GE VERNOVA

3 Series
Protective Relay Platform

350 - 345 - 339



Communications Guide

3 Series revision: 2.6x Manual
P/N: 1601-0246-A5

WORLDWIDE 10 YEAR WARRANTY

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REGISTERED ISO 9001

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GE VERNOVA Grid Solutions 3 Series Protective Relay Platform Communications Guide for revision 2.6x.

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Safety words and definitions

The following symbols used in this document indicate the following conditions:

DANGER **Indicates a hazardous situation which, if not avoided, will result in death or serious injury.**

WARNING **Indicates a hazardous situation which, if not avoided, could result in death or serious injury.**

CAUTION **Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.**

NOTICE **Indicates practices not related to personal injury.**

NOTE **Indicates general information and practices, including operational information and practices, that are not related to personal injury.**

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3 Series Protective Relay Platform

Chapter 1: Introduction

The Multilin 3 Series protective relay platform includes three different relays, the 350, 345, and 339. Information in this manual applies to all 3 Series relays unless otherwise indicated.

The 350 is a microprocessor-based relay for primary and backup overcurrent protection of medium and low voltage distribution feeders. The relay is also suitable for providing overcurrent and backup protection for small and medium size motors, transformers, generators, and distribution bus-bars.

The 345 is a microprocessor-based relay for primary and backup protection of small to medium size distribution transformers. The relay provides advanced algorithms for automatic magnitude and phase compensation for more than twenty types of two-winding transformers, good sensitivity for the detection of winding ground faults, and the flexibility to set any of the phase, ground, neutral and negative sequence currents overcurrent elements.

The 339 Motor Protection System is a microprocessor based relay providing suitable protection of medium voltage motors. The basic protection functions of this relay include motor thermal model, time-delayed and instantaneous overcurrent, ground overcurrent and sensitive ground overcurrent protection. Additional control features such as logic control are available for applications that require additional motor control functionality.

Communications interfaces

Each 3 Series relay has three communications interfaces. These can be used simultaneously:

- RS485
- USB
- Ethernet

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3 Series Protective Relay Platform

Chapter 2: RS485 interface

The hardware or electrical interface in the 3 Series relay is two-wire RS485. In a two-wire link, data is transmitted and received over the same two wires. Although RS485 two wire communication is bi-directional, the data is never transmitted and received at the same time. This means that the data flow is half duplex.



Polarity is important in RS485 communications. The '+' (positive) terminals of every device must be connected together.

Electrical Interface

RS485 lines should be connected in a daisy chain configuration with terminating networks installed at each end of the link (i.e. at the master end and at the slave farthest from the master). The terminating network should consist of a 120 W resistor in series with a 1 nF ceramic capacitor when used with Belden 9841 RS485 wire. Shielded wire should always be used to minimize noise. The shield should be connected to all of the 3 Series relay s as well as the master, then grounded at one location only. This keeps the ground potential at the same level for all of the devices on the serial link.

MODBUS Protocol

The 3 Series relay implements a subset of the Modicon Modbus RTU serial communication standard. The Modbus protocol is hardware-independent. That is, the physical layer can be any of a variety of standard hardware configurations. This includes USB, RS485, fibre optics, etc. Modbus is a single master / multiple slave type of protocol suitable for a multi-drop configuration.

The 3 Series relay is always a Modbus slave. It can not be programmed as a Modbus master. Computers or PLCs are commonly programmed as masters.

Both monitoring and control are possible using read and write register commands. Other commands are supported to provide additional functions.

The Modbus protocol has the following characteristics.

- Address: 1 to 254
- Supported Modbus function codes: 1H, 2H, 3H, 4H, 5H, 6H, 7H, 8H, 10H, 42H, 43H

For details see MODBUS Functions.

Data Frame Format and Data Rate

One data frame of an asynchronous transmission to or from a 3 Series relay typically consists of 1 start bit, 8 data bits, and 1 stop bit. This produces a 10 bit data frame. This is important for transmission through modems at high bit rates.

Modbus protocol can be implemented at any standard communication speed. The 3 Series relay supports operation at 9600, 19200, 38400, 57600, and 115200 baud.



The USB interface will support only 115200 baud.

Data Packet Format

A complete request/response sequence consists of the following bytes (transmitted as separate data frames):

Master Request Transmission:

SLAVE ADDRESS: 1 byte
FUNCTION CODE: 1 byte
DATA: variable number of bytes depending on FUNCTION CODE
CRC: 2 bytes

Slave Response Transmission:

SLAVE ADDRESS: 1 byte
FUNCTION CODE: 1 byte
DATA: variable number of bytes depending on FUNCTION CODE
CRC: 2 bytes

SLAVE ADDRESS: This is the first byte of every transmission. This byte represents the user-assigned address of the slave device that is to receive the message sent by the master. Each slave device must be assigned a unique address and only the addressed slave will respond to a transmission that starts with its address. In a master request transmission the SLAVE ADDRESS represents the address of the slave to which the request is being sent. In a slave response transmission the SLAVE ADDRESS represents the address of the slave that is sending the response.

FUNCTION CODE: This is the second byte of every transmission. Modbus defines function codes of 1 to 127.

DATA: This will be a variable number of bytes depending on the FUNCTION CODE. This may be Actual Values, Setpoints, or addresses sent by the master to the slave or by the slave to the master.

CRC: This is a two byte error checking code.

Error Checking

The RTU version of Modbus includes a two byte CRC-16 (16 bit cyclic redundancy check) with every transmission. The CRC-16 algorithm essentially treats the entire data stream (data bits only; start, stop and parity ignored) as one continuous binary number. This number is first shifted left 16 bits and then divided by a characteristic polynomial (1100000000000101B). The 16 bit remainder of the division is appended to the end of the transmission, MSByte first. The resulting message including CRC, when divided by the same polynomial at the receiver will give a zero remainder if no transmission errors have occurred.

If a 3 Series relay Modbus slave device receives a transmission in which an error is indicated by the CRC-16 calculation, the slave device will not respond to the transmission. A CRC-16 error indicates than one or more bytes of the transmission were received incorrectly and thus the entire transmission should be ignored in order to avoid the 3 Series relay performing any incorrect operation.

The CRC-16 calculation is an industry standard method used for error detection. An algorithm is included here to assist programmers in situations where no standard CRC-16 calculation routines are available.

CRC-16 Algorithm

Once the following algorithm is complete, the working register "A" will contain the CRC value to be transmitted. Note that this algorithm requires the characteristic polynomial to be reverse bit ordered. The MSBit of the characteristic polynomial is dropped since it does not affect the value of the remainder. The following symbols are used in the algorithm:

—>: data transfer

A: 16 bit working register

AL: low order byte of A

AH: high order byte of A

CRC: 16 bit CRC-16 value

i, j: loop counters

(+): logical exclusive or operator

Di: i-th data byte (i = 0 to N-1)

G: 16 bit characteristic polynomial = 1010000000000001 with MSbit dropped and bit order reversed

shr(x): shift right (the LSbit of the low order byte of x shifts into a carry flag, a '0' is shifted into the MSbit of the high order byte of x, all other bits shift right one location

The algorithm is:

```
1. FFFF hex –> A

2. 0 –> i

3. 0 –> j

4. Di (+) AL –> AL

5. j+1 –> j

6. shr(A)

7. is there a carry? No: go to 8. Yes: G (+) A –> A

8. is j = 8? No: go to 5. Yes: go to 9.

9. i+1 –> i

10. is i = N? No: go to 3. Yes: go to 11.

11. A –> CRC
```

Timing

Data packet synchronization is maintained by timing constraints. The receiving device must measure the time between the reception of characters. If 3.5 character times elapse without a new character or completion of the packet, then the communication link must be reset (i.e. all slaves start listening for a new transmission from the master). Thus at 115200 baud a delay of greater than 3.5 x 1 / 115200 x 10 x = 0.3 ms will cause the communication link to be reset.

3 Series supported functions

The following functions are supported by the 3 Series relay :

- FUNCTION CODE 03H - Read Setpoints
- FUNCTION CODE 04H - Read Actual Values
- FUNCTION CODE 05H - Execute Operation
- FUNCTION CODE 06H - Store Single Setpoint
- FUNCTION CODE 07H - Read Device Status
- FUNCTION CODE 08H - Loopback Test
- FUNCTION CODE 10H - Store Multiple Setpoints

Refer to *section 6* of this guide for more details on MODBUS function codes.

DNP protocol settings

DNP communication

The menu structure for the DNP protocol is shown below.

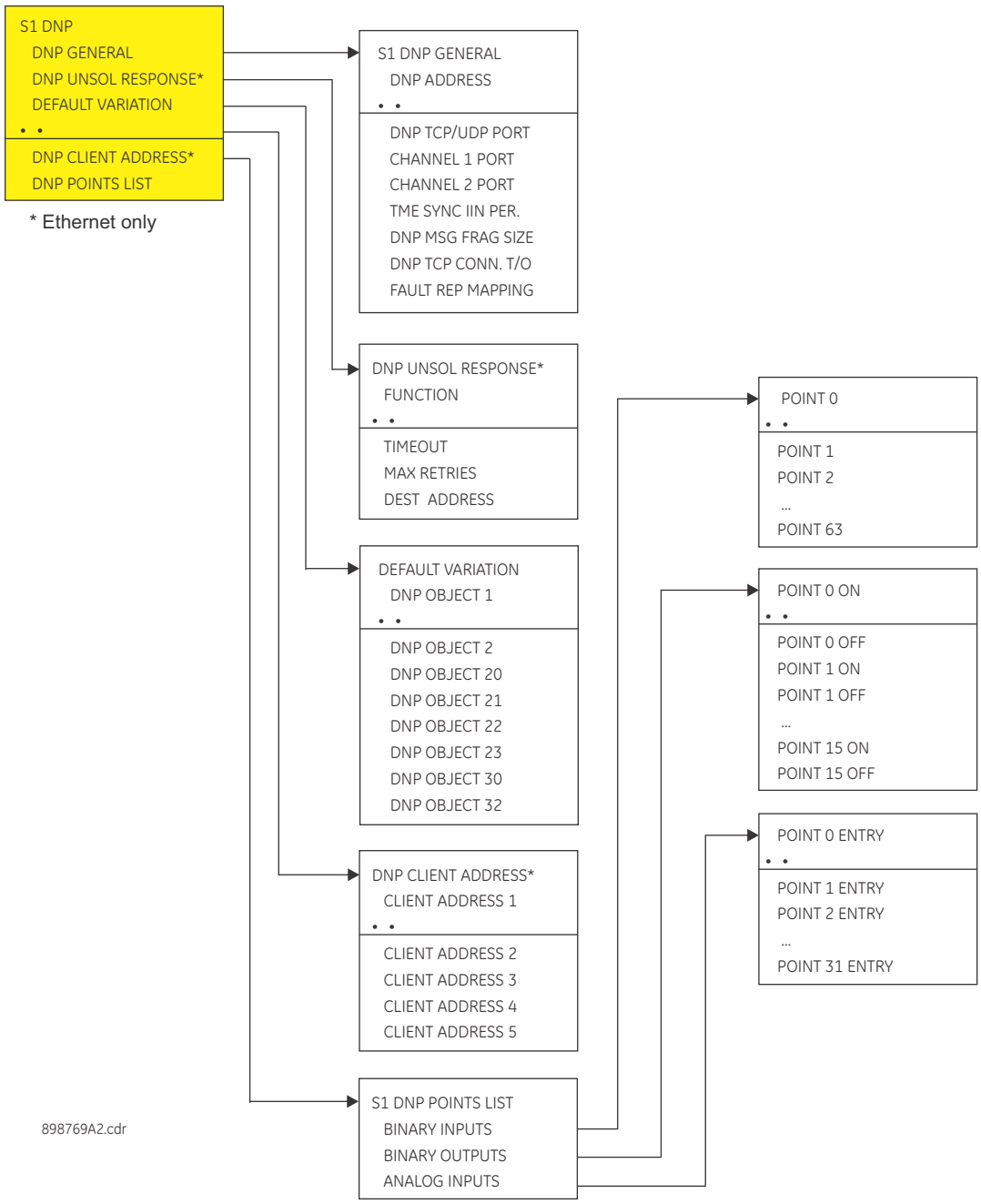


Figure 2-1: DNP communication menu

The following path is available using the keypad.

PATH: **SETPOINTS > S1 RELAY SETUP > COMMUNICATIONS > DNP PROTOCOL > DNP GENERAL**

To view the list of DNP Binary Inputs please refer to the *Format Codes* section - FC134B - of this Guide.

DNP device profile

DNP 3.0 Device Profile	
(Also see the IMPLEMENTATION TABLE in the following section)	
Vendor Name: **General Electric Multilin**	
Device Name: **3 Series relay**	
Highest DNP Level Supported: For Requests: **Level 2** For Responses: **Level 2**	
Device Function: ☐ Master ☒ **Slave**	
Notable objects, functions, and/or qualifiers supported in addition to the Highest DNP Levels Supported (the complete list is described in the attached table): **Binary Inputs (Object 1)** **Binary Input Changes (Object 2)** **Binary Outputs (Object 10)** **Control Relay Output Block (Object 12)** **Binary Counters (Object 20)** **Frozen Counters (Object 21)** **Counter Change Event (Object 22)** **Frozen Counter Event (Object 23)** **Analog Inputs (Object 30)** **Analog Input Changes (Object 32)** **Analog Deadbands (Object 34)**	
Time and Date (Object 50) **Internal Indications (Object 80)**	
Maximum Data Link Frame Size (octets):	Maximum Application Fragment Size (octets):
Transmitted: **292**	Transmitted: **configurable up to 2048**
Received: **292**	Received: **2048**
Maximum Data Link Re-tries:	**Maximum Application Layer Re-tries:**
☒**None**	☒ **None**
☐Fixed at 3	☐ Configurable
☐Configurable	
Requires Data Link Layer Confirmation: ☒ **Never**	

DNP 3.0 Device Profile				
☐ Always				
☐ Sometimes				
☐ Configurable				
Requires Application Layer Confirmation:				
☐ Never				
☐ Always				
☒ **When reporting Event Data**				
☒ **When sending multi-fragment responses**				
☐ Sometimes				
☐ Configurable				
Timeouts while waiting for:				
Data Link Confirm:	☒ **None**	☐ Fixed	☐ Variable	☐ Configurable
Complete Appl. Fragment:	☒ **None**	☐ Fixed	☐ Variable	☐ Configurable
Application Confirm:	☐ None	☒ **Fixed at 10 s**	☐ Variable	☐ Configurable
Complete Appl. Response:	☒ **None**	☐ Fixed at ___	☐ Variable	☐ Configurable
Others:				
Transmission Delay: **No intentional delay**				
Need Time Interval: **Configurable (default = 24 hrs.)**				
Select/Operate Arm Timeout: **10 s**				
Binary input change scanning period: **8 times per power system cycle**				
Analog input change scanning period: **500 ms**				
Counter change scanning period: **500 ms**				
Frozen counter event scanning period: **500 ms**				
Sends/Executes Control Operations:				
WRITE Binary Outputs	☒ **Never**	☐ Always	☐ Sometimes	☐Configurable
SELECT/OPERATE	☐ Never	☒ **Always**	☐ Sometimes	☐ Configurable
DIRECT OPERATE	☐ Never	☒**Always**	☐ Sometimes	☐ Configurable
DIRECT OPERATE – NO ACK	☐ Never	☒ **Always**	☐ Sometimes	☐ Configurable
Count > 1	☒ **Never**	☐ Always	☐ Sometimes	☐ Configurable
Pulse On	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Pulse Off	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Latch On	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Latch Off	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Queue	☒ **Never**	☐ Always	☐ Sometimes	☐ Configurable
Clear Queue	☒ **Never**	☐ Always	☐ Sometimes	☐ Configurable
Explanation of 'Sometimes': Object 12 points are mapped to Virtual Inputs and Commands (Force Coils). Both "Pulse On" and "Latch On" operations perform the same function in the 3 Series relay ; that is, the appropriate Virtual Input or Coil is put into the "On" state. The On/Off times and Count value are ignored. "Pulse Off" and "Latch Off" operations put the appropriate Virtual Input or Coil into the "Off" state. "Trip" and "Close" operations both put the appropriate Virtual Input or coil into the "On" state if a paired mapping is set, otherwise "Trip" will put into "Off" and "Close" will put into "On".				

Reports Binary Input Change Events when no specific variation requested:	**Reports time-tagged Binary Input Change Events when no specific variation requested:**
☐ Never	☐ Never
☒ **Only time-tagged**	☒ **Binary Input Change With Time**
☐ Only non-time-tagged	☐ Binary Input Change With Relative Time
☐ Configurable	☐ Configurable (attach explanation)
Sends Unsolicited Responses:	**Sends Static Data in Unsolicited Responses:**

DNP 3.0 Device Profile	
☐ Never ☐ Configurable ☐ Only certain objects ☒ **Sometimes** ☒ **ENABLE/DISABLE** unsolicited Function codes supported	☒ **Never** ☐ When Device Restarts ☐ When Status Flags Change No other options are permitted.
Explanation of 'Sometimes': It will be disabled for RS-485 applications, since there is no collision avoidance mechanism. For Ethernet communication it will be available and it can be disabled or enabled with the proper function code.	
Default Counter Object/Variation: ☐ No Counters Reported ☐ Configurable (attach explanation) ☒ **Default Object: 20** **Default Variation: 1** ☒ **Point-by-point list attached**	**Counters Roll Over at:** ☐ No Counters Reported ☐ Configurable (attach explanation) ☒ **16 Bits** ☐ Other Value: _____ ☒ **Point-by-point list attached**
Sends Multi-Fragment Responses: ☒ **Yes** ☐ No	

DNP implementation

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	**VARIATION NO.**	**DESCRIPTION**	**FUNCTION CODES (DEC)**	**QUALIFIER CODES (HEX)**	**FUNCTION CODES (DEC)**	**QUALIFIER CODES (HEX)**
1	0	Binary Input (Variation 0 is used to request default variation)	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	Binary Input	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	Binary Input with Status	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
2	0	Binary Input Change (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	Binary Input Change without Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	2	Binary Input Change with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	3	Binary Input Change with Relative Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	VARIATION NO.	DESCRIPTION	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)
10	0	Binary Output Status (Variation 0 is used to request default variation)	1 (read)	00, 01(start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	2	Binary Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
12	1	Control Relay Output Block	3 (select)4 (operate) 5 (direct op) 6 (dir. op, noack)	00, 01 (start-stop) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	echo of request
20	0	Binary Counter (Variation 0 is used to request default variation)	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	32-Bit Binary Counter	1 (read)7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	16-Bit Binary Counter	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	5	32-Bit Binary Counter without Flag	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	6	16-Bit Binary Counter without Flag	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
21	0	Frozen Counter(Variation 0 is used to request defaultvariation)	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	32-Bit Frozen Counter	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	16-Bit Frozen Counter	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	9	32-Bit Frozen Counter without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	10	16-Bit Frozen Counter without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	VARIATION NO.	DESCRIPTION	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)
22	0	Counter Change Event (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	32-Bit Counter Change Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	2	16-Bit Counter Change Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	5	32-Bit Counter Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	6	16-Bit Counter Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
23	0	Frozen Counter Event (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	32-Bit Frozen Counter Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	2	16-Bit Frozen Counter Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	5	32-Bit Frozen Counter Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	6	16-Bit Frozen Counter Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
30	0	Analog Input (Variation 0 is used to request default variation)	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	32-Bit Analog Input	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	16-Bit Analog Input	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	3	32-Bit Analog Input without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	4	16-Bit Analog Input without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
32	0	Analog Change Event (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	32-Bit Analog Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	VARIATION NO.	DESCRIPTION	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)
	2	16-Bit Analog Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	3	32-Bit Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	4	16-Bit Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
34	0	Analog Input Reporting Deadband (Variation 0 is used to request defaultvariation)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	16-bit Analog Input Reporting Deadband (default - see Note 1)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
			2 (write)	00, 01 (start-stop) 07, 08 (limited quantity) 17, 28 (index)	---	---
	2	32-bit Analog Input Reporting Deadband	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
			2 (write)	00, 01 (start-stop) 07, 08 (limited quantity) 17, 28 (index)	---	---
50	1	Time and Date (default - see Note 1)	1 (read)2 (write)	00, 01 (start-stop) 06 (no range, or all) 07 (limited qty=1) 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
60	0	Class 0, 1, 2, and 3 Data	1 (read) 20 (enable unsol) 21 (disable unsol) 22 (assign class)	06 (no range, or all)	---	---
	1	Class 0 Data	1 (read) 22 (assign class)	06 (no range, or all)	---	---
	2	Class 1 Data	1 (read) 20 (enable unsol)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	3	Class 2 Data	21 (disable unsol)		---	---
	4	Class 3 Data	22 (assign class)		---	---
80	1	Internal Indications	1 (read)	00, 01 (start-stop) (index =7)	129 (response)	00, 01 (start-stop)
			2 (write) (see Note 3)	00 (start-stop) (index =7)	---	---
		No Object (function code only) see Note 3	13 (cold restart)	---	---	---
		No Object (function code only)	14 (warm restart)	---	---	---
		No Object (function code only)	23 (delay meas.)	---	---	---

NOTE

1. A default variation refers to the variation response when variation 0 is requested and/or in class 0, 1, 2, or 3 scans. The default variations for object types 1, 2, 20, 21, 22, 23, 30, and 32 are selected via relay settings. This optimizes the class 0 poll data size.
2. For static (non-change-event) objects, qualifiers 17 or 28 are only responded when a request is sent with qualifiers 17 or 28, respectively. Otherwise, static object requests sent with qualifiers 00, 01, 06, 07, or 08, will be responded with qualifiers 00 or 01 (for change event objects, qualifiers 17 or 28 are always responded.)

Cold restarts are implemented the same as warm restarts – the 3 Series relay is not restarted, but the DNP process is restarted.

DNP serial EnerVista Setup

The following tables show the settings needed to configure all the DNP 3.0 implementation parameters.

Table 2-1: RS-485

SETTINGS	PARAMETER	RANGE	FORMAT
RS485 Baud Rate	115200	9600, 19200, 38400, 57600, 115200	F101
RS485 Comm Parity	None	None, Odd, Even	F102
Rear 485 Protocol	DNP 3.0	Modbus, IEC60870-5-103, DNP 3.0	F97

In order to activate DNP 3.0 at the RS485 rear port, the setting "Rear 485 Protocol" must be set to DNP 3.0. Once the setting has been changed, the relay must be switched off, then switched on.

Table 2-2: DNP protocol

SETTINGS	PARAMETER	RANGE	FORMAT
DNP Unsol Resp Function	Disabled	Disabled ; Enabled	F126
DNP Unsol Resp Timeout	5 s	0 to 60 s	F1
DNP Unsol Resp Max Retries	10	1 to 255	F1
DNP Unsol Resp Dest Addr	1	0 to 65519	F1
DNP Time Sync IIN Period	1440 min	1 to 10080 min	F1
DNP Message Fragment Size	240	30 to 2048	F1
DNP Object 1 Default Variation	2	1 ; 2	F1
DNP Object 2 Default Variation	2	1 ; 2	F1
DNP Object 20 Default Variation	1	1 ; 2 , 5 ; 6	F78
DNP Object 21 Default Variation	1	1 ; 2 ; 9 ; 10	F79
DNP Object 22 Default Variation	1	1 ; 2 , 5 ; 6	F80
DNP Object 23 Default Variation	1	1 ; 2 , 5 ; 6	F81
DNP Object 30 Default Variation	1	1 ; 2 ;3 ; 4	F82
DNP Object 32 Default Variation	1	1 ; 2 ;3 ; 4	F83
DNP TCP Connection Timeout	120 s	10 to 300 s	F1
Fault Report Mapping in DNP/104	Disabled	Disabled, Enabled	F126

Table 2-3: DNP point list

SETTINGS	PARAMETER	RANGE	FORMAT
Binary Input Point 0 Entry	Select entry from a list	Operands	F134B
Binary Input Point 63 Entry	Select entry from a list	Operands	F134B
Analog Input Point 0 Entry	Select entry from a list	Analog parameters	F88
Analog Input Point 0 Scale Factor	1	0.001 ; 0.01 ; 0.1 ; 1 ; 10 ; 100 ; 1000 ; 10000 ; 100000	F85
Analog Input Point 0 Deadband	30000	0 to 100000000	F9
Analog Input Point 31 Entry	Select entry from a list	Analog parameters	F88
Analog Input Point 31 Scale Factor	1	0.001 ; 0.01 ; 0.1 ; 1 ; 10 ; 100 ; 1000 ; 10000 ; 100000	F85
Analog Input Point 31 Deadband	30000	0 to 100000000	F9
Binary Output Point 0 ON	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86
Binary Output Point 0 OFF	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86
Binary Output Point 15 ON	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86
Binary Output Point 15 OFF	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86

- DNP UNSOL RESPONSE FUNCTION should be “Disabled” for RS485 applications, since there is no collision avoidance mechanism.
- The DNP Time Sync IIN Period setting determines how often the Need Time Internal Indication (IIN) bit is set by the 3 Series relay. Changing this time allows the 3 Series relay to indicate that a time synchronization command is necessary more or less often
- Various settings have been included to configure Default Variation for the Binary Inputs, Counters and Analog Inputs Objects. The default variation refers to the variation response when variation 0 is requested, and/or in class 0, 1, 2, or 3 scans
- Up to 64 Binary Inputs and 32 Analog Input entries can be mapped to an item from a list of 3 Series relay status events and metered values. Status events correspond to format FC134B.
- Each Analog Input point Deadband and Scale Factor can be set individually instead of setting a general deadband or scale for different metering groups. This will avoid scale and deadband conflicts for different meterings of the same nature.
- Up to 16 Binary/Control Outputs can be configured by selecting a Virtual Input or Command from a list of 32 Virtual Inputs and Commands (Force Coils). Some legacy DNP implementations use a mapping of one DNP Binary Output to two physical or virtual control points. In Order to configure Paired Control Points the source for states ON and OFF should be set to different Virtual Inputs or Commands.
- The DNP Technical Committee recommends using contiguous point numbers, starting at 0, for each data type, because some DNP3 Master implementations allocate contiguous memory from point 0 to the last number for each data type.



Binary Inputs are inputs **to** the Master. Binary Outputs are outputs **from** the Master.

DNP general

Default variations for Object 1, 2 , 20 , 21 , 22 , 23 , 30 and Object 32 will be set by settings and returned for the object in a response when no specific variation is specified in a Master request.

Any change in the state of any binary point causes the generation of an event, and consequently, if configured, an unsolicited response. Alternatively it is returned when the Master asks for it. The same behavior will be seen when an analog value changes by more than its configured deadband limit. There can be up to 3 masters in total, but only one Serial Master.

The following Default Classes will be fixed for the different blocks of data:

Binary Input Points Default Class = 1
Analog Input Point Default Class = 2
Counters Default Class = 3

Each Data Point Class can be changed by protocol function code 22 in volatile mode. If a restart is performed, the new values will be lost.

DNP Object 34 points can be used to change deadband values from the default for each individual DNP Analog Input point. These new deadbands will be maintained such that in the case of a relay restart, the values are not lost.

For the 350 and 339 relays, one Binary Counter has been hardcoded such that no option can be modified by setting:

- Total_Number_of_Trips

Requests for Object 20 (Binary Counters), Object 21 (Frozen Counters), and Object 22 (Counter Change Events) must be accepted.

Function codes “Immediate Freeze”, “Freeze and Clear” etc. are accepted as well.

The FAULT REPORT MAPPING IN DNP/104 setpoint may be set to a value of "Disabled" or "Enabled". When "Disabled", only the configurable Analog Input points are available beginning at point index 0.When "Enabled", the Fault Report Values are assigned from point 0 to 32 in the 339 and 350 relays, and from 0 to 38 in the 345 relay, with the configurable Analog Inputs following the point numbers.

To support existing SCADA hardware not capable of 32-bit data reads, the upper and lower 16-bit portions of the fault report time and date values have been assigned to separate points. To read a date or time, it is necessary to read both the upper and lower 16-bit portions, concatenate these two values to form a 32-bit value and interpret the result in the format associated with the point.

Fault Report Mapping		350 and 339	Fault Report Mapping		345
Disabled	Enabled		Disabled	Enabled	
-	0	Fault Report Date Upper 16	-	0	Fault Report Date Upper 16
-	1	Fault Report Date Lower 16	-	1	Fault Report Date Lower 16
-	2	Fault Report Time Upper 16	-	2	Fault Report Time Upper 16
-	3	Fault Report Time Lower 16	-	3	Fault Report Time Lower 16
-	4	Fault Report Fault Type	-	4	Fault Report Fault Type
-	5	Fault Report Ia	-	5	Fault Report Ia
-	6	Fault Report Ia Angle	-	6	Fault Report Ia Angle
-	7	Fault Report Ib	-	7	Fault Report Ib
-	8	Fault Report Ib Angle	-	8	Fault Report Ib Angle
-	9	Fault Report Ic	-	9	Fault Report Ic
-	10	Fault Report Ic Angle	-	10	Fault Report Ic Angle
-	11	Fault Report Ig	-	11	Fault Report Ig
-	12	Fault Report Ig Angle	-	12	Fault Report Ig Angle

Fault Report Mapping		350 and 339	Fault Report Mapping		345
Disabled	Enabled		Disabled	Enabled	
-	13	Fault Report In	-	13	Fault Report In
-	14	Fault Report In Angle	-	14	Fault Report In Angle
-	15	Fault Report Va	-	15	Fault Report System Frequency
-	16	Fault Report Va Angle	-	16	Fault Report Ia 2
-	17	Fault Report Vb	-	17	Fault Report Ia 2 Angle
-	18	Fault Report Vb Angle	-	18	Fault Report Ib 2
-	19	Fault Report Vc	-	19	Fault Report Ib 2 Angle
-	20	Fault Report Vc Angle	-	20	Fault Report Ic 2
-	21	Fault Report Vab	-	21	Fault Report Ic 2 Angle
-	22	Fault Report Vab Angle	-	22	Fault Report Ig 2
-	23	Fault Report Vbc	-	23	Fault Report Ig 2 Angle
-	24	Fault Report Vbc Angle	-	24	Fault Report In 2
-	25	Fault Report Vca	-	25	Fault Report In 2 Angle
-	26	Fault Report Vca Angle	-	26	Fault Report Idiff 1 PhA
-	27	Fault Report Vn	-	27	Fault Report Idiff 1 PhA Angle
-	28	Fault Report Vn Angle	-	28	Fault Report I Restraint PhA
-	29	Fault Report Vaux	-	29	Fault Report I Restraint PhA Angle
-	30	Fault Report Vaux Angle	-	30	Fault Report Idiff 1 PhB
-	31	Fault Report System Frequency	-	31	Fault Report Idiff 1 PhB Angle
-	32	Fault Report Phases	-	32	Fault Report I Restraint Ph B
0	33	Analog Input Point 0 Entry	-	33	Fault Report I Restraint PhB Angle
1	34	Analog Input Point 1 Entry	-	34	Fault Report Idiff 1 PhC
...	...	...	-	35	Fault Report Idiff 1 PhC Angle
...	...	...	-	36	Fault Report I Restraint PhC
31	64	Analog Input Point 31 Entry	-	37	Fault Report I Restraint PhC Angle
			-	38	Fault Report Phases
			0	39	Analog Input Point 0 Entry
			1	40	Analog Input Point 1 Entry
			...	...	...
			...	...	...
			31	70	Analog Input Point 31 Entry

Some fault report data has been scaled to fit into a 16-bit value as follows:

Fault Report Data	Scale
Fault Report Ia, Ib, Ic, Ia2, Ib2, Ic2	Format_F10 * 100 / CT Primary
Fault Report Ig, Ig2	Format_F10 * 100 / Gnd CT Primary
Fault Report In , In2	Format_F10 * 100 / CT Primary
Fault Report Va, Vb, Vc, Vab, Vbc, Vca, Vn	Format_F9 * 10000 /(BusVTRatio * BusVTSecondary)
Fault Report Vaux	Format_F9 * 10000 /(AuxVTRatio * AuxVTSecondary)
Fault Report System Frequency	Format_F3
Fault Report Phases	Format_F37

IEC 60870-5-103 serial communication

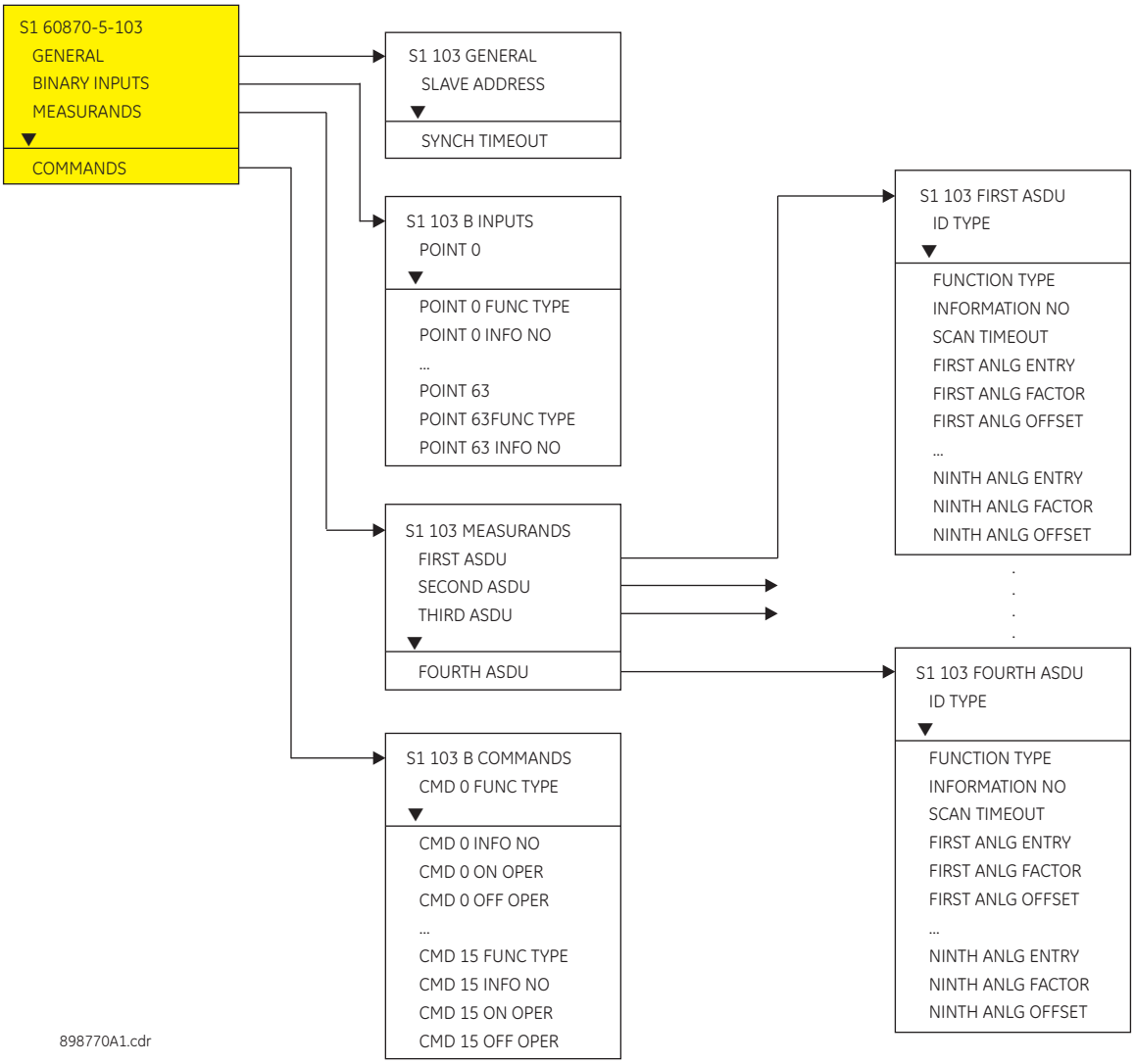


Figure 2-2: IEC 60870-5-103 serial communication menu

PATH: SETPOINTS > S1 RELAY SETUP > COMMUNICATIONS > IEC61870-5-103

To view the list of Binary Inputs please refer to the *Format Codes* section - FC134B - of this Guide.

Interoperability

Physical layer

Electrical interface

☒	EIA RS-485
32	Number of loads for one protection equipment

Optical interface

☐	Glass fibre
☐	Plastic fibre
☐	F-SMA type connector
☐	BFOC/2,5 type connector

Transmission speed

☒	9600 bits/s
☒	19200 bits/s

Link layer

There are no choices for the Link Layer.

Application layer

Transmission mode for application data

Mode 1 (least significant octet first), is used exclusively in this companion standard.

Common address of ASDU

☒	One COMMON ADDRESS OF ASDU (identical with station address)
	More than one COMMON ADDRESS OF ASDU

Selection of standard information numbers in monitor direction

Table 2-4: System functions in monitor direction

	INF	Semantics
☒	<0>	End of general interrogation
☒	<0>	Time synchronization
☒	<2>	Reset FCB
☒	<3>	Reset CU
☒	<4>	Start/restart
☒	<5>	Power on

Table 2-5: Status indications in monitor direction

	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	<16>	Auto-recloser active		
☐	<17>	Teleprotection active		
☐	<18>	Protection active		
☐	<19>	LED reset		
☐	<20>	Monitor direction blocked		
☐	<21>	Test mode		
☐	<22>	Local parameter setting		
☐	<23>	Characteristic 1		
☐	<24>	Characteristic 2		
☐	<25>	Characteristic 3		
☐	<26>	Characteristic 4		
☐	<27>	Auxiliary input 1		
☐	<28>	Auxiliary input 2		
☐	<29>	Auxiliary input 3		
☐	<30>	Auxiliary input 4		

Table 2-6: Supervision indications in monitor direction

	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	<32>	Measurand supervision I		
☐	<33>	Measurand supervision V		
☐	<35>	Phase sequence supervision		
☐	<36>	Trip circuit supervision		
☐	<37>	I>> back-up operation		
☐	<38>	VT fuse failure		
☐	<39>	Teleprotection disturbed		
☐	<46>	Group warning		
☐	<47>	Group alarm		

Table 2-7: Earth fault indications in monitor direction

	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	<48>	Earth fault L1		
☐	<49>	Earth fault L2		
☐	<50>	Earth fault L3		
☐	<51>	Earth fault forward, i.e. line		
☐	<52>	Earth fault reverse, i.e. busbar		

Table 2-8: Fault indications in monitor direction

	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	<64>	Start / pick-up L1		
☐	<65>	Start / pick-up L2		
☐	<66>	Start / pick-up L3		

	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	<67>	Start / pick-up N		
☐	<68>	General trip		
☐	<69>	Trip L1		
☐	<70>	Trip L2		
☐	<71>	Trip L3		
☐	<72>	Trip I>> (back-up operation)		
☐	<73>	Fault location X in ohms		
☐	<74>	Fault forward / line		
☐	<75>	Fault reverse / busbar		
☐	<76>	Teleprotection signal transmitted		
☐	<77>	Teleprotection signal received		
☐	<78>	Zone 1		
☐	<79>	Zone 2		
☐	<80>	Zone 3		
☐	<81>	Zone 4		
☐	<82>	Zone 5		
☐	<83>	Zone 6		
☐	<84>	General start / pick-up		
☐	<85>	Breaker failure		
☐	<86>	Trip measuring system L1		
☐	<87>	Trip measuring system L2		
☐	<88>	Trip measuring system L3		
☐	<89>	Trip measuring system E		
☐	<90>	Trip I>		
☐	<91>	Trip I>>		
☐	<92>	Trip IN>		
☐	<93>	Trip IN>>		

Table 2-9: Auto-reclosure indications in monitor direction

	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	<128>	CB 'on' by AR		
☐	<129>	CB 'on' by long-time AR		
☐	<130>	AR blocked		

Table 2-10: Measurands in monitor direction

	INF	Semantics	3 Series relay Identifier	3 Series relay Data Text
☐	<144>	Measurand I		
☐	<145>	Measurands I, V		
☐	<146>	Measurands I, V, P, Q		
☐	<147>	Measurands In, Ven		
☐	<148>	Measurands IL123, VL123, P, Q, f		

Table 2-11: Generic functions in monitor direction

	INF	Semantics
☐	<240>	Read headings of all defined groups
☐	<241>	Read values or attributes of all entries of one group
☐	<243>	Read directory of a single entry
☐	<244>	Read value or attribute of a single entry
☐	<245>	End of general interrogation of generic data
☐	<249>	Write entry with confirmation
☐	<250>	Write entry with execution
☐	<251>	Write entry aborted

Selection of standard information numbers in control direction

Table 2-12: System functions in control direction

	INF	Semantics
☒	<0>	Initiation of general interrogation
☒	<0>	Time synchronization

Table 2-13: General commands in control direction

	INF	Semantics
☐	<16>	Auto-recloser on / off
☐	<17>	Teleprotection on / off
☐	<18>	Protection on / off
☐	<19>	LED reset
☐	<23>	Activate characteristic 1
☐	<24>	Activate characteristic 2
☐	<25>	Activate characteristic 3
☐	<26>	Activate characteristic 4

Table 2-14: General functions in control direction

	INF	Semantics
☐	<240>	Read headings of all defined groups
☐	<241>	Read values or attributes of all entries of one group
☐	<243>	Read directory of a single entry
☐	<244>	Read value or attribute of a single entry
☐	<245>	General interrogation of generic data
☐	<248>	Write entry
☐	<249>	Write entry with confirmation
☐	<250>	Write entry with execution
☐	<251>	Write entry abort

Basic application functions

☐	Test mode
☐	Blocking of monitor direction
☐	Disturbance data
☐	Generic services
☐	Private data

Miscellaneous

Measurand	Max. MVAL = times rated value		
	1,2	or	2,4
Current L1	☐		☒
Current L2	☐		☒
Current L3	☐		☒
Voltage L1-E	☐		☒
Voltage L2-E	☐		☒
Voltage L3-E	☐		☒
Active power P	☐		☒
Reactive power Q	☐		☒
Frequency f	☐		☒
Voltage L1-L2	☐		☒

Application level

Application functions

The unbalanced transmission mode of the protocol is used to avoid the possibility of more than one protection device attempting to transmit on the channel at the same time, over the RS485 port.

Data is transferred to the primary or control station (master) using the “data acquisition by polling” principle. Cyclically, the master will request class 2 data to the secondary station (slave).

When slave has class 1 data (high priority) pending, the ACD control bit will be set to 1 demanding the master to request for that data.

Periodically, the master may send a General Interrogation in order to update the complete database.

The measurands will be sent to the primary station as a response to class 2 request. A setting (0 to 60 min) is available to configure the desired interval, where 0 means transmission as fast as possible.

The following functions are supported:

- Initialization
- General Interrogation
- Synchronization
- Commands transmission

Type identification

The Type Identification implemented will be:

TYPE IDENTIFICATION UI8[1..8] <1..255>
<1..31>:= definitions of this companion standard(compatible range)
<32..255>:= for special use (private range)

Information in monitor direction:

<1>:= time-tagged message
<3>:= measurands I
<5>:= identification
<6>:= time synchronization
<8>:= general interrogation termination
<9>:= measurands II

Information in control direction:

<6>:= time synchronization
<7>:= general interrogation
<20>:= general command

Function type

FUNCTION TYPE UI8 [1..8] <0..255>

<0..127>:= private range
<128..129>:= compatible range
<130..143>:= private range
<144..145>:= compatible range
<146..159>:= private range
<160..161>:= compatible range
<162..175>:= private range
<176..177>:= compatible range
<178..191>:= private range
<192..193>:= compatible range
<194..207>:= private range
<208..209>:= compatible range
<210..223>:= private range
<224..225>:= compatible range
<226..239>:= private range
<240..241>:= compatible range
<242..253>:= private range
<254..255>:= compatible range

The 3 Series relay is identified in this protocol as “overcurrent protection”, so it will use the Function Type <160> for all the digital and analogues points proposed by the standard and mapped in this profile. For the other data supported by the device, the customer will have the capability to use them by setting a number from the private range.

Information number

INFORMATION NUMBER := UI8 [1..8] <0..255>

Monitor direction := <0..255>

<0..15>:=system functions
<16..31>:= status
<32..47>:=supervision
<48..63>:=earth fault
<64..127>:=short circuit
<128..143>:=auto-reclosure
<144..159>:=measurands
<160..239>:=not used
<240..255>:=generic functions

Control direction:=<0..255>

<0..15>:=system functions
<16..31>:=general commands
<32..239>:=not used
<240..255>:=generic functions

Data management

The 3 Series relay supports a fixed profile and data that is configurable using the EnerVista 3 Series Setup program.

The data that can be configured are:

- digital states
- measurands
- commands.

Digital states

Digital states in the relay may be mapped using the EnerVista 3 Series Setup program. By default, states are mapped to information numbers proposed by the standard, but the user may delete these mappings if desired.

All the mapped information will be sent as a response to a general interrogation like ASDU 1.

For the other states, the customer can assign:

1. Information Number <1..255>
2. Function Type <0..255>.

Settings	Digital Status	Information Number	Function Type
Point 1 Entry	Select entry from list	<0 – 255 >	<0 – 255 >
....			
....			
Point 64 Entry	Select entry from list	<0 – 255 >	<0 – 255 >

This means that for each digital point 3 settings are required.

Example:

Modbus Address	Description	Value	Format
43879	Point 1 Entry Digital Status	0x8242 (Undercurrent Trip)	FC134
44223	Point 1 Entry Function Type	160	F1
44224	Point 1 Entry Information Number	144	F1

The "Point Entry Digital Status" reuses the DNP Binary Input 43029, 43030, ...

Measurands

Some analog points are supported by the 3 Series relay with compatible information numbers that have been identified in the device profile.

For the other measurands, it is possible to use the EnerVista 3 Series Setup to select the desired point and assign the Identification Type (3 or 9), Function Type <0..255>, and Information Number <1..255>.

If the user selects Identification Type 3 (ASDU 3) only four measurands are available for configuration, but if Identification Type 9 (ASDU 9) is selected, up to nine measurands can be sent in the IEC103 slave answer. For each measurand, all metering values that the 3 Series relay supports, are available in order to be mapped. There are 3 possible configurable ASDUS.

For example, eDataVab is the index in the Modbus Memory Map.

Modbus Address	Description	Value	Format
44384	First ASDU Identification Type	3 or 9	F221
44385	First ASDU Function Type	<0 - 255 >	F1
44386	First ASDU Information Number	< 0 - 255 >	F1
44387	First ASDU Scan Timeout	< 0 - 1000> secs	F1

Modbus Address	Description	Value	Format
44388	First ASDU First Analogue Entry	Disabled	F88
44389	First ASDU First Analogue Factor	1	F3
44390	First ASDU First Analogue Offset	0	F1
44391	First ASDU Second Analogue Entry	Disabled	F88
44392	First ASDU Second Analogue Factor	1	F3
44393	First ASDU Second Analogue Offset	0	F1
	.....		
44412	First ASDU Ninth Analogue Entry	Disabled	F88
44413	First ASDU Ninth Analogue Factor	1	F3
44414	First ASDU Ninth Analogue Offset	0	F1
44415	Second ASDU Identification Type	3 or 9	F221
44416	Second ASDU Function Type	<0 - 255 >	F1
44417	Second ASDU Information Number	< 0 - 255 >	F1
44418	Second ASDU Scan Timeout	< 0 - 1000> secs	F1
44419	Second ASDU First Analogue Entry	Disabled	
44420	Second ASDU First Analogue Factor	1	F3
44421	Second ASDU First Analogue Offset	0	F1
	.....		
44443	Second ASDU Ninth Analogue Entry	Disabled	
44444	Second ASDU Ninth Analogue Factor	1	F3
44445	Second ASDU Ninth Analogue Offset	0	F1
44446	Third ASDU Identification Type	3 or 9	F221
	.....		
44476	Third ASDU Ninth Analogue Offset	0	F1
44477	Fourth ASDU Identification Type	3 or 9	F221
	.....		
44507	Third ASDU Ninth Analogue Offset	0	F1

In the measurands configuration screen, with each selected measurement, a Factor and an Offset must be configured.

- The Factor is a multiplier factor.
- The Offset is an offset factor to be applied to the relay measurement to make the final measurement calculation to be sent to the master

The factor and offset parameters allow the user to perform different scaling in the relay measurements. The final measurement sent to the IEC103 master will be: “a*x+b”, where “x” is the relay measurement, “a” is the multiplier factor and “b” is the offset.

The measurands will be sent to the primary station as a response to a class 2 request.

There is a Timeout configurable with increments of 100 ms, between 0 and 60 min, in order to configure the desired interval.

Commands

All the commands and virtual inputs are available to be mapped using the EnerVista Setup program. It is possible to choose the desired command for the ON state and the same or different command for the OFF state.

The user is able to select the Information Number <1..255> and the Function Type <0..255> command mappings, but the Identification Type 20 (General Commands) is fixed.++ There are 32 configurable commands.

In this case it will be necessary to define a new format.

For example, FC500:

Description	Value
Virtual Input 1	1
Virtual Input 2	2
...	
Virtual Input 32	32
Reset	33
Open	34
Close	35
Display Msg	36

Modbus Address	Description	Value	Format
	Command 1 Function Type	<0 – 255 >	F1
	Command 1 Information Number	< 0 – 255 >	F1
	Command 1 Operation ON	2	FC500
	Command 1 Operation OFF	8	FC500
	...		
	Command 16 Function Type	<0 – 255 >	F1
	Command 16 Information Number	< 0 – 255 >	F1
	Command 16 Operation ON	6	FC500
	Command 16 Operation OFF	34	FC500

The "Command Operations ON and OFF" reuse the DNP Binary Outputs 43189, 43190, ...

103 general settings

Number	Value	Range
Comms Port	COM1	Enum[None,Com1]
Slave Address	0	[0..254]
Synchronization Timeout	30 min	[0..1440]min

If Comms Port is set to NONE, the IEC 870-5-103 communication protocol will not be available.

If the user sets a value other than 0 in the Synchronization Timeout setting, when this time expires without receiving a synchronization message, the Invalid bit will be set in the time stamp of a time-tagged message.

It is necessary to configure other port settings: Baud Rate, etc.

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3 Series Protective Relay Platform

Chapter 3: Ethernet interface

The Ethernet option for the 3 Series relay provides both a 1300 nm optical interface, and a 10/100 auto-negotiating copper interface. To select which interface is active, a MODBUS setpoint (see below) must be modified:

MODBUS Address	Hex Address	Description	Min	Max	Step	Function Code	Factory Default
40191	BE	EthernetConnectionType	0	1	1	FC230	0

350 Redundancy Options

NOTE

Redundancy options are available for the 350 relay only.

Industrial real-time Ethernets typically demand much higher availability and uninterrupted operation than office Ethernet solutions can provide. Even a short loss of connectivity can result in loss of functionality, as for example in some automation, vehicular, power generation, and power distribution systems.

To recover from a network failure, different standard redundancy schemes are applied such as Parallel Redundancy Protocol (PRP), High-availability Seamless Redundancy (HSR) and others.

The basic concept of both protocols, PRP and HSR, is to send practically identical frames over different paths and discard one of the copies in reception, at best. If an error occurs or one of the paths is down, the frame travelling through that path will not reach its destination, but its copy will.

PRP operates on two independent networks. Each frame is replicated on the sending node and transmitted over both networks. The receiving node processes the frame arriving first and discards the subsequent copy. The PRP layer is responsible for this replicate/discard function and hides the two networks from the upper layers. This scheme works without explicit reconfiguration and switchover and therefore does not show a period of unavailability.

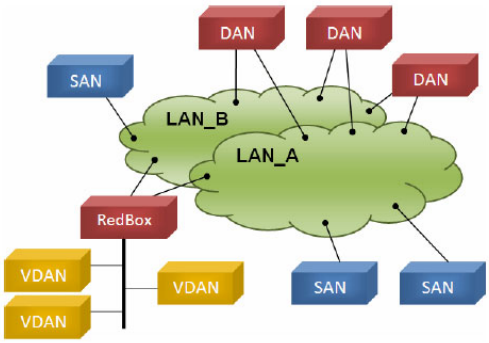


Figure 3-1: Example of PRP with two LANs (LAN A and LAN B)

The two LANs, named LAN_A and LAN_B, are identical in protocol at the MAC level, but they can differ in performance and topology. Transmission delays can also be different. The LANs have no direct connection among them and they are assumed to be fail-independent.

In some applications, only availability-critical nodes need a double attachment, while others do not. In order to meet the specific requirements, PRP defines different kinds of end nodes.

- The Dual Attached Node (DAN) is connected to both LANs.
- Uncritical nodes can be attached to only one LAN and are therefore called Single Attached Nodes (SAN). SANs that need to communicate with each other are on the same LAN.
- The Redundancy Box (RedBox) is used when a single interface node has to be attached to both networks. Such a node can communicate with all other nodes. Since a node behind a RedBox appears for other nodes like a DAN, it is called Virtual DANs (VDAN). The RedBox itself is a DAN and acts as a proxy on behalf of its VDANs. The RedBox has its own IP address for management purposes

Similarly to PRP, HSR is based in the duplication of every frame sent, but in a ring topology. Each copy of the frame is injected in a different direction of the ring. If any of the links between nodes is down, all nodes are still reachable. This topology forces every node in the net to be HSR aware because they have to forward every message until it reaches its destination. With that purpose, the redundancy information is located at the beginning of the frame allowing a faster forwarding, see next figure.

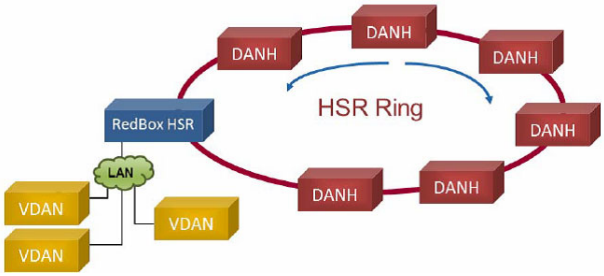


Figure 3-2: Example of HSR with HSR Ring

Definitions

- PRP – Parallel Redundancy Protocol - redundancy protocol for high availability in substation automation networks based on IEC 62439-3 Clause 4 and applicable to networks based on Ethernet technology (ISO/IEC 8802-3).
- OSI - Open Systems Interconnection - model defined by the International Organization for Standardization (ISO) for standardizing the functions of a communication system in terms of abstraction layers. Similar communication functions are grouped into logical layers. A layer serves the layer above it and is served by the layer below it. There are 7 layers: physical, data link, network, transport, session, presentation, application.
- DANP – Doubly Attached Node running PRP – a node that has two ports which operate in parallel and are attached to the upper layers of the OSI communications stack through a Link Redundancy Entity module.
- DANH – Doubly Attached Node with HSR protocol.
- LRE - Link Redundancy Entity – module operating at the link layer of the OSI stack and responsible for handling duplicates and managing redundancy.
- SAN – Singly Attached Node – regular nodes with non-redundant network adapters
- RedBox – device attaching singly attached nodes (SANs) to a redundant network.
- RCT – Redundancy Check Trailer – PRP trailer added to frames and consisting of the following fields:
  - 16-bit sequence number (SeqNr);
  - 4-bit LAN identifier (LanId);
  - 12 bit frame size (LSDUsize);
  - 16-bit suffix (PRPsuffix).

350 Parallel Redundancy Protocol (PRP)

PRP defines a redundancy protocol for high availability in substation automation networks. It is applicable to networks based on Ethernet technology (ISO/IEC 8802-3).

PRP is designed to provide seamless recovery in case of a single failure in the network, by using a combination of LAN duplication and frame duplication technique. Identical frames are sent on two completely independent networks that connect source and destination, see next figure.

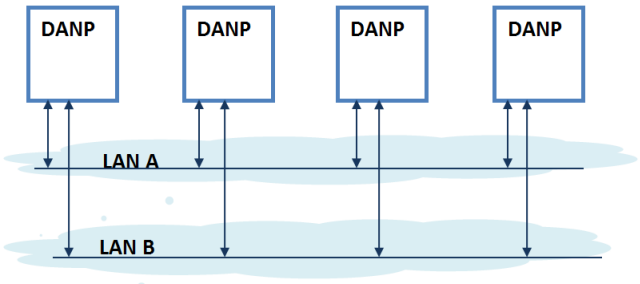


Figure 3-3: Example of PRP Redundant Network

Under normal circumstances both frames will reach their destination and one of them will be sent up the OSI stack to the destination application, while the second one will be discarded. If an error occurs in one of the networks and traffic is prevented from flowing on that path, connectivity will still be provided through the other network to ensure continuous communication. However, care must be taken when designing the two LANs, so that no single point of failure (such as a common power supply) is encountered, as such scenarios can bring down both LANs simultaneously.

PRP uses specialized nodes called doubly attached nodes (DANPs) for handling the duplicated frames. DANPs devices have an additional module at the link layer level, called the Link Redundancy Entity (LRE). LRE is responsible for duplicating frames and adding the specific PRP trailer when sending the frames out on the LAN, as well as making decisions on received frames as to which one is sent up the OSI stack to the application layer and which one is discarded. In essence LRE is responsible for making PRP transparent to the higher layers of the stack. There is a second type of specialized device used in PRP networks, called RedBox, with the role of connecting Single Attached Nodes (SANs) to a redundant network.

350relays implement only the DANP functionality. The RedBox functionality is not implemented.

The original standard IEC 62439-3 (2010) was amended to align PRP with the High-availability Seamless Redundancy (HSR) protocol. To achieve this, the original PRP was modified at the cost of losing compatibility with the PRP 2010 version. The revised standard IEC 62439-3 (2012) is commonly referred to as PRP-1, while the original standard is PRP-0. 350 relays support only PRP-1.

PRP can be enabled in configuration through a setting available on the network configuration menu, REDUNDANCY, which already has the capability of enabling Failover redundancy. When REDUNDANCY is set to PRP, the ports dedicated for PRP will operate in redundant mode.

The rights associated with configuring PRP follow the security requirements for network configuration.

PRP management through SNMP MIB is not supported, as the 350 relay doesn't currently support SNMP for configuration. Settings and actual values are only available through the front panel and through EnerVista.

The PRP solution to implemented must ensure that performance requirements stated in IEC 61850-5 Clause 13 are still met. It is specified under Clause 13 (Message performance requirements) that messages of type 1A must meet the performance class P2/3, which is 3ms (See 3.7.1.1).

Each device in the daisy chain forwards the message until it reaches the destination.

350 High-availability Seamless Redundancy (HSR)

HSR defines a redundancy protocol for high availability in substation automation networks, based on PRP principles, provides the property of zero recovery time, typically used in ring topology but applicable to any topology.

In the 350 relay, HSR is implemented in devices with communication option number 5 and it has two fiber optics. A frame is sent over both ports. A destination should receive, in the fault-free state, two identical frames within a certain time skew, forward the first frame to the application and discard the second frame when (and if) it comes. A sequence number is used to recognize such duplicates.

In contrast to PRP (IEC 62439-3- Clause 4), with which it shares the operating principle, HSR nodes are arranged into a ring, which allows the network to operate without dedicated switches, since every node is able to forward frames from port to port. HSR originally meant "High-availability Seamless Ring", but HSR is not limited to a simple ring topology. Redundant connections to other HSR rings and to PRP networks are possible.

350 Daisy Chain

A daisy chain is an interconnection of devices where each device is connected in series to the next.

When an Ethernet daisy-chain redundancy is selected, the 350 relay has two Ethernet ports and it is working as an unmanaged Ethernet switch. The two Ethernet ports are used for connecting each device to the ports of its two neighboring devices, see figure.

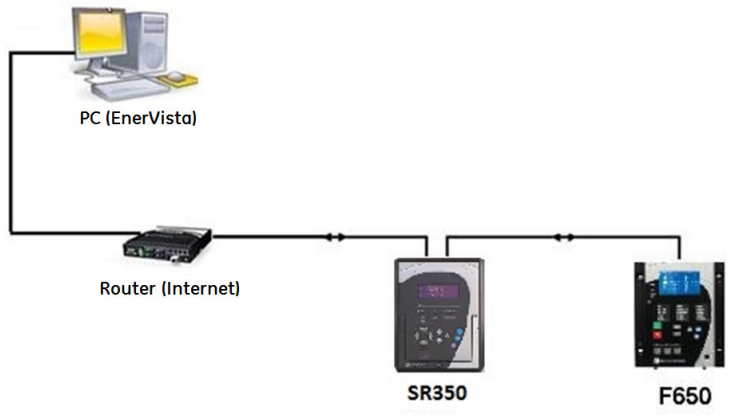


Figure 3-4: Ethernet daisy-chain redundancy

Each device in the daisy chain forwards the message until it reaches the destination.

Ports A and B use the same MAC (physical device) address and operate by chaining one device with the next one.

NOTICE

It is important not to create a loop in this topology. Both ends of the chain can be connected to different networks. The device operates only with one IP address through these two ports.

If a closed loop configuration is required, it is possible to use two RSTP switches as shown:

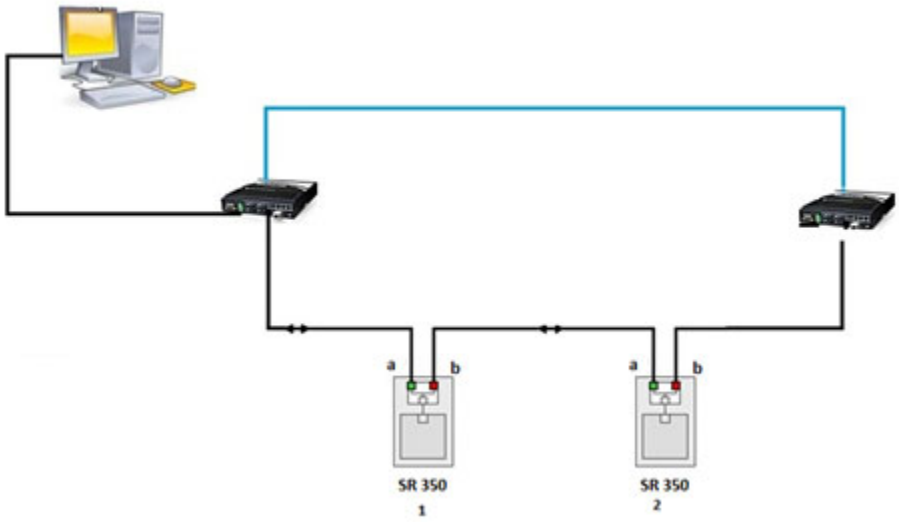


Figure 3-5: Ethernet daisy-chain loop with two RSTP switches

NOTE

In case of a link loss, only port A generates an "Ethernet Link Failure" target message or event message. Port B does not generate this message. In cases where a 350 device is connected between 2 other devices and has a link failure on Port B, it will be necessary to check the device connected to port B in order to identify the link failure.

350 LLA (Link Loss Alert)

Under Link Loss Alert (LLA) redundancy, port A has the priority. If the Port A LLA detects a problem with the link, communications is switched to Port B. Port B is, in effect, acting as a redundant or backup link to the network for Port A.

The operation of ports A and B are as follows:

Ports A and B both use the Port A MAC and IP address settings, while Port B is in standby mode in that it does not actively communicate on the Ethernet network but does monitors its Ethernet link.

If the setting LLA PRIORITY is enabled:

- The primary port is port A while secondary (redundant) port is port B.
- The primary port will always be used if available.
- If the link on primary port is lost switch over to secondary port occurs immediately.
- When the link on primary port is detected again, it is monitored for a period of time (LLA TIMEOUT) to ensure the health of the network. After that period the communication switch over to primary port automatically.

If the setting LLA PRIORITY is disabled:

- There is no priority, therefore there is no primary port. The communication switch over from one Port to the other occurs when the link fails.
- In this case the LLA TIMEOUT setting does not act.

SNTP

SNTP settings

With SNTP, the device can obtain the clock time over an Ethernet network, acting as an SNTP client to receive time values from an SNTP server.

SNTP Port configures the ports that the device uses, so it's necessary to configure it in all cases.

The relay binds to the first unicast message (see below) received from any server, then continues operating with the SNTP server in unicast mode. Any further responses from other SNTP servers are ignored. In the unicast mode of operation the chosen time server can go offline, in which case it takes about one minute for the device to signal an SNTP FAIL state and switch again to anycast mode in order to try to find another time server.

SNTP modes

Three different modes of SNTP operation are supported. These modes are unicast, broadcast and anycast.

To use SNTP in **unicast** mode, the SNTP IP Address must be set to the SNTP server IP address. Once this address is set and the function setting is "UNICAST", the device attempts to obtain time values from the SNTP server. Since many time values are obtained and averaged, it generally takes 10 seconds until the clock is synchronized with the SNTP server.

It may take up to 30 seconds for the device to signal an SNTP FAIL state if the server is off-line. In this case the main CPU generates an alarm similar to that of the IRIG-B case.

To use SNTP in **broadcast** mode, set the function setting to "BROADCAST". The device listens to SNTP messages sent to "all" the broadcast addresses for the subnet.

The device waits up to eighteen minutes (>1024 seconds) to receive an SNTP broadcast message before signaling an SNTP FAIL state.

To use SNTP in **anycast** mode, set the function setting to "ANYCAST". Anycast mode is designed for use with a set of cooperating servers whose addresses are not known beforehand by the client. The device sends a request to a multicast group address assigned by IANA for SNTP protocol purposes. This address is 224.0.1.1 and a group of SNTP servers listens to it. Upon receiving such a request, each server sends a unicast response to the SNTP client.

The relay binds to the first unicast message received from any server, then it continues operating with the SNTP server in unicast mode. Any further responses from other SNTP servers are ignored. In the unicast mode of operation, the chosen time server can go offline, in which case it takes about one minute for the device to signal an SNTP FAIL state and to switch again to the anycast mode to try to find another time server.

MODBUS TCP/IP

This section describes the procedure to read and write data in a 3 Series relay using MODBUS TCP protocol. The MODBUS communication allows the 3 Series relay to be connected to a supervisor program or any other device with a master MODBUS communication channel. The 3 Series will always be a slave station.

MODBUS TCP is a variant of the MODBUS protocol, intended for supervision and control of automation equipment. It covers the use of MODBUS messaging in an 'Intranet' or 'Internet' environment using the TCP/IP protocols.

MODBUS TCP basically embeds a MODBUS frame into a TCP frame in a simple manner. This is a connection-oriented transaction which means that every query expects a response. When the relay communicates using MODBUS TCP, it does not require a checksum calculation of the MODBUS frame as does the MODBUS RTU.

The 3 Series relays support only a subset of the MODBUS protocol functions.

Data and control functions

Supported Modbus function codes: 1H, 2H, 3H, 4H, 5H, 6H, 7H, 8H, 10H, 42H, 43H

For details see MODBUS Functions.

01H Read Coil Status

Just respond, no action required for now.

Outgoing message for this function is the same as input one.

02H Read Input Status

Just respond, no action required for now.

Outgoing message for this function is the same as input one.

03H Read Holding Registers

04H Read Input Registers

05H Force Single Coil

07H Read Exception Status

08H Diagnostics

16 (10 Hex) Preset Multiple Registers

42H Read Settings Group

43H Write Settings Group

Not a standard function

This function is used to write settings in a specific settings group.

Example: (In the example there is a write setting procedure in the Group 1 (00) , setting address 0x09C1 and 2 bytes of data with value 0x0001.)

Field Name	Hex
Slave Address	FE
Function	43
Group Activation	00
Starting Address Hi	09
Starting Address Lo	C1
No. of Registers Hi	00
No. of Registers Lo	01

Field Name	Hex
Byte Count 04	02
Data Hi	00
Data Lo	01

Response:

Field Name	Hex
Slave Address	FE
Function	43
Starting Address Hi	09
Starting Address Lo	C1
No. of Registers Hi	00
No. of Registers Lo	01

Exception and error responses

One data frame of an asynchronous transmission to or from a 3 Series relay typically consists of 1 start bit, 8 data bits, and 1 stop bit. This produces a 10 bit data frame. This is important for transmission through modems at high bit rates.

Request response sequence

A complete request/response sequence consists of the following bytes (transmitted as separate data frames):

Master Request Transmission:

SLAVE ADDRESS: 1 byte
FUNCTION CODE: 1 byte
DATA: variable number of bytes depending on FUNCTION CODE

Slave Response Transmission:

SLAVE ADDRESS: 1 byte
FUNCTION CODE: 1 byte
DATA: variable number of bytes depending on FUNCTION CODE

SLAVE ADDRESS: This is the first byte of every transmission. This byte represents the user-assigned address of the slave device that is to receive the message sent by the master. Each slave device must be assigned a unique address and only the addressed slave will respond to a transmission that starts with its address. In a master request transmission the SLAVE ADDRESS represents the address of the slave to which the request is being sent. In a slave response transmission the SLAVE ADDRESS represents the address of the slave that is sending the response.

FUNCTION CODE: This is the second byte of every transmission. Modbus defines function codes of 1 to 127.

DATA: This will be a variable number of bytes depending on the FUNCTION CODE. This may be Actual Values, Setpoints, or addresses sent by the master to the slave or by the slave to the master.

DNP Ethernet protocol settings

DNP communication

The menu structure for the DNP protocol is shown below.

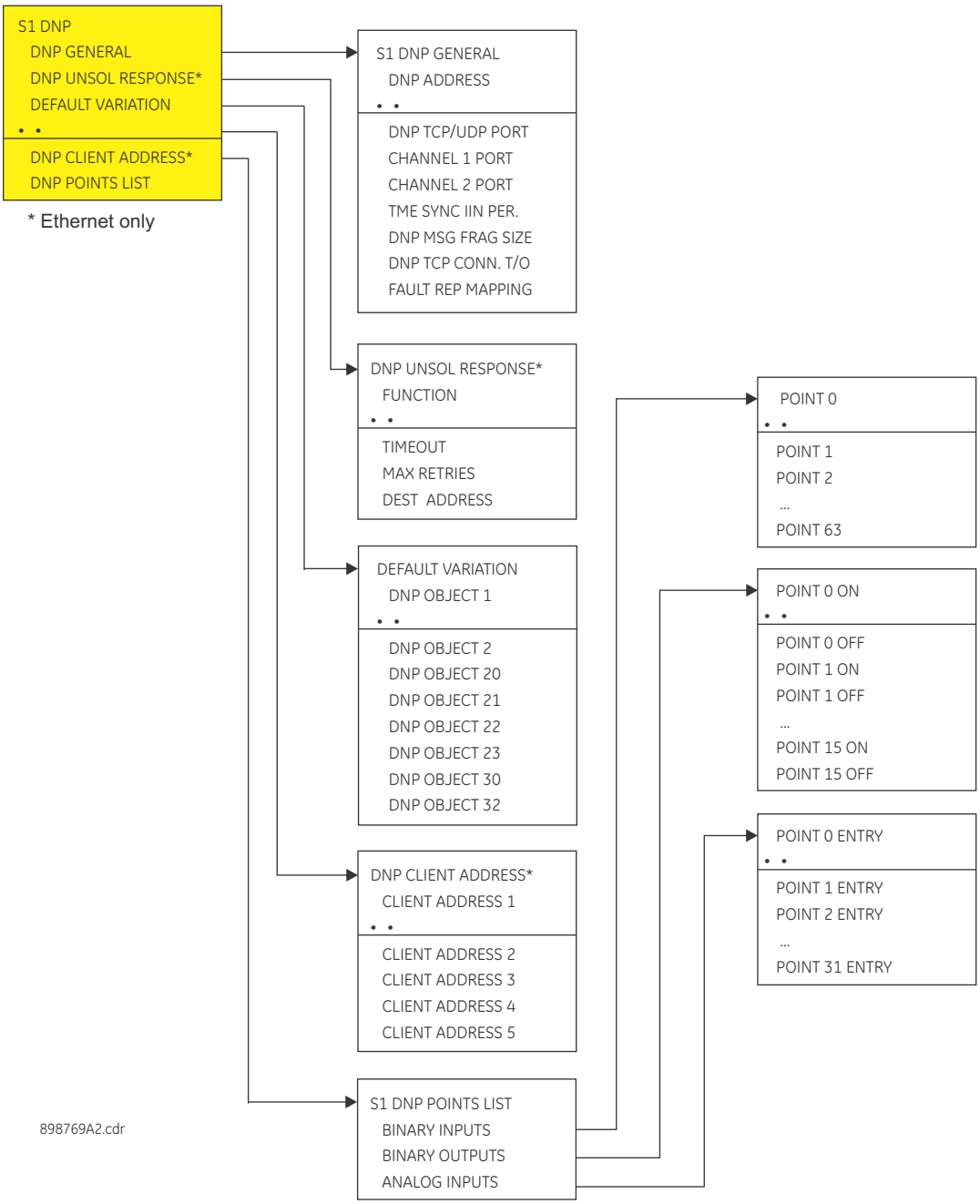


Figure 3-6: DNP communication menu

The following path is available using the keypad.

PATH: **SETPOINTS > S1 RELAY SETUP > COMMUNICATIONS > DNP PROTOCOL > DNP GENERAL**

To view the list of DNP Binary Inputs please refer to the *Format Codes* section - FC134B - of this Guide.

DNP device profile

DNP 3.0 Device Profile	
(Also see the IMPLEMENTATION TABLE in the following section)	
Vendor Name: **General Electric Multilin**	
Device Name: **3 Series relay**	
Highest DNP Level Supported: For Requests: **Level 2** For Responses: **Level 2**	
Device Function: ☐ Master ☒ **Slave**	
Notable objects, functions, and/or qualifiers supported in addition to the Highest DNP Levels Supported (the complete list is described in the attached table): **Binary Inputs (Object 1)** **Binary Input Changes (Object 2)** **Binary Outputs (Object 10)** **Control Relay Output Block (Object 12)** **Binary Counters (Object 20)** **Frozen Counters (Object 21)** **Counter Change Event (Object 22)** **Frozen Counter Event (Object 23)** **Analog Inputs (Object 30)** **Analog Input Changes (Object 32)** **Analog Deadbands (Object 34)**	
Time and Date (Object 50) **Internal Indications (Object 80)**	
Maximum Data Link Frame Size (octets):	Maximum Application Fragment Size (octets):
Transmitted: **292**	Transmitted: **configurable up to 2048**
Received: **292**	Received: **2048**
Maximum Data Link Re-tries:	**Maximum Application Layer Re-tries:**
☒**None**	☒ **None**
☐Fixed at 3	☐ Configurable
☐Configurable	
Requires Data Link Layer Confirmation: ☒ **Never**	

DNP 3.0 Device Profile				
☐ Always				
☐ Sometimes				
☐ Configurable				
Requires Application Layer Confirmation:				
☐ Never				
☐ Always				
☒ **When reporting Event Data**				
☒ **When sending multi-fragment responses**				
☐ Sometimes				
☐ Configurable				
Timeouts while waiting for:				
Data Link Confirm:	☒ **None**	☐ Fixed	☐ Variable	☐ Configurable
Complete Appl. Fragment:	☒ **None**	☐ Fixed	☐ Variable	☐ Configurable
Application Confirm:	☐ None	☒ **Fixed at 10 s**	☐ Variable	☐ Configurable
Complete Appl. Response:	☒ **None**	☐ Fixed at ___	☐ Variable	☐ Configurable
Others:				
Transmission Delay: **No intentional delay**				
Need Time Interval: **Configurable (default = 24 hrs.)**				
Select/Operate Arm Timeout: **10 s**				
Binary input change scanning period: **8 times per power system cycle**				
Analog input change scanning period: **500 ms**				
Counter change scanning period: **500 ms**				
Frozen counter event scanning period: **500 ms**				
Sends/Executes Control Operations:				
WRITE Binary Outputs	☒ **Never**	☐ Always	☐ Sometimes	☐Configurable
SELECT/OPERATE	☐ Never	☒ **Always**	☐ Sometimes	☐ Configurable
DIRECT OPERATE	☐ Never	☒**Always**	☐ Sometimes	☐ Configurable
DIRECT OPERATE – NO ACK	☐ Never	☒ **Always**	☐ Sometimes	☐ Configurable
Count > 1	☒ **Never**	☐ Always	☐ Sometimes	☐ Configurable
Pulse On	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Pulse Off	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Latch On	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Latch Off	☐ Never	☐ Always	☒ **Sometimes**	☐ Configurable
Queue	☒ **Never**	☐ Always	☐ Sometimes	☐ Configurable
Clear Queue	☒ **Never**	☐ Always	☐ Sometimes	☐ Configurable
Explanation of 'Sometimes': Object 12 points are mapped to Virtual Inputs and Commands (Force Coils). Both "Pulse On" and "Latch On" operations perform the same function in the 3 Series relay ; that is, the appropriate Virtual Input or Coil is put into the "On" state. The On/Off times and Count value are ignored. "Pulse Off" and "Latch Off" operations put the appropriate Virtual Input or Coil into the "Off" state. "Trip" and "Close" operations both put the appropriate Virtual Input or coil into the "On" state if a paired mapping is set, otherwise "Trip" will put into "Off" and "Close" will put into "On".				
Reports Binary Input Change Events when no specific variation requested:				**Reports time-tagged Binary Input Change Events when no specific variation requested:**
☐ Never				☐ Never
☒ **Only time-tagged**				☒ **Binary Input Change With Time**
☐ Only non-time-tagged				☐ Binary Input Change With Relative Time
☐ Configurable				☐ Configurable (attach explanation)
Sends Unsolicited Responses:				**Sends Static Data in Unsolicited Responses:**

DNP 3.0 Device Profile	
☐ Never ☐ Configurable ☐ Only certain objects ☒ **Sometimes** ☒ **ENABLE/DISABLE** unsolicited Function codes supported	☒ **Never** ☐ When Device Restarts ☐ When Status Flags Change No other options are permitted.
Explanation of 'Sometimes': It will be disabled for RS-485 applications, since there is no collision avoidance mechanism. For Ethernet communication it will be available and it can be disabled or enabled with the proper function code.	
Default Counter Object/Variation: ☐ No Counters Reported ☐ Configurable (attach explanation) ☒ **Default Object: 20** **Default Variation: 1** ☒ **Point-by-point list attached**	**Counters Roll Over at:** ☐ No Counters Reported ☐ Configurable (attach explanation) ☒ **16 Bits** ☐ Other Value: _____ ☒ **Point-by-point list attached**
Sends Multi-Fragment Responses: ☒ **Yes** ☐ No	

DNP port allocation

Channel 1 Port	Channel 2 Port	DNP Availability
None	None	DNP not available over Ethernet port
None	NETWORK-TCP	One Master over TCP
None	NETWORK-UDP	"Various" Masters over UDP
NETWORK-TCP	None	One Master over TCP
NETWORK-TCP	NETWORK-TCP	Two Masters over TCP
NETWORK-TCP	NETWORK-UDP	One Master over TCP and "various" Masters over UDP
NETWORK-UDP	None	"Various" Masters over UDP
NETWORK-UDP	NETWORK-TCP	"Various" Masters over UDP and one Master over TCP
NETWORK-UDP	NETWORK-UDP	"Various" Masters over UDP

The DNP Eth Channel 1 Port and DNP Eth Channel 2 Port settings select the communications port assigned to the DNP protocol for each Ethernet channel. When this setting is set to "Network-TCP" the DNP protocol can be used over TCP/IP channels 1 or 2. When this value is set to "Network-UDP" the DNP protocol can be used over UDP/IP on one channel only.

DNP implementation

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	VARIATION NO.	DESCRIPTION	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)
1	0	Binary Input (Variation 0 is used to request default variation)	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	Binary Input	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	Binary Input with Status	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
2	0	Binary Input Change (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	Binary Input Change without Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	2	Binary Input Change with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	3	Binary Input Change with Relative Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
10	0	Binary Output Status (Variation 0 is used to request default variation)	1 (read)	00, 01(start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	2	Binary Output Status	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
12	1	Control Relay Output Block	3 (select)4 (operate) 5 (direct op) 6 (dir. op, noack)	00, 01 (start-stop) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	echo of request
20	0	Binary Counter (Variation 0 is used to request default variation)	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	32-Bit Binary Counter	1 (read)7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	16-Bit Binary Counter	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	5	32-Bit Binary Counter without Flag	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	VARIATION NO.	DESCRIPTION	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)
	6	16-Bit Binary Counter without Flag	1 (read) 7 (freeze) 8 (freeze noack) 9 (freeze clear) 10 (frz. cl. noack) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
21	0	Frozen Counter(Variation 0 is used to request defaultvariation)	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	32-Bit Frozen Counter	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	16-Bit Frozen Counter	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	9	32-Bit Frozen Counter without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	10	16-Bit Frozen Counter without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
22	0	Counter Change Event (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	32-Bit Counter Change Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	2	16-Bit Counter Change Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	5	32-Bit Counter Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	6	16-Bit Counter Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
23	0	Frozen Counter Event (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	32-Bit Frozen Counter Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	2	16-Bit Frozen Counter Event	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	5	32-Bit Frozen Counter Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	6	16-Bit Frozen Counter Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	VARIATION NO.	DESCRIPTION	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)
30	0	Analog Input (Variation 0 is used to request default variation)	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	32-Bit Analog Input	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	2	16-Bit Analog Input	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	3	32-Bit Analog Input without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
	4	16-Bit Analog Input without Flag	1 (read) 22 (assign class)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
32	0	Analog Change Event (Variation 0 is used to request default variation)	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	1	32-Bit Analog Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	2	16-Bit Analog Change Event without Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	3	32-Bit Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
	4	16-Bit Analog Change Event with Time	1 (read)	06 (no range, or all) 07, 08 (limited quantity)	129 (response) 130 (unsol. resp.)	17, 28 (index)
34	0	Analog Input Reporting Deadband (Variation 0 is used to request defaultvariation)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	---	---
	1	16-bit Analog Input Reporting Deadband (default - see Note 1)	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
			2 (write)	00, 01 (start-stop) 07, 08 (limited quantity) 17, 28 (index)	---	---
	2	32-bit Analog Input Reporting Deadband	1 (read)	00, 01 (start-stop) 06 (no range, or all) 07, 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
			2 (write)	00, 01 (start-stop) 07, 08 (limited quantity) 17, 28 (index)	---	---

OBJECT			REQUEST		RESPONSE	
OBJECT NO.	VARIATION NO.	DESCRIPTION	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)	FUNCTION CODES (DEC)	QUALIFIER CODES (HEX)
50	1	Time and Date (default - see Note 1)	1 (read)2 (write)	00, 01 (start-stop) 06 (no range, or all) 07 (limited qty=1) 08 (limited quantity) 17, 28 (index)	129 (response)	00, 01 (start-stop) 17, 28 (index) (see Note 2)
60	0	Class 0, 1, 2, and 3 Data	1 (read) 20 (enable unsol) 21 (disable unsol) 22 (assign class)	06 (no range, or all)	---	---
	1	Class 0 Data	1 (read) 22 (assign class)	06 (no range, or all)	---	---
	2	Class 1 Data	1 (read) 20 (enable unsol)	06 (no range, or all) 07, 08 (limited quantity)	---	---
	3	Class 2 Data	21 (disable unsol)		---	---
	4	Class 3 Data	22 (assign class)		---	---
80	1	Internal Indications	1 (read)	00, 01 (start-stop) (index =7)	129 (response)	00, 01 (start-stop)
			2 (write) (see Note 3)	00 (start-stop) (index =7)	---	---
		No Object (function code only) see Note 3	13 (cold restart)	---	---	---
		No Object (function code only)	14 (warm restart)	---	---	---
		No Object (function code only)	23 (delay meas.)	---	---	---

NOTE

1. A default variation refers to the variation response when variation 0 is requested and/or in class 0, 1, 2, or 3 scans. The default variations for object types 1, 2, 20, 21, 22, 23, 30, and 32 are selected via relay settings. This optimizes the class 0 poll data size.
2. For static (non-change-event) objects, qualifiers 17 or 28 are only responded when a request is sent with qualifiers 17 or 28, respectively. Otherwise, static object requests sent with qualifiers 00, 01, 06, 07, or 08, will be responded with qualifiers 00 or 01 (for change event objects, qualifiers 17 or 28 are always responded.)

Cold restarts are implemented the same as warm restarts – the 3 Series relay is not restarted, but the DNP process is restarted.

DNP Ethernet EnerVista Setup

Table 3-1: DNP protocol

SETTINGS	PARAMETER	RANGE	FORMAT
DNP Channel 1 Port	NONE	NONE ; NETWORK-TCP ; NETWORK –UDP	F87
DNP Channel 2 Port	NONE	NONE ; NETWORK-TCP ; NETWORK –UDP	F87
DNP Address	0	0 to 65519	F1
DNP Client Address 1	0. 0. 0. 0		F150
DNP Client Address 2	0. 0. 0. 0		F150
DNP Client Address 3	0. 0. 0. 0		F150
DNP Client Address 4	0. 0. 0. 0		F150
DNP Client Address 5	0. 0. 0. 0		F150

SETTINGS	PARAMETER	RANGE	FORMAT
DNP TCP/UDP Port Number	20000	0 to 65535	F1
DNP Unsol Resp Function	Disabled	Disabled ; Enabled	F126
DNP Unsol Resp Timeout	5 s	0 to 60 s	F1
DNP Unsol Resp Max Retries	10	1 to 255	F1
DNP Unsol Resp Dest Addr	1	0 to 65519	F1
DNP Time Sync IIN Period	1440 min	1 to 10080 min	F1
DNP Message Fragment Size	240	30 to 2048	F1
DNP Object 1 Default Variation	2	1 ; 2	F1
DNP Object 2 Default Variation	2	1 ; 2	F1
DNP Object 20 Default Variation	1	1 ; 2 , 5 ; 6	F78
DNP Object 21 Default Variation	1	1 ; 2 ; 9 ; 10	F79
DNP Object 22 Default Variation	1	1 ; 2 , 5 ; 6	F80
DNP Object 23 Default Variation	1	1 ; 2 , 5 ; 6	F81
DNP Object 30 Default Variation	1	1 ; 2 ;3 ; 4	F82
DNP Object 32 Default Variation	1	1 ; 2 ;3 ; 4	F83
DNP TCP Connection Timeout	120 s	10 to 300 s	F1
Fault Report Mapping in DNP/104	Disabled	Disabled, Enabled	F126

NOTE

The setting **DNP Unsolicited Response Timeout** affects DNP TCP clients only; not serial and UDP clients. Possible values that can be selected for this setting lie between 0 and 60 seconds.

In addition to this selected timeout, up to an additional 10 seconds is required to send the response packet.

Table 3-2: DNP point list

SETTINGS	PARAMETER	RANGE	FORMAT
Binary Input Point 0 Entry	Select entry from a list	Operands	FC134B
Binary Input Point 63 Entry	Select entry from a list	Operands	FC134B
Analog Input Point 0 Entry	Select entry from a list	Analog parameters	F88
Analog Input Point 0 Scale Factor	1	0.001 ; 0.01 ; 0.1 ; 1 ; 10 ; 100 ; 1000 ; 10000 ; 100000	F85
Analog Input Point 0 Deadband	30000	0 to 100000000	F9
Analog Input Point 31 Entry	Select entry from a list	Analog parameters	F88
Analog Input Point 31 Scale Factor	1	0.001 ; 0.01 ; 0.1 ; 1 ; 10 ; 100 ; 1000 ; 10000 ; 100000	F85
Analog Input Point 31 Deadband	30000	0 to 100000000	F9
Binary Output Point 0 ON	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86
Binary Output Point 0 OFF	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86

SETTINGS	PARAMETER	RANGE	FORMAT
Binary Output Point 15 ON	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86
Binary Output Point 15 OFF	Select entry from a list	Virtual Input 1 to 32 and Force Coils	F86

- The DNP Time Sync IIN Period setting determines how often the Need Time Internal Indication (IIN) bit is set by the 3 Series relay. Changing this time allows the 3 Series relay to indicate that a time synchroniztion command is necessary more or less often
- Various settings have been included to configure Default Variation for the Binary Inputs, Counters and Analog Inputs Objects. The default variation refers to the variation response when variation 0 is requested, and/or in class 0, 1, 2, or 3 scans
- Up to 64 Binary Inputs and 32 Analog Input entries can be mapped to an item from a list of 3 Series relay status events and metered values. Status events correspond to format FC134B.
- Each Analog Input point Deadband and Scale Factor can be set individually instead of setting a general deadband or scale for different metering groups. This will avoid scale and deadband conflicts for different meterings of the same nature.
- Up to 16 Binary/Control Outputs can be configured by selecting a Virtual Input or Command from a list of 32 Virtual Inputs and Commands (Force Coils). Some legacy DNP implementations use a mapping of one DNP Binary Output to two physical or virtual control points. In Order to configure Paired Control Points the source for states ON and OFF should be set to different Virtual Inputs or Commands.
- The DNP Technical Committee recommends using contiguous point numbers, starting at 0, for each data type, because some DNP3 Master implementations allocate contiguous memory from point 0 to the last number for each data type.


NOTE

Binary Inputs are inputs **to** the Master. Binary Outputs are outputs **from** the Master.

DNP general

Default variations for Object 1, 2 , 20 , 21 , 22 , 23 , 30 and Object 32 will be set by settings and returned for the object in a response when no specific variation is specified in a Master request.

Any change in the state of any binary point causes the generation of an event, and consequently, if configured, an unsolicited response. Alternatively it is returned when the Master asks for it. The same behavior will be seen when an analog value changes by more than its configured deadband limit. There can be up to 3 masters in total, but only one Serial Master.

The following Default Classes will be fixed for the different blocks of data:

Binary Input Points Default Class = 1
Analog Input Point Default Class = 2
Counters Default Class = 3

Each Data Point Class can be changed by protocol function code 22 in volatile mode. If a restart is performed, the new values will be lost.

DNP Object 34 points can be used to change deadband values from the default for each individual DNP Analog Input point. These new deadbands will be maintained such that in the case of a relay restart, the values are not lost.

For the 350 and 339 relays, one Binary Counter has been hardcoded such that no option can be modified by setting:

- Total_Number_of_Trips

Requests for Object 20 (Binary Counters), Object 21 (Frozen Counters), and Object 22 (Counter Change Events) must be accepted.

Function codes “Immediate Freeze”, “Freeze and Clear” etc. are accepted as well.

The FAULT REPORT MAPPING IN DNP/104 setpoint may be set to a value of "Disabled" or "Enabled". When "Disabled", only the configurable Analog Input points are available beginning at point index 0.When "Enabled", the Fault Report Values are assigned from point 0 to 32 in the 339 and 350 relays, and from 0 to 38 in the 345 relay, with the configurable Analog Inputs following the point numbers.

To support existing SCADA hardware not capable of 32-bit data reads, the upper and lower 16-bit portions of the fault report time and date values have been assigned to separate points. To read a date or time, it is necessary to read both the upper and lower 16-bit portions, concatenate these two values to form a 32-bit value and interpret the result in the format associated with the point.

Fault Report Mapping		350 and 339	Fault Report Mapping		345
Disabled	Enabled		Disabled	Enabled	
-	0	Fault Report Date Upper 16	-	0	Fault Report Date Upper 16
-	1	Fault Report Date Lower 16	-	1	Fault Report Date Lower 16
-	2	Fault Report Time Upper 16	-	2	Fault Report Time Upper 16
-	3	Fault Report Time Lower 16	-	3	Fault Report Time Lower 16
-	4	Fault Report Fault Type	-	4	Fault Report Fault Type
-	5	Fault Report Ia	-	5	Fault Report Ia
-	6	Fault Report Ia Angle	-	6	Fault Report Ia Angle
-	7	Fault Report Ib	-	7	Fault Report Ib
-	8	Fault Report Ib Angle	-	8	Fault Report Ib Angle
-	9	Fault Report Ic	-	9	Fault Report Ic
-	10	Fault Report Ic Angle	-	10	Fault Report Ic Angle
-	11	Fault Report Ig	-	11	Fault Report Ig
-	12	Fault Report Ig Angle	-	12	Fault Report Ig Angle
-	13	Fault Report In	-	13	Fault Report In
-	14	Fault Report In Angle	-	14	Fault Report In Angle
-	15	Fault Report Va	-	15	Fault Report System Frequency
-	16	Fault Report Va Angle	-	16	Fault Report Ia 2
-	17	Fault Report Vb	-	17	Fault Report Ia 2 Angle
-	18	Fault Report Vb Angle	-	18	Fault Report Ib 2
-	19	Fault Report Vc	-	19	Fault Report Ib 2 Angle
-	20	Fault Report Vc Angle	-	20	Fault Report Ic 2
-	21	Fault Report Vab	-	21	Fault Report Ic 2 Angle
-	22	Fault Report Vab Angle	-	22	Fault Report Ig 2
-	23	Fault Report Vbc	-	23	Fault Report Ig 2 Angle
-	24	Fault Report Vbc Angle	-	24	Fault Report In 2
-	25	Fault Report Vca	-	25	Fault Report In 2 Angle
-	26	Fault Report Vca Angle	-	26	Fault Report Idiff 1 PhA
-	27	Fault Report Vn	-	27	Fault Report Idiff 1 PhA Angle
-	28	Fault Report Vn Angle	-	28	Fault Report I Restraint PhA
-	29	Fault Report Vaux	-	29	Fault Report I Restraint PhA Angle
-	30	Fault Report Vaux Angle	-	30	Fault Report Idiff 1 PhB
-	31	Fault Report System Frequency	-	31	Fault Report Idiff 1 PhB Angle
-	32	Fault Report Phases	-	32	Fault Report I Restraint Ph B

Fault Report Mapping		350 and 339	Fault Report Mapping		345
Disabled	**Enabled**		**Disabled**	**Enabled**	
0	33	Analog Input Point 0 Entry	-	33	Fault Report I Restraint PhB Angle
1	34	Analog Input Point 1 Entry	-	34	Fault Report Idiff 1 PhC
...	...	...	-	35	Fault Report Idiff 1 PhC Angle
...	...	...	-	36	Fault Report I Restraint PhC
31	64	Analog Input Point 31 Entry	-	37	Fault Report I Restraint PhC Angle
			-	38	Fault Report Phases
			0	39	Analog Input Point 0 Entry
			1	40	Analog Input Point 1 Entry
			...	...	...
			...	...	...
			31	70	Analog Input Point 31 Entry

Some fault report data has been scaled to fit into a 16-bit value as follows:

Fault Report Data	Scale
Fault Report Ia, Ib, Ic, Ia2, Ib2, Ic2	Format_F10 * 100 / CT Primary
Fault Report Ig, Ig2	Format_F10 * 100 / Gnd CT Primary
Fault Report In , In2	Format_F10 * 100 / CT Primary
Fault Report Va, Vb, Vc, Vab, Vbc, Vca, Vn	Format_F9 * 10000 /(BusVTRatio * BusVTSecondary)
Fault Report Vaux	Format_F9 * 10000 /(AuxVTRatio * AuxVTSecondary)
Fault Report System Frequency	Format_F3
Fault Report Phases	Format_F37

IEC60870-5-104 protocol

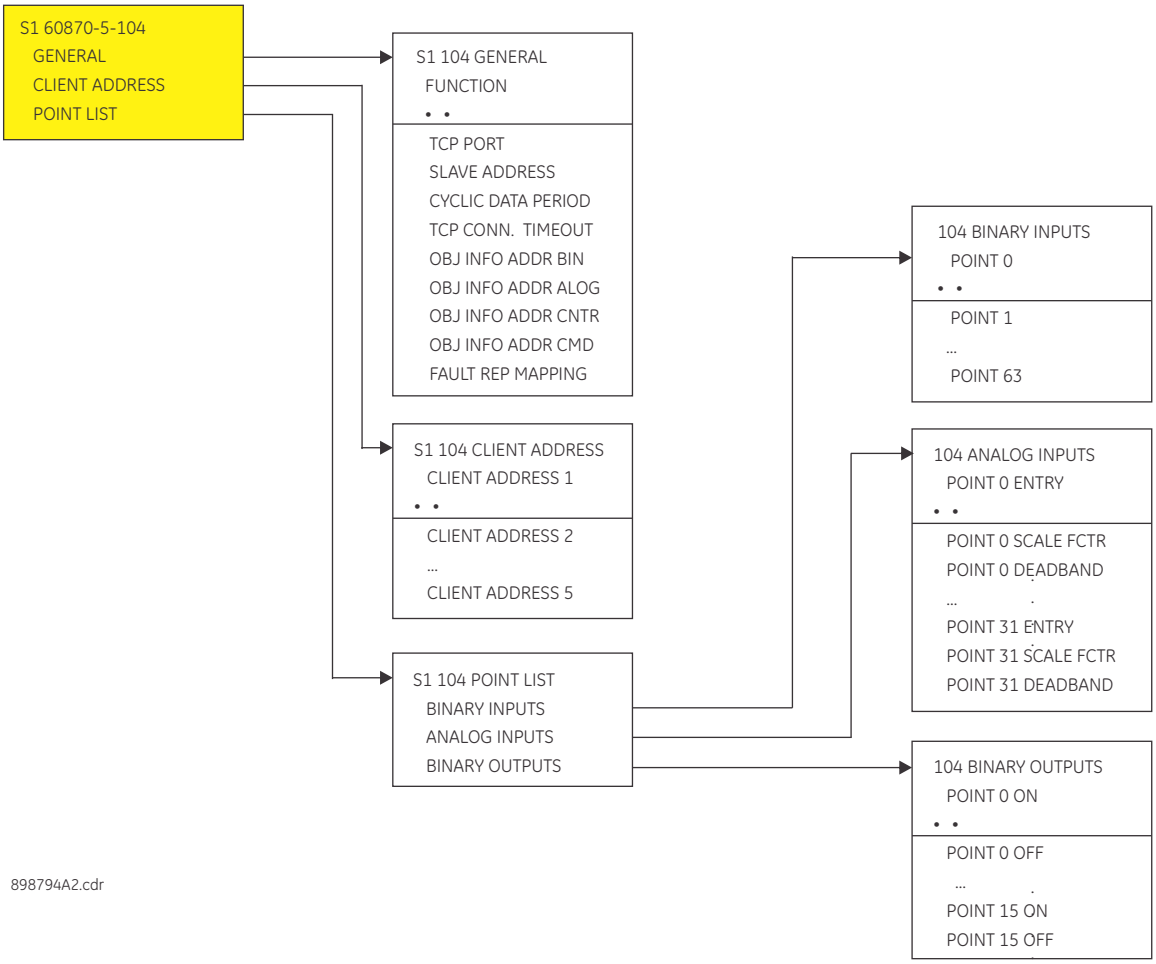


Figure 3-7: IEC 60870-5-104 protocol menu

IEC 60870-5-104 interoperability

This document is adapted from the IEC 60870-5-104 standard. For this section the boxes indicate the following: ☒ – used in the standard direction; ☐– not used.

IEC 60870-5-104 Interoperability Document

1. **System or device**:
   - ☐ System definition.
   - ☐ Controlling station definition (master).
   - ☒ Controlled station definition (slave).
2. **Application layer**:

2.1. Transmission mode for application data:

Mode 1 (least significant octet first), as defined in Clause 4.10 of IEC 60870-5-4, is used exclusively in this companion standard.

2.2. Common address of ADSU:

☒ Two octets.

2.3. Information object address:

☒ Three octets.

☒ Structured

☒ Unstructured

2.4. Cause of transmission:

☒ Two octets (with originator address). Originator address is set to zero if not used.

2.5. Maximum length of APDU.

253 in both directions (the maximum length is a fixed system parameter).

2.6. Selection of standard ASDUs.

For the following lists, the boxes indicate the following: ☒ – used in standard direction; ☐ – not used.

Process information in monitor direction:

Table 3-3: Process information in monitor direction

Number / description	Mnemonic
☒ <1> := Single-point information	M_SP_NA_1
☐ <3> := Double-point information	M_DP_NA_1
☐ <5> := Step position information	M_ST_NA_1
☐ <7> := Bitstring of 32 bits	M_BO_NA_1
☐ <9> := Measured value, normalized value	M_ME_NA_1
☒ <11> := Measured value, scaled value	M_ME_NB_1
☐ <13> := Measured value, short floating point value	M_ME_NC_1
☒ <15> := Integrated totals	M_IT_NA_1
☐ <20> := Packed single-point information with status change detection	M_SP_NA_1
☐ <21> := Measured value, normalized value without quantity descriptor	M_ME_ND_1
☒ <30> := Single-point information with time tag CP56Time2a	M_SP_TB_1
☐ <31> := Double-point information with time tag CP56Time2a	M_DP_TB_1
☐ <32> := Step position information with time tag CP56Time2a	M_ST_TB_1
☐ <33> := Bitstring of 32 bits with time tag CP56Time2a	M_BO_TB_1
☐ <34> := Measured value, normalized value with time tag CP56Time2a	M_ME_TD_1
☒ <35> := Measured value, scaled value with time tag CP56Time2a	M_ME_TE_1
☐ <36> := Measured value, short floating point value with time tag CP56Time2a	M_ME_TF_1
☒ <37> := Integrated totals with time tag CP56Time2a	M_IT_TB_1
☐ <38> := Event of protection equipment with time tag CP56Time2a	M_EP_TD_1
☐ <39> := Packed start events of protection equipment with time tag CP56Time2a	M_EP_TE_1
☐ <40> := Packed output circuit information of protection equipment with time tag CP56Time2a	M_EP_TF_1

Either the ASDUs of the set <2>, <4>, <6>, <8>, <10>, <12>, <14>, <16>, <17>, <18>, and <19> or of the set <30> to <40> are used.

Table 3-4: Process information in control direction

Number / description	Mnemonic
☒ <45> := Single command	C_SC_NA_1
☒ <46> := Double command	C_DC_NA_1
☐ <47> := Regulating step command	C_RC_NA_1
☐ <48> := Set point command, normalized value	C_SE_NA_1
☐ <49> := Set point command, scaled value	C_SE_NB_1

Number / description	Mnemonic
☐ <50> := Set point command, short floating point value	C_SE_NC_1
☐ <51> := Bitstring of 32 bits	C_BO_NA_1
☒ <58> := Single command with time tag CP56Time2a	C_SC_TA_1
☒ <59> := Double command with time tag CP56Time2a	C_DC_TA_1
☐ <60> := Regulating step command with time tag CP56Time2a	C_RC_TA_1
☐ <61> := Set point command, normalized value with time tag CP56Time2a	C_SE_TA_1
☐ <62> := Set point command, scaled value with time tag CP56Time2a	C_SE_TB_1
☐ <63> := Set point command, short floating point value with time tag CP56Time2a	C_SE_TC_1
☐ <64> := Bitstring of 32 bits with time tag CP56Time2a	C_BO_TA_1

Either the ASDUs of the set <45> to <51> or of the set <58> to <64> are used.

Table 3-5: System information in monitor direction

Number / description	Mnemonic
☒ <70> := End of initialization	M_EI_NA_1

Table 3-6: System information in control direction

Number / description	Mnemonic
☒ <100> := Interrogation command	C_IC_NA_1
☒ <101> := Counter interrogation command	C_CI_NA_1
☒ <102> := Read command	C_RD_NA_1
☒ <103> := Clock synchronization command (see Clause 7.6 in standard)	C_CS_NA_1
☒ <105> := Reset process command	C_RP_NA_1
☒ <107> := Test command with time tag CP56Time2a	C_TS_TA_1

Table 3-7: Parameter in control direction

Number / description	Mnemonic
☐ <110> := Parameter of measured value, normalized value	PE_ME_NA_1
☒ <111> := Parameter of measured value, scaled value	PE_ME_NB_1
☐ <112> := Parameter of measured value, short floating point value	PE_ME_NC_1
☐ <113> := Parameter activation	PE_AC_NA_1

Table 3-8: File transfer

Number / description	Mnemonic
☐ <120> := File ready	F_FR_NA_1
☐ <121> := Section ready	F_SR_NA_1
☐ <122> := Call directory, select file, call file, call section	F_SC_NA_1
☐ <123> := Last section, last segment	F_LS_NA_1
☐ <124> := Ack file, ack section	F_AF_NA_1
☐ <125> := Segment	F_SG_NA_1
☐ <126> := Directory (blank or X, available only in monitor [standard] direction)	F_DR_TA_1
☐ <127> := Query log - Request archive file	F_SC_NB_1

Type identifier and cause of transmission assignments (station-specific parameters) are shown in the following tables. In these tables, shaded boxes (▒) are not required, black boxes (■) are not permitted in the companion standard, empty cells indicate the functions or ASDU are not used, and a cross (╳) indicates availability only in the standard direction.

Table 3-9: Cause of transmission numbers

Number	Cause of transmission
1	Periodic, cyclic
2	Background scan
3	Spontaneous
4	Initialized
5	Request or requested
6	Activation
7	Activation confirmation
8	Deactivation
9	Deactivation confirmation
10	Activation termination
11	Return information caused by local command
12	File transfer
13	Interrogated by group <number>
20 to 36	Requested by group <n> counter request
37 to 41	Unknown type identification
44	Unknown cause of transmission
45	Unknown command address of ADSU
46	Unknown information object address
47	Unknown information object address

Table 3-10: Cause of transmission assignments

Type identification		Cause of transmission																	
No.	Mnemonic	1	2	3	4	5	6	7	8	9	10	11	12	13	20 to 36	37 to 41	44	45	46	47
<1>	M_SP_NA_1	▒			▒	X	▒	▒	▒	▒	▒			▒	X	▒	▒	▒	▒	▒
<2>	M_SP_TA_1	▒	▒	■	▒	■	▒	▒	▒	▒	▒	■	■	▒	▒	▒	▒	▒	▒	▒
<3>	M_DP_NA_1	▒			▒		▒	▒	▒	▒	▒			▒		▒	▒	▒	▒	▒
<4>	M_DP_TA_1	▒	▒	■	▒	■	▒	▒	▒	▒	▒	■	■	▒	▒	▒	▒	▒	▒	▒
<5>	M_ST_NA_1	▒			▒		▒	▒	▒	▒	▒			▒		▒	▒	▒	▒	▒
<6>	M_ST_TA_1	▒	▒	■	▒	■	▒	▒	▒	▒	▒	■	■	▒	▒	▒	▒	▒	▒	▒
<7>	M_BO_NA_1	▒			▒		▒	▒	▒	▒	▒	▒	▒	▒		▒	▒	▒	▒	▒
<8>	M_BO_TA_1	▒	▒	■	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<9>	M_ME_NA_1				▒		▒	▒	▒	▒	▒	▒	▒	▒		▒	▒	▒	▒	▒
<10>	M_ME_TA_1	▒	▒	■	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<11>	M_ME_NB_1	X			▒	X	▒	▒	▒	▒	▒	▒	▒	▒	X	▒	▒	▒	▒	▒
<12>	M_ME_TB_1	▒	▒	■	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<13>	M_ME_NC_1				▒		▒	▒	▒	▒	▒	▒	▒	▒		▒	▒	▒	▒	▒
<14>	M_ME_TC_1	▒	▒	■	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<15>	M_IT_NA_1	▒	▒		▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	X	▒	▒	▒	▒
<16>	M_IT_TA_1	▒	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	■	▒	▒	▒	▒
<17>	M_EP_TA_1	▒	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<18>	M_EP_TB_1	▒	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<19>	M_EP_TC_1	▒	▒	■	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<20>	M_PS_NA_1	▒			▒		▒	▒	▒	▒	▒	▒	▒	▒		▒	▒	▒	▒	▒
<21>	M_ME_ND_1				▒		▒	▒	▒	▒	▒	▒	▒	▒		▒	▒	▒	▒	▒
<30>	M_SP_TB_1	▒	▒	X	▒		▒	▒	▒	▒	▒			▒	▒	▒	▒	▒	▒	▒

Type identification		Cause of transmission																	
No.	Mnemonic	1	2	3	4	5	6	7	8	9	10	11	12	13	20 to 36	37 to 41	44	45	46	47
<31>	M_DP_TB_1																			
<32>	M_ST_TB_1																			
<33>	M_BO_TB_1																			
<34>	M_ME_TD_1																			
<35>	M_ME_TE_1			?																
<36>	M_ME_TF_1																			
<37>	M_IT_TB_1			X												X				
<38>	M_EP_TD_1																			
<39>	M_EP_TE_1																			
<40>	M_EP_TF_1																			
<45>	C_SC_NA_1						X	X	X	X	X									
<46>	C_DC_NA_1						X	X	X	X	X									
<47>	C_RC_NA_1																			
<48>	C_SE_NA_1																			
<49>	C_SE_NB_1																			
<50>	C_SE_NC_1																			
<51>	C_BO_NA_1																			
<58>	C_SC_TA_1						X	X	X	X	X									
<59>	C_DC_TA_1						X	X	X	X	X									
<60>	C_RC_TA_1																			
<61>	C_SE_TA_1																			
<62>	C_SE_TB_1																			
<63>	C_SE_TC_1																			
<64>	C_BO_TA_1								■	■										
<70>	M_EI_NA_1*)				X															
<100>	C_IC_NA_1						X	X	X	X	X									
<101>	C_CI_NA_1						X	X			X									
<102>	C_RD_NA_1					X														
<103>	C_CS_NA_1			X			X	X												
<104>	C_TS_NA_1						■	■									■	■	■	■
<105>	C_RP_NA_1						X	X												
<106>	C_CD_NA_1			■			■	■									■	■	■	■
<107>	C_TS_TA_1																			
<110>	P_ME_NA_1																			
<111>	P_ME_NB_1						X	X							X					
<112>	P_ME_NC_1																			
<113>	P_AC_NA_1																			
<120>	F_FR_NA_1																			
<121>	F_SR_NA_1																			
<122>	F_SC_NA_1																			
<123>	F_LS_NA_1																			
<124>	F_AF_NA_1																			

Type identification		Cause of transmission																	
No.	Mnemonic	1	2	3	4	5	6	7	8	9	10	11	12	13	20 to 36	37 to 41	44	45	46	47
<125>	F_SG_NA_1	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒		▒	▒				
<126>	F_DR_TA_1*)	▒	▒		▒		▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒	▒
<127>	F_SC_NB_1*)	▒	▒	▒	▒		▒	▒	▒	▒	▒	▒	▒		▒	▒				

3. **Basic application functions**:

3.1. Station initialization:

☒ Remote initialization.

3.2. Cyclic data transmission:

☒ Cyclic data transmission.

3.3. Read procedure:

☒ Read procedure.

3.4. Spontaneous transmission:

☒ Spontaneous transmission.

3.5. Double transmission of information objects with cause of transmission spontaneous:

The following type identifications may be transmitted in succession caused by a single status change of an information object. The particular information object addresses for which double transmission is enabled are defined in a project-specific list.

☐ Single point information: M_SP_NA_1, M_SP_TA_1, M_SP_TB_1, and M_PS_NA_1.

☐ Double point information: M_DP_NA_1, M_DP_TA_1, and M_DP_TB_1.

☐ Step position information: M_ST_NA_1, M_ST_TA_1, and M_ST_TB_1.

☐ Bitstring of 32 bits: M_BO_NA_1, M_BO_TA_1, and M_BO_TB_1 (if defined for a specific project).

☐ Measured value, normalized value: M_ME_NA_1, M_ME_TA_1, M_ME_ND_1, and M_ME_TD_1.

☐ Measured value, scaled value: M_ME_NB_1, M_ME_TB_1, and M_ME_TE_1.

☐ Measured value, short floating point number: M_ME_NC_1, M_ME_TC_1, and M_ME_TF_1.

3.6. Station interrogation:

☒ Group 1.

☒ Group 2.

☒ Group 3.

☒ Group 4.

☒ Group 5.

☒ Group 6.

☒ Group 7.

☒ Group 8.

☒ Group 9.

☒ Group 10.

☒ Group 11.

☒ Group 12.

☒ Group 13.

☒ Group 14.

☒ Group 15.

☒ Group 16.
☒ Global.

3.7. Clock synchronization:
☒ Clock synchronization (optional, see Clause 7.6).
☐ Day of week used.
☐ RESI, GEN (time tag substituted/not substituted)
☐ SU-bit (summertime) used.

3.8. Command transmission:
☒ Direct command transmission.
☐ Direct setpoint command transmission.
☒ Select and execute command.
☐ Select and execute setpoint command.
☒ C_SE ACTTERM used.
☒ No additional definition.
☒ Short pulse duration (duration determined by a system parameter in the outstation).
☒ Long pulse duration (duration determined by a system parameter in the outstation).
☒ Persistent output.
☒ Supervision of maximum delay in command direction of commands and setpoint commands.
Maximum allowable delay of commands and setpoint commands: 5 s.

3.9. Transmission of integrated totals:
☒ Mode A: Local freeze with spontaneous transmission.
☒ Mode B: Local freeze with counter interrogation.
☒ Mode C: Freeze and transmit by counter-interrogation commands.
☒ Mode D: Freeze by counter-interrogation command, frozen values reported simultaneously.
☒ Counter read.
☒ Counter freeze without reset.
☒ Counter freeze with reset.
☒ Counter reset.
☒ General request counter.
☒ Request counter group 1.
☒ Request counter group 2.
☒ Request counter group 3.
☒ Request counter group 4.

3.10. Parameter loading:
☒ Threshold value.
☐ Smoothing factor.
☐ Low limit for transmission of measured values.
☐ High limit for transmission of measured values.

3.11. Parameter activation:
☐ Activation/deactivation of persistent cyclic or periodic transmission of the addressed object.

3.12. Test procedure:
☐ Test procedure.

3.13. File transfer in monitor direction:

☐ Transparent file.
☐ Transmission of disturbance data of protection equipment.
☐ Transmission of sequences of events.
☐ Transmission of sequences of recorded analog values.

3.14. File transfer in control direction:
☐ Transparent file.

3.15. Background scan:
☐ Background scan.

3.16. Definition of timeouts:

Parameter	Default value	Remarks	Selected value
t_0	30 s	Timeout of connection establishment	Configurable
t_1	15 s	Timeout of send or test APDUs	15 s
t_2	10 s	Timeout for acknowledgements in case of no data messages $t_2 < t_1$	10 s
t_3	20 s	Timeout for sending test frames in case of a long idle state	20 s

Maximum range of values for all time outs: 1 to 255 s, accuracy 1 s.

3.17. Maximum number of outstanding I-format APDUs (*k*) and latest acknowledge APDUs (*w*):

Parameter	Default value	Remarks	Selected value
k	12 APDUs	Maximum difference receive sequence number to send state variable	12 APDUs
w	8 APDUs	Latest acknowledge after receiving *w* I-format APDUs	8 APDUs

Maximum range of values *k*: 1 to 32767 ($2^{15} - 1$) APDUs, accuracy 1 APDU.
Maximum range of values *w*: 1 to 32767 APDUs, accuracy 1 APDU.
Recommendation: *w* should not exceed two-thirds of *k*.

3.18. Port number:

Parameter	Value	Remarks
Port number	2404	In all cases

3.19. RFC 2200 suite:
RFC 2200 is an official Internet Standard which describes the state of standardization of protocols used in the Internet as determined by the Internet Architecture Board (IAB). It offers a broad spectrum of actual standards used in the Internet. The suitable selection of documents from RFC 2200 defined in this standard for given projects has to be chosen by the user of this standard.
☒ Ethernet 802.3.
☐ Serial X.21 interface.
☐ Other selection(s) from RFC 2200 (list below if selected).

IEC 60870-5-104 protocol settings

Select the **Settings > Communications > IEC 60870-5-104 > Protocol** menu item to open the IEC 60870-5-104 protocol configuration window.

Settings	Range	Default
GENERAL		
IEC 60870-5-104 Function	Disabled, Enabled	Disabled
IEC TCP Port	1 to 65535	2404
IEC Common Address of ASDU	0 to 65535	0
IEC Cyclic Data Period	0 to 65535 s	60 s
IEC TCP Connection Timeout	10 to 300 s	120 s
Fault Report Mapping in DNP/104	Disabled, Enabled	Disabled
CLIENT ADDRESS		
Client Address 1*		0.0.0.0
Client Address 2*		0.0.0.0
Client Address 3*		0.0.0.0
Client Address 4*		0.0.0.0
Client Address 5*		0.0.0.0

NOTE

The Client Address setpoints marked "*" are shared with DNP, as only one protocol can be active at a time.

The 3 Series relay can be used as an IEC 60870-5-104 slave device connected to a maximum of two masters (usually either an RTU or a SCADA master station). Since the 3 Series relay maintains two sets of IEC 60870-5-104 data change buffers, no more than two masters should actively communicate with the 3 Series relay at one time. Five client address settings are used to filter which master is suitable for communicating with 3 Series relay.

The IEC 60870-5-104 and DNP protocols cannot be used simultaneously. When the IEC 60870-5-104 FUNCTION setting is set to “Enabled”, the DNP protocol will not be operational.

If IEC Cyclic Data Period is set to 0 there will be no cyclic data response.

Some other settings can be added to select the first address of the different Object Information. These settings can be removed to be consistent with the UR but are very useful for integrating the relay into a system.

Settings	Range	Default
Object Information Address Binary	1 to 16777215	1000
Object Information Address Analog	1 to 16777215	2000
Object Information Address Counters	1 to 16777215	3000
Object Information Address Command	1 to 16777215	4000

By default, the Object Information Address for the different data will be as follows:

M_SP (Single Points) = 1000
M_ME (Measured Value) = 2000
M_IT (Integrated Totals) = 3000
C_SC or C_DC (Single or Double Command) = 4000

IEC 60870-5-104 point lists

M_SP can be configured to a maximum of 64 points. The value for each point is user-programmable and can be configured by assigning operands.

Up to 32 Measured values (M_ME) can be configured assigning metered values to each data point.

The Commands points (C_SC or C_DC) can be configured to a maximum of 16 points selecting data from a list of Virtual Inputs and Force Coil commands.

The following Integrated Total (M_IT) will be added to the set of data:

- Total Number of Trips

The table below shows all the Configurable Points settings:

Settings	Range	Default
Binary Input Point 0 Entry*	Operands	Off
Binary Input Point 63 Entry*	Operands	Off
Analog Input Point 0 Entry*	Analog Parameters	Disabled
Analog Input Point 0 Scale Factor*	0.001, 0.01, 0.1, 1, 10, 100, 1000, 10000, 100000	1
Analog Input Point 0 Deadband*	0 to 100000000	30000
Analog Input Point 31 Entry*	Analog Parameters	Disabled
Analog Input Point 31 Scale Factor*	0.001, 0.01, 0.1, 1, 10, 100, 1000, 10000, 100000	1
Analog Input Point 31 Deadband*	0 to 100000000	30000
Binary Output Point 0 ON*	Virtual Input 1 to 32 and Force Coils	Off
Binary Output Point 0 OFF*	Virtual Input 1 to 32 and Force Coils	Off
Binary Output Point 15 ON*	Virtual Input 1 to 32 and Force Coils	Off
Binary Output Point 15 OFF*	Virtual Input 1 to 32 and Force Coils	Off


NOTE

The settings marked "*" are the same as those used by the DNP 3.0 protocol to configure the point mapping from address 43878 to 44101.

The IEC 60870-5-104 Deadbands settings are used to determine when to trigger spontaneous responses containing M_ME_NB_1 analog data. Each setting represents the threshold value for each M_ME_NB_1 analog point.

For example, to trigger spontaneous responses from the 3 Series relay when a current value changes by 15 A, the "Analog Point xx Deadband" setting should be set to 15. Note that these settings are the default values of the deadbands. P_ME_NB_1 (parameter of measured value, scaled value) points can be used to change threshold values from the default, for each individual M_ME_NB_1 analog point.

There are three ways to send the measurands to the Master station. As the measurands will be part of the General Group and Group 2, when a general interrogation or group 2 interrogation takes place, all the measurands will be included in the response. There is also a cyclic data period setting where the scan period is configured to send the measurands to the Master. The final way is to send the measurands spontaneously when a deadband overflow takes place.

Groups of Data

The data will be organized in groups in order to provide values when the controlling station requests by general or group interrogation.

Group 1 will be set by the 64 Single Points (M_SP).

Group 2 will be set by the 32 Measured values (M_ME).

These 64 Single Points and 32 Measured Values will also be sent as a response to a General Interrogation.

Integrated Totals (M_IT) will have its own Counter Group 1 and these will be sent as a response to a General Request Counter.

The FAULT REPORT MAPPING IN DNP/104 setpoint may be set to a value of "Disabled" or "Enabled". When "Disabled", only the configurable Analog Input points are available beginning with the configured information object address (IOA) for analog values.When "Enabled", the Fault Report Values are assigned from IOA to IOA + 32 in the 339 and 350 relays, and from IOA to IOA + 38 in the 345 relay, with the configurable Analog Inputs following that IOAs.To support existing SCADA hardware not capable of 32-bit data reads, the upper and lower 16-bit portions of the fault report time and date values have been assigned to separate points. To read a date or time, it is necessary to read both the upper and lower 16-bit portions, concatenate these two values to form a 32-bit value, and interpret the result in the format associated with the point.

Fault Report Mapping		**350 and 339**	**Fault Report Mapping**		**345**
Disabled	**Enabled**		**Disabled**	**Enabled**	
Disabled	Enabled		Disabled	Enabled	
-	0	Fault Report Date Upper 16	-	0	Fault Report Date Upper 16
-	1	Fault Report Date Lower 16	-	1	Fault Report Date Lower 16
-	2	Fault Report Time Upper 16	-	2	Fault Report Time Upper 16
-	3	Fault Report Time Lower 16	-	3	Fault Report Time Lower 16
-	4	Fault Report Fault Type	-	4	Fault Report Fault Type
-	5	Fault Report Ia	-	5	Fault Report Ia
-	6	Fault Report Ia Angle	-	6	Fault Report Ia Angle
-	7	Fault Report Ib	-	7	Fault Report Ib
-	8	Fault Report Ib Angle	-	8	Fault Report Ib Angle
-	9	Fault Report Ic	-	9	Fault Report Ic
-	10	Fault Report Ic Angle	-	10	Fault Report Ic Angle
-	11	Fault Report Ig	-	11	Fault Report Ig
-	12	Fault Report Ig Angle	-	12	Fault Report Ig Angle
-	13	Fault Report In	-	13	Fault Report In
-	14	Fault Report In Angle	-	14	Fault Report In Angle
-	15	Fault Report Va	-	15	Fault Report System Frequency
-	16	Fault Report Va Angle	-	16	Fault Report Ia 2
-	17	Fault Report Vb	-	17	Fault Report Ia 2 Angle
-	18	Fault Report Vb Angle	-	18	Fault Report Ib 2
-	19	Fault Report Vc	-	19	Fault Report Ib 2 Angle
-	20	Fault Report Vc Angle	-	20	Fault Report Ic 2
-	21	Fault Report Vab	-	21	Fault Report Ic 2 Angle
-	22	Fault Report Vab Angle	-	22	Fault Report Ig 2
-	23	Fault Report Vbc	-	23	Fault Report Ig 2 Angle
-	24	Fault Report Vbc Angle	-	24	Fault Report In 2
-	25	Fault Report Vca	-	25	Fault Report In 2 Angle
-	26	Fault Report Vca Angle	-	26	Fault Report Idiff 1 PhA
-	27	Fault Report Vn	-	27	Fault Report Idiff 1 PhA Angle
-	28	Fault Report Vn Angle	-	28	Fault Report I Restraint PhA
-	29	Fault Report Vaux	-	29	Fault Report I Restraint PhA Angle
-	30	Fault Report Vaux Angle	-	30	Fault Report Idiff 1 PhB

Fault Report Mapping		350 and 339	Fault Report Mapping		345
Disabled	Enabled		Disabled	Enabled	
-	31	Fault Report System Frequency	-	31	Fault Report Idiff 1 PhB Angle
-	32	Fault Report Phases	-	32	Fault Report I Restraint Ph B
0	33	Analog Input Point 0 Entry	-	33	Fault Report I Restraint PhB Angle
1	34	Analog Input Point 1 Entry	-	34	Fault Report Idiff 1 PhC
...	...	...	-	35	Fault Report Idiff 1 PhC Angle
...	...	...	-	36	Fault Report I Restraint PhC
31	64	Analog Input Point 31 Entry	-	37	Fault Report I Restraint PhC Angle
			-	38	Fault Report Phases
			0	39	Analog Input Point 0 Entry
			1	40	Analog Input Point 1 Entry
			...	...	...
			...	...	...
			31	70	Analog Input Point 31 Entry

Some fault report data has been scaled to fit into a 16-bit value as follows:

Fault Report Data	Scale
Fault Report Ia, Ib, Ic, Ia2, Ib2, Ic2	Format_F10 * 100 / CT Primary
Fault Report Ig, Ig2	Format_F10 * 100 / Gnd CT Primary
Fault Report In , In2	Format_F10 * 100 / CT Primary
Fault Report Va, Vb, Vc, Vab, Vbc, Vca, Vn	Format_F9 * 10000 /(BusVTRatio * BusVTSecondary)
Fault Report Vaux	Format_F9 * 10000 /(AuxVTRatio * AuxVTSecondary)
Fault Report System Frequency	Format_F3
Fault Report Phases	Format_F37

Summary of Ethernet client connections

Table 3-11: Case A

Settings			Ethernet		
DNP CHANNEL 1 PORT	NONE				
DNP CHANNEL 2 PORT	NONE				
104 GENERAL FUNCTION	DISABLE				
			Client 1	Client 2	Client 3
			MODBUS	NOTHING	NOTHING
			MODBUS	MODBUS	NOTHING
			MODBUS	MODBUS	MODBUS

Table 3-12: Case B

Settings			Ethernet		
DNP CHANNEL 1 PORT	TCP				
DNP CHANNEL 2 PORT	NONE				
104 GENERAL FUNCTION	DISABLE				
			Client 1	Client 2	Client 3

Settings			Ethernet		
			DNP	NOTHING	NOTHING
			DNP	MODBUS	NOTHING
			DNP	MODBUS	MODBUS

Table 3-13: Case C

Settings			Ethernet			
DNP CHANNEL 1 PORT	UDP					
DNP CHANNEL 2 PORT	NONE					
104 GENERAL FUNCTION	DISABLE					
			Client 1	Client 2	Client 3	Client 4
			DNP	NOTHING	NOTHING	NOTHING
			DNP	MODBUS	NOTHING	NOTHING
			DNP	MODBUS	MODBUS	NOTHING
			DNP	MODBUS	MODBUS	MODBUS

Table 3-14: Case D

Settings			Ethernet		
DNP CHANNEL 1 PORT	TCP				
DNP CHANNEL 2 PORT	TCP				
104 GENERAL FUNCTION	DISABLE				
			Client 1	Client 2	Client 3
			DNP	DNP	NOTHING
			DNP	DNP	MODBUS

Table 3-15: Case E

Settings			Ethernet			
DNP CHANNEL 1 PORT	TCP					
DNP CHANNEL 2 PORT	UDP					
104 GENERAL FUNCTION	DISABLE					
			Client 1	Client 2	Client 3	Client 4
			DNP-TCP	DNP-UDP	NOTHING	NOTHING
			DNP-TCP	DNP-UDP	MODBUS	NOTHING
			DNP-TCP	DNP-UDP	MODBUS	MODBUS

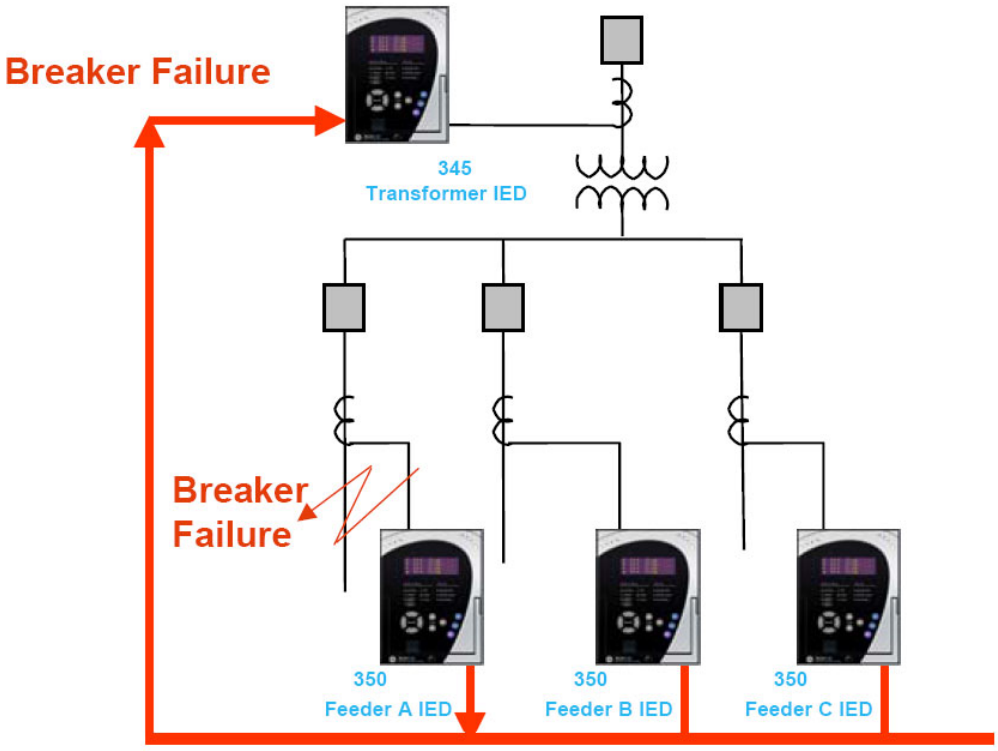
Table 3-16: Case F

Settings			Ethernet		
DNP CHANNEL 1 PORT	XX (any value)				
DNP CHANNEL 2 PORT	XX (any value)				
104 GENERAL FUNCTION	ENABLE				
			Client 1	Client 2	Client 3
			IEC104	IEC104	NOTHING
			IEC104	IEC104	MODBUS

GE
Grid Solutions

3 Series Protective Relay Platform

Chapter 4: 3 Series IEC61850 GOOSE



3 Series relays support the IEC61850 GOOSE messaging service. This service allows 3 Series relay units to exchange digital and analog information with other relays supporting the same service. This information exchange is at speeds suitable for protection.

One example of how this communication service can be used within a protection scheme, is to have it provide the communications link for a blocking scheme to protect a bus, as shown in the above figure. In this example, if there is a fault on one of the feeders, say, feeder A, both the instantaneous overcurrent element of the 350 feeder A and the instantaneous overcurrent element of the 345 will pick up. The 345's protection has been coordinated with the downstream feeders such that if the 345 does not receive a GOOSE

message from one of the feeders (in this case feeder A) within a specified period of time after detection of the overcurrent fault, the 345 will trip its breaker, removing power to the bus. If however, a GOOSE message is received from any one of the feeder relays, the 345 will delay the trip of its breaker long enough for the downstream feeder to remove the fault.

Configuration of GOOSE messaging within the 3 Series family of relays can be accomplished in one of three ways:

- Users familiar with both the 3 Series configuration menus and IEC61850 implementation within the 3 Series, may prefer to configure the relays directly through the menus.
- For those not familiar with the 3 Series IEC61850 implementation and/or the 3 Series menus, the 3 Series simplified GOOSE message tool may save time and effort.
- For those interested in a more IEC61850-centric approach, the IEC61850 configurator tool may be used.

GOOSE configuration via the 3 Series menus

The 3 Series relay firmware supports IEC61850 GOOSE communications on the optional communications daughter board.

Portions of the IEC61850 standard not pertaining to GOOSE, are not implemented in the 3 Series relay depending on order code and GOOSE type setting (found under **S1 RELAY SETUP > COMMUNICATIONS > GOOSE CONFIGURATION > GENERAL SETTINGS**).

IEC61850 Feature	Order Code includes "IEC61850" & GOOSE Type is "Simplified"	Order Code includes "IEC61850" & GOOSE Type is "Advanced"	Order Code includes "IEC61850 GOOSE" (and not "IEC61850")
Manufacturing Message Specification (MMS) standard ISO/IEC 9506	Not Available	Available	Not Available
GOOSE Transmission of analog values	Not Available	Available	Not Available
GOOSE Reception of analog values	Not Available	Not Available	Not Available
GOOSE Configuration storage	MODBUS Set Points	CID file and MODBUS Set Points	MODBUS Set Points
File system to maintain ICD/CID files	Not Available	Available	Not Available

Configuration of transmission and reception settings for the GOOSE feature are performed using EnerVista SR3 Setup Software.

The 3 Series relay firmware accepts GOOSE messages from 8 Series, UR, F650 and UR Plus. The interoperability with other manufacturers will be guaranteed in almost all cases, by implementing the reception side with nested structures (one level of nesting) and all the standard data types.

GOOSE settings changes will take effect only after the 3 Series relay is re-booted. One setting is available to Enable/Disable both Transmission and Reception. It is possible to change these settings from the Front Panel of the relay.

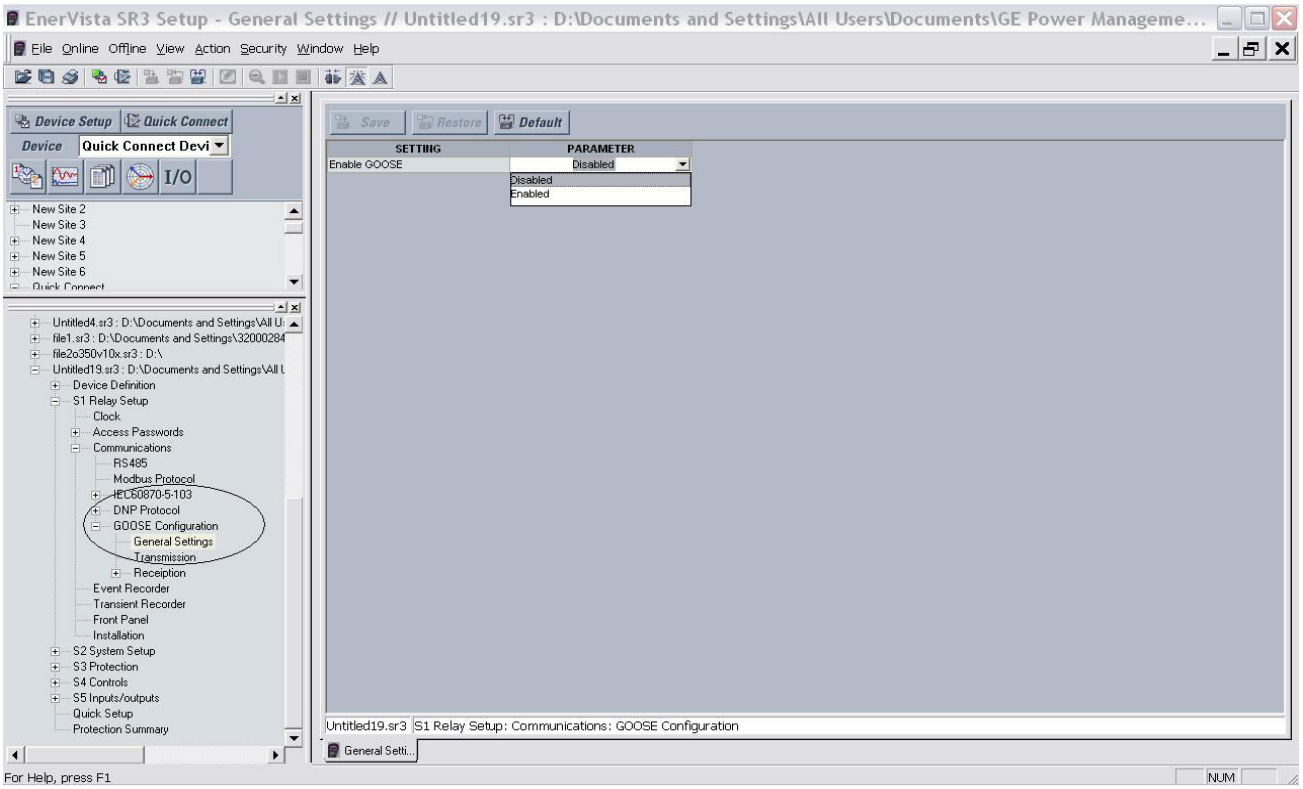
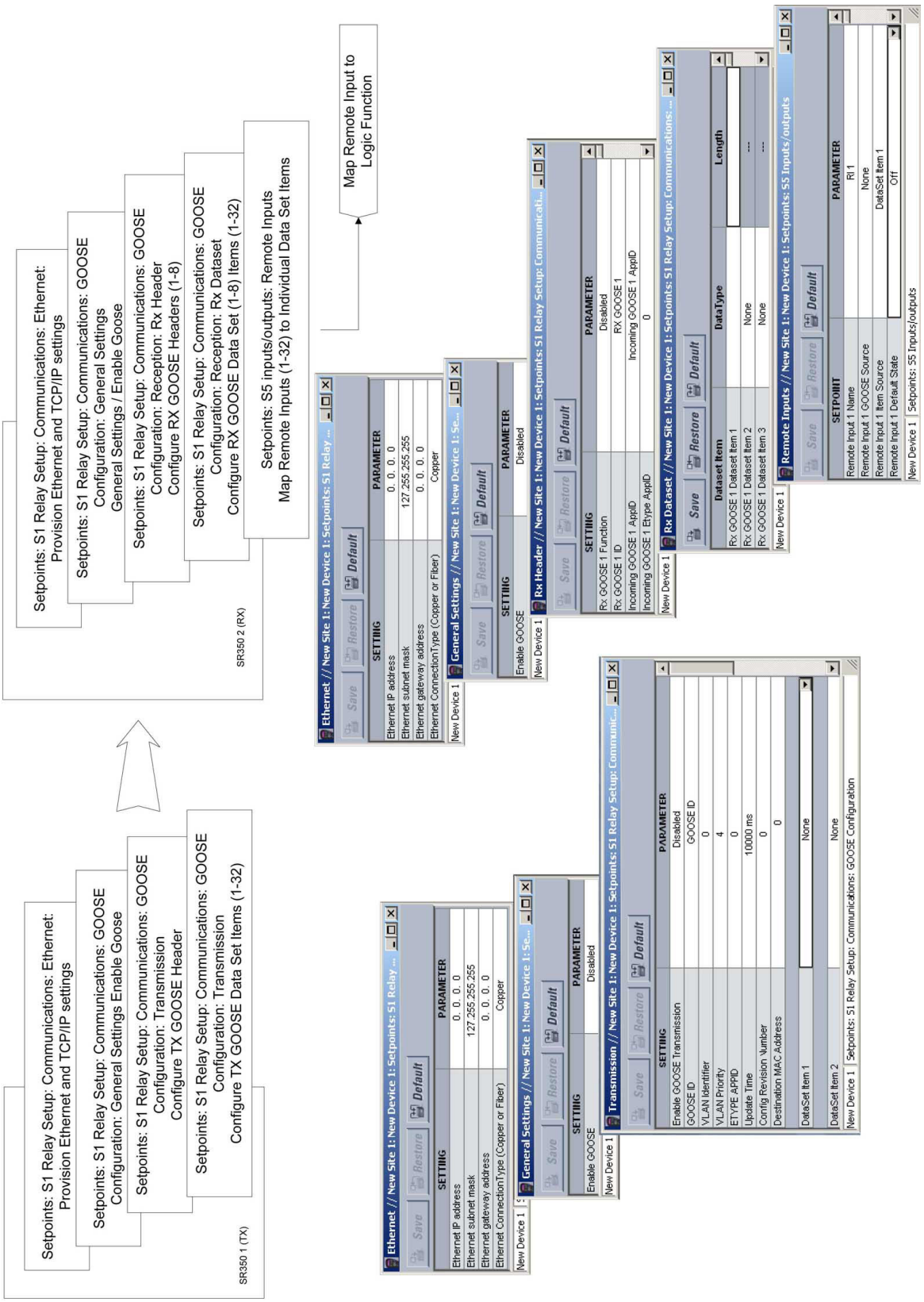


Figure 4-1: EnerVista 3 Series Setup GOOSE General Settings

EnerVista 3 Series Setup software structure

The structure below provides a summary of how the EnerVista 3 Series Setup software should be used to implement the sections detailed in this document, in order to enable both transmission and reception of GOOSE messages.


SR350 1 (TX)
Setpoints: S1 Relay Setup: Communications: Ethernet: Provision Ethernet and TCP/IP settings
Setpoints: S1 Relay Setup: Communications: GOOSE Configuration: General Settings Enable Goose
Setpoints: S1 Relay Setup: Communications: GOOSE Configuration: Transmission Configure TX GOOSE Header
Setpoints: S1 Relay Setup: Communications: GOOSE Configuration: Transmission Configure TX GOOSE Data Set Items (1-32)
SR350 2 (RX)
Setpoints: S1 Relay Setup: Communications: Ethernet: Provision Ethernet and TCP/IP settings
Setpoints: S1 Relay Setup: Communications: GOOSE Configuration: General Settings General Settings / Enable Goose
Setpoints: S1 Relay Setup: Communications: GOOSE Configuration: Reception: Rx Header Configure RX GOOSE Headers (1-8)
Setpoints: S1 Relay Setup: Communications: GOOSE Configuration: Reception: Rx Dataset Configure RX GOOSE Data Set (1-8) Items (1-32)
Setpoints: S5 inputs/outputs: Remote Inputs Map Remote Inputs (1-32) to Individual Data Set Items
Map Remote Input to Logic Function
Ethernet // New Site 1: New Device 1: Setpoints: S1 Relay ...
Save
Restore
Default
SETTING
PARAMETER
Ethernet IP address
0. 0. 0. 0
Ethernet subnet mask
127.255.255.255
Ethernet gateway address
0. 0. 0. 0
Ethernet ConnectionType (Copper or Fiber)
Copper
New Device 1
General Settings // New Site 1: New Device 1: Se...
Enable GOOSE
Disabled
Transmission // New Site 1: New Device 1: Setpoints: S1 Relay Setup: Communic...
Enable GOOSE Transmission
Disabled
GOOSE ID
GOOSE ID
VLAN Identifier
0
VLAN Priority
4
ETYPE APPID
0
Update Time
10000 ms
Config Revision Number
0
Destination MAC Address
0
DataSet Item 1
None
DataSet Item 2
None
New Device 1
Setpoints: S1 Relay Setup: Communications: GOOSE Configuration
Ethernet // New Site 1: New Device 1: Setpoints: S1 Relay ...
Ethernet IP address
0. 0. 0. 0
Ethernet subnet mask
127.255.255.255
Ethernet gateway address
0. 0. 0. 0
Ethernet ConnectionType (Copper or Fiber)
Copper
New Device 1
General Settings // New Site 1: New Device 1: Se...
Enable GOOSE
Disabled
New Device 1
Rx Header // New Site 1: New Device 1: Setpoints: S1 Relay Setup: Communicati...
Rx GOOSE 1 Function
Disabled
Rx GOOSE 1 ID
RX GOOSE 1
Incoming GOOSE 1 ApplD
Incoming GOOSE 1 ApplD
Incoming GOOSE 1 Etype ApplD
0
New Device 1
Rx Dataset // New Site 1: New Device 1: Setpoints: S1 Relay Setup: Communications: ...
Dataset Item
DataType
Length
Rx GOOSE 1 Dataset Item 1
Rx GOOSE 1 Dataset Item 2
None
Rx GOOSE 1 Dataset Item 3
None
New Device 1
Remote Inputs // New Site 1: New Device 1: Setpoints: S5 Inputs/outputs
SETPOINT
PARAMETER
Remote Input 1 Name
RI 1
Remote Input 1 GOOSE Source
None
Remote Input 1 Item Source
DataSet Item 1
Remote Input 1 Default State
Off
New Device 1
Setpoints: S5 Inputs/outputs

GOOSE transmission

The 3 Series relay firmware supports one transmission dataset.

All elements in the transmit dataset must be Boolean values.

The user can define the number of items in the transmit data setup, to a maximum of 32. The minimum number of items in a data set is 1.

The number of data items configured before the NULL (below), determines the dataset length. It is also possible to map any Item to a fixed value (ON or OFF).

The IEDName is taken from setting **S1 Relay Setup > Installation > Relay Name**

Setting the IEDName to "Feeder_25Kv_Line1" (for example) would result in a DataSet Reference:

Feeder_25Kv_Line1LDInts/LLN0$GOOSE1

Another, less common, possibility is to change the 123E setting (using modbus) for example to "GOOSE_Points" resulting in a DataSet Reference:

Feeder_25Kv_Line1LDInts/LLN0$GOOSE_Points

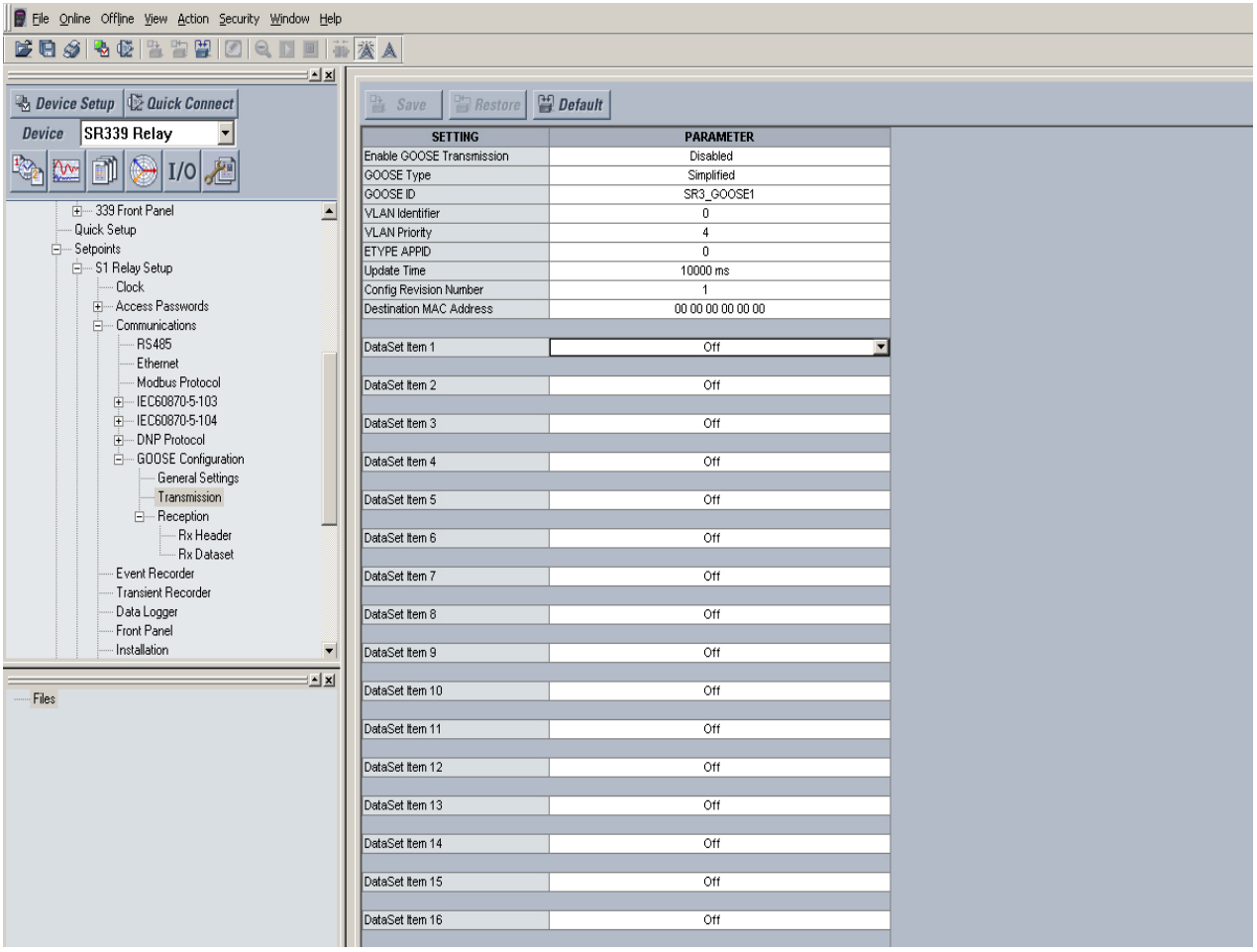


Figure 4-2: EnerVista 3 Series Setup GOOSE Transmission page

- **GOOSE ID**: A string of up to 40 characters that represent the IEC 61850 GOOSE application ID (GoID). This string identifies the GOOSE Tx message to the receiving device.
- **VLAN Identifier/Priority**: a two-byte value whose 3 most significant bits define the user priority and the twelve least significant bits are for the VLAN identifier.

VLAN PRIORITY

Range: 1 to 7

Default: 4

This setting selects the value of the priority field in the VLAN tag.

VLAN ID

Range: 0 to 4095

Default: 0

This setting selects the value of the ID field in the VLAN tag.

- **ETYPE AppID**: to select ISO/IEC 8802-3 frames containing GSE Management and GOOSE messages and to distinguish the application association.
- **Update Time**: time to delay transmission of the next iteration of a particular GOOSE message if no value within the message has changed. I.e. 60. Measured in ms.
- **Conf Revision Number**: This number updates automatically after Tx data set has been modified and the relay power has been cycled.
- **Destination MAC Address**: This setting is required to ensure interoperability as some vendors require valid range of destination MAC addresses in GOOSE messages.
- **Quality Flags**: In order to ensure interoperability with some vendors, there is a quality flag associated with a data item. The quality flags item only can be set if its associated data item is selected. The data type of the quality flags is Bitstring13 and the attribute will always set to value “0” at the protocol level.

All the elements in a dataset can be mapped by the user to any available digital value within the 3 Series relay, including:

- Alarm elements
- Protection elements (Pickup, Dropout and Operate of all available protection elements)
- Control element (all available control elements)
- Status of digital inputs
- Status of digital outputs
- Status of virtual inputs
- Status of virtual outputs.

The destination multicast address for GOOSE messages is composed of the MAC address of the device, with the least significant bit in the most significant byte, set to 1.

The 3 Series relay relay does not generate ICD files that describe the format of transmitted GOOSE items. EnerVista 3 Series Setup software is used to generate these files, and the files must contain at least the following information:

- Mandatory Nodes: LLN0, LPHD, GGIO, etc.
- GOOSE Configuration: Control Block, Dataset, etc.
- Dataset configuration.

Once a GOOSE message is transmitted, it will be retransmitted at an increasing time interval as follows: 4ms, 8ms, 16ms, and then 1 second.

GOOSE Rx

The 3 Series relay firmware allows the user to configure up to 8 separate GOOSE messages for reception. One GOOSE message consists of 2 parts: Header and Dataset. The Header is used for identification and the Dataset for data handling.

At this point , it is convenient to clarify the difference between Remote GOOSE and Remote Device. One Remote Device can send more than one GOOSE, so from the reception point of view, it is not very useful to handle Remote Devices. Instead, it is simpler to deal with Remote GOOSE messages.

The 3 Series relay firmware is able to receive up to a total of 8 remote GOOSE messages transmitted from up to a maximum of 8 remote devices.

GOOSE Rx status

In order to visualize the status of the incoming GOOSE messages, the following status registers are available in the MODBUS memory map:

Data Item	EnerVista 3 Series Setup Text	MMI Text	Value	Format Code	Size in words	Modbus Address
eDataRemoteGOOSEStatus	Remote GOOSE Status	REM GOOSE STAT	0xFFFF FFFF	FC215	2	31515
eDataRemoteGOOSEHeaderStatus	Remote GOOSE Header Status	REM GOOSE HDR STAT	0xFFFF FFFF	FC215	2	31517

GOOSE 1	0x0000 0001
GOOSE 2	0x0000 0010
GOOSE 3	0x0000 0100
GOOSE 4	0x0000 1000
GOOSE 5	0x0001 0000
GOOSE 6	0x0010 0000
GOOSE 7	0x0100 0000
GOOSE 8	0x1000 0000

		unsigned 32 bits	GOOSE Receive Status	Text String
Enum	**FC215**	0x0001	eFMT_GOOSE1	GOOSE 1 RECEIVED
		0x0002	eFMT_GOOSE2	GOOSE 2 RECEIVED
		0x0004	eFMT_GOOSE3	GOOSE 3 RECEIVED
		0x0008	eFMT_GOOSE4	GOOSE 4 RECEIVED
		0x0010	eFMT_GOOSE5	GOOSE 5 RECEIVED
		0x0020	eFMT_GOOSE6	GOOSE 6 RECEIVED
		0x0040	eFMT_GOOSE7	GOOSE 7 RECEIVED
		0x0080	eFMT_GOOSE8	GOOSE 8 RECEIVED

The GOOSE Header Status is set at 1 if all the header's filters are passed. Otherwise, the Header Status will be set at 0.

After a GOOSE header is accepted, the 3 Series relay firmware either accepts or rejects the associated dataset. The firmware bases this decision on the R_X dataset that has been configured for the header. If both (Header and Dataset structure) are accepted, the Remote GOOSE Status is set to 1, otherwise it is set to 0. If the header status is never set to 1, then the associated GOOSE status always remains at 0.

The incoming GOOSE defines the timeout for the next message. GOOSE Header Status is set to 0 if the next message is not received within the specified amount of time. GOOSE Status is also set to 0 if the next message is not accepted within the specified amount of time.

If a GOOSE message is received, and its header has not been configured for reception, the firmware ignores the message.

It is possible to see this GOOSE status information from the 3 Series relay front panel.

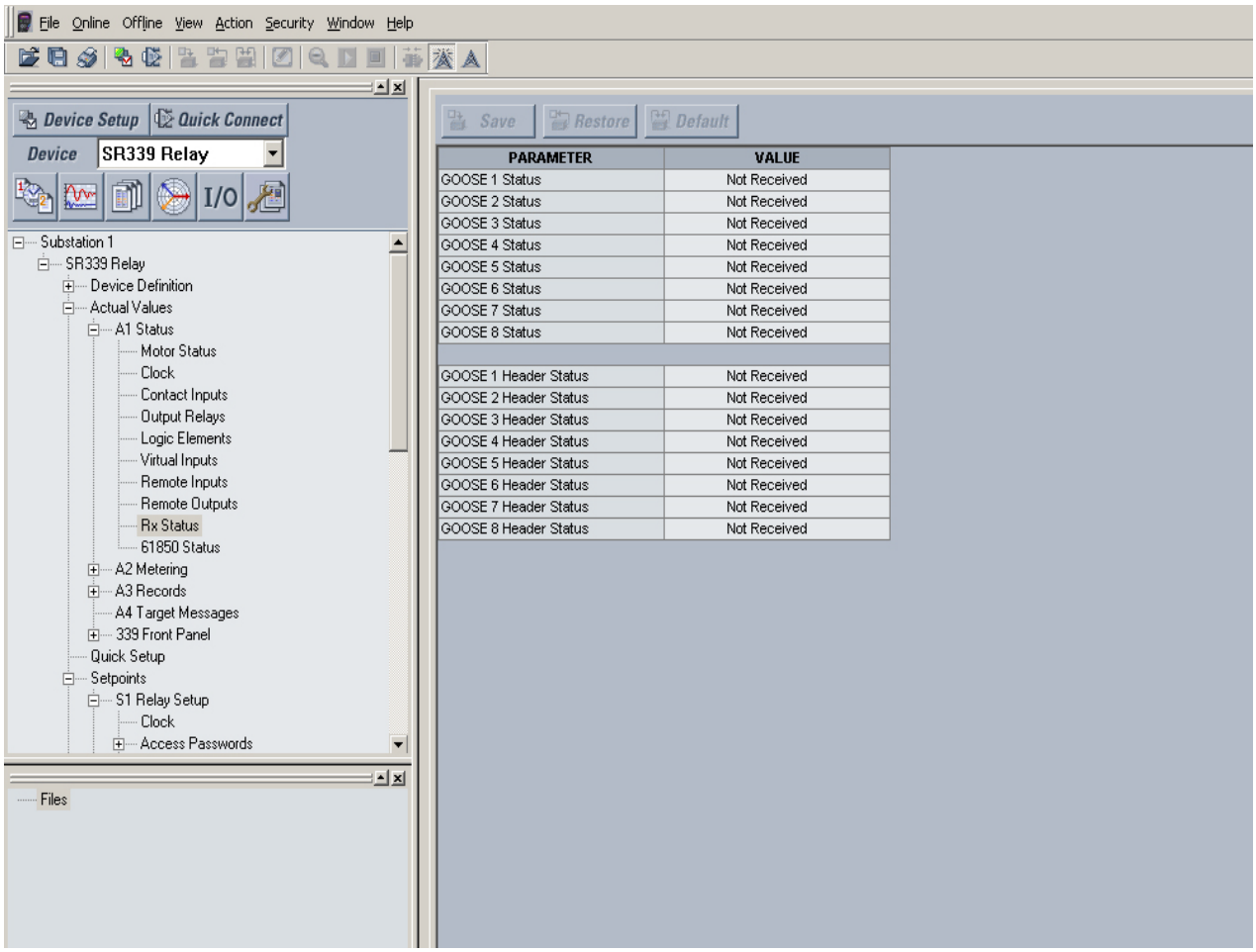


Figure 4-3: EnerVista 3 Series Setup GOOSE Status page

GOOSE Rx headers

The 3 Series relay firmware supports GOOSE messages that contain up to one level of nesting, and that are capable of mapping only digital values to the remote inputs.

The 3 Series relay firmware maintains the format of GOOSE messages that can be received in MODBUS registers.

Configuration of GOOSE messages to be received by the device, is implemented using the EnerVista 3 Series Setup software, as shown below, either by reading in and parsing the ICD, or SCD file from a remote device, or by manually configuring the settings.

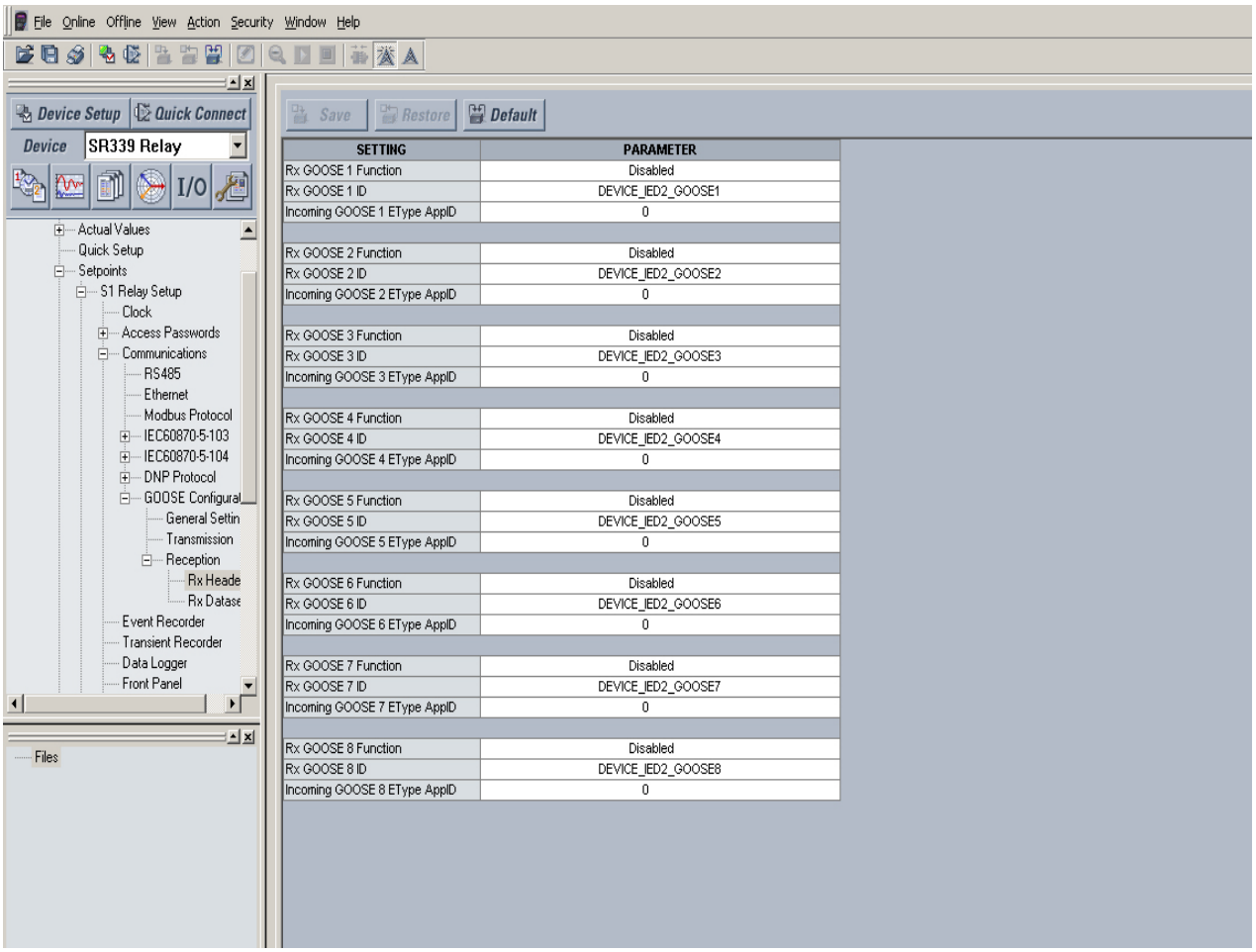
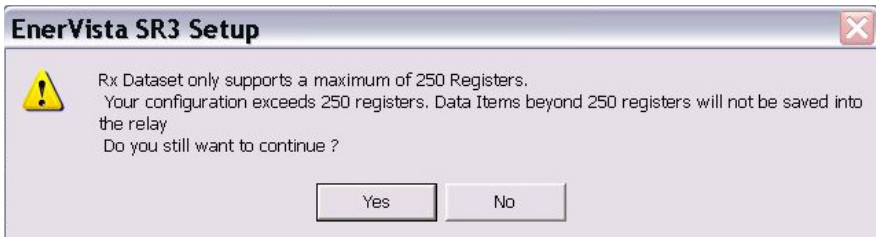


Figure 4-4: EnerVista 3 Series Setup GOOSE Rx Header

GOOSE receive dataset structure

The format of the GOOSE messages that can be accepted by the firmware is stored in MODBUS registers. The maximum total storage size for the 8 Rx GOOSE structure is 250 registers. This means that the number of elements per Rx GOOSE is unlimited provided that the total size of all Rx structures doesn't exceed the defined limit of 250 registers.

The User can configure the Datasets of his choice, and if he exceeds the 250 registers limit when he tries to **SAVE**, the following message appears, saying that the selection of the user has exceeded the limit of 250 registers and that anything beyond will be lost.



Clicking on **YES** will save Dataset items selection up to 250 registers and the others will be lost. The screen then refreshes, reflecting the saved data. Clicking on **NO** will do nothing and the user can make changes on the screen (shown below).

The RX GOOSE message data types that are handled by the software, are:

Bool, Byte, Ubyte, Short, Ushort, Long, Ulong, Int64, Uint64, Float, Double, Btime4, Btime6, Utctime, Bcd, Vstring, Ostring, OVstring, Bstring, Bvstring

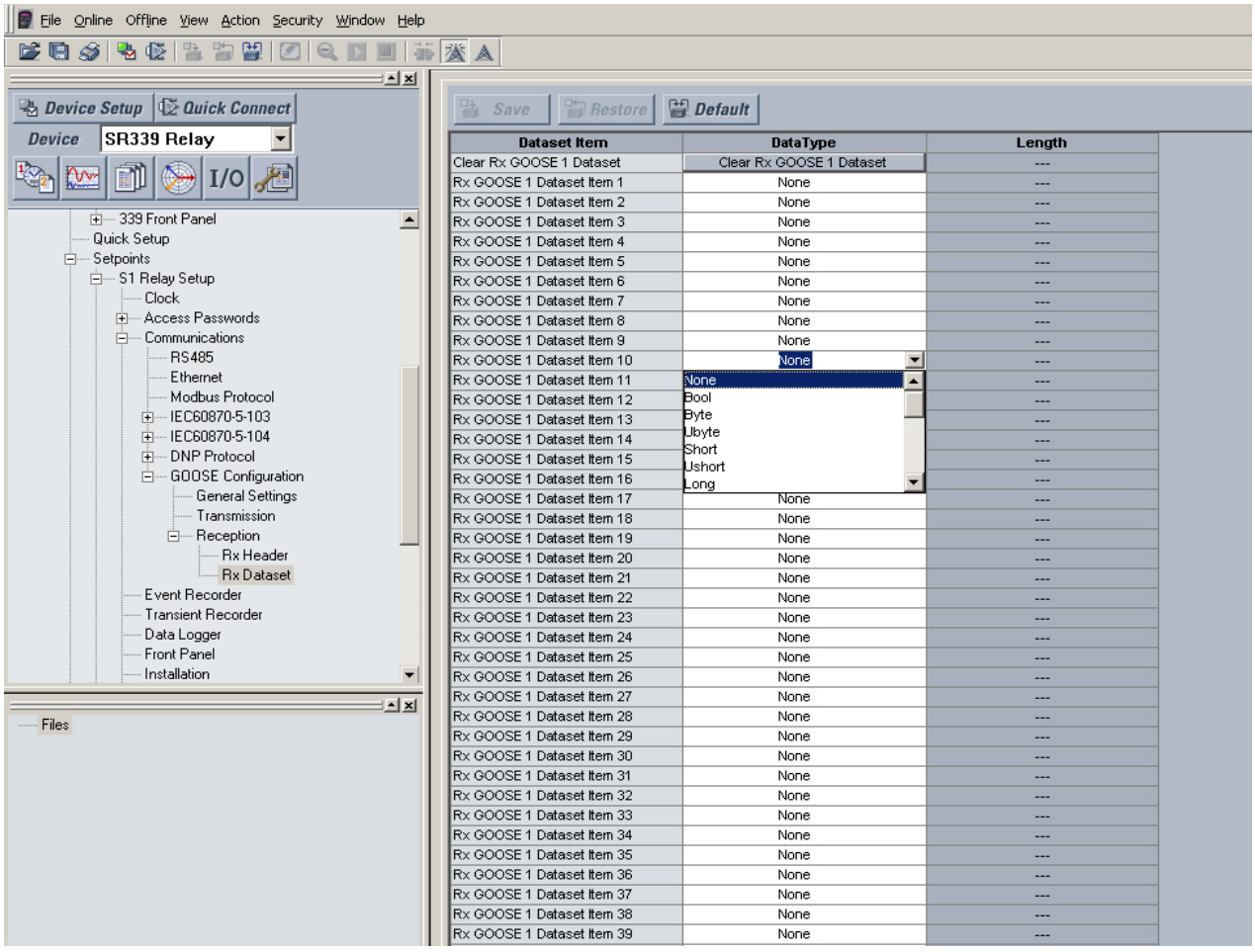


Figure 4-5: EnerVista 3 Series Setup GOOSE Dataset

GOOSE remote inputs

The firmware allows the user to map each of the digital data points received in a data set, configured for reception, to one of 32 GOOSE remote inputs.

More than 1 GOOSE remote input can be mapped to the same data element, in a data set belonging to a received GOOSE message.

GOOSE remote inputs can only be mapped to digital data elements.

The firmware considers a GOOSE remote input to be in the "on/off" state when the digital data element to which it is mapped, is in the "on/off" state.

The firmware allows the user to assign a string name to each of the 32 remote inputs, and allows the string name assigned to each remote input to be up to 14 characters.

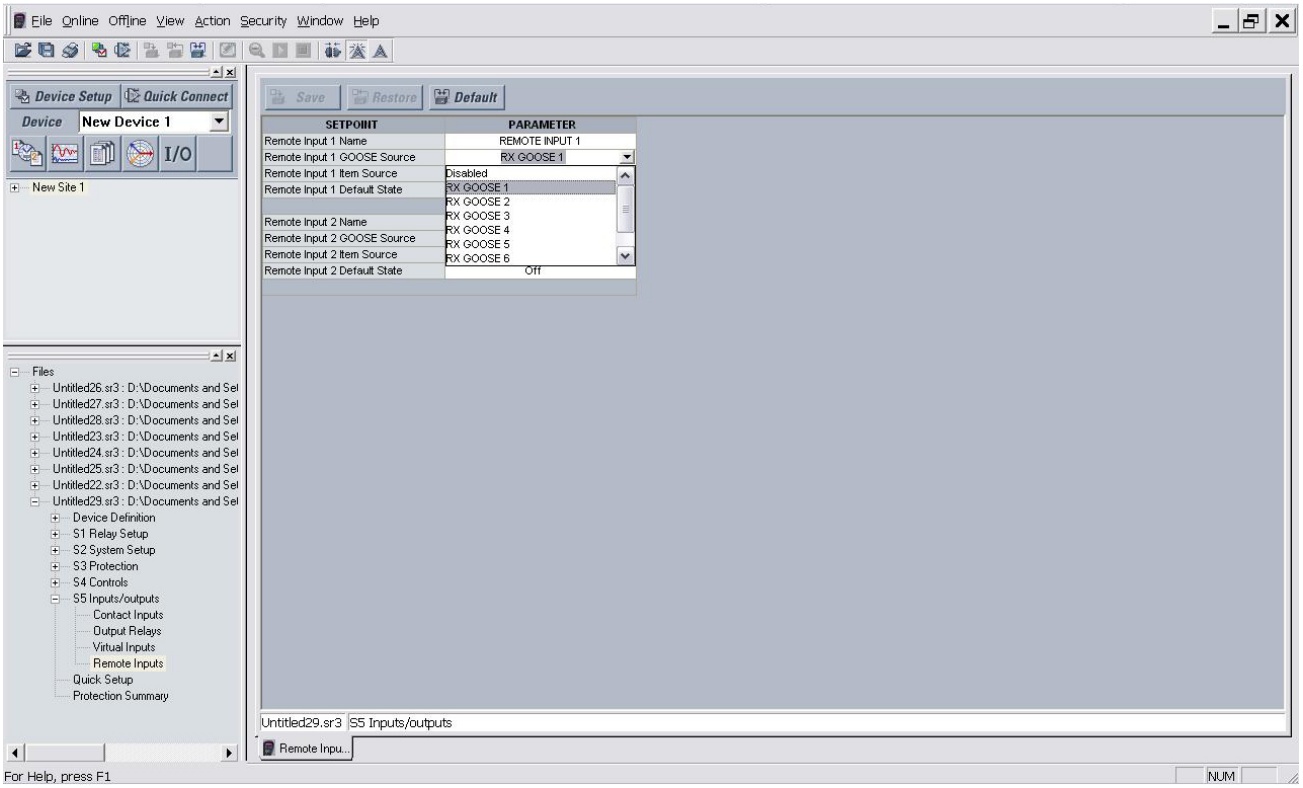


Figure 4-6: EnerVista 3 Series Setup GOOSE Remote Inputs - 1 of 2

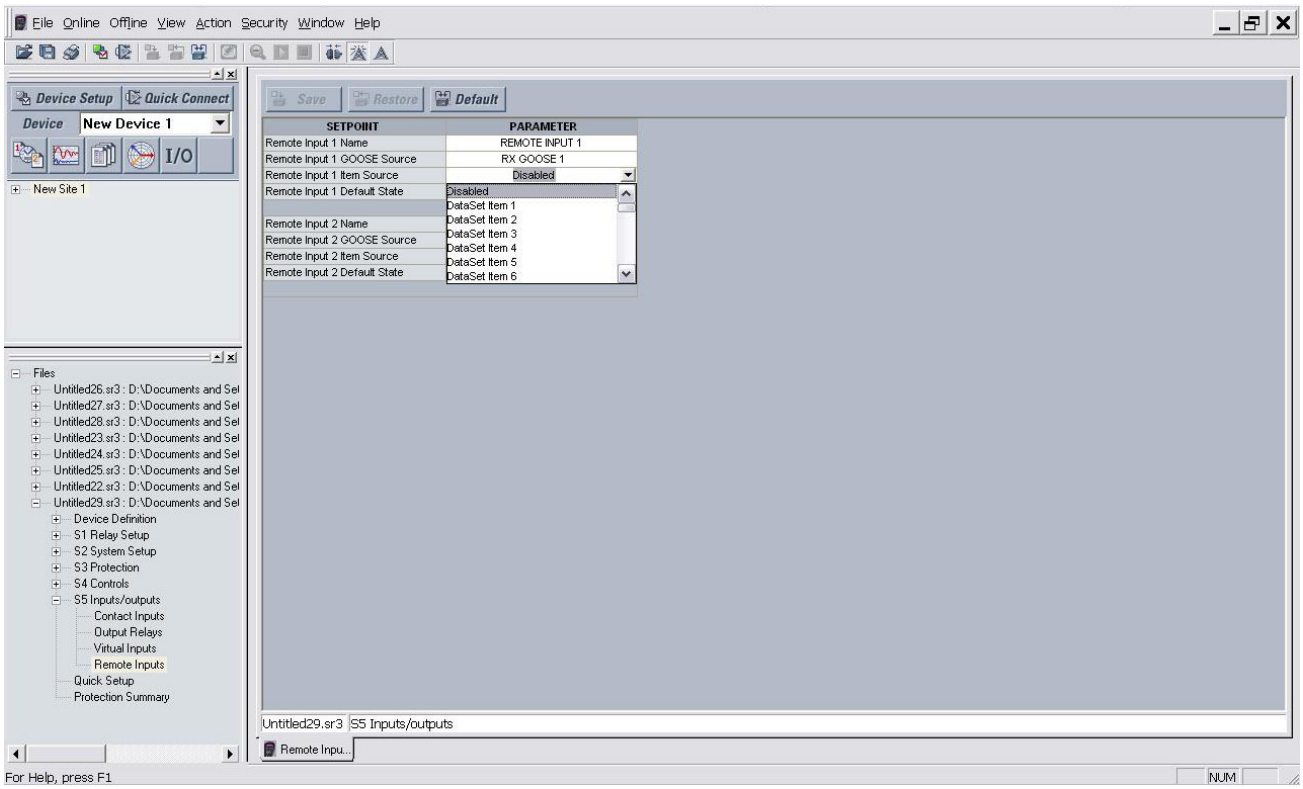


Figure 4-7: EnerVista 3 Series Setup GOOSE Remote Inputs - 2 of 2

The following format indicates the source of the GOOSE message:

The string name of each remote input is maintained in a set of MODBUS registers, where each string name consumes up to 7 MODBUS registers.

Each GOOSE remote input can be mapped to one of the following functions:

- protection element block (all protection elements that have a single or multiple block setting)
- user assignable LED
- digital output
- group setting change (350 and 345 only)

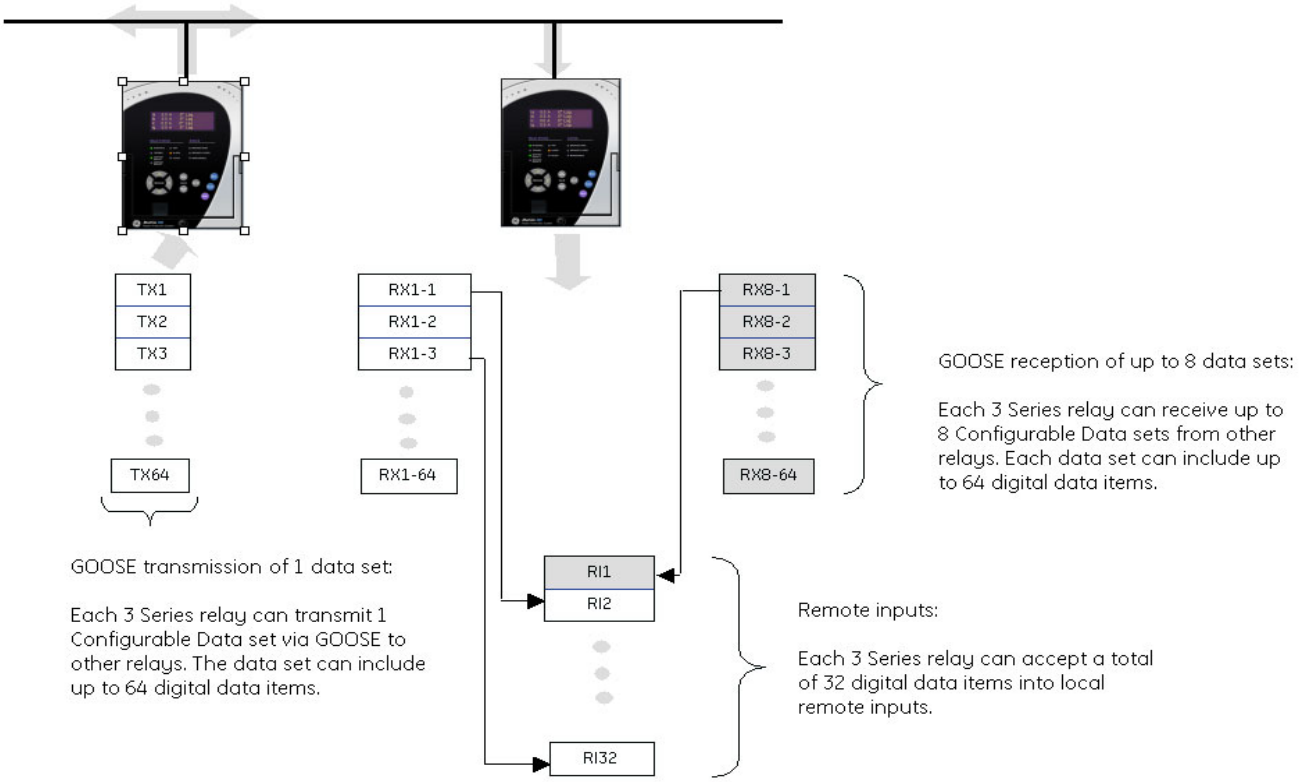
The 3 Series relay records changes in GOOSE remote inputs in the Event Log.

The time recorded in a GOOSE remote input's event log entry, is the time at which the change in the input's state is detected.

The 3 Series relay invokes a logic (block / control) function when its corresponding GOOSE remote input is asserted.

In the 3 Series relay there are many different settings where it is possible to select between a Contact Input (1 to 10), a Virtual Input (1 to 32) or a Logic Element (1 to 16). In all of these settings it is also possible to select Remote Input (1-32) if the GOOSE feature is enabled on the relay.

Using the Simplified GOOSE Configurator



NOTE

The simplified GOOSE configuration tool has no way of sensing manual changes to the GOOSE configuration menus and so when used, the SGC tool overwrites the entire IEC61850 settings of all settings files within the offline site. For this reason it is not advisable to mix the two techniques.

3 Series GOOSE Implementation

Before we proceed with the configuration tool we will review the 3 Series IEC61850 implementation. The 3 Series family of relays can receive and transmit both digital and analog information. However, currently only digital status information received via GOOSE can be used in the 3 Series relays.

Transmission Data Block

Each 3 Series relay has one GOOSE transmission data block consisting of up to 64 data items. Once configured, this block is transmitted at power-up, on a pre-configured time basis (ranging from 1 to 60 seconds) and within a window of 4 to 10 ms after a digital point within the data block has changed state.

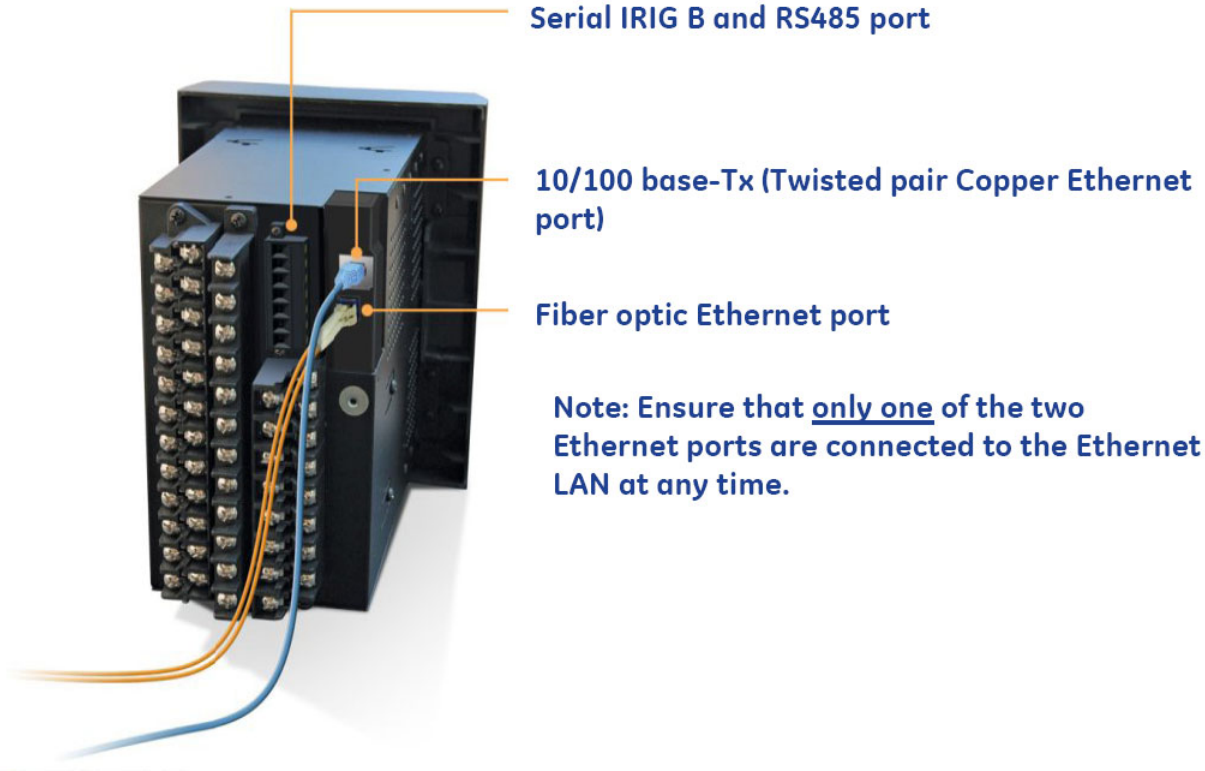
Receive Data Block

Each 3 Series relay has eight GOOSE receive data blocks. Each receive data block consists of up to 64 data items and is configured to receive the transmission from a specific device on the network. Received digital status information from any of the eight receive data blocks is mapped into the local relay's 32 remote inputs such that the status can be made available to the relay.

NOTE

The total number of items that can be received is affected by the number of GOOSE receives that have been configured, the type of data item, and by whether or not the quality is to be received with the item.

Setting up the GOOSE Configurator



This section will explain how to setup GOOSE messaging between two relays using the Simplified GOOSE Configurator (SGC). As stated earlier, the purpose of the SGC is to allow the user to configure the 3 Series relays to share digital data points via GOOSE without requiring a detailed understanding of the IEC61850 model or of how to configure GOOSE within the relay. As SGC may not allow advanced users the flexibility for a complex application, manual configuration could be required and used.

SGC is only intended to modify offline settings files. There is no support for online devices and only settings files of firmware version 1.4x and higher, with the 2E/3E option, will be included in the simplified GOOSE configuration screen for any given site.

Setting up the Simplified GOOSE Configurator is a three-step process:

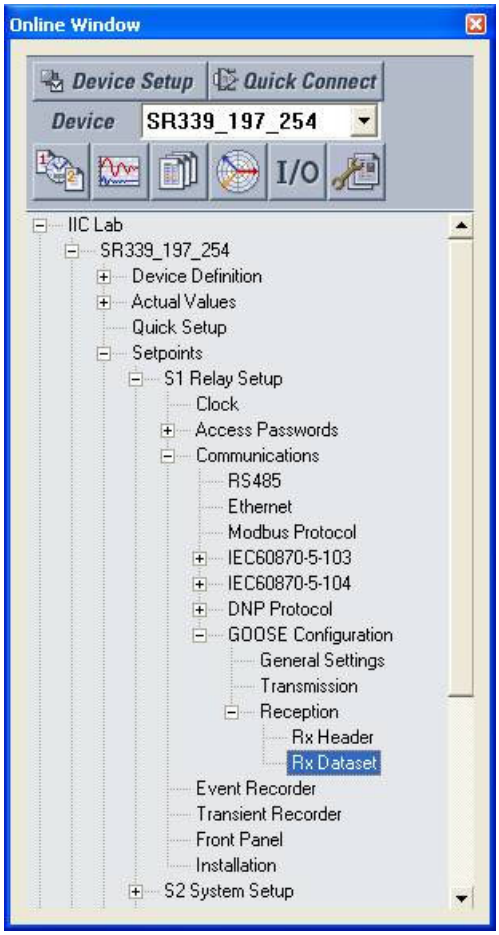
1. Create a GOOSE Site (in the offline window) that will contain all the related relay settings files, then add the associated 3 Series IED settings files to this site.
2. Launch the Simplified GOOSE Configurator, configure the GOOSE transmissions for each relay, then save and exit the tool.
3. Download the settings files to the associated relays.

Each of these steps will be explained in detail in the following section. IEC61850 GOOSE messaging uses Ethernet, so the 3 Series relay must be equipped with an Ethernet port and support the IEC61850 GOOSE messaging option. Each relay can be connected to the Ethernet LAN through either the fiber optic (preferred) or twisted pair Ethernet port **but not BOTH at the same time**.

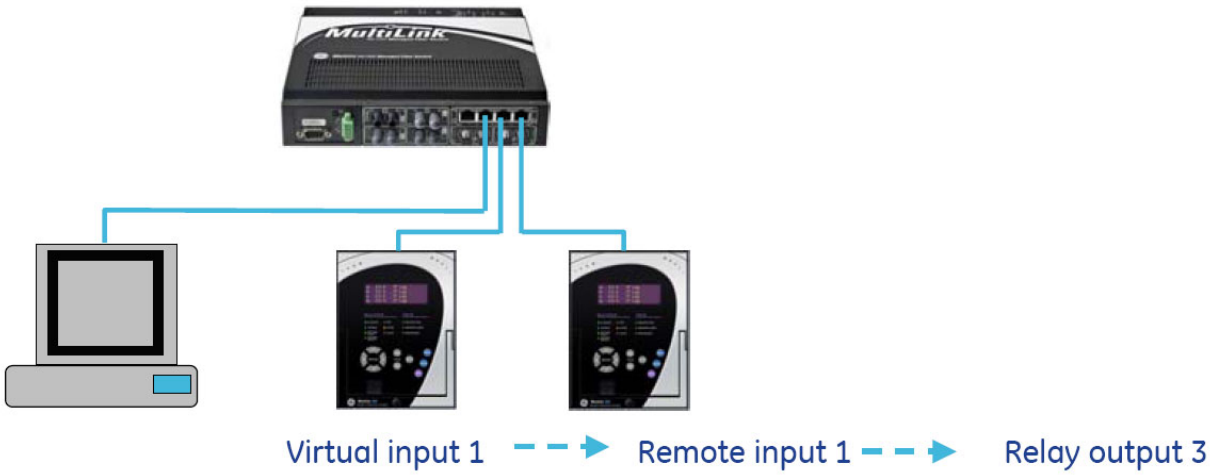
Once an IP address and subnet mask have been configured within each relay, and the power cycled, the relays can be connected though a switch to the computer running the EnerVista 3 Series Setup configuration software. Please note that an IP address and subnet mask are not required for GOOSE but are required to configure the relays for operation via Ethernet. For simplicity, the objective of this exercise is to configure the relay labeled 228 to send a GOOSE message containing the status of Virtual Input 1 to the relay labeled 230. Upon reception of the message, relay 230 will use this Virtual Input status to control output relay number 3.

NOTE

The 3 Series relay can save RX dataset information to a maximum of 250 items. If GOOSE configured through SGC requires a single device to receive GOOSE messages from multiple senders, such that the total items may be more that 250, then additional items beyond 250 may not get saved in the settings file. In such a case, it is recommended to manually verify the saved configuration in the receiver device once (under **Setpoints > S1 Relay Setup > Communication > GOOSE Configuration > Reception > RX dataset**) to avoid communication problems.



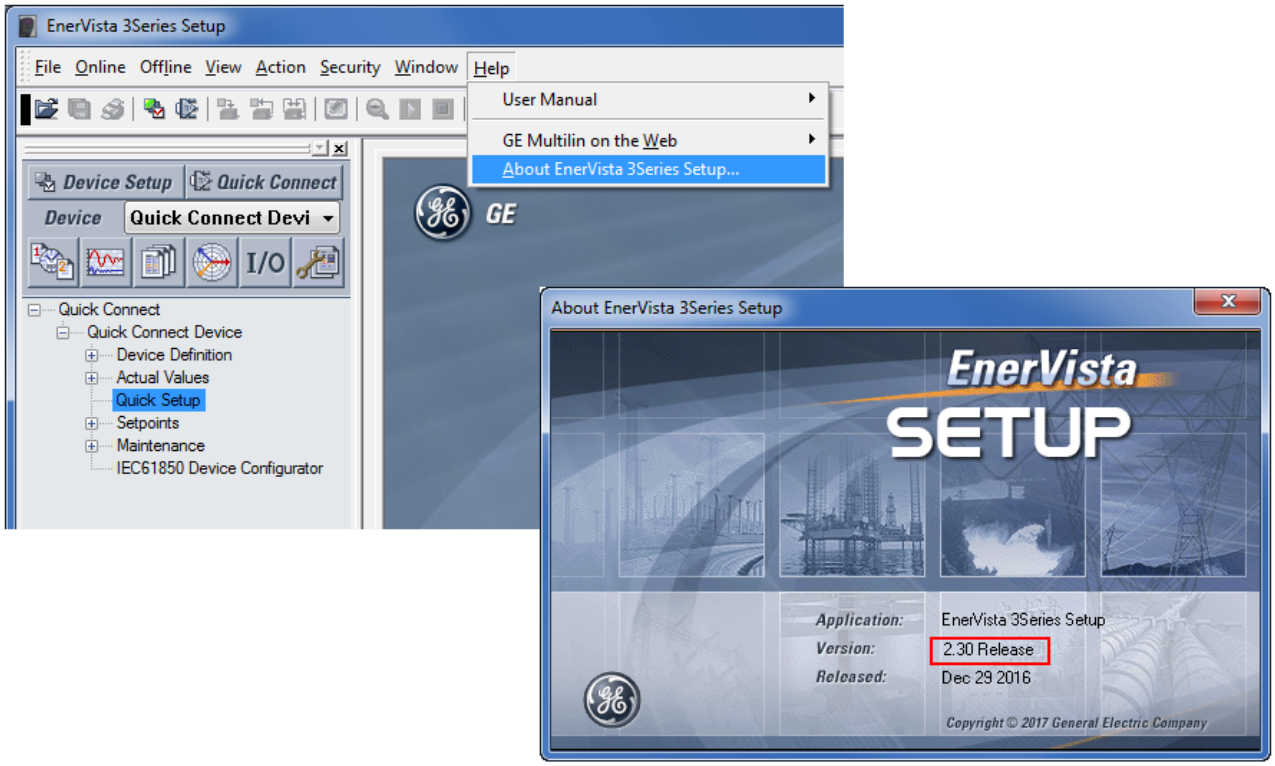
Connection



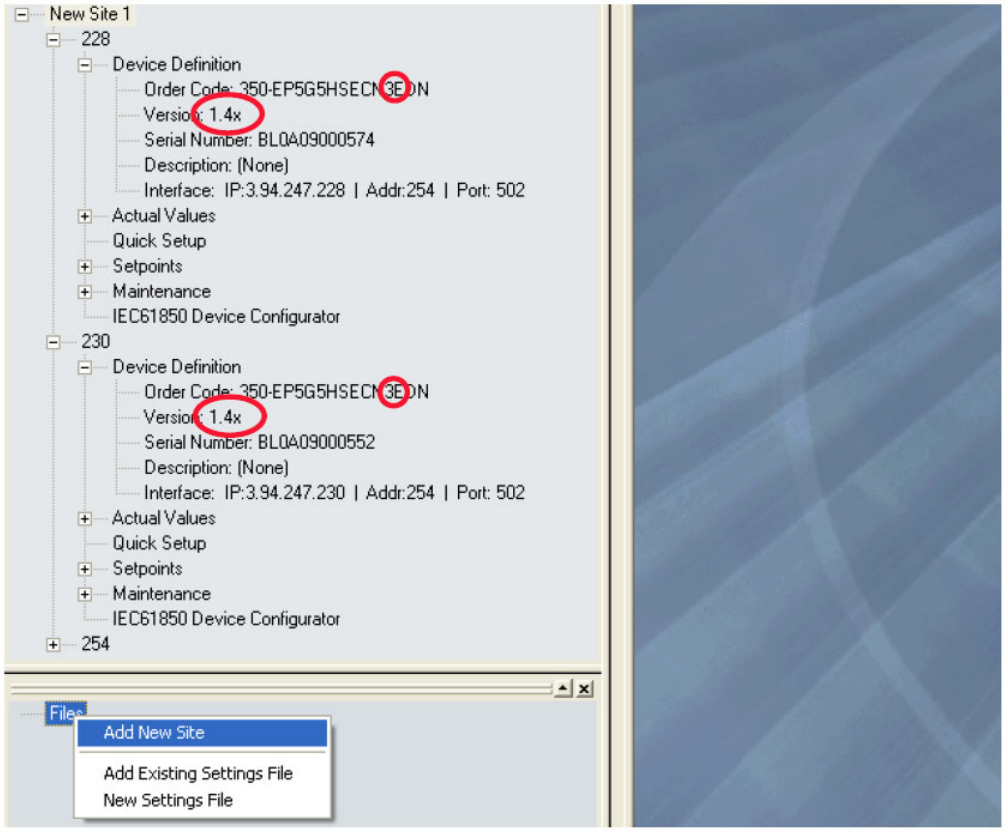
Once an IP address and subnet mask have been configured within each relay, and the power cycled, the relays can be connected though a switch to the computer running the EnerVista 3 Series Setup software.

Configuration

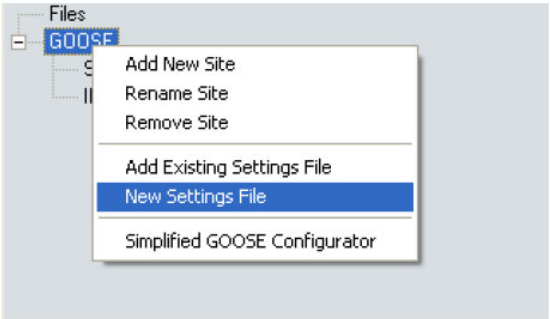
Launch the EnerVista 3 Series Setup software, and using the help menu, ensure that the EnerVista 3 Series Setup software is version 1.41 or higher. If it is not, go to the GE Multilin website and download the latest copy of the EnerVista 3 Series Setup software before proceeding. .



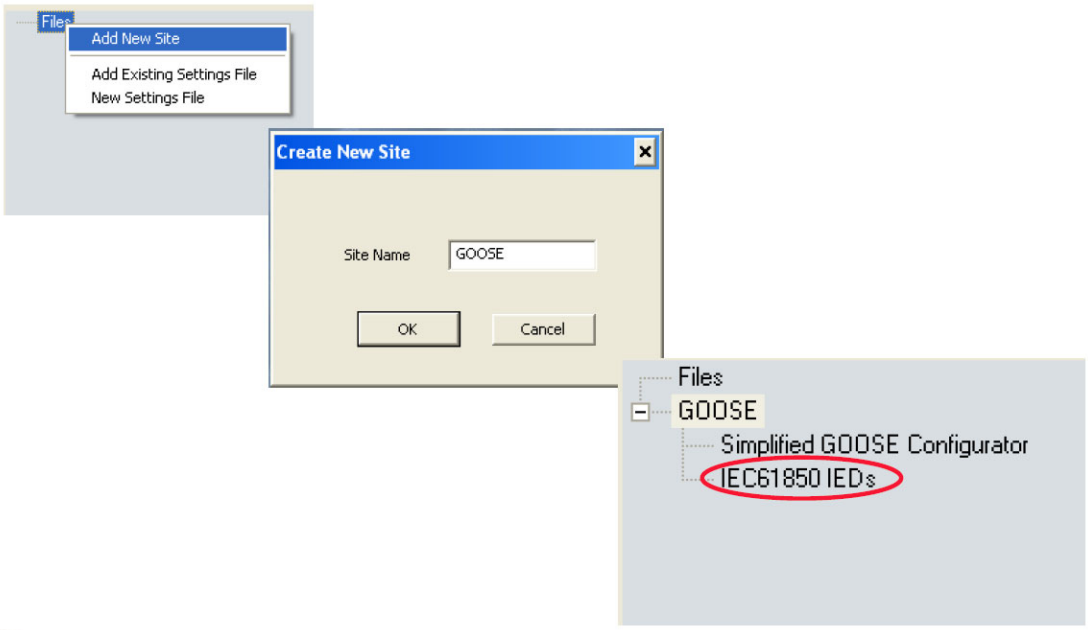
1. **CONFIGURE THE RELAYS USING THE DEVICE SETUP MENU, ensuring the relay firmware is version 1.40 or higher and that the relay includes either the 2E or 3E option in its order code.**



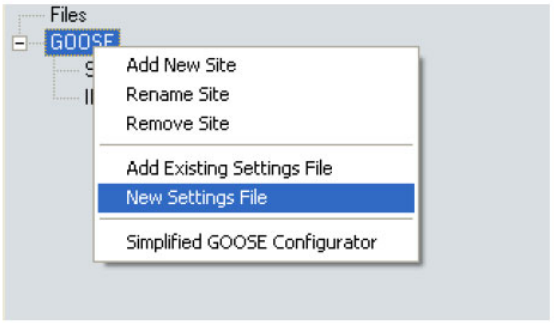
2. **CREATE AN OFFLINE SITE AND ADD THE DEVICE SETTINGS FILES**:
Note that an additional tree labeled **IEC61850 Devices** is also created. This is a place holder for non-3-Series CID files so that all project-related files can be located within one site.



2.1. **Right-click** the offline **File** tree and select **Add New Site** (see figure below). This selection will launch another window requesting the name of the new site. In our example, GOOSE was entered for the site name. Once the site name has been entered, selecting **OK** will create a new site in the offline window with a name corresponding to that which was entered.



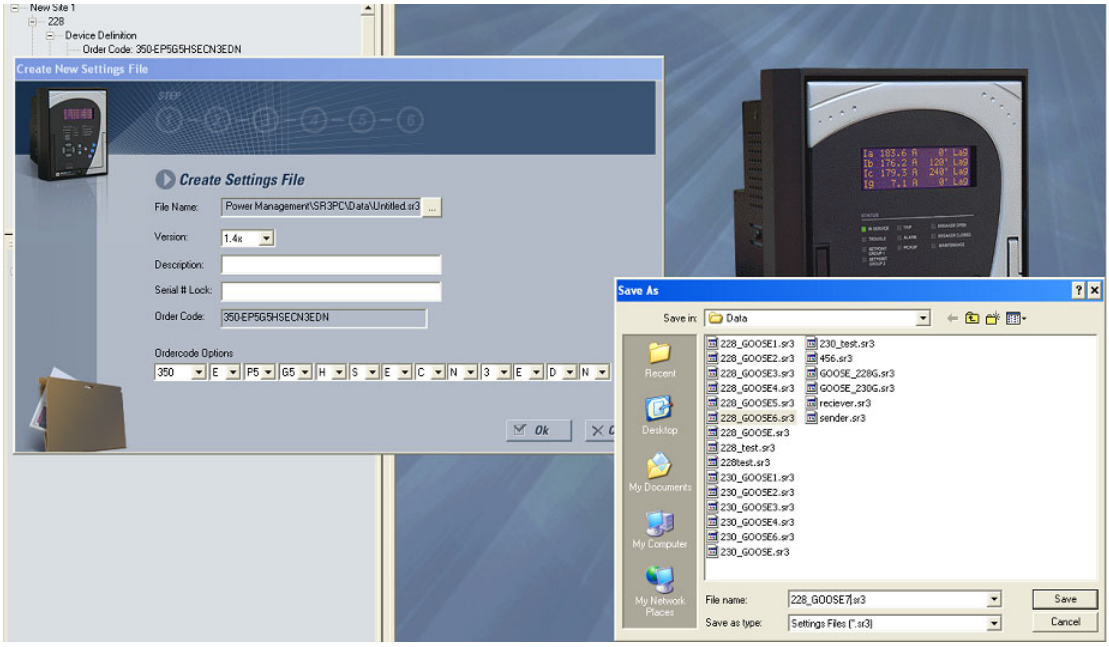
Note that an additional tree labeled **IEC61850 Devices** is also created. This is a place holder for non-3-Series CID files such that all project-related files can be located within one site.



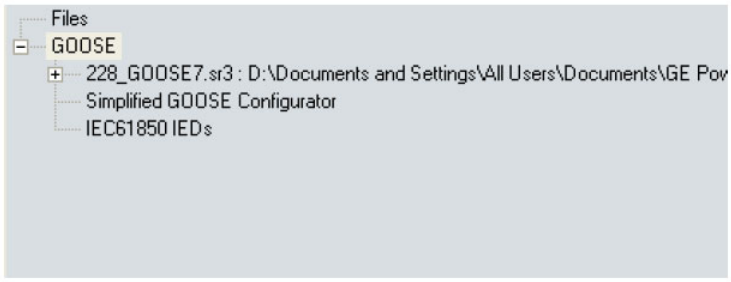
2.2. **Right-click the offline site named GOOSE** (see above figure). You will see several selections:

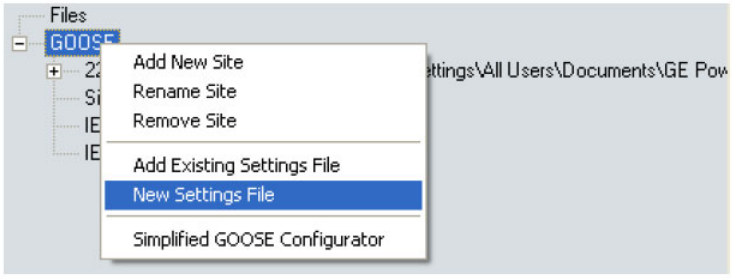
- **Add New Site:** This selection will add a new site to the root of the offline tree.
- **Remove Site**: This selection removes the site and settings files branches from the offline settings file list.
- **Rename Site**: This selection renames the site name:
- **Move Settings File**: This selection allows the user to move a settings file from one site to another.
- **Simplified GOOSE Configurator**: This selection launches the Simplified GOOSE Configurator for the given site branch. The feature will be grayed out if the highlighted item is not a site name or settings file within a site branch. Therefore

any settings file off the root of the offline tree will not be considered for this feature.



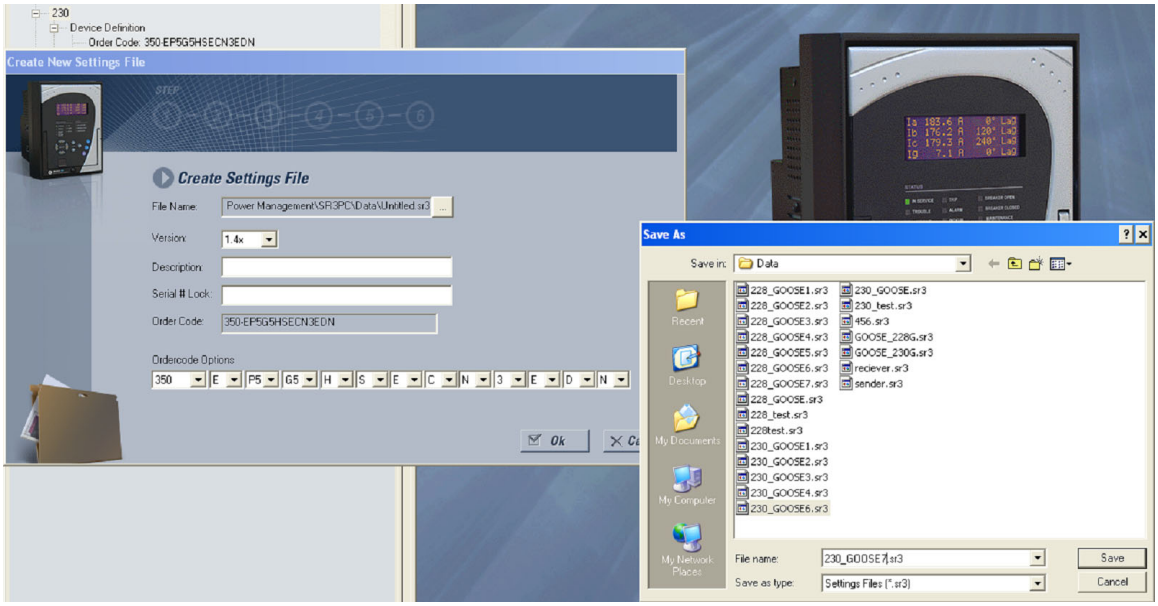
2.3. **Select New Settings File and enter the order code of the first relay.**



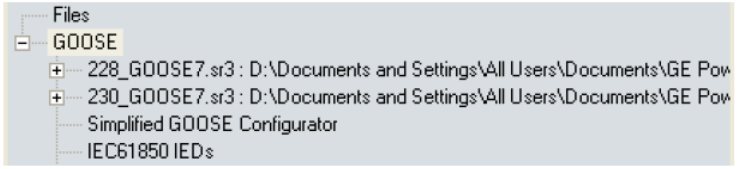


Note that the setting file name 228_GOOSE7 now appears under the site GOOSE.

2.4. Using the browser select the name (in this case 228_GOOSE7) and location of the offline settings file. Once entered select **Save**, then **OK**.

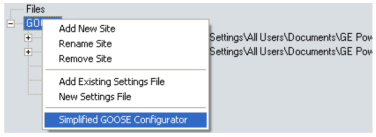


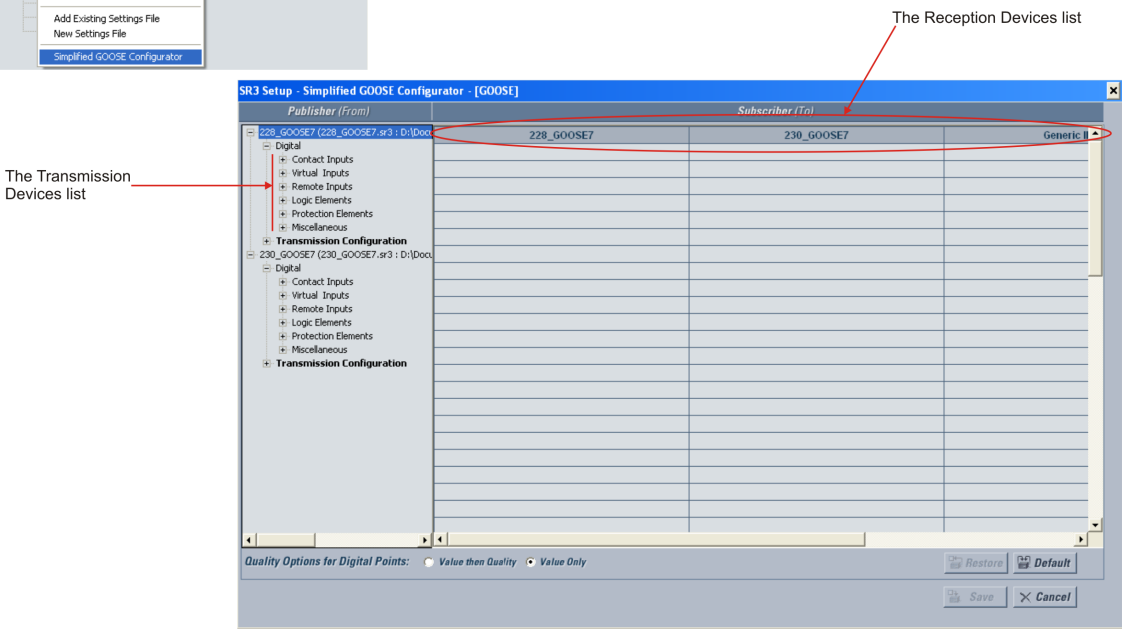
2.5. **Repeat this process to enter the second setting file** (using the name 230_GOOSE7), then again select **Save** and **OK**.



Both settings files should now appear under the offline site **GOOSE**.

3. **LAUNCH THE SGC TOOL AND CONFIGURE THE TRANSMISSIONS**:





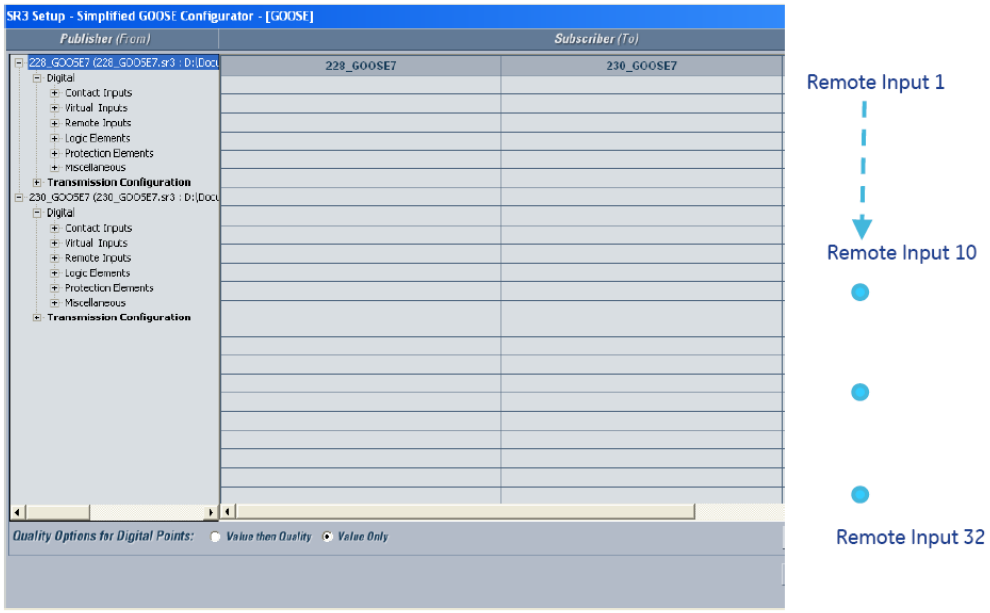
Now that we've created the offline settings files for our relays it is time to launch the Simplified GOOSE Configurator (SGC) tool.

3.1. **Right-click** the site GOOSE, then **select Simplified GOOSE Configurator** to launch the SGC tool.

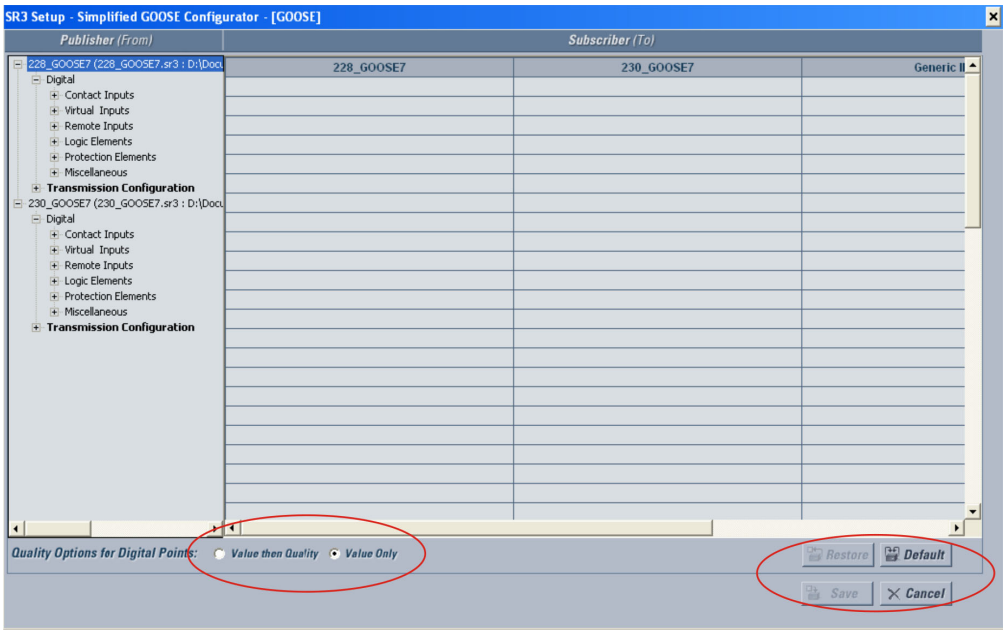
When the SGC tool is launched, a screen will appear that displays a grid. The first column of this grid contains the transmission device list and the first row contains the reception device list.

For the reception row, the second column and those to the right will correspond to one of the devices in the site list. Each of these columns has 32 cells which represent the digital information that each device will be receiving, and the associated remote input. The last column will always be used as a placeholder for a non-3-Series device (Generic IED). This will allow the user to select data items that do not map to any 3 Series device but will be used by other devices. Any data items found in this column will not be saved to a device; it is used only to build the transmission data set in the transmitting 3 Series relay. To make the configuration easy, we allow the user to drag and drop items from the transmission tree to the corresponding column of the device that will receive the information.

When we expand each device within the transmission column, we will see a tree similar to what we have in the offline tree.



Again each reception device column has 32 entries corresponding to the 32 remote inputs of this device into which the associated status information is mapped.



At the bottom of the screen there is a selection to determine if quality bits are to be included with the value. Users have an option to Enable/Disable Quality here. In our example application we are going to send just the status of Virtual Input 1 from the relay labeled 228 to the relay labeled 230, so the **Value Only** selection will be made by clicking on that portion of the screen.

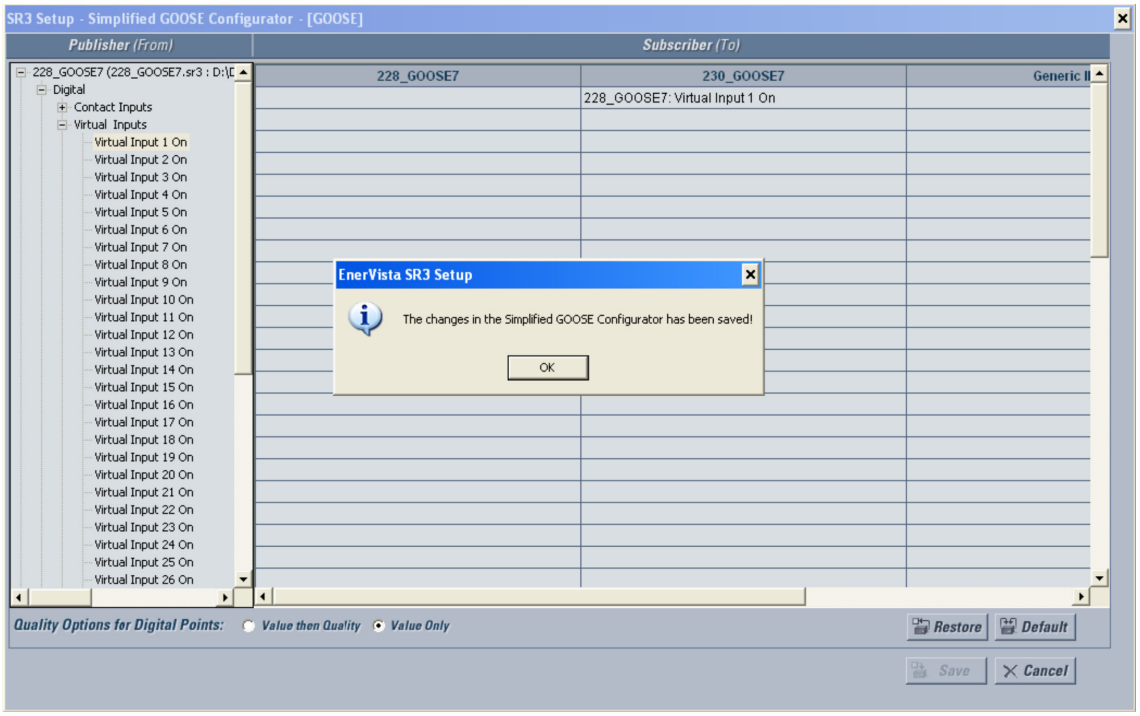
Also located at the bottom of the screen are the icons the restore Restore and Default:

- **Restore** if selected will restore the screen to the last save position
- **Default** if selected will set all the screen information to default values.

To configure Relay228_GOOSE7 to transmit Virtual Input 1 proceed as follows:

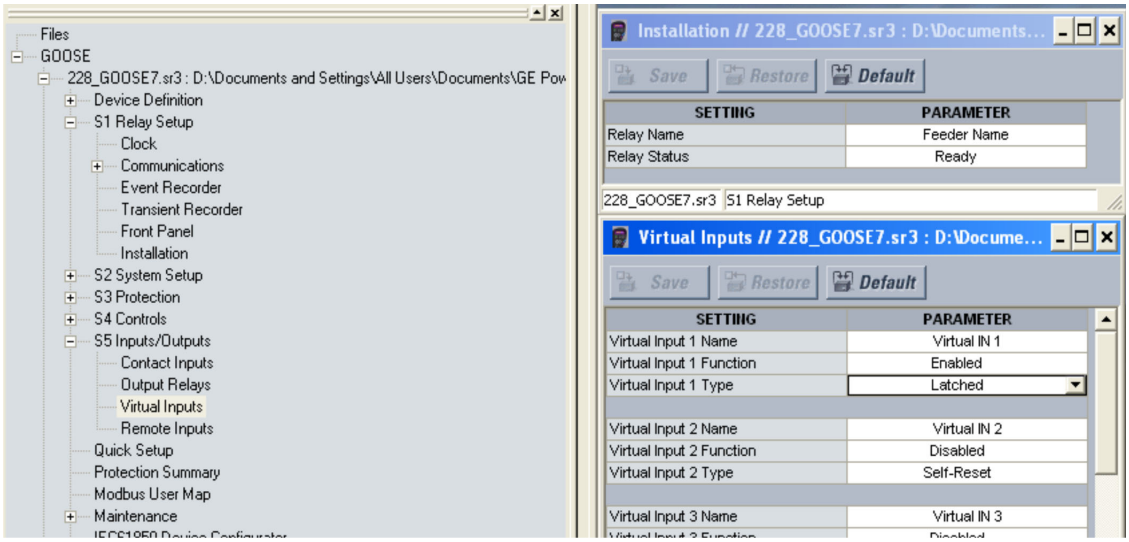
NOTE

The simplified GOOSE Configuration Tool required all settings files to be present before launching the tool. If at a later date settings files need to be added or removed, the above process must be repeated from the beginning.

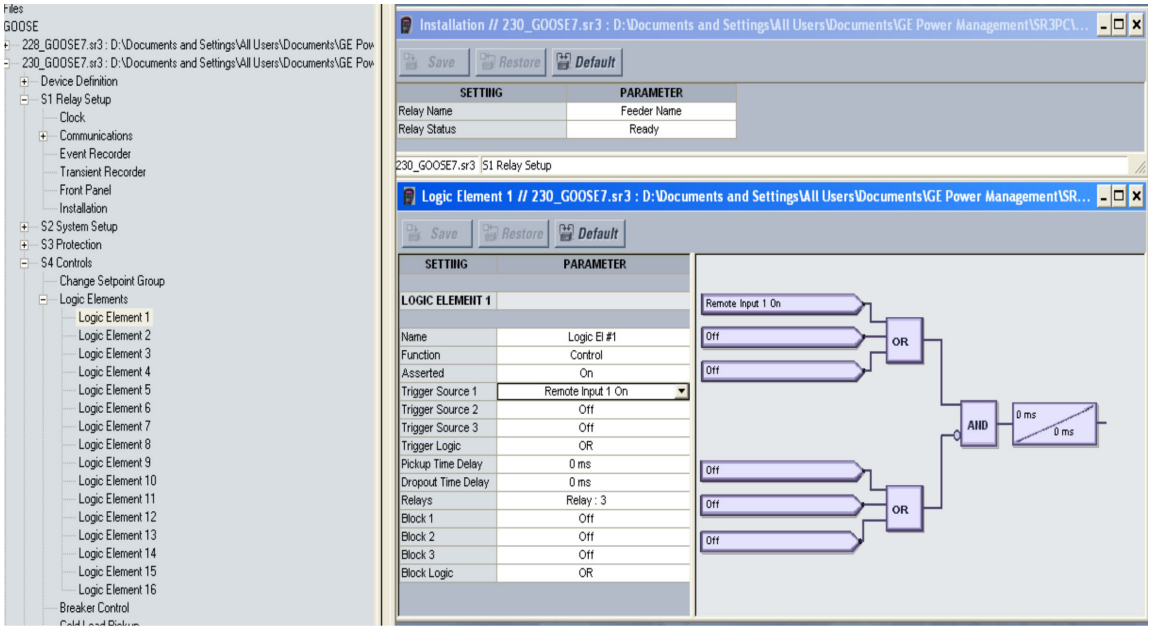


3.2. In the **Transmission Device** column expand the tree of 228_GOOSE7 such that Virtual input 1 is displayed. **Left-click Virtual Input 1** in the Transmission Device column and drag this point into the relay(s) that are to receive the status of this point.

In our example we would **left-click Virtual Input 1** and drag it into the **Reception** column corresponding to the relay labeled 230_GOOSE7. In this case we dragged Virtual Input 1 from the relay labeled 228_GOOSE7 into the first row of relay 230_GOOSE7. This position corresponds to Remote Input 1. This is the process that is used to configured both the transmission and reception. Once the configuration is complete, select **Save**. The SGC program then takes the information within the screen and determines how to set up the transmission and reception list for each device.

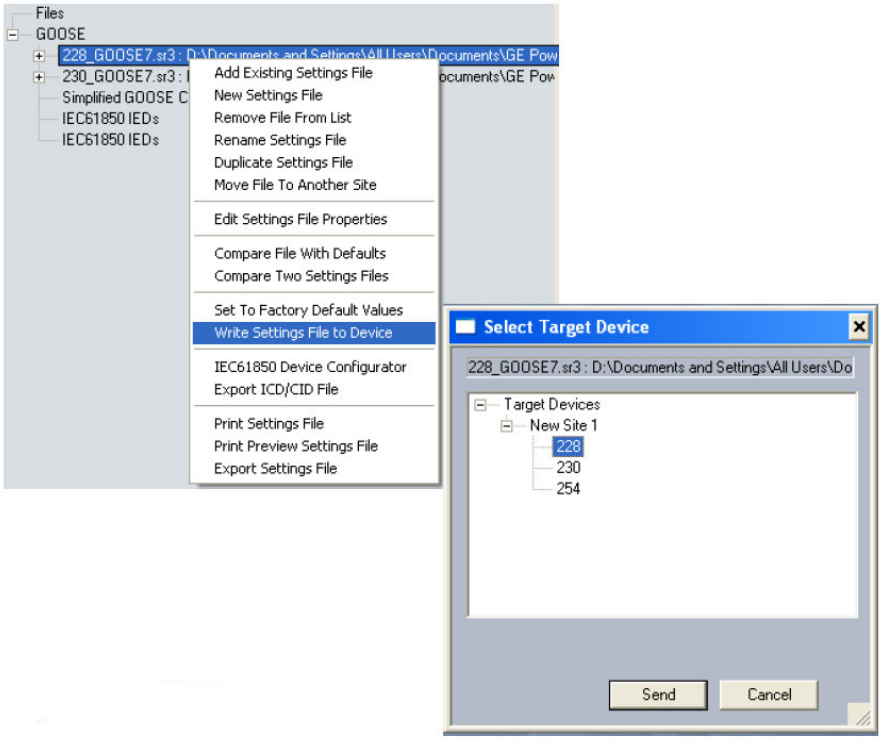


3.3. Before the final step of downloading the settings to each relay, we need to enable the Virtual Input within 228_GOOSE7 such that we can change its status.

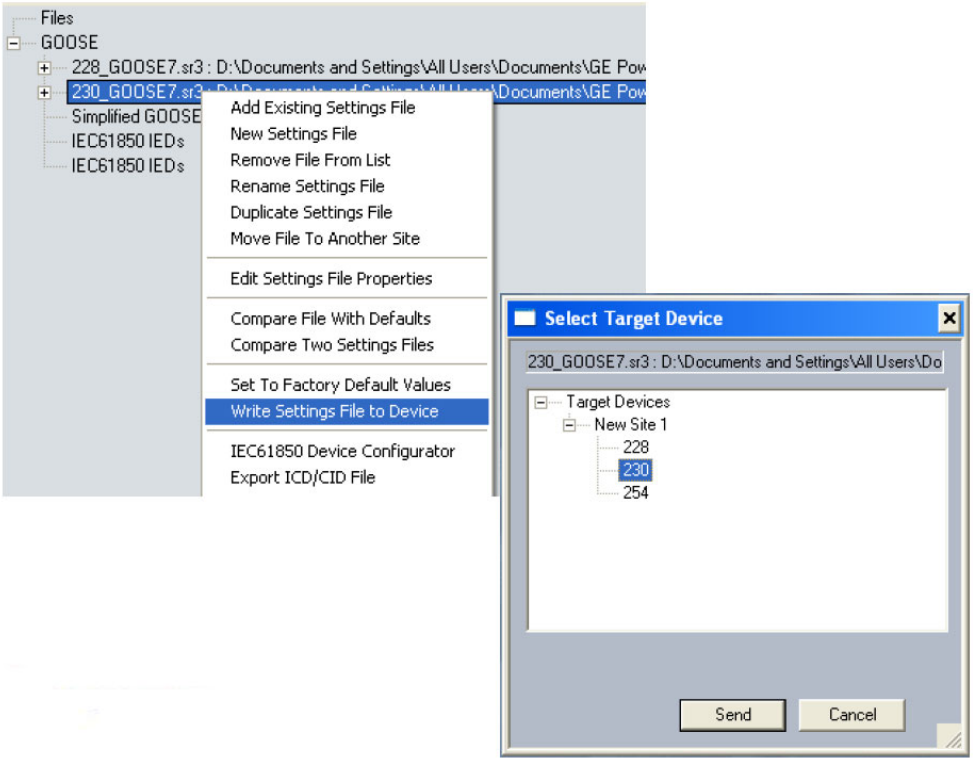


3.4. Since Remote Input 1 of 230_GOOSE7 will receive the status of the Virtual Input of 228_GOOSE7, we must configure a logic element within 230_GOOSE7 to use the status of Remote Input 1 to drive the status of Relay 3 as shown. Once these settings have been saved we can proceed to the next step: downloading the offline Settings files to the relays.

4. **DOWNLOAD THE SETTINGS FILES TO THE ASSOCIATED RELAYS**

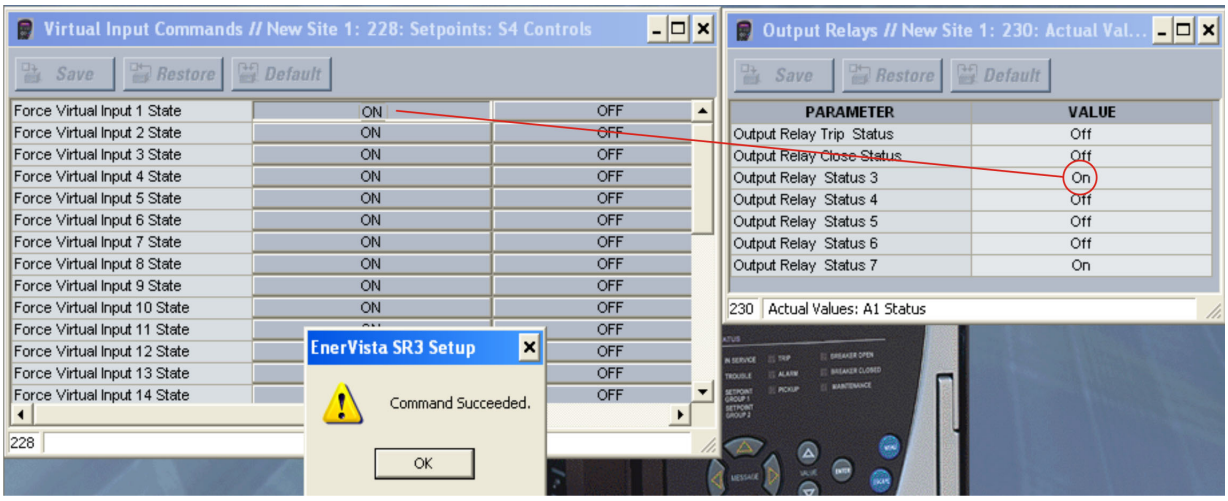


4.1. **Right-click** the settings file labeled 228_GOOSE7 and select **Write Setting File to Device**. This action launches a second window showing all devices configured for the online window. To start the download process to Relay 228, click Relay 228 such that it is highlighted, then select **Send**.



4.2. Once the download is complete, repeat the process for the setting file labeled 230_GOOSE7 and relay 230. At this point the GOOSE messaging configuration is complete.

4.3. To test the GOOSE messaging first, open the **Virtual Input Commands** window of Relay 228, then under 230's Actual Values branch, open the Output Relays window.



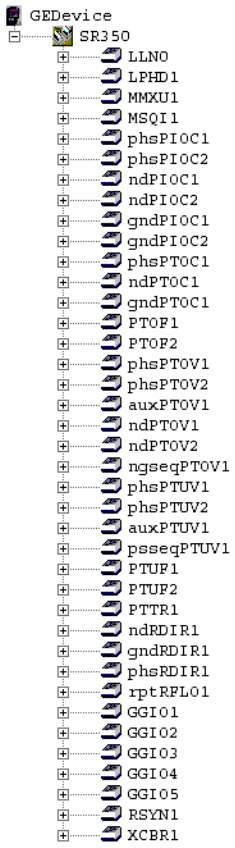
Force Virtual Input number 1 of 228 on or off and monitor the status of Relay 3 in Relay 230. Note that the status of Relay 3 follows the status of Virtual Input 1 of Relay 228.

This completes the exercise.

Using the IEC 61850 configurator

Introduction to the 3 Series IEC61850 Device Configurator

The 3 Series family of relays supports the IEC61850 GOOSE messaging service.



This service offers 3 Series relays the ability to exchange digital and analog information with other relays supporting the same service, at speeds suitable for protection. The configuration of GOOSE messaging within the 3 Series family of relays can be accomplished in one of three ways:

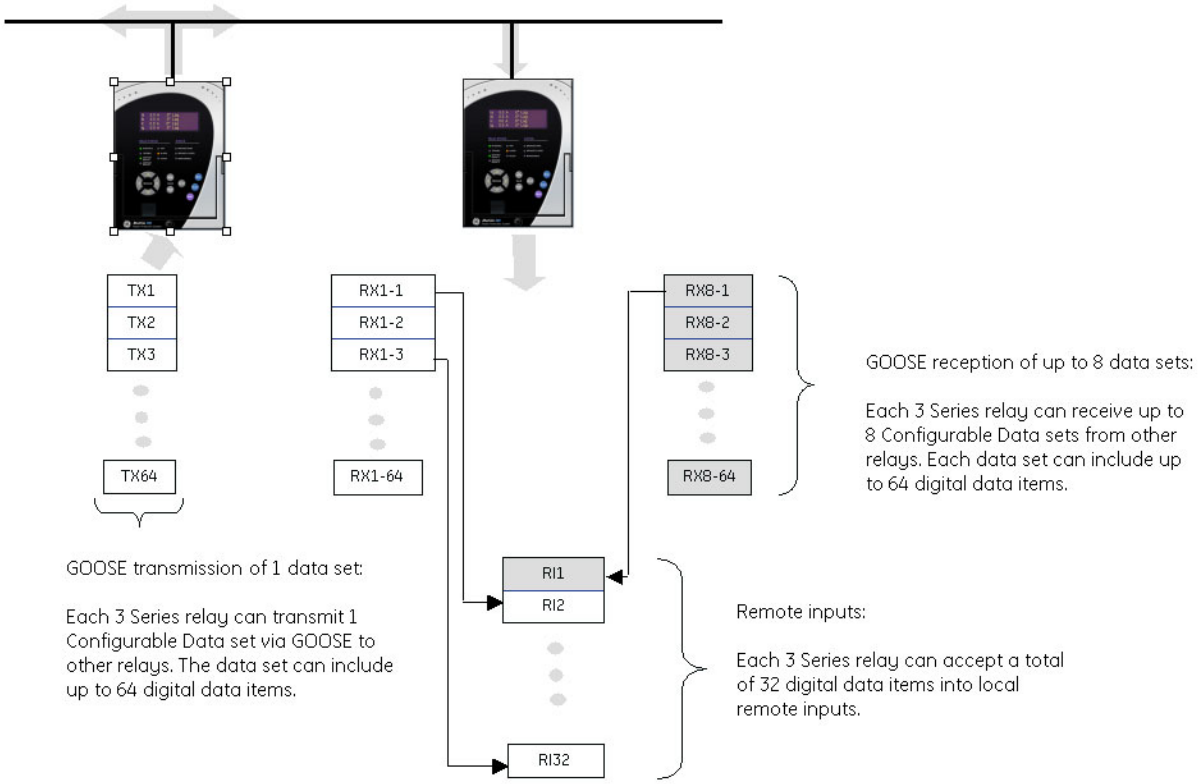
1. For those users familiar with both the 3 Series configuration menus and IEC61850 implementation within the 3 Series, they may prefer to configure the relays directly through the 3 Series menus if the GOOSE messaging is restricted to the exchange of digital point status.
2. For those not familiar with 3 Series IEC61850 implementation and/or the 3 Series menus, the above 3 Series Simplified GOOSE Message tool may save time and effort, and is again restricted to the exchange of digital status information.
3. The 3 Series IEC61850 Device Configurator may be used with 3 Series relays supporting the "3E" option and itself supports the configuration of both digital and analog items for transmission.

This section of the Communications Guide deals with configuration of GOOSE messages via the 3 Series IEC61850 Device Configurator.

NOTE

An Ethernet connection is required for programming relays using the IEC61850 Device Configurator; connecting to the relay via USB is not recommended.

For details on establishing an Ethernet Connection please refer to "SR3 GOOSE configuration - Lab".



3 Series GOOSE implementation

Before we proceed we will review the 3 Series IEC61850 implementation. The 3 Series family of relays can receive and transmit both digital and analog information. However, currently only digital status information received via GOOSE can be used within the 3 Series relays.

Transmission data block

Each 3 Series relay has one GOOSE transmission data block consisting of up to 64 data items. Once configured, this block is transmitted at power-up, on a pre-configured time basis (ranging from 1 to 60 seconds) and within a window of 4 to 10 ms after a digital point within the data block has changed state.

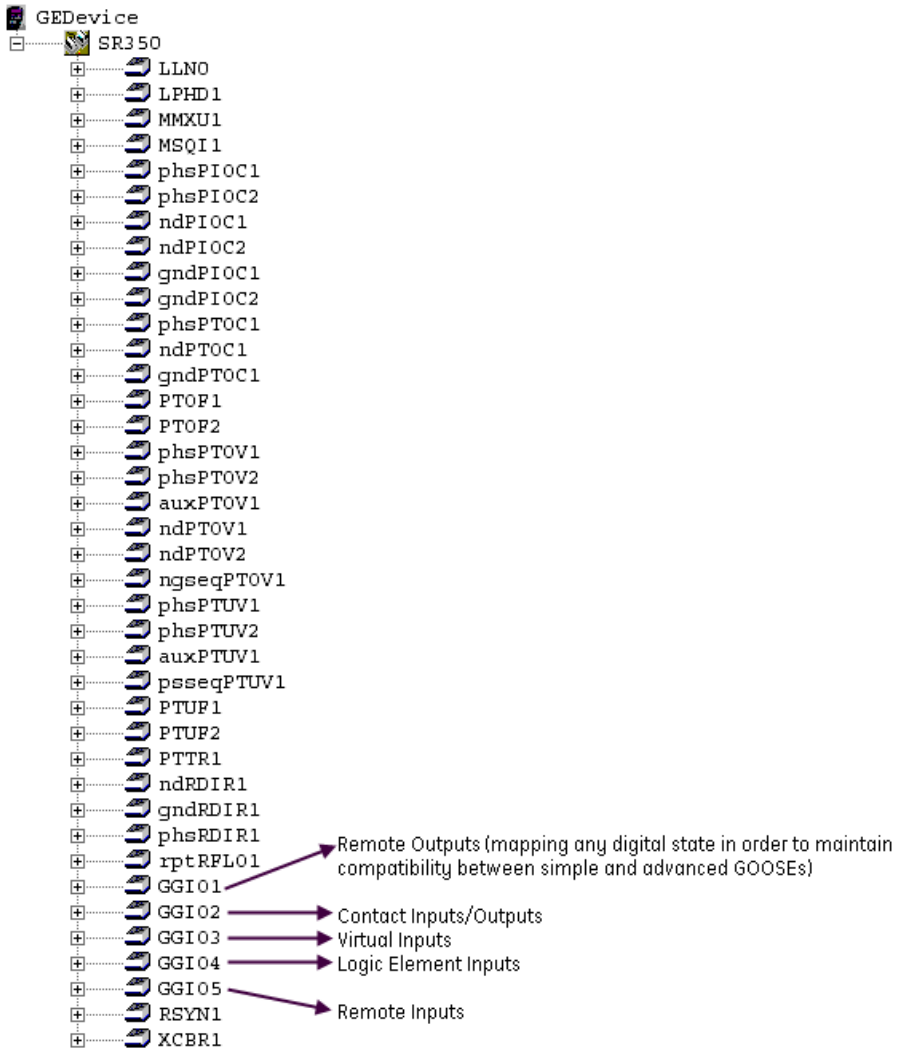
Reception data blocks

Each 3 Series relay has eight GOOSE receive data blocks. Each receive data block consists of up to 64 data items and is configured to receive the transmission from a specific device on the network. Received digital status information from any of the eight receive data blocks is mapped into the local relay's 32 remote digital input locations such that this status can be used by the local relay.

NOTE

The total number of items that can be received is affected by the number of GOOSE receives that have been configured, the type of data item, and by whether or not the quality is to be received with the item.

The 3 Series IEC61850 Device Configurator allows the user to build the GOOSE transmission by dragging and dropping digital and analog values from the 3 Series logical nodes directly into the GOOSE transmission message. The 3 Series IEC61850 logical nodes include five General Generic Input/Output logical nodes referred to as GGIO X where "X" represents an index (from 1 to 7 in the case of the 3 Series) used to differentiate between different GGIO logical nodes.

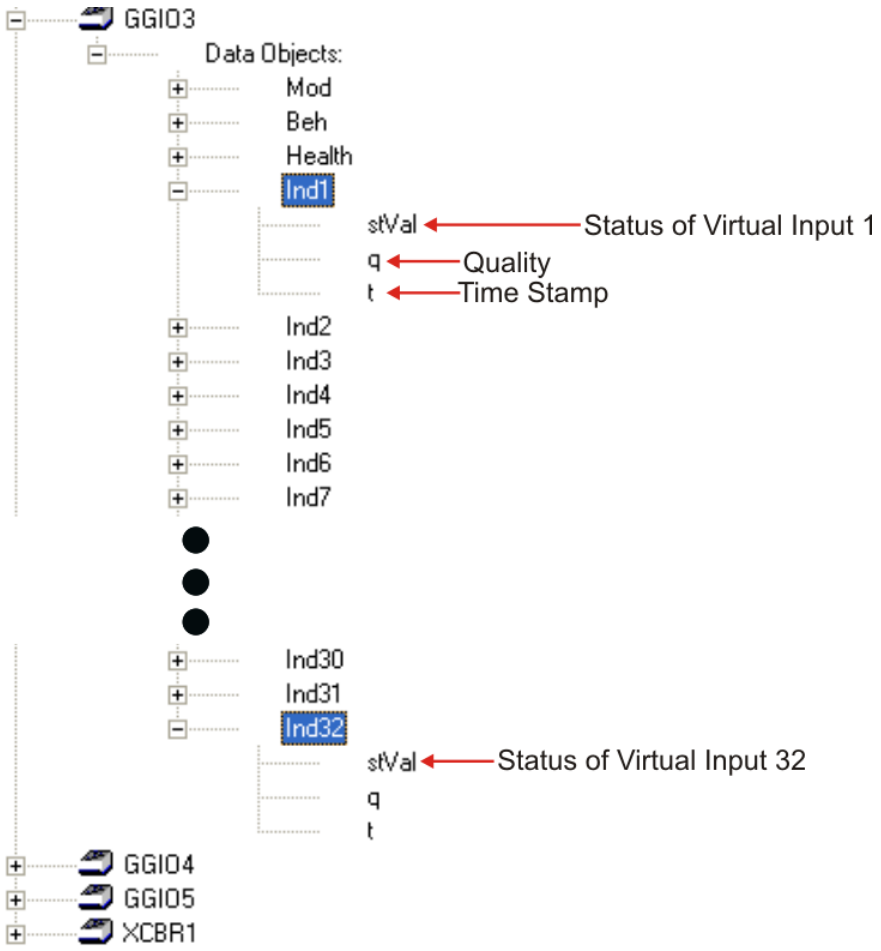


The 3 Series Contact I/O, and Virtual Inputs, and the status of Logic Elements are not data types defined within IEC61850. The GGIO logical nodes are used to map none IEC61850 data into IEC61850 as “general generic” data which is defined within the IEC61850 standard. The 3 Series Contact I/O, Virtual Inputs and the status of Logic Elements are mapped into GGIO2, 3 and 4 respectively.

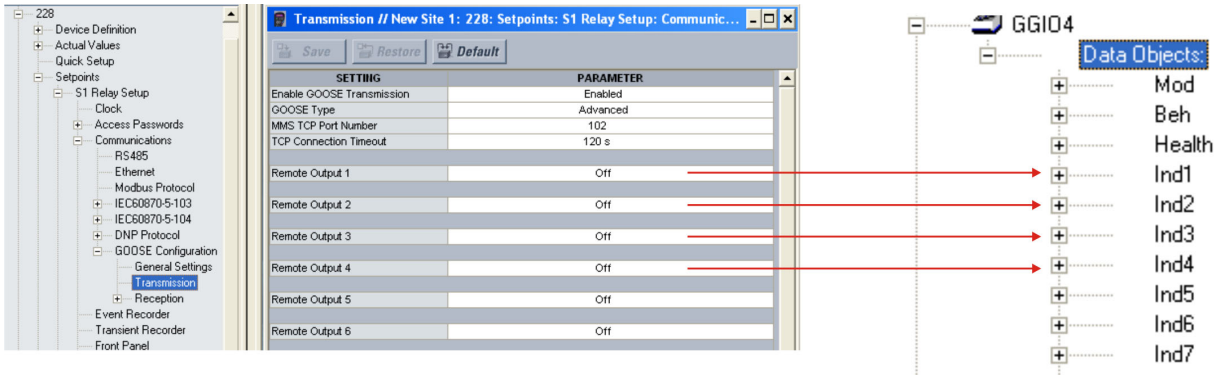
NOTE

Also available are GGIO7 (Analog Operands) and rtdGGIO6 (RTDs). See Appendix A for the complete IEC 61850 implementation.

Let’s take a moment to examine GGIO logical nodes further before moving on. We will take Virtual Inputs as our example:



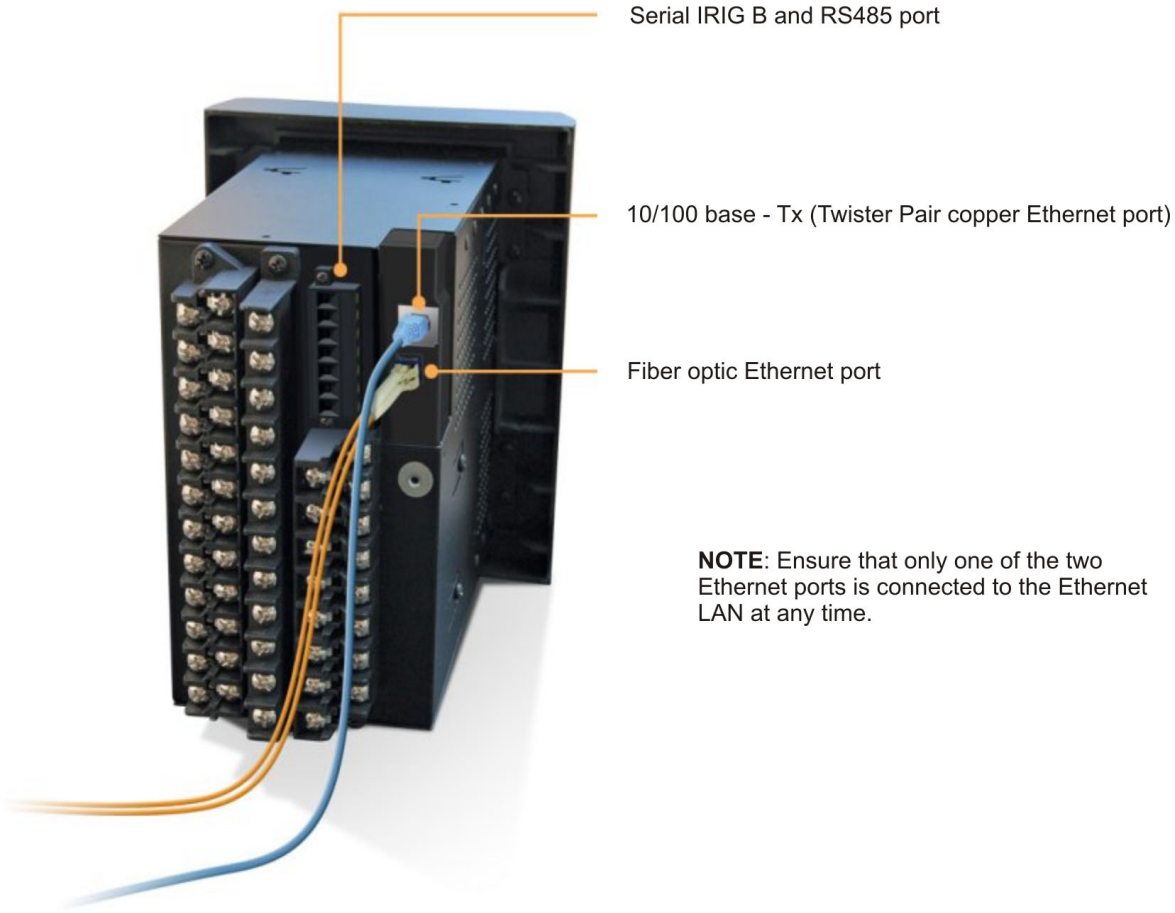
Within 3 Series relays there are 32 Virtual Inputs. The status of each of these 32 Virtual Inputs is automatically mapped into GGIO3 indication 1 through 32 within the stVal bit. In other words, each stVal bit within each indication, reflects the status of the corresponding Virtual Input. In addition to the individual digital status, each indication area contains a time stamp for the last change and an indication of the quality of the data. Within the EnerVista 3 Series Setup software, the user can drag and drop the stVal bit or other digital or analog values, from resident logical nodes into the GOOSE message in order to build the GOOSE message that this relay will eventually transmit.



GGIO5 contains the status of the remote inputs received by this relay while GGIO1 contains the status of the remote outputs configured under **Setpoints > S1 Relay Setup > Communication > Transmission**.

3 Series GOOSE configuration - Lab

This section explains how to setup GOOSE messaging between two relays using the 3 Series IEC61850 Device Configurator. Please note that only relay settings files with firmware version 1.41 or higher, with the 3E option, support this feature.

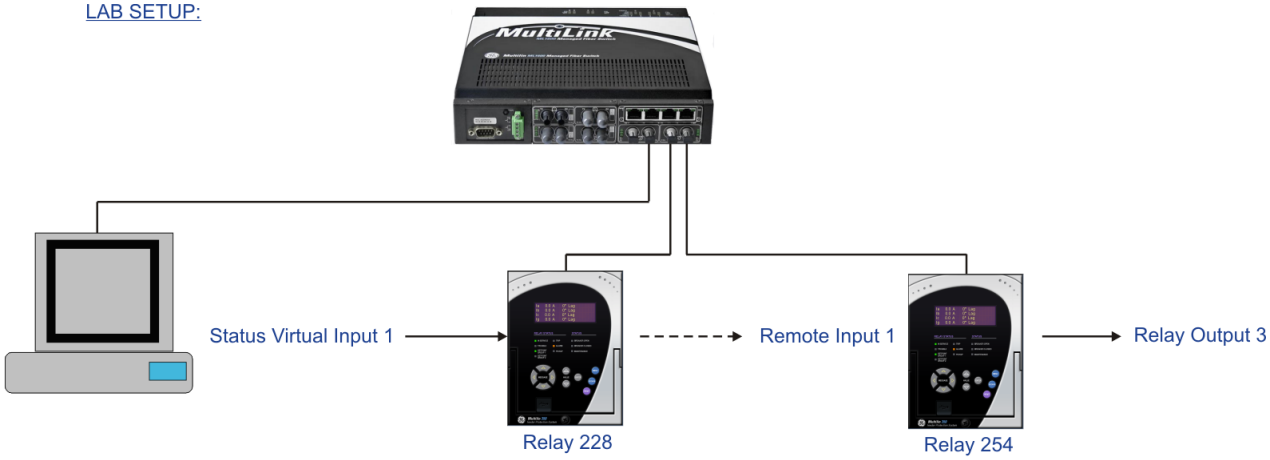


NOTE: Ensure that only one of the two Ethernet ports is connected to the Ethernet LAN at any time.

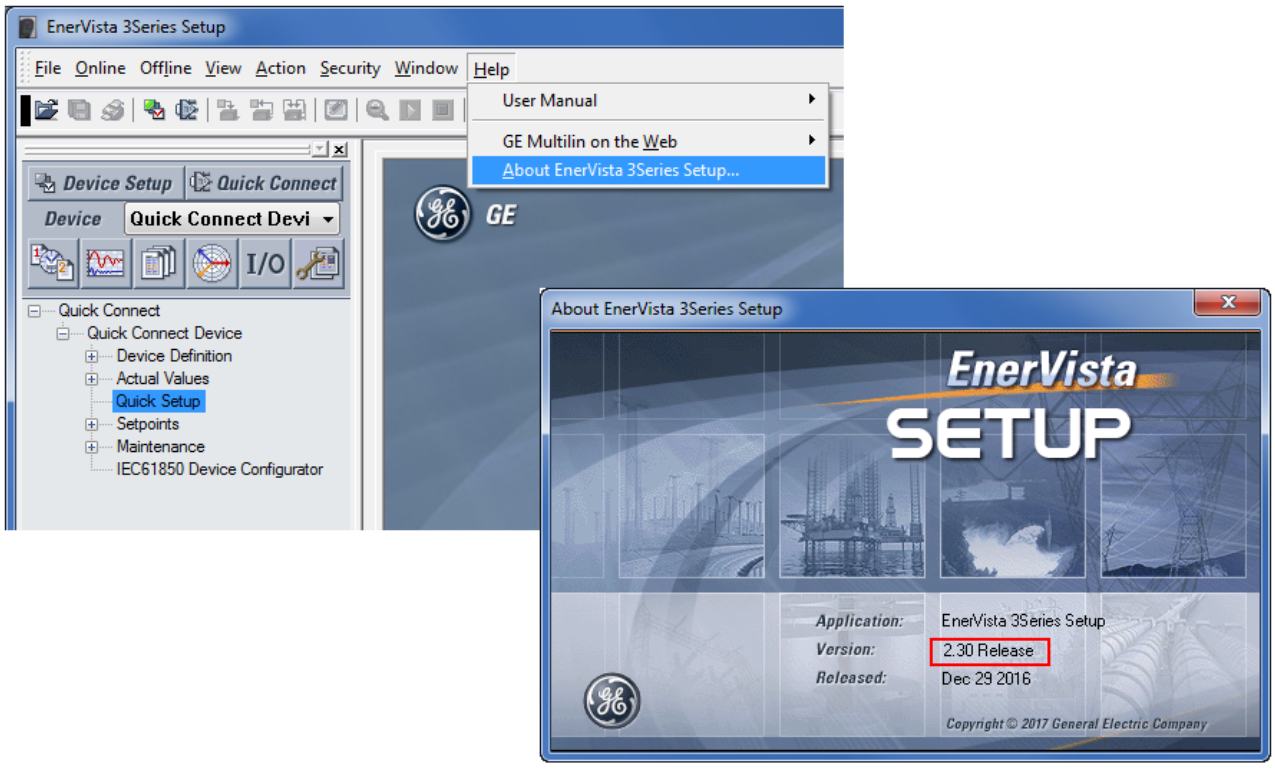
For simplicity, the objective of this exercise will be to demonstrate how to configure the 3 Series relay labeled 228 (using the 3 Series IEC61850 Device Configurator portion of the EnerVista 3 Series Setup software) to send a GOOSE message containing the status of Virtual Input 1 to the 3 Series relay labeled 254.

Once the IP address and subnet mask have been configured within each relay using the procedures outlined earlier in this guide, and the power to the relays cycled, the relays are ready to be connect though a switch to the computer running the EnerVista 3 Series Setup software. Please note that an IP address and subnet mask are not required for GOOSE messaging but are required to allow configuration of the relays via Ethernet.

LAB SETUP:

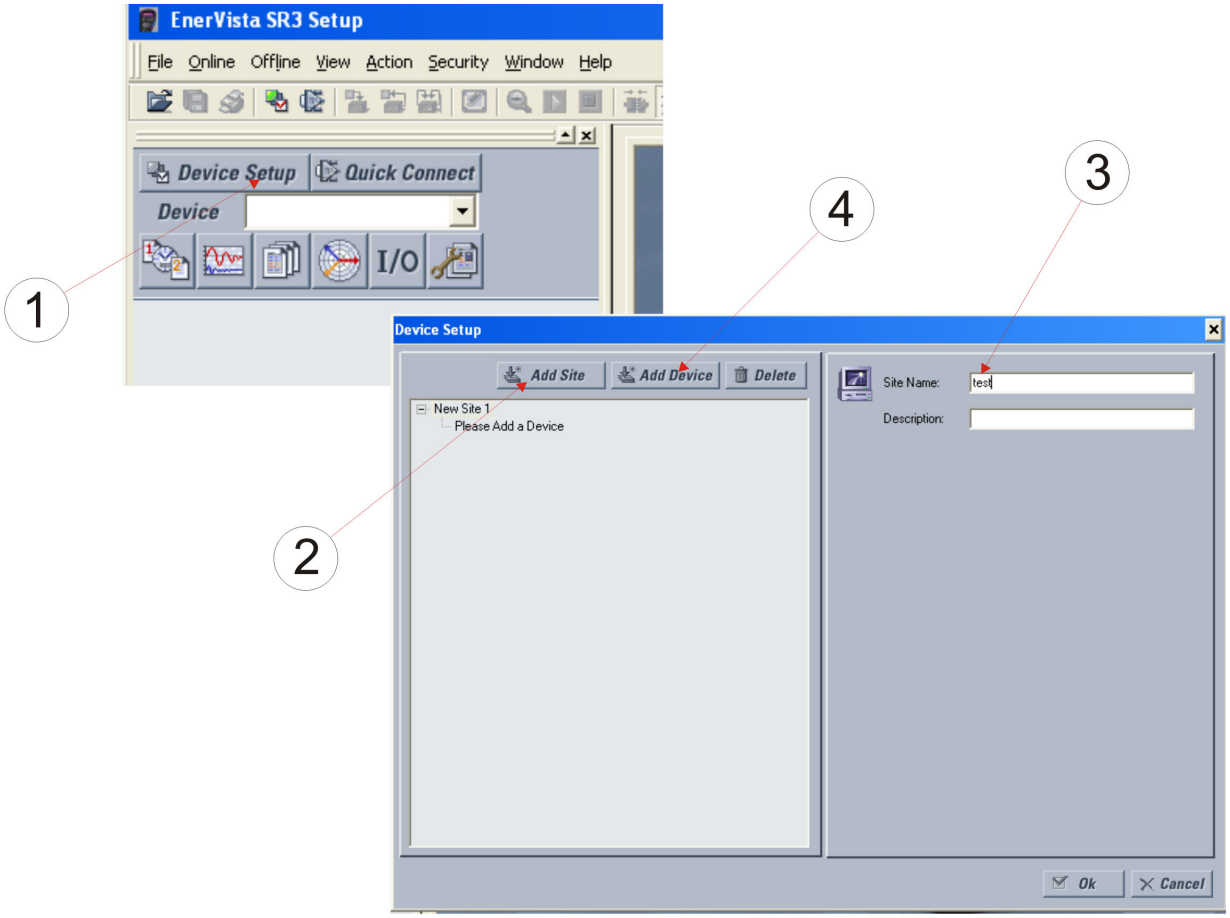


Launch the EnerVista 3 Series Setup software and using the Help menu, ensure that the EnerVista 3 Series Setup software is version 1.41 or higher. If it is not, go to the GE Multilin website and download the latest copy of the EnerVista 3 Series Setup software before proceeding.

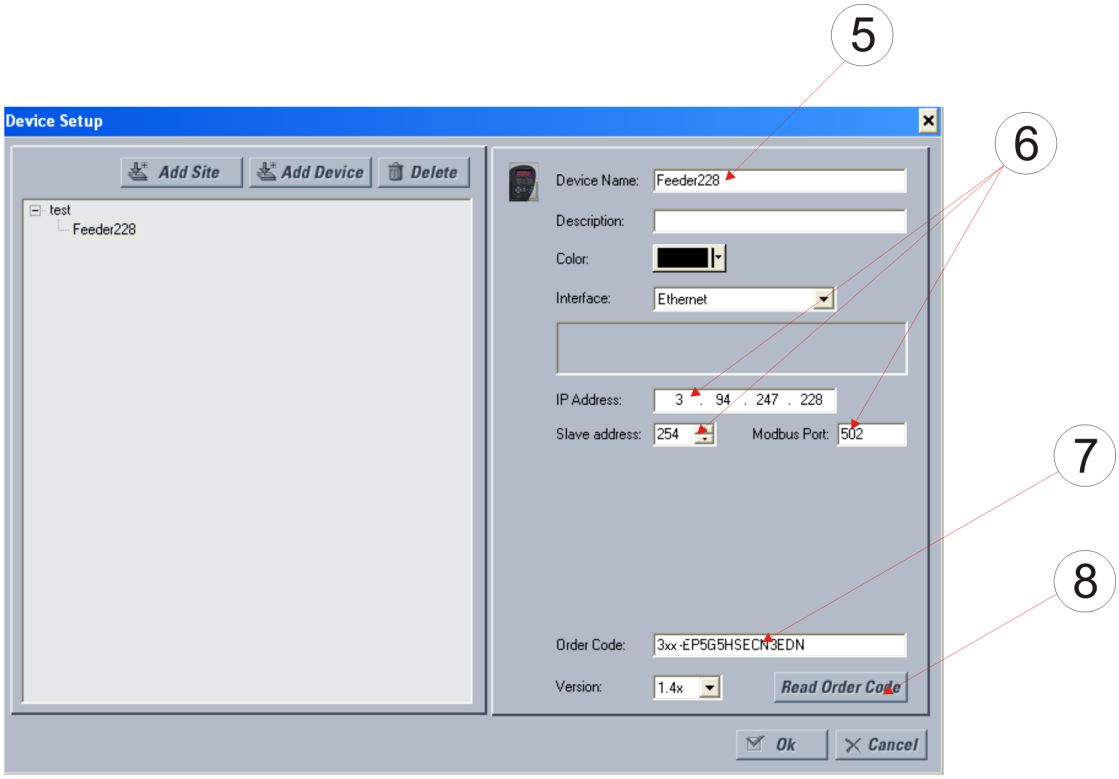


1. Configure both relays in the EnerVista 3 Series Setup software and set the GOOSE transmission of both relays to Advanced.
2. Configure relay 228's GOOSE transmission.
3. Configure relay 254's GOOSE reception.
4. Testing

Configuration lab steps



1. **Configure both relays in the EnerVista 3 Series Setup software and set the GOOSE transmission of both relays to Advanced.**
   Configure both 3 Series relays into the EnerVista 3 Series Setup application using the following procedure
   1.1. Launch the EnerVista 3 Series Setup software and select **Device Setup.**
   1.2. Select **Add Site.**
   1.3. Enter an optional site name.
   1.4. Select **Add Device.**

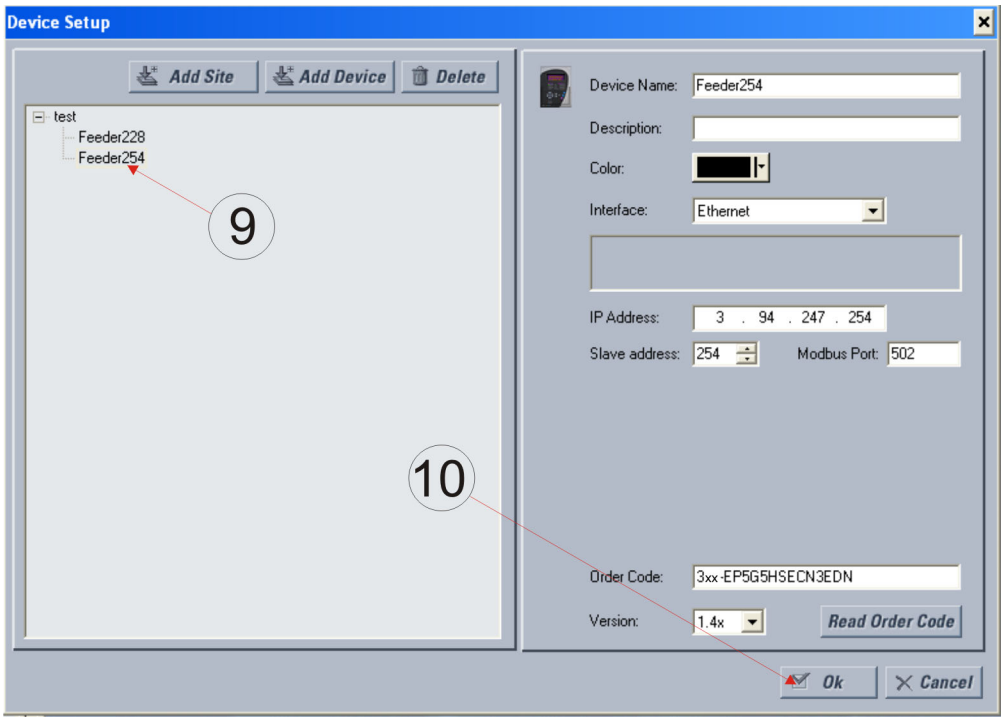


1.5. Enter an optional device name.

1.6. Set the interface to Ethernet and enter the first relays IP address, and Slave address.

1.7. To verify communications and ensure the correct order code is entered, select **Read Order Code.**

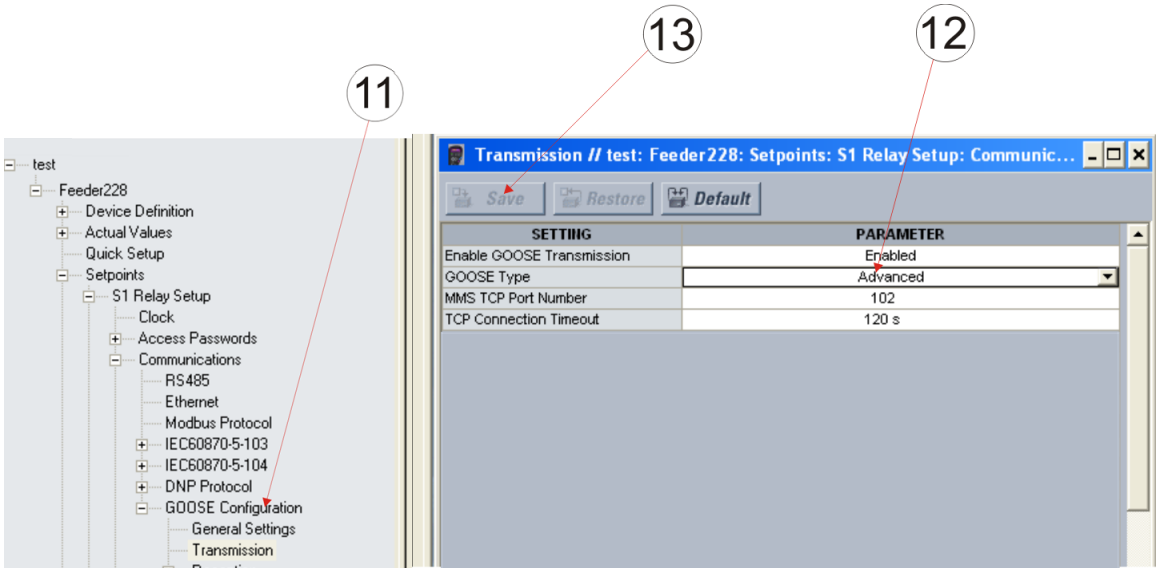
1.8. After a brief period of time the software program should read the relay's order code and fill it in within the work area. If the software fails to connect to the relay and read the order code, an error message will appear indicating that either the relay was not connected to the network correctly, or the IP address, subnet mask and/or the ModBus Slave address entered in the software does not match the relay. Troubleshoot accordingly.



1.9. Repeat for the second 3 Series relay.

1.10. Select **OK** to save the settings and return to the Main Menu.

- Before we can configure the relay using the IEC61850 Device Configuration tool we must set the GOOSE message transmission of both relays to **Advanced** as follows:



1.11. For relay 228, open **Setpoints > Communications > GOOSE Configuration > General Settings**.

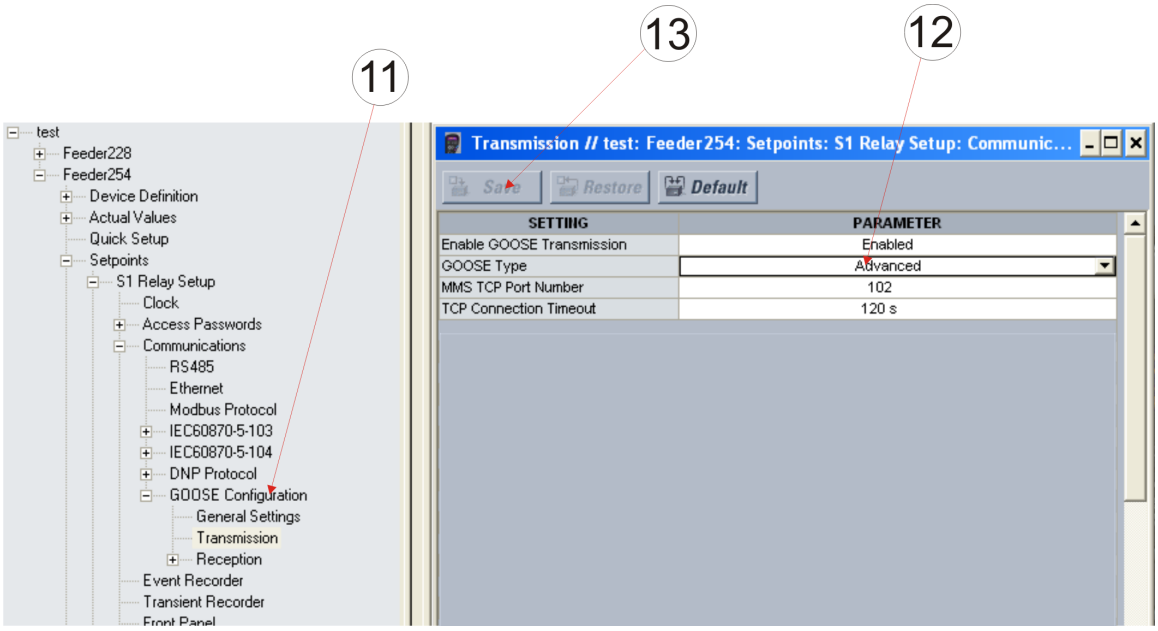
NOTE

For EnerVista 3 Series Setup software version 2.2x and earlier, this menu option is under Transmission instead of General Settings.

1.12. Set the GOOSE Type to **Advanced**.

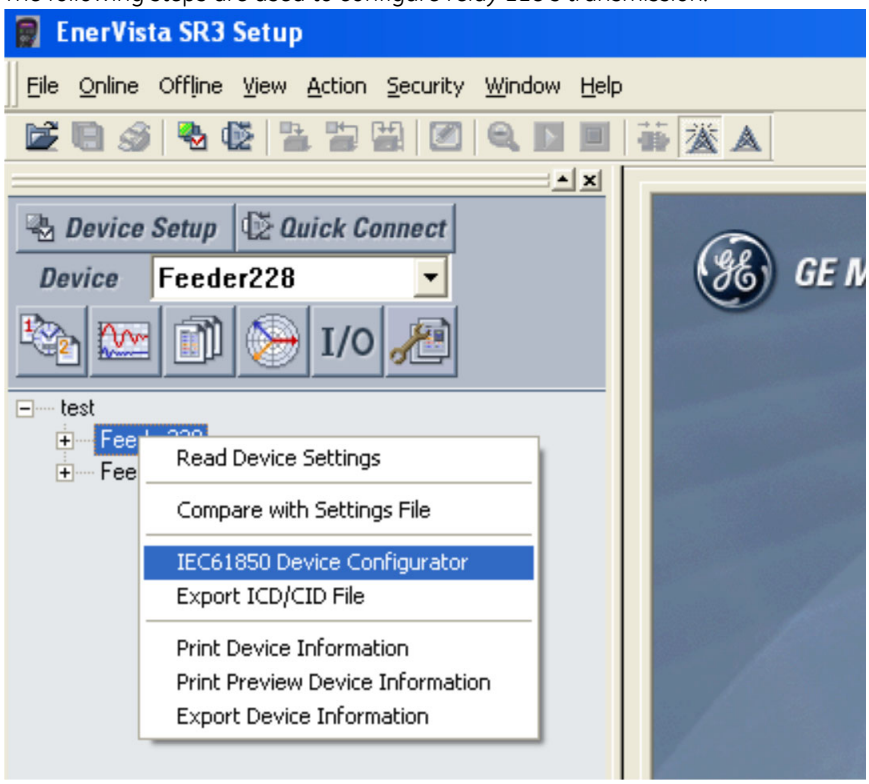
1.13. Select **Save.**

1.14. Repeat for Relay 254.

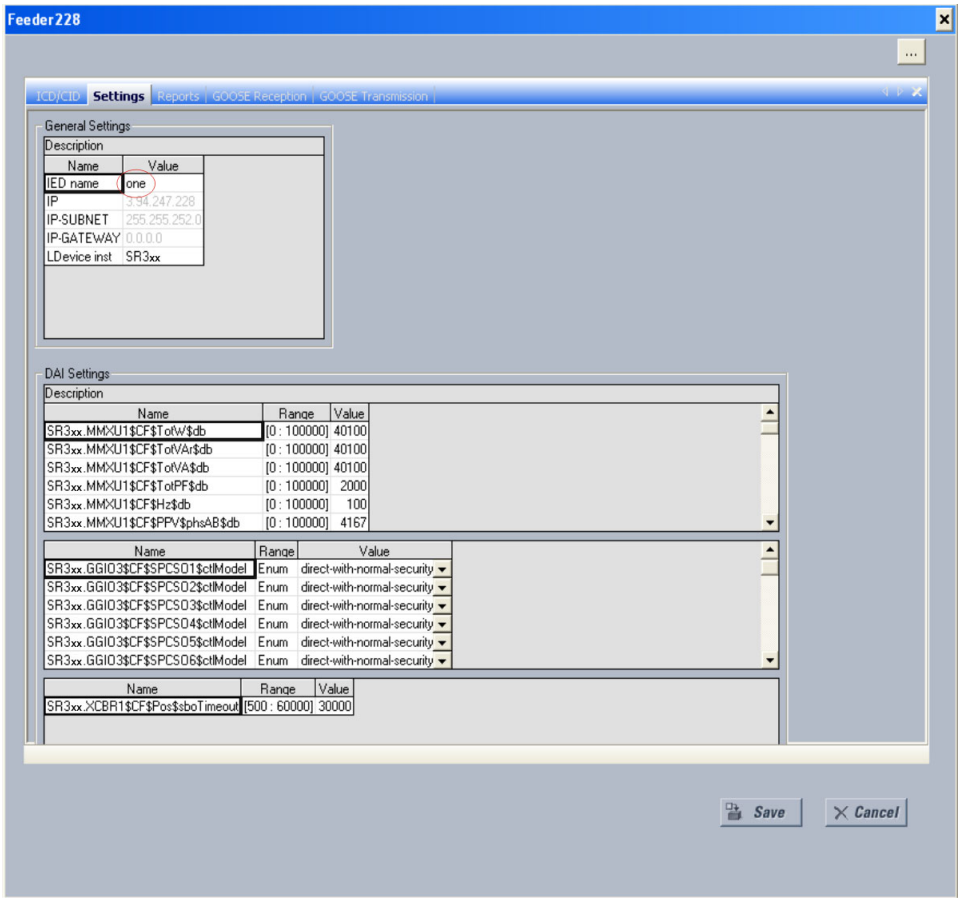


2. **Configure relay 228's GOOSE transmission**

The following steps are used to configure relay 228's transmission:

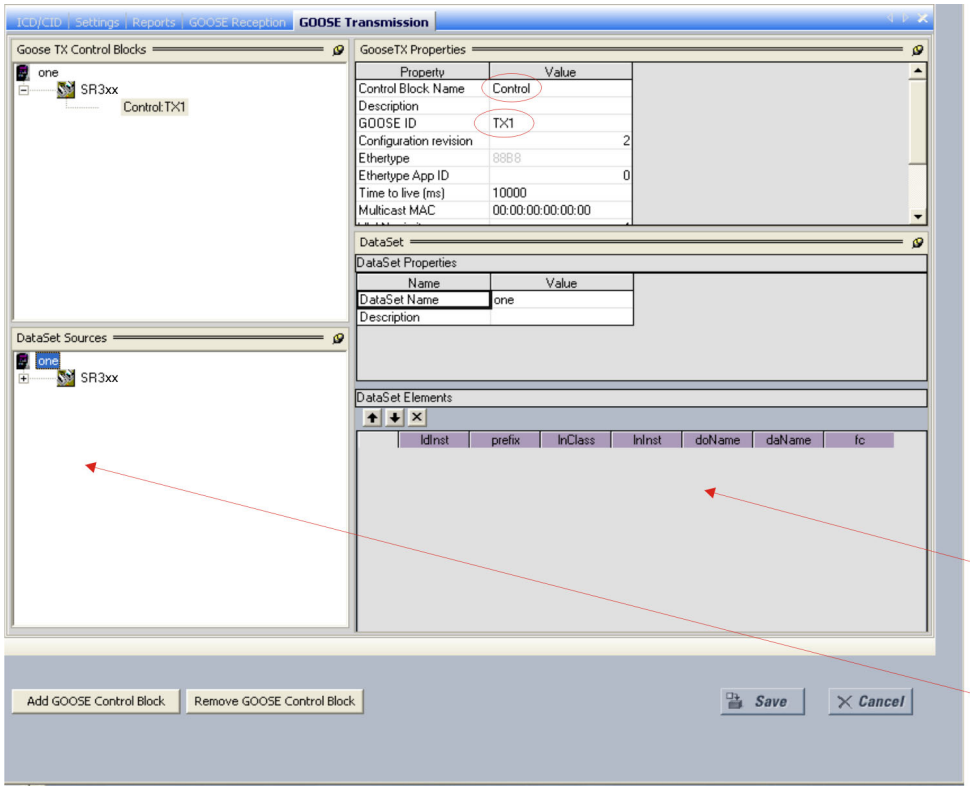


2.1. **Right-click** relay 228, then select **IEC61850 Device Configurator** to launch the software



2.2. Select the **Settings** tab, then enter a unique IED name for this relay. For this lab exercise select “one” by a left double-click on the cell to the left of the cell labeled "IEC Name", and enter “one”.

2.3. Select the **GOOSE transmission** tab to configure the actual GOOSE transmission name and data within the transmission that will be sent.



64 data set elements that form the TX GOOSE message are dragged into this work area

Source of Data Set elements that can be used to form the GOOSE message for transmission

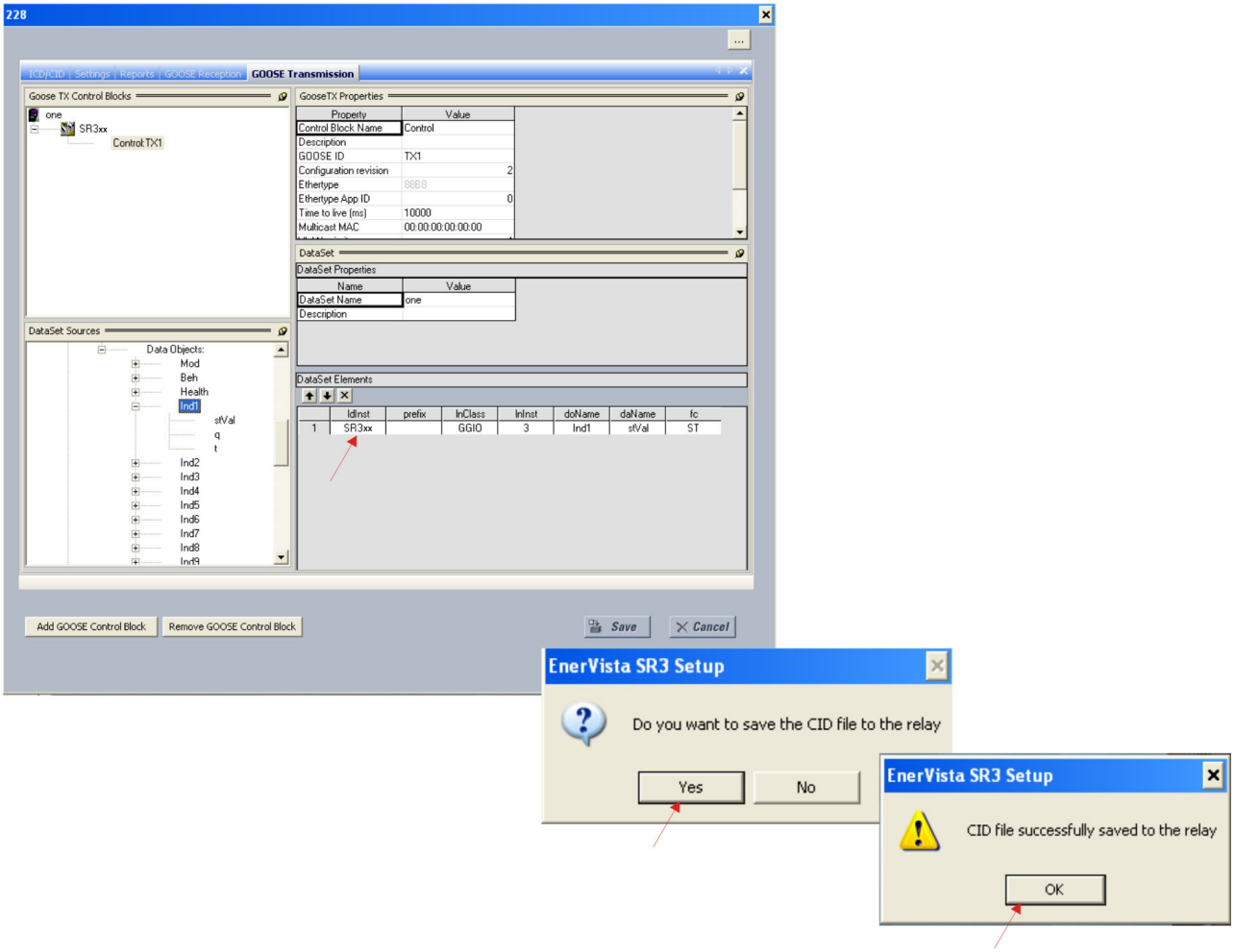
2.4. Within the GOOSE transmission control block work area you will see the SR3xx IED icon with IED name "one". Click the icon and open the directory tree until the GOOSE ID is displayed.

2.5. Click the GOOSE ID to allow the GOOSE transmission properties work area to become visible for editing.

2.6. Enter a unique name for the GOOSE transmission. In our example we will use the name **TX1**. Once entered, and the configuration complete, the name TX1 will be assigned to the GOOSE message transmitted from this relay. Optionally, you can also enter a unique name for the GOOSE control block.

2.7. The directory tree within the data set source work area can be expanded such that digital and analog data values of different logical nodes can be accessed. Sixty four of these data values can be dragged into the data settlements work area to form the GOOSE message that will be transmitted.

To build the content of the GOOSE transmission proceed as follows:



2.8. Within the dataset sources work area, open the directory tree of the IED labeled "one" to expose the logical nodes.

2.9. To transmit the status of Virtual Input 1 which is contained within logical node GGIO3, open the directory of logical node GGIO3 to view indication one.

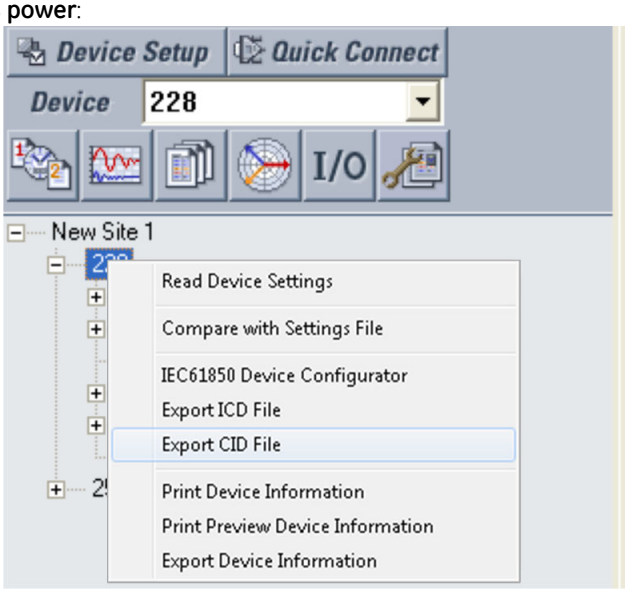
2.10. Within indication one status bit sval will contain the status of Virtual Input 1. Once visible, left-click and drag the status value (sVal) of indication one into the data sets elements list.

2.11. Select **Save** and once saved, you will see a confirmation message appear on the computer screen.

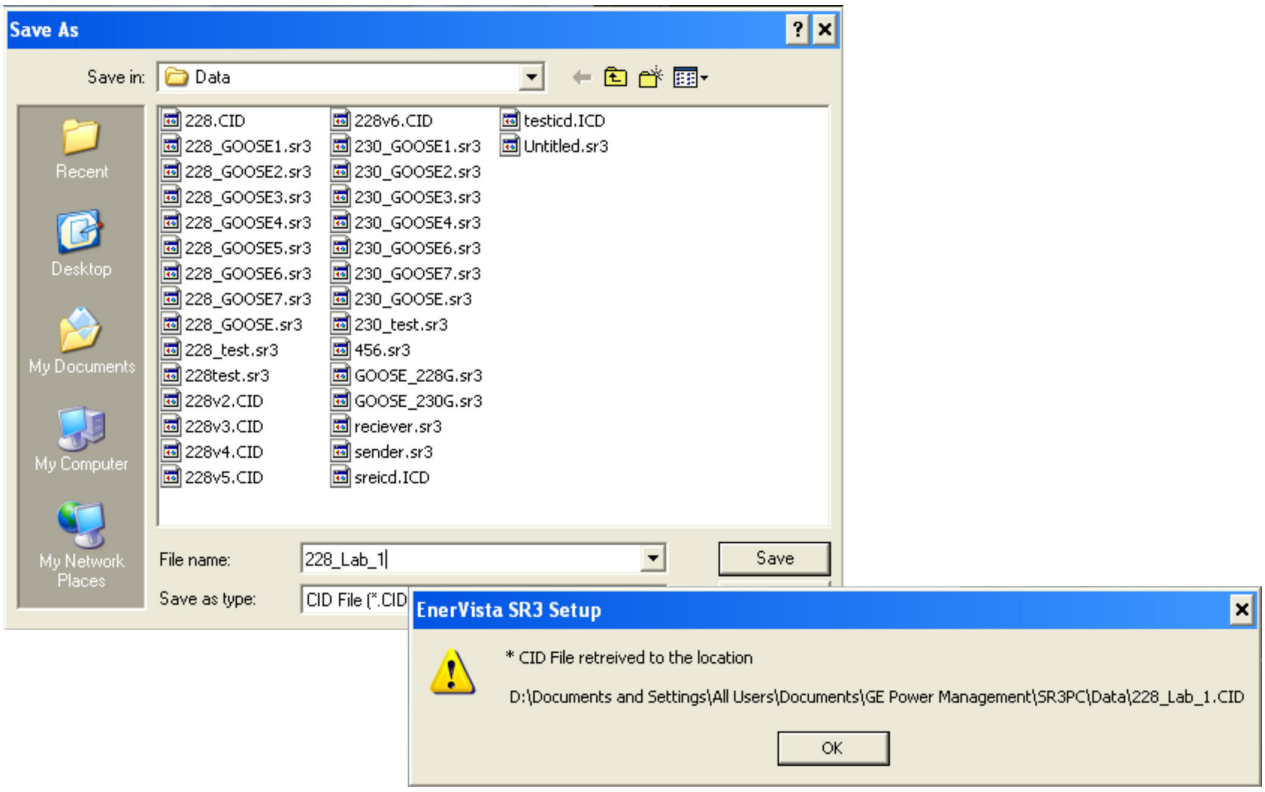
3. **Configure relay 254's GOOSE reception.**

The next step is to export relay 228's modified CID file to the computer such that the structure of GOOSE message TX1 can be used to configure the structure of the reception within relay 254. Within the 3 Series relays, the CID file settings are resident in both the on-line and off-line memory area of the relay. The EnerVista 3 Series Setup software modifies the CID file settings located in the off-line area while loading, running the CID settings that were present at power-up. Only at power-up are the off-line CID file settings loaded into the on-line memory area in order for them to take effect. Given that the EnerVista 3 Series Setup software exports only the on-line CID file, the power to relay 228 must first be cycled before the file can be exported.

To export 228's CID file to the computer perform the following steps **after cycling relay 228's power**:

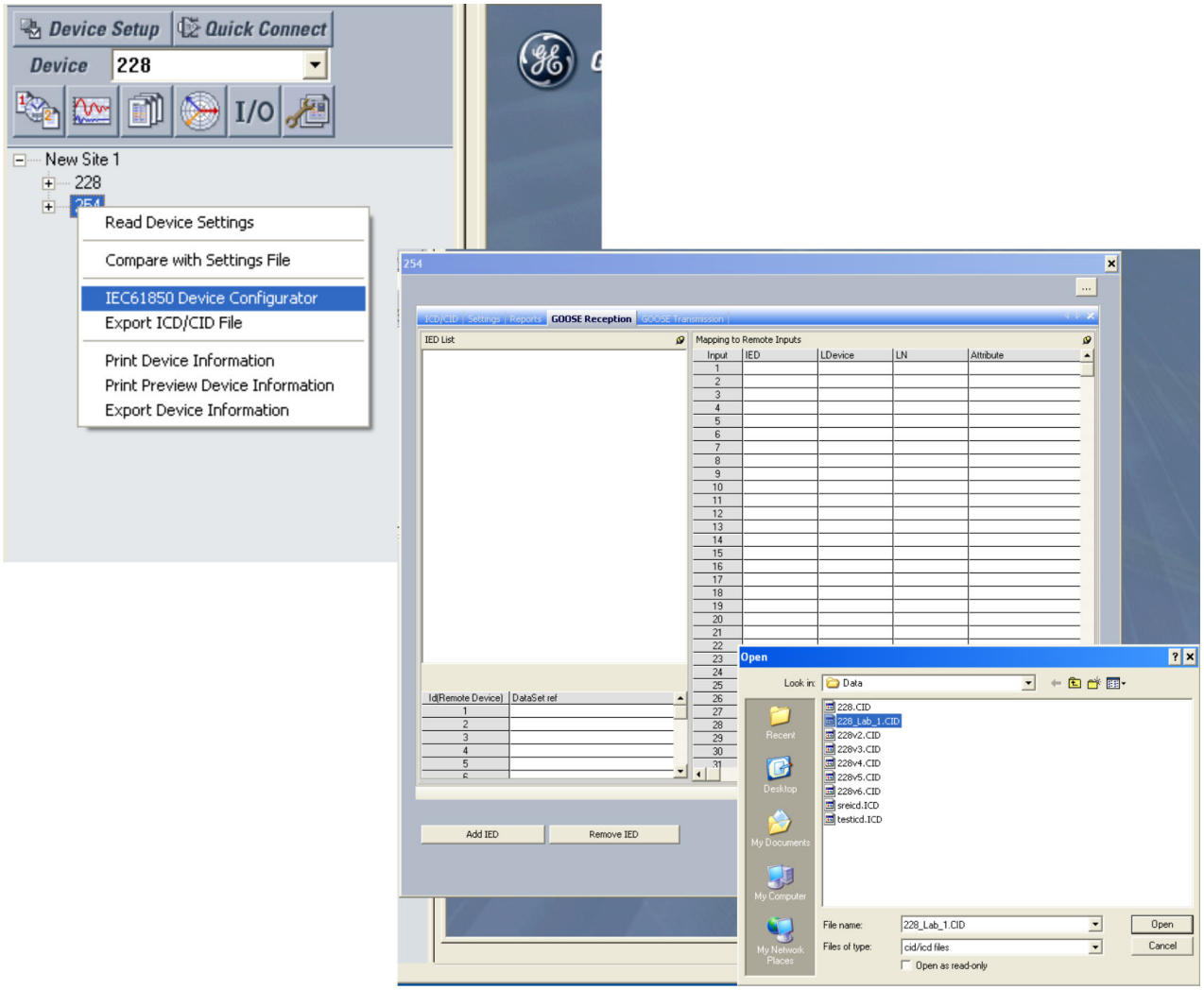


3.1. From the Main Menu right-click **relay 228** and select **Export CID file**.



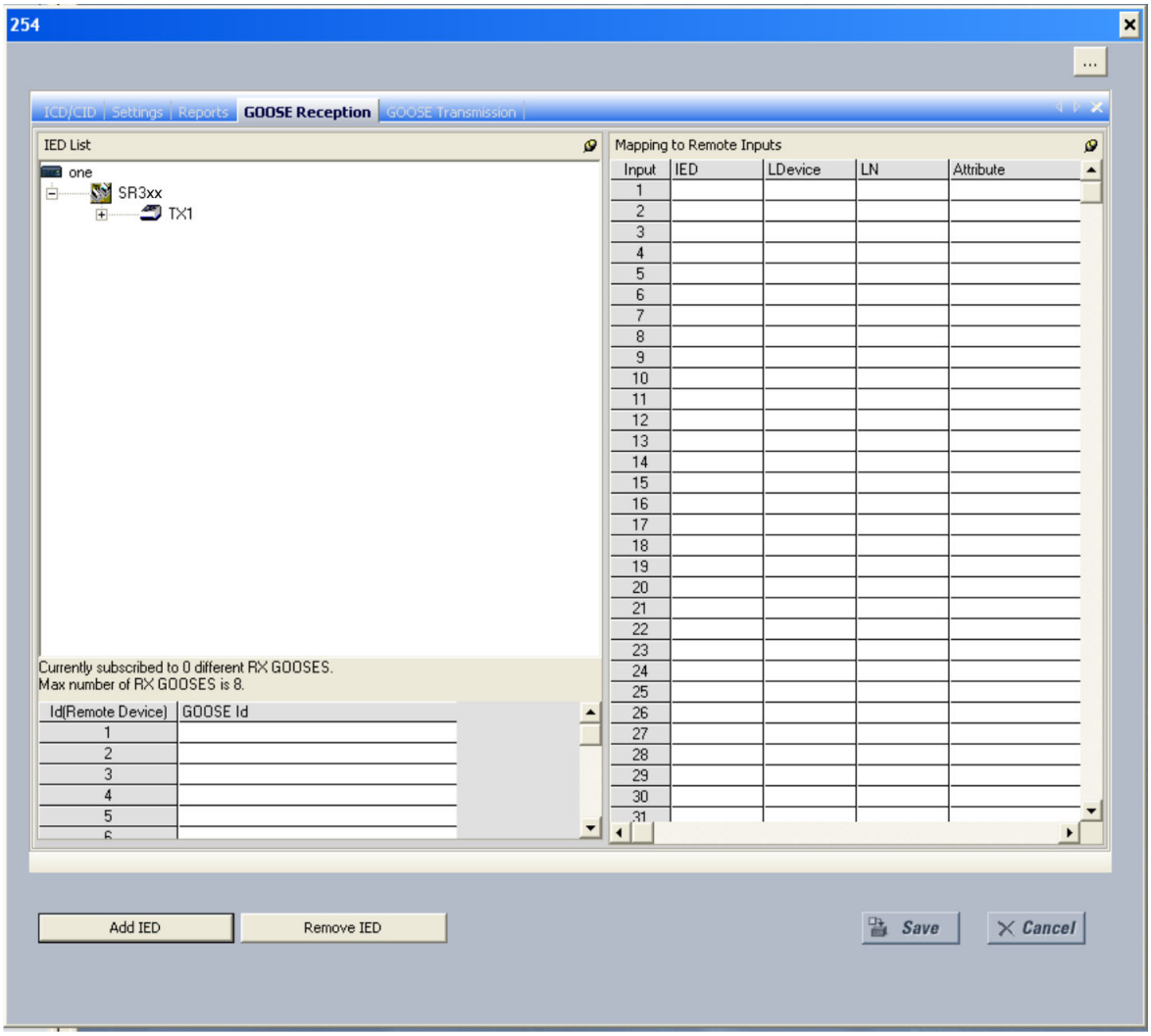
3.2. Enter a name for the CID file that will be exported (in our example lab, we will use the name 228_Lab_1), then select **Save**. Once saved, a confirmation message appears on the computer screen.

Relay 228's GOOSE message TX1's structure must be known by all relays receiving this message. The structure of GOOSE TX1 is contained within relay 228's CID file. To load this structure into relay 254 proceed as follows:

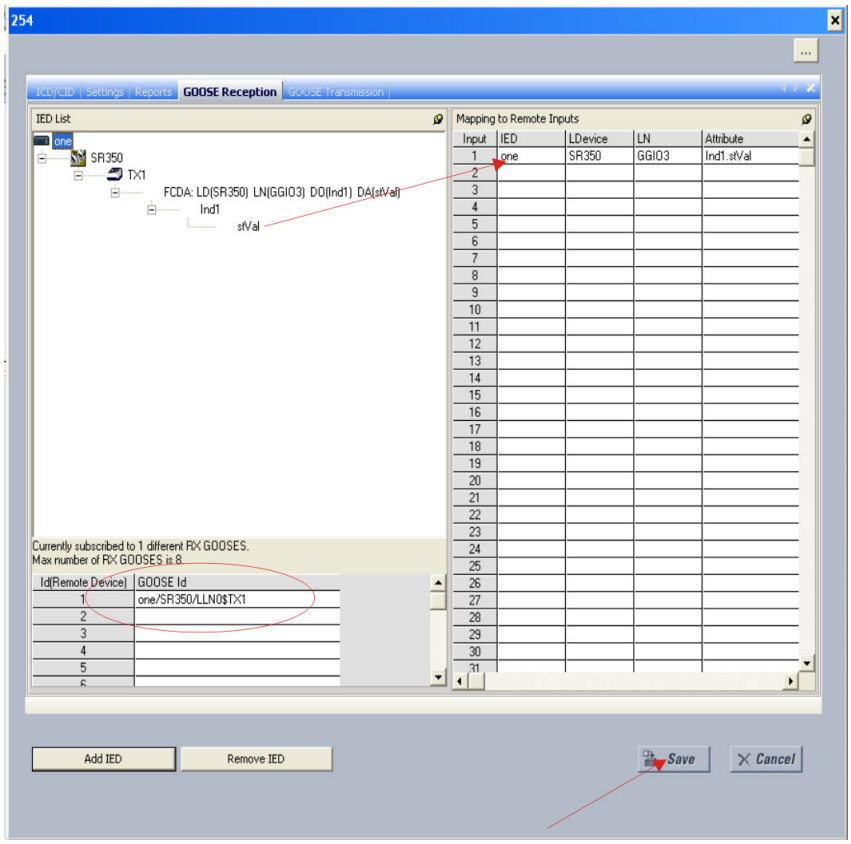


3.3. From the main 3 Series menu, right-click relay 254 and select **IEC61850 Device Configurator**, then select **GOOSE Reception**.

3.4. To load the structure of TX1 into relay 254, select **ADD IED**, then select the name of the file containing relay 228's CID file which, in our example, is **228_Lab_1.CID**, then select **Open**.



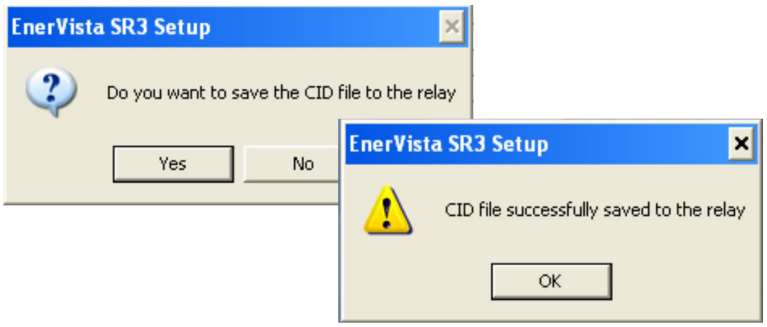
3.5. Relay 228's GOOSE message appears as an icon. This process can be repeated to load the structures of up to seven additional GOOSE messages into relay 254.



3.6. Open the directory of relay 228's GOOSE transmission until the status bit of Virtual Input 1 (sVal) is displayed.

3.7. Click and drag the bit labeled **status value** (sVal) into the first data item location of the reception as shown. This action maps the status of Ind 1 (sVal) which is Virtual input 1 into the first remote input of relay 254.

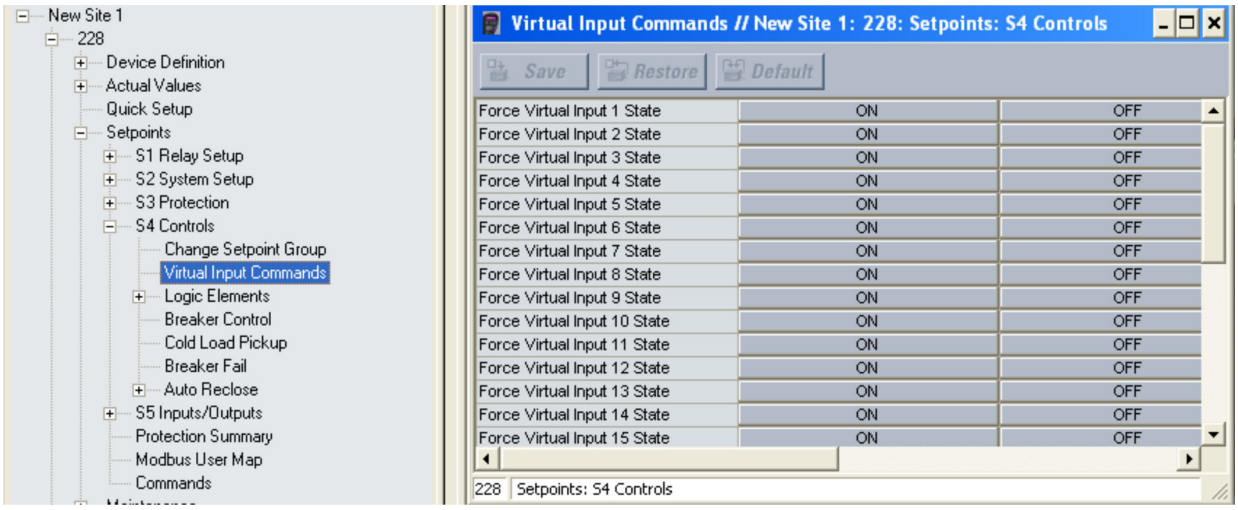
3.8. If available, additional items from relay 228's TX1 transmission, or other GOOSE messages loaded into Relay 254, could be mapped into the remaining 31 locations within relay 254's receive area. Select **Save**.



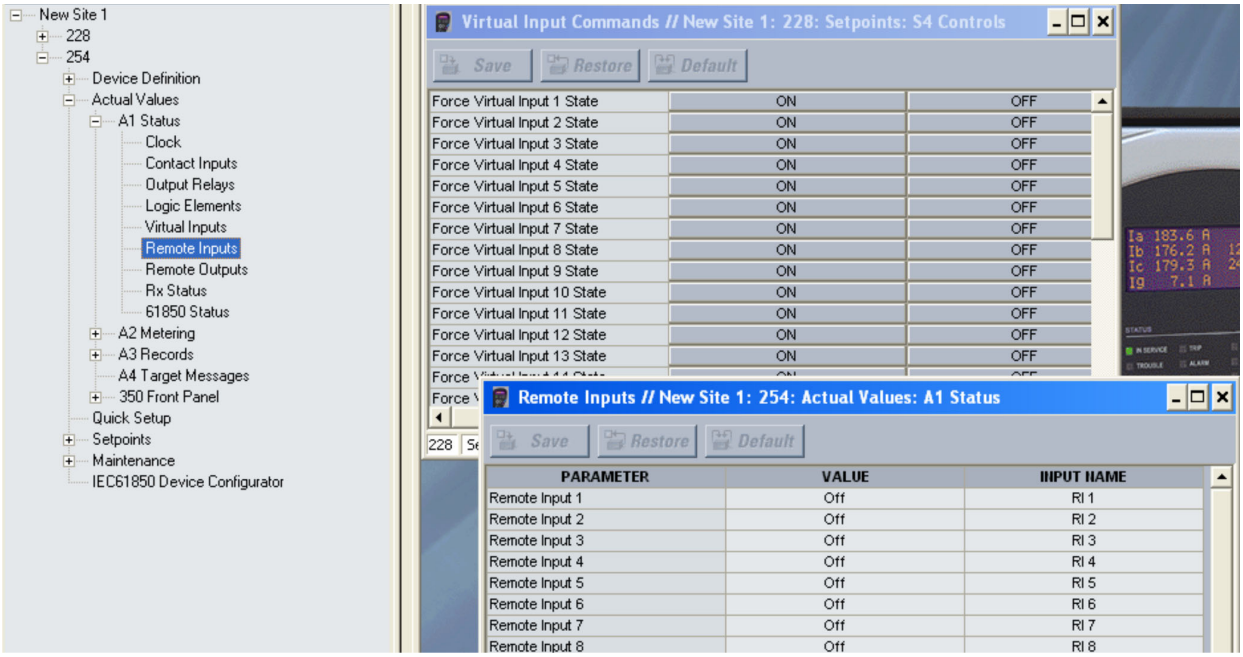
NOTE

Once the CID file is modified, relay 254's power must be cycled to load the new CID file settings for the GOOSE message into the on-line area to take effect.

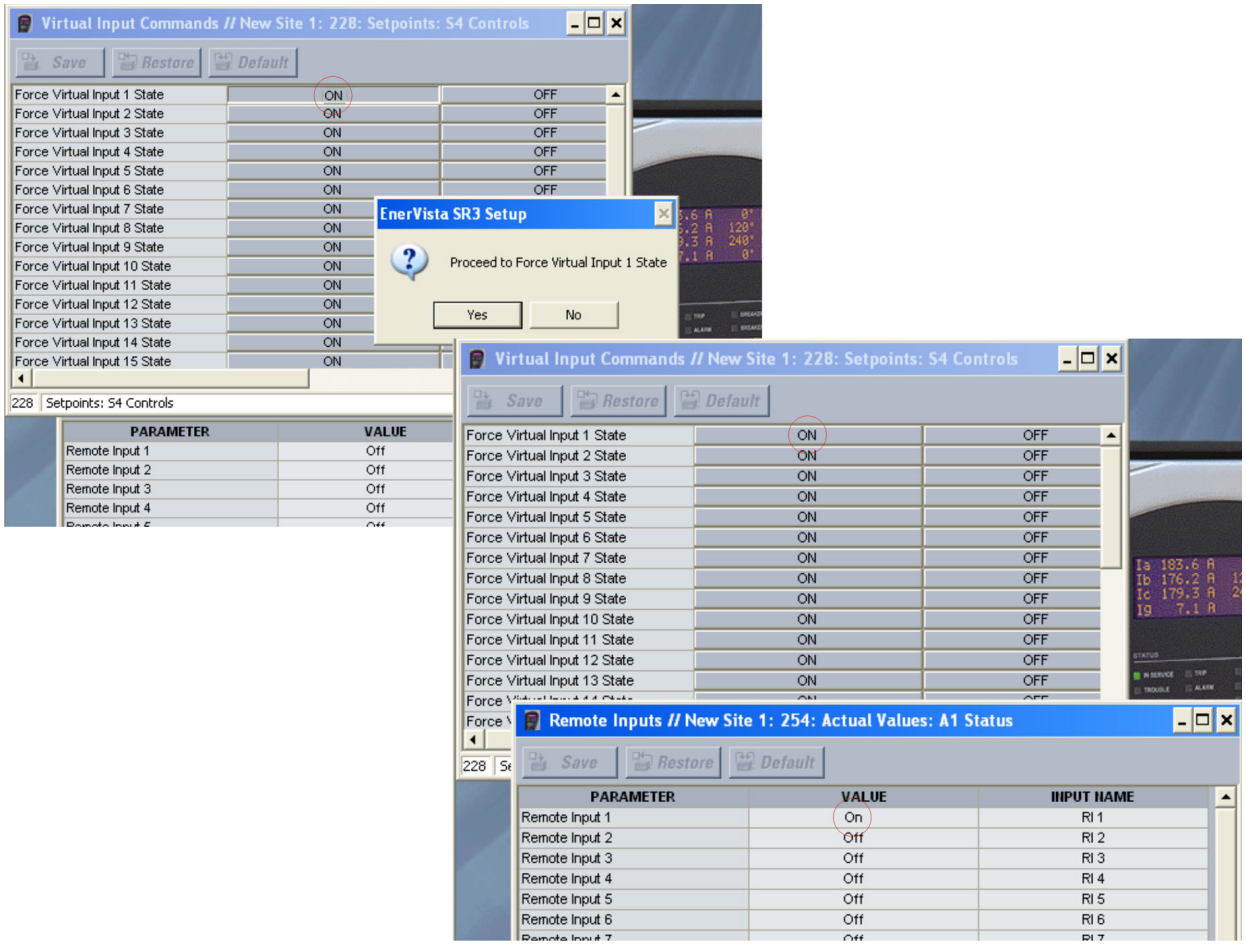
4. **Testing.**
   To test the operation, proceed as follows:



4.1. Open Virtual input commands on relay 228.



4.2. Open the **Remote Input Status** under Actual Values on Relay 254, and note that when Virtual Input 1 of relay 228 is forced to a logic 1 or a logic 0, the status of Remote Input 1 of relay 254 changes to the same state, proving that the GOOSE transmission and reception were configured correctly.



This completes the exercise.

IEC61850 Server

The IEC 61850 Server reports data including the logical device, data sets, data control block, logical nodes and their data attributes to the IEC 61850 Client, such as the Local HMI, RTU or Gateway.

The following is a list of logical nodes and number of instances that are supported by 3 Series relays. For a complete description of logical nodes, see Appendix A: IEC 61850 Implementation Details.

L: System Logical Nodes	Description	ANSI	350	339	345
LPHD 1	Physical device information	-	Yes	Yes	Yes
LLN0	Logical node zero	-	Yes	Yes	Yes

P: Logical Nodes for protection functions	Description	ANSI	350	339	345
phsPIOC	Instantaneous Overcurrent	50P	Yes(2)	-	Yes(2)
ndPIOC	Instantaneous Neutral Overcurrent	50N	Yes(2)	Yes(1)	Yes(2)
gndPIOC	Instantaneous Ground Overcurrent	50G	Yes(2)	-	Yes(2)
gndPIOC	Ground Fault	50G	-	Yes(1)	-
hsePIOC	Instantaneous Sensitive Ground Overcurrent	50SG	Yes(2)	-	Yes(2)
ngseqPIOC	Instantaneous Negative Sequence Overcurrent	50_2(46)	Yes(1)	-	Yes(2)
scPIOC	Short Circuit	50P	-	Yes(1)	-
phsPTOC	Time Phase Overcurrent	51P	Yes(1)	Yes(1)	Yes(2)
ndPTOC	Time Neutral Overcurrent	51N	Yes(1)	Yes(1)	Yes(2)
gndPTOC	Time Ground Overcurrent	51G	Yes(1)	-	Yes(2)
hsePTOC	Time Sensitive Ground Overcurrent	51SG	Yes(1)	-	Yes(2)
ngseqPTOC	Time Negative Sequence Overcurrent	51_2(46)	Yes(1)	-	Yes(2)
jamPTOC	Mechanical Jam	51R	-	Yes(1)	-
unbalPTOC	Current Unbalance	46	-	Yes(1)	-
accelPTOC	Acceleration	48	-	Yes(1)	-
ldincPTOC	Load Increase	-	-	Yes(1)	-
PTUC	Phase undecurrent	37	-	Yes(1)	-
PTOF	Overfrequency	81O	Yes(4)	Yes(2)	-
phsPTOV	Phase Overvoltage	59P	Yes(4)	Yes(2)	-
auxPTOV	Auxiliary Overvoltage	59X	Yes(1)	-	-
ndPTOV	Neutral Overvoltage	59N	Yes(4)	-	-
ngseqPTOV	Negative Sequence Overvoltage	59_2	Yes(2)	Yes(1)	-
phsrevPTOV	Phase Reversal Overvoltage	47	-	Yes(1)	-
phsPTUV	Phase Undervoltage	27P	Yes(4)	Yes(2)	-
auxPTUV	Auxiliary Undervoltage	27X	Yes(1)		-
psseqPTUV	Positive Sequence Undervoltage	27P_1	Yes(1)	Yes(2)	-
PTUF	Underfrequency	81U	Yes(4)	Yes(2)	-
PTTR	Thermal O/L	49	Yes(1)	Yes(1)	Yes(1)
PDOP	Directional Power	32	Yes(2)	Yes(2)	-
ndPDOP	Wattmetric Ground Fault	32N	Yes(2)	-	-
PMRI	Restart Inhibit	66	-	Yes(1)	-

P: Logical Nodes for protection functions	Description	ANSI	350	339	345
PDUP	UnderPower	37P	-	Yes(1)	-
pcntPDIF	Percent Differential	87T	-	-	Yes(1)
instPDIF	Instantaneous Differential	87T-50	-	-	Yes(1)
rgfPDIF	Restricted Ground Fault	RGF	-	-	Yes(2)

R: Logical Nodes for protection functions	Description	ANSI	350	339	345
ndRDIR	Neutral Directional Overcurrent	67N	Yes(1)	Yes(1)	-
gndRDIR	Ground Directional Overcurrent	67G	Yes(1)	-	-
hseRDIR	Sensitive Ground Directional Overcurrent	67SG	Yes(1)	-	-
phsRDIR	Phase Directional Overcurrent	67P	Yes(1)	-	-
RREC	Autorecloser	79	Yes(1)	-	-
rptRFLO	Fault Report	-	Yes(1)	Yes(1)	Yes(1)
RBRF	Breaker Failure	50BF	Yes(1)	Yes(1)	Yes(2)
RSYN	Synchrocheck	25	Yes(1)	-	-

G: Logical Nodes for generic functions	Description	ANSI	350	339	345
GGIO1	Remote Outputs	-	Yes	Yes	Yes
GGIO2	Contact Inputs/Outputs	-	Yes	Yes	Yes
GGIO3	Virtual Inputs	-	Yes	Yes	Yes
GGIO4	Logic Elements	-	Yes	Yes	Yes
GGIO5	Remote Inputs	-	Yes	Yes	Yes
rtdGGIO6	RTD's	-	-	Yes	-
GGIO7	Analog Operands	-	Yes	Yes	Yes

M: Logical Nodes for metering and measurement	Description	ANSI	350	339	345
MMXU1	Measurement	-	Yes	Yes	Yes
MMXU2	Measurement	-	-	-	Yes
MMXU3	Differential Current	-	-	-	Yes
MMXU4	Differential 2 Harmonic	-	-	-	Yes
MMXU5	Differential 5 Harmonic	-	-	-	Yes
MMXU6	Restraint Current	-	-	-	Yes
MSQI1	Sequence and Imbalance	-	Yes	Yes	Yes
MSQI2	Sequence and Imbalance	-	-	-	Yes
MMTR1	Metering (Energy)	-	Yes	Yes	-

X: Logical Nodes for switchgear	Description	ANSI	350	339	SR345
XCBR	Circuit Breaker	-	Yes	Yes	Yes(2)

Functionality

CLIENT CONNECTIONS

The 3 Series relay supports up to three IEC61850 concurrent client connections.

LOGICAL DEVICES AND REPORTS

Supported buffered and un-buffered report, and the report triggers are shown in the *Supported Triggers* list.

Supported Triggers

- Data-change
- Integrity
- General-interrogation

Supported buffered and un-buffered report option fields are shown in the *Field* list.

Field

- Sequence number
- Report time stamp
- Reason for inclusion
- Data set name
- Data-ref
- Buffer-overflow (Buffered reports only)
- Entry id (Buffered reports only)
- Conf- revision

Report control block configuration settings are modified from the IEC61850 advanced configurator writing directly to a CID file.

The datasets for reports are fully configurable with CDCs from any Logical Node.

IEC61850 Configurator

The 3 Series relay supports the IEC 61850 protocol which is identified by order code Communications option "3E".

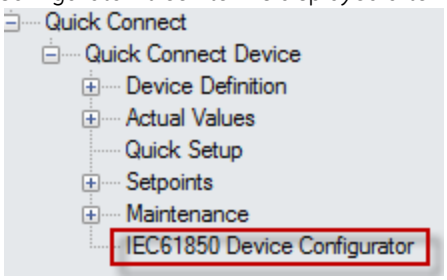
The IEC 61850 Configurator is found in both the online and offline section of the EnerVista 3 Series Setup software for configuring both the online and offline 3 Series relay settings files.

Online and offline setup

ONLINE SETTINGS FILE

Two options are available to configure the relay's online settings file.

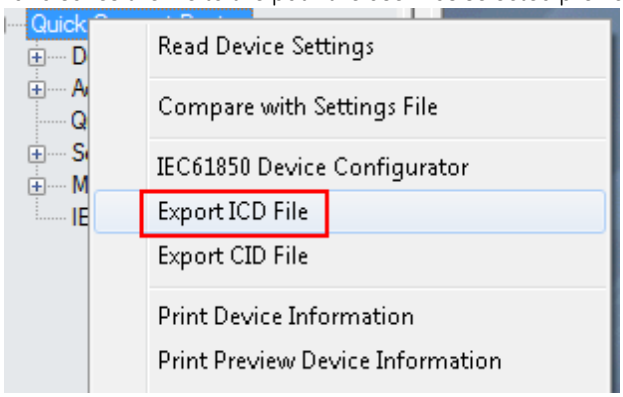
1. Configuration
   - Configure the 3 Series relay (having order code option: IEC 61850) through the Device Setup or Quick Connect screen.
   - The IEC 61850 Configurator "tree" item is displayed after Maintenance.



   - Launch the online IEC 61850 configurator screen, by double-clicking **IEC61850 Configurator**.
   - Select the required settings from the different tabs in the configurator screen to complete the IEC 61850 configuration.
2. Online right-click option
   - Select any online relay and right-click the selected "tree" item. More options become available for selection, as shown in the next examples.

Example of Additional Options

Export ICD file: The menu option generates a default ICD file with the respective order code option and saves the file to the path the user has selected previously.



Read Device Settings: This menu option reads all settings from the relay by modbus and TFTP, and creates a 3 Series relay file with extension *.sr3. The new *.sr3 file consists of two sections: one containing all modbus settings, and another in which IEC61850-related configuration is implemented.

Export CID file: This menu option gets the CID file from the relay by TFTP and creates a 3 Series relay file with extension *.CID.

NOTICE

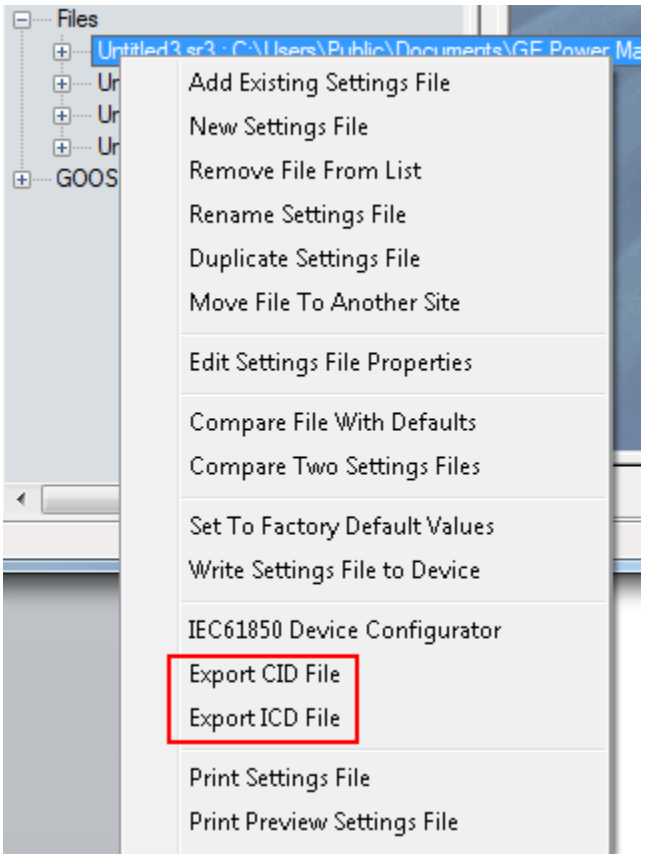
When creating a CID file using a 3rd party ICT/SCL tool, ensure the following guidlines are followed:

- The order code in the CID file must match the device order code if writing the CID file directly into the relay (without using the Enervista software).
- The maximum allowed services must be equal or below the specified limits as in ICD/CID.
- Configure Datasets only in "LLN0" logical node.
- Creating new LD, LN, and communication-AP settings is not recommended.

OFFLINE SETTINGS FILE

The Export ICD file menu option generates a default ICD file with the respective order code option and saves the file to the path the user has selected previously.

The Export CID File menu option generates the CID file, extracting all 61850 configuration from the *.sr3 file.



IEC 61850 Configurator Details

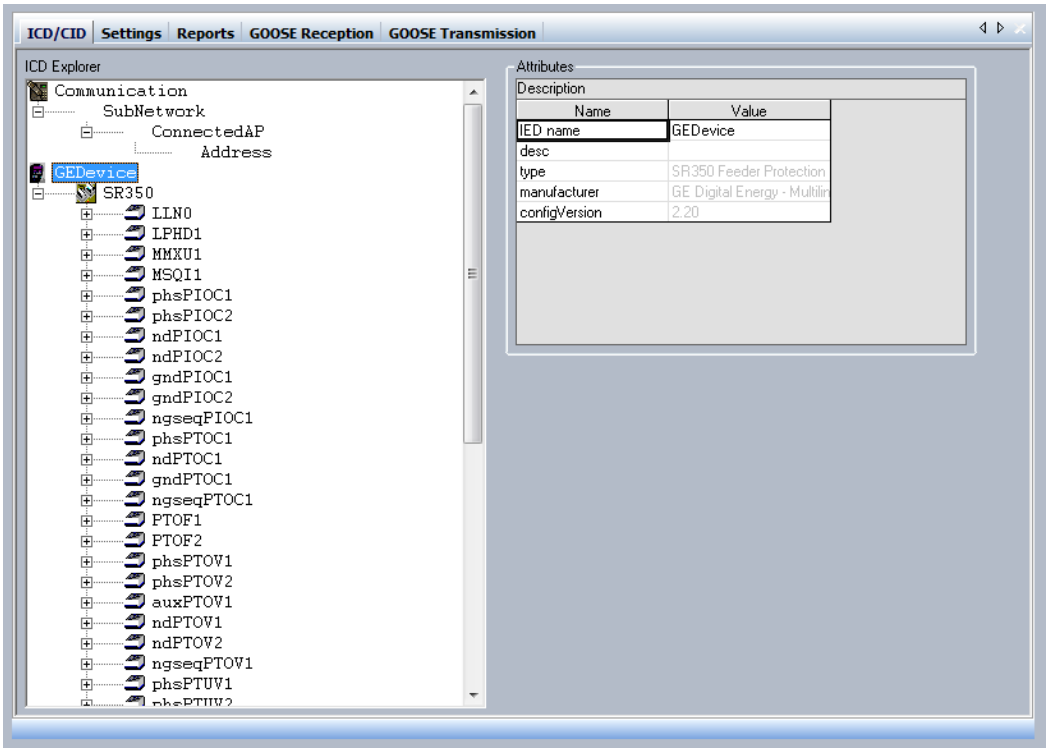
The IEC 61850 Configurator allows the user to edit all sections of the IEC61850 CID and ICD file. Close the IEC 61850 session to perform other operations in the EnerVista 3 Series Setup software.

The IEC 61850 configurator consists of five sections:

- ICD/CID
- Settings
- Reports
- GOOSE Reception
- GOOSE Transmission

ICD/CID

The **ICD/CID** tab consists of the ICD Explorer window on the left. The ICD Explorer window allows the user to navigate through the data model of the relay and change desired IEC 61850 parameters such as the Logical Device Name, MMS port, etc. which are displayed on the right.



To Modify the Parameters

1. Select a parameter in the ICD Explorer window to open the Attributes window in the right part of the screen.
2. In the Attributes window, double-click in the Value column of the table and enter the new value for that parameter.
   For example, from the Attributes window set the IED name, description, and configuration version for the Logical Device, as shown in the preceding figure.

Settings

The Settings tab consists of General Settings and DAI Settings.

1. **General Settings**

   IED NameRange:

   Up to 64 alphanumeric characters

   The IED Name represents the MMS domain name (IEC 61850 logical device) where all IEC/MMS logical nodes are located. Valid characters for these values are upper and lowercase letters, numbers, and the underscore (_) character, and the first character in the string must be a letter. This conforms to the IEC 61850 standard.

   LDevice inst

   Range: Up to 64 alphanumeric characters

   The setting represents the MMS domain name (IEC 61850 logical device) where all IEC/MMS logical nodes are located. Valid characters for these values are upper and lowercase letters, numbers, and the underscore (_) character. The first character in the string must be a letter. This conforms to the IEC 61850 standard.

2. **DAI Settings**

   DAI settings contains these features for configuration: MMXU & MSQI logical nodes, GGIO3 logical node, XCBR logical node.

   MMXU & MSQI Logical nodes

   Range: 1 to 100.000 %

   The MMXU & MSQI deadband settings represent the deadband values used to determine when to update the MMXU “mag” and “cVal” values from the associated “instmag” and “instcVal” values. The “mag” and “cVal” values are used for the IEC 61850 buffered and unbuffered reports. The settings correspond to the associated “db” data items in the CF functional constraint of the MMXU logical node, as per the IEC 61850 standard. According to IEC 61850-7-3, the db value “shall represent the percentage of difference between the maximum and minimum in units of 0.001%”. Thus, it is important to know the maximum value for each MMXU measured quantity, since this represents the 100.00% value for the deadband.

   MIN/MAX VALUES FOR MMXU NODES

   The equations to calculate minimum (min) and maximum (max) values in the MMXU nodes are as follows:

Table 4-1: Calculate Min/Max MMXU Node Values

MMXU Node	To Calculate
TotW TotVar TotVA	Max (350)= (Phase CT Primary * 115 A) * (Phase VT Ratio * BusVTRatio * 240 V) *(scale W/kW/MW) Max(339) = (Phase CT Primary * 115 A) * (Phase VT Ratio * BusVTRatio * 240 V) *(scale W/kW/MW) Max(339 two speed) = (SpeedTwoPhase CT Primary * 115 A) * (Phase VT Ratio * BusVTRatio * 240 V) *scaleW/kW/MW min = -max
TotPF	max = 1 min = -1
Hz	max = 80 min = 30
Hte	max = 15 min = -15
PPV	max = BusVTRatio * 240 V min = 0
PhV	max = BusVTRatio * 240 V min = 0
A$phsA A$phsB A$phsC	Max(350,345) = (Phase CT Primary * 115A) Max(339) = (Phase CT Primary * 115A) Max(339 two speed) = (SpeedTwoPhase CT Primary * 115 A) min = 0

MMXU Node	To Calculate
A$neut	Max(350) = (Ground CT Primary * 115A) Max(350 SG) = (SensitiveGround CT Primary * 115A) Max(339) = (Ground CT Primary * 115A) Max(339 SG) = (SensitiveGround CT Primary * 115A) Max(339CBCT) = 15 min = 0
A$net	Max(350,345) = (Phase CT Primary * 115A) Max(339) = (Phase CT Primary * 115A) Max(339 two speed) = (SpeedTwoPhase CT Primary * 115 A) min = 0
A$res	Max = (Ground CT Primary * 115A) Max(SG) = (SensitiveGround CT Primary * 115A) min = 0
AuxV	max = AuxVTRatio * 240V min = 0
SeqA$c1, c2 ,c3	Max(350,345) = (Phase CT Primary * 115A) Max(339) = (Phase CT Primary * 115A) Max(339 two speed) = (SpeedTwoPhase CT Primary * 115 A) min = 0
SeqV$c1,c2,c3	max = (BusVTRatio * 240) min = 0
dbAng	angle dB = (DB percentage* 360)

GGIO3 Logical Node

Range: Enum

These are the control models supported: (0) status only, (1) direct-with-normal-security.

XCBR Logical Node

Range: Enum for ctlModel and 500:60000ms for sboTimeout

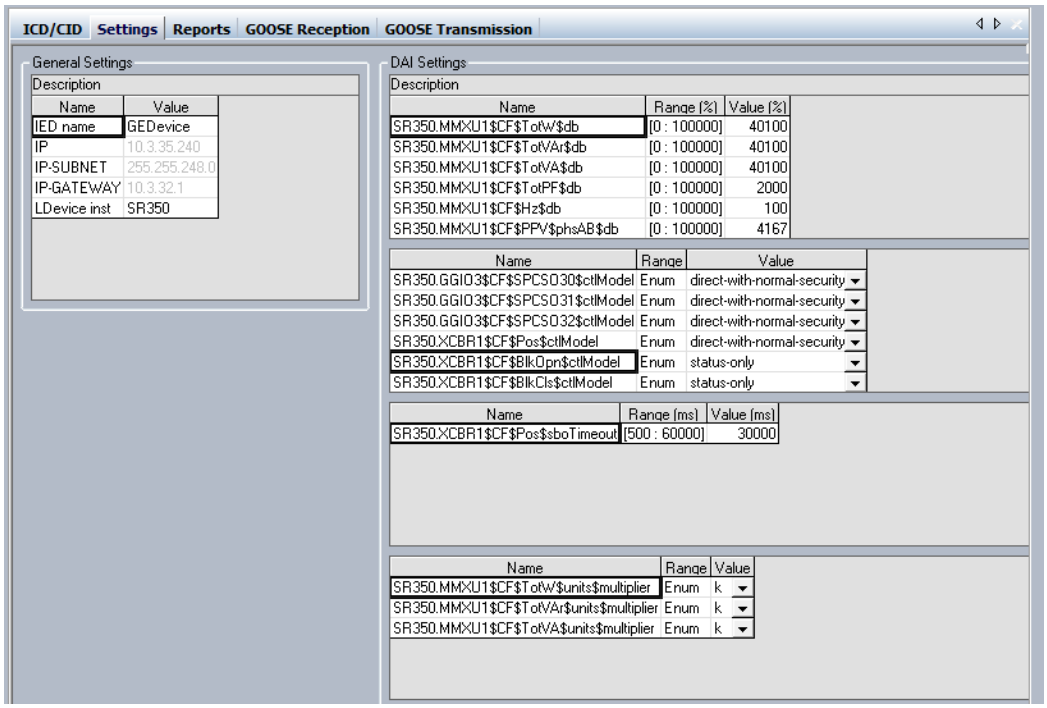
The IEC61850 "operate" command must be executed after "select" command within the XCBR1 pos sboTimeout setting value to be successful.

XCBR1 pos cltModel can be configured as (0)status only, (1) direct-with-nomal-security, (2)sbo-with-normal-security, (3)direct-with-enhanced-security,(4)sbo-with-enhanced-security

MMXU TotW, TotVar, TotVA

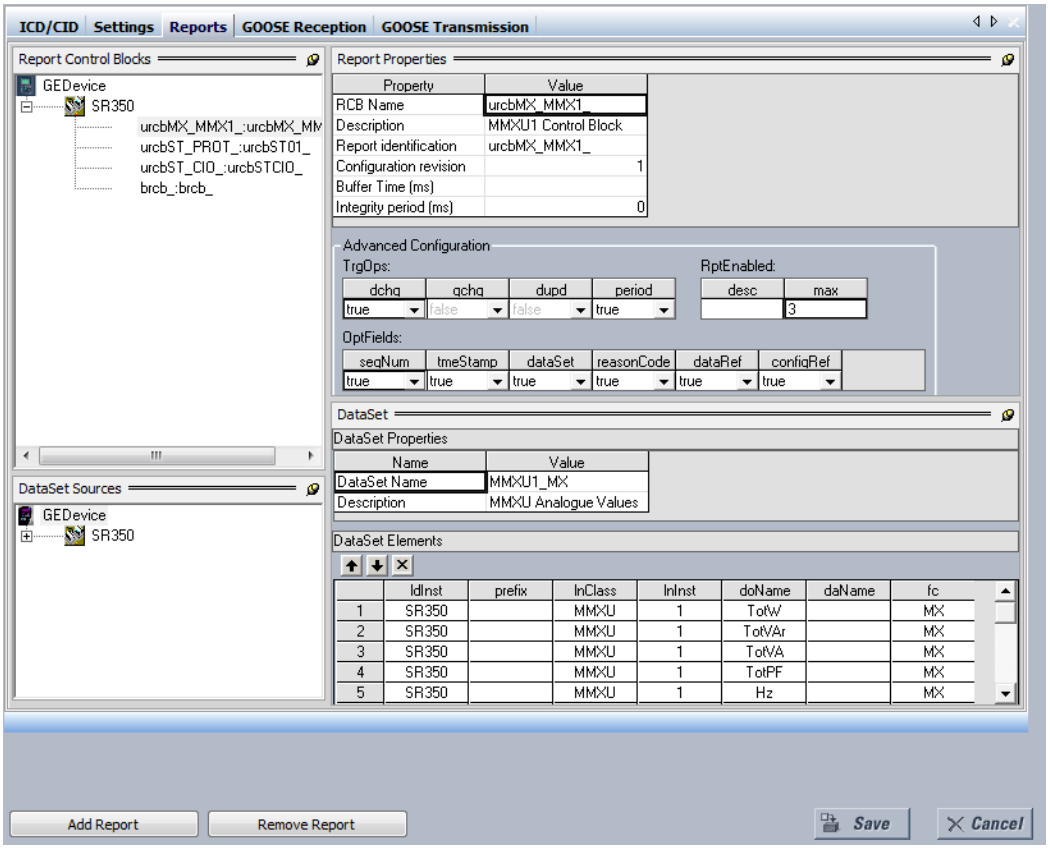
Range: none, k, M

The multiplier of the TotW, TotVar,TotVA can be modified to select the scale of the values to be sent between none, kilo or Mega. (W,Var,VA).


ICD/CID
Settings
Reports
GOOSE Reception
GOOSE Transmission
General Settings
Description
Name
Value
IED name
GEDevice
IP
10.3.35.240
IP-SUBNET
255.255.248.0
IP-GATEWAY
10.3.32.1
LDevice inst
SR350
DAI Settings
Description
Name
Range (%)
Value (%)
SR350.MMXU1CFTotW$db
[0 : 100000]
40100
SR350.MMXU1CFTotVAr$db
[0 : 100000]
40100
SR350.MMXU1CFTotVA$db
[0 : 100000]
40100
SR350.MMXU1CFTotPF$db
[0 : 100000]
2000
SR350.MMXU1CFHz$db
[0 : 100000]
100
SR350.MMXU1CFPPV$phsAB$db
[0 : 100000]
4167
Name
Range
Value
SR350.GGIO3CFSPCSO30$ctlModel
Enum
direct-with-normal-security
SR350.GGIO3CFSPCSO31$ctlModel
Enum
direct-with-normal-security
SR350.GGIO3CFSPCSO32$ctlModel
Enum
direct-with-normal-security
SR350.XCBR1CFPos$ctlModel
Enum
direct-with-normal-security
SR350.XCBR1CFBlkOpn$ctlModel
Enum
status-only
SR350.XCBR1CFBlkCls$ctlModel
Enum
status-only
Name
Range (ms)
Value (ms)
SR350.XCBR1CFPos$sboTimeout
[500 : 60000]
30000
Name
Range
Value
SR350.MMXU1CFTotW$units$multiplier
Enum
k
SR350.MMXU1CFTotVAr$units$multiplier
Enum
k
SR350.MMXU1CFTotVA$units$multiplier
Enum
k

Reports

The Reports tab in the IEC 61580 Configurator permits configuration of data sets and report control blocks for buffered and unbuffered reports.



The screen helps the user to create, modify and delete Report Control Blocks (RCBs) and Datasets. Each Report Control Block must have a maximum of 4 different clients up to a maximum of 8 Report Control Blocks linked to their Datasets. Each dataset must have a maximum of 64 elements in total.

There are two screens available in the Report tab window:

- Report control block: used to add the required report control block.
  - **RCB Name:** The first character in the value of this attribute must be a letter (upper or lower case). The rest of the characters must be a number, a letter (upper or lower case) or a "_". The maximum number of characters allowed in IEC61850 Configurator is 30 and IEC61850 MMS Library adds 2 more characters indicating the number of the instance of the RCB depending on the number of IEC61850 clients configured.
  - **Description:** The maximum number of characters allowed is 32.
- Dataset sources: Each report control block can be appended with dataset items in the screen using a drag and drop operation.

The following buttons are available in the Reports window.

- "Add Report" button and "Remove Report" button: Both buttons are in the lower side of the screen.
- Note that a Report control block can also be added by right clicking the LD entry under the IED name in the "tree".
  The "Remove Report" button deletes an existing Report control block.
  Note that the Report can also be deleted by right clicking the configured existing report.

Add/Remove Report Control Block

1. Click the “Add Report” button.
   The button is available in the lower side of the screen and is used to add a report control block. (a Report can also be added by right clicking the LD entry under the IED name in the "tree")
   The “New Report Control Block” window appears.
2. In the “New Report Control Block” window under “Select Report Type”, select the radio button for a buffered or unbuffered report.
3. In the “IEC61850 Clients N#” dropdown list, select 1 or any other available number.
4. Click the “Next” button to proceed with further configuration (else click “Cancel” to discard the new configuration).
5. In the “Select DataSet” window, select the radio button for “New DataSet” or “Existing DataSet”.

Report Properties

The report properties section can be viewed when any configured report is selected.

All the available parameters of the Report control block are displayed when clicking “Report Advanced Configuration”. Respective OptFields, TrgOps can be configured by either selecting “True” or “False”. Buffer time is given in milliseconds.

Configure Dataset Items

1. Select the required logical node under IED name> LD name relay “tree”.
2. Go to the required dataset item.
3. Drag and drop the item to the “DataSet Elements” section.

Maximum Report Control Blocks

The 3 Series relay supports a maximum of 8 report control blocks. Buffered and unbuffered reports are both included in the maximum. The user can configure reports based on the Report Configurations Supported table as follows.

Table 4-2: Report Configurations Supported

Buffered Report	Unbuffered Report	Total Reports
8	0	8
7	1	8
6	2	8
5	3	8
4	4	8
3	5	8
2	6	8
1	7	8

GOOSE reception and GOOSE transmission

The GOOSE tabs in IEC61850 Configurator permits configuration of data set and GOOSE control block for transmission and the subscription for the reception of gooses.

The use of this two tabs is described in the section Using the IEC 61850 configurator on page 4-27.

GE
Grid Solutions

3 Series Protective Relay Platform

Chapter 5: 350 OPC–UA Communication Standard

This chapter describes the implementation process for the OPC-UA (OLE for Process Control – Unified Architecture) in the 350 relay.

NOTE

OPC-UA communication is available for the 350 relay only.

Definitions and Acronyms

- OPC-UA – OLE for Process Control - Unified Architecture
- OLE – Object Linking and Embedding
- SOA – Service Oriented Architecture
- DA – Data Access
- AE – Alarms and Events
- SDK – Software Development Kit
- CTT – Compliance Test Tool

OPC–UA Architecture

The OPC communication is done through Client-Server architecture. In the case of the 350 relay, the relay is implemented as the Server.

The parts that are being supported are:

- OPC-UA DA
  - Read and write actions of the data service. The data service deals with real-time data, not historical data.
- OPC-UA AE
  - Lecture events service.
- OPC-UA Methods
  - Service commonly used for commands

OPC-UA Settings

OPCUA Enable

Range: Disabled, Enabled

Default: Disabled

The OPCUA Enable setting is only for a 350 relay with a communications Order Code 4.

In this case only, the OPC-UA and the IEC61850 protocol do not run simultaneously. If IEC61850 is running by default but it is desired to use OPC-UA instead, the user must put the OPCUA Enable setting to Enabled. Then, the relay must be rebooted. This will run the OPC-UA instead of the IEC61850.

In the 350 relay with communications Order Code 5, this setting is not visible and both protocols run simultaneously.

OPC–UA Server Configuration Data

The servers internal configuration data are the following:

- OPC-UA connection port is 4842
- Maximum number of sessions per server is 2
- The server has the following data types:
  - Double - used for Analog Values
  - Boolean - used for Digital, Logic, Input and Output data
- The server guarantees the reading of 60 nodes. If the number of nodes is bigger than this value, the response time increases proportionally to the number of nodes.

OPC–UA Point Lists

- Modeling for the following:

Events
All digital signals available are defined as an event source. So, the Server connection is declared as a unique event notifier.

Alarms
The alarms are not supported.

Commands
The Open&Close breaker and Reset commands have been implemented as Method services.

- The OPC-UA server has implemented the following Analog, Digital, Input, Logic and Command points, as shown in the tables.

Table 5-1: Analog points

Data	Description
W	Real Power
VAr	Reactive Power
VA	Apparent Power
PF	Power Factor
Freq	Frequency
Vab	PhA to PhB Voltage
Vab_ang	Va angle
Vbc	PhB to Ph CVoltage
Vbc_ang	Vb angle
Vca	PhCtoPhAVoltage
Vca_ang	Vc angle
Va_mag	Va magnitude
Va_ang	Va angle
Vb_mag	Vb magnitude
Vb_ang	Vb angle
Vc_mag	Vc magnitude
Vc_ang	V cangle
Vn_mag	Vn magnitude
Vn_ang	Vn angle
Ia_mag	Ia magnitude
Ia_ang	Ia angle
Ib_mag	Ib magnitude
Ib_ang	Ib angle
Ic_mag	Ic magnitude
Ic_ang	Ic angle
Ig_mag	Ground magnitude
Ig_ang	Ground angle
In_mag	Neutral magnitude
In_ang	Neutral angle
Is_mag	Sensitive Ground magnitude
Is_ang	Sensitive Ground angle
Vaux_mag	Auxiliary Voltage magnitude

Data	Description
Vaux_ang	Auxiliary Voltage angle
IseqPos_mag	Positive Sequence Current magnitude
IseqPos_ang	Positive Sequence Current angle
IseqNeg_mag	Negative Sequence Current magnitude
IseqNeg_ang	Negative Sequence Current angle
IseqZero_mag	Zero Sequence Current magnitude
IseqZero_ang	Zero Sequence Current angle
VseqPos_mag	Positive Sequence Voltage magnitude
VseqPos_ang	Positive Sequence Voltage angle
VseqNeg_mag	Negative Sequence Voltage magnitude
VseqNeg_ang	Negative Sequence Voltage angle
VseqZero_mag	Zero Sequence Voltage magnitude
VseqZero_ang	Zero Sequence Voltage angle
Power1_WGF	32N Wattmetric Power1
Power2_WGF	32N Wattmetric Power2
Power1_32DP	Directional Power1
Power2_32DP	Directional Power2
Ia_2ndHarmc	2nd Harmonic Ia
Ib_2ndHarmc	2nd Harmonic Ib
Ic_2ndHarmc	2nd Harmonic Ic
Therm_Cap_PhA	Thermal Capacity PhA
Therm_Cap_PhB	Thermal Capacity PhB
Therm_Cap_PhC	Thermal Capacity PhC
Enrgy_Mvarh_Neg	Mvarh Generation
Enrgy_MWh_Neg	MWh Generation
Enrgy_Mvarh_Pos	Mvarh Consumption
Enrgy_MWh_Pos	MWh Consumption

Table 5-2: Digital points

Data	Description
Data	
PIOC_1_PKP	Phase IOC1 PKP
PIOC_1_phA_PKP	Phase A IOC1 PKP
PIOC_1_phB_PKP	Phase B IOC1 PKP
PIOC_1_phC_PKP	Phase C IOC1 PKP
PIOC_1_OP	Phase IOC1 OP
PIOC_1_phA_OP	Phase A IOC1 OP
PIOC_1_phB_OP	Phase B IOC1 OP
PIOC_1_phC_OP	Phase C IOC1 OP
PIOC_1_BLK	Phase IOC1 BLK
PIOC_2_PKP	Phase IOC2 PKP
PIOC_2_phA_PKP	Phase A IOC2 PKP
PIOC_2_phB_PKP	Phase B IOC2 PKP
PIOC_2_phC_PKP	Phase C IOC2 PKP
PIOC_2_OP	Phase IOC2 OP
PIOC_2_phA_OP	Phase A IOC2 OP
PIOC_2_phB_OP	Phase B IOC2 OP

Data	Description
PIOC_2_phC_OP	Phase C IOC2 OP
PIOC_2_BLK	Phase IOC2 BLK
NIOC_1_PKP	Neutral IOC1 PKP
NIOC_1_OP	Neutral IOC1 OP
NIOC_1_BLK	Neutral IOC1 BLK
NIOC_2_PKP	Neutral IOC2 PKP
NIOC_2_OP	Neutral IOC2 OP
NIOC_2_BLK	Neutral IOC2 BLK
GIOC_1_PKP	Ground IOC1 PKP
GIOC_1_OP	Ground IOC1 OP
GIOC_1_BLK	Ground IOC1 BLK
GIOC_2_PKP	Ground IOC2 PKP
GIOC_2_OP	Ground IOC2 OP
GIOC_2_BLK	Ground IOC2 BLK
SGIOC_1_PKP	Sensitive Ground IOC1 PKP
SGIOC_1_OP	Sensitive Ground IOC1 OP
SGIOC_1_BLK	Sensitive Ground IOC1 BLK
SGIOC_2_PKP	Sensitive Ground IOC2 PKP
SGIOC_2_OP	Sensitive Ground IOC2 OP
SGIOC_2_BLK	Sensitive Ground IOC2 BLK
NegSeq_IOC_PKP	Negative Sequence IOC PKP
NegSeq_IOC_OP	Negative Sequence IOC OP
NegSeq_IOC_BLK	Negative Sequence IOC BLK
PTOC_1_PKP	Phase TOC1 PKP
PTOC_1_phA_PKP	Phase A TOC1 PKP
PTOC_1_phB_PKP	Phase B TOC1 PKP
PTOC_1_phC_PKP	Phase C TOC1 PKP
PTOC_1_OP	Phase TOC1 OP
PTOC_1_phA_OP	Phase A TOC1 OP
PTOC_1_phB_OP	Phase B TOC1 OP
PTOC_1_phC_OP	Phase C TOC1 OP
PTOC_1_BLK	Phase TOC1 BLK
NTOC_1_PKP	Neutral TOC1 PKP
NTOC_1_OP	Neutral TOC1 OP
NTOC_1_BLK	Neutral TOC1 BLK
GTOC_1_PKP	Ground TOC1 PKP
GTOC_1_OP	Ground TOC1 OP
GTOC_1_BLK	Ground TOC1 BLK
SGTOC_1_PKP	Sensitive Ground TOC1 PKP
SGTOC_1_OP	Sensitive Ground TOC1 OP
SGTOC_1_BLK	Sensitive Ground TOC1 BLK
OF_1_PKP	OverFrequency1 PKP
OF_1_OP	OverFrequency1 OP
OF_1_BLK	OverFrequency1 BLK
OF_2_PKP	OverFrequency2 PKP
OF_2_OP	OverFrequency2 OP
OF_2_BLK	OverFrequency2 BLK

Data	Description
POV_PKP	Phase OV PKP
POV_phA_PKP	Phase A OV PKP
POV_phB_PKP	Phase B OV PKP
POV_phC_PKP	Phase C OV PKP
POV_OP	Phase OV OP
POV_phA_OP	Phase A OV OP
POV_phB_OP	Phase B OV OP
POV_phC_OP	Phase C OV OP
POV_BLK	Phase OV BLK
AuxOV_PKP	Auxiliary OV PKP
AuxOV_OP	Auxiliary OV OP
AuxOV_BLK	Auxiliary OV BLK
NOV_PKP	Neutral OV PKP
NOV_OP	Neutral OV OP
NOV_BLK	Neutral OV BLK
NegSeqOV_PKP	Negative Sequence OV PKP
NegSeqOV_OP	Negative Sequence OV OP
NegSeqOV_BLK	Negative Sequence OV BLK
PUV_PKP	Phase UV PKP
PUV_phA_PKP	Phase A UV PKP
PUV_phB_PKP	Phase B UV PKP
PUV_phC_PKP	Phase C UV PKP
PUV_OP	Phase UV OP
PUV_phA_OP	Phase A UV OP
PUV_phB_OP	Phase B UV OP
PUV_phC_OP	Phase C UV OP
PUV_BLK	Phase UV BLK
AuxUV_PKP	Auxiliary UV PKP
AuxUV_OP	Auxiliary UV OP
AuxUV_BLK	Auxiliary UV BLK
UF_1_PKP	UnderFrequency1 PKP
UF_1_OP	UnderFrequency1 OP
UF_1_BLK	UnderFrequency1 BLK
UF_2_PKP	UnderFrequency2 PKP
UF_2_OP	UnderFrequency2 OP
UF_2_BLK	UnderFrequency2 BLK
Therm_OP	Thermal Model OP
Therm_BLK	Therma lModel BLK
NDirOC_OP	Ntrl Dir OC OP
NDirOC_BLK	Ntrl Dir OC BLK
GDirOC_OP	Ground Dir OC OP
GDirOC_BLK	Ground Dir OC BLK
PDirOC_OP	Phase Dir OC OP
PhADirOC_OP	Phase A Dir OC OP
PhBDirOC_OP	Phase B Dir OC OP
PhCDirOC_OP	Phase C Dir OC OP
PDirOC_BLK	Phase Dir OC BLK

Data	Description
AR_Close_OP	AR Close
AR_Disabled_OP	AR Disabled
AR_ExtInit_OP	AR Ext Init
AR_InProgress_OP	AR In Progress
AR_Ready_OP	AR Ready
WGF_1_PKP	Wattmetric1 PKP
WGF_1_OP	Wattmetric1 OP
WGF_1_BLK	Wattmetric1 BLK
WGF_2_PKP	Wattmetric2 PKP
WGF_2_OP	Wattmetric2 OP
WGF_2_BLK	Wattmetric2 BLK
DirPower32DP_1_PKP	DirectionalPower1 PKP
DirPower32DP_1_OP	DirectionalPower1 OP
DirPower32DP_1_BLK	DirectionalPower1 BLK
DirPower32DP_2_PKP	DirectionalPower2 PKP
DirPower32DP_2_OP	DirectionalPower2 OP
DirPower32DP_2_BLK	DirectionalPower2 BLK
HRMC_2nd_PKP	Harmonic 2nd PKP
HRMC_2nd_OP	Harmonic 2nd OP
BrokenCond46BC_PKP	BrokenConductor 46BC PKP
BrokenCond46BC_OP	BrokenConductor 46BC OP
BrokenCond46BC_BLK	BrokenConducto r46BC BLK
CTFail_1_PKP	CT Fail 2 BLK
CTFail_1_OP	CT Fail 1 PKP
CTFail_1_BLK	CT Fail 1 OP
PUV_2_PKP	Phase A UV 2 PKP
PUV_2_phA_PKP	Phase A UV 2 PKP
PUV_2_phB_PKP	Phase B UV 2 PKP
PUV_2_phC_PKP	Phase C UV 2 PKP
PUV_2_OP	Phase A UV 2 OP
PUV_2_phA_OP	Phase A UV 2 OP
PUV_2_phB_OP	Phase B UV 2 OP
PUV_2_phC_OP	Phase C UV 2 OP
PUV_2_BLK	Phase UV 2 BLK
PUV_3_PKP	Phase UV 3 PKP
PUV_3_phA_PKP	Phase A UV 3 PKP
PUV_3_phB_PKP	Phase B UV 3 PKP
PUV_3_phC_PKP	Phase C UV 3 PKP
PUV_3_OP	Phase UV 3 OP
PUV_3_phA_OP	Phase A UV 3 OP
PUV_3_phB_OP	Phase B UV 3 OP
PUV_3_phC_OP	Phase C UV 3 OP
PUV_3_BLK	Phase UV 3 BLK
PUV_4_PKP	Phase UV 4 PKP
PUV_4_phA_PKP	Phase A UV 4 PKP
PUV_4_phB_PKP	Phase B UV 4 PKP
PUV_4_phC_PKP	Phase C UV 4

Data	Description
PUV_4_OP	Phase UV 4 OP
PUV_4_phA_OP	Phase A UV 4 OP
PUV_4_phB_OP	Phase B UV 4 OP
PUV_4_phC_OP	Phase C UV 4 OP
PUV_4_BLK	Phase UV 4 BLK
POV_2_PKP	Phase OV 2 PKP
POV_2_phA_PKP	Phase A OV 2 PKP
POV_2_phB_PKP	Phase B OV 2 PKP
POV_2_phC_PKP	Phase C OV 2 PKP
POV_2_OP	Phase OV 2 OP
POV_2_phA_OP	Phase A OV 2 OP
POV_2_phB_OP	Phase B OV 2 OP
POV_2_phC_OP	Phase C OV 2 OP
POV_2_BLK	Phase OV 2 BLK
POV_3_PKP	Phase OV 3 PKP
POV_3_phA_PKP	Phase A OV 3 PKP
POV_3_phB_PKP	Phase B OV 3 PKP
POV_3_phC_PKP	Phase C OV 3 PKP
POV_3_OP	Phase OV 3 OP
POV_3_phA_OP	Phase A OV 3 OP
POV_3_phB_OP	Phase B OV 3 OP
POV_3_phC_OP	Phase C OV 3 OP
POV_3_BLK	Phase OV 3 BLK
POV_4_PKP	Phase OV 4 PKP
POV_4_phA_PKP	Phase A OV 4 PKP
POV_4_phB_PKP	Phase B OV 4 PKP
POV_4_phC_PKP	Phase C OV 4 PKP
POV_4_OP	Phase OV 4 OP
POV_4_phA_OP	Phase A OV 4 OP
POV_4_phB_OP	Phase B OV 4 OP
POV_4_phC_OP	Phase C OV 4 OP
POV_4_BLK	Phase OV 4 BLK
NOV_2_PKP	Neutral OV 2 PKP
NOV_2_OP	Neutral OV 2 OP
NOV_2_BLK	Neutral OV 2 BLK
NOV_3_PKP	Neutral OV 3 PKP
NOV_3_OP	Neutral OV 3 OP
NOV_3_BLK	Neutral OV 3 BLK
NOV_4_PKP	Neutral OV 4 PKP
NOV_4_OP	Neutral OV 4 OP
NOV_4_BLK	Neutral OV 4 BLK
NegSeqOV_2_PKP	Neg Seq OV 2 PKP
NegSeqOV_2_OP	Neg Seq OV 2 OP
NegSeqOV_2_BLK	Neg Seq OV 2 BLK
OF_3_PKP	Over Frequency 3 PKP
OF_3_OP	Over Frequency 3 OP
OF_3_BLK	Over Frequency 3 BLK

Data	Description
OF_4_PKP	Over Frequency 4 PKP
OF_4_OP	Over Frequency 4 OP
OF_4_BLK	Over Frequency 4 BLK
UF_3_PKP	Under Frequency 3 PKP
UF_3_OP	Under Frequency 3 OP
UF_3_BLK	Under Frequency 3 BLK
UF_4_PKP	Under Frequency 4 PKP
UF_4_OP	Under Frequency 4 OP
UF_4_BLK	Under Frequency 4 BLK
FuseFail_PKP	Fuse Fail PKP
FuseFail_OP	Fuse Fail OP
PosSeq_UV_PKP	Positive Sequence UV PKP
PosSeq_UV_OP	Positive Sequence UV OP
PosSeq_UV_BLK	Positive Sequence UV BLK
Synchk_OP	Syncrocheck OP
Synchk_Close_OP	Syncrocheck Close OP
Synchk_Cond_OP	Syncrocheck Condition OP
CLP_PKP	Cold Load Pickup PKP
CLP_OP	Cold Load Pickup OP
VoltHertz_PKP	Volt Hertz PKP
VoltHertz_OP	Volt Hertz OP
VoltHertz_BLK	Volt Hertz BLK

Table 5-3: Input points

Data	Description
CI_1	Contact Input 1
CI_2	Contact Input 2
CI_3	Contact Input 3
CI_4	Contact Input 4
CI_5	Contact Input 5
CI_6	Contact Input 6
CI_7	Contact Input 7
CI_8	Contact Input 8
CI_9	Contact Input 9
CI_10	Contact Input 10
VI_1	Virtual Input 1
VI_2	Virtual Input 2
VI_3	Virtual Input 3
VI_4	Virtual Input 4
VI_5	Virtual Input 5
VI_6	Virtual Input 6
VI_7	Virtual Input 7
VI_8	Virtual Input 8
VI_9	Virtual Input 9
VI_10	Virtual Input 10
VI_11	Virtual Input 11
VI_12	Virtual Input 12

Data	Description
VI_13	Virtual Input 13
VI_14	Virtual Input 14
VI_15	Virtual Input 15
VI_16	Virtual Input 16
VI_17	Virtual Input 17
VI_18	Virtual Input 18
VI_19	Virtual Input 19
VI_20	Virtual Input 20
VI_21	Virtual Input 21
VI_22	Virtual Input 22
VI_23	Virtual Input 23
VI_24	Virtual Input 24
VI_25	Virtual Input 25
VI_26	Virtual Input 26
VI_27	Virtual Input 27
VI_28	Virtual Input 28
VI_29	Virtual Input 29
VI_30	Virtual Input 30
VI_31	Virtual Input 31
VI_32	Virtual Input 32
RI_1	Remote Input 1
RI_2	Remote Input 2
RI_3	Remote Input 3
RI_4	Remote Input 4
RI_5	Remote Input 5
RI_6	Remote Input 6
RI_7	Remote Input 7
RI_8	Remote Input 8
RI_9	Remote Input 9
RI_10	Remote Input 10
RI_11	Remote Input 11
RI_12	Remote Input 12
RI_13	Remote Input 13
RI_14	Remote Input 14
RI_15	Remote Input 15
RI_16	Remote Input 16
RI_17	Remote Input 17
RI_18	Remote Input 18
RI_19	Remote Input 19
RI_20	Remote Input 20
RI_21	Remote Input 21
RI_22	Remote Input 22
RI_23	Remote Input 23
RI_24	Remote Input 24
RI_25	Remote Input 25
RI_26	Remote Input 26
RI_27	Remote Input 27

Data	Description
RI_28	Remote Input 28
RI_29	Remote Input 29
RI_30	Remote Input 30
RI_31	Remote Input 31
RI_32	Remote Input 32

Table 5-4: Output points

Data	Description
RO_1	Remote Output 1
RO_2	Remote Output 2
RO_3	Remote Output 3
RO_4	Remote Output 4
RO_5	Remote Output 5
RO_6	Remote Output 6
RO_7	Remote Output 7
RO_8	Remote Output 8
RO_9	Remote Output 9
RO_10	Remote Output 10
RO_11	Remote Output 11
RO_12	Remote Output 12
RO_13	Remote Output 13
RO_14	Remote Output 14
RO_15	Remote Output 15
RO_16	Remote Output 16
RO_17	Remote Output 17
RO_18	Remote Output 18
RO_19	Remote Output 19
RO_20	Remote Output 20
RO_21	Remote Output 21
RO_22	Remote Output 22
RO_23	Remote Output 23
RO_24	Remote Output 24
RO_25	Remote Output 25
RO_26	Remote Output 26
RO_27	Remote Output 27
RO_28	Remote Output 28
RO_29	Remote Output 29
RO_30	Remote Output 30
RO_31	Remote Output 31
RO_32	Remote Output 32
CO_1	Contact Output 1
CO_2	Contact Output 2
CO_3	Contact Output 3
CO_4	Contact Output 4
CO_5	Contact Output 5
CO_6	Contact Output 6
CO_7	Contact Output 7

Table 5-5: Logic points

Data	Description
Logic_1	Logic Element 1
Logic_2	Logic Element 2
Logic_3	Logic Element 3
Logic_4	Logic Element 4
Logic_5	Logic Element 5
Logic_6	Logic Element 6
Logic_7	Logic Element 7
Logic_8	Logic Element 8
Logic_9	Logic Element 9
Logic_10	Logic Element 10
Logic_11	Logic Element 11
Logic_12	Logic Element 12
Logic_13	Logic Element 13
Logic_14	Logic Element 14
Logic_15	Logic Element 15
Logic_16	Logic Element 16

Table 5-6: Commands

Data	Description
Reset	Reset
Open	Open
Close	Close

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Chapter 6: USB interface

The USB inferface supports only the Modbus protocol.

For information on using the USB port on the 3 Series relay, please refer to section 3 of the appropriate 3 Series relay Instruction Manual.

MODBUS Protocol

The 3 Series relay implements a subset of the Modicon Modbus RTU serial communication standard. The Modbus protocol is hardware-independent. That is, the physical layer can be any of a variety of standard hardware configurations. This includes USB, RS485, fibre optics, etc. Modbus is a single master / multiple slave type of protocol suitable for a multi-drop configuration.

The 3 Series relay is always a Modbus slave. It can not be programmed as a Modbus master. Computers or PLCs are commonly programmed as masters.

Both monitoring and control are possible using read and write register commands. Other commands are supported to provide additional functions.

The Modbus protocol has the following characteristics.

- Address: 1 to 254
- Supported Modbus function codes: 1H, 2H, 3H, 4H, 5H, 6H, 7H, 8H, 10H, 42H, 43H

For details see MODBUS Functions.

Data Frame Format and Data Rate

One data frame of an asynchronous transmission to or from a 3 Series relay typically consists of 1 start bit, 8 data bits, and 1 stop bit. This produces a 10 bit data frame. This is important for transmission through modems at high bit rates.

Modbus protocol can be implemented at any standard communication speed. The 3 Series relay supports operation at 9600, 19200, 38400, 57600, and 115200 baud.



The USB interface will support only 115200 baud.

Data Packet Format

A complete request/response sequence consists of the following bytes (transmitted as separate data frames):

Master Request Transmission:

SLAVE ADDRESS: 1 byte
FUNCTION CODE: 1 byte
DATA: variable number of bytes depending on FUNCTION CODE
CRC: 2 bytes

Slave Response Transmission:

SLAVE ADDRESS: 1 byte
FUNCTION CODE: 1 byte
DATA: variable number of bytes depending on FUNCTION CODE
CRC: 2 bytes

SLAVE ADDRESS: This is the first byte of every transmission. This byte represents the user-assigned address of the slave device that is to receive the message sent by the master. Each slave device must be assigned a unique address and only the addressed slave will respond to a transmission that starts with its address. In a master request transmission the SLAVE ADDRESS represents the address of the slave to which the request is being sent. In a slave response transmission the SLAVE ADDRESS represents the address of the slave that is sending the response.

FUNCTION CODE: This is the second byte of every transmission. Modbus defines function codes of 1 to 127.

DATA: This will be a variable number of bytes depending on the FUNCTION CODE. This may be Actual Values, Setpoints, or addresses sent by the master to the slave or by the slave to the master.

CRC: This is a two byte error checking code.

Error Checking

The RTU version of Modbus includes a two byte CRC-16 (16 bit cyclic redundancy check) with every transmission. The CRC-16 algorithm essentially treats the entire data stream (data bits only; start, stop and parity ignored) as one continuous binary number. This number is first shifted left 16 bits and then divided by a characteristic polynomial (1100000000000000101B). The 16 bit remainder of the division is appended to the end of the transmission, MSByte first. The resulting message including CRC, when divided by the same polynomial at the receiver will give a zero remainder if no transmission errors have occurred.

If a 3 Series relay Modbus slave device receives a transmission in which an error is indicated by the CRC-16 calculation, the slave device will not respond to the transmission. A CRC-16 error indicates than one or more bytes of the transmission were received incorrectly and thus the entire transmission should be ignored in order to avoid the 3 Series relay performing any incorrect operation.

The CRC-16 calculation is an industry standard method used for error detection. An algorithm is included here to assist programmers in situations where no standard CRC-16 calculation routines are available.

CRC-16 Algorithm

Once the following algorithm is complete, the working register "A" will contain the CRC value to be transmitted. Note that this algorithm requires the characteristic polynomial to be reverse bit ordered. The MSBit of the characteristic polynomial is dropped since it does not affect the value of the remainder. The following symbols are used in the algorithm:

—>: data transfer

A: 16 bit working register

AL: low order byte of A

AH: high order byte of A

CRC: 16 bit CRC-16 value

i, j: loop counters

(+): logical exclusive or operator

Di: i-th data byte (i = 0 to N-1)

G: 16 bit characteristic polynomial = 1010000000000001 with MSbit dropped and bit order reversed

shr(x): shift right (the LSbit of the low order byte of x shifts into a carry flag, a '0' is shifted into the MSbit of the high order byte of x, all other bits shift right one location

The algorithm is:

```
1. FFFF hex –> A

2. 0 –> i

3. 0 –> j
```

```
4. Di (+) AL -> AL

5. j+1 -> j

6. shr(A)

7. is there a carry? No: go to 8. Yes: G (+) A -> A

8. is j = 8? No: go to 5. Yes: go to 9.

9. i+1 -> i

10. is i = N? No: go to 3. Yes: go to 11.

11. A -> CRC
```

Timing

Data packet synchronization is maintained by timing constraints. The receiving device must measure the time between the reception of characters. If 3.5 character times elapse without a new character or completion of the packet, then the communication link must be reset (i.e. all slaves start listening for a new transmission from the master). Thus at 115200 baud a delay of greater than 3.5 x 1 / 115200 x 10 x = 0.3 ms will cause the communication link to be reset.

3 Series supported functions

The following functions are supported by the 3 Series relay :

- FUNCTION CODE 03H - Read Setpoints
- FUNCTION CODE 04H - Read Actual Values
- FUNCTION CODE 05H - Execute Operation
- FUNCTION CODE 06H - Store Single Setpoint
- FUNCTION CODE 07H - Read Device Status
- FUNCTION CODE 08H - Loopback Test
- FUNCTION CODE 10H - Store Multiple Setpoints

Refer to *section 6* of this guide for more details on MODBUS function codes.

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Chapter 7: 350 Time Protocols

NOTE

Time protocols are available for the 350 relay only.

350 IEC 1588 Precision Time Protocol (PTP)

The 350 relay supports PTP V2 protocol. The present values of the PTP protocol are displayed here.

PATH: Actual Values > A1 Status

The **RTC Sync Source** actual value is the time synchronizing source the relay is using at present. Possible sources are: PTP Clock, IRIG-B, SNTP and Internal.

PATH: Actual Values > A1 Status > PTP

Grandmaster ID: GRAND MAS HI + GRAND MAS LO is the grandmaster Identity code being received from the present PTP grandmaster, if any. When the relay is not using any PTP grandmaster, this actual value is zero. The grandmaster Identity code is specified by PTP to be globally unique, so one can always know which clock is grandmaster in system with multiple grandmaster-capable clocks.

350 Real Time Clock

PATH: SETPOINTS > S1 RELAY SETUP > CLOCK

PTP FUNCTION

Range: Enabled, Disabled
Default: Disabled

When "Disabled" is selected for this setting, PTP is disabled on the port. The relay does not generate, or listen to, PTP messages on the port.

PTP STRICT POWER PROFILE

Range: Enabled, Disabled
Default: Disabled

Power profile (IEEE Std C37.238™ 2011) requires that the relay selects as a grandmaster:

- only power profile compliant clocks
- that the delivered time has a worst-case error of ±1 µs
- and, that the peer delay mechanism be implemented.

With the **Strict Power Profile** setting set to "Enabled", the relay selects as the master only clocks displaying the IEEE_C37_238 identification codes. It uses a port only when the peer delay mechanism is operational. With the **Strict Power Profile** setting set to "Disabled", the relay uses clocks without the power profile identification when no power profile clocks are present, and uses ports even if the peer delay mechanism is non-operational. This setting applies to all of the relay's PTP-capable ports.

PTP DOMAIN NUMBER

Range: 0 to 255
Default: 0

The setting is set to the domain number of the grandmaster-capable clock(s) to which they can be synchronized. A network can support multiple time distribution domains, each distinguished with a unique domain number. More commonly, there is a single domain using the default domain number zero. The setting applies to all of the relay's PTP-capable ports.

PTP VLAN PRIORITY

Range: 0 to 7
Default: 4

The setting selects the value of the priority field in the 802.1Q VLAN tag in request messages issued by the relay's peer delay mechanism. In compliance with PP (Power Profile) the default VLAN priority is 4, but it is recommended that in accordance with PTP it be set to 7.

Depending on the characteristics of the device to which the relay is directly linked, VLAN Priority may have no effect.

The setting applies to all of the relay's PTP-capable ports.

PTP VLAN ID

Range: 0 to 4095
Default: 0

The setting selects the value of the ID field in the 802.1Q VLAN tag in request messages issued by the relay's peer delay mechanism. It is provided in compliance with PP (Power Profile).

As these messages have a destination address that indicates they are not to be bridged, their VLAN ID serves no function, and so may be left at its default value. Depending on the characteristics of the device to which the relay is directly linked, VLAN ID may have no effect.

The setting applies to all of the relay's PTP-capable ports

PTP EPOCH

Range: UTC since 1995, UTC since 1900, UTC since 1970, TAI since 1970
Default: UTC since 1995

The setting selects the origin of the time scale.

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Chapter 8: MODBUS Functions

Function Code 03H

Modbus implementation: Read Holding Registers

3 Series relay implementation: Read Setpoints

For the 3 Series relay implementation of Modbus, this function code can be used to read any setpoints ("holding registers"). Holding registers are 16 bit (two byte) values transmitted high order byte first. Thus all 3 Series relay Setpoints are sent as two bytes. The maximum number of registers that can be read in one transmission is 125.

The slave response to this function code is the slave address, function code, a count of the number of data bytes to follow, the data itself and the CRC. Each data item is sent as a two byte number with the high order byte sent first.

For example, consider a request for slave 17 to respond with 3 registers starting at address 006B. For this example the register data in these addresses is as follows:

Address	Data
006B	022B
006C	0000
006D	0064

The master/slave packets have the following format:

Table 8-1: MASTER/SLAVE PACKET FORMAT FOR FUNCTION CODE 03H

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	03	read registers
DATA STARTING ADDRESS	2	00 6B	data starting at 006B
NUMBER OF SETPOINTS	2	00 03	3 registers = 6 bytes total
CRC	2	76 87	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	03	read registers
BYTE COUNT	1	06	3 registers = 6 bytes
DATA 1 (see definition above)	2	02 2B	value in address 006B
DATA 2 (see definition above)	2	00 00	value in address 006C
DATA 3 (see definition above)	2	00 64	value in address 006D
CRC	2	54 83	CRC error code

Query:

The query message specifies the starting register and quantity of registers to be read. Registers are addressed starting at zero: registers 1 to 16 are addressed as 0 to 15.

Here is an example of a request to read registers 40172 to 40175 from slave device 254:

Field Name	Hex
Slave Address	FE
Function	03
Starting Address Hi	00
Starting Address Lo	AB
No. of Points Hi	00
No. of Points Lo	04

Response:

The register data in the response message are packed as two bytes per register, with the binary contents right justified within each byte. For each register, the first byte contains the high order bits and the second contains the low order bits.

The response is returned when the data is completely assembled.

Field Name	Hex
Slave Address	FE
Function	03
Byte Count	08
Data Hi (Register 40172)	00
Data Lo (Register 40172)	FE
Data Hi (Register 40173)	00
Data Lo (Register 40173)	04
Data Hi (Register 40174)	00
Data Lo (Register 40174)	00
Data Hi (Register 40175)	00
Data Lo (Register 40175)	00

The contents of register 40172 are shown as the two byte values of 00 FE hex, or254 decimal. The contents of registers 40173 to 40175 are 00 04, 00 00 and 00 00 hex, or 4, 0 and 0 decimal.

Function Code 04H

Modbus Implementation: Read Input Registers

3 Series relay implementation: Read Actual Values

For the 3 Series relay implementation of Modbus, this function code can be used to read any actual values ("input registers"). Input registers are 16 bit (two byte) values transmitted high order byte first. Thus all 3 Series relay Actual Values are sent as two bytes. The maximum number of registers that can be read in one transmission is 125.

The slave response to this function code is the slave address, function code, a count of the data bytes to follow, the data itself and the CRC. Each data item is sent as a two byte number with the high order byte sent first.

For example, request slave 17 to respond with 1 register starting at address 0008. For this example the value in this register (0008) is 0000.

Table 8-2: MASTER/SLAVE PACKET FORMAT FOR FUNCTION CODE 04H

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	04	read registers
DATA STARTING ADDRESS	2	00 08	data starting at 0008
NUMBER OF ACTUAL VALUES	2	00 01	1 register = 2 bytes
CRC	2	B2 98	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	04	read registers
BYTE COUNT	1	02	1 register = 2 bytes
DATA (see definition above)	2	00 00	value in address 0008
CRC	2	78 F3	CRC error code

Query:

The query message specifies the starting register and quantity of registers to be read. Registers are addressed starting at zero: registers 1 to 16 are addressed as 0 to 15.

Here is an example of a request to read register 30305 from slave device 254:

Field Name	Hex
Slave Address	FE
Function	04
Starting Address Hi	01
Starting Address Lo	30
No. of Points Hi	00
No. of Points Lo	01

Response:

The register data in the response message are packed as two bytes per register, with the binary contents right justified within each byte. For each register, the first byte contains the high order bits and the second contains the low order bits.

Field Name	Hex
Slave Address	FE
Function	04
Byte Count	02
Data Hi (Register 30305)	80
Data Lo (Register 30305)	80

Function Code 05H

Modbus Implementation: Force Single Coil

3 Series relay Implementation: Execute Operation

This function code allows the master to request a 3 Series relay to perform specific command operations.

For example, to request slave 17 to execute operation code 1 (reset), we have the following master/slave packet format:

Table 8-3: MASTER/SLAVE PACKET FORMAT FOR FUNCTION CODE 05H

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	05	execute operation
OPERATION CODE	2	00 01	operation code 1
CODE VALUE	2	FF 00	perform function
CRC	2	DF 6A	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	05	execute operation
OPERATION CODE	2	00 01	operation code 1
CODE VALUE	2	FF 00	perform function
CRC	2	DF 6A	CRC error code

Forces a single coil (0X reference) to either ON or OFF.

The query message specifies the coil reference to be forced. Coils are addressed starting at zero: coil 1 is addressed as 0.

The requested ON/OFF state is specified by a constant in the query data field.

A value of FF 00 hex requests the coil to be ON. A value of 00 00 requests it to be OFF. All other values are illegal and will not affect the coil.

Force Virtual Inputs:

Description	Coil Address (HEX)	Description	Coil Address (HEX)
Virtual Input 1	0x1000	Virtual Input 17	0x1010
Virtual Input 2	0x1001	Virtual Input 18	0x1011
Virtual Input 3	0x1002	Virtual Input 19	0x1012
Virtual Input 4	0x1003	Virtual Input 20	0x1013
Virtual Input 5	0x1004	Virtual Input 21	0x1014

Description	Coil Address (HEX)	Description	Coil Address (HEX)
Virtual Input 6	0x1005	Virtual Input 22	0x1015
Virtual Input 7	0x1006	Virtual Input 23	0x1016
Virtual Input 8	0x1007	Virtual Input 24	0x1017
Virtual Input 9	0x1008	Virtual Input 25	0x1018
Virtual Input 10	0x1009	Virtual Input 26	0x1019
Virtual Input 11	0x100A	Virtual Input 27	0x101A
Virtual Input 12	0x100B	Virtual Input 28	0x101B
Virtual Input 13	0x100C	Virtual Input 29	0x101C
Virtual Input 14	0x100D	Virtual Input 30	0x101D
Virtual Input 15	0x100E	Virtual Input 31	0x101E
Virtual Input 16	0x100F	Virtual Input 32	0x101F

Commands are different for each 3 Series relay:

339 Commands:

Description	Coil Address (DEC)
Reset	1
Lockout Reset	2
Open	4
Close	5
Validate RMIO	12
Emergency Restart	13
Clear Last Trip Data Prompt	96
Reset MWh and Mvarh Meters	97
Clear Trip Counters	99
Clear Event Records	100
Clear Waveform Data	101
Clear Data Logger	103
Clear Learned Data	106
Trigger Waveform Capture	120
Start Data Log	121
Stop Data Log	122
Clear Security Log	126
Simulate Key Press - Nav Up Key	142
Simulate Key Press - Nav Left Key	143
Simulate Key Press - Nav Down Key	144
Simulate Key Press - Nav Right Key	145
Simulate Key Press - Up Key	146
Simulate Key Press - Down Key	147
Simulate Key Press - Enter Key	148
Simulate Key Press - Menu Key	149
Simulate Key Press - Escape Key	150
Simulate Key Press - Reset Key	151
Reload Factory Setpoints 2	161
Reload Factory Setpoints 1	162
Motor Data Logger Clear	182

345 Commands:

Description	Coil Address (DEC)
Reset	1
Activate Group 1	7
Activate Group 2	8
Active Group	11
Clear Event Records	100
Clear Waveform Data	101
Clear Maintenance Timer	102
Clear Thermal Image	105
Trigger Waveform Capture	120
Force Virtual Input 1 State	4096
Force Virtual Input 2 State	4097
Force Virtual Input 3 State	4098
Force Virtual Input 4 State	4099
Force Virtual Input 5 State	4100
Force Virtual Input 6 State	4101
Force Virtual Input 7 State	4102
Force Virtual Input 8 State	4103
Force Virtual Input 9 State	4104
Force Virtual Input 10 State	4105
Force Virtual Input 11 State	4106
Force Virtual Input 12 State	4107
Force Virtual Input 13 State	4108
Force Virtual Input 14 State	4109
Force Virtual Input 15 State	4110
Force Virtual Input 16 State	4111
Force Virtual Input 17 State	4112
Force Virtual Input 18 State	4113
Force Virtual Input 19 State	4114
Force Virtual Input 20 State	4115
Force Virtual Input 21 State	4116
Force Virtual Input 22 State	4117
Force Virtual Input 23 State	4118
Force Virtual Input 24 State	4119
Force Virtual Input 25 State	4120
Force Virtual Input 26 State	4121
Force Virtual Input 27 State	4122
Force Virtual Input 28 State	4123
Force Virtual Input 29 State	4124
Force Virtual Input 30 State	4125
Force Virtual Input 31 State	4126
Force Virtual Input 32 State	4127

350 Commands:

Description	Coil Address (DEC)
Reset	1
Open	4
Close	5
Activate Group 1	7
Activate Group 2	8
Active Group	11
Reset MWh and Mvarh Meters	97
Clear Trip Counters	99
Clear Event Records	100
Clear Waveform Data	101
Clear Maintenance Timer	102
Clear Thermal Image	105
Trigger Waveform Capture	120
Force Virtual Input 1 State	4096
Force Virtual Input 2 State	4097
Force Virtual Input 3 State	4098
Force Virtual Input 4 State	4099
Force Virtual Input 5 State	4100
Force Virtual Input 6 State	4101
Force Virtual Input 7 State	4102
Force Virtual Input 8 State	4103
Force Virtual Input 9 State	4104
Force Virtual Input 10 State	4105
Force Virtual Input 11 State	4106
Force Virtual Input 12 State	4107
Force Virtual Input 13 State	4108
Force Virtual Input 14 State	4109
Force Virtual Input 15 State	4110
Force Virtual Input 16 State	4111
Force Virtual Input 17 State	4112
Force Virtual Input 18 State	4113
Force Virtual Input 19 State	4114
Force Virtual Input 20 State	4115
Force Virtual Input 21 State	4116
Force Virtual Input 22 State	4117
Force Virtual Input 23 State	4118
Force Virtual Input 24 State	4119
Force Virtual Input 25 State	4120
Force Virtual Input 26 State	4121
Force Virtual Input 27 State	4122
Force Virtual Input 28 State	4123
Force Virtual Input 29 State	4124
Force Virtual Input 30 State	4125
Force Virtual Input 31 State	4126
Force Virtual Input 32 State	4127

Query:
Here is an example of a request to force Virtual Input1 to ON in slave device 254:

Field Name	Hex
Slave Address	FE
Function	05
Coil Address Hi	10
Coil Address Lo	00
Force Data Hi	FF
Force Data Lo	00

Response:
The normal response is an echo of the query, returned after the coil state has been forced.

Field Name	Hex
Slave Address	FE
Function	05
Coil Address Hi	10
Coil Address Lo	00
Force Data Hi	FF
Force Data Lo	00

Function Code 06H

Modbus Implementation: Preset Single Register

3 Series relay Implementation: Store Single Setpoint

This command allows the master to store a single setpoint into the memory of a 3 Series relay. The slave response to this function code is to echo the entire master transmission.

For example, request slave 17 to store the value 2 in setpoint address 04 5C. After the transmission in this example is complete, setpoints address 04 5C will contain the value 0002. The master/slave packet format is shown below:

Table 8-4: MASTER/SLAVE PACKET FORMAT FOR FUNCTION CODE 06H

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	06	store single setpoint
DATA STARTING ADDRESS	2	04 5C	setpoint address 04 5C
DATA	2	00 02	data for setpoint address 04 5C
CRC	2	CB B9	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	06	store single setpoint
DATA STARTING ADDRESS	2	04 5C	setpoint address 04 5C
DATA	2	00 02	data stored in setpoint address 04 5C
CRC	2	CB B9	CRC error code

Function Code 07H

Modbus Implementation: Read Exception Status

3 Series relay Implementation: Read Device Status

This is a function used to quickly read the status of a selected device. A short message length allows for rapid reading of status. The status byte returned will have individual bits set to 1 or 0 depending on the status of the slave device. For this example, consider the following 3 Series relay general status byte:

The master/slave packets have the following format:

Table 8-5: Function code 7 bitmask

Bit	Function
0	Alarm
1	Trip
2	Self Test
3	Breaker Connected
4	52a Contact
5	52b Contact
6	Maintenance
7	Relay in Service

Table 8-6: MASTER/SLAVE PACKET FORMAT FOR FUNCTION CODE 07H

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	07	read device status
CRC	2	4C 22	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	07	read device status
DEVICE STATUS (see definition above)	1	2C	status = 00101100 (in binary)
CRC	2	22 28	CRC error code

Query:

Field Name	Hex
Slave Address	FE
Function	07

Response:

Field Name	Hex
Slave Address	FE
Function	07
Device Status (see definition above)	2C

Function Code 08H

Modbus Implementation: Loopback

Test 3 Series relay Implementation: Loopback Test

This function is used to test the integrity of the communication link. The 3 Series relay will echo the request.

For example, consider a loopback test from slave 17:

Table 8-7: MASTER/SLAVE PACKET FORMAT FOR FUNCTION CODE 08H

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	08	loopback test
DIAG CODE	2	00 00	must be 00 00
DATA	2	00 00	must be 00 00
CRC	2	E0 0B	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	08	loopback test
DIAG CODE	2	00 00	must be 00 00
DATA	2	00 00	must be 00 00
CRC	2	E0 0B	CRC error code

Function Code 10H

Modbus Implementation: Preset Multiple Registers

3 Series relay Implementation: Store Multiple Setpoints

This function code allows multiple Setpoints to be stored into the 3 Series relay memory. Modbus "registers" are 16-bit (two byte) values transmitted high order byte first. Thus all 3 Series relay setpoints are sent as two bytes. The maximum number of Setpoints that can be stored in one transmission is dependent on the slave device. Modbus allows up to a maximum of 60 holding registers to be stored. The 3 Series relay response to this function code is to echo the slave address, function code, starting address, the number of Setpoints stored, and the CRC.

For example, consider a request for slave 17 to store the value 00 02 to setpoint address 04 5C and the value 01 F4 to setpoint address 04 5D. After the transmission in this example is complete, 3 Series relay slave 17 will have the following setpoints information stored:

Address	Data
04 5C	00 02
04 5D	01 F4

The master/slave packets have the following format:

Table 8-8: MASTER/SLAVE PACKET FORMAT FOR FUNCTION CODE 10H

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	10	store setpoints
DATA STARTING ADDRESS	2	04 5C	setpoint address 04 5C
NUMBER OF SETPOINTS	2	00 02	2 setpoints = 4 bytes total
BYTE COUNT	1	04	4 bytes of data
DATA 1	2	00 02	data for setpoint address 04 5C
DATA 2	2	01 F4	data for setpoint address 04 5D
CRC	2	31 11	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	10	store setpoints
DATA STARTING ADDRESS	2	04 5C	setpoint address 04 5C
NUMBER OF SETPOINTS	2	00 02	2 setpoints
CRC	2	82 7A	CRC error code

Query:

The query message specifies the register references to be preset. Registers are addressed starting at zero: register 1 is addressed as 0.

The requested preset values are specified in the query data field. Data is packed as two bytes per register.

Here is an example of a request to preset two registers starting at 43851 to 00 01 and 00 00 hex, in slave device 254:

Field Name	Hex
Slave Address	FE
Function	10
Starting Address Hi	0F
Starting Address Lo	0A
No. of Registers Hi	00
No. of Registers Lo	02
Byte Count 04	04
Data Hi	00
Data Lo	01
Data Hi	00
Data Lo	00

Response:

The normal response returns the slave address, function code, starting address, and quantity of registers preset.

Field Name	Hex
Slave Address	FE
Function	10
Starting Address Hi	0F
Starting Address Lo	0A
No. of Registers Hi	00
No. of Registers Lo	02

Performing Commands Using Function Code 10H

Commands can be performed using function code 16 (10H) as well as function code 5. When using FUNCTION CODE 16, the Command Function register must be written with a value of 5. The Command Operation register must be written with a valid command operation number. The Command Data registers must be written with valid data; this is dependent upon the command operation.

For example, consider a request for slave 17 to perform command operation 1 (RESET): The master/slave packets have the following format:

Table 8-9: MASTER/SLAVE PACKET FORMAT FOR PERFORMING COMMANDS

MASTER TRANSMISSION	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message for slave 17
FUNCTION CODE	1	10	store multiple setpoints
DATA STARTING ADDRESS	2	00 80	setpoint address 00 80
NUMBER OF SETPOINTS	2	00 02	2 setpoints = 4 bytes total
BYTE COUNT	1	04	4 bytes of data
DATA 1	2	00 05	data for address 00 80
DATA 2	2	00 01	data for address 00 81
CRC	2	7E CE	CRC error code

SLAVE RESPONSE	BYTES	EXAMPLE	DESCRIPTION
SLAVE ADDRESS	1	11	message from slave 17
FUNCTION CODE	1	10	store multiple setpoints
DATA STARTING ADDRESS	2	00 80	setpoint address 00 80
NUMBER OF SETPOINTS	2	00 02	2 setpoints
CRC	2	42 B0	CRC error code

Function Code 42H

Modbus Implementation: (not a standard function)

3 Series relay Implementation: Read Settings Group

All protection functions for the 345 and 350 relays have two sets of settings - Group 1 and Group 2. This function number is used to read the settings for each group. (This function does not apply to the 339 relay.)

Example:

Field Name	Hex
Slave Address	FE
Function	42
Group Activation	00
Starting Address Hi	0A
Starting Address Lo	B3
No. of Registers Hi	00
No. of Registers Lo	01

Response:

Field Name	Hex
Slave Address	FE
Function	42
Byte Count	02
Data Hi	00
Data Lo	00

Function Code 43H

Modbus Implementation: (not a standard function)

3 Series relay Implementation: Write Settings Group

All protection functions for the 345 and 350 relays have two sets of settings - Group 1 and Group 2. This function is used to write settings in a specific settings group. (This function does not apply to the 339 relay.)

Example: (In the example there is a write setting procedure in the Group 1 (00), setting address 0x09C1 and 2 bytes of data with value 0x0001.)

Field Name	Hex
Slave Address	FE
Function	43
Group Activation	00
Starting Address Hi	09
Starting Address Lo	C1
No. of Registers Hi	00
No. of Registers Lo	01
Byte Count 04	02
Data Hi	00
Data Lo	01

Response:

Field Name	Hex
Slave Address	FE
Function	43
Starting Address Hi	09
Starting Address Lo	C1
No. of Registers Hi	00
No. of Registers Lo	01

Error Responses

When a 3 Series relay detects an error other than a CRC error, a response will be sent to the master. The MSBit of the FUNCTION CODE byte will be set to 1 (i.e. the function code sent from the slave will be equal to the function code sent from the master plus 128). The following byte will be an exception code indicating the type of error that occurred.

Transmissions received from the master with CRC errors will be ignored by the 3 Series relay.

The slave response to an error (other than CRC error) will be:

SLAVE ADDRESS: 1 byte

FUNCTION CODE: 1 byte (with MSbit set to 1)

EXCEPTION CODE: 1 byte

CRC: 2 bytes

The 3 Series relay implements the following exception response codes:

01 - ILLEGAL FUNCTION
The function code transmitted is not one of the functions supported by the 3 Series relay.

02 - ILLEGAL DATA ADDRESS
The address referenced in the data field transmitted by the master is not an allowable address for the 3 Series relay.

03 - ILLEGAL DATA VALUE
The value referenced in the data field transmitted by the master is not within range for the selected data address.

GE
Grid Solutions

3 Series Protective Relay Platform

Chapter 9: Using the MODBUS User Map

3 Series relay units incorporate a powerful feature called Modbus User Map, that allows the user to read 125 non-consecutive data records.

A master computer will often have to interrogate continuously several connected slave relays. If the values being read are "randomly" positioned along the memory map, reading them may require several transmissions, and this may cause a communications overload.

Data records that are positioned in this manner in the memory map, can be remapped to the address of an adjacent record in the **User Map** area, so that they can be accessible to the master computer with only a single read operation.

To program the map this way, addresses for the required records must be written in the index area, which is located at the addresses from 40524 (0x020B) to 40648 (0x287).

Only single data from the Actual Values subset can be set in the map. The ranges of addresses that can be configured in that index area are:

Range1 : 30001 to 30523 (Product Device Code to Internal Fault Cause)
[The address 30302 (Current Security Access Level) cannot be configured.]
Range2 : 30946 to 32036 (Alarm Status 4 to Last Actual Values Register)

The values that correspond to the points provisioned in the User Map index (40524 (0x020B) to 40648 (0x287)) may be read from the Actual Values map area located at the addresses from 30524 (0x020B) to 30648 (0x0287).

MODBUS User Map

Table 9-1: User Map Settings

MODBUS Address	Hex Addr.	Description	Min	Max	Step	Format Code	339 Factory Default	345 Factory Default	350 Factory Default
40524	20B	User Map Address 1	30001	43763	1	F1	30305 Device Status	30305 Device Status	30305 Device Status
40525	20C	User Map Address 2	30001	43763	1	F1	30505 LED Status	30505 LED Status	30505 LED Status
40526	20D	User Map Address 3	30001	43763	1	F1	30506 LED Status	30506 LED Status	30506 LED Status
40527	20E	User Map Address 4	30001	43763	1	F1	30960 Trip Status 1	30960 Trip Status 1	30960 Trip Status 1
40528	20F	User Map Address 5	30001	43763	1	F1	30961 Trip Status 1	30961 Trip Status 1	30961 Trip Status 1
40529	210	User Map Address 6	30001	43763	1	F1	30958 Trip Status 2	30958 Trip Status 2	30958 Trip Status 2
40530	211	User Map Address 7	30001	43763	1	F1	30959 Trip Status 2	30959 Trip Status 2	30959 Trip Status 2
40531	212	User Map Address 8	30001	43763	1	F1	30956 Trip Status 3	30956 Trip Status 3	30956 Trip Status 3
40532	213	User Map Address 9	30001	43763	1	F1	30957 Trip Status 3	30957 Trip Status 3	30957 Trip Status 3
40533	214	User Map Address 10	30001	43763	1	F1	30954 Trip Status 4	30954 Trip Status 4	30954 Trip Status 4
40534	215	User Map Address 11	30001	43763	1	F1	30955 Trip Status 4	30955 Trip Status 4	30955 Trip Status 4
40535	216	User Map Address 12	30001	43763	1	F1	30952 Alarm Status 1	30952 Alarm Status 1	30952 Alarm Status 1
40536	217	User Map Address 13	30001	43763	1	F1	30953 Alarm Status 1	30953 Alarm Status 1	30953 Alarm Status 1
40537	218	User Map Address 14	30001	43763	1	F1	30950 Alarm Status 2	30950 Alarm Status 2	30950 Alarm Status 2
40538	219	User Map Address 15	30001	43763	1	F1	30951 Alarm Status 2	30951 Alarm Status 2	30951 Alarm Status 2
40539	21A	User Map Address 16	30001	43763	1	F1	30948 Alarm Status 3	30948 Alarm Status 3	30948 Alarm Status 3
40540	21B	User Map Address 17	30001	43763	1	F1	30949 Alarm Status 3	30949 Alarm Status 3	30949 Alarm Status 3
40541	21C	User Map Address 18	30001	43763	1	F1	30946 Alarm Status 4	30946 Alarm Status 4	30946 Alarm Status 4
40542	21D	User Map Address 19	30001	43763	1	F1	30947 Alarm Status 4	30947 Alarm Status 4	30947 Alarm Status 4
40543	21E	User Map Address 20	30001	43763	1	F1	30976 Cntrl Element Status 1	30976 Cntrl Element Status 1	30976 Cntrl Element Status 1
40544	21F	User Map Address 21	30001	43763	1	F1	30977 Cntrl Element Status 1	30977 Cntrl Element Status 1	30977 Cntrl Element Status 1
40545	220	User Map Address 22	30001	43763	1	F1	30974 Cntrl Element Status 2	30974 Cntrl Element Status 2	30974 Cntrl Element Status 2
40546	221	User Map Address 23	30001	43763	1	F1	30975 Cntrl Element Status 2	30975 Cntrl Element Status 2	30975 Cntrl Element Status 2
40547	222	User Map Address 24	30001	43763	1	F1	30972 Cntrl Element Status 3	30972 Cntrl Element Status 3	30972 Cntrl Element Status 3
40548	223	User Map Address 25	30001	43763	1	F1	30973 Cntrl Element Status 3	30973 Cntrl Element Status 3	30973 Cntrl Element Status 3
40549	224	User Map Address 26	30001	43763	1	F1	30970 Cntrl Element Status 4	30970 Cntrl Element Status 4	30970 Cntrl Element Status 4
40550	225	User Map Address 27	30001	43763	1	F1	30971 Cntrl Element Status 4	30971 Cntrl Element Status 4	30971 Cntrl Element Status 4
40551	226	User Map Address 28	30001	43763	1	F1	30984 Block Status 1	30984 Block Status 1	30984 Block Status 1
40552	227	User Map Address 29	30001	43763	1	F1	30985 Block Status 1	30985 Block Status 1	30985 Block Status 1

MODBUS Address	Hex Addr.	Description	Min	Max	Step	Format Code	339 Factory Default	345 Factory Default	350 Factory Default
40553	228	User Map Address 30	30001	43763	1	F1	30982 Block Status 2	30982 Block Status 2	30982 Block Status 2
40554	229	User Map Address 31	30001	43763	1	F1	30983 Block Status 2	30983 Block Status 2	30983 Block Status 2
40555	22A	User Map Address 32	30001	43763	1	F1	30980 Block Status 3	30980 Block Status 3	30980 Block Status 3
40556	22B	User Map Address 33	30001	43763	1	F1	30981 Block Status 3	30981 Block Status 3	30981 Block Status 3
40557	22C	User Map Address 34	30001	43763	1	F1	30978 Block Status 4	30978 Block Status 4	30978 Block Status 4
40558	22D	User Map Address 35	30001	43763	1	F1	30979 Block Status 4	30979 Block Status 4	30979 Block Status 4
40559	22E	User Map Address 36	30001	43763	1	F1	30186 Cause of Last Trip	30186 Cause of Last Trip	30186 Cause of Last Trip
40560	22F	User Map Address 37	30001	43763	1	F1	30308 Time to Trip	30285 Contact Input 1-32	30285 Contact Input 1-32
40561	230	User Map Address 38	30001	43763	1	F1	30309 Time to Trip	30286 Contact Input 1-32	30286 Contact Input 1-32
40562	231	User Map Address 39	30001	43763	1	F1	30313 Time to Reset	30298 Contact Output 1-32	30298 Contact Output 1-32
40563	232	User Map Address 40	30001	43763	1	F1	30307 Thermal Capacity Used	30299 Contact Output 1-32	30299 Contact Output 1-32
40564	233	User Map Address 41	30001	43763	1	F1	30336 Motor Load	30288 Virtual Input 1-32	30288 Virtual Input 1-32
40565	234	User Map Address 42	30001	43763	1	F1	30285 Contact Input 1-32	30289 Virtual Input 1-32	30289 Virtual Input 1-32
40566	235	User Map Address 43	30001	43763	1	F1	30286 Contact Input 1-32	30317 Active Setpoint Group	30317 Active Setpoint Group
40567	236	User Map Address 44	30001	43763	1	F1	30298 Contact Output 1-32	30291 Logic Element 1-16	30291 Logic Element 1-16
40568	237	User Map Address 45	30001	43763	1	F1	30299 Contact Output 1-32	30296 Remote Input 1-32	30296 Remote Input 1-32
40569	238	User Map Address 46	30001	43763	1	F1	30288 Virtual Input 1-32	30297 Remote Input 1-32	30297 Remote Input 1-32
40570	239	User Map Address 47	30001	43763	1	F1	30289 Virtual Input 1-32	30300 Remote Output 1-32	30300 Remote Output 1-32
40571	23A	User Map Address 48	30001	43763	1	F1	30290 Virtual Output 1-32	30301 Remote Output 1-32	30301 Remote Output 1-32
40572	23B	User Map Address 49	30001	43763	1	F1	30291 Virtual Output 1-32	30328 W1a	30328 Ia
40573	23C	User Map Address 50	30001	43763	1	F1	30296 Remote Input 1-32	30329 W1a	30329 Ia
40574	23D	User Map Address 51	30001	43763	1	F1	30297 Remote Input 1-32	30330 W1b	30330 Ib
40575	23E	User Map Address 52	30001	43763	1	F1	30300 Remote Output 1-32	30331 W1b	30331 Ib
40576	23F	User Map Address 53	30001	43763	1	F1	30301 Remote Output 1-32	30332 W1c	30332 Ic
40577	240	User Map Address 54	30001	43763	1	F1	30192 Pre-Trip Ia	30333 W1c	30333 Ic
40578	241	User Map Address 55	30001	43763	1	F1	30193 Pre-Trip Ia	30326 W1n	30326 In
40579	242	User Map Address 56	30001	43763	1	F1	30194 Pre-Trip Ib	30327 W1n	30327 In
40580	243	User Map Address 57	30001	43763	1	F1	30195 Pre-Trip Ib	30338 W1g	30334 Iavg
40581	244	User Map Address 58	30001	43763	1	F1	30196 Pre-Trip Ic	30339 W1g	30335 Iavg
40582	245	User Map Address 59	30001	43763	1	F1	30197 Pre-Trip Ic	30324 W1sg	30338 Ig
40583	246	User Map Address 60	30001	43763	1	F1	30328 Ia	30325 W1sg	30339 Ig

MODBUS Address	Hex Addr.	Description	Min	Max	Step	Format Code	339 Factory Default	345 Factory Default	350 Factory Default
40584	247	User Map Address 61	30001	43763	1	F1	30329 Ia	30319 Relay 1 Coil Status	30324 Sense Ig
40585	248	User Map Address 62	30001	43763	1	F1	30330 Ib	30320 Relay 2 Coil Staus	30325 Sense Ig
40586	249	User Map Address 63	30001	43763	1	F1	30331 Ib	31665 W2a	30319 Trip Coil Status
40587	24A	User Map Address 64	30001	43763	1	F1	30332 Ic	31666 W2a	30320 Close Coil Staus
40588	24B	User Map Address 65	30001	43763	1	F1	30333 Ic	31667 W2b	30001
40589	24C	User Map Address 66	30001	43763	1	F1	30326 In	31668 W2b	30001
40590	24D	User Map Address 67	30001	43763	1	F1	30327 In	31669 W2c	30001
40591	24E	User Map Address 68	30001	43763	1	F1	30334 Iavg	31670 W2c	30001
40592	24F	User Map Address 69	30001	43763	1	F1	30335 Iavg	31671 W2n	30001
40593	250	User Map Address 70	30001	43763	1	F1	30338 Ig	31672 W2n	30001
40594	251	User Map Address 71	30001	43763	1	F1	30339 Ig	31673 W2g	30001
40595	252	User Map Address 72	30001	43763	1	F1	30324 Sense Ig	31674 W2g	30001
40596	253	User Map Address 73	30001	43763	1	F1	30325 Sense Ig	31675 W2sg	30001
40597	254	User Map Address 74	30001	43763	1	F1	30319 Relay 1 Coil Status	31675 W2sg	30001
40598	255	User Map Address 75	30001	43763	1	F1	30320 Relay 2 Coil Status	31677 Diff Phase A	30001
40599	256	User Map Address 76	30001	43763	1	F1	30429 RTD 1	31678 Diff Phase A	30001
40600	257	User Map Address 77	30001	43763	1	F1	30430 RTD 2	31679 Diff Phase B	30001
40601	258	User Map Address 78	30001	43763	1	F1	30431 RTD 3	31680 Diff Phase B	30001
40602	259	User Map Address 79	30001	43763	1	F1	30432 RTD 4	31681 Diff Phase C	30001
40603	25A	User Map Address 80	30001	43763	1	F1	30433 RTD 5	31682 Diff Phase C	30001
40604	25B	User Map Address 81	30001	43763	1	F1	30434 RTD 6	31683 2nd Harmonic Phase A	30001
40605	25C	User Map Address 82	30001	43763	1	F1	30420 RTD 7	31684 2nd Harmonic Phase B	30001
40606	25D	User Map Address 83	30001	43763	1	F1	30421 RTD 8	31685 2nd Harmonic Phase C	30001
40607	25E	User Map Address 84	30001	43763	1	F1	30422 RTD 9	31686 5th Harmonic Phase A	30001
40608	25F	User Map Address 85	30001	43763	1	F1	30423 RTD 10	31687 5th Harmonic Phase B	30001
40609	260	User Map Address 86	30001	43763	1	F1	30424 RTD 11	31688 5th Harmonic Phase C	30001
40610	261	User Map Address 87	30001	43763	1	F1	30425 RTD 12	31695 I Restraint Ph A	30001
40611	262	User Map Address 88	30001	43763	1	F1	30358 Vab	31696 I Restraint Ph A	30001
40612	263	User Map Address 89	30001	43763	1	F1	30359 Vbc	31697 I Restraint Ph B	30001
40613	264	User Map Address 90	30001	43763	1	F1	30360 Vca	31698 I Restraint Ph B	30001
40614	265	User Map Address 91	30001	43763	1	F1	30361 Average Line Voltage	31699 I Restraint Ph C	30001
40615	266	User Map Address 92	30001	43763	1	F1	30366 Frequency	31700 I Restraint Ph C	30001
40616	267	User Map Address 93	30001	43763	1	F1	30384 Power Factor	30001	30001
40617	268	User Map Address 94	30001	43763	1	F1	30385 Real Power	30001	30001

MODBUS Address	Hex Addr.	Description	Min	Max	Step	Format Code	339 Factory Default	345 Factory Default	350 Factory Default
40618	269	User Map Address 95	30001	43763	1	F1	30386 Real Power	30001	30001
40619	26A	User Map Address 96	30001	43763	1	F1	30389 Reative Power	30001	30001
40620	26B	User Map Address 97	30001	43763	1	F1	30390 Reative Power	30001	30001
40621	26C	User Map Address 98	30001	43763	1	F1	30391 Apparent Power	30001	30001
40622	26D	User Map Address 99	30001	43763	1	F1	30392 Apparent Power	30001	30001
40623	26E	User Map Address 100	30001	43763	1	F1	30001	30001	30001
40624	26F	User Map Address 101	30001	43763	1	F1	30001	30001	30001
40625	270	User Map Address 102	30001	43763	1	F1	30001	30001	30001
40626	271	User Map Address 103	30001	43763	1	F1	30001	30001	30001
40627	272	User Map Address 104	30001	43763	1	F1	30001	30001	30001
40628	273	User Map Address 105	30001	43763	1	F1	30001	30001	30001
40629	274	User Map Address 106	30001	43763	1	F1	30001	30001	30001
40630	275	User Map Address 107	30001	43763	1	F1	30001	30001	30001
40631	276	User Map Address 108	30001	43763	1	F1	30001	30001	30001
40632	277	User Map Address 109	30001	43763	1	F1	30001	30001	30001
40633	278	User Map Address 110	30001	43763	1	F1	30001	30001	30001
40634	279	User Map Address 111	30001	43763	1	F1	30001	30001	30001
40635	27A	User Map Address 112	30001	43763	1	F1	30001	30001	30001
40636	27B	User Map Address 113	30001	43763	1	F1	30001	30001	30001
40637	27C	User Map Address 114	30001	43763	1	F1	30001	30001	30001
40638	27D	User Map Address 115	30001	43763	1	F1	30001	30001	30001
40639	27E	User Map Address 116	30001	43763	1	F1	30001	30001	30001
40640	27F	User Map Address 117	30001	43763	1	F1	30001	30001	30001
40641	280	User Map Address 118	30001	43763	1	F1	30001	30001	30001
40642	281	User Map Address 119	30001	43763	1	F1	30001	30001	30001
40643	282	User Map Address 120	30001	43763	1	F1	30001	30001	30001
40644	283	User Map Address 121	30001	43763	1	F1	30001	30001	30001
40645	284	User Map Address 122	30001	43763	1	F1	30001	30001	30001
40646	285	User Map Address 123	30001	43763	1	F1	30001	30001	30001
40647	286	User Map Address 124	30001	43763	1	F1	30001	30001	30001
40648	287	User Map Address 125	30001	43763	1	F1	30001	30001	30001

Table 9-2: User Map Actual Values

MODBUS Address	Hex Address	Description	Min	Max	Step	Format Code	Factory Default
30524	20B	User Map Value 1	0	0xFFFF	1	F1	0
30525	20C	User Map Value 2	0	0xFFFF	1	F1	0
30526	20D	User Map Value 3	0	0xFFFF	1	F1	0
30527	20E	User Map Value 4	0	0xFFFF	1	F1	0
30528	20F	User Map Value 5	0	0xFFFF	1	F1	0
30529	210	User Map Value 6	0	0xFFFF	1	F1	0
30530	211	User Map Value 7	0	0xFFFF	1	F1	0
30531	212	User Map Value 8	0	0xFFFF	1	F1	0
30532	213	User Map Value 9	0	0xFFFF	1	F1	0

MODBUS Address	Hex Address	Description	Min	Max	Step	Format Code	Factory Default
30533	214	User Map Value 10	0	0xFFFF	1	F1	0
30534	215	User Map Value 11	0	0xFFFF	1	F1	0
30535	216	User Map Value 12	0	0xFFFF	1	F1	0
30536	217	User Map Value 13	0	0xFFFF	1	F1	0
30537	218	User Map Value 14	0	0xFFFF	1	F1	0
30538	219	User Map Value 15	0	0xFFFF	1	F1	0
30539	21A	User Map Value 16	0	0xFFFF	1	F1	0
30540	21B	User Map Value 17	0	0xFFFF	1	F1	0
30541	21C	User Map Value 18	0	0xFFFF	1	F1	0
30542	21D	User Map Value 19	0	0xFFFF	1	F1	0
30543	21E	User Map Value 20	0	0xFFFF	1	F1	0
30544	21F	User Map Value 21	0	0xFFFF	1	F1	0
30545	220	User Map Value 22	0	0xFFFF	1	F1	0
30546	221	User Map Value 23	0	0xFFFF	1	F1	0
30547	222	User Map Value 24	0	0xFFFF	1	F1	0
30548	223	User Map Value 25	0	0xFFFF	1	F1	0
30549	224	User Map Value 26	0	0xFFFF	1	F1	0
30550	225	User Map Value 27	0	0xFFFF	1	F1	0
30551	226	User Map Value 28	0	0xFFFF	1	F1	0
30552	227	User Map Value 29	0	0xFFFF	1	F1	0
30553	228	User Map Value 30	0	0xFFFF	1	F1	0
30554	229	User Map Value 31	0	0xFFFF	1	F1	0
30555	22A	User Map Value 32	0	0xFFFF	1	F1	0
30556	22B	User Map Value 33	0	0xFFFF	1	F1	0
30557	22C	User Map Value 34	0	0xFFFF	1	F1	0
30558	22D	User Map Value 35	0	0xFFFF	1	F1	0
30559	22E	User Map Value 36	0	0xFFFF	1	F1	0
30560	22F	User Map Value 37	0	0xFFFF	1	F1	0
30561	230	User Map Value 38	0	0xFFFF	1	F1	0
30562	231	User Map Value 39	0	0xFFFF	1	F1	0
30563	232	User Map Value 40	0	0xFFFF	1	F1	0
30564	233	User Map Value 41	0	0xFFFF	1	F1	0
30565	234	User Map Value 42	0	0xFFFF	1	F1	0
30566	235	User Map Value 43	0	0xFFFF	1	F1	0
30567	236	User Map Value 44	0	0xFFFF	1	F1	0
30568	237	User Map Value 45	0	0xFFFF	1	F1	0
30569	238	User Map Value 46	0	0xFFFF	1	F1	0
30570	239	User Map Value 47	0	0xFFFF	1	F1	0
30571	23A	User Map Value 48	0	0xFFFF	1	F1	0
30572	23B	User Map Value 49	0	0xFFFF	1	F1	0
30573	23C	User Map Value 50	0	0xFFFF	1	F1	0
30574	23D	User Map Value 51	0	0xFFFF	1	F1	0
30575	23E	User Map Value 52	0	0xFFFF	1	F1	0
30576	23F	User Map Value 53	0	0xFFFF	1	F1	0
30577	240	User Map Value 54	0	0xFFFF	1	F1	0
30578	241	User Map Value 55	0	0xFFFF	1	F1	0

MODBUS Address	Hex Address	Description	Min	Max	Step	Format Code	Factory Default
30579	242	User Map Value 56	0	0xFFFF	1	F1	0
30580	243	User Map Value 57	0	0xFFFF	1	F1	0
30581	244	User Map Value 58	0	0xFFFF	1	F1	0
30582	245	User Map Value 59	0	0xFFFF	1	F1	0
30583	246	User Map Value 60	0	0xFFFF	1	F1	0
30584	247	User Map Value 61	0	0xFFFF	1	F1	0
30585	248	User Map Value 62	0	0xFFFF	1	F1	0
30586	249	User Map Value 63	0	0xFFFF	1	F1	0
30587	24A	User Map Value 64	0	0xFFFF	1	F1	0
30588	24B	User Map Value 65	0	0xFFFF	1	F1	0
30589	24C	User Map Value 66	0	0xFFFF	1	F1	0
30590	24D	User Map Value 67	0	0xFFFF	1	F1	0
30591	24E	User Map Value 68	0	0xFFFF	1	F1	0
30592	24F	User Map Value 69	0	0xFFFF	1	F1	0
30593	250	User Map Value 70	0	0xFFFF	1	F1	0
30594	251	User Map Value 71	0	0xFFFF	1	F1	0
30595	252	User Map Value 72	0	0xFFFF	1	F1	0
30596	253	User Map Value 73	0	0xFFFF	1	F1	0
30597	254	User Map Value 74	0	0xFFFF	1	F1	0
30598	255	User Map Value 75	0	0xFFFF	1	F1	0
30599	256	User Map Value 76	0	0xFFFF	1	F1	0
30600	257	User Map Value 77	0	0xFFFF	1	F1	0
30601	258	User Map Value 78	0	0xFFFF	1	F1	0
30602	259	User Map Value 79	0	0xFFFF	1	F1	0
30603	25A	User Map Value 80	0	0xFFFF	1	F1	0
30604	25B	User Map Value 81	0	0xFFFF	1	F1	0
30605	25C	User Map Value 82	0	0xFFFF	1	F1	0
30606	25D	User Map Value 83	0	0xFFFF	1	F1	0
30607	25E	User Map Value 84	0	0xFFFF	1	F1	0
30608	25F	User Map Value 85	0	0xFFFF	1	F1	0
30609	260	User Map Value 86	0	0xFFFF	1	F1	0
30610	261	User Map Value 87	0	0xFFFF	1	F1	0
30611	262	User Map Value 88	0	0xFFFF	1	F1	0
30612	263	User Map Value 89	0	0xFFFF	1	F1	0
30613	264	User Map Value 90	0	0xFFFF	1	F1	0
30614	265	User Map Value 91	0	0xFFFF	1	F1	0
30615	266	User Map Value 92	0	0xFFFF	1	F1	0
30616	267	User Map Value 93	0	0xFFFF	1	F1	0
30617	268	User Map Value 94	0	0xFFFF	1	F1	0
30618	269	User Map Value 95	0	0xFFFF	1	F1	0
30619	26A	User Map Value 96	0	0xFFFF	1	F1	0
30620	26B	User Map Value 97	0	0xFFFF	1	F1	0
30621	26C	User Map Value 98	0	0xFFFF	1	F1	0
30622	26D	User Map Value 99	0	0xFFFF	1	F1	0
30623	26E	User Map Value 100	0	0xFFFF	1	F1	0
30624	26F	User Map Value 101	0	0xFFFF	1	F1	0

MODBUS Address	Hex Address	Description	Min	Max	Step	Format Code	Factory Default
30625	270	User Map Value 102	0	0xFFFF	1	F1	0
30626	271	User Map Value 103	0	0xFFFF	1	F1	0
30627	272	User Map Value 104	0	0xFFFF	1	F1	0
30628	273	User Map Value 105	0	0xFFFF	1	F1	0
30629	274	User Map Value 106	0	0xFFFF	1	F1	0
30630	275	User Map Value 107	0	0xFFFF	1	F1	0
30631	276	User Map Value 108	0	0xFFFF	1	F1	0
30632	277	User Map Value 109	0	0xFFFF	1	F1	0
30633	278	User Map Value 110	0	0xFFFF	1	F1	0
30634	279	User Map Value 111	0	0xFFFF	1	F1	0
30635	27A	User Map Value 112	0	0xFFFF	1	F1	0
30636	27B	User Map Value 113	0	0xFFFF	1	F1	0
30637	27C	User Map Value 114	0	0xFFFF	1	F1	0
30638	27D	User Map Value 115	0	0xFFFF	1	F1	0
30639	27E	User Map Value 116	0	0xFFFF	1	F1	0
30640	27F	User Map Value 117	0	0xFFFF	1	F1	0
30641	280	User Map Value 118	0	0xFFFF	1	F1	0
30642	281	User Map Value 119	0	0xFFFF	1	F1	0
30643	282	User Map Value 120	0	0xFFFF	1	F1	0
30644	283	User Map Value 121	0	0xFFFF	1	F1	0
30645	284	User Map Value 122	0	0xFFFF	1	F1	0
30646	285	User Map Value 123	0	0xFFFF	1	F1	0
30647	286	User Map Value 124	0	0xFFFF	1	F1	0
30648	287	User Map Value 125	0	0xFFFF	1	F1	0

GE
Grid Solutions

3 Series Protective Relay Platform

Chapter 10: 339 MODBUS memory map and Format Codes

NOTE

The 339, 345, and 350 relays have different MODBUS maps and Format Codes. Make sure you are looking at the chapter corresponding to your relay model.

NOTE

The Cause of Last trip register (MODBUS Address 30186) returns a combined value of Pickup And Operate.

For example, for a Phase TOC 1 Trip:

0x90C1 Ph TOC1 Trip PKP

0x90C2 Ph TOC1 Trip OP

Upon Phase TOC 1 Trip, the value read from 30186 Cause of Last Trip register is: 0x90C3

339 MODBUS memory map

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
PRODUCT INFORMATION									
30001	0x0	Product Device Code	0	1	1	---	F22	L2	1
30002	0x1	Hardware Revision	0	26	1	---	F15	1	1
30003	0x2	Firmware Version	0	0xFFFF	1	---	F3	231	1
30006	0x5	Boot Version	0	0xFFFF	1	---	F3	100	1
30008	0x7	Serial Number	0	6	1	---	F22	L2MA09000001	6
30014	0xD	Order Code	0	16	1	---	F22	339-CP5G5HISSXXS	16
30030	0x1D	MAC Address	0	0xFFFF	1	---	FC214	0	3
30035	0x22	Comms HW Version	0	26	1	---	F15	0	1
30037	0x24	Build Date	0	6	1	---	F22	Unknown	6
30043	0x2A	Build Time	0	4	1	---	F22	Unknown	4
30051	0x32	Comm Build Date	0	6	1	---	F22	Unknown	6

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30057	0x38	Comm Build Time	0	4	1	---	F22	Unknown	4
30061	0x3C	Comm Revision	0	0xFFFF	1	---	F3	231	1
30063	0x3E	Comm Boot Code Revision	0	0xFFFF	1	---	F3	200	1
30064	0x3F	RMIO Value	0	4	1	---	F22		4
30068	0x43	FPGA Revision	0	0xFFFF	1	---	F3	0	1
30135	0x86	Main Boot Code Date	0	6	1	---	F22	Unknown	6
30141	0x8C	Main Boot Code Time	0	4	1	---	F22	Unknown	4
30145	0x90	Comms Boot Code Date	0	6	1	---	F22	Unknown	6
30151	0x96	Comms Boot Code Time	0	4	1	---	F22	Unknown	4
LAST TRIP DATA									
30186	0xB9	Cause of Last Trip	0	0xFFFF	1	---	FC134	0	1
REAL-TIME CLOCK									
30223	0xDE	Weekday	0	7	1	---	None	0	1
30224	0xDF	Current Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
30226	0xE1	Current Time	0	0X173BEA5F	0	---	F19	0	2
30228	0xE3	Daylight Savings Active	0	1	1	---	FC126	0	1
TRIP COUNTERS									
30230	0xE5	Total Number of Trips	0	10000	1	---	F1	0	1
COUNTERS									
30246	0xF5	Number of Emergency Restarts	0	65535	1	---	F1	0	1
30257	0x100	Number of Motor Starts	0	65535	1	---	F1	0	1
30259	0x102	Motor Running Hours	0	65535	1	hrs	F1	0	1
TIMERS									
30262	0x105	Start Timer 1	0	3600	1	s	F1	0	1
30263	0x106	Start Timer 2	0	3600	1	s	F1	0	1
30264	0x107	Start Timer 3	0	3600	1	s	F1	0	1
30265	0x108	Start Timer 4	0	3600	1	s	F1	0	1
30266	0x109	Start Timer 5	0	3600	1	s	F1	0	1
30270	0x10D	Overload Lockout	0	65535	1	s	F1	0	1
30271	0x10E	Starts/Hour Block	0	3600	1	s	F1	0	1
30272	0x10F	Time Between Starts Lockout Time	0	3601	1	s	F1B	0	1
30273	0x110	Restart Block	0	50000	1	s	F1	0	1
30278	0x115	Therman Inhibit Timer	0	65535	1	s	F1	0	1
30279	0x116	Motor Lockout Time	0	65535	1	s	F1	0	1
INPUTS / OUTPUTS									
30285	0x11C	Contact Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30288	0x11F	Virtual Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30290	0x121	Virtual Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30296	0x127	Remote Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30298	0x129	Contact Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30300	0x12B	Remote Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
CURRENT METERING									
30323	0x142	CBCT Ground Current	0	65535	1	A	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30326	0x145	Neutral Current	0	100000	1	A	F10	0	2
30328	0x147	Phase A Current	0	1200000	1	A	F10	0	2
30330	0x149	Phase B Current	0	1200000	1	A	F10	0	2
30332	0x14B	Phase C Current	0	1200000	1	A	F10	0	2
30334	0x14D	Average Phase Current	0	1200000	1	A	F10	0	2
30336	0x14F	Motor Load	0	30000	1	x FLA	F3	0	1
30337	0x150	Current Unbalance	0	10000	1	%	F3	0	1
30338	0x151	Ground Current	0	1200000	1	A	F10	0	2
PHASE ANGLES									
30343	0x156	Ia Angle	0	359	1	°	F1	0	1
30344	0x157	Ib Angle	0	359	1	°	F1	0	1
30345	0x158	Ic Angle	0	359	1	°	F1	0	1
30346	0x159	Van Angle	0	359	1	°	F1	0	1
30347	0x15A	Vbn Angle	0	359	1	°	F1	0	1
30348	0x15B	Vcn Angle	0	359	1	°	F1	0	1
30349	0x15C	Ground Current Angle	0	359	1	°	F1	0	1
30350	0x15D	Neutral Current Angle	0	359	1	°	F1	0	1
30353	0x160	Vab Angle	0	359	1	°	F1	0	1
30354	0x161	Vbc Angle	0	359	1	°	F1	0	1
30355	0x162	Vca Angle	0	359	1	°	F1	0	1
BIASED MOTOR LOAD METERING									
30356	0x163	Biased Motor Load	0	30000	1	x FLA	F3	0	1
POWER & ENERGY METERING									
30384	0x17F	Power Factor	-99	100	1	---	F21	0	1
30385	0x180	Real Power	-1000000000	1000000000	1	kW	F13	0	2
30389	0x184	Reactive Power	-1000000000	1000000000	1	kvar	F13	0	2
30392	0x187	MWh Consumption	0	999999999	1	MWh	F17	0	2
30394	0x189	Mvarh Consumption	0	999999999	1	Mvarh	F17	0	2
30396	0x18B	Mvarh Generation	0	999999999	1	Mvarh	F17	0	2
30398	0x18D	Apparent Power	0	1000000000	1	kVA	F10	0	2
30400	0x18F	MWh Generation	0	999999999	1	MWh	F17	0	2
30402	0x191	Real Power MW	-1000000000	1000000000	1	MW	F13	0	2
30404	0x193	Reactive Power MW	-1000000000	1000000000	1	Mvar	F13	0	2
RTD METERING									
30420	0x1A3	RTD 7 Temp	-50	251	1	°C	F4	0	1
30421	0x1A4	RTD 8 Temp	-50	251	1	°C	F4	0	1
30422	0x1A5	RTD 9 Temp	-50	251	1	°C	F4	0	1
30423	0x1A6	RTD 10 Temp	-50	251	1	°C	F4	0	1
30424	0x1A7	RTD 11 Temp	-50	251	1	°C	F4	0	1
30425	0x1A8	RTD 12 Temp	-50	251	1	°C	F4	0	1
30427	0x1AA	Hottest Stator RTD	0	12	1	---	F1	0	1
30428	0x1AB	Hottest Stator RTD	-50	251	1	°C	F4	0	1
30429	0x1AC	RTD 1 Temperature	-50	251	1	°C	F4	0	1
30430	0x1AD	RTD 2 Temperature	-50	251	1	°C	F4	0	1
30431	0x1AE	RTD 3 Temperature	-50	251	1	°C	F4	0	1
30432	0x1AF	RTD 4 Temperature	-50	251	1	°C	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30433	0x1B0	RTD 5 Temperature	-50	251	1	°C	F4	0	1
30434	0x1B1	RTD 6 Temperature	-50	251	1	°C	F4	0	1
TEMPERATURE									
30435	0x1B2	Ambient Temperature	-50	250	1	°	F4	25	1
NEGATIVE SEQUENCE VOLTAGE ANGLE									
30463	0x1CE	Negative Sequence Voltage Angle	0	359	1	°Lag	F1	0	1
LEARNED DATA									
30467	0x1D2	Learned Acceleration Time	0	65535	1	s	F2	0	1
30468	0x1D3	Learned Starting Current	0	1200000	1	A	F10	0	2
30470	0x1D5	Learned Starting Capacity	0	100	1	%	F1	0	1
30471	0x1D6	Last Acceleration Time	0	65535	1	s	F2	0	1
30472	0x1D7	Last Starting Current	0	1200000	1	A	F10	0	2
30474	0x1D9	Last Start TCU	0	100	1	%	F1	0	1
30475	0x1DA	Learned Average Load	0	30000	1	x FLA	F3	0	1
30476	0x1DB	Learned Run Time After Start (days)	0	65535	1	---	F1	0	1
30477	0x1DC	Learned Run Time After Start (minutes)	0	1339	1	---	F1	0	1
NEGATIVE SEQUENCE VOLTAGE METERING									
30479	0x1DE	Negative Sequence Voltage	0	65535	1	V	F1	0	1
RTD MAXIMUMS									
30485	0x1E4	RTD 1 Maximum Temperature	-50	250	1	°C	F4	0	1
30486	0x1E5	RTD 2 Maximum Temperature	-50	250	1	°C	F4	0	1
30487	0x1E6	RTD 3 Maximum Temperature	-50	250	1	°C	F4	0	1
30488	0x1E7	RTD 4 Maximum Temperature	-50	250	1	°C	F4	0	1
30489	0x1E8	RTD 5 Maximum Temperature	-50	250	1	°C	F4	0	1
30490	0x1E9	RTD 6 Maximum Temperature	-50	250	1	°C	F4	0	1
30491	0x1EA	RTD 7 MAX Temp	-50	250	1	°C	F4	0	1
30492	0x1EB	RTD 8 MAX Temp	-50	250	1	°C	F4	0	1
30493	0x1EC	RTD 9 MAX Temp	-50	250	1	°C	F4	0	1
30494	0x1ED	RTD 10 MAX Temp	-50	250	1	°C	F4	0	1
30495	0x1EE	RTD 11 MAX Temp	-50	250	1	°C	F4	0	1
30496	0x1EF	RTD 12 MAX Temp	-50	250	1	°C	F4	0	1
LED STATUS									
30505	0x1F8	LED Status	0	0xFFFFFFFF	1	---	FC144A	0	2
USER MAP ACTUAL VALUES									
30524	0x20B	User Map Value 1	0	0xFFFF	1	---	F1	0	1
30525	0x20C	User Map Value 2	0	0xFFFF	1	---	F1	0	1
30526	0x20D	User Map Value 3	0	0xFFFF	1	---	F1	0	1
30527	0x20E	User Map Value 4	0	0xFFFF	1	---	F1	0	1
30528	0x20F	User Map Value 5	0	0xFFFF	1	---	F1	0	1
30529	0x210	User Map Value 6	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30530	0x211	User Map Value 7	0	0xFFFF	1	---	F1	0	1
30531	0x212	User Map Value 8	0	0xFFFF	1	---	F1	0	1
30532	0x213	User Map Value 9	0	0xFFFF	1	---	F1	0	1
30533	0x214	User Map Value 10	0	0xFFFF	1	---	F1	0	1
30534	0x215	User Map Value 11	0	0xFFFF	1	---	F1	0	1
30535	0x216	User Map Value 12	0	0xFFFF	1	---	F1	0	1
30536	0x217	User Map Value 13	0	0xFFFF	1	---	F1	0	1
30537	0x218	User Map Value 14	0	0xFFFF	1	---	F1	0	1
30538	0x219	User Map Value 15	0	0xFFFF	1	---	F1	0	1
30539	0x21A	User Map Value 16	0	0xFFFF	1	---	F1	0	1
30540	0x21B	User Map Value 17	0	0xFFFF	1	---	F1	0	1
30541	0x21C	User Map Value 18	0	0xFFFF	1	---	F1	0	1
30542	0x21D	User Map Value 19	0	0xFFFF	1	---	F1	0	1
30543	0x21E	User Map Value 20	0	0xFFFF	1	---	F1	0	1
30544	0x21F	User Map Value 21	0	0xFFFF	1	---	F1	0	1
30545	0x220	User Map Value 22	0	0xFFFF	1	---	F1	0	1
30546	0x221	User Map Value 23	0	0xFFFF	1	---	F1	0	1
30547	0x222	User Map Value 24	0	0xFFFF	1	---	F1	0	1
30548	0x223	User Map Value 25	0	0xFFFF	1	---	F1	0	1
30549	0x224	User Map Value 26	0	0xFFFF	1	---	F1	0	1
30550	0x225	User Map Value 27	0	0xFFFF	1	---	F1	0	1
30551	0x226	User Map Value 28	0	0xFFFF	1	---	F1	0	1
30552	0x227	User Map Value 29	0	0xFFFF	1	---	F1	0	1
30553	0x228	User Map Value 30	0	0xFFFF	1	---	F1	0	1
30554	0x229	User Map Value 31	0	0xFFFF	1	---	F1	0	1
30555	0x22A	User Map Value 32	0	0xFFFF	1	---	F1	0	1
30556	0x22B	User Map Value 33	0	0xFFFF	1	---	F1	0	1
30557	0x22C	User Map Value 34	0	0xFFFF	1	---	F1	0	1
30558	0x22D	User Map Value 35	0	0xFFFF	1	---	F1	0	1
30559	0x22E	User Map Value 36	0	0xFFFF	1	---	F1	0	1
30560	0x22F	User Map Value 37	0	0xFFFF	1	---	F1	0	1
30561	0x230	User Map Value 38	0	0xFFFF	1	---	F1	0	1
30562	0x231	User Map Value 39	0	0xFFFF	1	---	F1	0	1
30563	0x232	User Map Value 40	0	0xFFFF	1	---	F1	0	1
30564	0x233	User Map Value 41	0	0xFFFF	1	---	F1	0	1
30565	0x234	User Map Value 42	0	0xFFFF	1	---	F1	0	1
30566	0x235	User Map Value 43	0	0xFFFF	1	---	F1	0	1
30567	0x236	User Map Value 44	0	0xFFFF	1	---	F1	0	1
30568	0x237	User Map Value 45	0	0xFFFF	1	---	F1	0	1
30569	0x238	User Map Value 46	0	0xFFFF	1	---	F1	0	1
30570	0x239	User Map Value 47	0	0xFFFF	1	---	F1	0	1
30571	0x23A	User Map Value 48	0	0xFFFF	1	---	F1	0	1
30572	0x23B	User Map Value 49	0	0xFFFF	1	---	F1	0	1
30573	0x23C	User Map Value 50	0	0xFFFF	1	---	F1	0	1
30574	0x23D	User Map Value 51	0	0xFFFF	1	---	F1	0	1
30575	0x23E	User Map Value 52	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30576	0x23F	User Map Value 53	0	0xFFFF	1	---	F1	0	1
30577	0x240	User Map Value 54	0	0xFFFF	1	---	F1	0	1
30578	0x241	User Map Value 55	0	0xFFFF	1	---	F1	0	1
30579	0x242	User Map Value 56	0	0xFFFF	1	---	F1	0	1
30580	0x243	User Map Value 57	0	0xFFFF	1	---	F1	0	1
30581	0x244	User Map Value 58	0	0xFFFF	1	---	F1	0	1
30582	0x245	User Map Value 59	0	0xFFFF	1	---	F1	0	1
30583	0x246	User Map Value 60	0	0xFFFF	1	---	F1	0	1
30584	0x247	User Map Value 61	0	0xFFFF	1	---	F1	0	1
30585	0x248	User Map Value 62	0	0xFFFF	1	---	F1	0	1
30586	0x249	User Map Value 63	0	0xFFFF	1	---	F1	0	1
30587	0x24A	User Map Value 64	0	0xFFFF	1	---	F1	0	1
30588	0x24B	User Map Value 65	0	0xFFFF	1	---	F1	0	1
30589	0x24C	User Map Value 66	0	0xFFFF	1	---	F1	0	1
30590	0x24D	User Map Value 67	0	0xFFFF	1	---	F1	0	1
30591	0x24E	User Map Value 68	0	0xFFFF	1	---	F1	0	1
30592	0x24F	User Map Value 69	0	0xFFFF	1	---	F1	0	1
30593	0x250	User Map Value 70	0	0xFFFF	1	---	F1	0	1
30594	0x251	User Map Value 71	0	0xFFFF	1	---	F1	0	1
30595	0x252	User Map Value 72	0	0xFFFF	1	---	F1	0	1
30596	0x253	User Map Value 73	0	0xFFFF	1	---	F1	0	1
30597	0x254	User Map Value 74	0	0xFFFF	1	---	F1	0	1
30598	0x255	User Map Value 75	0	0xFFFF	1	---	F1	0	1
30599	0x256	User Map Value 76	0	0xFFFF	1	---	F1	0	1
30600	0x257	User Map Value 77	0	0xFFFF	1	---	F1	0	1
30601	0x258	User Map Value 78	0	0xFFFF	1	---	F1	0	1
30602	0x259	User Map Value 79	0	0xFFFF	1	---	F1	0	1
30603	0x25A	User Map Value 80	0	0xFFFF	1	---	F1	0	1
30604	0x25B	User Map Value 81	0	0xFFFF	1	---	F1	0	1
30605	0x25C	User Map Value 82	0	0xFFFF	1	---	F1	0	1
30606	0x25D	User Map Value 83	0	0xFFFF	1	---	F1	0	1
30607	0x25E	User Map Value 84	0	0xFFFF	1	---	F1	0	1
30608	0x25F	User Map Value 85	0	0xFFFF	1	---	F1	0	1
30609	0x260	User Map Value 86	0	0xFFFF	1	---	F1	0	1
30610	0x261	User Map Value 87	0	0xFFFF	1	---	F1	0	1
30611	0x262	User Map Value 88	0	0xFFFF	1	---	F1	0	1
30612	0x263	User Map Value 89	0	0xFFFF	1	---	F1	0	1
30613	0x264	User Map Value 90	0	0xFFFF	1	---	F1	0	1
30614	0x265	User Map Value 91	0	0xFFFF	1	---	F1	0	1
30615	0x266	User Map Value 92	0	0xFFFF	1	---	F1	0	1
30616	0x267	User Map Value 93	0	0xFFFF	1	---	F1	0	1
30617	0x268	User Map Value 94	0	0xFFFF	1	---	F1	0	1
30618	0x269	User Map Value 95	0	0xFFFF	1	---	F1	0	1
30619	0x26A	User Map Value 96	0	0xFFFF	1	---	F1	0	1
30620	0x26B	User Map Value 97	0	0xFFFF	1	---	F1	0	1
30621	0x26C	User Map Value 98	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30622	0x26D	User Map Value 99	0	0xFFFF	1	---	F1	0	1
30623	0x26E	User Map Value 100	0	0xFFFF	1	---	F1	0	1
30624	0x26F	User Map Value 101	0	0xFFFF	1	---	F1	0	1
30625	0x270	User Map Value 102	0	0xFFFF	1	---	F1	0	1
30626	0x271	User Map Value 103	0	0xFFFF	1	---	F1	0	1
30627	0x272	User Map Value 104	0	0xFFFF	1	---	F1	0	1
30628	0x273	User Map Value 105	0	0xFFFF	1	---	F1	0	1
30629	0x274	User Map Value 106	0	0xFFFF	1	---	F1	0	1
30630	0x275	User Map Value 107	0	0xFFFF	1	---	F1	0	1
30631	0x276	User Map Value 108	0	0xFFFF	1	---	F1	0	1
30632	0x277	User Map Value 109	0	0xFFFF	1	---	F1	0	1
30633	0x278	User Map Value 110	0	0xFFFF	1	---	F1	0	1
30634	0x279	User Map Value 111	0	0xFFFF	1	---	F1	0	1
30635	0x27A	User Map Value 112	0	0xFFFF	1	---	F1	0	1
30636	0x27B	User Map Value 113	0	0xFFFF	1	---	F1	0	1
30637	0x27C	User Map Value 114	0	0xFFFF	1	---	F1	0	1
30638	0x27D	User Map Value 115	0	0xFFFF	1	---	F1	0	1
30639	0x27E	User Map Value 116	0	0xFFFF	1	---	F1	0	1
30640	0x27F	User Map Value 117	0	0xFFFF	1	---	F1	0	1
30641	0x280	User Map Value 118	0	0xFFFF	1	---	F1	0	1
30642	0x281	User Map Value 119	0	0xFFFF	1	---	F1	0	1
30643	0x282	User Map Value 120	0	0xFFFF	1	---	F1	0	1
30644	0x283	User Map Value 121	0	0xFFFF	1	---	F1	0	1
30645	0x284	User Map Value 122	0	0xFFFF	1	---	F1	0	1
30646	0x285	User Map Value 123	0	0xFFFF	1	---	F1	0	1
30647	0x286	User Map Value 124	0	0xFFFF	1	---	F1	0	1
30648	0x287	User Map Value 125	0	0xFFFF	1	---	F1	0	1
EVENT RECORDER DETAILS									
30652	0x28B	Bus VT Secondary	50	240	1	V	F1	120	1
30654	0x28D	CT Primary	10	5000	1	A	F1	100	1
30655	0x28E	Ground CT Primary	10	1500	1	A	F1	100	1
30656	0x28F	VT Ratio	10	3000	1	1	F2	10	1
30658	0x291	Power Unit	0	1	1	---	FC430	0	1
30659	0x292	Event Recorder Last Reset 2 words	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30661	0x294	Total Number of Events Since Last Clear	0	65535	1	---	F1	0	1
30662	0x295	Event Cause	0	0xFFFF	1	---	FC134	0	1
30663	0x296	Event Time	0	0X173BEA5F	0	---	F19	0	2
30665	0x298	Event Date	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30667	0x29A	Event Ia	0	65535	1	x CT	F17A	0	1
30668	0x29B	Event Ib	0	65535	1	x CT	F17A	0	1
30669	0x29C	Event Ic	0	65535	1	x CT	F17A	0	1
30670	0x29D	Event Ig	0	65535	1	x CT	F17A	0	1
30671	0x29E	Event In	0	65535	1	x CT	F17A	0	1
30672	0x29F	Event Isgrd	0	6000	1	x CT	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30673	0x2A0	Event Ia Angle	0	359	1	°	F1	0	1
30674	0x2A1	Event Ib Angle	0	359	1	°	F1	0	1
30675	0x2A2	Event Ic Angle	0	359	1	°	F1	0	1
30676	0x2A3	Event Igrd Angle	0	359	1	°	F1	0	1
30677	0x2A4	Event In Angle	0	359	1	°	F1	0	1
30678	0x2A5	Event Vab	0	65535	1	x VT	F17A	0	1
30679	0x2A6	Event Vbc	0	65535	1	x VT	F17A	0	1
30680	0x2A7	Event Vca	0	65535	1	x VT	F17A	0	1
30681	0x2A8	Event Van	0	65535	1	x VT	F17A	0	1
30682	0x2A9	Event Vbn	0	65535	1	x VT	F17A	0	1
30683	0x2AA	Event Vcn	0	65535	1	x VT	F17A	0	1
30684	0x2AB	Event Va Angle	0	359	1	°	F1	0	1
30685	0x2AC	Event Vb Angle	0	359	1	°	F1	0	1
30686	0x2AD	Event Vc Angle	0	359	1	°	F1	0	1
30687	0x2AE	Event Vc Angle	0	359	1	°	F1	0	1
30688	0x2AF	Frequency	0	12000	1	Hz	F3	0	1
30689	0x2B0	Event Power Factor	-99	100	1	---	F21	0	1
30690	0x2B1	Event Real Power	-65535	65535	1	x CTxVT	F7	0	1
30691	0x2B2	Event Reactive Power	-65535	65535	1	x CTxVT	F7	0	1
30692	0x2B3	Event Apparent Power	0	65535	1	x CTxVT	F17A	0	1
30693	0x2B4	Event Thermal Capacity	0	100	1	%	F1	0	1
30694	0x2B5	Event Motor Load	0	30000	1	x FLA	F3	0	1
30695	0x2B6	Event Unbalance	0	10000	1	%	F3	0	1
30696	0x2B7	Event CBCT Current	0	65535	1	A	F3	0	1
30697	0x2B8	Event Self-Test Event	0	0xFFFFFFFF	2	---	FC188	0	2
TRANSIENT RECORDER SAMPLES									
30720	0x2CF	Sample Index + Trace Memory Sample 1	-32767	32767	1	---	F4	0	1
30721	0x2D0	Sample Index + Trace Memory Sample 2	-32767	32767	1	---	F4	0	1
30722	0x2D1	Sample Index + Trace Memory Sample 3	-32767	32767	1	---	F4	0	1
30723	0x2D2	Sample Index + Trace Memory Sample 4	-32767	32767	1	---	F4	0	1
30724	0x2D3	Sample Index + Trace Memory Sample 5	-32767	32767	1	---	F4	0	1
30725	0x2D4	Sample Index + Trace Memory Sample 6	-32767	32767	1	---	F4	0	1
30726	0x2D5	Sample Index + Trace Memory Sample 7	-32767	32767	1	---	F4	0	1
30727	0x2D6	Sample Index + Trace Memory Sample 8	-32767	32767	1	---	F4	0	1
30728	0x2D7	Sample Index + Trace Memory Sample 9	-32767	32767	1	---	F4	0	1
30729	0x2D8	Sample Index + Trace Memory Sample 10	-32767	32767	1	---	F4	0	1
30730	0x2D9	Sample Index + Trace Memory Sample 11	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30731	0x2DA	Sample Index + Trace Memory Sample 12	-32767	32767	1	---	F4	0	1
30732	0x2DB	Sample Index + Trace Memory Sample 13	-32767	32767	1	---	F4	0	1
30733	0x2DC	Sample Index + Trace Memory Sample 14	-32767	32767	1	---	F4	0	1
30734	0x2DD	Sample Index + Trace Memory Sample 15	-32767	32767	1	---	F4	0	1
30735	0x2DE	Sample Index + Trace Memory Sample 16	-32767	32767	1	---	F4	0	1
30736	0x2DF	Sample Index + Trace Memory Sample 17	-32767	32767	1	---	F4	0	1
30737	0x2E0	Sample Index + Trace Memory Sample 18	-32767	32767	1	---	F4	0	1
30738	0x2E1	Sample Index + Trace Memory Sample 19	-32767	32767	1	---	F4	0	1
30739	0x2E2	Sample Index + Trace Memory Sample 20	-32767	32767	1	---	F4	0	1
30740	0x2E3	Sample Index + Trace Memory Sample 21	-32767	32767	1	---	F4	0	1
30741	0x2E4	Sample Index + Trace Memory Sample 22	-32767	32767	1	---	F4	0	1
30742	0x2E5	Sample Index + Trace Memory Sample 23	-32767	32767	1	---	F4	0	1
30743	0x2E6	Sample Index + Trace Memory Sample 24	-32767	32767	1	---	F4	0	1
30744	0x2E7	Sample Index + Trace Memory Sample 25	-32767	32767	1	---	F4	0	1
30745	0x2E8	Sample Index + Trace Memory Sample 26	-32767	32767	1	---	F4	0	1
30746	0x2E9	Sample Index + Trace Memory Sample 27	-32767	32767	1	---	F4	0	1
30747	0x2EA	Sample Index + Trace Memory Sample 28	-32767	32767	1	---	F4	0	1
30748	0x2EB	Sample Index + Trace Memory Sample 29	-32767	32767	1	---	F4	0	1
30749	0x2EC	Sample Index + Trace Memory Sample 30	-32767	32767	1	---	F4	0	1
30750	0x2ED	Sample Index + Trace Memory Sample 31	-32767	32767	1	---	F4	0	1
30751	0x2EE	Sample Index + Trace Memory Sample 32	-32767	32767	1	---	F4	0	1
30752	0x2EF	Sample Index + Trace Memory Sample 33	-32767	32767	1	---	F4	0	1
30753	0x2F0	Sample Index + Trace Memory Sample 34	-32767	32767	1	---	F4	0	1
30754	0x2F1	Sample Index + Trace Memory Sample 35	-32767	32767	1	---	F4	0	1
30755	0x2F2	Sample Index + Trace Memory Sample 36	-32767	32767	1	---	F4	0	1
30756	0x2F3	Sample Index + Trace Memory Sample 37	-32767	32767	1	---	F4	0	1
30757	0x2F4	Sample Index + Trace Memory Sample 38	-32767	32767	1	---	F4	0	1
30758	0x2F5	Sample Index + Trace Memory Sample 39	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30759	0x2F6	Sample Index + Trace Memory Sample 40	-32767	32767	1	---	F4	0	1
30760	0x2F7	Sample Index + Trace Memory Sample 41	-32767	32767	1	---	F4	0	1
30761	0x2F8	Sample Index + Trace Memory Sample 42	-32767	32767	1	---	F4	0	1
30762	0x2F9	Sample Index + Trace Memory Sample 43	-32767	32767	1	---	F4	0	1
30763	0x2FA	Sample Index + Trace Memory Sample 44	-32767	32767	1	---	F4	0	1
30764	0x2FB	Sample Index + Trace Memory Sample 45	-32767	32767	1	---	F4	0	1
30765	0x2FC	Sample Index + Trace Memory Sample 46	-32767	32767	1	---	F4	0	1
30766	0x2FD	Sample Index + Trace Memory Sample 47	-32767	32767	1	---	F4	0	1
30767	0x2FE	Sample Index + Trace Memory Sample 48	-32767	32767	1	---	F4	0	1
30768	0x2FF	Sample Index + Trace Memory Sample 49	-32767	32767	1	---	F4	0	1
30769	0x300	Sample Index + Trace Memory Sample 50	-32767	32767	1	---	F4	0	1
30770	0x301	Sample Index + Trace Memory Sample 51	-32767	32767	1	---	F4	0	1
30771	0x302	Sample Index + Trace Memory Sample 52	-32767	32767	1	---	F4	0	1
30772	0x303	Sample Index + Trace Memory Sample 53	-32767	32767	1	---	F4	0	1
30773	0x304	Sample Index + Trace Memory Sample 54	-32767	32767	1	---	F4	0	1
30774	0x305	Sample Index + Trace Memory Sample 55	-32767	32767	1	---	F4	0	1
30775	0x306	Sample Index + Trace Memory Sample 56	-32767	32767	1	---	F4	0	1
30776	0x307	Sample Index + Trace Memory Sample 57	-32767	32767	1	---	F4	0	1
30777	0x308	Sample Index + Trace Memory Sample 58	-32767	32767	1	---	F4	0	1
30778	0x309	Sample Index + Trace Memory Sample 59	-32767	32767	1	---	F4	0	1
30779	0x30A	Sample Index + Trace Memory Sample 60	-32767	32767	1	---	F4	0	1
30780	0x30B	Sample Index + Trace Memory Sample 61	-32767	32767	1	---	F4	0	1
30781	0x30C	Sample Index + Trace Memory Sample 62	-32767	32767	1	---	F4	0	1
30782	0x30D	Sample Index + Trace Memory Sample 63	-32767	32767	1	---	F4	0	1
30783	0x30E	Sample Index + Trace Memory Sample 64	-32767	32767	1	---	F4	0	1
30784	0x30F	Sample Index + Trace Memory Sample 65	-32767	32767	1	---	F4	0	1
30785	0x310	Sample Index + Trace Memory Sample 66	-32767	32767	1	---	F4	0	1
30786	0x311	Sample Index + Trace Memory Sample 67	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30787	0x312	Sample Index + Trace Memory Sample 68	-32767	32767	1	---	F4	0	1
30788	0x313	Sample Index + Trace Memory Sample 69	-32767	32767	1	---	F4	0	1
30789	0x314	Sample Index + Trace Memory Sample 70	-32767	32767	1	---	F4	0	1
30790	0x315	Sample Index + Trace Memory Sample 71	-32767	32767	1	---	F4	0	1
30791	0x316	Sample Index + Trace Memory Sample 72	-32767	32767	1	---	F4	0	1
30792	0x317	Sample Index + Trace Memory Sample 73	-32767	32767	1	---	F4	0	1
30793	0x318	Sample Index + Trace Memory Sample 74	-32767	32767	1	---	F4	0	1
30794	0x319	Sample Index + Trace Memory Sample 75	-32767	32767	1	---	F4	0	1
30795	0x31A	Sample Index + Trace Memory Sample 76	-32767	32767	1	---	F4	0	1
30796	0x31B	Sample Index + Trace Memory Sample 77	-32767	32767	1	---	F4	0	1
30797	0x31C	Sample Index + Trace Memory Sample 78	-32767	32767	1	---	F4	0	1
30798	0x31D	Sample Index + Trace Memory Sample 79	-32767	32767	1	---	F4	0	1
30799	0x31E	Sample Index + Trace Memory Sample 80	-32767	32767	1	---	F4	0	1
30800	0x31F	Sample Index + Trace Memory Sample 81	-32767	32767	1	---	F4	0	1
30801	0x320	Sample Index + Trace Memory Sample 82	-32767	32767	1	---	F4	0	1
30802	0x321	Sample Index + Trace Memory Sample 83	-32767	32767	1	---	F4	0	1
30803	0x322	Sample Index + Trace Memory Sample 84	-32767	32767	1	---	F4	0	1
30804	0x323	Sample Index + Trace Memory Sample 85	-32767	32767	1	---	F4	0	1
30805	0x324	Sample Index + Trace Memory Sample 86	-32767	32767	1	---	F4	0	1
30806	0x325	Sample Index + Trace Memory Sample 87	-32767	32767	1	---	F4	0	1
30807	0x326	Sample Index + Trace Memory Sample 88	-32767	32767	1	---	F4	0	1
30808	0x327	Sample Index + Trace Memory Sample 89	-32767	32767	1	---	F4	0	1
30809	0x328	Sample Index + Trace Memory Sample 90	-32767	32767	1	---	F4	0	1
30810	0x329	Sample Index + Trace Memory Sample 91	-32767	32767	1	---	F4	0	1
30811	0x32A	Sample Index + Trace Memory Sample 92	-32767	32767	1	---	F4	0	1
30812	0x32B	Sample Index + Trace Memory Sample 93	-32767	32767	1	---	F4	0	1
30813	0x32C	Sample Index + Trace Memory Sample 94	-32767	32767	1	---	F4	0	1
30814	0x32D	Sample Index + Trace Memory Sample 95	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30815	0x32E	Sample Index + Trace Memory Sample 96	-32767	32767	1	---	F4	0	1
30816	0x32F	Sample Index + Trace Memory Sample 97	-32767	32767	1	---	F4	0	1
30817	0x330	Sample Index + Trace Memory Sample 98	-32767	32767	1	---	F4	0	1
30818	0x331	Sample Index + Trace Memory Sample 99	-32767	32767	1	---	F4	0	1
30819	0x332	Sample Index + Trace Memory Sample 100	-32767	32767	1	---	F4	0	1
30820	0x333	Sample Index + Trace Memory Sample 101	-32767	32767	1	---	F4	0	1
30821	0x334	Sample Index + Trace Memory Sample 102	-32767	32767	1	---	F4	0	1
30822	0x335	Sample Index + Trace Memory Sample 103	-32767	32767	1	---	F4	0	1
30823	0x336	Sample Index + Trace Memory Sample 104	-32767	32767	1	---	F4	0	1
30824	0x337	Sample Index + Trace Memory Sample 105	-32767	32767	1	---	F4	0	1
30825	0x338	Sample Index + Trace Memory Sample 106	-32767	32767	1	---	F4	0	1
30826	0x339	Sample Index + Trace Memory Sample 107	-32767	32767	1	---	F4	0	1
30827	0x33A	Sample Index + Trace Memory Sample 108	-32767	32767	1	---	F4	0	1
30828	0x33B	Sample Index + Trace Memory Sample 109	-32767	32767	1	---	F4	0	1
30829	0x33C	Sample Index + Trace Memory Sample 110	-32767	32767	1	---	F4	0	1
30830	0x33D	Sample Index + Trace Memory Sample 111	-32767	32767	1	---	F4	0	1
30831	0x33E	Sample Index + Trace Memory Sample 112	-32767	32767	1	---	F4	0	1
30832	0x33F	Sample Index + Trace Memory Sample 113	-32767	32767	1	---	F4	0	1
30833	0x340	Sample Index + Trace Memory Sample 114	-32767	32767	1	---	F4	0	1
30834	0x341	Sample Index + Trace Memory Sample 115	-32767	32767	1	---	F4	0	1
30835	0x342	Sample Index + Trace Memory Sample 116	-32767	32767	1	---	F4	0	1
30836	0x343	Sample Index + Trace Memory Sample 117	-32767	32767	1	---	F4	0	1
30837	0x344	Sample Index + Trace Memory Sample 118	-32767	32767	1	---	F4	0	1
30838	0x345	Sample Index + Trace Memory Sample 119	-32767	32767	1	---	F4	0	1
30839	0x346	Sample Index + Trace Memory Sample 120	-32767	32767	1	---	F4	0	1
30840	0x347	Sample Index + Trace Memory Sample 121	-32767	32767	1	---	F4	0	1
30841	0x348	Sample Index + Trace Memory Sample 122	-32767	32767	1	---	F4	0	1
30842	0x349	Sample Index + Trace Memory Sample 123	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30843	0x34A	Sample Index + Trace Memory Sample 124	-32767	32767	1	---	F4	0	1
30844	0x34B	Sample Index + Trace Memory Sample 125	-32767	32767	1	---	F4	0	1
30845	0x34C	Sample Index + Trace Memory Sample 126	-32767	32767	1	---	F4	0	1
30846	0x34D	Sample Index + Trace Memory Sample 127	-32767	32767	1	---	F4	0	1
30847	0x34E	Sample Index + Trace Memory Sample 128	-32767	32767	1	---	F4	0	1
DATA LOGGER									
30860	0x35B	Number of Triggers Since Clear	0	32767	1	---	F4	0	1
30861	0x35C	No. of Data Log Samples Stored	0	256	1	---	F4	0	1
30862	0x35D	Data Log Start Index	0	256	1	---	F4	0	1
30863	0x35E	Data LogTrigger Cause	0	256	1	---	F4	0	1
30864	0x35F	Data Log Trigger Cause	0	0xFFFF	1	---	FC133A	0	1
30865	0x360	Data Log Trigger Date	0x010107D8	0X0C1F082E	1	---	F18	0x010107D8	2
30867	0x362	Data Log Trigger Time	0	0X173BEA5F	1	---	F19	0	2
30869	0x364	Data Log Status	0	4	1	---	F75	0	1
30881	0x370	Data Log Sample DLSS + 0	-32767	32767	0	---	F4	0	1
30882	0x371	Data Log Sample DLSS + 1	-32767	32767	0	---	F4	0	1
30883	0x372	Data Log Sample DLSS + 2	-32767	32767	0	---	F4	0	1
30884	0x373	Data Log Sample DLSS + 3	-32767	32767	0	---	F4	0	1
30885	0x374	Data Log Sample DLSS + 4	-32767	32767	0	---	F4	0	1
30886	0x375	Data Log Sample DLSS + 5	-32767	32767	0	---	F4	0	1
30887	0x376	Data Log Sample DLSS + 6	-32767	32767	0	---	F4	0	1
30888	0x377	Data Log Sample DLSS + 7	-32767	32767	0	---	F4	0	1
30889	0x378	Data Log Sample DLSS + 8	-32767	32767	0	---	F4	0	1
30890	0x379	Data Log Sample DLSS + 9	-32767	32767	0	---	F4	0	1
30891	0x37A	Data Log Sample DLSS + 10	-32767	32767	0	---	F4	0	1
30892	0x37B	Data Log Sample DLSS + 11	-32767	32767	0	---	F4	0	1
30893	0x37C	Data Log Sample DLSS + 12	-32767	32767	0	---	F4	0	1
30894	0x37D	Data Log Sample DLSS + 13	-32767	32767	0	---	F4	0	1
30895	0x37E	Data Log Sample DLSS + 14	-32767	32767	0	---	F4	0	1
30896	0x37F	Data Log Sample DLSS + 15	-32767	32767	0	---	F4	0	1
30897	0x380	Data Log Sample DLSS + 16	-32767	32767	0	---	F4	0	1
30898	0x381	Data Log Sample DLSS + 17	-32767	32767	0	---	F4	0	1
30899	0x382	Data Log Sample DLSS + 18	-32767	32767	0	---	F4	0	1
30900	0x383	Data Log Sample DLSS + 19	-32767	32767	0	---	F4	0	1
30901	0x384	Data Log Sample DLSS + 20	-32767	32767	0	---	F4	0	1
30902	0x385	Data Log Sample DLSS + 21	-32767	32767	0	---	F4	0	1
30903	0x386	Data Log Sample DLSS + 22	-32767	32767	0	---	F4	0	1
30904	0x387	Data Log Sample DLSS + 23	-32767	32767	0	---	F4	0	1
30905	0x388	Data Log Sample DLSS + 24	-32767	32767	0	---	F4	0	1
30906	0x389	Data Log Sample DLSS + 25	-32767	32767	0	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30907	0x38A	Data Log Sample DLSS + 26	-32767	32767	0	---	F4	0	1
30908	0x38B	Data Log Sample DLSS + 27	-32767	32767	0	---	F4	0	1
30909	0x38C	Data Log Sample DLSS + 28	-32767	32767	0	---	F4	0	1
30910	0x38D	Data Log Sample DLSS + 29	-32767	32767	0	---	F4	0	1
30911	0x38E	Data Log Sample DLSS + 30	-32767	32767	0	---	F4	0	1
30912	0x38F	Data Log Sample DLSS + 31	-32767	32767	0	---	F4	0	1
30913	0x390	Data Log Sample DLSS + 32	-32767	32767	0	---	F4	0	1
30914	0x391	Data Log Sample DLSS + 33	-32767	32767	0	---	F4	0	1
30915	0x392	Data Log Sample DLSS + 34	-32767	32767	0	---	F4	0	1
30916	0x393	Data Log Sample DLSS + 35	-32767	32767	0	---	F4	0	1
30917	0x394	Data Log Sample DLSS + 36	-32767	32767	0	---	F4	0	1
30918	0x395	Data Log Sample DLSS + 37	-32767	32767	0	---	F4	0	1
30919	0x396	Data Log Sample DLSS + 38	-32767	32767	0	---	F4	0	1
30920	0x397	Data Log Sample DLSS + 39	-32767	32767	0	---	F4	0	1
30921	0x398	Data Log Sample DLSS + 40	-32767	32767	0	---	F4	0	1
30922	0x399	Data Log Sample DLSS + 41	-32767	32767	0	---	F4	0	1
30923	0x39A	Data Log Sample DLSS + 42	-32767	32767	0	---	F4	0	1
30924	0x39B	Data Log Sample DLSS + 43	-32767	32767	0	---	F4	0	1
30925	0x39C	Data Log Sample DLSS + 44	-32767	32767	0	---	F4	0	1
30926	0x39D	Data Log Sample DLSS + 45	-32767	32767	0	---	F4	0	1
30927	0x39E	Data Log Sample DLSS + 46	-32767	32767	0	---	F4	0	1
30928	0x39F	Data Log Sample DLSS + 47	-32767	32767	0	---	F4	0	1
30929	0x3A0	Data Log Sample DLSS + 48	-32767	32767	0	---	F4	0	1
30930	0x3A1	Data Log Sample DLSS + 49	-32767	32767	0	---	F4	0	1
30931	0x3A2	Data Log Sample DLSS + 50	-32767	32767	0	---	F4	0	1
30932	0x3A3	Data Log Sample DLSS + 51	-32767	32767	0	---	F4	0	1
30933	0x3A4	Data Log Sample DLSS + 52	-32767	32767	0	---	F4	0	1
30934	0x3A5	Data Log Sample DLSS + 53	-32767	32767	0	---	F4	0	1
30935	0x3A6	Data Log Sample DLSS + 54	-32767	32767	0	---	F4	0	1
30936	0x3A7	Data Log Sample DLSS + 55	-32767	32767	0	---	F4	0	1
30937	0x3A8	Data Log Sample DLSS + 56	-32767	32767	0	---	F4	0	1
30938	0x3A9	Data Log Sample DLSS + 57	-32767	32767	0	---	F4	0	1
30939	0x3AA	Data Log Sample DLSS + 58	-32767	32767	0	---	F4	0	1
30940	0x3AB	Data Log Sample DLSS + 59	-32767	32767	0	---	F4	0	1
30941	0x3AC	Data Log Sample DLSS + 60	-32767	32767	0	---	F4	0	1
30942	0x3AD	Data Log Sample DLSS + 61	-32767	32767	0	---	F4	0	1
30943	0x3AE	Data Log Sample DLSS + 62	-32767	32767	0	---	F4	0	1
30944	0x3AF	Data Log Sample DLSS + 63	-32767	32767	0	---	F4	0	1
STATUS BUFFER									
30946	0x3B1	Alarm Status 4	0	0xFFFFFFFF	1	---	FC182	0	2
30948	0x3B3	Alarm Status 3	0	0xFFFFFFFF	1	---	FC181	0	2
30950	0x3B5	Alarm Status 2	0	0xFFFFFFFF	1	---	FC180	0	2
30952	0x3B7	Alarm Status 1	0	0xFFFFFFFF	1	---	FC179	0	2
30954	0x3B9	Trip Status 4	0	0xFFFFFFFF	1	---	FC186	0	2
30956	0x3BB	Trip Status 3	0	0xFFFFFFFF	1	---	FC185	0	2
30958	0x3BD	Trip Status 2	0	0xFFFFFFFF	1	---	FC184	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30960	0x3BF	Trip Status 1	0	0xFFFFFFFF	1	---	FC183	0	2
30966	0x3C5	Message Status 2	0	0xFFFFFFFF	1	---	FC188	0	2
30968	0x3C7	Message Status 1	0	0xFFFFFFFF	1	---	FC187	0	2
30970	0x3C9	Control Element Status 4	0	0xFFFFFFFF	1	---	FC194	0	2
30974	0x3CD	Control Element Status 2	0	0xFFFFFFFF	1	---	FC192	0	2
30976	0x3CF	Control Element Status 1	0	0xFFFFFFFF	1	---	FC191	0	2
30978	0x3D1	Block Status 4	0	0xFFFFFFFF	1	---	FC203	0	2
30980	0x3D3	Block Status 3	0	0xFFFFFFFF	1	---	FC202	0	2
30982	0x3D5	Block Status 2	0	0xFFFFFFFF	1	---	FC201	0	2
30984	0x3D7	Block Status 1	0	0xFFFFFFFF	1	---	FC200	0	2
61850 STATUS									
31510	0x5E5	61850 Status	0	2	1	---	FC108	0	1
31511	0x5E6	61850 N.V. Status	0	4	1	---	FC434	0	1
IEC61850 GOOSE STATUS									
31515	0x5EA	Remote GOOSE Status	0	0xFFFFFFFF	1	---	FC215	0	2
31517	0x5EC	Remote GOOSE Header Status	0	0xFFFFFFFF	1	---	FC215	0	2
PHASE OV TRIP STATUS									
31533	0x5FC	Trip Phase A Status 5	0	65535	1	---	FC134	0	1
31534	0x5FD	Trip Phase B Status 5	0	65535	1	---	FC134	0	1
31535	0x5FE	Trip Phase C Status 5	0	65535	1	---	FC134	0	1
PHASE UV TRIP STATUS									
31536	0x5FF	Trip Phase A Status 6	0	65535	1	---	FC134	0	1
31537	0x600	Trip Phase B Status 6	0	65535	1	---	FC134	0	1
31538	0x601	Trip Phase C Status 6	0	65535	1	---	FC134	0	1
PHASE OV2 TRIP STATUS									
31545	0x608	PhaseOV2Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31546	0x609	PhaseOV2Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31547	0x60A	PhaseOV2Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV2 TRIP STATUS									
31548	0x60B	PhaseUV2Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31549	0x60C	PhaseUV2Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31550	0x60D	PhaseUV2Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV3 TRIP STATUS									
31551	0x60E	PhaseOV3Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31552	0x60F	PhaseOV3Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31553	0x610	PhaseOV3Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV3 TRIP STATUS									
31554	0x611	PhaseUV3Trip_PhaseAStatus	0	65535	1	---	FC134	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
31555	0x612	PhaseUV3Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31556	0x613	PhaseUV3Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV4 TRIP STATUS									
31557	0x614	PhaseOV4Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31558	0x615	PhaseOV4Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31559	0x616	PhaseOV4Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV4 TRIP STATUS									
31560	0x617	PhaseUV4Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31561	0x618	PhaseUV4Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31562	0x619	PhaseUV4Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV ALARM STATUS									
31581	0x62C	Alarm Phase A Status 5	0	65535	1	---	FC134	0	1
31582	0x62D	Alarm Phase B Status 5	0	65535	1	---	FC134	0	1
31583	0x62E	Alarm Phase C Status 5	0	65535	1	---	FC134	0	1
PHASE UV ALARM STATUS									
31584	0x62F	Alarm Phase A Status 6	0	65535	1	---	FC134	0	1
31585	0x630	Alarm Phase B Status 6	0	65535	1	---	FC134	0	1
31586	0x631	Alarm Phase C Status 6	0	65535	1	---	FC134	0	1
PHASE TOC2 ALARM STATUS									
31590	0x635	Phase51PTOC_2Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31591	0x636	Phase51PTOC_2Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31592	0x637	Phase51PTOC_2Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV 2 ALARM STATUS									
31593	0x638	PhaseOV2Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31594	0x639	PhaseOV2Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31595	0x63A	PhaseOV2Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV 2 ALARM STATUS									
31596	0x63B	PhaseUV2Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31597	0x63C	PhaseUV2Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31598	0x63D	PhaseUV2Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
VOLTAGE METERING									
30358	0x165	Vab Voltage	0	65535	1	V	F1	0	1
30359	0x166	Vbc Voltage	0	65535	1	V	F1	0	1
30360	0x167	Vca Voltage	0	65535	1	V	F1	0	1
30361	0x168	Average Line Voltage	0	65535	1	V	F1	0	1
30362	0x169	Van Voltage	0	65535	1	V	F1	0	1
30363	0x16A	Vbn Voltage	0	65535	1	V	F1	0	1
30364	0x16B	Vcn Voltage	0	65535	1	V	F1	0	1
30365	0x16C	Average Phase Voltage	0	65535	1	V	F1	0	1
30366	0x16D	Frequency	0	12000	1	Hz	F3	0	1
31746	0x6D1	Vab Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31748	0x6D3	Vbc Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31750	0x6D5	Vca Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31752	0x6D7	Van Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31754	0x6D9	Vbn Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31756	0x6DB	Vcn Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31758	0x6DD	Vn Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31760	0x6DF	VAux Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31762	0x6E1	Positive Sequence Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31764	0x6E3	Negative Sequence Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31766	0x6E5	Zero Sequence Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31768	0x6E7		0	65535	1	V	F9	0	2
31770	0x6E9		0	65535	1	V	F9	0	2
TRANSIENT RECORDER									
30707	0x2C2	Transient Recorder Last Cleared	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30709	0x2C4	Transient Recorder Available Records	0	6	1	---	F1	0	1
30710	0x2C5	Trace Memory Trigger Date	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30712	0x2C7	Trace Memory Trigger Time	0	0X173BEA5F	0	---	F19	0	2
30714	0x2C9	Trace Memory Trigger Cause	0	0xD002	0	---	FC133	0	1
30715	0x2CA	Trace Memory Trigger Frequency	0	12000	1	Hz	F3	60	1
30716	0x2CB	Total Triggers	0	0xFFFF	1	---	F1	0	1
30718	0x2CD	Trigger Position (Actual Value)	0	6143	1	---	F1	25	1
30719	0x2CE	Trace Memory Start Index	0	6143	1	---	F1	0	1
31773	0x6EC	Transient Sampling Rate Status	0	3	1	---	FC429	0	1
FAULT REPORT									
31775	0x6EE	Fault Report Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
31777	0x6F0	Fault Report Time	0	0X173BEA5F	0	---	F19	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
31779	0x6F2	Fault Report Fault Type	0	2	1	---	FC134C	0	1
31780	0x6F3	Fault Report Ia	0	1200000	1	A	F10	0	2
31782	0x6F5	Fault Report Ia Angle	0	359	1	°	F1	0	1
31783	0x6F6	Fault Report Ib	0	1200000	1	A	F10	0	2
31785	0x6F8	Fault Report Ib Angle	0	359	1	°	F1	0	1
31786	0x6F9	Fault Report Ic	0	1200000	1	A	F10	0	2
31788	0x6FB	Fault Report Ic Angle	0	359	1	°	F1	0	1
31789	0x6FC	Fault Report Ig	0	1200000	1	A	F10	0	2
31791	0x6FE	Fault Report Ig Angle	0	359	1	°	F1	0	1
31792	0x6FF	Fault Report In	0	100000	1	A	F10	0	2
31794	0x701	Fault Report In Angle	0	359	1	°	F1	0	1
31795	0x702	Fault Report Va	0	65535	1	V	F9	0	2
31797	0x704	Fault Report Va Angle	0	359	1	°	F1	0	1
31798	0x705	Fault Report Vb	0	65535	1	V	F9	0	2
31800	0x707	Fault Report Vb Angle	0	359	1	°	F1	0	1
31801	0x708	Fault Report Vc	0	65535	1	V	F9	0	2
31803	0x70A	Fault Report Vc Angle	0	359	1	°	F1	0	1
31804	0x70B	Fault Report Vab	0	0xFFFF	1	V	F9	0	2
31806	0x70D	Fault Report Vab Angle	0	359	1	°	F1	0	1
31807	0x70E	Fault Report Vbc	0	0xFFFF	1	V	F9	0	2
31809	0x710	Fault Report Vbc Angle	0	359	1	°	F1	0	1
31810	0x711	Fault Report Vca	0	0xFFFF	1	V	F9	0	2
31812	0x713	Fault Report Vca Angle	0	359	1	°	F1	0	1
31813	0x714	Fault Report Vn	0	65535	1	V	F9	0	2
31815	0x716	Fault Report Vn Angle	0	359	1	°	F1	0	1
31816	0x717	Fault Report Vaux	0	65535	1	V	F9	0	2
31818	0x719	Fault Report Vaux Angle	0	359	1	°	F1	0	1
31853	0x73C	Fault Report Phases	1	7	1	---	F37	1	1
31854	0x73D	Fault Report Firmware Version	0	0xFFFF	1	---	F3	220	1
31855	0x73E	Fault Report Order Code	0	16	1	---	F22	339-CP5G5HISSXXS	12
31867	0x74A	Fault Report Feeder Name	0	10	1	---	F22	Motor Name	10
DIRECTIONAL POWER									
31739	0x6CA	Directional Power 1	-1000000	1000000	1	kW	F13	0	2
31741	0x6CC	Directional Power 2	-1000000	1000000	1	kW	F13	0	2
31880	0x757	Directional Power 1	-1000	1000	1	MW	F13	0	2
31882	0x759	Directional Power 2	-1000	1000	1	MW	F13	0	2
DEVICE STATUS									
30302	0x12D	Current Security Access Level	0	3	1	---	F1	0	1
30305	0x130	Device Status	0	0xFFFF	1	---	FC129	0	1
30306	0x131	Extended Status	0	0xFFFF	1	---	FC178	0	1
30307	0x132	Thermal Capacity Used	0	100	1	%	F1	0	1
30308	0x133	Time to Overload Trip	-1	99999	1	s	F20	-1	2
30319	0x13E	Relay1 Coil Status	0	1	1	---	FC125	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30320	0x13F	Relay2 Coil Status	0	1	1	---	FC125	0	1
31887	0x75E	Breaker Health	0	100000	1	---	F9	0	2
31889	0x760	Breaker Last Trip Time	0	10000	1	ms	F1	0	1
31890	0x761	Breaker Avg Trip Time	0	10000	1	ms	F1	0	1
31891	0x762	Breaker Last Close Time	0	10000	1	ms	F1	0	1
31892	0x763	Breaker Avg Close Time	0	10000	1	ms	F1	0	1
31893	0x764	Breaker Last Charge Time	0	60000	1	ms	F1	0	1
31894	0x765	Breaker Avg Charge Time	0	60000	1	ms	F1	0	1
ENHANCED LEARNED DATA									
32010	0x7D9	Number of Records	0	65535	1	---	F1	0	1
32011	0x7DA	Date of Record	0x010107D8	0x0C1F082E	1	---	F18	0x010107D8	2
32013	0x7DC	Learned Acceleration Time	0	65535	1	s	F2	0	1
32014	0x7DD	Learned Starting Current	0	1200000	1	A	F10	0	2
32016	0x7DF	Learned Starting Capacity	0	100	1	%	F1	0	1
32017	0x7E0	Last Starting Current	0	1200000	1	A	F10	0	2
32019	0x7E2	Last Starting Capacity	0	100	1	%	F1	0	1
32020	0x7E3	Last Acceleration Time	0	65535	1	s	F2	0	1
32021	0x7E4	Learned Motor Load	0	30000	1	x FLA	F3	0	1
32022	0x7E5	Learned Run Time After Start (days)	0	65535	1	days	F1	0	1
32023	0x7E6	Learned Run Time After Start (minutes)	0	1339	1	min	F1	0	1
MOTOR START DATA LOGGER									
32040	0x7F7	Motor Data Log Number Of Triggers	0	0xFFFF	1	---	F1	0	1
32041	0x7F8	Motor Data Log Number Of Samples Stored	0	0xFFFF	1	---	F1	0	1
32042	0x7F9	Motor Data Log Start Index	0	0xFFFF	1	---	F1	0	1
32043	0x7FA	Motor Data Log Trigger Index	-32767	32767	1	---	F4	0	1
32044	0x7FB	Motor Data Log Trigger Cause	0	0xFFFF	1	---	F1	0	1
32045	0x7FC	Motor Data Log Trigger Date	0x010107D8	0X0C1F082E	1	---	F18	0x010107D8	2
32047	0x7FE	Motor Data Log Trigger Time	0	0X173BEA5F	1	---	F19	0	2
32049	0x800	Motor Data Log Status	0	4	1	---	F75	0	1
32050	0x801	Motor Data Log Num Buffers Available	0	6	1	---	F1	0	1
32060	0x80B	Motor Data Log Sample 0	-32767	32767	0	---	F4	1	1
32061	0x80C	Motor Data Log Sample 1	-32767	32767	0	---	F4	1	1
32062	0x80D	Motor Data Log Sample 2	-32767	32767	0	---	F4	1	1
32063	0x80E	Motor Data Log Sample 3	-32767	32767	0	---	F4	1	1
32064	0x80F	Motor Data Log Sample 4	-32767	32767	0	---	F4	1	1
32065	0x810	Motor Data Log Sample 5	-32767	32767	0	---	F4	1	1
32066	0x811	Motor Data Log Sample 6	-32767	32767	0	---	F4	1	1
32067	0x812	Motor Data Log Sample 7	-32767	32767	0	---	F4	1	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
32068	0x813	Motor Data Log Sample 8	-32767	32767	0	---	F4	1	1
32069	0x814	Motor Data Log Sample 9	-32767	32767	0	---	F4	1	1
32070	0x815	Motor Data Log Sample 10	-32767	32767	0	---	F4	1	1
32071	0x816	Motor Data Log Sample 11	-32767	32767	0	---	F4	1	1
32072	0x817	Motor Data Log Sample 12	-32767	32767	0	---	F4	1	1
32073	0x818	Motor Data Log Sample 13	-32767	32767	0	---	F4	1	1
32074	0x819	Motor Data Log Sample 14	-32767	32767	0	---	F4	1	1
32075	0x81A	Motor Data Log Sample 15	-32767	32767	0	---	F4	1	1
32076	0x81B	Motor Data Log Sample 16	-32767	32767	0	---	F4	1	1
32077	0x81C	Motor Data Log Sample 17	-32767	32767	0	---	F4	1	1
32078	0x81D	Motor Data Log Sample 18	-32767	32767	0	---	F4	1	1
32079	0x81E	Motor Data Log Sample 19	-32767	32767	0	---	F4	1	1
32080	0x81F	Motor Data Log Sample 20	-32767	32767	0	---	F4	1	1
32081	0x820	Motor Data Log Sample 21	-32767	32767	0	---	F4	1	1
32082	0x821	Motor Data Log Sample 22	-32767	32767	0	---	F4	1	1
32083	0x822	Motor Data Log Sample 23	-32767	32767	0	---	F4	1	1
32084	0x823	Motor Data Log Sample 24	-32767	32767	0	---	F4	1	1
32085	0x824	Motor Data Log Sample 25	-32767	32767	0	---	F4	1	1
32086	0x825	Motor Data Log Sample 26	-32767	32767	0	---	F4	1	1
32087	0x826	Motor Data Log Sample 27	-32767	32767	0	---	F4	1	1
32088	0x827	Motor Data Log Sample 28	-32767	32767	0	---	F4	1	1
32089	0x828	Motor Data Log Sample 29	-32767	32767	0	---	F4	1	1
32090	0x829	Motor Data Log Sample 30	-32767	32767	0	---	F4	1	1
32091	0x82A	Motor Data Log Sample 31	-32767	32767	0	---	F4	1	1
32092	0x82B	Motor Data Log Sample 32	-32767	32767	0	---	F4	1	1
32093	0x82C	Motor Data Log Sample 33	-32767	32767	0	---	F4	1	1
32094	0x82D	Motor Data Log Sample 34	-32767	32767	0	---	F4	1	1
32095	0x82E	Motor Data Log Sample 35	-32767	32767	0	---	F4	1	1
32096	0x82F	Motor Data Log Sample 36	-32767	32767	0	---	F4	1	1
32097	0x830	Motor Data Log Sample 37	-32767	32767	0	---	F4	1	1
32098	0x831	Motor Data Log Sample 38	-32767	32767	0	---	F4	1	1
32099	0x832	Motor Data Log Sample 39	-32767	32767	0	---	F4	1	1
32100	0x833	Motor Data Log Sample 40	-32767	32767	0	---	F4	1	1
32101	0x834	Motor Data Log Sample 41	-32767	32767	0	---	F4	1	1
32102	0x835	Motor Data Log Sample 42	-32767	32767	0	---	F4	1	1
32103	0x836	Motor Data Log Sample 43	-32767	32767	0	---	F4	1	1
32104	0x837	Motor Data Log Sample 44	-32767	32767	0	---	F4	1	1
32105	0x838	Motor Data Log Sample 45	-32767	32767	0	---	F4	1	1
32106	0x839	Motor Data Log Sample 46	-32767	32767	0	---	F4	1	1
32107	0x83A	Motor Data Log Sample 47	-32767	32767	0	---	F4	1	1
32108	0x83B	Motor Data Log Sample 48	-32767	32767	0	---	F4	1	1
32109	0x83C	Motor Data Log Sample 49	-32767	32767	0	---	F4	1	1
32110	0x83D	Motor Data Log Sample 50	-32767	32767	0	---	F4	1	1
32111	0x83E	Motor Data Log Sample 51	-32767	32767	0	---	F4	1	1
32112	0x83F	Motor Data Log Sample 52	-32767	32767	0	---	F4	1	1
32113	0x840	Motor Data Log Sample 53	-32767	32767	0	---	F4	1	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
32114	0x841	Motor Data Log Sample 54	-32767	32767	0	---	F4	1	1
32115	0x842	Motor Data Log Sample 55	-32767	32767	0	---	F4	1	1
32116	0x843	Motor Data Log Sample 56	-32767	32767	0	---	F4	1	1
32117	0x844	Motor Data Log Sample 57	-32767	32767	0	---	F4	1	1
32118	0x845	Motor Data Log Sample 58	-32767	32767	0	---	F4	1	1
32119	0x846	Motor Data Log Sample 59	-32767	32767	0	---	F4	1	1
32120	0x847	Motor Data Log Sample 60	-32767	32767	0	---	F4	1	1
32121	0x848	Motor Data Log Sample 61	-32767	32767	0	---	F4	1	1
32122	0x849	Motor Data Log Sample 62	-32767	32767	0	---	F4	1	1
32123	0x84A	Motor Data Log Sample 63	-32767	32767	0	---	F4	1	1
DEMAND									
32170	0x879	Current Demand 1 Last Rst Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32172	0x87B	Current Demand 1 Last Rst Time	0	0X173BEA5F	0	---	F19	0	2
32174	0x87D	Current Demand 1 PhA	0	300000	1	A	F10	0	2
32176	0x87F	Current Demand 1 PhB	0	300000	1	A	F10	0	2
32178	0x881	Current Demand 1 PhC	0	300000	1	A	F10	0	2
32180	0x883	Max Current Demand 1 PhA	0	300000	1	A	F10	0	2
32182	0x885	Max Current Demand 1 PhB	0	300000	1	A	F10	0	2
32184	0x887	Max Current Demand 1 PhC	0	300000	1	A	F10	0	2
32186	0x889	Current Demand 1 PhA Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32188	0x88B	Current Demand 1 PhB Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32190	0x88D	Current Demand 1 PhC Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32192	0x88F	Current Demand 1 PhA Time	0	0X173BEA5F	0	---	F19	0	2
32194	0x891	Current Demand 1 PhB Time	0	0X173BEA5F	0	---	F19	0	2
32196	0x893	Current Demand 1 PhC Time	0	0X173BEA5F	0	---	F19	0	2
32226	0x8B1	Power Demand Last Rst Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32228	0x8B3	Power Demand Last Rst Time	0	0X173BEA5F	0	---	F19	0	2
32230	0x8B5	Real Power Demand	0	1000000	1	kW	F10	0	2
32232	0x8B7	Reactive Power Demand	0	1000000	1	kvar	F10	0	2
32234	0x8B9	Apparent Power Demand	0	1000000	1	kVA	F10	0	2
32236	0x8BB	Max Real Power Demand	0	1000000	1	kW	F10	0	2
32238	0x8BD	Max Reactive Power Demand	0	1000000	1	kvar	F10	0	2
32240	0x8BF	Max Apparent Power Demand	0	1000000	1	kVA	F10	0	2
32242	0x8C1	Real Power Demand Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32244	0x8C3	Reactive Power Demand Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
32246	0x8C5	Apparent Power Demand Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32248	0x8C7	Real Power Demand Time	0	0X173BEA5F	0	---	F19	0	2
32250	0x8C9	Reactive Power Demand Time	0	0X173BEA5F	0	---	F19	0	2
32252	0x8CB	Apparent Power Demand Time	0	0X173BEA5F	0	---	F19	0	2
SETPOINTS									
MESSAGE TIMES									
40120	0x77	Flash Message Time	1	65535	1	s	F1	5	1
40121	0x78	Message Timeout	1	65535	1	s	F1	30	1
COMMANDS									
40129	0x80	Command address	0	0xFFFF	0	---	F1	0	1
40130	0x81	Command Function	0	0xFFFF	0	---	F1	0	1
40131	0x82	Command Data 1	0	0xFFFF	0	---	F1	0	1
40132	0x83	Command Data 2	0	0xFFFF	0	---	F1	0	1
40133	0x84	Command Data 3	0	0xFFFF	0	---	F1	0	1
40134	0x85	Command Data 4	0	0xFFFF	0	---	F1	0	1
40135	0x86	Command Data 5	0	0xFFFF	0	---	F1	0	1
40136	0x87	Command Data 6	0	0xFFFF	0	---	F1	0	1
40137	0x88	Command Data 7	0	0xFFFF	0	---	F1	0	1
40138	0x89	Command Data 8	0	0xFFFF	0	---	F1	0	1
40139	0x8A	Command Data 9	0	0xFFFF	0	---	F1	0	1
40140	0x8B	Command Data 10	0	0xFFFF	0	---	F1	0	1
RS485 COMMUNICATIONS									
40172	0xAB	Slave Address	1	254	1	---	F1	254	1
40173	0xAC	RS485 Baud Rate	0	4	1	---	FC101	4	1
40174	0xAD	RS485 Parity	0	2	1	---	FC102	0	1
40175	0xAE	Rear 485 Port Protocol	0	2	1	---	F97	0	1
ETHERNET COMMUNICATIONS									
40180	0xB3	SNTP Mode	0	3	1	---	FC100	0	1
40181	0xB4	SNTP IP Address	0	0xFFFFFFFF	1	---	FC150	0	2
40183	0xB6	Ethernet IP address	0	0xFFFFFFFF	1	---	FC150	0	2
40185	0xB8	Ethernet subnet mask	0	0xFFFFFFFF	1	---	FC150	0xFFFFFC00	2
40187	0xBA	Ethernet gateway address	0	0xFFFFFFFF	1	---	FC150	0	2
40189	0xBC	SNTP Port	0	65535	1	---	F1	0	1
40191	0xBE	Ethernet ConnectionType	0	1	1	---	FC230	0	1
40194	0xC1	High Eth Message Enable	0	1	1	---	FC126	1	1
REAL-TIME CLOCK									
40228	0xE3	Set Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
40230	0xE5	Set Time	0	0X173BEA5F	0	---	F19	0	2
40232	0xE7	Time Offset From UTC	-2400	2400	25	hrs	F6	0	1
40233	0xE8	IRIG-B	0	1	1	---	FC126	0	1
40234	0xE9	Daylight Savings	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40235	0xEA	DST Start Month	0	12	1	---	FC169	0	1
40236	0xEB	DST Start Week	0	5	1	---	FC170	0	1
40237	0xEC	DST Start Weekday	0	7	1	---	FC171	0	1
40238	0xED	DST End Month	0	12	1	---	FC169	0	1
40239	0xEE	DST End Week	0	5	1	---	FC170	0	1
40240	0xEF	DST End Weekday	0	7	1	---	FC171	0	1
REMOTE INPUTS									
40260	0x103	Remote Inputs	0	0xFFFFFFFF	1	---	FC167	0	2
CURRENT SENSING									
40267	0x10A	CT Primary	10	5000	1	A	F1	100	1
40268	0x10B	Ground CT Secondary	0	2	1	---	FC104	2	1
40269	0x10C	High Speed CT Primary	10	5000	1	A	F1	100	1
40271	0x10E	Ground CT Primary	10	5000	1	A	F1	100	1
40273	0x110	Phase CT Secondary	0	1	1	---	FC415	1	1
VOLTAGE SENSING									
40276	0x113	3 Phase Voltage Connection	0	1	1	---	FC106	0	1
40281	0x118	Bus VT Secondary	50	240	1	V	F1	120	1
40282	0x119	Bus VT Ratio	10	3000	1	1	F2	10	1
POWER SYSTEM									
40284	0x11B	Supply Frequency	0	1	1	Hz	FC107	0	1
40285	0x11C	Relay Name	0	9	1	---	F22	Motor Name	9
40295	0x126	Power Unit	0	1	1	---	FC430	0	1
40296	0x127	Phase Sequence	0	1	1	---	FC124A	0	1
40298	0x129	Motor FLA	50	50000	1	A	F2	1000	1
40299	0x12A	High Speed FLA	50	50000	1	A	F2	1000	1
40300	0x12B	Bus Voltage	100	20000	1	V	F1	3000	1
MOTOR									
40308	0x133	Feeder Rating	100	10000	1	kW	F1	3000	1
40309	0x134	High Speed Motor Rating	100	10000	1	kW	F1	3000	1
SWITCHING DEVICE									
40310	0x135	Switching Device	0	1	1	---	FC235	0	1
ENABLE TWO-SPEED MOTOR									
40311	0x136	Enable Two Speed	0	1	1	---	FC126	0	1
VFD									
40314	0x139	VFD Function	0	1	1	---	FC126	0	1
40315	0x13A	VFD Bypass Switch	0	0xEF02	1	---	F89	0	1
PRESET STATISTICS									
40330	0x149	Set Number of Motor Starts	0	50000	1	---	F1	0	1
40331	0x14A	Set Number of Emergency Restarts	0	50000	1	---	F1	0	1
40332	0x14B	Preset Motor Running Hours	0	65535	1	---	F1	0	1
USER MAP ADDRESSES									
40524	0x20B	User Map Address 1	30001	39999	1	---	F1	30305	1
40525	0x20C	User Map Address 2	30001	39999	1	---	F1	30505	1
40526	0x20D	User Map Address 3	30001	39999	1	---	F1	30506	1
40527	0x20E	User Map Address 4	30001	39999	1	---	F1	30960	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40528	0x20F	User Map Address 5	30001	39999	1	---	F1	30961	1
40529	0x210	User Map Address 6	30001	39999	1	---	F1	30958	1
40530	0x211	User Map Address 7	30001	39999	1	---	F1	30959	1
40531	0x212	User Map Address 8	30001	39999	1	---	F1	30956	1
40532	0x213	User Map Address 9	30001	39999	1	---	F1	30957	1
40533	0x214	User Map Address 10	30001	39999	1	---	F1	30954	1
40534	0x215	User Map Address 11	30001	39999	1	---	F1	30955	1
40535	0x216	User Map Address 12	30001	39999	1	---	F1	30952	1
40536	0x217	User Map Address 13	30001	39999	1	---	F1	30953	1
40537	0x218	User Map Address 14	30001	39999	1	---	F1	30950	1
40538	0x219	User Map Address 15	30001	39999	1	---	F1	30951	1
40539	0x21A	User Map Address 16	30001	39999	1	---	F1	30948	1
40540	0x21B	User Map Address 17	30001	39999	1	---	F1	30949	1
40541	0x21C	User Map Address 18	30001	39999	1	---	F1	30946	1
40542	0x21D	User Map Address 19	30001	39999	1	---	F1	30947	1
40543	0x21E	User Map Address 20	30001	39999	1	---	F1	30976	1
40544	0x21F	User Map Address 21	30001	39999	1	---	F1	30977	1
40545	0x220	User Map Address 22	30001	39999	1	---	F1	30974	1
40546	0x221	User Map Address 23	30001	39999	1	---	F1	30975	1
40547	0x222	User Map Address 24	30001	39999	1	---	F1	30972	1
40548	0x223	User Map Address 25	30001	39999	1	---	F1	30973	1
40549	0x224	User Map Address 26	30001	39999	1	---	F1	30970	1
40550	0x225	User Map Address 27	30001	39999	1	---	F1	30971	1
40551	0x226	User Map Address 28	30001	39999	1	---	F1	30984	1
40552	0x227	User Map Address 29	30001	39999	1	---	F1	30985	1
40553	0x228	User Map Address 30	30001	39999	1	---	F1	30982	1
40554	0x229	User Map Address 31	30001	39999	1	---	F1	30983	1
40555	0x22A	User Map Address 32	30001	39999	1	---	F1	30980	1
40556	0x22B	User Map Address 33	30001	39999	1	---	F1	30981	1
40557	0x22C	User Map Address 34	30001	39999	1	---	F1	30978	1
40558	0x22D	User Map Address 35	30001	39999	1	---	F1	30979	1
40559	0x22E	User Map Address 36	30001	39999	1	---	F1	30186	1
40560	0x22F	User Map Address 37	30001	39999	1	---	F1	30308	1
40561	0x230	User Map Address 38	30001	39999	1	---	F1	30309	1
40562	0x231	User Map Address 39	30001	39999	1	---	F1	30313	1
40563	0x232	User Map Address 40	30001	39999	1	---	F1	30307	1
40564	0x233	User Map Address 41	30001	39999	1	---	F1	30336	1
40565	0x234	User Map Address 42	30001	39999	1	---	F1	30285	1
40566	0x235	User Map Address 43	30001	39999	1	---	F1	30286	1
40567	0x236	User Map Address 44	30001	39999	1	---	F1	30298	1
40568	0x237	User Map Address 45	30001	39999	1	---	F1	30299	1
40569	0x238	User Map Address 46	30001	39999	1	---	F1	30288	1
40570	0x239	User Map Address 47	30001	39999	1	---	F1	30289	1
40571	0x23A	User Map Address 48	30001	39999	1	---	F1	30257	1
40572	0x23B	User Map Address 49	30001	39999	1	---	F1	30291	1
40573	0x23C	User Map Address 50	30001	39999	1	---	F1	30296	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40574	0x23D	User Map Address 51	30001	39999	1	---	F1	30297	1
40575	0x23E	User Map Address 52	30001	39999	1	---	F1	30300	1
40576	0x23F	User Map Address 53	30001	39999	1	---	F1	30301	1
40577	0x240	User Map Address 54	30001	39999	1	---	F1	30192	1
40578	0x241	User Map Address 55	30001	39999	1	---	F1	30193	1
40579	0x242	User Map Address 56	30001	39999	1	---	F1	30194	1
40580	0x243	User Map Address 57	30001	39999	1	---	F1	30195	1
40581	0x244	User Map Address 58	30001	39999	1	---	F1	30196	1
40582	0x245	User Map Address 59	30001	39999	1	---	F1	30197	1
40583	0x246	User Map Address 60	30001	39999	1	---	F1	30328	1
40584	0x247	User Map Address 61	30001	39999	1	---	F1	30329	1
40585	0x248	User Map Address 62	30001	39999	1	---	F1	30330	1
40586	0x249	User Map Address 63	30001	39999	1	---	F1	30331	1
40587	0x24A	User Map Address 64	30001	39999	1	---	F1	30332	1
40588	0x24B	User Map Address 65	30001	39999	1	---	F1	30333	1
40589	0x24C	User Map Address 66	30001	39999	1	---	F1	30326	1
40590	0x24D	User Map Address 67	30001	39999	1	---	F1	30327	1
40591	0x24E	User Map Address 68	30001	39999	1	---	F1	30334	1
40592	0x24F	User Map Address 69	30001	39999	1	---	F1	30335	1
40593	0x250	User Map Address 70	30001	39999	1	---	F1	30338	1
40594	0x251	User Map Address 71	30001	39999	1	---	F1	30339	1
40595	0x252	User Map Address 72	30001	39999	1	---	F1	30324	1
40596	0x253	User Map Address 73	30001	39999	1	---	F1	30325	1
40597	0x254	User Map Address 74	30001	39999	1	---	F1	30319	1
40598	0x255	User Map Address 75	30001	39999	1	---	F1	30320	1
40599	0x256	User Map Address 76	30001	39999	1	---	F1	30429	1
40600	0x257	User Map Address 77	30001	39999	1	---	F1	30430	1
40601	0x258	User Map Address 78	30001	39999	1	---	F1	30431	1
40602	0x259	User Map Address 79	30001	39999	1	---	F1	30432	1
40603	0x25A	User Map Address 80	30001	39999	1	---	F1	30433	1
40604	0x25B	User Map Address 81	30001	39999	1	---	F1	30434	1
40605	0x25C	User Map Address 82	30001	39999	1	---	F1	30420	1
40606	0x25D	User Map Address 83	30001	39999	1	---	F1	30421	1
40607	0x25E	User Map Address 84	30001	39999	1	---	F1	30422	1
40608	0x25F	User Map Address 85	30001	39999	1	---	F1	30423	1
40609	0x260	User Map Address 86	30001	39999	1	---	F1	30424	1
40610	0x261	User Map Address 87	30001	39999	1	---	F1	30425	1
40611	0x262	User Map Address 88	30001	39999	1	---	F1	31746	1
40612	0x263	User Map Address 89	30001	39999	1	---	F1	31748	1
40613	0x264	User Map Address 90	30001	39999	1	---	F1	31750	1
40614	0x265	User Map Address 91	30001	39999	1	---	F1	31768	1
40615	0x266	User Map Address 92	30001	39999	1	---	F1	30366	1
40616	0x267	User Map Address 93	30001	39999	1	---	F1	30384	1
40617	0x268	User Map Address 94	30001	39999	1	---	F1	30385	1
40618	0x269	User Map Address 95	30001	39999	1	---	F1	30386	1
40619	0x26A	User Map Address 96	30001	39999	1	---	F1	30389	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40620	0x26B	User Map Address 97	30001	39999	1	---	F1	30390	1
40621	0x26C	User Map Address 98	30001	39999	1	---	F1	30406	1
40622	0x26D	User Map Address 99	30001	39999	1	---	F1	30407	1
40623	0x26E	User Map Address 100	30001	39999	1	---	F1	30001	1
40624	0x26F	User Map Address 101	30001	39999	1	---	F1	30001	1
40625	0x270	User Map Address 102	30001	39999	1	---	F1	30001	1
40626	0x271	User Map Address 103	30001	39999	1	---	F1	30001	1
40627	0x272	User Map Address 104	30001	39999	1	---	F1	30001	1
40628	0x273	User Map Address 105	30001	39999	1	---	F1	30001	1
40629	0x274	User Map Address 106	30001	39999	1	---	F1	30001	1
40630	0x275	User Map Address 107	30001	39999	1	---	F1	30001	1
40631	0x276	User Map Address 108	30001	39999	1	---	F1	30001	1
40632	0x277	User Map Address 109	30001	39999	1	---	F1	30001	1
40633	0x278	User Map Address 110	30001	39999	1	---	F1	30001	1
40634	0x279	User Map Address 111	30001	39999	1	---	F1	30001	1
40635	0x27A	User Map Address 112	30001	39999	1	---	F1	30001	1
40636	0x27B	User Map Address 113	30001	39999	1	---	F1	30001	1
40637	0x27C	User Map Address 114	30001	39999	1	---	F1	30001	1
40638	0x27D	User Map Address 115	30001	39999	1	---	F1	30001	1
40639	0x27E	User Map Address 116	30001	39999	1	---	F1	30001	1
40640	0x27F	User Map Address 117	30001	39999	1	---	F1	30001	1
40641	0x280	User Map Address 118	30001	39999	1	---	F1	30001	1
40642	0x281	User Map Address 119	30001	39999	1	---	F1	30001	1
40643	0x282	User Map Address 120	30001	39999	1	---	F1	30001	1
40644	0x283	User Map Address 121	30001	39999	1	---	F1	30001	1
40645	0x284	User Map Address 122	30001	39999	1	---	F1	30001	1
40646	0x285	User Map Address 123	30001	39999	1	---	F1	30001	1
40647	0x286	User Map Address 124	30001	39999	1	---	F1	30001	1
40648	0x287	User Map Address 125	30001	39999	1	---	F1	30001	1
TRANSIENT RECORDER TRIGGERS									
40650	0x289	Trigger On Input 1	0	0xEF02	1	---	F89A	0	1
40651	0x28A	Trigger On Input 2	0	0xEF02	1	---	F89A	0	1
40652	0x28B	Trigger On Input 3	0	0xEF02	1	---	F89A	0	1
EVENT RECORDER									
40649	0x288	Recording of Block Events	0	1	1	---	FC126	1	1
40654	0x28D	Recording of Pickup Events	0	1	1	---	FC126	0	1
40655	0x28E	Recording of Contact Input Events	0	1	1	---	FC126	1	1
40656	0x28F	Recording of Virtual Input Events	0	1	1	---	FC126	1	1
40657	0x290	Recording of Remote Inputs	0	1	1	---	FC126	1	1
40658	0x291	Recording of Logic Element Events	0	1	1	---	FC126	1	1
40660	0x293	Recording of Trip Events	0	1	1	---	FC126	1	1
40661	0x294	Recording of Alarm Events	0	1	1	---	FC126	1	1
40662	0x295	Recording of Control Events	0	1	1	---	FC126	1	1
40665	0x298	Recording of Dropout Events	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40666	0x299	Recording of Set Time/Date Events	0	1	1	---	FC126	0	1
40667	0x29A	Event Record Selector	1	65535	1	---	F1	1	1
DATA LOGGER									
40680	0x2A7	Data Log Channel Selector	-32767	32767	1	---	F4	0	1
40681	0x2A8	Data Log Sample Selector (DLSS)	-32767	32767	1	---	F4	0	1
40682	0x2A9	Sample Rate	0	3	1	---	F74	1	1
40683	0x2AA	Continuous Mode	0	1	1	---	FC126	0	1
40685	0x2AC	Data LoggerTrigger Position	0	100	1	%	F1	25	1
40686	0x2AD	Data Log Trigger Source	0	0xC942	1	---	FC133A	0	1
40687	0x2AE	Channel 1 Source	0	35	1	---	F77	1	1
40688	0x2AF	Channel 2 Source	0	35	1	---	F77	2	1
40689	0x2B0	Channel 3 Source	0	35	1	---	F77	3	1
40690	0x2B1	Channel 4 Source	0	35	1	---	F77	0	1
40691	0x2B2	Channel 5 Source	0	35	1	---	F77	0	1
40692	0x2B3	Channel 6 Source	0	35	1	---	F77	0	1
40693	0x2B4	Channel 7 Source	0	35	1	---	F77	0	1
40694	0x2B5	Channel 8 Source	0	35	1	---	F77	0	1
40695	0x2B6	Channel 9 Source	0	35	1	---	F77	0	1
40696	0x2B7	Channel 10 Source	0	35	1	---	F77	0	1
THERMAL PROTECTION									
40698	0x2B9	Enable Thermal Model	0	1	1	---	FC126	0	1
40699	0x2BA	Thermal O/L Curve	0	1	1	---	FC236	0	1
40700	0x2BB	Start Thermal Protection	0	0x1DF	1	---	F89B	0	1
40701	0x2BC	Thermal Alarm Enable	0	1	1	---	FC126	0	1
40702	0x2BD	Overload Pickup Level	101	125	1	x FLA	F3	101	1
40703	0x2BE	Unbalance K Factor	0	19	1	---	F1	0	1
40704	0x2BF	Cool Time Constant Running	1	1000	1	min	F1	15	1
40705	0x2C0	Cool Time Constant Stopped	1	1000	1	min	F1	30	1
40706	0x2C1	Hot/Cold Safe Stall Ratio	1	100	1	---	F3	85	1
40707	0x2C2	Thermal Capacity Alarm Level	10	100	1	%	F1	75	1
40708	0x2C3	Standard Overload Curve	1	15	1	---	F1	4	1
40710	0x2C5	RTD Bias - Minimum Temperature	0	130	1	°C	F1	40	1
40711	0x2C6	RTD Bias - Center Temperature	40	155	1	°C	F1	110	1
40712	0x2C7	RTD Bias - Maximum Temperature	130	250	1	°C	F1	130	1
40714	0x2C9	Overload Reset Mode	0	1	1	---	FC160	1	1
40715	0x2CA	Locked Rotor Current	20	110	1	x FLA	F2	60	1
40716	0x2CB	Safe Stall Time Cold	10	6000	1	s	F2	100	1
MECHANICAL JAM									
40718	0x2CD	Enable Mechanical Jam	0	1	1	---	FC126	0	1
40719	0x2CE	Mechanical Jam Level	101	450	1	x FLA	F3	450	1
40720	0x2CF	Mechanical Jam Delay	10	3000	1	s	F3	10	1
TEMPERATURE									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40820	0x333	Enable Ambient Temp	0	2	1	---	FC206	0	1
40821	0x334	HI Alarm Level	20	80	1	°C	F1	60	1
40822	0x335	Low Alarm Level	-40	20	1	°C	F4	10	1
40823	0x336	Hysteresis Level	2	10	1	°C	F1	2	1
40824	0x337	Time Delay	1	60	1	min	F1	1	1
40825	0x338	Output Relays	0	0x7F	1	---	FC198	0	1
UNDERCURRENT									
40831	0x33E	Enable Undercurrent Alarm	0	1	1	---	FC126	0	1
40832	0x33F	Enable Undercurrent Trip	0	1	1	---	FC126	0	1
40833	0x340	BLK Undercurrent On Start	0	600	1	s	F1	0	1
40834	0x341	Undercurrent Alarm Level	10	95	1	x FLA	F3	70	1
40835	0x342	Undercurrent Alarm Delay	100	6000	1	s	F3	100	1
40836	0x343	Undercurrent Trip Level	10	95	1	x FLA	F3	60	1
40837	0x344	Undercurrent Trip Delay	100	6000	1	s	F3	100	1
UNDERPOWER									
40840	0x347	Enable Underpower Trip	0	1	1	---	FC126	0	1
40841	0x348	Enable Underpower Alarm	0	1	1	---	FC126	0	1
40842	0x349	Underpower Alarm Level	1	100	1	%MNR	F1	70	1
40843	0x34A	Underpower Alarm Delay	10	600	1	s	F2	10	1
40844	0x34B	Underpower Trip Level	1	100	1	%MNR	F1	60	1
40845	0x34C	Underpower Trip Delay	10	600	1	s	F2	10	1
40846	0x34D	Block Underpower on Start	0	600	1	s	F1	0	1
ACCELERATION									
40850	0x351	Accel Time Func	0	1	1	---	FC126	0	1
40852	0x353	Acceleration Trip Timer	10	2500	1	s	F2	100	1
GROUND FAULT									
40863	0x35E	Enable Ground Fault Alarm	0	1	1	---	FC126	0	1
40864	0x35F	Enable Ground Fault Trip	0	1	1	---	FC126	0	1
40865	0x360	Ground Alarm Level	3	100	1	x CT	F3	10	1
40866	0x361	CBCT Ground Alarm Level	50	1500	1	A	F3	1000	1
40867	0x362	Ground Alarm Delay On Start	0	6000	1	s	F3	0	1
40868	0x363	Ground Trip Level	3	100	1	x CT	F3	10	1
40869	0x364	CBCT Ground Trip Level	50	1500	1	A	F3	1000	1
40870	0x365	Ground Trip Delay On Start	0	1000	1	s	F3	0	1
40871	0x366	Ground Alarm Delay On Run	0	6000	1	s	F3	0	1
40872	0x367	Ground Trip Delay On Run	0	500	1	s	F3	0	1
40874	0x369	Enable Load Increase Alarm	0	1	1	---	FC126	0	1
LOAD INCREASE									
40875	0x36A	Load Increase Alarm Level	50	150	1	%FLA	F1	150	1
40876	0x36B	Load Increase Alarm Delay	100	6000	1	s	F3	150	1
CURRENT UNBALANCE									
40855	0x356	Enable Current Unbalance Alarm	0	1	1	---	FC126	0	1
40856	0x357	Enable Current Unbalance Trip	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40857	0x358	Current Unbalance Alarm Level	400	4000	1	%	F3	1500	1
40858	0x359	Current Unbalance Alarm Delay	100	10000	1	s	F3	100	1
40859	0x35A	Current Unbalance Trip Level	400	4000	1	%	F3	3000	1
40860	0x35B	Current Unbalance Trip Delay	0	10000	1	s	F3	1000	1
40880	0x36F	Current Unbalance Trip Curve	0	1	1	---	F93	0	1
40881	0x370	Current Unbalance Trip Max Time	0	100000	1	---	F11	100	2
40883	0x372	Current Unbalance Trip Min Time	0	100000	1	---	F11	25	2
40885	0x374	Current Unbalance Trip Reset Time	0	100000	1	---	F11	100	2
TRANSIENT RECORDER									
40668	0x29B	Trigger on Pickup	0	1	1	---	FC103	0	1
40669	0x29C	Trigger on Dropout	0	1	1	---	FC103	0	1
40670	0x29D	Trigger on Alarm	0	1	1	---	FC103	0	1
40671	0x29E	Trigger on Dropout	0	1	1	---	FC103	0	1
40672	0x29F	Trace Memory Channel Selector	0	16	1	---	F26A	0	1
40673	0x2A0	Trace Memory Buffer Selector	0	10	1	---	F1	0	1
40674	0x2A1	Trace Memory Sample Index	0	6144	1	---	F1	0	1
40676	0x2A3	Trace Memory Trigger Position	0	100	1	%	F1	20	1
40677	0x2A4	Trigger Mode	0	1	1	---	FC148	0	1
40678	0x2A5	Number of Records	0	2	1	---	F95	0	1
40887	0x376	Transient Sampling Rate	0	3	1	---	FC429	0	1
PHASE REVERSAL									
40903	0x386	Voltage Phase Reversal	0	2	1	---	FC140	0	1
VT FUSE FAIL									
40908	0x38B	VT Fuse Fail	0	2	1	---	FC140	0	1
MOTOR RUNNING HOURS									
40910	0x38D	Motor Running Hours Alarm	0	1	1	---	FC126	0	1
40911	0x38E	Motor Running Hours Limit	0	65535	1	hrs	F1	0	1
START INHIBITS									
40917	0x394	Start Inhibit Margin	0	26	1	%	F1B	10	1
40919	0x396	Starts/Hour Limit	1	6	1	---	F1B	6	1
40920	0x397	Time Between Starts	1	3601	1	s	F1B	3601	1
40921	0x398	Start Inhibit Relays	0	0x7F	1	---	FC198	4	1
40926	0x39D	Restart Block Time	1	50001	1	s	F1B	50001	1
RELAY STATUS									
40927	0x39E	Relay Status	0	1	1	---	F99	0	1
SHORT CIRCUIT									
40948	0x3B3	Short Circuit Function	0	3	1	---	FC197	0	1
40949	0x3B4	Short Circuit Pickup	100	2000	1	x CT	F3	600	1
40950	0x3B5	Short Circuit Delay	0	6000	1	s	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
CONTACT INPUT NAMES (1 TO 8)									
40961	0x3C0	Input Name 1	0	7	1	---	F22	52a Contact	7
40970	0x3C9	Input Name 2	0	7	1	---	F22	52b Contact	7
40979	0x3D2	Input Name 3	0	7	1	---	F22	Input 3	7
40988	0x3DB	Input Name 4	0	7	1	---	F22	Input 4	7
40997	0x3E4	Input Name 5	0	7	1	---	F22	Input 5	7
41006	0x3ED	Input Name 6	0	7	1	---	F22	Input 6	7
41015	0x3F6	Input Name 7	0	7	1	---	F22	Input 7	7
41024	0x3FF	Input Name 8	0	7	1	---	F22	Input 8	7
LOGIC ELEMENTS									
41118	0x45D	Timer 1 Pickup Delay	0	60000	1	ms	F1	0	1
41119	0x45E	Timer 1 Dropout Delay	0	60000	1	ms	F1	0	1
41120	0x45F	Logic Element 1 Function	0	4	1	---	FC205	0	1
41121	0x460	Logic Element 1 Asserted	0	1	1	---	FC103	0	1
41122	0x461	Logic Element 1 Relay	0	0x7F	1	---	FC198	0	1
41126	0x465	Timer 2 Pickup Delay	0	60000	1	ms	F1	0	1
41127	0x466	Timer 2 Dropout Delay	0	60000	1	ms	F1	0	1
41128	0x467	Logic Element 2 Function	0	4	1	---	FC205	0	1
41129	0x468	Logic Element 2 Asserted	0	1	1	---	FC103	0	1
41130	0x469	Logic Element 2 Relay	0	0x7F	1	---	FC198	0	1
41134	0x46D	Timer 3 Pickup Delay	0	60000	1	ms	F1	0	1
41135	0x46E	Timer 3 Dropout Delay	0	60000	1	ms	F1	0	1
41136	0x46F	Logic Element 3 Function	0	4	1	---	FC205	0	1
41137	0x470	Logic Element 3 Asserted	0	1	1	---	FC103	0	1
41138	0x471	Logic Element 3 Relay	0	0x7F	1	---	FC198	0	1
41142	0x475	Timer 4 Pickup Delay	0	60000	1	ms	F1	0	1
41143	0x476	Timer 4 Dropout Delay	0	60000	1	ms	F1	0	1
41144	0x477	Logic Element 4 Function	0	4	1	---	FC205	0	1
41145	0x478	Logic Element 4 Asserted	0	1	1	---	FC103	0	1
41146	0x479	Logic Element 4 Relay	0	0x7F	1	---	FC198	0	1
41150	0x47D	Timer 5 Pickup Delay	0	60000	1	ms	F1	0	1
41151	0x47E	Timer 5 Dropout Delay	0	60000	1	ms	F1	0	1
41152	0x47F	Logic Element 5 Function	0	4	1	---	FC205	0	1
41153	0x480	Logic Element 5 Asserted	0	1	1	---	FC103	0	1
41154	0x481	Logic Element 5 Relay	0	0x7F	1	---	FC198	0	1
41158	0x485	Timer 6 Pickup Delay	0	60000	1	ms	F1	0	1
41159	0x486	Timer 6 Dropout Delay	0	60000	1	ms	F1	0	1
41160	0x487	Logic Element 6 Function	0	4	1	---	FC205	0	1
41161	0x488	Logic Element 6 Asserted	0	1	1	---	FC103	0	1
41162	0x489	Logic Element 6 Relay	0	0x7F	1	---	FC198	0	1
41166	0x48D	Timer 7 Pickup Delay	0	60000	1	ms	F1	0	1
41167	0x48E	Timer 7 Dropout Delay	0	60000	1	ms	F1	0	1
41168	0x48F	Logic Element 7 Function	0	4	1	---	FC205	0	1
41169	0x490	Logic Element 7 Asserted	0	1	1	---	FC103	0	1
41170	0x491	Logic Element 7 Relay	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
41174	0x495	Timer 8 Pickup Delay	0	60000	1	ms	F1	0	1
41175	0x496	Timer 8 Dropout Delay	0	60000	1	ms	F1	0	1
41176	0x497	Logic Element 8 Function	0	4	1	---	FC205	0	1
41177	0x498	Logic Element 8 Asserted	0	1	1	---	FC103	0	1
41178	0x499	Logic Element 8 Relay	0	0x7F	1	---	FC198	0	1
41182	0x49D	Timer 9 Pickup Delay	0	60000	1	ms	F1	0	1
41183	0x49E	Timer 9 Dropout Delay	0	60000	1	ms	F1	0	1
41184	0x49F	Logic Element 9 Function	0	4	1	---	FC205	0	1
41185	0x4A0	Logic Element 9 Asserted	0	1	1	---	FC103	0	1
41186	0x4A1	Logic Element 9 Relay	0	0x7F	1	---	FC198	0	1
41190	0x4A5	Timer 10 Pickup Delay	0	60000	1	ms	F1	0	1
41191	0x4A6	Timer 10 Dropout Delay	0	60000	1	ms	F1	0	1
41192	0x4A7	Logic Element 10 Function	0	4	1	---	FC205	0	1
41193	0x4A8	Logic Element 10 Asserted	0	1	1	---	FC103	0	1
41194	0x4A9	Logic Element 10 Relay	0	0x7F	1	---	FC198	0	1
41198	0x4AD	Timer 11 Pickup Delay	0	60000	1	ms	F1	0	1
41199	0x4AE	Timer 11 Dropout Delay	0	60000	1	ms	F1	0	1
41200	0x4AF	Logic Element 11 Function	0	4	1	---	FC205	0	1
41201	0x4B0	Logic Element 11 Asserted	0	1	1	---	FC103	0	1
41202	0x4B1	Logic Element 11 Relay	0	0x7F	1	---	FC198	0	1
41206	0x4B5	Timer 12 Pickup Delay	0	60000	1	ms	F1	0	1
41207	0x4B6	Timer 12 Dropout Delay	0	60000	1	ms	F1	0	1
41208	0x4B7	Logic Element 12 Function	0	4	1	---	FC205	0	1
41209	0x4B8	Logic Element 12 Asserted	0	1	1	---	FC103	0	1
41210	0x4B9	Logic Element 12 Relay	0	0x7F	1	---	FC198	0	1
41214	0x4BD	Timer 13 Pickup Delay	0	60000	1	ms	F1	0	1
41215	0x4BE	Timer 13 Dropout Delay	0	60000	1	ms	F1	0	1
41216	0x4BF	Logic Element 13 Function	0	4	1	---	FC205	0	1
41217	0x4C0	Logic Element 13 Asserted	0	1	1	---	FC103	0	1
41218	0x4C1	Logic Element 13 Relay	0	0x7F	1	---	FC198	0	1
41222	0x4C5	Timer 14 Pickup Delay	0	60000	1	ms	F1	0	1
41223	0x4C6	Timer 14 Dropout Delay	0	60000	1	ms	F1	0	1
41224	0x4C7	Logic Element 14 Function	0	4	1	---	FC205	0	1
41225	0x4C8	Logic Element 14 Asserted	0	1	1	---	FC103	0	1
41226	0x4C9	Logic Element 14 Relay	0	0x7F	1	---	FC198	0	1
41230	0x4CD	Timer 15 Pickup Delay	0	60000	1	ms	F1	0	1
41231	0x4CE	Timer 15 Dropout Delay	0	60000	1	ms	F1	0	1
41232	0x4CF	Logic Element 15 Function	0	4	1	---	FC205	0	1
41233	0x4D0	Logic Element 15 Asserted	0	1	1	---	FC103	0	1
41234	0x4D1	Logic Element 15 Relay	0	0x7F	1	---	FC198	0	1
41238	0x4D5	Timer 16 Pickup Delay	0	60000	1	ms	F1	0	1
41239	0x4D6	Timer 16 Dropout Delay	0	60000	1	ms	F1	0	1
41240	0x4D7	Logic Element 16 Function	0	4	1	---	FC205	0	1
41241	0x4D8	Logic Element 16 Asserted	0	1	1	---	FC103	0	1
41242	0x4D9	Logic Element 16 Relay	0	0x7F	1	---	FC198	0	1
CONTACT INPUT ASSIGNMENT									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
41374	0x55D	Lockout Reset	0	0xEF02	1	---	F89A	0	1
41380	0x563	Remote Reset	0	0xEF02	1	---	F89A	0	1
41386	0x569	Remote Open	0	0xEF02	0	---	F89A	0	1
41387	0x56A	Remote Close	0	0xEF02	0	---	F89A	0	1
41389	0x56C	Breaker 52a Contact	0	0x40	0	---	FC204A	0	1
41390	0x56D	Breaker 52b Contact	0	0x41	0	---	FC204C	0	1
41391	0x56E	Local Mode	0	0xEF02	0	---	F89	0	1
41406	0x57D	High Speed Switch	0	0xEF02	1	---	F89	0	1
41407	0x57E	Low Speed Switch	0	0xEF02	1	---	F89	0	1
41408	0x57F	Emergency Restart	0	0xEF02	1	---	F89A	0	1
CONTACT INPUT NAMES (9 TO 10)									
41435	0x59A	Input Name 9	0	7	1	---	F22	Input 9	7
41444	0x5A3	Input Name 10	0	7	1	---	F22	Input 10	7
CONTACT INPUTS									
41454	0x5AD	Input 9 Debounce Interval	1	64	1	ms	F1	2	1
41455	0x5AE	Input 10 Debounce Interval	1	64	1	ms	F1	2	1
41456	0x5AF	Input 1 Debounce Interval	1	64	1	ms	F1	2	1
41457	0x5B0	Input 2 Debounce Interval	1	64	1	ms	F1	2	1
41458	0x5B1	Input 3 Debounce Interval	1	64	1	ms	F1	2	1
41459	0x5B2	Input 4 Debounce Interval	1	64	1	ms	F1	2	1
41460	0x5B3	Input 5 Debounce Interval	1	64	1	ms	F1	2	1
41461	0x5B4	Input 6 Debounce Interval	1	64	1	ms	F1	2	1
41462	0x5B5	Input 7 Debounce Interval	1	64	1	ms	F1	2	1
41463	0x5B6	Input 8 Debounce Interval	1	64	1	ms	F1	2	1
41465	0x5B8	Select DC Voltage	0	3	1	---	FC123	2	1
FRONT PANEL SETUP									
41475	0x5C2	Screen Saver	0	10000	1	min	F1C	0	1
41498	0x5D9	Stopped LED Colour	0	3	1	---	FC157	1	1
41500	0x5DB	Starting LED Colour	0	3	1	---	FC157	3	1
41502	0x5DD	Running LED Colour	0	3	1	---	FC157	2	1
OUTPUT RELAYS									
41509	0x5E4	Close Relay Type	0	1	1	---	FC199	0	1
41510	0x5E5	Relay 3 Type	0	1	1	---	FC199	0	1
41511	0x5E6	Relay 4 Type	0	1	1	---	FC199	0	1
41512	0x5E7	Relay 5 Type	0	1	1	---	FC199	0	1
41513	0x5E8	Relay 6 Type	0	1	1	---	FC199	0	1
OUTPUT RELAY BLOCKING									
41547	0x60A	Block Relay 1 Trip	0	0xEF02	1	---	F89	0	1
41548	0x60B	Block Relay 2 Close	0	0xEF02	1	---	F89	0	1
OUTPUT RELAY OPERATION									
41552	0x60F	Relay 1 Operation	0	1	1	---	FC208	1	1
41553	0x610	Relay 2 Operation	0	1	1	---	FC208	1	1
41554	0x611	Relay 3 Operation	0	1	1	---	FC208	1	1
41555	0x612	Relay 4 Operation	0	1	1	---	FC208	1	1
41556	0x613	Relay 5 Operation	0	1	1	---	FC208	1	1
41557	0x614	Relay 6 Operation	0	1	1	---	FC208	1	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
PROGRAMMABLE LEDs									
41522	0x5F1	LED 1 Type	0	1	1	---	FC199	0	1
41523	0x5F2	LED 2 Type	0	1	1	---	FC199	0	1
41524	0x5F3	LED 3 Type	0	1	1	---	FC199	0	1
41525	0x5F4	LED 4 Type	0	1	1	---	FC199	0	1
41526	0x5F5	LED 5 Type	0	1	1	---	FC199	0	1
41527	0x5F6	LED 6 Type	0	1	1	---	FC199	0	1
41528	0x5F7	LED 7 Type	0	1	1	---	FC199	0	1
41529	0x5F8	LED 8 Type	0	1	1	---	FC199	0	1
41570	0x621	LED 1 Source	0	0xFFFF	1	---	FC134B	0	1
41572	0x623	LED 2 Source	0	0xFFFF	1	---	FC134B	0	1
41574	0x625	LED 3 Source	0	0xFFFF	1	---	FC134B	0	1
41576	0x627	LED 4 Source	0	0xFFFF	1	---	FC134B	0	1
41578	0x629	LED 5 Source	0	0xFFFF	1	---	FC134B	0	1
41579	0x62A	LED 5 Color	0	3	1	---	FC157	3	1
41580	0x62B	LED 6 Source	0	0xFFFF	1	---	FC134B	0	1
41581	0x62C	LED 6 Color	0	3	1	---	FC157	3	1
41582	0x62D	LED 7 Source	0	0xFFFF	1	---	FC134B	0	1
41583	0x62E	LED 7 Color	0	3	1	---	FC157	3	1
41584	0x62F	LED 8 Source	0	0xFFFF	1	---	FC134B	0	1
41585	0x630	LED 8 Color	0	3	1	---	FC157	3	1
BREAKER TRIP COUNTER									
42210	0x8A1	Breaker Trip Counter Initial Trips	0	10000	1	---	F1	0	1
42211	0x8A2	Breaker Trip Counter Function	0	2	1	---	FC206	0	1
42212	0x8A3	Breaker Trip Counter Limit	1	10000	1	trips	F1	1	1
42213	0x8A4	Breaker Trip Counter Relay	0	0x7F	1	---	FC198	0	1
COIL MONITORS									
42214	0x8A5	Bypass Breaker Status	0	1	1	---	FC126	0	1
42215	0x8A6	Relay1 Coil Monitor Function	0	2	1	---	FC206	0	1
42216	0x8A7	Relay1 Coil Monitor Pickup	1	10	1	s	F1	5	1
42217	0x8A8	Relay1 Coil Monitor Relay	0	0x7F	1	---	FC198	0	1
42218	0x8A9	Bypass Breaker Status	0	1	1	---	FC126	0	1
42219	0x8AA	Relay2 Coil Monitor Function	0	2	1	---	FC206	0	1
42220	0x8AB	Relay2 Coil Monitor Pickup	1	10	1	s	F1	5	1
42221	0x8AC	Relay2 Coil Monitor Relay	0	0x7F	1	---	FC198	0	1
OUTPUT RELAY SEAL-IN									
42222	0x8AD	Relay 1 Seal-In	0	999	1	s	F3	4	1
42223	0x8AE	Relay 2 Seal-In	0	999	1	s	F3	4	1
COLD LOAD PICKUP									
42251	0x8CA	Block Sensitive Ground IOC1	0	1	1	---	FC103A	0	1
42252	0x8CB	Block Sensitive Ground IOC2	0	1	1	---	FC103A	0	1
42253	0x8CC	Raise Sensitive Ground TOC Pickup	0	100	1	%	F1	0	1
42254	0x8CD	Block Negative Sequence IOC	0	1	1	---	FC103A	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42255	0x8CE	Raise Negative Sequence TOC	0	100	1	%	F1	0	1
BREAKER FAIL									
42262	0x8D5	Breaker Failure Function	0	2	1	---	FC206	0	1
42263	0x8D6	Breaker Failure Delay 1	3	100	1	s	F3	10	1
42264	0x8D7	Breaker Failure Current	5	2000	1	x CT	F3	100	1
42265	0x8D8	Breaker Failure Delay 2	0	100	1	s	F3	0	1
42266	0x8D9	Breaker Failure Relays	0	0x7F	1	---	FC198	0	1
42267	0x8DA	Breaker Failure Ext Initiate	0	0xEF02	1	---	F89	0	1
FLEXCURVE A									
42278	0x8E5	Flex Curve A 1.03 X PU	0	65535	1	100 ms	F1	0	1
42279	0x8E6	Flex Curve A 1.05 X PU	0	65535	1	100 ms	F1	0	1
42280	0x8E7	Flex Curve A 1.10 X PU	0	65535	1	100 ms	F1	0	1
42281	0x8E8	Flex Curve A 1.20 X PU	0	65535	1	100 ms	F1	0	1
42282	0x8E9	Flex Curve A 1.30 X PU	0	65535	1	100 ms	F1	0	1
42283	0x8EA	Flex Curve A 1.40 X PU	0	65535	1	100 ms	F1	0	1
42284	0x8EB	Flex Curve A 1.50 X PU	0	65535	1	100 ms	F1	0	1
42285	0x8EC	Flex Curve A 1.60 X PU	0	65535	1	100 ms	F1	0	1
42286	0x8ED	Flex Curve A 1.70 X PU	0	65535	1	100 ms	F1	0	1
42287	0x8EE	Flex Curve A 1.80 X PU	0	65535	1	100 ms	F1	0	1
42288	0x8EF	Flex Curve A 1.90 X PU	0	65535	1	100 ms	F1	0	1
42289	0x8F0	Flex Curve A 2.00 X PU	0	65535	1	100 ms	F1	0	1
42290	0x8F1	Flex Curve A 2.10 X PU	0	65535	1	100 ms	F1	0	1
42291	0x8F2	Flex Curve A 2.20 X PU	0	65535	1	100 ms	F1	0	1
42292	0x8F3	Flex Curve A 2.30 X PU	0	65535	1	100 ms	F1	0	1
42293	0x8F4	Flex Curve A 2.40 X PU	0	65535	1	100 ms	F1	0	1
42294	0x8F5	Flex Curve A 2.50 X PU	0	65535	1	100 ms	F1	0	1
42295	0x8F6	Flex Curve A 2.60 X PU	0	65535	1	100 ms	F1	0	1
42296	0x8F7	Flex Curve A 2.70 X PU	0	65535	1	100 ms	F1	0	1
42297	0x8F8	Flex Curve A 2.80 X PU	0	65535	1	100 ms	F1	0	1
42298	0x8F9	Flex Curve A 2.90 X PU	0	65535	1	100 ms	F1	0	1
42299	0x8FA	Flex Curve A 3.00 X PU	0	65535	1	100 ms	F1	0	1
42300	0x8FB	Flex Curve A 3.10 X PU	0	65535	1	100 ms	F1	0	1
42301	0x8FC	Flex Curve A 3.20 X PU	0	65535	1	100 ms	F1	0	1
42302	0x8FD	Flex Curve A 3.30 X PU	0	65535	1	100 ms	F1	0	1
42303	0x8FE	Flex Curve A 3.40 X PU	0	65535	1	100 ms	F1	0	1
42304	0x8FF	Flex Curve A 3.50 X PU	0	65535	1	100 ms	F1	0	1
42305	0x900	Flex Curve A 3.60 X PU	0	65535	1	100 ms	F1	0	1
42306	0x901	Flex Curve A 3.70 X PU	0	65535	1	100 ms	F1	0	1
42307	0x902	Flex Curve A 3.80 X PU	0	65535	1	100 ms	F1	0	1
42308	0x903	Flex Curve A 3.90 X PU	0	65535	1	100 ms	F1	0	1
42309	0x904	Flex Curve A 4.00 X PU	0	65535	1	100 ms	F1	0	1
42310	0x905	Flex Curve A 4.10 X PU	0	65535	1	100 ms	F1	0	1
42311	0x906	Flex Curve A 4.20 X PU	0	65535	1	100 ms	F1	0	1
42312	0x907	Flex Curve A 4.30 X PU	0	65535	1	100 ms	F1	0	1
42313	0x908	Flex Curve A 4.40 X PU	0	65535	1	100 ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42314	0x909	Flex Curve A 4.50 X PU	0	65535	1	100 ms	F1	0	1
42315	0x90A	Flex Curve A 4.60 X PU	0	65535	1	100 ms	F1	0	1
42316	0x90B	Flex Curve A 4.70 X PU	0	65535	1	100 ms	F1	0	1
42317	0x90C	Flex Curve A 4.80 X PU	0	65535	1	100 ms	F1	0	1
42318	0x90D	Flex Curve A 4.90 X PU	0	65535	1	100 ms	F1	0	1
42319	0x90E	Flex Curve A 5.00 X PU	0	65535	1	100 ms	F1	0	1
42320	0x90F	Flex Curve A 5.10 X PU	0	65535	1	100 ms	F1	0	1
42321	0x910	Flex Curve A 5.20 X PU	0	65535	1	100 ms	F1	0	1
42322	0x911	Flex Curve A 5.30 X PU	0	65535	1	100 ms	F1	0	1
42323	0x912	Flex Curve A 5.40 X PU	0	65535	1	100 ms	F1	0	1
42324	0x913	Flex Curve A 5.50 X PU	0	65535	1	100 ms	F1	0	1
42325	0x914	Flex Curve A 5.60 X PU	0	65535	1	100 ms	F1	0	1
42326	0x915	Flex Curve A 5.70 X PU	0	65535	1	100 ms	F1	0	1
42327	0x916	Flex Curve A 5.80 X PU	0	65535	1	100 ms	F1	0	1
42328	0x917	Flex Curve A 5.90 X PU	0	65535	1	100 ms	F1	0	1
42329	0x918	Flex Curve A 6.00 X PU	0	65535	1	100 ms	F1	0	1
42330	0x919	Flex Curve A 6.50 X PU	0	65535	1	100 ms	F1	0	1
42331	0x91A	Flex Curve A 7.00 X PU	0	65535	1	100 ms	F1	0	1
42332	0x91B	Flex Curve A 7.50 X PU	0	65535	1	100 ms	F1	0	1
42333	0x91C	Flex Curve A 8.00 X PU	0	65535	1	100 ms	F1	0	1
42334	0x91D	Flex Curve A 8.50 X PU	0	65535	1	100 ms	F1	0	1
42335	0x91E	Flex Curve A 9.00 X PU	0	65535	1	100 ms	F1	0	1
42336	0x91F	Flex Curve A 9.50 X PU	0	65535	1	100 ms	F1	0	1
42337	0x920	Flex Curve A 10.00 X PU	0	65535	1	100 ms	F1	0	1
42338	0x921	Flex Curve A 10.50 X PU	0	65535	1	100 ms	F1	0	1
42339	0x922	Flex Curve A 11.00 X PU	0	65535	1	100 ms	F1	0	1
42340	0x923	Flex Curve A 11.50 X PU	0	65535	1	100 ms	F1	0	1
42341	0x924	Flex Curve A 12.00 X PU	0	65535	1	100 ms	F1	0	1
42342	0x925	Flex Curve A 12.50 X PU	0	65535	1	100 ms	F1	0	1
42343	0x926	Flex Curve A 13.00 X PU	0	65535	1	100 ms	F1	0	1
42344	0x927	Flex Curve A 13.50 X PU	0	65535	1	100 ms	F1	0	1
42345	0x928	Flex Curve A 14.00 X PU	0	65535	1	100 ms	F1	0	1
42346	0x929	Flex Curve A 14.50 X PU	0	65535	1	100 ms	F1	0	1
42347	0x92A	Flex Curve A 15.00 X PU	0	65535	1	100 ms	F1	0	1
42348	0x92B	Flex Curve A 15.50 X PU	0	65535	1	100 ms	F1	0	1
42349	0x92C	Flex Curve A 16.00 X PU	0	65535	1	100 ms	F1	0	1
42350	0x92D	Flex Curve A 16.50 X PU	0	65535	1	100 ms	F1	0	1
42351	0x92E	Flex Curve A 17.00 X PU	0	65535	1	100 ms	F1	0	1
42352	0x92F	Flex Curve A 17.50 X PU	0	65535	1	100 ms	F1	0	1
42353	0x930	Flex Curve A 18.00 X PU	0	65535	1	100 ms	F1	0	1
42354	0x931	Flex Curve A 18.50 X PU	0	65535	1	100 ms	F1	0	1
42355	0x932	Flex Curve A 19.00 X PU	0	65535	1	100 ms	F1	0	1
42356	0x933	Flex Curve A 19.50 X PU	0	65535	1	100 ms	F1	0	1
42357	0x934	Flex Curve A 20.00 X PU	0	65535	1	100 ms	F1	0	1
FLEXCURVE B									
42380	0x94B	Flex Curve B 1.03 X PU	0	65535	1	100 ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42381	0x94C	Flex Curve B 1.05 X PU	0	65535	1	100 ms	F1	0	1
42382	0x94D	Flex Curve B 1.10 X PU	0	65535	1	100 ms	F1	0	1
42383	0x94E	Flex Curve B 1.20 X PU	0	65535	1	100 ms	F1	0	1
42384	0x94F	Flex Curve B 1.30 X PU	0	65535	1	100 ms	F1	0	1
42385	0x950	Flex Curve B 1.40 X PU	0	65535	1	100 ms	F1	0	1
42386	0x951	Flex Curve B 1.50 X PU	0	65535	1	100 ms	F1	0	1
42387	0x952	Flex Curve B 1.60 X PU	0	65535	1	100 ms	F1	0	1
42388	0x953	Flex Curve B 1.70 X PU	0	65535	1	100 ms	F1	0	1
42389	0x954	Flex Curve B 1.80 X PU	0	65535	1	100 ms	F1	0	1
42390	0x955	Flex Curve B 1.90 X PU	0	65535	1	100 ms	F1	0	1
42391	0x956	Flex Curve B 2.00 X PU	0	65535	1	100 ms	F1	0	1
42392	0x957	Flex Curve B 2.10 X PU	0	65535	1	100 ms	F1	0	1
42393	0x958	Flex Curve B 2.20 X PU	0	65535	1	100 ms	F1	0	1
42394	0x959	Flex Curve B 2.30 X PU	0	65535	1	100 ms	F1	0	1
42395	0x95A	Flex Curve B 2.40 X PU	0	65535	1	100 ms	F1	0	1
42396	0x95B	Flex Curve B 2.50 X PU	0	65535	1	100 ms	F1	0	1
42397	0x95C	Flex Curve B 2.60 X PU	0	65535	1	100 ms	F1	0	1
42398	0x95D	Flex Curve B 2.70 X PU	0	65535	1	100 ms	F1	0	1
42399	0x95E	Flex Curve B 2.80 X PU	0	65535	1	100 ms	F1	0	1
42400	0x95F	Flex Curve B 2.90 X PU	0	65535	1	100 ms	F1	0	1
42401	0x960	Flex Curve B 3.00 X PU	0	65535	1	100 ms	F1	0	1
42402	0x961	Flex Curve B 3.10 X PU	0	65535	1	100 ms	F1	0	1
42403	0x962	Flex Curve B 3.20 X PU	0	65535	1	100 ms	F1	0	1
42404	0x963	Flex Curve B 3.30 X PU	0	65535	1	100 ms	F1	0	1
42405	0x964	Flex Curve B 3.40 X PU	0	65535	1	100 ms	F1	0	1
42406	0x965	Flex Curve B 3.50 X PU	0	65535	1	100 ms	F1	0	1
42407	0x966	Flex Curve B 3.60 X PU	0	65535	1	100 ms	F1	0	1
42408	0x967	Flex Curve B 3.70 X PU	0	65535	1	100 ms	F1	0	1
42409	0x968	Flex Curve B 3.80 X PU	0	65535	1	100 ms	F1	0	1
42410	0x969	Flex Curve B 3.90 X PU	0	65535	1	100 ms	F1	0	1
42411	0x96A	Flex Curve B 4.00 X PU	0	65535	1	100 ms	F1	0	1
42412	0x96B	Flex Curve B 4.10 X PU	0	65535	1	100 ms	F1	0	1
42413	0x96C	Flex Curve B 4.20 X PU	0	65535	1	100 ms	F1	0	1
42414	0x96D	Flex Curve B 4.30 X PU	0	65535	1	100 ms	F1	0	1
42415	0x96E	Flex Curve B 4.40 X PU	0	65535	1	100 ms	F1	0	1
42416	0x96F	Flex Curve B 4.50 X PU	0	65535	1	100 ms	F1	0	1
42417	0x970	Flex Curve B 4.60 X PU	0	65535	1	100 ms	F1	0	1
42418	0x971	Flex Curve B 4.70 X PU	0	65535	1	100 ms	F1	0	1
42419	0x972	Flex Curve B 4.80 X PU	0	65535	1	100 ms	F1	0	1
42420	0x973	Flex Curve B 4.90 X PU	0	65535	1	100 ms	F1	0	1
42421	0x974	Flex Curve B 5.00 X PU	0	65535	1	100 ms	F1	0	1
42422	0x975	Flex Curve B 5.10 X PU	0	65535	1	100 ms	F1	0	1
42423	0x976	Flex Curve B 5.20 X PU	0	65535	1	100 ms	F1	0	1
42424	0x977	Flex Curve B 5.30 X PU	0	65535	1	100 ms	F1	0	1
42425	0x978	Flex Curve B 5.40 X PU	0	65535	1	100 ms	F1	0	1
42426	0x979	Flex Curve B 5.50 X PU	0	65535	1	100 ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42427	0x97A	Flex Curve B 5.60 X PU	0	65535	1	100 ms	F1	0	1
42428	0x97B	Flex Curve B 5.70 X PU	0	65535	1	100 ms	F1	0	1
42429	0x97C	Flex Curve B 5.80 X PU	0	65535	1	100 ms	F1	0	1
42430	0x97D	Flex Curve B 5.90 X PU	0	65535	1	100 ms	F1	0	1
42431	0x97E	Flex Curve B 6.00 X PU	0	65535	1	100 ms	F1	0	1
42432	0x97F	Flex Curve B 6.50 X PU	0	65535	1	100 ms	F1	0	1
42433	0x980	Flex Curve B 7.00 X PU	0	65535	1	100 ms	F1	0	1
42434	0x981	Flex Curve B 7.50 X PU	0	65535	1	100 ms	F1	0	1
42435	0x982	Flex Curve B 8.00 X PU	0	65535	1	100 ms	F1	0	1
42436	0x983	Flex Curve B 8.50 X PU	0	65535	1	100 ms	F1	0	1
42437	0x984	Flex Curve B 9.00 X PU	0	65535	1	100 ms	F1	0	1
42438	0x985	Flex Curve B 9.50 X PU	0	65535	1	100 ms	F1	0	1
42439	0x986	Flex Curve B 10.00 X PU	0	65535	1	100 ms	F1	0	1
42440	0x987	Flex Curve B 10.50 X PU	0	65535	1	100 ms	F1	0	1
42441	0x988	Flex Curve B 11.00 X PU	0	65535	1	100 ms	F1	0	1
42442	0x989	Flex Curve B 11.50 X PU	0	65535	1	100 ms	F1	0	1
42443	0x98A	Flex Curve B 12.00 X PU	0	65535	1	100 ms	F1	0	1
42444	0x98B	Flex Curve B 12.50 X PU	0	65535	1	100 ms	F1	0	1
42445	0x98C	Flex Curve B 13.00 X PU	0	65535	1	100 ms	F1	0	1
42446	0x98D	Flex Curve B 13.50 X PU	0	65535	1	100 ms	F1	0	1
42447	0x98E	Flex Curve B 14.00 X PU	0	65535	1	100 ms	F1	0	1
42448	0x98F	Flex Curve B 14.50 X PU	0	65535	1	100 ms	F1	0	1
42449	0x990	Flex Curve B 15.00 X PU	0	65535	1	100 ms	F1	0	1
42450	0x991	Flex Curve B 15.50 X PU	0	65535	1	100 ms	F1	0	1
42451	0x992	Flex Curve B 16.00 X PU	0	65535	1	100 ms	F1	0	1
42452	0x993	Flex Curve B 16.50 X PU	0	65535	1	100 ms	F1	0	1
42453	0x994	Flex Curve B 17.00 X PU	0	65535	1	100 ms	F1	0	1
42454	0x995	Flex Curve B 17.50 X PU	0	65535	1	100 ms	F1	0	1
42455	0x996	Flex Curve B 18.00 X PU	0	65535	1	100 ms	F1	0	1
42456	0x997	Flex Curve B 18.50 X PU	0	65535	1	100 ms	F1	0	1
42457	0x998	Flex Curve B 19.00 X PU	0	65535	1	100 ms	F1	0	1
42458	0x999	Flex Curve B 19.50 X PU	0	65535	1	100 ms	F1	0	1
42459	0x99A	Flex Curve B 20.00 X PU	0	65535	1	100 ms	F1	0	1
NEUTRAL IOC									
42490	0x9B9	Neutral IOC Function	0	3	1	---	FC197	0	1
42491	0x9BA	Neutral IOC Pickup	5	2000	1	x CT	F3	100	1
42492	0x9BB	Neutral IOC Delay	0	30000	1	s	F3	0	1
GROUND DIRECTIONAL									
42556	0x9FB	Ground Directional Function	0	3	1	---	FC207	0	1
NEGATIVE SEQUENCE OVERVOLTAGE									
42560	0x9FF	Negative Sequence OV Function	0	3	1	---	FC197	0	1
42561	0xA00	Negative Sequence OV Pickup	0	125	1	x VT	F3	30	1
42562	0xA01	Negative Sequence OV Delay	0	60000	1	s	F3	200	1
PHASE OVERVOLTAGE1									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42566	0xA05	Phase OV Function	0	3	1	---	FC197	0	1
42567	0xA06	Phase OV Pickup	0	125	1	x VT	F3	125	1
42568	0xA07	Phase OV Delay	0	60000	1	s	F3	200	1
42569	0xA08	Phase OV Phases	1	3	1	---	F92	1	1
PHASE UNDERVOLTAGE1									
42570	0xA09	Phase UV Function	0	3	1	---	FC197	0	1
42571	0xA0A	Phase UV Pickup	0	125	1	x VT	F3	75	1
42572	0xA0B	Phase UV Curve	0	1	1	---	F93	1	1
42573	0xA0C	Phase UV Delay	0	60000	1	s	F3	200	1
42574	0xA0D	Phase UV Phases	1	3	1	---	F92	1	1
42575	0xA0E	Phase UV Minimum Voltage	0	125	1	x VT	F3	30	1
UNDERFREQUENCY									
42584	0xA17	Underfrequency 1 Function	0	3	1	---	FC197	0	1
42585	0xA18	Underfrequency 1 Pickup	4000	7000	1	Hz	F3	5900	1
42586	0xA19	Underfrequency 1 Delay	10	60000	1	s	F3	200	1
42587	0xA1A	Minimum UF Voltage 1	0	125	1	x VT	F3	70	1
42588	0xA1B	Underfrequency 2 Function	0	3	1	---	FC197	0	1
42589	0xA1C	Underfrequency 2 Pickup	4000	7000	1	Hz	F3	5900	1
42590	0xA1D	Underfrequency 2 Delay	10	60000	1	s	F3	200	1
42591	0xA1E	Minimum UF Voltage 2	0	125	1	x VT	F3	70	1
OVERFREQUENCY									
42592	0xA1F	Overfrequency 1 Function	0	3	1	---	FC197	0	1
42593	0xA20	Overfrequency 1 Pickup	4000	7000	1	Hz	F3	6050	1
42594	0xA21	Overfrequency 1 Delay	10	60000	1	s	F3	200	1
42595	0xA22	Overfrequency 2 Function	0	3	1	---	FC197	0	1
42596	0xA23	Overfrequency 2 Pickup	4000	7000	1	Hz	F3	6050	1
42597	0xA24	Overfrequency 2 Delay	10	60000	1	s	F3	200	1
PROTECTION ELEMENT RELAY CONFIGURATION									
42738	0xAB1	Neutral IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42752	0xABF	Negative Sequence Overvoltage Relay	0	0x7F	1	---	FC198	0	1
42754	0xAC1	Phase Overvoltage Relay	0	0x7F	1	---	FC198	0	1
42755	0xAC2	Phase Undervoltage Relay	0	0x7F	1	---	FC198	0	1
42758	0xAC5	Underfrequency 1 Relay	0	0x7F	1	---	FC198	0	1
42759	0xAC6	Underfrequency 2 Relay	0	0x7F	1	---	FC198	0	1
42760	0xAC7	Overfrequency 1 Relay	0	0x7F	1	---	FC198	0	1
42761	0xAC8	Overfrequency 2 Relay	0	0x7F	1	---	FC198	0	1
42764	0xACB	Negative Sequence IOC Relays	0	0x7F	1	---	FC198	0	1
42765	0xACC	Short Circuit Relays	0	0x7F	1	---	FC198	0	1
42766	0xACD	Mechanical Jam Relays	0	0x7F	1	---	FC198	0	1
42767	0xACE	Underpower Relays	0	0x7F	1	---	FC198	0	1
42768	0xACF	Acceleration Relays	0	0x7F	1	---	FC198	0	1
42769	0xAD0	Undercurrent Relays	0	0x7F	1	---	FC198	0	1
42770	0xAD1	Current Unbalance Relays	0	0x7F	1	---	FC198	0	1
42771	0xAD2	Load Increase Alarm Relays	0	0x7F	1	---	FC198	0	1
42772	0xAD3	Ground Trip Relays	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42773	0xAD4	Welded Contactor Relays	0	0x7F	1	---	FC198	0	1
42774	0xAD5	RTD Trouble Relays	0	0x7F	1	---	FC198	0	1
42775	0xAD6	High Speed Undercurrent Relays	0	0x7F	1	---	FC198	0	1
42781	0xADC	Motor Running Hours Alarm Relays	0	0x7F	1	---	FC198	0	1
WELDED CONTACTOR									
42783	0xADE	Enable Welded Contactor	0	2	1	---	FC206	0	1
42784	0xADF	Welded Contactor Current	5	2000	1	x CT	F3	100	1
42785	0xAE0	Welded Contactor Time Delay 1	3	100	1	s	F3	10	1
42786	0xAE1	Welded Contactor Time Delay 2	0	100	1	s	F3	0	1
42787	0xAE2	Welded Contactor Ext Initiate	0	0xEF02	1	---	F89	0	1
TWO-SPEED MOTOR PROTECTION									
42789	0xAE4	High Speed Thermal OL Curve	0	1	1	---	FC236	0	1
42790	0xAE5	High Speed O/L No.	1	15	1	---	F1	4	1
42791	0xAE6	High Speed S/C Func	0	3	1	---	FC197	0	1
42797	0xAEC	High Speed S/C Pickup	100	2000	1	x CT	F3	600	1
42798	0xAED	High Speed S/C Delay	0	6000	1	s	F3	0	1
42799	0xAEE	High Speed SC Relays	0	0x7F	1	---	FC198	0	1
42802	0xAF1	Acceleration Time On Stopped	10	2500	1	s	F2	100	1
42803	0xAF2	Acceleration Time On Low Speed	10	2500	1	s	F2	100	1
42807	0xAF6	High Speed Undercurrent Block On Start	0	600	1	s	F1	0	1
42808	0xAF7	High Speed U/C Alarm Enable	0	1	1	---	FC126	0	1
42809	0xAF8	High Speed U/C Alarm Pickup	10	95	1	x FLA	F3	70	1
42810	0xAF9	High Speed U/C Alarm Delay	100	6000	1	s	F3	100	1
42811	0xAFA	High Speed U/C Trip Enable	0	1	1	---	FC126	0	1
42812	0xAFB	High Speed U/C Trip Pickup	10	95	1	x FLA	F3	60	1
42813	0xAFC	High Speed U/C Trip Delay	100	6000	1	s	F3	100	1
VIRTUAL INPUT NAMES									
42884	0xB43	Virtual Input Name 1	0	9	1	---	F22	Virtual IN 1	9
42893	0xB4C	Virtual Input Name 2	0	9	1	---	F22	Virtual IN 2	9
42902	0xB55	Virtual Input Name 3	0	9	1	---	F22	Virtual IN 3	9
42911	0xB5E	Virtual Input Name 4	0	9	1	---	F22	Virtual IN 4	9
42920	0xB67	Virtual Input Name 5	0	9	1	---	F22	Virtual IN 5	9
42929	0xB70	Virtual Input Name 6	0	9	1	---	F22	Virtual IN 6	9
42938	0xB79	Virtual Input Name 7	0	9	1	---	F22	Virtual IN 7	9
42947	0xB82	Virtual Input Name 8	0	9	1	---	F22	Virtual IN 8	9
42956	0xB8B	Virtual Input Name 9	0	9	1	---	F22	Virtual IN 9	9
42965	0xB94	Virtual Input Name 10	0	9	1	---	F22	Virtual IN 10	9
42974	0xB9D	Virtual Input Name 11	0	9	1	---	F22	Virtual IN 11	9

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42983	0xBA6	Virtual Input Name 12	0	9	1	---	F22	Virtual IN 12	9
42992	0xBAF	Virtual Input Name 13	0	9	1	---	F22	Virtual IN 13	9
43001	0xBB8	Virtual Input Name 14	0	9	1	---	F22	Virtual IN 14	9
43010	0xBC1	Virtual Input Name 15	0	9	1	---	F22	Virtual IN 15	9
43019	0xBCA	Virtual Input Name 16	0	9	1	---	F22	Virtual IN 16	9
43028	0xBD3	Virtual Input Name 17	0	9	1	---	F22	Virtual IN 17	9
43037	0xBDC	Virtual Input Name 18	0	9	1	---	F22	Virtual IN 18	9
43046	0xBE5	Virtual Input Name 19	0	9	1	---	F22	Virtual IN 19	9
43055	0xBEE	Virtual Input Name 20	0	9	1	---	F22	Virtual IN 20	9
43064	0xBF7	Virtual Input Name 21	0	9	1	---	F22	Virtual IN 21	9
43073	0xC00	Virtual Input Name 22	0	9	1	---	F22	Virtual IN 22	9
43082	0xC09	Virtual Input Name 23	0	9	1	---	F22	Virtual IN 23	9
43091	0xC12	Virtual Input Name 24	0	9	1	---	F22	Virtual IN 24	9
43100	0xC1B	Virtual Input Name 25	0	9	1	---	F22	Virtual IN 25	9
43109	0xC24	Virtual Input Name 26	0	9	1	---	F22	Virtual IN 26	9
43118	0xC2D	Virtual Input Name 27	0	9	1	---	F22	Virtual IN 27	9
43127	0xC36	Virtual Input Name 28	0	9	1	---	F22	Virtual IN 28	9
43136	0xC3F	Virtual Input Name 29	0	9	1	---	F22	Virtual IN 29	9
43145	0xC48	Virtual Input Name 30	0	9	1	---	F22	Virtual IN 30	9
43154	0xC51	Virtual Input Name 31	0	9	1	---	F22	Virtual IN 31	9
43163	0xC5A	Virtual Input Name 32	0	9	1	---	F22	Virtual IN 32	9
SIMULATION									
RTD PROTECTION									
40335	0x14E	RTD 1 Alarm PKP Delay	0	60000	1	s	F3	200	1
40336	0x14F	RTD 2 Alarm PKP Delay	0	60000	1	s	F3	200	1
40337	0x150	RTD 3 Alarm PKP Delay	0	60000	1	s	F3	200	1
40338	0x151	RTD 4 Alarm PKP Delay	0	60000	1	s	F3	200	1
40339	0x152	RTD 5 Alarm PKP Delay	0	60000	1	s	F3	200	1
40340	0x153	RTD 6 Alarm PKP Delay	0	60000	1	s	F3	200	1
40341	0x154	RTD 7 Alarm PKP Delay	0	60000	1	s	F3	200	1
40342	0x155	RTD 8 Alarm PKP Delay	0	60000	1	s	F3	200	1
40343	0x156	RTD 9 Alarm PKP Delay	0	60000	1	s	F3	200	1
40344	0x157	RTD 10 Alarm PKP Delay	0	60000	1	s	F3	200	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40345	0x158	RTD 11 Alarm PKP Delay	0	60000	1	s	F3	200	1
40346	0x159	RTD 12 Alarm PKP Delay	0	60000	1	s	F3	200	1
40347	0x15A	RTD 1 Alarm DPO Delay	0	60000	1	s	F3	200	1
40348	0x15B	RTD 2 Alarm DPO Delay	0	60000	1	s	F3	200	1
40349	0x15C	RTD 3 Alarm DPO Delay	0	60000	1	s	F3	200	1
40350	0x15D	RTD 4 Alarm DPO Delay	0	60000	1	s	F3	200	1
40351	0x15E	RTD 5 Alarm DPO Delay	0	60000	1	s	F3	200	1
40352	0x15F	RTD 6 Alarm DPO Delay	0	60000	1	s	F3	200	1
40353	0x160	RTD 7 Alarm DPO Delay	0	60000	1	s	F3	200	1
40354	0x161	RTD 8 Alarm DPO Delay	0	60000	1	s	F3	200	1
40355	0x162	RTD 9 Alarm DPO Delay	0	60000	1	s	F3	200	1
40356	0x163	RTD 10 Alarm DPO Delay	0	60000	1	s	F3	200	1
40357	0x164	RTD 11 Alarm DPO Delay	0	60000	1	s	F3	200	1
40358	0x165	RTD 12 Alarm DPO Delay	0	60000	1	s	F3	200	1
40359	0x166	RTD 1 Trip PKP Delay	0	60000	1	s	F3	200	1
40360	0x167	RTD 2 Trip PKP Delay	0	60000	1	s	F3	200	1
40361	0x168	RTD 3 Trip PKP Delay	0	60000	1	s	F3	200	1
40362	0x169	RTD 4 Trip PKP Delay	0	60000	1	s	F3	200	1
40363	0x16A	RTD 5 Trip PKP Delay	0	60000	1	s	F3	200	1
40364	0x16B	RTD 6 Trip PKP Delay	0	60000	1	s	F3	200	1
40365	0x16C	RTD 7 Trip PKP Delay	0	60000	1	s	F3	200	1
40366	0x16D	RTD 8 Trip PKP Delay	0	60000	1	s	F3	200	1
40367	0x16E	RTD 9 Trip PKP Delay	0	60000	1	s	F3	200	1
40368	0x16F	RTD 10 Trip PKP Delay	0	60000	1	s	F3	200	1
40369	0x170	RTD 11 Trip PKP Delay	0	60000	1	s	F3	200	1
40370	0x171	RTD 12 Trip PKP Delay	0	60000	1	s	F3	200	1
40371	0x172	RTD 1 Trip DPO Delay	0	60000	1	s	F3	200	1
40372	0x173	RTD 2 Trip DPO Delay	0	60000	1	s	F3	200	1
40373	0x174	RTD 3 Trip DPO Delay	0	60000	1	s	F3	200	1
40374	0x175	RTD 4 Trip DPO Delay	0	60000	1	s	F3	200	1
40375	0x176	RTD 5 Trip DPO Delay	0	60000	1	s	F3	200	1
40376	0x177	RTD 6 Trip DPO Delay	0	60000	1	s	F3	200	1
40377	0x178	RTD 7 Trip DPO Delay	0	60000	1	s	F3	200	1
40378	0x179	RTD 8 Trip DPO Delay	0	60000	1	s	F3	200	1
40379	0x17A	RTD 9 Trip DPO Delay	0	60000	1	s	F3	200	1
40380	0x17B	RTD 10 Trip DPO Delay	0	60000	1	s	F3	200	1
40381	0x17C	RTD 11 Trip DPO Delay	0	60000	1	s	F3	200	1
40382	0x17D	RTD 12 Trip DPO Delay	0	60000	1	s	F3	200	1
40390	0x185	RTD 7 Application	0	7	1	---	FC121	0	1
40391	0x186	RTD 7 Name	0	9	1	---	F22	RTD 7	9
40401	0x190	RTD 7 Alarm Temp	1	250	1	°C	F4	130	1
40402	0x191	RTD 7 Trip Voting	0	12	1	---	FC122	0	1
40403	0x192	RTD 7 Trip Temp	1	250	1	°C	F4	155	1
40404	0x193	RTD 8 Application	0	7	1	---	FC121	0	1
40405	0x194	RTD 8 Name	0	9	1	---	F22	RTD 8	9
40415	0x19E	RTD 8 Alarm Temp	1	250	1	°C	F4	130	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40416	0x19F	RTD 8 Trip Voting	0	12	1	---	FC122	0	1
40417	0x1A0	RTD 8 Trip Temp	1	250	1	°C	F4	155	1
40418	0x1A1	RTD 9 Application	0	7	1	---	FC121	0	1
40419	0x1A2	RTD 9 Name	0	9	1	---	F22	RTD 9	9
40429	0x1AC	RTD 9 Alarm Temp	1	250	1	°C	F4	130	1
40430	0x1AD	RTD 9 Trip Voting	0	12	1	---	FC122	0	1
40431	0x1AE	RTD 9 Trip Temp	1	250	1	°C	F4	155	1
40432	0x1AF	RTD 10 Application	0	7	1	---	FC121	0	1
40433	0x1B0	RTD 10 Name	0	9	1	---	F22	RTD 10	9
40443	0x1BA	RTD 10 Alarm Temp	1	250	1	°C	F4	130	1
40444	0x1BB	RTD 10 Trip Voting	0	12	1	---	FC122	0	1
40445	0x1BC	RTD 10 Trip Temp	1	250	1	°C	F4	155	1
40446	0x1BD	RTD 11 Application	0	7	1	---	FC121	0	1
40447	0x1BE	RTD 11 Name	0	9	1	---	F22	RTD 11	9
40457	0x1C8	RTD 11 Alarm Temp	1	250	1	°C	F4	130	1
40458	0x1C9	RTD 11 Trip Voting	0	12	1	---	FC122	0	1
40459	0x1CA	RTD 11 Trip Temp	1	250	1	°C	F4	155	1
40460	0x1CB	RTD 12 Application	0	7	1	---	FC121	0	1
40461	0x1CC	RTD 12 Name	0	9	1	---	F22	RTD 12	9
40471	0x1D6	RTD 12 Alarm Temp	1	250	1	°C	F4	130	1
40472	0x1D7	RTD 12 Trip Voting	0	12	1	---	FC122	0	1
40473	0x1D8	RTD 12 Trip Temp	1	250	1	°C	F4	155	1
40731	0x2DA	RTD Trouble Alarm	0	1	1	---	FC126	0	1
40732	0x2DB	Enable RTD Bias	0	1	1	---	FC126	0	1
40735	0x2DE	RTD 1 Application	0	7	1	---	FC121	0	1
40736	0x2DF	RTD 1 Name	0	9	1	---	F22	RTD 1	9
40746	0x2E9	RTD 1 Alarm Temperature	1	250	1	°C	F4	130	1
40747	0x2EA	RTD 1 Trip Voting	0	12	1	---	FC122	0	1
40748	0x2EB	RTD 1 Trip Temperature	1	250	1	°C	F4	155	1
40749	0x2EC	RTD 2 Application	0	7	1	---	FC121	0	1
40750	0x2ED	RTD 2 Name	0	9	1	---	F22	RTD 2	9
40760	0x2F7	RTD 2 Alarm Temperature	1	250	1	°C	F4	130	1
40761	0x2F8	RTD 2 Trip Voting	0	12	1	---	FC122	0	1
40762	0x2F9	RTD 2 Trip Temperature	1	250	1	°C	F4	155	1
40763	0x2FA	RTD 3 Application	0	7	1	---	FC121	0	1
40764	0x2FB	RTD 3 Name	0	9	1	---	F22	RTD 3	9
40774	0x305	RTD 3 Alarm Temperature	1	250	1	°C	F4	130	1
40775	0x306	RTD 3 Trip Voting	0	12	1	---	FC122	0	1
40776	0x307	RTD 3 Trip Temperature	1	250	1	°C	F4	155	1
40777	0x308	RTD 4 Application	0	7	1	---	FC121	0	1
40778	0x309	RTD 4 Name	0	9	1	---	F22	RTD 4	9
40788	0x313	RTD 4 Alarm Temperature	1	250	1	°C	F4	130	1
40789	0x314	RTD 4 Trip Voting	0	12	1	---	FC122	0	1
40790	0x315	RTD 4 Trip Temperature	1	250	1	°C	F4	155	1
40791	0x316	RTD 5 Application	0	7	1	---	FC121	0	1
40792	0x317	RTD 5 Name	0	9	1	---	F22	RTD 5	9

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40802	0x321	RTD 5 Alarm Temperature	1	250	1	°C	F4	130	1
40803	0x322	RTD 5 Trip Voting	0	12	1	---	FC122	0	1
40804	0x323	RTD 5 Trip Temperature	1	250	1	°C	F4	155	1
40805	0x324	RTD 6 Application	0	7	1	---	FC121	0	1
40806	0x325	RTD 6 Name	0	9	1	---	F22	RTD 6	9
40816	0x32F	RTD 6 Alarm Temperature	1	250	1	°C	F4	130	1
40817	0x330	RTD 6 Trip Voting	0	12	1	---	FC122	0	1
40818	0x331	RTD 6 Trip Temperature	1	250	1	°C	F4	155	1
43560	0xDE7	RTD 1 Alarm	0	1	1	---	FC126	0	1
43561	0xDE8	RTD 1 Trip	0	1	1	---	FC126	0	1
43562	0xDE9	RTD 2 Alarm	0	1	1	---	FC126	0	1
43563	0xDEA	RTD 2 Trip	0	1	1	---	FC126	0	1
43564	0xDEB	RTD 3 Alarm	0	1	1	---	FC126	0	1
43565	0xDEC	RTD 3 Trip	0	1	1	---	FC126	0	1
43566	0xDED	RTD 4 Alarm	0	1	1	---	FC126	0	1
43567	0xDEE	RTD 4 Trip	0	1	1	---	FC126	0	1
43568	0xDEF	RTD 5 Alarm	0	1	1	---	FC126	0	1
43569	0xDF0	RTD 5 Trip	0	1	1	---	FC126	0	1
43570	0xDF1	RTD 6 Alarm	0	1	1	---	FC126	0	1
43571	0xDF2	RTD 6 Trip	0	1	1	---	FC126	0	1
43572	0xDF3	RTD 7 Alarm	0	1	1	---	FC126	0	1
43573	0xDF4	RTD 7 Trip	0	1	1	---	FC126	0	1
43574	0xDF5	RTD 8 Alarm	0	1	1	---	FC126	0	1
43575	0xDF6	RTD 8 Trip	0	1	1	---	FC126	0	1
43576	0xDF7	RTD 9 Alarm	0	1	1	---	FC126	0	1
43577	0xDF8	RTD 9 Trip	0	1	1	---	FC126	0	1
43578	0xDF9	RTD 10 Alarm	0	1	1	---	FC126	0	1
43579	0xDFA	RTD 10 Trip	0	1	1	---	FC126	0	1
43580	0xDFB	RTD 11 Alarm	0	1	1	---	FC126	0	1
43581	0xDFC	RTD 11 Trip	0	1	1	---	FC126	0	1
43582	0xDFD	RTD 12 Alarm	0	1	1	---	FC126	0	1
43583	0xDFE	RTD 12 Trip	0	1	1	---	FC126	0	1
43586	0xE01	RTD 1 Relays	0	0x7F	1	---	FC198	0	1
43587	0xE02	RTD 2 Relays	0	0x7F	1	---	FC198	0	1
43588	0xE03	RTD 3 Relays	0	0x7F	1	---	FC198	0	1
43589	0xE04	RTD 4 Relays	0	0x7F	1	---	FC198	0	1
43590	0xE05	RTD 5 Relays	0	0x7F	1	---	FC198	0	1
43591	0xE06	RTD 6 Relays	0	0x7F	1	---	FC198	0	1
43592	0xE07	RTD 7 Relays	0	0x7F	1	---	FC198	0	1
43593	0xE08	RTD 8 Relays	0	0x7F	1	---	FC198	0	1
43594	0xE09	RTD 9 Relays	0	0x7F	1	---	FC198	0	1
43595	0xE0A	RTD 10 Relays	0	0x7F	1	---	FC198	0	1
43596	0xE0B	RTD 11 Relays	0	0x7F	1	---	FC198	0	1
43597	0xE0C	RTD 12 Relays	0	0x7F	1	---	FC198	0	1
43599	0xE0E	RTD 1 Block1	0	0xEF02	1	---	F89	0	1
43600	0xE0F	RTD 1 Block2	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43601	0xE10	RTD 1 Block3	0	0xEF02	1	---	F89	0	1
43602	0xE11	RTD 2 Block1	0	0xEF02	1	---	F89	0	1
43603	0xE12	RTD 2 Block2	0	0xEF02	1	---	F89	0	1
43604	0xE13	RTD 2 Block3	0	0xEF02	1	---	F89	0	1
43605	0xE14	RTD 3 Block1	0	0xEF02	1	---	F89	0	1
43606	0xE15	RTD 3 Block2	0	0xEF02	1	---	F89	0	1
43607	0xE16	RTD 3 Block3	0	0xEF02	1	---	F89	0	1
43608	0xE17	RTD 4 Block1	0	0xEF02	1	---	F89	0	1
43609	0xE18	RTD 4 Block2	0	0xEF02	1	---	F89	0	1
43610	0xE19	RTD 4 Block3	0	0xEF02	1	---	F89	0	1
43611	0xE1A	RTD 5 Block1	0	0xEF02	1	---	F89	0	1
43612	0xE1B	RTD 5 Block2	0	0xEF02	1	---	F89	0	1
43613	0xE1C	RTD 5 Block3	0	0xEF02	1	---	F89	0	1
43614	0xE1D	RTD 6 Block1	0	0xEF02	1	---	F89	0	1
43615	0xE1E	RTD 6 Block2	0	0xEF02	1	---	F89	0	1
43616	0xE1F	RTD 6 Block3	0	0xEF02	1	---	F89	0	1
43617	0xE20	RTD 7 Block1	0	0xEF02	1	---	F89	0	1
43618	0xE21	RTD 7 Block2	0	0xEF02	1	---	F89	0	1
43619	0xE22	RTD 7 Block3	0	0xEF02	1	---	F89	0	1
43620	0xE23	RTD 8 Block1	0	0xEF02	1	---	F89	0	1
43621	0xE24	RTD 8 Block2	0	0xEF02	1	---	F89	0	1
43622	0xE25	RTD 8 Block3	0	0xEF02	1	---	F89	0	1
43623	0xE26	RTD 9 Block1	0	0xEF02	1	---	F89	0	1
43624	0xE27	RTD 9 Block2	0	0xEF02	1	---	F89	0	1
43625	0xE28	RTD 9 Block3	0	0xEF02	1	---	F89	0	1
43626	0xE29	RTD 10 Block1	0	0xEF02	1	---	F89	0	1
43627	0xE2A	RTD 10 Block2	0	0xEF02	1	---	F89	0	1
43628	0xE2B	RTD 10 Block3	0	0xEF02	1	---	F89	0	1
43629	0xE2C	RTD 11 Block1	0	0xEF02	1	---	F89	0	1
43630	0xE2D	RTD 11 Block2	0	0xEF02	1	---	F89	0	1
43631	0xE2E	RTD 11 Block3	0	0xEF02	1	---	F89	0	1
43632	0xE2F	RTD 12 Block1	0	0xEF02	1	---	F89	0	1
43633	0xE30	RTD 12 Block2	0	0xEF02	1	---	F89	0	1
43634	0xE31	RTD 12 Block3	0	0xEF02	1	---	F89	0	1
PHASE OVERVOLTAGE2									
43733	0xE94	Phase OV 2 Function	0	3	1	---	FC197	0	1
43734	0xE95	Phase OV 2 Pickup	0	125	1	x VT	F3	125	1
43735	0xE96	Phase OV 2 Delay	0	60000	1	s	F3	200	1
43736	0xE97	Phase OV 2 Phases	1	3	1	---	F92	1	1
PHASE UNDERVOLTAGE2									
43737	0xE98	Phase UV 2 Function	0	3	1	---	FC197	0	1
43738	0xE99	Phase UV 2 Pickup	0	125	1	x VT	F3	75	1
43739	0xE9A	Phase UV 2 Curve	0	1	1	---	F93	1	1
43740	0xE9B	Phase UV 2 Delay	0	60000	1	s	F3	200	1
43741	0xE9C	Phase UV 2 Phases	1	3	1	---	F92	1	1
43742	0xE9D	Phase UV 2 Min Voltage	0	125	1	x VT	F3	30	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
PHASE OVERVOLTAGE2 (RELAYS & BLOCKS)									
43743	0xE9E	Phase OV 2 Relays	0	0x7F	1	---	FC198	0	1
43744	0xE9F	Phase OV 2 Block 1	0	0xEF02	1	---	F89	0	1
43745	0xEA0	Phase OV 2 Block 1	0	0xEF02	1	---	F89	0	1
43746	0xEA1	Phase OV 2 Block 1	0	0xEF02	1	---	F89	0	1
PHASE UNDERVOLTAGE2 (RELAYS & BLOCKS)									
43747	0xEA2	Phase UV 2 Relays	0	0x7F	1	---	FC198	0	1
43748	0xEA3	Phase UV 2 Block 1	0	0xEF02	1	---	F89	0	1
43749	0xEA4	Phase UV 2 Block 1	0	0xEF02	1	---	F89	0	1
43750	0xEA5	Phase UV 2 Block 1	0	0xEF02	1	---	F89	0	1
FORCE VIRTUAL INPUTS									
43764	0xEB3	Force Virtual Input 1	0	1	1	---	FC103	0	1
43765	0xEB4	Force Virtual Input 2	0	1	1	---	FC103	0	1
43766	0xEB5	Force Virtual Input 3	0	1	1	---	FC103	0	1
43767	0xEB6	Force Virtual Input 4	0	1	1	---	FC103	0	1
43768	0xEB7	Force Virtual Input 5	0	1	1	---	FC103	0	1
43769	0xEB8	Force Virtual Input 6	0	1	1	---	FC103	0	1
43770	0xEB9	Force Virtual Input 7	0	1	1	---	FC103	0	1
43771	0xEBA	Force Virtual Input 8	0	1	1	---	FC103	0	1
43772	0xEBB	Force Virtual Input 9	0	1	1	---	FC103	0	1
43773	0xEBC	Force Virtual Input 10	0	1	1	---	FC103	0	1
43774	0xEBD	Force Virtual Input 11	0	1	1	---	FC103	0	1
43775	0xEBE	Force Virtual Input 12	0	1	1	---	FC103	0	1
43776	0xEBF	Force Virtual Input 13	0	1	1	---	FC103	0	1
43777	0xEC0	Force Virtual Input 14	0	1	1	---	FC103	0	1
43778	0xEC1	Force Virtual Input 15	0	1	1	---	FC103	0	1
43779	0xEC2	Force Virtual Input 16	0	1	1	---	FC103	0	1
43780	0xEC3	Force Virtual Input 17	0	1	1	---	FC103	0	1
43781	0xEC4	Force Virtual Input 18	0	1	1	---	FC103	0	1
43782	0xEC5	Force Virtual Input 19	0	1	1	---	FC103	0	1
43783	0xEC6	Force Virtual Input 20	0	1	1	---	FC103	0	1
43784	0xEC7	Force Virtual Input 21	0	1	1	---	FC103	0	1
43785	0xEC8	Force Virtual Input 22	0	1	1	---	FC103	0	1
43786	0xEC9	Force Virtual Input 23	0	1	1	---	FC103	0	1
43787	0xECA	Force Virtual Input 24	0	1	1	---	FC103	0	1
43788	0xECB	Force Virtual Input 25	0	1	1	---	FC103	0	1
43789	0xECC	Force Virtual Input 26	0	1	1	---	FC103	0	1
43790	0xECD	Force Virtual Input 27	0	1	1	---	FC103	0	1
43791	0xECE	Force Virtual Input 28	0	1	1	---	FC103	0	1
43792	0xECF	Force Virtual Input 29	0	1	1	---	FC103	0	1
43793	0xED0	Force Virtual Input 30	0	1	1	---	FC103	0	1
43794	0xED1	Force Virtual Input 31	0	1	1	---	FC103	0	1
43795	0xED2	Force Virtual Input 32	0	1	1	---	FC103	0	1
DNP OVER ETHERNET PORT									
43836	0xEFB	DNP/Ethernet Channel 1 Port	0	2	1	---	F87	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43837	0xEFC	DNP/Ethernet Channel 2 Port	0	2	1	---	F87	0	1
IEC60870-5-104 PROTOCOL									
43838	0xEFD	IEC 60870-5-104 Function	0	1	1	---	FC126	0	1
43839	0xEFE	IEC TCP Port	1	65535	1	---	F1	2404	1
43840	0xEFF	IEC Common Address of ASDU	0	65535	1	---	F1	0	1
43841	0xF00	IEC Cyclic Data Period	0	65535	1	s	F1	60	1
43842	0xF01	IEC TCP Connection Timeout	10	300	1	s	F1	120	1
43843	0xF02	Object Information Address Binary	1	16777215	1	---	F9	1000	2
43845	0xF04	Object Information Address Analog	1	16777215	1	---	F9	2000	2
43847	0xF06	Object Information Address Counters	1	16777215	1	---	F9	3000	2
43849	0xF08	Object Information Address Command	1	16777215	1	---	F9	4000	2
DNP / IEC60870-5-104 SHARED SETTINGS									
43851	0xF0A	DNP Address	0	65519	1	---	F1	0	1
43852	0xF0B	DNP Client Address 1	0	0xFFFFFFFF	1	---	FC150	0	2
43854	0xF0D	DNP Client Address 2	0	0xFFFFFFFF	1	---	FC150	0	2
43856	0xF0F	DNP Client Address 3	0	0xFFFFFFFF	1	---	FC150	0	2
43858	0xF11	DNP Client Address 4	0	0xFFFFFFFF	1	---	FC150	0	2
43860	0xF13	DNP Client Address 5	0	0xFFFFFFFF	1	---	FC150	0	2
43862	0xF15	DNP TCP/UDP Port Number	0	65535	1	---	F1	20000	1
43863	0xF16	DNP Unsolicited Response Function	0	1	1	---	FC126	0	1
43864	0xF17	DNP Unsolicited Response Timeout	0	60	1	s	F1	5	1
43865	0xF18	DNP Unsolicited Response Maximum Retries	1	255	1	---	F1	10	1
43866	0xF19	DNP Unsolicited Response Destination Address	0	65519	1	---	F1	1	1
43867	0xF1A	DNP Time Sync IIN Period	1	10080	1	min	F1	1440	1
43868	0xF1B	DNP Message Fragment Size	30	2048	1	---	F1	240	1
43869	0xF1C	DNP Object 1 Default Variation	1	2	1	---	F1	2	1
43870	0xF1D	DNP Object 2 Default Variation	1	2	1	---	F1	2	1
43871	0xF1E	DNP Object 20 Default Variation	1	6	1	---	F78	1	1
43872	0xF1F	DNP Object 21 Default Variation	1	10	1	---	F79	1	1
43873	0xF20	DNP Object 22 Default Variation	1	6	1	---	F80	1	1
43874	0xF21	DNP Object 23 Default Variation	1	6	1	---	F81	1	1
43875	0xF22	DNP Object 30 Default Variation	1	4	1	---	F82	1	1
43876	0xF23	DNP Object 32 Default Variation	1	4	1	---	F83	1	1
43877	0xF24	DNP TCP Connection Timeout	10	300	1	s	F1	120	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
DNP / IEC60870-5-103 / IEC60870-5-104 BINARY INPUTS									
43878	0xF25	Binary Input Point 0 Entry	0	0xFFFF	1	---	FC134B	0	1
43879	0xF26	Binary Input Point 1 Entry	0	0xFFFF	1	---	FC134B	0	1
43880	0xF27	Binary Input Point 2 Entry	0	0xFFFF	1	---	FC134B	0	1
43881	0xF28	Binary Input Point 3 Entry	0	0xFFFF	1	---	FC134B	0	1
43882	0xF29	Binary Input Point 4 Entry	0	0xFFFF	1	---	FC134B	0	1
43883	0xF2A	Binary Input Point 5 Entry	0	0xFFFF	1	---	FC134B	0	1
43884	0xF2B	Binary Input Point 6 Entry	0	0xFFFF	1	---	FC134B	0	1
43885	0xF2C	Binary Input Point 7 Entry	0	0xFFFF	1	---	FC134B	0	1
43886	0xF2D	Binary Input Point 8 Entry	0	0xFFFF	1	---	FC134B	0	1
43887	0xF2E	Binary Input Point 9 Entry	0	0xFFFF	1	---	FC134B	0	1
43888	0xF2F	Binary Input Point 10 Entry	0	0xFFFF	1	---	FC134B	0	1
43889	0xF30	Binary Input Point 11 Entry	0	0xFFFF	1	---	FC134B	0	1
43890	0xF31	Binary Input Point 12 Entry	0	0xFFFF	1	---	FC134B	0	1
43891	0xF32	Binary Input Point 13 Entry	0	0xFFFF	1	---	FC134B	0	1
43892	0xF33	Binary Input Point 14 Entry	0	0xFFFF	1	---	FC134B	0	1
43893	0xF34	Binary Input Point 15 Entry	0	0xFFFF	1	---	FC134B	0	1
43894	0xF35	Binary Input Point 16 Entry	0	0xFFFF	1	---	FC134B	0	1
43895	0xF36	Binary Input Point 17 Entry	0	0xFFFF	1	---	FC134B	0	1
43896	0xF37	Binary Input Point 18 Entry	0	0xFFFF	1	---	FC134B	0	1
43897	0xF38	Binary Input Point 19 Entry	0	0xFFFF	1	---	FC134B	0	1
43898	0xF39	Binary Input Point 20 Entry	0	0xFFFF	1	---	FC134B	0	1
43899	0xF3A	Binary Input Point 21 Entry	0	0xFFFF	1	---	FC134B	0	1
43900	0xF3B	Binary Input Point 22 Entry	0	0xFFFF	1	---	FC134B	0	1
43901	0xF3C	Binary Input Point 23 Entry	0	0xFFFF	1	---	FC134B	0	1
43902	0xF3D	Binary Input Point 24 Entry	0	0xFFFF	1	---	FC134B	0	1
43903	0xF3E	Binary Input Point 25 Entry	0	0xFFFF	1	---	FC134B	0	1
43904	0xF3F	Binary Input Point 26 Entry	0	0xFFFF	1	---	FC134B	0	1
43905	0xF40	Binary Input Point 27 Entry	0	0xFFFF	1	---	FC134B	0	1
43906	0xF41	Binary Input Point 28 Entry	0	0xFFFF	1	---	FC134B	0	1
43907	0xF42	Binary Input Point 29 Entry	0	0xFFFF	1	---	FC134B	0	1
43908	0xF43	Binary Input Point 30 Entry	0	0xFFFF	1	---	FC134B	0	1
43909	0xF44	Binary Input Point 31 Entry	0	0xFFFF	1	---	FC134B	0	1
43910	0xF45	Binary Input Point 32 Entry	0	0xFFFF	1	---	FC134B	0	1
43911	0xF46	Binary Input Point 33 Entry	0	0xFFFF	1	---	FC134B	0	1
43912	0xF47	Binary Input Point 34 Entry	0	0xFFFF	1	---	FC134B	0	1
43913	0xF48	Binary Input Point 35 Entry	0	0xFFFF	1	---	FC134B	0	1
43914	0xF49	Binary Input Point 36 Entry	0	0xFFFF	1	---	FC134B	0	1
43915	0xF4A	Binary Input Point 37 Entry	0	0xFFFF	1	---	FC134B	0	1
43916	0xF4B	Binary Input Point 38 Entry	0	0xFFFF	1	---	FC134B	0	1
43917	0xF4C	Binary Input Point 39 Entry	0	0xFFFF	1	---	FC134B	0	1
43918	0xF4D	Binary Input Point 40 Entry	0	0xFFFF	1	---	FC134B	0	1
43919	0xF4E	Binary Input Point 41 Entry	0	0xFFFF	1	---	FC134B	0	1
43920	0xF4F	Binary Input Point 42 Entry	0	0xFFFF	1	---	FC134B	0	1
43921	0xF50	Binary Input Point 43 Entry	0	0xFFFF	1	---	FC134B	0	1
43922	0xF51	Binary Input Point 44 Entry	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43923	0xF52	Binary Input Point 45 Entry	0	0xFFFF	1	---	FC134B	0	1
43924	0xF53	Binary Input Point 46 Entry	0	0xFFFF	1	---	FC134B	0	1
43925	0xF54	Binary Input Point 47 Entry	0	0xFFFF	1	---	FC134B	0	1
43926	0xF55	Binary Input Point 48 Entry	0	0xFFFF	1	---	FC134B	0	1
43927	0xF56	Binary Input Point 49 Entry	0	0xFFFF	1	---	FC134B	0	1
43928	0xF57	Binary Input Point 50 Entry	0	0xFFFF	1	---	FC134B	0	1
43929	0xF58	Binary Input Point 51 Entry	0	0xFFFF	1	---	FC134B	0	1
43930	0xF59	Binary Input Point 52 Entry	0	0xFFFF	1	---	FC134B	0	1
43931	0xF5A	Binary Input Point 53 Entry	0	0xFFFF	1	---	FC134B	0	1
43932	0xF5B	Binary Input Point 54 Entry	0	0xFFFF	1	---	FC134B	0	1
43933	0xF5C	Binary Input Point 55 Entry	0	0xFFFF	1	---	FC134B	0	1
43934	0xF5D	Binary Input Point 56 Entry	0	0xFFFF	1	---	FC134B	0	1
43935	0xF5E	Binary Input Point 57 Entry	0	0xFFFF	1	---	FC134B	0	1
43936	0xF5F	Binary Input Point 58 Entry	0	0xFFFF	1	---	FC134B	0	1
43937	0xF60	Binary Input Point 59 Entry	0	0xFFFF	1	---	FC134B	0	1
43938	0xF61	Binary Input Point 60 Entry	0	0xFFFF	1	---	FC134B	0	1
43939	0xF62	Binary Input Point 61 Entry	0	0xFFFF	1	---	FC134B	0	1
43940	0xF63	Binary Input Point 62 Entry	0	0xFFFF	1	---	FC134B	0	1
43941	0xF64	Binary Input Point 63 Entry	0	0xFFFF	1	---	FC134B	0	1
DNP / IEC60870-5-104 BINARY OUTPUTS									
44070	0xFE5	Binary Output Point 0 ON	0	40	1	---	F86	0	1
44071	0xFE6	Binary Output Point 0 OFF	0	40	1	---	F86	0	1
44072	0xFE7	Binary Output Point 1 ON	0	40	1	---	F86	0	1
44073	0xFE8	Binary Output Point 1 OFF	0	40	1	---	F86	0	1
44074	0xFE9	Binary Output Point 2 ON	0	40	1	---	F86	0	1
44075	0xFEA	Binary Output Point 2 OFF	0	40	1	---	F86	0	1
44076	0xFEB	Binary Output Point 3 ON	0	40	1	---	F86	0	1
44077	0xFEC	Binary Output Point 3 OFF	0	40	1	---	F86	0	1
44078	0xFED	Binary Output Point 4 ON	0	40	1	---	F86	0	1
44079	0xFEE	Binary Output Point 4 OFF	0	40	1	---	F86	0	1
44080	0xFEF	Binary Output Point 5 ON	0	40	1	---	F86	0	1
44081	0xFF0	Binary Output Point 5 OFF	0	40	1	---	F86	0	1
44082	0xFF1	Binary Output Point 6 ON	0	40	1	---	F86	0	1
44083	0xFF2	Binary Output Point 6 OFF	0	40	1	---	F86	0	1
44084	0xFF3	Binary Output Point 7 ON	0	40	1	---	F86	0	1
44085	0xFF4	Binary Output Point 7 OFF	0	40	1	---	F86	0	1
44086	0xFF5	Binary Output Point 8 ON	0	40	1	---	F86	0	1
44087	0xFF6	Binary Output Point 8 OFF	0	40	1	---	F86	0	1
44088	0xFF7	Binary Output Point 9 ON	0	40	1	---	F86	0	1
44089	0xFF8	Binary Output Point 9 OFF	0	40	1	---	F86	0	1
44090	0xFF9	Binary Output Point 10 ON	0	40	1	---	F86	0	1
44091	0xFFA	Binary Output Point 10 OFF	0	40	1	---	F86	0	1
44092	0xFFB	Binary Output Point 11 ON	0	40	1	---	F86	0	1
44093	0xFFC	Binary Output Point 11 OFF	0	40	1	---	F86	0	1
44094	0xFFD	Binary Output Point 12 ON	0	40	1	---	F86	0	1
44095	0xFFE	Binary Output Point 12 OFF	0	40	1	---	F86	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44096	0xFFF	Binary Output Point 13 ON	0	40	1	---	F86	0	1
44097	0x1000	Binary Output Point 13 OFF	0	40	1	---	F86	0	1
44098	0x1001	Binary Output Point 14 ON	0	40	1	---	F86	0	1
44099	0x1002	Binary Output Point 14 OFF	0	40	1	---	F86	0	1
44100	0x1003	Binary Output Point 15 ON	0	40	1	---	F86	0	1
44101	0x1004	Binary Output Point 15 OFF	0	40	1	---	F86	0	1
DNP / IEC60870-5-104 ANALOG INPUTS									
43942	0xF65	Analog Input Point 0 Entry	0	251	1	---	F88	0	1
43943	0xF66	Analog Input Point 0 Scale Factor	1	9	1	---	F85	4	1
43944	0xF67	Analog Input Point 0 Deadband	0	100000000	1	---	F9	30000	2
43946	0xF69	Analog Input Point 1 Entry	0	251	1	---	F88	0	1
43947	0xF6A	Analog Input Point 1 Scale Factor	1	9	1	---	F85	4	1
43948	0xF6B	Analog Input Point 1 Deadband	0	100000000	1	---	F9	30000	2
43950	0xF6D	Analog Input Point 2 Entry	0	251	1	---	F88	0	1
43951	0xF6E	Analog Input Point 2 Scale Factor	1	9	1	---	F85	4	1
43952	0xF6F	Analog Input Point 2 Deadband	0	100000000	1	---	F9	30000	2
43954	0xF71	Analog Input Point 3 Entry	0	251	1	---	F88	0	1
43955	0xF72	Analog Input Point 3 Scale Factor	1	9	1	---	F85	4	1
43956	0xF73	Analog Input Point 3 Deadband	0	100000000	1	---	F9	30000	2
43958	0xF75	Analog Input Point 4 Entry	0	251	1	---	F88	0	1
43959	0xF76	Analog Input Point 4 Scale Factor	1	9	1	---	F85	4	1
43960	0xF77	Analog Input Point 4 Deadband	0	100000000	1	---	F9	30000	2
43962	0xF79	Analog Input Point 5 Entry	0	251	1	---	F88	0	1
43963	0xF7A	Analog Input Point 5 Scale Factor	1	9	1	---	F85	4	1
43964	0xF7B	Analog Input Point 5 Deadband	0	100000000	1	---	F9	30000	2
43966	0xF7D	Analog Input Point 6 Entry	0	251	1	---	F88	0	1
43967	0xF7E	Analog Input Point 6 Scale Factor	1	9	1	---	F85	4	1
43968	0xF7F	Analog Input Point 6 Deadband	0	100000000	1	---	F9	30000	2
43970	0xF81	Analog Input Point 7 Entry	0	251	1	---	F88	0	1
43971	0xF82	Analog Input Point 7 Scale Factor	1	9	1	---	F85	4	1
43972	0xF83	Analog Input Point 7 Deadband	0	100000000	1	---	F9	30000	2
43974	0xF85	Analog Input Point 8 Entry	0	251	1	---	F88	0	1
43975	0xF86	Analog Input Point 8 Scale Factor	1	9	1	---	F85	4	1
43976	0xF87	Analog Input Point 8 Deadband	0	100000000	1	---	F9	30000	2
43978	0xF89	Analog Input Point 9 Entry	0	251	1	---	F88	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43979	0xF8A	Analog Input Point 9 Scale Factor	1	9	1	---	F85	4	1
43980	0xF8B	Analog Input Point 9 Deadband	0	100000000	1	---	F9	30000	2
43982	0xF8D	Analog Input Point 10 Entry	0	251	1	---	F88	0	1
43983	0xF8E	Analog Input Point 10 Scale Factor	1	9	1	---	F85	4	1
43984	0xF8F	Analog Input Point 10 Deadband	0	100000000	1	---	F9	30000	2
43986	0xF91	Analog Input Point 11 Entry	0	251	1	---	F88	0	1
43987	0xF92	Analog Input Point 11 Scale Factor	1	9	1	---	F85	4	1
43988	0xF93	Analog Input Point 11 Deadband	0	100000000	1	---	F9	30000	2
43990	0xF95	Analog Input Point 12 Entry	0	251	1	---	F88	0	1
43991	0xF96	Analog Input Point 12 Scale Factor	1	9	1	---	F85	4	1
43992	0xF97	Analog Input Point 12 Deadband	0	100000000	1	---	F9	30000	2
43994	0xF99	Analog Input Point 13 Entry	0	251	1	---	F88	0	1
43995	0xF9A	Analog Input Point 13 Scale Factor	1	9	1	---	F85	4	1
43996	0xF9B	Analog Input Point 13 Deadband	0	100000000	1	---	F9	30000	2
43998	0xF9D	Analog Input Point 14 Entry	0	251	1	---	F88	0	1
43999	0xF9E	Analog Input Point 14 Scale Factor	1	9	1	---	F85	4	1
44000	0xF9F	Analog Input Point 14 Deadband	0	100000000	1	---	F9	30000	2
44002	0xFA1	Analog Input Point 15 Entry	0	251	1	---	F88	0	1
44003	0xFA2	Analog Input Point 15 Scale Factor	1	9	1	---	F85	4	1
44004	0xFA3	Analog Input Point 15 Deadband	0	100000000	1	---	F9	30000	2
44006	0xFA5	Analog Input Point 16 Entry	0	251	1	---	F88	0	1
44007	0xFA6	Analog Input Point 16 Scale Factor	1	9	1	---	F85	4	1
44008	0xFA7	Analog Input Point 16 Deadband	0	100000000	1	---	F9	30000	2
44010	0xFA9	Analog Input Point 17 Entry	0	251	1	---	F88	0	1
44011	0xFAA	Analog Input Point 17 Scale Factor	1	9	1	---	F85	4	1
44012	0xFAB	Analog Input Point 17 Deadband	0	100000000	1	---	F9	30000	2
44014	0xFAD	Analog Input Point 18 Entry	0	251	1	---	F88	0	1
44015	0xFAE	Analog Input Point 18 Scale Factor	1	9	1	---	F85	4	1
44016	0xFAF	Analog Input Point 18 Deadband	0	100000000	1	---	F9	30000	2
44018	0xFB1	Analog Input Point 19 Entry	0	251	1	---	F88	0	1
44019	0xFB2	Analog Input Point 19 Scale Factor	1	9	1	---	F85	4	1
44020	0xFB3	Analog Input Point 19 Deadband	0	100000000	1	---	F9	30000	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44022	0xFB5	Analog Input Point 20 Entry	0	251	1	---	F88	0	1
44023	0xFB6	Analog Input Point 20 Scale Factor	1	9	1	---	F85	4	1
44024	0xFB7	Analog Input Point 20 Deadband	0	100000000	1	---	F9	30000	2
44026	0xFB9	Analog Input Point 21 Entry	0	251	1	---	F88	0	1
44027	0xFBA	Analog Input Point 21 Scale Factor	1	9	1	---	F85	4	1
44028	0xFBB	Analog Input Point 21 Deadband	0	100000000	1	---	F9	30000	2
44030	0xFBD	Analog Input Point 22 Entry	0	251	1	---	F88	0	1
44031	0xFBE	Analog Input Point 22 Scale Factor	1	9	1	---	F85	4	1
44032	0xFBF	Analog Input Point 22 Deadband	0	100000000	1	---	F9	30000	2
44034	0xFC1	Analog Input Point 23 Entry	0	251	1	---	F88	0	1
44035	0xFC2	Analog Input Point 23 Scale Factor	1	9	1	---	F85	4	1
44036	0xFC3	Analog Input Point 23 Deadband	0	100000000	1	---	F9	30000	2
44038	0xFC5	Analog Input Point 24 Entry	0	251	1	---	F88	0	1
44039	0xFC6	Analog Input Point 24 Scale Factor	1	9	1	---	F85	4	1
44040	0xFC7	Analog Input Point 24 Deadband	0	100000000	1	---	F9	30000	2
44042	0xFC9	Analog Input Point 25 Entry	0	251	1	---	F88	0	1
44043	0xFCA	Analog Input Point 25 Scale Factor	1	9	1	---	F85	4	1
44044	0xFCB	Analog Input Point 25 Deadband	0	100000000	1	---	F9	30000	2
44046	0xFCD	Analog Input Point 26 Entry	0	251	1	---	F88	0	1
44047	0xFCE	Analog Input Point 26 Scale Factor	1	9	1	---	F85	4	1
44048	0xFCF	Analog Input Point 26 Deadband	0	100000000	1	---	F9	30000	2
44050	0xFD1	Analog Input Point 27 Entry	0	251	1	---	F88	0	1
44051	0xFD2	Analog Input Point 27 Scale Factor	1	9	1	---	F85	4	1
44052	0xFD3	Analog Input Point 27 Deadband	0	100000000	1	---	F9	30000	2
44054	0xFD5	Analog Input Point 28 Entry	0	251	1	---	F88	0	1
44055	0xFD6	Analog Input Point 28 Scale Factor	1	9	1	---	F85	4	1
44056	0xFD7	Analog Input Point 28 Deadband	0	100000000	1	---	F9	30000	2
44058	0xFD9	Analog Input Point 29 Entry	0	251	1	---	F88	0	1
44059	0xFDA	Analog Input Point 29 Scale Factor	1	9	1	---	F85	4	1
44060	0xFDB	Analog Input Point 29 Deadband	0	100000000	1	---	F9	30000	2
44062	0xFDD	Analog Input Point 30 Entry	0	251	1	---	F88	0	1
44063	0xFDE	Analog Input Point 30 Scale Factor	1	9	1	---	F85	4	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44064	0xFDF	Analog Input Point 30 Deadband	0	100000000	1	---	F9	30000	2
44066	0xFE1	Analog Input Point 31 Entry	0	251	1	---	F88	0	1
44067	0xFE2	Analog Input Point 31 Scale Factor	1	9	1	---	F85	4	1
44068	0xFE3	Analog Input Point 31 Deadband	0	100000000	1	---	F9	30000	2
44102	0x1005	Fault Report Mapping Enable	0	1	1	---	FC126	0	1
AUTORECLOSE									
44152	0x1037	Negative Sequence TOC Shot 1	0	1	1	---	FC103	0	1
44172	0x104B	Negative Sequence TOC Shot 2	0	1	1	---	FC103	0	1
44192	0x105F	Negative Sequence TOC Shot 3	0	1	1	---	FC103	0	1
44197	0x1064	Negative Sequence TOC Shot 4	0	1	1	---	FC103	0	1
IEC60870-5-103 BINARY INPUT POINTS									
44221	0x107C	Binary In Point 0 Entry Function Type	0	255	1	---	F1	0	1
44222	0x107D	Binary In Point 0 Entry Information Number	0	255	1	---	F1	0	1
44223	0x107E	Binary In Point 1 Entry Function Type	0	255	1	---	F1	0	1
44224	0x107F	Binary In Point 1 Entry Information Number	0	255	1	---	F1	0	1
44225	0x1080	Binary In Point 2 Entry Function Type	0	255	1	---	F1	0	1
44226	0x1081	Binary In Point 2 Entry Information Number	0	255	1	---	F1	0	1
44227	0x1082	Binary In Point 3 Entry Function Type	0	255	1	---	F1	0	1
44228	0x1083	Binary In Point 3 Entry Information Number	0	255	1	---	F1	0	1
44229	0x1084	Binary In Point 4 Entry Function Type	0	255	1	---	F1	0	1
44230	0x1085	Binary In Point 4 Entry Information Number	0	255	1	---	F1	0	1
44231	0x1086	Binary In Point 5 Entry Function Type	0	255	1	---	F1	0	1
44232	0x1087	Binary In Point 5 Entry Information Number	0	255	1	---	F1	0	1
44233	0x1088	Binary In Point 6 Entry Function Type	0	255	1	---	F1	0	1
44234	0x1089	Binary In Point 6 Entry Information Number	0	255	1	---	F1	0	1
44235	0x108A	Binary In Point 7 Entry Function Type	0	255	1	---	F1	0	1
44236	0x108B	Binary In Point 7 Entry Information Number	0	255	1	---	F1	0	1
44237	0x108C	Binary In Point 8 Entry Function Type	0	255	1	---	F1	0	1
44238	0x108D	Binary In Point 8 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44239	0x108E	Binary In Point 9 Entry Function Type	0	255	1	---	F1	0	1
44240	0x108F	Binary In Point 9 Entry Information Number	0	255	1	---	F1	0	1
44241	0x1090	Binary In Point 10 Entry Function Type	0	255	1	---	F1	0	1
44242	0x1091	Binary In Point 10 Entry Information Number	0	255	1	---	F1	0	1
44243	0x1092	Binary In Point 11 Entry Function Type	0	255	1	---	F1	0	1
44244	0x1093	Binary In Point 11 Entry Information Number	0	255	1	---	F1	0	1
44245	0x1094	Binary In Point 12 Entry Function Type	0	255	1	---	F1	0	1
44246	0x1095	Binary In Point 12 Entry Information Number	0	255	1	---	F1	0	1
44247	0x1096	Binary In Point 13 Entry Function Type	0	255	1	---	F1	0	1
44248	0x1097	Binary In Point 13 Entry Information Number	0	255	1	---	F1	0	1
44249	0x1098	Binary In Point 14 Entry Function Type	0	255	1	---	F1	0	1
44250	0x1099	Binary In Point 14 Entry Information Number	0	255	1	---	F1	0	1
44251	0x109A	Binary In Point 15 Entry Function Type	0	255	1	---	F1	0	1
44252	0x109B	Binary In Point 15 Entry Information Number	0	255	1	---	F1	0	1
44253	0x109C	Binary In Point 16 Entry Function Type	0	255	1	---	F1	0	1
44254	0x109D	Binary In Point 16 Entry Information Number	0	255	1	---	F1	0	1
44255	0x109E	Binary In Point 17 Entry Function Type	0	255	1	---	F1	0	1
44256	0x109F	Binary In Point 17 Entry Information Number	0	255	1	---	F1	0	1
44257	0x10A0	Binary In Point 18 Entry Function Type	0	255	1	---	F1	0	1
44258	0x10A1	Binary In Point 18 Entry Information Number	0	255	1	---	F1	0	1
44259	0x10A2	Binary In Point 19 Entry Function Type	0	255	1	---	F1	0	1
44260	0x10A3	Binary In Point 19 Entry Information Number	0	255	1	---	F1	0	1
44261	0x10A4	Binary In Point 20 Entry Function Type	0	255	1	---	F1	0	1
44262	0x10A5	Binary In Point 20 Entry Information Number	0	255	1	---	F1	0	1
44263	0x10A6	Binary In Point 21 Entry Function Type	0	255	1	---	F1	0	1
44264	0x10A7	Binary In Point 21 Entry Information Number	0	255	1	---	F1	0	1
44265	0x10A8	Binary In Point 22 Entry Function Type	0	255	1	---	F1	0	1
44266	0x10A9	Binary In Point 22 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44267	0x10AA	Binary In Point 23 Entry Function Type	0	255	1	---	F1	0	1
44268	0x10AB	Binary In Point 23 Entry Information Number	0	255	1	---	F1	0	1
44269	0x10AC	Binary In Point 24 Entry Function Type	0	255	1	---	F1	0	1
44270	0x10AD	Binary In Point 24 Entry Information Number	0	255	1	---	F1	0	1
44271	0x10AE	Binary In Point 25 Entry Function Type	0	255	1	---	F1	0	1
44272	0x10AF	Binary In Point 25 Entry Information Number	0	255	1	---	F1	0	1
44273	0x10B0	Binary In Point 26 Entry Function Type	0	255	1	---	F1	0	1
44274	0x10B1	Binary In Point 26 Entry Information Number	0	255	1	---	F1	0	1
44275	0x10B2	Binary In Point 27 Entry Function Type	0	255	1	---	F1	0	1
44276	0x10B3	Binary In Point 27 Entry Information Number	0	255	1	---	F1	0	1
44277	0x10B4	Binary In Point 28 Entry Function Type	0	255	1	---	F1	0	1
44278	0x10B5	Binary In Point 28 Entry Information Number	0	255	1	---	F1	0	1
44279	0x10B6	Binary In Point 29 Entry Function Type	0	255	1	---	F1	0	1
44280	0x10B7	Binary In Point 29 Entry Information Number	0	255	1	---	F1	0	1
44281	0x10B8	Binary In Point 30 Entry Function Type	0	255	1	---	F1	0	1
44282	0x10B9	Binary In Point 30 Entry Information Number	0	255	1	---	F1	0	1
44283	0x10BA	Binary In Point 31 Entry Function Type	0	255	1	---	F1	0	1
44284	0x10BB	Binary In Point 31 Entry Information Number	0	255	1	---	F1	0	1
44285	0x10BC	Binary In Point 32 Entry Function Type	0	255	1	---	F1	0	1
44286	0x10BD	Binary In Point 32 Entry Information Number	0	255	1	---	F1	0	1
44287	0x10BE	Binary In Point 33 Entry Function Type	0	255	1	---	F1	0	1
44288	0x10BF	Binary In Point 33 Entry Information Number	0	255	1	---	F1	0	1
44289	0x10C0	Binary In Point 34 Entry Function Type	0	255	1	---	F1	0	1
44290	0x10C1	Binary In Point 34 Entry Information Number	0	255	1	---	F1	0	1
44291	0x10C2	Binary In Point 35 Entry Function Type	0	255	1	---	F1	0	1
44292	0x10C3	Binary In Point 35 Entry Information Number	0	255	1	---	F1	0	1
44293	0x10C4	Binary In Point 36 Entry Function Type	0	255	1	---	F1	0	1
44294	0x10C5	Binary In Point 36 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44295	0x10C6	Binary In Point 37 Entry Function Type	0	255	1	---	F1	0	1
44296	0x10C7	Binary In Point 37 Entry Information Number	0	255	1	---	F1	0	1
44297	0x10C8	Binary In Point 38 Entry Function Type	0	255	1	---	F1	0	1
44298	0x10C9	Binary In Point 38 Entry Information Number	0	255	1	---	F1	0	1
44299	0x10CA	Binary In Point 39 Entry Function Type	0	255	1	---	F1	0	1
44300	0x10CB	Binary In Point 39 Entry Information Number	0	255	1	---	F1	0	1
44301	0x10CC	Binary In Point 40 Entry Function Type	0	255	1	---	F1	0	1
44302	0x10CD	Binary In Point 40 Entry Information Number	0	255	1	---	F1	0	1
44303	0x10CE	Binary In Point 41 Entry Function Type	0	255	1	---	F1	0	1
44304	0x10CF	Binary In Point 41 Entry Information Number	0	255	1	---	F1	0	1
44305	0x10D0	Binary In Point 42 Entry Function Type	0	255	1	---	F1	0	1
44306	0x10D1	Binary In Point 42 Entry Information Number	0	255	1	---	F1	0	1
44307	0x10D2	Binary In Point 43 Entry Function Type	0	255	1	---	F1	0	1
44308	0x10D3	Binary In Point 43 Entry Information Number	0	255	1	---	F1	0	1
44309	0x10D4	Binary In Point 44 Entry Function Type	0	255	1	---	F1	0	1
44310	0x10D5	Binary In Point 44 Entry Information Number	0	255	1	---	F1	0	1
44311	0x10D6	Binary In Point 45 Entry Function Type	0	255	1	---	F1	0	1
44312	0x10D7	Binary In Point 45 Entry Information Number	0	255	1	---	F1	0	1
44313	0x10D8	Binary In Point 46 Entry Function Type	0	255	1	---	F1	0	1
44314	0x10D9	Binary In Point 46 Entry Information Number	0	255	1	---	F1	0	1
44315	0x10DA	Binary In Point 47 Entry Function Type	0	255	1	---	F1	0	1
44316	0x10DB	Binary In Point 47 Entry Information Number	0	255	1	---	F1	0	1
44317	0x10DC	Binary In Point 48 Entry Function Type	0	255	1	---	F1	0	1
44318	0x10DD	Binary In Point 48 Entry Information Number	0	255	1	---	F1	0	1
44319	0x10DE	Binary In Point 49 Entry Function Type	0	255	1	---	F1	0	1
44320	0x10DF	Binary In Point 49 Entry Information Number	0	255	1	---	F1	0	1
44321	0x10E0	Binary In Point 50 Entry Function Type	0	255	1	---	F1	0	1
44322	0x10E1	Binary In Point 50 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44323	0x10E2	Binary In Point 51 Entry Function Type	0	255	1	---	F1	0	1
44324	0x10E3	Binary In Point 51 Entry Information Number	0	255	1	---	F1	0	1
44325	0x10E4	Binary In Point 52 Entry Function Type	0	255	1	---	F1	0	1
44326	0x10E5	Binary In Point 52 Entry Information Number	0	255	1	---	F1	0	1
44327	0x10E6	Binary In Point 53 Entry Function Type	0	255	1	---	F1	0	1
44328	0x10E7	Binary In Point 53 Entry Information Number	0	255	1	---	F1	0	1
44329	0x10E8	Binary In Point 54 Entry Function Type	0	255	1	---	F1	0	1
44330	0x10E9	Binary In Point 54 Entry Information Number	0	255	1	---	F1	0	1
44331	0x10EA	Binary In Point 55 Entry Function Type	0	255	1	---	F1	0	1
44332	0x10EB	Binary In Point 55 Entry Information Number	0	255	1	---	F1	0	1
44333	0x10EC	Binary In Point 56 Entry Function Type	0	255	1	---	F1	0	1
44334	0x10ED	Binary In Point 56 Entry Information Number	0	255	1	---	F1	0	1
44335	0x10EE	Binary In Point 57 Entry Function Type	0	255	1	---	F1	0	1
44336	0x10EF	Binary In Point 57 Entry Information Number	0	255	1	---	F1	0	1
44337	0x10F0	Binary In Point 58 Entry Function Type	0	255	1	---	F1	0	1
44338	0x10F1	Binary In Point 58 Entry Information Number	0	255	1	---	F1	0	1
44339	0x10F2	Binary In Point 59 Entry Function Type	0	255	1	---	F1	0	1
44340	0x10F3	Binary In Point 59 Entry Information Number	0	255	1	---	F1	0	1
44341	0x10F4	Binary In Point 60 Entry Function Type	0	255	1	---	F1	0	1
44342	0x10F5	Binary In Point 60 Entry Information Number	0	255	1	---	F1	0	1
44343	0x10F6	Binary In Point 61 Entry Function Type	0	255	1	---	F1	0	1
44344	0x10F7	Binary In Point 61 Entry Information Number	0	255	1	---	F1	0	1
44345	0x10F8	Binary In Point 62 Entry Function Type	0	255	1	---	F1	0	1
44346	0x10F9	Binary In Point 62 Entry Information Number	0	255	1	---	F1	0	1
44347	0x10FA	Binary In Point 63 Entry Function Type	0	255	1	---	F1	0	1
44348	0x10FB	Binary In Point 63 Entry Information Number	0	255	1	---	F1	0	1
DNP / IEC60870-5-103 BINARY OUTPUT POINTS									
44349	0x10FC	Binary Out Point 0 Entry Function Type	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44350	0x10FD	Binary Out Point 0 Entry Information Number	0	255	1	---	F1	0	1
44351	0x10FE	Binary Out Point 1 Entry Function Type	0	255	1	---	F1	0	1
44352	0x10FF	Binary Out Point 1 Entry Information Number	0	255	1	---	F1	0	1
44353	0x1100	Binary Out Point 2 Entry Function Type	0	255	1	---	F1	0	1
44354	0x1101	Binary Out Point 2 Entry Information Number	0	255	1	---	F1	0	1
44355	0x1102	Binary Out Point 3 Entry Function Type	0	255	1	---	F1	0	1
44356	0x1103	Binary Out Point 3 Entry Information Number	0	255	1	---	F1	0	1
44357	0x1104	Binary Out Point 4 Entry Function Type	0	255	1	---	F1	0	1
44358	0x1105	Binary Out Point 4 Entry Information Number	0	255	1	---	F1	0	1
44359	0x1106	Binary Out Point 5 Entry Function Type	0	255	1	---	F1	0	1
44360	0x1107	Binary Out Point 5 Entry Information Number	0	255	1	---	F1	0	1
44361	0x1108	Binary Out Point 6 Entry Function Type	0	255	1	---	F1	0	1
44362	0x1109	Binary Out Point 6 Entry Information Number	0	255	1	---	F1	0	1
44363	0x110A	Binary Out Point 7 Entry Function Type	0	255	1	---	F1	0	1
44364	0x110B	Binary Out Point 7 Entry Information Number	0	255	1	---	F1	0	1
44365	0x110C	Binary Out Point 8 Entry Function Type	0	255	1	---	F1	0	1
44366	0x110D	Binary Out Point 8 Entry Information Number	0	255	1	---	F1	0	1
44367	0x110E	Binary Out Point 9 Entry Function Type	0	255	1	---	F1	0	1
44368	0x110F	Binary Out Point 9 Entry Information Number	0	255	1	---	F1	0	1
44369	0x1110	Binary Out Point 10 Entry Function Type	0	255	1	---	F1	0	1
44370	0x1111	Binary Out Point 10 Entry Information Number	0	255	1	---	F1	0	1
44371	0x1112	Binary Out Point 11 Entry Function Type	0	255	1	---	F1	0	1
44372	0x1113	Binary Out Point 11 Entry Information Number	0	255	1	---	F1	0	1
44373	0x1114	Binary Out Point 12 Entry Function Type	0	255	1	---	F1	0	1
44374	0x1115	Binary Out Point 12 Entry Information Number	0	255	1	---	F1	0	1
44375	0x1116	Binary Out Point 13 Entry Function Type	0	255	1	---	F1	0	1
44376	0x1117	Binary Out Point 13 Entry Information Number	0	255	1	---	F1	0	1
44377	0x1118	Binary Out Point 14 Entry Function Type	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44378	0x1119	Binary Out Point 14 Entry Information Number	0	255	1	---	F1	0	1
44379	0x111A	Binary Out Point 15 Entry Function Type	0	255	1	---	F1	0	1
44380	0x111B	Binary Out Point 15 Entry Information Number	0	255	1	---	F1	0	1
DNP / IEC60870-5-103 ADDRESSING									
44382	0x111D	IEC60870-5-103 Slave Address	0	254	1	---	F1	0	1
44383	0x111E	Synchronization Timeout	0	1440	1	min	F1	0	1
IEC60870-5-103 MEASURANDS									
44384	0x111F	103 First ASDU Identification Type	3	9	1	---	FC221	3	1
44385	0x1120	103 First ASDU Function Type	0	255	1	---	F1	0	1
44386	0x1121	103 First ASDU Information Number	0	255	1	---	F1	0	1
44387	0x1122	103 First ASDU Scan Timeout	0	1000	1	s	F1	0	1
44388	0x1123	103 First ASDU First Analogue Entry	0	251	1	---	F88	0	1
44389	0x1124	103 First ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44390	0x1125	103 First ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44391	0x1126	103 First ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44392	0x1127	103 First ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44393	0x1128	103 First ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44394	0x1129	103 First ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44395	0x112A	103 First ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44396	0x112B	103 First ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44397	0x112C	103 First ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44398	0x112D	103 First ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44399	0x112E	103 First ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44400	0x112F	103 First ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44401	0x1130	103 First ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44402	0x1131	103 First ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44403	0x1132	103 First ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44404	0x1133	103 First ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44405	0x1134	103 First ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44406	0x1135	103 First ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44407	0x1136	103 First ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44408	0x1137	103 First ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44409	0x1138	103 First ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44410	0x1139	103 First ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44411	0x113A	103 First ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44412	0x113B	103 First ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44413	0x113C	103 First ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44414	0x113D	103 First ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44415	0x113E	103 Second ASDU Identification Type	3	9	1	---	FC221	3	1
44416	0x113F	103 Second ASDU Function Type	0	255	1	---	F1	0	1
44417	0x1140	103 Second ASDU Information Number	0	255	1	---	F1	0	1
44418	0x1141	103 Second ASDU Scan Timeout	0	1000	1	s	F1	0	1
44419	0x1142	103 Second ASDU First Analogue Entry	0	251	1	---	F88	0	1
44420	0x1143	103 Second ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44421	0x1144	103 Second ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44422	0x1145	103 Second ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44423	0x1146	103 Second ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44424	0x1147	103 Second ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44425	0x1148	103 Second ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44426	0x1149	103 Second ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44427	0x114A	103 Second ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44428	0x114B	103 Second ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44429	0x114C	103 Second ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44430	0x114D	103 Second ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44431	0x114E	103 Second ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44432	0x114F	103 Second ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44433	0x1150	103 Second ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44434	0x1151	103 Second ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44435	0x1152	103 Second ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44436	0x1153	103 Second ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44437	0x1154	103 Second ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44438	0x1155	103 Second ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44439	0x1156	103 Second ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44440	0x1157	103 Second ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44441	0x1158	103 Second ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44442	0x1159	103 Second ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44443	0x115A	103 Second ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44444	0x115B	103 Second ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44445	0x115C	103 Second ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44446	0x115D	103 Third ASDU Identification Type	3	9	1	---	FC221	3	1
44447	0x115E	103 Third ASDU Function Type	0	255	1	---	F1	0	1
44448	0x115F	103 Third ASDU Information Number	0	255	1	---	F1	0	1
44449	0x1160	103 Third ASDU Scan Timeout	0	1000	1	s	F1	0	1
44450	0x1161	103 Third ASDU First Analogue Entry	0	251	1	---	F88	0	1
44451	0x1162	103 Third ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44452	0x1163	103 Third ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44453	0x1164	103 Third ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44454	0x1165	103 Third ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44455	0x1166	103 Third ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44456	0x1167	103 Third ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44457	0x1168	103 Third ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44458	0x1169	103 Third ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44459	0x116A	103 Third ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44460	0x116B	103 Third ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44461	0x116C	103 Third ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44462	0x116D	103 Third ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44463	0x116E	103 Third ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44464	0x116F	103 Third ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44465	0x1170	103 Third ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44466	0x1171	103 Third ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44467	0x1172	103 Third ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44468	0x1173	103 Third ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44469	0x1174	103 Third ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44470	0x1175	103 Third ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44471	0x1176	103 Third ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44472	0x1177	103 Third ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44473	0x1178	103 Third ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44474	0x1179	103 Third ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44475	0x117A	103 Third ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44476	0x117B	103 Third ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44477	0x117C	103 Fourth ASDU Identification Type	3	9	1	---	FC221	3	1
44478	0x117D	103 Fourth ASDU Function Type	0	255	1	---	F1	0	1
44479	0x117E	103 Fourth ASDU Information Number	0	255	1	---	F1	0	1
44480	0x117F	103 Fourth ASDU Scan Timeout	0	1000	1	s	F1	0	1
44481	0x1180	103 Fourth ASDU First Analogue Entry	0	251	1	---	F88	0	1
44482	0x1181	103 Fourth ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44483	0x1182	103 Fourth ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44484	0x1183	103 Fourth ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44485	0x1184	103 Fourth ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44486	0x1185	103 Fourth ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44487	0x1186	103 Fourth ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44488	0x1187	103 Fourth ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44489	0x1188	103 Fourth ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44490	0x1189	103 Fourth ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44491	0x118A	103 Fourth ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44492	0x118B	103 Fourth ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44493	0x118C	103 Fourth ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44494	0x118D	103 Fourth ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44495	0x118E	103 Fourth ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44496	0x118F	103 Fourth ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44497	0x1190	103 Fourth ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44498	0x1191	103 Fourth ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44499	0x1192	103 Fourth ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44500	0x1193	103 Fourth ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44501	0x1194	103 Fourth ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44502	0x1195	103 Fourth ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44503	0x1196	103 Fourth ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44504	0x1197	103 Fourth ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44505	0x1198	103 Fourth ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44506	0x1199	103 Fourth ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44507	0x119A	103 Fourth ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
PASSWORD SECURITY									
44536	0x11B7	Security Passcode Master 1	0	1	1	---	F22	0	1
44537	0x11B8	Security Passcode Master 2	0	1	1	---	F22	0	1
44538	0x11B9	Security Passcode Master 3	0	1	1	---	F22	0	1
44539	0x11BA	Security Passcode Master 4	0	1	1	---	F22	0	1
44540	0x11BB	Security Passcode Master 5	0	1	1	---	F22	0	1
44541	0x11BC	Security Passcode Local Setpoint 1	0	1	1	---	F22	0	1
44542	0x11BD	Security Passcode Local Setpoint 2	0	1	1	---	F22	0	1
44543	0x11BE	Security Passcode Local Setpoint 3	0	1	1	---	F22	0	1
44544	0x11BF	Security Passcode Local Setpoint 4	0	1	1	---	F22	0	1
44545	0x11C0	Security Passcode Local Setpoint 5	0	1	1	---	F22	0	1
44546	0x11C1	Security Passcode Local Control 1	0	1	1	---	F22	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44547	0x11C2	Security Passcode Local Control 2	0	1	1	---	F22	0	1
44548	0x11C3	Security Passcode Local Control 3	0	1	1	---	F22	0	1
44549	0x11C4	Security Passcode Local Control 4	0	1	1	---	F22	0	1
44550	0x11C5	Security Passcode Local Control 5	0	1	1	---	F22	0	1
44551	0x11C6	Security Passcode Remote Setpoint 1	0	1	1	---	F22	0	1
44552	0x11C7	Security Passcode Remote Setpoint 2	0	1	1	---	F22	0	1
44553	0x11C8	Security Passcode Remote Setpoint 3	0	1	1	---	F22	0	1
44554	0x11C9	Security Passcode Remote Setpoint 4	0	1	1	---	F22	0	1
44555	0x11CA	Security Passcode Remote Setpoint 5	0	1	1	---	F22	0	1
44556	0x11CB	Security Passcode Remote Control 1	0	1	1	---	F22	0	1
44557	0x11CC	Security Passcode Remote Control 2	0	1	1	---	F22	0	1
44558	0x11CD	Security Passcode Remote Control 3	0	1	1	---	F22	0	1
44559	0x11CE	Security Passcode Remote Control 4	0	1	1	---	F22	0	1
44560	0x11CF	Security Passcode Remote Control 5	0	1	1	---	F22	0	1
44561	0x11D0	Security Passcode Entry Master 1	0	1	1	---	F22	0	1
44562	0x11D1	Security Passcode Entry Master 2	0	1	1	---	F22	0	1
44563	0x11D2	Security Passcode Entry Master 3	0	1	1	---	F22	0	1
44564	0x11D3	Security Passcode Entry Master 4	0	1	1	---	F22	0	1
44565	0x11D4	Security Passcode Entry Master 5	0	1	1	---	F22	0	1
44566	0x11D5	Security Passcode Entry Setpoints 1	0	1	1	---	F22	0	1
44567	0x11D6	Security Passcode Entry Setpoints 2	0	1	1	---	F22	0	1
44568	0x11D7	Security Passcode Entry Setpoints 3	0	1	1	---	F22	0	1
44569	0x11D8	Security Passcode Entry Setpoints 4	0	1	1	---	F22	0	1
44570	0x11D9	Security Passcode Entry Setpoints 5	0	1	1	---	F22	0	1
44571	0x11DA	Security Passcode Entry Control 1	0	1	1	---	F22	0	1
44572	0x11DB	Security Passcode Entry Control 2	0	1	1	---	F22	0	1
44573	0x11DC	Security Passcode Entry Control 3	0	1	1	---	F22	0	1
44574	0x11DD	Security Passcode Entry Control 4	0	1	1	---	F22	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44575	0x11DE	Security Passcode Entry Control 5	0	1	1	---	F22	0	1
44576	0x11DF	Overwrite Local Setpoint Password	0	1	1	---	FC103A	0	1
VIRTUAL INPUT FUNCTION									
44580	0x11E3	Virtual Input 1 Function	0	1	1	---	FC126	0	1
44581	0x11E4	Virtual Input 2 Function	0	1	1	---	FC126	0	1
44582	0x11E5	Virtual Input 3 Function	0	1	1	---	FC126	0	1
44583	0x11E6	Virtual Input 4 Function	0	1	1	---	FC126	0	1
44584	0x11E7	Virtual Input 5 Function	0	1	1	---	FC126	0	1
44585	0x11E8	Virtual Input 6 Function	0	1	1	---	FC126	0	1
44586	0x11E9	Virtual Input 7 Function	0	1	1	---	FC126	0	1
44587	0x11EA	Virtual Input 8 Function	0	1	1	---	FC126	0	1
44588	0x11EB	Virtual Input 9 Function	0	1	1	---	FC126	0	1
44589	0x11EC	Virtual Input 10 Function	0	1	1	---	FC126	0	1
44590	0x11ED	Virtual Input 11 Function	0	1	1	---	FC126	0	1
44591	0x11EE	Virtual Input 12 Function	0	1	1	---	FC126	0	1
44592	0x11EF	Virtual Input 13 Function	0	1	1	---	FC126	0	1
44593	0x11F0	Virtual Input 14 Function	0	1	1	---	FC126	0	1
44594	0x11F1	Virtual Input 15 Function	0	1	1	---	FC126	0	1
44595	0x11F2	Virtual Input 16 Function	0	1	1	---	FC126	0	1
44596	0x11F3	Virtual Input 17 Function	0	1	1	---	FC126	0	1
44597	0x11F4	Virtual Input 18 Function	0	1	1	---	FC126	0	1
44598	0x11F5	Virtual Input 19 Function	0	1	1	---	FC126	0	1
44599	0x11F6	Virtual Input 20 Function	0	1	1	---	FC126	0	1
44600	0x11F7	Virtual Input 21 Function	0	1	1	---	FC126	0	1
44601	0x11F8	Virtual Input 22 Function	0	1	1	---	FC126	0	1
44602	0x11F9	Virtual Input 23 Function	0	1	1	---	FC126	0	1
44603	0x11FA	Virtual Input 24 Function	0	1	1	---	FC126	0	1
44604	0x11FB	Virtual Input 25 Function	0	1	1	---	FC126	0	1
44605	0x11FC	Virtual Input 26 Function	0	1	1	---	FC126	0	1
44606	0x11FD	Virtual Input 27 Function	0	1	1	---	FC126	0	1
44607	0x11FE	Virtual Input 28 Function	0	1	1	---	FC126	0	1
44608	0x11FF	Virtual Input 29 Function	0	1	1	---	FC126	0	1
44609	0x1200	Virtual Input 30 Function	0	1	1	---	FC126	0	1
44610	0x1201	Virtual Input 31 Function	0	1	1	---	FC126	0	1
44611	0x1202	Virtual Input 32 Function	0	1	1	---	FC126	0	1
VIRTUAL INPUT TYPE									
44612	0x1203	Virtual Input 1 Type	0	1	1	---	FC199	0	1
44613	0x1204	Virtual Input 2 Type	0	1	1	---	FC199	0	1
44614	0x1205	Virtual Input 3 Type	0	1	1	---	FC199	0	1
44615	0x1206	Virtual Input 4 Type	0	1	1	---	FC199	0	1
44616	0x1207	Virtual Input 5 Type	0	1	1	---	FC199	0	1
44617	0x1208	Virtual Input 6 Type	0	1	1	---	FC199	0	1
44618	0x1209	Virtual Input 7 Type	0	1	1	---	FC199	0	1
44619	0x120A	Virtual Input 8 Type	0	1	1	---	FC199	0	1
44620	0x120B	Virtual Input 9 Type	0	1	1	---	FC199	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44621	0x120C	Virtual Input 10 Type	0	1	1	---	FC199	0	1
44622	0x120D	Virtual Input 11 Type	0	1	1	---	FC199	0	1
44623	0x120E	Virtual Input 12 Type	0	1	1	---	FC199	0	1
44624	0x120F	Virtual Input 13 Type	0	1	1	---	FC199	0	1
44625	0x1210	Virtual Input 14 Type	0	1	1	---	FC199	0	1
44626	0x1211	Virtual Input 15 Type	0	1	1	---	FC199	0	1
44627	0x1212	Virtual Input 16 Type	0	1	1	---	FC199	0	1
44628	0x1213	Virtual Input 17 Type	0	1	1	---	FC199	0	1
44629	0x1214	Virtual Input 18 Type	0	1	1	---	FC199	0	1
44630	0x1215	Virtual Input 19 Type	0	1	1	---	FC199	0	1
44631	0x1216	Virtual Input 20 Type	0	1	1	---	FC199	0	1
44632	0x1217	Virtual Input 21 Type	0	1	1	---	FC199	0	1
44633	0x1218	Virtual Input 22 Type	0	1	1	---	FC199	0	1
44634	0x1219	Virtual Input 23 Type	0	1	1	---	FC199	0	1
44635	0x121A	Virtual Input 24 Type	0	1	1	---	FC199	0	1
44636	0x121B	Virtual Input 25 Type	0	1	1	---	FC199	0	1
44637	0x121C	Virtual Input 26 Type	0	1	1	---	FC199	0	1
44638	0x121D	Virtual Input 27 Type	0	1	1	---	FC199	0	1
44639	0x121E	Virtual Input 28 Type	0	1	1	---	FC199	0	1
44640	0x121F	Virtual Input 29 Type	0	1	1	---	FC199	0	1
44641	0x1220	Virtual Input 30 Type	0	1	1	---	FC199	0	1
44642	0x1221	Virtual Input 31 Type	0	1	1	---	FC199	0	1
44643	0x1222	Virtual Input 32 Type	0	1	1	---	FC199	0	1
IEC61850 GOOSE									
44645	0x1224	Enable GOOSE Transmission	0	1	1	---	FC126	0	1
44646	0x1225	Enable GOOSE	0	1	1	---	FC126	0	1
44647	0x1226	GOOSE Name	0	20	1	---	F22	SR3_GOOSE 1	20
44667	0x123A	VLAN Identifier	0	4095	1	---	F1	0	1
44668	0x123B	VLAN Priority	1	7	1	---	F1	4	1
44669	0x123C	Application Identifier	0	0x3FFF	1	---	F1	0	1
44670	0x123D	Update Time	1000	60000	1	ms	F1	10000	1
44671	0x123E	DataSet Name	0	20	1	---	F22	GOOSE1	20
44691	0x1252	Control Block Name	0	20	1	---	F22	gcb01	20
44711	0x1266	Conf Revision Number	1	0xFFFF	1	---	F1	1	1
44712	0x1267	Destination MAC Address	0	0xFFFF	1	---	FC214	0	3
44715	0x126A	MMS TCP Port Number	1	65535	1	---	F1	102	1
44716	0x126B	TCP Connection Timeout	10	1800	1	s	F1	120	1
IEC61850 GOOSE TRANSMISSION DATASET ITEMS									
44718	0x126D	DataSet Item 1	0	0xFFFF	1	---	FC134B	0	1
44719	0x126E	Item 1 Quality	0	1	1	---	FC126	0	1
44720	0x126F	DataSet Item 2	0	0xFFFF	1	---	FC134B	0	1
44721	0x1270	Item 2 Quality	0	1	1	---	FC126	0	1
44722	0x1271	DataSet Item 3	0	0xFFFF	1	---	FC134B	0	1
44723	0x1272	Item 3 Quality	0	1	1	---	FC126	0	1
44724	0x1273	DataSet Item 4	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44725	0x1274	Item 4 Quality	0	1	1	---	FC126	0	1
44726	0x1275	DataSet Item 5	0	0xFFFF	1	---	FC134B	0	1
44727	0x1276	Item 5 Quality	0	1	1	---	FC126	0	1
44728	0x1277	DataSet Item 6	0	0xFFFF	1	---	FC134B	0	1
44729	0x1278	Item 6 Quality	0	1	1	---	FC126	0	1
44730	0x1279	DataSet Item 7	0	0xFFFF	1	---	FC134B	0	1
44731	0x127A	Item 7 Quality	0	1	1	---	FC126	0	1
44732	0x127B	DataSet Item 8	0	0xFFFF	1	---	FC134B	0	1
44733	0x127C	Item 8 Quality	0	1	1	---	FC126	0	1
44734	0x127D	DataSet Item 9	0	0xFFFF	1	---	FC134B	0	1
44735	0x127E	Item 9 Quality	0	1	1	---	FC126	0	1
44736	0x127F	DataSet Item 10	0	0xFFFF	1	---	FC134B	0	1
44737	0x1280	Item 10 Quality	0	1	1	---	FC126	0	1
44738	0x1281	DataSet Item 11	0	0xFFFF	1	---	FC134B	0	1
44739	0x1282	Item 11 Quality	0	1	1	---	FC126	0	1
44740	0x1283	DataSet Item 12	0	0xFFFF	1	---	FC134B	0	1
44741	0x1284	Item 12 Quality	0	1	1	---	FC126	0	1
44742	0x1285	DataSet Item 13	0	0xFFFF	1	---	FC134B	0	1
44743	0x1286	Item 13 Quality	0	1	1	---	FC126	0	1
44744	0x1287	DataSet Item 14	0	0xFFFF	1	---	FC134B	0	1
44745	0x1288	Item 14 Quality	0	1	1	---	FC126	0	1
44746	0x1289	DataSet Item 15	0	0xFFFF	1	---	FC134B	0	1
44747	0x128A	Item 15 Quality	0	1	1	---	FC126	0	1
44748	0x128B	DataSet Item 16	0	0xFFFF	1	---	FC134B	0	1
44749	0x128C	Item 16 Quality	0	1	1	---	FC126	0	1
44750	0x128D	DataSet Item 17	0	0xFFFF	1	---	FC134B	0	1
44751	0x128E	Item 17 Quality	0	1	1	---	FC126	0	1
44752	0x128F	DataSet Item 18	0	0xFFFF	1	---	FC134B	0	1
44753	0x1290	Item 18 Quality	0	1	1	---	FC126	0	1
44754	0x1291	DataSet Item 19	0	0xFFFF	1	---	FC134B	0	1
44755	0x1292	Item 19 Quality	0	1	1	---	FC126	0	1
44756	0x1293	DataSet Item 20	0	0xFFFF	1	---	FC134B	0	1
44757	0x1294	Item 20 Quality	0	1	1	---	FC126	0	1
44758	0x1295	DataSet Item 21	0	0xFFFF	1	---	FC134B	0	1
44759	0x1296	Item 21 Quality	0	1	1	---	FC126	0	1
44760	0x1297	DataSet Item 22	0	0xFFFF	1	---	FC134B	0	1
44761	0x1298	Item 22 Quality	0	1	1	---	FC126	0	1
44762	0x1299	DataSet Item 23	0	0xFFFF	1	---	FC134B	0	1
44763	0x129A	Item 23 Quality	0	1	1	---	FC126	0	1
44764	0x129B	DataSet Item 24	0	0xFFFF	1	---	FC134B	0	1
44765	0x129C	Item 24 Quality	0	1	1	---	FC126	0	1
44766	0x129D	DataSet Item 25	0	0xFFFF	1	---	FC134B	0	1
44767	0x129E	Item 25 Quality	0	1	1	---	FC126	0	1
44768	0x129F	DataSet Item 26	0	0xFFFF	1	---	FC134B	0	1
44769	0x12A0	Item 26 Quality	0	1	1	---	FC126	0	1
44770	0x12A1	DataSet Item 27	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44771	0x12A2	Item 27 Quality	0	1	1	---	FC126	0	1
44772	0x12A3	DataSet Item 28	0	0xFFFF	1	---	FC134B	0	1
44773	0x12A4	Item 28 Quality	0	1	1	---	FC126	0	1
44774	0x12A5	DataSet Item 29	0	0xFFFF	1	---	FC134B	0	1
44775	0x12A6	Item 29 Quality	0	1	1	---	FC126	0	1
44776	0x12A7	DataSet Item 30	0	0xFFFF	1	---	FC134B	0	1
44777	0x12A8	Item 30 Quality	0	1	1	---	FC126	0	1
44778	0x12A9	DataSet Item 31	0	0xFFFF	1	---	FC134B	0	1
44779	0x12AA	Item 31 Quality	0	1	1	---	FC126	0	1
44780	0x12AB	DataSet Item 32	0	0xFFFF	1	---	FC134B	0	1
44781	0x12AC	Item 32 Quality	0	1	1	---	FC126	0	1
IEC61850 GOOSE RX1 CONFIGURATION									
44786	0x12B1	Rx GOOSE1 Function	0	1	1	---	FC126	0	1
44787	0x12B2	Rx GOOSE1 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE1	20
44807	0x12C6	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44827	0x12DA	RX1 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb01	20
44847	0x12EE	RX1 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44848	0x12EF	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX2 CONFIGURATION									
44852	0x12F3	Rx GOOSE2 Function	0	1	1	---	FC126	0	1
44853	0x12F4	Rx GOOSE2 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE2	20
44873	0x1308	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44893	0x131C	RX2 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb02	20
44913	0x1330	RX2 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44914	0x1331	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX3 CONFIGURATION									
44918	0x1335	Rx GOOSE3 Function	0	1	1	---	FC126	0	1
44919	0x1336	Rx GOOSE3 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE3	20
44939	0x134A	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44959	0x135E	RX3 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb03	20
44979	0x1372	RX3 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44980	0x1373	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX4 CONFIGURATION									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44984	0x1377	Rx GOOSE4 Function	0	1	1	---	FC126	0	1
44985	0x1378	Rx GOOSE4 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE4	20
45005	0x138C	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45025	0x13A0	RX4 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb04	20
45045	0x13B4	RX4 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45046	0x13B5	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX5 CONFIGURATION									
45050	0x13B9	Rx GOOSE5 Function	0	1	1	---	FC126	0	1
45051	0x13BA	Rx GOOSE5 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE5	20
45071	0x13CE	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45091	0x13E2	RX5 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb05	20
45111	0x13F6	RX5 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45112	0x13F7	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX6 CONFIGURATION									
45116	0x13FB	Rx GOOSE6 Function	0	1	1	---	FC126	0	1
45117	0x13FC	Rx GOOSE6 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE6	20
45137	0x1410	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45157	0x1424	RX6 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb06	20
45177	0x1438	RX6 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45178	0x1439	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX7 CONFIGURATION									
45182	0x143D	Rx GOOSE7 Function	0	1	1	---	FC126	0	1
45183	0x143E	Rx GOOSE7 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE7	20
45203	0x1452	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45223	0x1466	RX7 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb07	20
45243	0x147A	RX7 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45244	0x147B	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX8 CONFIGURATION									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45248	0x147F	Rx GOOSE8 Function	0	1	1	---	FC126	0	1
45249	0x1480	Rx GOOSE8 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE8	20
45269	0x1494	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45289	0x14A8	RX8 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb08	20
45309	0x14BC	RX8 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45310	0x14BD	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE DATASET STRUCTURE BUFFER									
45314	0x14C1	DataSet Struct Buffer	0	0xFFFF	1	---	FC216	0	250
IEC61850 GOOSE REMOTE INPUTS									
45567	0x15BE	Remote Input 1 Name	0	7	1	---	F22	RI 1	7
45583	0x15CE	Remote Input 1 GOOSE Source	0	0x80	1	---	FC219	0	1
45584	0x15CF	Remote Input 1 Item Source	0	0xFFFF	1	---	FC217	0	1
45585	0x15D0	Remote Input 1 Item Mask	0	0xFFFF	1	---	FC218	0	1
45586	0x15D1	Remote Input 1 Default State	0	3	1	---	FC220	1	1
45588	0x15D3	Remote Input 2 Name	0	7	1	---	F22	RI 2	7
45604	0x15E3	Remote Input 2 GOOSE Source	0	0x80	1	---	FC219	0	1
45605	0x15E4	Remote Input 2 Item Source	0	0xFFFF	1	---	FC217	0	1
45606	0x15E5	Remote Input 2 Item Mask	0	0xFFFF	1	---	FC218	0	1
45607	0x15E6	Remote Input 2 Default State	0	3	1	---	FC220	1	1
45609	0x15E8	Remote Input 3 Name	0	7	1	---	F22	RI 3	7
45625	0x15F8	Remote Input 3 GOOSE Source	0	0x80	1	---	FC219	0	1
45626	0x15F9	Remote Input 3 Item Source	0	0xFFFF	1	---	FC217	0	1
45627	0x15FA	Remote Input 3 Item Mask	0	0xFFFF	1	---	FC218	0	1
45628	0x15FB	Remote Input 3 Default State	0	3	1	---	FC220	1	1
45630	0x15FD	Remote Input 4 Name	0	7	1	---	F22	RI 4	7
45646	0x160D	Remote Input 4 GOOSE Source	0	0x80	1	---	FC219	0	1
45647	0x160E	Remote Input 4 Item Source	0	0xFFFF	1	---	FC217	0	1
45648	0x160F	Remote Input 4 Item Mask	0	0xFFFF	1	---	FC218	0	1
45649	0x1610	Remote Input 4 Default State	0	3	1	---	FC220	1	1
45651	0x1612	Remote Input 5 Name	0	7	1	---	F22	RI 5	7
45667	0x1622	Remote Input 5 GOOSE Source	0	0x80	1	---	FC219	0	1
45668	0x1623	Remote Input 5 Item Source	0	0xFFFF	1	---	FC217	0	1
45669	0x1624	Remote Input 5 Item Mask	0	0xFFFF	1	---	FC218	0	1
45670	0x1625	Remote Input 5 Default State	0	3	1	---	FC220	1	1
45672	0x1627	Remote Input 6 Name	0	7	1	---	F22	RI 6	7

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45688	0x1637	Remote Input 6 GOOSE Source	0	0x80	1	---	FC219	0	1
45689	0x1638	Remote Input 6 Item Source	0	0xFFFF	1	---	FC217	0	1
45690	0x1639	Remote Input 6 Item Mask	0	0xFFFF	1	---	FC218	0	1
45691	0x163A	Remote Input 6 Default State	0	3	1	---	FC220	1	1
45693	0x163C	Remote Input 7 Name	0	7	1	---	F22	RI 7	7
45709	0x164C	Remote Input 7 GOOSE Source	0	0x80	1	---	FC219	0	1
45710	0x164D	Remote Input 7 Item Source	0	0xFFFF	1	---	FC217	0	1
45711	0x164E	Remote Input 7 Item Mask	0	0xFFFF	1	---	FC218	0	1
45712	0x164F	Remote Input 7 Default State	0	3	1	---	FC220	1	1
45714	0x1651	Remote Input 8 Name	0	7	1	---	F22	RI 8	7
45730	0x1661	Remote Input 8 GOOSE Source	0	0x80	1	---	FC219	0	1
45731	0x1662	Remote Input 8 Item Source	0	0xFFFF	1	---	FC217	0	1
45732	0x1663	Remote Input 8 Item Mask	0	0xFFFF	1	---	FC218	0	1
45733	0x1664	Remote Input 8 Default State	0	3	1	---	FC220	1	1
45735	0x1666	Remote Input 9 Name	0	7	1	---	F22	RI 9	7
45751	0x1676	Remote Input 9 GOOSE Source	0	0x80	1	---	F1	0	1
45752	0x1677	Remote Input 9 Item Source	0	0xFFFF	1	---	FC217	0	1
45753	0x1678	Remote Input 9 Item Mask	0	0xFFFF	1	---	FC218	0	1
45754	0x1679	Remote Input 9 Default State	0	3	1	---	FC220	1	1
45756	0x167B	Remote Input 10 Name	0	7	1	---	F22	RI 10	7
45772	0x168B	Remote Input 10 GOOSE Source	0	0x80	1	---	F1	0	1
45773	0x168C	Remote Input 10 Item Source	0	0xFFFF	1	---	FC217	0	1
45774	0x168D	Remote Input 10 Item Mask	0	0xFFFF	1	---	FC218	0	1
45775	0x168E	Remote Input 10 Default State	0	3	1	---	FC220	1	1
45777	0x1690	Remote Input 11 Name	0	7	1	---	F22	RI 11	7
45793	0x16A0	Remote Input 11 GOOSE Source	0	0x80	1	---	F1	0	1
45794	0x16A1	Remote Input 11 Item Source	0	0xFFFF	1	---	FC217	0	1
45795	0x16A2	Remote Input 11 Item Mask	0	0xFFFF	1	---	FC218	0	1
45796	0x16A3	Remote Input 11 Default State	0	3	1	---	FC220	1	1
45798	0x16A5	Remote Input 12 Name	0	7	1	---	F22	RI 12	7
45814	0x16B5	Remote Input 12 GOOSE Source	0	0x80	1	---	F1	0	1
45815	0x16B6	Remote Input 12 Item Source	0	0xFFFF	1	---	FC217	0	1
45816	0x16B7	Remote Input 12 Item Mask	0	0xFFFF	1	---	FC218	0	1
45817	0x16B8	Remote Input 12 Default State	0	3	1	---	FC220	1	1
45819	0x16BA	Remote Input 13 Name	0	7	1	---	F22	RI 13	7

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45835	0x16CA	Remote Input 13 GOOSE Source	0	0x80	1	---	F1	0	1
45836	0x16CB	Remote Input 13 Item Source	0	0xFFFF	1	---	FC217	0	1
45837	0x16CC	Remote Input 13 Item Mask	0	0xFFFF	1	---	FC218	0	1
45838	0x16CD	Remote Input 13 Default State	0	3	1	---	FC220	1	1
45840	0x16CF	Remote Input 14 Name	0	7	1	---	F22	RI 14	7
45856	0x16DF	Remote Input 14 GOOSE Source	0	0x80	1	---	F1	0	1
45857	0x16E0	Remote Input 14 Item Source	0	0xFFFF	1	---	FC217	0	1
45858	0x16E1	Remote Input 14 Item Mask	0	0xFFFF	1	---	FC218	0	1
45859	0x16E2	Remote Input 14 Default State	0	3	1	---	FC220	1	1
45861	0x16E4	Remote Input 15 Name	0	7	1	---	F22	RI 15	7
45877	0x16F4	Remote Input 15 GOOSE Source	0	0x80	1	---	F1	0	1
45878	0x16F5	Remote Input 15 Item Source	0	0xFFFF	1	---	FC217	0	1
45879	0x16F6	Remote Input 15 Item Mask	0	0xFFFF	1	---	FC218	0	1
45880	0x16F7	Remote Input 15 Default State	0	3	1	---	FC220	1	1
45882	0x16F9	Remote Input 16 Name	0	7	1	---	F22	RI 16	7
45898	0x1709	Remote Input 16 GOOSE Source	0	0x80	1	---	F1	0	1
45899	0x170A	Remote Input 16 Item Source	0	0xFFFF	1	---	FC217	0	1
45900	0x170B	Remote Input 16 Item Mask	0	0xFFFF	1	---	FC218	0	1
45901	0x170C	Remote Input 16 Default State	0	3	1	---	FC220	1	1
45903	0x170E	Remote Input 17 Name	0	7	1	---	F22	RI 17	7
45919	0x171E	Remote Input 17 GOOSE Source	0	0x80	1	---	F1	0	1
45920	0x171F	Remote Input 17 Item Source	0	0xFFFF	1	---	FC217	0	1
45921	0x1720	Remote Input 17 Item Mask	0	0xFFFF	1	---	FC218	0	1
45922	0x1721	Remote Input 17 Default State	0	3	1	---	FC220	1	1
45924	0x1723	Remote Input 18 Name	0	7	1	---	F22	RI 18	7
45940	0x1733	Remote Input 18 GOOSE Source	0	0x80	1	---	F1	0	1
45941	0x1734	Remote Input 18 Item Source	0	0xFFFF	1	---	FC217	0	1
45942	0x1735	Remote Input 18 Item Mask	0	0xFFFF	1	---	FC218	0	1
45943	0x1736	Remote Input 18 Default State	0	3	1	---	FC220	1	1
45945	0x1738	Remote Input 19 Name	0	7	1	---	F22	RI 19	7
45961	0x1748	Remote Input 19 GOOSE Source	0	0x80	1	---	F1	0	1
45962	0x1749	Remote Input 19 Item Source	0	0xFFFF	1	---	FC217	0	1
45963	0x174A	Remote Input 19 Item Mask	0	0xFFFF	1	---	FC218	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45964	0x174B	Remote Input 19 Default State	0	3	1	---	FC220	1	1
45966	0x174D	Remote Input 20 Name	0	7	1	---	F22	RI 20	7
45982	0x175D	Remote Input 20 GOOSE Source	0	0x80	1	---	F1	0	1
45983	0x175E	Remote Input 20 Item Source	0	0xFFFF	1	---	FC217	0	1
45984	0x175F	Remote Input 20 Item Mask	0	0xFFFF	1	---	FC218	0	1
45985	0x1760	Remote Input 20 Default State	0	3	1	---	FC220	1	1
45987	0x1762	Remote Input 21 Name	0	7	1	---	F22	RI 21	7
46003	0x1772	Remote Input 21 GOOSE Source	0	0x80	1	---	F1	0	1
46004	0x1773	Remote Input 21 Item Source	0	0xFFFF	1	---	FC217	0	1
46005	0x1774	Remote Input 21 Item Mask	0	0xFFFF	1	---	FC218	0	1
46006	0x1775	Remote Input 21 Default State	0	3	1	---	FC220	1	1
46008	0x1777	Remote Input 22 Name	0	7	1	---	F22	RI 22	7
46024	0x1787	Remote Input 22 GOOSE Source	0	0x80	1	---	F1	0	1
46025	0x1788	Remote Input 22 Item Source	0	0xFFFF	1	---	FC217	0	1
46026	0x1789	Remote Input 22 Item Mask	0	0xFFFF	1	---	FC218	0	1
46027	0x178A	Remote Input 22 Default State	0	3	1	---	FC220	1	1
46029	0x178C	Remote Input 23 Name	0	7	1	---	F22	RI 23	7
46045	0x179C	Remote Input 23 GOOSE Source	0	0x80	1	---	F1	0	1
46046	0x179D	Remote Input 23 Item Source	0	0xFFFF	1	---	FC217	0	1
46047	0x179E	Remote Input 23 Item Mask	0	0xFFFF	1	---	FC218	0	1
46048	0x179F	Remote Input 23 Default State	0	3	1	---	FC220	1	1
46050	0x17A1	Remote Input 24 Name	0	7	1	---	F22	RI 24	7
46066	0x17B1	Remote Input 24 GOOSE Source	0	0x80	1	---	F1	0	1
46067	0x17B2	Remote Input 24 Item Source	0	0xFFFF	1	---	FC217	0	1
46068	0x17B3	Remote Input 24 Item Mask	0	0xFFFF	1	---	FC218	0	1
46069	0x17B4	Remote Input 24 Default State	0	3	1	---	FC220	1	1
46071	0x17B6	Remote Input 25 Name	0	7	1	---	F22	RI 25	7
46087	0x17C6	Remote Input 25 GOOSE Source	0	0x80	1	---	F1	0	1
46088	0x17C7	Remote Input 25 Item Source	0	0xFFFF	1	---	FC217	0	1
46089	0x17C8	Remote Input 25 Item Mask	0	0xFFFF	1	---	FC218	0	1
46090	0x17C9	Remote Input 25 Default State	0	3	1	---	FC220	1	1
46092	0x17CB	Remote Input 26 Name	0	7	1	---	F22	RI 26	7
46108	0x17DB	Remote Input 26 GOOSE Source	0	0x80	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46109	0x17DC	Remote Input 26 Item Source	0	0xFFFF	1	---	FC217	0	1
46110	0x17DD	Remote Input 26 Item Mask	0	0xFFFF	1	---	FC218	0	1
46111	0x17DE	Remote Input 26 Default State	0	3	1	---	FC220	1	1
46113	0x17E0	Remote Input 27 Name	0	7	1	---	F22	RI 27	7
46129	0x17F0	Remote Input 27 GOOSE Source	0	0x80	1	---	F1	0	1
46130	0x17F1	Remote Input 27 Item Source	0	0xFFFF	1	---	FC217	0	1
46131	0x17F2	Remote Input 27 Item Mask	0	0xFFFF	1	---	FC218	0	1
46132	0x17F3	Remote Input 27 Default State	0	3	1	---	FC220	1	1
46134	0x17F5	Remote Input 28 Name	0	7	1	---	F22	RI 28	7
46150	0x1805	Remote Input 28 GOOSE Source	0	0x80	1	---	F1	0	1
46151	0x1806	Remote Input 28 Item Source	0	0xFFFF	1	---	FC217	0	1
46152	0x1807	Remote Input 28 Item Mask	0	0xFFFF	1	---	FC218	0	1
46153	0x1808	Remote Input 28 Default State	0	3	1	---	FC220	1	1
46155	0x180A	Remote Input 29 Name	0	7	1	---	F22	RI 29	7
46171	0x181A	Remote Input 29 GOOSE Source	0	0x80	1	---	F1	0	1
46172	0x181B	Remote Input 29 Item Source	0	0xFFFF	1	---	FC217	0	1
46173	0x181C	Remote Input 29 Item Mask	0	0xFFFF	1	---	FC218	0	1
46174	0x181D	Remote Input 29 Default State	0	3	1	---	FC220	1	1
46176	0x181F	Remote Input 30 Name	0	7	1	---	F22	RI 30	7
46192	0x182F	Remote Input 30 GOOSE Source	0	0x80	1	---	F1	0	1
46193	0x1830	Remote Input 30 Item Source	0	0xFFFF	1	---	FC217	0	1
46194	0x1831	Remote Input 30 Item Mask	0	0xFFFF	1	---	FC218	0	1
46195	0x1832	Remote Input 30 Default State	0	3	1	---	FC220	1	1
46197	0x1834	Remote Input 31 Name	0	7	1	---	F22	RI 31	7
46213	0x1844	Remote Input 31 GOOSE Source	0	0x80	1	---	F1	0	1
46214	0x1845	Remote Input 31 Item Source	0	0xFFFF	1	---	FC217	0	1
46215	0x1846	Remote Input 31 Item Mask	0	0xFFFF	1	---	FC218	0	1
46216	0x1847	Remote Input 31 Default State	0	3	1	---	FC220	1	1
46218	0x1849	Remote Input 32 Name	0	7	1	---	F22	RI 32	7
46234	0x1859	Remote Input 32 GOOSE Source	0	0x80	1	---	F1	0	1
46235	0x185A	Remote Input 32 Item Source	0	0xFFFF	1	---	FC217	0	1
46236	0x185B	Remote Input 32 Item Mask	0	0xFFFF	1	---	FC218	0	1
46237	0x185C	Remote Input 32 Default State	0	3	1	---	FC220	1	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
BKR HEALTH									
46428	0x191B	Breaker Health Function	0	2	1	---	FC206	0	1
46429	0x191C	Breaker Health Mode	0	1	1	---	FC433	0	1
46430	0x191D	Breaker Health Limit	0	100000	1	---	F9	0	2
46432	0x191F	Breaker Health Trip Time Pickup	0	1000	1	s	F3	5	1
46433	0x1920	Breaker Health Close Time Pickup	0	1000	1	s	F3	5	1
46434	0x1921	Breaker Health Charge Time Pickup	0	6000	1	s	F3	1500	1
46435	0x1922	Breaker Health Spring Charge Input	0	0xEF02	1	---	F89A	0	1
46436	0x1923	Breaker Health Block1	0	0xEF02	1	---	F89	0	1
46437	0x1924	Breaker Health Block2	0	0xEF02	1	---	F89	0	1
46438	0x1925	Breaker Health Block3	0	0xEF02	1	---	F89	0	1
46439	0x1926	Breaker Health Output Relays	0	0x7F	1	---	FC198	0	1
46452	0x1933	Breaker Health Incomp Trp/Cls Time	0	60000	1	s	F3	10	1
46453	0x1934	Breaker Health Incomp Charge Time	0	60000	1	s	F3	4500	1
LOGIC ELEMENT NAMES									
46240	0x185F	Logic Element 1 Name	0	9	1	---	F22	Logic El #1	9
46249	0x1868	Logic Element 2 Name	0	9	1	---	F22	Logic El #2	9
46258	0x1871	Logic Element 3 Name	0	9	1	---	F22	Logic El #3	9
46267	0x187A	Logic Element 4 Name	0	9	1	---	F22	Logic El #4	9
46276	0x1883	Logic Element 5 Name	0	9	1	---	F22	Logic El #5	9
46285	0x188C	Logic Element 6 Name	0	9	1	---	F22	Logic El #6	9
46294	0x1895	Logic Element 7 Name	0	9	1	---	F22	Logic El #7	9
46303	0x189E	Logic Element 8 Name	0	9	1	---	F22	Logic El #8	9
46314	0x18A9	High Speed Undercurrent Block 1	0	0xEF02	1	---	F89	0	1
46315	0x18AA	High Speed Undercurrent Block 2	0	0xEF02	1	---	F89	0	1
46316	0x18AB	High Speed Undercurrent Block 3	0	0xEF02	1	---	F89	0	1
46492	0x195B	Logic Element 9 Name	0	9	1	---	F22	Logic El #9	9
46501	0x1964	Logic Element 10 Name	0	9	1	---	F22	Logic El #10	9
46510	0x196D	Logic Element 11 Name	0	9	1	---	F22	Logic El #11	9
46519	0x1976	Logic Element 12 Name	0	9	1	---	F22	Logic El #12	9
46528	0x197F	Logic Element 13 Name	0	9	1	---	F22	Logic El #13	9
46537	0x1988	Logic Element 14 Name	0	9	1	---	F22	Logic El #14	9
46546	0x1991	Logic Element 15 Name	0	9	1	---	F22	Logic El #15	9
46555	0x199A	Logic Element 16 Name	0	9	1	---	F22	Logic El #16	9
SETPOINT GROUP SETTINGS									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42604	0xA2B	Negative Sequence IOC Function	0	3	1	---	FC197	0	1
42605	0xA2C	Negative Sequence IOC Pickup	5	2000	1	x CT	F3	100	1
42606	0xA2D	Negative Sequence IOC Delay	0	30000	1	s	F3	0	1
46833	0x1AB0	Directional Power 1 Function	0	4	1	---	FC205	0	1
46834	0x1AB1	Directional Power 1 RCA	0	359	1	°	F1	0	1
46835	0x1AB2	Directional Power 1 SMIN	-1200	1200	1	x Rated Power	F7	100	1
46836	0x1AB3	Directional Power 1 Pickup Delay	0	6000	1	s	F2	5	1
46837	0x1AB4	Directional Power 1 Output Relays 3-6	0	0x3F	1	---	FC198	0	1
46841	0x1AB8	Directional Power 2 Function	0	4	1	---	FC205	0	1
46842	0x1AB9	Directional Power 2 RCA	0	359	1	°	F1	0	1
46843	0x1ABA	Directional Power 2 SMIN	-1200	1200	1	x Rated Power	F7	100	1
46844	0x1ABB	Directional Power 2 Pickup Delay	0	6000	1	s	F2	5	1
46845	0x1ABC	Directional Power 2 Output Relays 3-6	0	0x3F	1	---	FC198	0	1
PROTECTION FUNCTION BLOCKING									
42644	0xA53	Neutral IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42645	0xA54	Neutral IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42646	0xA55	Neutral IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42686	0xA7D	Negative Sequence OV Block 1	0	0xEF02	1	---	F89	0	1
42687	0xA7E	Negative Sequence OV Block 2	0	0xEF02	1	---	F89	0	1
42688	0xA7F	Negative Sequence OV Block 3	0	0xEF02	1	---	F89	0	1
42692	0xA83	Phase OV Block 1	0	0xEF02	1	---	F89	0	1
42693	0xA84	Phase OV Block 2	0	0xEF02	1	---	F89	0	1
42694	0xA85	Phase OV Block 3	0	0xEF02	1	---	F89	0	1
42695	0xA86	Phase UV Block 1	0	0xEF02	1	---	F89	0	1
42696	0xA87	Phase UV Block 2	0	0xEF02	1	---	F89	0	1
42697	0xA88	Phase UV Block 3	0	0xEF02	1	---	F89	0	1
42704	0xA8F	Underfrequency 1 Block 1	0	0xEF02	1	---	F89	0	1
42705	0xA90	Underfrequency 1 Block 2	0	0xEF02	1	---	F89	0	1
42706	0xA91	Underfrequency 1 Block 3	0	0xEF02	1	---	F89	0	1
42707	0xA92	Underfrequency 2 Block 1	0	0xEF02	1	---	F89	0	1
42708	0xA93	Underfrequency 2 Block 2	0	0xEF02	1	---	F89	0	1
42709	0xA94	Underfrequency 2 Block 3	0	0xEF02	1	---	F89	0	1
42710	0xA95	Overfrequency 1 Block 1	0	0xEF02	1	---	F89	0	1
42711	0xA96	Overfrequency 1 Block 2	0	0xEF02	1	---	F89	0	1
42712	0xA97	Overfrequency 1 Block 3	0	0xEF02	1	---	F89	0	1
42713	0xA98	Overfrequency 2 Block 1	0	0xEF02	1	---	F89	0	1
42714	0xA99	Overfrequency 2 Block 2	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42715	0xA9A	Overfrequency 2 Block 3	0	0xEF02	1	---	F89	0	1
42716	0xA9B	Short Circuit Block 1	0	0xEF02	1	---	F89	0	1
42717	0xA9C	Short Circuit Block 2	0	0xEF02	1	---	F89	0	1
42718	0xA9D	Short Circuit Block 3	0	0xEF02	1	---	F89	0	1
42728	0xAA7	Negative Sequence IOC Block 1	0	0xEF02	1	---	F89	0	1
42729	0xAA8	Negative Sequence IOC Block 2	0	0xEF02	1	---	F89	0	1
42730	0xAA9	Negative Sequence IOC Block 3	0	0xEF02	1	---	F89	0	1
46323	0x18B2	Ground Trip Block 1	0	0xEF02	1	---	F89	0	1
46324	0x18B3	Ground Trip Block 2	0	0xEF02	1	---	F89	0	1
46325	0x18B4	Ground Trip Block 3	0	0xEF02	1	---	F89	0	1
46326	0x18B5	Load Increase Alarm Block 1	0	0xEF02	1	---	F89	0	1
46327	0x18B6	Load Increase Alarm Block 2	0	0xEF02	1	---	F89	0	1
46328	0x18B7	Load Increase Alarm Block 3	0	0xEF02	1	---	F89	0	1
46329	0x18B8	Current Unbalance Block 1	0	0xEF02	1	---	F89	0	1
46330	0x18B9	Current Unbalance Block 2	0	0xEF02	1	---	F89	0	1
46331	0x18BA	Current Unbalance Block 3	0	0xEF02	1	---	F89	0	1
46332	0x18BB	Undercurrent Block 1	0	0xEF02	1	---	F89	0	1
46333	0x18BC	Undercurrent Block 2	0	0xEF02	1	---	F89	0	1
46334	0x18BD	Undercurrent Block 3	0	0xEF02	1	---	F89	0	1
46335	0x18BE	Acceleration Block 1	0	0xEF02	1	---	F89	0	1
46336	0x18BF	Acceleration Block 2	0	0xEF02	1	---	F89	0	1
46337	0x18C0	Acceleration Block 3	0	0xEF02	1	---	F89	0	1
46338	0x18C1	Underpower Block 1	0	0xEF02	1	---	F89	0	1
46339	0x18C2	Underpower Block 2	0	0xEF02	1	---	F89	0	1
46340	0x18C3	Underpower Block 3	0	0xEF02	1	---	F89	0	1
46341	0x18C4	Mechanical Jam Block 1	0	0xEF02	1	---	F89	0	1
46342	0x18C5	Mechanical Jam Block 2	0	0xEF02	1	---	F89	0	1
46343	0x18C6	Mechanical Jam Block 3	0	0xEF02	1	---	F89	0	1
46356	0x18D3	RTD Trouble Block 1	0	0xEF02	1	---	F89	0	1
46357	0x18D4	RTD Trouble Block 2	0	0xEF02	1	---	F89	0	1
46358	0x18D5	RTD Trouble Block 3	0	0xEF02	1	---	F89	0	1
46359	0x18D6	High Speed SC Block 1	0	0xEF02	1	---	F89	0	1
46360	0x18D7	High Speed SC Block 2	0	0xEF02	1	---	F89	0	1
46361	0x18D8	High Speed SC Block 3	0	0xEF02	1	---	F89	0	1
46838	0x1AB5	Directional Power 1 Block 1	0	0xEF02	1	---	F89	0	1
46839	0x1AB6	Directional Power 1 Block 2	0	0xEF02	1	---	F89	0	1
46840	0x1AB7	Directional Power 1 Block 3	0	0xEF02	1	---	F89	0	1
46846	0x1ABD	Directional Power 2 Block 1	0	0xEF02	1	---	F89	0	1
46847	0x1ABE	Directional Power 2 Block 2	0	0xEF02	1	---	F89	0	1
46848	0x1ABF	Directional Power 2 Block 3	0	0xEF02	1	---	F89	0	1
FAULT REPORT									
46985	0x1B48	Fault Report Delay	0	60000	1	s	F3	10	1
46986	0x1B49	Fault Report Trigger	0	0xFFFF	1	---	FC134E	0x8002	1
ENHANCED LEARNED DATA									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46991	0x1B4E	Learned Data Record Selector	1	65535	1	---	F1	1	1
MOTOR START DATA LOGGER									
47001	0x1B58	Motor Data Log Number Selector	0	6	1	---	F1	1	1
47002	0x1B59	Motor Data Log Channel Selector	-32767	32767	1	---	F4	1	1
47003	0x1B5A	Motor Data Log Sample Selector	-32767	32767	1	---	F4	1	1
LOGIC ELEMENTS (TRIGGERS & BLOCKS)									
41123	0x462	Logic Element 1 Trigger Logic	0	5	1	---	FC149	0	1
41124	0x463	Logic Element 1 Block Logic	0	5	1	---	FC149	0	1
41131	0x46A	Logic Element 2 Trigger Logic	0	5	1	---	FC149	0	1
41132	0x46B	Logic Element 2 Block Logic	0	5	1	---	FC149	0	1
41139	0x472	Logic Element 3 Trigger Logic	0	5	1	---	FC149	0	1
41140	0x473	Logic Element 3 Block Logic	0	5	1	---	FC149	0	1
41147	0x47A	Logic Element 4 Trigger Logic	0	5	1	---	FC149	0	1
41148	0x47B	Logic Element 4 Block Logic	0	5	1	---	FC149	0	1
41155	0x482	Logic Element 5 Trigger Logic	0	5	1	---	FC149	0	1
41156	0x483	Logic Element 5 Block Logic	0	5	1	---	FC149	0	1
41163	0x48A	Logic Element 6 Trigger Logic	0	5	1	---	FC149	0	1
41164	0x48B	Logic Element 6 Block Logic	0	5	1	---	FC149	0	1
41171	0x492	Logic Element 7 Trigger Logic	0	5	1	---	FC149	0	1
41172	0x493	Logic Element 7 Block Logic	0	5	1	---	FC149	0	1
41179	0x49A	Logic Element 8 Trigger Logic	0	5	1	---	FC149	0	1
41180	0x49B	Logic Element 8 Block Logic	0	5	1	---	FC149	0	1
41187	0x4A2	Logic Element 9 Trigger Logic	0	5	1	---	FC149	0	1
41188	0x4A3	Logic Element 9 Block Logic	0	5	1	---	FC149	0	1
41195	0x4AA	Logic Element 10 Trigger Logic	0	5	1	---	FC149	0	1
41196	0x4AB	Logic Element 10 Block Logic	0	5	1	---	FC149	0	1
41203	0x4B2	Logic Element 11 Trigger Logic	0	5	1	---	FC149	0	1
41204	0x4B3	Logic Element 11 Block Logic	0	5	1	---	FC149	0	1
41211	0x4BA	Logic Element 12 Trigger Logic	0	5	1	---	FC149	0	1
41212	0x4BB	Logic Element 12 Block Logic	0	5	1	---	FC149	0	1
41219	0x4C2	Logic Element 13 Trigger Logic	0	5	1	---	FC149	0	1
41220	0x4C3	Logic Element 13 Block Logic	0	5	1	---	FC149	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
41227	0x4CA	Logic Element 14 Trigger Logic	0	5	1	---	FC149	0	1
41228	0x4CB	Logic Element 14 Block Logic	0	5	1	---	FC149	0	1
41235	0x4D2	Logic Element 15 Trigger Logic	0	5	1	---	FC149	0	1
41236	0x4D3	Logic Element 15 Block Logic	0	5	1	---	FC149	0	1
41243	0x4DA	Logic Element 16 Trigger Logic	0	5	1	---	FC149	0	1
41244	0x4DB	Logic Element 16 Block Logic	0	5	1	---	FC149	0	1
43470	0xD8D	Logic Element 1 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43471	0xD8E	Logic Element 1 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43472	0xD8F	Logic Element 1 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43473	0xD90	Logic Element 1 Block 1	0	0xFFFF	1	---	FC134B	0	1
43474	0xD91	Logic Element 1 Block 2	0	0xFFFF	1	---	FC134B	0	1
43475	0xD92	Logic Element 1 Block 3	0	0xFFFF	1	---	FC134B	0	1
43476	0xD93	Logic Element 2 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43477	0xD94	Logic Element 2 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43478	0xD95	Logic Element 2 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43479	0xD96	Logic Element 2 Block 1	0	0xFFFF	1	---	FC134B	0	1
43480	0xD97	Logic Element 2 Block 2	0	0xFFFF	1	---	FC134B	0	1
43481	0xD98	Logic Element 2 Block 3	0	0xFFFF	1	---	FC134B	0	1
43482	0xD99	Logic Element 3 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43483	0xD9A	Logic Element 3 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43484	0xD9B	Logic Element 3 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43485	0xD9C	Logic Element 3 Block 1	0	0xFFFF	1	---	FC134B	0	1
43486	0xD9D	Logic Element 3 Block 2	0	0xFFFF	1	---	FC134B	0	1
43487	0xD9E	Logic Element 3 Block 3	0	0xFFFF	1	---	FC134B	0	1
43488	0xD9F	Logic Element 4 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43489	0xDA0	Logic Element 4 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43490	0xDA1	Logic Element 4 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43491	0xDA2	Logic Element 4 Block 1	0	0xFFFF	1	---	FC134B	0	1
43492	0xDA3	Logic Element 4 Block 2	0	0xFFFF	1	---	FC134B	0	1
43493	0xDA4	Logic Element 4 Block 3	0	0xFFFF	1	---	FC134B	0	1
43494	0xDA5	Logic Element 5 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43495	0xDA6	Logic Element 5 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43496	0xDA7	Logic Element 5 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43497	0xDA8	Logic Element 5 Block 1	0	0xFFFF	1	---	FC134B	0	1
43498	0xDA9	Logic Element 5 Block 2	0	0xFFFF	1	---	FC134B	0	1
43499	0xDAA	Logic Element 5 Block 3	0	0xFFFF	1	---	FC134B	0	1
43500	0xDAB	Logic Element 6 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43501	0xDAC	Logic Element 6 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43502	0xDAD	Logic Element 6 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43503	0xDAE	Logic Element 6 Block 1	0	0xFFFF	1	---	FC134B	0	1
43504	0xDAF	Logic Element 6 Block 2	0	0xFFFF	1	---	FC134B	0	1
43505	0xDB0	Logic Element 6 Block 3	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43506	0xDB1	Logic Element 7 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43507	0xDB2	Logic Element 7 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43508	0xDB3	Logic Element 7 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43509	0xDB4	Logic Element 7 Block 1	0	0xFFFF	1	---	FC134B	0	1
43510	0xDB5	Logic Element 7 Block 2	0	0xFFFF	1	---	FC134B	0	1
43511	0xDB6	Logic Element 7 Block 3	0	0xFFFF	1	---	FC134B	0	1
43512	0xDB7	Logic Element 8 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43513	0xDB8	Logic Element 8 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43514	0xDB9	Logic Element 8 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43515	0xDBA	Logic Element 8 Block 1	0	0xFFFF	1	---	FC134B	0	1
43516	0xDBB	Logic Element 8 Block 2	0	0xFFFF	1	---	FC134B	0	1
43517	0xDBC	Logic Element 8 Block 3	0	0xFFFF	1	---	FC134B	0	1
46365	0x18DC	Logic Element 9 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46366	0x18DD	Logic Element 9 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46367	0x18DE	Logic Element 9 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46368	0x18DF	Logic Element 9 Block 1	0	0xFFFF	1	---	FC134B	0	1
46369	0x18E0	Logic Element 9 Block 2	0	0xFFFF	1	---	FC134B	0	1
46370	0x18E1	Logic Element 9 Block 3	0	0xFFFF	1	---	FC134B	0	1
46371	0x18E2	Logic Element 10 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46372	0x18E3	Logic Element 10 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46373	0x18E4	Logic Element 10 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46374	0x18E5	Logic Element 10 Block 1	0	0xFFFF	1	---	FC134B	0	1
46375	0x18E6	Logic Element 10 Block 2	0	0xFFFF	1	---	FC134B	0	1
46376	0x18E7	Logic Element 10 Block 3	0	0xFFFF	1	---	FC134B	0	1
46377	0x18E8	Logic Element 11 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46378	0x18E9	Logic Element 11 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46379	0x18EA	Logic Element 11 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46380	0x18EB	Logic Element 11 Block 1	0	0xFFFF	1	---	FC134B	0	1
46381	0x18EC	Logic Element 11 Block 2	0	0xFFFF	1	---	FC134B	0	1
46382	0x18ED	Logic Element 11 Block 3	0	0xFFFF	1	---	FC134B	0	1
46383	0x18EE	Logic Element 12 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46384	0x18EF	Logic Element 12 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46385	0x18F0	Logic Element 12 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46386	0x18F1	Logic Element 12 Block 1	0	0xFFFF	1	---	FC134B	0	1
46387	0x18F2	Logic Element 12 Block 2	0	0xFFFF	1	---	FC134B	0	1
46388	0x18F3	Logic Element 12 Block 3	0	0xFFFF	1	---	FC134B	0	1
46389	0x18F4	Logic Element 13 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46390	0x18F5	Logic Element 13 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46391	0x18F6	Logic Element 13 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46392	0x18F7	Logic Element 13 Block 1	0	0xFFFF	1	---	FC134B	0	1
46393	0x18F8	Logic Element 13 Block 2	0	0xFFFF	1	---	FC134B	0	1
46394	0x18F9	Logic Element 13 Block 3	0	0xFFFF	1	---	FC134B	0	1
46395	0x18FA	Logic Element 14 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46396	0x18FB	Logic Element 14 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46397	0x18FC	Logic Element 14 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46398	0x18FD	Logic Element 14 Block 1	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46399	0x18FE	Logic Element 14 Block 2	0	0xFFFF	1	---	FC134B	0	1
46400	0x18FF	Logic Element 14 Block 3	0	0xFFFF	1	---	FC134B	0	1
46401	0x1900	Logic Element 15 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46402	0x1901	Logic Element 15 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46403	0x1902	Logic Element 15 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46404	0x1903	Logic Element 15 Block 1	0	0xFFFF	1	---	FC134B	0	1
46405	0x1904	Logic Element 15 Block 2	0	0xFFFF	1	---	FC134B	0	1
46406	0x1905	Logic Element 15 Block 3	0	0xFFFF	1	---	FC134B	0	1
46407	0x1906	Logic Element 16 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46408	0x1907	Logic Element 16 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46409	0x1908	Logic Element 16 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46410	0x1909	Logic Element 16 Block 1	0	0xFFFF	1	---	FC134B	0	1
46411	0x190A	Logic Element 16 Block 2	0	0xFFFF	1	---	FC134B	0	1
46412	0x190B	Logic Element 16 Block 3	0	0xFFFF	1	---	FC134B	0	1
47012	0x1B63	Logic Element 1 Number of Triggers	2	8	1	---	F1	3	1
47013	0x1B64	Logic Element 1 Number of Blocks	2	4	1	---	F1	3	1
47014	0x1B65	Logic Element 1 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47015	0x1B66	Logic Element 1 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47016	0x1B67	Logic Element 1 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47017	0x1B68	Logic Element 1 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47018	0x1B69	Logic Element 1 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47019	0x1B6A	Logic Element 1 Block 4	0	0xFFFF	1	---	FC134B	0	1
47020	0x1B6B	Logic Element 2 Number of Triggers	2	8	1	---	F1	3	1
47021	0x1B6C	Logic Element 2 Number of Blocks	2	4	1	---	F1	3	1
47022	0x1B6D	Logic Element 2 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47023	0x1B6E	Logic Element 2 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47024	0x1B6F	Logic Element 2 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47025	0x1B70	Logic Element 2 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47026	0x1B71	Logic Element 2 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47027	0x1B72	Logic Element 2 Block 4	0	0xFFFF	1	---	FC134B	0	1
47028	0x1B73	Logic Element 3 Number of Triggers	2	8	1	---	F1	3	1
47029	0x1B74	Logic Element 3 Number of Blocks	2	4	1	---	F1	3	1
47030	0x1B75	Logic Element 3 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47031	0x1B76	Logic Element 3 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47032	0x1B77	Logic Element 3 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47033	0x1B78	Logic Element 3 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47034	0x1B79	Logic Element 3 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47035	0x1B7A	Logic Element 3 Block 4	0	0xFFFF	1	---	FC134B	0	1
47036	0x1B7B	Logic Element 4 Number of Triggers	2	8	1	---	F1	3	1
47037	0x1B7C	Logic Element 4 Number of Blocks	2	4	1	---	F1	3	1
47038	0x1B7D	Logic Element 4 Trigger 4	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47039	0x1B7E	Logic Element 4 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47040	0x1B7F	Logic Element 4 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47041	0x1B80	Logic Element 4 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47042	0x1B81	Logic Element 4 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47043	0x1B82	Logic Element 4 Block 4	0	0xFFFF	1	---	FC134B	0	1
47044	0x1B83	Logic Element 5 Number of Triggers	2	8	1	---	F1	3	1
47045	0x1B84	Logic Element 5 Number of Blocks	2	4	1	---	F1	3	1
47046	0x1B85	Logic Element 5 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47047	0x1B86	Logic Element 5 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47048	0x1B87	Logic Element 5 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47049	0x1B88	Logic Element 5 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47050	0x1B89	Logic Element 5 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47051	0x1B8A	Logic Element 5 Block 4	0	0xFFFF	1	---	FC134B	0	1
47052	0x1B8B	Logic Element 6 Number of Triggers	2	8	1	---	F1	3	1
47053	0x1B8C	Logic Element 6 Number of Blocks	2	4	1	---	F1	3	1
47054	0x1B8D	Logic Element 6 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47055	0x1B8E	Logic Element 6 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47056	0x1B8F	Logic Element 6 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47057	0x1B90	Logic Element 6 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47058	0x1B91	Logic Element 6 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47059	0x1B92	Logic Element 6 Block 4	0	0xFFFF	1	---	FC134B	0	1
47060	0x1B93	Logic Element 7 Number of Triggers	2	8	1	---	F1	3	1
47061	0x1B94	Logic Element 7 Number of Blocks	2	4	1	---	F1	3	1
47062	0x1B95	Logic Element 7 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47063	0x1B96	Logic Element 7 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47064	0x1B97	Logic Element 7 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47065	0x1B98	Logic Element 7 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47066	0x1B99	Logic Element 7 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47067	0x1B9A	Logic Element 7 Block 4	0	0xFFFF	1	---	FC134B	0	1
47068	0x1B9B	Logic Element 8 Number of Triggers	2	8	1	---	F1	3	1
47069	0x1B9C	Logic Element 8 Number of Blocks	2	4	1	---	F1	3	1
47070	0x1B9D	Logic Element 8 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47071	0x1B9E	Logic Element 8 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47072	0x1B9F	Logic Element 8 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47073	0x1BA0	Logic Element 8 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47074	0x1BA1	Logic Element 8 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47075	0x1BA2	Logic Element 8 Block 4	0	0xFFFF	1	---	FC134B	0	1
47076	0x1BA3	Logic Element 9 Number of Triggers	2	8	1	---	F1	3	1
47077	0x1BA4	Logic Element 9 Number of Blocks	2	4	1	---	F1	3	1
47078	0x1BA5	Logic Element 9 Trigger 4	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47079	0x1BA6	Logic Element 9 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47080	0x1BA7	Logic Element 9 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47081	0x1BA8	Logic Element 9 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47082	0x1BA9	Logic Element 9 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47083	0x1BAA	Logic Element 9 Block 4	0	0xFFFF	1	---	FC134B	0	1
47084	0x1BAB	Logic Element 10 Number of Triggers	2	8	1	---	F1	3	1
47085	0x1BAC	Logic Element 10 Number of Blocks	2	4	1	---	F1	3	1
47086	0x1BAD	Logic Element 10 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47087	0x1BAE	Logic Element 10 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47088	0x1BAF	Logic Element 10 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47089	0x1BB0	Logic Element 10 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47090	0x1BB1	Logic Element 10 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47091	0x1BB2	Logic Element 10 Block 4	0	0xFFFF	1	---	FC134B	0	1
47092	0x1BB3	Logic Element 11 Number of Triggers	2	8	1	---	F1	3	1
47093	0x1BB4	Logic Element 11 Number of Blocks	2	4	1	---	F1	3	1
47094	0x1BB5	Logic Element 11 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47095	0x1BB6	Logic Element 11 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47096	0x1BB7	Logic Element 11 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47097	0x1BB8	Logic Element 11 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47098	0x1BB9	Logic Element 11 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47099	0x1BBA	Logic Element 11 Block 4	0	0xFFFF	1	---	FC134B	0	1
47100	0x1BBB	Logic Element 12 Number of Triggers	2	8	1	---	F1	3	1
47101	0x1BBC	Logic Element 12 Number of Blocks	2	4	1	---	F1	3	1
47102	0x1BBD	Logic Element 12 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47103	0x1BBE	Logic Element 12 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47104	0x1BBF	Logic Element 12 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47105	0x1BC0	Logic Element 12 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47106	0x1BC1	Logic Element 12 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47107	0x1BC2	Logic Element 12 Block 4	0	0xFFFF	1	---	FC134B	0	1
47108	0x1BC3	Logic Element 13 Number of Triggers	2	8	1	---	F1	3	1
47109	0x1BC4	Logic Element 13 Number of Blocks	2	4	1	---	F1	3	1
47110	0x1BC5	Logic Element 13 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47111	0x1BC6	Logic Element 13 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47112	0x1BC7	Logic Element 13 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47113	0x1BC8	Logic Element 13 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47114	0x1BC9	Logic Element 13 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47115	0x1BCA	Logic Element 13 Block 4	0	0xFFFF	1	---	FC134B	0	1
47116	0x1BCB	Logic Element 14 Number of Triggers	2	8	1	---	F1	3	1
47117	0x1BCC	Logic Element 14 Number of Blocks	2	4	1	---	F1	3	1
47118	0x1BCD	Logic Element 14 Trigger 4	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47119	0x1BCE	Logic Element 14 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47120	0x1BCF	Logic Element 14 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47121	0x1BD0	Logic Element 14 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47122	0x1BD1	Logic Element 14 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47123	0x1BD2	Logic Element 14 Block 4	0	0xFFFF	1	---	FC134B	0	1
47124	0x1BD3	Logic Element 15 Number of Triggers	2	8	1	---	F1	3	1
47125	0x1BD4	Logic Element 15 Number of Blocks	2	4	1	---	F1	3	1
47126	0x1BD5	Logic Element 15 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47127	0x1BD6	Logic Element 15 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47128	0x1BD7	Logic Element 15 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47129	0x1BD8	Logic Element 15 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47130	0x1BD9	Logic Element 15 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47131	0x1BDA	Logic Element 15 Block 4	0	0xFFFF	1	---	FC134B	0	1
47132	0x1BDB	Logic Element 16 Number of Triggers	2	8	1	---	F1	3	1
47133	0x1BDC	Logic Element 16 Number of Blocks	2	4	1	---	F1	3	1
47134	0x1BDD	Logic Element 16 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47135	0x1BDE	Logic Element 16 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47136	0x1BDF	Logic Element 16 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47137	0x1BE0	Logic Element 16 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47138	0x1BE1	Logic Element 16 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47139	0x1BE2	Logic Element 16 Block 4	0	0xFFFF	1	---	FC134B	0	1
DEMAND									
47189	0x1C14	Current Demand 1 Function	0	2	1	---	FC206	0	1
47191	0x1C16	Current Demand 1 Measurement Type	0	2	1	---	FC431	0	1
47192	0x1C17	Current Demand 1 90% Response Time	0	4	1	---	FC432	2	1
47193	0x1C18	Current Demand 1 Time Interval	0	4	1	---	FC432	3	1
47194	0x1C19	Current Demand 1 Pkp	10	10000	1	A	F1	1000	1
47195	0x1C1A	Current Demand 1 Relays	0	0x7F	1	---	FC198	0	1
47196	0x1C1B	Current Demand 1 Block 1	0	0xEF02	1	---	F89	0	1
47197	0x1C1C	Current Demand 1 Block 2	0	0xEF02	1	---	F89	0	1
47198	0x1C1D	Current Demand 1 Block 3	0	0xEF02	1	---	F89	0	1
47209	0x1C28	Real Power Demand Function	0	2	1	---	FC206	0	1
47210	0x1C29	Real Power Demand Measurement Type	0	2	1	---	FC431	0	1
47211	0x1C2A	Real Power Demand 90% Response Time	0	4	1	---	FC432	2	1
47212	0x1C2B	Real Power Demand Time Interval	0	4	1	---	FC432	3	1
47213	0x1C2C	Real Power Demand Pkp	1	3000000	1	kW	F10	10000	2
47215	0x1C2E	Real Power Demand Relays	0	0x7F	1	---	FC198	0	1
47216	0x1C2F	Real Power Demand Block 1	0	0xEF02	1	---	F89	0	1
47217	0x1C30	Real Power Demand Block 2	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47218	0x1C31	Real Power Demand Block 3	0	0xEF02	1	---	F89	0	1
47219	0x1C32	Reactive Power Demand Function	0	2	1	---	FC206	0	1
47220	0x1C33	Reactive Power Demand Measurement Type	0	2	1	---	FC431	0	1
47221	0x1C34	Reactive Power Demand 90% Response Time	0	4	1	---	FC432	2	1
47222	0x1C35	Reactive Power Demand Time Interval	0	4	1	---	FC432	3	1
47223	0x1C36	Reactive Power Demand Pkp	1	3000000	1	kvar	F10	10000	2
47225	0x1C38	Reactive Power Demand Relays	0	0x7F	1	---	FC198	0	1
47226	0x1C39	Reactive Power Demand Block 1	0	0xEF02	1	---	F89	0	1
47227	0x1C3A	Reactive Power Demand Block 2	0	0xEF02	1	---	F89	0	1
47228	0x1C3B	Reactive Power Demand Block 3	0	0xEF02	1	---	F89	0	1
47229	0x1C3C	Apparent Power Demand Function	0	2	1	---	FC206	0	1
47230	0x1C3D	Apparent Power Demand Measurement Type	0	2	1	---	FC431	0	1
47231	0x1C3E	Apparent Power Demand 90% Response Time	0	4	1	---	FC432	2	1
47232	0x1C3F	Apparent Power Demand Time Interval	0	4	1	---	FC432	3	1
47233	0x1C40	Apparent Power Demand Pkp	1	3000000	1	kVA	F10	10000	2
47235	0x1C42	Apparent Power Demand Relays	0	0x7F	1	---	FC198	0	1
47236	0x1C43	Apparent Power Demand Block 1	0	0xEF02	1	---	F89	0	1
47237	0x1C44	Apparent Power Demand Block 2	0	0xEF02	1	---	F89	0	1
47238	0x1C45	Apparent Power Demand Block 3	0	0xEF02	1	---	F89	0	1
LOCKOUT									
47242	0x1C49	Lockout Function	0	1	1	---	FC126	0	1
47243	0x1C4A	Lockout Input 1	0	0xFFFF	1	---	FC134D	0	1
47244	0x1C4B	Lockout Input 2	0	0xFFFF	1	---	FC134D	0	1
47245	0x1C4C	Lockout Input 3	0	0xFFFF	1	---	FC134D	0	1
47246	0x1C4D	Lockout Input 4	0	0xFFFF	1	---	FC134D	0	1
47247	0x1C4E	Lockout Input 5	0	0xFFFF	1	---	FC134D	0	1
47248	0x1C4F	Lockout Input 6	0	0xFFFF	1	---	FC134D	0	1
47249	0x1C50	Lockout Input 7	0	0xFFFF	1	---	FC134D	0	1
47250	0x1C51	Lockout Input 8	0	0xFFFF	1	---	FC134D	0	1
47251	0x1C52	Lockout Input 9	0	0xFFFF	1	---	FC134D	0	1
47252	0x1C53	Lockout Input 10	0	0xFFFF	1	---	FC134D	0	1
47253	0x1C54	Lockout Supervision	0	0xFFFF	1	---	FC134C	1	1
47254	0x1C55	Lockout Reset	0	0xFFFF	1	---	FC134F	0	1
47255	0x1C56	Lockout Reset From PB Reset	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47256	0x1C57	Lockout Block Reset Lockout	0	0xFFFF	1	---	FC134D	0x8002	1
47257	0x1C58	Lockout Block 1	0	0xEF02	1	---	F89	0	1
47258	0x1C59	Lockout Block 2	0	0xEF02	1	---	F89	0	1
47259	0x1C5A	Lockout Block 3	0	0xEF02	1	---	F89	0	1
POSITIVE SEQ UV									
47263	0x1C5E	Positive Seq UV 1 Function	0	3	1	---	FC197	0	1
47264	0x1C5F	Positive Seq UV 1 Pkp	0	125	1	x VT	F3	75	1
47265	0x1C60	Positive Seq UV 1 Curve	0	1	1	---	F93	1	1
47266	0x1C61	Positive Seq UV 1 Delay	0	60000	1	s	F3	200	1
47267	0x1C62	Positive Seq UV 1 Min V	0	125	1	x VT	F3	10	1
47268	0x1C63	Positive Seq UV 1 Relays	0	0x7F	1	---	FC198	0	1
47269	0x1C64	Positive Seq UV 1 Block 1	0	0xEF02	1	---	F89	0	1
47270	0x1C65	Positive Seq UV 1 Block 2	0	0xEF02	1	---	F89	0	1
47271	0x1C66	Positive Seq UV 1 Block 3	0	0xEF02	1	---	F89	0	1
47272	0x1C67	Positive Seq UV 2 Function	0	3	1	---	FC197	0	1
47273	0x1C68	Positive Seq UV 2 Pkp	0	125	1	x VT	F3	75	1
47274	0x1C69	Positive Seq UV 2 Curve	0	1	1	---	F93	1	1
47275	0x1C6A	Positive Seq UV 2 Delay	0	60000	1	s	F3	200	1
47276	0x1C6B	Positive Seq UV 2 Min V	0	125	1	x VT	F3	10	1
47277	0x1C6C	Positive Seq UV 2 Relays	0	0x7F	1	---	FC198	0	1
47278	0x1C6D	Positive Seq UV 2 Block 1	0	0xEF02	1	---	F89	0	1
47279	0x1C6E	Positive Seq UV 2 Block 2	0	0xEF02	1	---	F89	0	1
47280	0x1C6F	Positive Seq UV 2 Block 3	0	0xEF02	1	---	F89	0	1
CT FAILURE									
47282	0x1C71	CT Failure Function	0	2	1	---	FC206	0	1
47285	0x1C74	CT Failure Output Relays 3-6	0	0x3F	1	---	FC198	0	1
47286	0x1C75	CT Failure Block 1	0	0xEF02	1	---	F89	0	1
47287	0x1C76	CT Failure Block 2	0	0xEF02	1	---	F89	0	1
47288	0x1C77	CT Failure Block 3	0	0xEF02	1	---	F89	0	1
47296	0x1C7F	W1 CT Fail 3I0 Current PKP	3	200	1	x CT	F3	10	1
47297	0x1C80	W1 CT Fail 3V0 Voltage Inhibit	5	200	1	x VT	F3	20	1
47298	0x1C81	W1 CT Fail GND Current Inhibit	2	200	1	x CT	F3	20	1
47300	0x1C83	W1 CT Fail Time Delay	0	6000	1	s	F3	0	1
TESTING									
47303	0x1C86	Force leds	0	1		---	FC126	0	1
47304	0x1C87	Led 1	0	1		---	FC103	0	1
47305	0x1C88	Led 2	0	1		---	FC103	0	1
47306	0x1C89	Led 3	0	1		---	FC103	0	1
47307	0x1C8A	Led 4	0	1		---	FC103	0	1
47308	0x1C8B	Led 5	0	1		---	FC103	0	1
47309	0x1C8C	Led 6	0	1		---	FC103	0	1
47310	0x1C8D	Led 7	0	1		---	FC103	0	1
47311	0x1C8E	Led 8	0	1		---	FC103	0	1
47312	0x1C8F	Led 9	0	1		---	FC103	0	1
47313	0x1C90	Led 10	0	1		---	FC103	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47314	0x1C91	Led 11	0	1		---	FC103	0	1
47315	0x1C92	Led 12	0	1		---	FC103	0	1
47318	0x1C95	Force Output Relays	0	1		---	FC126	0	1
47319	0x1C96	Relay 1 Trip	0	1		---	FC103	0	1
47320	0x1C97	Relay 2 Close	0	1		---	FC103	0	1
47321	0x1C98	Relay 3 Auxiliary	0	1		---	FC103	0	1
47322	0x1C99	Relay 4 Auxiliary	0	1		---	FC103	0	1
47323	0x1C9A	Relay 5 Auxiliary	0	1		---	FC103	0	1
47324	0x1C9B	Relay 6 Auxiliary	0	1		---	FC103	0	1
61850 MAPPING									
47327	0x1C9E	Analog input 1 Value	0	251	1	---	F88	0	1
47328	0x1C9F	Analog input 1 db	0	100000	1	%	F17	0	2
47330	0x1CA1	Analog input 1 Min	-2147483648	2147483647	1	---	F13	0	2
47332	0x1CA3	Analog input 1 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47334	0x1CA5	Analog input 2 Value	0	251	1	---	F88	0	1
47335	0x1CA6	Analog input 2 db	0	100000	1	%	F17	0	2
47337	0x1CA8	Analog input 2 Min	-2147483648	2147483647	1	---	F13	0	2
47339	0x1CAA	Analog input 2 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47341	0x1CAC	Analog input 3 Value	0	251	1	---	F88	0	1
47342	0x1CAD	Analog input 3 db	0	100000	1	%	F17	0	2
47344	0x1CAF	Analog input 3 Min	-2147483648	2147483647	1	---	F13	0	2
47346	0x1CB1	Analog input 3 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47348	0x1CB3	Analog input 4 Value	0	251	1	---	F88	0	1
47349	0x1CB4	Analog input 4 db	0	100000	1	%	F17	0	2
47351	0x1CB6	Analog input 4 Min	-2147483648	2147483647	1	---	F13	0	2
47353	0x1CB8	Analog input 4 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47355	0x1CBA	Analog input 5 Value	0	251	1	---	F88	0	1
47356	0x1CBB	Analog input 5 db	0	100000	1	%	F17	0	2
47358	0x1CBD	Analog input 5 Min	-2147483648	2147483647	1	---	F13	0	2
47360	0x1CBF	Analog input 5 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47362	0x1CC1	Analog input 6 Value	0	251	1	---	F88	0	1
47363	0x1CC2	Analog input 6 db	0	100000	1	%	F17	0	2
47365	0x1CC4	Analog input 6 Min	-2147483648	2147483647	1	---	F13	0	2
47367	0x1CC6	Analog input 6 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47369	0x1CC8	Analog input 7 Value	0	251	1	---	F88	0	1
47370	0x1CC9	Analog input 7 db	0	100000	1	%	F17	0	2
47372	0x1CCB	Analog input 7 Min	-2147483648	2147483647	1	---	F13	0	2
47374	0x1CCD	Analog input 7 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47376	0x1CCF	Analog input 8 Value	0	251	1	---	F88	0	1
47377	0x1CD0	Analog input 8 db	0	100000	1	%	F17	0	2
47379	0x1CD2	Analog input 8 Min	-2147483648	2147483647	1	---	F13	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47381	0x1CD4	Analog input 8 Max	-2147483648	2147483647	1	---	F13	2147483647	2
FLEXCURVE C									
47387	0x1CDA	Flex Curve C 1.03 X PU	0	65535	1	ms	F1	0	1
47388	0x1CDB	Flex Curve C 1.05 X PU	0	65535	1	ms	F1	0	1
47389	0x1CDC	Flex Curve C 1.10 X PU	0	65535	1	ms	F1	0	1
47390	0x1CDD	Flex Curve C 1.20 X PU	0	65535	1	ms	F1	0	1
47391	0x1CDE	Flex Curve C 1.30 X PU	0	65535	1	ms	F1	0	1
47392	0x1CDF	Flex Curve C 1.40 X PU	0	65535	1	ms	F1	0	1
47393	0x1CE0	Flex Curve C 1.50 X PU	0	65535	1	ms	F1	0	1
47394	0x1CE1	Flex Curve C 1.60 X PU	0	65535	1	ms	F1	0	1
47395	0x1CE2	Flex Curve C 1.70 X PU	0	65535	1	ms	F1	0	1
47396	0x1CE3	Flex Curve C 1.80 X PU	0	65535	1	ms	F1	0	1
47397	0x1CE4	Flex Curve C 1.90 X PU	0	65535	1	ms	F1	0	1
47398	0x1CE5	Flex Curve C 2.00 X PU	0	65535	1	ms	F1	0	1
47399	0x1CE6	Flex Curve C 2.10 X PU	0	65535	1	ms	F1	0	1
47400	0x1CE7	Flex Curve C 2.20 X PU	0	65535	1	ms	F1	0	1
47401	0x1CE8	Flex Curve C 2.30 X PU	0	65535	1	ms	F1	0	1
47402	0x1CE9	Flex Curve C 2.40 X PU	0	65535	1	ms	F1	0	1
47403	0x1CEA	Flex Curve C 2.50 X PU	0	65535	1	ms	F1	0	1
47404	0x1CEB	Flex Curve C 2.60 X PU	0	65535	1	ms	F1	0	1
47405	0x1CEC	Flex Curve C 2.70 X PU	0	65535	1	ms	F1	0	1
47406	0x1CED	Flex Curve C 2.80 X PU	0	65535	1	ms	F1	0	1
47407	0x1CEE	Flex Curve C 2.90 X PU	0	65535	1	ms	F1	0	1
47408	0x1CEF	Flex Curve C 3.00 X PU	0	65535	1	ms	F1	0	1
47409	0x1CF0	Flex Curve C 3.10 X PU	0	65535	1	ms	F1	0	1
47410	0x1CF1	Flex Curve C 3.20 X PU	0	65535	1	ms	F1	0	1
47411	0x1CF2	Flex Curve C 3.30 X PU	0	65535	1	ms	F1	0	1
47412	0x1CF3	Flex Curve C 3.40 X PU	0	65535	1	ms	F1	0	1
47413	0x1CF4	Flex Curve C 3.50 X PU	0	65535	1	ms	F1	0	1
47414	0x1CF5	Flex Curve C 3.60 X PU	0	65535	1	ms	F1	0	1
47415	0x1CF6	Flex Curve C 3.70 X PU	0	65535	1	ms	F1	0	1
47416	0x1CF7	Flex Curve C 3.80 X PU	0	65535	1	ms	F1	0	1
47417	0x1CF8	Flex Curve C 3.90 X PU	0	65535	1	ms	F1	0	1
47418	0x1CF9	Flex Curve C 4.00 X PU	0	65535	1	ms	F1	0	1
47419	0x1CFA	Flex Curve C 4.10 X PU	0	65535	1	ms	F1	0	1
47420	0x1CFB	Flex Curve C 4.20 X PU	0	65535	1	ms	F1	0	1
47421	0x1CFC	Flex Curve C 4.30 X PU	0	65535	1	ms	F1	0	1
47422	0x1CFD	Flex Curve C 4.40 X PU	0	65535	1	ms	F1	0	1
47423	0x1CFE	Flex Curve C 4.50 X PU	0	65535	1	ms	F1	0	1
47424	0x1CFF	Flex Curve C 4.60 X PU	0	65535	1	ms	F1	0	1
47425	0x1D00	Flex Curve C 4.70 X PU	0	65535	1	ms	F1	0	1
47426	0x1D01	Flex Curve C 4.80 X PU	0	65535	1	ms	F1	0	1
47427	0x1D02	Flex Curve C 4.90 X PU	0	65535	1	ms	F1	0	1
47428	0x1D03	Flex Curve C 5.00 X PU	0	65535	1	ms	F1	0	1
47429	0x1D04	Flex Curve C 5.10 X PU	0	65535	1	ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47430	0x1D05	Flex Curve C 5.20 X PU	0	65535	1	ms	F1	0	1
47431	0x1D06	Flex Curve C 5.30 X PU	0	65535	1	ms	F1	0	1
47432	0x1D07	Flex Curve C 5.40 X PU	0	65535	1	ms	F1	0	1
47433	0x1D08	Flex Curve C 5.50 X PU	0	65535	1	ms	F1	0	1
47434	0x1D09	Flex Curve C 5.60 X PU	0	65535	1	ms	F1	0	1
47435	0x1D0A	Flex Curve C 5.70 X PU	0	65535	1	ms	F1	0	1
47436	0x1D0B	Flex Curve C 5.80 X PU	0	65535	1	ms	F1	0	1
47437	0x1D0C	Flex Curve C 5.90 X PU	0	65535	1	ms	F1	0	1
47438	0x1D0D	Flex Curve C 6.00 X PU	0	65535	1	ms	F1	0	1
47439	0x1D0E	Flex Curve C 6.50 X PU	0	65535	1	ms	F1	0	1
47440	0x1D0F	Flex Curve C 7.00 X PU	0	65535	1	ms	F1	0	1
47441	0x1D10	Flex Curve C 7.50 X PU	0	65535	1	ms	F1	0	1
47442	0x1D11	Flex Curve C 8.00 X PU	0	65535	1	ms	F1	0	1
47443	0x1D12	Flex Curve C 8.50 X PU	0	65535	1	ms	F1	0	1
47444	0x1D13	Flex Curve C 9.00 X PU	0	65535	1	ms	F1	0	1
47445	0x1D14	Flex Curve C 9.50 X PU	0	65535	1	ms	F1	0	1
47446	0x1D15	Flex Curve C 10.00 X PU	0	65535	1	ms	F1	0	1
47447	0x1D16	Flex Curve C 10.50 X PU	0	65535	1	ms	F1	0	1
47448	0x1D17	Flex Curve C 11.00 X PU	0	65535	1	ms	F1	0	1
47449	0x1D18	Flex Curve C 11.50 X PU	0	65535	1	ms	F1	0	1
47450	0x1D19	Flex Curve C 12.00 X PU	0	65535	1	ms	F1	0	1
47451	0x1D1A	Flex Curve C 12.50 X PU	0	65535	1	ms	F1	0	1
47452	0x1D1B	Flex Curve C 13.00 X PU	0	65535	1	ms	F1	0	1
47453	0x1D1C	Flex Curve C 13.50 X PU	0	65535	1	ms	F1	0	1
47454	0x1D1D	Flex Curve C 14.00 X PU	0	65535	1	ms	F1	0	1
47455	0x1D1E	Flex Curve C 14.50 X PU	0	65535	1	ms	F1	0	1
47456	0x1D1F	Flex Curve C 15.00 X PU	0	65535	1	ms	F1	0	1
47457	0x1D20	Flex Curve C 15.50 X PU	0	65535	1	ms	F1	0	1
47458	0x1D21	Flex Curve C 16.00 X PU	0	65535	1	ms	F1	0	1
47459	0x1D22	Flex Curve C 16.50 X PU	0	65535	1	ms	F1	0	1
47460	0x1D23	Flex Curve C 17.00 X PU	0	65535	1	ms	F1	0	1
47461	0x1D24	Flex Curve C 17.50 X PU	0	65535	1	ms	F1	0	1
47462	0x1D25	Flex Curve C 18.00 X PU	0	65535	1	ms	F1	0	1
47463	0x1D26	Flex Curve C 18.50 X PU	0	65535	1	ms	F1	0	1
47464	0x1D27	Flex Curve C 19.00 X PU	0	65535	1	ms	F1	0	1
47465	0x1D28	Flex Curve C 19.50 X PU	0	65535	1	ms	F1	0	1
47466	0x1D29	Flex Curve C 20.00 X PU	0	65535	1	ms	F1	0	1
FLEXCURVE D									
47468	0x1D2B	Flex Curve D 1.03 X PU	0	65535	1	ms	F1	0	1
47469	0x1D2C	Flex Curve D 1.05 X PU	0	65535	1	ms	F1	0	1
47470	0x1D2D	Flex Curve D 1.10 X PU	0	65535	1	ms	F1	0	1
47471	0x1D2E	Flex Curve D 1.20 X PU	0	65535	1	ms	F1	0	1
47472	0x1D2F	Flex Curve D 1.30 X PU	0	65535	1	ms	F1	0	1
47473	0x1D30	Flex Curve D 1.40 X PU	0	65535	1	ms	F1	0	1
47474	0x1D31	Flex Curve D 1.50 X PU	0	65535	1	ms	F1	0	1
47475	0x1D32	Flex Curve D 1.60 X PU	0	65535	1	ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47476	0x1D33	Flex Curve D 1.70 X PU	0	65535	1	ms	F1	0	1
47477	0x1D34	Flex Curve D 1.80 X PU	0	65535	1	ms	F1	0	1
47478	0x1D35	Flex Curve D 1.90 X PU	0	65535	1	ms	F1	0	1
47479	0x1D36	Flex Curve D 2.00 X PU	0	65535	1	ms	F1	0	1
47480	0x1D37	Flex Curve D 2.10 X PU	0	65535	1	ms	F1	0	1
47481	0x1D38	Flex Curve D 2.20 X PU	0	65535	1	ms	F1	0	1
47482	0x1D39	Flex Curve D 2.30 X PU	0	65535	1	ms	F1	0	1
47483	0x1D3A	Flex Curve D 2.40 X PU	0	65535	1	ms	F1	0	1
47484	0x1D3B	Flex Curve D 2.50 X PU	0	65535	1	ms	F1	0	1
47485	0x1D3C	Flex Curve D 2.60 X PU	0	65535	1	ms	F1	0	1
47486	0x1D3D	Flex Curve D 2.70 X PU	0	65535	1	ms	F1	0	1
47487	0x1D3E	Flex Curve D 2.80 X PU	0	65535	1	ms	F1	0	1
47488	0x1D3F	Flex Curve D 2.90 X PU	0	65535	1	ms	F1	0	1
47489	0x1D40	Flex Curve D 3.00 X PU	0	65535	1	ms	F1	0	1
47490	0x1D41	Flex Curve D 3.10 X PU	0	65535	1	ms	F1	0	1
47491	0x1D42	Flex Curve D 3.20 X PU	0	65535	1	ms	F1	0	1
47492	0x1D43	Flex Curve D 3.30 X PU	0	65535	1	ms	F1	0	1
47493	0x1D44	Flex Curve D 3.40 X PU	0	65535	1	ms	F1	0	1
47494	0x1D45	Flex Curve D 3.50 X PU	0	65535	1	ms	F1	0	1
47495	0x1D46	Flex Curve D 3.60 X PU	0	65535	1	ms	F1	0	1
47496	0x1D47	Flex Curve D 3.70 X PU	0	65535	1	ms	F1	0	1
47497	0x1D48	Flex Curve D 3.80 X PU	0	65535	1	ms	F1	0	1
47498	0x1D49	Flex Curve D 3.90 X PU	0	65535	1	ms	F1	0	1
47499	0x1D4A	Flex Curve D 4.00 X PU	0	65535	1	ms	F1	0	1
47500	0x1D4B	Flex Curve D 4.10 X PU	0	65535	1	ms	F1	0	1
47501	0x1D4C	Flex Curve D 4.20 X PU	0	65535	1	ms	F1	0	1
47502	0x1D4D	Flex Curve D 4.30 X PU	0	65535	1	ms	F1	0	1
47503	0x1D4E	Flex Curve D 4.40 X PU	0	65535	1	ms	F1	0	1
47504	0x1D4F	Flex Curve D 4.50 X PU	0	65535	1	ms	F1	0	1
47505	0x1D50	Flex Curve D 4.60 X PU	0	65535	1	ms	F1	0	1
47506	0x1D51	Flex Curve D 4.70 X PU	0	65535	1	ms	F1	0	1
47507	0x1D52	Flex Curve D 4.80 X PU	0	65535	1	ms	F1	0	1
47508	0x1D53	Flex Curve D 4.90 X PU	0	65535	1	ms	F1	0	1
47509	0x1D54	Flex Curve D 5.00 X PU	0	65535	1	ms	F1	0	1
47510	0x1D55	Flex Curve D 5.10 X PU	0	65535	1	ms	F1	0	1
47511	0x1D56	Flex Curve D 5.20 X PU	0	65535	1	ms	F1	0	1
47512	0x1D57	Flex Curve D 5.30 X PU	0	65535	1	ms	F1	0	1
47513	0x1D58	Flex Curve D 5.40 X PU	0	65535	1	ms	F1	0	1
47514	0x1D59	Flex Curve D 5.50 X PU	0	65535	1	ms	F1	0	1
47515	0x1D5A	Flex Curve D 5.60 X PU	0	65535	1	ms	F1	0	1
47516	0x1D5B	Flex Curve D 5.70 X PU	0	65535	1	ms	F1	0	1
47517	0x1D5C	Flex Curve D 5.80 X PU	0	65535	1	ms	F1	0	1
47518	0x1D5D	Flex Curve D 5.90 X PU	0	65535	1	ms	F1	0	1
47519	0x1D5E	Flex Curve D 6.00 X PU	0	65535	1	ms	F1	0	1
47520	0x1D5F	Flex Curve D 6.50 X PU	0	65535	1	ms	F1	0	1
47521	0x1D60	Flex Curve D 7.00 X PU	0	65535	1	ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47522	0x1D61	Flex Curve D 7.50 X PU	0	65535	1	ms	F1	0	1
47523	0x1D62	Flex Curve D 8.00 X PU	0	65535	1	ms	F1	0	1
47524	0x1D63	Flex Curve D 8.50 X PU	0	65535	1	ms	F1	0	1
47525	0x1D64	Flex Curve D 9.00 X PU	0	65535	1	ms	F1	0	1
47526	0x1D65	Flex Curve D 9.50 X PU	0	65535	1	ms	F1	0	1
47527	0x1D66	Flex Curve D 10.00 X PU	0	65535	1	ms	F1	0	1
47528	0x1D67	Flex Curve D 10.50 X PU	0	65535	1	ms	F1	0	1
47529	0x1D68	Flex Curve D 11.00 X PU	0	65535	1	ms	F1	0	1
47530	0x1D69	Flex Curve D 11.50 X PU	0	65535	1	ms	F1	0	1
47531	0x1D6A	Flex Curve D 12.00 X PU	0	65535	1	ms	F1	0	1
47532	0x1D6B	Flex Curve D 12.50 X PU	0	65535	1	ms	F1	0	1
47533	0x1D6C	Flex Curve D 13.00 X PU	0	65535	1	ms	F1	0	1
47534	0x1D6D	Flex Curve D 13.50 X PU	0	65535	1	ms	F1	0	1
47535	0x1D6E	Flex Curve D 14.00 X PU	0	65535	1	ms	F1	0	1
47536	0x1D6F	Flex Curve D 14.50 X PU	0	65535	1	ms	F1	0	1
47537	0x1D70	Flex Curve D 15.00 X PU	0	65535	1	ms	F1	0	1
47538	0x1D71	Flex Curve D 15.50 X PU	0	65535	1	ms	F1	0	1
47539	0x1D72	Flex Curve D 16.00 X PU	0	65535	1	ms	F1	0	1
47540	0x1D73	Flex Curve D 16.50 X PU	0	65535	1	ms	F1	0	1
47541	0x1D74	Flex Curve D 17.00 X PU	0	65535	1	ms	F1	0	1
47542	0x1D75	Flex Curve D 17.50 X PU	0	65535	1	ms	F1	0	1
47543	0x1D76	Flex Curve D 18.00 X PU	0	65535	1	ms	F1	0	1
47544	0x1D77	Flex Curve D 18.50 X PU	0	65535	1	ms	F1	0	1
47545	0x1D78	Flex Curve D 19.00 X PU	0	65535	1	ms	F1	0	1
47546	0x1D79	Flex Curve D 19.50 X PU	0	65535	1	ms	F1	0	1
47547	0x1D7A	Flex Curve D 20.00 X PU	0	65535	1	ms	F1	0	1

339 Format Codes

In some cases names of settings displayed in the HMI have been shortened. The Long Definition column below contains the full name used in the Enervista Setup software, when applicable. In many cases the long description is the same as the description.

Code	Type	Definition	Long Definition
F1	unsigned 16 bits	Unsigned Value	
Example: 1234 stored as 1234			
F1B	unsigned 16 bits	Unsigned Value Max Value = OFF	
Example: 1234 stored as 1234			
F1C	unsigned 16 bits	Unsigned Value Min Value = OFF	
Example: 1234 stored as 1234			
F2	unsigned 16 bits	Unsigned Value 1 Decimal Place	
Example: 123.4 stored as 1234			
F2B	unsigned 16 bits	Unsigned Value 1 Decimal Place	
Example: 123.4 stored as 1234			
F3	unsigned 16 bits	Unsigned Value 2 Decimal Places	
Example: 12.34 stored as 1234			
F3B	unsigned 16 bits	Unsigned Value 2 Decimal Places	
Example: 12.34 stored as 1234			
F4	signed 16 bits	2's Complement Signed Value	
Example: -1234 stored as -1234 i.e. 64302			
F4B	signed 16 bits	2's Complement Signed Value Max Value = OFF	
Example: -1234 stored as -1234 i.e. 64302			
F5	signed 16 bits	2's Complement Signed Value 1 Decimal Place	
Example: -123.4 stored as -1234 i.e. 64302			
F6	signed 16 bits	2's Complement Signed Value 2 Decimal Places	
Example: -12.34 stored as -1234 i.e. 64302			
F7	signed 16 bits	2's Complement Signed Value 3 Decimal Places	
Example: -1.234 stored as -1234 i.e. 64302			
F8	signed 16 bits	2's Complement Signed Value 4 Decimal Places	
Example: -0.1234 stored as -1234 i.e. 64302			
F9	unsigned 32 bits	Unsigned Long Value	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 123456 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			
F10	unsigned 32 bits	Unsigned Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 12345.6 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			

Code	Type	Definition	Long Definition
F11	unsigned 32 bits	Unsigned Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 1234.56 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			
F12	signed 32 bits	2's Complement Signed Long Value	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -123456 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F13	signed 32 bits	2's Complement Signed Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -12345.6 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F14	signed 32 bits	2's Complement Signed Long Value 2 Decimal Places	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -1234.56 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F14A	signed 32 bits	2's Complement Signed Long Value 3 Decimal Places	
F15	unsigned 16 bits	Hardware Revision	
0		Prototype	Prototype
1		A	A
2		B	B
3		C	C
4		D	D
5		E	E
6		F	F
7		G	G
8		H	H
9		I	I
10		J	J
11		K	K
12		L	L
13		M	M
14		N	N
15		O	O
16		P	P
17		Q	Q
18		R	R
19		S	S
20		T	T
21		U	U
22		V	V

Code	Type	Definition	Long Definition
23		W	W
24		X	X
25		Y	Y
26		Z	Z
F16	signed 16 bits	2's Complement Signed Value 1 Decimal Place	
F17	unsigned 32 bits	Unsigned Long Value 3 Decimal Places	
F17A	unsigned 16 bits	Unsigned Value 3 Decimal Places	
F18	unsigned 32 bits	Date MM/DD/YYYY	
1st byte Month 1 to 12			
2nd byte Day 1 to 31			
3rd and 4th byte Year 2000 to 2099 2000 stored as 34867152 (i.e. 1st word: 0214 2nd word 07D0)			
Example: Feb 20			
F19	unsigned 32 bits	Time HH:MM:SS.sss	
1st byte Hours 0 to 23			
2nd byte Minutes 0 to 59			
3rd and 4th byte miliSeconds 0 to 59999			
Example: 2:05pm stored as 235208704 (i.e. 1st word: 0E05 2nd word 0000)			
F20	signed 32 bits	2's Complement Signed Long Value	
F21	signed 16 bits	2's Complement Signed Value 2 Decimal Places (Power Factor)	
F22	unsigned 16 bits	Two 8-BIT Characters Packed Into 16-BIT Unsigned	
F23	unsigned 16 bits	Unsigned Value 3 Decimal Places	
F24	unsigned 16 bits	Unsigned Value AS Seconds SHOW AS Duration Max Value = OFF	
F24B	unsigned 16 bits	Unsigned Value AS Seconds SHOW AS Duration	
F25	unsigned 16 bits	Trace Memory Channel Data	
0		Leading	Leading
1		Lagging	Lagging
F26	unsigned 16 bits	350 Trace Memory Channel Data	
F26A	unsigned 16 bits	339 Trace Memory Channel Data	
0		Va	Va
1		Vb	Vb
2		Vc	Vc
3		ICBCT	ICBCT
4		Not Used	Not Used
5		Not Used	Not Used
6		Ia	Ia
7		Ib	Ib
8		Ic	Ic
9		Ig	Ig
10		Inputs 1-16	Inputs 1-16
11		Outputs 1-16	Outputs 1-16
12		Virtual Inputs1-16	Virtual Inputs 1-16
13		Virtual Inputs7-32	Virtual Inputs 17-32
14		Remote INs 1-16	Remote Inputs 1-16

Code	Type	Definition	Long Definition
15		Remote INs 17-32	Remote Inputs 17-32
16		Logic Elements	Logic Elements
F26B	unsigned 16 bits	345 Trace Memory Channel Data	
F27	unsigned 32 bits	Unsigned Long Value 4 Decimal Places	
F36	unsigned 16 bits	OC Curve Selection	
0		Extremely Inverse	Extremely Inverse
1		Very Inverse	Very Inverse
2		Normally Inverse	Normally Inverse
3		Moderately Inverse	Moderately Inverse
4		Definite Time	Definite Time
5		IEC Curve A	IEC Curve A
6		IEC Curve B	IEC Curve B
7		IEC Curve C	IEC Curve C
10		IAC Extr. Inverse	IAC Extremely Inverse
11		IAC Very Inverse	IAC Very Inverse
12		IAC Inverse	IAC Inverse
13		IAC Short Inverse	IAC Short Inverse
14		IEC Short Inverse	IEC Short Inverse
F37	unsigned 16 bits	OC Pickup flags	
1		Phase A	Phase A
2		Phase B	Phase B
4		Phase C	Phase C
7		All Phases	All Phases
F38	unsigned 16 bits	OC Direction pickup flags	
0x10		Direction PKP Ph A	Direction PKP Phase A
0x20		Direction PKP Ph B	Direction PKP Phase B
0x40		Direction PKP Ph C	Direction PKP Phase C
0x80		Direction Pickup	Direction Pickup
0xF0		Direction	Direction
F48	unsigned 16 bits	Simulation Status	
0		Disabled	Disabled
1		Prefault State	Prefault State
2		Fault State	Fault State
3		Postfault State	Postfault State
F68	unsigned 16 bits	Reset Time Model	
0		Instantaneous	Instantaneous
1		Linear	Linear
F74	unsigned 16 bits	Data Logger Sample Rate	
0		1 Cycle	1 Cycle
1		1 Second	1 Second
2		1 Minute	1 Minute
3		1 Hour	1 Hour
F75	unsigned 16 bits	Data Logger Status	
0		Stopped	Stopped
1		Started	Started
2		Triggered	Triggered
3		Pretrigger	Pretrigger

Code	Type	Definition	Long Definition
4		PostTrigger	PostTrigger
F76	unsigned 16 bits	Overcurrent Direction	
0		Disabled	Disabled
1		Forward	Forward
2		Reverse	Reverse
F77	unsigned 16 bits	Data Logger Channel Data	
0		Disabled	Disabled
1		Phase A Current	Phase A Current
2		Phase B Current	Phase B Current
3		Phase C Current	Phase C Current
4		Avg Phase Current	Average Phase Current
5		Motor Load	Motor Load
6		Current Unbalance	Current Unbalance
7		Gnd Current	Gnd Current
8		System Frequency	System Frequency
9		Vab	Vab
10		Vbc	Vbc
11		Vca	Vca
12		Van	Van
13		Vbn	Vbn
14		Vcn	Vcn
15		Power Factor	Power Factor
16		Real Power	Real Power
17		Reactive Pwr	Reactive Power
18		Apparent Pwr	Apparent Power
19		Positive Watthours	Positive Watthours
20		Positive Varhours	Positive Varhours
21		Hottest Stator RTD	Hottest Stator RTD
22		Therm Cap. Used	Thermal Capacity Used
23		RTD #1	RTD #1
24		RTD #2	RTD #2
25		RTD #3	RTD #3
26		RTD #4	RTD #4
27		RTD #5	RTD #5
28		RTD #6	RTD #6
29		Breaker Status	Breaker Status
30		RTD #7	RTD #7
31		RTD #8	RTD #8
32		RTD #9	RTD #9
33		RTD #10	RTD #10
34		RTD #11	RTD #11
35		RTD #12	RTD #12
F77B	unsigned 16 bits	345 Data Logger Channel Data	
F78	unsigned 16 bits	DNP Object 20 Default Variation	
1		1	(1) 32-Bit Binary Counter
2		2	(2) 16-Bit Binary Counter
5		5	(5) 32-Bit Binary Counter w/o Flag

Code	Type	Definition	Long Definition
6		6	(6) 16-Bit Binary Counter w/o Flag
F79	unsigned 16 bits	DNP Object 21 Default Variation	
1		1	(1) 32-Bit Frozen Counter
2		2	(2) 16-Bit Frozen Counter
9		9	(9) 32-Bit Frozen Counter w/o Flag
10		10	(10) 16-Bit Frozen Counter w/o Flag
F80	unsigned 16 bits	DNP Object 22 Default Variation	
1		1	(1) 32-Bit Counter Change Event
2		2	(2) 16-Bit Counter Change Event
5		5	(5) 32-Bit Counter Change Event w Time
6		6	(6) 16-Bit Counter Change Event w Time
F81	unsigned 16 bits	DNP Object 23 Default Variation	
1		1	(1) 32-Bit Frozen Counter Event
2		2	(2) 16-Bit Frozen Counter Event
5		5	(5) 32-Bit Frozen Counter Event w Time
6		6	(6) 16-Bit Frozen Counter Event w Time
F82	unsigned 16 bits	DNP Object 30 Default Variation	
1		1	(1) 32-Bit Analog Input
2		2	(2) 16-Bit Analog Input
3		3	(3) 32-Bit Analog Input w/o Flag
4		4	(4) 16-Bit Analog Input w/o Flag
F83	unsigned 16 bits	DNP Object 32 Default Variation	
1		1	(1) 32-Bit Analog Change Event w/o Time
2		2	(2) 16-Bit Analog Change Event w/o Time
3		3	(3) 32-Bit Analog Change Event w Time
4		4	(4) 16-Bit Analog Change Event w Time
F85	unsigned 16 bits	DNP Analog Input Point Scale Factor	
1		/ 0.001	/ 0.001
2		/ 0.01	/ 0.01
3		/ 0.1	/ 0.1
4		/ 1	/ 1
5		/ 10	/ 10
6		/ 100	/ 100
7		/ 1000	/ 1000
8		/ 10000	/ 10000
9		/ 100000	/ 100000
F86	unsigned 16 bits	DNP and 103 Binary Output Points	
0		Off	Off
1		Virtual Input 1	Virtual Input 1
2		Virtual Input 2	Virtual Input 2
3		Virtual Input 3	Virtual Input 3
4		Virtual Input 4	Virtual Input 4
5		Virtual Input 5	Virtual Input 5
6		Virtual Input 6	Virtual Input 6
7		Virtual Input 7	Virtual Input 7
8		Virtual Input 8	Virtual Input 8
9		Virtual Input 9	Virtual Input 9

Code	Type	Definition	Long Definition
10		Virtual Input 10	Virtual Input 10
11		Virtual Input 11	Virtual Input 11
12		Virtual Input 12	Virtual Input 12
13		Virtual Input 13	Virtual Input 13
14		Virtual Input 14	Virtual Input 14
15		Virtual Input 15	Virtual Input 15
16		Virtual Input 16	Virtual Input 16
17		Virtual Input 17	Virtual Input 17
18		Virtual Input 18	Virtual Input 18
19		Virtual Input 19	Virtual Input 19
20		Virtual Input 20	Virtual Input 20
21		Virtual Input 21	Virtual Input 21
22		Virtual Input 22	Virtual Input 22
23		Virtual Input 23	Virtual Input 23
24		Virtual Input 24	Virtual Input 24
25		Virtual Input 25	Virtual Input 25
26		Virtual Input 26	Virtual Input 26
27		Virtual Input 27	Virtual Input 27
28		Virtual Input 28	Virtual Input 28
29		Virtual Input 29	Virtual Input 29
30		Virtual Input 30	Virtual Input 30
31		Virtual Input 31	Virtual Input 31
32		Virtual Input 32	Virtual Input 32
33		FC: Reset	Force Coil: Reset
34		FC: Open Breaker	Force Coil: Open Breaker
35		FC: Close Breaker	Force Coil: Close Breaker
36		FC: Display Msg	Force Coil: Display Message
37		FC: Clear Curr Dmd1	Force Coil: Clear Current Dmd1
39		FC: Clear Pwr Dmd	Force Coil: Clear Power Dmd
40		FC:Clear Fault Rep	FC:Clear Fault Rep
F87	unsigned 16 bits	DNP/Ethernet Channel Port	
0		None	None
1		TCP	TCP
2		UDP	UDP
F88	unsigned 16 bits	Analog Values	
0		Disabled	Disabled
1		Phase A Current	Phase A Current
2		Phase B Current	Phase B Current
3		Phase C Current	Phase C Current
4		Avg Phase Current	Average Phase Current
7		Gnd Current	Gnd Current
8		System Frequency	System Frequency
9		Vab	Vab
10		Vbc	Vbc
11		Vca	Vca
12		Van	Van
13		Vbn	Vbn

Code	Type	Definition	Long Definition
14		Vcn	Vcn
15		Power Factor	Power Factor
16		Real Power	Real Power
17		Reactive Pwr	Reactive Power
18		Apparent Pwr	Apparent Power
19		Positive Watthours	Positive Watthours
20		Positive Varhours	Positive Varhours
21		Negative Watthours	Negative Watthours
22		Negative Varhours	Negative Varhours
26		Ntrl Current	Ntrl Current
27		Ntrl Voltage	Ntrl Voltage
46		NSeq Voltage	Negative Sequence Voltage
47		Avg Phase Voltage	Avg Phase Voltage
48		Avg Line Voltage	Avg Line Voltage
55		Dir Power 1	Directional Power 1
56		Dir Power 2	Directional Power 2
60		FR Date (Upper 16)	Fault Report Date (Upper 16)
61		FR Date (Lower 16)	Fault Report Date (Lower 16)
62		FR Time (Upper 16)	Fault Report Time (Upper 16)
63		FR Time (Lower 16)	Fault Report Time (Lower 16)
64		FR Fault Type	Fault Report Fault Type
65		FR Ia	Fault Report Ia
66		FR Ia Angle	Fault Report Ia Angle
67		FR Ib	Fault Report Ib
68		FR Ib Angle	Fault Report Ib Angle
69		FR Ic	Fault Report Ic
70		FR Ic Angle	Fault Report Ic Angle
71		FR Ig	Fault Report Ig
72		FR Ig Angle	Fault Report Ig Angle
73		FR In	Fault Report In
74		FR In Angle	Fault Report In Angle
75		FR Va	Fault Report Va
76		FR Va Angle	Fault Report Va Angle
77		FR Vb	Fault Report Vb
78		FR Vb Angle	Fault Report Vb Angle
79		FR Vc	Fault Report Vc
80		FR Vc Angle	Fault Report Vc Angle
81		FR Vab	Fault Report Vab
82		FR Vab Angle	Fault Report Vab Angle
83		FR Vbc	Fault Report Vbc
84		FR Vbc Angle	Fault Report Vbc Angle
85		FR Vca	Fault Report Vca
86		FR Vca Angle	Fault Report Vca Angle
87		FR Vn	Fault Report Vn
88		FR Vn Angle	Fault Report Vn Angle
89		FR Vaux	Fault Report Vaux
90		FR Vaux Angle	Fault Report Vaux Angle

Code	Type	Definition	Long Definition
91		FR System Freq	Fault Report System Frequency
114		FR Phases	Fault Report Phases
115		Current Dmd 1 PhA	Current Demand 1 PhA
116		Current Dmd 1 PhB	Current Demand 1 PhB
117		Current Dmd 1 PhC	Current Demand 1 PhC
118		Max Curr Dmd1 PhA	Max Current Demand 1 PhA
119		Max Curr Dmd1 PhB	Max Current Demand 1 PhB
120		Max Curr Dmd1 PhC	Max Current Demand 1 PhC
127		Real Pwr Dmd	Real Power Demand
128		React Pwr Dmd	Reactive Power Demand
129		App Pwr Dmd	Apparent Power Demand
130		Max Real Pwr Dmd	Max Real Power Demand
131		Max React Pwr Dmd	Max Reactive Power Demand
132		Max App Pwr Dmd	Max Apparent Power Demand
133		Total Num of Trips	Total Num of Trips
134		Num Emerg Restarts	Number Of Emergency Restarts
135		Num Motor Starts	Number of Motor Starts
136		Motor Run Hours	Motor Running Hours
137		Start Timer 1	Start Timer 1
138		Start Timer 2	Start Timer 2
139		Start Timer 3	Start Timer 3
140		Start Timer 4	Start Timer 4
141		Start Timer 5	Start Timer 5
142		Motor Stop Hours	Motor Stopped Hours
143		Overload Lockout	Overload Lockout
144		Starts/Hr Lockout	Starts/Hour Lockout
145		Time Betw Starts	Time Between Starts
146		Restart Inhibit	Restart Inhibit
147		Thrm Inhib Timer	Thermal Start Inhibit Timer
148		Motor Lockout Time	Motor Lockout Time
149		Thermal Cap Used	Thermal Cap Used
150		Time to Trip	Time to Overload Trip
151		Time To Reset	Time To Reset
152		CBCT	CBCT
153		Motor Load	Motor Load
154		Curr Unbalance	Current Unbalance
155		PhA Curr Angle	PhA Current Angle
156		PhB Curr Angle	PhB Current Angle
157		PhC Curr Angle	PhC Current Angle
158		Van Angle	Van Angle
159		Vbn Angle	Vbn Angle
160		Vcn Angle	Vcn Angle
161		Ig Angle	Ig Angle
162		In Angle	In Angle
163		Ntrl Voltage Angle	Neutral Voltage Angle
165		Vab Angle	Vab Angle
166		Vbc Angle	Vbc Angle

Code	Type	Definition	Long Definition
167		Vca Angle	Vca Angle
168		Biased Motor Load	Biased Motor Load
171		Voltage Unbalance	Voltage Unbalance
172		RTD 7 Temp	RTD 7 Temp
173		RTD 8 Temp	RTD 8 Temp
174		RTD 9 Temp	RTD 9 Temp
175		RTD 10 Temp	RTD 10 Temp
176		RTD 11 Temp	RTD 11 Temp
177		RTD 12 Temp	RTD 12 Temp
178		Internal Temp	Internal Temp
179		Hottest Stator RTD	Hottest Stator RTD
180		Hottst St RTD Temp	Hottest Stator RTD Temperature
181		RTD 1 Temp	RTD 1 Temp
182		RTD 2 Temp	RTD 2 Temp
183		RTD 3 Temp	RTD 3 Temp
184		RTD 4 Temp	RTD 4 Temp
185		RTD 5 Temp	RTD 5 Temp
186		RTD 6 Temp	RTD 6 Temp
187		Ambient Temp	Ambient Temperature
188		Internal Temp Max	Internal Temperature Max
193		Neg Seq V Angle	Negative Sequence V Angle
195		Learned Acc Time	Learned Acceleration Time
196		Learned Start Curr	Learned Starting Current
197		Learned Start Cap	Learned Starting Capacity
198		Last Acc Time	Last Acceleration Time
199		Last Start Curr	Last Starting Current
200		Last Start TCU	Last Start TCU
201		Learned Avg Load	Learned Average Load
202		RunTime in Days	Learned Run Time After Start (days)
203		RunTime in Mins	Learned Run Time After Start (minutes)
204		I^2 Counter	I^2 Counter
205		Avg Motor Load	Average Motor Load Learned
237		BKR Health	Breaker Health
238		BKR Last Trip Time	Breaker Last Trip Time
239		BKR Avg Trip Time	Breaker Average Trip Time
240		BKR Last Close Time	Breaker Last Close Time
241		BKR Avg Close Time	Breaker Average Close Time
242		BKR Last Charge Time	Breaker Last Charge Time
243		BKR Avg Charge Time	Breaker Average Charge Time
F89	unsigned 16 bits	Autoreclose Block	
0		Off	Off
1		On	On
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5

Code	Type	Definition	Long Definition
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10

Code	Type	Definition	Long Definition
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
0xA9C1		CT Fail Alarm PKP	CT Fail Alarm PKP
0xA9C2		CT Fail Alarm OP	CT Fail Alarm OP
F89A	unsigned 16 bits	BKR Health Charge Input	
0		Off	Off
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5

Code	Type	Definition	Long Definition
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10

Code	Type	Definition	Long Definition
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
0xA9C1		CT Fail Alarm PKP	CT Fail Alarm PKP
0xA9C2		CT Fail Alarm OP	CT Fail Alarm OP
F89B	unsigned 16 bits	Start Thermal Protection	
0		Off	Off
1		On	On
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4

Code	Type	Definition	Long Definition
0x44		Contact Input 5	Contact Input 5
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9

Code	Type	Definition	Long Definition
0xC9		Logic Element 10	Logic Element 10
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
F90	unsigned 16 bits	Operate / Do Not Operate	
0		Do Not Operate	Do Not Operate
1		Operate	Operate
F91	signed 16 bits	Edit Group	
F92	unsigned 16 bits	Phases	
1		Any One	Any One
2		Any Two	Any Two
3		All Three	All Three

Code	Type	Definition	Long Definition
F92A	unsigned 16 bits	Phases + Average	
F93	unsigned 16 bits	Phase UV Curve	
0		Definite Time	Definite Time
1		Inverse Time	Inverse Time
F94	unsigned 16 bits	Breaker Control	
0		Disabled	Disabled
1		Contact Input 1	Contact Input 1
2		Contact Input 2	Contact Input 2
3		Contact Input 3	Contact Input 3
4		Contact Input 4	Contact Input 4
5		Contact Input 5	Contact Input 5
6		Contact Input 6	Contact Input 6
7		Contact Input 7	Contact Input 7
8		Contact Input 8	Contact Input 8
9		Contact Input 9	Contact Input 9
10		Contact Input 10	Contact Input 10
F95	unsigned 16 bits	Transient Recorder Buffer	
0		1	1
1		3	3
2		6	6
F96	unsigned 16 bits	Directional Polarizing	
1		Voltage	Voltage
2		Current	Current
3		Dual	Dual
F97	unsigned 16 bits	Rear 485 Port Protocol	
0		Modbus	Modbus
1		IEC60870-5-103	IEC60870-5-103
2		DNP 3.0	DNP 3.0
F98	unsigned 16 bits	Simulated Key Press	
0		No Key Press	No Key Press
1		Nav Up Key	Nav Up Key
2		Nav Left Key	Nav Left Key
3		Nav Down Key	Navigation Down Key
4		Nav Right Key	Navigation Right Key
5		Up Key	Up Key
6		Down Key	Down Key
7		Enter Key	Enter Key
8		Menu Key	Menu Key
9		Escape Key	Escape Key
10		Reset Key	Reset Key
F99	unsigned 16 bits	SR 3 Relay Status	
0		Not Ready	Not Ready
1		Ready	Ready
FC100	unsigned 16 bits	SNTP Mode	
0		Disabled	Disabled
1		Unicast	Unicast
2		Anycast	Anycast

Code	Type	Definition	Long Definition
3		Broadcast	Broadcast
FC101	unsigned 16 bits	RS 485 Baud Rate	
0		9600 baud	9600 baud
1		19200 baud	19200 baud
2		38400 baud	38400 baud
3		57600 baud	57600 baud
4		115200 baud	115200 baud
FC102	unsigned 16 bits	RS 485 Parity	
0		None	None
1		Odd	Odd
2		Even	Even
FC103	unsigned 16 bits	Off / On Selection	
0		Off	Off
1		On	On
FC103A	unsigned 16 bits	No / Yes Selection	
0		NO	NO
1		YES	YES
FC104	unsigned 16 bits	Ground CT Type	
0		1 A Secondary	1 A Secondary
1		5 A Secondary	5 A Secondary
2		50:00.0	50:00.0
FC105	unsigned 16 bits	Differential CT Type	
0		None	None
1		1 A Secondary	1 A Secondary
2		5 A Secondary	5 A Secondary
3		Direct Connect	Direct Connect
FC106	unsigned 16 bits	Voltage Transformer Connection Type	
0		Wye	Wye
1		Delta	Delta
FC107	unsigned 16 bits	Supply Frequency	
0		60 Hz	60 Hz
1		50 Hz	50 Hz
FC108	unsigned 16 bits	61850 Status	
0		Not Ready	Not Ready
1		Ready	Ready
2		Default CID	Default CID
FC109	unsigned 16 bits	Flex Logic Status	
0		OK	OK
1		Unknown Token	Unknown Token
2		TooMany Latches	Too Many Latches
3		TooMany Timers	Too Many Timers
4		TooMany + OneShots	Too Many + One Shots
5		TooMany - OneShots	Too Many - One Shots
6		TooMany Duel1Shots	Too Many Duel One Shots
7		Stack Overflow	Stack Overflow
8		Stack Underflow	Stack Underflow
9		Program Too Long	Program Too Long

Code	Type	Definition	Long Definition
FC111	unsigned 16 bits	Trip Relays	
0		Trip	Trip
1		Alarm	Alarm
FC112	unsigned 16 bits	Communication Status	
0		Error	Error
1		OK	OK
FC115	unsigned 16 bits	Alarm Type Selection	
0		Off	Off
1		Trip	Trip
2		Alarm	Alarm
FC116	unsigned 16 bits	Switch Type	
0		Open	Open
1		Closed	Closed
FC117	unsigned 16 bits	Directional Voltage	
0		Measured (Vx)	Measured (Vx)
1		Calculated (VTs)	Calculated (VTs)
FC118	unsigned 16 bits	WGF Voltage	
0		Calculated (Vn)	Calculated (Vn)
1		Measured (Vx)	Measured (Vx)
FC119	unsigned 16 bits	WGF Current	
0		Calculated (In)	Calculated (In)
1		Measured (Ig)	Measured (Ig)
FC120	unsigned 16 bits	RTD Type	
0		100 Ohm Pt	100 Ohm Platinum
FC121	unsigned 16 bits	RTD Application	
0		None	None
1		Stator	Stator
2		Bearing	Bearing
3		Ambient	Ambient
6		Other	Other
FC122	unsigned 16 bits	RTD Voting Selection	
0		Off	Off
1		RTD #1	RTD #1
2		RTD #2	RTD #2
3		RTD #3	RTD #3
4		RTD #4	RTD #4
5		RTD #5	RTD #5
6		RTD #6	RTD #6
7		RTD #7	RTD #7
8		RTD #8	RTD #8
9		RTD #9	RTD #9
10		RTD #10	RTD #10
11		RTD #11	RTD #11
12		RTD #12	RTD #12
FC123	unsigned 16 bits	Select DV Voltage	
0		17V Threshold	17V Threshold
1		33V Threshold	33V Threshold

Code	Type	Definition	Long Definition
2		84V Threshold	84V Threshold
3		166V Threshold	166V Threshold
FC124	unsigned 16 bits	Phase Rotation	
0		ABC	ABC
1		CBA	CBA
FC124A	unsigned 16 bits	Phase Rotation	
0		ABC	ABC
1		ACB	ACB
FC125	unsigned 16 bits	Coil Monitor	
0		Healthy	Healthy
1		Unhealthy	Unhealthy
FC126	unsigned 16 bits	Disabled / Enabled Selection	
0		Disabled	Disabled
1		Enabled	Enabled
FC127	unsigned 16 bits	System Language	
0		English	English
1		Chinese	Chinese
FC128	unsigned 16 bits	Command Status	
5		None	None
FC129	unsigned 16 bits	Relay Status	
FC130	unsigned 16 bits	LED Flash	
FC131	unsigned 16 bits	Comm Fail Mode	
1		Serial	Serial
2		Serial & Ethernet	Serial & Ethernet
4		Serial & FieldBus	Serial & FieldBus
8		Ethernet	Ethernet
16		FieldBus	FieldBus
32		Ethernet&Fieldbus	Ethernet & Fieldbus
64		All	All
FC133	unsigned 16 bits	Cause of Waveform Trigger	
0		None	None
1		Command	Command
0x00C0		Logic Element 1	Logic Element 1
0x00C1		Logic Element 2	Logic Element 2
0x00C2		Logic Element 3	Logic Element 3
0x00C3		Logic Element 4	Logic Element 4
0x00C4		Logic Element 5	Logic Element 5
0x00C5		Logic Element 6	Logic Element 6
0x00C6		Logic Element 7	Logic Element 7
0x00C7		Logic Element 8	Logic Element 8
0x00C8		Logic Element 9	Logic Element 9
0x00C9		Logic Element 10	Logic Element 10
0x00CA		Logic Element 11	Logic Element 11
0x00CB		Logic Element 12	Logic Element 12
0x00CC		Logic Element 13	Logic Element 13
0x00CD		Logic Element 14	Logic Element 14
0x00CE		Logic Element 15	Logic Element 15

Code	Type	Definition	Long Definition
0x00CF		Logic Element 16	Logic Element 16
0x00D0		VO 17	Virtual Output 17
0x00D1		VO 18	Virtual Output 18
0x00D2		VO 19	Virtual Output 19
0x00D3		VO 20	Virtual Output 20
0x00D4		VO 21	Virtual Output 21
0x00D5		VO 22	Virtual Output 22
0x00D6		VO 23	Virtual Output 23
0x00D7		VO 24	Virtual Output 24
0x00D8		VO 25	Virtual Output 25
0x00D9		VO 26	Virtual Output 26
0x00DA		VO 27	Virtual Output 27
0x00DB		VO 28	Virtual Output 28
0x00DC		VO 29	Virtual Output 29
0x00DD		VO 30	Virtual Output 30
0x00DE		VO 31	Virtual Output 31
0x00DF		VO 32	Virtual Output 32
0x8001		Any Trip PickUp	Any Trip PickUp
0x8002		Any Trip	Any Trip
0x8004		Any Trip DropOut	Any Trip DropOut
0xA001		Any Alarm PickUp	Any Alarm PickUp
0xA002		Any Alarm	Any Alarm
0xA004		Any Alarm DropOut	Any Alarm DropOut
0xC002		Any Inhibit	Any Inhibit
0xD000		Input 1	Input 1
0xD001		Input 2	Input 2
0xD002		Input 3	Input 3
FC133A	unsigned 16 bits	Data Log Trigger	
0		None	None
1		Command	Command
0x00C0		Logic Element 1	Logic Element 1
0x00C1		Logic Element 2	Logic Element 2
0x00C2		Logic Element 3	Logic Element 3
0x00C3		Logic Element 4	Logic Element 4
0x00C4		Logic Element 5	Logic Element 5
0x00C5		Logic Element 6	Logic Element 6
0x00C6		Logic Element 7	Logic Element 7
0x00C7		Logic Element 8	Logic Element 8
0x00C8		Logic Element 9	Logic Element 9
0x00C9		Logic Element 10	Logic Element 10
0x00CA		Logic Element 11	Logic Element 11
0x00CB		Logic Element 12	Logic Element 12
0x00CC		Logic Element 13	Logic Element 13
0x00CD		Logic Element 14	Logic Element 14
0x00CE		Logic Element 15	Logic Element 15
0x00CF		Logic Element 16	Logic Element 16
0x8001		Any Trip PickUp	Any Trip PickUp

Code	Type	Definition	Long Definition
0x8002		Any Trip	Any Trip
0x8004		Any Trip DropOut	Any Trip DropOut
0xA001		Any Alarm PickUp	Any Alarm PickUp
0xA002		Any Alarm	Any Alarm
0xA004		Any Alarm DropOut	Any Alarm DropOut
0xC002		Any Inhibit	Any Inhibit
FC134	unsigned 16 bits	Cause of Event	
0		No Evnt/Trp ToDate	No Event/Trip To Date
1		Ctrl. Pwr Lost	Control Power Lost
2		Ctrl. Pwr Applied	Control Power Applied
3		Date or Time Set	Date or Time Set
4		Reset	Reset
5		Lockout Rst Closed	Lockout Reset Closed
6		Factory Reload	Factory Reload
7		Clock Not Set	Clock Not Set
8		IRIG-B Failure	IRIG-B Failure
9		Reset Trip Counter	Reset Trip Counter
10		BKR Status Unknown	Breaker Status Unknown
11		Clear Event Rec	Clear Event Records
12		Clear Transt Rec	Clear Transient Records
13		Clear Therm Cap	Clear Thermal Capacity
14		Comm. Alert 1	Comm. Alert 1
15		Comm. Alert 2	Comm. Alert 2
16		Comm. Alert 3	Comm. Alert 3
17		Ethernet Link Fail	Ethernet Link Failure
18		High ENET Traffic	High Ethernet Traffic
19		Intern Temp. >80C	Internal Temperature High
20		RMIO Mismatch	RMIO Mismatch
22		Emergency Restart	Emergency Restart
23		Trace Mem. Trigger	Trace Mem. Trigger
24		Rx Goose 1 ON	Rx Goose 1 ON
25		Rx Goose 1 OFF	Rx Goose 1 OFF
26		Rx Goose 2 ON	Rx Goose 2 ON
27		Rx Goose 2 OFF	Rx Goose 2 OFF
28		Rx Goose 3 ON	Rx Goose 3 ON
29		Rx Goose 3 OFF	Rx Goose 3 OFF
30		Rx Goose 4 ON	Rx Goose 4 ON
31		Rx Goose 4 OFF	Rx Goose 4 OFF
32		Rx Goose 5 ON	Rx Goose 5 ON
33		Rx Goose 5 OFF	Rx Goose 5 OFF
34		Rx Goose 6 ON	Rx Goose 6 ON
35		Rx Goose 6 OFF	Rx Goose 6 OFF
36		Rx Goose 7 ON	Rx Goose 7 ON
37		Rx Goose 7 OFF	Rx Goose 7 OFF
38		Rx Goose 8 ON	Rx Goose 8 ON
39		Rx Goose 8 OFF	Rx Goose 8 OFF
40		Eth Link A Fail	Ethernet Link A Fail

Code	Type	Definition	Long Definition
41		Eth Link B Fail	Ethernet Link B Fail
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On

Code	Type	Definition	Long Definition
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On

Code	Type	Definition	Long Definition
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off

Code	Type	Definition	Long Definition
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x8002		Any Trip	Any Trip
0x8041		Therm O/L Trip PKP	Thermal Overload Trip PKP
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x8081		GF Trip PKP	GF Trip PKP
0x8082		GF Trip OP	GF Trip OP
0x8084		GF Trip DPO	GF Trip DPO
0x80C2		Accel Trip OP	Acceleration Trip OP
0x8141		Under Pwr Trip PKP	Under Power Trip PKP
0x8142		Under Pwr Trip OP	Under Power Trip OP
0x8144		Under Pwr Trip DPO	Under Power Trip DPO
0x8181		Single PH Trip PKP	Single PH Trip PKP
0x8182		Single PH Trip OP	Single PH Trip OP
0x8184		Single PH Trip DPO	Single PH Trip DPO
0x8201		Mech Jam Trip PKP	Mech Jam Trip PKP
0x8202		Mech Jam Trip OP	Mech Jam Trip OP
0x8204		Mech Jam Trip DPO	Mech Jam Trip DPO
0x8241		U/CURR Trip PKP	U/CURR Trip PKP
0x8242		U/CURR Trip OP	U/CURR Trip OP
0x8244		U/CURR Trip DPO	U/CURR Trip DPO
0x8281		UNBAL Trip PKP	Unbalance Trip PKP
0x8282		UNBAL Trip OP	Unbalance Trip OP
0x8284		UNBAL Trip DPO	Unbalance Trip DPO
0x82C1		RTD 1 Trip PKP	RTD 1 Trip PKP
0x82C2		RTD 1 Trip OP	RTD 1 Trip OP
0x8301		RTD 2 Trip PKP	RTD 2 Trip PKP
0x8302		RTD 2 Trip OP	RTD 2 Trip OP
0x8341		RTD 3 Trip PKP	RTD 3 Trip PKP
0x8342		RTD 3 Trip OP	RTD 3 Trip OP
0x8381		RTD 4 Trip PKP	RTD 4 Trip PKP
0x8382		RTD 4 Trip OP	RTD 4 Trip OP
0x83C1		RTD 5 Trip PKP	RTD 5 Trip PKP
0x83C2		RTD 5 Trip OP	RTD 5 Trip OP
0x8401		RTD 6 Trip PKP	RTD 6 Trip PKP
0x8402		RTD 6 Trip OP	RTD 6 Trip OP
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP

Code	Type	Definition	Long Definition
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x86C1		RTD 7 Trip PKP	RTD 7 Trip PKP
0x86C2		RTD 7 Trip OP	RTD 7 Trip OP
0x8701		RTD 8 Trip PKP	RTD 8 Trip PKP
0x8702		RTD 8 Trip OP	RTD 8 Trip OP
0x8741		RTD 9 Trip PKP	RTD 9 Trip PKP
0x8742		RTD 9 Trip OP	RTD 9 Trip OP
0x8781		RTD 10 Trip PKP	RTD 10 Trip PKP
0x8782		RTD 10 Trip OP	RTD 10 Trip OP
0x87C1		RTD 11 Trip PKP	RTD 11 Trip PKP
0x87C2		RTD 11 Trip OP	RTD 11 Trip OP
0x8801		RTD 12 Trip PKP	RTD 12 Trip PKP
0x8802		RTD 12 Trip OP	RTD 12 Trip OP
0x8841		PosSeq UV1 Trp PKP	Positive Sequence UV 1 Trp PKP
0x8842		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8844		PosSeq UV1 Trp DPO	Positive Sequence UV 1 Trp DPO
0x8901		PosSeq UV2 Trp PKP	Positive Sequence UV 2 Trp PKP
0x8902		PosSeq UV2 Trip OP	Positive Sequence UV 2 Trip OP
0x8904		PosSeq UV2 Trp DPO	Positive Sequence UV 2 Trp DPO
0x89C2		Self Test OP	Self Test OP
0x89C4		Self Test DPO	Self Test Trip DPO
0x8F81		Fuse Fail Trip PKP	Fuse Fail Trip PKP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8F84		Fuse Fail Trip DPO	Fuse Fail Trip DPO
0x8FC1		Ph Revrsl Trip PKP	Ph Revrsl Trip PKP
0x8FC2		Ph Revrsl Trip OP	Ph Revrsl Trip OP
0x8FC4		Ph Revrsl Trip DPO	Ph Revrsl Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP

Code	Type	Definition	Long Definition
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x90C9		Ph A TOC1 Trip PKP	Phase A TOC 1 Trip PKP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90CC		Ph A TOC1 Trip DPO	Phase A TOC 1 Trip DPO
0x90D1		Ph B TOC1 Trip PKP	Phase B TOC 1 Trip PKP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90D4		Ph B TOC1 Trip DPO	Phase B TOC 1 Trip DPO
0x90E1		Ph C TOC1 Trip PKP	Phase C TOC 1 Trip PKP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x90E4		Ph C TOC1 Trip DPO	Phase C TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9241		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x9242		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x9281		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x9282		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x93C1		NSeq OV Trp PKP	Negative Sequence OV Trip PKP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x93C4		NSeq OV Trp DPO	Negative Sequence OV Trip DPO
0x9441		Ph OV1 Trip PKP	Phase OV1 Trip PKP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x9444		Ph OV1 Trip DPO	Phase OV1 Trip DPO
0x9449		Ph A OV1 Trip PKP	Phase A OV1 Trip PKP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x944C		Ph A OV1 Trip DPO	Phase A OV1 Trip DPO
0x9451		Ph B OV1 Trip PKP	Phase B OV1 Trip PKP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP
0x9454		Ph B OV1 Trip DPO	Phase B OV1 Trip DPO
0x9461		Ph C OV1 Trip PKP	Phase C OV1 Trip PKP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9464		Ph C OV1 Trip DPO	Phase C OV1 Trip DPO
0x9481		Ph UV1 Trip PKP	Phase UV1 Trip PKP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x9484		Ph UV1 Trip DPO	Phase UV1 Trip DPO
0x9489		Ph A UV1 Trip PKP	Phase A UV1 Trip PKP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x948C		Ph A UV1 Trip DPO	Phase A UV1 Trip DPO
0x9491		Ph B UV1 Trip PKP	Phase B UV1 Trip PKP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x9494		Ph B UV1 Trip DPO	Phase B UV1 Trip DPO
0x94A1		Ph C UV1 Trip PKP	Phase C UV1 Trip PKP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP

Code	Type	Definition	Long Definition
0x94A4		Ph C UV1 Trip DPO	Phase C UV1 Trip DPO
0x9541		UndrFreq1 Trip PKP	Underfrequency 1 Trip PKP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9544		UndrFreq1 Trip DPO	Underfrequency 1 Trip DPO
0x9581		UndrFreq2 Trip PKP	Underfrequency 2 Trip PKP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x9584		UndrFreq2 Trip DPO	Underfrequency 2 Trip DPO
0x95C1		OverFreq1 Trip PKP	Overfrequency 1 Trip PKP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x95C4		OverFreq1 Trip DPO	Overfrequency 1 Trip DPO
0x9601		OverFreq2 Trip PKP	Overfrequency 2 Trip PKP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9604		OverFreq2 Trip DPO	Overfrequency 2 Trip DPO
0x9881		Ph OV2 Trip PKP	Phase OV 2 Trip PKP
0x9882		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x9884		Ph OV2 Trip DPO	Phase OV 2 Trip DPO
0x9889		Ph A OV2 Trip PKP	Phase A OV2 Trip PKP
0x988A		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x988C		Ph A OV2 Trip DPO	Phase A OV2 Trip DPO
0x9891		Ph B OV2 Trip PKP	Phase B OV2 Trip PKP
0x9892		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x9894		Ph B OV2 Trip DPO	Phase B OV2 Trip DPO
0x98A1		Ph C OV2 Trip PKP	Phase C OV2 Trip PKP
0x98A2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x98A4		Ph C OV2 Trip DPO	Phase C OV2 Trip DPO
0x98C1		Ph UV2 Trip PKP	Phase UV 2 Trip PKP
0x98C2		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x98C4		Ph UV2 Trip DPO	Phase UV 2 Trip DPO
0x98C9		Ph A UV2 Trip PKP	Phase A UV2 Trip PKP
0x98CA		Ph A UV2 Trip OP	Phase A UV2 Trip OP
0x98CC		Ph A UV2 Trip DPO	Phase A UV2 Trip DPO
0x98D1		Ph B UV2 Trip PKP	Phase B UV2 Trip PKP
0x98D2		Ph B UV2 Trip OP	Phase B UV2 Trip OP
0x98D4		Ph B UV2 Trip DPO	Phase B UV2 Trip DPO
0x98E1		Ph C UV2 Trip PKP	Phase C UV2 Trip PKP
0x98E2		Ph C UV2 Trip OP	Phase C UV2 Trip OP
0x98E4		Ph C UV2 Trip DPO	Phase C UV2 Trip DPO
0x9901		S/C Trip PKP	S/C Trip PKP
0x9902		S/C Trip OP	S/C Trip OP
0x9904		S/C Trip DPO	S/C Trip DPO
0x9941		SPD2 S/C Trip PKP	SPD2 S/C Trip PKP
0x9942		SPD2 S/C Trip OP	SPD2 S/C Trip OP
0x9944		SPD2 S/C Trip DPO	SPD2 S/C Trip DPO
0x9981		SPD2 U/C Trip PKP	SPD2 U/C Trip PKP
0x9982		SPD2 U/C Trip OP	SPD2 U/C Trip OP
0x9984		SPD2 U/C Trip DPO	SPD2 U/C Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP

Code	Type	Definition	Long Definition
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA081		Gnd Fault Alrm PKP	Ground Fault Alarm PKP
0xA082		Gnd Fault Alrm OP	Ground Fault Alarm OP
0xA084		Gnd Fault Alrm DPO	Ground Fault Alarm DPO
0xA0C2		Accel Alarm OP	Accel Alarm OP
0xA141		Under Pwr Alrm PKP	Under Power Alarm PKP
0xA142		Under Pwr Alrm OP	Under Power Alarm OP
0xA144		Under Pwr Alrm DPO	Under Power Alarm DPO
0xA201		Mech Jam Alarm PKP	Mech Jam Alarm PKP
0xA202		Mech Jam Alarm OP	Mech Jam Alarm OP
0xA204		Mech Jam Alarm DPO	Mech Jam Alarm DPO
0xA241		U/CURR Alarm PKP	U/CURR Alarm PKP
0xA242		U/CURR Alarm OP	U/CURR Alarm OP
0xA244		U/CURR Alarm DPO	U/CURR Alarm DPO
0xA281		UNBAL Alarm PKP	Unbalance Alarm PKP
0xA282		UNBAL Alarm OP	Unbalance Alarm OP
0xA284		UNBAL Alarm DPO	Unbalance Alarm DPO
0xA2C1		RTD 1 Alarm PKP	RTD 1 Alarm PKP
0xA2C2		RTD 1 Alarm OP	RTD 1 Alarm OP
0xA301		RTD 2 Alarm PKP	RTD 2 Alarm PKP
0xA302		RTD 2 Alarm OP	RTD 2 Alarm OP
0xA341		RTD 3 Alarm PKP	RTD 3 Alarm PKP

Code	Type	Definition	Long Definition
0xA342		RTD 3 Alarm OP	RTD 3 Alarm OP
0xA381		RTD 4 Alarm PKP	RTD 4 Alarm PKP
0xA382		RTD 4 Alarm OP	RTD 4 Alarm OP
0xA3C1		RTD 5 Alarm PKP	RTD 5 Alarm PKP
0xA3C2		RTD 5 Alarm OP	RTD 5 Alarm OP
0xA401		RTD 6 Alarm PKP	RTD 6 Alarm PKP
0xA402		RTD 6 Alarm OP	RTD 6 Alarm OP
0xA442		RTD Trouble Alr OP	RTD Trouble Alarm
0xA482		Relay Not Ready	Relay Not Ready
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA6C1		RTD 7 Alarm PKP	RTD 7 Alarm PKP
0xA6C2		RTD 7 Alarm OP	RTD 7 Alarm OP
0xA701		RTD 8 Alarm PKP	RTD 8 Alarm PKP
0xA702		RTD 8 Alarm OP	RTD 8 Alarm OP
0xA741		RTD 9 Alarm PKP	RTD 9 Alarm PKP
0xA742		RTD 9 Alarm OP	RTD 9 Alarm OP
0xA781		RTD 10 Alarm PKP	RTD 10 Alarm PKP
0xA782		RTD 10 Alarm OP	RTD 10 Alarm OP
0xA7C1		RTD 11 Alarm PKP	RTD 11 Alarm PKP
0xA7C2		RTD 11 Alarm OP	RTD 11 Alarm OP
0xA801		RTD 12 Alarm PKP	RTD 12 Alarm PKP
0xA802		RTD 12 Alarm OP	RTD 12 Alarm OP
0xA841		PosSeq UV1 AlrmPKP	Positive Sequence UV 1 Alarm PKP
0xA842		PosSeq UV1 Alrm OP	Positive Sequence UV 1 Alarm OP

Code	Type	Definition	Long Definition
0xA844		PosSeq UV1 AlrmDPO	Positive Sequence UV 1 Alarm DPO
0xA882		BKR Alarm	Breaker Alarm
0xA901		PosSeq UV2 AlrmPKP	Positive Sequence UV 2 Alarm PKP
0xA902		PosSeq UV2 Alrm OP	Positive Sequence UV 2 Alarm OP
0xA904		PosSeq UV2 AlrmDPO	Positive Sequence UV 2 Alarm DPO
0xA982		Motor Run Hrs OP	Motor Running Hours OP
0xA9C1		CTFail Alrm PKP	CT Fail Alarm PKP
0xA9C2		CTFail Alrm OP	CT Fail Alarm OP
0xA9C4		CTFail Alrm DPO	CT Fail Alarm DPO
0xAA01		Welded ContactrPKP	Welded ContactrPKP
0xAA02		Welded Contactr OP	Welded Contactr OP
0xAA04		Welded ContactrDPO	Welded ContactrDPO
0xAA42		SPD SW Not Cnfg OP	SPD SW Not Cnfg OP
0xAA82		SPD SW Fail OP	SPD SW Fail OP
0xAAC1		Load Incr Alrm PKP	Load Incr Alrm PKP
0xAAC2		Load Incr Alrm OP	Load Incr Alrm OP
0xAAC4		Load Incr Alrm DPO	Load Incr Alrm DPO
0xAB02		BKR Trip Time	Breaker Trip Time
0xAB42		BKR Close Time	Breaker Close Time
0xAB82		BKR Charge Time	Breaker Charge Time
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xAC44		Self Test Alrm DPO	Self Test Alarm DPO
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xACC4		BKRTrpCntrAlrm DPO	Breaker Trip Control Alarm DPO
0xAD01		R1 CoilMonAlrm PKP	Trip Coil Monitor Alarm PKP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD04		R1 CoilMonAlrm DPO	Trip Coil Monitor Alarm DPO
0xAD41		R2 CoilMonAlrm PKP	Close Coil Monitor Alarm PKP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD44		R2 CoilMonAlrm DPO	Close Coil Monitor Alarm DPO
0xAD81		BKR Fail Alrm PKP	Breaker Fail Alarm PKP
0xAD82		BKR Fail Alrm OP	Breaker Fail Alarm OP
0xAD84		BKR Fail Alrm DPO	Breaker Fail Alarm DPO
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xADC4		BKR Stat Fail DPO	Breaker Status Fail DPO
0xAE82		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAEC2		BKR Charge Fail	Breaker Charge Fail
0xAF81		Fuse Fail Alrm PKP	Fuse Fail Alarm PKP
0xAF82		Fuse Fail Alrm OP	Fuse Fail Alarm OP
0xAF84		Fuse Fail Alrm DPO	Fuse Fail Alarm DPO
0xAFC1		Ph Revrsl Alrm PKP	Ph Reversal Alarm PKP

Code	Type	Definition	Long Definition
0xAFC2		Ph Revrsl Alarm OP	Ph Reversal Alarm OP
0xAFC4		Ph Revrsl Alrm DPO	Ph Reversal Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB0C9		Ph A TOC1 Alrm PKP	Phase A TOC 1 Alarm PKP
0xB0CA		Ph A TOC1 Alrm OP	Phase A TOC 1 Alarm OP
0xB0CC		Ph A TOC1 Alrm DPO	Phase A TOC 1 Alarm DPO
0xB0D1		Ph B TOC1 Alrm PKP	Phase B TOC 1 Alarm PKP
0xB0D2		Ph B TOC1 Alrm OP	Phase B TOC 1 Alarm OP
0xB0D4		Ph B TOC1 Alrm DPO	Phase B TOC 1 Alarm DPO
0xB0E1		Ph C TOC1 Alrm PKP	Phase C TOC 1 Alarm PKP
0xB0E2		Ph C TOC1 Alrm OP	Phase C TOC 1 Alarm OP
0xB0E4		Ph C TOC1 Alrm DPO	Phase C TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB241		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xB242		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xB281		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP
0xB282		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xB341		NtrlDir RevAlmPKP	Neutral Directional Reverse Alarm PKP
0xB342		NtrlDir RevAlm OP	Neutral Directional Alarm OP
0xB344		NtrlDir RevAlmDPO	Neutral Directional Reverse Alarm DPO
0xB3C1		NSeq OV Alrm PKP	Negative Sequence OV Alarm PKP
0xB3C2		NSeq OV Alrm OP	Negative Sequence OV Alarm OP
0xB3C4		NSeq OV Alrm DPO	Negative Sequence OV Alarm DPO
0xB441		Ph OV1 Alarm PKP	Phase OV1 Alarm PKP
0xB442		Ph OV1 Alarm OP	Phase OV 1 Alarm OP
0xB444		Ph OV1 Alarm DPO	Phase OV1 Alarm DPO
0xB449		Ph A OV1 Alarm PKP	Phase A OV1 Alarm PKP
0xB44A		Ph A OV1 Alarm OP	Phase A OV1 Alarm OP
0xB44C		Ph A OV1 Alarm DPO	Phase A OV1 Alarm DPO
0xB451		Ph B OV1 Alarm PKP	Phase B OV1 Alarm PKP
0xB452		Ph B OV1 Alarm OP	Phase B OV1 Alarm OP
0xB454		Ph B OV1 Alarm DPO	Phase B OV1 Alarm DPO
0xB461		Ph C OV1 Alarm PKP	Phase C OV1 Alarm PKP
0xB462		Ph C OV1 Alarm OP	Phase C OV1 Alarm OP
0xB464		Ph C OV1 Alarm DPO	Phase C OV1 Alarm DPO
0xB481		Ph UV1 Alarm PKP	Phase UV1 Alarm PKP
0xB482		Ph UV1 Alarm OP	Phase UV 1 Alarm OP
0xB484		Ph UV1 Alarm DPO	Phase UV1 Alarm DPO
0xB489		Ph A UV1 Alarm PKP	Phase A UV1 Alarm PKP
0xB48A		Ph A UV1 Alarm OP	Phase A UV1 Alarm OP

Code	Type	Definition	Long Definition
0xB48C		Ph A UV1 Alarm DPO	Phase A UV1 Alarm DPO
0xB491		Ph B UV1 Alarm PKP	Phase B UV1 Alarm PKP
0xB492		Ph B UV1 Alarm OP	Phase B UV1 Alarm OP
0xB494		Ph B UV1 Alarm DPO	Phase B UV1 Alarm DPO
0xB4A1		Ph C UV1 Alarm PKP	Phase C UV1 Alarm PKP
0xB4A2		Ph C UV1 Alarm OP	Phase C UV1 Alarm OP
0xB4A4		Ph C UV1 Alarm DPO	Phase C UV1 Alarm DPO
0xB541		UndrFreq1 Alrm PKP	Underfrequency 1 Alarm PKP
0xB542		UndrFreq1 Alrm OP	Underfrequency 1 Alarm OP
0xB544		UndrFreq1 Alrm DPO	Underfrequency 1 Alarm DPO
0xB581		UndrFreq2 Alrm PKP	Underfrequency 2 Alarm PKP
0xB582		UndrFreq2 Alrm OP	Underfrequency 2 Alarm OP
0xB584		UndrFreq2 Alrm DPO	Underfrequency 2 Alarm DPO
0xB5C1		OverFreq1 Alrm PKP	Overfrequency 1 Alarm PKP
0xB5C2		OverFreq1 Alrm OP	Overfrequency 1 Alarm OP
0xB5C4		OverFreq1 Alrm DPO	Overfrequency 1 Alarm DPO
0xB601		OverFreq2 Alrm PKP	Overfrequency 2 Alarm PKP
0xB602		OverFreq2 Alrm OP	Overfrequency 2 Alarm OP
0xB604		OverFreq2 Alrm DPO	Overfrequency 2 Alarm DPO
0xB702		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xB70A		C Dmd1 PhA Alrm OP	Current Demand 1 PhA Alarm OP
0xB712		C Dmd1 PhB Alrm OP	Current Demand 1 PhB Alarm OP
0xB722		C Dmd1 PhC Alrm OP	Current Demand 1 PhC Alarm OP
0xB742		RealP Dmd Alrm OP	Real Power Demand Alarm OP
0xB782		ReacP Dmd Alrm OP	Reactive Power Demand Alarm OP
0xB7C2		AppP Dmd Alrm OP	Apparent Power Demand Alarm OP
0xB881		Ph OV2 Alarm PKP	Phase OV 2 Alarm PKP
0xB882		Ph OV2 Alarm OP	Phase OV 2 Alarm OP
0xB884		Ph OV2 Alarm DPO	Phase OV 2 Alarm DPO
0xB889		Ph A OV2 Alarm PKP	Ph A OV2 Alarm PKP
0xB88A		Ph A OV2 Alarm OP	Ph A OV2 Alarm OP
0xB88C		Ph A OV2 Alarm DPO	Ph A OV2 Alarm DPO
0xB891		Ph B OV2 Alarm PKP	Ph B OV2 Alarm PKP
0xB892		Ph B OV2 Alarm OP	Ph B OV2 Alarm OP
0xB894		Ph B OV2 Alarm DPO	Ph B OV2 Alarm DPO
0xB8A1		Ph C OV2 Alarm PKP	Ph C OV2 Alarm PKP
0xB8A2		Ph C OV2 Alarm OP	Ph C OV2 Alarm OP
0xB8A4		Ph C OV2 Alarm DPO	Ph C OV2 Alarm DPO
0xB8C1		Ph UV2 Alarm PKP	Phase UV 2 Alarm PKP
0xB8C2		Ph UV2 Alarm OP	Phase UV 2 Alarm OP
0xB8C4		Ph UV2 Alarm DPO	Phase UV 2 Alarm DPO
0xB8C9		Ph A UV2 Alarm PKP	Ph A UV2 Alarm PKP
0xB8CA		Ph A UV2 Alarm OP	Ph A UV2 Alarm OP
0xB8CC		Ph A UV2 Alarm DPO	Ph A UV2 Alarm DPO
0xB8D1		Ph B UV2 Alarm PKP	Ph B UV2 Alarm PKP
0xB8D2		Ph B UV2 Alarm OP	Ph B UV2 Alarm OP
0xB8D4		Ph B UV2 Alarm DPO	Ph B UV2 Alarm DPO

Code	Type	Definition	Long Definition
0xB8E1		Ph C UV2 Alarm PKP	Ph C UV2 Alarm PKP
0xB8E2		Ph C UV2 Alarm OP	Ph C UV2 Alarm OP
0xB8E4		Ph C UV2 Alarm DPO	Ph C UV2 Alarm DPO
0xB901		S/C Alarm PKP	S/C Alarm PKP
0xB902		S/C Alarm OP	S/C Alarm OP
0xB904		S/C Alarm DPO	S/C Alarm DPO
0xB941		SPD2 S/C Alarm PKP	SPD2 S/C Alarm PKP
0xB942		SPD2 S/C Alarm OP	SPD2 S/C Alarm OP
0xB944		SPD2 S/C Alarm DPO	SPD2 S/C Alarm DPO
0xB981		SPD2 U/C Alarm PKP	SPD2 U/C Alarm PKP
0xB982		SPD2 U/C Alarm OP	SPD2 U/C Alarm OP
0xB984		SPD2 U/C Alarm DPO	SPD2 U/C Alarm DPO
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xC002		Any Inhibit	Any Inhibit
0xC042		Output Relay 3 On	Output Relay 3 On
0xC044		Output Relay 3 Off	Output Relay 3 Off
0xC082		Output Relay 4 On	Output Relay 4 On
0xC084		Output Relay 4 Off	Output Relay 4 Off
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC0C4		Output Relay 5 Off	Output Relay 5 Off
0xC102		Output Relay 6 On	Output Relay 6 On
0xC104		Output Relay 6 Off	Output Relay 6 Off
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC144		Self-Tst Rly 7 DPO	Self-Tst Rly 7 DPO

Code	Type	Definition	Long Definition
0xC202		BKR Connected	Breaker Connected OP
0xC242		High Speed OP	High Speed OP
0xC282		Low Speed OP	Low Speed OP
0xC2C2		Any Pkp OP	Any Pkp OP
0xC302		Stopped	Stopped
0xC342		Starting	Starting
0xC382		Running	Running
0xC3C2		Motor Online OP	Motor Online OP
0xC402		Emergency Restart	Emergency Restart
0xC441		Hot RTD PKP	Hot RTD PKP
0xC442		Hot RTD OP	Hot RTD OP
0xC481		Lockout PKP	Lockout PKP
0xC482		Lockout OP	Lockout OP
0xC484		Lockout DPO	Lockout DPO
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC742		VFD Bypassed	VFD Bypassed
0xC744		VFD Not Bypassed	VFD Not Bypassed
0xC902		BKR Open	Breaker Open
0xC942		BKR Close	Breaker Close
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCA82		Reset OK	Reset OK
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP

Code	Type	Definition	Long Definition
0xCAC4		L/O Rst Closed DPO	Lockout Reset Closed DPO
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD82		Testing ON	Testing ON
0xCD84		Testing OFF	Testing OFF
0xCE82		Therm Inhibit OP	Therm Inhibit OP
0xCE84		Therm Inhibit DPO	Thermal Inhibit DPO
0xCEC2		Restart Inhibit OP	Restart Inhibit OP
0xCEC4		Restart Inhib Off	Restart Inhib Off
0xCF02		Starts/Hr Inhib OP	Starts/Hr Inhibit OP
0xCF04		Start/Hr Inhib Off	Start/Hr Inhib Off
0xCF42		T-BT-Strt Inhib OP	T-BT-Strt Inhibit OP
0xCF44		T-BT-Strt InhibOff	T-BT-Strt InhibOff
0xCF81		Fuse Fail InhibPKP	Fuse Fail InhibPKP
0xCF82		Fuse Fail Inhib OP	Fuse Fail Inhibit OP
0xCF84		Fuse Fail InhibDPO	Fuse Fail Inhibit DPO
0xCFC2		Ph Rev Inhibit OP	Ph Reversal Inhibit OP
0xCFC4		Ph Rev Inhibit DPO	Ph Rev Inhibit DPO
0xD241		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xD242		Dir Pwr 1 OP	Directional Pwr 1 OP
0xD281		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xD282		Dir Pwr 2 OP	Directional Pwr 2 OP
0xD341		Ntrl Dir Rev PKP	Neutral Directional Reverse PKP
0xD342		Ntrl Dir Rev OP	Neutral Directional Rev OP
0xD344		Ntrl Dir Rev DPO	Neutral Directional Reverse DPO
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP

Code	Type	Definition	Long Definition
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xE002		Any Block	Any Block
0xE004		Any Block DPO	Any Block DPO
0xE042		Therm O/L Block	Thermal Level Block
0xE044		Therm O/L Blk DPO	Thermal Level Block DPO
0xE082		Gnd Fault Blk	Gnd Fault Blk
0xE084		Gnd Fault Blk DPO	Gnd Fault Blk DPO
0xE0C2		Accel Blk	Accel Blk
0xE0C4		Accel Block DPO	Accel Block DPO
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE184		Relay 1 Blk DPO	Relay 1 Block DPO
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE1C4		Relay 2 Blk DPO	Relay 2 Block DPO
0xE202		Mech Jam Blk	Mech Jam Blk
0xE204		Mech Jam Blk DPO	Mech Jam Blk DPO
0xE242		U/CURR Blk	U/CURR Blk
0xE244		U/CURR Blk DPO	U/CURR Blk DPO
0xE282		UNBAL Blk	UNBAL Blk
0xE284		UNBAL Blk DPO	Unbalance Block DPO
0xE2C2		RTD1 Block	RTD1 Block
0xE2C4		RTD1 Blk DPO	RTD1 Blk DPO
0xE302		RTD2 Block	RTD2 Block
0xE304		RTD2 Blk DPO	RTD2 Blk DPO
0xE342		RTD3 Block	RTD3 Block
0xE344		RTD3 Blk DPO	RTD3 Blk DPO
0xE382		RTD4 Block	RTD4 Block
0xE384		RTD4 Blk DPO	RTD4 Blk DPO
0xE3C2		RTD5 Block	RTD5 Block
0xE3C4		RTD5 Blk DPO	RTD5 Blk DPO
0xE402		RTD6 Block	RTD6 Block
0xE404		RTD6 Blk DPO	RTD6 Blk DPO
0xE442		RTDTrouble Block	RTDTrouble Block
0xE444		RTDTrouble Blk DPO	RTDTrouble Blk DPO
0xE6C2		RTD7 Block	RTD7 Block
0xE6C4		RTD7 Blk DPO	RTD7 Blk DPO
0xE702		RTD8 Block	RTD8 Block
0xE704		RTD8 Blk DPO	RTD8 Blk DPO
0xE742		RTD9 Block	RTD9 Block
0xE744		RTD9 Blk DPO	RTD9 Blk DPO
0xE782		RTD10 Block	RTD10 Block
0xE784		RTD10 Blk DPO	RTD10 Blk DPO
0xE7C2		RTD11 Block	RTD11 Block
0xE7C4		RTD11 Blk DPO	RTD11 Blk DPO
0xE802		RTD12 Block	RTD12 Block
0xE804		RTD12 Blk DPO	RTD12 Blk DPO
0xE842		PosSeq UV1 Block	Positive Sequence UV 1 Block

Code	Type	Definition	Long Definition
0xE844		PosSeq UV1 BlckDPO	Positive Sequence UV 1 Block DPO
0xE902		PosSeq UV2 Block	Positive Sequence UV 2 Block
0xE904		PosSeq UV2 BlckDPO	Positive Sequence UV 2 Block DPO
0xE9C2		CTFail Block	CT Fail Block
0xE9C4		CTFail Block DPO	CT Fail Block DPO
0xEAC2		Load Incr Block	Load Increase Block
0xEAC4		Load Incr Blk DPO	Load Increase Block DPO
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF044		Ntrl IOC1 Blk DPO	Neutral IOC 1 Block DPO
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF0C4		Ph TOC1 Block DPO	Phase TOC 1 Block DPO
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF104		Ntrl TOC1 BlockDPO	Neutral TOC 1 Block DPO
0xF242		Dir Pwr 1 Block	Directional Pwr 1 Block
0xF244		Dir Pwr 1 Blk DPO	Directional Pwr 1 Block DPO
0xF282		Dir Pwr 2 Block	Directional Pwr 2 Block
0xF284		Dir Pwr 2 Blk DPO	Directional Pwr 2 Block DPO
0xF342		Ntrl Dir Rev Block	Neutral Directional Rev Block
0xF344		Ntrl Dir Block DPO	Neutral Directional Block DPO
0xF3C2		NSeq OV Block	Negative Sequence OV OP
0xF3C4		NSeq OV Blk DPO	Negative Sequence OV Block DPO
0xF442		Ph OV1 Block	Ph OV 1 Block
0xF444		Ph OV1 Block DPO	Ph OV 1 Block DPO
0xF482		Ph UV1 Block	Ph UV 1 Block
0xF484		Ph UV1 Block DPO	Ph UV 1 Block DPO
0xF542		UndrFreq1 Block	Underfrequency 1 Block
0xF544		UndrFreq1 BlockDPO	Underfrequency 1 Block DPO
0xF582		UndrFreq2 Block	Underfrequency 2 Block
0xF584		UndrFreq2 BlockDPO	Underfrequency 2 Block DPO
0xF5C2		OverFreq1 Block	Overfrequency 1 Block
0xF5C4		OverFreq1 Blk DPO	Overfrequency 1 Block DPO
0xF602		OverFreq2 Block	Overfrequency 2 Block
0xF604		OverFreq2 BlockDPO	Overfrequency 2 Block DPO
0xF702		Curr Dmd1 Block	Current Demand 1 Block OP
0xF704		Curr Dmd1 Blk DPO	Current Demand 1 Block DPO
0xF742		RealP Dmd Block	Real Power Demand Block OP
0xF744		RealP Dmd Blk DPO	Real Power Demand Block DPO
0xF782		ReacP Dmd Block	Reactive Power Demand Block OP
0xF784		ReacP Dmd Blk DPO	Reactive Power Demand Block DPO
0xF7C2		AppP Dmd Block	Apparent Power Demand Block OP
0xF7C4		AppP Dmd Block DPO	Apparent Power Demand Block DPO
0xF882		Ph OV2 Block	Ph OV2 Block
0xF884		Ph OV2 Block DPO	Ph OV2 Block DPO
0xF8C2		Ph UV2 Block	Ph UV2 Block
0xF8C4		Ph UV2 Block DPO	Ph UV2 Block DPO
0xF902		S/C Blk	S/C Blk
0xF904		S/C Blk DPO	S/C Blk DPO

Code	Type	Definition	Long Definition
0xF942		SPD2 S/C Blk	SPD2 S/C Blk
0xF944		SPD2 S/C Blk DPO	SPD2 S/C Blk DPO
0xF982		SPD2 U/C Block	SPD2 U/C Block
0xF984		SPD2 U/C Blk DPO	SPD2 U/C Blk DPO
FC134A	unsigned 16 bits	Active Targets	
0		No Active Targets	No Active Targets
7		Clock Not Set	Clock Not Set
8		IRIG-B Failure	IRIG-B Failure
14		Comm. Alert 1	Comm. Alert 1
15		Comm. Alert 2	Comm. Alert 2
16		Comm. Alert 3	Comm. Alert 3
17		Ethernet Link Fail	Ethernet Link Failure
18		High ENET Traffic	High Ethernet Traffic
19		Intern Temp. >80C	Internal Temperature High
20		RMIO Mismatch	RMIO Mismatch
40		Eth Link A Fail	Ethernet Link A Fail
41		Eth Link B Fail	Ethernet Link B Fail
0x8040		Therm O/L Trip	Therm O/L Trip
0x8080		Gnd Fault Trip	Gnd Fault Trip
0x80C0		Accel Trip	Accel Trip
0x8140		UndrPower Trip	Under Power Trip
0x8180		Single Ph Trip	Single Ph Trip
0x8200		Mech Jam Trip	Mech Jam Trip
0x8240		U/Curr Trip	U/Curr Trip
0x8280		UNBAL Trip	UNBAL Trip
0x82C0		RTD 1 Trip	RTD 1 Trip
0x8300		RTD 2 Trip	RTD 2 Trip
0x8340		RTD 3 Trip	RTD 3 Trip
0x8380		RTD 4 Trip	RTD 4 Trip
0x83C0		RTD 5 Trip	RTD 5 Trip
0x8400		RTD 6 Trip	RTD 6 Trip
0x8480		Relay Not Config	Relay Not Config
0x84C0		LE 1 Trip	Logic Element 1 Trip
0x8500		LE 2 Trip	Logic Element 2 Trip
0x8540		LE 3 Trip	Logic Element 3 Trip
0x8580		LE 4 Trip	Logic Element 4 Trip
0x85C0		LE 5 Trip	Logic Element 5 Trip
0x8600		LE 6 Trip	Logic Element 6 Trip
0x8640		LE 7 Trip	Logic Element 7 Trip
0x8680		LE 8 Trip	Logic Element 8 Trip
0x86C0		RTD 7 Trip	RTD 7 Trip
0x8700		RTD 8 Trip	RTD 8 Trip
0x8740		RTD 9 Trip	RTD 9 Trip
0x8780		RTD 10 Trip	RTD 10 Trip
0x87C0		RTD 11 Trip	RTD 11 Trip
0x8800		RTD 12 Trip	RTD 12 Trip
0x8840		PosSeq UV1 Trip	Positive Sequence UV 1 Trip

Code	Type	Definition	Long Definition
0x8900		PosSeq UV2 Trip	Positive Sequence UV 2 Trip
0x89C0		Self Test Trip	Self Test Trip
0x8D00		Rly #1 Trip OP	Rly #1 Trip OP
0x8D40		Rly #2 Trip OP	Rly #2 Trip OP
0x8D80		BKR Failure	BKR Failure
0x8F80		Fuse Fail Trip	Fuse Fail Trip
0x8FC0		Ph Revrsl Trip	Phase Reversal Trip
0x9040		Ntrl IOC1 Trip	Neutral IOC 1 Trip
0x90C0		Ph TOC1 Trip	Phase TOC 1 Trip
0x9100		Ntrl TOC1 Trip	Neutral TOC 1 Trip
0x9240		Dir Pwr 1 Trip	Directional Pwr 1 Trip
0x9280		Dir Pwr 2 Trip	Directional Pwr 2 Trip
0x93C0		NSeq OV Trip	Negative Sequence OV Trip
0x9440		Ph OV1 Trip	Phase OV 1 Trip
0x9480		Ph UV1 Trip	Phase UV 1 Trip
0x9540		UndrFreq1 Trip	Underfrequency 1 Trip
0x9580		UndrFreq2 Trip	Underfrequency 2 Trip
0x95C0		OverFreq1 Trip	Overfrequency 1 Trip
0x9600		OverFreq2 Trip	Overfrequency 2 Trip
0x9880		Ph OV2 Trip	Ph OV2 Trip
0x98C0		Ph UV2 Trip	Ph UV2 Trip
0x9900		S/C Trip	S/C Trip
0x9940		SPD2 S/C Trip	SPD2 S/C Trip
0x9980		SPD2 U/C Trip	SPD2 U/C Trip
0x9C00		LE 9 Trip	Logic Element 9 Trip
0x9C40		LE 10 Trip	Logic Element 10 Trip
0x9C80		LE 11 Trip	Logic Element 11 Trip
0x9CC0		LE 12 Trip	Logic Element 12 Trip
0x9D00		LE 13 Trip	Logic Element 13 Trip
0x9D40		LE 14 Trip	Logic Element 14 Trip
0x9D80		LE 15 Trip	Logic Element 15 Trip
0x9DC0		LE 16 Trip	Logic Element 16 Trip
0xA040		Therm Lvl Alrm	Thermal Level Alarm
0xA080		Gnd Fault Alarm	Gnd Fault Alarm
0xA0C0		Accel Alarm	Accel Alarm
0xA140		Under Pwr Alarm	Under Power Alarm
0xA200		Mech Jam Alarm	Mech Jam Alarm
0xA240		U/Curr Alarm	Under Current Alarm
0xA280		UNBAL Alarm	Unbalance Alarm
0xA2C0		RTD 1 Alarm	RTD 1 Alarm
0xA300		RTD 2 Alarm	RTD 2 Alarm
0xA340		RTD 3 Alarm	RTD 3 Alarm
0xA380		RTD 4 Alarm	RTD 4 Alarm
0xA3C0		RTD 5 Alarm	RTD 5 Alarm
0xA400		RTD 6 Alarm	RTD 6 Alarm
0xA440		RTD Trouble Alrm	RTD Trouble Alarm
0xA480		Not Configured	Not Configured

Code	Type	Definition	Long Definition
0xA4C0		LE 1 Alarm	Logic Element 1 Alarm
0xA500		LE 2 Alarm	Logic Element 2 Alarm
0xA540		LE 3 Alarm	Logic Element 3 Alarm
0xA580		LE 4 Alarm	Logic Element 4 Alarm
0xA5C0		LE 5 Alarm	Logic Element 5 Alarm
0xA600		LE 6 Alarm	Logic Element 6 Alarm
0xA640		LE 7 Alarm	Logic Element 7 Alarm
0xA680		LE 8 Alarm	Logic Element 8 Alarm
0xA6C0		RTD 7 Alarm	RTD 7 Alarm
0xA700		RTD 8 Alarm	RTD 8 Alarm
0xA740		RTD 9 Alarm	RTD 9 Alarm
0xA780		RTD 10 Alarm	RTD 10 Alarm
0xA7C0		RTD 11 Alarm	RTD 11 Alarm
0xA800		RTD 12 Alarm	RTD 12 Alarm
0xA840		PosSeq UV1 Alrm	Positive Sequence UV 1 Alarm
0xA880		BKR Alarm	Breaker Alarm
0xA900		PosSeq UV2 Alrm	Positive Sequence UV 2 Alarm
0xA980		Motor Running Hrs	Motor Running Hrs
0xA9C0		CTFail Alrm	CT Fail Alarm
0xAA00		Welded Contactr	Welded Contactr
0xAA40		SPD SW Not Config	SPD SW Not Config
0xAA80		SPD SW Fail	SPD SW Fail
0xAAC0		Load Incr Alarm	Load Incr Alarm
0xAB00		BKR Trip Time	Breaker Trip Time
0xAB40		BKR Close Time	Breaker Close Time
0xAB80		BKR Charge Time	Breaker Charge Time
0xABC0		HI Ambient Temp	High Ambient Temperature Alarm
0xAC00		LO Ambient Temp	Low Ambient Temperature Alarm
0xAC40		Self Test Alarm	Self Test Alarm
0xACC0		BKRTrpCntrAlrm	Breaker Trip Control Alarm
0xAD00		Rly1 Coil Mn Alrm	Relay # 1 Coil Monitor Alarm
0xAD40		Rly2 Coil Mn Alrm	Relay # 2 Coil Monitor Alarm
0xAD80		BKR Fail Alrm	BKR Fail Alrm
0xADC0		BKRStatus Fail	Breaker Status Fail
0xAE80		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAEC0		BKR Charge Fail	Breaker Charge Fail
0xAF80		Fuse Fail Alrm	Fuse Fail Alrm
0xAFC0		Ph Revrsl Alrm	Phase Reversal Alarm
0xB040		Ntrl IOC1 Alarm	Neutral IOC 1 Alarm
0xB0C0		Ph TOC1 Alarm	Phase TOC 1 Alarm
0xB100		Ntrl TOC1 Alrm	Neutral TOC 1 Alarm
0xB240		Dir Pwr 1 Alarm	Directional Pwr 1 Alarm
0xB280		Dir Pwr 2 Alarm	Directional Pwr 2 Alarm
0xB3C0		NSeq OV Alarm	Negative Sequence OV Alarm
0xB440		Ph OV1 Alarm	Phase OV 1 Alarm
0xB480		Ph UV1 Alarm	Phase UV 1 Alarm
0xB540		UndrFreq1 Alarm	Underfrequency 1 Alarm

Code	Type	Definition	Long Definition
0xB580		UndrFreq2 Alarm	Underfrequency 2 Alarm
0xB5C0		OverFreq1 Alrm	Overfrequency 1 Alarm
0xB600		OverFreq2 Alrm	Overfrequency 2 Alarm
0xB700		Curr Dmd1 Alrm	Current Demand 1 Alarm
0xB740		RealP Dmd Alrm	Real Power Demand Alarm
0xB780		ReacP Dmd Alrm	Reactive Power Demand Alarm
0xB7C0		AppP Dmd Alrm	Apparent Power Demand Alarm
0xB880		Ph OV2 Alarm	Ph OV2 Alarm
0xB8C0		Ph UV2 Alarm	Ph UV2 Alarm
0xB900		S/C Alarm	S/C Alarm
0xB940		SPD2 S/C Alarm	SPD2 S/C Alarm
0xB980		SPD2 U/C Alarm	SPD2 U/C Alarm
0xBC00		LE 9 Alarm	Logic Element 9 Alarm
0xBC40		LE 10 Alarm	Logic Element 10 Alarm
0xBC80		LE 11 Alarm	Logic Element 11 Alarm
0xBCC0		LE 12 Alarm	Logic Element 12 Alarm
0xBD00		LE 13 Alarm	Logic Element 13 Alarm
0xBD40		LE 14 Alarm	Logic Element 14 Alarm
0xBD80		LE 15 Alarm	Logic Element 15 Alarm
0xBDC0		LE 16 Alarm	Logic Element 16 Alarm
0xC040		Output Relay 3	Output Relay 3
0xC080		Output Relay 4	Output Relay 4
0xC0C0		Output Relay 5	Output Relay 5
0xC100		Output Relay 6	Output Relay 6
0xC140		Output Relay 7	Output Relay 7
0xC180		Relay1 Coil	Relay # 1 Coil
0xC1C0		Relay2 Coil	Relay # 2 Coil
0xC200		BKR Connected	Breaker Connected
0xC240		High Speed	High Speed
0xC280		Low Speed	Low Speed
0xC300		Stopped	Stopped
0xC340		Starting	Starting
0xC380		Running	Running
0xC3C0		Motor Online	Motor Online
0xC400		Emergency Restart	Emergency Restart
0xC440		Hot RTD	Hot RTD
0xC480		Lockout	Lockout
0xC4C0		LE 1	LE 1
0xC500		LE 2	LE 2
0xC540		LE 3	LE 3
0xC580		LE 4	LE 4
0xC5C0		LE 5	LE 5
0xC600		LE 6	LE 6
0xC640		LE 7	LE 7
0xC680		LE 8	LE 8
0xC900		Open BKR	Open Breaker
0xC940		Close BKR	Close Breaker

Code	Type	Definition	Long Definition
0xC980		Maint Required	Maint Required
0xCA00		52a Contact	52a Contact
0xCA40		52b Contact	52b Contact
0xCAC0		L/O Rst Closed	Lockout Reset Closed
0xCCC0		BKR Stat Open	Breaker Status Open
0xCD00		BKR Stat Clsd	Breaker Status Closed
0xCD80		Testing	Testing
0xCE80		Therm Inhibit	Therm Inhibit
0xCEC0		Restart Inhibit	Restart Inhibit
0xCF00		Starts/Hr Inhib	Starts/Hr Inhibit
0xCF40		T-BT-Strt Inhib	T-BT-Strt Inhibit
0xCF80		Fuse Fail Inhib	Fuse Fail Inhibit
0xCFC0		Ph Revrsl Inhib	Phase Reversal Inhibit
0xD240		Dir Pwr 1	Directional Pwr 1
0xD280		Dir Pwr 2	Directional Pwr 2
0xD340		Ntrl Dir Rev	Neutral Directional Rev
0xDC00		LE 9	LE 9
0xDC40		LE 10	LE 10
0xDC80		LE 11	LE 11
0xDCC0		LE 12	LE 12
0xDD00		LE 13	LE 13
0xDD40		LE 14	LE 14
0xDD80		LE 15	LE 15
0xDDC0		LE 16	LE 16
0xE040		Therm O/L Block	Thermal Level Block
0xE080		Gnd Fault Blk	Gnd Fault Blk
0xE0C0		Accel Block	Accel Block
0xE180		Output Relay 1 BLK	Output Relay 1 BLK
0xE1C0		Output Relay 2 BLK	Output Relay 2 BLK
0xE200		Mech Jam Block	Mech Jam Block
0xE240		U/Curr Block	U/Curr Block
0xE280		UNBAL Block	UNBAL Block
0xE2C0		RTD1 Block	RTD1 Block
0xE300		RTD2 Block	RTD2 Block
0xE340		RTD3 Block	RTD3 Block
0xE380		RTD4 Block	RTD4 Block
0xE3C0		RTD5 Block	RTD5 Block
0xE400		RTD6 Block	RTD6 Block
0xE440		RTD Trouble Blk	RTD Trouble Blk
0xE6C0		RTD7 Block	RTD7 Block
0xE700		RTD8 Block	RTD8 Block
0xE740		RTD9 Block	RTD9 Block
0xE780		RTD10 Block	RTD10 Block
0xE7C0		RTD11 Block	RTD11 Block
0xE800		RTD12 Block	RTD12 Block
0xE840		PosSeq UV1 Block	Positive Sequence UV 1 Block
0xE900		PosSeq UV2 Block	Positive Sequence UV 2 Block

Code	Type	Definition	Long Definition
0xE9C0		CTFail Block	CT Fail Block
0xEAC0		Load Incr Block	Load Increase Block
0xF040		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF0C0		Ph TOC1 Block	Phase TOC 1 Block
0xF100		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF240		Dir Pwr 1 Block	Directional Pwr 1 Block
0xF280		Dir Pwr 2 Block	Directional Pwr 2 Block
0xF340		Ntrl Dir Rev Block	Neutral Directional Block
0xF3C0		NSeq OV Block	Negative Sequence OV Block
0xF440		Ph OV1 Block	Phase OV 1 Block
0xF480		Ph UV1 Block	Phase UV 1 Block
0xF540		UndrFreq1 Block	Underfrequency 1 Block
0xF580		UndrFreq2 Block	Underfrequency 2 Block
0xF5C0		OverFreq1 Block	Overfrequency 1 Block
0xF600		OverFreq2 Block	Overfrequency 2 Block
0xF700		Curr Dmd1 Block	Current Demand 1 Block
0xF740		RealPwr Dmd Block	Real Power Demand Block
0xF780		ReacPwr Dmd Block	Reactive Power Demand Block
0xF7C0		AppPwr Dmd Block	Apparent Power Demand Block
0xF880		Ph OV2 Block	Ph OV2 Block
0xF8C0		Ph UV2 Block	Ph UV2 Block
0xF900		S/C Blk	S/C Blk
0xF940		SPD2 S/C Blk	SPD2 S/C Blk
0xF980		SPD2 U/C Block	SPD2 U/C Block
FC134B	unsigned 16 bits	DNP Binary Inputs	
0		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off

Code	Type	Definition	Long Definition
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On

Code	Type	Definition	Long Definition
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off

Code	Type	Definition	Long Definition
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x8002		Any Trip	Any Trip
0x8041		Therm O/L Trip PKP	Thermal Overload Trip PKP
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x8081		GF Trip PKP	GF Trip PKP
0x8082		GF Trip OP	GF Trip OP
0x8084		GF Trip DPO	GF Trip DPO
0x80C2		Accel Trip OP	Acceleration Trip OP
0x8141		Under Pwr Trip PKP	Under Power Trip PKP
0x8142		Under Pwr Trip OP	Under Power Trip OP
0x8144		Under Pwr Trip DPO	Under Power Trip DPO
0x8181		Single PH Trip PKP	Single PH Trip PKP
0x8182		Single PH Trip OP	Single PH Trip OP
0x8184		Single PH Trip DPO	Single PH Trip DPO
0x8201		Mech Jam Trip PKP	Mech Jam Trip PKP
0x8202		Mech Jam Trip OP	Mech Jam Trip OP
0x8204		Mech Jam Trip DPO	Mech Jam Trip DPO
0x8241		U/CURR Trip PKP	U/CURR Trip PKP
0x8242		U/CURR Trip OP	U/CURR Trip OP
0x8244		U/CURR Trip DPO	U/CURR Trip DPO
0x8281		UNBAL Trip PKP	Unbalance Trip PKP
0x8282		UNBAL Trip OP	Unbalance Trip OP
0x8284		UNBAL Trip DPO	Unbalance Trip DPO
0x82C1		RTD 1 Trip PKP	RTD 1 Trip PKP
0x82C2		RTD 1 Trip OP	RTD 1 Trip OP
0x8301		RTD 2 Trip PKP	RTD 2 Trip PKP
0x8302		RTD 2 Trip OP	RTD 2 Trip OP
0x8341		RTD 3 Trip PKP	RTD 3 Trip PKP
0x8342		RTD 3 Trip OP	RTD 3 Trip OP
0x8381		RTD 4 Trip PKP	RTD 4 Trip PKP
0x8382		RTD 4 Trip OP	RTD 4 Trip OP
0x83C1		RTD 5 Trip PKP	RTD 5 Trip PKP
0x83C2		RTD 5 Trip OP	RTD 5 Trip OP
0x8401		RTD 6 Trip PKP	RTD 6 Trip PKP
0x8402		RTD 6 Trip OP	RTD 6 Trip OP
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP

Code	Type	Definition	Long Definition
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x86C1		RTD 7 Trip PKP	RTD 7 Trip PKP
0x86C2		RTD 7 Trip OP	RTD 7 Trip OP
0x8701		RTD 8 Trip PKP	RTD 8 Trip PKP
0x8702		RTD 8 Trip OP	RTD 8 Trip OP
0x8741		RTD 9 Trip PKP	RTD 9 Trip PKP
0x8742		RTD 9 Trip OP	RTD 9 Trip OP
0x8781		RTD 10 Trip PKP	RTD 10 Trip PKP
0x8782		RTD 10 Trip OP	RTD 10 Trip OP
0x87C1		RTD 11 Trip PKP	RTD 11 Trip PKP
0x87C2		RTD 11 Trip OP	RTD 11 Trip OP
0x8801		RTD 12 Trip PKP	RTD 12 Trip PKP
0x8802		RTD 12 Trip OP	RTD 12 Trip OP
0x8841		PosSeq UV1 Trp PKP	Positive Sequence UV 1 Trp PKP
0x8842		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8844		PosSeq UV1 Trp DPO	Positive Sequence UV 1 Trp DPO
0x8901		PosSeq UV2 Trp PKP	Positive Sequence UV 2 Trp PKP
0x8902		PosSeq UV2 Trip OP	Positive Sequence UV 2 Trip OP
0x8904		PosSeq UV2 Trp DPO	Positive Sequence UV 2 Trp DPO
0x89C2		Self Test OP	Self Test OP
0x8F81		Fuse Fail Trip PKP	Fuse Fail Trip PKP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8F84		Fuse Fail Trip DPO	Fuse Fail Trip DPO
0x8FC1		Ph Revrsl Trip PKP	Ph Revrsl Trip PKP
0x8FC2		Ph Revrsl Trip OP	Ph Revrsl Trip OP
0x8FC4		Ph Revrsl Trip DPO	Ph Revrsl Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x90C9		Ph A TOC1 Trip PKP	Phase A TOC 1 Trip PKP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP

Code	Type	Definition	Long Definition
0x90CC		Ph A TOC1 Trip DPO	Phase A TOC 1 Trip DPO
0x90D1		Ph B TOC1 Trip PKP	Phase B TOC 1 Trip PKP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90D4		Ph B TOC1 Trip DPO	Phase B TOC 1 Trip DPO
0x90E1		Ph C TOC1 Trip PKP	Phase C TOC 1 Trip PKP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x90E4		Ph C TOC1 Trip DPO	Phase C TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9241		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x9242		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x9281		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x9282		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x93C1		NSeq OV Trp PKP	Negative Sequence OV Trip PKP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x93C4		NSeq OV Trp DPO	Negative Sequence OV Trip DPO
0x9441		Ph OV1 Trip PKP	Phase OV1 Trip PKP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x9444		Ph OV1 Trip DPO	Phase OV1 Trip DPO
0x9449		Ph A OV1 Trip PKP	Phase A OV1 Trip PKP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x944C		Ph A OV1 Trip DPO	Phase A OV1 Trip DPO
0x9451		Ph B OV1 Trip PKP	Phase B OV1 Trip PKP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP
0x9454		Ph B OV1 Trip DPO	Phase B OV1 Trip DPO
0x9461		Ph C OV1 Trip PKP	Phase C OV1 Trip PKP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9464		Ph C OV1 Trip DPO	Phase C OV1 Trip DPO
0x9481		Ph UV1 Trip PKP	Phase UV1 Trip PKP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x9484		Ph UV1 Trip DPO	Phase UV1 Trip DPO
0x9489		Ph A UV1 Trip PKP	Phase A UV1 Trip PKP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x948C		Ph A UV1 Trip DPO	Phase A UV1 Trip DPO
0x9491		Ph B UV1 Trip PKP	Phase B UV1 Trip PKP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x9494		Ph B UV1 Trip DPO	Phase B UV1 Trip DPO
0x94A1		Ph C UV1 Trip PKP	Phase C UV1 Trip PKP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP
0x94A4		Ph C UV1 Trip DPO	Phase C UV1 Trip DPO
0x9541		UndrFreq1 Trip PKP	Underfrequency 1 Trip PKP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9544		UndrFreq1 Trip DPO	Underfrequency 1 Trip DPO
0x9581		UndrFreq2 Trip PKP	Underfrequency 2 Trip PKP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x9584		UndrFreq2 Trip DPO	Underfrequency 2 Trip DPO

Code	Type	Definition	Long Definition
0x95C1		OverFreq1 Trip PKP	Overfrequency 1 Trip PKP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x95C4		OverFreq1 Trip DPO	Overfrequency 1 Trip DPO
0x9601		OverFreq2 Trip PKP	Overfrequency 2 Trip PKP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9604		OverFreq2 Trip DPO	Overfrequency 2 Trip DPO
0x9881		Ph OV2 Trip PKP	Phase OV 2 Trip PKP
0x9882		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x9884		Ph OV2 Trip DPO	Phase OV 2 Trip DPO
0x9889		Ph A OV2 Trip PKP	Phase A OV2 Trip PKP
0x988A		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x988C		Ph A OV2 Trip DPO	Phase A OV2 Trip DPO
0x9891		Ph B OV2 Trip PKP	Phase B OV2 Trip PKP
0x9892		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x9894		Ph B OV2 Trip DPO	Phase B OV2 Trip DPO
0x98A1		Ph C OV2 Trip PKP	Phase C OV2 Trip PKP
0x98A2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x98A4		Ph C OV2 Trip DPO	Phase C OV2 Trip DPO
0x98C1		Ph UV2 Trip PKP	Phase UV 2 Trip PKP
0x98C2		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x98C4		Ph UV2 Trip DPO	Phase UV 2 Trip DPO
0x98C9		Ph A UV2 Trip PKP	Phase A UV2 Trip PKP
0x98CA		Ph A UV2 Trip OP	Phase A UV2 Trip OP
0x98CC		Ph A UV2 Trip DPO	Phase A UV2 Trip DPO
0x98D1		Ph B UV2 Trip PKP	Phase B UV2 Trip PKP
0x98D2		Ph B UV2 Trip OP	Phase B UV2 Trip OP
0x98D4		Ph B UV2 Trip DPO	Phase B UV2 Trip DPO
0x98E1		Ph C UV2 Trip PKP	Phase C UV2 Trip PKP
0x98E2		Ph C UV2 Trip OP	Phase C UV2 Trip OP
0x98E4		Ph C UV2 Trip DPO	Phase C UV2 Trip DPO
0x9901		S/C Trip PKP	S/C Trip PKP
0x9902		S/C Trip OP	S/C Trip OP
0x9904		S/C Trip DPO	S/C Trip DPO
0x9941		SPD2 S/C Trip PKP	SPD2 S/C Trip PKP
0x9942		SPD2 S/C Trip OP	SPD2 S/C Trip OP
0x9944		SPD2 S/C Trip DPO	SPD2 S/C Trip DPO
0x9981		SPD2 U/C Trip PKP	SPD2 U/C Trip PKP
0x9982		SPD2 U/C Trip OP	SPD2 U/C Trip OP
0x9984		SPD2 U/C Trip DPO	SPD2 U/C Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP

Code	Type	Definition	Long Definition
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA081		Gnd Fault Alrm PKP	Ground Fault Alarm PKP
0xA082		Gnd Fault Alrm OP	Ground Fault Alarm OP
0xA084		Gnd Fault Alrm DPO	Ground Fault Alarm DPO
0xA0C2		Accel Alarm OP	Accel Alarm OP
0xA141		Under Pwr Alrm PKP	Under Power Alarm PKP
0xA142		Under Pwr Alrm OP	Under Power Alarm OP
0xA144		Under Pwr Alrm DPO	Under Power Alarm DPO
0xA201		Mech Jam Alarm PKP	Mech Jam Alarm PKP
0xA202		Mech Jam Alarm OP	Mech Jam Alarm OP
0xA204		Mech Jam Alarm DPO	Mech Jam Alarm DPO
0xA241		U/CURR Alarm PKP	U/CURR Alarm PKP
0xA242		U/CURR Alarm OP	U/CURR Alarm OP
0xA244		U/CURR Alarm DPO	U/CURR Alarm DPO
0xA281		UNBAL Alarm PKP	Unbalance Alarm PKP
0xA282		UNBAL Alarm OP	Unbalance Alarm OP
0xA284		UNBAL Alarm DPO	Unbalance Alarm DPO
0xA2C1		RTD 1 Alarm PKP	RTD 1 Alarm PKP
0xA2C2		RTD 1 Alarm OP	RTD 1 Alarm OP
0xA301		RTD 2 Alarm PKP	RTD 2 Alarm PKP
0xA302		RTD 2 Alarm OP	RTD 2 Alarm OP
0xA341		RTD 3 Alarm PKP	RTD 3 Alarm PKP
0xA342		RTD 3 Alarm OP	RTD 3 Alarm OP
0xA381		RTD 4 Alarm PKP	RTD 4 Alarm PKP
0xA382		RTD 4 Alarm OP	RTD 4 Alarm OP
0xA3C1		RTD 5 Alarm PKP	RTD 5 Alarm PKP
0xA3C2		RTD 5 Alarm OP	RTD 5 Alarm OP
0xA401		RTD 6 Alarm PKP	RTD 6 Alarm PKP
0xA402		RTD 6 Alarm OP	RTD 6 Alarm OP

Code	Type	Definition	Long Definition
0xA442		RTD Trouble Alr OP	RTD Trouble Alarm
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA6C1		RTD 7 Alarm PKP	RTD 7 Alarm PKP
0xA6C2		RTD 7 Alarm OP	RTD 7 Alarm OP
0xA701		RTD 8 Alarm PKP	RTD 8 Alarm PKP
0xA702		RTD 8 Alarm OP	RTD 8 Alarm OP
0xA741		RTD 9 Alarm PKP	RTD 9 Alarm PKP
0xA742		RTD 9 Alarm OP	RTD 9 Alarm OP
0xA781		RTD 10 Alarm PKP	RTD 10 Alarm PKP
0xA782		RTD 10 Alarm OP	RTD 10 Alarm OP
0xA7C1		RTD 11 Alarm PKP	RTD 11 Alarm PKP
0xA7C2		RTD 11 Alarm OP	RTD 11 Alarm OP
0xA801		RTD 12 Alarm PKP	RTD 12 Alarm PKP
0xA802		RTD 12 Alarm OP	RTD 12 Alarm OP
0xA841		PosSeq UV1 AlrmPKP	Positive Sequence UV 1 Alarm PKP
0xA842		PosSeq UV1 Alrm OP	Positive Sequence UV 1 Alarm OP
0xA844		PosSeq UV1 AlrmDPO	Positive Sequence UV 1 Alarm DPO
0xA882		BKR Alarm	Breaker Alarm
0xA901		PosSeq UV2 AlrmPKP	Positive Sequence UV 2 Alarm PKP
0xA902		PosSeq UV2 Alrm OP	Positive Sequence UV 2 Alarm OP
0xA904		PosSeq UV2 AlrmDPO	Positive Sequence UV 2 Alarm DPO
0xA982		Motor Run Hrs OP	Motor Running Hours OP
0xA9C1		CTFail Alrm PKP	CT Fail Alarm PKP
0xA9C2		CTFail Alrm OP	CT Fail Alarm OP

Code	Type	Definition	Long Definition
0xA9C4		CTFail Alrm DPO	CT Fail Alarm DPO
0xAA01		Welded ContactrPKP	Welded ContactrPKP
0xAA02		Welded Contactr OP	Welded Contactr OP
0xAA04		Welded ContactrDPO	Welded ContactrDPO
0xAA42		SPD SW Not Cnfg OP	SPD SW Not Cnfg OP
0xAA82		SPD SW Fail OP	SPD SW Fail OP
0xAAC1		Load Incr Alrm PKP	Load Incr Alrm PKP
0xAAC2		Load Incr Alrm OP	Load Incr Alrm OP
0xAAC4		Load Incr Alrm DPO	Load Incr Alrm DPO
0xAB02		BKR Trip Time	Breaker Trip Time
0xAB42		BKR Close Time	Breaker Close Time
0xAB82		BKR Charge Time	Breaker Charge Time
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD81		BKR Fail Alrm PKP	Breaker Fail Alarm PKP
0xAD82		BKR Fail Alrm OP	Breaker Fail Alarm OP
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xAE82		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAEC2		BKR Charge Fail	Breaker Charge Fail
0xAF81		Fuse Fail Alrm PKP	Fuse Fail Alarm PKP
0xAF82		Fuse Fail Alrm OP	Fuse Fail Alarm OP
0xAF84		Fuse Fail Alrm DPO	Fuse Fail Alarm DPO
0xAFC1		Ph Revrsl Alrm PKP	Ph Reversal Alarm PKP
0xAFC2		Ph Revrsl Alarm OP	Ph Reversal Alarm OP
0xAFC4		Ph Revrsl Alrm DPO	Ph Reversal Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB0C9		Ph A TOC1 Alrm PKP	Phase A TOC 1 Alarm PKP
0xB0CA		Ph A TOC1 Alrm OP	Phase A TOC 1 Alarm OP
0xB0CC		Ph A TOC1 Alrm DPO	Phase A TOC 1 Alarm DPO
0xB0D1		Ph B TOC1 Alrm PKP	Phase B TOC 1 Alarm PKP
0xB0D2		Ph B TOC1 Alrm OP	Phase B TOC 1 Alarm OP
0xB0D4		Ph B TOC1 Alrm DPO	Phase B TOC 1 Alarm DPO
0xB0E1		Ph C TOC1 Alrm PKP	Phase C TOC 1 Alarm PKP
0xB0E2		Ph C TOC1 Alrm OP	Phase C TOC 1 Alarm OP

Code	Type	Definition	Long Definition
0xB0E4		Ph C TOC1 Alrm DPO	Phase C TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB241		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xB242		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xB281		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP
0xB282		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xB342		NtrlDir RevAlm OP	Neutral Directional Alarm OP
0xB344		NtrlDir RevAlmDPO	Neutral Directional Reverse Alarm DPO
0xB3C1		NSeq OV Alrm PKP	Negative Sequence OV Alarm PKP
0xB3C2		NSeq OV Alrm OP	Negative Sequence OV Alarm OP
0xB3C4		NSeq OV Alrm DPO	Negative Sequence OV Alarm DPO
0xB441		Ph OV1 Alarm PKP	Phase OV1 Alarm PKP
0xB442		Ph OV1 Alarm OP	Phase OV 1 Alarm OP
0xB444		Ph OV1 Alarm DPO	Phase OV1 Alarm DPO
0xB449		Ph A OV1 Alarm PKP	Phase A OV1 Alarm PKP
0xB44A		Ph A OV1 Alarm OP	Phase A OV1 Alarm OP
0xB44C		Ph A OV1 Alarm DPO	Phase A OV1 Alarm DPO
0xB451		Ph B OV1 Alarm PKP	Phase B OV1 Alarm PKP
0xB452		Ph B OV1 Alarm OP	Phase B OV1 Alarm OP
0xB454		Ph B OV1 Alarm DPO	Phase B OV1 Alarm DPO
0xB461		Ph C OV1 Alarm PKP	Phase C OV1 Alarm PKP
0xB462		Ph C OV1 Alarm OP	Phase C OV1 Alarm OP
0xB464		Ph C OV1 Alarm DPO	Phase C OV1 Alarm DPO
0xB481		Ph UV1 Alarm PKP	Phase UV1 Alarm PKP
0xB482		Ph UV1 Alarm OP	Phase UV 1 Alarm OP
0xB484		Ph UV1 Alarm DPO	Phase UV1 Alarm DPO
0xB489		Ph A UV1 Alarm PKP	Phase A UV1 Alarm PKP
0xB48A		Ph A UV1 Alarm OP	Phase A UV1 Alarm OP
0xB48C		Ph A UV1 Alarm DPO	Phase A UV1 Alarm DPO
0xB491		Ph B UV1 Alarm PKP	Phase B UV1 Alarm PKP
0xB492		Ph B UV1 Alarm OP	Phase B UV1 Alarm OP
0xB494		Ph B UV1 Alarm DPO	Phase B UV1 Alarm DPO
0xB4A1		Ph C UV1 Alarm PKP	Phase C UV1 Alarm PKP
0xB4A2		Ph C UV1 Alarm OP	Phase C UV1 Alarm OP
0xB4A4		Ph C UV1 Alarm DPO	Phase C UV1 Alarm DPO
0xB541		UndrFreq1 Alrm PKP	Underfrequency 1 Alarm PKP
0xB542		UndrFreq1 Alrm OP	Underfrequency 1 Alarm OP
0xB544		UndrFreq1 Alrm DPO	Underfrequency 1 Alarm DPO
0xB581		UndrFreq2 Alrm PKP	Underfrequency 2 Alarm PKP
0xB582		UndrFreq2 Alrm OP	Underfrequency 2 Alarm OP
0xB584		UndrFreq2 Alrm DPO	Underfrequency 2 Alarm DPO
0xB5C1		OverFreq1 Alrm PKP	Overfrequency 1 Alarm PKP
0xB5C2		OverFreq1 Alrm OP	Overfrequency 1 Alarm OP
0xB5C4		OverFreq1 Alrm DPO	Overfrequency 1 Alarm DPO
0xB601		OverFreq2 Alrm PKP	Overfrequency 2 Alarm PKP

Code	Type	Definition	Long Definition
0xB602		OverFreq2 Alrm OP	Overfrequency 2 Alarm OP
0xB604		OverFreq2 Alrm DPO	Overfrequency 2 Alarm DPO
0xB702		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xB70A		C Dmd1 PhA Alrm OP	Current Demand 1 PhA Alarm OP
0xB712		C Dmd1 PhB Alrm OP	Current Demand 1 PhB Alarm OP
0xB722		C Dmd1 PhC Alrm OP	Current Demand 1 PhC Alarm OP
0xB742		RealP Dmd Alrm OP	Real Power Demand Alarm OP
0xB782		ReacP Dmd Alrm OP	Reactive Power Demand Alarm OP
0xB7C2		AppP Dmd Alrm OP	Apparent Power Demand Alarm OP
0xB881		Ph OV2 Alarm PKP	Phase OV 2 Alarm PKP
0xB882		Ph OV2 Alarm OP	Phase OV 2 Alarm OP
0xB884		Ph OV2 Alarm DPO	Phase OV 2 Alarm DPO
0xB889		Ph A OV2 Alarm PKP	Ph A OV2 Alarm PKP
0xB88A		Ph A OV2 Alarm OP	Ph A OV2 Alarm OP
0xB88C		Ph A OV2 Alarm DPO	Ph A OV2 Alarm DPO
0xB891		Ph B OV2 Alarm PKP	Ph B OV2 Alarm PKP
0xB892		Ph B OV2 Alarm OP	Ph B OV2 Alarm OP
0xB894		Ph B OV2 Alarm DPO	Ph B OV2 Alarm DPO
0xB8A1		Ph C OV2 Alarm PKP	Ph C OV2 Alarm PKP
0xB8A2		Ph C OV2 Alarm OP	Ph C OV2 Alarm OP
0xB8A4		Ph C OV2 Alarm DPO	Ph C OV2 Alarm DPO
0xB8C1		Ph UV2 Alarm PKP	Phase UV 2 Alarm PKP
0xB8C2		Ph UV2 Alarm OP	Phase UV 2 Alarm OP
0xB8C4		Ph UV2 Alarm DPO	Phase UV 2 Alarm DPO
0xB8C9		Ph A UV2 Alarm PKP	Ph A UV2 Alarm PKP
0xB8CA		Ph A UV2 Alarm OP	Ph A UV2 Alarm OP
0xB8CC		Ph A UV2 Alarm DPO	Ph A UV2 Alarm DPO
0xB8D1		Ph B UV2 Alarm PKP	Ph B UV2 Alarm PKP
0xB8D2		Ph B UV2 Alarm OP	Ph B UV2 Alarm OP
0xB8D4		Ph B UV2 Alarm DPO	Ph B UV2 Alarm DPO
0xB8E1		Ph C UV2 Alarm PKP	Ph C UV2 Alarm PKP
0xB8E2		Ph C UV2 Alarm OP	Ph C UV2 Alarm OP
0xB8E4		Ph C UV2 Alarm DPO	Ph C UV2 Alarm DPO
0xB901		S/C Alarm PKP	S/C Alarm PKP
0xB902		S/C Alarm OP	S/C Alarm OP
0xB904		S/C Alarm DPO	S/C Alarm DPO
0xB941		SPD2 S/C Alarm PKP	SPD2 S/C Alarm PKP
0xB942		SPD2 S/C Alarm OP	SPD2 S/C Alarm OP
0xB944		SPD2 S/C Alarm DPO	SPD2 S/C Alarm DPO
0xB981		SPD2 U/C Alarm PKP	SPD2 U/C Alarm PKP
0xB982		SPD2 U/C Alarm OP	SPD2 U/C Alarm OP
0xB984		SPD2 U/C Alarm DPO	SPD2 U/C Alarm DPO
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP

Code	Type	Definition	Long Definition
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xC002		Any Inhibit	Any Inhibit
0xC042		Output Relay 3 On	Output Relay 3 On
0xC082		Output Relay 4 On	Output Relay 4 On
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC102		Output Relay 6 On	Output Relay 6 On
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC202		BKR Connected	Breaker Connected OP
0xC242		High Speed OP	High Speed OP
0xC282		Low Speed OP	Low Speed OP
0xC2C2		Any Pkp OP	Any Pkp OP
0xC302		Stopped	Stopped
0xC342		Starting	Starting
0xC382		Running	Running
0xC3C2		Motor Online OP	Motor Online OP
0xC402		Emergency Restart	Emergency Restart
0xC441		Hot RTD PKP	Hot RTD PKP
0xC442		Hot RTD OP	Hot RTD OP
0xC482		Lockout OP	Lockout OP
0xC484		Lockout DPO	Lockout DPO
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO

Code	Type	Definition	Long Definition
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC742		VFD Bypassed	VFD Bypassed
0xC744		VFD Not Bypassed	VFD Not Bypassed
0xC902		BKR Open	Breaker Open
0xC942		BKR Close	Breaker Close
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCA82		Reset OK	Reset OK
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD82		Testing ON	Testing ON
0xCD84		Testing OFF	Testing OFF
0xCE82		Therm Inhibit OP	Therm Inhibit OP
0xCEC2		Restart Inhibit OP	Restart Inhibit OP
0xCF02		Starts/Hr Inhib OP	Starts/Hr Inhibit OP
0xCF42		T-BT-Strt Inhib OP	T-BT-Strt Inhibit OP
0xCF81		Fuse Fail InhibPKP	Fuse Fail InhibPKP
0xCF82		Fuse Fail Inhib OP	Fuse Fail Inhibit OP
0xCFC2		Ph Rev Inhibit OP	Ph Reversal Inhibit OP
0xCFC4		Ph Rev Inhibit DPO	Ph Rev Inhibit DPO
0xD241		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xD242		Dir Pwr 1 OP	Directional Pwr 1 OP
0xD281		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xD282		Dir Pwr 2 OP	Directional Pwr 2 OP
0xD342		Ntrl Dir Rev OP	Neutral Directional Rev OP
0xD344		Ntrl Dir Rev DPO	Neutral Directional Reverse DPO
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP

Code	Type	Definition	Long Definition
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xE002		Any Block	Any Block
0xE042		Therm O/L Block	Thermal Level Block
0xE082		Gnd Fault Blk	Gnd Fault Blk
0xE0C2		Accel Blk	Accel Blk
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE202		Mech Jam Blk	Mech Jam Blk
0xE242		U/CURR Blk	U/CURR Blk
0xE282		UNBAL Blk	UNBAL Blk
0xE2C2		RTD1 Block	RTD1 Block
0xE302		RTD2 Block	RTD2 Block
0xE342		RTD3 Block	RTD3 Block
0xE382		RTD4 Block	RTD4 Block
0xE3C2		RTD5 Block	RTD5 Block
0xE402		RTD6 Block	RTD6 Block
0xE442		RTDTrouble Block	RTDTrouble Block
0xE6C2		RTD7 Block	RTD7 Block
0xE702		RTD8 Block	RTD8 Block
0xE742		RTD9 Block	RTD9 Block
0xE782		RTD10 Block	RTD10 Block
0xE7C2		RTD11 Block	RTD11 Block
0xE802		RTD12 Block	RTD12 Block
0xE842		PosSeq UV1 Block	Positive Sequence UV 1 Block
0xE902		PosSeq UV2 Block	Positive Sequence UV 2 Block
0xE9C2		CTFail Block	CT Fail Block
0xEAC2		Load Incr Block	Load Increase Block
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block

Code	Type	Definition	Long Definition
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF242		Dir Pwr 1 Block	Directional Pwr 1 Block
0xF282		Dir Pwr 2 Block	Directional Pwr 2 Block
0xF342		Ntrl Dir Rev Block	Neutral Directional Rev Block
0xF3C2		NSeq OV Block	Negative Sequence OV OP
0xF442		Ph OV1 Block	Ph OV 1 Block
0xF482		Ph UV1 Block	Ph UV 1 Block
0xF542		UndrFreq1 Block	Underfrequency 1 Block
0xF582		UndrFreq2 Block	Underfrequency 2 Block
0xF5C2		OverFreq1 Block	Overfrequency 1 Block
0xF602		OverFreq2 Block	Overfrequency 2 Block
0xF702		Curr Dmd1 Block	Current Demand 1 Block OP
0xF742		RealP Dmd Block	Real Power Demand Block OP
0xF782		ReacP Dmd Block	Reactive Power Demand Block OP
0xF7C2		AppP Dmd Block	Apparent Power Demand Block OP
0xF882		Ph OV2 Block	Ph OV2 Block
0xF8C2		Ph UV2 Block	Ph UV2 Block
0xF902		S/C Blk	S/C Blk
0xF942		SPD2 S/C Blk	SPD2 S/C Blk
0xF982		SPD2 U/C Block	SPD2 U/C Block
FC134C	unsigned 16 bits	Logic Element Trigger	
0x0000		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On

Code	Type	Definition	Long Definition
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off

Code	Type	Definition	Long Definition
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off

Code	Type	Definition	Long Definition
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x8002		Any Trip	Any Trip
0x8041		Therm O/L Trip PKP	Thermal Overload Trip PKP
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x8081		GF Trip PKP	GF Trip PKP
0x8082		GF Trip OP	GF Trip OP
0x8084		GF Trip DPO	GF Trip DPO
0x80C2		Accel Trip OP	Acceleration Trip OP
0x8141		Under Pwr Trip PKP	Under Power Trip PKP
0x8142		Under Pwr Trip OP	Under Power Trip OP
0x8144		Under Pwr Trip DPO	Under Power Trip DPO
0x8181		Single PH Trip PKP	Single PH Trip PKP
0x8182		Single PH Trip OP	Single PH Trip OP
0x8184		Single PH Trip DPO	Single PH Trip DPO
0x8201		Mech Jam Trip PKP	Mech Jam Trip PKP
0x8202		Mech Jam Trip OP	Mech Jam Trip OP
0x8204		Mech Jam Trip DPO	Mech Jam Trip DPO

Code	Type	Definition	Long Definition
0x8241		U/CURR Trip PKP	U/CURR Trip PKP
0x8242		U/CURR Trip OP	U/CURR Trip OP
0x8244		U/CURR Trip DPO	U/CURR Trip DPO
0x8281		UNBAL Trip PKP	Unbalance Trip PKP
0x8282		UNBAL Trip OP	Unbalance Trip OP
0x8284		UNBAL Trip DPO	Unbalance Trip DPO
0x82C1		RTD 1 Trip PKP	RTD 1 Trip PKP
0x82C2		RTD 1 Trip OP	RTD 1 Trip OP
0x8301		RTD 2 Trip PKP	RTD 2 Trip PKP
0x8302		RTD 2 Trip OP	RTD 2 Trip OP
0x8341		RTD 3 Trip PKP	RTD 3 Trip PKP
0x8342		RTD 3 Trip OP	RTD 3 Trip OP
0x8381		RTD 4 Trip PKP	RTD 4 Trip PKP
0x8382		RTD 4 Trip OP	RTD 4 Trip OP
0x83C1		RTD 5 Trip PKP	RTD 5 Trip PKP
0x83C2		RTD 5 Trip OP	RTD 5 Trip OP
0x8401		RTD 6 Trip PKP	RTD 6 Trip PKP
0x8402		RTD 6 Trip OP	RTD 6 Trip OP
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x86C1		RTD 7 Trip PKP	RTD 7 Trip PKP
0x86C2		RTD 7 Trip OP	RTD 7 Trip OP
0x8701		RTD 8 Trip PKP	RTD 8 Trip PKP
0x8702		RTD 8 Trip OP	RTD 8 Trip OP
0x8741		RTD 9 Trip PKP	RTD 9 Trip PKP

Code	Type	Definition	Long Definition
0x8742		RTD 9 Trip OP	RTD 9 Trip OP
0x8781		RTD 10 Trip PKP	RTD 10 Trip PKP
0x8782		RTD 10 Trip OP	RTD 10 Trip OP
0x87C1		RTD 11 Trip PKP	RTD 11 Trip PKP
0x87C2		RTD 11 Trip OP	RTD 11 Trip OP
0x8801		RTD 12 Trip PKP	RTD 12 Trip PKP
0x8802		RTD 12 Trip OP	RTD 12 Trip OP
0x8841		PosSeq UV1 Trp PKP	Positive Sequence UV 1 Trp PKP
0x8842		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8844		PosSeq UV1 Trp DPO	Positive Sequence UV 1 Trp DPO
0x8901		PosSeq UV2 Trp PKP	Positive Sequence UV 2 Trp PKP
0x8902		PosSeq UV2 Trip OP	Positive Sequence UV 2 Trip OP
0x8904		PosSeq UV2 Trp DPO	Positive Sequence UV 2 Trp DPO
0x8F81		Fuse Fail Trip PKP	Fuse Fail Trip PKP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8F84		Fuse Fail Trip DPO	Fuse Fail Trip DPO
0x8FC1		Ph Revrsl Trip PKP	Ph Revrsl Trip PKP
0x8FC2		Ph Revrsl Trip OP	Ph Revrsl Trip OP
0x8FC4		Ph Revrsl Trip DPO	Ph Revrsl Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9241		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x9242		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x9281		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x9282		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x93C1		NSeq OV Trp PKP	Negative Sequence OV Trip PKP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x93C4		NSeq OV Trp DPO	Negative Sequence OV Trip DPO
0x9441		Ph OV1 Trip PKP	Phase OV1 Trip PKP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x9444		Ph OV1 Trip DPO	Phase OV1 Trip DPO
0x9481		Ph UV1 Trip PKP	Phase UV1 Trip PKP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x9484		Ph UV1 Trip DPO	Phase UV1 Trip DPO
0x9541		UndrFreq1 Trip PKP	Underfrequency 1 Trip PKP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9544		UndrFreq1 Trip DPO	Underfrequency 1 Trip DPO
0x9581		UndrFreq2 Trip PKP	Underfrequency 2 Trip PKP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x9584		UndrFreq2 Trip DPO	Underfrequency 2 Trip DPO

Code	Type	Definition	Long Definition
0x95C1		OverFreq1 Trip PKP	Overfrequency 1 Trip PKP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x95C4		OverFreq1 Trip DPO	Overfrequency 1 Trip DPO
0x9601		OverFreq2 Trip PKP	Overfrequency 2 Trip PKP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9604		OverFreq2 Trip DPO	Overfrequency 2 Trip DPO
0x9881		Ph OV2 Trip PKP	Phase OV 2 Trip PKP
0x9882		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x9884		Ph OV2 Trip DPO	Phase OV 2 Trip DPO
0x98C1		Ph UV2 Trip PKP	Phase UV 2 Trip PKP
0x98C2		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x98C4		Ph UV2 Trip DPO	Phase UV 2 Trip DPO
0x9901		S/C Trip PKP	S/C Trip PKP
0x9902		S/C Trip OP	S/C Trip OP
0x9904		S/C Trip DPO	S/C Trip DPO
0x9941		SPD2 S/C Trip PKP	SPD2 S/C Trip PKP
0x9942		SPD2 S/C Trip OP	SPD2 S/C Trip OP
0x9944		SPD2 S/C Trip DPO	SPD2 S/C Trip DPO
0x9981		SPD2 U/C Trip PKP	SPD2 U/C Trip PKP
0x9982		SPD2 U/C Trip OP	SPD2 U/C Trip OP
0x9984		SPD2 U/C Trip DPO	SPD2 U/C Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP

Code	Type	Definition	Long Definition
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA081		Gnd Fault Alrm PKP	Ground Fault Alarm PKP
0xA082		Gnd Fault Alrm OP	Ground Fault Alarm OP
0xA084		Gnd Fault Alrm DPO	Ground Fault Alarm DPO
0xA0C2		Accel Alarm OP	Accel Alarm OP
0xA141		Under Pwr Alrm PKP	Under Power Alarm PKP
0xA142		Under Pwr Alrm OP	Under Power Alarm OP
0xA144		Under Pwr Alrm DPO	Under Power Alarm DPO
0xA201		Mech Jam Alarm PKP	Mech Jam Alarm PKP
0xA202		Mech Jam Alarm OP	Mech Jam Alarm OP
0xA204		Mech Jam Alarm DPO	Mech Jam Alarm DPO
0xA241		U/CURR Alarm PKP	U/CURR Alarm PKP
0xA242		U/CURR Alarm OP	U/CURR Alarm OP
0xA244		U/CURR Alarm DPO	U/CURR Alarm DPO
0xA281		UNBAL Alarm PKP	Unbalance Alarm PKP
0xA282		UNBAL Alarm OP	Unbalance Alarm OP
0xA284		UNBAL Alarm DPO	Unbalance Alarm DPO
0xA2C1		RTD 1 Alarm PKP	RTD 1 Alarm PKP
0xA2C2		RTD 1 Alarm OP	RTD 1 Alarm OP
0xA301		RTD 2 Alarm PKP	RTD 2 Alarm PKP
0xA302		RTD 2 Alarm OP	RTD 2 Alarm OP
0xA341		RTD 3 Alarm PKP	RTD 3 Alarm PKP
0xA342		RTD 3 Alarm OP	RTD 3 Alarm OP
0xA381		RTD 4 Alarm PKP	RTD 4 Alarm PKP
0xA382		RTD 4 Alarm OP	RTD 4 Alarm OP
0xA3C1		RTD 5 Alarm PKP	RTD 5 Alarm PKP
0xA3C2		RTD 5 Alarm OP	RTD 5 Alarm OP
0xA401		RTD 6 Alarm PKP	RTD 6 Alarm PKP
0xA402		RTD 6 Alarm OP	RTD 6 Alarm OP
0xA442		RTD Trouble Alr OP	RTD Trouble Alarm
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP

Code	Type	Definition	Long Definition
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA6C1		RTD 7 Alarm PKP	RTD 7 Alarm PKP
0xA6C2		RTD 7 Alarm OP	RTD 7 Alarm OP
0xA701		RTD 8 Alarm PKP	RTD 8 Alarm PKP
0xA702		RTD 8 Alarm OP	RTD 8 Alarm OP
0xA741		RTD 9 Alarm PKP	RTD 9 Alarm PKP
0xA742		RTD 9 Alarm OP	RTD 9 Alarm OP
0xA781		RTD 10 Alarm PKP	RTD 10 Alarm PKP
0xA782		RTD 10 Alarm OP	RTD 10 Alarm OP
0xA7C1		RTD 11 Alarm PKP	RTD 11 Alarm PKP
0xA7C2		RTD 11 Alarm OP	RTD 11 Alarm OP
0xA801		RTD 12 Alarm PKP	RTD 12 Alarm PKP
0xA802		RTD 12 Alarm OP	RTD 12 Alarm OP
0xA841		PosSeq UV1 AlrmPKP	Positive Sequence UV 1 Alarm PKP
0xA842		PosSeq UV1 Alrm OP	Positive Sequence UV 1 Alarm OP
0xA844		PosSeq UV1 AlrmDPO	Positive Sequence UV 1 Alarm DPO
0xA882		BKR Alarm	Breaker Alarm
0xA901		PosSeq UV2 AlrmPKP	Positive Sequence UV 2 Alarm PKP
0xA902		PosSeq UV2 Alrm OP	Positive Sequence UV 2 Alarm OP
0xA904		PosSeq UV2 AlrmDPO	Positive Sequence UV 2 Alarm DPO
0xA982		Motor Run Hrs OP	Motor Running Hours OP
0xA9C1		CTFail Alrm PKP	CT Fail Alarm PKP
0xA9C2		CTFail Alrm OP	CT Fail Alarm OP
0xA9C4		CTFail Alrm DPO	CT Fail Alarm DPO
0xAA01		Welded ContactrPKP	Welded ContactrPKP
0xAA02		Welded Contactr OP	Welded Contactr OP
0xAA04		Welded ContactrDPO	Welded ContactrDPO
0xAA42		SPD SW Not Cnfg OP	SPD SW Not Cnfg OP
0xAA82		SPD SW Fail OP	SPD SW Fail OP
0xAAC1		Load Incr Alrm PKP	Load Incr Alrm PKP
0xAAC2		Load Incr Alrm OP	Load Incr Alrm OP
0xAAC4		Load Incr Alrm DPO	Load Incr Alrm DPO
0xAB02		BKR Trip Time	Breaker Trip Time
0xAB42		BKR Close Time	Breaker Close Time
0xAB82		BKR Charge Time	Breaker Charge Time
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO

Code	Type	Definition	Long Definition
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD81		BKR Fail Alrm PKP	Breaker Fail Alarm PKP
0xAD82		BKR Fail Alrm OP	Breaker Fail Alarm OP
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xAE82		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAEC2		BKR Charge Fail	Breaker Charge Fail
0xAF81		Fuse Fail Alrm PKP	Fuse Fail Alarm PKP
0xAF82		Fuse Fail Alrm OP	Fuse Fail Alarm OP
0xAF84		Fuse Fail Alrm DPO	Fuse Fail Alarm DPO
0xAFC1		Ph Revrsl Alrm PKP	Ph Reversal Alarm PKP
0xAFC2		Ph Revrsl Alarm OP	Ph Reversal Alarm OP
0xAFC4		Ph Revrsl Alrm DPO	Ph Reversal Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB241		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xB242		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xB281		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP
0xB282		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xB342		NtrlDir RevAlm OP	Neutral Directional Alarm OP
0xB344		NtrlDir RevAlmDPO	Neutral Directional Reverse Alarm DPO
0xB3C1		NSeq OV Alrm PKP	Negative Sequence OV Alarm PKP
0xB3C2		NSeq OV Alrm OP	Negative Sequence OV Alarm OP
0xB3C4		NSeq OV Alrm DPO	Negative Sequence OV Alarm DPO
0xB441		Ph OV1 Alarm PKP	Phase OV1 Alarm PKP
0xB442		Ph OV1 Alarm OP	Phase OV 1 Alarm OP
0xB444		Ph OV1 Alarm DPO	Phase OV1 Alarm DPO
0xB481		Ph UV1 Alarm PKP	Phase UV1 Alarm PKP
0xB482		Ph UV1 Alarm OP	Phase UV 1 Alarm OP
0xB484		Ph UV1 Alarm DPO	Phase UV1 Alarm DPO
0xB541		UndrFreq1 Alrm PKP	Underfrequency 1 Alarm PKP
0xB542		UndrFreq1 Alrm OP	Underfrequency 1 Alarm OP
0xB544		UndrFreq1 Alrm DPO	Underfrequency 1 Alarm DPO
0xB581		UndrFreq2 Alrm PKP	Underfrequency 2 Alarm PKP
0xB582		UndrFreq2 Alrm OP	Underfrequency 2 Alarm OP
0xB584		UndrFreq2 Alrm DPO	Underfrequency 2 Alarm DPO
0xB5C1		OverFreq1 Alrm PKP	Overfrequency 1 Alarm PKP
0xB5C2		OverFreq1 Alrm OP	Overfrequency 1 Alarm OP

Code	Type	Definition	Long Definition
0xB5C4		OverFreq1 Alrm DPO	Overfrequency 1 Alarm DPO
0xB601		OverFreq2 Alrm PKP	Overfrequency 2 Alarm PKP
0xB602		OverFreq2 Alrm OP	Overfrequency 2 Alarm OP
0xB604		OverFreq2 Alrm DPO	Overfrequency 2 Alarm DPO
0xB702		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xB742		RealP Dmd Alrm OP	Real Power Demand Alarm OP
0xB782		ReacP Dmd Alrm OP	Reactive Power Demand Alarm OP
0xB7C2		AppP Dmd Alrm OP	Apparent Power Demand Alarm OP
0xB881		Ph OV2 Alarm PKP	Phase OV 2 Alarm PKP
0xB882		Ph OV2 Alarm OP	Phase OV 2 Alarm OP
0xB884		Ph OV2 Alarm DPO	Phase OV 2 Alarm DPO
0xB8C1		Ph UV2 Alarm PKP	Phase UV 2 Alarm PKP
0xB8C2		Ph UV2 Alarm OP	Phase UV 2 Alarm OP
0xB8C4		Ph UV2 Alarm DPO	Phase UV 2 Alarm DPO
0xB901		S/C Alarm PKP	S/C Alarm PKP
0xB902		S/C Alarm OP	S/C Alarm OP
0xB904		S/C Alarm DPO	S/C Alarm DPO
0xB941		SPD2 S/C Alarm PKP	SPD2 S/C Alarm PKP
0xB942		SPD2 S/C Alarm OP	SPD2 S/C Alarm OP
0xB944		SPD2 S/C Alarm DPO	SPD2 S/C Alarm DPO
0xB981		SPD2 U/C Alarm PKP	SPD2 U/C Alarm PKP
0xB982		SPD2 U/C Alarm OP	SPD2 U/C Alarm OP
0xB984		SPD2 U/C Alarm DPO	SPD2 U/C Alarm DPO
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO

Code	Type	Definition	Long Definition
0xC002		Any Inhibit	Any Inhibit
0xC042		Output Relay 3 On	Output Relay 3 On
0xC082		Output Relay 4 On	Output Relay 4 On
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC102		Output Relay 6 On	Output Relay 6 On
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC182		Rly1 Coil OP	Relay # 1 Coil OP
0xC1C2		Rly2 Coil OP	Relay # 2 Coil OP
0xC202		BKR Connected	Breaker Connected OP
0xC242		High Speed OP	High Speed OP
0xC282		Low Speed OP	Low Speed OP
0xC2C2		Any Pkp OP	Any Pkp OP
0xC302		Stopped	Stopped
0xC342		Starting	Starting
0xC382		Running	Running
0xC3C2		Motor Online OP	Motor Online OP
0xC402		Emergency Restart	Emergency Restart
0xC441		Hot RTD PKP	Hot RTD PKP
0xC442		Hot RTD OP	Hot RTD OP
0xC482		Lockout OP	Lockout OP
0xC484		Lockout DPO	Lockout DPO
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC742		VFD Bypassed	VFD Bypassed
0xC744		VFD Not Bypassed	VFD Not Bypassed

Code	Type	Definition	Long Definition
0xC902		BKR Open	Breaker Open
0xC942		BKR Close	Breaker Close
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCA82		Reset OK	Reset OK
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD82		Testing ON	Testing ON
0xCD84		Testing OFF	Testing OFF
0xCE82		Therm Inhibit OP	Therm Inhibit OP
0xCEC2		Restart Inhibit OP	Restart Inhibit OP
0xCF02		Starts/Hr Inhib OP	Starts/Hr Inhibit OP
0xCF42		T-BT-Strt Inhib OP	T-BT-Strt Inhibit OP
0xCF81		Fuse Fail InhibPKP	Fuse Fail InhibPKP
0xCF82		Fuse Fail Inhib OP	Fuse Fail Inhibit OP
0xCFC2		Ph Rev Inhibit OP	Ph Reversal Inhibit OP
0xCFC4		Ph Rev Inhibit DPO	Ph Rev Inhibit DPO
0xD241		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xD242		Dir Pwr 1 OP	Directional Pwr 1 OP
0xD281		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xD282		Dir Pwr 2 OP	Directional Pwr 2 OP
0xD342		Ntrl Dir Rev OP	Neutral Directional Rev OP
0xD344		Ntrl Dir Rev DPO	Neutral Directional Reverse DPO
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP

Code	Type	Definition	Long Definition
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xE002		Any Block	Any Block
0xE042		Therm O/L Block	Thermal Level Block
0xE082		Gnd Fault Blk	Gnd Fault Blk
0xE0C2		Accel Blk	Accel Blk
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE202		Mech Jam Blk	Mech Jam Blk
0xE242		U/CURR Blk	U/CURR Blk
0xE282		UNBAL Blk	UNBAL Blk
0xE2C2		RTD1 Block	RTD1 Block
0xE302		RTD2 Block	RTD2 Block
0xE342		RTD3 Block	RTD3 Block
0xE382		RTD4 Block	RTD4 Block
0xE3C2		RTD5 Block	RTD5 Block
0xE402		RTD6 Block	RTD6 Block
0xE442		RTDTrouble Block	RTDTrouble Block
0xE6C2		RTD7 Block	RTD7 Block
0xE702		RTD8 Block	RTD8 Block
0xE742		RTD9 Block	RTD9 Block
0xE782		RTD10 Block	RTD10 Block
0xE7C2		RTD11 Block	RTD11 Block
0xE802		RTD12 Block	RTD12 Block
0xE842		PosSeq UV1 Block	Positive Sequence UV 1 Block
0xE902		PosSeq UV2 Block	Positive Sequence UV 2 Block
0xE9C2		CTFail Block	CT Fail Block
0xEAC2		Load Incr Block	Load Increase Block
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF242		Dir Pwr 1 Block	Directional Pwr 1 Block
0xF282		Dir Pwr 2 Block	Directional Pwr 2 Block
0xF342		Ntrl Dir Rev Block	Neutral Directional Rev Block
0xF3C2		NSeq OV Block	Negative Sequence OV OP
0xF442		Ph OV1 Block	Ph OV 1 Block
0xF482		Ph UV1 Block	Ph UV 1 Block
0xF542		UndrFreq1 Block	Underfrequency 1 Block
0xF582		UndrFreq2 Block	Underfrequency 2 Block
0xF5C2		OverFreq1 Block	Overfrequency 1 Block
0xF602		OverFreq2 Block	Overfrequency 2 Block
0xF702		Curr Dmd1 Block	Current Demand 1 Block OP
0xF742		RealP Dmd Block	Real Power Demand Block OP
0xF782		ReacP Dmd Block	Reactive Power Demand Block OP
0xF7C2		AppP Dmd Block	Apparent Power Demand Block OP
0xF882		Ph OV2 Block	Ph OV2 Block
0xF8C2		Ph UV2 Block	Ph UV2 Block

Code	Type	Definition	Long Definition
0xF902		S/C Blk	S/C Blk
0xF942		SPD2 S/C Blk	SPD2 S/C Blk
0xF982		SPD2 U/C Block	SPD2 U/C Block
FC134D	unsigned 16 bits	Lockout Trigger	
0		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On

Code	Type	Definition	Long Definition
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8082		GF Trip OP	GF Trip OP
0x80C2		Accel Trip OP	Acceleration Trip OP
0x8142		Under Pwr Trip OP	Under Power Trip OP
0x8182		Single PH Trip OP	Single PH Trip OP
0x8202		Mech Jam Trip OP	Mech Jam Trip OP
0x8242		U/CURR Trip OP	U/CURR Trip OP
0x8282		UNBAL Trip OP	Unbalance Trip OP
0x82C2		RTD 1 Trip OP	RTD 1 Trip OP
0x8302		RTD 2 Trip OP	RTD 2 Trip OP
0x8342		RTD 3 Trip OP	RTD 3 Trip OP
0x8382		RTD 4 Trip OP	RTD 4 Trip OP
0x83C2		RTD 5 Trip OP	RTD 5 Trip OP
0x8402		RTD 6 Trip OP	RTD 6 Trip OP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x86C2		RTD 7 Trip OP	RTD 7 Trip OP
0x8702		RTD 8 Trip OP	RTD 8 Trip OP
0x8742		RTD 9 Trip OP	RTD 9 Trip OP
0x8782		RTD 10 Trip OP	RTD 10 Trip OP
0x87C2		RTD 11 Trip OP	RTD 11 Trip OP
0x8802		RTD 12 Trip OP	RTD 12 Trip OP
0x8842		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8902		PosSeq UV2 Trip OP	Positive Sequence UV 2 Trip OP
0x89C2		Self Test OP	Self Test OP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8FC2		Ph Revrsl Trip OP	Ph Revrsl Trip OP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP

Code	Type	Definition	Long Definition
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9242		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x9282		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9882		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x988A		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x9892		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x98A2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x98C2		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x98CA		Ph A UV2 Trip OP	Phase A UV2 Trip OP
0x98D2		Ph B UV2 Trip OP	Phase B UV2 Trip OP
0x98E2		Ph C UV2 Trip OP	Phase C UV2 Trip OP
0x9902		S/C Trip OP	S/C Trip OP
0x9942		SPD2 S/C Trip OP	SPD2 S/C Trip OP
0x9982		SPD2 U/C Trip OP	SPD2 U/C Trip OP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
FC134E	unsigned 16 bits	Fault Report Trigger	
0		Off	Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8082		GF Trip OP	GF Trip OP
0x80C2		Accel Trip OP	Acceleration Trip OP
0x8142		Under Pwr Trip OP	Under Power Trip OP
0x8182		Single PH Trip OP	Single PH Trip OP
0x8202		Mech Jam Trip OP	Mech Jam Trip OP

Code	Type	Definition	Long Definition
0x8242		U/CURR Trip OP	U/CURR Trip OP
0x8282		UNBAL Trip OP	Unbalance Trip OP
0x82C2		RTD 1 Trip OP	RTD 1 Trip OP
0x8302		RTD 2 Trip OP	RTD 2 Trip OP
0x8342		RTD 3 Trip OP	RTD 3 Trip OP
0x8382		RTD 4 Trip OP	RTD 4 Trip OP
0x83C2		RTD 5 Trip OP	RTD 5 Trip OP
0x8402		RTD 6 Trip OP	RTD 6 Trip OP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x86C2		RTD 7 Trip OP	RTD 7 Trip OP
0x8702		RTD 8 Trip OP	RTD 8 Trip OP
0x8742		RTD 9 Trip OP	RTD 9 Trip OP
0x8782		RTD 10 Trip OP	RTD 10 Trip OP
0x87C2		RTD 11 Trip OP	RTD 11 Trip OP
0x8802		RTD 12 Trip OP	RTD 12 Trip OP
0x8842		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8902		PosSeq UV2 Trip OP	Positive Sequence UV 2 Trip OP
0x89C2		Self Test OP	Self Test OP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8FC2		Ph Revrsl Trip OP	Ph Revrsl Trip OP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9242		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x9282		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP

Code	Type	Definition	Long Definition
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9882		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x988A		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x9892		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x98A2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x98C2		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x98CA		Ph A UV2 Trip OP	Phase A UV2 Trip OP
0x98D2		Ph B UV2 Trip OP	Phase B UV2 Trip OP
0x98E2		Ph C UV2 Trip OP	Phase C UV2 Trip OP
0x9902		S/C Trip OP	S/C Trip OP
0x9942		SPD2 S/C Trip OP	SPD2 S/C Trip OP
0x9982		SPD2 U/C Trip OP	SPD2 U/C Trip OP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
FC134F	unsigned 16 bits	Lockout Reset	
0		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On

Code	Type	Definition	Long Definition
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC502		LE 2 OP	Logic Element 2 OP
0xC542		LE 3 OP	Logic Element 3 OP

Code	Type	Definition	Long Definition
0xC582		LE 4 OP	Logic Element 4 OP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC602		LE 6 OP	Logic Element 6 OP
0xC642		LE 7 OP	Logic Element 7 OP
0xC682		LE 8 OP	Logic Element 8 OP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDDC2		LE 16 OP	Logic Element 16 OP
FC135	unsigned 16 bits	Motor Speed During Trip / Motor Speed During Event	
0		Low Speed	Low Speed
1		High Speed	High Speed
FC136	unsigned 16 bits	Motor Speed During Trip / Motor Speed During Event	
0		None	None
1		A	A
2		B	B
FC139	unsigned 16 bits	Starter Type	
0		None	None
1		FV Nonreversing	Full Voltage Nonreversing
2		FV Reversing	Full Voltage Reversing
3		Two Speed	Two Speed
4		Wye-Delta	Wye-Delta
5		Inverter	Inverter
6		Soft Starter	Soft Starter
7		Custom Starter	Custom Starter
FC140	unsigned 16 bits	Interlock Function	
0		Disabled	Disabled
1		Trip	Trip
2		Alarm	Alarm
FC141	unsigned 16 bits	Timer Type	
0		Millisecond	Millisecond
1		Second	Second
2		Minute	Minute
FC142	unsigned 16 bits	FlexLogic Bit Field EEETTTTTTTSSSSSS	
0x0000		Off	Off
0x0001		On	On
0x0040		Contact Inputs	Contact Inputs
0x0080		Virtual Inputs	Virtual Inputs
0x00C0		Virtual Outputs	Virtual Outputs
0x01C0		Remote Inputs	Remote Inputs
0x0380		Insert	Insert

Code	Type	Definition	Long Definition
0x0400		End	End
0x0440		NOT	NOT
0x0480		XOR	XOR
0x04C0		LATCH	LATCH
0x0500		OR	OR
0x0540		AND	AND
0x0580		NOR	NOR
0x05C0		NAND	NAND
0x0600		TIMER	TIMER
0x0640		ASSIGN	ASSIGN
0x8000		Trip	Trip
0x9241		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x9242		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x9281		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x9282		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0xA000		Alarm	Alarm
0xA9C1		CTFail Alrm PKP	CT Fail Alarm PKP
0xA9C2		CTFail Alrm OP	CT Fail Alarm OP
0xA9C4		CTFail Alrm DPO	CT Fail Alarm DPO
0xB241		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xB242		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xB281		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP
0xB282		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xC000		Control	Control
0xC742		VFD Bypassed	VFD Bypassed
0xC744		VFD Not Bypassed	VFD Not Bypassed
0xC9C1		CTFail PKP	CT Fail PKP
0xC9C2		CTFail OP	CT Fail OP
0xC9C4		CTFail DPO	CT Fail DPO
0xD241		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xD242		Dir Pwr 1 OP	Directional Pwr 1 OP
0xD281		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xD282		Dir Pwr 2 OP	Directional Pwr 2 OP
0xE9C2		CTFail Block	CT Fail Block
0xF242		Dir Pwr 1 Block	Directional Pwr 1 Block
0xF282		Dir Pwr 2 Block	Directional Pwr 2 Block
FC143	unsigned 16 bits	Drive Status	
0		Drive Unavailable	Drive Unavailable
1		Available Auto	Available Auto
2		Available Manual	Available Manual
3		Available	Available
4		Running	Running
5		ESD Trip / Stop	ESD Trip / Stop
FC144	unsigned 32 bits	LED Status - 350	
FC144A	unsigned 32 bits	LED Status - 339	
0x00000300		Hot RTD Amber	Hot RTD Amber
0x00000400		Running Red	Running Red

Code	Type	Definition	Long Definition
0x00000800		Running Green	Running Green
0x00000C00		Running Amber	Running Amber
0x00001000		Starting Red	Starting Red
0x00002000		Starting Green	Starting Green
0x00003000		Starting Amber	Starting Amber
0x00004000		Stopped Red	Stopped Red
0x00008000		Stopped Green	Stopped Green
0x0000C000		Stopped Amber	Stopped Amber
0x00030000		Maintenance Amber	Maintenance Amber
0x000C0000		Pickup Amber	Pickup Amber
0x00300000		Alarm Amber	Alarm Amber
0x00400000		Trip Red	Trip Red
0x01000000		Start Inhibit Red	Start Inhibit Red
0x04000000		Lockout Red	Lockout Red
0x30000000		Trouble Amber	Trouble Amber
0x80000000		In Service Green	In Service Green
FC144B	unsigned 32 bits	LED Status - 345	
FC145	unsigned 16 bits	Element Status 1	
FC146	unsigned 16 bits	Element Status 2	
FC147	unsigned 16 bits	LED Intensity	
0		Level 1	Level 1
12		Level 5	Level 5
15		Level 6	Level 6
3		Level 2	Level 2
6		Level 3	Level 3
9		Level 4	Level 4
FC148	unsigned 16 bits	Trigger Mode	
0		Overwrite	Overwrite
1		Protected	Protected
FC149	unsigned 16 bits	OR / AND Selection	
0		OR	OR
1		AND	AND
2		NOR	NOR
3		NAND	NAND
4		XOR	XOR
5		XNOR	XNOR
FC149A	unsigned 16 bits	AND / LATCH Selection	
0		AND	AND
1		LATCH	LATCH
FC150	unsigned 32 bits	IP Address	
FC155	unsigned 16 bits	Profibus Baud Rate	
0x0001		9600	9600
0x0002		19200	19200
0x0004		31250	31250
0x0008		45450	45450
0x0010		93750	93750
0x0020		187500	187500

Code	Type	Definition	Long Definition
0x0040		500000	500000
0x0080		1500000	1500000
0x07E2		Auto Detect	Auto Detect
FC156	unsigned 16 bits	DeviceNet Baud Rate	
0		125 kbps	125 kbps
1		250 kbps	250 kbps
2		500 kbps	500 kbps
FC157	unsigned 16 bits	LED Colour	
0		Off	Off
1		Red	Red
2		Green	Green
3		Orange	Orange
FC157A	unsigned 16 bits	LED Colour (Subset A)	
0		None	None
1		Red	Red
2		Green	Green
FC160	unsigned 16 bits	Auto/Manual Mode	
0		Auto	Auto
1		Manual	Manual
FC167	unsigned 32 bits	Contact/Virtual Input/Output Status	
FC168	unsigned 32 bits	Contact/Virtual Input/Output Status	
FC169	unsigned 16 bits	Month	
0		Not Set	Not Set
1		January	January
2		February	February
3		March	March
4		April	April
5		May	May
6		June	June
7		July	July
8		August	August
9		September	September
10		October	October
11		November	November
12		December	December
FC170	unsigned 16 bits	Count of Week	
0		Not Set	Not Set
1		1st	1st
2		2nd	2nd
3		3rd	3rd
4		4th	4th
5		Last	Last
FC171	unsigned 16 bits	Weekdays	
0		Not Set	Not Set
1		SUN	SUN
2		MON	MON
3		TUE	TUE

Code	Type	Definition	Long Definition
4		WED	WED
5		THU	THU
6		FRI	FRI
7		SAT	SAT
FC172	unsigned 16 bits	Auto/Manual Control Stop Mode	
0		Always Enabled	Always Enabled
1		Follow Ctrl Mode	Follow Control Mode
FC173	unsigned 16 bits	Wire Selection	
0		2W	2W
1		3W	3W
FC174	unsigned 16 bits	Source Stop Action	
0		Stop	Stop
1		Trip	Trip
FC175	unsigned 16 bits	Test Auto/Manual Mode	
0		On	On
1		Off	Off
2		Unaffected	Unaffected
FC176	unsigned 16 bits	Auxiliary VT Connection	
0		Vab VT	Vab VT
1		Vbc VT	Vbc VT
2		Vca VT	Vca VT
3		Van VT	Van VT
4		Vbn VT	Vbn VT
5		Vcn VT	Vcn VT
FC177	unsigned 16 bits	LED Color Invert	
0		Green/Red	Green/Red
1		Red/Green	Red/Green
FC178	unsigned 16 bits	Motor Status	
0x0000		Lockout	Lockout
0x0001		Non-Lockout Trip	Non-Lockout Trip
0x0040		Tripped	Tripped
0x0080		Overload	Overload
0x00C0		Running	Running
0x01C0		Overload Lockout	Overload Lockout
0x0380		Starting	Starting
0x0400		Stopping	Stopping
0x0440		Inhibit	Inhibit
0x0480		Stopped	Stopped
0x04C0		Self Test Fault	Self Test Fault
0x0500		Alarm	Alarm
0x0540		Forward	Forward
0x0580		Reverse	Reverse
0x05C0		Low Speed	Low Speed
0x0600		High Speed	High Speed
FC179	unsigned 32 bits	Alarm Status 1	
0x00000001		Any Alarm	Any Alarm
0x00000002		Therm Level Alarm	Thermal Level Alarm

Code	Type	Definition	Long Definition
0x00000004		Gnd Fault Alarm	Gnd Fault Alarm
0x00000008		Acceleration Alarm	Acceleration Alarm
0x00000020		Under Pwr Alarm	Under Power Alarm
0x00000040		Reserved	Reserved
0x00000080		Reserved	Reserved
0x00000100		Mech Jam Alarm	Mechanical Jam Alarm
0x00000200		Under Curr Alarm	Undercurrent Alarm
0x00000400		Unbalance Alarm	Unbalance Alarm
0x00000800		RTD 1 Alarm	RTD 1 Alarm
0x00001000		RTD 2 Alarm	RTD 2 Alarm
0x00002000		RTD 3 Alarm	RTD 3 Alarm
0x00004000		RTD 4 Alarm	RTD 4 Alarm
0x00008000		RTD 5 Alarm	RTD 5 Alarm
0x00010000		RTD 6 Alarm	RTD 6 Alarm
0x00020000		RTD Trouble Alarm	RTD Trouble Alarm
0x00040000		Not Configured	Not Configured
0x00080000		LE 1 Alarm	Logic Element 1 Alarm
0x00100000		LE 2 Alarm	Logic Element 2 Alarm
0x00200000		LE 3 Alarm	Logic Element 3 Alarm
0x00400000		LE 4 Alarm	Logic Element 4 Alarm
0x00800000		LE 5 Alarm	Logic Element 5 Alarm
0x01000000		LE 6 Alarm	Logic Element 6 Alarm
0x02000000		LE 7 Alarm	Logic Element 7 Alarm
0x04000000		LE 8 Alarm	Logic Element 8 Alarm
0x08000000		RTD 7 Alarm	RTD 7 Alarm
0x10000000		RTD 8 Alarm	RTD 8 Alarm
0x20000000		RTD 9 Alarm	RTD 9 Alarm
0x40000000		RTD 10 Alarm	RTD 10 Alarm
0x80000000		RTD 11 Alarm	RTD 11 Alarm
FC180	unsigned 32 bits	Alarm Status 2	
0x00000001		RTD 12 Alarm	RTD 12 Alarm
0x00000002		Reserved	Reserved
0x00000004		Reserved	Reserved
0x00000008		Reserved	Reserved
0x00000010		Reserved	Reserved
0x00000020		Reserved	Reserved
0x00000040		Motor Run Hrs	Motor Running Hours
0x00000080		I^2 Counter Alarm	I^2 Counter Alarm
0x00000100		Welded Contactor	Welded Contactor
0x00000200		SPD SW Not Config	SPD SW Not Config
0x00000400		SPD SW Fail	SPD SW Fail
0x00000800		Reserved	Reserved
0x00001000		Load Increase Alrm	Load Increase Alarm
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		High Ambient Temp	High Ambient Temperature Alarm
0x00010000		Low Ambient Temp	Low Ambient Temperature Alarm

Code	Type	Definition	Long Definition
0x00020000		Self Test Alarm	Self Test Alarm
0x00040000		Comm Fail Alarm	Comm Fail Alarm
0x00080000		BKRTrip Cntr Alarm	Breaker Trip Counter Alarm
0x00100000		Rly1 74 Alarm	Relay 1 74 Alarm
0x00200000		Rly2 74 Alarm	Relay 2 74 Alarm
0x00400000		BKR Fail Alarm	Breaker Fail Alarm
0x00800000		BKR Status Failure	Breaker Status Failure
0x01000000		Reserved	Reserved
0x02000000		CLP Alarm	Cold Load PKP Alarm
0x04000000		Reserved	Reserved
0x08000000		BKR2 Status Fail	Breaker 2 Status Failure
0x10000000		Reserved	Reserved
0x20000000		BKR2 Fail Alrm	Breaker 2 Failure Alarm
0x40000000		FuseFail Alarm	Fuse Fail Alarm
0x80000000		Ph Revrsl Alarm	Phase Reversal Alarm
FC181	unsigned 32 bits	Alarm Status 3	
0x00000001		Ph IOC1 Alarm	Phase IOC 1 Alarm
0x00000002		Ntrl IOC1 Alarm	Neutral IOC 1 Alarm
0x00000004		Gnd IOC1 Alarm	Ground IOC 1 Alarm
0x00000008		Ph TOC1 Alarm	Phase TOC 1 Alarm
0x00000020		Gnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0x00000040		Ph IOC2 Alarm	Phase IOC 2 Alarm
0x00000080		Ntrl IOC2 Alarm	Neutral IOC 2 Alarm
0x00000100		Gnd IOC2 Alarm	Ground IOC 2 Alarm
0x00000200		Ph TOC2 Alrm	Phase TOC 2 Alarm
0x00000800		Gnd TOC2 Alrm	Sensitive Ground TOC 2 Alarm
0x00001000		SGnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0x00002000		Ntrl Dir Rev Alm	Neutral Directional Alarm
0x00008000		NSeq OV Alarm	Negative Sequence OV Alarm
0x00010000		Ntrl OV Alarm	Ntrl OV Alarm
0x00020000		Phase OV Alarm	Phase OV Alarm
0x00040000		Phase UV Alarm	Phase UV Alarm
0x00080000		Aux OV Alarm	Auxiliary OV Alarm
0x00100000		Aux UV Alarm	Auxiliary UV Alarm
0x00200000		UnderFreq1 Alarm	Underfrequency 1 Alarm
0x00400000		UnderFreq2 Alarm	Underfrequency 2 Alarm
0x00800000		OverFreq1 Alrm	Overfrequency 1 Alarm
0x01000000		OverFreq2 Alrm	Overfrequency 2 Alarm
0x02000000		SGnd IOC1 Alarm	Sensitive Ground IOC 1 Alarm
0x04000000		SGnd IOC2 Alarm	Sensitive Ground IOC 2 Alarm
0x10000000		Diff 87P Alarm	Diff 87P Alarm
0x20000000		Diff 87REF 1 Alarm	Diff 87REF 1 Alarm
0x40000000		Diff 87REF 2 Alarm	Diff 87REF 2 Alarm
0x80000000		Inst 50/87P Alarm	Inst 50/87P Alarm
FC182	unsigned 32 bits	Alarm Status 4	
0x00000004		Ph OV2 Alarm	Phase OV 2 Alarm
0x00000008		Ph UV2 Alarm	Phase UV 2 Alarm

Code	Type	Definition	Long Definition
0x00000010		Short Circuit Alrm	Short Circuit Alarm
0x00000020		SPD2 S/C Alarm	SPD2 S/C Alarm
0x00000040		SPD2 U/C Alarm	SPD2 U/C Alarm
0x00000080		SGnd TOC2 Alarm	Sensitive Ground TOC 2 Alarm
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		LE 9 Alarm	Logic Element 9 Alarm
0x00020000		LE 10 Alarm	Logic Element 10 Alarm
0x00040000		LE 11 Alarm	Logic Element 11 Alarm
0x00080000		LE 12 Alarm	Logic Element 12 Alarm
0x00100000		LE 13 Alarm	Logic Element 13 Alarm
0x00200000		LE 14 Alarm	Logic Element 14 Alarm
0x00400000		LE 15 Alarm	Logic Element 15 Alarm
0x00800000		LE 16 Alarm	Logic Element 16 Alarm
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		Reserved	Reserved
0x40000000		Reserved	Reserved
0x80000000		Reserved	Reserved
FC183	unsigned 32 bits	Trip Status 1	
0x00000001		Any Trip	Any Trip
0x00000002		Therm O/L Trip	Thermal O/L Trip
0x00000004		Gnd Fault Trip	Gnd Fault Trip
0x00000008		Acceleration Trip	Acceleration Trip
0x00000020		Under Pwr Trip	Under Power Trip
0x00000040		Single Phase Trip	Single Phase Trip
0x00000080		Reserved	Reserved
0x00000100		Mech Jam Trip	Mechanical Jam Trip
0x00000200		Under Curr Trip	Undercurrent Trip
0x00000400		Unbalance Trip	Unbalance Trip
0x00000800		RTD 1 Trip	RTD 1 Trip
0x00001000		RTD 2 Trip	RTD 2 Trip
0x00002000		RTD 3 Trip	RTD 3 Trip
0x00004000		RTD 4 Trip	RTD 4 Trip
0x00008000		RTD 5 Trip	RTD 5 Trip
0x00010000		RTD 6 Trip	RTD 6 Trip
0x00020000		Comm Fail Trip	Comm Fail Trip
0x00040000		Relay Not Config.	Relay Not Configured

Code	Type	Definition	Long Definition
0x00080000		LE 1 Trip	Logic Element 1 Trip
0x00100000		LE 2 Trip	Logic Element 2 Trip
0x00200000		LE 3 Trip	Logic Element 3 Trip
0x00400000		LE 4 Trip	Logic Element 4 Trip
0x00800000		LE 5 Trip	Logic Element 5 Trip
0x01000000		LE 6 Trip	Logic Element 6 Trip
0x02000000		LE 7 Trip	Logic Element 7 Trip
0x04000000		LE 8 Trip	Logic Element 8 Trip
0x08000000		RTD 7 Trip	RTD 7 Trip
0x10000000		RTD 8 Trip	RTD 8 Trip
0x20000000		RTD 9 Trip	RTD 9 Trip
0x40000000		RTD 10 Trip	RTD 10 Trip
0x80000000		RTD 11 Trip	RTD 11 Trip
FC184	unsigned 32 bits	Trip Status 2	
0x00000001		RTD 12 Trip	RTD 12 Trip
0x00000002		Reserved	Reserved
0x00000004		Reserved	Reserved
0x00000008		Reserved	Reserved
0x00000010		Reserved	Reserved
0x00000020		Reserved	Reserved
0x00000040		Reserved	Reserved
0x00000080		Self Test Trip	Self Test Trip
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		Reserved	Reserved
0x00020000		Reserved	Reserved
0x00040000		Reserved	Reserved
0x00080000		BKRTrip Cntr Trip	Breaker Trip Counter Trip
0x00100000		Rly1 74 Trip	Relay 1 74 Trip
0x00200000		Rly2 74 Trip	Relay 2 74 Trip
0x00400000		BKR Failure	Breaker Failure
0x00800000		Reserved	Reserved
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		BKR 2 Failure	Breaker 2 Failure
0x40000000		FuseFail Trip	FuseFail Trip
0x80000000		Ph Revrsl Trip	Phase Reversal Trip
FC185	unsigned 32 bits	Trip Status 3	

Code	Type	Definition	Long Definition
0x00000001		Ph IOC1 Trip	Phase IOC 1 Trip
0x00000002		Ntrl IOC1 Trip	Neutral IOC 1 Trip
0x00000004		Gnd IOC1 Trip	Ground IOC 1 Trip
0x00000008		Ph TOC1 Trip	Phase TOC 1 Trip
0x00000020		Gnd TOC1 Trip	Sensitive Ground TOC 1 Trip
0x00000040		Ph IOC2 Trip	Phase IOC 2 Trip
0x00000080		Ntrl IOC2 Trip	Neutral IOC 2 Trip
0x00000100		Gnd IOC2 Trip	Ground IOC 2 Trip
0x00000200		Ph TOC2 Trip	Phase TOC 2 Trip
0x00000800		Gnd TOC2 Trip	Sensitive Ground TOC 2 Trip
0x00001000		SGnd TOC1 Trip	Sensitive Ground TOC 1 Trip
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		NSeq OV Trip	Negative Sequence OV Trip
0x00010000		Ntrl OV Trip	Ntrl OV Trip
0x00020000		Phase OV Trip	Phase OV Trip
0x00040000		Phase UV Trip	Phase UV Trip
0x00080000		Aux OV Trip	Auxiliary OV Trip
0x00100000		Aux UV Trip	Auxiliary UV Trip
0x00200000		UnderFreq1 Trip	Underfrequency 1 Trip
0x00400000		UnderFreq2 Trip	Underfrequency 2 Trip
0x00800000		OVERFREQ1 TRIP	Overfrequency 1 Trip
0x01000000		OVERFREQ2 TRIP	Overfrequency 2 Trip
0x02000000		SGnd IOC1 Trip	Sensitive Ground IOC 1 Trip
0x04000000		SGnd IOC2 Trip	Sensitive Ground IOC 2 Trip
0x10000000		Diff 87P Trip	Diff 87P Trip
0x20000000		Diff 87REF 1 Trip	Diff 87REF 1 Trip
0x40000000		Diff 87REF 2 Trip	Diff 87REF 2 Trip
0x80000000		Inst 50/87P Trip	Inst 50/87P Trip
FC186	unsigned 32 bits	Trip Status 4	
0x00000004		Phase OV 2 Trip	Phase OV 2 Trip
0x00000008		Phase UV 2 Trip	Phase UV 2 Trip
0x00000010		Short Circuit Trip	Short Circuit Trip
0x00000020		SPD2 S/C Trip	SPD2 S/C Trip
0x00000040		SPD2 U/C Trip	SPD2 U/C Trip
0x00000080		SGnd TOC2 Trip	Sensitive Ground TOC 2 Trip
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		LE 9 Trip	Logic Element 9 Trip
0x00020000		LE 10 Trip	Logic Element 10 Trip
0x00040000		LE 11 Trip	Logic Element 11 Trip

Code	Type	Definition	Long Definition
0x00080000		LE 12 Trip	Logic Element 12 Trip
0x00100000		LE 13 Trip	Logic Element 13 Trip
0x00200000		LE 14 Trip	Logic Element 14 Trip
0x00400000		LE 15 Trip	Logic Element 15 Trip
0x00800000		LE 16 Trip	Logic Element 16 Trip
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		Reserved	Reserved
0x40000000		Reserved	Reserved
0x80000000		Reserved	Reserved
FC187	unsigned 32 bits	Message Status 1	
FC188	unsigned 32 bits	Message Status 2	
FC189	unsigned 32 bits	Message Status 3	
FC190	unsigned 32 bits	Message Status 4	
FC191	unsigned 32 bits	Ctrl Element Status 1	
FC192	unsigned 32 bits	Ctrl Element Status 2	
FC193	unsigned 32 bits	Ctrl Status 3	
FC194	unsigned 32 bits	Ctrl Status 4	
FC195	unsigned 16 bits	Command Status	
0		Normal	Normal
1		Gain Forced to X1	Gain Forced to X1
FC196	unsigned 16 bits	Digital Alarm	
0		Active Low	Active Low
1		Active High	Active High
FC197	unsigned 16 bits	Breaker Counter Alarm	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Trip	Trip
FC198	unsigned 16 bits	Output Relay Operation	
FC199	unsigned 16 bits	Output Relay Type	
0		Self-Reset	Self-Reset
1		Latched	Latched
FC200	unsigned 32 bits	Block Status 1	
FC201	unsigned 32 bits	Block Status 2	
FC202	unsigned 32 bits	Block Status 3	
FC203	unsigned 32 bits	Block Status 4	
FC204	unsigned 16 bits	Contact Input FlexLogic Bit Field Values	
0x0000		Disabled	Disabled
0x0040		Contact Input 1	Contact Input 1
0x0041		Contact Input 2	Contact Input 2
0x0042		Contact Input 3	Contact Input 3
0x0043		Contact Input 4	Contact Input 4
0x0044		Contact Input 5	Contact Input 5

Code	Type	Definition	Long Definition
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204A	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset A)	
0x0000		Disabled	Disabled
0x0040		Contact Input 1	Contact Input 1
FC204B	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset B)	
0x0000		Disabled	Disabled
0x0042		Contact Input 3	Contact Input 3
0x0043		Contact Input 4	Contact Input 4
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204C	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset C)	
0x0000		Disabled	Disabled
0x0041		Contact Input 2	Contact Input 2
FC204D	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset D)	
0x0000		Disabled	Disabled
0x0042		Contact Input 3	W2 Breaker 52a (CI#3)
FC204E	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset E)	
0x0000		Disabled	Disabled
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204F	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset F)	
0x0000		Disabled	Disabled
0x0043		Contact Input 4	W2 Breaker 52b (CI#4)
FC205	unsigned 16 bits	Element Type 1	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Trip	Trip
4		Control	Control
FC206	unsigned 16 bits	Element Type 2	
0		Disabled	Disabled

Code	Type	Definition	Long Definition
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
FC207	unsigned 16 bits	Element Type 3	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Control	Control
FC208	unsigned 16 bits	Relay Operation (Failsafe	
0		Failsafe	Failsafe
1		Non-Failsafe	Non-Failsafe
FC212	unsigned 16 bits	LCD Test Paint Color	
0		None	None
1		Red	Red
2		Green	Green
3		Blue	Blue
FC214	unsigned 16 bits	MAC Address	
FC215	unsigned 32 bits	GOOSE Receive Status	
FC216	unsigned 16 bits	Received GOOSE Message Formatting	
0x0000		{	{
0x0001		}	}
0x0002		Bool	Bool
0x0003		Byte	Byte
0x0004		Ubyte	Ubyte
0x0005		Short	Short
0x0006		Ushort	Ushort
0x0007		Long	Long
0x0008		Ulong	Ulong
0x0009		Int64	Int64
0x000A		Uint64	Uint64
0x000B		Float	Float
0x000C		Double	Double
0x000D		Btime4	Btime4
0x000E		Btime6	Btime6
0x000F		Utctime	Utctime
0x0010		Bcd	Bcd
0x0011		Vstring	Vstring
0x0012		Ostring	Ostring
0x0013		Ovstring	Ovstring
0x0014		Bstring	Bstring
0x0015		Bvstring	Bvstring
0x00FF		Row	Row
FC217	unsigned 16 bits	Remote Input Item Source	
FC218	unsigned 16 bits	Remote Input Item Mask	
FC219	unsigned 32 bits	GOOSE Source	
0x0000		Disabled	Disabled
0x0001		1	1
0x0002		2	2

Code	Type	Definition	Long Definition
0x0004		3	3
0x0008		4	4
0x0010		5	5
0x0020		6	6
0x0040		7	7
0x0080		8	8
FC220	unsigned 16 bits	Remote Input Default State	
0		On	On
1		Off	Off
2		Latest/On	Latest/On
3		Latest/Off	Latest/Off
FC221	unsigned 16 bits	IEC103 ASDU Identification Type	
3		3	3
9		9	9
FC222	unsigned 16 bits	GOOSE Type	
0		Simplified	Simplified
1		Advanced	Advanced
FC225	unsigned 16 bits	Security Audit Trail Change Method	
0		Unknown	Unknown
1		USB	USB
2		COM1	COM1
3		Ethernet	Ethernet
4		KeyPad	KeyPad
FC226	unsigned 16 bits	Security Audit Trail Event Type	
0		Unknown	Unknown
1		Setpoint Change	Setpoint Change
2		Firmware File	Firmware File
3		Factory Reload	Factory Reload
4		Setpoint File	Setpoint File
FC230	unsigned 16 bits	Ethernet Connection Type	
0		Copper	Copper
1		Fiber	Fiber
FC235	unsigned 16 bits	Switching Device	
0		BKR	Breaker
1		Contactor	Contactor
FC236	unsigned 16 bits	Thermal O/L Curve	
0		Standard	Standard
1		Flex Curve	Flex Curve
FC240	unsigned 16 bits	Self Test Error	
0		None	None
1		Order Code Error	Order Code Error
2		RTC Error	RTC Error
4		Cal Error	Cal Error
8		EEPROM Error	EEPROM Error
16		System Health	System Health
17		PSU Serial# Blank	PSU Serial# Blank
18		INP Serial# Blank	INP Serial# Blank

Code	Type	Definition	Long Definition
19		ANLG Serial# Blank	ANLG Serial# Blank
20		MAG Serial# Blank	MAG Serial# Blank
21		COMM Serial# Blank	COMM Serial# Blank
22		CCP Serial# Blank	CCP Serial# Blank
23		CPU Serial# Blank	CPU Serial# Blank
24		PSU Serial# Inval	PSU Serial# Invalid
25		INP Serial# Inval	INP Serial# Invalid
26		ANLG Serial# Inval	ANLG Serial# Invalid
27		MAG Serial# Inval	MAG Serial# Invalid
28		COMM Serial# Inval	COMM Serial# Invalid
29		CCP Serial# Inval	CCP Serial# Invalid
30		CPU Serial# Inval	CPU Serial# Invalid
32		3.3V Error	3.3V Error
64		Analog V Error	Analog V Error
128		DPRAM Checksum	DPRAM Checksum
256		DPRAM Heart Beat	DPRAM Heart Beat
512		COMM Error	COMM Error
513		DAUGHTER Error	DAUGHTER Error
514		COMM HW Rev Error	COMM HW Revision Error
1024		Link Error	Link Error
2048		Traffic Error	Traffic Error
4096		Internal Temp	Internal Temp
FC401	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC402	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC403	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC404	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		Off	Off
1		On	On
FC405	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		100 Ohm Pt	100 Ohm Platinum
1		120 Ohm Ni	120 Ohm Nickel
2		100 Ohm Ni	100 Ohm Nickel
FC406	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		Off	Off
1		On	On
FC407	unsigned 16 bits	PC Program Reserved for Output Relay Bits (Do Not Use)	
0		Disabled	Disabled
3		3	3
4		4	4

Code	Type	Definition	Long Definition
5		5	5
6		6	6
7		7	7
FC408	unsigned 16 bits	Inrush Function	
FC409	unsigned 16 bits	Inhibit Mode	
0		Per Phase	Per Phase
1		2-out-of-3	2-out-of-3
2		Average	Average
FC410	unsigned 16 bits	Overexcitation Function	
FC411	unsigned 16 bits	Internal Compensation	
0		Internal(software)	Internal(software)
1		External(with CTs)	External(with CTs)
FC412	unsigned 16 bits	Winding Connection	
0		Wye	Wye
1		Delta	Delta
2		Zig-Zag	Zig-Zag
FC413	unsigned 16 bits	Grounding Connection	
0		Not Within zone	Not Within zone
1		Within zone	Within zone
FC415	unsigned 16 bits	SR345 CT Type	
0		1 A Secondary	1 A Secondary
1		5 A Secondary	5 A Secondary
FC418	unsigned 16 bits	CT Inputs	
FC419	unsigned 16 bits	XFMR Type	
FC420	unsigned 16 bits	Modbus File Transfer State	
0		Idle	Idle
1		Write	Write
2		Read	Read
3		File Error	File Error
4		File OK	File OK
5		Start	Start
6		Ready	Ready
7		File Over	File Over
FC421	unsigned 16 bits	Redundancy type	
FC422	unsigned 16 bits	Redundancy Port	
FC423	unsigned 16 bits	Redundancy State	
FC424	unsigned 16 bits	Dead Condition	
FC425	unsigned 16 bits	Epoch type	
FC426	unsigned 16 bits	RSTP State	
FC427	unsigned 16 bits	WGF Curve Selection	
0		Inverse	Inverse
4		Definite Time	Definite Time
8		Flex Curve A	Flex Curve A
9		Flex Curve B	Flex Curve B
FC428	unsigned 16 bits	Fault Recorder Type	
0		TOC A	TOC A
1		TOC B	TOC B

Code	Type	Definition	Long Definition
2		TOC C	TOC C
FC429	unsigned 16 bits	Transient Sampling Rate	
0		4	4
1		8	8
2		16	16
3		32	32
FC430	unsigned 16 bits	Power Unit	
0		Kw	Kw
1		Mw	Mw
FC431	unsigned 16 bits	Demand Measurement Type	
0		Blk Interval	Blk Interval
1		Exponential	Exponential
2		Rolling Dmd	Rolling Dmd
FC432	unsigned 16 bits	Demand Time	
0		5 min	5 min
1		10 min	10 min
2		15 min	15 min
3		20 min	20 min
4		30 min	30 min
FC433	unsigned 16 bits	BKR Alarm Counter	
0		Detection	Detection
1		Monitoring	Monitoring
FC434	unsigned 16 bits	61850 NV Status	
0		Unknown	Unknown
1		Header Error	Header Error
2		Parse Error	Parse Error
3		Passed to Validated	Passed to Validated
4		Empty	Empty
FC435	unsigned 16 bits	Volts Per Herz Voltage Mode	
FC436	unsigned 16 bits	Volts Per Herz Curves	
None			

GE
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3 Series Protective Relay Platform

Chapter 11: 345 MODBUS memory map and Format Codes

NOTE

The 339, 345, and 350 relays have different MODBUS maps and Format Codes. Make sure you are looking at the chapter corresponding to your relay model.

NOTE

The Cause of Last trip register (MODBUS Address 30186) returns a combined value of Pickup And Operate.

For example, for a Phase TOC 1 Trip:

0x90C1 Ph TOC1 Trip PKP

0x90C2 Ph TOC1 Trip OP

Upon Phase TOC 1 Trip, the value read from 30186 Cause of Last Trip register is: 0x90C3

345 MODBUS memory map

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
PRODUCT INFORMATION									
30001	0x0	Product Device Code	0	1	1	---	F22	L3	1
30002	0x1	Hardware Revision	0	26	1	---	F15	1	1
30003	0x2	Firmware Version	0	0xFFFF	1	---	F3	231	1
30006	0x5	Boot Version	0	0xFFFF	1	---	F3	100	1
30008	0x7	Serial Number	0	6	1	---	F22	L3MA09000001	6
30014	0xD	Order Code	0	16	1	---	F22	345-EP5G5HEMNNSNNN	16
30030	0x1D	MAC Address	0	0xFFFF	1	---	FC214	0	3
30035	0x22	Comms HW Version	0	26	1	---	F15	0	1
30037	0x24	Build Date	0	6	1	---	F22	Unknown	6
30043	0x2A	Build Time	0	4	1	---	F22	Unknown	4
30051	0x32	Comm Build Date	0	6	1	---	F22	Unknown	6

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30057	0x38	Comm Build Time	0	4	1	---	F22	Unknown	4
30061	0x3C	Comm Revision	0	0xFFFF	1	---	F3	231	1
30063	0x3E	Comm Boot Code Revision	0	0xFFFF	1	---	F3	200	1
30068	0x43	FPGA Revision	0	0xFFFF	1	---	F3	0	1
30135	0x86	Main Boot Code Date	0	6	1	---	F22	Unknown	6
30141	0x8C	Main Boot Code Time	0	4	1	---	F22	Unknown	4
30145	0x90	Comms Boot Code Date	0	6	1	---	F22	Unknown	6
30151	0x96	Comms Boot Code Time	0	4	1	---	F22	Unknown	4
LAST TRIP DATA									
30186	0xB9	Cause of Last Trip	0	0xFFFF	1	---	FC134	0	1
REAL-TIME CLOCK									
30223	0xDE	Weekday	0	7	1	---	None	0	1
30224	0xDF	Current Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
30226	0xE1	Current Time	0	0X173BEA5F	0	---	F19	0	2
30228	0xE3	Daylight Savings Active	0	1	1	---	FC126	0	1
INPUTS / OUTPUTS									
30285	0x11C	Contact Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30288	0x11F	Virtual Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30290	0x121	Virtual Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30296	0x127	Remote Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30298	0x129	Contact Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30300	0x12B	Remote Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
DEVICE STATUS									
30302	0x12D	Current Security Access Level	0	3	1	---	F1	0	1
30305	0x130	Device Status	0	0xFFFF	1	---	FC129	0	1
30317	0x13C	Active Setpoint Group	0	1	1	---	F1	0	1
30319	0x13E	Relay1 Coil Status	0	1	1	---	FC125	0	1
30320	0x13F	Relay2 Coil Status	0	1	1	---	FC125	0	1
30321	0x140	TRIP COIL BKR2 STATUS	0	1	1	---	FC125	0	1
WINDING 1 CURRENT METERING									
30324	0x143	Sensitive Ground Current	0	0xFFFFFFFF	1	A	F11	0	2
30326	0x145	Neutral Current	0	100000	1	A	F10	0	2
30328	0x147	Phase A Current	0	1200000	1	A	F10	0	2
30330	0x149	Phase B Current	0	1200000	1	A	F10	0	2
30332	0x14B	Phase C Current	0	1200000	1	A	F10	0	2
30338	0x151	Ground Current	0	1200000	1	A	F10	0	2
30343	0x156	Ia Angle	0	359	1	°	F1	0	1
30344	0x157	Ib Angle	0	359	1	°	F1	0	1
30345	0x158	Ic Angle	0	359	1	°	F1	0	1
30349	0x15C	Ground Current Angle	0	359	1	°	F1	0	1
30350	0x15D	Neutral Current Angle	0	359	1	°	F1	0	1
30437	0x1B4	Event Phase A Thermal Capacity	0	1500	1	%	F2	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30438	0x1B5	Event Phase B Thermal Capacity	0	1500	1	%	F2	0	1
30439	0x1B6	Event Phase C Thermal Capacity	0	1500	1	%	F2	0	1
30456	0x1C7	Negative Sequence Current Magnitude	0	65535	1	A	F1	0	1
30457	0x1C8	Negative Sequence Current Angle	0	359	1	°Lag	F1	0	1
30478	0x1DD	Negative Sequence Current Magnitude	0	65535	1	A	F2	0	1
RTD METERING									
30420	0x1A3	RTD 7 Temp	-50	251	1	°C	F4	0	1
30421	0x1A4	RTD 8 Temp	-50	251	1	°C	F4	0	1
30422	0x1A5	RTD 9 Temp	-50	251	1	°C	F4	0	1
30423	0x1A6	RTD 10 Temp	-50	251	1	°C	F4	0	1
30424	0x1A7	RTD 11 Temp	-50	251	1	°C	F4	0	1
30425	0x1A8	RTD 12 Temp	-50	251	1	°C	F4	0	1
30427	0x1AA	Hottest Stator RTD	0	12	1	---	F1	0	1
30428	0x1AB	Hottest Stator RTD	-50	251	1	°C	F4	0	1
30429	0x1AC	RTD 1 Temperature	-50	251	1	°C	F4	0	1
30430	0x1AD	RTD 2 Temperature	-50	251	1	°C	F4	0	1
30431	0x1AE	RTD 3 Temperature	-50	251	1	°C	F4	0	1
30432	0x1AF	RTD 4 Temperature	-50	251	1	°C	F4	0	1
30433	0x1B0	RTD 5 Temperature	-50	251	1	°C	F4	0	1
30434	0x1B1	RTD 6 Temperature	-50	251	1	°C	F4	0	1
TEMPERATURE									
30435	0x1B2	Ambient Temperature	-50	250	1	°	F4	25	1
RTD MAXIMUMS									
30485	0x1E4	RTD 1 Maximum Temperature	-50	250	1	°C	F4	0	1
30486	0x1E5	RTD 2 Maximum Temperature	-50	250	1	°C	F4	0	1
30487	0x1E6	RTD 3 Maximum Temperature	-50	250	1	°C	F4	0	1
30488	0x1E7	RTD 4 Maximum Temperature	-50	250	1	°C	F4	0	1
30489	0x1E8	RTD 5 Maximum Temperature	-50	250	1	°C	F4	0	1
30490	0x1E9	RTD 6 Maximum Temperature	-50	250	1	°C	F4	0	1
30491	0x1EA	RTD 7 MAX Temp	-50	250	1	°C	F4	0	1
30492	0x1EB	RTD 8 MAX Temp	-50	250	1	°C	F4	0	1
30493	0x1EC	RTD 9 MAX Temp	-50	250	1	°C	F4	0	1
30494	0x1ED	RTD 10 MAX Temp	-50	250	1	°C	F4	0	1
30495	0x1EE	RTD 11 MAX Temp	-50	250	1	°C	F4	0	1
30496	0x1EF	RTD 12 MAX Temp	-50	250	1	°C	F4	0	1
LED STATUS									
30505	0x1F8	LED Status	0	0xFFFFFFFF	1	---	FC144B	0	2
USER MAP ACTUAL VALUES									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30524	0x20B	User Map Value 1	0	0xFFFF	1	---	F1	0	1
30525	0x20C	User Map Value 2	0	0xFFFF	1	---	F1	0	1
30526	0x20D	User Map Value 3	0	0xFFFF	1	---	F1	0	1
30527	0x20E	User Map Value 4	0	0xFFFF	1	---	F1	0	1
30528	0x20F	User Map Value 5	0	0xFFFF	1	---	F1	0	1
30529	0x210	User Map Value 6	0	0xFFFF	1	---	F1	0	1
30530	0x211	User Map Value 7	0	0xFFFF	1	---	F1	0	1
30531	0x212	User Map Value 8	0	0xFFFF	1	---	F1	0	1
30532	0x213	User Map Value 9	0	0xFFFF	1	---	F1	0	1
30533	0x214	User Map Value 10	0	0xFFFF	1	---	F1	0	1
30534	0x215	User Map Value 11	0	0xFFFF	1	---	F1	0	1
30535	0x216	User Map Value 12	0	0xFFFF	1	---	F1	0	1
30536	0x217	User Map Value 13	0	0xFFFF	1	---	F1	0	1
30537	0x218	User Map Value 14	0	0xFFFF	1	---	F1	0	1
30538	0x219	User Map Value 15	0	0xFFFF	1	---	F1	0	1
30539	0x21A	User Map Value 16	0	0xFFFF	1	---	F1	0	1
30540	0x21B	User Map Value 17	0	0xFFFF	1	---	F1	0	1
30541	0x21C	User Map Value 18	0	0xFFFF	1	---	F1	0	1
30542	0x21D	User Map Value 19	0	0xFFFF	1	---	F1	0	1
30543	0x21E	User Map Value 20	0	0xFFFF	1	---	F1	0	1
30544	0x21F	User Map Value 21	0	0xFFFF	1	---	F1	0	1
30545	0x220	User Map Value 22	0	0xFFFF	1	---	F1	0	1
30546	0x221	User Map Value 23	0	0xFFFF	1	---	F1	0	1
30547	0x222	User Map Value 24	0	0xFFFF	1	---	F1	0	1
30548	0x223	User Map Value 25	0	0xFFFF	1	---	F1	0	1
30549	0x224	User Map Value 26	0	0xFFFF	1	---	F1	0	1
30550	0x225	User Map Value 27	0	0xFFFF	1	---	F1	0	1
30551	0x226	User Map Value 28	0	0xFFFF	1	---	F1	0	1
30552	0x227	User Map Value 29	0	0xFFFF	1	---	F1	0	1
30553	0x228	User Map Value 30	0	0xFFFF	1	---	F1	0	1
30554	0x229	User Map Value 31	0	0xFFFF	1	---	F1	0	1
30555	0x22A	User Map Value 32	0	0xFFFF	1	---	F1	0	1
30556	0x22B	User Map Value 33	0	0xFFFF	1	---	F1	0	1
30557	0x22C	User Map Value 34	0	0xFFFF	1	---	F1	0	1
30558	0x22D	User Map Value 35	0	0xFFFF	1	---	F1	0	1
30559	0x22E	User Map Value 36	0	0xFFFF	1	---	F1	0	1
30560	0x22F	User Map Value 37	0	0xFFFF	1	---	F1	0	1
30561	0x230	User Map Value 38	0	0xFFFF	1	---	F1	0	1
30562	0x231	User Map Value 39	0	0xFFFF	1	---	F1	0	1
30563	0x232	User Map Value 40	0	0xFFFF	1	---	F1	0	1
30564	0x233	User Map Value 41	0	0xFFFF	1	---	F1	0	1
30565	0x234	User Map Value 42	0	0xFFFF	1	---	F1	0	1
30566	0x235	User Map Value 43	0	0xFFFF	1	---	F1	0	1
30567	0x236	User Map Value 44	0	0xFFFF	1	---	F1	0	1
30568	0x237	User Map Value 45	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30569	0x238	User Map Value 46	0	0xFFFF	1	---	F1	0	1
30570	0x239	User Map Value 47	0	0xFFFF	1	---	F1	0	1
30571	0x23A	User Map Value 48	0	0xFFFF	1	---	F1	0	1
30572	0x23B	User Map Value 49	0	0xFFFF	1	---	F1	0	1
30573	0x23C	User Map Value 50	0	0xFFFF	1	---	F1	0	1
30574	0x23D	User Map Value 51	0	0xFFFF	1	---	F1	0	1
30575	0x23E	User Map Value 52	0	0xFFFF	1	---	F1	0	1
30576	0x23F	User Map Value 53	0	0xFFFF	1	---	F1	0	1
30577	0x240	User Map Value 54	0	0xFFFF	1	---	F1	0	1
30578	0x241	User Map Value 55	0	0xFFFF	1	---	F1	0	1
30579	0x242	User Map Value 56	0	0xFFFF	1	---	F1	0	1
30580	0x243	User Map Value 57	0	0xFFFF	1	---	F1	0	1
30581	0x244	User Map Value 58	0	0xFFFF	1	---	F1	0	1
30582	0x245	User Map Value 59	0	0xFFFF	1	---	F1	0	1
30583	0x246	User Map Value 60	0	0xFFFF	1	---	F1	0	1
30584	0x247	User Map Value 61	0	0xFFFF	1	---	F1	0	1
30585	0x248	User Map Value 62	0	0xFFFF	1	---	F1	0	1
30586	0x249	User Map Value 63	0	0xFFFF	1	---	F1	0	1
30587	0x24A	User Map Value 64	0	0xFFFF	1	---	F1	0	1
30588	0x24B	User Map Value 65	0	0xFFFF	1	---	F1	0	1
30589	0x24C	User Map Value 66	0	0xFFFF	1	---	F1	0	1
30590	0x24D	User Map Value 67	0	0xFFFF	1	---	F1	0	1
30591	0x24E	User Map Value 68	0	0xFFFF	1	---	F1	0	1
30592	0x24F	User Map Value 69	0	0xFFFF	1	---	F1	0	1
30593	0x250	User Map Value 70	0	0xFFFF	1	---	F1	0	1
30594	0x251	User Map Value 71	0	0xFFFF	1	---	F1	0	1
30595	0x252	User Map Value 72	0	0xFFFF	1	---	F1	0	1
30596	0x253	User Map Value 73	0	0xFFFF	1	---	F1	0	1
30597	0x254	User Map Value 74	0	0xFFFF	1	---	F1	0	1
30598	0x255	User Map Value 75	0	0xFFFF	1	---	F1	0	1
30599	0x256	User Map Value 76	0	0xFFFF	1	---	F1	0	1
30600	0x257	User Map Value 77	0	0xFFFF	1	---	F1	0	1
30601	0x258	User Map Value 78	0	0xFFFF	1	---	F1	0	1
30602	0x259	User Map Value 79	0	0xFFFF	1	---	F1	0	1
30603	0x25A	User Map Value 80	0	0xFFFF	1	---	F1	0	1
30604	0x25B	User Map Value 81	0	0xFFFF	1	---	F1	0	1
30605	0x25C	User Map Value 82	0	0xFFFF	1	---	F1	0	1
30606	0x25D	User Map Value 83	0	0xFFFF	1	---	F1	0	1
30607	0x25E	User Map Value 84	0	0xFFFF	1	---	F1	0	1
30608	0x25F	User Map Value 85	0	0xFFFF	1	---	F1	0	1
30609	0x260	User Map Value 86	0	0xFFFF	1	---	F1	0	1
30610	0x261	User Map Value 87	0	0xFFFF	1	---	F1	0	1
30611	0x262	User Map Value 88	0	0xFFFF	1	---	F1	0	1
30612	0x263	User Map Value 89	0	0xFFFF	1	---	F1	0	1
30613	0x264	User Map Value 90	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30614	0x265	User Map Value 91	0	0xFFFF	1	---	F1	0	1
30615	0x266	User Map Value 92	0	0xFFFF	1	---	F1	0	1
30616	0x267	User Map Value 93	0	0xFFFF	1	---	F1	0	1
30617	0x268	User Map Value 94	0	0xFFFF	1	---	F1	0	1
30618	0x269	User Map Value 95	0	0xFFFF	1	---	F1	0	1
30619	0x26A	User Map Value 96	0	0xFFFF	1	---	F1	0	1
30620	0x26B	User Map Value 97	0	0xFFFF	1	---	F1	0	1
30621	0x26C	User Map Value 98	0	0xFFFF	1	---	F1	0	1
30622	0x26D	User Map Value 99	0	0xFFFF	1	---	F1	0	1
30623	0x26E	User Map Value 100	0	0xFFFF	1	---	F1	0	1
30624	0x26F	User Map Value 101	0	0xFFFF	1	---	F1	0	1
30625	0x270	User Map Value 102	0	0xFFFF	1	---	F1	0	1
30626	0x271	User Map Value 103	0	0xFFFF	1	---	F1	0	1
30627	0x272	User Map Value 104	0	0xFFFF	1	---	F1	0	1
30628	0x273	User Map Value 105	0	0xFFFF	1	---	F1	0	1
30629	0x274	User Map Value 106	0	0xFFFF	1	---	F1	0	1
30630	0x275	User Map Value 107	0	0xFFFF	1	---	F1	0	1
30631	0x276	User Map Value 108	0	0xFFFF	1	---	F1	0	1
30632	0x277	User Map Value 109	0	0xFFFF	1	---	F1	0	1
30633	0x278	User Map Value 110	0	0xFFFF	1	---	F1	0	1
30634	0x279	User Map Value 111	0	0xFFFF	1	---	F1	0	1
30635	0x27A	User Map Value 112	0	0xFFFF	1	---	F1	0	1
30636	0x27B	User Map Value 113	0	0xFFFF	1	---	F1	0	1
30637	0x27C	User Map Value 114	0	0xFFFF	1	---	F1	0	1
30638	0x27D	User Map Value 115	0	0xFFFF	1	---	F1	0	1
30639	0x27E	User Map Value 116	0	0xFFFF	1	---	F1	0	1
30640	0x27F	User Map Value 117	0	0xFFFF	1	---	F1	0	1
30641	0x280	User Map Value 118	0	0xFFFF	1	---	F1	0	1
30642	0x281	User Map Value 119	0	0xFFFF	1	---	F1	0	1
30643	0x282	User Map Value 120	0	0xFFFF	1	---	F1	0	1
30644	0x283	User Map Value 121	0	0xFFFF	1	---	F1	0	1
30645	0x284	User Map Value 122	0	0xFFFF	1	---	F1	0	1
30646	0x285	User Map Value 123	0	0xFFFF	1	---	F1	0	1
30647	0x286	User Map Value 124	0	0xFFFF	1	---	F1	0	1
30648	0x287	User Map Value 125	0	0xFFFF	1	---	F1	0	1
EVENT RECORDER DETAILS									
30654	0x28D	W1 CT Primary	1	6000	1	A	F1	500	1
30655	0x28E	W1 Ground CT Primary	1	6000	1	A	F1	50	1
30656	0x28F	W2 CT Primary	1	6000	1	A	F1	5	1
30657	0x290	W2 Ground CT Primary	1	6000	1	A	F1	5	1
30659	0x292	Event Recorder Last Reset 2 words	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30661	0x294	Total Number of Events Since Last Clear	0	65535	1	---	F1	0	1
30662	0x295	Event Cause	0	0xFFFF	1	---	FC134	0	1
30663	0x296	Event Time	0	0X173BEA5F	0	---	F19	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30665	0x298	Event Date	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30667	0x29A	W1 Ia	0	65535	1	x CT	F3	0	1
30668	0x29B	W1 Ib	0	65535	1	x CT	F3	0	1
30669	0x29C	W1 Ic	0	65535	1	x CT	F3	0	1
30670	0x29D	W1 Ig	0	65535	1	x CTg	F3	0	1
30671	0x29E	W1 Igd	0	65535	1	x CT	F3	0	1
30672	0x29F	W1 Igr	0	65535	1	x CT	F3	0	1
30673	0x2A0	W1 I_2	0	65535	1	x CT	F3	0	1
30674	0x2A1	W1 Ia Angle	0	359	1	°	F1	0	1
30675	0x2A2	W1 Ib Angle	0	359	1	°	F1	0	1
30676	0x2A3	W1 Ic Angle	0	359	1	°	F1	0	1
30677	0x2A4	W1 Ig Angle	0	359	1	°	F1	0	1
30678	0x2A5	W1 In	0	65535	1	x CT	F3	0	1
30679	0x2A6	W1 In Angle	0	359	1	°	F1	0	1
30680	0x2A7	W2 Ia	0	65535	1	x CT	F3	0	1
30681	0x2A8	W2 Ib	0	65535	1	x CT	F3	0	1
30682	0x2A9	W2 Ic	0	65535	1	x CT	F3	0	1
30683	0x2AA	W2 Ig	0	65535	1	x CTg	F3	0	1
30684	0x2AB	W2 Igd	0	65535	1	x CT	F3	0	1
30685	0x2AC	W2 Igr	0	65535	1	x CT	F3	0	1
30686	0x2AD	W2 I_2	0	65535	1	x CT	F3	0	1
30687	0x2AE	W2 Ia Angle	0	359	1	°	F1	0	1
30688	0x2AF	W2 Ib Angle	0	359	1	°	F1	0	1
30689	0x2B0	W2 Ic Angle	0	359	1	°	F1	0	1
30690	0x2B1	W2 Ig Angle	0	359	1	°	F1	0	1
30691	0x2B2	W2 In	0	65535	1	x CT	F3	0	1
30692	0x2B3	W2 In Angle	0	359	1	°	F1	0	1
30693	0x2B4	Ph A Diff.	0	65535	1	x CT (W1)	F3	0	1
30694	0x2B5	Ph B Diff.	0	65535	1	x CT (W1)	F3	0	1
30695	0x2B6	Ph C Diff.	0	65535	1	x CT (W1)	F3	0	1
30696	0x2B7	Ph A Restr.	0	65535	1	x CT (W1)	F3	0	1
30697	0x2B8	Ph B Restr.	0	65535	1	x CT (W1)	F3	0	1
30698	0x2B9	Ph C Restr.	0	65535	1	x CT (W1)	F3	0	1
30699	0x2BA	2nd Harm Ph A diff	0	65535	1	% fo	F2	0	1
30700	0x2BB	2nd Harm Ph B diff	0	65535	1	% fo	F2	0	1
30701	0x2BC	2nd Harm Ph C diff	0	65535	1	% fo	F2	0	1
30702	0x2BD	Phase A Thermal Capacity	0	1500	1	%	F2	0	1
30703	0x2BE	Phase B Thermal Capacity	0	1500	1	%	F2	0	1
30704	0x2BF	Phase C Thermal Capacity	0	1500	1	%	F2	0	1
30705	0x2C0	Event Self-Test Event	0	0xFFFFFFFF	2	---	FC188	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
TRANSIENT RECORDER SAMPLES									
30720	0x2CF	Sample Index + Trace Memory Sample 1	-32767	32767	1	---	F4	0	1
30721	0x2D0	Sample Index + Trace Memory Sample 2	-32767	32767	1	---	F4	0	1
30722	0x2D1	Sample Index + Trace Memory Sample 3	-32767	32767	1	---	F4	0	1
30723	0x2D2	Sample Index + Trace Memory Sample 4	-32767	32767	1	---	F4	0	1
30724	0x2D3	Sample Index + Trace Memory Sample 5	-32767	32767	1	---	F4	0	1
30725	0x2D4	Sample Index + Trace Memory Sample 6	-32767	32767	1	---	F4	0	1
30726	0x2D5	Sample Index + Trace Memory Sample 7	-32767	32767	1	---	F4	0	1
30727	0x2D6	Sample Index + Trace Memory Sample 8	-32767	32767	1	---	F4	0	1
30728	0x2D7	Sample Index + Trace Memory Sample 9	-32767	32767	1	---	F4	0	1
30729	0x2D8	Sample Index + Trace Memory Sample 10	-32767	32767	1	---	F4	0	1
30730	0x2D9	Sample Index + Trace Memory Sample 11	-32767	32767	1	---	F4	0	1
30731	0x2DA	Sample Index + Trace Memory Sample 12	-32767	32767	1	---	F4	0	1
30732	0x2DB	Sample Index + Trace Memory Sample 13	-32767	32767	1	---	F4	0	1
30733	0x2DC	Sample Index + Trace Memory Sample 14	-32767	32767	1	---	F4	0	1
30734	0x2DD	Sample Index + Trace Memory Sample 15	-32767	32767	1	---	F4	0	1
30735	0x2DE	Sample Index + Trace Memory Sample 16	-32767	32767	1	---	F4	0	1
30736	0x2DF	Sample Index + Trace Memory Sample 17	-32767	32767	1	---	F4	0	1
30737	0x2E0	Sample Index + Trace Memory Sample 18	-32767	32767	1	---	F4	0	1
30738	0x2E1	Sample Index + Trace Memory Sample 19	-32767	32767	1	---	F4	0	1
30739	0x2E2	Sample Index + Trace Memory Sample 20	-32767	32767	1	---	F4	0	1
30740	0x2E3	Sample Index + Trace Memory Sample 21	-32767	32767	1	---	F4	0	1
30741	0x2E4	Sample Index + Trace Memory Sample 22	-32767	32767	1	---	F4	0	1
30742	0x2E5	Sample Index + Trace Memory Sample 23	-32767	32767	1	---	F4	0	1
30743	0x2E6	Sample Index + Trace Memory Sample 24	-32767	32767	1	---	F4	0	1
30744	0x2E7	Sample Index + Trace Memory Sample 25	-32767	32767	1	---	F4	0	1
30745	0x2E8	Sample Index + Trace Memory Sample 26	-32767	32767	1	---	F4	0	1
30746	0x2E9	Sample Index + Trace Memory Sample 27	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30747	0x2EA	Sample Index + Trace Memory Sample 28	-32767	32767	1	---	F4	0	1
30748	0x2EB	Sample Index + Trace Memory Sample 29	-32767	32767	1	---	F4	0	1
30749	0x2EC	Sample Index + Trace Memory Sample 30	-32767	32767	1	---	F4	0	1
30750	0x2ED	Sample Index + Trace Memory Sample 31	-32767	32767	1	---	F4	0	1
30751	0x2EE	Sample Index + Trace Memory Sample 32	-32767	32767	1	---	F4	0	1
30752	0x2EF	Sample Index + Trace Memory Sample 33	-32767	32767	1	---	F4	0	1
30753	0x2F0	Sample Index + Trace Memory Sample 34	-32767	32767	1	---	F4	0	1
30754	0x2F1	Sample Index + Trace Memory Sample 35	-32767	32767	1	---	F4	0	1
30755	0x2F2	Sample Index + Trace Memory Sample 36	-32767	32767	1	---	F4	0	1
30756	0x2F3	Sample Index + Trace Memory Sample 37	-32767	32767	1	---	F4	0	1
30757	0x2F4	Sample Index + Trace Memory Sample 38	-32767	32767	1	---	F4	0	1
30758	0x2F5	Sample Index + Trace Memory Sample 39	-32767	32767	1	---	F4	0	1
30759	0x2F6	Sample Index + Trace Memory Sample 40	-32767	32767	1	---	F4	0	1
30760	0x2F7	Sample Index + Trace Memory Sample 41	-32767	32767	1	---	F4	0	1
30761	0x2F8	Sample Index + Trace Memory Sample 42	-32767	32767	1	---	F4	0	1
30762	0x2F9	Sample Index + Trace Memory Sample 43	-32767	32767	1	---	F4	0	1
30763	0x2FA	Sample Index + Trace Memory Sample 44	-32767	32767	1	---	F4	0	1
30764	0x2FB	Sample Index + Trace Memory Sample 45	-32767	32767	1	---	F4	0	1
30765	0x2FC	Sample Index + Trace Memory Sample 46	-32767	32767	1	---	F4	0	1
30766	0x2FD	Sample Index + Trace Memory Sample 47	-32767	32767	1	---	F4	0	1
30767	0x2FE	Sample Index + Trace Memory Sample 48	-32767	32767	1	---	F4	0	1
30768	0x2FF	Sample Index + Trace Memory Sample 49	-32767	32767	1	---	F4	0	1
30769	0x300	Sample Index + Trace Memory Sample 50	-32767	32767	1	---	F4	0	1
30770	0x301	Sample Index + Trace Memory Sample 51	-32767	32767	1	---	F4	0	1
30771	0x302	Sample Index + Trace Memory Sample 52	-32767	32767	1	---	F4	0	1
30772	0x303	Sample Index + Trace Memory Sample 53	-32767	32767	1	---	F4	0	1
30773	0x304	Sample Index + Trace Memory Sample 54	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30774	0x305	Sample Index + Trace Memory Sample 55	-32767	32767	1	---	F4	0	1
30775	0x306	Sample Index + Trace Memory Sample 56	-32767	32767	1	---	F4	0	1
30776	0x307	Sample Index + Trace Memory Sample 57	-32767	32767	1	---	F4	0	1
30777	0x308	Sample Index + Trace Memory Sample 58	-32767	32767	1	---	F4	0	1
30778	0x309	Sample Index + Trace Memory Sample 59	-32767	32767	1	---	F4	0	1
30779	0x30A	Sample Index + Trace Memory Sample 60	-32767	32767	1	---	F4	0	1
30780	0x30B	Sample Index + Trace Memory Sample 61	-32767	32767	1	---	F4	0	1
30781	0x30C	Sample Index + Trace Memory Sample 62	-32767	32767	1	---	F4	0	1
30782	0x30D	Sample Index + Trace Memory Sample 63	-32767	32767	1	---	F4	0	1
30783	0x30E	Sample Index + Trace Memory Sample 64	-32767	32767	1	---	F4	0	1
30784	0x30F	Sample Index + Trace Memory Sample 65	-32767	32767	1	---	F4	0	1
30785	0x310	Sample Index + Trace Memory Sample 66	-32767	32767	1	---	F4	0	1
30786	0x311	Sample Index + Trace Memory Sample 67	-32767	32767	1	---	F4	0	1
30787	0x312	Sample Index + Trace Memory Sample 68	-32767	32767	1	---	F4	0	1
30788	0x313	Sample Index + Trace Memory Sample 69	-32767	32767	1	---	F4	0	1
30789	0x314	Sample Index + Trace Memory Sample 70	-32767	32767	1	---	F4	0	1
30790	0x315	Sample Index + Trace Memory Sample 71	-32767	32767	1	---	F4	0	1
30791	0x316	Sample Index + Trace Memory Sample 72	-32767	32767	1	---	F4	0	1
30792	0x317	Sample Index + Trace Memory Sample 73	-32767	32767	1	---	F4	0	1
30793	0x318	Sample Index + Trace Memory Sample 74	-32767	32767	1	---	F4	0	1
30794	0x319	Sample Index + Trace Memory Sample 75	-32767	32767	1	---	F4	0	1
30795	0x31A	Sample Index + Trace Memory Sample 76	-32767	32767	1	---	F4	0	1
30796	0x31B	Sample Index + Trace Memory Sample 77	-32767	32767	1	---	F4	0	1
30797	0x31C	Sample Index + Trace Memory Sample 78	-32767	32767	1	---	F4	0	1
30798	0x31D	Sample Index + Trace Memory Sample 79	-32767	32767	1	---	F4	0	1
30799	0x31E	Sample Index + Trace Memory Sample 80	-32767	32767	1	---	F4	0	1
30800	0x31F	Sample Index + Trace Memory Sample 81	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30801	0x320	Sample Index + Trace Memory Sample 82	-32767	32767	1	---	F4	0	1
30802	0x321	Sample Index + Trace Memory Sample 83	-32767	32767	1	---	F4	0	1
30803	0x322	Sample Index + Trace Memory Sample 84	-32767	32767	1	---	F4	0	1
30804	0x323	Sample Index + Trace Memory Sample 85	-32767	32767	1	---	F4	0	1
30805	0x324	Sample Index + Trace Memory Sample 86	-32767	32767	1	---	F4	0	1
30806	0x325	Sample Index + Trace Memory Sample 87	-32767	32767	1	---	F4	0	1
30807	0x326	Sample Index + Trace Memory Sample 88	-32767	32767	1	---	F4	0	1
30808	0x327	Sample Index + Trace Memory Sample 89	-32767	32767	1	---	F4	0	1
30809	0x328	Sample Index + Trace Memory Sample 90	-32767	32767	1	---	F4	0	1
30810	0x329	Sample Index + Trace Memory Sample 91	-32767	32767	1	---	F4	0	1
30811	0x32A	Sample Index + Trace Memory Sample 92	-32767	32767	1	---	F4	0	1
30812	0x32B	Sample Index + Trace Memory Sample 93	-32767	32767	1	---	F4	0	1
30813	0x32C	Sample Index + Trace Memory Sample 94	-32767	32767	1	---	F4	0	1
30814	0x32D	Sample Index + Trace Memory Sample 95	-32767	32767	1	---	F4	0	1
30815	0x32E	Sample Index + Trace Memory Sample 96	-32767	32767	1	---	F4	0	1
30816	0x32F	Sample Index + Trace Memory Sample 97	-32767	32767	1	---	F4	0	1
30817	0x330	Sample Index + Trace Memory Sample 98	-32767	32767	1	---	F4	0	1
30818	0x331	Sample Index + Trace Memory Sample 99	-32767	32767	1	---	F4	0	1
30819	0x332	Sample Index + Trace Memory Sample 100	-32767	32767	1	---	F4	0	1
30820	0x333	Sample Index + Trace Memory Sample 101	-32767	32767	1	---	F4	0	1
30821	0x334	Sample Index + Trace Memory Sample 102	-32767	32767	1	---	F4	0	1
30822	0x335	Sample Index + Trace Memory Sample 103	-32767	32767	1	---	F4	0	1
30823	0x336	Sample Index + Trace Memory Sample 104	-32767	32767	1	---	F4	0	1
30824	0x337	Sample Index + Trace Memory Sample 105	-32767	32767	1	---	F4	0	1
30825	0x338	Sample Index + Trace Memory Sample 106	-32767	32767	1	---	F4	0	1
30826	0x339	Sample Index + Trace Memory Sample 107	-32767	32767	1	---	F4	0	1
30827	0x33A	Sample Index + Trace Memory Sample 108	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30828	0x33B	Sample Index + Trace Memory Sample 109	-32767	32767	1	---	F4	0	1
30829	0x33C	Sample Index + Trace Memory Sample 110	-32767	32767	1	---	F4	0	1
30830	0x33D	Sample Index + Trace Memory Sample 111	-32767	32767	1	---	F4	0	1
30831	0x33E	Sample Index + Trace Memory Sample 112	-32767	32767	1	---	F4	0	1
30832	0x33F	Sample Index + Trace Memory Sample 113	-32767	32767	1	---	F4	0	1
30833	0x340	Sample Index + Trace Memory Sample 114	-32767	32767	1	---	F4	0	1
30834	0x341	Sample Index + Trace Memory Sample 115	-32767	32767	1	---	F4	0	1
30835	0x342	Sample Index + Trace Memory Sample 116	-32767	32767	1	---	F4	0	1
30836	0x343	Sample Index + Trace Memory Sample 117	-32767	32767	1	---	F4	0	1
30837	0x344	Sample Index + Trace Memory Sample 118	-32767	32767	1	---	F4	0	1
30838	0x345	Sample Index + Trace Memory Sample 119	-32767	32767	1	---	F4	0	1
30839	0x346	Sample Index + Trace Memory Sample 120	-32767	32767	1	---	F4	0	1
30840	0x347	Sample Index + Trace Memory Sample 121	-32767	32767	1	---	F4	0	1
30841	0x348	Sample Index + Trace Memory Sample 122	-32767	32767	1	---	F4	0	1
30842	0x349	Sample Index + Trace Memory Sample 123	-32767	32767	1	---	F4	0	1
30843	0x34A	Sample Index + Trace Memory Sample 124	-32767	32767	1	---	F4	0	1
30844	0x34B	Sample Index + Trace Memory Sample 125	-32767	32767	1	---	F4	0	1
30845	0x34C	Sample Index + Trace Memory Sample 126	-32767	32767	1	---	F4	0	1
30846	0x34D	Sample Index + Trace Memory Sample 127	-32767	32767	1	---	F4	0	1
30847	0x34E	Sample Index + Trace Memory Sample 128	-32767	32767	1	---	F4	0	1
STATUS BUFFER									
30946	0x3B1	Alarm Status 4	0	0xFFFFFFFF	1	---	FC182	0	2
30948	0x3B3	Alarm Status 3	0	0xFFFFFFFF	1	---	FC181	0	2
30950	0x3B5	Alarm Status 2	0	0xFFFFFFFF	1	---	FC180	0	2
30952	0x3B7	Alarm Status 1	0	0xFFFFFFFF	1	---	FC179	0	2
30954	0x3B9	Trip Status 4	0	0xFFFFFFFF	1	---	FC186	0	2
30956	0x3BB	Trip Status 3	0	0xFFFFFFFF	1	---	FC185	0	2
30960	0x3BF	Trip Status 1	0	0xFFFFFFFF	1	---	FC183	0	2
30966	0x3C5	Message Status 2	0	0xFFFFFFFF	1	---	FC188	0	2
30968	0x3C7	Message Status 1	0	0xFFFFFFFF	1	---	FC187	0	2
30970	0x3C9	Control Element Status 4	0	0xFFFFFFFF	1	---	FC194	0	2
30974	0x3CD	Control Element Status 2	0	0xFFFFFFFF	1	---	FC192	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
30976	0x3CF	Control Element Status 1	0	0xFFFFFFFF	1	---	FC191	0	2
30978	0x3D1	Block Status 4	0	0xFFFFFFFF	1	---	FC203	0	2
30980	0x3D3	Block Status 3	0	0xFFFFFFFF	1	---	FC202	0	2
30982	0x3D5	Block Status 2	0	0xFFFFFFFF	1	---	FC201	0	2
30984	0x3D7	Block Status 1	0	0xFFFFFFFF	1	---	FC200	0	2
61850 STATUS									
31510	0x5E5	61850 Status	0	2	1	---	FC108	0	1
31511	0x5E6	61850 N.V. Status	0	4	1	---	FC434	0	1
IEC61850 GOOSE STATUS									
31515	0x5EA	Remote GOOSE Status	0	0xFFFFFFFF	1	---	FC215	0	2
31517	0x5EC	Remote GOOSE Header Status	0	0xFFFFFFFF	1	---	FC215	0	2
THERMAL MODEL TRIP STATUS									
31521	0x5F0	Trip Phase A Status 1	0	65535	1	---	FC134	0	1
31522	0x5F1	Trip Phase B Status 1	0	65535	1	---	FC134	0	1
31523	0x5F2	Trip Phase C Status 1	0	65535	1	---	FC134	0	1
PHASE IOC1 TRIP STATUS									
31524	0x5F3	Trip Phase A Status 2	0	65535	1	---	FC134	0	1
31525	0x5F4	Trip Phase B Status 2	0	65535	1	---	FC134	0	1
31526	0x5F5	Trip Phase C Status 2	0	65535	1	---	FC134	0	1
PHASE TOC1 TRIP STATUS									
31527	0x5F6	Trip Phase A Status 3	0	65535	1	---	FC134	0	1
31528	0x5F7	Trip Phase B Status 3	0	65535	1	---	FC134	0	1
31529	0x5F8	Trip Phase C Status 3	0	65535	1	---	FC134	0	1
PHASE IOC2 TRIP STATUS									
31530	0x5F9	Trip Phase A Status 4	0	65535	1	---	FC134	0	1
31531	0x5FA	Trip Phase B Status 4	0	65535	1	---	FC134	0	1
31532	0x5FB	Trip Phase C Status 4	0	65535	1	---	FC134	0	1
DIFFERENTIAL TRIP STATUS									
31539	0x602	Diff Trip PhA Status	0	65535	1	---	FC134	0	1
31540	0x603	Diff Trip PhB Status	0	65535	1	---	FC134	0	1
31541	0x604	Diff Trip PhC Status	0	65535	1	---	FC134	0	1
PHASE TOC2 TRIP STATUS									
31542	0x605	Phase51PTOC_2Trip_PhaseA Status	0	65535	1	---	FC134	0	1
31543	0x606	Phase51PTOC_2Trip_PhaseB Status	0	65535	1	---	FC134	0	1
31544	0x607	Phase51PTOC_2Trip_PhaseC Status	0	65535	1	---	FC134	0	1
THERMAL MODEL ALARM STATUS									
31569	0x620	Alarm Phase A Status 1	0	65535	1	---	FC134	0	1
31570	0x621	Alarm Phase B Status 1	0	65535	1	---	FC134	0	1
31571	0x622	Alarm Phase C Status 1	0	65535	1	---	FC134	0	1
PHASE IOC1 ALARM STATUS									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
31572	0x623	Alarm Phase A Status 2	0	65535	1	---	FC134	0	1
31573	0x624	Alarm Phase B Status 2	0	65535	1	---	FC134	0	1
31574	0x625	Alarm Phase C Status 2	0	65535	1	---	FC134	0	1
PHASE TOC1 ALARM STATUS									
31575	0x626	Alarm Phase A Status 3	0	65535	1	---	FC134	0	1
31576	0x627	Alarm Phase B Status 3	0	65535	1	---	FC134	0	1
31577	0x628	Alarm Phase C Status 3	0	65535	1	---	FC134	0	1
PHASE IOC2 ALARM STATUS									
31578	0x629	Alarm Phase A Status 4	0	65535	1	---	FC134	0	1
31579	0x62A	Alarm Phase B Status 4	0	65535	1	---	FC134	0	1
31580	0x62B	Alarm Phase C Status 4	0	65535	1	---	FC134	0	1
DIFFERENTIAL ALARM STATUS									
31587	0x632	Diff Alarm PhA Status	0	65535	1	---	FC134	0	1
31588	0x633	Diff Alarm PhB Status	0	65535	1	---	FC134	0	1
31589	0x634	Diff Alarm PhC Status	0	65535	1	---	FC134	0	1
PHASE TOC2 ALARM STATUS									
31590	0x635	Phase51PTOC_2Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31591	0x636	Phase51PTOC_2Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31592	0x637	Phase51PTOC_2Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
WINDING 2 CURRENT METERING									
31665	0x680	Ia2	0	100000	1	A	F10	0	2
31667	0x682	Ib2	0	100000	1	A	F10	0	2
31669	0x684	Ic2	0	100000	1	A	F10	0	2
31671	0x686	In2	0	100000	1	A	F10	0	2
31673	0x688	Ig2	0	100000	1	A	F10	0	2
31675	0x68A	Isg2	0	100000	1	A	F11	0	2
PHASE DIFFERENTIAL CURRENT METERING									
31677	0x68C	Idiff 1 Ph A	0	100000	1	x CT	F11	0	2
31679	0x68E	Idiff 1 Ph B	0	100000	1	x CT	F11	0	2
31681	0x690	Idiff 1 Ph C	0	100000	1	x CT	F11	0	2
31683	0x692	Idiff 2 Ph A	0	1000	1	% fo	F2	0	1
31684	0x693	Idiff 2 Ph B	0	1000	1	% fo	F2	0	1
31685	0x694	Idiff 2 Ph C	0	1000	1	% fo	F2	0	1
31686	0x695	Idiff 5 Ph A	0	1000	1	% fo	F2	0	1
31687	0x696	Idiff 5 Ph B	0	1000	1	% fo	F2	0	1
31688	0x697	Idiff 5 Ph C	0	1000	1	% fo	F2	0	1
RESTRAINT CURRENT METERING									
31695	0x69E	I Restraint Ph A	0	100000	1	x CT	F11	0	2
31697	0x6A0	I Restraint Ph B	0	100000	1	x CT	F11	0	2
31699	0x6A2	I Restraint Ph C	0	100000	1	x CT	F11	0	2
PHASE ANGLES									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
31701	0x6A4	Ia2 Angle	0	359	1	---	F1	0	1
31702	0x6A5	Ib2 Angle	0	359	1	---	F1	0	1
31703	0x6A6	Ic2 Angle	0	359	1	---	F1	0	1
31704	0x6A7	Ig2 Angle	0	359	1	---	F1	0	1
31705	0x6A8	In2 Angle	0	359	1	---	F1	0	1
31706	0x6A9	Idiff 1 PhA Angle	0	359	1	---	F1	0	1
31707	0x6AA	Idiff 1 PhB Angle	0	359	1	---	F1	0	1
31708	0x6AB	Idiff 1 PhC Angle	0	359	1	---	F1	0	1
31709	0x6AC	Idiff 2 PhA Angle	0	359	1	---	F1	0	1
31710	0x6AD	Idiff 2 PhB Angle	0	359	1	---	F1	0	1
31711	0x6AE	Idiff 2 PhC Angle	0	359	1	---	F1	0	1
31712	0x6AF	Idiff 5 PhA Angle	0	359	1	---	F1	0	1
31713	0x6B0	Idiff 5 PhB Angle	0	359	1	---	F1	0	1
31714	0x6B1	Idiff 5 PhC Angle	0	359	1	---	F1	0	1
31715	0x6B2	Irestraint A Angle	0	359	1	---	F1	0	1
31716	0x6B3	Irestraint B Angle	0	359	1	---	F1	0	1
31717	0x6B4	Irestraint C Angle	0	359	1	---	F1	0	1
31721	0x6B8	W2 Neg Seq Angle	0	359	1	°	F1	0	1
GROUND DIFFERENTIAL CURRENT METERING									
31724	0x6BB	W1 Ground Differential Current	0	1000000	1	x CT	F11	0	2
31726	0x6BD	W1 Ground Differential Angle	0	359	1	°	F1	0	1
31727	0x6BE	W2 Ground Differential Current	0	1000000	1	x CT	F11	0	2
31729	0x6C0	W2 Ground Differential Angle	0	359	1	°	F1	0	1
WINDING 2 NEGATIVE SEQUENCE CURRENT METERING									
31720	0x6B7	W2 Neg Sequence	0	0xFFFF	1	A	F1	0	1
31730	0x6C1	W2 Neg Sequence	0	0xFFFF	1	A	F2	0	1
TRANSIENT RECORDER									
30707	0x2C2	Transient Recorder Last Cleared	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30709	0x2C4	Transient Recorder Available Records	0	6	1	---	F1	0	1
30710	0x2C5	Trace Memory Trigger Date	0x010107D8	0X0C1F082E	0	---	F18	0x010107D8	2
30712	0x2C7	Trace Memory Trigger Time	0	0X173BEA5F	0	---	F19	0	2
30714	0x2C9	Trace Memory Trigger Cause	0	0xD002	0	---	FC133	0	1
30715	0x2CA	Trace Memory Trigger Frequency	0	12000	1	Hz	F3	60	1
30716	0x2CB	Total Triggers	0	0xFFFF	1	---	F1	0	1
30718	0x2CD	Trigger Position (Actual Value)	0	6143	1	---	F1	25	1
30719	0x2CE	Trace Memory Start Index	0	6143	1	---	F1	0	1
31773	0x6EC	Transient Sampling Rate Status	0	3	1	---	FC429	0	1
FAULT REPORT									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
31775	0x6EE	Fault Report Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
31777	0x6F0	Fault Report Time	0	0X173BEA5F	0	---	F19	0	2
31779	0x6F2	Fault Report Fault Type	0	2	1	---	FC134C	0	1
31780	0x6F3	Fault Report Ia	0	1200000	1	A	F10	0	2
31782	0x6F5	Fault Report Ia Angle	0	359	1	°	F1	0	1
31783	0x6F6	Fault Report Ib	0	1200000	1	A	F10	0	2
31785	0x6F8	Fault Report Ib Angle	0	359	1	°	F1	0	1
31786	0x6F9	Fault Report Ic	0	1200000	1	A	F10	0	2
31788	0x6FB	Fault Report Ic Angle	0	359	1	°	F1	0	1
31789	0x6FC	Fault Report Ig	0	1200000	1	A	F10	0	2
31791	0x6FE	Fault Report Ig Angle	0	359	1	°	F1	0	1
31792	0x6FF	Fault Report In	0	100000	1	A	F10	0	2
31794	0x701	Fault Report In Angle	0	359	1	°	F1	0	1
31819	0x71A	Fault Report System Frequency	0	12000	1	Hz	F3	0	1
31820	0x71B	Fault Report Ia 2	0	1200000	1	A	F10	0	2
31822	0x71D	Fault Report Ia 2 Angle	0	359	1	°	F1	0	1
31823	0x71E	Fault Report Ib 2	0	1200000	1	A	F10	0	2
31825	0x720	Fault Report Ib 2 Angle	0	359	1	°	F1	0	1
31826	0x721	Fault Report Ic 2	0	1200000	1	A	F10	0	2
31828	0x723	Fault Report Ic 2 Angle	0	359	1	°	F1	0	1
31829	0x724	Fault Report Ig 2	0	1200000	1	A	F10	0	2
31831	0x726	Fault Report Ig 2 Angle	0	359	1	°	F1	0	1
31832	0x727	Fault Report In 2	0	100000	1	A	F10	0	2
31834	0x729	Fault Report In 2 Angle	0	359	1	°	F1	0	1
31835	0x72A	Fault Report Idiff 1 PhA	0	100000	1	x CT	F11	0	2
31837	0x72C	Fault Report Idiff 1 PhA Angle	0	359	1	---	F1	0	1
31838	0x72D	Fault Report I Restraint PhA	0	100000	1	x CT	F11	0	2
31840	0x72F	Fault Report I Restraint PhA Angle	0	359	1	---	F1	0	1
31841	0x730	Fault Report Idiff 1 PhB	0	100000	1	x CT	F11	0	2
31843	0x732	Fault Report Idiff 1 PhB Angle	0	359	1	---	F1	0	1
31844	0x733	Fault Report I Restraint PhB	0	100000	1	x CT	F11	0	2
31846	0x735	Fault Report I Restraint PhB Angle	0	359	1	---	F1	0	1
31847	0x736	Fault Report Idiff 1 PhC	0	100000	1	x CT	F11	0	2
31849	0x738	Fault Report Idiff 1 PhC Angle	0	359	1	---	F1	0	1
31850	0x739	Fault Report I Restraint PhC	0	100000	1	x CT	F11	0	2
31852	0x73B	Fault Report I Restraint PhC Angle	0	359	1	---	F1	0	1
31853	0x73C	Fault Report Phases	1	7	1	---	F37	1	1
31854	0x73D	Fault Report Firmware Version	0	0xFFFF	1	---	F3	220	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
31855	0x73E	Fault Report Order Code	0	16	1	---	F22	345-EP5G5HEMNNSNNN	12
31867	0x74A	Fault Report Feeder Name	0	10	1	---	F22	Transformer	10
TRIP COUNTERS								Name	
31904	0x76F		0	10000	1	---	F1	0	1
DEMAND									
32170	0x879	Current Demand 1 Last Rst Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32172	0x87B	Current Demand 1 Last Rst Time	0	0X173BEA5F	0	---	F19	0	2
32174	0x87D	Current Demand 1 PhA	0	300000	1	A	F10	0	2
32176	0x87F	Current Demand 1 PhB	0	300000	1	A	F10	0	2
32178	0x881	Current Demand 1 PhC	0	300000	1	A	F10	0	2
32180	0x883	Max Current Demand 1 PhA	0	300000	1	A	F10	0	2
32182	0x885	Max Current Demand 1 PhB	0	300000	1	A	F10	0	2
32184	0x887	Max Current Demand 1 PhC	0	300000	1	A	F10	0	2
32186	0x889	Current Demand 1 PhA Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32188	0x88B	Current Demand 1 PhB Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32190	0x88D	Current Demand 1 PhC Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32192	0x88F	Current Demand 1 PhA Time	0	0X173BEA5F	0	---	F19	0	2
32194	0x891	Current Demand 1 PhB Time	0	0X173BEA5F	0	---	F19	0	2
32196	0x893	Current Demand 1 PhC Time	0	0X173BEA5F	0	---	F19	0	2
32198	0x895	Current Demand 2 Last Rst Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32200	0x897	Current Demand 2 Last Rst Time	0	0X173BEA5F	0	---	F19	0	2
32202	0x899	Current Demand 2 PhA	0	300000	1	A	F10	0	2
32204	0x89B	Current Demand 2 PhB	0	300000	1	A	F10	0	2
32206	0x89D	Current Demand 2 PhC	0	300000	1	A	F10	0	2
32208	0x89F	Max Current Demand 2 PhA	0	300000	1	A	F10	0	2
32210	0x8A1	Max Current Demand 2 PhB	0	300000	1	A	F10	0	2
32212	0x8A3	Max Current Demand 2 PhC	0	300000	1	A	F10	0	2
32214	0x8A5	Current Demand 2 PhA Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32216	0x8A7	Current Demand 2 PhB Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32218	0x8A9	Current Demand 2 PhC Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32220	0x8AB	Current Demand 2 PhA Time	0	0X173BEA5F	0	---	F19	0	2
32222	0x8AD	Current Demand 2 PhB Time	0	0X173BEA5F	0	---	F19	0	2
32224	0x8AF	Current Demand 2 PhC Time	0	0X173BEA5F	0	---	F19	0	2
SETPOINTS									
MESSAGE TIMES									
40120	0x77	Flash Message Time	1	65535	1	s	F1	5	1
40121	0x78	Message Timeout	1	65535	1	s	F1	30	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
COMMANDS									
40129	0x80	Command address	0	0xFFFF	0	---	F1	0	1
40130	0x81	Command Function	0	0xFFFF	0	---	F1	0	1
40131	0x82	Command Data 1	0	0xFFFF	0	---	F1	0	1
40132	0x83	Command Data 2	0	0xFFFF	0	---	F1	0	1
40133	0x84	Command Data 3	0	0xFFFF	0	---	F1	0	1
40134	0x85	Command Data 4	0	0xFFFF	0	---	F1	0	1
40135	0x86	Command Data 5	0	0xFFFF	0	---	F1	0	1
40136	0x87	Command Data 6	0	0xFFFF	0	---	F1	0	1
40137	0x88	Command Data 7	0	0xFFFF	0	---	F1	0	1
40138	0x89	Command Data 8	0	0xFFFF	0	---	F1	0	1
40139	0x8A	Command Data 9	0	0xFFFF	0	---	F1	0	1
40140	0x8B	Command Data 10	0	0xFFFF	0	---	F1	0	1
RS485 COMMUNICATIONS									
40172	0xAB	Slave Address	1	254	1	---	F1	254	1
40173	0xAC	RS485 Baud Rate	0	4	1	---	FC101	4	1
40174	0xAD	RS485 Parity	0	2	1	---	FC102	0	1
40175	0xAE	Rear 485 Port Protocol	0	2	1	---	F97	0	1
ETHERNET COMMUNICATIONS									
40180	0xB3	SNTP Mode	0	3	1	---	FC100	0	1
40181	0xB4	SNTP IP Address	0	0xFFFFFFFF	1	---	FC150	0	2
40183	0xB6	Ethernet IP address	0	0xFFFFFFFF	1	---	FC150	0	2
40185	0xB8	Ethernet subnet mask	0	0xFFFFFFFF	1	---	FC150	0xFFFFFC00	2
40187	0xBA	Ethernet gateway address	0	0xFFFFFFFF	1	---	FC150	0	2
40189	0xBC	SNTP Port	0	65535	1	---	F1	0	1
40191	0xBE	EthernetConnectionType (Copper or Fiber)	0	1	1	---	FC230	0	1
40194	0xC1	High Eth Message Enable	0	1	1	---	FC126	1	1
REAL-TIME CLOCK									
40228	0xE3	Set Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
40230	0xE5	Set Time	0	0X173BEA5F	0	---	F19	0	2
40232	0xE7	Time Offset From UTC	-2400	2400	25	hrs	F6	0	1
40233	0xE8	IRIG-B	0	1	1	---	FC126	0	1
40234	0xE9	Daylight Savings	0	1	1	---	FC126	0	1
40235	0xEA	DST Start Month	0	12	1	---	FC169	0	1
40236	0xEB	DST Start Week	0	5	1	---	FC170	0	1
40237	0xEC	DST Start Weekday	0	7	1	---	FC171	0	1
40238	0xED	DST End Month	0	12	1	---	FC169	0	1
40239	0xEE	DST End Week	0	5	1	---	FC170	0	1
40240	0xEF	DST End Weekday	0	7	1	---	FC171	0	1
REMOTE INPUTS									
40260	0x103	Remote Inputs	0	0xFFFFFFFF	1	---	FC167	0	2
POWER SYSTEM									
40284	0x11B	Supply Frequency	0	1	1	Hz	FC107	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40285	0x11C	Relay Name	0	9	1	---	F22	Transformer Name	9
40295	0x126	Power Unit	0	1	1	---	FC430	0	1
40296	0x127	Phase Sequence	0	1	1	---	FC124A	0	1
USER MAP ADDRESSES									
40524	0x20B	User Map Address 1	30001	39999	1	---	F1	30305	1
40525	0x20C	User Map Address 2	30001	39999	1	---	F1	30505	1
40526	0x20D	User Map Address 3	30001	39999	1	---	F1	30506	1
40527	0x20E	User Map Address 4	30001	39999	1	---	F1	30960	1
40528	0x20F	User Map Address 5	30001	39999	1	---	F1	30961	1
40529	0x210	User Map Address 6	30001	39999	1	---	F1	30958	1
40530	0x211	User Map Address 7	30001	39999	1	---	F1	30959	1
40531	0x212	User Map Address 8	30001	39999	1	---	F1	30956	1
40532	0x213	User Map Address 9	30001	39999	1	---	F1	30957	1
40533	0x214	User Map Address 10	30001	39999	1	---	F1	30954	1
40534	0x215	User Map Address 11	30001	39999	1	---	F1	30955	1
40535	0x216	User Map Address 12	30001	39999	1	---	F1	30952	1
40536	0x217	User Map Address 13	30001	39999	1	---	F1	30953	1
40537	0x218	User Map Address 14	30001	39999	1	---	F1	30950	1
40538	0x219	User Map Address 15	30001	39999	1	---	F1	30951	1
40539	0x21A	User Map Address 16	30001	39999	1	---	F1	30948	1
40540	0x21B	User Map Address 17	30001	39999	1	---	F1	30949	1
40541	0x21C	User Map Address 18	30001	39999	1	---	F1	30946	1
40542	0x21D	User Map Address 19	30001	39999	1	---	F1	30947	1
40543	0x21E	User Map Address 20	30001	39999	1	---	F1	30976	1
40544	0x21F	User Map Address 21	30001	39999	1	---	F1	30977	1
40545	0x220	User Map Address 22	30001	39999	1	---	F1	30974	1
40546	0x221	User Map Address 23	30001	39999	1	---	F1	30975	1
40547	0x222	User Map Address 24	30001	39999	1	---	F1	30972	1
40548	0x223	User Map Address 25	30001	39999	1	---	F1	30973	1
40549	0x224	User Map Address 26	30001	39999	1	---	F1	30970	1
40550	0x225	User Map Address 27	30001	39999	1	---	F1	30971	1
40551	0x226	User Map Address 28	30001	39999	1	---	F1	30984	1
40552	0x227	User Map Address 29	30001	39999	1	---	F1	30985	1
40553	0x228	User Map Address 30	30001	39999	1	---	F1	30982	1
40554	0x229	User Map Address 31	30001	39999	1	---	F1	30983	1
40555	0x22A	User Map Address 32	30001	39999	1	---	F1	30980	1
40556	0x22B	User Map Address 33	30001	39999	1	---	F1	30981	1
40557	0x22C	User Map Address 34	30001	39999	1	---	F1	30978	1
40558	0x22D	User Map Address 35	30001	39999	1	---	F1	30979	1
40559	0x22E	User Map Address 36	30001	39999	1	---	F1	30186	1
40560	0x22F	User Map Address 37	30001	39999	1	---	F1	30285	1
40561	0x230	User Map Address 38	30001	39999	1	---	F1	30286	1
40562	0x231	User Map Address 39	30001	39999	1	---	F1	30298	1
40563	0x232	User Map Address 40	30001	39999	1	---	F1	30299	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40564	0x233	User Map Address 41	30001	39999	1	---	F1	30288	1
40565	0x234	User Map Address 42	30001	39999	1	---	F1	30289	1
40566	0x235	User Map Address 43	30001	39999	1	---	F1	30317	1
40567	0x236	User Map Address 44	30001	39999	1	---	F1	30291	1
40568	0x237	User Map Address 45	30001	39999	1	---	F1	30296	1
40569	0x238	User Map Address 46	30001	39999	1	---	F1	30297	1
40570	0x239	User Map Address 47	30001	39999	1	---	F1	30300	1
40571	0x23A	User Map Address 48	30001	39999	1	---	F1	30301	1
40572	0x23B	User Map Address 49	30001	39999	1	---	F1	30328	1
40573	0x23C	User Map Address 50	30001	39999	1	---	F1	30329	1
40574	0x23D	User Map Address 51	30001	39999	1	---	F1	30330	1
40575	0x23E	User Map Address 52	30001	39999	1	---	F1	30331	1
40576	0x23F	User Map Address 53	30001	39999	1	---	F1	30332	1
40577	0x240	User Map Address 54	30001	39999	1	---	F1	30333	1
40578	0x241	User Map Address 55	30001	39999	1	---	F1	30326	1
40579	0x242	User Map Address 56	30001	39999	1	---	F1	30327	1
40580	0x243	User Map Address 57	30001	39999	1	---	F1	30338	1
40581	0x244	User Map Address 58	30001	39999	1	---	F1	30339	1
40582	0x245	User Map Address 59	30001	39999	1	---	F1	30324	1
40583	0x246	User Map Address 60	30001	39999	1	---	F1	30325	1
40584	0x247	User Map Address 61	30001	39999	1	---	F1	30319	1
40585	0x248	User Map Address 62	30001	39999	1	---	F1	30320	1
40586	0x249	User Map Address 63	30001	39999	1	---	F1	31665	1
40587	0x24A	User Map Address 64	30001	39999	1	---	F1	31666	1
40588	0x24B	User Map Address 65	30001	39999	1	---	F1	31667	1
40589	0x24C	User Map Address 66	30001	39999	1	---	F1	31668	1
40590	0x24D	User Map Address 67	30001	39999	1	---	F1	31669	1
40591	0x24E	User Map Address 68	30001	39999	1	---	F1	31670	1
40592	0x24F	User Map Address 69	30001	39999	1	---	F1	31671	1
40593	0x250	User Map Address 70	30001	39999	1	---	F1	31672	1
40594	0x251	User Map Address 71	30001	39999	1	---	F1	31673	1
40595	0x252	User Map Address 72	30001	39999	1	---	F1	31674	1
40596	0x253	User Map Address 73	30001	39999	1	---	F1	31675	1
40597	0x254	User Map Address 74	30001	39999	1	---	F1	31676	1
40598	0x255	User Map Address 75	30001	39999	1	---	F1	31677	1
40599	0x256	User Map Address 76	30001	39999	1	---	F1	31678	1
40600	0x257	User Map Address 77	30001	39999	1	---	F1	31679	1
40601	0x258	User Map Address 78	30001	39999	1	---	F1	31680	1
40602	0x259	User Map Address 79	30001	39999	1	---	F1	31681	1
40603	0x25A	User Map Address 80	30001	39999	1	---	F1	31682	1
40604	0x25B	User Map Address 81	30001	39999	1	---	F1	31683	1
40605	0x25C	User Map Address 82	30001	39999	1	---	F1	31684	1
40606	0x25D	User Map Address 83	30001	39999	1	---	F1	31685	1
40607	0x25E	User Map Address 84	30001	39999	1	---	F1	31686	1
40608	0x25F	User Map Address 85	30001	39999	1	---	F1	31687	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40609	0x260	User Map Address 86	30001	39999	1	---	F1	31688	1
40610	0x261	User Map Address 87	30001	39999	1	---	F1	31695	1
40611	0x262	User Map Address 88	30001	39999	1	---	F1	31696	1
40612	0x263	User Map Address 89	30001	39999	1	---	F1	31697	1
40613	0x264	User Map Address 90	30001	39999	1	---	F1	31698	1
40614	0x265	User Map Address 91	30001	39999	1	---	F1	31699	1
40615	0x266	User Map Address 92	30001	39999	1	---	F1	31700	1
40616	0x267	User Map Address 93	30001	39999	1	---	F1	30001	1
40617	0x268	User Map Address 94	30001	39999	1	---	F1	30001	1
40618	0x269	User Map Address 95	30001	39999	1	---	F1	30001	1
40619	0x26A	User Map Address 96	30001	39999	1	---	F1	30001	1
40620	0x26B	User Map Address 97	30001	39999	1	---	F1	30001	1
40621	0x26C	User Map Address 98	30001	39999	1	---	F1	30001	1
40622	0x26D	User Map Address 99	30001	39999	1	---	F1	30001	1
40623	0x26E	User Map Address 100	30001	39999	1	---	F1	30001	1
40624	0x26F	User Map Address 101	30001	39999	1	---	F1	30001	1
40625	0x270	User Map Address 102	30001	39999	1	---	F1	30001	1
40626	0x271	User Map Address 103	30001	39999	1	---	F1	30001	1
40627	0x272	User Map Address 104	30001	39999	1	---	F1	30001	1
40628	0x273	User Map Address 105	30001	39999	1	---	F1	30001	1
40629	0x274	User Map Address 106	30001	39999	1	---	F1	30001	1
40630	0x275	User Map Address 107	30001	39999	1	---	F1	30001	1
40631	0x276	User Map Address 108	30001	39999	1	---	F1	30001	1
40632	0x277	User Map Address 109	30001	39999	1	---	F1	30001	1
40633	0x278	User Map Address 110	30001	39999	1	---	F1	30001	1
40634	0x279	User Map Address 111	30001	39999	1	---	F1	30001	1
40635	0x27A	User Map Address 112	30001	39999	1	---	F1	30001	1
40636	0x27B	User Map Address 113	30001	39999	1	---	F1	30001	1
40637	0x27C	User Map Address 114	30001	39999	1	---	F1	30001	1
40638	0x27D	User Map Address 115	30001	39999	1	---	F1	30001	1
40639	0x27E	User Map Address 116	30001	39999	1	---	F1	30001	1
40640	0x27F	User Map Address 117	30001	39999	1	---	F1	30001	1
40641	0x280	User Map Address 118	30001	39999	1	---	F1	30001	1
40642	0x281	User Map Address 119	30001	39999	1	---	F1	30001	1
40643	0x282	User Map Address 120	30001	39999	1	---	F1	30001	1
40644	0x283	User Map Address 121	30001	39999	1	---	F1	30001	1
40645	0x284	User Map Address 122	30001	39999	1	---	F1	30001	1
40646	0x285	User Map Address 123	30001	39999	1	---	F1	30001	1
40647	0x286	User Map Address 124	30001	39999	1	---	F1	30001	1
40648	0x287	User Map Address 125	30001	39999	1	---	F1	30001	1
TRANSIENT RECORDER TRIGGERS									
40650	0x289	Trigger On Input 1	0	0xEF02	1	---	F89A	0	1
40651	0x28A	Trigger On Input 2	0	0xEF02	1	---	F89A	0	1
40652	0x28B	Trigger On Input 3	0	0xEF02	1	---	F89A	0	1
EVENT RECORDER									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40649	0x288	Recording of Block Events	0	1	1	---	FC126	1	1
40654	0x28D	Recording of Pickup Events	0	1	1	---	FC126	0	1
40655	0x28E	Recording of Contact Input Events	0	1	1	---	FC126	1	1
40656	0x28F	Recording of Virtual Input Events	0	1	1	---	FC126	1	1
40657	0x290	Recording of Remote Inputs	0	1	1	---	FC126	1	1
40658	0x291	Recording of Logic Element Events	0	1	1	---	FC126	1	1
40660	0x293	Recording of Trip Events	0	1	1	---	FC126	1	1
40661	0x294	Recording of Alarm Events	0	1	1	---	FC126	1	1
40662	0x295	Recording of Control Events	0	1	1	---	FC126	1	1
40665	0x298	Recording of Dropout Events	0	1	1	---	FC126	0	1
40666	0x299	Recording of Set Time/Date Events	0	1	1	---	FC126	0	1
40667	0x29A	Event Record Selector	1	65535	1	---	F1	1	1
TEMPERATURE									
40820	0x333	Enable Ambient Temp	0	2	1	---	FC206	0	1
40821	0x334	HI Alarm Level	20	80	1	°C	F1	60	1
40822	0x335	Low Alarm Level	-40	20	1	°C	F4	10	1
40823	0x336	Hysteresis Level	2	10	1	°C	F1	2	1
40824	0x337	Time Delay	1	60	1	min	F1	1	1
40825	0x338	Output Relays	0	0x7F	1	---	FC198	0	1
TRANSIENT RECORDER									
40668	0x29B	Trigger on Pickup	0	1	1	---	FC103	0	1
40669	0x29C	Trigger on Dropout	0	1	1	---	FC103	0	1
40670	0x29D	Trigger on Alarm	0	1	1	---	FC103	0	1
40671	0x29E	Trigger on Dropout	0	1	1	---	FC103	0	1
40672	0x29F	Trace Memory Channel Selector	0	16	1	---	F26B	0	1
40673	0x2A0	Trace Memory Buffer Selector	0	10	1	---	F1	0	1
40674	0x2A1	Trace Memory Sample Index	0	6144	1	---	F1	0	1
40676	0x2A3	Trace Memory Trigger Position	0	100	1	%	F1	20	1
40677	0x2A4	Trigger Mode	0	1	1	---	FC148	0	1
40678	0x2A5	Number of Records	0	2	1	---	F95	0	1
40887	0x376	Transient Sampling Rate	0	3	1	---	FC429	0	1
RELAY STATUS									
40927	0x39E	Relay Status	0	1	1	---	F99	0	1
CONTACT INPUT NAMES (1 TO 8)									
40961	0x3C0	Input Name 1	0	7	1	---	F22	BKR1 52a (CI#1)	7
40970	0x3C9	Input Name 2	0	7	1	---	F22	BKR1 52b (CI#2)	7
40979	0x3D2	Input Name 3	0	7	1	---	F22	BKR2 52a (CI#3)	7
40988	0x3DB	Input Name 4	0	7	1	---	F22	BKR2 52b (CI#4)	7

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40997	0x3E4	Input Name 5	0	7	1	---	F22	Input 5	7
41006	0x3ED	Input Name 6	0	7	1	---	F22	Input 6	7
41015	0x3F6	Input Name 7	0	7	1	---	F22	Input 7	7
41024	0x3FF	Input Name 8	0	7	1	---	F22	Input 8	7
EDIT SETPOINT GROUP									
41113	0x458	Edit Setpoint Group	-1	1	1	---	F91	0	1
LOGIC ELEMENTS									
41118	0x45D	Timer 1 Pickup Delay	0	60000	1	ms	F1	0	1
41119	0x45E	Timer 1 Dropout Delay	0	60000	1	ms	F1	0	1
41120	0x45F	Logic Element 1 Function	0	4	1	---	FC205	0	1
41121	0x460	Logic Element 1 Asserted	0	1	1	---	FC103	0	1
41122	0x461	Logic Element 1 Relay	0	0x7F	1	---	FC198	0	1
41126	0x465	Timer 2 Pickup Delay	0	60000	1	ms	F1	0	1
41127	0x466	Timer 2 Dropout Delay	0	60000	1	ms	F1	0	1
41128	0x467	Logic Element 2 Function	0	4	1	---	FC205	0	1
41129	0x468	Logic Element 2 Asserted	0	1	1	---	FC103	0	1
41130	0x469	Logic Element 2 Relay	0	0x7F	1	---	FC198	0	1
41134	0x46D	Timer 3 Pickup Delay	0	60000	1	ms	F1	0	1
41135	0x46E	Timer 3 Dropout Delay	0	60000	1	ms	F1	0	1
41136	0x46F	Logic Element 3 Function	0	4	1	---	FC205	0	1
41137	0x470	Logic Element 3 Asserted	0	1	1	---	FC103	0	1
41138	0x471	Logic Element 3 Relay	0	0x7F	1	---	FC198	0	1
41142	0x475	Timer 4 Pickup Delay	0	60000	1	ms	F1	0	1
41143	0x476	Timer 4 Dropout Delay	0	60000	1	ms	F1	0	1
41144	0x477	Logic Element 4 Function	0	4	1	---	FC205	0	1
41145	0x478	Logic Element 4 Asserted	0	1	1	---	FC103	0	1
41146	0x479	Logic Element 4 Relay	0	0x7F	1	---	FC198	0	1
41150	0x47D	Timer 5 Pickup Delay	0	60000	1	ms	F1	0	1
41151	0x47E	Timer 5 Dropout Delay	0	60000	1	ms	F1	0	1
41152	0x47F	Logic Element 5 Function	0	4	1	---	FC205	0	1
41153	0x480	Logic Element 5 Asserted	0	1	1	---	FC103	0	1
41154	0x481	Logic Element 5 Relay	0	0x7F	1	---	FC198	0	1
41158	0x485	Timer 6 Pickup Delay	0	60000	1	ms	F1	0	1
41159	0x486	Timer 6 Dropout Delay	0	60000	1	ms	F1	0	1
41160	0x487	Logic Element 6 Function	0	4	1	---	FC205	0	1
41161	0x488	Logic Element 6 Asserted	0	1	1	---	FC103	0	1
41162	0x489	Logic Element 6 Relay	0	0x7F	1	---	FC198	0	1
41166	0x48D	Timer 7 Pickup Delay	0	60000	1	ms	F1	0	1
41167	0x48E	Timer 7 Dropout Delay	0	60000	1	ms	F1	0	1
41168	0x48F	Logic Element 7 Function	0	4	1	---	FC205	0	1
41169	0x490	Logic Element 7 Asserted	0	1	1	---	FC103	0	1
41170	0x491	Logic Element 7 Relay	0	0x7F	1	---	FC198	0	1
41174	0x495	Timer 8 Pickup Delay	0	60000	1	ms	F1	0	1
41175	0x496	Timer 8 Dropout Delay	0	60000	1	ms	F1	0	1
41176	0x497	Logic Element 8 Function	0	4	1	---	FC205	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
41177	0x498	Logic Element 8 Asserted	0	1	1	---	FC103	0	1
41178	0x499	Logic Element 8 Relay	0	0x7F	1	---	FC198	0	1
41182	0x49D	Timer 9 Pickup Delay	0	60000	1	ms	F1	0	1
41183	0x49E	Timer 9 Dropout Delay	0	60000	1	ms	F1	0	1
41184	0x49F	Logic Element 9 Function	0	4	1	---	FC205	0	1
41185	0x4A0	Logic Element 9 Asserted	0	1	1	---	FC103	0	1
41186	0x4A1	Logic Element 9 Relay	0	0x7F	1	---	FC198	0	1
41190	0x4A5	Timer 10 Pickup Delay	0	60000	1	ms	F1	0	1
41191	0x4A6	Timer 10 Dropout Delay	0	60000	1	ms	F1	0	1
41192	0x4A7	Logic Element 10 Function	0	4	1	---	FC205	0	1
41193	0x4A8	Logic Element 10 Asserted	0	1	1	---	FC103	0	1
41194	0x4A9	Logic Element 10 Relay	0	0x7F	1	---	FC198	0	1
41198	0x4AD	Timer 11 Pickup Delay	0	60000	1	ms	F1	0	1
41199	0x4AE	Timer 11 Dropout Delay	0	60000	1	ms	F1	0	1
41200	0x4AF	Logic Element 11 Function	0	4	1	---	FC205	0	1
41201	0x4B0	Logic Element 11 Asserted	0	1	1	---	FC103	0	1
41202	0x4B1	Logic Element 11 Relay	0	0x7F	1	---	FC198	0	1
41206	0x4B5	Timer 12 Pickup Delay	0	60000	1	ms	F1	0	1
41207	0x4B6	Timer 12 Dropout Delay	0	60000	1	ms	F1	0	1
41208	0x4B7	Logic Element 12 Function	0	4	1	---	FC205	0	1
41209	0x4B8	Logic Element 12 Asserted	0	1	1	---	FC103	0	1
41210	0x4B9	Logic Element 12 Relay	0	0x7F	1	---	FC198	0	1
41214	0x4BD	Timer 13 Pickup Delay	0	60000	1	ms	F1	0	1
41215	0x4BE	Timer 13 Dropout Delay	0	60000	1	ms	F1	0	1
41216	0x4BF	Logic Element 13 Function	0	4	1	---	FC205	0	1
41217	0x4C0	Logic Element 13 Asserted	0	1	1	---	FC103	0	1
41218	0x4C1	Logic Element 13 Relay	0	0x7F	1	---	FC198	0	1
41222	0x4C5	Timer 14 Pickup Delay	0	60000	1	ms	F1	0	1
41223	0x4C6	Timer 14 Dropout Delay	0	60000	1	ms	F1	0	1
41224	0x4C7	Logic Element 14 Function	0	4	1	---	FC205	0	1
41225	0x4C8	Logic Element 14 Asserted	0	1	1	---	FC103	0	1
41226	0x4C9	Logic Element 14 Relay	0	0x7F	1	---	FC198	0	1
41230	0x4CD	Timer 15 Pickup Delay	0	60000	1	ms	F1	0	1
41231	0x4CE	Timer 15 Dropout Delay	0	60000	1	ms	F1	0	1
41232	0x4CF	Logic Element 15 Function	0	4	1	---	FC205	0	1
41233	0x4D0	Logic Element 15 Asserted	0	1	1	---	FC103	0	1
41234	0x4D1	Logic Element 15 Relay	0	0x7F	1	---	FC198	0	1
41238	0x4D5	Timer 16 Pickup Delay	0	60000	1	ms	F1	0	1
41239	0x4D6	Timer 16 Dropout Delay	0	60000	1	ms	F1	0	1
41240	0x4D7	Logic Element 16 Function	0	4	1	---	FC205	0	1
41241	0x4D8	Logic Element 16 Asserted	0	1	1	---	FC103	0	1
41242	0x4D9	Logic Element 16 Relay	0	0x7F	1	---	FC198	0	1
REMOTE RESET									
41380	0x563	Remote Reset	0	0xEF02	1	---	F89A	0	1
WINDING 1 BREAKER									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
41388	0x56B	Breaker Connected	0	0x49	0	---	FC204B	0	1
41389	0x56C	Breaker 52a Contact	0	0x40	0	---	FC204A	0	1
41390	0x56D	Breaker 52b Contact	0	0x41	0	---	FC204C	0	1
SETPOINT GROUP CHANGE									
41404	0x57B	Set Group 2 Active	0	0xEF02	1	---	F89	0	1
41405	0x57C	Block Group Change	0	0xEF02	1	---	F89	0	1
WINDING 2 BREAKER									
41414	0x585	Breaker 2 Connected	0	0x49	0	---	FC204B	0	1
41415	0x586	Breaker 2 52a Contact	0	0x42	0	---	FC204D	0	1
41416	0x587	Breaker 2 52b Contact	0	0x43	0	---	FC204F	0	1
TRANSFORMER SETUP									
41420	0x58B	XFMR Rated MVA	0	20000	1	MVA	F11	500	2
41422	0x58D	XFRM Type	0	25	1	---	FC419	0	1
41423	0x58E	Phase Compensation	0	1	1	---	FC411	0	1
41424	0x58F	Winding 1 Ph-Ph Voltage	1	25000	1	kV	F11	1380	2
41426	0x591	Winding 1 Grounding	0	1	0	---	FC413	0	1
41427	0x592	Winding 2 Ph-Ph Voltage	1	25000	1	kV	F11	416	2
41429	0x594	Winding 2 Grounding	0	1	0	---	FC413	0	1
CONTACT INPUT NAMES (9 TO 10)									
41435	0x59A	Input Name 9	0	7	1	---	F22	Input 9	7
41444	0x5A3	Input Name 10	0	7	1	---	F22	Input 10	7
CONTACT INPUTS									
41454	0x5AD	Input 9 Debounce Interval	1	64	1	ms	F1	2	1
41455	0x5AE	Input 10 Debounce Interval	1	64	1	ms	F1	2	1
41456	0x5AF	Input 1 Debounce Interval	1	64	1	ms	F1	2	1
41457	0x5B0	Input 2 Debounce Interval	1	64	1	ms	F1	2	1
41458	0x5B1	Input 3 Debounce Interval	1	64	1	ms	F1	2	1
41459	0x5B2	Input 4 Debounce Interval	1	64	1	ms	F1	2	1
41460	0x5B3	Input 5 Debounce Interval	1	64	1	ms	F1	2	1
41461	0x5B4	Input 6 Debounce Interval	1	64	1	ms	F1	2	1
41462	0x5B5	Input 7 Debounce Interval	1	64	1	ms	F1	2	1
41463	0x5B6	Input 8 Debounce Interval	1	64	1	ms	F1	2	1
41465	0x5B8	Select DC Voltage	0	3	1	---	FC123	2	1
FRONT PANEL SETUP									
41475	0x5C2	Screen Saver	0	10000	1	min	F1C	0	1
41498	0x5D9	Breaker Open Color	0	3	1	---	FC157	2	1
41500	0x5DB	Breaker Close Color	0	3	1	---	FC157	2	1
41502	0x5DD	W2 Breaker Open Colour	0	3	1	---	FC157	2	1
41504	0x5DF	W2 Breaker Closed Colour	0	3	1	---	FC157	2	1
OUTPUT RELAYS									
41510	0x5E5	Relay 3 Type	0	1	1	---	FC199	0	1
41511	0x5E6	Relay 4 Type	0	1	1	---	FC199	0	1
41512	0x5E7	Relay 5 Type	0	1	1	---	FC199	0	1
41513	0x5E8	Relay 6 Type	0	1	1	---	FC199	0	1
41547	0x60A	Block Relay 1 Trip	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
41549	0x60C	Block Relay 2 Trip	0	0xEF02	1	---	F89	0	1
PROGRAMMABLE LEDs									
41522	0x5F1	LED 1 Type	0	1	1	---	FC199	0	1
41523	0x5F2	LED 2 Type	0	1	1	---	FC199	0	1
41524	0x5F3	LED 3 Type	0	1	1	---	FC199	0	1
41525	0x5F4	LED 4 Type	0	1	1	---	FC199	0	1
41526	0x5F5	LED 5 Type	0	1	1	---	FC199	0	1
41527	0x5F6	LED 6 Type	0	1	1	---	FC199	0	1
41528	0x5F7	LED 7 Type	0	1	1	---	FC199	0	1
41529	0x5F8	LED 8 Type	0	1	1	---	FC199	0	1
41570	0x621	LED 1 Source	0	0xFFFF	1	---	FC134B	0	1
41572	0x623	LED 2 Source	0	0xFFFF	1	---	FC134B	0	1
41574	0x625	LED 3 Source	0	0xFFFF	1	---	FC134B	0	1
41576	0x627	LED 4 Source	0	0xFFFF	1	---	FC134B	0	1
41578	0x629	LED 5 Source	0	0xFFFF	1	---	FC134B	0	1
41579	0x62A	LED 5 Color	0	3	1	---	FC157	3	1
41580	0x62B	LED 6 Source	0	0xFFFF	1	---	FC134B	0	1
41581	0x62C	LED 6 Color	0	3	1	---	FC157	3	1
41582	0x62D	LED 7 Source	0	0xFFFF	1	---	FC134B	0	1
41583	0x62E	LED 7 Color	0	3	1	---	FC157	3	1
41584	0x62F	LED 8 Source	0	0xFFFF	1	---	FC134B	0	1
41585	0x630	LED 8 Color	0	3	1	---	FC157	3	1
BREAKER TRIP COUNTER									
41563	0x61A	W2 Breaker Trip Counter Initial Trips	0	10000	1	---	F1	0	1
41564	0x61B	W2 Breaker Trip Counter Function	0	2	1	---	FC206	0	1
41565	0x61C	W2 Breaker Trip Counter Limit	1	10000	1	trips	F1	1	1
41566	0x61D	W2 Breaker Trip Counter Relay	0	0x7F	1	---	FC198	0	1
42210	0x8A1	W1 Breaker Trip Counter Initial Trips	0	10000	1	---	F1	0	1
42211	0x8A2	W1 Breaker Trip Counter Function	0	2	1	---	FC206	0	1
42212	0x8A3	W1 Breaker Trip Counter Pickup	1	10000	1	trips	F1	1	1
42213	0x8A4	W1 Breaker Trip Counter Relay	0	0x7F	1	---	FC198	0	1
COIL MONITORS									
42214	0x8A5	Bypass Breaker Status	0	1	1	---	FC126	0	1
42215	0x8A6	Relay1 Coil Monitor Function	0	2	1	---	FC206	0	1
42216	0x8A7	Relay1 Coil Monitor Pickup	1	10	1	s	F1	5	1
42217	0x8A8	Relay1 Coil Monitor Relay	0	0x7F	1	---	FC198	0	1
42218	0x8A9	Bypass Breaker Status	0	1	1	---	FC126	0	1
42219	0x8AA	Relay2 Coil Monitor Function	0	2	1	---	FC206	0	1
42220	0x8AB	Relay2 Coil Monitor Pickup	1	10	1	s	F1	5	1
42221	0x8AC	Relay2 Coil Monitor Relay	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
TRIP RELAY SEAL-IN									
42222	0x8AD	Relay 1 Seal-In	0	999	1	s	F3	4	1
42224	0x8AF	Relay 2 Trip Seal-In	0	999	1	s	F3	4	1
W1 BREAKER FAIL									
42262	0x8D5	Breaker Failure Function	0	2	1	---	FC206	0	1
42263	0x8D6	Breaker Failure Delay 1	3	100	1	s	F3	10	1
42264	0x8D7	Breaker Failure Current	5	2000	1	x CT	F3	100	1
42265	0x8D8	Breaker Failure Delay 2	0	100	1	s	F3	0	1
42266	0x8D9	Breaker Failure Relays	0	0x7F	1	---	FC198	0	1
42267	0x8DA	Breaker Failure Ext Initiate	0	0xEF02	1	---	F89	0	1
PHASE IOC1									
42485	0x9B4	Phase IOC Function	0	3	1	---	FC197	0	1
42486	0x9B5	Phase IOC Pickup	5	2000	1	x CT	F3	100	1
42487	0x9B6	Phase IOC Delay	0	30000	1	s	F3	0	1
NEUTRAL IOC1									
42490	0x9B9	Neutral IOC Function	0	3	1	---	FC197	0	1
42491	0x9BA	Neutral IOC Pickup	5	2000	1	x CT	F3	100	1
42492	0x9BB	Neutral IOC Delay	0	30000	1	s	F3	0	1
GROUND IOC1									
42494	0x9BD	Ground IOC Function	0	3	1	---	FC197	0	1
42495	0x9BE	Ground IOC Pickup	5	2000	1	x CT	F3	100	1
42496	0x9BF	Ground IOC Delay	0	30000	1	s	F3	0	1
PHASE TOC1									
42498	0x9C1	Phase Time OC Function	0	3	1	---	FC197	0	1
42499	0x9C2	Phase Time OC Pickup	5	2000	1	x CT	F3	100	1
42500	0x9C3	Phase Time OC Curve	0	14	1	---	F36	0	1
42501	0x9C4	Phase Time OC Multiplier	5	5000	1	---	F3	100	1
42502	0x9C5	Phase Time OC Reset	0	1	1	---	F68	0	1
NEUTRAL TOC1									
42504	0x9C7	Neutral Time OC Function	0	3	1	---	FC197	0	1
42505	0x9C8	Neutral Time OC Pickup	5	2000	1	x CT	F3	100	1
42506	0x9C9	Neutral Time OC Curve	0	14	1	---	F36	0	1
42507	0x9CA	Neutral Time OC Multiplier	5	5000	1	---	F3	100	1
42508	0x9CB	Neutral Time OC Reset	0	1	1	---	F68	0	1
GROUND TOC1									
42510	0x9CD	Ground Time OC Function	0	3	1	---	FC197	0	1
42511	0x9CE	Ground Time OC Pickup	5	2000	1	x CT	F3	100	1
42512	0x9CF	Ground Time OC Curve	0	14	1	---	F36	0	1
42513	0x9D0	Ground Time OC Multiplier	5	5000	1	---	F3	100	1
42514	0x9D1	Ground Time OC Reset	0	1	1	---	F68	0	1
PHASE IOC2									
42516	0x9D3	Phase IOC 2 Function	0	3	1	---	FC197	0	1
42517	0x9D4	Phase IOC 2 Pickup	5	2000	1	x CT	F3	100	1
42518	0x9D5	Phase IOC 2 Delay	0	30000	1	s	F3	0	1
NEUTRAL IOC2									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
42521	0x9D8	Neutral IOC 2 Function	0	3	1	---	FC197	0	1
42522	0x9D9	Neutral IOC 2 Pickup	5	2000	1	x CT	F3	100	1
42523	0x9DA	Neutral IOC 2 Delay	0	30000	1	s	F3	0	1
GROUND IOC2									
42525	0x9DC	Ground IOC 2 Function	0	3	1	---	FC197	0	1
42526	0x9DD	Ground IOC 2 Pickup	5	2000	1	x CT	F3	100	1
42527	0x9DE	Ground IOC 2 Delay	0	30000	1	s	F3	0	1
PHASE TOC2									
42529	0x9E0	Phase Time OC 2 Function	0	3	1	---	FC197	0	1
42530	0x9E1	Phase Time OC 2 Pickup	5	2000	1	x CT	F3	100	1
42531	0x9E2	Phase Time OC 2 Curve	0	14	1	---	F36	0	1
42532	0x9E3	Phase Time OC 2 Multiplier	5	5000	1	---	F3	100	1
42533	0x9E4	Phase Time OC 2 Reset	0	1	1	---	F68	0	1
NEUTRAL TOC2									
42535	0x9E6	Neutral Time OC 2 Function	0	3	1	---	FC197	0	1
42536	0x9E7	Neutral Time OC 2 Pickup	5	2000	1	x CT	F3	100	1
42537	0x9E8	Neutral Time OC 2 Curve	0	14	1	---	F36	0	1
42538	0x9E9	Neutral Time OC 2 Multiplier	5	5000	1	---	F3	100	1
42539	0x9EA	Neutral Time OC 2 Reset	0	1	1	---	F68	0	1
GROUND TOC2									
42541	0x9EC	Ground Time OC 2 Function	0	3	1	---	FC197	0	1
42542	0x9ED	Ground Time OC 2 Pickup	5	2000	1	x CT	F3	100	1
42543	0x9EE	Ground Time OC 2 Curve	0	14	1	---	F36	0	1
42544	0x9EF	Ground Time OC 2 Multiplier	5	5000	1	---	F3	100	1
42545	0x9F0	Ground Time OC 2 Reset	0	1	1	---	F68	0	1
SENSITIVE GROUND TOC1									
42547	0x9F2	Sensitive Ground Time OC Function	0	3	1	---	FC197	0	1
42548	0x9F3	Sensitive Ground Time OC Pickup	5	3000	1	x CT	F17A	1000	1
42549	0x9F4	Sensitive Ground Time OC Curve	0	14	1	---	F36	0	1
42550	0x9F5	Sensitive Ground Time OC Multiplier	5	5000	1	---	F3	100	1
42551	0x9F6	Sensitive Ground Time OC Reset	0	1	1	---	F68	0	1
SENSITIVE GROUND IOC1									
42598	0xA25	Sensitive Ground IOC Function	0	3	1	---	FC197	0	1
42599	0xA26	Sensitive Ground IOC Pickup	5	3000	1	x CT	F17A	1000	1
42600	0xA27	Sensitive Ground IOC Delay	0	30000	1	s	F3	0	1
SENSITIVE GROUND IOC2									
42601	0xA28	Sensitive Ground 2 IOC Function	0	3	1	---	FC197	0	1
42602	0xA29	Sensitive Ground 2 IOC Pickup	5	3000	1	x CT	F17A	1000	1
42603	0xA2A	Sensitive Ground 2 IOC Delay	0	30000	1	s	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
TRANSFORMER PERCENT DIFFERENTIAL									
42608	0xA2F	XFMR Pcnt Func	0	3	1	---	FC197	0	1
42609	0xA30	Minimum Diff Pkp	5	100	1	x CT	F3	10	1
42610	0xA31	Slope1	15	100	1	%	F1	30	1
42611	0xA32	Break 1	50	400	1	x CT	F3	150	1
42612	0xA33	Break 2	100	1000	1	x CT	F3	150	1
42613	0xA34	Slope 2	50	100	1	%	F1	95	1
42614	0xA35	Inrush Inhbit Func	0	1	1	---	FC408	1	1
42615	0xA36	Inrush Level	1	400	1	% fo	F2	200	1
42616	0xA37	Inrush Inhibit Mode	0	3	1	---	FC409	0	1
42617	0xA38	Overexcitation Func	0	1	1	---	FC410	0	1
42618	0xA39	Overexcitation Level	10	400	1	% fo	F2	100	1
42619	0xA3A	Output Relays	0	0x7F	1	---	FC198	0	1
RESTRICTED GROUND FAULT1									
42620	0xA3B	RGF 1 Pickup	2	2000	1	x CT	F17A	5	1
42621	0xA3C	GND Current SPVSN Level	2	1000	1	x CTg	F17A	10	1
42624	0xA3F	Restd Gnd Fault 1 Func	0	3	1	---	FC197	0	1
42625	0xA40	REF CT Input 1	0	1	1	---	FC418	0	1
42626	0xA41	RGF 1 Pickup	2	2000	1	x CT	F3	5	1
42627	0xA42	RGF 1 Slope	0	100	1	%	F1	20	1
42628	0xA43	RGF 1 Delay	0	60000	1	s	F3	50	1
42629	0xA44	GND Current SPVSN	0	1	1	---	FC126	0	1
42630	0xA45	GND Current SPVSN Level	2	1000	1	x CTg	F3	10	1
RESTRICTED GROUND FAULT2									
42622	0xA3D	RGF 2 Pickup	2	2000	1	x CT	F17A	5	1
42623	0xA3E	GND Current SPVSN Level	2	2000	1	x CTg	F17A	10	1
42631	0xA46	Restd Gnd Fault 2 Func	0	3	1	---	FC197	0	1
42632	0xA47	REF CT Input 2	0	1	1	---	FC418	0	1
42633	0xA48	RGF 2 Pickup	2	2000	1	x CT	F3	5	1
42634	0xA49	RGF 2 Slope	0	100	1	%	F1	20	1
42635	0xA4A	RGF 2 Delay	0	60000	1	s	F3	50	1
42636	0xA4B	GND Current SPVSN	0	1	1	---	FC126	0	1
42637	0xA4C	GND Current SPVSN Level	2	2000	1	x CTg	F3	10	1
TRANSFORMER INSTANTANEOUS DIFFERENTIAL									
42638	0xA4D	Inst Diff Function	0	3	1	---	FC197	0	1
42639	0xA4E	Inst Diff Pickup	300	2000	1	x CT	F3	800	1
W2 BYPASS BREAKER STATUS									
42816	0xAFF	Bypass Breaker 2 Status	0	1	1	---	FC126	0	1
VIRTUAL INPUT NAMES									
42884	0xB43	Virtual Input Name 1	0	9	1	---	F22	Virtual IN 1	9
42893	0xB4C	Virtual Input Name 2	0	9	1	---	F22	Virtual IN 2	9
42902	0xB55	Virtual Input Name 3	0	9	1	---	F22	Virtual IN 3	9
42911	0xB5E	Virtual Input Name 4	0	9	1	---	F22	Virtual IN 4	9
42920	0xB67	Virtual Input Name 5	0	9	1	---	F22	Virtual IN 5	9
42929	0xB70	Virtual Input Name 6	0	9	1	---	F22	Virtual IN 6	9

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
42938	0xB79	Virtual Input Name 7	0	9	1	---	F22	Virtual IN 7	9
42947	0xB82	Virtual Input Name 8	0	9	1	---	F22	Virtual IN 8	9
42956	0xB8B	Virtual Input Name 9	0	9	1	---	F22	Virtual IN 9	9
42965	0xB94	Virtual Input Name 10	0	9	1	---	F22	Virtual IN 10	9
42974	0xB9D	Virtual Input Name 11	0	9	1	---	F22	Virtual IN 11	9
42983	0xBA6	Virtual Input Name 12	0	9	1	---	F22	Virtual IN 12	9
42992	0xBAF	Virtual Input Name 13	0	9	1	---	F22	Virtual IN 13	9
43001	0xBB8	Virtual Input Name 14	0	9	1	---	F22	Virtual IN 14	9
43010	0xBC1	Virtual Input Name 15	0	9	1	---	F22	Virtual IN 15	9
43019	0xBCA	Virtual Input Name 16	0	9	1	---	F22	Virtual IN 16	9
43028	0xBD3	Virtual Input Name 17	0	9	1	---	F22	Virtual IN 17	9
43037	0xBDC	Virtual Input Name 18	0	9	1	---	F22	Virtual IN 18	9
43046	0xBE5	Virtual Input Name 19	0	9	1	---	F22	Virtual IN 19	9
43055	0xBEE	Virtual Input Name 20	0	9	1	---	F22	Virtual IN 20	9
43064	0xBF7	Virtual Input Name 21	0	9	1	---	F22	Virtual IN 21	9
43073	0xC00	Virtual Input Name 22	0	9	1	---	F22	Virtual IN 22	9
43082	0xC09	Virtual Input Name 23	0	9	1	---	F22	Virtual IN 23	9
43091	0xC12	Virtual Input Name 24	0	9	1	---	F22	Virtual IN 24	9
43100	0xC1B	Virtual Input Name 25	0	9	1	---	F22	Virtual IN 25	9
43109	0xC24	Virtual Input Name 26	0	9	1	---	F22	Virtual IN 26	9
43118	0xC2D	Virtual Input Name 27	0	9	1	---	F22	Virtual IN 27	9
43127	0xC36	Virtual Input Name 28	0	9	1	---	F22	Virtual IN 28	9
43136	0xC3F	Virtual Input Name 29	0	9	1	---	F22	Virtual IN 29	9
43145	0xC48	Virtual Input Name 30	0	9	1	---	F22	Virtual IN 30	9
43154	0xC51	Virtual Input Name 31	0	9	1	---	F22	Virtual IN 31	9
43163	0xC5A	Virtual Input Name 32	0	9	1	---	F22	Virtual IN 32	9
SIMULATION									
RTD PROTECTION									
40335	0x14E	RTD 1 Alarm PKP Delay	0	60000	1	s	F3	200	1
40336	0x14F	RTD 2 Alarm PKP Delay	0	60000	1	s	F3	200	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40337	0x150	RTD 3 Alarm PKP Delay	0	60000	1	s	F3	200	1
40338	0x151	RTD 4 Alarm PKP Delay	0	60000	1	s	F3	200	1
40339	0x152	RTD 5 Alarm PKP Delay	0	60000	1	s	F3	200	1
40340	0x153	RTD 6 Alarm PKP Delay	0	60000	1	s	F3	200	1
40341	0x154	RTD 7 Alarm PKP Delay	0	60000	1	s	F3	200	1
40342	0x155	RTD 8 Alarm PKP Delay	0	60000	1	s	F3	200	1
40343	0x156	RTD 9 Alarm PKP Delay	0	60000	1	s	F3	200	1
40344	0x157	RTD 10 Alarm PKP Delay	0	60000	1	s	F3	200	1
40345	0x158	RTD 11 Alarm PKP Delay	0	60000	1	s	F3	200	1
40346	0x159	RTD 12 Alarm PKP Delay	0	60000	1	s	F3	200	1
40347	0x15A	RTD 1 Alarm DPO Delay	0	60000	1	s	F3	200	1
40348	0x15B	RTD 2 Alarm DPO Delay	0	60000	1	s	F3	200	1
40349	0x15C	RTD 3 Alarm DPO Delay	0	60000	1	s	F3	200	1
40350	0x15D	RTD 4 Alarm DPO Delay	0	60000	1	s	F3	200	1
40351	0x15E	RTD 5 Alarm DPO Delay	0	60000	1	s	F3	200	1
40352	0x15F	RTD 6 Alarm DPO Delay	0	60000	1	s	F3	200	1
40353	0x160	RTD 7 Alarm DPO Delay	0	60000	1	s	F3	200	1
40354	0x161	RTD 8 Alarm DPO Delay	0	60000	1	s	F3	200	1
40355	0x162	RTD 9 Alarm DPO Delay	0	60000	1	s	F3	200	1
40356	0x163	RTD 10 Alarm DPO Delay	0	60000	1	s	F3	200	1
40357	0x164	RTD 11 Alarm DPO Delay	0	60000	1	s	F3	200	1
40358	0x165	RTD 12 Alarm DPO Delay	0	60000	1	s	F3	200	1
40359	0x166	RTD 1 Trip PKP Delay	0	60000	1	s	F3	200	1
40360	0x167	RTD 2 Trip PKP Delay	0	60000	1	s	F3	200	1
40361	0x168	RTD 3 Trip PKP Delay	0	60000	1	s	F3	200	1
40362	0x169	RTD 4 Trip PKP Delay	0	60000	1	s	F3	200	1
40363	0x16A	RTD 5 Trip PKP Delay	0	60000	1	s	F3	200	1
40364	0x16B	RTD 6 Trip PKP Delay	0	60000	1	s	F3	200	1
40365	0x16C	RTD 7 Trip PKP Delay	0	60000	1	s	F3	200	1
40366	0x16D	RTD 8 Trip PKP Delay	0	60000	1	s	F3	200	1
40367	0x16E	RTD 9 Trip PKP Delay	0	60000	1	s	F3	200	1
40368	0x16F	RTD 10 Trip PKP Delay	0	60000	1	s	F3	200	1
40369	0x170	RTD 11 Trip PKP Delay	0	60000	1	s	F3	200	1
40370	0x171	RTD 12 Trip PKP Delay	0	60000	1	s	F3	200	1
40371	0x172	RTD 1 Trip DPO Delay	0	60000	1	s	F3	200	1
40372	0x173	RTD 2 Trip DPO Delay	0	60000	1	s	F3	200	1
40373	0x174	RTD 3 Trip DPO Delay	0	60000	1	s	F3	200	1
40374	0x175	RTD 4 Trip DPO Delay	0	60000	1	s	F3	200	1
40375	0x176	RTD 5 Trip DPO Delay	0	60000	1	s	F3	200	1
40376	0x177	RTD 6 Trip DPO Delay	0	60000	1	s	F3	200	1
40377	0x178	RTD 7 Trip DPO Delay	0	60000	1	s	F3	200	1
40378	0x179	RTD 8 Trip DPO Delay	0	60000	1	s	F3	200	1
40379	0x17A	RTD 9 Trip DPO Delay	0	60000	1	s	F3	200	1
40380	0x17B	RTD 10 Trip DPO Delay	0	60000	1	s	F3	200	1
40381	0x17C	RTD 11 Trip DPO Delay	0	60000	1	s	F3	200	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40382	0x17D	RTD 12 Trip DPO Delay	0	60000	1	s	F3	200	1
40390	0x185	RTD 7 Application	0	7	1	---	FC121	0	1
40391	0x186	RTD 7 Name	0	9	1	---	F22	RTD 7	9
40401	0x190	RTD 7 Alarm Temp	1	250	1	°C	F4	130	1
40402	0x191	RTD 7 Trip Voting	0	12	1	---	FC122	0	1
40403	0x192	RTD 7 Trip Temp	1	250	1	°C	F4	155	1
40404	0x193	RTD 8 Application	0	7	1	---	FC121	0	1
40405	0x194	RTD 8 Name	0	9	1	---	F22	RTD 8	9
40415	0x19E	RTD 8 Alarm Temp	1	250	1	°C	F4	130	1
40416	0x19F	RTD 8 Trip Voting	0	12	1	---	FC122	0	1
40417	0x1A0	RTD 8 Trip Temp	1	250	1	°C	F4	155	1
40418	0x1A1	RTD 9 Application	0	7	1	---	FC121	0	1
40419	0x1A2	RTD 9 Name	0	9	1	---	F22	RTD 9	9
40429	0x1AC	RTD 9 Alarm Temp	1	250	1	°C	F4	130	1
40430	0x1AD	RTD 9 Trip Voting	0	12	1	---	FC122	0	1
40431	0x1AE	RTD 9 Trip Temp	1	250	1	°C	F4	155	1
40432	0x1AF	RTD 10 Application	0	7	1	---	FC121	0	1
40433	0x1B0	RTD 10 Name	0	9	1	---	F22	RTD 10	9
40443	0x1BA	RTD 10 Alarm Temp	1	250	1	°C	F4	130	1
40444	0x1BB	RTD 10 Trip Voting	0	12	1	---	FC122	0	1
40445	0x1BC	RTD 10 Trip Temp	1	250	1	°C	F4	155	1
40446	0x1BD	RTD 11 Application	0	7	1	---	FC121	0	1
40447	0x1BE	RTD 11 Name	0	9	1	---	F22	RTD 11	9
40457	0x1C8	RTD 11 Alarm Temp	1	250	1	°C	F4	130	1
40458	0x1C9	RTD 11 Trip Voting	0	12	1	---	FC122	0	1
40459	0x1CA	RTD 11 Trip Temp	1	250	1	°C	F4	155	1
40460	0x1CB	RTD 12 Application	0	7	1	---	FC121	0	1
40461	0x1CC	RTD 12 Name	0	9	1	---	F22	RTD 12	9
40471	0x1D6	RTD 12 Alarm Temp	1	250	1	°C	F4	130	1
40472	0x1D7	RTD 12 Trip Voting	0	12	1	---	FC122	0	1
40473	0x1D8	RTD 12 Trip Temp	1	250	1	°C	F4	155	1
40731	0x2DA	RTD Trouble Alarm	0	1	1	---	FC126	0	1
40735	0x2DE	RTD 1 Application	0	7	1	---	FC121	0	1
40736	0x2DF	RTD 1 Name	0	9	1	---	F22	RTD 1	9
40746	0x2E9	RTD 1 Alarm Temperature	1	250	1	°C	F4	130	1
40747	0x2EA	RTD 1 Trip Voting	0	12	1	---	FC122	0	1
40748	0x2EB	RTD 1 Trip Temperature	1	250	1	°C	F4	155	1
40749	0x2EC	RTD 2 Application	0	7	1	---	FC121	0	1
40750	0x2ED	RTD 2 Name	0	9	1	---	F22	RTD 2	9
40760	0x2F7	RTD 2 Alarm Temperature	1	250	1	°C	F4	130	1
40761	0x2F8	RTD 2 Trip Voting	0	12	1	---	FC122	0	1
40762	0x2F9	RTD 2 Trip Temperature	1	250	1	°C	F4	155	1
40763	0x2FA	RTD 3 Application	0	7	1	---	FC121	0	1
40764	0x2FB	RTD 3 Name	0	9	1	---	F22	RTD 3	9
40774	0x305	RTD 3 Alarm Temperature	1	250	1	°C	F4	130	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
40775	0x306	RTD 3 Trip Voting	0	12	1	---	FC122	0	1
40776	0x307	RTD 3 Trip Temperature	1	250	1	°C	F4	155	1
40777	0x308	RTD 4 Application	0	7	1	---	FC121	0	1
40778	0x309	RTD 4 Name	0	9	1	---	F22	RTD 4	9
40788	0x313	RTD 4 Alarm Temperature	1	250	1	°C	F4	130	1
40789	0x314	RTD 4 Trip Voting	0	12	1	---	FC122	0	1
40790	0x315	RTD 4 Trip Temperature	1	250	1	°C	F4	155	1
40791	0x316	RTD 5 Application	0	7	1	---	FC121	0	1
40792	0x317	RTD 5 Name	0	9	1	---	F22	RTD 5	9
40802	0x321	RTD 5 Alarm Temperature	1	250	1	°C	F4	130	1
40803	0x322	RTD 5 Trip Voting	0	12	1	---	FC122	0	1
40804	0x323	RTD 5 Trip Temperature	1	250	1	°C	F4	155	1
40805	0x324	RTD 6 Application	0	7	1	---	FC121	0	1
40806	0x325	RTD 6 Name	0	9	1	---	F22	RTD 6	9
40816	0x32F	RTD 6 Alarm Temperature	1	250	1	°C	F4	130	1
40817	0x330	RTD 6 Trip Voting	0	12	1	---	FC122	0	1
40818	0x331	RTD 6 Trip Temperature	1	250	1	°C	F4	155	1
43560	0xDE7	RTD 1 Alarm	0	1	1	---	FC126	0	1
43561	0xDE8	RTD 1 Trip	0	1	1	---	FC126	0	1
43562	0xDE9	RTD 2 Alarm	0	1	1	---	FC126	0	1
43563	0xDEA	RTD 2 Trip	0	1	1	---	FC126	0	1
43564	0xDEB	RTD 3 Alarm	0	1	1	---	FC126	0	1
43565	0xDEC	RTD 3 Trip	0	1	1	---	FC126	0	1
43566	0xDED	RTD 4 Alarm	0	1	1	---	FC126	0	1
43567	0xDEE	RTD 4 Trip	0	1	1	---	FC126	0	1
43568	0xDEF	RTD 5 Alarm	0	1	1	---	FC126	0	1
43569	0xDF0	RTD 5 Trip	0	1	1	---	FC126	0	1
43570	0xDF1	RTD 6 Alarm	0	1	1	---	FC126	0	1
43571	0xDF2	RTD 6 Trip	0	1	1	---	FC126	0	1
43572	0xDF3	RTD 7 Alarm	0	1	1	---	FC126	0	1
43573	0xDF4	RTD 7 Trip	0	1	1	---	FC126	0	1
43574	0xDF5	RTD 8 Alarm	0	1	1	---	FC126	0	1
43575	0xDF6	RTD 8 Trip	0	1	1	---	FC126	0	1
43576	0xDF7	RTD 9 Alarm	0	1	1	---	FC126	0	1
43577	0xDF8	RTD 9 Trip	0	1	1	---	FC126	0	1
43578	0xDF9	RTD 10 Alarm	0	1	1	---	FC126	0	1
43579	0xDFA	RTD 10 Trip	0	1	1	---	FC126	0	1
43580	0xDFB	RTD 11 Alarm	0	1	1	---	FC126	0	1
43581	0xDFC	RTD 11 Trip	0	1	1	---	FC126	0	1
43582	0xDFD	RTD 12 Alarm	0	1	1	---	FC126	0	1
43583	0xDFE	RTD 12 Trip	0	1	1	---	FC126	0	1
43586	0xE01	RTD 1 Relays	0	0x7F	1	---	FC198	0	1
43587	0xE02	RTD 2 Relays	0	0x7F	1	---	FC198	0	1
43588	0xE03	RTD 3 Relays	0	0x7F	1	---	FC198	0	1
43589	0xE04	RTD 4 Relays	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43590	0xE05	RTD 5 Relays	0	0x7F	1	---	FC198	0	1
43591	0xE06	RTD 6 Relays	0	0x7F	1	---	FC198	0	1
43592	0xE07	RTD 7 Relays	0	0x7F	1	---	FC198	0	1
43593	0xE08	RTD 8 Relays	0	0x7F	1	---	FC198	0	1
43594	0xE09	RTD 9 Relays	0	0x7F	1	---	FC198	0	1
43595	0xE0A	RTD 10 Relays	0	0x7F	1	---	FC198	0	1
43596	0xE0B	RTD 11 Relays	0	0x7F	1	---	FC198	0	1
43597	0xE0C	RTD 12 Relays	0	0x7F	1	---	FC198	0	1
43599	0xE0E	RTD 1 Block1	0	0xEF02	1	---	F89	0	1
43600	0xE0F	RTD 1 Block2	0	0xEF02	1	---	F89	0	1
43601	0xE10	RTD 1 Block3	0	0xEF02	1	---	F89	0	1
43602	0xE11	RTD 2 Block1	0	0xEF02	1	---	F89	0	1
43603	0xE12	RTD 2 Block2	0	0xEF02	1	---	F89	0	1
43604	0xE13	RTD 2 Block3	0	0xEF02	1	---	F89	0	1
43605	0xE14	RTD 3 Block1	0	0xEF02	1	---	F89	0	1
43606	0xE15	RTD 3 Block2	0	0xEF02	1	---	F89	0	1
43607	0xE16	RTD 3 Block3	0	0xEF02	1	---	F89	0	1
43608	0xE17	RTD 4 Block1	0	0xEF02	1	---	F89	0	1
43609	0xE18	RTD 4 Block2	0	0xEF02	1	---	F89	0	1
43610	0xE19	RTD 4 Block3	0	0xEF02	1	---	F89	0	1
43611	0xE1A	RTD 5 Block1	0	0xEF02	1	---	F89	0	1
43612	0xE1B	RTD 5 Block2	0	0xEF02	1	---	F89	0	1
43613	0xE1C	RTD 5 Block3	0	0xEF02	1	---	F89	0	1
43614	0xE1D	RTD 6 Block1	0	0xEF02	1	---	F89	0	1
43615	0xE1E	RTD 6 Block2	0	0xEF02	1	---	F89	0	1
43616	0xE1F	RTD 6 Block3	0	0xEF02	1	---	F89	0	1
43617	0xE20	RTD 7 Block1	0	0xEF02	1	---	F89	0	1
43618	0xE21	RTD 7 Block2	0	0xEF02	1	---	F89	0	1
43619	0xE22	RTD 7 Block3	0	0xEF02	1	---	F89	0	1
43620	0xE23	RTD 8 Block1	0	0xEF02	1	---	F89	0	1
43621	0xE24	RTD 8 Block2	0	0xEF02	1	---	F89	0	1
43622	0xE25	RTD 8 Block3	0	0xEF02	1	---	F89	0	1
43623	0xE26	RTD 9 Block1	0	0xEF02	1	---	F89	0	1
43624	0xE27	RTD 9 Block2	0	0xEF02	1	---	F89	0	1
43625	0xE28	RTD 9 Block3	0	0xEF02	1	---	F89	0	1
43626	0xE29	RTD 10 Block1	0	0xEF02	1	---	F89	0	1
43627	0xE2A	RTD 10 Block2	0	0xEF02	1	---	F89	0	1
43628	0xE2B	RTD 10 Block3	0	0xEF02	1	---	F89	0	1
43629	0xE2C	RTD 11 Block1	0	0xEF02	1	---	F89	0	1
43630	0xE2D	RTD 11 Block2	0	0xEF02	1	---	F89	0	1
43631	0xE2E	RTD 11 Block3	0	0xEF02	1	---	F89	0	1
43632	0xE2F	RTD 12 Block1	0	0xEF02	1	---	F89	0	1
43633	0xE30	RTD 12 Block2	0	0xEF02	1	---	F89	0	1
43634	0xE31	RTD 12 Block3	0	0xEF02	1	---	F89	0	1
CURRENT SENSING									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43658	0xE49	W1 SGnd CT Primary	1	600	1	A	F1	50	1
43659	0xE4A	W2 SGnd CT Primary	1	600	1	A	F1	50	1
43660	0xE4B	W1 Phase CT Primary	1	6000	1	A	F1	5	1
43661	0xE4C	W1 Phase CT Secondary	0	1	1	---	FC415	0	1
43662	0xE4D	W2 Phase CT Primary	1	6000	1	A	F1	5	1
43663	0xE4E	W2 Phase CT Secondary	0	1	1	---	FC415	0	1
43664	0xE4F	W1 Gnd CT Primary	1	6000	1	A	F1	5	1
43665	0xE50	W1 Gnd CT Secondary	0	1	1	---	FC415	0	1
43666	0xE51	W2 Gnd CT Primary	1	6000	1	A	F1	5	1
43667	0xE52	W2 Gnd CT Secondary	0	1	1	---	FC415	0	1
PROTECTION ELEMENT CT INPUTS									
43670	0xE55	Phase TOC 1 CT Input	0	1	1	---	FC418	0	1
43671	0xE56	Phase TOC 2 CT Input	0	1	1	---	FC418	0	1
43672	0xE57	Phase IOC 1 CT Input	0	1	1	---	FC418	0	1
43673	0xE58	Phase IOC 2 CT Input	0	1	1	---	FC418	0	1
43674	0xE59	Ground TOC 1 CT Input	0	1	1	---	FC418	0	1
43675	0xE5A	Ground TOC 2 CT Input	0	1	1	---	FC418	0	1
43676	0xE5B	Ground IOC 1 CT Input	0	1	1	---	FC418	0	1
43677	0xE5C	Ground IOC 2 CT Input	0	1	1	---	FC418	0	1
43678	0xE5D	Neutral TOC 1 CT Input	0	1	1	---	FC418	0	1
43679	0xE5E	Neutral TOC 2 CT Input	0	1	1	---	FC418	0	1
43680	0xE5F	Neutral IOC 1 CT Input	0	1	1	---	FC418	0	1
43681	0xE60	Neutral IOC 2 CT Input	0	1	1	---	FC418	0	1
43682	0xE61	Negative Sequence TOC 1 CT Input	0	1	1	---	FC418	0	1
43683	0xE62	Negative Sequence TOC 2 CT Input	0	1	1	---	FC418	0	1
43685	0xE64	Sensitive Ground TOC 1 CT Input	0	1	1	---	FC418	0	1
43686	0xE65	Sensitive Ground TOC 2 CT Input	0	1	1	---	FC418	0	1
43687	0xE66	Sensitive Ground IOC 1 CT Input	0	1	1	---	FC418	0	1
43688	0xE67	Sensitive Ground IOC 2 CT Input	0	1	1	---	FC418	0	1
43689	0xE68	Negative Sequence IOC 1 CT Input	0	1	1	---	FC418	0	1
43690	0xE69	Negative Sequence IOC 2 CT Input	0	1	1	---	FC418	0	1
NEGATIVE SEQUENCE TOC1									
43691	0xE6A	Neg Seq TOC1 Func	0	3	1	---	FC197	0	1
43692	0xE6B	Neg Seq TOC1 PkP	5	2000	1	x CT	F3	100	1
43693	0xE6C	Neg Seq TOC1 Curve	0	14	1	---	F36	0	1
43694	0xE6D	Neg Seq TOC1 TDM	5	5000	1	---	F3	100	1
43695	0xE6E	Neg Seq TOC1 Reset	0	1	1	---	F68	0	1
43696	0xE6F	Neg Seq TOC1 Relays	0	0x7F	1	---	FC198	0	1
NEGATIVE SEQUENCE TOC2									
43697	0xE70	Neg Seq TOC2 Func	0	3	1	---	FC197	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43698	0xE71	Neg Seq TOC2 PkP	5	2000	1	x CT	F3	100	1
43699	0xE72	Neg Seq TOC2 Curve	0	14	1	---	F36	0	1
43700	0xE73	Neg Seq TOC2 TDM	5	5000	1	---	F3	100	1
43701	0xE74	Neg Seg TOC2 Reset	0	1	1	---	F68	0	1
43702	0xE75	Neg Seq TOC2 Relays	0	0x7F	1	---	FC198	0	1
W2 BREAKER FAIL									
43712	0xE7F	Breaker Failure 2 Function	0	2	1	---	FC206	0	1
43713	0xE80	Breaker Failure 2 Delay 1	3	100	1	s	F3	10	1
43714	0xE81	Breaker Failure 2 Current	5	2000	1	x CT (W2)	F3	100	1
43715	0xE82	Breaker Failure 2 Delay 2	0	100	1	s	F3	0	1
43716	0xE83	Breaker Failure 2 Relays	0	0x7F	1	---	FC198	0	1
43717	0xE84	BF 2 EXT INITIATE	0	0xEF02	1	---	F89	0	1
SENSITIVE GROUND TOC2									
43727	0xE8E	Sensitive Ground Time OC 2 Function	0	3	1	---	FC197	0	1
43728	0xE8F	Sensitive Ground Time OC 2 Pickup	5	3000	1	x CT	F17A	1000	1
43729	0xE90	Sensitive Ground Time OC 2 Reset	0	14	1	---	F36	0	1
43730	0xE91	Sensitive Ground Time OC 2 Multiplier	5	5000	1	---	F3	100	1
43731	0xE92	Sensitive Ground Time OC 2 Reset	0	1	1	---	F68	0	1
FORCE VIRTUAL INPUTS									
43764	0xEB3	Force Virtual Input 1	0	1	1	---	FC103	0	1
43765	0xEB4	Force Virtual Input 2	0	1	1	---	FC103	0	1
43766	0xEB5	Force Virtual Input 3	0	1	1	---	FC103	0	1
43767	0xEB6	Force Virtual Input 4	0	1	1	---	FC103	0	1
43768	0xEB7	Force Virtual Input 5	0	1	1	---	FC103	0	1
43769	0xEB8	Force Virtual Input 6	0	1	1	---	FC103	0	1
43770	0xEB9	Force Virtual Input 7	0	1	1	---	FC103	0	1
43771	0xEBA	Force Virtual Input 8	0	1	1	---	FC103	0	1
43772	0xEBB	Force Virtual Input 9	0	1	1	---	FC103	0	1
43773	0xEBC	Force Virtual Input 10	0	1	1	---	FC103	0	1
43774	0xEBD	Force Virtual Input 11	0	1	1	---	FC103	0	1
43775	0xEBE	Force Virtual Input 12	0	1	1	---	FC103	0	1
43776	0xEBF	Force Virtual Input 13	0	1	1	---	FC103	0	1
43777	0xEC0	Force Virtual Input 14	0	1	1	---	FC103	0	1
43778	0xEC1	Force Virtual Input 15	0	1	1	---	FC103	0	1
43779	0xEC2	Force Virtual Input 16	0	1	1	---	FC103	0	1
43780	0xEC3	Force Virtual Input 17	0	1	1	---	FC103	0	1
43781	0xEC4	Force Virtual Input 18	0	1	1	---	FC103	0	1
43782	0xEC5	Force Virtual Input 19	0	1	1	---	FC103	0	1
43783	0xEC6	Force Virtual Input 20	0	1	1	---	FC103	0	1
43784	0xEC7	Force Virtual Input 21	0	1	1	---	FC103	0	1
43785	0xEC8	Force Virtual Input 22	0	1	1	---	FC103	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43786	0xEC9	Force Virtual Input 23	0	1	1	---	FC103	0	1
43787	0xECA	Force Virtual Input 24	0	1	1	---	FC103	0	1
43788	0xECB	Force Virtual Input 25	0	1	1	---	FC103	0	1
43789	0xECC	Force Virtual Input 26	0	1	1	---	FC103	0	1
43790	0xECD	Force Virtual Input 27	0	1	1	---	FC103	0	1
43791	0xECE	Force Virtual Input 28	0	1	1	---	FC103	0	1
43792	0xECF	Force Virtual Input 29	0	1	1	---	FC103	0	1
43793	0xED0	Force Virtual Input 30	0	1	1	---	FC103	0	1
43794	0xED1	Force Virtual Input 31	0	1	1	---	FC103	0	1
43795	0xED2	Force Virtual Input 32	0	1	1	---	FC103	0	1
DNP OVER ETHERNET PORT									
43836	0xEFB	DNP/Ethernet Channel 1 Port	0	2	1	---	F87	0	1
43837	0xEFC	DNP/Ethernet Channel 2 Port	0	2	1	---	F87	0	1
IEC60870-5-104 PROTOCOL									
43838	0xEFD	IEC 60870-5-104 Function	0	1	1	---	FC126	0	1
43839	0xEFE	IEC TCP Port	1	65535	1	---	F1	2404	1
43840	0xEFF	IEC Common Address of ASDU	0	65535	1	---	F1	0	1
43841	0xF00	IEC Cyclic Data Period	0	65535	1	s	F1	60	1
43842	0xF01	IEC TCP Connection Timeout	10	300	1	s	F1	120	1
43843	0xF02	Object Information Address Binary	1	16777215	1	---	F9	1000	2
43845	0xF04	Object Information Address Analog	1	16777215	1	---	F9	2000	2
43847	0xF06	Object Information Address Counters	1	16777215	1	---	F9	3000	2
43849	0xF08	Object Information Address Command	1	16777215	1	---	F9	4000	2
DNP / IEC60870-5-104 SHARED SETTINGS									
43851	0xF0A	DNP Address	0	65519	1	---	F1	0	1
43852	0xF0B	DNP Client Address 1	0	0xFFFFFFFF	1	---	FC150	0	2
43854	0xF0D	DNP Client Address 2	0	0xFFFFFFFF	1	---	FC150	0	2
43856	0xF0F	DNP Client Address 3	0	0xFFFFFFFF	1	---	FC150	0	2
43858	0xF11	DNP Client Address 4	0	0xFFFFFFFF	1	---	FC150	0	2
43860	0xF13	DNP Client Address 5	0	0xFFFFFFFF	1	---	FC150	0	2
43862	0xF15	DNP TCP/UDP Port Number	0	65535	1	---	F1	20000	1
43863	0xF16	DNP Unsolicited Response Function	0	1	1	---	FC126	0	1
43864	0xF17	DNP Unsolicited Response Timeout	0	60	1	s	F1	5	1
43865	0xF18	DNP Unsolicited Response Maximum Retries	1	255	1	---	F1	10	1
43866	0xF19	DNP Unsolicited Response Destination Address	0	65519	1	---	F1	1	1
43867	0xF1A	DNP Time Sync IIN Period	1	10080	1	min	F1	1440	1
43868	0xF1B	DNP Message Fragment Size	30	2048	1	---	F1	240	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43869	0xF1C	DNP Object 1 Default Variation	1	2	1	---	F1	2	1
43870	0xF1D	DNP Object 2 Default Variation	1	2	1	---	F1	2	1
43871	0xF1E	DNP Object 20 Default Variation	1	6	1	---	F78	1	1
43872	0xF1F	DNP Object 21 Default Variation	1	10	1	---	F79	1	1
43873	0xF20	DNP Object 22 Default Variation	1	6	1	---	F80	1	1
43874	0xF21	DNP Object 23 Default Variation	1	6	1	---	F81	1	1
43875	0xF22	DNP Object 30 Default Variation	1	4	1	---	F82	1	1
43876	0xF23	DNP Object 32 Default Variation	1	4	1	---	F83	1	1
43877	0xF24	DNP TCP Connection Timeout	10	300	1	s	F1	120	1
DNP / IEC60870-5-103 / IEC60870-5-104 BINARY INPUTS									
43878	0xF25	Binary Input Point 0 Entry	0	0xFFFF	1	---	FC134B	0	1
43879	0xF26	Binary Input Point 1 Entry	0	0xFFFF	1	---	FC134B	0	1
43880	0xF27	Binary Input Point 2 Entry	0	0xFFFF	1	---	FC134B	0	1
43881	0xF28	Binary Input Point 3 Entry	0	0xFFFF	1	---	FC134B	0	1
43882	0xF29	Binary Input Point 4 Entry	0	0xFFFF	1	---	FC134B	0	1
43883	0xF2A	Binary Input Point 5 Entry	0	0xFFFF	1	---	FC134B	0	1
43884	0xF2B	Binary Input Point 6 Entry	0	0xFFFF	1	---	FC134B	0	1
43885	0xF2C	Binary Input Point 7 Entry	0	0xFFFF	1	---	FC134B	0	1
43886	0xF2D	Binary Input Point 8 Entry	0	0xFFFF	1	---	FC134B	0	1
43887	0xF2E	Binary Input Point 9 Entry	0	0xFFFF	1	---	FC134B	0	1
43888	0xF2F	Binary Input Point 10 Entry	0	0xFFFF	1	---	FC134B	0	1
43889	0xF30	Binary Input Point 11 Entry	0	0xFFFF	1	---	FC134B	0	1
43890	0xF31	Binary Input Point 12 Entry	0	0xFFFF	1	---	FC134B	0	1
43891	0xF32	Binary Input Point 13 Entry	0	0xFFFF	1	---	FC134B	0	1
43892	0xF33	Binary Input Point 14 Entry	0	0xFFFF	1	---	FC134B	0	1
43893	0xF34	Binary Input Point 15 Entry	0	0xFFFF	1	---	FC134B	0	1
43894	0xF35	Binary Input Point 16 Entry	0	0xFFFF	1	---	FC134B	0	1
43895	0xF36	Binary Input Point 17 Entry	0	0xFFFF	1	---	FC134B	0	1
43896	0xF37	Binary Input Point 18 Entry	0	0xFFFF	1	---	FC134B	0	1
43897	0xF38	Binary Input Point 19 Entry	0	0xFFFF	1	---	FC134B	0	1
43898	0xF39	Binary Input Point 20 Entry	0	0xFFFF	1	---	FC134B	0	1
43899	0xF3A	Binary Input Point 21 Entry	0	0xFFFF	1	---	FC134B	0	1
43900	0xF3B	Binary Input Point 22 Entry	0	0xFFFF	1	---	FC134B	0	1
43901	0xF3C	Binary Input Point 23 Entry	0	0xFFFF	1	---	FC134B	0	1
43902	0xF3D	Binary Input Point 24 Entry	0	0xFFFF	1	---	FC134B	0	1
43903	0xF3E	Binary Input Point 25 Entry	0	0xFFFF	1	---	FC134B	0	1
43904	0xF3F	Binary Input Point 26 Entry	0	0xFFFF	1	---	FC134B	0	1
43905	0xF40	Binary Input Point 27 Entry	0	0xFFFF	1	---	FC134B	0	1
43906	0xF41	Binary Input Point 28 Entry	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43907	0xF42	Binary Input Point 29 Entry	0	0xFFFF	1	---	FC134B	0	1
43908	0xF43	Binary Input Point 30 Entry	0	0xFFFF	1	---	FC134B	0	1
43909	0xF44	Binary Input Point 31 Entry	0	0xFFFF	1	---	FC134B	0	1
43910	0xF45	Binary Input Point 32 Entry	0	0xFFFF	1	---	FC134B	0	1
43911	0xF46	Binary Input Point 33 Entry	0	0xFFFF	1	---	FC134B	0	1
43912	0xF47	Binary Input Point 34 Entry	0	0xFFFF	1	---	FC134B	0	1
43913	0xF48	Binary Input Point 35 Entry	0	0xFFFF	1	---	FC134B	0	1
43914	0xF49	Binary Input Point 36 Entry	0	0xFFFF	1	---	FC134B	0	1
43915	0xF4A	Binary Input Point 37 Entry	0	0xFFFF	1	---	FC134B	0	1
43916	0xF4B	Binary Input Point 38 Entry	0	0xFFFF	1	---	FC134B	0	1
43917	0xF4C	Binary Input Point 39 Entry	0	0xFFFF	1	---	FC134B	0	1
43918	0xF4D	Binary Input Point 40 Entry	0	0xFFFF	1	---	FC134B	0	1
43919	0xF4E	Binary Input Point 41 Entry	0	0xFFFF	1	---	FC134B	0	1
43920	0xF4F	Binary Input Point 42 Entry	0	0xFFFF	1	---	FC134B	0	1
43921	0xF50	Binary Input Point 43 Entry	0	0xFFFF	1	---	FC134B	0	1
43922	0xF51	Binary Input Point 44 Entry	0	0xFFFF	1	---	FC134B	0	1
43923	0xF52	Binary Input Point 45 Entry	0	0xFFFF	1	---	FC134B	0	1
43924	0xF53	Binary Input Point 46 Entry	0	0xFFFF	1	---	FC134B	0	1
43925	0xF54	Binary Input Point 47 Entry	0	0xFFFF	1	---	FC134B	0	1
43926	0xF55	Binary Input Point 48 Entry	0	0xFFFF	1	---	FC134B	0	1
43927	0xF56	Binary Input Point 49 Entry	0	0xFFFF	1	---	FC134B	0	1
43928	0xF57	Binary Input Point 50 Entry	0	0xFFFF	1	---	FC134B	0	1
43929	0xF58	Binary Input Point 51 Entry	0	0xFFFF	1	---	FC134B	0	1
43930	0xF59	Binary Input Point 52 Entry	0	0xFFFF	1	---	FC134B	0	1
43931	0xF5A	Binary Input Point 53 Entry	0	0xFFFF	1	---	FC134B	0	1
43932	0xF5B	Binary Input Point 54 Entry	0	0xFFFF	1	---	FC134B	0	1
43933	0xF5C	Binary Input Point 55 Entry	0	0xFFFF	1	---	FC134B	0	1
43934	0xF5D	Binary Input Point 56 Entry	0	0xFFFF	1	---	FC134B	0	1
43935	0xF5E	Binary Input Point 57 Entry	0	0xFFFF	1	---	FC134B	0	1
43936	0xF5F	Binary Input Point 58 Entry	0	0xFFFF	1	---	FC134B	0	1
43937	0xF60	Binary Input Point 59 Entry	0	0xFFFF	1	---	FC134B	0	1
43938	0xF61	Binary Input Point 60 Entry	0	0xFFFF	1	---	FC134B	0	1
43939	0xF62	Binary Input Point 61 Entry	0	0xFFFF	1	---	FC134B	0	1
43940	0xF63	Binary Input Point 62 Entry	0	0xFFFF	1	---	FC134B	0	1
43941	0xF64	Binary Input Point 63 Entry	0	0xFFFF	1	---	FC134B	0	1
DNP / IEC60870-5-104 BINARY OUTPUTS									
44070	0xFE5	Binary Output Point 0 ON	0	40	1	---	F86	0	1
44071	0xFE6	Binary Output Point 0 OFF	0	40	1	---	F86	0	1
44072	0xFE7	Binary Output Point 1 ON	0	40	1	---	F86	0	1
44073	0xFE8	Binary Output Point 1 OFF	0	40	1	---	F86	0	1
44074	0xFE9	Binary Output Point 2 ON	0	40	1	---	F86	0	1
44075	0xFEA	Binary Output Point 2 OFF	0	40	1	---	F86	0	1
44076	0xFEB	Binary Output Point 3 ON	0	40	1	---	F86	0	1
44077	0xFEC	Binary Output Point 3 OFF	0	40	1	---	F86	0	1
44078	0xFED	Binary Output Point 4 ON	0	40	1	---	F86	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44079	0xFEE	Binary Output Point 4 OFF	0	40	1	---	F86	0	1
44080	0xFEF	Binary Output Point 5 ON	0	40	1	---	F86	0	1
44081	0xFF0	Binary Output Point 5 OFF	0	40	1	---	F86	0	1
44082	0xFF1	Binary Output Point 6 ON	0	40	1	---	F86	0	1
44083	0xFF2	Binary Output Point 6 OFF	0	40	1	---	F86	0	1
44084	0xFF3	Binary Output Point 7 ON	0	40	1	---	F86	0	1
44085	0xFF4	Binary Output Point 7 OFF	0	40	1	---	F86	0	1
44086	0xFF5	Binary Output Point 8 ON	0	40	1	---	F86	0	1
44087	0xFF6	Binary Output Point 8 OFF	0	40	1	---	F86	0	1
44088	0xFF7	Binary Output Point 9 ON	0	40	1	---	F86	0	1
44089	0xFF8	Binary Output Point 9 OFF	0	40	1	---	F86	0	1
44090	0xFF9	Binary Output Point 10 ON	0	40	1	---	F86	0	1
44091	0xFFA	Binary Output Point 10 OFF	0	40	1	---	F86	0	1
44092	0xFFB	Binary Output Point 11 ON	0	40	1	---	F86	0	1
44093	0xFFC	Binary Output Point 11 OFF	0	40	1	---	F86	0	1
44094	0xFFD	Binary Output Point 12 ON	0	40	1	---	F86	0	1
44095	0xFFE	Binary Output Point 12 OFF	0	40	1	---	F86	0	1
44096	0xFFF	Binary Output Point 13 ON	0	40	1	---	F86	0	1
44097	0x1000	Binary Output Point 13 OFF	0	40	1	---	F86	0	1
44098	0x1001	Binary Output Point 14 ON	0	40	1	---	F86	0	1
44099	0x1002	Binary Output Point 14 OFF	0	40	1	---	F86	0	1
44100	0x1003	Binary Output Point 15 ON	0	40	1	---	F86	0	1
44101	0x1004	Binary Output Point 15 OFF	0	40	1	---	F86	0	1
DNP / IEC60870-5-104 ANALOG INPUTS									
43942	0xF65	Analog Input Point 0 Entry	0	251	1	---	F88	0	1
43943	0xF66	Analog Input Point 0 Scale Factor	1	9	1	---	F85	4	1
43944	0xF67	Analog Input Point 0 Deadband	0	100000000	1	---	F9	30000	2
43946	0xF69	Analog Input Point 1 Entry	0	251	1	---	F88	0	1
43947	0xF6A	Analog Input Point 1 Scale Factor	1	9	1	---	F85	4	1
43948	0xF6B	Analog Input Point 1 Deadband	0	100000000	1	---	F9	30000	2
43950	0xF6D	Analog Input Point 2 Entry	0	251	1	---	F88	0	1
43951	0xF6E	Analog Input Point 2 Scale Factor	1	9	1	---	F85	4	1
43952	0xF6F	Analog Input Point 2 Deadband	0	100000000	1	---	F9	30000	2
43954	0xF71	Analog Input Point 3 Entry	0	251	1	---	F88	0	1
43955	0xF72	Analog Input Point 3 Scale Factor	1	9	1	---	F85	4	1
43956	0xF73	Analog Input Point 3 Deadband	0	100000000	1	---	F9	30000	2
43958	0xF75	Analog Input Point 4 Entry	0	251	1	---	F88	0	1
43959	0xF76	Analog Input Point 4 Scale Factor	1	9	1	---	F85	4	1
43960	0xF77	Analog Input Point 4 Deadband	0	100000000	1	---	F9	30000	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43962	0xF79	Analog Input Point 5 Entry	0	251	1	---	F88	0	1
43963	0xF7A	Analog Input Point 5 Scale Factor	1	9	1	---	F85	4	1
43964	0xF7B	Analog Input Point 5 Deadband	0	100000000	1	---	F9	30000	2
43966	0xF7D	Analog Input Point 6 Entry	0	251	1	---	F88	0	1
43967	0xF7E	Analog Input Point 6 Scale Factor	1	9	1	---	F85	4	1
43968	0xF7F	Analog Input Point 6 Deadband	0	100000000	1	---	F9	30000	2
43970	0xF81	Analog Input Point 7 Entry	0	251	1	---	F88	0	1
43971	0xF82	Analog Input Point 7 Scale Factor	1	9	1	---	F85	4	1
43972	0xF83	Analog Input Point 7 Deadband	0	100000000	1	---	F9	30000	2
43974	0xF85	Analog Input Point 8 Entry	0	251	1	---	F88	0	1
43975	0xF86	Analog Input Point 8 Scale Factor	1	9	1	---	F85	4	1
43976	0xF87	Analog Input Point 8 Deadband	0	100000000	1	---	F9	30000	2
43978	0xF89	Analog Input Point 9 Entry	0	251	1	---	F88	0	1
43979	0xF8A	Analog Input Point 9 Scale Factor	1	9	1	---	F85	4	1
43980	0xF8B	Analog Input Point 9 Deadband	0	100000000	1	---	F9	30000	2
43982	0xF8D	Analog Input Point 10 Entry	0	251	1	---	F88	0	1
43983	0xF8E	Analog Input Point 10 Scale Factor	1	9	1	---	F85	4	1
43984	0xF8F	Analog Input Point 10 Deadband	0	100000000	1	---	F9	30000	2
43986	0xF91	Analog Input Point 11 Entry	0	251	1	---	F88	0	1
43987	0xF92	Analog Input Point 11 Scale Factor	1	9	1	---	F85	4	1
43988	0xF93	Analog Input Point 11 Deadband	0	100000000	1	---	F9	30000	2
43990	0xF95	Analog Input Point 12 Entry	0	251	1	---	F88	0	1
43991	0xF96	Analog Input Point 12 Scale Factor	1	9	1	---	F85	4	1
43992	0xF97	Analog Input Point 12 Deadband	0	100000000	1	---	F9	30000	2
43994	0xF99	Analog Input Point 13 Entry	0	251	1	---	F88	0	1
43995	0xF9A	Analog Input Point 13 Scale Factor	1	9	1	---	F85	4	1
43996	0xF9B	Analog Input Point 13 Deadband	0	100000000	1	---	F9	30000	2
43998	0xF9D	Analog Input Point 14 Entry	0	251	1	---	F88	0	1
43999	0xF9E	Analog Input Point 14 Scale Factor	1	9	1	---	F85	4	1
44000	0xF9F	Analog Input Point 14 Deadband	0	100000000	1	---	F9	30000	2
44002	0xFA1	Analog Input Point 15 Entry	0	251	1	---	F88	0	1
44003	0xFA2	Analog Input Point 15 Scale Factor	1	9	1	---	F85	4	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44004	0xFA3	Analog Input Point 15 Deadband	0	100000000	1	---	F9	30000	2
44006	0xFA5	Analog Input Point 16 Entry	0	251	1	---	F88	0	1
44007	0xFA6	Analog Input Point 16 Scale Factor	1	9	1	---	F85	4	1
44008	0xFA7	Analog Input Point 16 Deadband	0	100000000	1	---	F9	30000	2
44010	0xFA9	Analog Input Point 17 Entry	0	251	1	---	F88	0	1
44011	0xFAA	Analog Input Point 17 Scale Factor	1	9	1	---	F85	4	1
44012	0xFAB	Analog Input Point 17 Deadband	0	100000000	1	---	F9	30000	2
44014	0xFAD	Analog Input Point 18 Entry	0	251	1	---	F88	0	1
44015	0xFAE	Analog Input Point 18 Scale Factor	1	9	1	---	F85	4	1
44016	0xFAF	Analog Input Point 18 Deadband	0	100000000	1	---	F9	30000	2
44018	0xFB1	Analog Input Point 19 Entry	0	251	1	---	F88	0	1
44019	0xFB2	Analog Input Point 19 Scale Factor	1	9	1	---	F85	4	1
44020	0xFB3	Analog Input Point 19 Deadband	0	100000000	1	---	F9	30000	2
44022	0xFB5	Analog Input Point 20 Entry	0	251	1	---	F88	0	1
44023	0xFB6	Analog Input Point 20 Scale Factor	1	9	1	---	F85	4	1
44024	0xFB7	Analog Input Point 20 Deadband	0	100000000	1	---	F9	30000	2
44026	0xFB9	Analog Input Point 21 Entry	0	251	1	---	F88	0	1
44027	0xFBA	Analog Input Point 21 Scale Factor	1	9	1	---	F85	4	1
44028	0xFBB	Analog Input Point 21 Deadband	0	100000000	1	---	F9	30000	2
44030	0xFBD	Analog Input Point 22 Entry	0	251	1	---	F88	0	1
44031	0xFBE	Analog Input Point 22 Scale Factor	1	9	1	---	F85	4	1
44032	0xFBF	Analog Input Point 22 Deadband	0	100000000	1	---	F9	30000	2
44034	0xFC1	Analog Input Point 23 Entry	0	251	1	---	F88	0	1
44035	0xFC2	Analog Input Point 23 Scale Factor	1	9	1	---	F85	4	1
44036	0xFC3	Analog Input Point 23 Deadband	0	100000000	1	---	F9	30000	2
44038	0xFC5	Analog Input Point 24 Entry	0	251	1	---	F88	0	1
44039	0xFC6	Analog Input Point 24 Scale Factor	1	9	1	---	F85	4	1
44040	0xFC7	Analog Input Point 24 Deadband	0	100000000	1	---	F9	30000	2
44042	0xFC9	Analog Input Point 25 Entry	0	251	1	---	F88	0	1
44043	0xFCA	Analog Input Point 25 Scale Factor	1	9	1	---	F85	4	1
44044	0xFCB	Analog Input Point 25 Deadband	0	100000000	1	---	F9	30000	2
44046	0xFCD	Analog Input Point 26 Entry	0	251	1	---	F88	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44047	0xFCE	Analog Input Point 26 Scale Factor	1	9	1	---	F85	4	1
44048	0xFCF	Analog Input Point 26 Deadband	0	100000000	1	---	F9	30000	2
44050	0xFD1	Analog Input Point 27 Entry	0	251	1	---	F88	0	1
44051	0xFD2	Analog Input Point 27 Scale Factor	1	9	1	---	F85	4	1
44052	0xFD3	Analog Input Point 27 Deadband	0	100000000	1	---	F9	30000	2
44054	0xFD5	Analog Input Point 28 Entry	0	251	1	---	F88	0	1
44055	0xFD6	Analog Input Point 28 Scale Factor	1	9	1	---	F85	4	1
44056	0xFD7	Analog Input Point 28 Deadband	0	100000000	1	---	F9	30000	2
44058	0xFD9	Analog Input Point 29 Entry	0	251	1	---	F88	0	1
44059	0xFDA	Analog Input Point 29 Scale Factor	1	9	1	---	F85	4	1
44060	0xFDB	Analog Input Point 29 Deadband	0	100000000	1	---	F9	30000	2
44062	0xFDD	Analog Input Point 30 Entry	0	251	1	---	F88	0	1
44063	0xFDE	Analog Input Point 30 Scale Factor	1	9	1	---	F85	4	1
44064	0xFDF	Analog Input Point 30 Deadband	0	100000000	1	---	F9	30000	2
44066	0xFE1	Analog Input Point 31 Entry	0	251	1	---	F88	0	1
44067	0xFE2	Analog Input Point 31 Scale Factor	1	9	1	---	F85	4	1
44068	0xFE3	Analog Input Point 31 Deadband	0	100000000	1	---	F9	30000	2
44102	0x1005	Fault Report Mapping Enable	0	1	1	---	FC126	0	1
AUTORECLOSE									
44137	0x1028	Negative Sequence TOC Initiate	0	1	1	---	FC103	0	1
THERMAL MODEL									
44211	0x1072	Thermal Overload Function	0	3	1	---	FC197	0	1
44212	0x1073	Heat Time Constant	30	6000	1	min	F2	60	1
44213	0x1074	Cool Time Constant	100	600	1	---	F3	200	1
44214	0x1075	Pickup Level	5	2000	1	x CT	F3	100	1
44215	0x1076	Alarm Level	700	1100	1	%	F2	800	1
44216	0x1077	Output Relays 3-7	0	0x7F	1	---	FC198	0	1
IEC60870-5-103 BINARY INPUT POINTS									
44221	0x107C	Binary In Point 0 Entry Function Type	0	255	1	---	F1	0	1
44222	0x107D	Binary In Point 0 Entry Information Number	0	255	1	---	F1	0	1
44223	0x107E	Binary In Point 1 Entry Function Type	0	255	1	---	F1	0	1
44224	0x107F	Binary In Point 1 Entry Information Number	0	255	1	---	F1	0	1
44225	0x1080	Binary In Point 2 Entry Function Type	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44226	0x1081	Binary In Point 2 Entry Information Number	0	255	1	---	F1	0	1
44227	0x1082	Binary In Point 3 Entry Function Type	0	255	1	---	F1	0	1
44228	0x1083	Binary In Point 3 Entry Information Number	0	255	1	---	F1	0	1
44229	0x1084	Binary In Point 4 Entry Function Type	0	255	1	---	F1	0	1
44230	0x1085	Binary In Point 4 Entry Information Number	0	255	1	---	F1	0	1
44231	0x1086	Binary In Point 5 Entry Function Type	0	255	1	---	F1	0	1
44232	0x1087	Binary In Point 5 Entry Information Number	0	255	1	---	F1	0	1
44233	0x1088	Binary In Point 6 Entry Function Type	0	255	1	---	F1	0	1
44234	0x1089	Binary In Point 6 Entry Information Number	0	255	1	---	F1	0	1
44235	0x108A	Binary In Point 7 Entry Function Type	0	255	1	---	F1	0	1
44236	0x108B	Binary In Point 7 Entry Information Number	0	255	1	---	F1	0	1
44237	0x108C	Binary In Point 8 Entry Function Type	0	255	1	---	F1	0	1
44238	0x108D	Binary In Point 8 Entry Information Number	0	255	1	---	F1	0	1
44239	0x108E	Binary In Point 9 Entry Function Type	0	255	1	---	F1	0	1
44240	0x108F	Binary In Point 9 Entry Information Number	0	255	1	---	F1	0	1
44241	0x1090	Binary In Point 10 Entry Function Type	0	255	1	---	F1	0	1
44242	0x1091	Binary In Point 10 Entry Information Number	0	255	1	---	F1	0	1
44243	0x1092	Binary In Point 11 Entry Function Type	0	255	1	---	F1	0	1
44244	0x1093	Binary In Point 11 Entry Information Number	0	255	1	---	F1	0	1
44245	0x1094	Binary In Point 12 Entry Function Type	0	255	1	---	F1	0	1
44246	0x1095	Binary In Point 12 Entry Information Number	0	255	1	---	F1	0	1
44247	0x1096	Binary In Point 13 Entry Function Type	0	255	1	---	F1	0	1
44248	0x1097	Binary In Point 13 Entry Information Number	0	255	1	---	F1	0	1
44249	0x1098	Binary In Point 14 Entry Function Type	0	255	1	---	F1	0	1
44250	0x1099	Binary In Point 14 Entry Information Number	0	255	1	---	F1	0	1
44251	0x109A	Binary In Point 15 Entry Function Type	0	255	1	---	F1	0	1
44252	0x109B	Binary In Point 15 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44253	0x109C	Binary In Point 16 Entry Function Type	0	255	1	---	F1	0	1
44254	0x109D	Binary In Point 16 Entry Information Number	0	255	1	---	F1	0	1
44255	0x109E	Binary In Point 17 Entry Function Type	0	255	1	---	F1	0	1
44256	0x109F	Binary In Point 17 Entry Information Number	0	255	1	---	F1	0	1
44257	0x10A0	Binary In Point 18 Entry Function Type	0	255	1	---	F1	0	1
44258	0x10A1	Binary In Point 18 Entry Information Number	0	255	1	---	F1	0	1
44259	0x10A2	Binary In Point 19 Entry Function Type	0	255	1	---	F1	0	1
44260	0x10A3	Binary In Point 19 Entry Information Number	0	255	1	---	F1	0	1
44261	0x10A4	Binary In Point 20 Entry Function Type	0	255	1	---	F1	0	1
44262	0x10A5	Binary In Point 20 Entry Information Number	0	255	1	---	F1	0	1
44263	0x10A6	Binary In Point 21 Entry Function Type	0	255	1	---	F1	0	1
44264	0x10A7	Binary In Point 21 Entry Information Number	0	255	1	---	F1	0	1
44265	0x10A8	Binary In Point 22 Entry Function Type	0	255	1	---	F1	0	1
44266	0x10A9	Binary In Point 22 Entry Information Number	0	255	1	---	F1	0	1
44267	0x10AA	Binary In Point 23 Entry Function Type	0	255	1	---	F1	0	1
44268	0x10AB	Binary In Point 23 Entry Information Number	0	255	1	---	F1	0	1
44269	0x10AC	Binary In Point 24 Entry Function Type	0	255	1	---	F1	0	1
44270	0x10AD	Binary In Point 24 Entry Information Number	0	255	1	---	F1	0	1
44271	0x10AE	Binary In Point 25 Entry Function Type	0	255	1	---	F1	0	1
44272	0x10AF	Binary In Point 25 Entry Information Number	0	255	1	---	F1	0	1
44273	0x10B0	Binary In Point 26 Entry Function Type	0	255	1	---	F1	0	1
44274	0x10B1	Binary In Point 26 Entry Information Number	0	255	1	---	F1	0	1
44275	0x10B2	Binary In Point 27 Entry Function Type	0	255	1	---	F1	0	1
44276	0x10B3	Binary In Point 27 Entry Information Number	0	255	1	---	F1	0	1
44277	0x10B4	Binary In Point 28 Entry Function Type	0	255	1	---	F1	0	1
44278	0x10B5	Binary In Point 28 Entry Information Number	0	255	1	---	F1	0	1
44279	0x10B6	Binary In Point 29 Entry Function Type	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44280	0x10B7	Binary In Point 29 Entry Information Number	0	255	1	---	F1	0	1
44281	0x10B8	Binary In Point 30 Entry Function Type	0	255	1	---	F1	0	1
44282	0x10B9	Binary In Point 30 Entry Information Number	0	255	1	---	F1	0	1
44283	0x10BA	Binary In Point 31 Entry Function Type	0	255	1	---	F1	0	1
44284	0x10BB	Binary In Point 31 Entry Information Number	0	255	1	---	F1	0	1
44285	0x10BC	Binary In Point 32 Entry Function Type	0	255	1	---	F1	0	1
44286	0x10BD	Binary In Point 32 Entry Information Number	0	255	1	---	F1	0	1
44287	0x10BE	Binary In Point 33 Entry Function Type	0	255	1	---	F1	0	1
44288	0x10BF	Binary In Point 33 Entry Information Number	0	255	1	---	F1	0	1
44289	0x10C0	Binary In Point 34 Entry Function Type	0	255	1	---	F1	0	1
44290	0x10C1	Binary In Point 34 Entry Information Number	0	255	1	---	F1	0	1
44291	0x10C2	Binary In Point 35 Entry Function Type	0	255	1	---	F1	0	1
44292	0x10C3	Binary In Point 35 Entry Information Number	0	255	1	---	F1	0	1
44293	0x10C4	Binary In Point 36 Entry Function Type	0	255	1	---	F1	0	1
44294	0x10C5	Binary In Point 36 Entry Information Number	0	255	1	---	F1	0	1
44295	0x10C6	Binary In Point 37 Entry Function Type	0	255	1	---	F1	0	1
44296	0x10C7	Binary In Point 37 Entry Information Number	0	255	1	---	F1	0	1
44297	0x10C8	Binary In Point 38 Entry Function Type	0	255	1	---	F1	0	1
44298	0x10C9	Binary In Point 38 Entry Information Number	0	255	1	---	F1	0	1
44299	0x10CA	Binary In Point 39 Entry Function Type	0	255	1	---	F1	0	1
44300	0x10CB	Binary In Point 39 Entry Information Number	0	255	1	---	F1	0	1
44301	0x10CC	Binary In Point 40 Entry Function Type	0	255	1	---	F1	0	1
44302	0x10CD	Binary In Point 40 Entry Information Number	0	255	1	---	F1	0	1
44303	0x10CE	Binary In Point 41 Entry Function Type	0	255	1	---	F1	0	1
44304	0x10CF	Binary In Point 41 Entry Information Number	0	255	1	---	F1	0	1
44305	0x10D0	Binary In Point 42 Entry Function Type	0	255	1	---	F1	0	1
44306	0x10D1	Binary In Point 42 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44307	0x10D2	Binary In Point 43 Entry Function Type	0	255	1	---	F1	0	1
44308	0x10D3	Binary In Point 43 Entry Information Number	0	255	1	---	F1	0	1
44309	0x10D4	Binary In Point 44 Entry Function Type	0	255	1	---	F1	0	1
44310	0x10D5	Binary In Point 44 Entry Information Number	0	255	1	---	F1	0	1
44311	0x10D6	Binary In Point 45 Entry Function Type	0	255	1	---	F1	0	1
44312	0x10D7	Binary In Point 45 Entry Information Number	0	255	1	---	F1	0	1
44313	0x10D8	Binary In Point 46 Entry Function Type	0	255	1	---	F1	0	1
44314	0x10D9	Binary In Point 46 Entry Information Number	0	255	1	---	F1	0	1
44315	0x10DA	Binary In Point 47 Entry Function Type	0	255	1	---	F1	0	1
44316	0x10DB	Binary In Point 47 Entry Information Number	0	255	1	---	F1	0	1
44317	0x10DC	Binary In Point 48 Entry Function Type	0	255	1	---	F1	0	1
44318	0x10DD	Binary In Point 48 Entry Information Number	0	255	1	---	F1	0	1
44319	0x10DE	Binary In Point 49 Entry Function Type	0	255	1	---	F1	0	1
44320	0x10DF	Binary In Point 49 Entry Information Number	0	255	1	---	F1	0	1
44321	0x10E0	Binary In Point 50 Entry Function Type	0	255	1	---	F1	0	1
44322	0x10E1	Binary In Point 50 Entry Information Number	0	255	1	---	F1	0	1
44323	0x10E2	Binary In Point 51 Entry Function Type	0	255	1	---	F1	0	1
44324	0x10E3	Binary In Point 51 Entry Information Number	0	255	1	---	F1	0	1
44325	0x10E4	Binary In Point 52 Entry Function Type	0	255	1	---	F1	0	1
44326	0x10E5	Binary In Point 52 Entry Information Number	0	255	1	---	F1	0	1
44327	0x10E6	Binary In Point 53 Entry Function Type	0	255	1	---	F1	0	1
44328	0x10E7	Binary In Point 53 Entry Information Number	0	255	1	---	F1	0	1
44329	0x10E8	Binary In Point 54 Entry Function Type	0	255	1	---	F1	0	1
44330	0x10E9	Binary In Point 54 Entry Information Number	0	255	1	---	F1	0	1
44331	0x10EA	Binary In Point 55 Entry Function Type	0	255	1	---	F1	0	1
44332	0x10EB	Binary In Point 55 Entry Information Number	0	255	1	---	F1	0	1
44333	0x10EC	Binary In Point 56 Entry Function Type	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44334	0x10ED	Binary In Point 56 Entry Information Number	0	255	1	---	F1	0	1
44335	0x10EE	Binary In Point 57 Entry Function Type	0	255	1	---	F1	0	1
44336	0x10EF	Binary In Point 57 Entry Information Number	0	255	1	---	F1	0	1
44337	0x10F0	Binary In Point 58 Entry Function Type	0	255	1	---	F1	0	1
44338	0x10F1	Binary In Point 58 Entry Information Number	0	255	1	---	F1	0	1
44339	0x10F2	Binary In Point 59 Entry Function Type	0	255	1	---	F1	0	1
44340	0x10F3	Binary In Point 59 Entry Information Number	0	255	1	---	F1	0	1
44341	0x10F4	Binary In Point 60 Entry Function Type	0	255	1	---	F1	0	1
44342	0x10F5	Binary In Point 60 Entry Information Number	0	255	1	---	F1	0	1
44343	0x10F6	Binary In Point 61 Entry Function Type	0	255	1	---	F1	0	1
44344	0x10F7	Binary In Point 61 Entry Information Number	0	255	1	---	F1	0	1
44345	0x10F8	Binary In Point 62 Entry Function Type	0	255	1	---	F1	0	1
44346	0x10F9	Binary In Point 62 Entry Information Number	0	255	1	---	F1	0	1
44347	0x10FA	Binary In Point 63 Entry Function Type	0	255	1	---	F1	0	1
44348	0x10FB	Binary In Point 63 Entry Information Number	0	255	1	---	F1	0	1
DNP / IEC60870-5-103 BINARY OUTPUT POINTS									
44349	0x10FC	Binary Out Point 0 Entry Function Type	0	255	1	---	F1	0	1
44350	0x10FD	Binary Out Point 0 Entry Information Number	0	255	1	---	F1	0	1
44351	0x10FE	Binary Out Point 1 Entry Function Type	0	255	1	---	F1	0	1
44352	0x10FF	Binary Out Point 1 Entry Information Number	0	255	1	---	F1	0	1
44353	0x1100	Binary Out Point 2 Entry Function Type	0	255	1	---	F1	0	1
44354	0x1101	Binary Out Point 2 Entry Information Number	0	255	1	---	F1	0	1
44355	0x1102	Binary Out Point 3 Entry Function Type	0	255	1	---	F1	0	1
44356	0x1103	Binary Out Point 3 Entry Information Number	0	255	1	---	F1	0	1
44357	0x1104	Binary Out Point 4 Entry Function Type	0	255	1	---	F1	0	1
44358	0x1105	Binary Out Point 4 Entry Information Number	0	255	1	---	F1	0	1
44359	0x1106	Binary Out Point 5 Entry Function Type	0	255	1	---	F1	0	1
44360	0x1107	Binary Out Point 5 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44361	0x1108	Binary Out Point 6 Entry Function Type	0	255	1	---	F1	0	1
44362	0x1109	Binary Out Point 6 Entry Information Number	0	255	1	---	F1	0	1
44363	0x110A	Binary Out Point 7 Entry Function Type	0	255	1	---	F1	0	1
44364	0x110B	Binary Out Point 7 Entry Information Number	0	255	1	---	F1	0	1
44365	0x110C	Binary Out Point 8 Entry Function Type	0	255	1	---	F1	0	1
44366	0x110D	Binary Out Point 8 Entry Information Number	0	255	1	---	F1	0	1
44367	0x110E	Binary Out Point 9 Entry Function Type	0	255	1	---	F1	0	1
44368	0x110F	Binary Out Point 9 Entry Information Number	0	255	1	---	F1	0	1
44369	0x1110	Binary Out Point 10 Entry Function Type	0	255	1	---	F1	0	1
44370	0x1111	Binary Out Point 10 Entry Information Number	0	255	1	---	F1	0	1
44371	0x1112	Binary Out Point 11 Entry Function Type	0	255	1	---	F1	0	1
44372	0x1113	Binary Out Point 11 Entry Information Number	0	255	1	---	F1	0	1
44373	0x1114	Binary Out Point 12 Entry Function Type	0	255	1	---	F1	0	1
44374	0x1115	Binary Out Point 12 Entry Information Number	0	255	1	---	F1	0	1
44375	0x1116	Binary Out Point 13 Entry Function Type	0	255	1	---	F1	0	1
44376	0x1117	Binary Out Point 13 Entry Information Number	0	255	1	---	F1	0	1
44377	0x1118	Binary Out Point 14 Entry Function Type	0	255	1	---	F1	0	1
44378	0x1119	Binary Out Point 14 Entry Information Number	0	255	1	---	F1	0	1
44379	0x111A	Binary Out Point 15 Entry Function Type	0	255	1	---	F1	0	1
44380	0x111B	Binary Out Point 15 Entry Information Number	0	255	1	---	F1	0	1
DNP / IEC60870-5-103 ADDRESSING									
44382	0x111D	IEC60870-5-103 Slave Address	0	254	1	---	F1	0	1
44383	0x111E	Synchronization Timeout	0	1440	1	min	F1	0	1
IEC60870-5-103 MEASURANDS									
44384	0x111F	103 First ASDU Identification Type	3	9	1	---	FC221	3	1
44385	0x1120	103 First ASDU Function Type	0	255	1	---	F1	0	1
44386	0x1121	103 First ASDU Information Number	0	255	1	---	F1	0	1
44387	0x1122	103 First ASDU Scan Timeout	0	1000	1	s	F1	0	1
44388	0x1123	103 First ASDU First Analogue Entry	0	251	1	---	F88	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44389	0x1124	103 First ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44390	0x1125	103 First ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44391	0x1126	103 First ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44392	0x1127	103 First ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44393	0x1128	103 First ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44394	0x1129	103 First ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44395	0x112A	103 First ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44396	0x112B	103 First ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44397	0x112C	103 First ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44398	0x112D	103 First ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44399	0x112E	103 First ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44400	0x112F	103 First ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44401	0x1130	103 First ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44402	0x1131	103 First ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44403	0x1132	103 First ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44404	0x1133	103 First ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44405	0x1134	103 First ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44406	0x1135	103 First ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44407	0x1136	103 First ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44408	0x1137	103 First ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44409	0x1138	103 First ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44410	0x1139	103 First ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44411	0x113A	103 First ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44412	0x113B	103 First ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44413	0x113C	103 First ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44414	0x113D	103 First ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44415	0x113E	103 Second ASDU Identification Type	3	9	1	---	FC221	3	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44416	0x113F	103 Second ASDU Function Type	0	255	1	---	F1	0	1
44417	0x1140	103 Second ASDU Information Number	0	255	1	---	F1	0	1
44418	0x1141	103 Second ASDU Scan Timeout	0	1000	1	s	F1	0	1
44419	0x1142	103 Second ASDU First Analogue Entry	0	251	1	---	F88	0	1
44420	0x1143	103 Second ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44421	0x1144	103 Second ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44422	0x1145	103 Second ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44423	0x1146	103 Second ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44424	0x1147	103 Second ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44425	0x1148	103 Second ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44426	0x1149	103 Second ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44427	0x114A	103 Second ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44428	0x114B	103 Second ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44429	0x114C	103 Second ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44430	0x114D	103 Second ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44431	0x114E	103 Second ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44432	0x114F	103 Second ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44433	0x1150	103 Second ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44434	0x1151	103 Second ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44435	0x1152	103 Second ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44436	0x1153	103 Second ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44437	0x1154	103 Second ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44438	0x1155	103 Second ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44439	0x1156	103 Second ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44440	0x1157	103 Second ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44441	0x1158	103 Second ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44442	0x1159	103 Second ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44443	0x115A	103 Second ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44444	0x115B	103 Second ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44445	0x115C	103 Second ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44446	0x115D	103 Third ASDU Identification Type	3	9	1	---	FC221	3	1
44447	0x115E	103 Third ASDU Function Type	0	255	1	---	F1	0	1
44448	0x115F	103 Third ASDU Information Number	0	255	1	---	F1	0	1
44449	0x1160	103 Third ASDU Scan Timeout	0	1000	1	s	F1	0	1
44450	0x1161	103 Third ASDU First Analogue Entry	0	251	1	---	F88	0	1
44451	0x1162	103 Third ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44452	0x1163	103 Third ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44453	0x1164	103 Third ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44454	0x1165	103 Third ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44455	0x1166	103 Third ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44456	0x1167	103 Third ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44457	0x1168	103 Third ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44458	0x1169	103 Third ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44459	0x116A	103 Third ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44460	0x116B	103 Third ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44461	0x116C	103 Third ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44462	0x116D	103 Third ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44463	0x116E	103 Third ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44464	0x116F	103 Third ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44465	0x1170	103 Third ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44466	0x1171	103 Third ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44467	0x1172	103 Third ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44468	0x1173	103 Third ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44469	0x1174	103 Third ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44470	0x1175	103 Third ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44471	0x1176	103 Third ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44472	0x1177	103 Third ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44473	0x1178	103 Third ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44474	0x1179	103 Third ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44475	0x117A	103 Third ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44476	0x117B	103 Third ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44477	0x117C	103 Fourth ASDU Identification Type	3	9	1	---	FC221	3	1
44478	0x117D	103 Fourth ASDU Function Type	0	255	1	---	F1	0	1
44479	0x117E	103 Fourth ASDU Information Number	0	255	1	---	F1	0	1
44480	0x117F	103 Fourth ASDU Scan Timeout	0	1000	1	s	F1	0	1
44481	0x1180	103 Fourth ASDU First Analogue Entry	0	251	1	---	F88	0	1
44482	0x1181	103 Fourth ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44483	0x1182	103 Fourth ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44484	0x1183	103 Fourth ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44485	0x1184	103 Fourth ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44486	0x1185	103 Fourth ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44487	0x1186	103 Fourth ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44488	0x1187	103 Fourth ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44489	0x1188	103 Fourth ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44490	0x1189	103 Fourth ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44491	0x118A	103 Fourth ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44492	0x118B	103 Fourth ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44493	0x118C	103 Fourth ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44494	0x118D	103 Fourth ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44495	0x118E	103 Fourth ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44496	0x118F	103 Fourth ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44497	0x1190	103 Fourth ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44498	0x1191	103 Fourth ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44499	0x1192	103 Fourth ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44500	0x1193	103 Fourth ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44501	0x1194	103 Fourth ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44502	0x1195	103 Fourth ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44503	0x1196	103 Fourth ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44504	0x1197	103 Fourth ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44505	0x1198	103 Fourth ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44506	0x1199	103 Fourth ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44507	0x119A	103 Fourth ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
PASSWORD SECURITY									
44536	0x11B7	Security Passcode Master 1	0	1	1	---	F22	0	1
44537	0x11B8	Security Passcode Master 2	0	1	1	---	F22	0	1
44538	0x11B9	Security Passcode Master 3	0	1	1	---	F22	0	1
44539	0x11BA	Security Passcode Master 4	0	1	1	---	F22	0	1
44540	0x11BB	Security Passcode Master 5	0	1	1	---	F22	0	1
44541	0x11BC	Security Passcode Local Setpoint 1	0	1	1	---	F22	0	1
44542	0x11BD	Security Passcode Local Setpoint 2	0	1	1	---	F22	0	1
44543	0x11BE	Security Passcode Local Setpoint 3	0	1	1	---	F22	0	1
44544	0x11BF	Security Passcode Local Setpoint 4	0	1	1	---	F22	0	1
44545	0x11C0	Security Passcode Local Setpoint 5	0	1	1	---	F22	0	1
44546	0x11C1	Security Passcode Local Control 1	0	1	1	---	F22	0	1
44547	0x11C2	Security Passcode Local Control 2	0	1	1	---	F22	0	1
44548	0x11C3	Security Passcode Local Control 3	0	1	1	---	F22	0	1
44549	0x11C4	Security Passcode Local Control 4	0	1	1	---	F22	0	1
44550	0x11C5	Security Passcode Local Control 5	0	1	1	---	F22	0	1
44551	0x11C6	Security Passcode Remote Setpoint 1	0	1	1	---	F22	0	1
44552	0x11C7	Security Passcode Remote Setpoint 2	0	1	1	---	F22	0	1
44553	0x11C8	Security Passcode Remote Setpoint 3	0	1	1	---	F22	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44554	0x11C9	Security Passcode Remote Setpoint 4	0	1	1	---	F22	0	1
44555	0x11CA	Security Passcode Remote Setpoint 5	0	1	1	---	F22	0	1
44556	0x11CB	Security Passcode Remote Control 1	0	1	1	---	F22	0	1
44557	0x11CC	Security Passcode Remote Control 2	0	1	1	---	F22	0	1
44558	0x11CD	Security Passcode Remote Control 3	0	1	1	---	F22	0	1
44559	0x11CE	Security Passcode Remote Control 4	0	1	1	---	F22	0	1
44560	0x11CF	Security Passcode Remote Control 5	0	1	1	---	F22	0	1
44561	0x11D0	Security Passcode Entry Master 1	0	1	1	---	F22	0	1
44562	0x11D1	Security Passcode Entry Master 2	0	1	1	---	F22	0	1
44563	0x11D2	Security Passcode Entry Master 3	0	1	1	---	F22	0	1
44564	0x11D3	Security Passcode Entry Master 4	0	1	1	---	F22	0	1
44565	0x11D4	Security Passcode Entry Master 5	0	1	1	---	F22	0	1
44566	0x11D5	Security Passcode Entry Setpoints 1	0	1	1	---	F22	0	1
44567	0x11D6	Security Passcode Entry Setpoints 2	0	1	1	---	F22	0	1
44568	0x11D7	Security Passcode Entry Setpoints 3	0	1	1	---	F22	0	1
44569	0x11D8	Security Passcode Entry Setpoints 4	0	1	1	---	F22	0	1
44570	0x11D9	Security Passcode Entry Setpoints 5	0	1	1	---	F22	0	1
44571	0x11DA	Security Passcode Entry Control 1	0	1	1	---	F22	0	1
44572	0x11DB	Security Passcode Entry Control 2	0	1	1	---	F22	0	1
44573	0x11DC	Security Passcode Entry Control 3	0	1	1	---	F22	0	1
44574	0x11DD	Security Passcode Entry Control 4	0	1	1	---	F22	0	1
44575	0x11DE	Security Passcode Entry Control 5	0	1	1	---	F22	0	1
44576	0x11DF	Overwrite Local Setpoint Password	0	1	1	---	FC103A	0	1
VIRTUAL INPUT FUNCTION									
44580	0x11E3	Virtual Input 1 Function	0	1	1	---	FC126	0	1
44581	0x11E4	Virtual Input 2 Function	0	1	1	---	FC126	0	1
44582	0x11E5	Virtual Input 3 Function	0	1	1	---	FC126	0	1
44583	0x11E6	Virtual Input 4 Function	0	1	1	---	FC126	0	1
44584	0x11E7	Virtual Input 5 Function	0	1	1	---	FC126	0	1
44585	0x11E8	Virtual Input 6 Function	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44586	0x11E9	Virtual Input 7 Function	0	1	1	---	FC126	0	1
44587	0x11EA	Virtual Input 8 Function	0	1	1	---	FC126	0	1
44588	0x11EB	Virtual Input 9 Function	0	1	1	---	FC126	0	1
44589	0x11EC	Virtual Input 10 Function	0	1	1	---	FC126	0	1
44590	0x11ED	Virtual Input 11 Function	0	1	1	---	FC126	0	1
44591	0x11EE	Virtual Input 12 Function	0	1	1	---	FC126	0	1
44592	0x11EF	Virtual Input 13 Function	0	1	1	---	FC126	0	1
44593	0x11F0	Virtual Input 14 Function	0	1	1	---	FC126	0	1
44594	0x11F1	Virtual Input 15 Function	0	1	1	---	FC126	0	1
44595	0x11F2	Virtual Input 16 Function	0	1	1	---	FC126	0	1
44596	0x11F3	Virtual Input 17 Function	0	1	1	---	FC126	0	1
44597	0x11F4	Virtual Input 18 Function	0	1	1	---	FC126	0	1
44598	0x11F5	Virtual Input 19 Function	0	1	1	---	FC126	0	1
44599	0x11F6	Virtual Input 20 Function	0	1	1	---	FC126	0	1
44600	0x11F7	Virtual Input 21 Function	0	1	1	---	FC126	0	1
44601	0x11F8	Virtual Input 22 Function	0	1	1	---	FC126	0	1
44602	0x11F9	Virtual Input 23 Function	0	1	1	---	FC126	0	1
44603	0x11FA	Virtual Input 24 Function	0	1	1	---	FC126	0	1
44604	0x11FB	Virtual Input 25 Function	0	1	1	---	FC126	0	1
44605	0x11FC	Virtual Input 26 Function	0	1	1	---	FC126	0	1
44606	0x11FD	Virtual Input 27 Function	0	1	1	---	FC126	0	1
44607	0x11FE	Virtual Input 28 Function	0	1	1	---	FC126	0	1
44608	0x11FF	Virtual Input 29 Function	0	1	1	---	FC126	0	1
44609	0x1200	Virtual Input 30 Function	0	1	1	---	FC126	0	1
44610	0x1201	Virtual Input 31 Function	0	1	1	---	FC126	0	1
44611	0x1202	Virtual Input 32 Function	0	1	1	---	FC126	0	1
VIRTUAL INPUT TYPE									
44612	0x1203	Virtual Input 1 Type	0	1	1	---	FC199	0	1
44613	0x1204	Virtual Input 2 Type	0	1	1	---	FC199	0	1
44614	0x1205	Virtual Input 3 Type	0	1	1	---	FC199	0	1
44615	0x1206	Virtual Input 4 Type	0	1	1	---	FC199	0	1
44616	0x1207	Virtual Input 5 Type	0	1	1	---	FC199	0	1
44617	0x1208	Virtual Input 6 Type	0	1	1	---	FC199	0	1
44618	0x1209	Virtual Input 7 Type	0	1	1	---	FC199	0	1
44619	0x120A	Virtual Input 8 Type	0	1	1	---	FC199	0	1
44620	0x120B	Virtual Input 9 Type	0	1	1	---	FC199	0	1
44621	0x120C	Virtual Input 10 Type	0	1	1	---	FC199	0	1
44622	0x120D	Virtual Input 11 Type	0	1	1	---	FC199	0	1
44623	0x120E	Virtual Input 12 Type	0	1	1	---	FC199	0	1
44624	0x120F	Virtual Input 13 Type	0	1	1	---	FC199	0	1
44625	0x1210	Virtual Input 14 Type	0	1	1	---	FC199	0	1
44626	0x1211	Virtual Input 15 Type	0	1	1	---	FC199	0	1
44627	0x1212	Virtual Input 16 Type	0	1	1	---	FC199	0	1
44628	0x1213	Virtual Input 17 Type	0	1	1	---	FC199	0	1
44629	0x1214	Virtual Input 18 Type	0	1	1	---	FC199	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44630	0x1215	Virtual Input 19 Type	0	1	1	---	FC199	0	1
44631	0x1216	Virtual Input 20 Type	0	1	1	---	FC199	0	1
44632	0x1217	Virtual Input 21 Type	0	1	1	---	FC199	0	1
44633	0x1218	Virtual Input 22 Type	0	1	1	---	FC199	0	1
44634	0x1219	Virtual Input 23 Type	0	1	1	---	FC199	0	1
44635	0x121A	Virtual Input 24 Type	0	1	1	---	FC199	0	1
44636	0x121B	Virtual Input 25 Type	0	1	1	---	FC199	0	1
44637	0x121C	Virtual Input 26 Type	0	1	1	---	FC199	0	1
44638	0x121D	Virtual Input 27 Type	0	1	1	---	FC199	0	1
44639	0x121E	Virtual Input 28 Type	0	1	1	---	FC199	0	1
44640	0x121F	Virtual Input 29 Type	0	1	1	---	FC199	0	1
44641	0x1220	Virtual Input 30 Type	0	1	1	---	FC199	0	1
44642	0x1221	Virtual Input 31 Type	0	1	1	---	FC199	0	1
44643	0x1222	Virtual Input 32 Type	0	1	1	---	FC199	0	1
IEC61850 GOOSE									
44645	0x1224	Enable GOOSE Transmission	0	1	1	---	FC126	0	1
44646	0x1225	Enable GOOSE	0	1	1	---	FC126	0	1
44647	0x1226	GOOSE Name	0	20	1	---	F22	SR3_GOOSE 1	20
44667	0x123A	VLAN Identifier	0	4095	1	---	F1	0	1
44668	0x123B	VLAN Priority	1	7	1	---	F1	4	1
44669	0x123C	Application Identifier	0	0x3FFF	1	---	F1	0	1
44670	0x123D	Update Time	1000	60000	1	ms	F1	10000	1
44671	0x123E	DataSet Name	0	20	1	---	F22	GOOSE1	20
44691	0x1252	Control Block Name	0	20	1	---	F22	gcb01	20
44711	0x1266	Conf Revision Number	1	0xFFFF	1	---	F1	1	1
44712	0x1267	Destination MAC Address	0	0xFFFF	1	---	FC214	0	3
44715	0x126A	MMS TCP Port Number	1	65535	1	---	F1	102	1
44716	0x126B	TCP Connection Timeout	10	1800	1	s	F1	120	1
IEC61850 GOOSE TRANSMISSION DATASET ITEMS									
44718	0x126D	DataSet Item 1	0	0xFFFF	1	---	FC134B	0	1
44719	0x126E	Item 1 Quality	0	1	1	---	FC126	0	1
44720	0x126F	DataSet Item 2	0	0xFFFF	1	---	FC134B	0	1
44721	0x1270	Item 2 Quality	0	1	1	---	FC126	0	1
44722	0x1271	DataSet Item 3	0	0xFFFF	1	---	FC134B	0	1
44723	0x1272	Item 3 Quality	0	1	1	---	FC126	0	1
44724	0x1273	DataSet Item 4	0	0xFFFF	1	---	FC134B	0	1
44725	0x1274	Item 4 Quality	0	1	1	---	FC126	0	1
44726	0x1275	DataSet Item 5	0	0xFFFF	1	---	FC134B	0	1
44727	0x1276	Item 5 Quality	0	1	1	---	FC126	0	1
44728	0x1277	DataSet Item 6	0	0xFFFF	1	---	FC134B	0	1
44729	0x1278	Item 6 Quality	0	1	1	---	FC126	0	1
44730	0x1279	DataSet Item 7	0	0xFFFF	1	---	FC134B	0	1
44731	0x127A	Item 7 Quality	0	1	1	---	FC126	0	1
44732	0x127B	DataSet Item 8	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44733	0x127C	Item 8 Quality	0	1	1	---	FC126	0	1
44734	0x127D	DataSet Item 9	0	0xFFFF	1	---	FC134B	0	1
44735	0x127E	Item 9 Quality	0	1	1	---	FC126	0	1
44736	0x127F	DataSet Item 10	0	0xFFFF	1	---	FC134B	0	1
44737	0x1280	Item 10 Quality	0	1	1	---	FC126	0	1
44738	0x1281	DataSet Item 11	0	0xFFFF	1	---	FC134B	0	1
44739	0x1282	Item 11 Quality	0	1	1	---	FC126	0	1
44740	0x1283	DataSet Item 12	0	0xFFFF	1	---	FC134B	0	1
44741	0x1284	Item 12 Quality	0	1	1	---	FC126	0	1
44742	0x1285	DataSet Item 13	0	0xFFFF	1	---	FC134B	0	1
44743	0x1286	Item 13 Quality	0	1	1	---	FC126	0	1
44744	0x1287	DataSet Item 14	0	0xFFFF	1	---	FC134B	0	1
44745	0x1288	Item 14 Quality	0	1	1	---	FC126	0	1
44746	0x1289	DataSet Item 15	0	0xFFFF	1	---	FC134B	0	1
44747	0x128A	Item 15 Quality	0	1	1	---	FC126	0	1
44748	0x128B	DataSet Item 16	0	0xFFFF	1	---	FC134B	0	1
44749	0x128C	Item 16 Quality	0	1	1	---	FC126	0	1
44750	0x128D	DataSet Item 17	0	0xFFFF	1	---	FC134B	0	1
44751	0x128E	Item 17 Quality	0	1	1	---	FC126	0	1
44752	0x128F	DataSet Item 18	0	0xFFFF	1	---	FC134B	0	1
44753	0x1290	Item 18 Quality	0	1	1	---	FC126	0	1
44754	0x1291	DataSet Item 19	0	0xFFFF	1	---	FC134B	0	1
44755	0x1292	Item 19 Quality	0	1	1	---	FC126	0	1
44756	0x1293	DataSet Item 20	0	0xFFFF	1	---	FC134B	0	1
44757	0x1294	Item 20 Quality	0	1	1	---	FC126	0	1
44758	0x1295	DataSet Item 21	0	0xFFFF	1	---	FC134B	0	1
44759	0x1296	Item 21 Quality	0	1	1	---	FC126	0	1
44760	0x1297	DataSet Item 22	0	0xFFFF	1	---	FC134B	0	1
44761	0x1298	Item 22 Quality	0	1	1	---	FC126	0	1
44762	0x1299	DataSet Item 23	0	0xFFFF	1	---	FC134B	0	1
44763	0x129A	Item 23 Quality	0	1	1	---	FC126	0	1
44764	0x129B	DataSet Item 24	0	0xFFFF	1	---	FC134B	0	1
44765	0x129C	Item 24 Quality	0	1	1	---	FC126	0	1
44766	0x129D	DataSet Item 25	0	0xFFFF	1	---	FC134B	0	1
44767	0x129E	Item 25 Quality	0	1	1	---	FC126	0	1
44768	0x129F	DataSet Item 26	0	0xFFFF	1	---	FC134B	0	1
44769	0x12A0	Item 26 Quality	0	1	1	---	FC126	0	1
44770	0x12A1	DataSet Item 27	0	0xFFFF	1	---	FC134B	0	1
44771	0x12A2	Item 27 Quality	0	1	1	---	FC126	0	1
44772	0x12A3	DataSet Item 28	0	0xFFFF	1	---	FC134B	0	1
44773	0x12A4	Item 28 Quality	0	1	1	---	FC126	0	1
44774	0x12A5	DataSet Item 29	0	0xFFFF	1	---	FC134B	0	1
44775	0x12A6	Item 29 Quality	0	1	1	---	FC126	0	1
44776	0x12A7	DataSet Item 30	0	0xFFFF	1	---	FC134B	0	1
44777	0x12A8	Item 30 Quality	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
44778	0x12A9	DataSet Item 31	0	0xFFFF	1	---	FC134B	0	1
44779	0x12AA	Item 31 Quality	0	1	1	---	FC126	0	1
44780	0x12AB	DataSet Item 32	0	0xFFFF	1	---	FC134B	0	1
44781	0x12AC	Item 32 Quality	0	1	1	---	FC126	0	1
IEC61850 GOOSE RX1 CONFIGURATION									
44786	0x12B1	Rx GOOSE1 Function	0	1	1	---	FC126	0	1
44787	0x12B2	Rx GOOSE1 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE1	20
44807	0x12C6	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44827	0x12DA	RX1 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb01	20
44847	0x12EE	RX1 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44848	0x12EF	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX2 CONFIGURATION									
44852	0x12F3	Rx GOOSE2 Function	0	1	1	---	FC126	0	1
44853	0x12F4	Rx GOOSE2 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE2	20
44873	0x1308	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44893	0x131C	RX2 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb02	20
44913	0x1330	RX2 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44914	0x1331	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX3 CONFIGURATION									
44918	0x1335	Rx GOOSE3 Function	0	1	1	---	FC126	0	1
44919	0x1336	Rx GOOSE3 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE3	20
44939	0x134A	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44959	0x135E	RX3 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb03	20
44979	0x1372	RX3 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44980	0x1373	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX4 CONFIGURATION									
44984	0x1377	Rx GOOSE4 Function	0	1	1	---	FC126	0	1
44985	0x1378	Rx GOOSE4 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE4	20
45005	0x138C	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
45025	0x13A0	RX4 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb04	20
45045	0x13B4	RX4 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45046	0x13B5	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX5 CONFIGURATION									
45050	0x13B9	Rx GOOSE5 Function	0	1	1	---	FC126	0	1
45051	0x13BA	Rx GOOSE5 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE5	20
45071	0x13CE	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45091	0x13E2	RX5 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb05	20
45111	0x13F6	RX5 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45112	0x13F7	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX6 CONFIGURATION									
45116	0x13FB	Rx GOOSE6 Function	0	1	1	---	FC126	0	1
45117	0x13FC	Rx GOOSE6 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE6	20
45137	0x1410	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45157	0x1424	RX6 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb06	20
45177	0x1438	RX6 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45178	0x1439	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX7 CONFIGURATION									
45182	0x143D	Rx GOOSE7 Function	0	1	1	---	FC126	0	1
45183	0x143E	Rx GOOSE7 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE7	20
45203	0x1452	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45223	0x1466	RX7 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb07	20
45243	0x147A	RX7 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45244	0x147B	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX8 CONFIGURATION									
45248	0x147F	Rx GOOSE8 Function	0	1	1	---	FC126	0	1
45249	0x1480	Rx GOOSE8 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE8	20

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
45269	0x1494	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/ LLN0$GOOSESR3	20
45289	0x14A8	RX8 Control Block Name	0	20	1	---	F22	DEVICE/ LLN0GOgcb08	20
45309	0x14BC	RX8 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45310	0x14BD	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE DATASET STRUCTURE BUFFER									
45314	0x14C1	DataSet Struct Buffer	0	0xFFFF	1	---	FC216	0	250
IEC61850 GOOSE REMOTE INPUTS									
45567	0x15BE	Remote Input 1 Name	0	7	1	---	F22	RI 1	7
45583	0x15CE	Remote Input 1 GOOSE Source	0	0x80	1	---	FC219	0	1
45584	0x15CF	Remote Input 1 Item Source	0	0xFFFF	1	---	FC217	0	1
45585	0x15D0	Remote Input 1 Item Mask	0	0xFFFF	1	---	FC218	0	1
45586	0x15D1	Remote Input 1 Default State	0	3	1	---	FC220	1	1
45588	0x15D3	Remote Input 2 Name	0	7	1	---	F22	RI 2	7
45604	0x15E3	Remote Input 2 GOOSE Source	0	0x80	1	---	FC219	0	1
45605	0x15E4	Remote Input 2 Item Source	0	0xFFFF	1	---	FC217	0	1
45606	0x15E5	Remote Input 2 Item Mask	0	0xFFFF	1	---	FC218	0	1
45607	0x15E6	Remote Input 2 Default State	0	3	1	---	FC220	1	1
45609	0x15E8	Remote Input 3 Name	0	7	1	---	F22	RI 3	7
45625	0x15F8	Remote Input 3 GOOSE Source	0	0x80	1	---	FC219	0	1
45626	0x15F9	Remote Input 3 Item Source	0	0xFFFF	1	---	FC217	0	1
45627	0x15FA	Remote Input 3 Item Mask	0	0xFFFF	1	---	FC218	0	1
45628	0x15FB	Remote Input 3 Default State	0	3	1	---	FC220	1	1
45630	0x15FD	Remote Input 4 Name	0	7	1	---	F22	RI 4	7
45646	0x160D	Remote Input 4 GOOSE Source	0	0x80	1	---	FC219	0	1
45647	0x160E	Remote Input 4 Item Source	0	0xFFFF	1	---	FC217	0	1
45648	0x160F	Remote Input 4 Item Mask	0	0xFFFF	1	---	FC218	0	1
45649	0x1610	Remote Input 4 Default State	0	3	1	---	FC220	1	1
45651	0x1612	Remote Input 5 Name	0	7	1	---	F22	RI 5	7
45667	0x1622	Remote Input 5 GOOSE Source	0	0x80	1	---	FC219	0	1
45668	0x1623	Remote Input 5 Item Source	0	0xFFFF	1	---	FC217	0	1
45669	0x1624	Remote Input 5 Item Mask	0	0xFFFF	1	---	FC218	0	1
45670	0x1625	Remote Input 5 Default State	0	3	1	---	FC220	1	1
45672	0x1627	Remote Input 6 Name	0	7	1	---	F22	RI 6	7
45688	0x1637	Remote Input 6 GOOSE Source	0	0x80	1	---	FC219	0	1
45689	0x1638	Remote Input 6 Item Source	0	0xFFFF	1	---	FC217	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
45690	0x1639	Remote Input 6 Item Mask	0	0xFFFF	1	---	FC218	0	1
45691	0x163A	Remote Input 6 Default State	0	3	1	---	FC220	1	1
45693	0x163C	Remote Input 7 Name	0	7	1	---	F22	RI 7	7
45709	0x164C	Remote Input 7 GOOSE Source	0	0x80	1	---	FC219	0	1
45710	0x164D	Remote Input 7 Item Source	0	0xFFFF	1	---	FC217	0	1
45711	0x164E	Remote Input 7 Item Mask	0	0xFFFF	1	---	FC218	0	1
45712	0x164F	Remote Input 7 Default State	0	3	1	---	FC220	1	1
45714	0x1651	Remote Input 8 Name	0	7	1	---	F22	RI 8	7
45730	0x1661	Remote Input 8 GOOSE Source	0	0x80	1	---	FC219	0	1
45731	0x1662	Remote Input 8 Item Source	0	0xFFFF	1	---	FC217	0	1
45732	0x1663	Remote Input 8 Item Mask	0	0xFFFF	1	---	FC218	0	1
45733	0x1664	Remote Input 8 Default State	0	3	1	---	FC220	1	1
45735	0x1666	Remote Input 9 Name	0	7	1	---	F22	RI 9	7
45751	0x1676	Remote Input 9 GOOSE Source	0	0x80	1	---	F1	0	1
45752	0x1677	Remote Input 9 Item Source	0	0xFFFF	1	---	FC217	0	1
45753	0x1678	Remote Input 9 Item Mask	0	0xFFFF	1	---	FC218	0	1
45754	0x1679	Remote Input 9 Default State	0	3	1	---	FC220	1	1
45756	0x167B	Remote Input 10 Name	0	7	1	---	F22	RI 10	7
45772	0x168B	Remote Input 10 GOOSE Source	0	0x80	1	---	F1	0	1
45773	0x168C	Remote Input 10 Item Source	0	0xFFFF	1	---	FC217	0	1
45774	0x168D	Remote Input 10 Item Mask	0	0xFFFF	1	---	FC218	0	1
45775	0x168E	Remote Input 10 Default State	0	3	1	---	FC220	1	1
45777	0x1690	Remote Input 11 Name	0	7	1	---	F22	RI 11	7
45793	0x16A0	Remote Input 11 GOOSE Source	0	0x80	1	---	F1	0	1
45794	0x16A1	Remote Input 11 Item Source	0	0xFFFF	1	---	FC217	0	1
45795	0x16A2	Remote Input 11 Item Mask	0	0xFFFF	1	---	FC218	0	1
45796	0x16A3	Remote Input 11 Default State	0	3	1	---	FC220	1	1
45798	0x16A5	Remote Input 12 Name	0	7	1	---	F22	RI 12	7
45814	0x16B5	Remote Input 12 GOOSE Source	0	0x80	1	---	F1	0	1
45815	0x16B6	Remote Input 12 Item Source	0	0xFFFF	1	---	FC217	0	1
45816	0x16B7	Remote Input 12 Item Mask	0	0xFFFF	1	---	FC218	0	1
45817	0x16B8	Remote Input 12 Default State	0	3	1	---	FC220	1	1
45819	0x16BA	Remote Input 13 Name	0	7	1	---	F22	RI 13	7
45835	0x16CA	Remote Input 13 GOOSE Source	0	0x80	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
45836	0x16CB	Remote Input 13 Item Source	0	0xFFFF	1	---	FC217	0	1
45837	0x16CC	Remote Input 13 Item Mask	0	0xFFFF	1	---	FC218	0	1
45838	0x16CD	Remote Input 13 Default State	0	3	1	---	FC220	1	1
45840	0x16CF	Remote Input 14 Name	0	7	1	---	F22	RI 14	7
45856	0x16DF	Remote Input 14 GOOSE Source	0	0x80	1	---	F1	0	1
45857	0x16E0	Remote Input 14 Item Source	0	0xFFFF	1	---	FC217	0	1
45858	0x16E1	Remote Input 14 Item Mask	0	0xFFFF	1	---	FC218	0	1
45859	0x16E2	Remote Input 14 Default State	0	3	1	---	FC220	1	1
45861	0x16E4	Remote Input 15 Name	0	7	1	---	F22	RI 15	7
45877	0x16F4	Remote Input 15 GOOSE Source	0	0x80	1	---	F1	0	1
45878	0x16F5	Remote Input 15 Item Source	0	0xFFFF	1	---	FC217	0	1
45879	0x16F6	Remote Input 15 Item Mask	0	0xFFFF	1	---	FC218	0	1
45880	0x16F7	Remote Input 15 Default State	0	3	1	---	FC220	1	1
45882	0x16F9	Remote Input 16 Name	0	7	1	---	F22	RI 16	7
45898	0x1709	Remote Input 16 GOOSE Source	0	0x80	1	---	F1	0	1
45899	0x170A	Remote Input 16 Item Source	0	0xFFFF	1	---	FC217	0	1
45900	0x170B	Remote Input 16 Item Mask	0	0xFFFF	1	---	FC218	0	1
45901	0x170C	Remote Input 16 Default State	0	3	1	---	FC220	1	1
45903	0x170E	Remote Input 17 Name	0	7	1	---	F22	RI 17	7
45919	0x171E	Remote Input 17 GOOSE Source	0	0x80	1	---	F1	0	1
45920	0x171F	Remote Input 17 Item Source	0	0xFFFF	1	---	FC217	0	1
45921	0x1720	Remote Input 17 Item Mask	0	0xFFFF	1	---	FC218	0	1
45922	0x1721	Remote Input 17 Default State	0	3	1	---	FC220	1	1
45924	0x1723	Remote Input 18 Name	0	7	1	---	F22	RI 18	7
45940	0x1733	Remote Input 18 GOOSE Source	0	0x80	1	---	F1	0	1
45941	0x1734	Remote Input 18 Item Source	0	0xFFFF	1	---	FC217	0	1
45942	0x1735	Remote Input 18 Item Mask	0	0xFFFF	1	---	FC218	0	1
45943	0x1736	Remote Input 18 Default State	0	3	1	---	FC220	1	1
45945	0x1738	Remote Input 19 Name	0	7	1	---	F22	RI 19	7
45961	0x1748	Remote Input 19 GOOSE Source	0	0x80	1	---	F1	0	1
45962	0x1749	Remote Input 19 Item Source	0	0xFFFF	1	---	FC217	0	1
45963	0x174A	Remote Input 19 Item Mask	0	0xFFFF	1	---	FC218	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
45964	0x174B	Remote Input 19 Default State	0	3	1	---	FC220	1	1
45966	0x174D	Remote Input 20 Name	0	7	1	---	F22	RI 20	7
45982	0x175D	Remote Input 20 GOOSE Source	0	0x80	1	---	F1	0	1
45983	0x175E	Remote Input 20 Item Source	0	0xFFFF	1	---	FC217	0	1
45984	0x175F	Remote Input 20 Item Mask	0	0xFFFF	1	---	FC218	0	1
45985	0x1760	Remote Input 20 Default State	0	3	1	---	FC220	1	1
45987	0x1762	Remote Input 21 Name	0	7	1	---	F22	RI 21	7
46003	0x1772	Remote Input 21 GOOSE Source	0	0x80	1	---	F1	0	1
46004	0x1773	Remote Input 21 Item Source	0	0xFFFF	1	---	FC217	0	1
46005	0x1774	Remote Input 21 Item Mask	0	0xFFFF	1	---	FC218	0	1
46006	0x1775	Remote Input 21 Default State	0	3	1	---	FC220	1	1
46008	0x1777	Remote Input 22 Name	0	7	1	---	F22	RI 22	7
46024	0x1787	Remote Input 22 GOOSE Source	0	0x80	1	---	F1	0	1
46025	0x1788	Remote Input 22 Item Source	0	0xFFFF	1	---	FC217	0	1
46026	0x1789	Remote Input 22 Item Mask	0	0xFFFF	1	---	FC218	0	1
46027	0x178A	Remote Input 22 Default State	0	3	1	---	FC220	1	1
46029	0x178C	Remote Input 23 Name	0	7	1	---	F22	RI 23	7
46045	0x179C	Remote Input 23 GOOSE Source	0	0x80	1	---	F1	0	1
46046	0x179D	Remote Input 23 Item Source	0	0xFFFF	1	---	FC217	0	1
46047	0x179E	Remote Input 23 Item Mask	0	0xFFFF	1	---	FC218	0	1
46048	0x179F	Remote Input 23 Default State	0	3	1	---	FC220	1	1
46050	0x17A1	Remote Input 24 Name	0	7	1	---	F22	RI 24	7
46066	0x17B1	Remote Input 24 GOOSE Source	0	0x80	1	---	F1	0	1
46067	0x17B2	Remote Input 24 Item Source	0	0xFFFF	1	---	FC217	0	1
46068	0x17B3	Remote Input 24 Item Mask	0	0xFFFF	1	---	FC218	0	1
46069	0x17B4	Remote Input 24 Default State	0	3	1	---	FC220	1	1
46071	0x17B6	Remote Input 25 Name	0	7	1	---	F22	RI 25	7
46087	0x17C6	Remote Input 25 GOOSE Source	0	0x80	1	---	F1	0	1
46088	0x17C7	Remote Input 25 Item Source	0	0xFFFF	1	---	FC217	0	1
46089	0x17C8	Remote Input 25 Item Mask	0	0xFFFF	1	---	FC218	0	1
46090	0x17C9	Remote Input 25 Default State	0	3	1	---	FC220	1	1
46092	0x17CB	Remote Input 26 Name	0	7	1	---	F22	RI 26	7

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
46108	0x17DB	Remote Input 26 GOOSE Source	0	0x80	1	---	F1	0	1
46109	0x17DC	Remote Input 26 Item Source	0	0xFFFF	1	---	FC217	0	1
46110	0x17DD	Remote Input 26 Item Mask	0	0xFFFF	1	---	FC218	0	1
46111	0x17DE	Remote Input 26 Default State	0	3	1	---	FC220	1	1
46113	0x17E0	Remote Input 27 Name	0	7	1	---	F22	RI 27	7
46129	0x17F0	Remote Input 27 GOOSE Source	0	0x80	1	---	F1	0	1
46130	0x17F1	Remote Input 27 Item Source	0	0xFFFF	1	---	FC217	0	1
46131	0x17F2	Remote Input 27 Item Mask	0	0xFFFF	1	---	FC218	0	1
46132	0x17F3	Remote Input 27 Default State	0	3	1	---	FC220	1	1
46134	0x17F5	Remote Input 28 Name	0	7	1	---	F22	RI 28	7
46150	0x1805	Remote Input 28 GOOSE Source	0	0x80	1	---	F1	0	1
46151	0x1806	Remote Input 28 Item Source	0	0xFFFF	1	---	FC217	0	1
46152	0x1807	Remote Input 28 Item Mask	0	0xFFFF	1	---	FC218	0	1
46153	0x1808	Remote Input 28 Default State	0	3	1	---	FC220	1	1
46155	0x180A	Remote Input 29 Name	0	7	1	---	F22	RI 29	7
46171	0x181A	Remote Input 29 GOOSE Source	0	0x80	1	---	F1	0	1
46172	0x181B	Remote Input 29 Item Source	0	0xFFFF	1	---	FC217	0	1
46173	0x181C	Remote Input 29 Item Mask	0	0xFFFF	1	---	FC218	0	1
46174	0x181D	Remote Input 29 Default State	0	3	1	---	FC220	1	1
46176	0x181F	Remote Input 30 Name	0	7	1	---	F22	RI 30	7
46192	0x182F	Remote Input 30 GOOSE Source	0	0x80	1	---	F1	0	1
46193	0x1830	Remote Input 30 Item Source	0	0xFFFF	1	---	FC217	0	1
46194	0x1831	Remote Input 30 Item Mask	0	0xFFFF	1	---	FC218	0	1
46195	0x1832	Remote Input 30 Default State	0	3	1	---	FC220	1	1
46197	0x1834	Remote Input 31 Name	0	7	1	---	F22	RI 31	7
46213	0x1844	Remote Input 31 GOOSE Source	0	0x80	1	---	F1	0	1
46214	0x1845	Remote Input 31 Item Source	0	0xFFFF	1	---	FC217	0	1
46215	0x1846	Remote Input 31 Item Mask	0	0xFFFF	1	---	FC218	0	1
46216	0x1847	Remote Input 31 Default State	0	3	1	---	FC220	1	1
46218	0x1849	Remote Input 32 Name	0	7	1	---	F22	RI 32	7
46234	0x1859	Remote Input 32 GOOSE Source	0	0x80	1	---	F1	0	1
46235	0x185A	Remote Input 32 Item Source	0	0xFFFF	1	---	FC217	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
46236	0x185B	Remote Input 32 Item Mask	0	0xFFFF	1	---	FC218	0	1
46237	0x185C	Remote Input 32 Default State	0	3	1	---	FC220	1	1
LOGIC ELEMENT NAMES									
46240	0x185F	Logic Element 1 Name	0	9	1	---	F22	Logic El #1	9
46249	0x1868	Logic Element 2 Name	0	9	1	---	F22	Logic El #2	9
46258	0x1871	Logic Element 3 Name	0	9	1	---	F22	Logic El #3	9
46267	0x187A	Logic Element 4 Name	0	9	1	---	F22	Logic El #4	9
46276	0x1883	Logic Element 5 Name	0	9	1	---	F22	Logic El #5	9
46285	0x188C	Logic Element 6 Name	0	9	1	---	F22	Logic El #6	9
46294	0x1895	Logic Element 7 Name	0	9	1	---	F22	Logic El #7	9
46303	0x189E	Logic Element 8 Name	0	9	1	---	F22	Logic El #8	9
46492	0x195B	Logic Element 9 Name	0	9	1	---	F22	Logic El #9	9
46501	0x1964	Logic Element 10 Name	0	9	1	---	F22	Logic El #10	9
46510	0x196D	Logic Element 11 Name	0	9	1	---	F22	Logic El #11	9
46519	0x1976	Logic Element 12 Name	0	9	1	---	F22	Logic El #12	9
46528	0x197F	Logic Element 13 Name	0	9	1	---	F22	Logic El #13	9
46537	0x1988	Logic Element 14 Name	0	9	1	---	F22	Logic El #14	9
46546	0x1991	Logic Element 15 Name	0	9	1	---	F22	Logic El #15	9
46555	0x199A	Logic Element 16 Name	0	9	1	---	F22	Logic El #16	9
SETPOINT GROUP SETTINGS									
42604	0xA2B	Negative Sequence IOC Function	0	3	1	---	FC197	0	1
42605	0xA2C	Negative Sequence IOC Pickup	5	2000	1	x CT	F3	100	1
42606	0xA2D	Negative Sequence IOC Delay	0	30000	1	s	F3	0	1
46886	0x1AE5	Negative Sequence IOC 2 Function	0	3	1	---	FC197	0	1
46887	0x1AE6	Negative Sequence IOC 2 Pickup	5	2000	1	x CT	F3	100	1
46888	0x1AE7	Negative Sequence IOC 2 Delay	0	30000	1	s	F3	0	1
PROTECTION FUNCTION BLOCKING									
42641	0xA50	Phase IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42642	0xA51	Phase IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42643	0xA52	Phase IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42644	0xA53	Neutral IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42645	0xA54	Neutral IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42646	0xA55	Neutral IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42647	0xA56	Ground IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42648	0xA57	Ground IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42649	0xA58	Ground IOC 1 Block 3	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
42650	0xA59	Phase TOC Block 1	0	0xEF02	1	---	F89	0	1
42651	0xA5A	Phase TOC Block 2	0	0xEF02	1	---	F89	0	1
42652	0xA5B	Phase TOC Block 3	0	0xEF02	1	---	F89	0	1
42653	0xA5C	Neutral TOC Block 1	0	0xEF02	1	---	F89	0	1
42654	0xA5D	Neutral TOC Block 2	0	0xEF02	1	---	F89	0	1
42655	0xA5E	Neutral TOC Block 3	0	0xEF02	1	---	F89	0	1
42656	0xA5F	Ground TOC Block 1	0	0xEF02	1	---	F89	0	1
42657	0xA60	Ground TOC Block 2	0	0xEF02	1	---	F89	0	1
42658	0xA61	Ground TOC Block 3	0	0xEF02	1	---	F89	0	1
42659	0xA62	Phase IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42660	0xA63	Phase IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42661	0xA64	Phase IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42662	0xA65	Neutral IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42663	0xA66	Neutral IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42664	0xA67	Neutral IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42665	0xA68	Ground IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42666	0xA69	Ground IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42667	0xA6A	Ground IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42668	0xA6B	Phase TOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42669	0xA6C	Phase TOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42670	0xA6D	Phase TOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42671	0xA6E	Neutral TOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42672	0xA6F	Neutral TOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42673	0xA70	Neutral TOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42674	0xA71	Ground TOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42675	0xA72	Ground TOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42676	0xA73	Ground TOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42677	0xA74	Sensitive Ground TOC Block 1	0	0xEF02	1	---	F89	0	1
42678	0xA75	Sensitive Ground TOC Block 2	0	0xEF02	1	---	F89	0	1
42679	0xA76	Sensitive Ground TOC Block 3	0	0xEF02	1	---	F89	0	1
42719	0xA9E	Thermal Model Block 1	0	0xEF02	1	---	F89	0	1
42720	0xA9F	Thermal Model Block 2	0	0xEF02	1	---	F89	0	1
42721	0xAA0	Thermal Model Block 3	0	0xEF02	1	---	F89	0	1
42722	0xAA1	50SG IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42723	0xAA2	50SG IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42724	0xAA3	50SG IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42725	0xAA4	50SG IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42726	0xAA5	50SG IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42727	0xAA6	50SG IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42728	0xAA7	Negative Sequence IOC Block 1	0	0xEF02	1	---	F89	0	1
42729	0xAA8	Negative Sequence IOC Block 2	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
42730	0xAA9	Negative Sequence IOC Block 3	0	0xEF02	1	---	F89	0	1
42731	0xAAA	Neg Seq TOC1 Block 1	0	0xEF02	1	---	F89	0	1
42732	0xAAB	Neg Seq TOC1 Block 2	0	0xEF02	1	---	F89	0	1
42733	0xAAC	Neg Seq TOC1 Block 3	0	0xEF02	1	---	F89	0	1
42734	0xAAD	Neg Seq TOC2 Block 1	0	0xEF02	1	---	F89	0	1
42735	0xAAE	Neg Seq TOC2 Block 2	0	0xEF02	1	---	F89	0	1
42736	0xAAF	Neg Seq TOC2 Block 3	0	0xEF02	1	---	F89	0	1
46320	0x18AF	Breaker Failure Block 1	0	0xEF02	1	---	F89	0	1
46321	0x18B0	Breaker Failure Block 2	0	0xEF02	1	---	F89	0	1
46322	0x18B1	Breaker Failure Block 3	0	0xEF02	1	---	F89	0	1
46344	0x18C7	XFMR Block 1	0	0xEF02	1	---	F89	0	1
46345	0x18C8	XFMR Block 2	0	0xEF02	1	---	F89	0	1
46346	0x18C9	XFMR Block 3	0	0xEF02	1	---	F89	0	1
46347	0x18CA	RGF 1 Block1	0	0xEF02	1	---	F89	0	1
46348	0x18CB	REF 1 Block2	0	0xEF02	1	---	F89	0	1
46349	0x18CC	RGF 1 Block3	0	0xEF02	1	---	F89	0	1
46350	0x18CD	RGF 2 Block1	0	0xEF02	1	---	F89	0	1
46351	0x18CE	RGF 2 Block2	0	0xEF02	1	---	F89	0	1
46352	0x18CF	RGF 2 Block3	0	0xEF02	1	---	F89	0	1
46353	0x18D0	Inst Diff Block1	0	0xEF02	1	---	F89	0	1
46354	0x18D1	Inst Diff Block2	0	0xEF02	1	---	F89	0	1
46355	0x18D2	Inst Diff Block3	0	0xEF02	1	---	F89	0	1
46362	0x18D9	Sensitive Ground TOC2 Block 1	0	0xEF02	1	---	F89	0	1
46363	0x18DA	Sensitive Ground TOC2 Block 2	0	0xEF02	1	---	F89	0	1
46364	0x18DB	Sensitive Ground TOC2 Block 3	0	0xEF02	1	---	F89	0	1
46889	0x1AE8	Negative Sequence IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
46890	0x1AE9	Negative Sequence IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
46891	0x1AEA	Negative Sequence IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
PROTECTION ELEMENT RELAY CONFIGURATION									
42737	0xAB0	Phase IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42738	0xAB1	Neutral IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42739	0xAB2	Ground IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42740	0xAB3	Phase TOC1 Relay	0	0x7F	1	---	FC198	0	1
42741	0xAB4	Neutral TOC Relay	0	0x7F	1	---	FC198	0	1
42742	0xAB5	Ground TOC1 Relay	0	0x7F	1	---	FC198	0	1
42743	0xAB6	Phase IOC 2 Relay	0	0x7F	1	---	FC198	0	1
42744	0xAB7	Neutral IOC 2 Relay	0	0x7F	1	---	FC198	0	1
42745	0xAB8	Ground IOC 2 Relay	0	0x7F	1	---	FC198	0	1
42746	0xAB9	Phase TOC 2 Relay	0	0x7F	1	---	FC198	0	1
42747	0xABA	Neutral TOC 2 Relay	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
42748	0xABB	Ground TOC 2 Relay	0	0x7F	1	---	FC198	0	1
42749	0xABC	Sensitive Ground TOC1 Relay	0	0x7F	1	---	FC198	0	1
42762	0xAC9	Sensitive Ground IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42763	0xACA	Sensitive Ground IOC2 Relay	0	0x7F	1	---	FC198	0	1
42764	0xACB	Negative Sequence IOC Relays	0	0x7F	1	---	FC198	0	1
42774	0xAD5	RTD Trouble Relays	0	0x7F	1	---	FC198	0	1
42776	0xAD7	REF 1 Relays	0	0x7F	1	---	FC198	0	1
42777	0xAD8	REF 2 Relays	0	0x7F	1	---	FC198	0	1
42778	0xAD9	Inst Diff Relays	0	0x7F	1	---	FC198	0	1
42782	0xADD	Sensitive Ground TOC2 Relay	0	0x7F	1	---	FC198	0	1
46892	0x1AEB	Negative Sequence IOC 2 Relays	0	0x7F	1	---	FC198	0	1
FAULT REPORT									
46985	0x1B48	Fault Report Delay	0	60000	1	s	F3	10	1
46986	0x1B49	Fault Report Trigger	0	0xFFFF	1	---	FC134E	0x8002	1
LOGIC ELEMENTS (TRIGGERS & BLOCKS)									
41123	0x462	Logic Element 1 Trigger Logic	0	5	1	---	FC149	0	1
41124	0x463	Logic Element 1 Block Logic	0	5	1	---	FC149	0	1
41131	0x46A	Logic Element 2 Trigger Logic	0	5	1	---	FC149	0	1
41132	0x46B	Logic Element 2 Block Logic	0	5	1	---	FC149	0	1
41139	0x472	Logic Element 3 Trigger Logic	0	5	1	---	FC149	0	1
41140	0x473	Logic Element 3 Block Logic	0	5	1	---	FC149	0	1
41147	0x47A	Logic Element 4 Trigger Logic	0	5	1	---	FC149	0	1
41148	0x47B	Logic Element 4 Block Logic	0	5	1	---	FC149	0	1
41155	0x482	Logic Element 5 Trigger Logic	0	5	1	---	FC149	0	1
41156	0x483	Logic Element 5 Block Logic	0	5	1	---	FC149	0	1
41163	0x48A	Logic Element 6 Trigger Logic	0	5	1	---	FC149	0	1
41164	0x48B	Logic Element 6 Block Logic	0	5	1	---	FC149	0	1
41171	0x492	Logic Element 7 Trigger Logic	0	5	1	---	FC149	0	1
41172	0x493	Logic Element 7 Block Logic	0	5	1	---	FC149	0	1
41179	0x49A	Logic Element 8 Trigger Logic	0	5	1	---	FC149	0	1
41180	0x49B	Logic Element 8 Block Logic	0	5	1	---	FC149	0	1
41187	0x4A2	Logic Element 9 Trigger Logic	0	5	1	---	FC149	0	1
41188	0x4A3	Logic Element 9 Block Logic	0	5	1	---	FC149	0	1
41195	0x4AA	Logic Element 10 Trigger Logic	0	5	1	---	FC149	0	1
41196	0x4AB	Logic Element 10 Block Logic	0	5	1	---	FC149	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
41203	0x4B2	Logic Element 11 Trigger Logic	0	5	1	---	FC149	0	1
41204	0x4B3	Logic Element 11 Block Logic	0	5	1	---	FC149	0	1
41211	0x4BA	Logic Element 12 Trigger Logic	0	5	1	---	FC149	0	1
41212	0x4BB	Logic Element 12 Block Logic	0	5	1	---	FC149	0	1
41219	0x4C2	Logic Element 13 Trigger Logic	0	5	1	---	FC149	0	1
41220	0x4C3	Logic Element 13 Block Logic	0	5	1	---	FC149	0	1
41227	0x4CA	Logic Element 14 Trigger Logic	0	5	1	---	FC149	0	1
41228	0x4CB	Logic Element 14 Block Logic	0	5	1	---	FC149	0	1
41235	0x4D2	Logic Element 15 Trigger Logic	0	5	1	---	FC149	0	1
41236	0x4D3	Logic Element 15 Block Logic	0	5	1	---	FC149	0	1
41243	0x4DA	Logic Element 16 Trigger Logic	0	5	1	---	FC149	0	1
41244	0x4DB	Logic Element 16 Block Logic	0	5	1	---	FC149	0	1
43470	0xD8D	Logic Element 1 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43471	0xD8E	Logic Element 1 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43472	0xD8F	Logic Element 1 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43473	0xD90	Logic Element 1 Block 1	0	0xFFFF	1	---	FC134B	0	1
43474	0xD91	Logic Element 1 Block 2	0	0xFFFF	1	---	FC134B	0	1
43475	0xD92	Logic Element 1 Block 3	0	0xFFFF	1	---	FC134B	0	1
43476	0xD93	Logic Element 2 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43477	0xD94	Logic Element 2 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43478	0xD95	Logic Element 2 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43479	0xD96	Logic Element 2 Block 1	0	0xFFFF	1	---	FC134B	0	1
43480	0xD97	Logic Element 2 Block 2	0	0xFFFF	1	---	FC134B	0	1
43481	0xD98	Logic Element 2 Block 3	0	0xFFFF	1	---	FC134B	0	1
43482	0xD99	Logic Element 3 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43483	0xD9A	Logic Element 3 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43484	0xD9B	Logic Element 3 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43485	0xD9C	Logic Element 3 Block 1	0	0xFFFF	1	---	FC134B	0	1
43486	0xD9D	Logic Element 3 Block 2	0	0xFFFF	1	---	FC134B	0	1
43487	0xD9E	Logic Element 3 Block 3	0	0xFFFF	1	---	FC134B	0	1
43488	0xD9F	Logic Element 4 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43489	0xDA0	Logic Element 4 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43490	0xDA1	Logic Element 4 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43491	0xDA2	Logic Element 4 Block 1	0	0xFFFF	1	---	FC134B	0	1
43492	0xDA3	Logic Element 4 Block 2	0	0xFFFF	1	---	FC134B	0	1
43493	0xDA4	Logic Element 4 Block 3	0	0xFFFF	1	---	FC134B	0	1
43494	0xDA5	Logic Element 5 Trigger 1	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
43495	0xDA6	Logic Element 5 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43496	0xDA7	Logic Element 5 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43497	0xDA8	Logic Element 5 Block 1	0	0xFFFF	1	---	FC134B	0	1
43498	0xDA9	Logic Element 5 Block 2	0	0xFFFF	1	---	FC134B	0	1
43499	0xDAA	Logic Element 5 Block 3	0	0xFFFF	1	---	FC134B	0	1
43500	0xDAB	Logic Element 6 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43501	0xDAC	Logic Element 6 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43502	0xDAD	Logic Element 6 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43503	0xDAE	Logic Element 6 Block 1	0	0xFFFF	1	---	FC134B	0	1
43504	0xDAF	Logic Element 6 Block 2	0	0xFFFF	1	---	FC134B	0	1
43505	0xDB0	Logic Element 6 Block 3	0	0xFFFF	1	---	FC134B	0	1
43506	0xDB1	Logic Element 7 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43507	0xDB2	Logic Element 7 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43508	0xDB3	Logic Element 7 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43509	0xDB4	Logic Element 7 Block 1	0	0xFFFF	1	---	FC134B	0	1
43510	0xDB5	Logic Element 7 Block 2	0	0xFFFF	1	---	FC134B	0	1
43511	0xDB6	Logic Element 7 Block 3	0	0xFFFF	1	---	FC134B	0	1
43512	0xDB7	Logic Element 8 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43513	0xDB8	Logic Element 8 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43514	0xDB9	Logic Element 8 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43515	0xDBA	Logic Element 8 Block 1	0	0xFFFF	1	---	FC134B	0	1
43516	0xDBB	Logic Element 8 Block 2	0	0xFFFF	1	---	FC134B	0	1
43517	0xDBC	Logic Element 8 Block 3	0	0xFFFF	1	---	FC134B	0	1
46365	0x18DC	Logic Element 9 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46366	0x18DD	Logic Element 9 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46367	0x18DE	Logic Element 9 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46368	0x18DF	Logic Element 9 Block 1	0	0xFFFF	1	---	FC134B	0	1
46369	0x18E0	Logic Element 9 Block 2	0	0xFFFF	1	---	FC134B	0	1
46370	0x18E1	Logic Element 9 Block 3	0	0xFFFF	1	---	FC134B	0	1
46371	0x18E2	Logic Element 10 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46372	0x18E3	Logic Element 10 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46373	0x18E4	Logic Element 10 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46374	0x18E5	Logic Element 10 Block 1	0	0xFFFF	1	---	FC134B	0	1
46375	0x18E6	Logic Element 10 Block 2	0	0xFFFF	1	---	FC134B	0	1
46376	0x18E7	Logic Element 10 Block 3	0	0xFFFF	1	---	FC134B	0	1
46377	0x18E8	Logic Element 11 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46378	0x18E9	Logic Element 11 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46379	0x18EA	Logic Element 11 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46380	0x18EB	Logic Element 11 Block 1	0	0xFFFF	1	---	FC134B	0	1
46381	0x18EC	Logic Element 11 Block 2	0	0xFFFF	1	---	FC134B	0	1
46382	0x18ED	Logic Element 11 Block 3	0	0xFFFF	1	---	FC134B	0	1
46383	0x18EE	Logic Element 12 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46384	0x18EF	Logic Element 12 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46385	0x18F0	Logic Element 12 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46386	0x18F1	Logic Element 12 Block 1	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
46387	0x18F2	Logic Element 12 Block 2	0	0xFFFF	1	---	FC134B	0	1
46388	0x18F3	Logic Element 12 Block 3	0	0xFFFF	1	---	FC134B	0	1
46389	0x18F4	Logic Element 13 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46390	0x18F5	Logic Element 13 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46391	0x18F6	Logic Element 13 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46392	0x18F7	Logic Element 13 Block 1	0	0xFFFF	1	---	FC134B	0	1
46393	0x18F8	Logic Element 13 Block 2	0	0xFFFF	1	---	FC134B	0	1
46394	0x18F9	Logic Element 13 Block 3	0	0xFFFF	1	---	FC134B	0	1
46395	0x18FA	Logic Element 14 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46396	0x18FB	Logic Element 14 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46397	0x18FC	Logic Element 14 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46398	0x18FD	Logic Element 14 Block 1	0	0xFFFF	1	---	FC134B	0	1
46399	0x18FE	Logic Element 14 Block 2	0	0xFFFF	1	---	FC134B	0	1
46400	0x18FF	Logic Element 14 Block 3	0	0xFFFF	1	---	FC134B	0	1
46401	0x1900	Logic Element 15 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46402	0x1901	Logic Element 15 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46403	0x1902	Logic Element 15 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46404	0x1903	Logic Element 15 Block 1	0	0xFFFF	1	---	FC134B	0	1
46405	0x1904	Logic Element 15 Block 2	0	0xFFFF	1	---	FC134B	0	1
46406	0x1905	Logic Element 15 Block 3	0	0xFFFF	1	---	FC134B	0	1
46407	0x1906	Logic Element 16 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46408	0x1907	Logic Element 16 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46409	0x1908	Logic Element 16 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46410	0x1909	Logic Element 16 Block 1	0	0xFFFF	1	---	FC134B	0	1
46411	0x190A	Logic Element 16 Block 2	0	0xFFFF	1	---	FC134B	0	1
46412	0x190B	Logic Element 16 Block 3	0	0xFFFF	1	---	FC134B	0	1
47012	0x1B63	Logic Element 1 Number of Triggers	2	8	1	---	F1	3	1
47013	0x1B64	Logic Element 1 Number of Blocks	2	4	1	---	F1	3	1
47014	0x1B65	Logic Element 1 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47015	0x1B66	Logic Element 1 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47016	0x1B67	Logic Element 1 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47017	0x1B68	Logic Element 1 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47018	0x1B69	Logic Element 1 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47019	0x1B6A	Logic Element 1 Block 4	0	0xFFFF	1	---	FC134B	0	1
47020	0x1B6B	Logic Element 2 Number of Triggers	2	8	1	---	F1	3	1
47021	0x1B6C	Logic Element 2 Number of Blocks	2	4	1	---	F1	3	1
47022	0x1B6D	Logic Element 2 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47023	0x1B6E	Logic Element 2 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47024	0x1B6F	Logic Element 2 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47025	0x1B70	Logic Element 2 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47026	0x1B71	Logic Element 2 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47027	0x1B72	Logic Element 2 Block 4	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
47028	0x1B73	Logic Element 3 Number of Triggers	2	8	1	---	F1	3	1
47029	0x1B74	Logic Element 3 Number of Blocks	2	4	1	---	F1	3	1
47030	0x1B75	Logic Element 3 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47031	0x1B76	Logic Element 3 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47032	0x1B77	Logic Element 3 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47033	0x1B78	Logic Element 3 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47034	0x1B79	Logic Element 3 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47035	0x1B7A	Logic Element 3 Block 4	0	0xFFFF	1	---	FC134B	0	1
47036	0x1B7B	Logic Element 4 Number of Triggers	2	8	1	---	F1	3	1
47037	0x1B7C	Logic Element 4 Number of Blocks	2	4	1	---	F1	3	1
47038	0x1B7D	Logic Element 4 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47039	0x1B7E	Logic Element 4 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47040	0x1B7F	Logic Element 4 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47041	0x1B80	Logic Element 4 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47042	0x1B81	Logic Element 4 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47043	0x1B82	Logic Element 4 Block 4	0	0xFFFF	1	---	FC134B	0	1
47044	0x1B83	Logic Element 5 Number of Triggers	2	8	1	---	F1	3	1
47045	0x1B84	Logic Element 5 Number of Blocks	2	4	1	---	F1	3	1
47046	0x1B85	Logic Element 5 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47047	0x1B86	Logic Element 5 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47048	0x1B87	Logic Element 5 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47049	0x1B88	Logic Element 5 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47050	0x1B89	Logic Element 5 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47051	0x1B8A	Logic Element 5 Block 4	0	0xFFFF	1	---	FC134B	0	1
47052	0x1B8B	Logic Element 6 Number of Triggers	2	8	1	---	F1	3	1
47053	0x1B8C	Logic Element 6 Number of Blocks	2	4	1	---	F1	3	1
47054	0x1B8D	Logic Element 6 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47055	0x1B8E	Logic Element 6 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47056	0x1B8F	Logic Element 6 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47057	0x1B90	Logic Element 6 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47058	0x1B91	Logic Element 6 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47059	0x1B92	Logic Element 6 Block 4	0	0xFFFF	1	---	FC134B	0	1
47060	0x1B93	Logic Element 7 Number of Triggers	2	8	1	---	F1	3	1
47061	0x1B94	Logic Element 7 Number of Blocks	2	4	1	---	F1	3	1
47062	0x1B95	Logic Element 7 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47063	0x1B96	Logic Element 7 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47064	0x1B97	Logic Element 7 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47065	0x1B98	Logic Element 7 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47066	0x1B99	Logic Element 7 Trigger 8	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
47067	0x1B9A	Logic Element 7 Block 4	0	0xFFFF	1	---	FC134B	0	1
47068	0x1B9B	Logic Element 8 Number of Triggers	2	8	1	---	F1	3	1
47069	0x1B9C	Logic Element 8 Number of Blocks	2	4	1	---	F1	3	1
47070	0x1B9D	Logic Element 8 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47071	0x1B9E	Logic Element 8 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47072	0x1B9F	Logic Element 8 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47073	0x1BA0	Logic Element 8 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47074	0x1BA1	Logic Element 8 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47075	0x1BA2	Logic Element 8 Block 4	0	0xFFFF	1	---	FC134B	0	1
47076	0x1BA3	Logic Element 9 Number of Triggers	2	8	1	---	F1	3	1
47077	0x1BA4	Logic Element 9 Number of Blocks	2	4	1	---	F1	3	1
47078	0x1BA5	Logic Element 9 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47079	0x1BA6	Logic Element 9 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47080	0x1BA7	Logic Element 9 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47081	0x1BA8	Logic Element 9 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47082	0x1BA9	Logic Element 9 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47083	0x1BAA	Logic Element 9 Block 4	0	0xFFFF	1	---	FC134B	0	1
47084	0x1BAB	Logic Element 10 Number of Triggers	2	8	1	---	F1	3	1
47085	0x1BAC	Logic Element 10 Number of Blocks	2	4	1	---	F1	3	1
47086	0x1BAD	Logic Element 10 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47087	0x1BAE	Logic Element 10 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47088	0x1BAF	Logic Element 10 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47089	0x1BB0	Logic Element 10 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47090	0x1BB1	Logic Element 10 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47091	0x1BB2	Logic Element 10 Block 4	0	0xFFFF	1	---	FC134B	0	1
47092	0x1BB3	Logic Element 11 Number of Triggers	2	8	1	---	F1	3	1
47093	0x1BB4	Logic Element 11 Number of Blocks	2	4	1	---	F1	3	1
47094	0x1BB5	Logic Element 11 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47095	0x1BB6	Logic Element 11 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47096	0x1BB7	Logic Element 11 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47097	0x1BB8	Logic Element 11 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47098	0x1BB9	Logic Element 11 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47099	0x1BBA	Logic Element 11 Block 4	0	0xFFFF	1	---	FC134B	0	1
47100	0x1BBB	Logic Element 12 Number of Triggers	2	8	1	---	F1	3	1
47101	0x1BBC	Logic Element 12 Number of Blocks	2	4	1	---	F1	3	1
47102	0x1BBD	Logic Element 12 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47103	0x1BBE	Logic Element 12 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47104	0x1BBF	Logic Element 12 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47105	0x1BC0	Logic Element 12 Trigger 7	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
47106	0x1BC1	Logic Element 12 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47107	0x1BC2	Logic Element 12 Block 4	0	0xFFFF	1	---	FC134B	0	1
47108	0x1BC3	Logic Element 13 Number of Triggers	2	8	1	---	F1	3	1
47109	0x1BC4	Logic Element 13 Number of Blocks	2	4	1	---	F1	3	1
47110	0x1BC5	Logic Element 13 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47111	0x1BC6	Logic Element 13 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47112	0x1BC7	Logic Element 13 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47113	0x1BC8	Logic Element 13 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47114	0x1BC9	Logic Element 13 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47115	0x1BCA	Logic Element 13 Block 4	0	0xFFFF	1	---	FC134B	0	1
47116	0x1BCB	Logic Element 14 Number of Triggers	2	8	1	---	F1	3	1
47117	0x1BCC	Logic Element 14 Number of Blocks	2	4	1	---	F1	3	1
47118	0x1BCD	Logic Element 14 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47119	0x1BCE	Logic Element 14 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47120	0x1BCF	Logic Element 14 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47121	0x1BD0	Logic Element 14 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47122	0x1BD1	Logic Element 14 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47123	0x1BD2	Logic Element 14 Block 4	0	0xFFFF	1	---	FC134B	0	1
47124	0x1BD3	Logic Element 15 Number of Triggers	2	8	1	---	F1	3	1
47125	0x1BD4	Logic Element 15 Number of Blocks	2	4	1	---	F1	3	1
47126	0x1BD5	Logic Element 15 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47127	0x1BD6	Logic Element 15 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47128	0x1BD7	Logic Element 15 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47129	0x1BD8	Logic Element 15 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47130	0x1BD9	Logic Element 15 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47131	0x1BDA	Logic Element 15 Block 4	0	0xFFFF	1	---	FC134B	0	1
47132	0x1BDB	Logic Element 16 Number of Triggers	2	8	1	---	F1	3	1
47133	0x1BDC	Logic Element 16 Number of Blocks	2	4	1	---	F1	3	1
47134	0x1BDD	Logic Element 16 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47135	0x1BDE	Logic Element 16 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47136	0x1BDF	Logic Element 16 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47137	0x1BE0	Logic Element 16 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47138	0x1BE1	Logic Element 16 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47139	0x1BE2	Logic Element 16 Block 4	0	0xFFFF	1	---	FC134B	0	1
DEMAND									
47189	0x1C14	Current Demand 1 Function	0	2	1	---	FC206	0	1
47191	0x1C16	Current Demand 1 Measurement Type	0	2	1	---	FC431	0	1
47192	0x1C17	Current Demand 1 90% Response Time	0	4	1	---	FC432	2	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
47193	0x1C18	Current Demand 1 Time Interval	0	4	1	---	FC432	3	1
47194	0x1C19	Current Demand 1 Pkp	10	10000	1	A	F1	1000	1
47195	0x1C1A	Current Demand 1 Relays	0	0x7F	1	---	FC198	0	1
47196	0x1C1B	Current Demand 1 Block 1	0	0xEF02	1	---	F89	0	1
47197	0x1C1C	Current Demand 1 Block 2	0	0xEF02	1	---	F89	0	1
47198	0x1C1D	Current Demand 1 Block 3	0	0xEF02	1	---	F89	0	1
47199	0x1C1E	Current Demand 2 Function	0	2	1	---	FC206	0	1
47201	0x1C20	Current Demand 2 Measurement Type	0	2	1	---	FC431	0	1
47202	0x1C21	Current Demand 2 90% Response Time	0	4	1	---	FC432	2	1
47203	0x1C22	Current Demand 2 Time Interval	0	4	1	---	FC432	3	1
47204	0x1C23	Current Demand 2 Pkp	10	10000	1	A	F1	1000	1
47205	0x1C24	Current Demand 2 Relays	0	0x7F	1	---	FC198	0	1
47206	0x1C25	Current Demand 2 Block 1	0	0xEF02	1	---	F89	0	1
47207	0x1C26	Current Demand 2 Block 2	0	0xEF02	1	---	F89	0	1
47208	0x1C27	Current Demand 2 Block 3	0	0xEF02	1	---	F89	0	1
LOCKOUT									
47242	0x1C49	Lockout Function	0	1	1	---	FC126	0	1
47243	0x1C4A	Lockout Input 1	0	0xFFFF	1	---	FC134D	0	1
47244	0x1C4B	Lockout Input 2	0	0xFFFF	1	---	FC134D	0	1
47245	0x1C4C	Lockout Input 3	0	0xFFFF	1	---	FC134D	0	1
47246	0x1C4D	Lockout Input 4	0	0xFFFF	1	---	FC134D	0	1
47247	0x1C4E	Lockout Input 5	0	0xFFFF	1	---	FC134D	0	1
47248	0x1C4F	Lockout Input 6	0	0xFFFF	1	---	FC134D	0	1
47249	0x1C50	Lockout Input 7	0	0xFFFF	1	---	FC134D	0	1
47250	0x1C51	Lockout Input 8	0	0xFFFF	1	---	FC134D	0	1
47251	0x1C52	Lockout Input 9	0	0xFFFF	1	---	FC134D	0	1
47252	0x1C53	Lockout Input 10	0	0xFFFF	1	---	FC134D	0	1
47253	0x1C54	Lockout Supervision	0	0xFFFF	1	---	FC134C	1	1
47254	0x1C55	Lockout Reset	0	0xFFFF	1	---	FC134F	0	1
47255	0x1C56	Lockout Reset From PB Reset	0	1	1	---	FC126	0	1
47256	0x1C57	Lockout Block Reset Lockout	0	0xFFFF	1	---	FC134D	0x8002	1
47257	0x1C58	Lockout Block 1	0	0xEF02	1	---	F89	0	1
47258	0x1C59	Lockout Block 2	0	0xEF02	1	---	F89	0	1
47259	0x1C5A	Lockout Block 3	0	0xEF02	1	---	F89	0	1
TESTING									
47303	0x1C86	Force leds	0	1		---	FC126	0	1
47304	0x1C87	Led 1	0	1		---	FC103	0	1
47305	0x1C88	Led 2	0	1		---	FC103	0	1
47306	0x1C89	Led 3	0	1		---	FC103	0	1
47307	0x1C8A	Led 4	0	1		---	FC103	0	1
47308	0x1C8B	Led 5	0	1		---	FC103	0	1
47309	0x1C8C	Led 6	0	1		---	FC103	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
47310	0x1C8D	Led 7	0	1		---	FC103	0	1
47311	0x1C8E	Led 8	0	1		---	FC103	0	1
47312	0x1C8F	Led 9	0	1		---	FC103	0	1
47313	0x1C90	Led 10	0	1		---	FC103	0	1
47314	0x1C91	Led 11	0	1		---	FC103	0	1
47315	0x1C92	Led 12	0	1		---	FC103	0	1
47318	0x1C95	Force Output Relays	0	1		---	FC126	0	1
47319	0x1C96	Relay 1 Trip	0	1		---	FC103	0	1
47320	0x1C97	Relay 2 Close	0	1		---	FC103	0	1
47321	0x1C98	Relay 3 Auxiliary	0	1		---	FC103	0	1
47322	0x1C99	Relay 4 Auxiliary	0	1		---	FC103	0	1
47323	0x1C9A	Relay 5 Auxiliary	0	1		---	FC103	0	1
47324	0x1C9B	Relay 6 Auxiliary	0	1		---	FC103	0	1
61850 MAPPING									
47327	0x1C9E	Analog input 1 Value	0	251	1	---	F88	0	1
47328	0x1C9F	Analog input 1 db	0	100000	1	%	F17	0	2
47330	0x1CA1	Analog input 1 Min	-2147483648	2147483647	1	---	F13	0	2
47332	0x1CA3	Analog input 1 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47334	0x1CA5	Analog input 2 Value	0	251	1	---	F88	0	1
47335	0x1CA6	Analog input 2 db	0	100000	1	%	F17	0	2
47337	0x1CA8	Analog input 2 Min	-2147483648	2147483647	1	---	F13	0	2
47339	0x1CAA	Analog input 2 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47341	0x1CAC	Analog input 3 Value	0	251	1	---	F88	0	1
47342	0x1CAD	Analog input 3 db	0	100000	1	%	F17	0	2
47344	0x1CAF	Analog input 3 Min	-2147483648	2147483647	1	---	F13	0	2
47346	0x1CB1	Analog input 3 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47348	0x1CB3	Analog input 4 Value	0	251	1	---	F88	0	1
47349	0x1CB4	Analog input 4 db	0	100000	1	%	F17	0	2
47351	0x1CB6	Analog input 4 Min	-2147483648	2147483647	1	---	F13	0	2
47353	0x1CB8	Analog input 4 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47355	0x1CBA	Analog input 5 Value	0	251	1	---	F88	0	1
47356	0x1CBB	Analog input 5 db	0	100000	1	%	F17	0	2
47358	0x1CBD	Analog input 5 Min	-2147483648	2147483647	1	---	F13	0	2
47360	0x1CBF	Analog input 5 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47362	0x1CC1	Analog input 6 Value	0	251	1	---	F88	0	1
47363	0x1CC2	Analog input 6 db	0	100000	1	%	F17	0	2
47365	0x1CC4	Analog input 6 Min	-2147483648	2147483647	1	---	F13	0	2
47367	0x1CC6	Analog input 6 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47369	0x1CC8	Analog input 7 Value	0	251	1	---	F88	0	1
47370	0x1CC9	Analog input 7 db	0	100000	1	%	F17	0	2
47372	0x1CCB	Analog input 7 Min	-2147483648	2147483647	1	---	F13	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
47374	0x1CCD	Analog input 7 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47376	0x1CCF	Analog input 8 Value	0	251	1	---	F88	0	1
47377	0x1CD0	Analog input 8 db	0	100000	1	%	F17	0	2
47379	0x1CD2	Analog input 8 Min	-2147483648	2147483647	1	---	F13	0	2
47381	0x1CD4	Analog input 8 Max	-2147483648	2147483647	1	---	F13	2147483647	2

345 Format Codes

In some cases names of settings displayed in the HMI have been shortened. The Long Definition column below contains the full name used in the Enervista Setup software, when applicable. In many cases the long description is the same as the description.

Code	Type	Definition	Long Definition
F1	unsigned 16 bits	Unsigned Value	
Example: 1234 stored as 1234			
F1B	unsigned 16 bits	Unsigned Value Max Value = OFF	
Example: 1234 stored as 1234			
F1C	unsigned 16 bits	Unsigned Value Min Value = OFF	
Example: 1234 stored as 1234			
F2	unsigned 16 bits	Unsigned Value 1 Decimal Place	
Example: 123.4 stored as 1234			
F2B	unsigned 16 bits	Unsigned Value 1 Decimal Place	
Example: 123.4 stored as 1234			
F3	unsigned 16 bits	Unsigned Value 2 Decimal Places	
Example: 12.34 stored as 1234			
F3B	unsigned 16 bits	Unsigned Value 2 Decimal Places	
Example: 12.34 stored as 1234			
F4	signed 16 bits	2's Complement Signed Value	
Example: -1234 stored as -1234 i.e. 64302			
F4B	signed 16 bits	2's Complement Signed Value Max Value = OFF	
Example: -1234 stored as -1234 i.e. 64302			
F5	signed 16 bits	2's Complement Signed Value 1 Decimal Place	
Example: -123.4 stored as -1234 i.e. 64302			
F6	signed 16 bits	2's Complement Signed Value 2 Decimal Places	
Example: -12.34 stored as -1234 i.e. 64302			
F7	signed 16 bits	2's Complement Signed Value 3 Decimal Places	
Example: -1.234 stored as -1234 i.e. 64302			
F8	signed 16 bits	2's Complement Signed Value 4 Decimal Places	
Example: -0.1234 stored as -1234 i.e. 64302			

Code	Type	Definition	Long Definition
F9	unsigned 32 bits	Unsigned Long Value	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 123456 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			
F10	unsigned 32 bits	Unsigned Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 12345.6 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			
F11	unsigned 32 bits	Unsigned Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 1234.56 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			
F12	signed 32 bits	2's Complement Signed Long Value	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -123456 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F13	signed 32 bits	2's Complement Signed Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -12345.6 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F14	signed 32 bits	2's Complement Signed Long Value 2 Decimal Places	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -1234.56 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F14A	signed 32 bits	2's Complement Signed Long Value 3 Decimal Places	
F15	unsigned 16 bits	Hardware Revision	
0		Prototype	Prototype
1		A	A
2		B	B
3		C	C
4		D	D
5		E	E
6		F	F
7		G	G
8		H	H
9		I	I
10		J	J
11		K	K
12		L	L

Code	Type	Definition	Long Definition
13		M	M
14		N	N
15		O	O
16		P	P
17		Q	Q
18		R	R
19		S	S
20		T	T
21		U	U
22		V	V
23		W	W
24		X	X
25		Y	Y
26		Z	Z
F16	signed 16 bits	2's Complement Signed Value 1 Decimal Place	
F17	unsigned 32 bits	Unsigned Long Value 3 Decimal Places	
F17A	unsigned 16 bits	Unsigned Value 3 Decimal Places	
F18	unsigned 32 bits	Date MM/DD/YYYY	
1st byte Month 1 to 12			
2nd byte Day 1 to 31			
3rd and 4th byte Year 2000 to 2099 2000 stored as 34867152 (i.e. 1st word: 0214 2nd word 07D0)			
Example: Feb 20			
F19	unsigned 32 bits	Time HH:MM:SS.sss	
1st byte Hours 0 to 23			
2nd byte Minutes 0 to 59			
3rd and 4th byte miliSeconds 0 to 59999			
Example: 2:05pm stored as 235208704 (i.e. 1st word: 0E05 2nd word 0000)			
F20	signed 32 bits	2's Complement Signed Long Value	
F21	signed 16 bits	2's Complement Signed Value	
F22	unsigned 16 bits	Two 8-BIT Characters Packed Into 16-BIT Unsigned	
F23	unsigned 16 bits	Unsigned Value	
F24	unsigned 16 bits	Unsigned Value AS Seconds SHOW AS Duration	
F24B	unsigned 16 bits	Unsigned Value AS Seconds SHOW AS Duration	
F25	unsigned 16 bits	Trace Memory Channel Data	
0		Leading	Leading
1		Lagging	Lagging
F26	unsigned 16 bits	350 Trace Memory Channel Data	
F26A	unsigned 16 bits	339 Trace Memory Channel Data	
4		Not Used	Not Used
5		Not Used	Not Used
6		Ia	Ia
7		Ib	Ib
8		Ic	Ic
9		Ig	Ig

Code	Type	Definition	Long Definition
10		Inputs 1-16	Inputs 1-16
11		Outputs 1-16	Outputs 1-16
12		Virtual Inputs1-16	Virtual Inputs 1-16
13		Virtual Inputs7-32	Virtual Inputs 17-32
14		Remote INs 1-16	Remote Inputs 1-16
15		Remote INs 17-32	Remote Inputs 17-32
16		Logic Elements	Logic Elements
F26B	unsigned 16 bits	345 Trace Memory Channel Data	
0		W2 Ia	W2 Ia
1		W2 Ib	W2 Ib
2		W2 Ic	W2 Ic
3		W2 Ig	W2 Ig
4		Not Used	Not Used
5		Not Used	Not Used
6		W1 Ia	W1 Ia
7		W1 Ib	W1 Ib
8		W1 Ic	W1 Ic
9		W1 Ig	W1 Ig
10		Inputs 1-16	Inputs 1-16
11		Outputs 1-16	Outputs 1-16
12		Virtual Inputs1-16	Virtual Inputs 1-16
13		Virtual Inputs7-32	Virtual Inputs 17-32
14		Remote INs 1-16	Remote Inputs 1-16
15		Remote INs 17-32	Remote Inputs 17-32
16		Logic Elements	Logic Elements
F27	unsigned 32 bits	Unsigned Long Value	
F36	unsigned 16 bits	OC Curve Selection	
0		Extremely Inverse	Extremely Inverse
1		Very Inverse	Very Inverse
2		Normally Inverse	Normally Inverse
3		Moderately Inverse	Moderately Inverse
4		Definite Time	Definite Time
5		IEC Curve A	IEC Curve A
6		IEC Curve B	IEC Curve B
7		IEC Curve C	IEC Curve C
10		IAC Extr. Inverse	IAC Extremely Inverse
11		IAC Very Inverse	IAC Very Inverse
12		IAC Inverse	IAC Inverse
13		IAC Short Inverse	IAC Short Inverse
14		IEC Short Inverse	IEC Short Inverse
F37	unsigned 16 bits	OC Pickup flags	
1		Phase A	Phase A
2		Phase B	Phase B
4		Phase C	Phase C
7		All Phases	All Phases
F38	unsigned 16 bits	OC Direction pickup flags	
0x10		Direction PKP Ph A	Direction PKP Phase A

Code	Type	Definition	Long Definition
0x20		Direction PKP Ph B	Direction PKP Phase B
0x40		Direction PKP Ph C	Direction PKP Phase C
0x80		Direction Pickup	Direction Pickup
0xF0		Direction	Direction
F48	unsigned 16 bits	Simulation Status	
0		Disabled	Disabled
1		Prefault State	Prefault State
2		Fault State	Fault State
3		Postfault State	Postfault State
F68	unsigned 16 bits	Reset Time Model	
0		Instantaneous	Instantaneous
1		Linear	Linear
F74	unsigned 16 bits	Data Logger Sample Rate	
0		1 Cycle	1 Cycle
1		1 Second	1 Second
2		1 Minute	1 Minute
3		1 Hour	1 Hour
F75	unsigned 16 bits	Data Logger Status	
0		Stopped	Stopped
1		Started	Started
2		Triggered	Triggered
3		Pretrigger	Pretrigger
4		PostTrigger	PostTrigger
F76	unsigned 16 bits	Overcurrent Direction	
0		Disabled	Disabled
1		Forward	Forward
2		Reverse	Reverse
F77	unsigned 16 bits	Data Logger Channel Data	
0		Disabled	Disabled
1		Phase A Current	Phase A Current
2		Phase B Current	Phase B Current
3		Phase C Current	Phase C Current
4		Avg Phase Current	Average Phase Current
6		Current Unbalance	Current Unbalance
7		Gnd Current	Gnd Current
8		System Frequency	System Frequency
22		Vbc S2	Vbc S2
F77B	unsigned 16 bits	345 Data Logger Channel Data	
0		Disabled	Disabled
1		W1 Phase A Current	W1 Phase A Current
2		W1 Phase B Current	W1 Phase B Current
3		W1 Phase C Current	W1 Phase C Current
4		W1 Curr Unbalance	W1 Current Unbalance
5		W1 Gnd Current	W1 Ground Current
6		W1 Therm Cap. Used	W1 Thermal Capacity Used
7		W2 Phase A Current	W2 Phase A Current
8		W2 Phase B Current	W2 Phase B Current

Code	Type	Definition	Long Definition
9		W2 Phase C Current	W2 Phase C Current
10		W2 Curr Unbalance	W2 Current Unbalance
11		W2 Gnd Current	W2 Ground Current
12		W2 Therm Cap. Used	W2 Therm Capacity Used
F78	unsigned 16 bits	DNP Object 20 Default Variation	
1		1	(1) 32-Bit Binary Counter
2		2	(2) 16-Bit Binary Counter
5		5	(5) 32-Bit Binary Counter w/o Flag
6		6	(6) 16-Bit Binary Counter w/o Flag
F79	unsigned 16 bits	DNP Object 21 Default Variation	
1		1	(1) 32-Bit Frozen Counter
2		2	(2) 16-Bit Frozen Counter
9		9	(9) 32-Bit Frozen Counter w/o Flag
10		10	(10) 16-Bit Frozen Counter w/o Flag
F80	unsigned 16 bits	DNP Object 22 Default Variation	
1		1	(1) 32-Bit Counter Change Event
2		2	(2) 16-Bit Counter Change Event
5		5	(5) 32-Bit Counter Change Event w Time
6		6	(6) 16-Bit Counter Change Event w Time
F81	unsigned 16 bits	DNP Object 23 Default Variation	
1		1	(1) 32-Bit Frozen Counter Event
2		2	(2) 16-Bit Frozen Counter Event
5		5	(5) 32-Bit Frozen Counter Event w Time
6		6	(6) 16-Bit Frozen Counter Event w Time
F82	unsigned 16 bits	DNP Object 30 Default Variation	
1		1	(1) 32-Bit Analog Input
2		2	(2) 16-Bit Analog Input
3		3	(3) 32-Bit Analog Input w/o Flag
4		4	(4) 16-Bit Analog Input w/o Flag
F83	unsigned 16 bits	DNP Object 32 Default Variation	
1		1	(1) 32-Bit Analog Change Event w/o Time
2		2	(2) 16-Bit Analog Change Event w/o Time
3		3	(3) 32-Bit Analog Change Event w Time
4		4	(4) 16-Bit Analog Change Event w Time
F85	unsigned 16 bits	DNP Analog Input Point Scale Factor	
1		/ 0.001	/ 0.001
2		/ 0.01	/ 0.01
3		/ 0.1	/ 0.1
4		/ 1	/ 1
5		/ 10	/ 10
6		/ 100	/ 100
7		/ 1000	/ 1000
8		/ 10000	/ 10000
9		/ 100000	/ 100000
F86	unsigned 16 bits	DNP and 103 Binary Output Points	
0		Off	Off
1		Virtual Input 1	Virtual Input 1

Code	Type	Definition	Long Definition
2		Virtual Input 2	Virtual Input 2
3		Virtual Input 3	Virtual Input 3
4		Virtual Input 4	Virtual Input 4
5		Virtual Input 5	Virtual Input 5
6		Virtual Input 6	Virtual Input 6
7		Virtual Input 7	Virtual Input 7
8		Virtual Input 8	Virtual Input 8
9		Virtual Input 9	Virtual Input 9
10		Virtual Input 10	Virtual Input 10
11		Virtual Input 11	Virtual Input 11
12		Virtual Input 12	Virtual Input 12
13		Virtual Input 13	Virtual Input 13
14		Virtual Input 14	Virtual Input 14
15		Virtual Input 15	Virtual Input 15
16		Virtual Input 16	Virtual Input 16
17		Virtual Input 17	Virtual Input 17
18		Virtual Input 18	Virtual Input 18
19		Virtual Input 19	Virtual Input 19
20		Virtual Input 20	Virtual Input 20
21		Virtual Input 21	Virtual Input 21
22		Virtual Input 22	Virtual Input 22
23		Virtual Input 23	Virtual Input 23
24		Virtual Input 24	Virtual Input 24
25		Virtual Input 25	Virtual Input 25
26		Virtual Input 26	Virtual Input 26
27		Virtual Input 27	Virtual Input 27
28		Virtual Input 28	Virtual Input 28
29		Virtual Input 29	Virtual Input 29
30		Virtual Input 30	Virtual Input 30
31		Virtual Input 31	Virtual Input 31
32		Virtual Input 32	Virtual Input 32
33		FC: Reset	Force Coil: Reset
36		FC: Display Msg	Force Coil: Display Message
37		FC: Clear Curr Dmd1	Force Coil: Clear Current Dmd1
38		FC: Clear Curr Dmd2	Force Coil: Clear Current Dmd2
40		FC:Clear Fault Rep	FC:Clear Fault Rep
F87	unsigned 16 bits	DNP/Ethernet Channel Port	
0		None	None
1		TCP	TCP
2		UDP	UDP
F88	unsigned 16 bits	Analog Values	
0		Disabled	Disabled
1		Phase A Current	Phase A Current
2		Phase B Current	Phase B Current
3		Phase C Current	Phase C Current
7		Gnd Current	Gnd Current
23		Therm Cap. Phase A	Thermal Capacity Phase A

Code	Type	Definition	Long Definition
24		Therm Cap. Phase B	Thermal Capacity Phase B
25		Therm Cap. Phase C	Thermal Capacity Phase C
26		Ntrl Current	Ntrl Current
29		NSeq Current	Negative Sequence Current
30		W2 Phase A Current	W2 Phase A Current
31		W2 Phase B Current	W2 Phase B Current
32		W2 Phase C Current	W2 Phase C Current
33		W2 Gnd Current	W2 Ground Current
34		W2 SGnd Current	W2 Sensitive Ground Current
35		Ph A Diff Current	Phase A Differential Current
36		Ph B Diff Current	Phase B Differential Current
37		Ph C Diff Current	Phase C Differential Current
38		Ph A RESTR Current	Phase A Restraint Current
39		Ph B RESTR Current	Phase B Restraint Current
40		Ph C RESTR Current	Phase C Restraint Current
41		W1 Gnd Dif Current	W1 Ground Differential Current
42		W2 Gnd Dif Current	W2 Ground Differential Current
43		SGnd Current	Sensitive Ground Current
44		NSeq Current W2	Negative Sequence Current
45		Ntrl Current W2	Ntrl Current W2
60		FR Date (Upper 16)	Fault Report Date (Upper 16)
61		FR Date (Lower 16)	Fault Report Date (Lower 16)
62		FR Time (Upper 16)	Fault Report Time (Upper 16)
63		FR Time (Lower 16)	Fault Report Time (Lower 16)
64		FR Fault Type	Fault Report Fault Type
65		FR Ia	Fault Report Ia
66		FR Ia Angle	Fault Report Ia Angle
67		FR Ib	Fault Report Ib
68		FR Ib Angle	Fault Report Ib Angle
69		FR Ic	Fault Report Ic
70		FR Ic Angle	Fault Report Ic Angle
71		FR Ig	Fault Report Ig
72		FR Ig Angle	Fault Report Ig Angle
73		FR In	Fault Report In
74		FR In Angle	Fault Report In Angle
91		FR System Freq	Fault Report System Frequency
92		FR Ia 2	Fault Report Ia 2
93		FR Ia 2 Angle	Fault Report Ia 2 Angle
94		FR Ib 2	Fault Report Ib 2
95		FR Ib 2 Angle	Fault Report Ib 2 Angle
96		FR Ic 2	Fault Report Ic 2
97		FR Ic 2 Angle	Fault Report Ic 2 Angle
98		FR Ig 2	Fault Report Ig 2
99		FR Ig 2 Angle	Fault Report Ig 2 Angle
100		FR In 2	Fault Report In 2
101		FR In 2 Angle	Fault Report In 2 Angle
102		FR Idiff 1 PhA	Fault Report Idiff 1 PhA

Code	Type	Definition	Long Definition
103		FR Idiff 1 PhA Ang	Fault Report Idiff 1 PhA Angle
104		FR I Restr PhA	Fault Report I Restraint PhA
105		FR I Restr PhA Ang	Fault Report I Restraint PhA Angle
106		FR Idiff 1 PhB	Fault Report Idiff 1 PhB
107		FR Idiff 1 PhB Ang	Fault Report Idiff 1 PhB Angle
108		FR I Restr Ph B	Fault Report I Restraint Ph B
109		FR I Restr PhB Ang	Fault Report I Restraint PhB Angle
110		FR Idiff 1 PhC	Fault Report Idiff 1 PhC
111		FR Idiff 1 PhC Ang	Fault Report Idiff 1 PhC Angle
112		FR I Restr PhC	Fault Report I Restraint PhC
113		FR I Restr PhC Ang	Fault Report I Restraint PhC Angle
114		FR Phases	Fault Report Phases
115		Current Dmd 1 PhA	Current Demand 1 PhA
116		Current Dmd 1 PhB	Current Demand 1 PhB
117		Current Dmd 1 PhC	Current Demand 1 PhC
118		Max Curr Dmd1 PhA	Max Current Demand 1 PhA
119		Max Curr Dmd1 PhB	Max Current Demand 1 PhB
120		Max Curr Dmd1 PhC	Max Current Demand 1 PhC
121		Current Dmd 2 PhA	Current Demand 2 PhA
122		Current Dmd 2 PhB	Current Demand 2 PhB
123		Current Dmd 2 PhC	Current Demand 2 PhC
124		Max Curr Dmd2 PhA	Max Current Demand 2 PhA
125		Max Curr Dmd2 PhB	Max Current Demand 2 PhB
126		Max Curr Dmd2 PhC	Max Current Demand 2 PhC
133		Total Num of Trips	Total Num of Trips
154		Curr Unbalance	Current Unbalance
155		PhA Curr Angle	PhA Current Angle
156		PhB Curr Angle	PhB Current Angle
157		PhC Curr Angle	PhC Current Angle
161		Ig Angle	Ig Angle
162		In Angle	In Angle
172		RTD 7 Temp	RTD 7 Temp
173		RTD 8 Temp	RTD 8 Temp
174		RTD 9 Temp	RTD 9 Temp
175		RTD 10 Temp	RTD 10 Temp
176		RTD 11 Temp	RTD 11 Temp
177		RTD 12 Temp	RTD 12 Temp
178		Internal Temp	Internal Temp
181		RTD 1 Temp	RTD 1 Temp
182		RTD 2 Temp	RTD 2 Temp
183		RTD 3 Temp	RTD 3 Temp
184		RTD 4 Temp	RTD 4 Temp
185		RTD 5 Temp	RTD 5 Temp
186		RTD 6 Temp	RTD 6 Temp
187		Ambient Temp	Ambient Temperature
188		Internal Temp Max	Internal Temperature Max
190		Neg Seq I Angle	Negative Sequence I Angle

Code	Type	Definition	Long Definition
207		Idiff 2 Ph A	Idiff 2 Ph A
208		Idiff 2 Ph B	Idiff 2 Ph B
209		Idiff 2 Ph C	Idiff 2 Ph C
210		Idiff 5 Ph A	Idiff 5 Ph A
211		Idiff 5 Ph B	Idiff 5 Ph B
212		Idiff 5 Ph C	Idiff 5 Ph C
213		Ia2 Angle	Ia2 Angle
214		Ib2 Angle	Ib2 Angle
215		Ic2 Angle	Ic2 Angle
216		Ig2 Angle	Ig2 Angle
217		In2 Angle	In2 Angle
218		Idiff 1 PhA Angle	Idiff 1 PhA Angle
219		Idiff 1 PhB Angle	Idiff 1 PhB Angle
220		Idiff 1 PhC Angle	Idiff 1 PhC Angle
221		Idiff 2 PhA Angle	Idiff 2 PhA Angle
222		Idiff 2 PhB Angle	Idiff 2 PhB Angle
223		Idiff 2 PhC Angle	Idiff 2 PhC Angle
224		Idiff 5 PhA Angle	Idiff 5 PhA Angle
225		Idiff 5 PhB Angle	Idiff 5 PhB Angle
226		Idiff 5 PhC Angle	Idiff 5 PhC Angle
227		Irestraint A Angle	Irestraint A Angle
228		Irestraint B Angle	Irestraint B Angle
229		Irestraint C Angle	Irestraint C Angle
232		W2 Neg Seq Angle	W2 Negative Sequence Angle
235		W1 Gnd Dif Angle	W1 Ground Dif Angle
236		W2 Gnd Dif Angle	W2 Ground Dif Angle
237		BKR Health	Breaker Health
238		BKR Last Trip Time	Breaker Last Trip Time
239		BKR Avg Trip Time	Breaker Average Trip Time
240		BKR Last Close Time	Breaker Last Close Time
241		BKR Avg Close Time	Breaker Average Close Time
242		BKR Last Charge Time	Breaker Last Charge Time
243		BKR Avg Charge Time	Breaker Average Charge Time
244		W2BKR Health	W2 Breaker Health
245		W2BKR Last Trip Time	W2 Breaker Last Trip Time
246		W2BKR Avg Trip Time	W2 Breaker Average Trip Time
247		W2BKR Last Clse Time	W2 Breaker Last Close Time
248		W2BKR Avg Clse Time	W2 Breaker Average Close Time
249		W2BKR Last Chrg Time	W2 Breaker Last Charge Time
250		W2BKR Avg Chrg Time	W2 Breaker Average Charge Time
251		W2BKR Tot Num Trips	W2 Breaker Total Number of Trips
F89	unsigned 16 bits	Autoreclose Block	
0		Off	Off
1		On	On
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3

Code	Type	Definition	Long Definition
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8

Code	Type	Definition	Long Definition
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
F89A	unsigned 16 bits	BKR Health Charge Input	
0		Off	Off
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5

Code	Type	Definition	Long Definition
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10

Code	Type	Definition	Long Definition
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
F89B	unsigned 16 bits	Start Thermal Protection	
0		Off	Off
1		On	On
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5
0x45		Contact Input 6	Contact Input 6

Code	Type	Definition	Long Definition
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10
0xCA		Logic Element 11	Logic Element 11

Code	Type	Definition	Long Definition
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
F90	unsigned 16 bits	Operate / Do Not Operate	
0		Do Not Operate	Do Not Operate
1		Operate	Operate
F91	signed 16 bits	Edit Group	
-1		Active Group	Active Group
0		SP Group 1 Active	Setpoint Group 1 Active
1		SP Group 2 Active	Setpoint Group 2 Active
F92	unsigned 16 bits	Phases	
1		Any One	Any One
2		Any Two	Any Two

Code	Type	Definition	Long Definition
3		All Three	All Three
F92A	unsigned 16 bits	Phases + Average	
F93	unsigned 16 bits	Phase UV Curve	
0		Definite Time	Definite Time
1		Inverse Time	Inverse Time
F94	unsigned 16 bits	Breaker Control	
0		Disabled	Disabled
1		Contact Input 1	Contact Input 1
2		Contact Input 2	Contact Input 2
3		Contact Input 3	Contact Input 3
4		Contact Input 4	Contact Input 4
5		Contact Input 5	Contact Input 5
6		Contact Input 6	Contact Input 6
7		Contact Input 7	Contact Input 7
8		Contact Input 8	Contact Input 8
9		Contact Input 9	Contact Input 9
10		Contact Input 10	Contact Input 10
F95	unsigned 16 bits	Transient Recorder Buffer	
0		1	1
1		3	3
2		6	6
F96	unsigned 16 bits	Directional Polarizing	
1		Voltage	Voltage
2		Current	Current
3		Dual	Dual
F97	unsigned 16 bits	Rear 485 Port Protocol	
0		Modbus	Modbus
1		IEC60870-5-103	IEC60870-5-103
2		DNP 3.0	DNP 3.0
F98	unsigned 16 bits	Simulated Key Press	
0		No Key Press	No Key Press
1		Nav Up Key	Nav Up Key
2		Nav Left Key	Nav Left Key
3		Nav Down Key	Navigation Down Key
4		Nav Right Key	Navigation Right Key
5		Up Key	Up Key
6		Down Key	Down Key
7		Enter Key	Enter Key
8		Menu Key	Menu Key
9		Escape Key	Escape Key
10		Reset Key	Reset Key
F99	unsigned 16 bits	SR 3 Relay Status	
0		Not Ready	Not Ready
1		Ready	Ready
FC100	unsigned 16 bits	SNTP Mode	
0		Disabled	Disabled
1		Unicast	Unicast

Code	Type	Definition	Long Definition
2		Anycast	Anycast
3		Broadcast	Broadcast
FC101	unsigned 16 bits	RS 485 Baud Rate	
0		9600 baud	9600 baud
1		19200 baud	19200 baud
2		38400 baud	38400 baud
3		57600 baud	57600 baud
4		115200 baud	115200 baud
FC102	unsigned 16 bits	RS 485 Parity	
0		None	None
1		Odd	Odd
2		Even	Even
FC103	unsigned 16 bits	Off / On Selection	
0		Off	Off
1		On	On
FC103A	unsigned 16 bits	No / Yes Selection	
0		NO	NO
1		YES	YES
FC104	unsigned 16 bits	Ground CT Type	
0		1 A Secondary	1 A Secondary
1		5 A Secondary	5 A Secondary
2		50:00.0	50:00.0
FC105	unsigned 16 bits	Differential CT Type	
0		None	None
1		1 A Secondary	1 A Secondary
2		5 A Secondary	5 A Secondary
3		Direct Connect	Direct Connect
FC106	unsigned 16 bits	Voltage Transformer Connection Type	
FC107	unsigned 16 bits	Supply Frequency	
0		60 Hz	60 Hz
1		50 Hz	50 Hz
FC108	unsigned 16 bits	61850 Status	
0		Not Ready	Not Ready
1		Ready	Ready
2		Default CID	Default CID
FC109	unsigned 16 bits	Flex Logic Status	
0		OK	OK
1		Unknown Token	Unknown Token
2		TooMany Latches	Too Many Latches
3		TooMany Timers	Too Many Timers
4		TooMany + OneShots	Too Many + One Shots
5		TooMany - OneShots	Too Many - One Shots
6		TooMany Duel1Shots	Too Many Duel One Shots
7		Stack Overflow	Stack Overflow
8		Stack Underflow	Stack Underflow
9		Program Too Long	Program Too Long
FC111	unsigned 16 bits	Trip Relays	

Code	Type	Definition	Long Definition
0		Trip	Trip
1		Alarm	Alarm
FC112	unsigned 16 bits	Communication Status	
0		Error	Error
1		OK	OK
FC115	unsigned 16 bits	Alarm Type Selection	
0		Off	Off
1		Trip	Trip
2		Alarm	Alarm
FC116	unsigned 16 bits	Switch Type	
0		Open	Open
1		Closed	Closed
FC117	unsigned 16 bits	Directional Voltage	
0		Measured (Vx)	Measured (Vx)
1		Calculated (VTs)	Calculated (VTs)
FC118	unsigned 16 bits	WGF Voltage	
0		Calculated (Vn)	Calculated (Vn)
1		Measured (Vx)	Measured (Vx)
FC119	unsigned 16 bits	WGF Current	
0		Calculated (In)	Calculated (In)
1		Measured (Ig)	Measured (Ig)
FC120	unsigned 16 bits	RTD Type	
FC121	unsigned 16 bits	RTD Application	
0		None	None
3		Ambient	Ambient
4		Top Oil	Top Oil
5		Bottom Oil	Bottom Oil
6		Other	Other
FC122	unsigned 16 bits	RTD Voting Selection	
0		Off	Off
1		RTD #1	RTD #1
2		RTD #2	RTD #2
3		RTD #3	RTD #3
4		RTD #4	RTD #4
5		RTD #5	RTD #5
6		RTD #6	RTD #6
7		RTD #7	RTD #7
8		RTD #8	RTD #8
9		RTD #9	RTD #9
10		RTD #10	RTD #10
11		RTD #11	RTD #11
12		RTD #12	RTD #12
FC123	unsigned 16 bits	Select DV Voltage	
0		17V Threshold	17V Threshold
1		33V Threshold	33V Threshold
2		84V Threshold	84V Threshold
3		166V Threshold	166V Threshold

Code	Type	Definition	Long Definition
FC124	unsigned 16 bits	Phase Rotation	
0		ABC	ABC
1		CBA	CBA
FC124A	unsigned 16 bits	Phase Rotation	
0		ABC	ABC
1		ACB	ACB
FC125	unsigned 16 bits	Coil Monitor	
0		Healthy	Healthy
1		Unhealthy	Unhealthy
FC126	unsigned 16 bits	Disabled / Enabled Selection	
0		Disabled	Disabled
1		Enabled	Enabled
FC127	unsigned 16 bits	System Language	
0		English	English
1		Chinese	Chinese
FC128	unsigned 16 bits	Command Status	
5		None	None
FC129	unsigned 16 bits	Relay Status	
FC130	unsigned 16 bits	LED Flash	
FC131	unsigned 16 bits	Comm Fail Mode	
1		Serial	Serial
2		Serial & Ethernet	Serial & Ethernet
4		Serial & FieldBus	Serial & FieldBus
8		Ethernet	Ethernet
16		FieldBus	FieldBus
32		Ethernet&Fieldbus	Ethernet & Fieldbus
64		All	All
FC133	unsigned 16 bits	Cause of Waveform Trigger	
0		None	None
1		Command	Command
0x00C0		VO 1	Virtual Output 1
0x00C1		VO 2	Virtual Output 2
0x00C2		VO 3	Virtual Output 3
0x00C3		VO 4	Virtual Output 4
0x00C4		VO 5	Virtual Output 5
0x00C5		VO 6	Virtual Output 6
0x00C6		VO 7	Virtual Output 7
0x00C7		VO 8	Virtual Output 8
0x00C8		VO 9	Virtual Output 9
0x00C9		VO 10	Virtual Output 10
0x00CA		VO 11	Virtual Output 11
0x00CB		VO 12	Virtual Output 12
0x00CC		VO 13	Virtual Output 13
0x00CD		VO 14	Virtual Output 14
0x00CE		VO 15	Virtual Output 15
0x00CF		VO 16	Virtual Output 16
0x00D0		VO 17	Virtual Output 17

Code	Type	Definition	Long Definition
0x00D1		VO 18	Virtual Output 18
0x00D2		VO 19	Virtual Output 19
0x00D3		VO 20	Virtual Output 20
0x00D4		VO 21	Virtual Output 21
0x00D5		VO 22	Virtual Output 22
0x00D6		VO 23	Virtual Output 23
0x00D7		VO 24	Virtual Output 24
0x00D8		VO 25	Virtual Output 25
0x00D9		VO 26	Virtual Output 26
0x00DA		VO 27	Virtual Output 27
0x00DB		VO 28	Virtual Output 28
0x00DC		VO 29	Virtual Output 29
0x00DD		VO 30	Virtual Output 30
0x00DE		VO 31	Virtual Output 31
0x00DF		VO 32	Virtual Output 32
0x8001		Any Trip PickUp	Any Trip PickUp
0x8002		Any Fault	Any Fault
0x8004		Any Trip DropOut	Any Trip DropOut
0xA001		Any Alarm PickUp	Any Alarm PickUp
0xA002		Any Alarm	Any Alarm
0xA004		Any Alarm DropOut	Any Alarm DropOut
0xC002		Any Ctrl	Any Ctrl
0xD000		Input 1	Input 1
0xD001		Input 2	Input 2
0xD002		Input 3	Input 3
FC133A	unsigned 16 bits	Data Log Trigger	
0		None	None
1		Command	Command
0x00C0		VO 1	Virtual Output 1
0x00C1		VO 2	Virtual Output 2
0x00C2		VO 3	Virtual Output 3
0x00C3		VO 4	Virtual Output 4
0x00C4		VO 5	Virtual Output 5
0x00C5		VO 6	Virtual Output 6
0x00C6		VO 7	Virtual Output 7
0x00C7		VO 8	Virtual Output 8
0x00C8		VO 9	Virtual Output 9
0x00C9		VO 10	Virtual Output 10
0x00CA		VO 11	Virtual Output 11
0x00CB		VO 12	Virtual Output 12
0x00CC		VO 13	Virtual Output 13
0x00CD		VO 14	Virtual Output 14
0x00CE		VO 15	Virtual Output 15
0x00CF		VO 16	Virtual Output 16
0x00D0		VO 17	Virtual Output 17
0x00D1		VO 18	Virtual Output 18
0x00D2		VO 19	Virtual Output 19

Code	Type	Definition	Long Definition
0x00D3		VO 20	Virtual Output 20
0x00D4		VO 21	Virtual Output 21
0x00D5		VO 22	Virtual Output 22
0x00D6		VO 23	Virtual Output 23
0x00D7		VO 24	Virtual Output 24
0x00D8		VO 25	Virtual Output 25
0x00D9		VO 26	Virtual Output 26
0x00DA		VO 27	Virtual Output 27
0x00DB		VO 28	Virtual Output 28
0x00DC		VO 29	Virtual Output 29
0x00DD		VO 30	Virtual Output 30
0x00DE		VO 31	Virtual Output 31
0x00DF		VO 32	Virtual Output 32
0x8001		Any Trip PickUp	Any Trip PickUp
0x8002		Any Fault	Any Fault
0x8004		Any Trip DropOut	Any Trip DropOut
0xA001		Any Alarm PickUp	Any Alarm PickUp
0xA002		Any Alarm	Any Alarm
0xA004		Any Alarm DropOut	Any Alarm DropOut
0xC002		Any Ctrl	Any Ctrl
FC134	unsigned 16 bits	Cause of Event	
0		No Evnt/Trp ToDate	No Event/Trip To Date
1		Ctrl. Pwr Lost	Control Power Lost
2		Ctrl. Pwr Applied	Control Power Applied
3		Date or Time Set	Date or Time Set
4		Reset	Reset
5		Lockout Rst Closed	Lockout Reset Closed
6		Factory Reload	Factory Reload
7		Clock Not Set	Clock Not Set
8		IRIG-B Failure	IRIG-B Failure
9		Reset Trip Counter	Reset Trip Counter
10		BKR Status Unknown	Breaker Status Unknown
11		Clear Event Rec	Clear Event Records
12		Clear Transt Rec	Clear Transient Records
13		Clear Therm Cap	Clear Thermal Capacity
14		Comm. Alert 1	Comm. Alert 1
15		Comm. Alert 2	Comm. Alert 2
16		Comm. Alert 3	Comm. Alert 3
17		Ethernet Link Fail	Ethernet Link Failure
18		High ENET Traffic	High Ethernet Traffic
19		Intern Temp. >80C	Internal Temperature High
20		RMIO Mismatch	RMIO Mismatch
21		BKR2 Status Unkwn	Breaker 2 Status Unknown
22		Emergency Restart	Emergency Restart
23		Trace Mem. Trigger	Trace Mem. Trigger
24		Rx Goose 1 ON	Rx Goose 1 ON
25		Rx Goose 1 OFF	Rx Goose 1 OFF

Code	Type	Definition	Long Definition
26		Rx Goose 2 ON	Rx Goose 2 ON
27		Rx Goose 2 OFF	Rx Goose 2 OFF
28		Rx Goose 3 ON	Rx Goose 3 ON
29		Rx Goose 3 OFF	Rx Goose 3 OFF
30		Rx Goose 4 ON	Rx Goose 4 ON
31		Rx Goose 4 OFF	Rx Goose 4 OFF
32		Rx Goose 5 ON	Rx Goose 5 ON
33		Rx Goose 5 OFF	Rx Goose 5 OFF
34		Rx Goose 6 ON	Rx Goose 6 ON
35		Rx Goose 6 OFF	Rx Goose 6 OFF
36		Rx Goose 7 ON	Rx Goose 7 ON
37		Rx Goose 7 OFF	Rx Goose 7 OFF
38		Rx Goose 8 ON	Rx Goose 8 ON
39		Rx Goose 8 OFF	Rx Goose 8 OFF
40		Eth Link A Fail	Ethernet Link A Fail
41		Eth Link B Fail	Ethernet Link B Fail
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On

Code	Type	Definition	Long Definition
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off

Code	Type	Definition	Long Definition
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off

Code	Type	Definition	Long Definition
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP
0x804C		Therm PhA Trip DPO	Thermal Phase A Trip DPO
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8054		Therm PhB Trip DPO	Thermal Phase B Trip DPO
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8064		Therm PhC Trip DPO	Thermal Phase C Trip DPO
0x8081		RTD 1 Trip PKP	RTD 1 Trip PKP
0x8082		RTD 1 Trip OP	RTD 1 Trip OP
0x80C1		RTD 2 Trip PKP	RTD 2 Trip PKP
0x80C2		RTD 2 Trip OP	RTD 2 Trip OP
0x8101		RTD 3 Trip PKP	RTD 3 Trip PKP
0x8102		RTD 3 Trip OP	RTD 3 Trip OP
0x8141		RTD 4 Trip PKP	RTD 4 Trip PKP
0x8142		RTD 4 Trip OP	RTD 4 Trip OP
0x8201		RTD 5 Trip PKP	RTD 5 Trip PKP
0x8202		RTD 5 Trip OP	RTD 5 Trip OP
0x8241		RTD 6 Trip PKP	RTD 6 Trip PKP
0x8242		RTD 6 Trip OP	RTD 6 Trip OP
0x8281		RTD 7 Trip PKP	RTD 7 Trip PKP
0x8282		RTD 7 Trip OP	RTD 7 Trip OP
0x82C1		RTD 8 Trip PKP	RTD 8 Trip PKP

Code	Type	Definition	Long Definition
0x82C2		RTD 8 Trip OP	RTD 8 Trip OP
0x8301		RTD 9 Trip PKP	RTD 9 Trip PKP
0x8302		RTD 9 Trip OP	RTD 9 Trip OP
0x8341		RTD 10 Trip PKP	RTD 10 Trip PKP
0x8342		RTD 10 Trip OP	RTD 10 Trip OP
0x8381		RTD 11 Trip PKP	RTD 11 Trip PKP
0x8382		RTD 11 Trip OP	RTD 11 Trip OP
0x83C1		RTD 12 Trip PKP	RTD 12 Trip PKP
0x83C2		RTD 12 Trip OP	RTD 12 Trip OP
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x89C2		Self Test OP	Self Test OP
0x89C4		Self Test DPO	Self Test Trip DPO
0x9001		Ph IOC1 Trip PKP	Phase IOC 1 Trip PKP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x9004		Ph IOC1 Trip DPO	Phase IOC 1 Trip DPO
0x9009		Ph A IOC1 Trip PKP	Phase A IOC 1 Trip PKP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x900C		Ph A IOC1 Trip DPO	Phase A IOC 1 Trip DPO
0x9011		Ph B IOC1 Trip PKP	Phase B IOC 1 Trip PKP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP
0x9014		Ph B IOC1 Trip DPO	Phase B IOC 1 Trip DPO
0x9021		Ph C IOC1 Trip PKP	Phase C IOC 1 Trip PKP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9024		Ph C IOC1 Trip DPO	Phase C IOC 1 Trip DPO

Code	Type	Definition	Long Definition
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x9081		Gnd IOC1 Trip PKP	Ground IOC 1 Trip PKP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x9084		Gnd IOC1 Trip DPO	Ground IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x90C9		Ph A TOC1 Trip PKP	Phase A TOC 1 Trip PKP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90CC		Ph A TOC1 Trip DPO	Phase A TOC 1 Trip DPO
0x90D1		Ph B TOC1 Trip PKP	Phase B TOC 1 Trip PKP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90D4		Ph B TOC1 Trip DPO	Phase B TOC 1 Trip DPO
0x90E1		Ph C TOC1 Trip PKP	Phase C TOC 1 Trip PKP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x90E4		Ph C TOC1 Trip DPO	Phase C TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9141		Gnd TOC1 Trip PKP	Ground TOC Trip PKP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9144		Gnd TOC1 Trip DPO	Ground TOC Trip DPO
0x9181		Ph IOC2 Trip PKP	Phase IOC 2 Trip PKP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x9184		Ph IOC2 Trip DPO	Phase IOC 2 Trip DPO
0x9189		Ph A IOC2 Trip PKP	Phase A IOC 2 Trip PKP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x918C		Ph A IOC2 Trip DPO	Phase A IOC 2 Trip DPO
0x9191		Ph B IOC2 Trip PKP	Phase B IOC 2 Trip PKP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x9194		Ph B IOC2 Trip DPO	Phase B IOC 2 Trip DPO
0x91A1		Ph C IOC2 Trip PKP	Phase C IOC 2 Trip PKP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91A4		Ph C IOC2 Trip DPO	Phase C IOC 2 Trip DPO
0x91C1		Ntrl IOC2 Trip PKP	Neutral IOC 2 Trip PKP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x91C4		Ntrl IOC2 Trip DPO	Neutral IOC 2 Trip DPO
0x9201		Gnd IOC2 Trip PKP	Ground IOC 2 Trip PKP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9204		Gnd IOC2 Trip DPO	Ground IOC 2 Trip DPO
0x9241		Ph TOC2 Trip PKP	Phase TOC 2 Trip PKP
0x9242		Ph TOC2 Trip OP	Phase TOC 2 Trip OP
0x9244		Ph TOC2 Trip DPO	Phase TOC 2 Trip DPO
0x9249		Ph A TOC2 Trip PKP	Phase A TOC 2 Trip PKP
0x924A		Ph A TOC2 Trip OP	Phase A TOC 2 Trip OP

Code	Type	Definition	Long Definition
0x924C		Ph A TOC2 Trip DPO	Phase A TOC 2 Trip DPO
0x9251		Ph B TOC2 Trip PKP	Phase B TOC 2 Trip PKP
0x9252		Ph B TOC2 Trip OP	Phase B TOC 2 Trip OP
0x9254		Ph B TOC2 Trip DPO	Phase B TOC 2 Trip DPO
0x9261		Ph C TOC2 Trip PKP	Phase C TOC 2 Trip PKP
0x9262		Ph C TOC2 Trip OP	Phase C TOC 2 Trip OP
0x9264		Ph C TOC2 Trip DPO	Phase C TOC 2 Trip DPO
0x9281		Ntrl TOC2 Trip PKP	Neutral TOC 2 Trip PKP
0x9282		Ntrl TOC2 Trip OP	Neutral TOC 2 Trip OP
0x9284		Ntrl TOC2 Trip DPO	Neutral TOC 2 Trip DPO
0x92C1		Gnd TOC2 Trip PKP	Ground TOC 2 Trip PKP
0x92C2		Gnd TOC2 Trip OP	Ground TOC 2 Trip OP
0x92C4		Gnd TOC2 Trip DPO	Ground TOC 2 Trip DPO
0x9301		SGnd TOC1 Trip PKP	Sensitive Ground TOC 1 Trip PKP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9304		SGnd TOC1 Trip DPO	Sensitive Ground TOC 1 Trip DPO
0x9641		SGnd IOC1 Trip PKP	Sensitive Ground IOC 1 Trip PKP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9644		SGnd IOC1 Trip DPO	Sensitive Ground IOC 1 Trip DPO
0x9681		SGnd IOC2 Trip PKP	Sensitive Ground IOC 2 Trip PKP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x9684		SGnd IOC2 Trip DPO	Sensitive Ground IOC 2 Trip DPO
0x96C1		NSeq IOC Trp PKP	Negative Sequence IOC Trip PKP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x96C4		NSeq IOC Trp DPO	Negative Sequence IOC Trip DPO
0x9701		Pcnt Diff Trip PKP	Pcnt Diff Trip PKP
0x9702		Pcnt Diff Trip OP	Pcnt Diff Trip OP
0x9704		Pcnt Diff Trip DPO	Pcnt Diff Trip DPO
0x9709		Ph Diff A Trip PKP	Ph Diff A Trip PKP
0x970A		Ph Diff A Trip OP	Ph Diff A Trip OP
0x970C		Ph Diff A Trip DPO	Ph Diff A Trip DPO
0x9711		Ph Diff B Trip PKP	Ph Diff B Trip PKP
0x9712		Ph Diff B Trip OP	Ph Diff B Trip OP
0x9714		Ph Diff B Trip DPO	Ph Diff B Trip DPO
0x9721		Ph Diff C Trip PKP	Ph Diff C Trip PKP
0x9722		Ph Diff C Trip OP	Ph Diff C Trip OP
0x9724		Ph Diff C Trip DPO	Ph Diff C Trip DPO
0x9741		RGF1 Trip PKP	RGF1 Trip PKP
0x9742		RGF1 Trip OP	RGF1 Trip OP
0x9744		RGF1 Trip DPO	RGF1 Trip DPO
0x9781		RGF2 Trip PKP	RGF2 Trip PKP
0x9782		RGF2 Trip OP	RGF2 Trip OP
0x9784		RGF2 Trip DPO	RGF2 Trip DPO
0x97C1		Inst Diff Trip PKP	Inst Diff Trip PKP
0x97C2		Inst Diff Trip OP	Inst Diff Trip OP
0x97C4		Inst Diff Trip DPO	Inst Diff Trip DPO
0x9801		NSeq TOC1 Trip PKP	Negative Sequence TOC 1 Trip PKP

Code	Type	Definition	Long Definition
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9804		NSeq TOC1 Trip DPO	Negative Sequence TOC 1 Trip DPO
0x9841		NSeq TOC2 Trip PKP	Negative Sequence TOC 2 Trip PKP
0x9842		NSeq TOC2 Trip OP	Negative Sequence TOC 2 Trip OP
0x9844		NSeq TOC2 Trip DPO	Negative Sequence TOC 2 Trip DPO
0x9901		NSeq IOC 2 Trp PKP	Negative Sequence IOC 2 Trip PKP
0x9902		NSeq IOC 2 Trp OP	Negative Sequence IOC 2 Trip OP
0x9904		NSeq IOC 2 Trp DPO	Negative Sequence IOC 2 Trip DPO
0x99C1		SGnd TOC2 Trip PKP	Sensitive Ground TOC 2 Trip PKP
0x99C2		SGnd TOC2 Trip OP	Sensitive Ground TOC 2 Trip OP
0x99C4		SGnd TOC2 Trip DPO	Sensitive Ground TOC 2 Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA04A		Therm PhA Alrm OP	Thermal Phase A Alarm OP
0xA04C		Therm PhA Alrm DPO	Thermal Phase A Alarm DPO
0xA052		Therm PhB Alrm OP	Thermal Phase B Alarm OP
0xA054		Therm PhB Alrm DPO	Thermal Phase B Alarm DPO
0xA062		Therm PhC Alrm OP	Thermal Phase C Alarm OP
0xA064		Therm PhC Alrm DPO	Thermal Phase C Alarm DPO
0xA081		RTD 1 Alarm PKP	RTD 1 Alarm PKP
0xA082		RTD 1 Alarm OP	RTD 1 Alarm OP
0xA0C1		RTD 2 Alarm PKP	RTD 2 Alarm PKP

Code	Type	Definition	Long Definition
0xA0C2		RTD 2 Alarm OP	RTD 2 Alarm OP
0xA101		RTD 3 Alarm PKP	RTD 3 Alarm PKP
0xA102		RTD 3 Alarm OP	RTD 3 Alarm OP
0xA141		RTD 4 Alarm PKP	RTD 4 Alarm PKP
0xA142		RTD 4 Alarm OP	RTD 4 Alarm OP
0xA201		RTD 5 Alarm PKP	RTD 5 Alarm PKP
0xA202		RTD 5 Alarm OP	RTD 5 Alarm OP
0xA241		RTD 6 Alarm PKP	RTD 6 Alarm PKP
0xA242		RTD 6 Alarm OP	RTD 6 Alarm OP
0xA281		RTD 7 Alarm PKP	RTD 7 Alarm PKP
0xA282		RTD 7 Alarm OP	RTD 7 Alarm OP
0xA2C1		RTD 8 Alarm PKP	RTD 8 Alarm PKP
0xA2C2		RTD 8 Alarm OP	RTD 8 Alarm OP
0xA301		RTD 9 Alarm PKP	RTD 9 Alarm PKP
0xA302		RTD 9 Alarm OP	RTD 9 Alarm OP
0xA341		RTD 10 Alarm PKP	RTD 10 Alarm PKP
0xA342		RTD 10 Alarm OP	RTD 10 Alarm OP
0xA381		RTD 11 Alarm PKP	RTD 11 Alarm PKP
0xA382		RTD 11 Alarm OP	RTD 11 Alarm OP
0xA3C1		RTD 12 Alarm PKP	RTD 12 Alarm PKP
0xA3C2		RTD 12 Alarm OP	RTD 12 Alarm OP
0xA402		RTD Trouble Alr OP	RTD Trouble Alarm
0xA482		Relay Not Ready	Relay Not Ready
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO

Code	Type	Definition	Long Definition
0xA6C2		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xA6CA		C Dmd1 PhA Alrm OP	Current Demand 1 PhA Alarm OP
0xA6D2		C Dmd1 PhB Alrm OP	Current Demand 1 PhB Alarm OP
0xA6E2		C Dmd1 PhC Alrm OP	Current Demand 1 PhC Alarm OP
0xA702		Curr Dmd2 Alrm OP	Current Demand 2 Alarm OP
0xA70A		C Dmd2 PhA Alrm OP	Current Demand 2 PhA Alarm OP
0xA712		C Dmd2 PhB Alrm OP	Current Demand 2 PhB Alarm OP
0xA722		C Dmd2 PhC Alrm OP	Current Demand 2 PhC Alarm OP
0xA842		W1BKR Alarm	W1 Breaker Alarm
0xA882		W1BKR Trip Time	W1 Breaker Trip Time
0xA8C2		W1BKR Close Time	W1 Breaker Close Time
0xA902		W1BKR Charge Time	W1 Breaker Charge Time
0xA942		W2BKR Alarm	W2 Breaker Alarm
0xA982		W2BKR Trip Time	W2 Breaker Trip Time
0xA9C2		W2BKR Close Time	W2 Breaker Close Time
0xAA02		W2BKR Charge Time	W2 Breaker Charge Time
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xAC44		Self Test Alrm DPO	Self Test Alarm DPO
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xAD01		R1 CoilMonAlrm PKP	Trip Coil Monitor Alarm PKP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD04		R1 CoilMonAlrm DPO	Trip Coil Monitor Alarm DPO
0xAD41		R2 CoilMonAlrm PKP	Close Coil Monitor Alarm PKP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD44		R2 CoilMonAlrm DPO	Close Coil Monitor Alarm DPO
0xAD81		BKR1 Fail Alrm PKP	Breaker 1 Fail Alarm PKP
0xAD82		BKR1 Fail Alrm OP	Breaker 1 Fail Alarm OP
0xAD84		BKR1 Fail Alrm DPO	Breaker 1 Fail Alarm DPO
0xADC1		BKR Stat Fail PKP	Breaker Status Fail PKP
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xADC4		BKR Stat Fail DPO	Breaker Status Fail DPO
0xAEC1		BKR2 Stat Fail PKP	Breaker 2 Status Fail PKP
0xAEC2		BKR2 Stat Fail OP	Breaker 2 Status Fail OP
0xAEC4		BKR2 Stat Fail DPO	Breaker 2 Status Fail DPO
0xAF41		BKR2 Fail Alrm PKP	Breaker 2 Fail Alarm PKP
0xAF42		BKR2 Fail Alrm OP	Breaker 2 Fail Alarm OP
0xAF44		BKR2 Fail Alrm DPO	Breaker 2 Fail Alarm DPO
0xB001		Ph IOC1 Alarm PKP	Phase IOC 1 Alarm PKP
0xB002		Ph IOC1 Alarm OP	Phase IOC 1 Alarm OP
0xB004		Ph IOC1 Alarm DPO	Phase IOC 1 Alarm DPO
0xB009		Ph A IOC1 Alrm PKP	Phase A IOC 1 Alarm PKP

Code	Type	Definition	Long Definition
0xB00A		Ph A IOC1 Alrm OP	Phase A IOC 1 Alarm OP
0xB00C		Ph A IOC1 Alrm DPO	Phase A IOC 1 Alarm DPO
0xB011		Ph B IOC1 Alrm PKP	Phase B IOC 1 Alarm PKP
0xB012		Ph B IOC1 Alrm OP	Phase B IOC 1 Alarm OP
0xB014		Ph B IOC1 Alrm DPO	Phase B IOC 1 Alarm DPO
0xB021		Ph C IOC1 Alrm PKP	Phase C IOC 1 Alarm PKP
0xB022		Ph C IOC1 Alrm OP	Phase C IOC 1 Alarm OP
0xB024		Ph C IOC1 Alrm DPO	Phase C IOC 1 Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB081		Gnd IOC1 Alarm PKP	Ground IOC 1 Alarm PKP
0xB082		Gnd IOC1 Alarm OP	Ground IOC 1 Alarm OP
0xB084		Gnd IOC1 Alarm DPO	Ground IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB0C9		Ph A TOC1 Alrm PKP	Phase A TOC 1 Alarm PKP
0xB0CA		Ph A TOC1 Alrm OP	Phase A TOC 1 Alarm OP
0xB0CC		Ph A TOC1 Alrm DPO	Phase A TOC 1 Alarm DPO
0xB0D1		Ph B TOC1 Alrm PKP	Phase B TOC 1 Alarm PKP
0xB0D2		Ph B TOC1 Alrm OP	Phase B TOC 1 Alarm OP
0xB0D4		Ph B TOC1 Alrm DPO	Phase B TOC 1 Alarm DPO
0xB0E1		Ph C TOC1 Alrm PKP	Phase C TOC 1 Alarm PKP
0xB0E2		Ph C TOC1 Alrm OP	Phase C TOC 1 Alarm OP
0xB0E4		Ph C TOC1 Alrm DPO	Phase C TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB141		Gnd TOC1 Alarm PKP	Ground TOC Alarm PKP
0xB142		Gnd TOC1 Alarm OP	Ground TOC 1 Alarm OP
0xB144		Gnd TOC1 Alarm DPO	Ground TOC Alarm DPO
0xB181		Ph IOC2 Alarm PKP	Phase IOC 2 Alarm PKP
0xB182		Ph IOC2 Alarm OP	Phase IOC 2 Alarm OP
0xB184		Ph IOC2 Alarm DPO	Phase IOC 2 Alarm DPO
0xB189		Ph A IOC2 Alrm PKP	Phase A IOC 2 Alarm PKP
0xB18A		Ph A IOC2 Alrm OP	Phase A IOC 2 Alarm OP
0xB18C		Ph A IOC2 Alrm DPO	Phase A IOC 2 Alarm DPO
0xB191		Ph B IOC2 Alrm PKP	Phase B IOC 2 Alarm PKP
0xB192		Ph B IOC2 Alrm OP	Phase B IOC 2 Alarm OP
0xB194		Ph B IOC2 Alrm DPO	Phase B IOC 2 Alarm DPO
0xB1A1		Ph C IOC2 Alrm PKP	Phase C IOC 2 Alarm PKP
0xB1A2		Ph C IOC2 Alrm OP	Phase C IOC 2 Alarm OP
0xB1A4		Ph C IOC2 Alrm DPO	Phase C IOC 2 Alarm DPO
0xB1C1		Ntrl IOC2 Alrm PKP	Neutral IOC 2 Alarm PKP
0xB1C2		Ntrl IOC2 Alrm OP	Neutral IOC 2 Alarm OP
0xB1C4		Ntrl IOC2 Alrm DPO	Neutral IOC 2 Alarm DPO

Code	Type	Definition	Long Definition
0xB201		Gnd IOC2 Alarm PKP	Ground IOC 2 Alarm PKP
0xB202		Gnd IOC2 Alarm OP	Ground IOC 2 Alarm OP
0xB204		Gnd IOC2 Alarm DPO	Ground IOC 2 Alarm DPO
0xB241		Ph TOC2 Alrm PKP	Phase TOC 2 Alarm PKP
0xB242		Ph TOC2 Alrm OP	Phase TOC 2 Alarm OP
0xB244		Ph TOC2 Alrm DPO	Phase TOC 2 Alarm DPO
0xB249		Ph A TOC2 Alrm PKP	Phase A TOC 2 Alarm PKP
0xB24A		Ph A TOC2 Alrm OP	Phase A TOC 2 Alarm OP
0xB24C		Ph A TOC2 Alrm DPO	Phase A TOC 2 Alarm DPO
0xB251		Ph B TOC2 Alrm PKP	Phase B TOC 2 Alarm PKP
0xB252		Ph B TOC2 Alrm OP	Phase B TOC 2 Alarm OP
0xB254		Ph B TOC2 Alrm DPO	Phase B TOC 2 Alarm DPO
0xB261		Ph C TOC2 Alrm PKP	Phase C TOC 2 Alarm PKP
0xB262		Ph C TOC2 Alrm OP	Phase C TOC 2 Alarm OP
0xB264		Ph C TOC2 Alrm DPO	Phase C TOC 2 Alarm DPO
0xB281		Ntrl TOC2 Alrm PKP	Neutral TOC 2 Alarm PKP
0xB282		Ntrl TOC2 Alrm OP	Neutral TOC 2 Alarm OP
0xB284		Ntrl TOC2 Alrm DPO	Neutral TOC 2 Alarm DPO
0xB2C1		Gnd TOC2 Alarm PKP	Ground TOC 2 Alarm PKP
0xB2C2		Gnd TOC2 Alarm OP	Ground TOC 2 Alarm OP
0xB2C4		Gnd TOC2 Alarm DPO	Ground TOC 2 Alarm DPO
0xB301		SGnd TOC1 Alrm PKP	Sensitive Ground TOC 1 Alarm PKP
0xB302		SGnd TOC1 Alrm OP	Sensitive Ground TOC 1 Alarm OP
0xB304		SGnd TOC1 Alrm DPO	Sensitive Ground TOC 1 Alarm DPO
0xB641		SGnd IOC1 Alrm PKP	Sensitive Ground IOC 1 Alarm PKP
0xB642		SGnd IOC1 Alrm OP	Sensitive Ground IOC 1 Alarm OP
0xB644		SGnd IOC1 Alrm DPO	Sensitive Ground IOC 1 Alarm DPO
0xB681		SGnd IOC2 Alrm PKP	Sensitive Ground IOC 2 Alarm PKP
0xB682		SGnd IOC2 Alrm OP	Sensitive Ground IOC 2 Alarm OP
0xB684		SGnd IOC2 Alrm DPO	Sensitive Ground IOC 2 Alarm DPO
0xB6C1		NSeq IOC Alrm PKP	Negative Sequence IOC Alarm PKP
0xB6C2		NSeq IOC Alrm OP	NSeq IOC Alrm OP
0xB6C4		NSeq IOC Alrm DPO	Negative Sequence IOC Alarm DPO
0xB701		Pcnt Diff Alrm PKP	Pcnt Diff Alrm PKP
0xB702		Pcnt Diff Alrm OP	Pcnt Diff Alrm OP
0xB704		Pcnt Diff Alrm DPO	Pcnt Diff Alrm DPO
0xB709		Ph Dif A Alarm PKP	Ph Dif A Alarm PKP
0xB70A		Ph Dif A Alarm OP	Ph Dif A Alarm OP
0xB70C		Ph Dif A Alarm DPO	Ph Dif A Alarm DPO
0xB711		Ph Dif B Alarm PKP	Ph Dif B Alarm PKP
0xB712		Ph Dif B Alarm OP	Ph Dif B Alarm OP
0xB714		Ph Dif B Alarm DPO	Ph Dif B Alarm DPO
0xB721		Ph Dif C Alarm PKP	Ph Dif C Alarm PKP
0xB722		Ph Dif C Alarm OP	Ph Dif C Alarm OP
0xB724		Ph Dif C Alarm DPO	Ph Dif C Alarm DPO
0xB741		RGF1 Alarm PKP	RGF1 Alarm PKP
0xB742		RGF1 Alarm OP	RGF1 Alarm OP

Code	Type	Definition	Long Definition
0xB744		RGF1 Alarm DPO	RGF1 Alarm DPO
0xB781		RGF2 Alarm PKP	RGF2 Alarm PKP
0xB782		RGF2 Alarm OP	RGF2 Alarm OP
0xB784		RGF2 Alarm DPO	RGF2 Alarm DPO
0xB7C1		Inst Diff Alrm PKP	Inst Diff Alrm PKP
0xB7C2		Inst Diff Alrm OP	Inst Diff Alrm OP
0xB7C4		Inst Diff Alrm DPO	Inst Diff Alrm DPO
0xB801		NSeq TOC1 Alrm PKP	Negative Sequence TOC 1 Alarm PKP
0xB802		NSeq TOC1 Alrm OP	Negative Sequence TOC 1 Alarm OP
0xB804		NSeq TOC1 Alrm DPO	Negative Sequence TOC 1 Alarm DPO
0xB841		NSeq TOC2 Alrm PKP	Negative Sequence TOC 2 Alarm PKP
0xB842		NSeq TOC2 Alrm OP	Negative Sequence TOC 2 Alarm OP
0xB844		NSeq TOC2 Alrm DPO	Negative Sequence TOC 2 Alarm DPO
0xB901		NSeq IOC 2 AlrmPKP	Negative Sequence IOC 2 Alarm PKP
0xB902		NSeq IOC 2 Alrm OP	Negative Sequence IOC 2 Alarm OP
0xB904		NSeq IOC 2 AlrmDPO	Negative Sequence IOC 2 Alarm DPO
0xB9C1		SGnd TOC2 Alrm PKP	Sensitive Ground TOC 2 Alarm PKP
0xB9C2		SGnd TOC2 Alrm OP	Sensitive Ground TOC 2 Alarm OP
0xB9C4		SGnd TOC2 Alrm DPO	Sensitive Ground TOC 2 Alarm DPO
0xBA02		W1BKR Trp/Cls Fail	W1 Breaker Trip/Close Fail
0xBA42		W1BKR Charge Fail	W1 Breaker Charge Fail
0xBA82		W2BKR Trp/Cls Fail	W2 Breaker Trip/Close Fail
0xBAC2		W2BKR Charge Fail	W2 Breaker Charge Fail
0xBB02		W2BKRTrpCntrAlrm OP	W2BKRTrpCntrAlrm OP
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP

Code	Type	Definition	Long Definition
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xC042		Output Relay 3 On	Output Relay 3 On
0xC044		Output Relay 3 Off	Output Relay 3 Off
0xC082		Output Relay 4 On	Output Relay 4 On
0xC084		Output Relay 4 Off	Output Relay 4 Off
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC0C4		Output Relay 5 Off	Output Relay 5 Off
0xC102		Output Relay 6 On	Output Relay 6 On
0xC104		Output Relay 6 Off	Output Relay 6 Off
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC144		Self-Tst Rly 7 DPO	Self-Tst Rly 7 DPO
0xC202		BKR Connected	Breaker Connected OP
0xC2C2		BKR2 Connected	Breaker 2 Connected OP
0xC401		Hot RTD PKP	Hot RTD PKP
0xC402		Hot RTD OP	Hot RTD OP
0xC482		Any Pkp OP	Any Pkp OP
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC882		Setpoint Group2 On	Setpoint Group2 On
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA04		52a Contact DPO	52a Contact DPO
0xCA42		52b Contact OP	52b Contact OP
0xCA44		52b Contact DPO	52b Contact DPO
0xCA82		Reset OK	Reset OK

Code	Type	Definition	Long Definition
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCAC4		L/O Rst Closed DPO	Lockout Reset Closed DPO
0xCC01		Lockout PKP	Lockout PKP
0xCC02		Lockout OP	Lockout OP
0xCC04		Lockout DPO	Lockout DPO
0xCC42		Testing ON	Testing ON
0xCC44		Testing OFF	Testing OFF
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD42		Setpoint Group1 On	Setpoint Group1 On
0xDA02		BKR2 52a Cont OP	BKR2 52a Cont OP
0xDA04		BKR2 52a Cont DPO	BKR2 52a Cont DPO
0xDA42		BKR2 52b Cont OP	BKR2 52b Cont OP
0xDA44		BKR2 52b Cont DPO	BKR2 52b Cont DPO
0xDA81		BKR2 Stat Open PKP	BKR2 Stat Open PKP
0xDA82		BKR2 Stat Open	BKR2 Stat Open
0xDA84		BKR2 Stat Open DPO	BKR2 Stat Open DPO
0xDAC1		BKR2 Stat Clsd PKP	BKR2 Stat Clsd PKP
0xDAC2		BKR2 Stat Clsd	BKR2 Stat Clsd
0xDAC4		BKR2 Stat Clsd DPO	BKR2 Stat Clsd DPO
0xDB01		Trip BKR 1 PKP	Trip BKR 1 PKP
0xDB02		Trip BKR 1 OP	Trip BKR 1 OP
0xDB04		Trip BKR 1 DPO	Trip BKR 1 DPO
0xDB41		Trip BKR 2 PKP	Trip BKR 2 PKP
0xDB42		Trip BKR 2 OP	Trip BKR 2 OP
0xDB44		Trip BKR 2 DPO	Trip BKR 2 DPO
0xDB82		2nd Hmnc Diff OP	2nd Hmnc Diff OP
0xDB8A		2nd Hmnc Diff Ph A	2nd Harmonic Diff Ph A
0xDB92		2nd Hmnc Diff Ph B	2nd Harmonic Diff Ph B
0xDBA2		2nd Hmnc Diff Ph C	2nd Harmonic Diff Ph C
0xDBC2		5th Hmnc Diff OP	5th Hmnc Diff OP
0xDBCA		5th Hmnc Diff Ph A	5th Harmonic Diff Ph A
0xDBD2		5th Hmnc Diff Ph B	5th Harmonic Diff Ph B
0xDBE2		5th Hmnc Diff Ph C	5th Harmonic Diff Ph C
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP

Code	Type	Definition	Long Definition
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xE002		Any Block	Any Block
0xE004		Any Block DPO	Any Block DPO
0xE042		Therm O/L Block	Thermal Level Block
0xE044		Therm O/L Blk DPO	Thermal Level Block DPO
0xE082		RTD1 Block	RTD1 Block
0xE084		RTD1 Blk DPO	RTD1 Blk DPO
0xE0C2		RTD2 Block	RTD2 Block
0xE0C4		RTD2 Blk DPO	RTD2 Blk DPO
0xE102		RTD3 Block	RTD3 Block
0xE104		RTD3 Blk DPO	RTD3 Blk DPO
0xE142		RTD4 Block	RTD4 Block
0xE144		RTD4 Blk DPO	RTD4 Blk DPO
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE184		Relay 1 Blk DPO	Relay 1 Block DPO
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE1C4		Relay 2 Blk DPO	Relay 2 Block DPO
0xE202		RTD5 Block	RTD5 Block
0xE204		RTD5 Blk DPO	RTD5 Blk DPO
0xE242		RTD6 Block	RTD6 Block
0xE244		RTD6 Blk DPO	RTD6 Blk DPO
0xE282		RTD7 Block	RTD7 Block
0xE284		RTD7 Blk DPO	RTD7 Blk DPO
0xE2C2		RTD8 Block	RTD8 Block
0xE2C4		RTD8 Blk DPO	RTD8 Blk DPO
0xE302		RTD9 Block	RTD9 Block
0xE304		RTD9 Blk DPO	RTD9 Blk DPO
0xE342		RTD10 Block	RTD10 Block
0xE344		RTD10 Blk DPO	RTD10 Blk DPO
0xE382		RTD11 Block	RTD11 Block
0xE384		RTD11 Blk DPO	RTD11 Blk DPO
0xE3C2		RTD12 Block	RTD12 Block
0xE3C4		RTD12 Blk DPO	RTD12 Blk DPO
0xE402		RTDTrouble Block	RTDTrouble Block
0xE404		RTDTrouble Blk DPO	RTDTrouble Blk DPO
0xE6C2		Curr Dmd1 Block	Current Demand 1 Block OP
0xE6C4		Curr Dmd1 Blk DPO	Current Demand 1 Block DPO

Code	Type	Definition	Long Definition
0xE702		Curr Dmd2 Block	Current Demand 2 Block OP
0xE704		Curr Dmd2 Blk DPO	Current Demand 2 Block DPO
0xE882		Group Change Blk	Group Change Blk
0xE884		Grp Change Blk DPO	Group Change Block DPO
0xEC02		Lockout Block	Lockout Block
0xEC04		Lockout Block DPO	Lockout Block DPO
0xF002		Ph IOC1 Block	Phase IOC 1 Block
0xF004		Ph IOC1 Block DPO	Phase IOC 1 Block DPO
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF044		Ntrl IOC1 Blk DPO	Neutral IOC 1 Block DPO
0xF082		Gnd IOC1 Block	Ground IOC 1 Block
0xF084		Gnd IOC1 Block DPO	Ground IOC 1 Block DPO
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF0C4		Ph TOC1 Block DPO	Phase TOC 1 Block DPO
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF104		Ntrl TOC1 BlockDPO	Neutral TOC 1 Block DPO
0xF142		Gnd TOC1 Block	Ground TOC 1 Block
0xF144		Gnd TOC1 Block DPO	Ground TOC 1 Block DPO
0xF182		Ph IOC2 Block	Phase IOC 2 Block
0xF184		Ph IOC2 Block DPO	Phase IOC 2 Block DPO
0xF1C2		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF1C4		Ntrl IOC2 Blk DPO	Neutral IOC 2 Block DPO
0xF202		Gnd IOC2 Block	Ground IOC 2 Block
0xF204		Gnd IOC2 Block DPO	Ground IOC 2 Block DPO
0xF242		Ph TOC2 Block	Phase TOC 2 Block
0xF244		Ph TOC2 Block DPO	Phase TOC 2 Block DPO
0xF282		Ntrl TOC2 Block	Neutral TOC 2 Block
0xF284		Ntrl TOC2 Blk DPO	Neutral TOC 2 Block DPO
0xF2C2		Gnd TOC2 Block	Ground TOC 2 Block
0xF2C4		Gnd TOC2 Blk DPO	Ground TOC 2 Block DPO
0xF302		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF304		SGnd TOC1 BlockDPO	Sensitive Ground TOC 1 Block DPO
0xF642		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF644		SGnd IOC1 Blk DPO	Sensitive Ground IOC 1 Block DPO
0xF682		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF684		SGnd IOC2 Blk DPO	Sensitive Ground IOC 2 Block DPO
0xF6C2		NSeq IOC Block	Negative Sequence IOC Block
0xF6C4		NSeq IOC Block DPO	Negative Sequence IOC Block DPO
0xF702		Pcnt Diff Block	Pcnt Diff Block
0xF704		Ph Diff Block DPO	Ph Diff Block DPO
0xF742		RGF1 Block	RGF1 Block
0xF744		RGF1 Block DPO	RGF1 Block DPO
0xF782		RGF2 Block	RGF2 Block
0xF784		RGF2 Block DPO	RGF2 Block DPO
0xF7C2		Inst Diff Block	Inst Diff Block
0xF7C4		Inst Diff BlockDPO	Inst Diff BlockDPO
0xF802		NSeq TOC1 Blk	Negative Sequence TOC 1 Block

Code	Type	Definition	Long Definition
0xF804		NSeq TOC1 Blk DPO	Negative Sequence TOC 1 Block DPO
0xF842		NSeq TOC2 Blk	Negative Sequence TOC 2 Block
0xF844		NSeq TOC2 Blk DPO	Negative Sequence TOC 2 Block DPO
0xF902		NSeq IOC 2 Block	Negative Sequence IOC 2 Block
0xF904		NSeq IOC 2 Blk DPO	Negative Sequence IOC 2 Block DPO
0xF9C2		SGnd TOC2 Block	Sensitive Ground TOC 2 Block
0xF9C4		SGnd TOC2 Blk DPO	Sensitive Ground TOC 2 Block DPO
0xFB02		Trip BKR1 Blk	Trip BKR1 Blk
0xFB04		Trip BKR1 Blk DPO	Trip Breaker 1 Block DPO
0xFB42		Trip BKR2 Blk	Trip BKR2 Blk
0xFB44		Trip BKR2 Blk DPO	Trip Breaker 2 Block DPO
FC134A	unsigned 16 bits	Active Targets	
0		No Active Targets	No Active Targets
7		Clock Not Set	Clock Not Set
8		IRIG-B Failure	IRIG-B Failure
14		Comm. Alert 1	Comm. Alert 1
15		Comm. Alert 2	Comm. Alert 2
16		Comm. Alert 3	Comm. Alert 3
17		Ethernet Link Fail	Ethernet Link Failure
18		High ENET Traffic	High Ethernet Traffic
19		Intern Temp. >80C	Internal Temperature High
20		RMIO Mismatch	RMIO Mismatch
21		BKR2 Status Unkwn	BKR2 Status Unkwn
40		Eth Link A Fail	Ethernet Link A Fail
41		Eth Link B Fail	Ethernet Link B Fail
0x8040		Therm O/L Trip	Therm O/L Trip
0x8080		RTD 1 Trip	RTD 1 Trip
0x80C0		RTD 2 Trip	RTD 2 Trip
0x8100		RTD 3 Trip	RTD 3 Trip
0x8140		RTD 4 Trip	RTD 4 Trip
0x8200		RTD 5 Trip	RTD 5 Trip
0x8240		RTD 6 Trip	RTD 6 Trip
0x8280		RTD 7 Trip	RTD 7 Trip
0x82C0		RTD 8 Trip	RTD 8 Trip
0x8300		RTD 9 Trip	RTD 9 Trip
0x8340		RTD 10 Trip	RTD 10 Trip
0x8380		RTD 11 Trip	RTD 11 Trip
0x83C0		RTD 12 Trip	RTD 12 Trip
0x8480		Relay Not Config	Relay Not Config
0x84C0		LE 1 Trip	Logic Element 1 Trip
0x8500		LE 2 Trip	Logic Element 2 Trip
0x8540		LE 3 Trip	Logic Element 3 Trip
0x8580		LE 4 Trip	Logic Element 4 Trip
0x85C0		LE 5 Trip	Logic Element 5 Trip
0x8600		LE 6 Trip	Logic Element 6 Trip
0x8640		LE 7 Trip	Logic Element 7 Trip
0x8680		LE 8 Trip	Logic Element 8 Trip

Code	Type	Definition	Long Definition
0x89C0		Self Test Trip	Self Test Trip
0x8D00		Rly #1 Trip OP	Rly #1 Trip OP
0x8D40		Rly #2 Trip OP	Rly #2 Trip OP
0x8D80		BKR Failure	BKR Failure
0x8F40		Breaker 2 Failure	Breaker 2 Failure
0x9000		Ph IOC1 Trip	Phase IOC 1 Trip
0x9040		Ntrl IOC1 Trip	Neutral IOC 1 Trip
0x9080		Gnd IOC1 Trip	Ground IOC 1 Trip
0x90C0		Ph TOC1 Trip	Phase TOC 1 Trip
0x9100		Ntrl TOC1 Trip	Neutral TOC 1 Trip
0x9140		Gnd TOC1 Trip	Ground TOC 1 Trip
0x9180		Ph IOC2 Trip	Phase IOC 2 Trip
0x91C0		Ntrl IOC2 Trip	Neutral IOC 2 Trip
0x9200		Gnd IOC2 Trip	Ground IOC 2 Trip
0x9240		Ph TOC2 Trip	Phase TOC 2 Trip
0x9280		Ntrl TOC2 Trip	Neutral TOC 2 Trip
0x92C0		Gnd TOC2 Trip	Ground TOC 2 Trip
0x9300		SGnd TOC1 Trip	Sensitive Ground TOC 1 Trip
0x9640		SGnd IOC1 Trip	Sensitive Ground IOC 1 Trip
0x9680		SGnd IOC2 Trip	Sensitive Ground IOC 2 Trip
0x96C0		NSeq IOC Trip	Negative Sequence IOC Trip
0x9700		Pcnt DIFF Trip	Pcnt DIFF Trip
0x9740		RGF1 Trip	RGF1 Trip
0x9780		RGF2 Trip	RGF2 Trip
0x97C0		Inst DIFF Trip	Inst DIFF Trip
0x9800		NSeq TOC1 Trip	Negative Sequence TOC 1 Trip
0x9840		NSeq TOC2 Trip	Negative Sequence TOC 2 Trip
0x9900		NSeq IOC 2 Trip	Negative Sequence IOC 2 Trip
0x99C0		SGnd TOC2 Trip	Sensitive Ground TOC 2 Trip
0x9C00		LE 9 Trip	Logic Element 9 Trip
0x9C40		LE 10 Trip	Logic Element 10 Trip
0x9C80		LE 11 Trip	Logic Element 11 Trip
0x9CC0		LE 12 Trip	Logic Element 12 Trip
0x9D00		LE 13 Trip	Logic Element 13 Trip
0x9D40		LE 14 Trip	Logic Element 14 Trip
0x9D80		LE 15 Trip	Logic Element 15 Trip
0x9DC0		LE 16 Trip	Logic Element 16 Trip
0xA040		Therm Lvl Alrm	Thermal Level Alarm
0xA080		RTD 1 Alarm	RTD 1 Alarm
0xA0C0		RTD 2 Alarm	RTD 2 Alarm
0xA100		RTD 3 Alarm	RTD 3 Alarm
0xA140		RTD 4 Alarm	RTD 4 Alarm
0xA200		RTD 5 Alarm	RTD 5 Alarm
0xA240		RTD 6 Alarm	RTD 6 Alarm
0xA280		RTD 7 Alarm	RTD 7 Alarm
0xA2C0		RTD 8 Alarm	RTD 8 Alarm
0xA300		RTD 9 Alarm	RTD 9 Alarm

Code	Type	Definition	Long Definition
0xA340		RTD 10 Alarm	RTD 10 Alarm
0xA380		RTD 11 Alarm	RTD 11 Alarm
0xA3C0		RTD 12 Alarm	RTD 12 Alarm
0xA400		RTD Trouble Alrm	RTD Trouble Alarm
0xA480		Not Configured	Not Configured
0xA4C0		LE 1 Alarm	Logic Element 1 Alarm
0xA500		LE 2 Alarm	Logic Element 2 Alarm
0xA540		LE 3 Alarm	Logic Element 3 Alarm
0xA580		LE 4 Alarm	Logic Element 4 Alarm
0xA5C0		LE 5 Alarm	Logic Element 5 Alarm
0xA600		LE 6 Alarm	Logic Element 6 Alarm
0xA640		LE 7 Alarm	Logic Element 7 Alarm
0xA680		LE 8 Alarm	Logic Element 8 Alarm
0xA6C0		Curr Dmd1 Alrm	Current Demand 1 Alarm
0xA700		Curr Dmd2 Alrm	Current Demand 2 Alarm
0xA840		W1BKR Alarm	W1 Breaker Alarm
0xA880		W1BKR Trip Time	W1 Breaker Trip Time
0xA8C0		W1BKR Close Time	W1 Breaker Close Time
0xA900		W1BKR Charge Time	W1 Breaker Charge Time
0xA940		W2BKR Alarm	W2 Breaker Alarm
0xA980		W2BKR Trip Time	W2 Breaker Trip Time
0xA9C0		W2BKR Close Time	W2 Breaker Close Time
0xAA00		W2BKR Charge Time	W2 Breaker Charge Time
0xABC0		HI Ambient Temp	High Ambient Temperature Alarm
0xAC00		LO Ambient Temp	Low Ambient Temperature Alarm
0xAC40		Self Test Alarm	Self Test Alarm
0xACC0		BKRTrpCntrAlrm	Breaker Trip Control Alarm
0xAD00		Rly1 Coil Mn Alrm	Relay # 1 Coil Monitor Alarm
0xAD40		Rly2 Coil Mn Alrm	Relay # 2 Coil Monitor Alarm
0xAD80		BKR Fail Alrm	BKR Fail Alrm
0xADC0		BKRStatus Fail	Breaker Status Fail
0xAEC0		BKR2 Status Fail	BKR2 Status Fail
0xAF40		BKR2 Fail Alrm	BKR2 Fail Alrm
0xB000		Ph IOC1 Alarm	Phase IOC 1 Alarm
0xB040		Ntrl IOC1 Alarm	Neutral IOC 1 Alarm
0xB080		Gnd IOC1 Alarm	Ground IOC 1 Alarm
0xB0C0		Ph TOC1 Alarm	Phase TOC 1 Alarm
0xB100		Ntrl TOC1 Alrm	Neutral TOC 1 Alarm
0xB140		Gnd TOC1 Alarm	Ground TOC 1 Alarm
0xB180		Ph IOC2 Alarm	Phase IOC 2 Alarm
0xB1C0		Ntrl IOC2 Alarm	Neutral IOC 2 Alarm
0xB200		Gnd IOC2 Alarm	Ground IOC 2 Alarm
0xB240		Ph TOC2 Alarm	Phase TOC 2 Alarm
0xB280		Ntrl TOC2 Alrm	Neutral TOC 2 Alarm
0xB2C0		Gnd TOC2 Alarm	Ground TOC 2 Alarm
0xB300		SGnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0xB640		SGnd IOC1 Alarm	Sensitive Ground IOC 1 Alarm

Code	Type	Definition	Long Definition
0xB680		SGnd IOC2 Alarm	Sensitive Ground IOC 2 Alarm
0xB6C0		NSeq IOC Alrm	Negative Sequence IOC Alarm
0xB700		Pcnt DIFF Alarm	Pcnt DIFF Alarm
0xB740		RGF1 Alarm	RGF1 Alarm
0xB780		RGF2 Alarm	RGF2 Alarm
0xB7C0		Inst DIFF Alarm	Inst DIFF Alarm
0xB800		NSeq TOC1 Alarm	Negative Sequence TOC 1 Alarm
0xB840		NSeq TOC2 Alarm	Negative Sequence TOC 2 Alarm
0xB900		NSeq IOC 2 Alarm	Negative Sequence IOC 2 Alarm
0xB9C0		SGnd TOC2 Alarm	Sensitive Ground TOC 2 Alarm
0xBA00		W1BKR Trp/Cls Fail	W1 Breaker Trip/Close Fail
0xBA40		W1BKR Charge Fail	W1 Breaker Charge Fail
0xBA80		W2BKR Trp/Cls Fail	W2 Breaker Trip/Close Fail
0xBAC0		W2BKR Charge Fail	W2 Breaker Charge Fail
0xBB00		W2BKRTrpCntAlrm	W2BKRTrpCntAlrm
0xBC00		LE 9 Alarm	Logic Element 9 Alarm
0xBC40		LE 10 Alarm	Logic Element 10 Alarm
0xBC80		LE 11 Alarm	Logic Element 11 Alarm
0xBCC0		LE 12 Alarm	Logic Element 12 Alarm
0xBD00		LE 13 Alarm	Logic Element 13 Alarm
0xBD40		LE 14 Alarm	Logic Element 14 Alarm
0xBD80		LE 15 Alarm	Logic Element 15 Alarm
0xBDC0		LE 16 Alarm	Logic Element 16 Alarm
0xC040		Output Relay 3	Output Relay 3
0xC080		Output Relay 4	Output Relay 4
0xC0C0		Output Relay 5	Output Relay 5
0xC100		Output Relay 6	Output Relay 6
0xC140		Output Relay 7	Output Relay 7
0xC180		Relay1 Coil	Relay # 1 Coil
0xC1C0		Relay2 Coil	Relay # 2 Coil
0xC200		BKR Connected	Breaker Connected
0xC2C0		BKR2 Connected	Breaker 2 Connected
0xC400		Hot RTD	Hot RTD
0xC4C0		LE 1	LE 1
0xC500		LE 2	LE 2
0xC540		LE 3	LE 3
0xC580		LE 4	LE 4
0xC5C0		LE 5	LE 5
0xC600		LE 6	LE 6
0xC640		LE 7	LE 7
0xC680		LE 8	LE 8
0xC880		Setpoint Group2	Setpoint Group2
0xC980		Maint Required	Maint Required
0xCA00		52a Contact	52a Contact
0xCA40		52b Contact	52b Contact
0xCA80		Reset OK	Reset OK
0xCAC0		L/O Rst Closed	Lockout Reset Closed

Code	Type	Definition	Long Definition
0xCC00		Lockout	Lockout
0xCC40		Testing	Testing
0xCD00		BKR Stat Clsd	Breaker Status Closed
0xCD40		Setpoint Group1	Setpoint Group1
0xDA00		BKR 2 52a Contact	BKR 2 52a Contact
0xDA40		BKR 2 52b Contact	BKR 2 52b Contact
0xDA80		BKR 2 Status Open	BKR 2 Status Open
0xDAC0		BKR2 Status Closed	BKR2 Status Closed
0xDB00		Trip BKR 1	Trip Breaker 1
0xDB40		Trip BKR 2	Trip Breaker 2
0xDB80		2nd Hmnc Diff	2nd Harmonic Diff
0xDBC0		5th Hmnc Diff	5th Harmonic Diff
0xDC00		LE 9	LE 9
0xDC40		LE 10	LE 10
0xDC80		LE 11	LE 11
0xDCC0		LE 12	LE 12
0xDD00		LE 13	LE 13
0xDD40		LE 14	LE 14
0xDD80		LE 15	LE 15
0xDDC0		LE 16	LE 16
0xE040		Therm O/L Block	Thermal Level Block
0xE080		RTD1 Block	RTD1 Block
0xE0C0		RTD2 Block	RTD2 Block
0xE100		RTD3 Block	RTD3 Block
0xE140		RTD4 Block	RTD4 Block
0xE180		Output Relay 1 BLK	Output Relay 1 BLK
0xE1C0		Output Relay 2 BLK	Output Relay 2 BLK
0xE200		RTD5 Block	RTD5 Block
0xE240		RTD6 Block	RTD6 Block
0xE280		RTD7 Block	RTD7 Block
0xE2C0		RTD8 Block	RTD8 Block
0xE300		RTD9 Block	RTD9 Block
0xE340		RTD10 Block	RTD10 Block
0xE380		RTD11 Block	RTD11 Block
0xE3C0		RTD12 Block	RTD12 Block
0xE400		RTD Trouble Blk	RTD Trouble Blk
0xE6C0		Curr Dmd1 Block	Current Demand 1 Block
0xE700		Curr Dmd2 Block	Current Demand 2 Block
0xE880		Group Change Blk	Group Change Blk
0xEC00		Lockout Block	Lockout Block
0xF000		Ph IOC1 Block	Phase IOC 1 Block
0xF040		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF080		Gnd IOC1 Block	Ground IOC 1 Block
0xF0C0		Ph TOC1 Block	Phase TOC 1 Block
0xF100		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF140		Gnd TOC1 Block	Ground TOC 1 Block
0xF180		Ph IOC2 Block	Phase IOC 2 Block

Code	Type	Definition	Long Definition
0xF1C0		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF200		Gnd IOC2 Block	Ground IOC 2 Block
0xF240		Ph TOC2 Block	Phase TOC 2 Block
0xF280		Ntrl TOC2 Block	Neutral TOC 2 Block
0xF2C0		Gnd TOC2 Block	Ground TOC 2 Block
0xF300		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF640		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF680		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF6C0		NSeq IOC Block	Negative Sequence IOC Block
0xF700		Pcnt DIFF Block	Pcnt DIFF Block
0xF740		RGF1 Block	RGF1 Block
0xF780		RGF2 Block	RGF2 Block
0xF7C0		Inst DIFF Block	Inst DIFF Block
0xF800		NSeq TOC1 Block	Negative Sequence TOC 1 Block
0xF840		NSeq TOC2 Block	Negative Sequence TOC 2 Block
0xF900		NSeq IOC 2 Block	Negative Sequence IOC 2 Block
0xF9C0		SGnd TOC2 Block	Sensitive Ground TOC 2 Block
0xFB00		Trip BKR1 Block	Trip BKR1 Block
0xFB40		Trip BKR2 Block	Trip BKR2 Block
FC134B	unsigned 16 bits	DNP Binary Inputs	
0		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On

Code	Type	Definition	Long Definition
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off

Code	Type	Definition	Long Definition
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off

Code	Type	Definition	Long Definition
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP
0x804C		Therm PhA Trip DPO	Thermal Phase A Trip DPO
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8054		Therm PhB Trip DPO	Thermal Phase B Trip DPO
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8064		Therm PhC Trip DPO	Thermal Phase C Trip DPO
0x8081		RTD 1 Trip PKP	RTD 1 Trip PKP
0x8082		RTD 1 Trip OP	RTD 1 Trip OP
0x80C1		RTD 2 Trip PKP	RTD 2 Trip PKP
0x80C2		RTD 2 Trip OP	RTD 2 Trip OP
0x8101		RTD 3 Trip PKP	RTD 3 Trip PKP
0x8102		RTD 3 Trip OP	RTD 3 Trip OP
0x8141		RTD 4 Trip PKP	RTD 4 Trip PKP
0x8142		RTD 4 Trip OP	RTD 4 Trip OP
0x8201		RTD 5 Trip PKP	RTD 5 Trip PKP

Code	Type	Definition	Long Definition
0x8202		RTD 5 Trip OP	RTD 5 Trip OP
0x8241		RTD 6 Trip PKP	RTD 6 Trip PKP
0x8242		RTD 6 Trip OP	RTD 6 Trip OP
0x8281		RTD 7 Trip PKP	RTD 7 Trip PKP
0x8282		RTD 7 Trip OP	RTD 7 Trip OP
0x82C1		RTD 8 Trip PKP	RTD 8 Trip PKP
0x82C2		RTD 8 Trip OP	RTD 8 Trip OP
0x8301		RTD 9 Trip PKP	RTD 9 Trip PKP
0x8302		RTD 9 Trip OP	RTD 9 Trip OP
0x8341		RTD 10 Trip PKP	RTD 10 Trip PKP
0x8342		RTD 10 Trip OP	RTD 10 Trip OP
0x8381		RTD 11 Trip PKP	RTD 11 Trip PKP
0x8382		RTD 11 Trip OP	RTD 11 Trip OP
0x83C1		RTD 12 Trip PKP	RTD 12 Trip PKP
0x83C2		RTD 12 Trip OP	RTD 12 Trip OP
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x9001		Ph IOC1 Trip PKP	Phase IOC 1 Trip PKP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x9004		Ph IOC1 Trip DPO	Phase IOC 1 Trip DPO
0x9009		Ph A IOC1 Trip PKP	Phase A IOC 1 Trip PKP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x900C		Ph A IOC1 Trip DPO	Phase A IOC 1 Trip DPO
0x9011		Ph B IOC1 Trip PKP	Phase B IOC 1 Trip PKP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP

Code	Type	Definition	Long Definition
0x9014		Ph B IOC1 Trip DPO	Phase B IOC 1 Trip DPO
0x9021		Ph C IOC1 Trip PKP	Phase C IOC 1 Trip PKP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9024		Ph C IOC1 Trip DPO	Phase C IOC 1 Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x9081		Gnd IOC1 Trip PKP	Ground IOC 1 Trip PKP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x9084		Gnd IOC1 Trip DPO	Ground IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x90C9		Ph A TOC1 Trip PKP	Phase A TOC 1 Trip PKP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90CC		Ph A TOC1 Trip DPO	Phase A TOC 1 Trip DPO
0x90D1		Ph B TOC1 Trip PKP	Phase B TOC 1 Trip PKP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90D4		Ph B TOC1 Trip DPO	Phase B TOC 1 Trip DPO
0x90E1		Ph C TOC1 Trip PKP	Phase C TOC 1 Trip PKP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x90E4		Ph C TOC1 Trip DPO	Phase C TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9141		Gnd TOC1 Trip PKP	Ground TOC Trip PKP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9144		Gnd TOC1 Trip DPO	Ground TOC Trip DPO
0x9181		Ph IOC2 Trip PKP	Phase IOC 2 Trip PKP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x9184		Ph IOC2 Trip DPO	Phase IOC 2 Trip DPO
0x9189		Ph A IOC2 Trip PKP	Phase A IOC 2 Trip PKP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x918C		Ph A IOC2 Trip DPO	Phase A IOC 2 Trip DPO
0x9191		Ph B IOC2 Trip PKP	Phase B IOC 2 Trip PKP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x9194		Ph B IOC2 Trip DPO	Phase B IOC 2 Trip DPO
0x91A1		Ph C IOC2 Trip PKP	Phase C IOC 2 Trip PKP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91A4		Ph C IOC2 Trip DPO	Phase C IOC 2 Trip DPO
0x91C1		Ntrl IOC2 Trip PKP	Neutral IOC 2 Trip PKP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x91C4		Ntrl IOC2 Trip DPO	Neutral IOC 2 Trip DPO
0x9201		Gnd IOC2 Trip PKP	Ground IOC 2 Trip PKP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9204		Gnd IOC2 Trip DPO	Ground IOC 2 Trip DPO
0x9241		Ph TOC2 Trip PKP	Phase TOC 2 Trip PKP

Code	Type	Definition	Long Definition
0x9242		Ph TOC2 Trip OP	Phase TOC 2 Trip OP
0x9244		Ph TOC2 Trip DPO	Phase TOC 2 Trip DPO
0x9249		Ph A TOC2 Trip PKP	Phase A TOC 2 Trip PKP
0x924A		Ph A TOC2 Trip OP	Phase A TOC 2 Trip OP
0x924C		Ph A TOC2 Trip DPO	Phase A TOC 2 Trip DPO
0x9251		Ph B TOC2 Trip PKP	Phase B TOC 2 Trip PKP
0x9252		Ph B TOC2 Trip OP	Phase B TOC 2 Trip OP
0x9254		Ph B TOC2 Trip DPO	Phase B TOC 2 Trip DPO
0x9261		Ph C TOC2 Trip PKP	Phase C TOC 2 Trip PKP
0x9262		Ph C TOC2 Trip OP	Phase C TOC 2 Trip OP
0x9264		Ph C TOC2 Trip DPO	Phase C TOC 2 Trip DPO
0x9281		Ntrl TOC2 Trip PKP	Neutral TOC 2 Trip PKP
0x9282		Ntrl TOC2 Trip OP	Neutral TOC 2 Trip OP
0x9284		Ntrl TOC2 Trip DPO	Neutral TOC 2 Trip DPO
0x92C1		Gnd TOC2 Trip PKP	Ground TOC 2 Trip PKP
0x92C2		Gnd TOC2 Trip OP	Ground TOC 2 Trip OP
0x92C4		Gnd TOC2 Trip DPO	Ground TOC 2 Trip DPO
0x9301		SGnd TOC1 Trip PKP	Sensitive Ground TOC 1 Trip PKP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9304		SGnd TOC1 Trip DPO	Sensitive Ground TOC 1 Trip DPO
0x9641		SGnd IOC1 Trip PKP	Sensitive Ground IOC 1 Trip PKP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9644		SGnd IOC1 Trip DPO	Sensitive Ground IOC 1 Trip DPO
0x9681		SGnd IOC2 Trip PKP	Sensitive Ground IOC 2 Trip PKP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x9684		SGnd IOC2 Trip DPO	Sensitive Ground IOC 2 Trip DPO
0x96C1		NSeq IOC Trp PKP	Negative Sequence IOC Trip PKP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x96C4		NSeq IOC Trp DPO	Negative Sequence IOC Trip DPO
0x9701		Pcnt Diff Trip PKP	Pcnt Diff Trip PKP
0x9702		Pcnt Diff Trip OP	Pcnt Diff Trip OP
0x9704		Pcnt Diff Trip DPO	Pcnt Diff Trip DPO
0x9709		Ph Diff A Trip PKP	Ph Diff A Trip PKP
0x970A		Ph Diff A Trip OP	Ph Diff A Trip OP
0x970C		Ph Diff A Trip DPO	Ph Diff A Trip DPO
0x9711		Ph Diff B Trip PKP	Ph Diff B Trip PKP
0x9712		Ph Diff B Trip OP	Ph Diff B Trip OP
0x9714		Ph Diff B Trip DPO	Ph Diff B Trip DPO
0x9721		Ph Diff C Trip PKP	Ph Diff C Trip PKP
0x9722		Ph Diff C Trip OP	Ph Diff C Trip OP
0x9724		Ph Diff C Trip DPO	Ph Diff C Trip DPO
0x9741		RGF1 Trip PKP	RGF1 Trip PKP
0x9742		RGF1 Trip OP	RGF1 Trip OP
0x9744		RGF1 Trip DPO	RGF1 Trip DPO
0x9781		RGF2 Trip PKP	RGF2 Trip PKP
0x9782		RGF2 Trip OP	RGF2 Trip OP
0x9784		RGF2 Trip DPO	RGF2 Trip DPO

Code	Type	Definition	Long Definition
0x97C1		Inst Diff Trip PKP	Inst Diff Trip PKP
0x97C2		Inst Diff Trip OP	Inst Diff Trip OP
0x97C4		Inst Diff Trip DPO	Inst Diff Trip DPO
0x9801		NSeq TOC1 Trip PKP	Negative Sequence TOC 1 Trip PKP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9804		NSeq TOC1 Trip DPO	Negative Sequence TOC 1 Trip DPO
0x9841		NSeq TOC2 Trip PKP	Negative Sequence TOC 2 Trip PKP
0x9842		NSeq TOC2 Trip OP	Negative Sequence TOC 2 Trip OP
0x9844		NSeq TOC2 Trip DPO	Negative Sequence TOC 2 Trip DPO
0x9901		NSeq IOC 2 Trp PKP	Negative Sequence IOC 2 Trip PKP
0x9902		NSeq IOC 2 Trp OP	Negative Sequence IOC 2 Trip OP
0x9904		NSeq IOC 2 Trp DPO	Negative Sequence IOC 2 Trip DPO
0x99C1		SGnd TOC2 Trip PKP	Sensitive Ground TOC 2 Trip PKP
0x99C2		SGnd TOC2 Trip OP	Sensitive Ground TOC 2 Trip OP
0x99C4		SGnd TOC2 Trip DPO	Sensitive Ground TOC 2 Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA04A		Therm PhA Alrm OP	Thermal Phase A Alarm OP
0xA04C		Therm PhA Alrm DPO	Thermal Phase A Alarm DPO
0xA052		Therm PhB Alrm OP	Thermal Phase B Alarm OP
0xA054		Therm PhB Alrm DPO	Thermal Phase B Alarm DPO
0xA062		Therm PhC Alrm OP	Thermal Phase C Alarm OP

Code	Type	Definition	Long Definition
0xA064		Therm PhC Alrm DPO	Thermal Phase C Alarm DPO
0xA081		RTD 1 Alarm PKP	RTD 1 Alarm PKP
0xA082		RTD 1 Alarm OP	RTD 1 Alarm OP
0xA0C1		RTD 2 Alarm PKP	RTD 2 Alarm PKP
0xA0C2		RTD 2 Alarm OP	RTD 2 Alarm OP
0xA101		RTD 3 Alarm PKP	RTD 3 Alarm PKP
0xA102		RTD 3 Alarm OP	RTD 3 Alarm OP
0xA141		RTD 4 Alarm PKP	RTD 4 Alarm PKP
0xA142		RTD 4 Alarm OP	RTD 4 Alarm OP
0xA201		RTD 5 Alarm PKP	RTD 5 Alarm PKP
0xA202		RTD 5 Alarm OP	RTD 5 Alarm OP
0xA241		RTD 6 Alarm PKP	RTD 6 Alarm PKP
0xA242		RTD 6 Alarm OP	RTD 6 Alarm OP
0xA281		RTD 7 Alarm PKP	RTD 7 Alarm PKP
0xA282		RTD 7 Alarm OP	RTD 7 Alarm OP
0xA2C1		RTD 8 Alarm PKP	RTD 8 Alarm PKP
0xA2C2		RTD 8 Alarm OP	RTD 8 Alarm OP
0xA301		RTD 9 Alarm PKP	RTD 9 Alarm PKP
0xA302		RTD 9 Alarm OP	RTD 9 Alarm OP
0xA341		RTD 10 Alarm PKP	RTD 10 Alarm PKP
0xA342		RTD 10 Alarm OP	RTD 10 Alarm OP
0xA381		RTD 11 Alarm PKP	RTD 11 Alarm PKP
0xA382		RTD 11 Alarm OP	RTD 11 Alarm OP
0xA3C1		RTD 12 Alarm PKP	RTD 12 Alarm PKP
0xA3C2		RTD 12 Alarm OP	RTD 12 Alarm OP
0xA402		RTD Trouble Alr OP	RTD Trouble Alarm
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO

Code	Type	Definition	Long Definition
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA6C2		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xA6CA		C Dmd1 PhA Alrm OP	Current Demand 1 PhA Alarm OP
0xA6D2		C Dmd1 PhB Alrm OP	Current Demand 1 PhB Alarm OP
0xA6E2		C Dmd1 PhC Alrm OP	Current Demand 1 PhC Alarm OP
0xA702		Curr Dmd2 Alrm OP	Current Demand 2 Alarm OP
0xA70A		C Dmd2 PhA Alrm OP	Current Demand 2 PhA Alarm OP
0xA712		C Dmd2 PhB Alrm OP	Current Demand 2 PhB Alarm OP
0xA722		C Dmd2 PhC Alrm OP	Current Demand 2 PhC Alarm OP
0xA842		W1BKR Alarm	W1 Breaker Alarm
0xA882		W1BKR Trip Time	W1 Breaker Trip Time
0xA8C2		W1BKR Close Time	W1 Breaker Close Time
0xA902		W1BKR Charge Time	W1 Breaker Charge Time
0xA942		W2BKR Alarm	W2 Breaker Alarm
0xA982		W2BKR Trip Time	W2 Breaker Trip Time
0xA9C2		W2BKR Close Time	W2 Breaker Close Time
0xAA02		W2BKR Charge Time	W2 Breaker Charge Time
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xAD01		R1 CoilMonAlrm PKP	Trip Coil Monitor Alarm PKP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD04		R1 CoilMonAlrm DPO	Trip Coil Monitor Alarm DPO
0xAD41		R2 CoilMonAlrm PKP	Close Coil Monitor Alarm PKP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD44		R2 CoilMonAlrm DPO	Close Coil Monitor Alarm DPO
0xAD81		BKR1 Fail Alrm PKP	Breaker 1 Fail Alarm PKP
0xAD82		BKR1 Fail Alrm OP	Breaker 1 Fail Alarm OP
0xAD84		BKR1 Fail Alrm DPO	Breaker 1 Fail Alarm DPO
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xAEC2		BKR2 Stat Fail OP	Breaker 2 Status Fail OP
0xAF41		BKR2 Fail Alrm PKP	Breaker 2 Fail Alarm PKP
0xAF42		BKR2 Fail Alrm OP	Breaker 2 Fail Alarm OP
0xAF44		BKR2 Fail Alrm DPO	Breaker 2 Fail Alarm DPO
0xB001		Ph IOC1 Alarm PKP	Phase IOC 1 Alarm PKP
0xB002		Ph IOC1 Alarm OP	Phase IOC 1 Alarm OP
0xB004		Ph IOC1 Alarm DPO	Phase IOC 1 Alarm DPO
0xB009		Ph A IOC1 Alrm PKP	Phase A IOC 1 Alarm PKP
0xB00A		Ph A IOC1 Alrm OP	Phase A IOC 1 Alarm OP
0xB00C		Ph A IOC1 Alrm DPO	Phase A IOC 1 Alarm DPO

Code	Type	Definition	Long Definition
0xB011		Ph B IOC1 Alrm PKP	Phase B IOC 1 Alarm PKP
0xB012		Ph B IOC1 Alrm OP	Phase B IOC 1 Alarm OP
0xB014		Ph B IOC1 Alrm DPO	Phase B IOC 1 Alarm DPO
0xB021		Ph C IOC1 Alrm PKP	Phase C IOC 1 Alarm PKP
0xB022		Ph C IOC1 Alrm OP	Phase C IOC 1 Alarm OP
0xB024		Ph C IOC1 Alrm DPO	Phase C IOC 1 Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB081		Gnd IOC1 Alarm PKP	Ground IOC 1 Alarm PKP
0xB082		Gnd IOC1 Alarm OP	Ground IOC 1 Alarm OP
0xB084		Gnd IOC1 Alarm DPO	Ground IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB0C9		Ph A TOC1 Alrm PKP	Phase A TOC 1 Alarm PKP
0xB0CA		Ph A TOC1 Alrm OP	Phase A TOC 1 Alarm OP
0xB0CC		Ph A TOC1 Alrm DPO	Phase A TOC 1 Alarm DPO
0xB0D1		Ph B TOC1 Alrm PKP	Phase B TOC 1 Alarm PKP
0xB0D2		Ph B TOC1 Alrm OP	Phase B TOC 1 Alarm OP
0xB0D4		Ph B TOC1 Alrm DPO	Phase B TOC 1 Alarm DPO
0xB0E1		Ph C TOC1 Alrm PKP	Phase C TOC 1 Alarm PKP
0xB0E2		Ph C TOC1 Alrm OP	Phase C TOC 1 Alarm OP
0xB0E4		Ph C TOC1 Alrm DPO	Phase C TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB141		Gnd TOC1 Alarm PKP	Ground TOC Alarm PKP
0xB142		Gnd TOC1 Alarm OP	Ground TOC 1 Alarm OP
0xB144		Gnd TOC1 Alarm DPO	Ground TOC Alarm DPO
0xB181		Ph IOC2 Alarm PKP	Phase IOC 2 Alarm PKP
0xB182		Ph IOC2 Alarm OP	Phase IOC 2 Alarm OP
0xB184		Ph IOC2 Alarm DPO	Phase IOC 2 Alarm DPO
0xB189		Ph A IOC2 Alrm PKP	Phase A IOC 2 Alarm PKP
0xB18A		Ph A IOC2 Alrm OP	Phase A IOC 2 Alarm OP
0xB18C		Ph A IOC2 Alrm DPO	Phase A IOC 2 Alarm DPO
0xB191		Ph B IOC2 Alrm PKP	Phase B IOC 2 Alarm PKP
0xB192		Ph B IOC2 Alrm OP	Phase B IOC 2 Alarm OP
0xB194		Ph B IOC2 Alrm DPO	Phase B IOC 2 Alarm DPO
0xB1A1		Ph C IOC2 Alrm PKP	Phase C IOC 2 Alarm PKP
0xB1A2		Ph C IOC2 Alrm OP	Phase C IOC 2 Alarm OP
0xB1A4		Ph C IOC2 Alrm DPO	Phase C IOC 2 Alarm DPO
0xB1C1		Ntrl IOC2 Alrm PKP	Neutral IOC 2 Alarm PKP
0xB1C2		Ntrl IOC2 Alrm OP	Neutral IOC 2 Alarm OP
0xB1C4		Ntrl IOC2 Alrm DPO	Neutral IOC 2 Alarm DPO
0xB201		Gnd IOC2 Alarm PKP	Ground IOC 2 Alarm PKP
0xB202		Gnd IOC2 Alarm OP	Ground IOC 2 Alarm OP

Code	Type	Definition	Long Definition
0xB204		Gnd IOC2 Alarm DPO	Ground IOC 2 Alarm DPO
0xB241		Ph TOC2 Alrm PKP	Phase TOC 2 Alarm PKP
0xB242		Ph TOC2 Alrm OP	Phase TOC 2 Alarm OP
0xB244		Ph TOC2 Alrm DPO	Phase TOC 2 Alarm DPO
0xB249		Ph A TOC2 Alrm PKP	Phase A TOC 2 Alarm PKP
0xB24A		Ph A TOC2 Alrm OP	Phase A TOC 2 Alarm OP
0xB24C		Ph A TOC2 Alrm DPO	Phase A TOC 2 Alarm DPO
0xB251		Ph B TOC2 Alrm PKP	Phase B TOC 2 Alarm PKP
0xB252		Ph B TOC2 Alrm OP	Phase B TOC 2 Alarm OP
0xB254		Ph B TOC2 Alrm DPO	Phase B TOC 2 Alarm DPO
0xB261		Ph C TOC2 Alrm PKP	Phase C TOC 2 Alarm PKP
0xB262		Ph C TOC2 Alrm OP	Phase C TOC 2 Alarm OP
0xB264		Ph C TOC2 Alrm DPO	Phase C TOC 2 Alarm DPO
0xB281		Ntrl TOC2 Alrm PKP	Neutral TOC 2 Alarm PKP
0xB282		Ntrl TOC2 Alrm OP	Neutral TOC 2 Alarm OP
0xB284		Ntrl TOC2 Alrm DPO	Neutral TOC 2 Alarm DPO
0xB2C1		Gnd TOC2 Alarm PKP	Ground TOC 2 Alarm PKP
0xB2C2		Gnd TOC2 Alarm OP	Ground TOC 2 Alarm OP
0xB2C4		Gnd TOC2 Alarm DPO	Ground TOC 2 Alarm DPO
0xB301		SGnd TOC1 Alrm PKP	Sensitive Ground TOC 1 Alarm PKP
0xB302		SGnd TOC1 Alrm OP	Sensitive Ground TOC 1 Alarm OP
0xB304		SGnd TOC1 Alrm DPO	Sensitive Ground TOC 1 Alarm DPO
0xB641		SGnd IOC1 Alrm PKP	Sensitive Ground IOC 1 Alarm PKP
0xB642		SGnd IOC1 Alrm OP	Sensitive Ground IOC 1 Alarm OP
0xB644		SGnd IOC1 Alrm DPO	Sensitive Ground IOC 1 Alarm DPO
0xB681		SGnd IOC2 Alrm PKP	Sensitive Ground IOC 2 Alarm PKP
0xB682		SGnd IOC2 Alrm OP	Sensitive Ground IOC 2 Alarm OP
0xB684		SGnd IOC2 Alrm DPO	Sensitive Ground IOC 2 Alarm DPO
0xB6C1		NSeq IOC Alrm PKP	Negative Sequence IOC Alarm PKP
0xB6C2		NSeq IOC Alrm OP	NSeq IOC Alrm OP
0xB6C4		NSeq IOC Alrm DPO	Negative Sequence IOC Alarm DPO
0xB701		Pcnt Diff Alrm PKP	Pcnt Diff Alrm PKP
0xB702		Pcnt Diff Alrm OP	Pcnt Diff Alrm OP
0xB704		Pcnt Diff Alrm DPO	Pcnt Diff Alrm DPO
0xB709		Ph Dif A Alarm PKP	Ph Dif A Alarm PKP
0xB70A		Ph Dif A Alarm OP	Ph Dif A Alarm OP
0xB70C		Ph Dif A Alarm DPO	Ph Dif A Alarm DPO
0xB711		Ph Dif B Alarm PKP	Ph Dif B Alarm PKP
0xB712		Ph Dif B Alarm OP	Ph Dif B Alarm OP
0xB714		Ph Dif B Alarm DPO	Ph Dif B Alarm DPO
0xB721		Ph Dif C Alarm PKP	Ph Dif C Alarm PKP
0xB722		Ph Dif C Alarm OP	Ph Dif C Alarm OP
0xB724		Ph Dif C Alarm DPO	Ph Dif C Alarm DPO
0xB741		RGF1 Alarm PKP	RGF1 Alarm PKP
0xB742		RGF1 Alarm OP	RGF1 Alarm OP
0xB744		RGF1 Alarm DPO	RGF1 Alarm DPO
0xB781		RGF2 Alarm PKP	RGF2 Alarm PKP

Code	Type	Definition	Long Definition
0xB782		RGF2 Alarm OP	RGF2 Alarm OP
0xB784		RGF2 Alarm DPO	RGF2 Alarm DPO
0xB7C1		Inst Diff Alrm PKP	Inst Diff Alrm PKP
0xB7C2		Inst Diff Alrm OP	Inst Diff Alrm OP
0xB7C4		Inst Diff Alrm DPO	Inst Diff Alrm DPO
0xB801		NSeq TOC1 Alrm PKP	Negative Sequence TOC 1 Alarm PKP
0xB802		NSeq TOC1 Alrm OP	Negative Sequence TOC 1 Alarm OP
0xB804		NSeq TOC1 Alrm DPO	Negative Sequence TOC 1 Alarm DPO
0xB841		NSeq TOC2 Alrm PKP	Negative Sequence TOC 2 Alarm PKP
0xB842		NSeq TOC2 Alrm OP	Negative Sequence TOC 2 Alarm OP
0xB844		NSeq TOC2 Alrm DPO	Negative Sequence TOC 2 Alarm DPO
0xB901		NSeq IOC 2 AlrmPKP	Negative Sequence IOC 2 Alarm PKP
0xB902		NSeq IOC 2 Alrm OP	Negative Sequence IOC 2 Alarm OP
0xB904		NSeq IOC 2 AlrmDPO	Negative Sequence IOC 2 Alarm DPO
0xB9C1		SGnd TOC2 Alrm PKP	Sensitive Ground TOC 2 Alarm PKP
0xB9C2		SGnd TOC2 Alrm OP	Sensitive Ground TOC 2 Alarm OP
0xB9C4		SGnd TOC2 Alrm DPO	Sensitive Ground TOC 2 Alarm DPO
0xBA02		W1BKR Trp/Cls Fail	W1 Breaker Trip/Close Fail
0xBA42		W1BKR Charge Fail	W1 Breaker Charge Fail
0xBA82		W2BKR Trp/Cls Fail	W2 Breaker Trip/Close Fail
0xBAC2		W2BKR Charge Fail	W2 Breaker Charge Fail
0xBB02		W2BKRTrpCntrAlrm OP	W2BKRTrpCntrAlrm OP
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xC042		Output Relay 3 On	Output Relay 3 On

Code	Type	Definition	Long Definition
0xC082		Output Relay 4 On	Output Relay 4 On
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC102		Output Relay 6 On	Output Relay 6 On
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC202		BKR Connected	Breaker Connected OP
0xC2C2		BKR2 Connected	Breaker 2 Connected OP
0xC401		Hot RTD PKP	Hot RTD PKP
0xC402		Hot RTD OP	Hot RTD OP
0xC482		Any Pkp OP	Any Pkp OP
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC882		Setpoint Group2 On	Setpoint Group2 On
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCC02		Lockout OP	Lockout OP
0xCC04		Lockout DPO	Lockout DPO
0xCC42		Testing ON	Testing ON
0xCC44		Testing OFF	Testing OFF
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD42		Setpoint Group1 On	Setpoint Group1 On
0xDA02		BKR2 52a Cont OP	BKR2 52a Cont OP
0xDA42		BKR2 52b Cont OP	BKR2 52b Cont OP

Code	Type	Definition	Long Definition
0xDA82		BKR2 Stat Open	BKR2 Stat Open
0xDAC2		BKR2 Stat Clsd	BKR2 Stat Clsd
0xDB02		Trip BKR 1 OP	Trip BKR 1 OP
0xDB42		Trip BKR 2 OP	Trip BKR 2 OP
0xDB82		2nd Hmnc Diff OP	2nd Hmnc Diff OP
0xDB8A		2nd Hmnc Diff Ph A	2nd Harmonic Diff Ph A
0xDB92		2nd Hmnc Diff Ph B	2nd Harmonic Diff Ph B
0xDBA2		2nd Hmnc Diff Ph C	2nd Harmonic Diff Ph C
0xDBC2		5th Hmnc Diff OP	5th Hmnc Diff OP
0xDBCA		5th Hmnc Diff Ph A	5th Harmonic Diff Ph A
0xDBD2		5th Hmnc Diff Ph B	5th Harmonic Diff Ph B
0xDBE2		5th Hmnc Diff Ph C	5th Harmonic Diff Ph C
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xE002		Any Block	Any Block
0xE042		Therm O/L Block	Thermal Level Block
0xE082		RTD1 Block	RTD1 Block
0xE0C2		RTD2 Block	RTD2 Block
0xE102		RTD3 Block	RTD3 Block
0xE142		RTD4 Block	RTD4 Block
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE202		RTD5 Block	RTD5 Block
0xE242		RTD6 Block	RTD6 Block
0xE282		RTD7 Block	RTD7 Block

Code	Type	Definition	Long Definition
0xE2C2		RTD8 Block	RTD8 Block
0xE302		RTD9 Block	RTD9 Block
0xE342		RTD10 Block	RTD10 Block
0xE382		RTD11 Block	RTD11 Block
0xE3C2		RTD12 Block	RTD12 Block
0xE402		RTDTrouble Block	RTDTrouble Block
0xE6C2		Curr Dmd1 Block	Current Demand 1 Block OP
0xE702		Curr Dmd2 Block	Current Demand 2 Block OP
0xE882		Group Change Blk	Group Change Blk
0xEC02		Lockout Block	Lockout Block
0xF002		Ph IOC1 Block	Phase IOC 1 Block
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF082		Gnd IOC1 Block	Ground IOC 1 Block
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF142		Gnd TOC1 Block	Ground TOC 1 Block
0xF182		Ph IOC2 Block	Phase IOC 2 Block
0xF1C2		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF202		Gnd IOC2 Block	Ground IOC 2 Block
0xF242		Ph TOC2 Block	Phase TOC 2 Block
0xF282		Ntrl TOC2 Block	Neutral TOC 2 Block
0xF2C2		Gnd TOC2 Block	Ground TOC 2 Block
0xF302		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF642		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF682		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF6C2		NSeq IOC Block	Negative Sequence IOC Block
0xF702		Pcnt Diff Block	Pcnt Diff Block
0xF742		RGF1 Block	RGF1 Block
0xF782		RGF2 Block	RGF2 Block
0xF7C2		Inst Diff Block	Inst Diff Block
0xF802		NSeq TOC1 Blk	Negative Sequence TOC 1 Block
0xF842		NSeq TOC2 Blk	Negative Sequence TOC 2 Block
0xF902		NSeq IOC 2 Block	Negative Sequence IOC 2 Block
0xF9C2		SGnd TOC2 Block	Sensitive Ground TOC 2 Block
0xFB02		Trip BKR1 Blk	Trip BKR1 Blk
0xFB42		Trip BKR2 Blk	Trip BKR2 Blk
FC134C	unsigned 16 bits	Logic Element Trigger	
0x0000		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On

Code	Type	Definition	Long Definition
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off

Code	Type	Definition	Long Definition
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On

Code	Type	Definition	Long Definition
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x8002		Any Trip	Any Trip

Code	Type	Definition	Long Definition
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x8081		RTD 1 Trip PKP	RTD 1 Trip PKP
0x8082		RTD 1 Trip OP	RTD 1 Trip OP
0x80C1		RTD 2 Trip PKP	RTD 2 Trip PKP
0x80C2		RTD 2 Trip OP	RTD 2 Trip OP
0x8101		RTD 3 Trip PKP	RTD 3 Trip PKP
0x8102		RTD 3 Trip OP	RTD 3 Trip OP
0x8141		RTD 4 Trip PKP	RTD 4 Trip PKP
0x8142		RTD 4 Trip OP	RTD 4 Trip OP
0x8201		RTD 5 Trip PKP	RTD 5 Trip PKP
0x8202		RTD 5 Trip OP	RTD 5 Trip OP
0x8241		RTD 6 Trip PKP	RTD 6 Trip PKP
0x8242		RTD 6 Trip OP	RTD 6 Trip OP
0x8281		RTD 7 Trip PKP	RTD 7 Trip PKP
0x8282		RTD 7 Trip OP	RTD 7 Trip OP
0x82C1		RTD 8 Trip PKP	RTD 8 Trip PKP
0x82C2		RTD 8 Trip OP	RTD 8 Trip OP
0x8301		RTD 9 Trip PKP	RTD 9 Trip PKP
0x8302		RTD 9 Trip OP	RTD 9 Trip OP
0x8341		RTD 10 Trip PKP	RTD 10 Trip PKP
0x8342		RTD 10 Trip OP	RTD 10 Trip OP
0x8381		RTD 11 Trip PKP	RTD 11 Trip PKP
0x8382		RTD 11 Trip OP	RTD 11 Trip OP
0x83C1		RTD 12 Trip PKP	RTD 12 Trip PKP
0x83C2		RTD 12 Trip OP	RTD 12 Trip OP
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO

Code	Type	Definition	Long Definition
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x9001		Ph IOC1 Trip PKP	Phase IOC 1 Trip PKP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x9004		Ph IOC1 Trip DPO	Phase IOC 1 Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x9081		Gnd IOC1 Trip PKP	Ground IOC 1 Trip PKP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x9084		Gnd IOC1 Trip DPO	Ground IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9141		Gnd TOC1 Trip PKP	Ground TOC Trip PKP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9144		Gnd TOC1 Trip DPO	Ground TOC Trip DPO
0x9181		Ph IOC2 Trip PKP	Phase IOC 2 Trip PKP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x9184		Ph IOC2 Trip DPO	Phase IOC 2 Trip DPO
0x91C1		Ntrl IOC2 Trip PKP	Neutral IOC 2 Trip PKP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x91C4		Ntrl IOC2 Trip DPO	Neutral IOC 2 Trip DPO
0x9201		Gnd IOC2 Trip PKP	Ground IOC 2 Trip PKP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9204		Gnd IOC2 Trip DPO	Ground IOC 2 Trip DPO
0x9241		Ph TOC2 Trip PKP	Phase TOC 2 Trip PKP
0x9242		Ph TOC2 Trip OP	Phase TOC 2 Trip OP
0x9244		Ph TOC2 Trip DPO	Phase TOC 2 Trip DPO
0x9281		Ntrl TOC2 Trip PKP	Neutral TOC 2 Trip PKP
0x9282		Ntrl TOC2 Trip OP	Neutral TOC 2 Trip OP
0x9284		Ntrl TOC2 Trip DPO	Neutral TOC 2 Trip DPO
0x92C1		Gnd TOC2 Trip PKP	Ground TOC 2 Trip PKP
0x92C2		Gnd TOC2 Trip OP	Ground TOC 2 Trip OP
0x92C4		Gnd TOC2 Trip DPO	Ground TOC 2 Trip DPO
0x9301		SGnd TOC1 Trip PKP	Sensitive Ground TOC 1 Trip PKP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9304		SGnd TOC1 Trip DPO	Sensitive Ground TOC 1 Trip DPO
0x9641		SGnd IOC1 Trip PKP	Sensitive Ground IOC 1 Trip PKP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9644		SGnd IOC1 Trip DPO	Sensitive Ground IOC 1 Trip DPO
0x9681		SGnd IOC2 Trip PKP	Sensitive Ground IOC 2 Trip PKP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP

Code	Type	Definition	Long Definition
0x9684		SGnd IOC2 Trip DPO	Sensitive Ground IOC 2 Trip DPO
0x96C1		NSeq IOC Trp PKP	Negative Sequence IOC Trip PKP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x96C4		NSeq IOC Trp DPO	Negative Sequence IOC Trip DPO
0x9701		Pcnt Diff Trip PKP	Pcnt Diff Trip PKP
0x9702		Pcnt Diff Trip OP	Pcnt Diff Trip OP
0x9704		Pcnt Diff Trip DPO	Pcnt Diff Trip DPO
0x9741		RGF1 Trip PKP	RGF1 Trip PKP
0x9742		RGF1 Trip OP	RGF1 Trip OP
0x9744		RGF1 Trip DPO	RGF1 Trip DPO
0x9781		RGF2 Trip PKP	RGF2 Trip PKP
0x9782		RGF2 Trip OP	RGF2 Trip OP
0x9784		RGF2 Trip DPO	RGF2 Trip DPO
0x97C1		Inst Diff Trip PKP	Inst Diff Trip PKP
0x97C2		Inst Diff Trip OP	Inst Diff Trip OP
0x97C4		Inst Diff Trip DPO	Inst Diff Trip DPO
0x9801		NSeq TOC1 Trip PKP	Negative Sequence TOC 1 Trip PKP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9804		NSeq TOC1 Trip DPO	Negative Sequence TOC 1 Trip DPO
0x9841		NSeq TOC2 Trip PKP	Negative Sequence TOC 2 Trip PKP
0x9842		NSeq TOC2 Trip OP	Negative Sequence TOC 2 Trip OP
0x9844		NSeq TOC2 Trip DPO	Negative Sequence TOC 2 Trip DPO
0x9901		NSeq IOC 2 Trp PKP	Negative Sequence IOC 2 Trip PKP
0x9902		NSeq IOC 2 Trp OP	Negative Sequence IOC 2 Trip OP
0x9904		NSeq IOC 2 Trp DPO	Negative Sequence IOC 2 Trip DPO
0x99C1		SGnd TOC2 Trip PKP	Sensitive Ground TOC 2 Trip PKP
0x99C2		SGnd TOC2 Trip OP	Sensitive Ground TOC 2 Trip OP
0x99C4		SGnd TOC2 Trip DPO	Sensitive Ground TOC 2 Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP

Code	Type	Definition	Long Definition
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA081		RTD 1 Alarm PKP	RTD 1 Alarm PKP
0xA082		RTD 1 Alarm OP	RTD 1 Alarm OP
0xA0C1		RTD 2 Alarm PKP	RTD 2 Alarm PKP
0xA0C2		RTD 2 Alarm OP	RTD 2 Alarm OP
0xA101		RTD 3 Alarm PKP	RTD 3 Alarm PKP
0xA102		RTD 3 Alarm OP	RTD 3 Alarm OP
0xA141		RTD 4 Alarm PKP	RTD 4 Alarm PKP
0xA142		RTD 4 Alarm OP	RTD 4 Alarm OP
0xA201		RTD 5 Alarm PKP	RTD 5 Alarm PKP
0xA202		RTD 5 Alarm OP	RTD 5 Alarm OP
0xA241		RTD 6 Alarm PKP	RTD 6 Alarm PKP
0xA242		RTD 6 Alarm OP	RTD 6 Alarm OP
0xA281		RTD 7 Alarm PKP	RTD 7 Alarm PKP
0xA282		RTD 7 Alarm OP	RTD 7 Alarm OP
0xA2C1		RTD 8 Alarm PKP	RTD 8 Alarm PKP
0xA2C2		RTD 8 Alarm OP	RTD 8 Alarm OP
0xA301		RTD 9 Alarm PKP	RTD 9 Alarm PKP
0xA302		RTD 9 Alarm OP	RTD 9 Alarm OP
0xA341		RTD 10 Alarm PKP	RTD 10 Alarm PKP
0xA342		RTD 10 Alarm OP	RTD 10 Alarm OP
0xA381		RTD 11 Alarm PKP	RTD 11 Alarm PKP
0xA382		RTD 11 Alarm OP	RTD 11 Alarm OP
0xA3C1		RTD 12 Alarm PKP	RTD 12 Alarm PKP
0xA3C2		RTD 12 Alarm OP	RTD 12 Alarm OP
0xA402		RTD Trouble Alr OP	RTD Trouble Alarm
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP

Code	Type	Definition	Long Definition
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA6C2		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xA702		Curr Dmd2 Alrm OP	Current Demand 2 Alarm OP
0xA842		W1BKR Alarm	W1 Breaker Alarm
0xA882		W1BKR Trip Time	W1 Breaker Trip Time
0xA8C2		W1BKR Close Time	W1 Breaker Close Time
0xA902		W1BKR Charge Time	W1 Breaker Charge Time
0xA942		W2BKR Alarm	W2 Breaker Alarm
0xA982		W2BKR Trip Time	W2 Breaker Trip Time
0xA9C2		W2BKR Close Time	W2 Breaker Close Time
0xAA02		W2BKR Charge Time	W2 Breaker Charge Time
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xAD01		R1 CoilMonAlrm PKP	Trip Coil Monitor Alarm PKP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD04		R1 CoilMonAlrm DPO	Trip Coil Monitor Alarm DPO
0xAD41		R2 CoilMonAlrm PKP	Close Coil Monitor Alarm PKP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD44		R2 CoilMonAlrm DPO	Close Coil Monitor Alarm DPO
0xAD81		BKR1 Fail Alrm PKP	Breaker 1 Fail Alarm PKP
0xAD82		BKR1 Fail Alrm OP	Breaker 1 Fail Alarm OP
0xAD84		BKR1 Fail Alrm DPO	Breaker 1 Fail Alarm DPO
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xAEC2		BKR2 Stat Fail OP	Breaker 2 Status Fail OP
0xAF41		BKR2 Fail Alrm PKP	Breaker 2 Fail Alarm PKP
0xAF42		BKR2 Fail Alrm OP	Breaker 2 Fail Alarm OP
0xAF44		BKR2 Fail Alrm DPO	Breaker 2 Fail Alarm DPO
0xB001		Ph IOC1 Alarm PKP	Phase IOC 1 Alarm PKP
0xB002		Ph IOC1 Alarm OP	Phase IOC 1 Alarm OP
0xB004		Ph IOC1 Alarm DPO	Phase IOC 1 Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP

Code	Type	Definition	Long Definition
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB081		Gnd IOC1 Alarm PKP	Ground IOC 1 Alarm PKP
0xB082		Gnd IOC1 Alarm OP	Ground IOC 1 Alarm OP
0xB084		Gnd IOC1 Alarm DPO	Ground IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB141		Gnd TOC1 Alarm PKP	Ground TOC Alarm PKP
0xB142		Gnd TOC1 Alarm OP	Ground TOC 1 Alarm OP
0xB144		Gnd TOC1 Alarm DPO	Ground TOC Alarm DPO
0xB181		Ph IOC2 Alarm PKP	Phase IOC 2 Alarm PKP
0xB182		Ph IOC2 Alarm OP	Phase IOC 2 Alarm OP
0xB184		Ph IOC2 Alarm DPO	Phase IOC 2 Alarm DPO
0xB1C1		Ntrl IOC2 Alrm PKP	Neutral IOC 2 Alarm PKP
0xB1C2		Ntrl IOC2 Alrm OP	Neutral IOC 2 Alarm OP
0xB1C4		Ntrl IOC2 Alrm DPO	Neutral IOC 2 Alarm DPO
0xB201		Gnd IOC2 Alarm PKP	Ground IOC 2 Alarm PKP
0xB202		Gnd IOC2 Alarm OP	Ground IOC 2 Alarm OP
0xB204		Gnd IOC2 Alarm DPO	Ground IOC 2 Alarm DPO
0xB241		Ph TOC2 Alrm PKP	Phase TOC 2 Alarm PKP
0xB242		Ph TOC2 Alrm OP	Phase TOC 2 Alarm OP
0xB244		Ph TOC2 Alrm DPO	Phase TOC 2 Alarm DPO
0xB281		Ntrl TOC2 Alrm PKP	Neutral TOC 2 Alarm PKP
0xB282		Ntrl TOC2 Alrm OP	Neutral TOC 2 Alarm OP
0xB284		Ntrl TOC2 Alrm DPO	Neutral TOC 2 Alarm DPO
0xB2C1		Gnd TOC2 Alarm PKP	Ground TOC 2 Alarm PKP
0xB2C2		Gnd TOC2 Alarm OP	Ground TOC 2 Alarm OP
0xB2C4		Gnd TOC2 Alarm DPO	Ground TOC 2 Alarm DPO
0xB301		SGnd TOC1 Alrm PKP	Sensitive Ground TOC 1 Alarm PKP
0xB302		SGnd TOC1 Alrm OP	Sensitive Ground TOC 1 Alarm OP
0xB304		SGnd TOC1 Alrm DPO	Sensitive Ground TOC 1 Alarm DPO
0xB641		SGnd IOC1 Alrm PKP	Sensitive Ground IOC 1 Alarm PKP
0xB642		SGnd IOC1 Alrm OP	Sensitive Ground IOC 1 Alarm OP
0xB644		SGnd IOC1 Alrm DPO	Sensitive Ground IOC 1 Alarm DPO
0xB681		SGnd IOC2 Alrm PKP	Sensitive Ground IOC 2 Alarm PKP
0xB682		SGnd IOC2 Alrm OP	Sensitive Ground IOC 2 Alarm OP
0xB684		SGnd IOC2 Alrm DPO	Sensitive Ground IOC 2 Alarm DPO
0xB6C1		NSeq IOC Alrm PKP	Negative Sequence IOC Alarm PKP
0xB6C2		NSeq IOC Alrm OP	NSeq IOC Alrm OP
0xB6C4		NSeq IOC Alrm DPO	Negative Sequence IOC Alarm DPO
0xB701		Pcnt Diff Alrm PKP	Pcnt Diff Alrm PKP
0xB702		Pcnt Diff Alrm OP	Pcnt Diff Alrm OP
0xB704		Pcnt Diff Alrm DPO	Pcnt Diff Alrm DPO
0xB741		RGF1 Alarm PKP	RGF1 Alarm PKP

Code	Type	Definition	Long Definition
0xB742		RGF1 Alarm OP	RGF1 Alarm OP
0xB744		RGF1 Alarm DPO	RGF1 Alarm DPO
0xB781		RGF2 Alarm PKP	RGF2 Alarm PKP
0xB782		RGF2 Alarm OP	RGF2 Alarm OP
0xB784		RGF2 Alarm DPO	RGF2 Alarm DPO
0xB7C1		Inst Diff Alrm PKP	Inst Diff Alrm PKP
0xB7C2		Inst Diff Alrm OP	Inst Diff Alrm OP
0xB7C4		Inst Diff Alrm DPO	Inst Diff Alrm DPO
0xB801		NSeq TOC1 Alrm PKP	Negative Sequence TOC 1 Alarm PKP
0xB802		NSeq TOC1 Alrm OP	Negative Sequence TOC 1 Alarm OP
0xB804		NSeq TOC1 Alrm DPO	Negative Sequence TOC 1 Alarm DPO
0xB841		NSeq TOC2 Alrm PKP	Negative Sequence TOC 2 Alarm PKP
0xB842		NSeq TOC2 Alrm OP	Negative Sequence TOC 2 Alarm OP
0xB844		NSeq TOC2 Alrm DPO	Negative Sequence TOC 2 Alarm DPO
0xB901		NSeq IOC 2 AlrmPKP	Negative Sequence IOC 2 Alarm PKP
0xB902		NSeq IOC 2 Alrm OP	Negative Sequence IOC 2 Alarm OP
0xB904		NSeq IOC 2 AlrmDPO	Negative Sequence IOC 2 Alarm DPO
0xB9C1		SGnd TOC2 Alrm PKP	Sensitive Ground TOC 2 Alarm PKP
0xB9C2		SGnd TOC2 Alrm OP	Sensitive Ground TOC 2 Alarm OP
0xB9C4		SGnd TOC2 Alrm DPO	Sensitive Ground TOC 2 Alarm DPO
0xBA02		W1BKR Trp/Cls Fail	W1 Breaker Trip/Close Fail
0xBA42		W1BKR Charge Fail	W1 Breaker Charge Fail
0xBA82		W2BKR Trp/Cls Fail	W2 Breaker Trip/Close Fail
0xBAC2		W2BKR Charge Fail	W2 Breaker Charge Fail
0xBB02		W2BKRTrpCntrAlrm OP	W2BKRTrpCntrAlrm OP
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP

Code	Type	Definition	Long Definition
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xC042		Output Relay 3 On	Output Relay 3 On
0xC082		Output Relay 4 On	Output Relay 4 On
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC102		Output Relay 6 On	Output Relay 6 On
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC182		Rly1 Coil OP	Relay # 1 Coil OP
0xC1C2		Rly2 Coil OP	Relay # 2 Coil OP
0xC202		BKR Connected	Breaker Connected OP
0xC2C2		BKR2 Connected	Breaker 2 Connected OP
0xC401		Hot RTD PKP	Hot RTD PKP
0xC402		Hot RTD OP	Hot RTD OP
0xC482		Any Pkp OP	Any Pkp OP
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC882		Setpoint Group2 On	Setpoint Group2 On
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCA82		Reset OK	Reset OK
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCC02		Lockout OP	Lockout OP
0xCC04		Lockout DPO	Lockout DPO
0xCC42		Testing ON	Testing ON

Code	Type	Definition	Long Definition
0xCC44		Testing OFF	Testing OFF
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD42		Setpoint Group1 On	Setpoint Group1 On
0xDA02		BKR2 52a Cont OP	BKR2 52a Cont OP
0xDA42		BKR2 52b Cont OP	BKR2 52b Cont OP
0xDA82		BKR2 Stat Open	BKR2 Stat Open
0xDAC2		BKR2 Stat Clsd	BKR2 Stat Clsd
0xDB02		Trip BKR 1 OP	Trip BKR 1 OP
0xDB04		Trip BKR 1 DPO	Trip BKR 1 DPO
0xDB42		Trip BKR 2 OP	Trip BKR 2 OP
0xDB44		Trip BKR 2 DPO	Trip BKR 2 DPO
0xDB82		2nd Hmnc Diff OP	2nd Hmnc Diff OP
0xDB8A		2nd Hmnc Diff Ph A	2nd Harmonic Diff Ph A
0xDB92		2nd Hmnc Diff Ph B	2nd Harmonic Diff Ph B
0xDBA2		2nd Hmnc Diff Ph C	2nd Harmonic Diff Ph C
0xDBC2		5th Hmnc Diff OP	5th Hmnc Diff OP
0xDBCA		5th Hmnc Diff Ph A	5th Harmonic Diff Ph A
0xDBD2		5th Hmnc Diff Ph B	5th Harmonic Diff Ph B
0xDBE2		5th Hmnc Diff Ph C	5th Harmonic Diff Ph C
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xE002		Any Block	Any Block
0xE042		Therm O/L Block	Thermal Level Block
0xE082		RTD1 Block	RTD1 Block

Code	Type	Definition	Long Definition
0xE0C2		RTD2 Block	RTD2 Block
0xE102		RTD3 Block	RTD3 Block
0xE142		RTD4 Block	RTD4 Block
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE202		RTD5 Block	RTD5 Block
0xE242		RTD6 Block	RTD6 Block
0xE282		RTD7 Block	RTD7 Block
0xE2C2		RTD8 Block	RTD8 Block
0xE302		RTD9 Block	RTD9 Block
0xE342		RTD10 Block	RTD10 Block
0xE382		RTD11 Block	RTD11 Block
0xE3C2		RTD12 Block	RTD12 Block
0xE402		RTDTrouble Block	RTDTrouble Block
0xE6C2		Curr Dmd1 Block	Current Demand 1 Block OP
0xE702		Curr Dmd2 Block	Current Demand 2 Block OP
0xE882		Group Change Blk	Group Change Blk
0xEC02		Lockout Block	Lockout Block
0xF002		Ph IOC1 Block	Phase IOC 1 Block
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF082		Gnd IOC1 Block	Ground IOC 1 Block
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF142		Gnd TOC1 Block	Ground TOC 1 Block
0xF182		Ph IOC2 Block	Phase IOC 2 Block
0xF1C2		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF202		Gnd IOC2 Block	Ground IOC 2 Block
0xF242		Ph TOC2 Block	Phase TOC 2 Block
0xF282		Ntrl TOC2 Block	Neutral TOC 2 Block
0xF2C2		Gnd TOC2 Block	Ground TOC 2 Block
0xF302		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF642		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF682		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF6C2		NSeq IOC Block	Negative Sequence IOC Block
0xF702		Pcnt Diff Block	Pcnt Diff Block
0xF742		RGF1 Block	RGF1 Block
0xF782		RGF2 Block	RGF2 Block
0xF7C2		Inst Diff Block	Inst Diff Block
0xF802		NSeq TOC1 Blk	Negative Sequence TOC 1 Block
0xF842		NSeq TOC2 Blk	Negative Sequence TOC 2 Block
0xF902		NSeq IOC 2 Block	Negative Sequence IOC 2 Block
0xF9C2		SGnd TOC2 Block	Sensitive Ground TOC 2 Block
0xFB02		Trip BKR1 Blk	Trip BKR1 Blk
0xFB42		Trip BKR2 Blk	Trip BKR2 Blk
FC134D	unsigned 16 bits	Lockout Trigger	
0		Off	Off
0x0001		On	On

Code	Type	Definition	Long Definition
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On

Code	Type	Definition	Long Definition
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8082		RTD 1 Trip OP	RTD 1 Trip OP
0x80C2		RTD 2 Trip OP	RTD 2 Trip OP
0x8102		RTD 3 Trip OP	RTD 3 Trip OP
0x8142		RTD 4 Trip OP	RTD 4 Trip OP
0x8202		RTD 5 Trip OP	RTD 5 Trip OP

Code	Type	Definition	Long Definition
0x8242		RTD 6 Trip OP	RTD 6 Trip OP
0x8282		RTD 7 Trip OP	RTD 7 Trip OP
0x82C2		RTD 8 Trip OP	RTD 8 Trip OP
0x8302		RTD 9 Trip OP	RTD 9 Trip OP
0x8342		RTD 10 Trip OP	RTD 10 Trip OP
0x8382		RTD 11 Trip OP	RTD 11 Trip OP
0x83C2		RTD 12 Trip OP	RTD 12 Trip OP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9242		Ph TOC2 Trip OP	Phase TOC 2 Trip OP
0x924A		Ph A TOC2 Trip OP	Phase A TOC 2 Trip OP
0x9252		Ph B TOC2 Trip OP	Phase B TOC 2 Trip OP
0x9262		Ph C TOC2 Trip OP	Phase C TOC 2 Trip OP
0x9282		Ntrl TOC2 Trip OP	Neutral TOC 2 Trip OP
0x92C2		Gnd TOC2 Trip OP	Ground TOC 2 Trip OP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x9702		Pcnt Diff Trip OP	Pcnt Diff Trip OP
0x970A		Ph Diff A Trip OP	Ph Diff A Trip OP
0x9712		Ph Diff B Trip OP	Ph Diff B Trip OP
0x9722		Ph Diff C Trip OP	Ph Diff C Trip OP

Code	Type	Definition	Long Definition
0x9742		RGF1 Trip OP	RGF1 Trip OP
0x9782		RGF2 Trip OP	RGF2 Trip OP
0x97C2		Inst Diff Trip OP	Inst Diff Trip OP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9842		NSeq TOC2 Trip OP	Negative Sequence TOC 2 Trip OP
0x9902		NSeq IOC 2 Trp OP	Negative Sequence IOC 2 Trip OP
0x99C2		SGnd TOC2 Trip OP	Sensitive Ground TOC 2 Trip OP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
FC134E	unsigned 16 bits	Fault Report Trigger	
0		Off	Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8082		RTD 1 Trip OP	RTD 1 Trip OP
0x80C2		RTD 2 Trip OP	RTD 2 Trip OP
0x8102		RTD 3 Trip OP	RTD 3 Trip OP
0x8142		RTD 4 Trip OP	RTD 4 Trip OP
0x8202		RTD 5 Trip OP	RTD 5 Trip OP
0x8242		RTD 6 Trip OP	RTD 6 Trip OP
0x8282		RTD 7 Trip OP	RTD 7 Trip OP
0x82C2		RTD 8 Trip OP	RTD 8 Trip OP
0x8302		RTD 9 Trip OP	RTD 9 Trip OP
0x8342		RTD 10 Trip OP	RTD 10 Trip OP
0x8382		RTD 11 Trip OP	RTD 11 Trip OP
0x83C2		RTD 12 Trip OP	RTD 12 Trip OP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP

Code	Type	Definition	Long Definition
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9242		Ph TOC2 Trip OP	Phase TOC 2 Trip OP
0x924A		Ph A TOC2 Trip OP	Phase A TOC 2 Trip OP
0x9252		Ph B TOC2 Trip OP	Phase B TOC 2 Trip OP
0x9262		Ph C TOC2 Trip OP	Phase C TOC 2 Trip OP
0x9282		Ntrl TOC2 Trip OP	Neutral TOC 2 Trip OP
0x92C2		Gnd TOC2 Trip OP	Ground TOC 2 Trip OP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x9702		Pcnt Diff Trip OP	Pcnt Diff Trip OP
0x970A		Ph Diff A Trip OP	Ph Diff A Trip OP
0x9712		Ph Diff B Trip OP	Ph Diff B Trip OP
0x9722		Ph Diff C Trip OP	Ph Diff C Trip OP
0x9742		RGF1 Trip OP	RGF1 Trip OP
0x9782		RGF2 Trip OP	RGF2 Trip OP
0x97C2		Inst Diff Trip OP	Inst Diff Trip OP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9842		NSeq TOC2 Trip OP	Negative Sequence TOC 2 Trip OP
0x9902		NSeq IOC 2 Trp OP	Negative Sequence IOC 2 Trip OP
0x99C2		SGnd TOC2 Trip OP	Sensitive Ground TOC 2 Trip OP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
FC134F	unsigned 16 bits	Lockout Reset	
0		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On

Code	Type	Definition	Long Definition
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On

Code	Type	Definition	Long Definition
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP

Code	Type	Definition	Long Definition
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC502		LE 2 OP	Logic Element 2 OP
0xC542		LE 3 OP	Logic Element 3 OP
0xC582		LE 4 OP	Logic Element 4 OP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC602		LE 6 OP	Logic Element 6 OP
0xC642		LE 7 OP	Logic Element 7 OP
0xC682		LE 8 OP	Logic Element 8 OP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDDC2		LE 16 OP	Logic Element 16 OP
FC135	unsigned 16 bits	Motor Speed During Trip / Motor Speed During Event	
FC136	unsigned 16 bits	Motor Speed During Trip / Motor Speed During Event	
0		None	None
1		A	A
2		B	B
FC139	unsigned 16 bits	Starter Type	
0		None	None
4		Wye-Delta	Wye-Delta
5		Inverter	Inverter
6		Soft Starter	Soft Starter
7		Custom Starter	Custom Starter
FC140	unsigned 16 bits	Interlock Function	
0		Disabled	Disabled
1		Trip	Trip
2		Alarm	Alarm
FC141	unsigned 16 bits	Timer Type	
0		Millisecond	Millisecond
1		Second	Second
2		Minute	Minute
FC142	unsigned 16 bits	FlexLogic Bit Field EEETTTTTTTSSSSSS	
0x0000		Off	Off
0x0001		On	On
0x0040		Contact Inputs	Contact Inputs
0x0080		Virtual Inputs	Virtual Inputs
0x00C0		Virtual Outputs	Virtual Outputs

Code	Type	Definition	Long Definition
0x01C0		Remote Inputs	Remote Inputs
0x0380		Insert	Insert
0x0400		End	End
0x0440		NOT	NOT
0x0480		XOR	XOR
0x04C0		LATCH	LATCH
0x0500		OR	OR
0x0540		AND	AND
0x0580		NOR	NOR
0x05C0		NAND	NAND
0x0600		TIMER	TIMER
0x0640		ASSIGN	ASSIGN
0x8000		Trip	Trip
0x9901		NSeq IOC 2 Trp PKP	Negative Sequence IOC 2 Trip PKP
0x9902		NSeq IOC 2 Trp OP	Negative Sequence IOC 2 Trip OP
0x9904		NSeq IOC 2 Trp DPO	Negative Sequence IOC 2 Trip DPO
0xA000		Alarm	Alarm
0xB881		CTFail 1 Alrm PKP	W1 CT Fail Alarm PKP
0xB882		CTFail 1 Alrm OP	W1 CT Fail Alarm OP
0xB884		CTFail 1 Alrm DPO	W1 CT Fail Alarm DPO
0xB8C1		CTFail 2 Alrm PKP	W2 CT Fail Alarm PKP
0xB8C2		CTFail 2 Alrm OP	W2 CT Fail Alarm OP
0xB8C4		CTFail 2 Alrm DPO	W2 CT Fail Alarm DPO
0xB901		NSeq IOC 2 AlrmPKP	Negative Sequence IOC 2 Alarm PKP
0xB902		NSeq IOC 2 Alrm OP	Negative Sequence IOC 2 Alarm OP
0xB904		NSeq IOC 2 AlrmDPO	Negative Sequence IOC 2 Alarm DPO
0xC000		Control	Control
0xD881		CTFail 1 PKP	W1 CT Fail PKP
0xD882		CTFail 1 OP	W1 CT Fail OP
0xD884		CTFail 1 DPO	W1 CT Fail DPO
0xD901		NSeq IOC 2 PKP	Negative Sequence IOC 2 PKP
0xD902		NSeq IOC 2 OP	Negative Sequence IOC 2 OP
0xD904		NSeq IOC 2 DPO	Negative Sequence IOC 2 DPO
0xD8C1		CTFail 2 PKP	W2 CT Fail PKP
0xD8C2		CTFail 2 OP	W2 CT Fail OP
0xD8C4		CTFail 2 DPO	W2 CT Fail DPO
0xF882		CTFail 1 Block	W1 CT Fail Block
0xF8C2		CTFail 2 Block	W2 CT Fail Block
0xF902		NSeq IOC 2 Block	Negative Sequence IOC 2 Block
FC143	unsigned 16 bits	Drive Status	
0		Drive Unavailable	Drive Unavailable
1		Available Auto	Available Auto
2		Available Manual	Available Manual
3		Available	Available
4		Running	Running
5		ESD Trip / Stop	ESD Trip / Stop
FC144	unsigned 32 bits	LED Status - 350	

Code	Type	Definition	Long Definition
FC144A	unsigned 32 bits	LED Status - 339	
FC144B	unsigned 32 bits	LED Status - 345	
0x00000100		W2 Closed Red	W2 Closed Red
0x00000200		W2 Closed Green	W2 Closed Green
0x00000300		W2 Closed Amber	W2 Closed Amber
0x00000400		W2 Open Red	W2 Open Red
0x00000800		W2 Open Green	W2 Open Green
0x00000C00		W2 Open Amber	W2 Open Amber
0x00001000		W1 Closed Red	W1 Closed Red
0x00002000		W1 Closed Green	W1 Closed Green
0x00003000		W1 Closed Amber	W1 Closed Amber
0x00004000		W1 Open Red	W1 Open Red
0x00008000		W1 Open Green	W1 Open Green
0x0000C000		W1 Open Amber	W1 Open Amber
0x00030000		Maintenance Amber	Maintenance Amber
0x000C0000		Pickup Amber	Pickup Amber
0x00300000		Alarm Amber	Alarm Amber
0x00400000		Trip Red	Trip Red
0x01000000		SP Group 2 Red	SP Group 2 Red
0x02000000		SP Group 2 Green	SP Group 2 Green
0x03000000		SP Group 2 Amber	SP Group 2 Amber
0x04000000		SP Group 1 Red	SP Group 1 Red
0x08000000		SP Group 1 Green	SP Group 1 Green
0x0C000000		SP Group 1 Amber	SP Group 1 Amber
0x30000000		Trouble Amber	Trouble Amber
0x80000000		In Service Green	In Service Green
FC145	unsigned 16 bits	Element Status 1	
FC146	unsigned 16 bits	Element Status 2	
FC147	unsigned 16 bits	LED Intensity	
0		Level 1	Level 1
12		Level 5	Level 5
15		Level 6	Level 6
3		Level 2	Level 2
6		Level 3	Level 3
9		Level 4	Level 4
FC148	unsigned 16 bits	Trigger Mode	
0		Overwrite	Overwrite
1		Protected	Protected
FC149	unsigned 16 bits	OR / AND Selection	
0		OR	OR
1		AND	AND
2		NOR	NOR
3		NAND	NAND
4		XOR	XOR
5		XNOR	XNOR
FC149A	unsigned 16 bits	AND / LATCH Selection	
0		AND	AND

Code	Type	Definition	Long Definition
1		LATCH	LATCH
FC150	unsigned 32 bits	IP Address	
FC155	unsigned 16 bits	Profibus Baud Rate	
0x0001		9600	9600
0x0002		19200	19200
0x0004		31250	31250
0x0008		45450	45450
0x0010		93750	93750
0x0020		187500	187500
0x0040		500000	500000
0x0080		1500000	1500000
0x07E2		Auto Detect	Auto Detect
FC156	unsigned 16 bits	DeviceNet Baud Rate	
0		125 kbps	125 kbps
1		250 kbps	250 kbps
2		500 kbps	500 kbps
FC157	unsigned 16 bits	LED Colour	
0		Off	Off
1		Red	Red
2		Green	Green
3		Orange	Orange
FC157A	unsigned 16 bits	LED Colour (Subset A)	
0		None	None
1		Red	Red
2		Green	Green
FC160	unsigned 16 bits	Auto/Manual Mode	
0		Auto	Auto
1		Manual	Manual
FC167	unsigned 32 bits	Contact/Virtual Input/Output Status	
FC168	unsigned 32 bits	Contact/Virtual Input/Output Status	
FC169	unsigned 16 bits	Month	
0		Not Set	Not Set
1		January	January
2		February	February
3		March	March
4		April	April
5		May	May
6		June	June
7		July	July
8		August	August
9		September	September
10		October	October
11		November	November
12		December	December
FC170	unsigned 16 bits	Count of Week	
0		Not Set	Not Set
1		1st	1st

Code	Type	Definition	Long Definition
2		2nd	2nd
3		3rd	3rd
4		4th	4th
5		Last	Last
FC171	unsigned 16 bits	Weekdays	
0		Not Set	Not Set
1		SUN	SUN
2		MON	MON
3		TUE	TUE
4		WED	WED
5		THU	THU
6		FRI	FRI
7		SAT	SAT
FC172	unsigned 16 bits	Auto/Manual Control Stop Mode	
0		Always Enabled	Always Enabled
1		Follow Ctrl Mode	Follow Control Mode
FC173	unsigned 16 bits	Wire Selection	
0		2W	2W
1		3W	3W
FC174	unsigned 16 bits	Source Stop Action	
0		Stop	Stop
1		Trip	Trip
FC175	unsigned 16 bits	Test Auto/Manual Mode	
0		On	On
1		Off	Off
2		Unaffected	Unaffected
FC176	unsigned 16 bits	Auxiliary VT Connection	
0		Vab VT	Vab VT
1		Vbc VT	Vbc VT
2		Vca VT	Vca VT
3		Van VT	Van VT
4		Vbn VT	Vbn VT
5		Vcn VT	Vcn VT
FC177	unsigned 16 bits	LED Color Invert	
0		Green/Red	Green/Red
1		Red/Green	Red/Green
FC178	unsigned 16 bits	Motor Status	
FC179	unsigned 32 bits	Alarm Status 1	
0x00000001		Any Alarm	Any Alarm
0x00000002		Therm Level Alarm	Thermal Level Alarm
0x00000004		Gnd Fault Alarm	Gnd Fault Alarm
0x00000008		Acceleration Alarm	Acceleration Alarm
0x00000020		Under Pwr Alarm	Under Power Alarm
0x00000040		Reserved	Reserved
0x00000080		Reserved	Reserved
0x00000100		Mech Jam Alarm	Mechanical Jam Alarm
0x00000200		Under Curr Alarm	Undercurrent Alarm

Code	Type	Definition	Long Definition
0x00000400		Unbalance Alarm	Unbalance Alarm
0x00000800		RTD 1 Alarm	RTD 1 Alarm
0x00001000		RTD 2 Alarm	RTD 2 Alarm
0x00002000		RTD 3 Alarm	RTD 3 Alarm
0x00004000		RTD 4 Alarm	RTD 4 Alarm
0x00008000		RTD 5 Alarm	RTD 5 Alarm
0x00010000		RTD 6 Alarm	RTD 6 Alarm
0x00020000		RTD Trouble Alarm	RTD Trouble Alarm
0x00040000		Not Configured	Not Configured
0x00080000		LE 1 Alarm	Logic Element 1 Alarm
0x00100000		LE 2 Alarm	Logic Element 2 Alarm
0x00200000		LE 3 Alarm	Logic Element 3 Alarm
0x00400000		LE 4 Alarm	Logic Element 4 Alarm
0x00800000		LE 5 Alarm	Logic Element 5 Alarm
0x01000000		LE 6 Alarm	Logic Element 6 Alarm
0x02000000		LE 7 Alarm	Logic Element 7 Alarm
0x04000000		LE 8 Alarm	Logic Element 8 Alarm
0x08000000		RTD 7 Alarm	RTD 7 Alarm
0x10000000		RTD 8 Alarm	RTD 8 Alarm
0x20000000		RTD 9 Alarm	RTD 9 Alarm
0x40000000		RTD 10 Alarm	RTD 10 Alarm
0x80000000		RTD 11 Alarm	RTD 11 Alarm
FC180	unsigned 32 bits	Alarm Status 2	
0x00000001		RTD 12 Alarm	RTD 12 Alarm
0x00000002		Reserved	Reserved
0x00000004		Reserved	Reserved
0x00000008		Reserved	Reserved
0x00000010		Reserved	Reserved
0x00000020		Reserved	Reserved
0x00000040		Motor Run Hrs	Motor Running Hours
0x00000080		I^2 Counter Alarm	I^2 Counter Alarm
0x00000100		Welded Contactor	Welded Contactor
0x00000800		Reserved	Reserved
0x00001000		Load Increase Alrm	Load Increase Alarm
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		High Ambient Temp	High Ambient Temperature Alarm
0x00010000		Low Ambient Temp	Low Ambient Temperature Alarm
0x00020000		Self Test Alarm	Self Test Alarm
0x00040000		Comm Fail Alarm	Comm Fail Alarm
0x00080000		BKRTrip Cntr Alarm	Breaker Trip Counter Alarm
0x00100000		Rly1 74 Alarm	Relay 1 74 Alarm
0x00200000		Rly2 74 Alarm	Relay 2 74 Alarm
0x00400000		BKR Fail Alarm	Breaker Fail Alarm
0x00800000		BKR Status Failure	Breaker Status Failure
0x01000000		Reserved	Reserved
0x02000000		CLP Alarm	Cold Load PKP Alarm

Code	Type	Definition	Long Definition
0x04000000		Reserved	Reserved
0x08000000		BKR2 Status Fail	Breaker 2 Status Failure
0x10000000		Reserved	Reserved
0x20000000		BKR2 Fail Alrm	Breaker 2 Failure Alarm
0x80000000		Ph Revrsl Alarm	Phase Reversal Alarm
FC181	unsigned 32 bits	Alarm Status 3	
0x00000001		Ph IOC1 Alarm	Phase IOC 1 Alarm
0x00000002		Ntrl IOC1 Alarm	Neutral IOC 1 Alarm
0x00000004		Gnd IOC1 Alarm	Ground IOC 1 Alarm
0x00000008		Ph TOC1 Alarm	Phase TOC 1 Alarm
0x00000010		Ntrl TOC1 Alarm	Neutral TOC1 Alarm
0x00000020		Gnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0x00000040		Ph IOC2 Alarm	Phase IOC 2 Alarm
0x00000080		Ntrl IOC2 Alarm	Neutral IOC 2 Alarm
0x00000100		Gnd IOC2 Alarm	Ground IOC 2 Alarm
0x00000200		Ph TOC2 Alrm	Phase TOC 2 Alarm
0x00000400		Ntrl TOC2 Alarm	Neutral TOC 2 Alarm
0x00000800		Gnd TOC2 Alrm	Sensitive Ground TOC 2 Alarm
0x00001000		SGnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0x00002000		Ntrl Dir Rev Alm	Neutral Directional Alarm
0x00008000		NSeq OV Alarm	Negative Sequence OV Alarm
0x00010000		Ntrl OV Alarm	Ntrl OV Alarm
0x00020000		Phase OV Alarm	Phase OV Alarm
0x00040000		Phase UV Alarm	Phase UV Alarm
0x00080000		Aux OV Alarm	Auxiliary OV Alarm
0x00100000		Aux UV Alarm	Auxiliary UV Alarm
0x00200000		UnderFreq1 Alarm	Underfrequency 1 Alarm
0x00400000		UnderFreq2 Alarm	Underfrequency 2 Alarm
0x00800000		OverFreq1 Alrm	Overfrequency 1 Alarm
0x01000000		OverFreq2 Alrm	Overfrequency 2 Alarm
0x02000000		SGnd IOC1 Alarm	Sensitive Ground IOC 1 Alarm
0x04000000		SGnd IOC2 Alarm	Sensitive Ground IOC 2 Alarm
0x08000000		Nseq IOC Alarm	Negative Sequence IOC Alarm
0x10000000		Diff 87P Alarm	Diff 87P Alarm
0x20000000		Diff 87REF 1 Alarm	Diff 87REF 1 Alarm
0x40000000		Diff 87REF 2 Alarm	Diff 87REF 2 Alarm
0x80000000		Inst 50/87P Alarm	Inst 50/87P Alarm
FC182	unsigned 32 bits	Alarm Status 4	
0x00000001		NSeq TOC1 Alarm	Negative Sequence TOC 1 Alarm
0x00000002		NSeq TOC2 Alarm	Negative Sequence TOC 2 Alarm
0x00000004		Ph OV2 Alarm	Phase OV 2 Alarm
0x00000008		Ph UV2 Alarm	Phase UV 2 Alarm
0x00000010		Short Circuit Alrm	Short Circuit Alarm
0x00000020		SPD2 S/C Alarm	SPD2 S/C Alarm
0x00000040		SPD2 U/C Alarm	SPD2 U/C Alarm
0x00000080		SGnd TOC2 Alarm	Sensitive Ground TOC 2 Alarm
0x00000100		Reserved	Reserved

Code	Type	Definition	Long Definition
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		LE 9 Alarm	Logic Element 9 Alarm
0x00020000		LE 10 Alarm	Logic Element 10 Alarm
0x00040000		LE 11 Alarm	Logic Element 11 Alarm
0x00080000		LE 12 Alarm	Logic Element 12 Alarm
0x00100000		LE 13 Alarm	Logic Element 13 Alarm
0x00200000		LE 14 Alarm	Logic Element 14 Alarm
0x00400000		LE 15 Alarm	Logic Element 15 Alarm
0x00800000		LE 16 Alarm	Logic Element 16 Alarm
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		Reserved	Reserved
0x40000000		Reserved	Reserved
0x80000000		Reserved	Reserved
FC183	unsigned 32 bits	Trip Status 1	
0x00000001		Any Trip	Any Trip
0x00000002		Therm O/L Trip	Thermal O/L Trip
0x00000004		Gnd Fault Trip	Gnd Fault Trip
0x00000008		Acceleration Trip	Acceleration Trip
0x00000020		Under Pwr Trip	Under Power Trip
0x00000040		Single Phase Trip	Single Phase Trip
0x00000080		Reserved	Reserved
0x00000100		Mech Jam Trip	Mechanical Jam Trip
0x00000200		Under Curr Trip	Undercurrent Trip
0x00000400		Unbalance Trip	Unbalance Trip
0x00000800		RTD 1 Trip	RTD 1 Trip
0x00001000		RTD 2 Trip	RTD 2 Trip
0x00002000		RTD 3 Trip	RTD 3 Trip
0x00004000		RTD 4 Trip	RTD 4 Trip
0x00008000		RTD 5 Trip	RTD 5 Trip
0x00010000		RTD 6 Trip	RTD 6 Trip
0x00020000		Comm Fail Trip	Comm Fail Trip
0x00040000		Relay Not Config.	Relay Not Configured
0x00080000		LE 1 Trip	Logic Element 1 Trip
0x00100000		LE 2 Trip	Logic Element 2 Trip
0x00200000		LE 3 Trip	Logic Element 3 Trip
0x00400000		LE 4 Trip	Logic Element 4 Trip
0x00800000		LE 5 Trip	Logic Element 5 Trip

Code	Type	Definition	Long Definition
0x01000000		LE 6 Trip	Logic Element 6 Trip
0x02000000		LE 7 Trip	Logic Element 7 Trip
0x04000000		LE 8 Trip	Logic Element 8 Trip
0x08000000		RTD 7 Trip	RTD 7 Trip
0x10000000		RTD 8 Trip	RTD 8 Trip
0x20000000		RTD 9 Trip	RTD 9 Trip
0x40000000		RTD 10 Trip	RTD 10 Trip
0x80000000		RTD 11 Trip	RTD 11 Trip
FC184	unsigned 32 bits	Trip Status 2	
0x00000001		RTD 12 Trip	RTD 12 Trip
0x00000002		Reserved	Reserved
0x00000004		Reserved	Reserved
0x00000008		Reserved	Reserved
0x00000010		Reserved	Reserved
0x00000020		Reserved	Reserved
0x00000040		Reserved	Internal Temperature Trip
0x00000080		Self Test Trip	Self Test Trip
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		Reserved	Reserved
0x00020000		Reserved	Reserved
0x00040000		Reserved	Reserved
0x00080000		BKRTrip Cntr Trip	Breaker Trip Counter Trip
0x00100000		Rly1 74 Trip	Relay 1 74 Trip
0x00200000		Rly2 74 Trip	Relay 2 74 Trip
0x00400000		BKR Failure	Breaker Failure
0x00800000		Reserved	Reserved
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		BKR 2 Failure	Breaker 2 Failure
0x80000000		Ph Revrsl Trip	Phase Reversal Trip
FC185	unsigned 32 bits	Trip Status 3	
0x00000001		Ph IOC1 Trip	Phase IOC 1 Trip
0x00000002		Ntrl IOC1 Trip	Neutral IOC 1 Trip
0x00000004		Gnd IOC1 Trip	Ground IOC 1 Trip
0x00000008		Ph TOC1 Trip	Phase TOC 1 Trip
0x00000010		Ntrl TOC1 Trip	Neutral TOC1 Trip
0x00000020		Gnd TOC1 Trip	Sensitive Ground TOC 1 Trip

Code	Type	Definition	Long Definition
0x00000040		Ph IOC2 Trip	Phase IOC 2 Trip
0x00000080		Ntrl IOC2 Trip	Neutral IOC 2 Trip
0x00000100		Gnd IOC2 Trip	Ground IOC 2 Trip
0x00000200		Ph TOC2 Trip	Phase TOC 2 Trip
0x00000400		Ntrl TOC2 Trip	Neutral TOC 2 Trip
0x00000800		Gnd TOC2 Trip	Sensitive Ground TOC 2 Trip
0x00001000		SGnd TOC1 Trip	Sensitive Ground TOC 1 Trip
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		NSeq OV Trip	Negative Sequence OV Trip
0x00010000		Ntrl OV Trip	Ntrl OV Trip
0x00020000		Phase OV Trip	Phase OV Trip
0x00040000		Phase UV Trip	Phase UV Trip
0x00080000		Aux OV Trip	Auxiliary OV Trip
0x00100000		Aux UV Trip	Auxiliary UV Trip
0x00200000		UnderFreq1 Trip	Underfrequency 1 Trip
0x00400000		UnderFreq2 Trip	Underfrequency 2 Trip
0x00800000		OVERFREQ1 TRIP	Overfrequency 1 Trip
0x01000000		OVERFREQ2 TRIP	Overfrequency 2 Trip
0x02000000		SGnd IOC1 Trip	Sensitive Ground IOC 1 Trip
0x04000000		SGnd IOC2 Trip	Sensitive Ground IOC 2 Trip
0x08000000		Nseq IOC Trip	Negative Sequence IOC Trip
0x10000000		Diff 87P Trip	Diff 87P Trip
0x20000000		Diff 87REF 1 Trip	Diff 87REF 1 Trip
0x40000000		Diff 87REF 2 Trip	Diff 87REF 2 Trip
0x80000000		Inst 50/87P Trip	Inst 50/87P Trip
FC186	unsigned 32 bits	Trip Status 4	
0x00000001		NSeq TOC1 Trip	Negative Sequence TOC 1 Trip
0x00000002		NSeq TOC2 Trip	Negative Sequence TOC 2 Trip
0x00000004		Phase OV 2 Trip	Phase OV 2 Trip
0x00000008		Phase UV 2 Trip	Phase UV 2 Trip
0x00000010		Short Circuit Trip	Short Circuit Trip
0x00000020		SPD2 S/C Trip	SPD2 S/C Trip
0x00000040		SPD2 U/C Trip	SPD2 U/C Trip
0x00000080		SGnd TOC2 Trip	Sensitive Ground TOC 2 Trip
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		LE 9 Trip	Logic Element 9 Trip
0x00020000		LE 10 Trip	Logic Element 10 Trip
0x00040000		LE 11 Trip	Logic Element 11 Trip
0x00080000		LE 12 Trip	Logic Element 12 Trip

Code	Type	Definition	Long Definition
0x00100000		LE 13 Trip	Logic Element 13 Trip
0x00200000		LE 14 Trip	Logic Element 14 Trip
0x00400000		LE 15 Trip	Logic Element 15 Trip
0x00800000		LE 16 Trip	Logic Element 16 Trip
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		Reserved	Reserved
0x40000000		Reserved	Reserved
0x80000000		Reserved	Reserved
FC187	unsigned 32 bits	Message Status 1	
FC188	unsigned 32 bits	Message Status 2	
FC189	unsigned 32 bits	Message Status 3	
FC190	unsigned 32 bits	Message Status 4	
FC191	unsigned 32 bits	Ctrl Element Status 1	
FC192	unsigned 32 bits	Ctrl Element Status 2	
FC193	unsigned 32 bits	Ctrl Status 3	
FC194	unsigned 32 bits	Ctrl Status 4	
FC195	unsigned 16 bits	Command Status	
0		Normal	Normal
1		Gain Forced to X1	Gain Forced to X1
FC196	unsigned 16 bits	Digital Alarm	
0		Active Low	Active Low
1		Active High	Active High
FC197	unsigned 16 bits	Breaker Counter Alarm	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Trip	Trip
FC198	unsigned 16 bits	Output Relay Operation	
FC199	unsigned 16 bits	Output Relay Type	
0		Self-Reset	Self-Reset
1		Latched	Latched
FC200	unsigned 32 bits	Block Status 1	
FC201	unsigned 32 bits	Block Status 2	
FC202	unsigned 32 bits	Block Status 3	
FC203	unsigned 32 bits	Block Status 4	
FC204	unsigned 16 bits	Contact Input FlexLogic Bit Field Values	
0x0000		Disabled	Disabled
0x0040		Contact Input 1	Contact Input 1
0x0041		Contact Input 2	Contact Input 2
0x0042		Contact Input 3	Contact Input 3
0x0043		Contact Input 4	Contact Input 4
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6

Code	Type	Definition	Long Definition
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204A	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset A)	
0x0000		Disabled	Disabled
0x0040		Contact Input 1	Contact Input 1
FC204B	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset B)	
0x0000		Disabled	Disabled
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204C	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset C)	
0x0000		Disabled	Disabled
0x0041		Contact Input 2	Contact Input 2
FC204D	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset D)	
0x0000		Disabled	Disabled
0x0042		Contact Input 3	W2 Breaker 52a (CI#3)
FC204E	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset E)	
0x0000		Disabled	Disabled
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204F	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset F)	
0x0000		Disabled	Disabled
0x0043		Contact Input 4	W2 Breaker 52b (CI#4)
FC205	unsigned 16 bits	Element Type 1	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Trip	Trip
4		Control	Control
FC206	unsigned 16 bits	Element Type 2	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
FC207	unsigned 16 bits	Element Type 3	

Code	Type	Definition	Long Definition
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Control	Control
FC208	unsigned 16 bits	Relay Operation (Failsafe	
0		Failsafe	Failsafe
1		Non-Failsafe	Non-Failsafe
FC212	unsigned 16 bits	LCD Test Paint Color	
0		None	None
1		Red	Red
2		Green	Green
3		Blue	Blue
FC214	unsigned 16 bits	MAC Address	
FC215	unsigned 32 bits	GOOSE Receive Status	
FC216	unsigned 16 bits	Received GOOSE Message Formatting	
0x0000		{	{
0x0001		}	}
0x0002		Bool	Bool
0x0003		Byte	Byte
0x0004		Ubyte	Ubyte
0x0005		Short	Short
0x0006		Ushort	Ushort
0x0007		Long	Long
0x0008		Ulong	Ulong
0x0009		Int64	Int64
0x000A		Uint64	Uint64
0x000B		Float	Float
0x000C		Double	Double
0x000D		Btime4	Btime4
0x000E		Btime6	Btime6
0x000F		Utctime	Utctime
0x0010		Bcd	Bcd
0x0011		Vstring	Vstring
0x0012		Ostring	Ostring
0x0013		Ovstring	Ovstring
0x0014		Bstring	Bstring
0x0015		Bvstring	Bvstring
0x00FF		Row	Row
FC217	unsigned 16 bits	Remote Input Item Source	
FC218	unsigned 16 bits	Remote Input Item Mask	
FC219	unsigned 32 bits	GOOSE Source	
0x0000		Disabled	Disabled
0x0001		1	1
0x0002		2	2
0x0004		3	3
0x0008		4	4
0x0010		5	5

Code	Type	Definition	Long Definition
0x0020		6	6
0x0040		7	7
0x0080		8	8
FC220	unsigned 16 bits	Remote Input Default State	
0		On	On
1		Off	Off
2		Latest/On	Latest/On
3		Latest/Off	Latest/Off
FC221	unsigned 16 bits	IEC103 ASDU Identification Type	
3		3	3
9		9	9
FC222	unsigned 16 bits	GOOSE Type	
0		Simplified	Simplified
1		Advanced	Advanced
FC225	unsigned 16 bits	Security Audit Trail Change Method	
0		Unknown	Unknown
1		USB	USB
2		COM1	COM1
3		Ethernet	Ethernet
4		KeyPad	KeyPad
FC226	unsigned 16 bits	Security Audit Trail Event Type	
0		Unknown	Unknown
1		Setpoint Change	Setpoint Change
2		Firmware File	Firmware File
3		Factory Reload	Factory Reload
4		Setpoint File	Setpoint File
FC230	unsigned 16 bits	Ethernet Connection Type	
0		Copper	Copper
1		Fiber	Fiber
FC235	unsigned 16 bits	Switching Device	
0		BKR	Breaker
1		Contactor	Contactor
FC236	unsigned 16 bits	Thermal O/L Curve	
FC240	unsigned 16 bits	Self Test Error	
0		None	None
1		Order Code Error	Order Code Error
2		RTC Error	RTC Error
4		Cal Error	Cal Error
8		EEPROM Error	EEPROM Error
16		System Health	System Health
17		PSU Serial# Blank	PSU Serial# Blank
18		INP Serial# Blank	INP Serial# Blank
19		ANLG Serial# Blank	ANLG Serial# Blank
20		MAG Serial# Blank	MAG Serial# Blank
21		COMM Serial# Blank	COMM Serial# Blank
22		CCP Serial# Blank	CCP Serial# Blank
23		CPU Serial# Blank	CPU Serial# Blank

Code	Type	Definition	Long Definition
24		PSU Serial# Inval	PSU Serial# Invalid
25		INP Serial# Inval	INP Serial# Invalid
26		ANLG Serial# Inval	ANLG Serial# Invalid
27		MAG Serial# Inval	MAG Serial# Invalid
28		COMM Serial# Inval	COMM Serial# Invalid
29		CCP Serial# Inval	CCP Serial# Invalid
30		CPU Serial# Inval	CPU Serial# Invalid
32		3.3V Error	3.3V Error
64		Analog V Error	Analog V Error
128		DPRAM Checksum	DPRAM Checksum
256		DPRAM Heart Beat	DPRAM Heart Beat
512		COMM Error	COMM Error
513		DAUGHTER Error	DAUGHTER Error
514		COMM HW Rev Error	COMM HW Revision Error
1024		Link Error	Link Error
2048		Traffic Error	Traffic Error
4096		Internal Temp	Internal Temp
FC401	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC402	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC403	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC404	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		Off	Off
1		On	On
FC405	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		100 Ohm Pt	100 Ohm Platinum
1		120 Ohm Ni	120 Ohm Nickel
2		100 Ohm Ni	100 Ohm Nickel
FC406	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		Off	Off
1		On	On
FC407	unsigned 16 bits	PC Program Reserved for Output Relay Bits (Do Not Use)	
0		Disabled	Disabled
3		3	3
4		4	4
5		5	5
6		6	6
7		7	7
FC408	unsigned 16 bits	Inrush Function	
0		Disabled	Disabled

Code	Type	Definition	Long Definition
1		2nd harm Block	2nd harmonic Block
FC409	unsigned 16 bits	Inhibit Mode	
0		Per Phase	Per Phase
1		2-out-of-3	2-out-of-3
2		Average	Average
3		1-out-of-3	1-out-of-3
FC410	unsigned 16 bits	Overexcitation Function	
0		Disabled	Disabled
1		5th harm	5th harmonic
FC411	unsigned 16 bits	Internal Compensation	
0		Internal(software)	Internal(software)
1		External(with CTs)	External(with CTs)
FC412	unsigned 16 bits	Winding Connection	
0		Wye	Wye
1		Delta	Delta
2		Zig-Zag	Zig-Zag
FC413	unsigned 16 bits	Grounding Connection	
0		Not Within zone	Not Within zone
1		Within zone	Within zone
FC415	unsigned 16 bits	SR345 CT Type	
0		1 A Secondary	1 A Secondary
1		5 A Secondary	5 A Secondary
FC418	unsigned 16 bits	CT Inputs	
0		CT (W1)	CT (W1)
1		CT (W2)	CT (W2)
FC419	unsigned 16 bits	XFMR Type	
0		Y/y0\2	Y/y0°
1		Y/y180\2	Y/y180°
2		Y/d30\2	Y/d30°
3		Y/d150\2	Y/d150°
4		Y/d210\2	Y/d210°
5		Y/d330\2	Y/d330°
6		Y/z30\2	Y/z30°
7		Y/z150\2	Y/z150°
8		Y/z210\2	Y/z210°
9		Y/z330\2	Y/z330°
10		D/d0\2	D/d0°
11		D/d60\2	D/d60°
12		D/d120\2	D/d120°
13		D/d180\2	D/d180°
14		D/d240\2	D/d240°
15		D/d300\2	D/d300°
16		D/y30\2	D/y30°
17		D/y150\2	D/y150°
18		D/y210\2	D/y210°
19		D/y330\2	D/y330°
20		D/z0\2	D/z0°

Code	Type	Definition	Long Definition
21		D/z60\2	D/z60°
22		D/z120\2	D/z120°
23		D/z180\2	D/z180°
24		D/z240\2	D/z240°
25		D/z300\2	D/z300°
FC420	unsigned 16 bits	Modbus File Transfer State	
0		Idle	Idle
1		Write	Write
2		Read	Read
3		File Error	File Error
4		File OK	File OK
5		Start	Start
6		Ready	Ready
7		File Over	File Over
FC421	unsigned 16 bits	Redundancy type	
FC422	unsigned 16 bits	Redundancy Port	
FC423	unsigned 16 bits	Redundancy State	
FC424	unsigned 16 bits	Dead Condition	
FC425	unsigned 16 bits	Epoch type	
FC426	unsigned 16 bits	RSTP State	
FC427	unsigned 16 bits	WGF Curve Selection	
0		Inverse	Inverse
4		Definite Time	Definite Time
8		Flex Curve A	Flex Curve A
9		Flex Curve B	Flex Curve B
FC428	unsigned 16 bits	Fault Recorder Type	
0		TOC A	TOC A
1		TOC B	TOC B
2		TOC C	TOC C
FC429	unsigned 16 bits	Transient Sampling Rate	
0		4	4
1		8	8
2		16	16
3		32	32
FC430	unsigned 16 bits	Power Unit	
0		Kw	Kw
1		Mw	Mw
FC431	unsigned 16 bits	Demand Measurement Type	
0		Blk Interval	Blk Interval
1		Exponential	Exponential
2		Rolling Dmd	Rolling Dmd
FC432	unsigned 16 bits	Demand Time	
0		5 min	5 min
1		10 min	10 min
2		15 min	15 min
3		20 min	20 min
4		30 min	30 min

Code	Type	Definition	Long Definition
FC433	unsigned 16 bits	BKR Alarm Counter	
0		Detection	Detection
1		Monitoring	Monitoring
FC434	unsigned 16 bits	61850 NV Status	
0		Unknown	Unknown
1		Header Error	Header Error
2		Parse Error	Parse Error
3		Passed to Validated	Passed to Validated
4		Empty	Empty
FC435	unsigned 16 bits	Volts Per Herz Voltage Mode	
FC436	unsigned 16 bits	Volts Per Herz Curves	
None			

GE
Grid Solutions

3 Series Protective Relay Platform

Chapter 12: 350 MODBUS memory map and Format Codes

NOTE

The 339, 345, and 350 relays have different MODBUS maps and Format Codes. Make sure you are looking at the chapter corresponding to your relay model.

NOTE

The Cause of Last trip register (MODBUS Address 30186) returns a combined value of Pickup And Operate.

For example, for a Phase TOC 1 Trip:

0x90C1 Ph TOC1 Trip PKP

0x90C2 Ph TOC1 Trip OP

Upon Phase TOC 1 Trip, the value read from 30186 Cause of Last Trip register is: 0x90C3

350 MODBUS memory map

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
ACTUAL VALUES									
PRODUCT INFORMATION									
30001	0x0	Product Device Code	0	1	1	---	F22	L0	1
30002	0x1	Hardware Revision	0	26	1	---	F15	1	1
30003	0x2	Firmware Version	0	0xFFFF	1	---	F3	231	1
30006	0x5	Boot Version	0	0xFFFF	1	---	F3	100	1
30008	0x7	Serial Number	0	6	1	---	F22	L0MA08000001	6
30014	0xD	Order Code	0	16	1	---	F22	350-EP5G5HSSNNSNDN	16
30030	0x1D	MAC Address	0	0xFFFF	1	---	FC214	0	3
30035	0x22	Comms HW Version	0	26	1	---	F15	0	1
30037	0x24	Build Date	0	6	1	---	F22	Unknown	6
30043	0x2A	Build Time	0	4	1	---	F22	Unknown	4
30051	0x32	Comm Build Date	0	6	1	---	F22	Unknown	6

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30057	0x38	Comm Build Time	0	4	1	---	F22	Unknown	4
30061	0x3C	Comm Revision	0	0xFFFF	1	---	F3	231	1
30063	0x3E	Comm Boot Code Revision	0	0xFFFF	1	---	F3	200	1
30068	0x43	FPGA Revision	0	0xFFFF	1	---	F3	0	1
30135	0x86	Main Boot Code Date	0	6	1	---	F22	Unknown	6
30141	0x8C	Main Boot Code Time	0	4	1	---	F22	Unknown	4
30145	0x90	Comms Boot Code Date	0	6	1	---	F22	Unknown	6
30151	0x96	Comms Boot Code Time	0	4	1	---	F22	Unknown	4
LAST TRIP DATA									
30186	0xB9	Cause of Last Trip	0	0xFFFF	1	---	FC134	0	1
REAL-TIME CLOCK									
30223	0xDE	Weekday	0	7	1	---	None	0	1
30224	0xDF	Current Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
30226	0xE1	Current Time	0	0x173BEA5F	0	---	F19	0	2
30228	0xE3	Daylight Savings Active	0	1	1	---	FC126	0	1
TRIP COUNTERS									
30230	0xE5	Total Number of Trips	0	10000	1	---	F1	0	1
INPUTS / OUTPUTS									
30285	0x11C	Contact Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30288	0x11F	Virtual Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30290	0x121	Virtual Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30296	0x127	Remote Input 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30298	0x129	Contact Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
30300	0x12B	Remote Output 32-1 (Bit Field)	0	0xFFFFFFFF	1	---	FC167	0	2
CURRENT METERING									
30324	0x143	Sensitive Ground Current	0	0xFFFFFFFF	1	A	F11	0	2
30326	0x145	Neutral Current	0	100000	1	A	F10	0	2
30328	0x147	Phase A Current	0	1200000	1	A	F10	0	2
30330	0x149	Phase B Current	0	1200000	1	A	F10	0	2
30332	0x14B	Phase C Current	0	1200000	1	A	F10	0	2
30334	0x14D	Average Phase Current	0	1200000	1	A	F10	0	2
30338	0x151	Ground Current	0	1200000	1	A	F10	0	2
SECOND HARMONIC									
31743	0x6CE	Ph A Current 2nd Hrmc	0	1000	1	%	F2	0	1
31744	0x6CF	Ph B Current 2nd Hrmc	0	1000	1	%	F2	0	1
31745	0x6D0	Ph C Current 2nd Hrmc	0	1000	1	%	F2	0	1
PHASE ANGLES									
30343	0x156	Ia Angle	0	359	1	°	F1	0	1
30344	0x157	Ib Angle	0	359	1	°	F1	0	1
30345	0x158	Ic Angle	0	359	1	°	F1	0	1
30346	0x159	Van Angle	0	359	1	°	F1	0	1
30347	0x15A	Vbn Angle	0	359	1	°	F1	0	1
30348	0x15B	Vcn Angle	0	359	1	°	F1	0	1
30349	0x15C	Ground Current Angle	0	359	1	°	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30350	0x15D	Neutral Current Angle	0	359	1	°	F1	0	1
30351	0x15E	Neutral Voltage Angle	0	359	1	°Lag	F1	0	1
30352	0x15F	Vaux Angle	0	359	1	°	F1	0	1
30353	0x160	Vab Angle	0	359	1	°	F1	0	1
30354	0x161	Vbc Angle	0	359	1	°	F1	0	1
30355	0x162	Vca Angle	0	359	1	°	F1	0	1
SYNCROCHECK									
30368	0x16F	Frequency	2000	8000	1	Hz	F3	2000	1
30369	0x170	Frequency	2000	8000	1	Hz	F3	2000	1
POWER & ENERGY METERING									
30384	0x17F	Power Factor	-99	100	1	---	F21	0	1
30385	0x180	Real Power	-1000000000	1000000000	1	kW	F13	0	2
30389	0x184	Reactive Power	-1000000000	1000000000	1	kvar	F13	0	2
30392	0x187	MWh Consumption	0	999999999	1	MWh	F17	0	2
30394	0x189	Mvarh Consumption	0	999999999	1	Mvarh	F17	0	2
30396	0x18B	Mvarh Generation	0	999999999	1	Mvarh	F17	0	2
30398	0x18D	Apparent Power	0	1000000000	1	kVA	F10	0	2
30400	0x18F	MWh Generation	0	999999999	1	MWh	F17	0	2
30402	0x191	Real Power MW	-1000000000	1000000000	1	MW	F13	0	2
30404	0x193	Reactive Power MW	-1000000000	1000000000	1	Mvar	F13	0	2
TEMPERATURE									
30435	0x1B2	Ambient Temperature	-50	250	1	°	F4	25	1
30437	0x1B4	Event Phase A Thermal Capacity	0	1500	1	%	F2	0	1
30438	0x1B5	Event Phase B Thermal Capacity	0	1500	1	%	F2	0	1
30439	0x1B6	Event Phase C Thermal Capacity	0	1500	1	%	F2	0	1
LED STATUS									
30505	0x1F8	LED Status	0	0xFFFFFFFF	1	---	FC144	0	2
USER MAP ACTUAL VALUES									
30524	0x20B	User Map Value 1	0	0xFFFF	1	---	F1	0	1
30525	0x20C	User Map Value 2	0	0xFFFF	1	---	F1	0	1
30526	0x20D	User Map Value 3	0	0xFFFF	1	---	F1	0	1
30527	0x20E	User Map Value 4	0	0xFFFF	1	---	F1	0	1
30528	0x20F	User Map Value 5	0	0xFFFF	1	---	F1	0	1
30529	0x210	User Map Value 6	0	0xFFFF	1	---	F1	0	1
30530	0x211	User Map Value 7	0	0xFFFF	1	---	F1	0	1
30531	0x212	User Map Value 8	0	0xFFFF	1	---	F1	0	1
30532	0x213	User Map Value 9	0	0xFFFF	1	---	F1	0	1
30533	0x214	User Map Value 10	0	0xFFFF	1	---	F1	0	1
30534	0x215	User Map Value 11	0	0xFFFF	1	---	F1	0	1
30535	0x216	User Map Value 12	0	0xFFFF	1	---	F1	0	1
30536	0x217	User Map Value 13	0	0xFFFF	1	---	F1	0	1
30537	0x218	User Map Value 14	0	0xFFFF	1	---	F1	0	1
30538	0x219	User Map Value 15	0	0xFFFF	1	---	F1	0	1
30539	0x21A	User Map Value 16	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30540	0x21B	User Map Value 17	0	0xFFFF	1	---	F1	0	1
30541	0x21C	User Map Value 18	0	0xFFFF	1	---	F1	0	1
30542	0x21D	User Map Value 19	0	0xFFFF	1	---	F1	0	1
30543	0x21E	User Map Value 20	0	0xFFFF	1	---	F1	0	1
30544	0x21F	User Map Value 21	0	0xFFFF	1	---	F1	0	1
30545	0x220	User Map Value 22	0	0xFFFF	1	---	F1	0	1
30546	0x221	User Map Value 23	0	0xFFFF	1	---	F1	0	1
30547	0x222	User Map Value 24	0	0xFFFF	1	---	F1	0	1
30548	0x223	User Map Value 25	0	0xFFFF	1	---	F1	0	1
30549	0x224	User Map Value 26	0	0xFFFF	1	---	F1	0	1
30550	0x225	User Map Value 27	0	0xFFFF	1	---	F1	0	1
30551	0x226	User Map Value 28	0	0xFFFF	1	---	F1	0	1
30552	0x227	User Map Value 29	0	0xFFFF	1	---	F1	0	1
30553	0x228	User Map Value 30	0	0xFFFF	1	---	F1	0	1
30554	0x229	User Map Value 31	0	0xFFFF	1	---	F1	0	1
30555	0x22A	User Map Value 32	0	0xFFFF	1	---	F1	0	1
30556	0x22B	User Map Value 33	0	0xFFFF	1	---	F1	0	1
30557	0x22C	User Map Value 34	0	0xFFFF	1	---	F1	0	1
30558	0x22D	User Map Value 35	0	0xFFFF	1	---	F1	0	1
30559	0x22E	User Map Value 36	0	0xFFFF	1	---	F1	0	1
30560	0x22F	User Map Value 37	0	0xFFFF	1	---	F1	0	1
30561	0x230	User Map Value 38	0	0xFFFF	1	---	F1	0	1
30562	0x231	User Map Value 39	0	0xFFFF	1	---	F1	0	1
30563	0x232	User Map Value 40	0	0xFFFF	1	---	F1	0	1
30564	0x233	User Map Value 41	0	0xFFFF	1	---	F1	0	1
30565	0x234	User Map Value 42	0	0xFFFF	1	---	F1	0	1
30566	0x235	User Map Value 43	0	0xFFFF	1	---	F1	0	1
30567	0x236	User Map Value 44	0	0xFFFF	1	---	F1	0	1
30568	0x237	User Map Value 45	0	0xFFFF	1	---	F1	0	1
30569	0x238	User Map Value 46	0	0xFFFF	1	---	F1	0	1
30570	0x239	User Map Value 47	0	0xFFFF	1	---	F1	0	1
30571	0x23A	User Map Value 48	0	0xFFFF	1	---	F1	0	1
30572	0x23B	User Map Value 49	0	0xFFFF	1	---	F1	0	1
30573	0x23C	User Map Value 50	0	0xFFFF	1	---	F1	0	1
30574	0x23D	User Map Value 51	0	0xFFFF	1	---	F1	0	1
30575	0x23E	User Map Value 52	0	0xFFFF	1	---	F1	0	1
30576	0x23F	User Map Value 53	0	0xFFFF	1	---	F1	0	1
30577	0x240	User Map Value 54	0	0xFFFF	1	---	F1	0	1
30578	0x241	User Map Value 55	0	0xFFFF	1	---	F1	0	1
30579	0x242	User Map Value 56	0	0xFFFF	1	---	F1	0	1
30580	0x243	User Map Value 57	0	0xFFFF	1	---	F1	0	1
30581	0x244	User Map Value 58	0	0xFFFF	1	---	F1	0	1
30582	0x245	User Map Value 59	0	0xFFFF	1	---	F1	0	1
30583	0x246	User Map Value 60	0	0xFFFF	1	---	F1	0	1
30584	0x247	User Map Value 61	0	0xFFFF	1	---	F1	0	1
30585	0x248	User Map Value 62	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30586	0x249	User Map Value 63	0	0xFFFF	1	---	F1	0	1
30587	0x24A	User Map Value 64	0	0xFFFF	1	---	F1	0	1
30588	0x24B	User Map Value 65	0	0xFFFF	1	---	F1	0	1
30589	0x24C	User Map Value 66	0	0xFFFF	1	---	F1	0	1
30590	0x24D	User Map Value 67	0	0xFFFF	1	---	F1	0	1
30591	0x24E	User Map Value 68	0	0xFFFF	1	---	F1	0	1
30592	0x24F	User Map Value 69	0	0xFFFF	1	---	F1	0	1
30593	0x250	User Map Value 70	0	0xFFFF	1	---	F1	0	1
30594	0x251	User Map Value 71	0	0xFFFF	1	---	F1	0	1
30595	0x252	User Map Value 72	0	0xFFFF	1	---	F1	0	1
30596	0x253	User Map Value 73	0	0xFFFF	1	---	F1	0	1
30597	0x254	User Map Value 74	0	0xFFFF	1	---	F1	0	1
30598	0x255	User Map Value 75	0	0xFFFF	1	---	F1	0	1
30599	0x256	User Map Value 76	0	0xFFFF	1	---	F1	0	1
30600	0x257	User Map Value 77	0	0xFFFF	1	---	F1	0	1
30601	0x258	User Map Value 78	0	0xFFFF	1	---	F1	0	1
30602	0x259	User Map Value 79	0	0xFFFF	1	---	F1	0	1
30603	0x25A	User Map Value 80	0	0xFFFF	1	---	F1	0	1
30604	0x25B	User Map Value 81	0	0xFFFF	1	---	F1	0	1
30605	0x25C	User Map Value 82	0	0xFFFF	1	---	F1	0	1
30606	0x25D	User Map Value 83	0	0xFFFF	1	---	F1	0	1
30607	0x25E	User Map Value 84	0	0xFFFF	1	---	F1	0	1
30608	0x25F	User Map Value 85	0	0xFFFF	1	---	F1	0	1
30609	0x260	User Map Value 86	0	0xFFFF	1	---	F1	0	1
30610	0x261	User Map Value 87	0	0xFFFF	1	---	F1	0	1
30611	0x262	User Map Value 88	0	0xFFFF	1	---	F1	0	1
30612	0x263	User Map Value 89	0	0xFFFF	1	---	F1	0	1
30613	0x264	User Map Value 90	0	0xFFFF	1	---	F1	0	1
30614	0x265	User Map Value 91	0	0xFFFF	1	---	F1	0	1
30615	0x266	User Map Value 92	0	0xFFFF	1	---	F1	0	1
30616	0x267	User Map Value 93	0	0xFFFF	1	---	F1	0	1
30617	0x268	User Map Value 94	0	0xFFFF	1	---	F1	0	1
30618	0x269	User Map Value 95	0	0xFFFF	1	---	F1	0	1
30619	0x26A	User Map Value 96	0	0xFFFF	1	---	F1	0	1
30620	0x26B	User Map Value 97	0	0xFFFF	1	---	F1	0	1
30621	0x26C	User Map Value 98	0	0xFFFF	1	---	F1	0	1
30622	0x26D	User Map Value 99	0	0xFFFF	1	---	F1	0	1
30623	0x26E	User Map Value 100	0	0xFFFF	1	---	F1	0	1
30624	0x26F	User Map Value 101	0	0xFFFF	1	---	F1	0	1
30625	0x270	User Map Value 102	0	0xFFFF	1	---	F1	0	1
30626	0x271	User Map Value 103	0	0xFFFF	1	---	F1	0	1
30627	0x272	User Map Value 104	0	0xFFFF	1	---	F1	0	1
30628	0x273	User Map Value 105	0	0xFFFF	1	---	F1	0	1
30629	0x274	User Map Value 106	0	0xFFFF	1	---	F1	0	1
30630	0x275	User Map Value 107	0	0xFFFF	1	---	F1	0	1
30631	0x276	User Map Value 108	0	0xFFFF	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30632	0x277	User Map Value 109	0	0xFFFF	1	---	F1	0	1
30633	0x278	User Map Value 110	0	0xFFFF	1	---	F1	0	1
30634	0x279	User Map Value 111	0	0xFFFF	1	---	F1	0	1
30635	0x27A	User Map Value 112	0	0xFFFF	1	---	F1	0	1
30636	0x27B	User Map Value 113	0	0xFFFF	1	---	F1	0	1
30637	0x27C	User Map Value 114	0	0xFFFF	1	---	F1	0	1
30638	0x27D	User Map Value 115	0	0xFFFF	1	---	F1	0	1
30639	0x27E	User Map Value 116	0	0xFFFF	1	---	F1	0	1
30640	0x27F	User Map Value 117	0	0xFFFF	1	---	F1	0	1
30641	0x280	User Map Value 118	0	0xFFFF	1	---	F1	0	1
30642	0x281	User Map Value 119	0	0xFFFF	1	---	F1	0	1
30643	0x282	User Map Value 120	0	0xFFFF	1	---	F1	0	1
30644	0x283	User Map Value 121	0	0xFFFF	1	---	F1	0	1
30645	0x284	User Map Value 122	0	0xFFFF	1	---	F1	0	1
30646	0x285	User Map Value 123	0	0xFFFF	1	---	F1	0	1
30647	0x286	User Map Value 124	0	0xFFFF	1	---	F1	0	1
30648	0x287	User Map Value 125	0	0xFFFF	1	---	F1	0	1
EVENT RECORDER DETAILS									
30652	0x28B	Bus VT Secondary	50	240	1	V	F1	120	1
30653	0x28C	Aux VT Secondary	50	240	1	V	F1	110	1
30654	0x28D	CT Primary	1	6000	1	A	F1	500	1
30655	0x28E	Ground CT Primary	1	6000	1	A	F1	50	1
30656	0x28F	VT Ratio	10	50000	1		F2	10	1
30657	0x290	Aux VT Ratio	10	50000	1		F2	10	1
30658	0x291	Power Unit	0	1	1	---	FC430	0	1
30659	0x292	Event Recorder Last Reset 2 words	0x010107D8	0x0C1F082E	0	---	F18	0x010107D8	2
30661	0x294	Total Number of Events Since Last Clear	0	65535	1	---	F1	0	1
30662	0x295	Event Cause	0	0xFFFF	1	---	FC134	0	1
30663	0x296	Event Time	0	0x173BEA5F	0	---	F19	0	2
30665	0x298	Event Date	0x010107D8	0x0C1F082E	0	---	F18	0x010107D8	2
30667	0x29A	Event Ia	0	0xFFFF	1	x CT	F17A	0	1
30668	0x29B	Event Ib	0	0xFFFF	1	x CT	F17A	0	1
30669	0x29C	Event Ic	0	0xFFFF	1	x CT	F17A	0	1
30670	0x29D	Event Ig	0	0xFFFF	1	x CT	F17A	0	1
30671	0x29E	Event In	0	0xFFFF	1	x CT	F17A	0	1
30672	0x29F	Event Isgrd	0	0xFFFF	1	x CT	F17A	0	1
30673	0x2A0	Event Ia Angle	0	359	1	°	F1	0	1
30674	0x2A1	Event Ib Angle	0	359	1	°	F1	0	1
30675	0x2A2	Event Ic Angle	0	359	1	°	F1	0	1
30676	0x2A3	Event Igrd Angle	0	359	1	°	F1	0	1
30677	0x2A4	Event In Angle	0	359	1	°	F1	0	1
30678	0x2A5	Event Vab	0	65535	1	x VT	F17A	0	1
30679	0x2A6	Event Vbc	0	65535	1	x VT	F17A	0	1
30680	0x2A7	Event Vca	0	65535	1	x VT	F17A	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30681	0x2A8	Event Van	0	65535	1	x VT	F17A	0	1
30682	0x2A9	Event Vbn	0	65535	1	x VT	F17A	0	1
30683	0x2AA	Event Vcn	0	65535	1	x VT	F17A	0	1
30684	0x2AB	Event Vaux	0	65535	1	x VT	F17A	0	1
30685	0x2AC	Event Va Angle	0	359	1	°	F1	0	1
30686	0x2AD	Event Vb Angle	0	359	1	°	F1	0	1
30687	0x2AE	Event Vc Angle	0	359	1	°	F1	0	1
30688	0x2AF	Event Vc Angle	0	359	1	°	F1	0	1
30689	0x2B0	Frequency	0	12000	1	Hz	F3	0	1
30690	0x2B1	Event Power Factor	-99	100	1	---	F21	0	1
30691	0x2B2	Event Real Power	-65535	65535	1	x CTxVT	F7	0	1
30692	0x2B3	Event Reactive Power	-65535	65535	1	x CTxVT	F7	0	1
30693	0x2B4	Event Apparent Power	0	65535	1	x CTxVT	F17A	0	1
30694	0x2B5	Phase A Thermal Capacity	0	1500	1	%	F2	0	1
30695	0x2B6	Phase B Thermal Capacity	0	1500	1	%	F2	0	1
30696	0x2B7	Phase C Thermal Capacity	0	1500	1	%	F2	0	1
30697	0x2B8	Event Self-Test Event	0	0xFFFFFFFF	2	---	FC188	0	2
TRANSIENT RECORDER SAMPLES									
30720	0x2CF	Sample Index + Trace Memory Sample 1	-32767	32767	1	---	F4	0	1
30721	0x2D0	Sample Index + Trace Memory Sample 2	-32767	32767	1	---	F4	0	1
30722	0x2D1	Sample Index + Trace Memory Sample 3	-32767	32767	1	---	F4	0	1
30723	0x2D2	Sample Index + Trace Memory Sample 4	-32767	32767	1	---	F4	0	1
30724	0x2D3	Sample Index + Trace Memory Sample 5	-32767	32767	1	---	F4	0	1
30725	0x2D4	Sample Index + Trace Memory Sample 6	-32767	32767	1	---	F4	0	1
30726	0x2D5	Sample Index + Trace Memory Sample 7	-32767	32767	1	---	F4	0	1
30727	0x2D6	Sample Index + Trace Memory Sample 8	-32767	32767	1	---	F4	0	1
30728	0x2D7	Sample Index + Trace Memory Sample 9	-32767	32767	1	---	F4	0	1
30729	0x2D8	Sample Index + Trace Memory Sample 10	-32767	32767	1	---	F4	0	1
30730	0x2D9	Sample Index + Trace Memory Sample 11	-32767	32767	1	---	F4	0	1
30731	0x2DA	Sample Index + Trace Memory Sample 12	-32767	32767	1	---	F4	0	1
30732	0x2DB	Sample Index + Trace Memory Sample 13	-32767	32767	1	---	F4	0	1
30733	0x2DC	Sample Index + Trace Memory Sample 14	-32767	32767	1	---	F4	0	1
30734	0x2DD	Sample Index + Trace Memory Sample 15	-32767	32767	1	---	F4	0	1
30735	0x2DE	Sample Index + Trace Memory Sample 16	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30736	0x2DF	Sample Index + Trace Memory Sample 17	-32767	32767	1	---	F4	0	1
30737	0x2E0	Sample Index + Trace Memory Sample 18	-32767	32767	1	---	F4	0	1
30738	0x2E1	Sample Index + Trace Memory Sample 19	-32767	32767	1	---	F4	0	1
30739	0x2E2	Sample Index + Trace Memory Sample 20	-32767	32767	1	---	F4	0	1
30740	0x2E3	Sample Index + Trace Memory Sample 21	-32767	32767	1	---	F4	0	1
30741	0x2E4	Sample Index + Trace Memory Sample 22	-32767	32767	1	---	F4	0	1
30742	0x2E5	Sample Index + Trace Memory Sample 23	-32767	32767	1	---	F4	0	1
30743	0x2E6	Sample Index + Trace Memory Sample 24	-32767	32767	1	---	F4	0	1
30744	0x2E7	Sample Index + Trace Memory Sample 25	-32767	32767	1	---	F4	0	1
30745	0x2E8	Sample Index + Trace Memory Sample 26	-32767	32767	1	---	F4	0	1
30746	0x2E9	Sample Index + Trace Memory Sample 27	-32767	32767	1	---	F4	0	1
30747	0x2EA	Sample Index + Trace Memory Sample 28	-32767	32767	1	---	F4	0	1
30748	0x2EB	Sample Index + Trace Memory Sample 29	-32767	32767	1	---	F4	0	1
30749	0x2EC	Sample Index + Trace Memory Sample 30	-32767	32767	1	---	F4	0	1
30750	0x2ED	Sample Index + Trace Memory Sample 31	-32767	32767	1	---	F4	0	1
30751	0x2EE	Sample Index + Trace Memory Sample 32	-32767	32767	1	---	F4	0	1
30752	0x2EF	Sample Index + Trace Memory Sample 33	-32767	32767	1	---	F4	0	1
30753	0x2F0	Sample Index + Trace Memory Sample 34	-32767	32767	1	---	F4	0	1
30754	0x2F1	Sample Index + Trace Memory Sample 35	-32767	32767	1	---	F4	0	1
30755	0x2F2	Sample Index + Trace Memory Sample 36	-32767	32767	1	---	F4	0	1
30756	0x2F3	Sample Index + Trace Memory Sample 37	-32767	32767	1	---	F4	0	1
30757	0x2F4	Sample Index + Trace Memory Sample 38	-32767	32767	1	---	F4	0	1
30758	0x2F5	Sample Index + Trace Memory Sample 39	-32767	32767	1	---	F4	0	1
30759	0x2F6	Sample Index + Trace Memory Sample 40	-32767	32767	1	---	F4	0	1
30760	0x2F7	Sample Index + Trace Memory Sample 41	-32767	32767	1	---	F4	0	1
30761	0x2F8	Sample Index + Trace Memory Sample 42	-32767	32767	1	---	F4	0	1
30762	0x2F9	Sample Index + Trace Memory Sample 43	-32767	32767	1	---	F4	0	1
30763	0x2FA	Sample Index + Trace Memory Sample 44	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30764	0x2FB	Sample Index + Trace Memory Sample 45	-32767	32767	1	---	F4	0	1
30765	0x2FC	Sample Index + Trace Memory Sample 46	-32767	32767	1	---	F4	0	1
30766	0x2FD	Sample Index + Trace Memory Sample 47	-32767	32767	1	---	F4	0	1
30767	0x2FE	Sample Index + Trace Memory Sample 48	-32767	32767	1	---	F4	0	1
30768	0x2FF	Sample Index + Trace Memory Sample 49	-32767	32767	1	---	F4	0	1
30769	0x300	Sample Index + Trace Memory Sample 50	-32767	32767	1	---	F4	0	1
30770	0x301	Sample Index + Trace Memory Sample 51	-32767	32767	1	---	F4	0	1
30771	0x302	Sample Index + Trace Memory Sample 52	-32767	32767	1	---	F4	0	1
30772	0x303	Sample Index + Trace Memory Sample 53	-32767	32767	1	---	F4	0	1
30773	0x304	Sample Index + Trace Memory Sample 54	-32767	32767	1	---	F4	0	1
30774	0x305	Sample Index + Trace Memory Sample 55	-32767	32767	1	---	F4	0	1
30775	0x306	Sample Index + Trace Memory Sample 56	-32767	32767	1	---	F4	0	1
30776	0x307	Sample Index + Trace Memory Sample 57	-32767	32767	1	---	F4	0	1
30777	0x308	Sample Index + Trace Memory Sample 58	-32767	32767	1	---	F4	0	1
30778	0x309	Sample Index + Trace Memory Sample 59	-32767	32767	1	---	F4	0	1
30779	0x30A	Sample Index + Trace Memory Sample 60	-32767	32767	1	---	F4	0	1
30780	0x30B	Sample Index + Trace Memory Sample 61	-32767	32767	1	---	F4	0	1
30781	0x30C	Sample Index + Trace Memory Sample 62	-32767	32767	1	---	F4	0	1
30782	0x30D	Sample Index + Trace Memory Sample 63	-32767	32767	1	---	F4	0	1
30783	0x30E	Sample Index + Trace Memory Sample 64	-32767	32767	1	---	F4	0	1
30784	0x30F	Sample Index + Trace Memory Sample 65	-32767	32767	1	---	F4	0	1
30785	0x310	Sample Index + Trace Memory Sample 66	-32767	32767	1	---	F4	0	1
30786	0x311	Sample Index + Trace Memory Sample 67	-32767	32767	1	---	F4	0	1
30787	0x312	Sample Index + Trace Memory Sample 68	-32767	32767	1	---	F4	0	1
30788	0x313	Sample Index + Trace Memory Sample 69	-32767	32767	1	---	F4	0	1
30789	0x314	Sample Index + Trace Memory Sample 70	-32767	32767	1	---	F4	0	1
30790	0x315	Sample Index + Trace Memory Sample 71	-32767	32767	1	---	F4	0	1
30791	0x316	Sample Index + Trace Memory Sample 72	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30792	0x317	Sample Index + Trace Memory Sample 73	-32767	32767	1	---	F4	0	1
30793	0x318	Sample Index + Trace Memory Sample 74	-32767	32767	1	---	F4	0	1
30794	0x319	Sample Index + Trace Memory Sample 75	-32767	32767	1	---	F4	0	1
30795	0x31A	Sample Index + Trace Memory Sample 76	-32767	32767	1	---	F4	0	1
30796	0x31B	Sample Index + Trace Memory Sample 77	-32767	32767	1	---	F4	0	1
30797	0x31C	Sample Index + Trace Memory Sample 78	-32767	32767	1	---	F4	0	1
30798	0x31D	Sample Index + Trace Memory Sample 79	-32767	32767	1	---	F4	0	1
30799	0x31E	Sample Index + Trace Memory Sample 80	-32767	32767	1	---	F4	0	1
30800	0x31F	Sample Index + Trace Memory Sample 81	-32767	32767	1	---	F4	0	1
30801	0x320	Sample Index + Trace Memory Sample 82	-32767	32767	1	---	F4	0	1
30802	0x321	Sample Index + Trace Memory Sample 83	-32767	32767	1	---	F4	0	1
30803	0x322	Sample Index + Trace Memory Sample 84	-32767	32767	1	---	F4	0	1
30804	0x323	Sample Index + Trace Memory Sample 85	-32767	32767	1	---	F4	0	1
30805	0x324	Sample Index + Trace Memory Sample 86	-32767	32767	1	---	F4	0	1
30806	0x325	Sample Index + Trace Memory Sample 87	-32767	32767	1	---	F4	0	1
30807	0x326	Sample Index + Trace Memory Sample 88	-32767	32767	1	---	F4	0	1
30808	0x327	Sample Index + Trace Memory Sample 89	-32767	32767	1	---	F4	0	1
30809	0x328	Sample Index + Trace Memory Sample 90	-32767	32767	1	---	F4	0	1
30810	0x329	Sample Index + Trace Memory Sample 91	-32767	32767	1	---	F4	0	1
30811	0x32A	Sample Index + Trace Memory Sample 92	-32767	32767	1	---	F4	0	1
30812	0x32B	Sample Index + Trace Memory Sample 93	-32767	32767	1	---	F4	0	1
30813	0x32C	Sample Index + Trace Memory Sample 94	-32767	32767	1	---	F4	0	1
30814	0x32D	Sample Index + Trace Memory Sample 95	-32767	32767	1	---	F4	0	1
30815	0x32E	Sample Index + Trace Memory Sample 96	-32767	32767	1	---	F4	0	1
30816	0x32F	Sample Index + Trace Memory Sample 97	-32767	32767	1	---	F4	0	1
30817	0x330	Sample Index + Trace Memory Sample 98	-32767	32767	1	---	F4	0	1
30818	0x331	Sample Index + Trace Memory Sample 99	-32767	32767	1	---	F4	0	1
30819	0x332	Sample Index + Trace Memory Sample 100	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30820	0x333	Sample Index + Trace Memory Sample 101	-32767	32767	1	---	F4	0	1
30821	0x334	Sample Index + Trace Memory Sample 102	-32767	32767	1	---	F4	0	1
30822	0x335	Sample Index + Trace Memory Sample 103	-32767	32767	1	---	F4	0	1
30823	0x336	Sample Index + Trace Memory Sample 104	-32767	32767	1	---	F4	0	1
30824	0x337	Sample Index + Trace Memory Sample 105	-32767	32767	1	---	F4	0	1
30825	0x338	Sample Index + Trace Memory Sample 106	-32767	32767	1	---	F4	0	1
30826	0x339	Sample Index + Trace Memory Sample 107	-32767	32767	1	---	F4	0	1
30827	0x33A	Sample Index + Trace Memory Sample 108	-32767	32767	1	---	F4	0	1
30828	0x33B	Sample Index + Trace Memory Sample 109	-32767	32767	1	---	F4	0	1
30829	0x33C	Sample Index + Trace Memory Sample 110	-32767	32767	1	---	F4	0	1
30830	0x33D	Sample Index + Trace Memory Sample 111	-32767	32767	1	---	F4	0	1
30831	0x33E	Sample Index + Trace Memory Sample 112	-32767	32767	1	---	F4	0	1
30832	0x33F	Sample Index + Trace Memory Sample 113	-32767	32767	1	---	F4	0	1
30833	0x340	Sample Index + Trace Memory Sample 114	-32767	32767	1	---	F4	0	1
30834	0x341	Sample Index + Trace Memory Sample 115	-32767	32767	1	---	F4	0	1
30835	0x342	Sample Index + Trace Memory Sample 116	-32767	32767	1	---	F4	0	1
30836	0x343	Sample Index + Trace Memory Sample 117	-32767	32767	1	---	F4	0	1
30837	0x344	Sample Index + Trace Memory Sample 118	-32767	32767	1	---	F4	0	1
30838	0x345	Sample Index + Trace Memory Sample 119	-32767	32767	1	---	F4	0	1
30839	0x346	Sample Index + Trace Memory Sample 120	-32767	32767	1	---	F4	0	1
30840	0x347	Sample Index + Trace Memory Sample 121	-32767	32767	1	---	F4	0	1
30841	0x348	Sample Index + Trace Memory Sample 122	-32767	32767	1	---	F4	0	1
30842	0x349	Sample Index + Trace Memory Sample 123	-32767	32767	1	---	F4	0	1
30843	0x34A	Sample Index + Trace Memory Sample 124	-32767	32767	1	---	F4	0	1
30844	0x34B	Sample Index + Trace Memory Sample 125	-32767	32767	1	---	F4	0	1
30845	0x34C	Sample Index + Trace Memory Sample 126	-32767	32767	1	---	F4	0	1
30846	0x34D	Sample Index + Trace Memory Sample 127	-32767	32767	1	---	F4	0	1
30847	0x34E	Sample Index + Trace Memory Sample 128	-32767	32767	1	---	F4	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
STATUS BUFFER									
30948	0x3B3	Alarm Status 3	0	0xFFFFFFFF	1	---	FC181	0	2
30950	0x3B5	Alarm Status 2	0	0xFFFFFFFF	1	---	FC180	0	2
30952	0x3B7	Alarm Status 1	0	0xFFFFFFFF	1	---	FC179	0	2
30956	0x3BB	Trip Status 3	0	0xFFFFFFFF	1	---	FC185	0	2
30958	0x3BD	Trip Status 2	0	0xFFFFFFFF	1	---	FC184	0	2
30960	0x3BF	Trip Status 1	0	0xFFFFFFFF	1	---	FC183	0	2
30966	0x3C5	Message Status 2	0	0xFFFFFFFF	1	---	FC188	0	2
30968	0x3C7	Message Status 1	0	0xFFFFFFFF	1	---	FC187	0	2
30970	0x3C9	Control Element Status 4	0	0xFFFFFFFF	1	---	FC194	0	2
30972	0x3CB	Control Element Status 3	0	0xFFFFFFFF	1	---	FC193	0	2
30974	0x3CD	Control Element Status 2	0	0xFFFFFFFF	1	---	FC192	0	2
30976	0x3CF	Control Element Status 1	0	0xFFFFFFFF	1	---	FC191	0	2
30980	0x3D3	Block Status 3	0	0xFFFFFFFF	1	---	FC202	0	2
30982	0x3D5	Block Status 2	0	0xFFFFFFFF	1	---	FC201	0	2
30984	0x3D7	Block Status 1	0	0xFFFFFFFF	1	---	FC200	0	2
61850 STATUS									
31510	0x5E5	61850 Status	0	2	1	---	FC108	0	1
31511	0x5E6	61850 N.V. Status	0	4	1	---	FC434	0	1
IEC61850 GOOSE STATUS									
31515	0x5EA	Remote GOOSE Status	0	0xFFFFFFFF	1	---	FC215	0	2
31517	0x5EC	Remote GOOSE Header Status	0	0xFFFFFFFF	1	---	FC215	0	2
THERMAL MODEL TRIP STATUS									
31521	0x5F0	Trip Phase A Status 1	0	65535	1	---	FC134	0	1
31522	0x5F1	Trip Phase B Status 1	0	65535	1	---	FC134	0	1
31523	0x5F2	Trip Phase C Status 1	0	65535	1	---	FC134	0	1
PHASE IOC1 TRIP STATUS									
31524	0x5F3	Trip Phase A Status 2	0	65535	1	---	FC134	0	1
31525	0x5F4	Trip Phase B Status 2	0	65535	1	---	FC134	0	1
31526	0x5F5	Trip Phase C Status 2	0	65535	1	---	FC134	0	1
PHASE TOC1 TRIP STATUS									
31527	0x5F6	Trip Phase A Status 3	0	65535	1	---	FC134	0	1
31528	0x5F7	Trip Phase B Status 3	0	65535	1	---	FC134	0	1
31529	0x5F8	Trip Phase C Status 3	0	65535	1	---	FC134	0	1
PHASE IOC2 TRIP STATUS									
31530	0x5F9	Trip Phase A Status 4	0	65535	1	---	FC134	0	1
31531	0x5FA	Trip Phase B Status 4	0	65535	1	---	FC134	0	1
31532	0x5FB	Trip Phase C Status 4	0	65535	1	---	FC134	0	1
PHASE OV TRIP STATUS									
31533	0x5FC	Trip Phase A Status 5	0	65535	1	---	FC134	0	1
31534	0x5FD	Trip Phase B Status 5	0	65535	1	---	FC134	0	1
31535	0x5FE	Trip Phase C Status 5	0	65535	1	---	FC134	0	1
PHASE UV TRIP STATUS									
31536	0x5FF	Trip Phase A Status 6	0	65535	1	---	FC134	0	1
31537	0x600	Trip Phase B Status 6	0	65535	1	---	FC134	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
31538	0x601	Trip Phase C Status 6	0	65535	1	---	FC134	0	1
PHASE OV2 TRIP STATUS									
31545	0x608	PhaseOV2Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31546	0x609	PhaseOV2Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31547	0x60A	PhaseOV2Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV2 TRIP STATUS									
31548	0x60B	PhaseUV2Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31549	0x60C	PhaseUV2Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31550	0x60D	PhaseUV2Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV3 TRIP STATUS									
31551	0x60E	PhaseOV3Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31552	0x60F	PhaseOV3Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31553	0x610	PhaseOV3Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV3 TRIP STATUS									
31554	0x611	PhaseUV3Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31555	0x612	PhaseUV3Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31556	0x613	PhaseUV3Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV4 TRIP STATUS									
31557	0x614	PhaseOV4Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31558	0x615	PhaseOV4Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31559	0x616	PhaseOV4Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV4 TRIP STATUS									
31560	0x617	PhaseUV4Trip_PhaseAStatus	0	65535	1	---	FC134	0	1
31561	0x618	PhaseUV4Trip_PhaseBStatus	0	65535	1	---	FC134	0	1
31562	0x619	PhaseUV4Trip_PhaseCStatus	0	65535	1	---	FC134	0	1
THERMAL MODEL ALARM STATUS									
31569	0x620	Alarm Phase A Status 1	0	65535	1	---	FC134	0	1
31570	0x621	Alarm Phase B Status 1	0	65535	1	---	FC134	0	1
31571	0x622	Alarm Phase C Status 1	0	65535	1	---	FC134	0	1
PHASE IOC1 ALARM STATUS									
31572	0x623	Alarm Phase A Status 2	0	65535	1	---	FC134	0	1
31573	0x624	Alarm Phase B Status 2	0	65535	1	---	FC134	0	1
31574	0x625	Alarm Phase C Status 2	0	65535	1	---	FC134	0	1
PHASE TOC1 ALARM STATUS									
31575	0x626	Alarm Phase A Status 3	0	65535	1	---	FC134	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
31576	0x627	Alarm Phase B Status 3	0	65535	1	---	FC134	0	1
31577	0x628	Alarm Phase C Status 3	0	65535	1	---	FC134	0	1
PHASE IOC2 ALARM STATUS									
31578	0x629	Alarm Phase A Status 4	0	65535	1	---	FC134	0	1
31579	0x62A	Alarm Phase B Status 4	0	65535	1	---	FC134	0	1
31580	0x62B	Alarm Phase C Status 4	0	65535	1	---	FC134	0	1
PHASE OV ALARM STATUS									
31581	0x62C	Alarm Phase A Status 5	0	65535	1	---	FC134	0	1
31582	0x62D	Alarm Phase B Status 5	0	65535	1	---	FC134	0	1
31583	0x62E	Alarm Phase C Status 5	0	65535	1	---	FC134	0	1
PHASE UV ALARM STATUS									
31584	0x62F	Alarm Phase A Status 6	0	65535	1	---	FC134	0	1
31585	0x630	Alarm Phase B Status 6	0	65535	1	---	FC134	0	1
31586	0x631	Alarm Phase C Status 6	0	65535	1	---	FC134	0	1
PHASE TOC2 ALARM STATUS									
31590	0x635	Phase51PTOC_2Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31591	0x636	Phase51PTOC_2Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31592	0x637	Phase51PTOC_2Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV 2 ALARM STATUS									
31593	0x638	PhaseOV2Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31594	0x639	PhaseOV2Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31595	0x63A	PhaseOV2Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV 2 ALARM STATUS									
31596	0x63B	PhaseUV2Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31597	0x63C	PhaseUV2Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31598	0x63D	PhaseUV2Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV 3 ALARM STATUS									
31599	0x63E	PhaseOV3Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31600	0x63F	PhaseOV3Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31601	0x640	PhaseOV3Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV 3 ALARM STATUS									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
31602	0x641	PhaseUV3Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31603	0x642	PhaseUV3Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31604	0x643	PhaseUV3Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE OV 4 ALARM STATUS									
31605	0x644	PhaseOV4Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31606	0x645	PhaseOV4Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31607	0x646	PhaseOV4Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
PHASE UV 4 ALARM STATUS									
31608	0x647	PhaseUV4Alarm_PhaseAStatus	0	65535	1	---	FC134	0	1
31609	0x648	PhaseUV4Alarm_PhaseBStatus	0	65535	1	---	FC134	0	1
31610	0x649	PhaseUV4Alarm_PhaseCStatus	0	65535	1	---	FC134	0	1
VOLTS PER HERTZ									
31613	0x64C	Volts per Hertz	0	400	1	V/Hz	F3	0	1
32N WATTMETRIC									
31734	0x6C5	Wattmetric Power 1	-999999999	999999999	1	W	F13	0	2
31736	0x6C7	Wattmetric Power 2	-999999999	999999999	1	W	F13	0	2
SYMMETRICAL COMPONENTS									
30454	0x1C5	Positive Sequence Current Magnitude	0	65535	1	A	F1	0	1
30455	0x1C6	Positive Sequence Current Angle	0	359	1	°Lag	F1	0	1
30456	0x1C7	Negative Sequence Current Magnitude	0	65535	1	A	F1	0	1
30457	0x1C8	Negative Sequence Current Angle	0	359	1	°Lag	F1	0	1
30458	0x1C9	Zero Sequence Current Magnitude	0	65535	1	A	F1	0	1
30459	0x1CA	Zero Sequence Current Angle	0	359	1	°Lag	F1	0	1
30460	0x1CB	Positive Sequence Voltage Magnitude	0	65535	1	V	F1	0	1
30461	0x1CC	Positive Sequence Voltage Angle	0	359	1	°Lag	F1	0	1
30462	0x1CD	Negative Sequence Voltage Magnitude	0	6000	1	kV	F2	0	1
30463	0x1CE	Negative Sequence Voltage Angle	0	359	1	°Lag	F1	0	1
30464	0x1CF	Zero Sequence Voltage Magnitude	0	60000	1	kV	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30465	0x1D0	Zero Sequence Voltage Angle	0	359	1	°Lag	F1	0	1
30466	0x1D1	Zero Seq V Mag	0	65535	1	kV	F1	0	1
30478	0x1DD	Negative Sequence Current Magnitude	0	65535	1	A	F2	0	1
30479	0x1DE	Negative Sequence Voltage	0	65535	1	V	F1	0	1
31762	0x6E1	Positive Sequence Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31764	0x6E3	Negative Sequence Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31766	0x6E5	Zero Sequence Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
VOLTAGE METERING									
30358	0x165	Vab Voltage	0	65535	1	V	F1	0	1
30359	0x166	Vbc Voltage	0	65535	1	V	F1	0	1
30360	0x167	Vca Voltage	0	65535	1	V	F1	0	1
30361	0x168	Average Line Voltage	0	65535	1	V	F1	0	1
30362	0x169	Van Voltage	0	65535	1	V	F1	0	1
30363	0x16A	Vbn Voltage	0	65535	1	V	F1	0	1
30364	0x16B	Vcn Voltage	0	65535	1	V	F1	0	1
30365	0x16C	Average Phase Voltage	0	65535	1	V	F1	0	1
30366	0x16D	Frequency	0	12000	1	Hz	F3	0	1
30367	0x16E	Neutral Voltage	0	65535	1	V	F1	0	1
30376	0x177	Auxiliary Voltage	0	65535	1	Vaux	F1	0	1
31746	0x6D1	Vab Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31748	0x6D3	Vbc Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31750	0x6D5	Vca Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31752	0x6D7	Van Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31754	0x6D9	Vbn Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31756	0x6DB	Vcn Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31758	0x6DD	Vn Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31760	0x6DF	VAux Voltage (32 bits)	0	0xFFFF	1	V	F9	0	2
31768	0x6E7		0	65535	1	V	F9	0	2
31770	0x6E9		0	65535	1	V	F9	0	2
TRANSIENT RECORDER									
30707	0x2C2	Transient Recorder Last Cleared	0x010107D8	0x0C1F082E	0	---	F18	0x010107D8	2
30709	0x2C4	Transient Recorder Available Records	0	6	1	---	F1	0	1
30710	0x2C5	Trace Memory Trigger Date	0x010107D8	0x0C1F082E	0	---	F18	0x010107D8	2
30712	0x2C7	Trace Memory Trigger Time	0	0x173BEA5F	0	---	F19	0	2
30714	0x2C9	Trace Memory Trigger Cause	0	0xD002	0	---	FC133	0	1
30715	0x2CA	Trace Memory Trigger Frequency	0	12000	1	Hz	F3	60	1
30716	0x2CB	Total Triggers	0	0xFFFF	1	---	F1	0	1
30718	0x2CD	Trigger Position (Actual Value)	0	6143	1	---	F1	25	1
30719	0x2CE	Trace Memory Start Index	0	6143	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
31773	0x6EC	Transient Sampling Rate Status	0	3	1	---	FC429	0	1
FAULT REPORT									
31775	0x6EE	Fault Report Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
31777	0x6F0	Fault Report Time	0	0x173BEA5F	0	---	F19	0	2
31779	0x6F2	Fault Report Fault Type	0	2	1	---	FC134C	0	1
31780	0x6F3	Fault Report Ia	0	1200000	1	A	F10	0	2
31782	0x6F5	Fault Report Ia Angle	0	359	1	°	F1	0	1
31783	0x6F6	Fault Report Ib	0	1200000	1	A	F10	0	2
31785	0x6F8	Fault Report Ib Angle	0	359	1	°	F1	0	1
31786	0x6F9	Fault Report Ic	0	1200000	1	A	F10	0	2
31788	0x6FB	Fault Report Ic Angle	0	359	1	°	F1	0	1
31789	0x6FC	Fault Report Ig	0	1200000	1	A	F10	0	2
31791	0x6FE	Fault Report Ig Angle	0	359	1	°	F1	0	1
31792	0x6FF	Fault Report In	0	100000	1	A	F10	0	2
31794	0x701	Fault Report In Angle	0	359	1	°	F1	0	1
31795	0x702	Fault Report Va	0	65535	1	V	F9	0	2
31797	0x704	Fault Report Va Angle	0	359	1	°	F1	0	1
31798	0x705	Fault Report Vb	0	65535	1	V	F9	0	2
31800	0x707	Fault Report Vb Angle	0	359	1	°	F1	0	1
31801	0x708	Fault Report Vc	0	65535	1	V	F9	0	2
31803	0x70A	Fault Report Vc Angle	0	359	1	°	F1	0	1
31804	0x70B	Fault Report Vab	0	0xFFFF	1	V	F9	0	2
31806	0x70D	Fault Report Vab Angle	0	359	1	°	F1	0	1
31807	0x70E	Fault Report Vbc	0	0xFFFF	1	V	F9	0	2
31809	0x710	Fault Report Vbc Angle	0	359	1	°	F1	0	1
31810	0x711	Fault Report Vca	0	0xFFFF	1	V	F9	0	2
31812	0x713	Fault Report Vca Angle	0	359	1	°	F1	0	1
31813	0x714	Fault Report Vn	0	65535	1	V	F9	0	2
31815	0x716	Fault Report Vn Angle	0	359	1	°	F1	0	1
31816	0x717	Fault Report Vaux	0	65535	1	V	F9	0	2
31818	0x719	Fault Report Vaux Angle	0	359	1	°	F1	0	1
31853	0x73C	Fault Report Phases	1	7	1	---	F37	1	1
31854	0x73D	Fault Report Firmware Version	0	0xFFFF	1	---	F3	220	1
31855	0x73E	Fault Report Order Code	0	16	1	---	F22	350-EP5G5HSSNNSNDN	12
31867	0x74A	Fault Report Feeder Name	0	10	1	---	F22	Feeder Name	10
DIRECTIONAL POWER									
31739	0x6CA	Directional Power 1	-1000000	1000000	1	kW	F13	0	2
31741	0x6CC	Directional Power 2	-1000000	1000000	1	kW	F13	0	2
31880	0x757	Directional Power 1	-1000	1000	1	MW	F13	0	2
31882	0x759	Directional Power 2	-1000	1000	1	MW	F13	0	2
DEVICE STATUS									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
30302	0x12D	Current Security Access Level	0	3	1	---	F1	0	1
30305	0x130	Device Status	0	0xFFFF	1	---	FC129	0	1
30317	0x13C	Active Setpoint Group	0	1	1	---	F1	0	1
30319	0x13E	Relay1 Coil Status	0	1	1	---	FC125	0	1
30320	0x13F	Relay2 Coil Status	0	1	1	---	FC125	0	1
31887	0x75E	Breaker Health	0	100000	1	---	F9	0	2
31889	0x760	Breaker Last Trip Time	0	10000	1	ms	F1	0	1
31890	0x761	Breaker Avg Trip Time	0	10000	1	ms	F1	0	1
31891	0x762	Breaker Last Close Time	0	10000	1	ms	F1	0	1
31892	0x763	Breaker Avg Close Time	0	10000	1	ms	F1	0	1
31893	0x764	Breaker Last Charge Time	0	60000	1	ms	F1	0	1
31894	0x765	Breaker Avg Charge Time	0	60000	1	ms	F1	0	1
HSR PRP SETTINGS									
32128	0x84F	RTC Sync Source	0	5	1	---	FC422	0	1
32129	0x850	Grand Master ID Low	0	4	1	---	F22	L0	4
32133	0x854	Grand Master ID High	0	4	1	---	F22	L0	4
32137	0x858	PTP Accuracy	-2147483648	2147483647	1	---	F12	0	2
32139	0x85A	PTP State	0	3	1	---	FC423	0	1
32140	0x85B	PTP Port B State	0	3	1	---	FC423	0	1
32141	0x85C	PRP HSR Version	0	4	1	---	F22	L0	4
32145	0x860	DAISY_CHAIN Version	0	4	1	---	F22	L0	4
32149	0x864	Bypass Version	0	4	1	---	F22	L0	4
32153	0x868	LLA Version	0	4	1	---	F22	L0	4
32157	0x86C	PRP total sent Port A	0	0xFFFFFFFF	1	---	F9	0	2
32159	0x86E	PRP total sent Port B	0	0xFFFFFFFF	1	---	F9	0	2
32161	0x870	PRP total errors Port A	0	0xFFFFFFFF	1	---	F9	0	2
32163	0x872	PRP total errors Port B	0	0xFFFFFFFF	1	---	F9	0	2
32165	0x874	RSTP Port A State	0	2	1	---	FC426	0	1
32166	0x875	RSTP Port B State	0	2	1	---	FC426	0	1
DEMAND									
32170	0x879	Current Demand 1 Last Rst Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32172	0x87B	Current Demand 1 Last Rst Time	0	0x173BEA5F	0	---	F19	0	2
32174	0x87D	Current Demand 1 PhA	0	300000	1	A	F10	0	2
32176	0x87F	Current Demand 1 PhB	0	300000	1	A	F10	0	2
32178	0x881	Current Demand 1 PhC	0	300000	1	A	F10	0	2
32180	0x883	Max Current Demand 1 PhA	0	300000	1	A	F10	0	2
32182	0x885	Max Current Demand 1 PhB	0	300000	1	A	F10	0	2
32184	0x887	Max Current Demand 1 PhC	0	300000	1	A	F10	0	2
32186	0x889	Current Demand 1 PhA Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32188	0x88B	Current Demand 1 PhB Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32190	0x88D	Current Demand 1 PhC Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32192	0x88F	Current Demand 1 PhA Time	0	0x173BEA5F	0	---	F19	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
32194	0x891	Current Demand 1 PhB Time	0	0x173BEA5F	0	---	F19	0	2
32196	0x893	Current Demand 1 PhC Time	0	0x173BEA5F	0	---	F19	0	2
32226	0x8B1	Power Demand Last Rst Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32228	0x8B3	Power Demand Last Rst Time	0	0x173BEA5F	0	---	F19	0	2
32230	0x8B5	Real Power Demand	0	1000000	1	kW	F10	0	2
32232	0x8B7	Reactive Power Demand	0	1000000	1	kvar	F10	0	2
32234	0x8B9	Apparent Power Demand	0	1000000	1	kVA	F10	0	2
32236	0x8BB	Max Real Power Demand	0	1000000	1	kW	F10	0	2
32238	0x8BD	Max Reactive Power Demand	0	1000000	1	kvar	F10	0	2
32240	0x8BF	Max Apparent Power Demand	0	1000000	1	kVA	F10	0	2
32242	0x8C1	Real Power Demand Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32244	0x8C3	Reactive Power Demand Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32246	0x8C5	Apparent Power Demand Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
32248	0x8C7	Real Power Demand Time	0	0x173BEA5F	0	---	F19	0	2
32250	0x8C9	Reactive Power Demand Time	0	0x173BEA5F	0	---	F19	0	2
32252	0x8CB	Apparent Power Demand Time	0	0x173BEA5F	0	---	F19	0	2
SETPOINTS									
MESSAGE TIMES									
40120	0x77	Flash Message Time	1	65535	1	s	F1	5	1
40121	0x78	Message Timeout	1	65535	1	s	F1	30	1
COMMANDS									
40129	0x80	Command address	0	0xFFFF	0	---	F1	0	1
40130	0x81	Command Function	0	0xFFFF	0	---	F1	0	1
40131	0x82	Command Data 1	0	0xFFFF	0	---	F1	0	1
40132	0x83	Command Data 2	0	0xFFFF	0	---	F1	0	1
40133	0x84	Command Data 3	0	0xFFFF	0	---	F1	0	1
40134	0x85	Command Data 4	0	0xFFFF	0	---	F1	0	1
40135	0x86	Command Data 5	0	0xFFFF	0	---	F1	0	1
40136	0x87	Command Data 6	0	0xFFFF	0	---	F1	0	1
40137	0x88	Command Data 7	0	0xFFFF	0	---	F1	0	1
40138	0x89	Command Data 8	0	0xFFFF	0	---	F1	0	1
40139	0x8A	Command Data 9	0	0xFFFF	0	---	F1	0	1
40140	0x8B	Command Data 10	0	0xFFFF	0	---	F1	0	1
RS485 COMMUNICATIONS									
40172	0xAB	Slave Address	1	254	1	---	F1	254	1
40173	0xAC	RS485 Baud Rate	0	4	1	---	FC101	4	1
40174	0xAD	RS485 Parity	0	2	1	---	FC102	0	1
40175	0xAE	Rear 485 Port Protocol	0	2	1	---	F97	0	1
ETHERNET COMMUNICATIONS									
40180	0xB3	SNTP Mode	0	3	1	---	FC100	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40181	0xB4	SNTP IP Address	0	0xFFFFFFFF	1	---	FC150	0	2
40183	0xB6	Ethernet IP address	0	0xFFFFFFFF	1	---	FC150	0	2
40185	0xB8	Ethernet subnet mask	0	0xFFFFFFFF	1	---	FC150	0xFFFFFC00	2
40187	0xBA	Ethernet gateway address	0	0xFFFFFFFF	1	---	FC150	0	2
40189	0xBC	SNTP Port	0	65535	1	---	F1	0	1
40191	0xBE	EthernetConnectionType (Copper or Fiber)	0	1	1	---	FC230	0	1
40194	0xC1	High Eth Message Enable	0	1	1	---	FC126	1	1
REAL-TIME CLOCK									
40228	0xE3	Set Date	0x010107D9	0x0C1F0833	0	---	F18	0x010107D9	2
40230	0xE5	Set Time	0	0x173BEA5F	0	---	F19	0	2
40232	0xE7	Time Offset From UTC	-2400	2400	25	hrs	F6	0	1
40233	0xE8	IRIG-B	0	1	1	---	FC126	0	1
40234	0xE9	Daylight Savings	0	1	1	---	FC126	0	1
40235	0xEA	DST Start Month	0	12	1	---	FC169	0	1
40236	0xEB	DST Start Week	0	5	1	---	FC170	0	1
40237	0xEC	DST Start Weekday	0	7	1	---	FC171	0	1
40238	0xED	DST End Month	0	12	1	---	FC169	0	1
40239	0xEE	DST End Week	0	5	1	---	FC170	0	1
40240	0xEF	DST End Weekday	0	7	1	---	FC171	0	1
REMOTE INPUTS									
40260	0x103	Remote Inputs	0	0xFFFFFFFF	1	---	FC167	0	2
CURRENT SENSING									
40267	0x10A	CT Primary	1	6000	1	A	F1	500	1
40268	0x10B	Ground CT Secondary	0	1	1	---	FC104	1	1
40271	0x10E	Ground CT Primary	1	6000	1	A	F1	50	1
40272	0x10F	Sensitive Ground CT Primary	1	600	1	A	F1	50	1
40273	0x110	Phase CT Secondary	0	1	1	---	FC415	1	1
VOLTAGE									
40276	0x113	3 Phase Voltage Connection	0	1	1	---	FC106	0	1
40277	0x114	Auxiliary VT Connection	0	6	1	---	FC176	0	1
40278	0x115	Auxiliary VT Primary	110	690	1	V	F1	415	1
40279	0x116	Auxiliary VT Secondary	50	240	1	V	F1	110	1
40280	0x117	Aux VT Ratio	10	50000	1		F2	10	1
40281	0x118	Bus VT Secondary	50	240	1	V	F1	120	1
40282	0x119	Bus VT Ratio	10	50000	1		F2	10	1
POWER SYSTEM									
40284	0x11B	Supply Frequency	0	1	1	Hz	FC107	0	1
40285	0x11C	Feeder Name	0	9	1	---	F22	Feeder Name	9
40295	0x126	Power Unit	0	1	1	---	FC430	0	1
40296	0x127	Phase Sequence	0	1	1	---	FC124A	0	1
USER MAP ADDRESSES									
40524	0x20B	User Map Address 1	30001	39999	1	---	F1	30305	1
40525	0x20C	User Map Address 2	30001	39999	1	---	F1	30505	1
40526	0x20D	User Map Address 3	30001	39999	1	---	F1	30506	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40527	0x20E	User Map Address 4	30001	39999	1	---	F1	30960	1
40528	0x20F	User Map Address 5	30001	39999	1	---	F1	30961	1
40529	0x210	User Map Address 6	30001	39999	1	---	F1	30958	1
40530	0x211	User Map Address 7	30001	39999	1	---	F1	30959	1
40531	0x212	User Map Address 8	30001	39999	1	---	F1	30956	1
40532	0x213	User Map Address 9	30001	39999	1	---	F1	30957	1
40533	0x214	User Map Address 10	30001	39999	1	---	F1	30954	1
40534	0x215	User Map Address 11	30001	39999	1	---	F1	30955	1
40535	0x216	User Map Address 12	30001	39999	1	---	F1	30952	1
40536	0x217	User Map Address 13	30001	39999	1	---	F1	30953	1
40537	0x218	User Map Address 14	30001	39999	1	---	F1	30950	1
40538	0x219	User Map Address 15	30001	39999	1	---	F1	30951	1
40539	0x21A	User Map Address 16	30001	39999	1	---	F1	30948	1
40540	0x21B	User Map Address 17	30001	39999	1	---	F1	30949	1
40541	0x21C	User Map Address 18	30001	39999	1	---	F1	30946	1
40542	0x21D	User Map Address 19	30001	39999	1	---	F1	30947	1
40543	0x21E	User Map Address 20	30001	39999	1	---	F1	30976	1
40544	0x21F	User Map Address 21	30001	39999	1	---	F1	30977	1
40545	0x220	User Map Address 22	30001	39999	1	---	F1	30974	1
40546	0x221	User Map Address 23	30001	39999	1	---	F1	30975	1
40547	0x222	User Map Address 24	30001	39999	1	---	F1	30972	1
40548	0x223	User Map Address 25	30001	39999	1	---	F1	30973	1
40549	0x224	User Map Address 26	30001	39999	1	---	F1	30970	1
40550	0x225	User Map Address 27	30001	39999	1	---	F1	30971	1
40551	0x226	User Map Address 28	30001	39999	1	---	F1	30984	1
40552	0x227	User Map Address 29	30001	39999	1	---	F1	30985	1
40553	0x228	User Map Address 30	30001	39999	1	---	F1	30982	1
40554	0x229	User Map Address 31	30001	39999	1	---	F1	30983	1
40555	0x22A	User Map Address 32	30001	39999	1	---	F1	30980	1
40556	0x22B	User Map Address 33	30001	39999	1	---	F1	30981	1
40557	0x22C	User Map Address 34	30001	39999	1	---	F1	30978	1
40558	0x22D	User Map Address 35	30001	39999	1	---	F1	30979	1
40559	0x22E	User Map Address 36	30001	39999	1	---	F1	30186	1
40560	0x22F	User Map Address 37	30001	39999	1	---	F1	30285	1
40561	0x230	User Map Address 38	30001	39999	1	---	F1	30286	1
40562	0x231	User Map Address 39	30001	39999	1	---	F1	30298	1
40563	0x232	User Map Address 40	30001	39999	1	---	F1	30299	1
40564	0x233	User Map Address 41	30001	39999	1	---	F1	30288	1
40565	0x234	User Map Address 42	30001	39999	1	---	F1	30289	1
40566	0x235	User Map Address 43	30001	39999	1	---	F1	30317	1
40567	0x236	User Map Address 44	30001	39999	1	---	F1	30291	1
40568	0x237	User Map Address 45	30001	39999	1	---	F1	30296	1
40569	0x238	User Map Address 46	30001	39999	1	---	F1	30297	1
40570	0x239	User Map Address 47	30001	39999	1	---	F1	30300	1
40571	0x23A	User Map Address 48	30001	39999	1	---	F1	30301	1
40572	0x23B	User Map Address 49	30001	39999	1	---	F1	30328	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40573	0x23C	User Map Address 50	30001	39999	1	---	F1	30329	1
40574	0x23D	User Map Address 51	30001	39999	1	---	F1	30330	1
40575	0x23E	User Map Address 52	30001	39999	1	---	F1	30331	1
40576	0x23F	User Map Address 53	30001	39999	1	---	F1	30332	1
40577	0x240	User Map Address 54	30001	39999	1	---	F1	30333	1
40578	0x241	User Map Address 55	30001	39999	1	---	F1	30326	1
40579	0x242	User Map Address 56	30001	39999	1	---	F1	30327	1
40580	0x243	User Map Address 57	30001	39999	1	---	F1	30334	1
40581	0x244	User Map Address 58	30001	39999	1	---	F1	30335	1
40582	0x245	User Map Address 59	30001	39999	1	---	F1	30338	1
40583	0x246	User Map Address 60	30001	39999	1	---	F1	30339	1
40584	0x247	User Map Address 61	30001	39999	1	---	F1	30324	1
40585	0x248	User Map Address 62	30001	39999	1	---	F1	30325	1
40586	0x249	User Map Address 63	30001	39999	1	---	F1	30319	1
40587	0x24A	User Map Address 64	30001	39999	1	---	F1	30320	1
40588	0x24B	User Map Address 65	30001	39999	1	---	F1	30001	1
40589	0x24C	User Map Address 66	30001	39999	1	---	F1	30001	1
40590	0x24D	User Map Address 67	30001	39999	1	---	F1	30001	1
40591	0x24E	User Map Address 68	30001	39999	1	---	F1	30001	1
40592	0x24F	User Map Address 69	30001	39999	1	---	F1	30001	1
40593	0x250	User Map Address 70	30001	39999	1	---	F1	30001	1
40594	0x251	User Map Address 71	30001	39999	1	---	F1	30001	1
40595	0x252	User Map Address 72	30001	39999	1	---	F1	30001	1
40596	0x253	User Map Address 73	30001	39999	1	---	F1	30001	1
40597	0x254	User Map Address 74	30001	39999	1	---	F1	30001	1
40598	0x255	User Map Address 75	30001	39999	1	---	F1	30001	1
40599	0x256	User Map Address 76	30001	39999	1	---	F1	30001	1
40600	0x257	User Map Address 77	30001	39999	1	---	F1	30001	1
40601	0x258	User Map Address 78	30001	39999	1	---	F1	30001	1
40602	0x259	User Map Address 79	30001	39999	1	---	F1	30001	1
40603	0x25A	User Map Address 80	30001	39999	1	---	F1	30001	1
40604	0x25B	User Map Address 81	30001	39999	1	---	F1	30001	1
40605	0x25C	User Map Address 82	30001	39999	1	---	F1	30001	1
40606	0x25D	User Map Address 83	30001	39999	1	---	F1	30001	1
40607	0x25E	User Map Address 84	30001	39999	1	---	F1	30001	1
40608	0x25F	User Map Address 85	30001	39999	1	---	F1	30001	1
40609	0x260	User Map Address 86	30001	39999	1	---	F1	30001	1
40610	0x261	User Map Address 87	30001	39999	1	---	F1	30001	1
40611	0x262	User Map Address 88	30001	39999	1	---	F1	30001	1
40612	0x263	User Map Address 89	30001	39999	1	---	F1	30001	1
40613	0x264	User Map Address 90	30001	39999	1	---	F1	30001	1
40614	0x265	User Map Address 91	30001	39999	1	---	F1	30001	1
40615	0x266	User Map Address 92	30001	39999	1	---	F1	30001	1
40616	0x267	User Map Address 93	30001	39999	1	---	F1	30001	1
40617	0x268	User Map Address 94	30001	39999	1	---	F1	30001	1
40618	0x269	User Map Address 95	30001	39999	1	---	F1	30001	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40619	0x26A	User Map Address 96	30001	39999	1	---	F1	30001	1
40620	0x26B	User Map Address 97	30001	39999	1	---	F1	30001	1
40621	0x26C	User Map Address 98	30001	39999	1	---	F1	30001	1
40622	0x26D	User Map Address 99	30001	39999	1	---	F1	30001	1
40623	0x26E	User Map Address 100	30001	39999	1	---	F1	30001	1
40624	0x26F	User Map Address 101	30001	39999	1	---	F1	30001	1
40625	0x270	User Map Address 102	30001	39999	1	---	F1	30001	1
40626	0x271	User Map Address 103	30001	39999	1	---	F1	30001	1
40627	0x272	User Map Address 104	30001	39999	1	---	F1	30001	1
40628	0x273	User Map Address 105	30001	39999	1	---	F1	30001	1
40629	0x274	User Map Address 106	30001	39999	1	---	F1	30001	1
40630	0x275	User Map Address 107	30001	39999	1	---	F1	30001	1
40631	0x276	User Map Address 108	30001	39999	1	---	F1	30001	1
40632	0x277	User Map Address 109	30001	39999	1	---	F1	30001	1
40633	0x278	User Map Address 110	30001	39999	1	---	F1	30001	1
40634	0x279	User Map Address 111	30001	39999	1	---	F1	30001	1
40635	0x27A	User Map Address 112	30001	39999	1	---	F1	30001	1
40636	0x27B	User Map Address 113	30001	39999	1	---	F1	30001	1
40637	0x27C	User Map Address 114	30001	39999	1	---	F1	30001	1
40638	0x27D	User Map Address 115	30001	39999	1	---	F1	30001	1
40639	0x27E	User Map Address 116	30001	39999	1	---	F1	30001	1
40640	0x27F	User Map Address 117	30001	39999	1	---	F1	30001	1
40641	0x280	User Map Address 118	30001	39999	1	---	F1	30001	1
40642	0x281	User Map Address 119	30001	39999	1	---	F1	30001	1
40643	0x282	User Map Address 120	30001	39999	1	---	F1	30001	1
40644	0x283	User Map Address 121	30001	39999	1	---	F1	30001	1
40645	0x284	User Map Address 122	30001	39999	1	---	F1	30001	1
40646	0x285	User Map Address 123	30001	39999	1	---	F1	30001	1
40647	0x286	User Map Address 124	30001	39999	1	---	F1	30001	1
40648	0x287	User Map Address 125	30001	39999	1	---	F1	30001	1
TRANSIENT RECORDER TRIGGERS									
40650	0x289	Trigger On Input 1	0	0xEF02	1	---	F89A	0	1
40651	0x28A	Trigger On Input 2	0	0xEF02	1	---	F89A	0	1
40652	0x28B	Trigger On Input 3	0	0xEF02	1	---	F89A	0	1
EVENT RECORDER									
40649	0x288	Recording of Block Events	0	1	1	---	FC126	1	1
40654	0x28D	Recording of Pickup Events	0	1	1	---	FC126	0	1
40655	0x28E	Recording of Contact Input Events	0	1	1	---	FC126	1	1
40656	0x28F	Recording of Virtual Input Events	0	1	1	---	FC126	1	1
40657	0x290	Recording of Remote Inputs	0	1	1	---	FC126	1	1
40658	0x291	Recording of Logic Element Events	0	1	1	---	FC126	1	1
40660	0x293	Recording of Trip Events	0	1	1	---	FC126	1	1
40661	0x294	Recording of Alarm Events	0	1	1	---	FC126	1	1
40662	0x295	Recording of Control Events	0	1	1	---	FC126	1	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
40665	0x298	Recording of Dropout Events	0	1	1	---	FC126	0	1
40666	0x299	Recording of Set Time/Date Events	0	1	1	---	FC126	0	1
40667	0x29A	Event Record Selector	1	65535	1	---	F1	1	1
THERMAL PROTECTION									
40699	0x2BA	Thermal O/L Curve	0	2	1	---	FC236	0	1
TEMPERATURE									
40820	0x333	Enable Ambient Temp	0	2	1	---	FC206	0	1
40821	0x334	HI Alarm Level	20	80	1	°C	F1	60	1
40822	0x335	Low Alarm Level	-40	20	1	°C	F4	10	1
40823	0x336	Hysteresis Level	2	10	1	°C	F1	2	1
40824	0x337	Time Delay	1	60	1	min	F1	1	1
40825	0x338	Output Relays	0	0x7F	1	---	FC198	0	1
TRANSIENT RECORDER									
40668	0x29B	Trigger on Pickup	0	1	1	---	FC103	0	1
40669	0x29C	Trigger on Dropout	0	1	1	---	FC103	0	1
40670	0x29D	Trigger on Alarm	0	1	1	---	FC103	0	1
40671	0x29E	Trigger on Dropout	0	1	1	---	FC103	0	1
40672	0x29F	Trace Memory Channel Selector	0	16	1	---	F26	0	1
40673	0x2A0	Trace Memory Buffer Selector	0	10	1	---	F1	0	1
40674	0x2A1	Trace Memory Sample Index	0	6144	1	---	F1	0	1
40676	0x2A3	Trace Memory Trigger Position	0	100	1	%	F1	20	1
40677	0x2A4	Trigger Mode	0	1	1	---	FC148	0	1
40678	0x2A5	Number of Records	0	2	1	---	F95	0	1
40887	0x376	Transient Sampling Rate	0	3	1	---	FC429	0	1
VT FUSE FAIL									
40908	0x38B	VT Fuse Fail	0	2	1	---	FC140	0	1
RELAY STATUS									
40927	0x39E	Relay Status	0	1	1	---	F99	0	1
CONTACT INPUT NAMES (1 TO 8)									
40961	0x3C0	Input Name 1	0	7	1	---	F22	52a Contact	7
40970	0x3C9	Input Name 2	0	7	1	---	F22	52b Contact	7
40979	0x3D2	Input Name 3	0	7	1	---	F22	Input 3	7
40988	0x3DB	Input Name 4	0	7	1	---	F22	Input 4	7
40997	0x3E4	Input Name 5	0	7	1	---	F22	Input 5	7
41006	0x3ED	Input Name 6	0	7	1	---	F22	Input 6	7
41015	0x3F6	Input Name 7	0	7	1	---	F22	Input 7	7
41024	0x3FF	Input Name 8	0	7	1	---	F22	Input 8	7
EDIT SETPOINT GROUP									
41113	0x458	Edit Setpoint Group	-1	1	1	---	F91	0	1
LOGIC ELEMENTS									
41118	0x45D	Timer 1 Pickup Delay	0	60000	1	ms	F1	0	1
41119	0x45E	Timer 1 Dropout Delay	0	60000	1	ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
41120	0x45F	Logic Element 1 Function	0	4	1	---	FC205	0	1
41121	0x460	Logic Element 1 Asserted	0	1	1	---	FC103	0	1
41122	0x461	Logic Element 1 Relay	0	0x7F	1	---	FC198	0	1
41126	0x465	Timer 2 Pickup Delay	0	60000	1	ms	F1	0	1
41127	0x466	Timer 2 Dropout Delay	0	60000	1	ms	F1	0	1
41128	0x467	Logic Element 2 Function	0	4	1	---	FC205	0	1
41129	0x468	Logic Element 2 Asserted	0	1	1	---	FC103	0	1
41130	0x469	Logic Element 2 Relay	0	0x7F	1	---	FC198	0	1
41134	0x46D	Timer 3 Pickup Delay	0	60000	1	ms	F1	0	1
41135	0x46E	Timer 3 Dropout Delay	0	60000	1	ms	F1	0	1
41136	0x46F	Logic Element 3 Function	0	4	1	---	FC205	0	1
41137	0x470	Logic Element 3 Asserted	0	1	1	---	FC103	0	1
41138	0x471	Logic Element 3 Relay	0	0x7F	1	---	FC198	0	1
41142	0x475	Timer 4 Pickup Delay	0	60000	1	ms	F1	0	1
41143	0x476	Timer 4 Dropout Delay	0	60000	1	ms	F1	0	1
41144	0x477	Logic Element 4 Function	0	4	1	---	FC205	0	1
41145	0x478	Logic Element 4 Asserted	0	1	1	---	FC103	0	1
41146	0x479	Logic Element 4 Relay	0	0x7F	1	---	FC198	0	1
41150	0x47D	Timer 5 Pickup Delay	0	60000	1	ms	F1	0	1
41151	0x47E	Timer 5 Dropout Delay	0	60000	1	ms	F1	0	1
41152	0x47F	Logic Element 5 Function	0	4	1	---	FC205	0	1
41153	0x480	Logic Element 5 Asserted	0	1	1	---	FC103	0	1
41154	0x481	Logic Element 5 Relay	0	0x7F	1	---	FC198	0	1
41158	0x485	Timer 6 Pickup Delay	0	60000	1	ms	F1	0	1
41159	0x486	Timer 6 Dropout Delay	0	60000	1	ms	F1	0	1
41160	0x487	Logic Element 6 Function	0	4	1	---	FC205	0	1
41161	0x488	Logic Element 6 Asserted	0	1	1	---	FC103	0	1
41162	0x489	Logic Element 6 Relay	0	0x7F	1	---	FC198	0	1
41166	0x48D	Timer 7 Pickup Delay	0	60000	1	ms	F1	0	1
41167	0x48E	Timer 7 Dropout Delay	0	60000	1	ms	F1	0	1
41168	0x48F	Logic Element 7 Function	0	4	1	---	FC205	0	1
41169	0x490	Logic Element 7 Asserted	0	1	1	---	FC103	0	1
41170	0x491	Logic Element 7 Relay	0	0x7F	1	---	FC198	0	1
41174	0x495	Timer 8 Pickup Delay	0	60000	1	ms	F1	0	1
41175	0x496	Timer 8 Dropout Delay	0	60000	1	ms	F1	0	1
41176	0x497	Logic Element 8 Function	0	4	1	---	FC205	0	1
41177	0x498	Logic Element 8 Asserted	0	1	1	---	FC103	0	1
41178	0x499	Logic Element 8 Relay	0	0x7F	1	---	FC198	0	1
41182	0x49D	Timer 9 Pickup Delay	0	60000	1	ms	F1	0	1
41183	0x49E	Timer 9 Dropout Delay	0	60000	1	ms	F1	0	1
41184	0x49F	Logic Element 9 Function	0	4	1	---	FC205	0	1
41185	0x4A0	Logic Element 9 Asserted	0	1	1	---	FC103	0	1
41186	0x4A1	Logic Element 9 Relay	0	0x7F	1	---	FC198	0	1
41190	0x4A5	Timer 10 Pickup Delay	0	60000	1	ms	F1	0	1
41191	0x4A6	Timer 10 Dropout Delay	0	60000	1	ms	F1	0	1
41192	0x4A7	Logic Element 10 Function	0	4	1	---	FC205	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
41193	0x4A8	Logic Element 10 Asserted	0	1	1	---	FC103	0	1
41194	0x4A9	Logic Element 10 Relay	0	0x7F	1	---	FC198	0	1
41198	0x4AD	Timer 11 Pickup Delay	0	60000	1	ms	F1	0	1
41199	0x4AE	Timer 11 Dropout Delay	0	60000	1	ms	F1	0	1
41200	0x4AF	Logic Element 11 Function	0	4	1	---	FC205	0	1
41201	0x4B0	Logic Element 11 Asserted	0	1	1	---	FC103	0	1
41202	0x4B1	Logic Element 11 Relay	0	0x7F	1	---	FC198	0	1
41206	0x4B5	Timer 12 Pickup Delay	0	60000	1	ms	F1	0	1
41207	0x4B6	Timer 12 Dropout Delay	0	60000	1	ms	F1	0	1
41208	0x4B7	Logic Element 12 Function	0	4	1	---	FC205	0	1
41209	0x4B8	Logic Element 12 Asserted	0	1	1	---	FC103	0	1
41210	0x4B9	Logic Element 12 Relay	0	0x7F	1	---	FC198	0	1
41214	0x4BD	Timer 13 Pickup Delay	0	60000	1	ms	F1	0	1
41215	0x4BE	Timer 13 Dropout Delay	0	60000	1	ms	F1	0	1
41216	0x4BF	Logic Element 13 Function	0	4	1	---	FC205	0	1
41217	0x4C0	Logic Element 13 Asserted	0	1	1	---	FC103	0	1
41218	0x4C1	Logic Element 13 Relay	0	0x7F	1	---	FC198	0	1
41222	0x4C5	Timer 14 Pickup Delay	0	60000	1	ms	F1	0	1
41223	0x4C6	Timer 14 Dropout Delay	0	60000	1	ms	F1	0	1
41224	0x4C7	Logic Element 14 Function	0	4	1	---	FC205	0	1
41225	0x4C8	Logic Element 14 Asserted	0	1	1	---	FC103	0	1
41226	0x4C9	Logic Element 14 Relay	0	0x7F	1	---	FC198	0	1
41230	0x4CD	Timer 15 Pickup Delay	0	60000	1	ms	F1	0	1
41231	0x4CE	Timer 15 Dropout Delay	0	60000	1	ms	F1	0	1
41232	0x4CF	Logic Element 15 Function	0	4	1	---	FC205	0	1
41233	0x4D0	Logic Element 15 Asserted	0	1	1	---	FC103	0	1
41234	0x4D1	Logic Element 15 Relay	0	0x7F	1	---	FC198	0	1
41238	0x4D5	Timer 16 Pickup Delay	0	60000	1	ms	F1	0	1
41239	0x4D6	Timer 16 Dropout Delay	0	60000	1	ms	F1	0	1
41240	0x4D7	Logic Element 16 Function	0	4	1	---	FC205	0	1
41241	0x4D8	Logic Element 16 Asserted	0	1	1	---	FC103	0	1
41242	0x4D9	Logic Element 16 Relay	0	0x7F	1	---	FC198	0	1
CONTACT INPUT ASSIGNMENT									
41380	0x563	Remote Reset	0	0xEF02	1	---	F89A	0	1
41386	0x569	Remote Open	0	0xEF02	0	---	F89A	0	1
41387	0x56A	Remote Close	0	0xEF02	0	---	F89A	0	1
41388	0x56B	Breaker Connected	0	0x49	0	---	FC204B	0	1
41389	0x56C	Breaker 52a Contact	0	0x40	0	---	FC204A	0	1
41390	0x56D	Breaker 52b Contact	0	0x41	0	---	FC204C	0	1
41391	0x56E	Local Mode	0	0xEF02	0	---	F89	0	1
41404	0x57B	Set Group 2 Active	0	0xEF02	1	---	F89	0	1
41405	0x57C	Block Group Change	0	0xEF02	1	---	F89	0	1
CONTACT INPUT NAMES (9 TO 10)									
41435	0x59A	Input Name 9	0	7	1	---	F22	Input 9	7
41444	0x5A3	Input Name 10	0	7	1	---	F22	Input 10	7
CONTACT INPUTS									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
41454	0x5AD	Input 9 Debounce Interval	1	64	1	ms	F1	2	1
41455	0x5AE	Input 10 Debounce Interval	1	64	1	ms	F1	2	1
41456	0x5AF	Input 1 Debounce Interval	1	64	1	ms	F1	2	1
41457	0x5B0	Input 2 Debounce Interval	1	64	1	ms	F1	2	1
41458	0x5B1	Input 3 Debounce Interval	1	64	1	ms	F1	2	1
41459	0x5B2	Input 4 Debounce Interval	1	64	1	ms	F1	2	1
41460	0x5B3	Input 5 Debounce Interval	1	64	1	ms	F1	2	1
41461	0x5B4	Input 6 Debounce Interval	1	64	1	ms	F1	2	1
41462	0x5B5	Input 7 Debounce Interval	1	64	1	ms	F1	2	1
41463	0x5B6	Input 8 Debounce Interval	1	64	1	ms	F1	2	1
41465	0x5B8	Select DC Voltage	0	3	1	---	FC123	2	1
FRONT PANEL SETUP									
41475	0x5C2	Screen Saver	0	10000	1	min	F1C	0	1
LEDs									
41498	0x5D9	Breaker Open LED Colour	0	3	1	---	FC157	2	1
41500	0x5DB	Breaker Closed LED Colour	0	3	1	---	FC157	2	1
OUTPUT RELAYS									
41510	0x5E5	Relay 3 Type	0	1	1	---	FC199	0	1
41511	0x5E6	Relay 4 Type	0	1	1	---	FC199	0	1
41512	0x5E7	Relay 5 Type	0	1	1	---	FC199	0	1
41513	0x5E8	Relay 6 Type	0	1	1	---	FC199	0	1
OUTPUT RELAY BLOCKING									
41547	0x60A	Block Relay 1 Trip	0	0xEF02	1	---	F89	0	1
41548	0x60B	Block Relay 2 Close	0	0xEF02	1	---	F89	0	1
PROGRAMMABLE LEDs									
41522	0x5F1	LED 1 Type	0	1	1	---	FC199	0	1
41523	0x5F2	LED 2 Type	0	1	1	---	FC199	0	1
41524	0x5F3	LED 3 Type	0	1	1	---	FC199	0	1
41525	0x5F4	LED 4 Type	0	1	1	---	FC199	0	1
41526	0x5F5	LED 5 Type	0	1	1	---	FC199	0	1
41527	0x5F6	LED 6 Type	0	1	1	---	FC199	0	1
41528	0x5F7	LED 7 Type	0	1	1	---	FC199	0	1
41529	0x5F8	LED 8 Type	0	1	1	---	FC199	0	1
41570	0x621	LED 1 Source	0	0xFFFF	1	---	FC134B	0	1
41572	0x623	LED 2 Source	0	0xFFFF	1	---	FC134B	0	1
41574	0x625	LED 3 Source	0	0xFFFF	1	---	FC134B	0	1
41576	0x627	LED 4 Source	0	0xFFFF	1	---	FC134B	0	1
41578	0x629	LED 5 Source	0	0xFFFF	1	---	FC134B	0	1
41579	0x62A	LED 5 Color	0	3	1	---	FC157	3	1
41580	0x62B	LED 6 Source	0	0xFFFF	1	---	FC134B	0	1
41581	0x62C	LED 6 Color	0	3	1	---	FC157	3	1
41582	0x62D	LED 7 Source	0	0xFFFF	1	---	FC134B	0	1
41583	0x62E	LED 7 Color	0	3	1	---	FC157	3	1
41584	0x62F	LED 8 Source	0	0xFFFF	1	---	FC134B	0	1
41585	0x630	LED 8 Color	0	3	1	---	FC157	3	1
BREAKER TRIP COUNTER									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42210	0x8A1	Breaker Trip Counter Initial Trips	0	10000	1	---	F1	0	1
42211	0x8A2	Breaker Trip Counter Function	0	2	1	---	FC206	0	1
42212	0x8A3	Breaker Trip Counter Limit	1	10000	1	trips	F1	1	1
42213	0x8A4	Breaker Trip Counter Relay	0	0x7F	1	---	FC198	0	1
COIL MONITORS									
42214	0x8A5	Bypass Breaker Status	0	1	1	---	FC126	0	1
TRIP COIL									
42215	0x8A6	Relay1 Coil Monitor Function	0	2	1	---	FC206	0	1
42216	0x8A7	Relay1 Coil Monitor Pickup	1	10	1	s	F1	5	1
42217	0x8A8	Relay1 Coil Monitor Relay	0	0x7F	1	---	FC198	0	1
42218	0x8A9	Bypass Breaker Status	0	1	1	---	FC126	0	1
CLOSE COIL									
42219	0x8AA	Relay2 Coil Monitor Function	0	2	1	---	FC206	0	1
42220	0x8AB	Relay2 Coil Monitor Pickup	1	10	1	s	F1	5	1
42221	0x8AC	Relay2 Coil Monitor Relay	0	0x7F	1	---	FC198	0	1
RELAY 1 TRIP									
42222	0x8AD	Relay 1 Seal-In	0	999	1	s	F3	4	1
RELAY 2 CLOSE									
42223	0x8AE	Relay 2 Seal-In	0	999	1	s	F3	4	1
USER CURVE									
42241	0x8C0	User Curve A Parameter	0	1250000	1	s	F27	500	2
42243	0x8C2	User Curve B Parameter	0	30000	1	s	F27	0	2
42245	0x8C4	User Curve P Parameter	0	30000	1	---	F27	400	2
42247	0x8C6	User Curve Q Parameter	0	20000	1	---	F27	10000	2
42249	0x8C8	User Curve K Parameter	0	1999	1	s	F23	0	1
COLD LOAD PICKUP									
42225	0x8B0	Cold Load Pickup Function	0	2	1	---	FC206	0	1
42226	0x8B1	Cold Load Pickup Block Time	1	1000	1	s	F1	5	1
42227	0x8B2	Outage Time before Cold Load Pickup	1	1000	1	min	F1	20	1
42228	0x8B3	External Cold Load Pickup Initiate	0	0xEF02	1	---	F89	0	1
42229	0x8B4	Block Phase IOC 1	0	1	1	---	FC103A	0	1
42230	0x8B5	Block Phase IOC 2	0	1	1	---	FC103A	0	1
42231	0x8B6	Block Ground IOC 1	0	1	1	---	FC103A	0	1
42232	0x8B7	Block Ground IOC 2	0	1	1	---	FC103A	0	1
42233	0x8B8	Block Neutral IOC 1	0	1	1	---	FC103A	0	1
42234	0x8B9	Block Neutral IOC 2	0	1	1	---	FC103A	0	1
42235	0x8BA	Raise Phase TOC Pickup	0	100	1	%	F1	0	1
42236	0x8BB	Raise Ground TOC Pickup	0	100	1	%	F1	0	1
42237	0x8BC	Raise Neutral TOC Pickup	0	100	1	%	F1	0	1
42238	0x8BD	Output Relays	0	0x7C	1	---	F1	0	1
42239	0x8BE	Select Setting Group	-1	1	1	---	F91	-1	1
42251	0x8CA	Block Sensitive Ground IOC1	0	1	1	---	FC103A	0	1
42252	0x8CB	Block Sensitive Ground IOC2	0	1	1	---	FC103A	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42253	0x8CC	Raise Sensitive Ground TOC Pickup	0	100	1	%	F1	0	1
42254	0x8CD	Block Negative Sequence IOC	0	1	1	---	FC103A	0	1
42255	0x8CE	Raise Negative Sequence TOC	0	100	1	%	F1	0	1
BREAKER FAILURE									
42262	0x8D5	Breaker Failure Function	0	2	1	---	FC206	0	1
42263	0x8D6	Breaker Failure Delay 1	3	100	1	s	F3	10	1
42264	0x8D7	Breaker Failure Current	5	2000	1	x CT	F3	100	1
42265	0x8D8	Breaker Failure Delay 2	0	100	1	s	F3	0	1
42266	0x8D9	Breaker Failure Relays	0	0x7F	1	---	FC198	0	1
42267	0x8DA	Breaker Failure Ext Initiate	0	0xEF02	1	---	F89	0	1
FLEXCURVE A									
42278	0x8E5	Flex Curve A 1.03 X PU	0	65535	1	ms	F1	0	1
42279	0x8E6	Flex Curve A 1.05 X PU	0	65535	1	ms	F1	0	1
42280	0x8E7	Flex Curve A 1.10 X PU	0	65535	1	ms	F1	0	1
42281	0x8E8	Flex Curve A 1.20 X PU	0	65535	1	ms	F1	0	1
42282	0x8E9	Flex Curve A 1.30 X PU	0	65535	1	ms	F1	0	1
42283	0x8EA	Flex Curve A 1.40 X PU	0	65535	1	ms	F1	0	1
42284	0x8EB	Flex Curve A 1.50 X PU	0	65535	1	ms	F1	0	1
42285	0x8EC	Flex Curve A 1.60 X PU	0	65535	1	ms	F1	0	1
42286	0x8ED	Flex Curve A 1.70 X PU	0	65535	1	ms	F1	0	1
42287	0x8EE	Flex Curve A 1.80 X PU	0	65535	1	ms	F1	0	1
42288	0x8EF	Flex Curve A 1.90 X PU	0	65535	1	ms	F1	0	1
42289	0x8F0	Flex Curve A 2.00 X PU	0	65535	1	ms	F1	0	1
42290	0x8F1	Flex Curve A 2.10 X PU	0	65535	1	ms	F1	0	1
42291	0x8F2	Flex Curve A 2.20 X PU	0	65535	1	ms	F1	0	1
42292	0x8F3	Flex Curve A 2.30 X PU	0	65535	1	ms	F1	0	1
42293	0x8F4	Flex Curve A 2.40 X PU	0	65535	1	ms	F1	0	1
42294	0x8F5	Flex Curve A 2.50 X PU	0	65535	1	ms	F1	0	1
42295	0x8F6	Flex Curve A 2.60 X PU	0	65535	1	ms	F1	0	1
42296	0x8F7	Flex Curve A 2.70 X PU	0	65535	1	ms	F1	0	1
42297	0x8F8	Flex Curve A 2.80 X PU	0	65535	1	ms	F1	0	1
42298	0x8F9	Flex Curve A 2.90 X PU	0	65535	1	ms	F1	0	1
42299	0x8FA	Flex Curve A 3.00 X PU	0	65535	1	ms	F1	0	1
42300	0x8FB	Flex Curve A 3.10 X PU	0	65535	1	ms	F1	0	1
42301	0x8FC	Flex Curve A 3.20 X PU	0	65535	1	ms	F1	0	1
42302	0x8FD	Flex Curve A 3.30 X PU	0	65535	1	ms	F1	0	1
42303	0x8FE	Flex Curve A 3.40 X PU	0	65535	1	ms	F1	0	1
42304	0x8FF	Flex Curve A 3.50 X PU	0	65535	1	ms	F1	0	1
42305	0x900	Flex Curve A 3.60 X PU	0	65535	1	ms	F1	0	1
42306	0x901	Flex Curve A 3.70 X PU	0	65535	1	ms	F1	0	1
42307	0x902	Flex Curve A 3.80 X PU	0	65535	1	ms	F1	0	1
42308	0x903	Flex Curve A 3.90 X PU	0	65535	1	ms	F1	0	1
42309	0x904	Flex Curve A 4.00 X PU	0	65535	1	ms	F1	0	1
42310	0x905	Flex Curve A 4.10 X PU	0	65535	1	ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42311	0x906	Flex Curve A 4.20 X PU	0	65535	1	ms	F1	0	1
42312	0x907	Flex Curve A 4.30 X PU	0	65535	1	ms	F1	0	1
42313	0x908	Flex Curve A 4.40 X PU	0	65535	1	ms	F1	0	1
42314	0x909	Flex Curve A 4.50 X PU	0	65535	1	ms	F1	0	1
42315	0x90A	Flex Curve A 4.60 X PU	0	65535	1	ms	F1	0	1
42316	0x90B	Flex Curve A 4.70 X PU	0	65535	1	ms	F1	0	1
42317	0x90C	Flex Curve A 4.80 X PU	0	65535	1	ms	F1	0	1
42318	0x90D	Flex Curve A 4.90 X PU	0	65535	1	ms	F1	0	1
42319	0x90E	Flex Curve A 5.00 X PU	0	65535	1	ms	F1	0	1
42320	0x90F	Flex Curve A 5.10 X PU	0	65535	1	ms	F1	0	1
42321	0x910	Flex Curve A 5.20 X PU	0	65535	1	ms	F1	0	1
42322	0x911	Flex Curve A 5.30 X PU	0	65535	1	ms	F1	0	1
42323	0x912	Flex Curve A 5.40 X PU	0	65535	1	ms	F1	0	1
42324	0x913	Flex Curve A 5.50 X PU	0	65535	1	ms	F1	0	1
42325	0x914	Flex Curve A 5.60 X PU	0	65535	1	ms	F1	0	1
42326	0x915	Flex Curve A 5.70 X PU	0	65535	1	ms	F1	0	1
42327	0x916	Flex Curve A 5.80 X PU	0	65535	1	ms	F1	0	1
42328	0x917	Flex Curve A 5.90 X PU	0	65535	1	ms	F1	0	1
42329	0x918	Flex Curve A 6.00 X PU	0	65535	1	ms	F1	0	1
42330	0x919	Flex Curve A 6.50 X PU	0	65535	1	ms	F1	0	1
42331	0x91A	Flex Curve A 7.00 X PU	0	65535	1	ms	F1	0	1
42332	0x91B	Flex Curve A 7.50 X PU	0	65535	1	ms	F1	0	1
42333	0x91C	Flex Curve A 8.00 X PU	0	65535	1	ms	F1	0	1
42334	0x91D	Flex Curve A 8.50 X PU	0	65535	1	ms	F1	0	1
42335	0x91E	Flex Curve A 9.00 X PU	0	65535	1	ms	F1	0	1
42336	0x91F	Flex Curve A 9.50 X PU	0	65535	1	ms	F1	0	1
42337	0x920	Flex Curve A 10.00 X PU	0	65535	1	ms	F1	0	1
42338	0x921	Flex Curve A 10.50 X PU	0	65535	1	ms	F1	0	1
42339	0x922	Flex Curve A 11.00 X PU	0	65535	1	ms	F1	0	1
42340	0x923	Flex Curve A 11.50 X PU	0	65535	1	ms	F1	0	1
42341	0x924	Flex Curve A 12.00 X PU	0	65535	1	ms	F1	0	1
42342	0x925	Flex Curve A 12.50 X PU	0	65535	1	ms	F1	0	1
42343	0x926	Flex Curve A 13.00 X PU	0	65535	1	ms	F1	0	1
42344	0x927	Flex Curve A 13.50 X PU	0	65535	1	ms	F1	0	1
42345	0x928	Flex Curve A 14.00 X PU	0	65535	1	ms	F1	0	1
42346	0x929	Flex Curve A 14.50 X PU	0	65535	1	ms	F1	0	1
42347	0x92A	Flex Curve A 15.00 X PU	0	65535	1	ms	F1	0	1
42348	0x92B	Flex Curve A 15.50 X PU	0	65535	1	ms	F1	0	1
42349	0x92C	Flex Curve A 16.00 X PU	0	65535	1	ms	F1	0	1
42350	0x92D	Flex Curve A 16.50 X PU	0	65535	1	ms	F1	0	1
42351	0x92E	Flex Curve A 17.00 X PU	0	65535	1	ms	F1	0	1
42352	0x92F	Flex Curve A 17.50 X PU	0	65535	1	ms	F1	0	1
42353	0x930	Flex Curve A 18.00 X PU	0	65535	1	ms	F1	0	1
42354	0x931	Flex Curve A 18.50 X PU	0	65535	1	ms	F1	0	1
42355	0x932	Flex Curve A 19.00 X PU	0	65535	1	ms	F1	0	1
42356	0x933	Flex Curve A 19.50 X PU	0	65535	1	ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42357	0x934	Flex Curve A 20.00 X PU	0	65535	1	ms	F1	0	1
FLEXCURVE B									
42380	0x94B	Flex Curve B 1.03 X PU	0	65535	1	ms	F1	0	1
42381	0x94C	Flex Curve B 1.05 X PU	0	65535	1	ms	F1	0	1
42382	0x94D	Flex Curve B 1.10 X PU	0	65535	1	ms	F1	0	1
42383	0x94E	Flex Curve B 1.20 X PU	0	65535	1	ms	F1	0	1
42384	0x94F	Flex Curve B 1.30 X PU	0	65535	1	ms	F1	0	1
42385	0x950	Flex Curve B 1.40 X PU	0	65535	1	ms	F1	0	1
42386	0x951	Flex Curve B 1.50 X PU	0	65535	1	ms	F1	0	1
42387	0x952	Flex Curve B 1.60 X PU	0	65535	1	ms	F1	0	1
42388	0x953	Flex Curve B 1.70 X PU	0	65535	1	ms	F1	0	1
42389	0x954	Flex Curve B 1.80 X PU	0	65535	1	ms	F1	0	1
42390	0x955	Flex Curve B 1.90 X PU	0	65535	1	ms	F1	0	1
42391	0x956	Flex Curve B 2.00 X PU	0	65535	1	ms	F1	0	1
42392	0x957	Flex Curve B 2.10 X PU	0	65535	1	ms	F1	0	1
42393	0x958	Flex Curve B 2.20 X PU	0	65535	1	ms	F1	0	1
42394	0x959	Flex Curve B 2.30 X PU	0	65535	1	ms	F1	0	1
42395	0x95A	Flex Curve B 2.40 X PU	0	65535	1	ms	F1	0	1
42396	0x95B	Flex Curve B 2.50 X PU	0	65535	1	ms	F1	0	1
42397	0x95C	Flex Curve B 2.60 X PU	0	65535	1	ms	F1	0	1
42398	0x95D	Flex Curve B 2.70 X PU	0	65535	1	ms	F1	0	1
42399	0x95E	Flex Curve B 2.80 X PU	0	65535	1	ms	F1	0	1
42400	0x95F	Flex Curve B 2.90 X PU	0	65535	1	ms	F1	0	1
42401	0x960	Flex Curve B 3.00 X PU	0	65535	1	ms	F1	0	1
42402	0x961	Flex Curve B 3.10 X PU	0	65535	1	ms	F1	0	1
42403	0x962	Flex Curve B 3.20 X PU	0	65535	1	ms	F1	0	1
42404	0x963	Flex Curve B 3.30 X PU	0	65535	1	ms	F1	0	1
42405	0x964	Flex Curve B 3.40 X PU	0	65535	1	ms	F1	0	1
42406	0x965	Flex Curve B 3.50 X PU	0	65535	1	ms	F1	0	1
42407	0x966	Flex Curve B 3.60 X PU	0	65535	1	ms	F1	0	1
42408	0x967	Flex Curve B 3.70 X PU	0	65535	1	ms	F1	0	1
42409	0x968	Flex Curve B 3.80 X PU	0	65535	1	ms	F1	0	1
42410	0x969	Flex Curve B 3.90 X PU	0	65535	1	ms	F1	0	1
42411	0x96A	Flex Curve B 4.00 X PU	0	65535	1	ms	F1	0	1
42412	0x96B	Flex Curve B 4.10 X PU	0	65535	1	ms	F1	0	1
42413	0x96C	Flex Curve B 4.20 X PU	0	65535	1	ms	F1	0	1
42414	0x96D	Flex Curve B 4.30 X PU	0	65535	1	ms	F1	0	1
42415	0x96E	Flex Curve B 4.40 X PU	0	65535	1	ms	F1	0	1
42416	0x96F	Flex Curve B 4.50 X PU	0	65535	1	ms	F1	0	1
42417	0x970	Flex Curve B 4.60 X PU	0	65535	1	ms	F1	0	1
42418	0x971	Flex Curve B 4.70 X PU	0	65535	1	ms	F1	0	1
42419	0x972	Flex Curve B 4.80 X PU	0	65535	1	ms	F1	0	1
42420	0x973	Flex Curve B 4.90 X PU	0	65535	1	ms	F1	0	1
42421	0x974	Flex Curve B 5.00 X PU	0	65535	1	ms	F1	0	1
42422	0x975	Flex Curve B 5.10 X PU	0	65535	1	ms	F1	0	1
42423	0x976	Flex Curve B 5.20 X PU	0	65535	1	ms	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42424	0x977	Flex Curve B 5.30 X PU	0	65535	1	ms	F1	0	1
42425	0x978	Flex Curve B 5.40 X PU	0	65535	1	ms	F1	0	1
42426	0x979	Flex Curve B 5.50 X PU	0	65535	1	ms	F1	0	1
42427	0x97A	Flex Curve B 5.60 X PU	0	65535	1	ms	F1	0	1
42428	0x97B	Flex Curve B 5.70 X PU	0	65535	1	ms	F1	0	1
42429	0x97C	Flex Curve B 5.80 X PU	0	65535	1	ms	F1	0	1
42430	0x97D	Flex Curve B 5.90 X PU	0	65535	1	ms	F1	0	1
42431	0x97E	Flex Curve B 6.00 X PU	0	65535	1	ms	F1	0	1
42432	0x97F	Flex Curve B 6.50 X PU	0	65535	1	ms	F1	0	1
42433	0x980	Flex Curve B 7.00 X PU	0	65535	1	ms	F1	0	1
42434	0x981	Flex Curve B 7.50 X PU	0	65535	1	ms	F1	0	1
42435	0x982	Flex Curve B 8.00 X PU	0	65535	1	ms	F1	0	1
42436	0x983	Flex Curve B 8.50 X PU	0	65535	1	ms	F1	0	1
42437	0x984	Flex Curve B 9.00 X PU	0	65535	1	ms	F1	0	1
42438	0x985	Flex Curve B 9.50 X PU	0	65535	1	ms	F1	0	1
42439	0x986	Flex Curve B 10.00 X PU	0	65535	1	ms	F1	0	1
42440	0x987	Flex Curve B 10.50 X PU	0	65535	1	ms	F1	0	1
42441	0x988	Flex Curve B 11.00 X PU	0	65535	1	ms	F1	0	1
42442	0x989	Flex Curve B 11.50 X PU	0	65535	1	ms	F1	0	1
42443	0x98A	Flex Curve B 12.00 X PU	0	65535	1	ms	F1	0	1
42444	0x98B	Flex Curve B 12.50 X PU	0	65535	1	ms	F1	0	1
42445	0x98C	Flex Curve B 13.00 X PU	0	65535	1	ms	F1	0	1
42446	0x98D	Flex Curve B 13.50 X PU	0	65535	1	ms	F1	0	1
42447	0x98E	Flex Curve B 14.00 X PU	0	65535	1	ms	F1	0	1
42448	0x98F	Flex Curve B 14.50 X PU	0	65535	1	ms	F1	0	1
42449	0x990	Flex Curve B 15.00 X PU	0	65535	1	ms	F1	0	1
42450	0x991	Flex Curve B 15.50 X PU	0	65535	1	ms	F1	0	1
42451	0x992	Flex Curve B 16.00 X PU	0	65535	1	ms	F1	0	1
42452	0x993	Flex Curve B 16.50 X PU	0	65535	1	ms	F1	0	1
42453	0x994	Flex Curve B 17.00 X PU	0	65535	1	ms	F1	0	1
42454	0x995	Flex Curve B 17.50 X PU	0	65535	1	ms	F1	0	1
42455	0x996	Flex Curve B 18.00 X PU	0	65535	1	ms	F1	0	1
42456	0x997	Flex Curve B 18.50 X PU	0	65535	1	ms	F1	0	1
42457	0x998	Flex Curve B 19.00 X PU	0	65535	1	ms	F1	0	1
42458	0x999	Flex Curve B 19.50 X PU	0	65535	1	ms	F1	0	1
42459	0x99A	Flex Curve B 20.00 X PU	0	65535	1	ms	F1	0	1
VIRTUAL INPUT NAMES									
42884	0xB43	Virtual Input Name 1	0	9	1	---	F22	Virtual IN 1	9
42893	0xB4C	Virtual Input Name 2	0	9	1	---	F22	Virtual IN 2	9
42902	0xB55	Virtual Input Name 3	0	9	1	---	F22	Virtual IN 3	9
42911	0xB5E	Virtual Input Name 4	0	9	1	---	F22	Virtual IN 4	9
42920	0xB67	Virtual Input Name 5	0	9	1	---	F22	Virtual IN 5	9
42929	0xB70	Virtual Input Name 6	0	9	1	---	F22	Virtual IN 6	9
42938	0xB79	Virtual Input Name 7	0	9	1	---	F22	Virtual IN 7	9
42947	0xB82	Virtual Input Name 8	0	9	1	---	F22	Virtual IN 8	9
42956	0xB8B	Virtual Input Name 9	0	9	1	---	F22	Virtual IN 9	9

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42965	0xB94	Virtual Input Name 10	0	9	1	---	F22	Virtual IN 10	9
42974	0xB9D	Virtual Input Name 11	0	9	1	---	F22	Virtual IN 11	9
42983	0xBA6	Virtual Input Name 12	0	9	1	---	F22	Virtual IN 12	9
42992	0xBAF	Virtual Input Name 13	0	9	1	---	F22	Virtual IN 13	9
43001	0xBB8	Virtual Input Name 14	0	9	1	---	F22	Virtual IN 14	9
43010	0xBC1	Virtual Input Name 15	0	9	1	---	F22	Virtual IN 15	9
43019	0xBCA	Virtual Input Name 16	0	9	1	---	F22	Virtual IN 16	9
43028	0xBD3	Virtual Input Name 17	0	9	1	---	F22	Virtual IN 17	9
43037	0xBDC	Virtual Input Name 18	0	9	1	---	F22	Virtual IN 18	9
43046	0xBE5	Virtual Input Name 19	0	9	1	---	F22	Virtual IN 19	9
43055	0xBEE	Virtual Input Name 20	0	9	1	---	F22	Virtual IN 20	9
43064	0xBF7	Virtual Input Name 21	0	9	1	---	F22	Virtual IN 21	9
43073	0xC00	Virtual Input Name 22	0	9	1	---	F22	Virtual IN 22	9
43082	0xC09	Virtual Input Name 23	0	9	1	---	F22	Virtual IN 23	9
43091	0xC12	Virtual Input Name 24	0	9	1	---	F22	Virtual IN 24	9
43100	0xC1B	Virtual Input Name 25	0	9	1	---	F22	Virtual IN 25	9
43109	0xC24	Virtual Input Name 26	0	9	1	---	F22	Virtual IN 26	9
43118	0xC2D	Virtual Input Name 27	0	9	1	---	F22	Virtual IN 27	9
43127	0xC36	Virtual Input Name 28	0	9	1	---	F22	Virtual IN 28	9
43136	0xC3F	Virtual Input Name 29	0	9	1	---	F22	Virtual IN 29	9
43145	0xC48	Virtual Input Name 30	0	9	1	---	F22	Virtual IN 30	9
43154	0xC51	Virtual Input Name 31	0	9	1	---	F22	Virtual IN 31	9
43163	0xC5A	Virtual Input Name 32	0	9	1	---	F22	Virtual IN 32	9
SIMULATION									
NEGATIVE SEQUENCE TOC1									
43691	0xE6A	Neg Seq TOC1 Func	0	3	1	---	FC197	0	1
43692	0xE6B	Neg Seq TOC1 PkP	5	2000	1	x CT	F3	100	1
43693	0xE6C	Neg Seq TOC1 Curve	0	15	1	---	F36	0	1
43694	0xE6D	Neg Seq TOC1 TDM	5	5000	1	---	F3	100	1
43695	0xE6E	Neg Seq TOC1 Reset	0	1	1	---	F68	0	1
43696	0xE6F	Neg Seq TOC1 Relays	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
PHASE OVERVOLTAGE2									
43733	0xE94	Phase OV 2 Function	0	3	1	---	FC197	0	1
43734	0xE95	Phase OV 2 Pickup	0	125	1	x VT	F3	125	1
43735	0xE96	Phase OV 2 Delay	0	60000	1	s	F3	200	1
43736	0xE97	Phase OV 2 Phases	1	3	1	---	F92	1	1
PHASE UNDERVOLTAGE2									
43737	0xE98	Phase UV 2 Function	0	3	1	---	FC197	0	1
43738	0xE99	Phase UV 2 Pickup	0	125	1	x VT	F3	75	1
43739	0xE9A	Phase UV 2 Curve	0	1	1	---	F93	1	1
43740	0xE9B	Phase UV 2 Delay	0	60000	1	s	F3	200	1
43741	0xE9C	Phase UV 2 Phases	1	3	1	---	F92	1	1
43742	0xE9D	Phase UV 2 Min Voltage	0	125	1	x VT	F3	30	1
PHASE OVERVOLTAGE2 (RELAYS & BLOCKS)									
43743	0xE9E	Phase OV 2 Relays	0	0x7F	1	---	FC198	0	1
43744	0xE9F	Phase OV 2 Block 1	0	0xEF02	1	---	F89	0	1
43745	0xEA0	Phase OV 2 Block 1	0	0xEF02	1	---	F89	0	1
43746	0xEA1	Phase OV 2 Block 1	0	0xEF02	1	---	F89	0	1
PHASE UNDERVOLTAGE2 (RELAYS & BLOCKS)									
43747	0xEA2	Phase UV 2 Relays	0	0x7F	1	---	FC198	0	1
43748	0xEA3	Phase UV 2 Block 1	0	0xEF02	1	---	F89	0	1
43749	0xEA4	Phase UV 2 Block 1	0	0xEF02	1	---	F89	0	1
43750	0xEA5	Phase UV 2 Block 1	0	0xEF02	1	---	F89	0	1
NEUTRAL DIRECTIONAL									
43751	0xEA6	NDir Block OC Dir UN	0	1	1	---	FC126	0	1
GROUND DIRECTIONAL									
42556	0x9FB	Ground Directional Function	0	3	1	---	FC207	0	1
43752	0xEA7	GDir Block OC Dir UN	0	1	1	---	FC126	0	1
PHASE DIRECTIONAL									
43753	0xEA8	Pha Dir Function	0	3	1	---	FC207	0	1
43754	0xEA9	Pha Dir Polarizing	1	3	1	---	F96	1	1
43755	0xEAA	Pha Dir MTA	0	359	1	°	F1	30	1
43756	0xEAB	Min POL Voltage	5	125	1	x VT	F3	5	1
43757	0xEAC	Blk OC Undthrld	0	1	1	---	FC126	1	1
43758	0xEAD	Pha Dir Relays	0	0x7F	1	---	FC198	0	1
43759	0xEAE	Ph Dir Block 1	0	0xEF02	1	---	F89	0	1
43760	0xEAF	Ph Dir Block 2	0	0xEF02	1	---	F89	0	1
43761	0xEB0	Ph Dir Block 3	0	0xEF02	1	---	F89	0	1
FORCE VIRTUAL INPUTS									
43764	0xEB3	Force Virtual Input 1	0	1	1	---	FC103	0	1
43765	0xEB4	Force Virtual Input 2	0	1	1	---	FC103	0	1
43766	0xEB5	Force Virtual Input 3	0	1	1	---	FC103	0	1
43767	0xEB6	Force Virtual Input 4	0	1	1	---	FC103	0	1
43768	0xEB7	Force Virtual Input 5	0	1	1	---	FC103	0	1
43769	0xEB8	Force Virtual Input 6	0	1	1	---	FC103	0	1
43770	0xEB9	Force Virtual Input 7	0	1	1	---	FC103	0	1
43771	0xEBA	Force Virtual Input 8	0	1	1	---	FC103	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43772	0xEBB	Force Virtual Input 9	0	1	1	---	FC103	0	1
43773	0xEBC	Force Virtual Input 10	0	1	1	---	FC103	0	1
43774	0xEBD	Force Virtual Input 11	0	1	1	---	FC103	0	1
43775	0xEBE	Force Virtual Input 12	0	1	1	---	FC103	0	1
43776	0xEBF	Force Virtual Input 13	0	1	1	---	FC103	0	1
43777	0xEC0	Force Virtual Input 14	0	1	1	---	FC103	0	1
43778	0xEC1	Force Virtual Input 15	0	1	1	---	FC103	0	1
43779	0xEC2	Force Virtual Input 16	0	1	1	---	FC103	0	1
43780	0xEC3	Force Virtual Input 17	0	1	1	---	FC103	0	1
43781	0xEC4	Force Virtual Input 18	0	1	1	---	FC103	0	1
43782	0xEC5	Force Virtual Input 19	0	1	1	---	FC103	0	1
43783	0xEC6	Force Virtual Input 20	0	1	1	---	FC103	0	1
43784	0xEC7	Force Virtual Input 21	0	1	1	---	FC103	0	1
43785	0xEC8	Force Virtual Input 22	0	1	1	---	FC103	0	1
43786	0xEC9	Force Virtual Input 23	0	1	1	---	FC103	0	1
43787	0xECA	Force Virtual Input 24	0	1	1	---	FC103	0	1
43788	0xECB	Force Virtual Input 25	0	1	1	---	FC103	0	1
43789	0xECC	Force Virtual Input 26	0	1	1	---	FC103	0	1
43790	0xECD	Force Virtual Input 27	0	1	1	---	FC103	0	1
43791	0xECE	Force Virtual Input 28	0	1	1	---	FC103	0	1
43792	0xECF	Force Virtual Input 29	0	1	1	---	FC103	0	1
43793	0xED0	Force Virtual Input 30	0	1	1	---	FC103	0	1
43794	0xED1	Force Virtual Input 31	0	1	1	---	FC103	0	1
43795	0xED2	Force Virtual Input 32	0	1	1	---	FC103	0	1
DNP OVER ETHERNET PORT									
43836	0xEFB	DNP/Ethernet Channel 1 Port	0	2	1	---	F87	0	1
43837	0xEFC	DNP/Ethernet Channel 2 Port	0	2	1	---	F87	0	1
IEC60870-5-104 PROTOCOL									
43838	0xEFD	IEC 60870-5-104 Function	0	1	1	---	FC126	0	1
43839	0xEFE	IEC TCP Port	1	65535	1	---	F1	2404	1
43840	0xEFF	IEC Common Address of ASDU	0	65535	1	---	F1	0	1
43841	0xF00	IEC Cyclic Data Period	0	65535	1	s	F1	60	1
43842	0xF01	IEC TCP Connection Timeout	10	300	1	s	F1	120	1
43843	0xF02	Object Information Address Binary	1	16777215	1	---	F9	1000	2
43845	0xF04	Object Information Address Analog	1	16777215	1	---	F9	2000	2
43847	0xF06	Object Information Address Counters	1	16777215	1	---	F9	3000	2
43849	0xF08	Object Information Address Command	1	16777215	1	---	F9	4000	2
DNP / IEC60870-5-104 SHARED SETTINGS									
43851	0xF0A	DNP Address	0	65519	1	---	F1	0	1
43852	0xF0B	DNP Client Address 1	0	0xFFFFFFFF	1	---	FC150	0	2
43854	0xF0D	DNP Client Address 2	0	0xFFFFFFFF	1	---	FC150	0	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43856	0xF0F	DNP Client Address 3	0	0xFFFFFFFF	1	---	FC150	0	2
43858	0xF11	DNP Client Address 4	0	0xFFFFFFFF	1	---	FC150	0	2
43860	0xF13	DNP Client Address 5	0	0xFFFFFFFF	1	---	FC150	0	2
43862	0xF15	DNP TCP/UDP Port Number	0	65535	1	---	F1	20000	1
43863	0xF16	DNP Unsolicited Response Function	0	1	1	---	FC126	0	1
43864	0xF17	DNP Unsolicited Response Timeout	0	60	1	s	F1	5	1
43865	0xF18	DNP Unsolicited Response Maximum Retries	1	255	1	---	F1	10	1
43866	0xF19	DNP Unsolicited Response Destination Address	0	65519	1	---	F1	1	1
43867	0xF1A	DNP Time Sync IIN Period	1	10080	1	min	F1	1440	1
43868	0xF1B	DNP Message Fragment Size	30	2048	1	---	F1	240	1
43869	0xF1C	DNP Object 1 Default Variation	1	2	1	---	F1	2	1
43870	0xF1D	DNP Object 2 Default Variation	1	2	1	---	F1	2	1
43871	0xF1E	DNP Object 20 Default Variation	1	6	1	---	F78	1	1
43872	0xF1F	DNP Object 21 Default Variation	1	10	1	---	F79	1	1
43873	0xF20	DNP Object 22 Default Variation	1	6	1	---	F80	1	1
43874	0xF21	DNP Object 23 Default Variation	1	6	1	---	F81	1	1
43875	0xF22	DNP Object 30 Default Variation	1	4	1	---	F82	1	1
43876	0xF23	DNP Object 32 Default Variation	1	4	1	---	F83	1	1
43877	0xF24	DNP TCP Connection Timeout	10	300	1	s	F1	120	1
DNP / IEC60870-5-103 / IEC60870-5-104 BINARY INPUTS									
43878	0xF25	Binary Input Point 0 Entry	0	0xFFFF	1	---	FC134B	0	1
43879	0xF26	Binary Input Point 1 Entry	0	0xFFFF	1	---	FC134B	0	1
43880	0xF27	Binary Input Point 2 Entry	0	0xFFFF	1	---	FC134B	0	1
43881	0xF28	Binary Input Point 3 Entry	0	0xFFFF	1	---	FC134B	0	1
43882	0xF29	Binary Input Point 4 Entry	0	0xFFFF	1	---	FC134B	0	1
43883	0xF2A	Binary Input Point 5 Entry	0	0xFFFF	1	---	FC134B	0	1
43884	0xF2B	Binary Input Point 6 Entry	0	0xFFFF	1	---	FC134B	0	1
43885	0xF2C	Binary Input Point 7 Entry	0	0xFFFF	1	---	FC134B	0	1
43886	0xF2D	Binary Input Point 8 Entry	0	0xFFFF	1	---	FC134B	0	1
43887	0xF2E	Binary Input Point 9 Entry	0	0xFFFF	1	---	FC134B	0	1
43888	0xF2F	Binary Input Point 10 Entry	0	0xFFFF	1	---	FC134B	0	1
43889	0xF30	Binary Input Point 11 Entry	0	0xFFFF	1	---	FC134B	0	1
43890	0xF31	Binary Input Point 12 Entry	0	0xFFFF	1	---	FC134B	0	1
43891	0xF32	Binary Input Point 13 Entry	0	0xFFFF	1	---	FC134B	0	1
43892	0xF33	Binary Input Point 14 Entry	0	0xFFFF	1	---	FC134B	0	1
43893	0xF34	Binary Input Point 15 Entry	0	0xFFFF	1	---	FC134B	0	1
43894	0xF35	Binary Input Point 16 Entry	0	0xFFFF	1	---	FC134B	0	1
43895	0xF36	Binary Input Point 17 Entry	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43896	0xF37	Binary Input Point 18 Entry	0	0xFFFF	1	---	FC134B	0	1
43897	0xF38	Binary Input Point 19 Entry	0	0xFFFF	1	---	FC134B	0	1
43898	0xF39	Binary Input Point 20 Entry	0	0xFFFF	1	---	FC134B	0	1
43899	0xF3A	Binary Input Point 21 Entry	0	0xFFFF	1	---	FC134B	0	1
43900	0xF3B	Binary Input Point 22 Entry	0	0xFFFF	1	---	FC134B	0	1
43901	0xF3C	Binary Input Point 23 Entry	0	0xFFFF	1	---	FC134B	0	1
43902	0xF3D	Binary Input Point 24 Entry	0	0xFFFF	1	---	FC134B	0	1
43903	0xF3E	Binary Input Point 25 Entry	0	0xFFFF	1	---	FC134B	0	1
43904	0xF3F	Binary Input Point 26 Entry	0	0xFFFF	1	---	FC134B	0	1
43905	0xF40	Binary Input Point 27 Entry	0	0xFFFF	1	---	FC134B	0	1
43906	0xF41	Binary Input Point 28 Entry	0	0xFFFF	1	---	FC134B	0	1
43907	0xF42	Binary Input Point 29 Entry	0	0xFFFF	1	---	FC134B	0	1
43908	0xF43	Binary Input Point 30 Entry	0	0xFFFF	1	---	FC134B	0	1
43909	0xF44	Binary Input Point 31 Entry	0	0xFFFF	1	---	FC134B	0	1
43910	0xF45	Binary Input Point 32 Entry	0	0xFFFF	1	---	FC134B	0	1
43911	0xF46	Binary Input Point 33 Entry	0	0xFFFF	1	---	FC134B	0	1
43912	0xF47	Binary Input Point 34 Entry	0	0xFFFF	1	---	FC134B	0	1
43913	0xF48	Binary Input Point 35 Entry	0	0xFFFF	1	---	FC134B	0	1
43914	0xF49	Binary Input Point 36 Entry	0	0xFFFF	1	---	FC134B	0	1
43915	0xF4A	Binary Input Point 37 Entry	0	0xFFFF	1	---	FC134B	0	1
43916	0xF4B	Binary Input Point 38 Entry	0	0xFFFF	1	---	FC134B	0	1
43917	0xF4C	Binary Input Point 39 Entry	0	0xFFFF	1	---	FC134B	0	1
43918	0xF4D	Binary Input Point 40 Entry	0	0xFFFF	1	---	FC134B	0	1
43919	0xF4E	Binary Input Point 41 Entry	0	0xFFFF	1	---	FC134B	0	1
43920	0xF4F	Binary Input Point 42 Entry	0	0xFFFF	1	---	FC134B	0	1
43921	0xF50	Binary Input Point 43 Entry	0	0xFFFF	1	---	FC134B	0	1
43922	0xF51	Binary Input Point 44 Entry	0	0xFFFF	1	---	FC134B	0	1
43923	0xF52	Binary Input Point 45 Entry	0	0xFFFF	1	---	FC134B	0	1
43924	0xF53	Binary Input Point 46 Entry	0	0xFFFF	1	---	FC134B	0	1
43925	0xF54	Binary Input Point 47 Entry	0	0xFFFF	1	---	FC134B	0	1
43926	0xF55	Binary Input Point 48 Entry	0	0xFFFF	1	---	FC134B	0	1
43927	0xF56	Binary Input Point 49 Entry	0	0xFFFF	1	---	FC134B	0	1
43928	0xF57	Binary Input Point 50 Entry	0	0xFFFF	1	---	FC134B	0	1
43929	0xF58	Binary Input Point 51 Entry	0	0xFFFF	1	---	FC134B	0	1
43930	0xF59	Binary Input Point 52 Entry	0	0xFFFF	1	---	FC134B	0	1
43931	0xF5A	Binary Input Point 53 Entry	0	0xFFFF	1	---	FC134B	0	1
43932	0xF5B	Binary Input Point 54 Entry	0	0xFFFF	1	---	FC134B	0	1
43933	0xF5C	Binary Input Point 55 Entry	0	0xFFFF	1	---	FC134B	0	1
43934	0xF5D	Binary Input Point 56 Entry	0	0xFFFF	1	---	FC134B	0	1
43935	0xF5E	Binary Input Point 57 Entry	0	0xFFFF	1	---	FC134B	0	1
43936	0xF5F	Binary Input Point 58 Entry	0	0xFFFF	1	---	FC134B	0	1
43937	0xF60	Binary Input Point 59 Entry	0	0xFFFF	1	---	FC134B	0	1
43938	0xF61	Binary Input Point 60 Entry	0	0xFFFF	1	---	FC134B	0	1
43939	0xF62	Binary Input Point 61 Entry	0	0xFFFF	1	---	FC134B	0	1
43940	0xF63	Binary Input Point 62 Entry	0	0xFFFF	1	---	FC134B	0	1
43941	0xF64	Binary Input Point 63 Entry	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
DNP / IEC60870-5-104 BINARY OUTPUTS									
44070	0xFE5	Binary Output Point 0 ON	0	40	1	---	F86	0	1
44071	0xFE6	Binary Output Point 0 OFF	0	40	1	---	F86	0	1
44072	0xFE7	Binary Output Point 1 ON	0	40	1	---	F86	0	1
44073	0xFE8	Binary Output Point 1 OFF	0	40	1	---	F86	0	1
44074	0xFE9	Binary Output Point 2 ON	0	40	1	---	F86	0	1
44075	0xFEA	Binary Output Point 2 OFF	0	40	1	---	F86	0	1
44076	0xFEB	Binary Output Point 3 ON	0	40	1	---	F86	0	1
44077	0xFEC	Binary Output Point 3 OFF	0	40	1	---	F86	0	1
44078	0xFED	Binary Output Point 4 ON	0	40	1	---	F86	0	1
44079	0xFEE	Binary Output Point 4 OFF	0	40	1	---	F86	0	1
44080	0xFEF	Binary Output Point 5 ON	0	40	1	---	F86	0	1
44081	0xFF0	Binary Output Point 5 OFF	0	40	1	---	F86	0	1
44082	0xFF1	Binary Output Point 6 ON	0	40	1	---	F86	0	1
44083	0xFF2	Binary Output Point 6 OFF	0	40	1	---	F86	0	1
44084	0xFF3	Binary Output Point 7 ON	0	40	1	---	F86	0	1
44085	0xFF4	Binary Output Point 7 OFF	0	40	1	---	F86	0	1
44086	0xFF5	Binary Output Point 8 ON	0	40	1	---	F86	0	1
44087	0xFF6	Binary Output Point 8 OFF	0	40	1	---	F86	0	1
44088	0xFF7	Binary Output Point 9 ON	0	40	1	---	F86	0	1
44089	0xFF8	Binary Output Point 9 OFF	0	40	1	---	F86	0	1
44090	0xFF9	Binary Output Point 10 ON	0	40	1	---	F86	0	1
44091	0xFFA	Binary Output Point 10 OFF	0	40	1	---	F86	0	1
44092	0xFFB	Binary Output Point 11 ON	0	40	1	---	F86	0	1
44093	0xFFC	Binary Output Point 11 OFF	0	40	1	---	F86	0	1
44094	0xFFD	Binary Output Point 12 ON	0	40	1	---	F86	0	1
44095	0xFFE	Binary Output Point 12 OFF	0	40	1	---	F86	0	1
44096	0xFFF	Binary Output Point 13 ON	0	40	1	---	F86	0	1
44097	0x1000	Binary Output Point 13 OFF	0	40	1	---	F86	0	1
44098	0x1001	Binary Output Point 14 ON	0	40	1	---	F86	0	1
44099	0x1002	Binary Output Point 14 OFF	0	40	1	---	F86	0	1
44100	0x1003	Binary Output Point 15 ON	0	40	1	---	F86	0	1
44101	0x1004	Binary Output Point 15 OFF	0	40	1	---	F86	0	1
DNP / IEC60870-5-104 ANALOG INPUTS									
43942	0xF65	Analog Input Point 0 Entry	0	251	1	---	F88	0	1
43943	0xF66	Analog Input Point 0 Scale Factor	1	9	1	---	F85	4	1
43944	0xF67	Analog Input Point 0 Deadband	0	100000000	1	---	F9	30000	2
43946	0xF69	Analog Input Point 1 Entry	0	251	1	---	F88	0	1
43947	0xF6A	Analog Input Point 1 Scale Factor	1	9	1	---	F85	4	1
43948	0xF6B	Analog Input Point 1 Deadband	0	100000000	1	---	F9	30000	2
43950	0xF6D	Analog Input Point 2 Entry	0	251	1	---	F88	0	1
43951	0xF6E	Analog Input Point 2 Scale Factor	1	9	1	---	F85	4	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43952	0xF6F	Analog Input Point 2 Deadband	0	100000000	1	---	F9	30000	2
43954	0xF71	Analog Input Point 3 Entry	0	251	1	---	F88	0	1
43955	0xF72	Analog Input Point 3 Scale Factor	1	9	1	---	F85	4	1
43956	0xF73	Analog Input Point 3 Deadband	0	100000000	1	---	F9	30000	2
43958	0xF75	Analog Input Point 4 Entry	0	251	1	---	F88	0	1
43959	0xF76	Analog Input Point 4 Scale Factor	1	9	1	---	F85	4	1
43960	0xF77	Analog Input Point 4 Deadband	0	100000000	1	---	F9	30000	2
43962	0xF79	Analog Input Point 5 Entry	0	251	1	---	F88	0	1
43963	0xF7A	Analog Input Point 5 Scale Factor	1	9	1	---	F85	4	1
43964	0xF7B	Analog Input Point 5 Deadband	0	100000000	1	---	F9	30000	2
43966	0xF7D	Analog Input Point 6 Entry	0	251	1	---	F88	0	1
43967	0xF7E	Analog Input Point 6 Scale Factor	1	9	1	---	F85	4	1
43968	0xF7F	Analog Input Point 6 Deadband	0	100000000	1	---	F9	30000	2
43970	0xF81	Analog Input Point 7 Entry	0	251	1	---	F88	0	1
43971	0xF82	Analog Input Point 7 Scale Factor	1	9	1	---	F85	4	1
43972	0xF83	Analog Input Point 7 Deadband	0	100000000	1	---	F9	30000	2
43974	0xF85	Analog Input Point 8 Entry	0	251	1	---	F88	0	1
43975	0xF86	Analog Input Point 8 Scale Factor	1	9	1	---	F85	4	1
43976	0xF87	Analog Input Point 8 Deadband	0	100000000	1	---	F9	30000	2
43978	0xF89	Analog Input Point 9 Entry	0	251	1	---	F88	0	1
43979	0xF8A	Analog Input Point 9 Scale Factor	1	9	1	---	F85	4	1
43980	0xF8B	Analog Input Point 9 Deadband	0	100000000	1	---	F9	30000	2
43982	0xF8D	Analog Input Point 10 Entry	0	251	1	---	F88	0	1
43983	0xF8E	Analog Input Point 10 Scale Factor	1	9	1	---	F85	4	1
43984	0xF8F	Analog Input Point 10 Deadband	0	100000000	1	---	F9	30000	2
43986	0xF91	Analog Input Point 11 Entry	0	251	1	---	F88	0	1
43987	0xF92	Analog Input Point 11 Scale Factor	1	9	1	---	F85	4	1
43988	0xF93	Analog Input Point 11 Deadband	0	100000000	1	---	F9	30000	2
43990	0xF95	Analog Input Point 12 Entry	0	251	1	---	F88	0	1
43991	0xF96	Analog Input Point 12 Scale Factor	1	9	1	---	F85	4	1
43992	0xF97	Analog Input Point 12 Deadband	0	100000000	1	---	F9	30000	2
43994	0xF99	Analog Input Point 13 Entry	0	251	1	---	F88	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43995	0xF9A	Analog Input Point 13 Scale Factor	1	9	1	---	F85	4	1
43996	0xF9B	Analog Input Point 13 Deadband	0	100000000	1	---	F9	30000	2
43998	0xF9D	Analog Input Point 14 Entry	0	251	1	---	F88	0	1
43999	0xF9E	Analog Input Point 14 Scale Factor	1	9	1	---	F85	4	1
44000	0xF9F	Analog Input Point 14 Deadband	0	100000000	1	---	F9	30000	2
44002	0xFA1	Analog Input Point 15 Entry	0	251	1	---	F88	0	1
44003	0xFA2	Analog Input Point 15 Scale Factor	1	9	1	---	F85	4	1
44004	0xFA3	Analog Input Point 15 Deadband	0	100000000	1	---	F9	30000	2
44006	0xFA5	Analog Input Point 16 Entry	0	251	1	---	F88	0	1
44007	0xFA6	Analog Input Point 16 Scale Factor	1	9	1	---	F85	4	1
44008	0xFA7	Analog Input Point 16 Deadband	0	100000000	1	---	F9	30000	2
44010	0xFA9	Analog Input Point 17 Entry	0	251	1	---	F88	0	1
44011	0xFAA	Analog Input Point 17 Scale Factor	1	9	1	---	F85	4	1
44012	0xFAB	Analog Input Point 17 Deadband	0	100000000	1	---	F9	30000	2
44014	0xFAD	Analog Input Point 18 Entry	0	251	1	---	F88	0	1
44015	0xFAE	Analog Input Point 18 Scale Factor	1	9	1	---	F85	4	1
44016	0xFAF	Analog Input Point 18 Deadband	0	100000000	1	---	F9	30000	2
44018	0xFB1	Analog Input Point 19 Entry	0	251	1	---	F88	0	1
44019	0xFB2	Analog Input Point 19 Scale Factor	1	9	1	---	F85	4	1
44020	0xFB3	Analog Input Point 19 Deadband	0	100000000	1	---	F9	30000	2
44022	0xFB5	Analog Input Point 20 Entry	0	251	1	---	F88	0	1
44023	0xFB6	Analog Input Point 20 Scale Factor	1	9	1	---	F85	4	1
44024	0xFB7	Analog Input Point 20 Deadband	0	100000000	1	---	F9	30000	2
44026	0xFB9	Analog Input Point 21 Entry	0	251	1	---	F88	0	1
44027	0xFBA	Analog Input Point 21 Scale Factor	1	9	1	---	F85	4	1
44028	0xFBB	Analog Input Point 21 Deadband	0	100000000	1	---	F9	30000	2
44030	0xFBD	Analog Input Point 22 Entry	0	251	1	---	F88	0	1
44031	0xFBE	Analog Input Point 22 Scale Factor	1	9	1	---	F85	4	1
44032	0xFBF	Analog Input Point 22 Deadband	0	100000000	1	---	F9	30000	2
44034	0xFC1	Analog Input Point 23 Entry	0	251	1	---	F88	0	1
44035	0xFC2	Analog Input Point 23 Scale Factor	1	9	1	---	F85	4	1
44036	0xFC3	Analog Input Point 23 Deadband	0	100000000	1	---	F9	30000	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44038	0xFC5	Analog Input Point 24 Entry	0	251	1	---	F88	0	1
44039	0xFC6	Analog Input Point 24 Scale Factor	1	9	1	---	F85	4	1
44040	0xFC7	Analog Input Point 24 Deadband	0	100000000	1	---	F9	30000	2
44042	0xFC9	Analog Input Point 25 Entry	0	251	1	---	F88	0	1
44043	0xFCA	Analog Input Point 25 Scale Factor	1	9	1	---	F85	4	1
44044	0xFCB	Analog Input Point 25 Deadband	0	100000000	1	---	F9	30000	2
44046	0xFCD	Analog Input Point 26 Entry	0	251	1	---	F88	0	1
44047	0xFCE	Analog Input Point 26 Scale Factor	1	9	1	---	F85	4	1
44048	0xFCF	Analog Input Point 26 Deadband	0	100000000	1	---	F9	30000	2
44050	0xFD1	Analog Input Point 27 Entry	0	251	1	---	F88	0	1
44051	0xFD2	Analog Input Point 27 Scale Factor	1	9	1	---	F85	4	1
44052	0xFD3	Analog Input Point 27 Deadband	0	100000000	1	---	F9	30000	2
44054	0xFD5	Analog Input Point 28 Entry	0	251	1	---	F88	0	1
44055	0xFD6	Analog Input Point 28 Scale Factor	1	9	1	---	F85	4	1
44056	0xFD7	Analog Input Point 28 Deadband	0	100000000	1	---	F9	30000	2
44058	0xFD9	Analog Input Point 29 Entry	0	251	1	---	F88	0	1
44059	0xFDA	Analog Input Point 29 Scale Factor	1	9	1	---	F85	4	1
44060	0xFDB	Analog Input Point 29 Deadband	0	100000000	1	---	F9	30000	2
44062	0xFDD	Analog Input Point 30 Entry	0	251	1	---	F88	0	1
44063	0xFDE	Analog Input Point 30 Scale Factor	1	9	1	---	F85	4	1
44064	0xFDF	Analog Input Point 30 Deadband	0	100000000	1	---	F9	30000	2
44066	0xFE1	Analog Input Point 31 Entry	0	251	1	---	F88	0	1
44067	0xFE2	Analog Input Point 31 Scale Factor	1	9	1	---	F85	4	1
44068	0xFE3	Analog Input Point 31 Deadband	0	100000000	1	---	F9	30000	2
44102	0x1005	Fault Report Mapping Enable	0	1	1	---	FC126	0	1
AUTORECLOSE SHOT 1									
44139	0x102A	Phase IOC 1 Shot 1 Initiate	0	1	1	---	FC103	0	1
44140	0x102B	Phase IOC 2 Shot 1 Initiate	0	1	1	---	FC103	0	1
44141	0x102C	Neutral IOC 1 Shot 1 Initiate	0	1	1	---	FC103	0	1
44142	0x102D	Neutral IOC 2 Shot 1 Initiate	0	1	1	---	FC103	0	1
44143	0x102E	Ground IOC 1 Shot 1 Initiate	0	1	1	---	FC103	0	1
44144	0x102F	Ground IOC 2 Shot 1 Initiate	0	1	1	---	FC103	0	1
44145	0x1030	Phase TOC Shot 1	0	1	1	---	FC103	0	1
44146	0x1031	Neutral TOC Shot 1	0	1	1	---	FC103	0	1
44147	0x1032	Ground TOC Shot 1	0	1	1	---	FC103	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44148	0x1033	Sensitive Ground IOC 1 Shot 1 Initiate	0	1	1	---	FC103	0	1
44149	0x1034	Sensitive Ground IOC 2 Shot 1 Initiate	0	1	1	---	FC103	0	1
44150	0x1035	Sensitive Ground TOC Shot 1	0	1	1	---	FC103	0	1
44151	0x1036	Block Negative Sequence IOC Shot 1	0	1	1	---	FC103	0	1
AUTORECLOSE SHOT 2									
44159	0x103E	Phase IOC 1 Shot 2 Initiate	0	1	1	---	FC103	0	1
44160	0x103F	Phase IOC 2 Shot 2 Initiate	0	1	1	---	FC103	0	1
44161	0x1040	Neutral IOC 1 Shot 2 Initiate	0	1	1	---	FC103	0	1
44162	0x1041	Neutral IOC 2 Shot 2 Initiate	0	1	1	---	FC103	0	1
44163	0x1042	Ground IOC 1 Shot 2 Initiate	0	1	1	---	FC103	0	1
44164	0x1043	Ground IOC 2 Shot 2 Initiate	0	1	1	---	FC103	0	1
44165	0x1044	Phase TOC Shot 2	0	1	1	---	FC103	0	1
44166	0x1045	Neutral TOC Shot 2	0	1	1	---	FC103	0	1
44167	0x1046	Ground TOC Shot 2	0	1	1	---	FC103	0	1
44168	0x1047	Sensitive Ground IOC 1 Shot 2 Initiate	0	1	1	---	FC103	0	1
44169	0x1048	Sensitive Ground IOC 2 Shot 2 Initiate	0	1	1	---	FC103	0	1
44170	0x1049	Sensitive Ground TOC Shot 2	0	1	1	---	FC103	0	1
44171	0x104A	Block Negative Sequence IOC Shot 2	0	1	1	---	FC103	0	1
AUTORECLOSE SHOT 3									
44179	0x1052	Phase IOC 1 Shot 3 Initiate	0	1	1	---	FC103	0	1
44180	0x1053	Phase IOC 2 Shot 3 Initiate	0	1	1	---	FC103	0	1
44181	0x1054	Neutral IOC 1 Shot 3 Initiate	0	1	1	---	FC103	0	1
44182	0x1055	Neutral IOC 2 Shot 3 Initiate	0	1	1	---	FC103	0	1
44183	0x1056	Ground IOC 1 Shot 3 Initiate	0	1	1	---	FC103	0	1
44184	0x1057	Ground IOC 2 Shot 3 Initiate	0	1	1	---	FC103	0	1
44185	0x1058	Phase TOC Shot 3	0	1	1	---	FC103	0	1
44186	0x1059	Neutral TOC Shot 3	0	1	1	---	FC103	0	1
44187	0x105A	Ground TOC Shot 3	0	1	1	---	FC103	0	1
44188	0x105B	Sensitive Ground IOC 1 Shot 3 Initiate	0	1	1	---	FC103	0	1
44189	0x105C	Sensitive Ground IOC 2 Shot 3 Initiate	0	1	1	---	FC103	0	1
44190	0x105D	Sensitive Ground TOC Shot 3	0	1	1	---	FC103	0	1
44191	0x105E	Block Negative Sequence IOC Shot 3	0	1	1	---	FC103	0	1
AUTORECLOSE									
42257	0x8D0	Initiate Reclosure	0	0xFFFF	1	---	F1	0	1
42259	0x8D2	Block Reclosure	0	0xFFFF	1	---	F1	0	1
44109	0x100C	AR Function	0	1	1	---	FC126	0	1
44110	0x100D	Number of Shots	1	4	1	---	F1	1	1
44111	0x100E	Dead Time Shot 1	1	6000	1	s	F2	10	1
44112	0x100F	Dead Time Shot 2	1	6000	1	s	F2	20	1
44113	0x1010	Dead Time Shot 3	1	6000	1	s	F2	30	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44114	0x1011	Dead Time Shot 4	1	6000	1	s	F2	40	1
44115	0x1012	Reset Lockout Time	1	6000	1	s	F2	100	1
44116	0x1013	Incomplete Sequence Time	1	6000	1	s	F2	50	1
44117	0x1014	Reset Time	1	6000	1	s	F2	50	1
44118	0x1015	Block AR	0	0xEF02	1	---	F89	0	1
44119	0x1016	External Initiate	0	0xEF02	1	---	F89	0	1
44120	0x1017	Phase IOC 1 Initiate	0	1	1	---	FC103	0	1
44121	0x1018	Phase IOC 2 Initiate	0	1	1	---	FC103	0	1
44122	0x1019	Neutral IOC 1 Initiate	0	1	1	---	FC103	0	1
44123	0x101A	Neutral IOC 2 Initiate	0	1	1	---	FC103	0	1
44124	0x101B	Ground IOC 1 Initiate	0	1	1	---	FC103	0	1
44125	0x101C	Ground IOC 2 Initiate	0	1	1	---	FC103	0	1
44126	0x101D	Phase TOC Initiate	0	1	1	---	FC103	0	1
44127	0x101E	Neutral TOC Initiate	0	1	1	---	FC103	0	1
44128	0x101F	Ground TOC Initiate	0	1	1	---	FC103	0	1
44129	0x1020	AR Ready Relays	0	0x7F	1	---	FC198	0	1
44130	0x1021	AR In-Progress Relays	0	0x7F	1	---	FC198	0	1
44131	0x1022	AR N/Ready Relays	0	0x7F	1	---	FC198	0	1
44132	0x1023	Select Setting Group	-1	1	1	---	F91	0	1
44133	0x1024	Sensitive Ground IOC 1 Initiate	0	1	1	---	FC103	0	1
44134	0x1025	Sensitive Ground IOC 2 Initiate	0	1	1	---	FC103	0	1
44135	0x1026	Sensitive Ground TOC Initiate	0	1	1	---	FC103	0	1
44136	0x1027	Negative Sequence IOC Initiate	0	1	1	---	FC103	0	1
44137	0x1028	Negative Sequence TOC Initiate	0	1	1	---	FC103	0	1
44152	0x1037	Negative Sequence TOC Shot 1	0	1	1	---	FC103	0	1
44172	0x104B	Negative Sequence TOC Shot 2	0	1	1	---	FC103	0	1
44192	0x105F	Negative Sequence TOC Shot 3	0	1	1	---	FC103	0	1
44197	0x1064	Negative Sequence TOC Shot 4	0	1	1	---	FC103	0	1
AUTORECLOSE SHOT 4									
44198	0x1065	Block Negative Sequence IOC Shot 4	0	1	1	---	FC103	0	1
44199	0x1066	Phase IOC 1 Shot 4 Initiate	0	1	1	---	FC103	0	1
44200	0x1067	Phase IOC 2 Shot 4 Initiate	0	1	1	---	FC103	0	1
44201	0x1068	Neutral IOC 1 Shot 4 Initiate	0	1	1	---	FC103	0	1
44202	0x1069	Neutral IOC 2 Shot 4 Initiate	0	1	1	---	FC103	0	1
44203	0x106A	Ground IOC 1 Shot 4 Initiate	0	1	1	---	FC103	0	1
44204	0x106B	Ground IOC 2 Shot 4 Initiate	0	1	1	---	FC103	0	1
44205	0x106C	Phase TOC Shot 4	0	1	1	---	FC103	0	1
44206	0x106D	Neutral TOC Shot 4	0	1	1	---	FC103	0	1
44207	0x106E	Ground TOC Shot 4	0	1	1	---	FC103	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44208	0x106F	Sensitive Ground IOC 1 Shot 4 Initiate	0	1	1	---	FC103	0	1
44209	0x1070	Sensitive Ground IOC 2 Shot 4 Initiate	0	1	1	---	FC103	0	1
44210	0x1071	Sensitive Ground TOC Shot 4	0	1	1	---	FC103	0	1
THERMAL OVERLOAD									
44211	0x1072	Thermal Overload Function	0	3	1	---	FC197	0	1
44212	0x1073	Heat Time Constant	30	6000	1	min	F2	60	1
44213	0x1074	Cool Time Constant	100	600	1	---	F3	200	1
44214	0x1075	Pickup Level	5	2000	1	x CT	F3	100	1
44215	0x1076	Alarm Level	700	1100	1	%	F2	800	1
44216	0x1077	Output Relays 3-7	0	0x7F	1	---	FC198	0	1
IEC60870-5-103 BINARY INPUT POINTS									
44221	0x107C	Binary In Point 0 Entry Function Type	0	255	1	---	F1	0	1
44222	0x107D	Binary In Point 0 Entry Information Number	0	255	1	---	F1	0	1
44223	0x107E	Binary In Point 1 Entry Function Type	0	255	1	---	F1	0	1
44224	0x107F	Binary In Point 1 Entry Information Number	0	255	1	---	F1	0	1
44225	0x1080	Binary In Point 2 Entry Function Type	0	255	1	---	F1	0	1
44226	0x1081	Binary In Point 2 Entry Information Number	0	255	1	---	F1	0	1
44227	0x1082	Binary In Point 3 Entry Function Type	0	255	1	---	F1	0	1
44228	0x1083	Binary In Point 3 Entry Information Number	0	255	1	---	F1	0	1
44229	0x1084	Binary In Point 4 Entry Function Type	0	255	1	---	F1	0	1
44230	0x1085	Binary In Point 4 Entry Information Number	0	255	1	---	F1	0	1
44231	0x1086	Binary In Point 5 Entry Function Type	0	255	1	---	F1	0	1
44232	0x1087	Binary In Point 5 Entry Information Number	0	255	1	---	F1	0	1
44233	0x1088	Binary In Point 6 Entry Function Type	0	255	1	---	F1	0	1
44234	0x1089	Binary In Point 6 Entry Information Number	0	255	1	---	F1	0	1
44235	0x108A	Binary In Point 7 Entry Function Type	0	255	1	---	F1	0	1
44236	0x108B	Binary In Point 7 Entry Information Number	0	255	1	---	F1	0	1
44237	0x108C	Binary In Point 8 Entry Function Type	0	255	1	---	F1	0	1
44238	0x108D	Binary In Point 8 Entry Information Number	0	255	1	---	F1	0	1
44239	0x108E	Binary In Point 9 Entry Function Type	0	255	1	---	F1	0	1
44240	0x108F	Binary In Point 9 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44241	0x1090	Binary In Point 10 Entry Function Type	0	255	1	---	F1	0	1
44242	0x1091	Binary In Point 10 Entry Information Number	0	255	1	---	F1	0	1
44243	0x1092	Binary In Point 11 Entry Function Type	0	255	1	---	F1	0	1
44244	0x1093	Binary In Point 11 Entry Information Number	0	255	1	---	F1	0	1
44245	0x1094	Binary In Point 12 Entry Function Type	0	255	1	---	F1	0	1
44246	0x1095	Binary In Point 12 Entry Information Number	0	255	1	---	F1	0	1
44247	0x1096	Binary In Point 13 Entry Function Type	0	255	1	---	F1	0	1
44248	0x1097	Binary In Point 13 Entry Information Number	0	255	1	---	F1	0	1
44249	0x1098	Binary In Point 14 Entry Function Type	0	255	1	---	F1	0	1
44250	0x1099	Binary In Point 14 Entry Information Number	0	255	1	---	F1	0	1
44251	0x109A	Binary In Point 15 Entry Function Type	0	255	1	---	F1	0	1
44252	0x109B	Binary In Point 15 Entry Information Number	0	255	1	---	F1	0	1
44253	0x109C	Binary In Point 16 Entry Function Type	0	255	1	---	F1	0	1
44254	0x109D	Binary In Point 16 Entry Information Number	0	255	1	---	F1	0	1
44255	0x109E	Binary In Point 17 Entry Function Type	0	255	1	---	F1	0	1
44256	0x109F	Binary In Point 17 Entry Information Number	0	255	1	---	F1	0	1
44257	0x10A0	Binary In Point 18 Entry Function Type	0	255	1	---	F1	0	1
44258	0x10A1	Binary In Point 18 Entry Information Number	0	255	1	---	F1	0	1
44259	0x10A2	Binary In Point 19 Entry Function Type	0	255	1	---	F1	0	1
44260	0x10A3	Binary In Point 19 Entry Information Number	0	255	1	---	F1	0	1
44261	0x10A4	Binary In Point 20 Entry Function Type	0	255	1	---	F1	0	1
44262	0x10A5	Binary In Point 20 Entry Information Number	0	255	1	---	F1	0	1
44263	0x10A6	Binary In Point 21 Entry Function Type	0	255	1	---	F1	0	1
44264	0x10A7	Binary In Point 21 Entry Information Number	0	255	1	---	F1	0	1
44265	0x10A8	Binary In Point 22 Entry Function Type	0	255	1	---	F1	0	1
44266	0x10A9	Binary In Point 22 Entry Information Number	0	255	1	---	F1	0	1
44267	0x10AA	Binary In Point 23 Entry Function Type	0	255	1	---	F1	0	1
44268	0x10AB	Binary In Point 23 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44269	0x10AC	Binary In Point 24 Entry Function Type	0	255	1	---	F1	0	1
44270	0x10AD	Binary In Point 24 Entry Information Number	0	255	1	---	F1	0	1
44271	0x10AE	Binary In Point 25 Entry Function Type	0	255	1	---	F1	0	1
44272	0x10AF	Binary In Point 25 Entry Information Number	0	255	1	---	F1	0	1
44273	0x10B0	Binary In Point 26 Entry Function Type	0	255	1	---	F1	0	1
44274	0x10B1	Binary In Point 26 Entry Information Number	0	255	1	---	F1	0	1
44275	0x10B2	Binary In Point 27 Entry Function Type	0	255	1	---	F1	0	1
44276	0x10B3	Binary In Point 27 Entry Information Number	0	255	1	---	F1	0	1
44277	0x10B4	Binary In Point 28 Entry Function Type	0	255	1	---	F1	0	1
44278	0x10B5	Binary In Point 28 Entry Information Number	0	255	1	---	F1	0	1
44279	0x10B6	Binary In Point 29 Entry Function Type	0	255	1	---	F1	0	1
44280	0x10B7	Binary In Point 29 Entry Information Number	0	255	1	---	F1	0	1
44281	0x10B8	Binary In Point 30 Entry Function Type	0	255	1	---	F1	0	1
44282	0x10B9	Binary In Point 30 Entry Information Number	0	255	1	---	F1	0	1
44283	0x10BA	Binary In Point 31 Entry Function Type	0	255	1	---	F1	0	1
44284	0x10BB	Binary In Point 31 Entry Information Number	0	255	1	---	F1	0	1
44285	0x10BC	Binary In Point 32 Entry Function Type	0	255	1	---	F1	0	1
44286	0x10BD	Binary In Point 32 Entry Information Number	0	255	1	---	F1	0	1
44287	0x10BE	Binary In Point 33 Entry Function Type	0	255	1	---	F1	0	1
44288	0x10BF	Binary In Point 33 Entry Information Number	0	255	1	---	F1	0	1
44289	0x10C0	Binary In Point 34 Entry Function Type	0	255	1	---	F1	0	1
44290	0x10C1	Binary In Point 34 Entry Information Number	0	255	1	---	F1	0	1
44291	0x10C2	Binary In Point 35 Entry Function Type	0	255	1	---	F1	0	1
44292	0x10C3	Binary In Point 35 Entry Information Number	0	255	1	---	F1	0	1
44293	0x10C4	Binary In Point 36 Entry Function Type	0	255	1	---	F1	0	1
44294	0x10C5	Binary In Point 36 Entry Information Number	0	255	1	---	F1	0	1
44295	0x10C6	Binary In Point 37 Entry Function Type	0	255	1	---	F1	0	1
44296	0x10C7	Binary In Point 37 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44297	0x10C8	Binary In Point 38 Entry Function Type	0	255	1	---	F1	0	1
44298	0x10C9	Binary In Point 38 Entry Information Number	0	255	1	---	F1	0	1
44299	0x10CA	Binary In Point 39 Entry Function Type	0	255	1	---	F1	0	1
44300	0x10CB	Binary In Point 39 Entry Information Number	0	255	1	---	F1	0	1
44301	0x10CC	Binary In Point 40 Entry Function Type	0	255	1	---	F1	0	1
44302	0x10CD	Binary In Point 40 Entry Information Number	0	255	1	---	F1	0	1
44303	0x10CE	Binary In Point 41 Entry Function Type	0	255	1	---	F1	0	1
44304	0x10CF	Binary In Point 41 Entry Information Number	0	255	1	---	F1	0	1
44305	0x10D0	Binary In Point 42 Entry Function Type	0	255	1	---	F1	0	1
44306	0x10D1	Binary In Point 42 Entry Information Number	0	255	1	---	F1	0	1
44307	0x10D2	Binary In Point 43 Entry Function Type	0	255	1	---	F1	0	1
44308	0x10D3	Binary In Point 43 Entry Information Number	0	255	1	---	F1	0	1
44309	0x10D4	Binary In Point 44 Entry Function Type	0	255	1	---	F1	0	1
44310	0x10D5	Binary In Point 44 Entry Information Number	0	255	1	---	F1	0	1
44311	0x10D6	Binary In Point 45 Entry Function Type	0	255	1	---	F1	0	1
44312	0x10D7	Binary In Point 45 Entry Information Number	0	255	1	---	F1	0	1
44313	0x10D8	Binary In Point 46 Entry Function Type	0	255	1	---	F1	0	1
44314	0x10D9	Binary In Point 46 Entry Information Number	0	255	1	---	F1	0	1
44315	0x10DA	Binary In Point 47 Entry Function Type	0	255	1	---	F1	0	1
44316	0x10DB	Binary In Point 47 Entry Information Number	0	255	1	---	F1	0	1
44317	0x10DC	Binary In Point 48 Entry Function Type	0	255	1	---	F1	0	1
44318	0x10DD	Binary In Point 48 Entry Information Number	0	255	1	---	F1	0	1
44319	0x10DE	Binary In Point 49 Entry Function Type	0	255	1	---	F1	0	1
44320	0x10DF	Binary In Point 49 Entry Information Number	0	255	1	---	F1	0	1
44321	0x10E0	Binary In Point 50 Entry Function Type	0	255	1	---	F1	0	1
44322	0x10E1	Binary In Point 50 Entry Information Number	0	255	1	---	F1	0	1
44323	0x10E2	Binary In Point 51 Entry Function Type	0	255	1	---	F1	0	1
44324	0x10E3	Binary In Point 51 Entry Information Number	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44325	0x10E4	Binary In Point 52 Entry Function Type	0	255	1	---	F1	0	1
44326	0x10E5	Binary In Point 52 Entry Information Number	0	255	1	---	F1	0	1
44327	0x10E6	Binary In Point 53 Entry Function Type	0	255	1	---	F1	0	1
44328	0x10E7	Binary In Point 53 Entry Information Number	0	255	1	---	F1	0	1
44329	0x10E8	Binary In Point 54 Entry Function Type	0	255	1	---	F1	0	1
44330	0x10E9	Binary In Point 54 Entry Information Number	0	255	1	---	F1	0	1
44331	0x10EA	Binary In Point 55 Entry Function Type	0	255	1	---	F1	0	1
44332	0x10EB	Binary In Point 55 Entry Information Number	0	255	1	---	F1	0	1
44333	0x10EC	Binary In Point 56 Entry Function Type	0	255	1	---	F1	0	1
44334	0x10ED	Binary In Point 56 Entry Information Number	0	255	1	---	F1	0	1
44335	0x10EE	Binary In Point 57 Entry Function Type	0	255	1	---	F1	0	1
44336	0x10EF	Binary In Point 57 Entry Information Number	0	255	1	---	F1	0	1
44337	0x10F0	Binary In Point 58 Entry Function Type	0	255	1	---	F1	0	1
44338	0x10F1	Binary In Point 58 Entry Information Number	0	255	1	---	F1	0	1
44339	0x10F2	Binary In Point 59 Entry Function Type	0	255	1	---	F1	0	1
44340	0x10F3	Binary In Point 59 Entry Information Number	0	255	1	---	F1	0	1
44341	0x10F4	Binary In Point 60 Entry Function Type	0	255	1	---	F1	0	1
44342	0x10F5	Binary In Point 60 Entry Information Number	0	255	1	---	F1	0	1
44343	0x10F6	Binary In Point 61 Entry Function Type	0	255	1	---	F1	0	1
44344	0x10F7	Binary In Point 61 Entry Information Number	0	255	1	---	F1	0	1
44345	0x10F8	Binary In Point 62 Entry Function Type	0	255	1	---	F1	0	1
44346	0x10F9	Binary In Point 62 Entry Information Number	0	255	1	---	F1	0	1
44347	0x10FA	Binary In Point 63 Entry Function Type	0	255	1	---	F1	0	1
44348	0x10FB	Binary In Point 63 Entry Information Number	0	255	1	---	F1	0	1
DNP / IEC60870-5-103 BINARY OUTPUT POINTS									
44349	0x10FC	Binary Out Point 0 Entry Function Type	0	255	1	---	F1	0	1
44350	0x10FD	Binary Out Point 0 Entry Information Number	0	255	1	---	F1	0	1
44351	0x10FE	Binary Out Point 1 Entry Function Type	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44352	0x10FF	Binary Out Point 1 Entry Information Number	0	255	1	---	F1	0	1
44353	0x1100	Binary Out Point 2 Entry Function Type	0	255	1	---	F1	0	1
44354	0x1101	Binary Out Point 2 Entry Information Number	0	255	1	---	F1	0	1
44355	0x1102	Binary Out Point 3 Entry Function Type	0	255	1	---	F1	0	1
44356	0x1103	Binary Out Point 3 Entry Information Number	0	255	1	---	F1	0	1
44357	0x1104	Binary Out Point 4 Entry Function Type	0	255	1	---	F1	0	1
44358	0x1105	Binary Out Point 4 Entry Information Number	0	255	1	---	F1	0	1
44359	0x1106	Binary Out Point 5 Entry Function Type	0	255	1	---	F1	0	1
44360	0x1107	Binary Out Point 5 Entry Information Number	0	255	1	---	F1	0	1
44361	0x1108	Binary Out Point 6 Entry Function Type	0	255	1	---	F1	0	1
44362	0x1109	Binary Out Point 6 Entry Information Number	0	255	1	---	F1	0	1
44363	0x110A	Binary Out Point 7 Entry Function Type	0	255	1	---	F1	0	1
44364	0x110B	Binary Out Point 7 Entry Information Number	0	255	1	---	F1	0	1
44365	0x110C	Binary Out Point 8 Entry Function Type	0	255	1	---	F1	0	1
44366	0x110D	Binary Out Point 8 Entry Information Number	0	255	1	---	F1	0	1
44367	0x110E	Binary Out Point 9 Entry Function Type	0	255	1	---	F1	0	1
44368	0x110F	Binary Out Point 9 Entry Information Number	0	255	1	---	F1	0	1
44369	0x1110	Binary Out Point 10 Entry Function Type	0	255	1	---	F1	0	1
44370	0x1111	Binary Out Point 10 Entry Information Number	0	255	1	---	F1	0	1
44371	0x1112	Binary Out Point 11 Entry Function Type	0	255	1	---	F1	0	1
44372	0x1113	Binary Out Point 11 Entry Information Number	0	255	1	---	F1	0	1
44373	0x1114	Binary Out Point 12 Entry Function Type	0	255	1	---	F1	0	1
44374	0x1115	Binary Out Point 12 Entry Information Number	0	255	1	---	F1	0	1
44375	0x1116	Binary Out Point 13 Entry Function Type	0	255	1	---	F1	0	1
44376	0x1117	Binary Out Point 13 Entry Information Number	0	255	1	---	F1	0	1
44377	0x1118	Binary Out Point 14 Entry Function Type	0	255	1	---	F1	0	1
44378	0x1119	Binary Out Point 14 Entry Information Number	0	255	1	---	F1	0	1
44379	0x111A	Binary Out Point 15 Entry Function Type	0	255	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44380	0x111B	Binary Out Point 15 Entry Information Number	0	255	1	---	F1	0	1
DNP / IEC60870-5-103 ADDRESSING									
44382	0x111D	IEC60870-5-103 Slave Address	0	254	1	---	F1	0	1
44383	0x111E	Synchronization Timeout	0	1440	1	min	F1	0	1
IEC60870-5-103 MEASURANDS									
44384	0x111F	103 First ASDU Identification Type	3	9	1	---	FC221	3	1
44385	0x1120	103 First ASDU Function Type	0	255	1	---	F1	0	1
44386	0x1121	103 First ASDU Information Number	0	255	1	---	F1	0	1
44387	0x1122	103 First ASDU Scan Timeout	0	1000	1	s	F1	0	1
44388	0x1123	103 First ASDU First Analogue Entry	0	251	1	---	F88	0	1
44389	0x1124	103 First ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44390	0x1125	103 First ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44391	0x1126	103 First ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44392	0x1127	103 First ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44393	0x1128	103 First ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44394	0x1129	103 First ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44395	0x112A	103 First ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44396	0x112B	103 First ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44397	0x112C	103 First ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44398	0x112D	103 First ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44399	0x112E	103 First ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44400	0x112F	103 First ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44401	0x1130	103 First ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44402	0x1131	103 First ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44403	0x1132	103 First ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44404	0x1133	103 First ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44405	0x1134	103 First ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44406	0x1135	103 First ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44407	0x1136	103 First ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44408	0x1137	103 First ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44409	0x1138	103 First ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44410	0x1139	103 First ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44411	0x113A	103 First ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44412	0x113B	103 First ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44413	0x113C	103 First ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44414	0x113D	103 First ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44415	0x113E	103 Second ASDU Identification Type	3	9	1	---	FC221	3	1
44416	0x113F	103 Second ASDU Function Type	0	255	1	---	F1	0	1
44417	0x1140	103 Second ASDU Information Number	0	255	1	---	F1	0	1
44418	0x1141	103 Second ASDU Scan Timeout	0	1000	1	s	F1	0	1
44419	0x1142	103 Second ASDU First Analogue Entry	0	251	1	---	F88	0	1
44420	0x1143	103 Second ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44421	0x1144	103 Second ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44422	0x1145	103 Second ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44423	0x1146	103 Second ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44424	0x1147	103 Second ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44425	0x1148	103 Second ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44426	0x1149	103 Second ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44427	0x114A	103 Second ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44428	0x114B	103 Second ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44429	0x114C	103 Second ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44430	0x114D	103 Second ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44431	0x114E	103 Second ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44432	0x114F	103 Second ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44433	0x1150	103 Second ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44434	0x1151	103 Second ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44435	0x1152	103 Second ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44436	0x1153	103 Second ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44437	0x1154	103 Second ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44438	0x1155	103 Second ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44439	0x1156	103 Second ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44440	0x1157	103 Second ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44441	0x1158	103 Second ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44442	0x1159	103 Second ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44443	0x115A	103 Second ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44444	0x115B	103 Second ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44445	0x115C	103 Second ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44446	0x115D	103 Third ASDU Identification Type	3	9	1	---	FC221	3	1
44447	0x115E	103 Third ASDU Function Type	0	255	1	---	F1	0	1
44448	0x115F	103 Third ASDU Information Number	0	255	1	---	F1	0	1
44449	0x1160	103 Third ASDU Scan Timeout	0	1000	1	s	F1	0	1
44450	0x1161	103 Third ASDU First Analogue Entry	0	251	1	---	F88	0	1
44451	0x1162	103 Third ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44452	0x1163	103 Third ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44453	0x1164	103 Third ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44454	0x1165	103 Third ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44455	0x1166	103 Third ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44456	0x1167	103 Third ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44457	0x1168	103 Third ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44458	0x1169	103 Third ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44459	0x116A	103 Third ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44460	0x116B	103 Third ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44461	0x116C	103 Third ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44462	0x116D	103 Third ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44463	0x116E	103 Third ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44464	0x116F	103 Third ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44465	0x1170	103 Third ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44466	0x1171	103 Third ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44467	0x1172	103 Third ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44468	0x1173	103 Third ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44469	0x1174	103 Third ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44470	0x1175	103 Third ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44471	0x1176	103 Third ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44472	0x1177	103 Third ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44473	0x1178	103 Third ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44474	0x1179	103 Third ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44475	0x117A	103 Third ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44476	0x117B	103 Third ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44477	0x117C	103 Fourth ASDU Identification Type	3	9	1	---	FC221	3	1
44478	0x117D	103 Fourth ASDU Function Type	0	255	1	---	F1	0	1
44479	0x117E	103 Fourth ASDU Information Number	0	255	1	---	F1	0	1
44480	0x117F	103 Fourth ASDU Scan Timeout	0	1000	1	s	F1	0	1
44481	0x1180	103 Fourth ASDU First Analogue Entry	0	251	1	---	F88	0	1
44482	0x1181	103 Fourth ASDU First Analogue Factor	0	0xFFFF	1	---	F3	0	1
44483	0x1182	103 Fourth ASDU First Analogue Offset	0	0xFFFF	1	---	F1	0	1
44484	0x1183	103 Fourth ASDU Second Analogue Entry	0	251	1	---	F88	0	1
44485	0x1184	103 Fourth ASDU Second Analogue Factor	0	0xFFFF	1	---	F3	0	1
44486	0x1185	103 Fourth ASDU Second Analogue Offset	0	0xFFFF	1	---	F1	0	1
44487	0x1186	103 Fourth ASDU Third Analogue Entry	0	251	1	---	F88	0	1
44488	0x1187	103 Fourth ASDU Third Analogue Factor	0	0xFFFF	1	---	F3	0	1
44489	0x1188	103 Fourth ASDU Third Analogue Offset	0	0xFFFF	1	---	F1	0	1
44490	0x1189	103 Fourth ASDU Fourth Analogue Entry	0	251	1	---	F88	0	1
44491	0x118A	103 Fourth ASDU Fourth Analogue Factor	0	0xFFFF	1	---	F3	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44492	0x118B	103 Fourth ASDU Fourth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44493	0x118C	103 Fourth ASDU Fifth Analogue Entry	0	251	1	---	F88	0	1
44494	0x118D	103 Fourth ASDU Fifth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44495	0x118E	103 Fourth ASDU Fifth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44496	0x118F	103 Fourth ASDU Sixth Analogue Entry	0	251	1	---	F88	0	1
44497	0x1190	103 Fourth ASDU Sixth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44498	0x1191	103 Fourth ASDU Sixth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44499	0x1192	103 Fourth ASDU Seventh Analogue Entry	0	251	1	---	F88	0	1
44500	0x1193	103 Fourth ASDU Seventh Analogue Factor	0	0xFFFF	1	---	F3	0	1
44501	0x1194	103 Fourth ASDU Seventh Analogue Offset	0	0xFFFF	1	---	F1	0	1
44502	0x1195	103 Fourth ASDU Eigth Analogue Entry	0	251	1	---	F88	0	1
44503	0x1196	103 Fourth ASDU Eigth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44504	0x1197	103 Fourth ASDU Eigth Analogue Offset	0	0xFFFF	1	---	F1	0	1
44505	0x1198	103 Fourth ASDU Ninth Analogue Entry	0	251	1	---	F88	0	1
44506	0x1199	103 Fourth ASDU Ninth Analogue Factor	0	0xFFFF	1	---	F3	0	1
44507	0x119A	103 Fourth ASDU Ninth Analogue Offset	0	0xFFFF	1	---	F1	0	1
PASSWORD SECURITY									
44536	0x11B7	Security Passcode Master 1	0	1	1	---	F22	0	1
44537	0x11B8	Security Passcode Master 2	0	1	1	---	F22	0	1
44538	0x11B9	Security Passcode Master 3	0	1	1	---	F22	0	1
44539	0x11BA	Security Passcode Master 4	0	1	1	---	F22	0	1
44540	0x11BB	Security Passcode Master 5	0	1	1	---	F22	0	1
44541	0x11BC	Security Passcode Local Setpoint 1	0	1	1	---	F22	0	1
44542	0x11BD	Security Passcode Local Setpoint 2	0	1	1	---	F22	0	1
44543	0x11BE	Security Passcode Local Setpoint 3	0	1	1	---	F22	0	1
44544	0x11BF	Security Passcode Local Setpoint 4	0	1	1	---	F22	0	1
44545	0x11C0	Security Passcode Local Setpoint 5	0	1	1	---	F22	0	1
44546	0x11C1	Security Passcode Local Control 1	0	1	1	---	F22	0	1
44547	0x11C2	Security Passcode Local Control 2	0	1	1	---	F22	0	1
44548	0x11C3	Security Passcode Local Control 3	0	1	1	---	F22	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44549	0x11C4	Security Passcode Local Control 4	0	1	1	---	F22	0	1
44550	0x11C5	Security Passcode Local Control 5	0	1	1	---	F22	0	1
44551	0x11C6	Security Passcode Remote Setpoint 1	0	1	1	---	F22	0	1
44552	0x11C7	Security Passcode Remote Setpoint 2	0	1	1	---	F22	0	1
44553	0x11C8	Security Passcode Remote Setpoint 3	0	1	1	---	F22	0	1
44554	0x11C9	Security Passcode Remote Setpoint 4	0	1	1	---	F22	0	1
44555	0x11CA	Security Passcode Remote Setpoint 5	0	1	1	---	F22	0	1
44556	0x11CB	Security Passcode Remote Control 1	0	1	1	---	F22	0	1
44557	0x11CC	Security Passcode Remote Control 2	0	1	1	---	F22	0	1
44558	0x11CD	Security Passcode Remote Control 3	0	1	1	---	F22	0	1
44559	0x11CE	Security Passcode Remote Control 4	0	1	1	---	F22	0	1
44560	0x11CF	Security Passcode Remote Control 5	0	1	1	---	F22	0	1
44561	0x11D0	Security Passcode Entry Master 1	0	1	1	---	F22	0	1
44562	0x11D1	Security Passcode Entry Master 2	0	1	1	---	F22	0	1
44563	0x11D2	Security Passcode Entry Master 3	0	1	1	---	F22	0	1
44564	0x11D3	Security Passcode Entry Master 4	0	1	1	---	F22	0	1
44565	0x11D4	Security Passcode Entry Master 5	0	1	1	---	F22	0	1
44566	0x11D5	Security Passcode Entry Setpoints 1	0	1	1	---	F22	0	1
44567	0x11D6	Security Passcode Entry Setpoints 2	0	1	1	---	F22	0	1
44568	0x11D7	Security Passcode Entry Setpoints 3	0	1	1	---	F22	0	1
44569	0x11D8	Security Passcode Entry Setpoints 4	0	1	1	---	F22	0	1
44570	0x11D9	Security Passcode Entry Setpoints 5	0	1	1	---	F22	0	1
44571	0x11DA	Security Passcode Entry Control 1	0	1	1	---	F22	0	1
44572	0x11DB	Security Passcode Entry Control 2	0	1	1	---	F22	0	1
44573	0x11DC	Security Passcode Entry Control 3	0	1	1	---	F22	0	1
44574	0x11DD	Security Passcode Entry Control 4	0	1	1	---	F22	0	1
44575	0x11DE	Security Passcode Entry Control 5	0	1	1	---	F22	0	1
44576	0x11DF	Overwrite Local Setpoint Password	0	1	1	---	FC103A	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
VIRTUAL INPUT FUNCTION									
44580	0x11E3	Virtual Input 1 Function	0	1	1	---	FC126	0	1
44581	0x11E4	Virtual Input 2 Function	0	1	1	---	FC126	0	1
44582	0x11E5	Virtual Input 3 Function	0	1	1	---	FC126	0	1
44583	0x11E6	Virtual Input 4 Function	0	1	1	---	FC126	0	1
44584	0x11E7	Virtual Input 5 Function	0	1	1	---	FC126	0	1
44585	0x11E8	Virtual Input 6 Function	0	1	1	---	FC126	0	1
44586	0x11E9	Virtual Input 7 Function	0	1	1	---	FC126	0	1
44587	0x11EA	Virtual Input 8 Function	0	1	1	---	FC126	0	1
44588	0x11EB	Virtual Input 9 Function	0	1	1	---	FC126	0	1
44589	0x11EC	Virtual Input 10 Function	0	1	1	---	FC126	0	1
44590	0x11ED	Virtual Input 11 Function	0	1	1	---	FC126	0	1
44591	0x11EE	Virtual Input 12 Function	0	1	1	---	FC126	0	1
44592	0x11EF	Virtual Input 13 Function	0	1	1	---	FC126	0	1
44593	0x11F0	Virtual Input 14 Function	0	1	1	---	FC126	0	1
44594	0x11F1	Virtual Input 15 Function	0	1	1	---	FC126	0	1
44595	0x11F2	Virtual Input 16 Function	0	1	1	---	FC126	0	1
44596	0x11F3	Virtual Input 17 Function	0	1	1	---	FC126	0	1
44597	0x11F4	Virtual Input 18 Function	0	1	1	---	FC126	0	1
44598	0x11F5	Virtual Input 19 Function	0	1	1	---	FC126	0	1
44599	0x11F6	Virtual Input 20 Function	0	1	1	---	FC126	0	1
44600	0x11F7	Virtual Input 21 Function	0	1	1	---	FC126	0	1
44601	0x11F8	Virtual Input 22 Function	0	1	1	---	FC126	0	1
44602	0x11F9	Virtual Input 23 Function	0	1	1	---	FC126	0	1
44603	0x11FA	Virtual Input 24 Function	0	1	1	---	FC126	0	1
44604	0x11FB	Virtual Input 25 Function	0	1	1	---	FC126	0	1
44605	0x11FC	Virtual Input 26 Function	0	1	1	---	FC126	0	1
44606	0x11FD	Virtual Input 27 Function	0	1	1	---	FC126	0	1
44607	0x11FE	Virtual Input 28 Function	0	1	1	---	FC126	0	1
44608	0x11FF	Virtual Input 29 Function	0	1	1	---	FC126	0	1
44609	0x1200	Virtual Input 30 Function	0	1	1	---	FC126	0	1
44610	0x1201	Virtual Input 31 Function	0	1	1	---	FC126	0	1
44611	0x1202	Virtual Input 32 Function	0	1	1	---	FC126	0	1
VIRTUAL INPUT TYPE									
44612	0x1203	Virtual Input 1 Type	0	1	1	---	FC199	0	1
44613	0x1204	Virtual Input 2 Type	0	1	1	---	FC199	0	1
44614	0x1205	Virtual Input 3 Type	0	1	1	---	FC199	0	1
44615	0x1206	Virtual Input 4 Type	0	1	1	---	FC199	0	1
44616	0x1207	Virtual Input 5 Type	0	1	1	---	FC199	0	1
44617	0x1208	Virtual Input 6 Type	0	1	1	---	FC199	0	1
44618	0x1209	Virtual Input 7 Type	0	1	1	---	FC199	0	1
44619	0x120A	Virtual Input 8 Type	0	1	1	---	FC199	0	1
44620	0x120B	Virtual Input 9 Type	0	1	1	---	FC199	0	1
44621	0x120C	Virtual Input 10 Type	0	1	1	---	FC199	0	1
44622	0x120D	Virtual Input 11 Type	0	1	1	---	FC199	0	1
44623	0x120E	Virtual Input 12 Type	0	1	1	---	FC199	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44624	0x120F	Virtual Input 13 Type	0	1	1	---	FC199	0	1
44625	0x1210	Virtual Input 14 Type	0	1	1	---	FC199	0	1
44626	0x1211	Virtual Input 15 Type	0	1	1	---	FC199	0	1
44627	0x1212	Virtual Input 16 Type	0	1	1	---	FC199	0	1
44628	0x1213	Virtual Input 17 Type	0	1	1	---	FC199	0	1
44629	0x1214	Virtual Input 18 Type	0	1	1	---	FC199	0	1
44630	0x1215	Virtual Input 19 Type	0	1	1	---	FC199	0	1
44631	0x1216	Virtual Input 20 Type	0	1	1	---	FC199	0	1
44632	0x1217	Virtual Input 21 Type	0	1	1	---	FC199	0	1
44633	0x1218	Virtual Input 22 Type	0	1	1	---	FC199	0	1
44634	0x1219	Virtual Input 23 Type	0	1	1	---	FC199	0	1
44635	0x121A	Virtual Input 24 Type	0	1	1	---	FC199	0	1
44636	0x121B	Virtual Input 25 Type	0	1	1	---	FC199	0	1
44637	0x121C	Virtual Input 26 Type	0	1	1	---	FC199	0	1
44638	0x121D	Virtual Input 27 Type	0	1	1	---	FC199	0	1
44639	0x121E	Virtual Input 28 Type	0	1	1	---	FC199	0	1
44640	0x121F	Virtual Input 29 Type	0	1	1	---	FC199	0	1
44641	0x1220	Virtual Input 30 Type	0	1	1	---	FC199	0	1
44642	0x1221	Virtual Input 31 Type	0	1	1	---	FC199	0	1
44643	0x1222	Virtual Input 32 Type	0	1	1	---	FC199	0	1
IEC61850 GOOSE									
44645	0x1224	Enable GOOSE Transmission	0	1	1	---	FC126	0	1
44646	0x1225	Enable GOOSE	0	1	1	---	FC126	0	1
44647	0x1226	GOOSE Name	0	20	1	---	F22	SR3_GOOSE 1	20
44667	0x123A	VLAN Identifier	0	4095	1	---	F1	0	1
44668	0x123B	VLAN Priority	1	7	1	---	F1	4	1
44669	0x123C	Application Identifier	0	0x3FFF	1	---	F1	0	1
44670	0x123D	Update Time	1000	60000	1	ms	F1	10000	1
44671	0x123E	DataSet Name	0	20	1	---	F22	GOOSE1	20
44691	0x1252	Control Block Name	0	20	1	---	F22	gcb01	20
44711	0x1266	Conf Revision Number	1	0xFFFF	1	---	F1	1	1
44712	0x1267	Destination MAC Address	0	0xFFFF	1	---	FC214	0	3
44715	0x126A	MMS TCP Port Number	1	65535	1	---	F1	102	1
44716	0x126B	TCP Connection Timeout	10	1800	1	s	F1	120	1
IEC61850 GOOSE TRANSMISSION DATASET ITEMS									
44718	0x126D	DataSet Item 1	0	0xFFFF	1	---	FC134B	0	1
44719	0x126E	Item 1 Quality	0	1	1	---	FC126	0	1
44720	0x126F	DataSet Item 2	0	0xFFFF	1	---	FC134B	0	1
44721	0x1270	Item 2 Quality	0	1	1	---	FC126	0	1
44722	0x1271	DataSet Item 3	0	0xFFFF	1	---	FC134B	0	1
44723	0x1272	Item 3 Quality	0	1	1	---	FC126	0	1
44724	0x1273	DataSet Item 4	0	0xFFFF	1	---	FC134B	0	1
44725	0x1274	Item 4 Quality	0	1	1	---	FC126	0	1
44726	0x1275	DataSet Item 5	0	0xFFFF	1	---	FC134B	0	1
44727	0x1276	Item 5 Quality	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44728	0x1277	DataSet Item 6	0	0xFFFF	1	---	FC134B	0	1
44729	0x1278	Item 6 Quality	0	1	1	---	FC126	0	1
44730	0x1279	DataSet Item 7	0	0xFFFF	1	---	FC134B	0	1
44731	0x127A	Item 7 Quality	0	1	1	---	FC126	0	1
44732	0x127B	DataSet Item 8	0	0xFFFF	1	---	FC134B	0	1
44733	0x127C	Item 8 Quality	0	1	1	---	FC126	0	1
44734	0x127D	DataSet Item 9	0	0xFFFF	1	---	FC134B	0	1
44735	0x127E	Item 9 Quality	0	1	1	---	FC126	0	1
44736	0x127F	DataSet Item 10	0	0xFFFF	1	---	FC134B	0	1
44737	0x1280	Item 10 Quality	0	1	1	---	FC126	0	1
44738	0x1281	DataSet Item 11	0	0xFFFF	1	---	FC134B	0	1
44739	0x1282	Item 11 Quality	0	1	1	---	FC126	0	1
44740	0x1283	DataSet Item 12	0	0xFFFF	1	---	FC134B	0	1
44741	0x1284	Item 12 Quality	0	1	1	---	FC126	0	1
44742	0x1285	DataSet Item 13	0	0xFFFF	1	---	FC134B	0	1
44743	0x1286	Item 13 Quality	0	1	1	---	FC126	0	1
44744	0x1287	DataSet Item 14	0	0xFFFF	1	---	FC134B	0	1
44745	0x1288	Item 14 Quality	0	1	1	---	FC126	0	1
44746	0x1289	DataSet Item 15	0	0xFFFF	1	---	FC134B	0	1
44747	0x128A	Item 15 Quality	0	1	1	---	FC126	0	1
44748	0x128B	DataSet Item 16	0	0xFFFF	1	---	FC134B	0	1
44749	0x128C	Item 16 Quality	0	1	1	---	FC126	0	1
44750	0x128D	DataSet Item 17	0	0xFFFF	1	---	FC134B	0	1
44751	0x128E	Item 17 Quality	0	1	1	---	FC126	0	1
44752	0x128F	DataSet Item 18	0	0xFFFF	1	---	FC134B	0	1
44753	0x1290	Item 18 Quality	0	1	1	---	FC126	0	1
44754	0x1291	DataSet Item 19	0	0xFFFF	1	---	FC134B	0	1
44755	0x1292	Item 19 Quality	0	1	1	---	FC126	0	1
44756	0x1293	DataSet Item 20	0	0xFFFF	1	---	FC134B	0	1
44757	0x1294	Item 20 Quality	0	1	1	---	FC126	0	1
44758	0x1295	DataSet Item 21	0	0xFFFF	1	---	FC134B	0	1
44759	0x1296	Item 21 Quality	0	1	1	---	FC126	0	1
44760	0x1297	DataSet Item 22	0	0xFFFF	1	---	FC134B	0	1
44761	0x1298	Item 22 Quality	0	1	1	---	FC126	0	1
44762	0x1299	DataSet Item 23	0	0xFFFF	1	---	FC134B	0	1
44763	0x129A	Item 23 Quality	0	1	1	---	FC126	0	1
44764	0x129B	DataSet Item 24	0	0xFFFF	1	---	FC134B	0	1
44765	0x129C	Item 24 Quality	0	1	1	---	FC126	0	1
44766	0x129D	DataSet Item 25	0	0xFFFF	1	---	FC134B	0	1
44767	0x129E	Item 25 Quality	0	1	1	---	FC126	0	1
44768	0x129F	DataSet Item 26	0	0xFFFF	1	---	FC134B	0	1
44769	0x12A0	Item 26 Quality	0	1	1	---	FC126	0	1
44770	0x12A1	DataSet Item 27	0	0xFFFF	1	---	FC134B	0	1
44771	0x12A2	Item 27 Quality	0	1	1	---	FC126	0	1
44772	0x12A3	DataSet Item 28	0	0xFFFF	1	---	FC134B	0	1
44773	0x12A4	Item 28 Quality	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44774	0x12A5	DataSet Item 29	0	0xFFFF	1	---	FC134B	0	1
44775	0x12A6	Item 29 Quality	0	1	1	---	FC126	0	1
44776	0x12A7	DataSet Item 30	0	0xFFFF	1	---	FC134B	0	1
44777	0x12A8	Item 30 Quality	0	1	1	---	FC126	0	1
44778	0x12A9	DataSet Item 31	0	0xFFFF	1	---	FC134B	0	1
44779	0x12AA	Item 31 Quality	0	1	1	---	FC126	0	1
44780	0x12AB	DataSet Item 32	0	0xFFFF	1	---	FC134B	0	1
44781	0x12AC	Item 32 Quality	0	1	1	---	FC126	0	1
IEC61850 GOOSE RX1 CONFIGURATION									
44786	0x12B1	Rx GOOSE1 Function	0	1	1	---	FC126	0	1
44787	0x12B2	Rx GOOSE1 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE1	20
44807	0x12C6	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44827	0x12DA	RX1 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb01	20
44847	0x12EE	RX1 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44848	0x12EF	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX2 CONFIGURATION									
44852	0x12F3	Rx GOOSE2 Function	0	1	1	---	FC126	0	1
44853	0x12F4	Rx GOOSE2 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE2	20
44873	0x1308	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44893	0x131C	RX2 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb02	20
44913	0x1330	RX2 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44914	0x1331	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX3 CONFIGURATION									
44918	0x1335	Rx GOOSE3 Function	0	1	1	---	FC126	0	1
44919	0x1336	Rx GOOSE3 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE3	20
44939	0x134A	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
44959	0x135E	RX3 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb03	20
44979	0x1372	RX3 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
44980	0x1373	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX4 CONFIGURATION									
44984	0x1377	Rx GOOSE4 Function	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
44985	0x1378	Rx GOOSE4 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE4	20
45005	0x138C	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45025	0x13A0	RX4 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb04	20
45045	0x13B4	RX4 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45046	0x13B5	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX5 CONFIGURATION									
45050	0x13B9	Rx GOOSE5 Function	0	1	1	---	FC126	0	1
45051	0x13BA	Rx GOOSE5 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE5	20
45071	0x13CE	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45091	0x13E2	RX5 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb05	20
45111	0x13F6	RX5 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45112	0x13F7	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX6 CONFIGURATION									
45116	0x13FB	Rx GOOSE6 Function	0	1	1	---	FC126	0	1
45117	0x13FC	Rx GOOSE6 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE6	20
45137	0x1410	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45157	0x1424	RX6 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb06	20
45177	0x1438	RX6 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45178	0x1439	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX7 CONFIGURATION									
45182	0x143D	Rx GOOSE7 Function	0	1	1	---	FC126	0	1
45183	0x143E	Rx GOOSE7 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE7	20
45203	0x1452	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45223	0x1466	RX7 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb07	20
45243	0x147A	RX7 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45244	0x147B	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE RX8 CONFIGURATION									
45248	0x147F	Rx GOOSE8 Function	0	1	1	---	FC126	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45249	0x1480	Rx GOOSE8 ID	0	20	1	---	F22	DEVICE_IED2_GOOSE8	20
45269	0x1494	Incoming GOOSE DataSet Name	0	20	1	---	F22	DEVICE/LLN0$GOOSESR3	20
45289	0x14A8	RX8 Control Block Name	0	20	1	---	F22	DEVICE/LLN0GOgcb08	20
45309	0x14BC	RX8 DataSet Configuration Revision	1	0xFFFF	1	---	F1	1	1
45310	0x14BD	EType AppID	0	0x3FFF	1	---	F1	0	1
IEC61850 GOOSE DATASET STRUCTURE BUFFER									
45314	0x14C1	DataSet Struct Buffer	0	0xFFFF	1	---	FC216	0	250
IEC61850 GOOSE REMOTE INPUTS									
45567	0x15BE	Remote Input 1 Name	0	7	1	---	F22	RI 1	7
45583	0x15CE	Remote Input 1 GOOSE Source	0	0x80	1	---	FC219	0	1
45584	0x15CF	Remote Input 1 Item Source	0	0xFFFF	1	---	FC217	0	1
45585	0x15D0	Remote Input 1 Item Mask	0	0xFFFF	1	---	FC218	0	1
45586	0x15D1	Remote Input 1 Default State	0	3	1	---	FC220	1	1
45588	0x15D3	Remote Input 2 Name	0	7	1	---	F22	RI 2	7
45604	0x15E3	Remote Input 2 GOOSE Source	0	0x80	1	---	FC219	0	1
45605	0x15E4	Remote Input 2 Item Source	0	0xFFFF	1	---	FC217	0	1
45606	0x15E5	Remote Input 2 Item Mask	0	0xFFFF	1	---	FC218	0	1
45607	0x15E6	Remote Input 2 Default State	0	3	1	---	FC220	1	1
45609	0x15E8	Remote Input 3 Name	0	7	1	---	F22	RI 3	7
45625	0x15F8	Remote Input 3 GOOSE Source	0	0x80	1	---	FC219	0	1
45626	0x15F9	Remote Input 3 Item Source	0	0xFFFF	1	---	FC217	0	1
45627	0x15FA	Remote Input 3 Item Mask	0	0xFFFF	1	---	FC218	0	1
45628	0x15FB	Remote Input 3 Default State	0	3	1	---	FC220	1	1
45630	0x15FD	Remote Input 4 Name	0	7	1	---	F22	RI 4	7
45646	0x160D	Remote Input 4 GOOSE Source	0	0x80	1	---	FC219	0	1
45647	0x160E	Remote Input 4 Item Source	0	0xFFFF	1	---	FC217	0	1
45648	0x160F	Remote Input 4 Item Mask	0	0xFFFF	1	---	FC218	0	1
45649	0x1610	Remote Input 4 Default State	0	3	1	---	FC220	1	1
45651	0x1612	Remote Input 5 Name	0	7	1	---	F22	RI 5	7
45667	0x1622	Remote Input 5 GOOSE Source	0	0x80	1	---	FC219	0	1
45668	0x1623	Remote Input 5 Item Source	0	0xFFFF	1	---	FC217	0	1
45669	0x1624	Remote Input 5 Item Mask	0	0xFFFF	1	---	FC218	0	1
45670	0x1625	Remote Input 5 Default State	0	3	1	---	FC220	1	1
45672	0x1627	Remote Input 6 Name	0	7	1	---	F22	RI 6	7
45688	0x1637	Remote Input 6 GOOSE Source	0	0x80	1	---	FC219	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45689	0x1638	Remote Input 6 Item Source	0	0xFFFF	1	---	FC217	0	1
45690	0x1639	Remote Input 6 Item Mask	0	0xFFFF	1	---	FC218	0	1
45691	0x163A	Remote Input 6 Default State	0	3	1	---	FC220	1	1
45693	0x163C	Remote Input 7 Name	0	7	1	---	F22	RI 7	7
45709	0x164C	Remote Input 7 GOOSE Source	0	0x80	1	---	FC219	0	1
45710	0x164D	Remote Input 7 Item Source	0	0xFFFF	1	---	FC217	0	1
45711	0x164E	Remote Input 7 Item Mask	0	0xFFFF	1	---	FC218	0	1
45712	0x164F	Remote Input 7 Default State	0	3	1	---	FC220	1	1
45714	0x1651	Remote Input 8 Name	0	7	1	---	F22	RI 8	7
45730	0x1661	Remote Input 8 GOOSE Source	0	0x80	1	---	FC219	0	1
45731	0x1662	Remote Input 8 Item Source	0	0xFFFF	1	---	FC217	0	1
45732	0x1663	Remote Input 8 Item Mask	0	0xFFFF	1	---	FC218	0	1
45733	0x1664	Remote Input 8 Default State	0	3	1	---	FC220	1	1
45735	0x1666	Remote Input 9 Name	0	7	1	---	F22	RI 9	7
45751	0x1676	Remote Input 9 GOOSE Source	0	0x80	1	---	F1	0	1
45752	0x1677	Remote Input 9 Item Source	0	0xFFFF	1	---	FC217	0	1
45753	0x1678	Remote Input 9 Item Mask	0	0xFFFF	1	---	FC218	0	1
45754	0x1679	Remote Input 9 Default State	0	3	1	---	FC220	1	1
45756	0x167B	Remote Input 10 Name	0	7	1	---	F22	RI 10	7
45772	0x168B	Remote Input 10 GOOSE Source	0	0x80	1	---	F1	0	1
45773	0x168C	Remote Input 10 Item Source	0	0xFFFF	1	---	FC217	0	1
45774	0x168D	Remote Input 10 Item Mask	0	0xFFFF	1	---	FC218	0	1
45775	0x168E	Remote Input 10 Default State	0	3	1	---	FC220	1	1
45777	0x1690	Remote Input 11 Name	0	7	1	---	F22	RI 11	7
45793	0x16A0	Remote Input 11 GOOSE Source	0	0x80	1	---	F1	0	1
45794	0x16A1	Remote Input 11 Item Source	0	0xFFFF	1	---	FC217	0	1
45795	0x16A2	Remote Input 11 Item Mask	0	0xFFFF	1	---	FC218	0	1
45796	0x16A3	Remote Input 11 Default State	0	3	1	---	FC220	1	1
45798	0x16A5	Remote Input 12 Name	0	7	1	---	F22	RI 12	7
45814	0x16B5	Remote Input 12 GOOSE Source	0	0x80	1	---	F1	0	1
45815	0x16B6	Remote Input 12 Item Source	0	0xFFFF	1	---	FC217	0	1
45816	0x16B7	Remote Input 12 Item Mask	0	0xFFFF	1	---	FC218	0	1
45817	0x16B8	Remote Input 12 Default State	0	3	1	---	FC220	1	1
45819	0x16BA	Remote Input 13 Name	0	7	1	---	F22	RI 13	7
45835	0x16CA	Remote Input 13 GOOSE Source	0	0x80	1	---	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45836	0x16CB	Remote Input 13 Item Source	0	0xFFFF	1	---	FC217	0	1
45837	0x16CC	Remote Input 13 Item Mask	0	0xFFFF	1	---	FC218	0	1
45838	0x16CD	Remote Input 13 Default State	0	3	1	---	FC220	1	1
45840	0x16CF	Remote Input 14 Name	0	7	1	---	F22	RI 14	7
45856	0x16DF	Remote Input 14 GOOSE Source	0	0x80	1	---	F1	0	1
45857	0x16E0	Remote Input 14 Item Source	0	0xFFFF	1	---	FC217	0	1
45858	0x16E1	Remote Input 14 Item Mask	0	0xFFFF	1	---	FC218	0	1
45859	0x16E2	Remote Input 14 Default State	0	3	1	---	FC220	1	1
45861	0x16E4	Remote Input 15 Name	0	7	1	---	F22	RI 15	7
45877	0x16F4	Remote Input 15 GOOSE Source	0	0x80	1	---	F1	0	1
45878	0x16F5	Remote Input 15 Item Source	0	0xFFFF	1	---	FC217	0	1
45879	0x16F6	Remote Input 15 Item Mask	0	0xFFFF	1	---	FC218	0	1
45880	0x16F7	Remote Input 15 Default State	0	3	1	---	FC220	1	1
45882	0x16F9	Remote Input 16 Name	0	7	1	---	F22	RI 16	7
45898	0x1709	Remote Input 16 GOOSE Source	0	0x80	1	---	F1	0	1
45899	0x170A	Remote Input 16 Item Source	0	0xFFFF	1	---	FC217	0	1
45900	0x170B	Remote Input 16 Item Mask	0	0xFFFF	1	---	FC218	0	1
45901	0x170C	Remote Input 16 Default State	0	3	1	---	FC220	1	1
45903	0x170E	Remote Input 17 Name	0	7	1	---	F22	RI 17	7
45919	0x171E	Remote Input 17 GOOSE Source	0	0x80	1	---	F1	0	1
45920	0x171F	Remote Input 17 Item Source	0	0xFFFF	1	---	FC217	0	1
45921	0x1720	Remote Input 17 Item Mask	0	0xFFFF	1	---	FC218	0	1
45922	0x1721	Remote Input 17 Default State	0	3	1	---	FC220	1	1
45924	0x1723	Remote Input 18 Name	0	7	1	---	F22	RI 18	7
45940	0x1733	Remote Input 18 GOOSE Source	0	0x80	1	---	F1	0	1
45941	0x1734	Remote Input 18 Item Source	0	0xFFFF	1	---	FC217	0	1
45942	0x1735	Remote Input 18 Item Mask	0	0xFFFF	1	---	FC218	0	1
45943	0x1736	Remote Input 18 Default State	0	3	1	---	FC220	1	1
45945	0x1738	Remote Input 19 Name	0	7	1	---	F22	RI 19	7
45961	0x1748	Remote Input 19 GOOSE Source	0	0x80	1	---	F1	0	1
45962	0x1749	Remote Input 19 Item Source	0	0xFFFF	1	---	FC217	0	1
45963	0x174A	Remote Input 19 Item Mask	0	0xFFFF	1	---	FC218	0	1
45964	0x174B	Remote Input 19 Default State	0	3	1	---	FC220	1	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
45966	0x174D	Remote Input 20 Name	0	7	1	---	F22	RI 20	7
45982	0x175D	Remote Input 20 GOOSE Source	0	0x80	1	---	F1	0	1
45983	0x175E	Remote Input 20 Item Source	0	0xFFFF	1	---	FC217	0	1
45984	0x175F	Remote Input 20 Item Mask	0	0xFFFF	1	---	FC218	0	1
45985	0x1760	Remote Input 20 Default State	0	3	1	---	FC220	1	1
45987	0x1762	Remote Input 21 Name	0	7	1	---	F22	RI 21	7
46003	0x1772	Remote Input 21 GOOSE Source	0	0x80	1	---	F1	0	1
46004	0x1773	Remote Input 21 Item Source	0	0xFFFF	1	---	FC217	0	1
46005	0x1774	Remote Input 21 Item Mask	0	0xFFFF	1	---	FC218	0	1
46006	0x1775	Remote Input 21 Default State	0	3	1	---	FC220	1	1
46008	0x1777	Remote Input 22 Name	0	7	1	---	F22	RI 22	7
46024	0x1787	Remote Input 22 GOOSE Source	0	0x80	1	---	F1	0	1
46025	0x1788	Remote Input 22 Item Source	0	0xFFFF	1	---	FC217	0	1
46026	0x1789	Remote Input 22 Item Mask	0	0xFFFF	1	---	FC218	0	1
46027	0x178A	Remote Input 22 Default State	0	3	1	---	FC220	1	1
46029	0x178C	Remote Input 23 Name	0	7	1	---	F22	RI 23	7
46045	0x179C	Remote Input 23 GOOSE Source	0	0x80	1	---	F1	0	1
46046	0x179D	Remote Input 23 Item Source	0	0xFFFF	1	---	FC217	0	1
46047	0x179E	Remote Input 23 Item Mask	0	0xFFFF	1	---	FC218	0	1
46048	0x179F	Remote Input 23 Default State	0	3	1	---	FC220	1	1
46050	0x17A1	Remote Input 24 Name	0	7	1	---	F22	RI 24	7
46066	0x17B1	Remote Input 24 GOOSE Source	0	0x80	1	---	F1	0	1
46067	0x17B2	Remote Input 24 Item Source	0	0xFFFF	1	---	FC217	0	1
46068	0x17B3	Remote Input 24 Item Mask	0	0xFFFF	1	---	FC218	0	1
46069	0x17B4	Remote Input 24 Default State	0	3	1	---	FC220	1	1
46071	0x17B6	Remote Input 25 Name	0	7	1	---	F22	RI 25	7
46087	0x17C6	Remote Input 25 GOOSE Source	0	0x80	1	---	F1	0	1
46088	0x17C7	Remote Input 25 Item Source	0	0xFFFF	1	---	FC217	0	1
46089	0x17C8	Remote Input 25 Item Mask	0	0xFFFF	1	---	FC218	0	1
46090	0x17C9	Remote Input 25 Default State	0	3	1	---	FC220	1	1
46092	0x17CB	Remote Input 26 Name	0	7	1	---	F22	RI 26	7
46108	0x17DB	Remote Input 26 GOOSE Source	0	0x80	1	---	F1	0	1
46109	0x17DC	Remote Input 26 Item Source	0	0xFFFF	1	---	FC217	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46110	0x17DD	Remote Input 26 Item Mask	0	0xFFFF	1	---	FC218	0	1
46111	0x17DE	Remote Input 26 Default State	0	3	1	---	FC220	1	1
46113	0x17E0	Remote Input 27 Name	0	7	1	---	F22	RI 27	7
46129	0x17F0	Remote Input 27 GOOSE Source	0	0x80	1	---	F1	0	1
46130	0x17F1	Remote Input 27 Item Source	0	0xFFFF	1	---	FC217	0	1
46131	0x17F2	Remote Input 27 Item Mask	0	0xFFFF	1	---	FC218	0	1
46132	0x17F3	Remote Input 27 Default State	0	3	1	---	FC220	1	1
46134	0x17F5	Remote Input 28 Name	0	7	1	---	F22	RI 28	7
46150	0x1805	Remote Input 28 GOOSE Source	0	0x80	1	---	F1	0	1
46151	0x1806	Remote Input 28 Item Source	0	0xFFFF	1	---	FC217	0	1
46152	0x1807	Remote Input 28 Item Mask	0	0xFFFF	1	---	FC218	0	1
46153	0x1808	Remote Input 28 Default State	0	3	1	---	FC220	1	1
46155	0x180A	Remote Input 29 Name	0	7	1	---	F22	RI 29	7
46171	0x181A	Remote Input 29 GOOSE Source	0	0x80	1	---	F1	0	1
46172	0x181B	Remote Input 29 Item Source	0	0xFFFF	1	---	FC217	0	1
46173	0x181C	Remote Input 29 Item Mask	0	0xFFFF	1	---	FC218	0	1
46174	0x181D	Remote Input 29 Default State	0	3	1	---	FC220	1	1
46176	0x181F	Remote Input 30 Name	0	7	1	---	F22	RI 30	7
46192	0x182F	Remote Input 30 GOOSE Source	0	0x80	1	---	F1	0	1
46193	0x1830	Remote Input 30 Item Source	0	0xFFFF	1	---	FC217	0	1
46194	0x1831	Remote Input 30 Item Mask	0	0xFFFF	1	---	FC218	0	1
46195	0x1832	Remote Input 30 Default State	0	3	1	---	FC220	1	1
46197	0x1834	Remote Input 31 Name	0	7	1	---	F22	RI 31	7
46213	0x1844	Remote Input 31 GOOSE Source	0	0x80	1	---	F1	0	1
46214	0x1845	Remote Input 31 Item Source	0	0xFFFF	1	---	FC217	0	1
46215	0x1846	Remote Input 31 Item Mask	0	0xFFFF	1	---	FC218	0	1
46216	0x1847	Remote Input 31 Default State	0	3	1	---	FC220	1	1
46218	0x1849	Remote Input 32 Name	0	7	1	---	F22	RI 32	7
46234	0x1859	Remote Input 32 GOOSE Source	0	0x80	1	---	F1	0	1
46235	0x185A	Remote Input 32 Item Source	0	0xFFFF	1	---	FC217	0	1
46236	0x185B	Remote Input 32 Item Mask	0	0xFFFF	1	---	FC218	0	1
46237	0x185C	Remote Input 32 Default State	0	3	1	---	FC220	1	1
ARC FLASH									
46415	0x190E	Arc Flash Function	0	4	1	---	FC205	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46416	0x190F	Arc Flash HS Phase Pickup	5	3000	1	x CT	F3	200	1
46417	0x1910	Arc Flash HS Ground Pickup	5	3000	1	x CT	F3	100	1
46418	0x1911	Arc Flash Light Sensor 1	0	1	1	---	FC126	0	1
46419	0x1912	Arc Flash Light Sensor 2	0	1	1	---	FC126	0	1
46420	0x1913	Arc Flash Light Sensor 3	0	1	1	---	FC126	0	1
46421	0x1914	Arc Flash Light Sensor 4	0	1	1	---	FC126	0	1
46422	0x1915	Arc Flash Block	0	0xEF02	1	---	F89	0	1
46423	0x1916	Arc Flash Output Relays 5-6	0	0x7F	1	---	FC198	0	1
46424	0x1917	Arc Flash HS Sens Ground Pickup	5	3000	1	x CT	F17A	100	1
46425	0x1918	Arc Flash Heartbeat Delay	0	1440	1	min	F1C	10	1
46426	0x1919	Arc Flash Seal-in Timer	0	999	1	s	F3	100	1
BKR HEALTH									
46428	0x191B	Breaker Health Function	0	2	1	---	FC206	0	1
46429	0x191C	Breaker Health Mode	0	1	1	---	FC433	0	1
46430	0x191D	Breaker Health Limit	0	100000	1	---	F9	0	2
46432	0x191F	Breaker Health Trip Time Pickup	0	1000	1	s	F3	5	1
46433	0x1920	Breaker Health Close Time Pickup	0	1000	1	s	F3	5	1
46434	0x1921	Breaker Health Charge Time Pickup	0	6000	1	s	F3	1500	1
46435	0x1922	Breaker Health Spring Charge Input	0	0xEF02	1	---	F89A	0	1
46436	0x1923	Breaker Health Block1	0	0xEF02	1	---	F89	0	1
46437	0x1924	Breaker Health Block2	0	0xEF02	1	---	F89	0	1
46438	0x1925	Breaker Health Block3	0	0xEF02	1	---	F89	0	1
46439	0x1926	Breaker Health Output Relays	0	0x7F	1	---	FC198	0	1
46452	0x1933	Breaker Health Incomp Trp/Cls Time	0	60000	1	s	F3	10	1
46453	0x1934	Breaker Health Incomp Charge Time	0	60000	1	s	F3	4500	1
LOGIC ELEMENT NAMES									
46240	0x185F	Logic Element 1 Name	0	9	1	---	F22	Logic El #1	9
46249	0x1868	Logic Element 2 Name	0	9	1	---	F22	Logic El #2	9
46258	0x1871	Logic Element 3 Name	0	9	1	---	F22	Logic El #3	9
46267	0x187A	Logic Element 4 Name	0	9	1	---	F22	Logic El #4	9
46276	0x1883	Logic Element 5 Name	0	9	1	---	F22	Logic El #5	9
46285	0x188C	Logic Element 6 Name	0	9	1	---	F22	Logic El #6	9
46294	0x1895	Logic Element 7 Name	0	9	1	---	F22	Logic El #7	9
46303	0x189E	Logic Element 8 Name	0	9	1	---	F22	Logic El #8	9
46492	0x195B	Logic Element 9 Name	0	9	1	---	F22	Logic El #9	9
46501	0x1964	Logic Element 10 Name	0	9	1	---	F22	Logic El #10	9
46510	0x196D	Logic Element 11 Name	0	9	1	---	F22	Logic El #11	9
46519	0x1976	Logic Element 12 Name	0	9	1	---	F22	Logic El #12	9

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46528	0x197F	Logic Element 13 Name	0	9	1	---	F22	Logic El #13	9
46537	0x1988	Logic Element 14 Name	0	9	1	---	F22	Logic El #14	9
46546	0x1991	Logic Element 15 Name	0	9	1	---	F22	Logic El #15	9
46555	0x199A	Logic Element 16 Name	0	9	1	---	F22	Logic El #16	9
SYNCROCHECK									
46737	0x1A50	Synchrocheck function enable	0	0xFFFFFFFF	1	---	FC126	0	1
46738	0x1A51	Dead bus voltage level	0	125	1	x VT	F3	10	1
46739	0x1A52	Live bus voltage level	3	125	1	x VT	F3	50	1
46740	0x1A53	Dead line voltage level	0	125	1	x VT	F3	10	1
46741	0x1A54	Live line voltage level	3	125	1	x VT	F3	50	1
46742	0x1A55	Voltage Difference	10	10000	1	V	F1	1000	1
46743	0x1A56	Angle Difference	2	80	1	°	F1	10	1
46744	0x1A57	Frequency Slip	5	500	1	Hz	F3	5	1
46745	0x1A58	Breaker Closing Time	0	100	1	s	F3	10	1
46746	0x1A59	Dead Condition	0	7	1	---	FC424	0	1
46747	0x1A5A	Snapshots Events	0	0xEF02	1	---	F89	0	1
46748	0x1A5B	Output Relays 3-7	0	0x7F	1	---	FC198	0	1
46749	0x1A5C	Angle Offset	0	359	1	°	F1	0	1
46750	0x1A5D	Synchro Bypass	0	0x1DF	1	---	F89B	0	1
OPCUA									
46773	0x1A74	OPCUA Enable	0	1	1	---	FC126	0	1
HSR PRP SETTINGS									
46771	0x1A72	LLA Priority	0	1	1	---	FC126	1	1
46772	0x1A73	LLA Timeout	0	65535	1	s	F1	300	1
46774	0x1A75	Redundancy mode	0	5	1	---	FC421	0	1
46775	0x1A76	PTP Function	0	1	1	---	FC126	0	1
46776	0x1A77	PTP Port A Path Delay Adder	0	0xFFFFFFFF	1	---	F9	0	2
46778	0x1A79	PTP Port A Path Delay Assymetry	-32767	32767	1	---	F4	0	1
46779	0x1A7A	PTP Port B Path Delay Adder	0	0xFFFFFFFF	1	---	F9	0	2
46781	0x1A7C	PTP Port B Path Delay Assymetry	-32767	32767	1	---	F4	0	1
46782	0x1A7D	PTP Strict Power Profile	0	1	1	---	FC126	0	1
46783	0x1A7E	PTP Domain Number	0	255	1	---	F1	0	1
46784	0x1A7F	PTP VLAN Priority	0	7	1	---	F1	4	1
46785	0x1A80	PTP VLAN ID	0	4095	1	---	F1	0	1
46786	0x1A81	PTP EPOCH	0	3	1	---	FC425	0	1
46787	0x1A82	RSTP Bridge Priority	0	61440	4096	---	F9	32768	2
46789	0x1A84	Port A Priority	0	240	16	---	F9	128	2
46791	0x1A86	Port A Path Cost	0	2000000	1	---	F9	200000	2
46793	0x1A88	Port B Priority	0	240	16	---	F9	128	2
46795	0x1A8A	Port B Path Cost	0	2000000	1	---	F9	200000	2
SECOND HARMONIC INHIBIT									

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46851	0x1AC2	Hrmc 2nd Function	0	3	1	---	FC207	0	1
46852	0x1AC3	Hrmc 2nd Pickup	1	400	1	%	F2	200	1
46853	0x1AC4	Hrmc 2nd Delay	0	60000	1	s	F3	0	1
46854	0x1AC5	Hrmc 2nd Phases for OP	0	3	1	---	F92A	0	1
46855	0x1AC6	Hrmc 2nd Min OP Current	3	300	1	x CT	F3	100	1
46856	0x1AC7	Hrmc 2nd Output Relays 3-6	0	0x3F	1	---	FC198	0	1
PHASE UNDERVOLTAGE3									
46897	0x1AF0	Phase UV 3 Function	0	3	1	---	FC197	0	1
46898	0x1AF1	Phase UV 3 Pickup	0	125	1	x VT	F3	75	1
46899	0x1AF2	Phase UV 3 Curve	0	1	1	---	F93	1	1
46900	0x1AF3	Phase UV 3 Delay	0	60000	1	s	F3	200	1
46901	0x1AF4	Phase UV 3 Phases	1	3	1	---	F92	1	1
46902	0x1AF5	Phase UV 3 Min Voltage	0	125	1	x VT	F3	30	1
PHASE UNDERVOLTAGE3 (RELAYS & BLOCKS)									
46903	0x1AF6	Phase UV3 Relays	0	0x7F	1	---	FC198	0	1
46904	0x1AF7	Phase UV 3 Block 1	0	0xEF02	1	---	F89	0	1
46905	0x1AF8	Phase UV 3 Block 2	0	0xEF02	1	---	F89	0	1
46906	0x1AF9	Phase UV 3 Block 3	0	0xEF02	1	---	F89	0	1
PHASE UNDERVOLTAGE4									
46907	0x1AFA	Phase UV 4 Function	0	3	1	---	FC197	0	1
46908	0x1AFB	Phase UV 4 Pickup	0	125	1	x VT	F3	75	1
46909	0x1AFC	Phase UV 4 Curve	0	1	1	---	F93	1	1
46910	0x1AFD	Phase UV 4 Delay	0	60000	1	s	F3	200	1
46911	0x1AFE	Phase UV 4 Phases	1	3	1	---	F92	1	1
46912	0x1AFF	Phase UV 4 Min Voltage	0	125	1	x VT	F3	30	1
PHASE UNDERVOLTAGE4 (RELAYS & BLOCKS)									
46913	0x1B00	Phase UV4 Relays	0	0x7F	1	---	FC198	0	1
46914	0x1B01	Phase UV 4 Block 1	0	0xEF02	1	---	F89	0	1
46915	0x1B02	Phase UV 4 Block 2	0	0xEF02	1	---	F89	0	1
46916	0x1B03	Phase UV 4 Block 3	0	0xEF02	1	---	F89	0	1
PHASE OVERVOLTAGE3									
46917	0x1B04	Phase OV 3 Function	0	3	1	---	FC197	0	1
46918	0x1B05	Phase OV 3 Pkp	0	125	1	x VT	F3	125	1
46919	0x1B06	Phase OV 3 Delay	0	60000	1	s	F3	200	1
46920	0x1B07	PH OV 3 Phases	1	3	1	---	F92	1	1
PHASE OVERVOLTAGE3 (RELAYS & BLOCKS)									
46922	0x1B09	Phase OV 3 Block 1	0	0xEF02	1	---	F89	0	1
46923	0x1B0A	Phase OV 3 Block 2	0	0xEF02	1	---	F89	0	1
46924	0x1B0B	Phase OV 3 Block 3	0	0xEF02	1	---	F89	0	1
PHASE OVERVOLTAGE4									
46925	0x1B0C	Phase OV 4 Function	0	3	1	---	FC197	0	1
46926	0x1B0D	Phase OV 4 Pkp	0	125	1	x VT	F3	125	1
46927	0x1B0E	Phase OV 4 Delay	0	60000	1	s	F3	200	1
46928	0x1B0F	PH OV 4 Phases	1	3	1	---	F92	1	1
PHASE OVERVOLTAGE4 (RELAYS & BLOCKS)									
46921	0x1B08	Phase OV3 Relays	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46929	0x1B10	Phase OV 4 Block 1	0	0xEF02	1	---	F89	0	1
46930	0x1B11	Phase OV 4 Block 2	0	0xEF02	1	---	F89	0	1
46931	0x1B12	Phase OV 4 Block 3	0	0xEF02	1	---	F89	0	1
46932	0x1B13	Phase OV 4 Relays	0	0x7F	1	---	FC198	0	1
FAULT REPORT									
46985	0x1B48	Fault Report Delay	0	60000	1	s	F3	10	1
46986	0x1B49	Fault Report Trigger	0	0xFFFF	1	---	FC134E	0x8002	1
LOGIC ELEMENTS (TRIGGERS & BLOCKS)									
41123	0x462	Logic Element 1 Trigger Logic	0	5	1	---	FC149	0	1
41124	0x463	Logic Element 1 Block Logic	0	5	1	---	FC149	0	1
41131	0x46A	Logic Element 2 Trigger Logic	0	5	1	---	FC149	0	1
41132	0x46B	Logic Element 2 Block Logic	0	5	1	---	FC149	0	1
41139	0x472	Logic Element 3 Trigger Logic	0	5	1	---	FC149	0	1
41140	0x473	Logic Element 3 Block Logic	0	5	1	---	FC149	0	1
41147	0x47A	Logic Element 4 Trigger Logic	0	5	1	---	FC149	0	1
41148	0x47B	Logic Element 4 Block Logic	0	5	1	---	FC149	0	1
41155	0x482	Logic Element 5 Trigger Logic	0	5	1	---	FC149	0	1
41156	0x483	Logic Element 5 Block Logic	0	5	1	---	FC149	0	1
41163	0x48A	Logic Element 6 Trigger Logic	0	5	1	---	FC149	0	1
41164	0x48B	Logic Element 6 Block Logic	0	5	1	---	FC149	0	1
41171	0x492	Logic Element 7 Trigger Logic	0	5	1	---	FC149	0	1
41172	0x493	Logic Element 7 Block Logic	0	5	1	---	FC149	0	1
41179	0x49A	Logic Element 8 Trigger Logic	0	5	1	---	FC149	0	1
41180	0x49B	Logic Element 8 Block Logic	0	5	1	---	FC149	0	1
41187	0x4A2	Logic Element 9 Trigger Logic	0	5	1	---	FC149	0	1
41188	0x4A3	Logic Element 9 Block Logic	0	5	1	---	FC149	0	1
41195	0x4AA	Logic Element 10 Trigger Logic	0	5	1	---	FC149	0	1
41196	0x4AB	Logic Element 10 Block Logic	0	5	1	---	FC149	0	1
41203	0x4B2	Logic Element 11 Trigger Logic	0	5	1	---	FC149	0	1
41204	0x4B3	Logic Element 11 Block Logic	0	5	1	---	FC149	0	1
41211	0x4BA	Logic Element 12 Trigger Logic	0	5	1	---	FC149	0	1
41212	0x4BB	Logic Element 12 Block Logic	0	5	1	---	FC149	0	1
41219	0x4C2	Logic Element 13 Trigger Logic	0	5	1	---	FC149	0	1
41220	0x4C3	Logic Element 13 Block Logic	0	5	1	---	FC149	0	1
41227	0x4CA	Logic Element 14 Trigger Logic	0	5	1	---	FC149	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
41228	0x4CB	Logic Element 14 Block Logic	0	5	1	---	FC149	0	1
41235	0x4D2	Logic Element 15 Trigger Logic	0	5	1	---	FC149	0	1
41236	0x4D3	Logic Element 15 Block Logic	0	5	1	---	FC149	0	1
41243	0x4DA	Logic Element 16 Trigger Logic	0	5	1	---	FC149	0	1
41244	0x4DB	Logic Element 16 Block Logic	0	5	1	---	FC149	0	1
43470	0xD8D	Logic Element 1 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43471	0xD8E	Logic Element 1 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43472	0xD8F	Logic Element 1 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43473	0xD90	Logic Element 1 Block 1	0	0xFFFF	1	---	FC134B	0	1
43474	0xD91	Logic Element 1 Block 2	0	0xFFFF	1	---	FC134B	0	1
43475	0xD92	Logic Element 1 Block 3	0	0xFFFF	1	---	FC134B	0	1
43476	0xD93	Logic Element 2 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43477	0xD94	Logic Element 2 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43478	0xD95	Logic Element 2 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43479	0xD96	Logic Element 2 Block 1	0	0xFFFF	1	---	FC134B	0	1
43480	0xD97	Logic Element 2 Block 2	0	0xFFFF	1	---	FC134B	0	1
43481	0xD98	Logic Element 2 Block 3	0	0xFFFF	1	---	FC134B	0	1
43482	0xD99	Logic Element 3 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43483	0xD9A	Logic Element 3 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43484	0xD9B	Logic Element 3 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43485	0xD9C	Logic Element 3 Block 1	0	0xFFFF	1	---	FC134B	0	1
43486	0xD9D	Logic Element 3 Block 2	0	0xFFFF	1	---	FC134B	0	1
43487	0xD9E	Logic Element 3 Block 3	0	0xFFFF	1	---	FC134B	0	1
43488	0xD9F	Logic Element 4 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43489	0xDA0	Logic Element 4 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43490	0xDA1	Logic Element 4 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43491	0xDA2	Logic Element 4 Block 1	0	0xFFFF	1	---	FC134B	0	1
43492	0xDA3	Logic Element 4 Block 2	0	0xFFFF	1	---	FC134B	0	1
43493	0xDA4	Logic Element 4 Block 3	0	0xFFFF	1	---	FC134B	0	1
43494	0xDA5	Logic Element 5 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43495	0xDA6	Logic Element 5 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43496	0xDA7	Logic Element 5 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43497	0xDA8	Logic Element 5 Block 1	0	0xFFFF	1	---	FC134B	0	1
43498	0xDA9	Logic Element 5 Block 2	0	0xFFFF	1	---	FC134B	0	1
43499	0xDAA	Logic Element 5 Block 3	0	0xFFFF	1	---	FC134B	0	1
43500	0xDAB	Logic Element 6 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43501	0xDAC	Logic Element 6 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43502	0xDAD	Logic Element 6 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43503	0xDAE	Logic Element 6 Block 1	0	0xFFFF	1	---	FC134B	0	1
43504	0xDAF	Logic Element 6 Block 2	0	0xFFFF	1	---	FC134B	0	1
43505	0xDB0	Logic Element 6 Block 3	0	0xFFFF	1	---	FC134B	0	1
43506	0xDB1	Logic Element 7 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43507	0xDB2	Logic Element 7 Trigger 2	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
43508	0xDB3	Logic Element 7 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43509	0xDB4	Logic Element 7 Block 1	0	0xFFFF	1	---	FC134B	0	1
43510	0xDB5	Logic Element 7 Block 2	0	0xFFFF	1	---	FC134B	0	1
43511	0xDB6	Logic Element 7 Block 3	0	0xFFFF	1	---	FC134B	0	1
43512	0xDB7	Logic Element 8 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
43513	0xDB8	Logic Element 8 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
43514	0xDB9	Logic Element 8 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
43515	0xDBA	Logic Element 8 Block 1	0	0xFFFF	1	---	FC134B	0	1
43516	0xDBB	Logic Element 8 Block 2	0	0xFFFF	1	---	FC134B	0	1
43517	0xDBC	Logic Element 8 Block 3	0	0xFFFF	1	---	FC134B	0	1
46365	0x18DC	Logic Element 9 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46366	0x18DD	Logic Element 9 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46367	0x18DE	Logic Element 9 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46368	0x18DF	Logic Element 9 Block 1	0	0xFFFF	1	---	FC134B	0	1
46369	0x18E0	Logic Element 9 Block 2	0	0xFFFF	1	---	FC134B	0	1
46370	0x18E1	Logic Element 9 Block 3	0	0xFFFF	1	---	FC134B	0	1
46371	0x18E2	Logic Element 10 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46372	0x18E3	Logic Element 10 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46373	0x18E4	Logic Element 10 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46374	0x18E5	Logic Element 10 Block 1	0	0xFFFF	1	---	FC134B	0	1
46375	0x18E6	Logic Element 10 Block 2	0	0xFFFF	1	---	FC134B	0	1
46376	0x18E7	Logic Element 10 Block 3	0	0xFFFF	1	---	FC134B	0	1
46377	0x18E8	Logic Element 11 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46378	0x18E9	Logic Element 11 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46379	0x18EA	Logic Element 11 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46380	0x18EB	Logic Element 11 Block 1	0	0xFFFF	1	---	FC134B	0	1
46381	0x18EC	Logic Element 11 Block 2	0	0xFFFF	1	---	FC134B	0	1
46382	0x18ED	Logic Element 11 Block 3	0	0xFFFF	1	---	FC134B	0	1
46383	0x18EE	Logic Element 12 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46384	0x18EF	Logic Element 12 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46385	0x18F0	Logic Element 12 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46386	0x18F1	Logic Element 12 Block 1	0	0xFFFF	1	---	FC134B	0	1
46387	0x18F2	Logic Element 12 Block 2	0	0xFFFF	1	---	FC134B	0	1
46388	0x18F3	Logic Element 12 Block 3	0	0xFFFF	1	---	FC134B	0	1
46389	0x18F4	Logic Element 13 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46390	0x18F5	Logic Element 13 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46391	0x18F6	Logic Element 13 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46392	0x18F7	Logic Element 13 Block 1	0	0xFFFF	1	---	FC134B	0	1
46393	0x18F8	Logic Element 13 Block 2	0	0xFFFF	1	---	FC134B	0	1
46394	0x18F9	Logic Element 13 Block 3	0	0xFFFF	1	---	FC134B	0	1
46395	0x18FA	Logic Element 14 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46396	0x18FB	Logic Element 14 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46397	0x18FC	Logic Element 14 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46398	0x18FD	Logic Element 14 Block 1	0	0xFFFF	1	---	FC134B	0	1
46399	0x18FE	Logic Element 14 Block 2	0	0xFFFF	1	---	FC134B	0	1
46400	0x18FF	Logic Element 14 Block 3	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46401	0x1900	Logic Element 15 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46402	0x1901	Logic Element 15 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46403	0x1902	Logic Element 15 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46404	0x1903	Logic Element 15 Block 1	0	0xFFFF	1	---	FC134B	0	1
46405	0x1904	Logic Element 15 Block 2	0	0xFFFF	1	---	FC134B	0	1
46406	0x1905	Logic Element 15 Block 3	0	0xFFFF	1	---	FC134B	0	1
46407	0x1906	Logic Element 16 Trigger 1	0	0xFFFF	1	---	FC134B	0	1
46408	0x1907	Logic Element 16 Trigger 2	0	0xFFFF	1	---	FC134B	0	1
46409	0x1908	Logic Element 16 Trigger 3	0	0xFFFF	1	---	FC134B	0	1
46410	0x1909	Logic Element 16 Block 1	0	0xFFFF	1	---	FC134B	0	1
46411	0x190A	Logic Element 16 Block 2	0	0xFFFF	1	---	FC134B	0	1
46412	0x190B	Logic Element 16 Block 3	0	0xFFFF	1	---	FC134B	0	1
47012	0x1B63	Logic Element 1 Number of Triggers	2	8	1	---	F1	3	1
47013	0x1B64	Logic Element 1 Number of Blocks	2	4	1	---	F1	3	1
47014	0x1B65	Logic Element 1 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47015	0x1B66	Logic Element 1 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47016	0x1B67	Logic Element 1 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47017	0x1B68	Logic Element 1 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47018	0x1B69	Logic Element 1 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47019	0x1B6A	Logic Element 1 Block 4	0	0xFFFF	1	---	FC134B	0	1
47020	0x1B6B	Logic Element 2 Number of Triggers	2	8	1	---	F1	3	1
47021	0x1B6C	Logic Element 2 Number of Blocks	2	4	1	---	F1	3	1
47022	0x1B6D	Logic Element 2 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47023	0x1B6E	Logic Element 2 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47024	0x1B6F	Logic Element 2 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47025	0x1B70	Logic Element 2 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47026	0x1B71	Logic Element 2 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47027	0x1B72	Logic Element 2 Block 4	0	0xFFFF	1	---	FC134B	0	1
47028	0x1B73	Logic Element 3 Number of Triggers	2	8	1	---	F1	3	1
47029	0x1B74	Logic Element 3 Number of Blocks	2	4	1	---	F1	3	1
47030	0x1B75	Logic Element 3 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47031	0x1B76	Logic Element 3 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47032	0x1B77	Logic Element 3 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47033	0x1B78	Logic Element 3 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47034	0x1B79	Logic Element 3 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47035	0x1B7A	Logic Element 3 Block 4	0	0xFFFF	1	---	FC134B	0	1
47036	0x1B7B	Logic Element 4 Number of Triggers	2	8	1	---	F1	3	1
47037	0x1B7C	Logic Element 4 Number of Blocks	2	4	1	---	F1	3	1
47038	0x1B7D	Logic Element 4 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47039	0x1B7E	Logic Element 4 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47040	0x1B7F	Logic Element 4 Trigger 6	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47041	0x1B80	Logic Element 4 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47042	0x1B81	Logic Element 4 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47043	0x1B82	Logic Element 4 Block 4	0	0xFFFF	1	---	FC134B	0	1
47044	0x1B83	Logic Element 5 Number of Triggers	2	8	1	---	F1	3	1
47045	0x1B84	Logic Element 5 Number of Blocks	2	4	1	---	F1	3	1
47046	0x1B85	Logic Element 5 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47047	0x1B86	Logic Element 5 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47048	0x1B87	Logic Element 5 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47049	0x1B88	Logic Element 5 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47050	0x1B89	Logic Element 5 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47051	0x1B8A	Logic Element 5 Block 4	0	0xFFFF	1	---	FC134B	0	1
47052	0x1B8B	Logic Element 6 Number of Triggers	2	8	1	---	F1	3	1
47053	0x1B8C	Logic Element 6 Number of Blocks	2	4	1	---	F1	3	1
47054	0x1B8D	Logic Element 6 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47055	0x1B8E	Logic Element 6 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47056	0x1B8F	Logic Element 6 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47057	0x1B90	Logic Element 6 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47058	0x1B91	Logic Element 6 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47059	0x1B92	Logic Element 6 Block 4	0	0xFFFF	1	---	FC134B	0	1
47060	0x1B93	Logic Element 7 Number of Triggers	2	8	1	---	F1	3	1
47061	0x1B94	Logic Element 7 Number of Blocks	2	4	1	---	F1	3	1
47062	0x1B95	Logic Element 7 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47063	0x1B96	Logic Element 7 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47064	0x1B97	Logic Element 7 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47065	0x1B98	Logic Element 7 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47066	0x1B99	Logic Element 7 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47067	0x1B9A	Logic Element 7 Block 4	0	0xFFFF	1	---	FC134B	0	1
47068	0x1B9B	Logic Element 8 Number of Triggers	2	8	1	---	F1	3	1
47069	0x1B9C	Logic Element 8 Number of Blocks	2	4	1	---	F1	3	1
47070	0x1B9D	Logic Element 8 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47071	0x1B9E	Logic Element 8 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47072	0x1B9F	Logic Element 8 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47073	0x1BA0	Logic Element 8 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47074	0x1BA1	Logic Element 8 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47075	0x1BA2	Logic Element 8 Block 4	0	0xFFFF	1	---	FC134B	0	1
47076	0x1BA3	Logic Element 9 Number of Triggers	2	8	1	---	F1	3	1
47077	0x1BA4	Logic Element 9 Number of Blocks	2	4	1	---	F1	3	1
47078	0x1BA5	Logic Element 9 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47079	0x1BA6	Logic Element 9 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47080	0x1BA7	Logic Element 9 Trigger 6	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47081	0x1BA8	Logic Element 9 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47082	0x1BA9	Logic Element 9 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47083	0x1BAA	Logic Element 9 Block 4	0	0xFFFF	1	---	FC134B	0	1
47084	0x1BAB	Logic Element 10 Number of Triggers	2	8	1	---	F1	3	1
47085	0x1BAC	Logic Element 10 Number of Blocks	2	4	1	---	F1	3	1
47086	0x1BAD	Logic Element 10 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47087	0x1BAE	Logic Element 10 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47088	0x1BAF	Logic Element 10 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47089	0x1BB0	Logic Element 10 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47090	0x1BB1	Logic Element 10 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47091	0x1BB2	Logic Element 10 Block 4	0	0xFFFF	1	---	FC134B	0	1
47092	0x1BB3	Logic Element 11 Number of Triggers	2	8	1	---	F1	3	1
47093	0x1BB4	Logic Element 11 Number of Blocks	2	4	1	---	F1	3	1
47094	0x1BB5	Logic Element 11 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47095	0x1BB6	Logic Element 11 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47096	0x1BB7	Logic Element 11 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47097	0x1BB8	Logic Element 11 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47098	0x1BB9	Logic Element 11 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47099	0x1BBA	Logic Element 11 Block 4	0	0xFFFF	1	---	FC134B	0	1
47100	0x1BBB	Logic Element 12 Number of Triggers	2	8	1	---	F1	3	1
47101	0x1BBC	Logic Element 12 Number of Blocks	2	4	1	---	F1	3	1
47102	0x1BBD	Logic Element 12 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47103	0x1BBE	Logic Element 12 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47104	0x1BBF	Logic Element 12 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47105	0x1BC0	Logic Element 12 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47106	0x1BC1	Logic Element 12 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47107	0x1BC2	Logic Element 12 Block 4	0	0xFFFF	1	---	FC134B	0	1
47108	0x1BC3	Logic Element 13 Number of Triggers	2	8	1	---	F1	3	1
47109	0x1BC4	Logic Element 13 Number of Blocks	2	4	1	---	F1	3	1
47110	0x1BC5	Logic Element 13 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47111	0x1BC6	Logic Element 13 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47112	0x1BC7	Logic Element 13 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47113	0x1BC8	Logic Element 13 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47114	0x1BC9	Logic Element 13 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47115	0x1BCA	Logic Element 13 Block 4	0	0xFFFF	1	---	FC134B	0	1
47116	0x1BCB	Logic Element 14 Number of Triggers	2	8	1	---	F1	3	1
47117	0x1BCC	Logic Element 14 Number of Blocks	2	4	1	---	F1	3	1
47118	0x1BCD	Logic Element 14 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47119	0x1BCE	Logic Element 14 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47120	0x1BCF	Logic Element 14 Trigger 6	0	0xFFFF	1	---	FC134B	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47121	0x1BD0	Logic Element 14 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47122	0x1BD1	Logic Element 14 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47123	0x1BD2	Logic Element 14 Block 4	0	0xFFFF	1	---	FC134B	0	1
47124	0x1BD3	Logic Element 15 Number of Triggers	2	8	1	---	F1	3	1
47125	0x1BD4	Logic Element 15 Number of Blocks	2	4	1	---	F1	3	1
47126	0x1BD5	Logic Element 15 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47127	0x1BD6	Logic Element 15 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47128	0x1BD7	Logic Element 15 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47129	0x1BD8	Logic Element 15 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47130	0x1BD9	Logic Element 15 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47131	0x1BDA	Logic Element 15 Block 4	0	0xFFFF	1	---	FC134B	0	1
47132	0x1BDB	Logic Element 16 Number of Triggers	2	8	1	---	F1	3	1
47133	0x1BDC	Logic Element 16 Number of Blocks	2	4	1	---	F1	3	1
47134	0x1BDD	Logic Element 16 Trigger 4	0	0xFFFF	1	---	FC134B	0	1
47135	0x1BDE	Logic Element 16 Trigger 5	0	0xFFFF	1	---	FC134B	0	1
47136	0x1BDF	Logic Element 16 Trigger 6	0	0xFFFF	1	---	FC134B	0	1
47137	0x1BE0	Logic Element 16 Trigger 7	0	0xFFFF	1	---	FC134B	0	1
47138	0x1BE1	Logic Element 16 Trigger 8	0	0xFFFF	1	---	FC134B	0	1
47139	0x1BE2	Logic Element 16 Block 4	0	0xFFFF	1	---	FC134B	0	1
SETPOINT GROUP SETTINGS									
40197	0xC4	Volts Per Hertz Function	0	3	1	---	FC197	0	1
40198	0xC5	Volts Per Hertz Voltage Mode	0	1	1	---	FC435	0	1
40199	0xC6	Volts Per Hertz Pickup	80	400	1	V/Hz	F3	105	1
40200	0xC7	Volts Per Hertz Curve	4	18	1	---	FC436	4	1
40201	0xC8	Volts per Hertz TD Multiplier	5	60000	1	---	F3	100	1
40202	0xC9	Volts per Hertz Reset Time	0	600000	1	---	F11	100	2
42485	0x9B4	Phase IOC Function	0	3	1	---	FC197	0	1
42486	0x9B5	Phase IOC Pickup	5	2000	1	x CT	F3	100	1
42487	0x9B6	Phase IOC Delay	0	30000	1	s	F3	0	1
42490	0x9B9	Neutral IOC Function	0	3	1	---	FC197	0	1
42491	0x9BA	Neutral IOC Pickup	5	2000	1	x CT	F3	100	1
42492	0x9BB	Neutral IOC Delay	0	30000	1	s	F3	0	1
42494	0x9BD	Ground IOC Function	0	3	1	---	FC197	0	1
42495	0x9BE	Ground IOC Pickup	5	2000	1	x CT	F3	100	1
42496	0x9BF	Ground IOC Delay	0	30000	1	s	F3	0	1
42498	0x9C1	Phase Time OC Function	0	3	1	---	FC197	0	1
42499	0x9C2	Phase Time OC Pickup	5	2000	1	x CT	F3	100	1
42500	0x9C3	Phase Time OC Curve	0	15	1	---	F36	0	1
42501	0x9C4	Phase Time OC Multiplier	5	5000	1	---	F3	100	1
42502	0x9C5	Phase Time OC Reset	0	1	1	---	F68	0	1
42504	0x9C7	Neutral Time OC Function	0	3	1	---	FC197	0	1
42505	0x9C8	Neutral Time OC Pickup	5	2000	1	x CT	F3	100	1
42506	0x9C9	Neutral Time OC Curve	0	15	1	---	F36	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42507	0x9CA	Neutral Time OC Multiplier	5	5000	1	---	F3	100	1
42508	0x9CB	Neutral Time OC Reset	0	1	1	---	F68	0	1
42510	0x9CD	Ground Time OC Function	0	3	1	---	FC197	0	1
42511	0x9CE	Ground Time OC Pickup	5	2000	1	x CT	F3	100	1
42512	0x9CF	Ground Time OC Curve	0	15	1	---	F36	0	1
42513	0x9D0	Ground Time OC Multiplier	5	5000	1	---	F3	100	1
42514	0x9D1	Ground Time OC Reset	0	1	1	---	F68	0	1
42516	0x9D3	Phase IOC 2 Function	0	3	1	---	FC197	0	1
42517	0x9D4	Phase IOC 2 Pickup	5	2000	1	x CT	F3	100	1
42518	0x9D5	Phase IOC 2 Delay	0	30000	1	s	F3	0	1
42521	0x9D8	Neutral IOC 2 Function	0	3	1	---	FC197	0	1
42522	0x9D9	Neutral IOC 2 Pickup	5	2000	1	x CT	F3	100	1
42523	0x9DA	Neutral IOC 2 Delay	0	30000	1	s	F3	0	1
42525	0x9DC	Ground IOC 2 Function	0	3	1	---	FC197	0	1
42526	0x9DD	Ground IOC 2 Pickup	5	2000	1	x CT	F3	100	1
42527	0x9DE	Ground IOC 2 Delay	0	30000	1	s	F3	0	1
42547	0x9F2	Sensitive Ground Time OC Function	0	3	1	---	FC197	0	1
42548	0x9F3	Sensitive Ground Time OC Pickup	5	3000	1	x CT	F17A	1000	1
42549	0x9F4	Sensitive Ground Time OC Curve	0	15	1	---	F36	0	1
42550	0x9F5	Sensitive Ground Time OC Multiplier	5	5000	1	---	F3	100	1
42551	0x9F6	Sensitive Ground Time OC Reset	0	1	1	---	F68	0	1
42552	0x9F7	Neutral Directional Function	0	3	1	---	FC207	0	1
42553	0x9F8	Neutral Directional Polarizing	1	3	1	---	F96	1	1
42554	0x9F9	Neutral Directional MTA	0	359	1	°Lead	F1	315	1
42555	0x9FA	Neutral Directional Minimum Voltage	5	125	1	x VT	F3	5	1
42560	0x9FF	Negative Sequence OV Function	0	3	1	---	FC197	0	1
42561	0xA00	Negative Sequence OV Pickup	0	125	1	x VT	F3	30	1
42562	0xA01	Negative Sequence OV Delay	0	60000	1	s	F3	200	1
42563	0xA02	Neutral OV Function	0	3	1	---	FC197	0	1
42564	0xA03	Neutral OV Pickup	0	125	1	x VT	F3	30	1
42565	0xA04	Neutral OV Delay	0	60000	1	s	F3	200	1
42566	0xA05	Phase OV Function	0	3	1	---	FC197	0	1
42567	0xA06	Phase OV Pickup	0	125	1	x VT	F3	125	1
42568	0xA07	Phase OV Delay	0	60000	1	s	F3	200	1
42569	0xA08	Phase OV Phases	1	3	1	---	F92	1	1
42570	0xA09	Phase UV Function	0	3	1	---	FC197	0	1
42571	0xA0A	Phase UV Pickup	0	125	1	x VT	F3	75	1
42572	0xA0B	Phase UV Curve	0	1	1	---	F93	1	1
42573	0xA0C	Phase UV Delay	0	60000	1	s	F3	200	1
42574	0xA0D	Phase UV Phases	1	3	1	---	F92	1	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42575	0xA0E	Phase UV Minimum Voltage	0	125	1	x VT	F3	30	1
42576	0xA0F	Auxiliary OV Function	0	3	1	---	FC197	0	1
42577	0xA10	Auxiliary OV Pickup	0	125	1	x VT	F3	30	1
42578	0xA11	Auxiliary OV Delay	0	60000	1	s	F3	200	1
42579	0xA12	Auxiliary UV Function	0	3	1	---	FC197	0	1
42580	0xA13	Auxiliary UV Pickup	0	125	1	x VT	F3	75	1
42581	0xA14	Auxiliary UV Curve	0	1	1	---	F93	1	1
42582	0xA15	Auxiliary UV Delay	0	60000	1	s	F3	200	1
42583	0xA16	Auxiliary Minimum Voltage	0	125	1	x VT	F3	30	1
42584	0xA17	Underfrequency 1 Function	0	3	1	---	FC197	0	1
42585	0xA18	Underfrequency 1 Pickup	4000	7000	1	Hz	F3	5900	1
42586	0xA19	Underfrequency 1 Delay	10	60000	1	s	F3	200	1
42587	0xA1A	Minimum UF Voltage 1	0	125	1	x VT	F3	70	1
42588	0xA1B	Underfrequency 2 Function	0	3	1	---	FC197	0	1
42589	0xA1C	Underfrequency 2 Pickup	4000	7000	1	Hz	F3	5900	1
42590	0xA1D	Underfrequency 2 Delay	10	60000	1	s	F3	200	1
42591	0xA1E	Minimum UF Voltage 2	0	125	1	x VT	F3	70	1
42592	0xA1F	Overfrequency 1 Function	0	3	1	---	FC197	0	1
42593	0xA20	Overfrequency 1 Pickup	4000	7000	1	Hz	F3	6050	1
42594	0xA21	Overfrequency 1 Delay	10	60000	1	s	F3	200	1
42595	0xA22	Overfrequency 2 Function	0	3	1	---	FC197	0	1
42596	0xA23	Overfrequency 2 Pickup	4000	7000	1	Hz	F3	6050	1
42597	0xA24	Overfrequency 2 Delay	10	60000	1	s	F3	200	1
42598	0xA25	Sensitive Ground IOC Function	0	3	1	---	FC197	0	1
42599	0xA26	Sensitive Ground IOC Pickup	5	3000	1	x CT	F17A	1000	1
42600	0xA27	Sensitive Ground IOC Delay	0	30000	1	s	F3	0	1
42601	0xA28	Sensitive Ground 2 IOC Function	0	3	1	---	FC197	0	1
42602	0xA29	Sensitive Ground 2 IOC Pickup	5	3000	1	x CT	F17A	1000	1
42603	0xA2A	Sensitive Ground 2 IOC Delay	0	30000	1	s	F3	0	1
42604	0xA2B	Negative Sequence IOC Function	0	3	1	---	FC197	0	1
42605	0xA2C	Negative Sequence IOC Pickup	5	2000	1	x CT	F3	100	1
42606	0xA2D	Negative Sequence IOC Delay	0	30000	1	s	F3	0	1
46799	0x1A8E	Wattmetric 1 Function	0	4	1	---	FC205	0	1
46800	0x1A8F	Wattmetric 1 Voltage	0	1	1	---	FC118	0	1
46801	0x1A90	Wattmetric 1 Voltage Pickup	2	300	1	x VT	F3	20	1
46802	0x1A91	Wattmetric 1 Current	0	1	1	---	FC119	0	1
46803	0x1A92	Wattmetric 1 Current Pickup	2	20000	1	x CT	F17A	60	1
46804	0x1A93	Wattmetric 1 Power Pickup	1	1200	1	x CTxVT	F17A	100	1
46805	0x1A94	Wattmetric 1 Ref Power Pickup	1	1200	1	x CTxVT	F17A	500	1
46806	0x1A95	Wattmetric 1 ECA	0	359	1	°	F1	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46807	0x1A96	Wattmetric 1 Power Pickup Delay	0	30000	1	s	F3	20	1
46808	0x1A97	Wattmetric 1 Curve	0	9	1	---	FC427	4	1
46809	0x1A98	Wattmetric 1 Multiplier	1	200	1	s	F3	100	1
46810	0x1A99	Wattmetric 1 Output Relays 3-6	0	0x3F	1	---	FC198	0	1
46814	0x1A9D	Wattmetric 2 Function	0	4	1	---	FC205	0	1
46815	0x1A9E	Wattmetric 2 Voltage	0	1	1	---	FC118	0	1
46816	0x1A9F	Wattmetric 2 Voltage Pickup	2	300	1	x VT	F3	20	1
46817	0x1AA0	Wattmetric 2 Current	0	1	1	---	FC119	0	1
46818	0x1AA1	Wattmetric 2 Current Pickup	2	20000	1	x CT	F17A	60	1
46819	0x1AA2	Wattmetric 2 Power Pickup	1	1200	1	x CTxVT	F17A	100	1
46820	0x1AA3	Wattmetric 2 Ref Power Pickup	1	1200	1	x CTxVT	F17A	500	1
46821	0x1AA4	Wattmetric 2 ECA	0	359	1	°	F1	0	1
46822	0x1AA5	Wattmetric 2 Power Pickup Delay	0	30000	1	s	F3	20	1
46823	0x1AA6	Wattmetric 2 Curve	0	9	1	---	FC427	4	1
46824	0x1AA7	Wattmetric 2 Multiplier	1	200	1	s	F3	100	1
46825	0x1AA8	Wattmetric 2 Output Relays 3-6	0	0x3F	1	---	FC198	0	1
46833	0x1AB0	Directional Power 1 Function	0	4	1	---	FC205	0	1
46834	0x1AB1	Directional Power 1 RCA	0	359	1	°	F1	0	1
46835	0x1AB2	Directional Power 1 SMIN	-1200	1200	1	x Rated Power	F7	100	1
46836	0x1AB3	Directional Power 1 Pickup Delay	0	6000	1	s	F2	5	1
46837	0x1AB4	Directional Power 1 Output Relays 3-6	0	0x3F	1	---	FC198	0	1
46841	0x1AB8	Directional Power 2 Function	0	4	1	---	FC205	0	1
46842	0x1AB9	Directional Power 2 RCA	0	359	1	°	F1	0	1
46843	0x1ABA	Directional Power 2 SMIN	-1200	1200	1	x Rated Power	F7	100	1
46844	0x1ABB	Directional Power 2 Pickup Delay	0	6000	1	s	F2	5	1
46845	0x1ABC	Directional Power 2 Output Relays 3-6	0	0x3F	1	---	FC198	0	1
46859	0x1ACA	Broken Conductor Function	0	4	1	---	FC205	0	1
46860	0x1ACB	Broken Conductor I_2/I_1 Ratio	200	1000	1	%	F2	200	1
46861	0x1ACC	Broken Conductor I_1 Min	5	100	1	x CT	F3	10	1
46862	0x1ACD	Broken Conductor I_1 Max	5	500	1	x CT	F3	150	1
46863	0x1ACE	Broken Conductor Pickup Delay	0	60000	1	s	F17A	20000	1
46864	0x1ACF	Broken Conductor Output Relays 3-6	0	0x3F	1	---	FC198	0	1
46933	0x1B14	Negative Seq OV 2 Function	0	3	1	---	FC197	0	1
46934	0x1B15	Negative Seq OV 2 Pkp	0	125	1	x VT	F3	30	1
46935	0x1B16	Negative Seq OV 2 Delay	0	60000	1	s	F3	200	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46940	0x1B1B	Auxiliary UV 2 Function	0	3	1	---	FC197	0	1
46941	0x1B1C	Auxiliary UV 2 Pickup	0	125	1	x VT	F3	75	1
46942	0x1B1D	Auxiliary UV 2 Curve	0	1	1	---	F93	1	1
46943	0x1B1E	Auxiliary UV 2 Delay	0	60000	1	s	F3	200	1
46948	0x1B23	Aux UV2 Min Voltage	0	125	1	x VT	F3	30	1
46949	0x1B24	Neutral OV 2 Function	0	3	1	---	FC197	0	1
46950	0x1B25	Neutral OV 2 Pickup	0	125	1	x VT	F3	30	1
46951	0x1B26	Neutral OV 2 Delay	0	60000	1	s	F3	200	1
46956	0x1B2B	Neutral OV 3 Function	0	3	1	---	FC197	0	1
46957	0x1B2C	Neutral OV 3 Pickup	0	125	1	x VT	F3	30	1
46958	0x1B2D	Neutral OV 3 Delay	0	60000	1	s	F3	200	1
46963	0x1B32	Neutral OV 4 Function	0	3	1	---	FC197	0	1
46964	0x1B33	Neutral OV 4 Pickup	0	125	1	x VT	F3	30	1
46965	0x1B34	Neutral OV 4 Delay	0	60000	1	s	F3	200	1
46970	0x1B39	Overfrequency 3 Function	0	3	1	---	FC197	0	1
46971	0x1B3A	Overfrequency 3 Pickup	4000	7000	1	Hz	F3	6050	1
46972	0x1B3B	Overfrequency 3 Delay	10	60000	1	s	F3	200	1
46977	0x1B40	Overfrequency 4 Function	0	3	1	---	FC197	0	1
46978	0x1B41	Overfrequency 4 Pickup	4000	7000	1	Hz	F3	6050	1
46979	0x1B42	Overfrequency 4 Delay	10	60000	1	s	F3	200	1
47143	0x1BE6	Underfrequency 3 Function	0	3	1	---	FC197	0	1
47144	0x1BE7	Underfrequency 3 Pkp	4000	7000	1	Hz	F3	5900	1
47145	0x1BE8	Underfrequency 3 Delay	10	60000	1	s	F3	200	1
47146	0x1BE9	Minimum UF Voltage 3	0	125	1	x VT	F3	70	1
47151	0x1BEE	Underfrequency 4 Function	0	3	1	---	FC197	0	1
47152	0x1BEF	Underfrequency 4 Pkp	4000	7000	1	Hz	F3	5900	1
47153	0x1BF0	Underfrequency 4 Delay	10	60000	1	s	F3	200	1
47154	0x1BF1	Minimum UF Voltage 4	0	125	1	x VT	F3	70	1
PROTECTION FUNCTION BLOCKING									
40205	0xCC	Volts Per Hertz Block 1	0	0xEF02	1	---	F89	0	1
40206	0xCD	Volts Per Hertz Block 2	0	0xEF02	1	---	F89	0	1
40207	0xCE	Volts Per Hertz Block 3	0	0xEF02	1	---	F89	0	1
42641	0xA50	Phase IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42642	0xA51	Phase IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42643	0xA52	Phase IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42644	0xA53	Neutral IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42645	0xA54	Neutral IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42646	0xA55	Neutral IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42647	0xA56	Ground IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42648	0xA57	Ground IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42649	0xA58	Ground IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42650	0xA59	Phase TOC Block 1	0	0xEF02	1	---	F89	0	1
42651	0xA5A	Phase TOC Block 2	0	0xEF02	1	---	F89	0	1
42652	0xA5B	Phase TOC Block 3	0	0xEF02	1	---	F89	0	1
42653	0xA5C	Neutral TOC Block 1	0	0xEF02	1	---	F89	0	1
42654	0xA5D	Neutral TOC Block 2	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42655	0xA5E	Neutral TOC Block 3	0	0xEF02	1	---	F89	0	1
42656	0xA5F	Ground TOC Block 1	0	0xEF02	1	---	F89	0	1
42657	0xA60	Ground TOC Block 2	0	0xEF02	1	---	F89	0	1
42658	0xA61	Ground TOC Block 3	0	0xEF02	1	---	F89	0	1
42659	0xA62	Phase IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42660	0xA63	Phase IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42661	0xA64	Phase IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42662	0xA65	Neutral IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42663	0xA66	Neutral IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42664	0xA67	Neutral IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42665	0xA68	Ground IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42666	0xA69	Ground IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42667	0xA6A	Ground IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42677	0xA74	Sensitive Ground TOC Block 1	0	0xEF02	1	---	F89	0	1
42678	0xA75	Sensitive Ground TOC Block 2	0	0xEF02	1	---	F89	0	1
42679	0xA76	Sensitive Ground TOC Block 3	0	0xEF02	1	---	F89	0	1
42680	0xA77	67N Block 1	0	0xEF02	1	---	F89	0	1
42681	0xA78	67N Block 2	0	0xEF02	1	---	F89	0	1
42682	0xA79	67N Block 3	0	0xEF02	1	---	F89	0	1
42686	0xA7D	Negative Sequence OV Block 1	0	0xEF02	1	---	F89	0	1
42687	0xA7E	Negative Sequence OV Block 2	0	0xEF02	1	---	F89	0	1
42688	0xA7F	Negative Sequence OV Block 3	0	0xEF02	1	---	F89	0	1
42689	0xA80	Neutral OV Block 1	0	0xEF02	1	---	F89	0	1
42690	0xA81	Neutral OV Block 2	0	0xEF02	1	---	F89	0	1
42691	0xA82	Neutral OV Block 3	0	0xEF02	1	---	F89	0	1
42692	0xA83	Phase OV Block 1	0	0xEF02	1	---	F89	0	1
42693	0xA84	Phase OV Block 2	0	0xEF02	1	---	F89	0	1
42694	0xA85	Phase OV Block 3	0	0xEF02	1	---	F89	0	1
42695	0xA86	Phase UV Block 1	0	0xEF02	1	---	F89	0	1
42696	0xA87	Phase UV Block 2	0	0xEF02	1	---	F89	0	1
42697	0xA88	Phase UV Block 3	0	0xEF02	1	---	F89	0	1
42698	0xA89	Auxiliary OV Block 1	0	0xEF02	1	---	F89	0	1
42699	0xA8A	Auxiliary OV Block 2	0	0xEF02	1	---	F89	0	1
42700	0xA8B	Auxiliary OV Block 3	0	0xEF02	1	---	F89	0	1
42701	0xA8C	Auxiliary UV Block 1	0	0xEF02	1	---	F89	0	1
42702	0xA8D	Auxiliary UV Block 2	0	0xEF02	1	---	F89	0	1
42703	0xA8E	Auxiliary UV Block 3	0	0xEF02	1	---	F89	0	1
42704	0xA8F	Underfrequency 1 Block 1	0	0xEF02	1	---	F89	0	1
42705	0xA90	Underfrequency 1 Block 2	0	0xEF02	1	---	F89	0	1
42706	0xA91	Underfrequency 1 Block 3	0	0xEF02	1	---	F89	0	1
42707	0xA92	Underfrequency 2 Block 1	0	0xEF02	1	---	F89	0	1
42708	0xA93	Underfrequency 2 Block 2	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42709	0xA94	Underfrequency 2 Block 3	0	0xEF02	1	---	F89	0	1
42710	0xA95	Overfrequency 1 Block 1	0	0xEF02	1	---	F89	0	1
42711	0xA96	Overfrequency 1 Block 2	0	0xEF02	1	---	F89	0	1
42712	0xA97	Overfrequency 1 Block 3	0	0xEF02	1	---	F89	0	1
42713	0xA98	Overfrequency 2 Block 1	0	0xEF02	1	---	F89	0	1
42714	0xA99	Overfrequency 2 Block 2	0	0xEF02	1	---	F89	0	1
42715	0xA9A	Overfrequency 2 Block 3	0	0xEF02	1	---	F89	0	1
42719	0xA9E	Thermal Model Block 1	0	0xEF02	1	---	F89	0	1
42720	0xA9F	Thermal Model Block 2	0	0xEF02	1	---	F89	0	1
42721	0xAA0	Thermal Model Block 3	0	0xEF02	1	---	F89	0	1
42722	0xAA1	50SG IOC 1 Block 1	0	0xEF02	1	---	F89	0	1
42723	0xAA2	50SG IOC 1 Block 2	0	0xEF02	1	---	F89	0	1
42724	0xAA3	50SG IOC 1 Block 3	0	0xEF02	1	---	F89	0	1
42725	0xAA4	50SG IOC 2 Block 1	0	0xEF02	1	---	F89	0	1
42726	0xAA5	50SG IOC 2 Block 2	0	0xEF02	1	---	F89	0	1
42727	0xAA6	50SG IOC 2 Block 3	0	0xEF02	1	---	F89	0	1
42728	0xAA7	Negative Sequence IOC Block 1	0	0xEF02	1	---	F89	0	1
42729	0xAA8	Negative Sequence IOC Block 2	0	0xEF02	1	---	F89	0	1
42730	0xAA9	Negative Sequence IOC Block 3	0	0xEF02	1	---	F89	0	1
42731	0xAAA	Neg Seq TOC1 Block 1	0	0xEF02	1	---	F89	0	1
42732	0xAAB	Neg Seq TOC1 Block 2	0	0xEF02	1	---	F89	0	1
42733	0xAAC	Neg Seq TOC1 Block 3	0	0xEF02	1	---	F89	0	1
46811	0x1A9A	Wattmetric 1 Block 1	0	0xEF02	1	---	F89	0	1
46812	0x1A9B	Wattmetric 1 Block 2	0	0xEF02	1	---	F89	0	1
46813	0x1A9C	Wattmetric 1 Block 3	0	0xEF02	1	---	F89	0	1
46826	0x1AA9	Wattmetric 2 Block 1	0	0xEF02	1	---	F89	0	1
46827	0x1AAA	Wattmetric 2 Block 2	0	0xEF02	1	---	F89	0	1
46828	0x1AAB	Wattmetric 2 Block 3	0	0xEF02	1	---	F89	0	1
46838	0x1AB5	Directional Power 1 Block 1	0	0xEF02	1	---	F89	0	1
46839	0x1AB6	Directional Power 1 Block 2	0	0xEF02	1	---	F89	0	1
46840	0x1AB7	Directional Power 1 Block 3	0	0xEF02	1	---	F89	0	1
46846	0x1ABD	Directional Power 2 Block 1	0	0xEF02	1	---	F89	0	1
46847	0x1ABE	Directional Power 2 Block 2	0	0xEF02	1	---	F89	0	1
46848	0x1ABF	Directional Power 2 Block 3	0	0xEF02	1	---	F89	0	1
46865	0x1AD0	Broken Conductor Block 1	0	0xEF02	1	---	F89	0	1
46866	0x1AD1	Broken Conductor Block 2	0	0xEF02	1	---	F89	0	1
46867	0x1AD2	Broken Conductor Block 3	0	0xEF02	1	---	F89	0	1
46936	0x1B17	Negative Seq OV 2 Block 1	0	0xEF02	1	---	F89	0	1
46937	0x1B18	Negative Seq OV 2 Block 2	0	0xEF02	1	---	F89	0	1
46938	0x1B19	Negative Seq OV 2 Block 3	0	0xEF02	1	---	F89	0	1
46944	0x1B1F	Auxiliary UV 2 Block 1	0	0xEF02	1	---	F89	0	1
46945	0x1B20	Auxiliary UV 2 Block 2	0	0xEF02	1	---	F89	0	1
46946	0x1B21	Auxiliary UV 2 Block 3	0	0xEF02	1	---	F89	0	1
46952	0x1B27	Neutral OV 2 Block 1	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
46953	0x1B28	Neutral OV 2 Block 2	0	0xEF02	1	---	F89	0	1
46954	0x1B29	Neutral OV 2 Block 3	0	0xEF02	1	---	F89	0	1
46959	0x1B2E	Neutral OV 3 Block 1	0	0xEF02	1	---	F89	0	1
46960	0x1B2F	Neutral OV 3 Block 2	0	0xEF02	1	---	F89	0	1
46961	0x1B30	Neutral OV 3 Block 3	0	0xEF02	1	---	F89	0	1
46966	0x1B35	Neutral OV 4 Block 1	0	0xEF02	1	---	F89	0	1
46967	0x1B36	Neutral OV 4 Block 2	0	0xEF02	1	---	F89	0	1
46968	0x1B37	Neutral OV 4 Block 3	0	0xEF02	1	---	F89	0	1
46973	0x1B3C	Overfrequency 3 Block 1	0	0xEF02	1	---	F89	0	1
46974	0x1B3D	Overfrequency 3 Block 2	0	0xEF02	1	---	F89	0	1
46975	0x1B3E	Overfrequency 3 Block 3	0	0xEF02	1	---	F89	0	1
46980	0x1B43	Overfrequency 4 Block 1	0	0xEF02	1	---	F89	0	1
46981	0x1B44	Overfrequency 4 Block 2	0	0xEF02	1	---	F89	0	1
47147	0x1BEA	Underfrequency 3 Block 1	0	0xEF02	1	---	F89	0	1
47148	0x1BEB	Underfrequency 3 Block 2	0	0xEF02	1	---	F89	0	1
47149	0x1BEC	Underfrequency 3 Block 3	0	0xEF02	1	---	F89	0	1
47155	0x1BF2	Underfrequency 4 Block 1	0	0xEF02	1	---	F89	0	1
47156	0x1BF3	Underfrequency 4 Block 2	0	0xEF02	1	---	F89	0	1
47157	0x1BF4	Underfrequency 4 Block 3	0	0xEF02	1	---	F89	0	1
PROTECTION ELEMENT RELAY CONFIGURATION									
40204	0xCB	Volts Per Hertz Relays	0	0x7F	1	---	FC198	0	1
42737	0xAB0	Phase IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42738	0xAB1	Neutral IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42739	0xAB2	Ground IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42740	0xAB3	Phase TOC1 Relay	0	0x7F	1	---	FC198	0	1
42741	0xAB4	Neutral TOC Relay	0	0x7F	1	---	FC198	0	1
42742	0xAB5	Ground TOC1 Relay	0	0x7F	1	---	FC198	0	1
42743	0xAB6	Phase IOC 2 Relay	0	0x7F	1	---	FC198	0	1
42744	0xAB7	Neutral IOC 2 Relay	0	0x7F	1	---	FC198	0	1
42745	0xAB8	Ground IOC 2 Relay	0	0x7F	1	---	FC198	0	1
42749	0xABC	Sensitive Ground TOC1 Relay	0	0x7F	1	---	FC198	0	1
42750	0xABD	Neutral Directional (67N) Relay	0	0x7F	1	---	FC198	0	1
42752	0xABF	Negative Sequence Overvoltage Relay	0	0x7F	1	---	FC198	0	1
42753	0xAC0	Neutral Overvoltage Relay	0	0x7F	1	---	FC198	0	1
42754	0xAC1	Phase Overvoltage Relay	0	0x7F	1	---	FC198	0	1
42755	0xAC2	Phase Undervoltage Relay	0	0x7F	1	---	FC198	0	1
42756	0xAC3	Auxiliary OVervoltage Relay	0	0x7F	1	---	FC198	0	1
42757	0xAC4	AuxiliaryUndervoltage Relay	0	0x7F	1	---	FC198	0	1
42758	0xAC5	Underfrequency 1 Relay	0	0x7F	1	---	FC198	0	1
42759	0xAC6	Underfrequency 2 Relay	0	0x7F	1	---	FC198	0	1
42760	0xAC7	Overfrequency 1 Relay	0	0x7F	1	---	FC198	0	1
42761	0xAC8	Overfrequency 2 Relay	0	0x7F	1	---	FC198	0	1
42762	0xAC9	Sensitive Ground IOC 1 Relay	0	0x7F	1	---	FC198	0	1
42763	0xACA	Sensitive Ground IOC2 Relay	0	0x7F	1	---	FC198	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
42764	0xACB	Negative Sequence IOC Relays	0	0x7F	1	---	FC198	0	1
46939	0x1B1A	Negative Seq OV 2 Relays	0	0x7F	1	---	FC198	0	1
46947	0x1B22	Auxiliary UV 2 Relay	0	0x7F	1	---	FC198	0	1
46955	0x1B2A	Neutral OV 2 Relay	0	0x7F	1	---	FC198	0	1
46962	0x1B31	Neutral OV 3 Relay	0	0x7F	1	---	FC198	0	1
46969	0x1B38	Neutral OV 4 Relay	0	0x7F	1	---	FC198	0	1
46976	0x1B3F	Overfrequency 3 Relay	0	0x7F	1	---	FC198	0	1
46983	0x1B46	Overfrequency 4 Relay	0	0x7F	1	---	FC198	0	1
47150	0x1BED	Underfrequency 3 Relays	0	0x7F	1	---	FC198	0	1
47158	0x1BF5	Underfrequency 4 Relays	0	0x7F	1	---	FC198	0	1
DEMAND									
47189	0x1C14	Current Demand 1 Function	0	2	1	---	FC206	0	1
47191	0x1C16	Current Demand 1 Measurement Type	0	2	1	---	FC431	0	1
47192	0x1C17	Current Demand 1 90% Response Time	0	4	1	---	FC432	2	1
47193	0x1C18	Current Demand 1 Time Interval	0	4	1	---	FC432	3	1
47194	0x1C19	Current Demand 1 Pkp	10	10000	1	A	F1	1000	1
47195	0x1C1A	Current Demand 1 Relays	0	0x7F	1	---	FC198	0	1
47196	0x1C1B	Current Demand 1 Block 1	0	0xEF02	1	---	F89	0	1
47197	0x1C1C	Current Demand 1 Block 2	0	0xEF02	1	---	F89	0	1
47198	0x1C1D	Current Demand 1 Block 3	0	0xEF02	1	---	F89	0	1
47209	0x1C28	Real Power Demand Function	0	2	1	---	FC206	0	1
47210	0x1C29	Real Power Demand Measurement Type	0	2	1	---	FC431	0	1
47211	0x1C2A	Real Power Demand 90% Response Time	0	4	1	---	FC432	2	1
47212	0x1C2B	Real Power Demand Time Interval	0	4	1	---	FC432	3	1
47213	0x1C2C	Real Power Demand Pkp	1	3000000	1	kW	F10	10000	2
47215	0x1C2E	Real Power Demand Relays	0	0x7F	1	---	FC198	0	1
47216	0x1C2F	Real Power Demand Block 1	0	0xEF02	1	---	F89	0	1
47217	0x1C30	Real Power Demand Block 2	0	0xEF02	1	---	F89	0	1
47218	0x1C31	Real Power Demand Block 3	0	0xEF02	1	---	F89	0	1
47219	0x1C32	Reactive Power Demand Function	0	2	1	---	FC206	0	1
47220	0x1C33	Reactive Power Demand Measurement Type	0	2	1	---	FC431	0	1
47221	0x1C34	Reactive Power Demand 90% Response Time	0	4	1	---	FC432	2	1
47222	0x1C35	Reactive Power Demand Time Interval	0	4	1	---	FC432	3	1
47223	0x1C36	Reactive Power Demand Pkp	1	3000000	1	kvar	F10	10000	2
47225	0x1C38	Reactive Power Demand Relays	0	0x7F	1	---	FC198	0	1
47226	0x1C39	Reactive Power Demand Block 1	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47227	0x1C3A	Reactive Power Demand Block 2	0	0xEF02	1	---	F89	0	1
47228	0x1C3B	Reactive Power Demand Block 3	0	0xEF02	1	---	F89	0	1
47229	0x1C3C	Apparent Power Demand Function	0	2	1	---	FC206	0	1
47230	0x1C3D	Apparent Power Demand Measurement Type	0	2	1	---	FC431	0	1
47231	0x1C3E	Apparent Power Demand 90% Response Time	0	4	1	---	FC432	2	1
47232	0x1C3F	Apparent Power Demand Time Interval	0	4	1	---	FC432	3	1
47233	0x1C40	Apparent Power Demand Pkp	1	3000000	1	kVA	F10	10000	2
47235	0x1C42	Apparent Power Demand Relays	0	0x7F	1	---	FC198	0	1
47236	0x1C43	Apparent Power Demand Block 1	0	0xEF02	1	---	F89	0	1
47237	0x1C44	Apparent Power Demand Block 2	0	0xEF02	1	---	F89	0	1
47238	0x1C45	Apparent Power Demand Block 3	0	0xEF02	1	---	F89	0	1
LOCKOUT									
47242	0x1C49	Lockout Function	0	1	1	---	FC126	0	1
47243	0x1C4A	Lockout Input 1	0	0xFFFF	1	---	FC134D	0	1
47244	0x1C4B	Lockout Input 2	0	0xFFFF	1	---	FC134D	0	1
47245	0x1C4C	Lockout Input 3	0	0xFFFF	1	---	FC134D	0	1
47246	0x1C4D	Lockout Input 4	0	0xFFFF	1	---	FC134D	0	1
47247	0x1C4E	Lockout Input 5	0	0xFFFF	1	---	FC134D	0	1
47248	0x1C4F	Lockout Input 6	0	0xFFFF	1	---	FC134D	0	1
47249	0x1C50	Lockout Input 7	0	0xFFFF	1	---	FC134D	0	1
47250	0x1C51	Lockout Input 8	0	0xFFFF	1	---	FC134D	0	1
47251	0x1C52	Lockout Input 9	0	0xFFFF	1	---	FC134D	0	1
47252	0x1C53	Lockout Input 10	0	0xFFFF	1	---	FC134D	0	1
47253	0x1C54	Lockout Supervision	0	0xFFFF	1	---	FC134C	1	1
47254	0x1C55	Lockout Reset	0	0xFFFF	1	---	FC134F	0	1
47255	0x1C56	Lockout Reset From PB Reset	0	1	1	---	FC126	0	1
47256	0x1C57	Lockout Block Reset Lockout	0	0xFFFF	1	---	FC134D	0x8002	1
47257	0x1C58	Lockout Block 1	0	0xEF02	1	---	F89	0	1
47258	0x1C59	Lockout Block 2	0	0xEF02	1	---	F89	0	1
47259	0x1C5A	Lockout Block 3	0	0xEF02	1	---	F89	0	1
POSITIVE SEQ UV									
47263	0x1C5E	Positive Seq UV 1 Function	0	3	1	---	FC197	0	1
47264	0x1C5F	Positive Seq UV 1 Pkp	0	125	1	x VT	F3	75	1
47265	0x1C60	Positive Seq UV 1 Curve	0	1	1	---	F93	1	1
47266	0x1C61	Positive Seq UV 1 Delay	0	60000	1	s	F3	200	1
47267	0x1C62	Positive Seq UV 1 Min V	0	125	1	x VT	F3	10	1
47268	0x1C63	Positive Seq UV 1 Relays	0	0x7F	1	---	FC198	0	1
47269	0x1C64	Positive Seq UV 1 Block 1	0	0xEF02	1	---	F89	0	1

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47270	0x1C65	Positive Seq UV 1 Block 2	0	0xEF02	1	---	F89	0	1
47271	0x1C66	Positive Seq UV 1 Block 3	0	0xEF02	1	---	F89	0	1
CT FAILURE									
47282	0x1C71	CT Failure Function	0	2	1	---	FC206	0	1
47285	0x1C74	CT Failure Output Relays 3-6	0	0x3F	1	---	FC198	0	1
47286	0x1C75	CT Failure Block 1	0	0xEF02	1	---	F89	0	1
47287	0x1C76	CT Failure Block 2	0	0xEF02	1	---	F89	0	1
47288	0x1C77	CT Failure Block 3	0	0xEF02	1	---	F89	0	1
47296	0x1C7F	W1 CT Fail 3I0 Current PKP	3	200	1	x CT	F3	10	1
47297	0x1C80	W1 CT Fail 3V0 Voltage Inhibit	5	200	1	x VT	F3	20	1
47298	0x1C81	W1 CT Fail GND Current Inhibit	2	200	1	x CT	F3	20	1
47299	0x1C82	W1 CT Fail Sens GND Current Inhibit	5	2000	1	x CT	F17A	200	1
47300	0x1C83	W1 CT Fail Time Delay	0	6000	1	s	F3	0	1
TESTING									
47303	0x1C86	Force leds	0	1		---	FC126	0	1
47304	0x1C87	Led 1	0	1		---	FC103	0	1
47305	0x1C88	Led 2	0	1		---	FC103	0	1
47306	0x1C89	Led 3	0	1		---	FC103	0	1
47307	0x1C8A	Led 4	0	1		---	FC103	0	1
47308	0x1C8B	Led 5	0	1		---	FC103	0	1
47309	0x1C8C	Led 6	0	1		---	FC103	0	1
47310	0x1C8D	Led 7	0	1		---	FC103	0	1
47311	0x1C8E	Led 8	0	1		---	FC103	0	1
47312	0x1C8F	Led 9	0	1		---	FC103	0	1
47313	0x1C90	Led 10	0	1		---	FC103	0	1
47314	0x1C91	Led 11	0	1		---	FC103	0	1
47315	0x1C92	Led 12	0	1		---	FC103	0	1
47318	0x1C95	Force Output Relays	0	1		---	FC126	0	1
47319	0x1C96	Relay 1 Trip	0	1		---	FC103	0	1
47320	0x1C97	Relay 2 Close	0	1		---	FC103	0	1
47321	0x1C98	Relay 3 Auxiliary	0	1		---	FC103	0	1
47322	0x1C99	Relay 4 Auxiliary	0	1		---	FC103	0	1
47323	0x1C9A	Relay 5 Auxiliary	0	1		---	FC103	0	1
47324	0x1C9B	Relay 6 Auxiliary	0	1		---	FC103	0	1
61850 MAPPING									
47327	0x1C9E	Analog input 1 Value	0	251	1	---	F88	0	1
47328	0x1C9F	Analog input 1 db	0	100000	1	%	F17	0	2
47330	0x1CA1	Analog input 1 Min	-2147483648	2147483647	1	---	F13	0	2
47332	0x1CA3	Analog input 1 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47334	0x1CA5	Analog input 2 Value	0	251	1	---	F88	0	1
47335	0x1CA6	Analog input 2 db	0	100000	1	%	F17	0	2
47337	0x1CA8	Analog input 2 Min	-2147483648	2147483647	1	---	F13	0	2
47339	0x1CAA	Analog input 2 Max	-2147483648	2147483647	1	---	F13	2147483647	2

Modbus Address	Hex Address	Description	Min	Max	Step	Units	Format Code	Factory Default	Size in words
47341	0x1CAC	Analog input 3 Value	0	251	1	---	F88	0	1
47342	0x1CAD	Analog input 3 db	0	100000	1	%	F17	0	2
47344	0x1CAF	Analog input 3 Min	-2147483648	2147483647	1	---	F13	0	2
47346	0x1CB1	Analog input 3 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47348	0x1CB3	Analog input 4 Value	0	251	1	---	F88	0	1
47349	0x1CB4	Analog input 4 db	0	100000	1	%	F17	0	2
47351	0x1CB6	Analog input 4 Min	-2147483648	2147483647	1	---	F13	0	2
47353	0x1CB8	Analog input 4 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47355	0x1CBA	Analog input 5 Value	0	251	1	---	F88	0	1
47356	0x1CBB	Analog input 5 db	0	100000	1	%	F17	0	2
47358	0x1CBD	Analog input 5 Min	-2147483648	2147483647	1	---	F13	0	2
47360	0x1CBF	Analog input 5 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47362	0x1CC1	Analog input 6 Value	0	251	1	---	F88	0	1
47363	0x1CC2	Analog input 6 db	0	100000	1	%	F17	0	2
47365	0x1CC4	Analog input 6 Min	-2147483648	2147483647	1	---	F13	0	2
47367	0x1CC6	Analog input 6 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47369	0x1CC8	Analog input 7 Value	0	251	1	---	F88	0	1
47370	0x1CC9	Analog input 7 db	0	100000	1	%	F17	0	2
47372	0x1CCB	Analog input 7 Min	-2147483648	2147483647	1	---	F13	0	2
47374	0x1CCD	Analog input 7 Max	-2147483648	2147483647	1	---	F13	2147483647	2
47376	0x1CCF	Analog input 8 Value	0	251	1	---	F88	0	1
47377	0x1CD0	Analog input 8 db	0	100000	1	%	F17	0	2
47379	0x1CD2	Analog input 8 Min	-2147483648	2147483647	1	---	F13	0	2
47381	0x1CD4	Analog input 8 Max	-2147483648	2147483647	1	---	F13	2147483647	2

350 Format Codes

In some cases names of settings displayed in the HMI have been shortened. The Long Definition column below contains the full name used in the Enervista Setup software, when applicable. In many cases the long description is the same as the description.

Code	Type	Definition	Long Definition
F1	unsigned 16 bits	Unsigned Value	
Example: 1234 stored as 1234			
F1B	unsigned 16 bits	Unsigned Value Max Value = OFF	
Example: 1234 stored as 1234			
F1C	unsigned 16 bits	Unsigned Value Min Value = OFF	
Example: 1234 stored as 1234			
F2	unsigned 16 bits	Unsigned Value 1 Decimal Place	
Example: 123.4 stored as 1234			
F2B	unsigned 16 bits	Unsigned Value 1 Decimal Place	
Example: 123.4 stored as 1234			
F3	unsigned 16 bits	Unsigned Value 2 Decimal Places	
Example: 12.34 stored as 1234			
F3B	unsigned 16 bits	Unsigned Value 2 Decimal Places	
Example: 12.34 stored as 1234			
F4	signed 16 bits	2's Complement Signed Value	
Example: -1234 stored as -1234 i.e. 64302			
F4B	signed 16 bits	2's Complement Signed Value Max Value = OFF	
Example: -1234 stored as -1234 i.e. 64302			
F5	signed 16 bits	2's Complement Signed Value 1 Decimal Place	
Example: -123.4 stored as -1234 i.e. 64302			
F6	signed 16 bits	2's Complement Signed Value 2 Decimal Places	
Example: -12.34 stored as -1234 i.e. 64302			
F7	signed 16 bits	2's Complement Signed Value 3 Decimal Places	
Example: -1.234 stored as -1234 i.e. 64302			
F8	signed 16 bits	2's Complement Signed Value 4 Decimal Places	
Example: -0.1234 stored as -1234 i.e. 64302			
F9	unsigned 32 bits	Unsigned Long Value	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 123456 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			
F10	unsigned 32 bits	Unsigned Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 12345.6 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			

Code	Type	Definition	Long Definition
F11	unsigned 32 bits	Unsigned Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: 1234.56 stored as 123456			
i.e. 1st word: 0001 hex 2nd word: E240 hex			
F12	signed 32 bits	2's Complement Signed Long Value	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -123456 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F13	signed 32 bits	2's Complement Signed Long Value 1 Decimal Place	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -12345.6 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F14	signed 32 bits	2's Complement Signed Long Value 2 Decimal Places	
1st 16 bits		High Order Word of Long Value	
2nd 16 bits		Low Order Word of Long Value	
Example: -1234.56 stored as -123456			
i.e. 1st word: FFFE hex 2nd word: 1DC0 hex			
F14A	signed 32 bits	2's Complement Signed Long Value 3 Decimal Places	
F15	unsigned 16 bits	Hardware Revision	
0		Prototype	Prototype
1		A	A
2		B	B
3		C	C
4		D	D
5		E	E
6		F	F
7		G	G
8		H	H
9		I	I
10		J	J
11		K	K
12		L	L
13		M	M
14		N	N
15		O	O
16		P	P
17		Q	Q
18		R	R
19		S	S
20		T	T
21		U	U
22		V	V

Code	Type	Definition	Long Definition
23		W	W
24		X	X
25		Y	Y
26		Z	Z
F16	signed 16 bits	2's Complement Signed Value 1 Decimal Place	
F17	unsigned 32 bits	Unsigned Long Value 3 Decimal Places	
F17A	unsigned 16 bits	Unsigned Value 3 Decimal Places	
F18	unsigned 32 bits	Date MM/DD/YYYY	
1st byte Month 1 to 12			
2nd byte Day 1 to 31			
3rd and 4th byte Year 2000 to 2099 2000 stored as 34867152 (i.e. 1st word: 0214 2nd word 07D0)			
Example: Feb 20			
F19	unsigned 32 bits	Time HH:MM:SS.sss	
1st byte Hours 0 to 23			
2nd byte Minutes 0 to 59			
3rd and 4th byte miliSeconds 0 to 59999			
Example: 2:05pm stored as 235208704 (i.e. 1st word: 0E05 2nd word 0000)			
F20	signed 32 bits	2's Complement Signed Long Value	
F21	signed 16 bits	2's Complement Signed Value	
F22	unsigned 16 bits	Two 8-BIT Characters Packed Into 16-BIT Unsigned	
F23	unsigned 16 bits	Unsigned Value	
F24	unsigned 16 bits	Unsigned Value AS Seconds SHOW AS Duration	
F24B	unsigned 16 bits	Unsigned Value AS Seconds SHOW AS Duration	
F25	unsigned 16 bits	Trace Memory Channel Data	
0		Leading	Leading
1		Lagging	Lagging
F26	unsigned 16 bits	350 Trace Memory Channel Data	
0		Va	Va
1		Vb	Vb
2		Vc	Vc
3		Vx	Vx
4		Not Used	Not Used
5		Not Used	Not Used
6		Ia	Ia
7		Ib	Ib
8		Ic	Ic
9		Ig	Ig
10		Inputs 1-16	Inputs 1-16
11		Outputs 1-16	Outputs 1-16
12		Virtual Inputs1-16	Virtual Inputs 1-16
13		Virtual Inputs7-32	Virtual Inputs 17-32
14		Remote INs 1-16	Remote Inputs 1-16
15		Remote INs 17-32	Remote Inputs 17-32
16		Logic Elements	Logic Elements

Code	Type	Definition	Long Definition
F26A	unsigned 16 bits	339 Trace Memory Channel Data	
0		Va	Va
1		Vb	Vb
2		Vc	Vc
4		Not Used	Not Used
5		Not Used	Not Used
6		Ia	Ia
7		Ib	Ib
8		Ic	Ic
9		Ig	Ig
10		Inputs 1-16	Inputs 1-16
11		Outputs 1-16	Outputs 1-16
12		Virtual Inputs1-16	Virtual Inputs 1-16
13		Virtual Inputs7-32	Virtual Inputs 17-32
14		Remote INs 1-16	Remote Inputs 1-16
15		Remote INs 17-32	Remote Inputs 17-32
16		Logic Elements	Logic Elements
F26B	unsigned 16 bits	345 Trace Memory Channel Data	
F27	unsigned 32 bits	Unsigned Long Value 4 Decimal Places	
F36	unsigned 16 bits	OC Curve Selection	
0		Extremely Inverse	Extremely Inverse
1		Very Inverse	Very Inverse
2		Normally Inverse	Normally Inverse
3		Moderately Inverse	Moderately Inverse
4		Definite Time	Definite Time
5		IEC Curve A	IEC Curve A
6		IEC Curve B	IEC Curve B
7		IEC Curve C	IEC Curve C
8		Flex Curve A	Flex Curve A
9		Flex Curve B	Flex Curve B
10		IAC Extr. Inverse	IAC Extremely Inverse
11		IAC Very Inverse	IAC Very Inverse
12		IAC Inverse	IAC Inverse
13		IAC Short Inverse	IAC Short Inverse
14		IEC Short Inverse	IEC Short Inverse
15		User Curve	User Curve
F37	unsigned 16 bits	OC Pickup flags	
1		Phase A	Phase A
2		Phase B	Phase B
4		Phase C	Phase C
7		All Phases	All Phases
F38	unsigned 16 bits	OC Direction pickup flags	
0x10		Direction PKP Ph A	Direction PKP Phase A
0x20		Direction PKP Ph B	Direction PKP Phase B
0x40		Direction PKP Ph C	Direction PKP Phase C
0x80		Direction Pickup	Direction Pickup
0xF0		Direction	Direction

Code	Type	Definition	Long Definition
F48	unsigned 16 bits	Simulation Status	
0		Disabled	Disabled
1		Prefault State	Prefault State
2		Fault State	Fault State
3		Postfault State	Postfault State
F68	unsigned 16 bits	Reset Time Model	
0		Instantaneous	Instantaneous
1		Linear	Linear
F74	unsigned 16 bits	Data Logger Sample Rate	
0		1 Cycle	1 Cycle
1		1 Second	1 Second
2		1 Minute	1 Minute
3		1 Hour	1 Hour
F75	unsigned 16 bits	Data Logger Status	
0		Stopped	Stopped
1		Started	Started
2		Triggered	Triggered
3		Pretrigger	Pretrigger
4		PostTrigger	PostTrigger
F76	unsigned 16 bits	Overcurrent Direction	
0		Disabled	Disabled
1		Forward	Forward
2		Reverse	Reverse
F77	unsigned 16 bits	Data Logger Channel Data	
0		Disabled	Disabled
1		Phase A Current	Phase A Current
2		Phase B Current	Phase B Current
3		Phase C Current	Phase C Current
4		Avg Phase Current	Average Phase Current
7		Gnd Current	Gnd Current
8		System Frequency	System Frequency
9		Vab	Vab
10		Vbc	Vbc
11		Vca	Vca
12		Van	Van
13		Vbn	Vbn
14		Vcn	Vcn
15		Power Factor	Power Factor
16		Real Power	Real Power
17		Reactive Pwr	Reactive Power
18		Apparent Pwr	Apparent Power
19		Positive Watthours	Positive Watthours
20		Positive Varhours	Positive Varhours
21		Hottest Stator RTD	Hottest Stator RTD
22		Therm Cap. Used	Thermal Capacity Used
F77B	unsigned 16 bits	345 Data Logger Channel Data	
F78	unsigned 16 bits	DNP Object 20 Default Variation	

Code	Type	Definition	Long Definition
1		1	(1) 32-Bit Binary Counter
2		2	(2) 16-Bit Binary Counter
5		5	(5) 32-Bit Binary Counter w/o Flag
6		6	(6) 16-Bit Binary Counter w/o Flag
F79	unsigned 16 bits	DNP Object 21 Default Variation	
1		1	(1) 32-Bit Frozen Counter
2		2	(2) 16-Bit Frozen Counter
9		9	(9) 32-Bit Frozen Counter w/o Flag
10		10	(10) 16-Bit Frozen Counter w/o Flag
F80	unsigned 16 bits	DNP Object 22 Default Variation	
1		1	(1) 32-Bit Counter Change Event
2		2	(2) 16-Bit Counter Change Event
5		5	(5) 32-Bit Counter Change Event w Time
6		6	(6) 16-Bit Counter Change Event w Time
F81	unsigned 16 bits	DNP Object 23 Default Variation	
1		1	(1) 32-Bit Frozen Counter Event
2		2	(2) 16-Bit Frozen Counter Event
5		5	(5) 32-Bit Frozen Counter Event w Time
6		6	(6) 16-Bit Frozen Counter Event w Time
F82	unsigned 16 bits	DNP Object 30 Default Variation	
1		1	(1) 32-Bit Analog Input
2		2	(2) 16-Bit Analog Input
3		3	(3) 32-Bit Analog Input w/o Flag
4		4	(4) 16-Bit Analog Input w/o Flag
F83	unsigned 16 bits	DNP Object 32 Default Variation	
1		1	(1) 32-Bit Analog Change Event w/o Time
2		2	(2) 16-Bit Analog Change Event w/o Time
3		3	(3) 32-Bit Analog Change Event w Time
4		4	(4) 16-Bit Analog Change Event w Time
F85	unsigned 16 bits	DNP Analog Input Point Scale Factor	
1		/ 0.001	/ 0.001
2		/ 0.01	/ 0.01
3		/ 0.1	/ 0.1
4		/ 1	/ 1
5		/ 10	/ 10
6		/ 100	/ 100
7		/ 1000	/ 1000
8		/ 10000	/ 10000
9		/ 100000	/ 100000
F86	unsigned 16 bits	DNP and 103 Binary Output Points	
0		Off	Off
1		Virtual Input 1	Virtual Input 1
2		Virtual Input 2	Virtual Input 2
3		Virtual Input 3	Virtual Input 3
4		Virtual Input 4	Virtual Input 4
5		Virtual Input 5	Virtual Input 5
6		Virtual Input 6	Virtual Input 6

Code	Type	Definition	Long Definition
7		Virtual Input 7	Virtual Input 7
8		Virtual Input 8	Virtual Input 8
9		Virtual Input 9	Virtual Input 9
10		Virtual Input 10	Virtual Input 10
11		Virtual Input 11	Virtual Input 11
12		Virtual Input 12	Virtual Input 12
13		Virtual Input 13	Virtual Input 13
14		Virtual Input 14	Virtual Input 14
15		Virtual Input 15	Virtual Input 15
16		Virtual Input 16	Virtual Input 16
17		Virtual Input 17	Virtual Input 17
18		Virtual Input 18	Virtual Input 18
19		Virtual Input 19	Virtual Input 19
20		Virtual Input 20	Virtual Input 20
21		Virtual Input 21	Virtual Input 21
22		Virtual Input 22	Virtual Input 22
23		Virtual Input 23	Virtual Input 23
24		Virtual Input 24	Virtual Input 24
25		Virtual Input 25	Virtual Input 25
26		Virtual Input 26	Virtual Input 26
27		Virtual Input 27	Virtual Input 27
28		Virtual Input 28	Virtual Input 28
29		Virtual Input 29	Virtual Input 29
30		Virtual Input 30	Virtual Input 30
31		Virtual Input 31	Virtual Input 31
32		Virtual Input 32	Virtual Input 32
33		FC: Reset	Force Coil: Reset
34		FC: Open Breaker	Force Coil: Open Breaker
35		FC: Close Breaker	Force Coil: Close Breaker
36		FC: Display Msg	Force Coil: Display Message
37		FC: Clear Curr Dmd1	Force Coil: Clear Current Dmd1
39		FC: Clear Pwr Dmd	Force Coil: Clear Power Dmd
40		FC:Clear Fault Rep	FC:Clear Fault Rep
F87	unsigned 16 bits	DNP/Ethernet Channel Port	
0		None	None
1		TCP	TCP
2		UDP	UDP
F88	unsigned 16 bits	Analog Values	
0		Disabled	Disabled
1		Phase A Current	Phase A Current
2		Phase B Current	Phase B Current
3		Phase C Current	Phase C Current
7		Gnd Current	Gnd Current
8		System Frequency	System Frequency
9		Vab	Vab
10		Vbc	Vbc
11		Vca	Vca

Code	Type	Definition	Long Definition
12		Van	Van
13		Vbn	Vbn
14		Vcn	Vcn
15		Power Factor	Power Factor
16		Real Power	Real Power
17		Reactive Pwr	Reactive Power
18		Apparent Pwr	Apparent Power
19		Positive Watthours	Positive Watthours
20		Positive Varhours	Positive Varhours
21		Negative Watthours	Negative Watthours
22		Negative Varhours	Negative Varhours
23		Therm Cap. Phase A	Thermal Capacity Phase A
24		Therm Cap. Phase B	Thermal Capacity Phase B
25		Therm Cap. Phase C	Thermal Capacity Phase C
26		Ntrl Current	Ntrl Current
27		Ntrl Voltage	Ntrl Voltage
28		Aux Volt	Auxiliary Voltage
29		NSeq Current	Negative Sequence Current
43		SGnd Current	Sensitive Ground Current
46		NSeq Voltage	Negative Sequence Voltage
49		Zero Seq Voltage	Zero Seq Voltage
50		Pos Seq Current	Pos Seq Current
51		Zero Seq Current	Zero Seq Current
52		Pos Seq Voltage	Pos Seq Voltage
53		WGF Power 1	Wattmetric Power 1
54		WGF Power 2	Wattmetric Power 2
55		Dir Power 1	Directional Power 1
56		Dir Power 2	Directional Power 2
57		2nd Hrmc Ph A Curr	2nd Hrmc Ph A Current
58		2nd Hrmc Ph B Curr	2nd Hrmc Ph B Current
59		2nd Hrmc Ph C Curr	2nd Hrmc Ph C Current
60		FR Date (Upper 16)	Fault Report Date (Upper 16)
61		FR Date (Lower 16)	Fault Report Date (Lower 16)
62		FR Time (Upper 16)	Fault Report Time (Upper 16)
63		FR Time (Lower 16)	Fault Report Time (Lower 16)
64		FR Fault Type	Fault Report Fault Type
65		FR Ia	Fault Report Ia
66		FR Ia Angle	Fault Report Ia Angle
67		FR Ib	Fault Report Ib
68		FR Ib Angle	Fault Report Ib Angle
69		FR Ic	Fault Report Ic
70		FR Ic Angle	Fault Report Ic Angle
71		FR Ig	Fault Report Ig
72		FR Ig Angle	Fault Report Ig Angle
73		FR In	Fault Report In
74		FR In Angle	Fault Report In Angle
75		FR Va	Fault Report Va

Code	Type	Definition	Long Definition
76		FR Va Angle	Fault Report Va Angle
77		FR Vb	Fault Report Vb
78		FR Vb Angle	Fault Report Vb Angle
79		FR Vc	Fault Report Vc
80		FR Vc Angle	Fault Report Vc Angle
81		FR Vab	Fault Report Vab
82		FR Vab Angle	Fault Report Vab Angle
83		FR Vbc	Fault Report Vbc
84		FR Vbc Angle	Fault Report Vbc Angle
85		FR Vca	Fault Report Vca
86		FR Vca Angle	Fault Report Vca Angle
87		FR Vn	Fault Report Vn
88		FR Vn Angle	Fault Report Vn Angle
89		FR Vaux	Fault Report Vaux
90		FR Vaux Angle	Fault Report Vaux Angle
91		FR System Freq	Fault Report System Frequency
114		FR Phases	Fault Report Phases
115		Current Dmd 1 PhA	Current Demand 1 PhA
116		Current Dmd 1 PhB	Current Demand 1 PhB
117		Current Dmd 1 PhC	Current Demand 1 PhC
118		Max Curr Dmd1 PhA	Max Current Demand 1 PhA
119		Max Curr Dmd1 PhB	Max Current Demand 1 PhB
120		Max Curr Dmd1 PhC	Max Current Demand 1 PhC
127		Real Pwr Dmd	Real Power Demand
128		React Pwr Dmd	Reactive Power Demand
129		App Pwr Dmd	Apparent Power Demand
130		Max Real Pwr Dmd	Max Real Power Demand
131		Max React Pwr Dmd	Max Reactive Power Demand
132		Max App Pwr Dmd	Max Apparent Power Demand
133		Total Num of Trips	Total Num of Trips
154		Curr Unbalance	Current Unbalance
155		PhA Curr Angle	PhA Current Angle
156		PhB Curr Angle	PhB Current Angle
157		PhC Curr Angle	PhC Current Angle
158		Van Angle	Van Angle
159		Vbn Angle	Vbn Angle
160		Vcn Angle	Vcn Angle
161		Ig Angle	Ig Angle
162		In Angle	In Angle
163		Ntrl Voltage Angle	Neutral Voltage Angle
164		Vaux Angle	Vaux Angle
165		Vab Angle	Vab Angle
166		Vbc Angle	Vbc Angle
167		Vca Angle	Vca Angle
169		Bus Freq	Bus Freq
170		Line Freq	Line Freq
171		Voltage Unbalance	Voltage Unbalance

Code	Type	Definition	Long Definition
178		Internal Temp	Internal Temp
187		Ambient Temp	Ambient Temperature
188		Internal Temp Max	Internal Temperature Max
189		Pos Seq I Angle	Positive Sequence I Angle
190		Neg Seq I Angle	Negative Sequence I Angle
191		Zero Seq I Angle	Zero Sequence I Angle
192		Pos Seq V Angle	Positive Sequence V Angle
193		Neg Seq V Angle	Negative Sequence V Angle
194		Zero Seq V Angle	Zero Sequence V Angle
204		I^2 Counter	I^2 Counter
206		Volts per Hertz	Volts per Hertz
237		BKR Health	Breaker Health
238		BKR Last Trip Time	Breaker Last Trip Time
239		BKR Avg Trip Time	Breaker Average Trip Time
240		BKR Last Close Time	Breaker Last Close Time
241		BKR Avg Close Time	Breaker Average Close Time
242		BKR Last Charge Time	Breaker Last Charge Time
243		BKR Avg Charge Time	Breaker Average Charge Time
F89	unsigned 16 bits	Autoreclose Block	
0		Off	Off
1		On	On
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16

Code	Type	Definition	Long Definition
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15

Code	Type	Definition	Long Definition
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
0xAF02		2nd Hrmc Alarm	2nd Harmonic Alarm
0xCF02		2nd Hrmc	2nd Harmonic
0xB881		CT Fail Alarm PKP	CT Fail Alarm PKP
0xB882		CT Fail Alarm OP	CT Fail Alarm OP
F89A	unsigned 16 bits	BKR Health Charge Input	
0		Off	Off
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14

Code	Type	Definition	Long Definition
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13

Code	Type	Definition	Long Definition
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
0xAF02		2nd Hrmc Alarm	2nd Harmonic Alarm
0xCF02		2nd Hrmc	2nd Harmonic
0xB881		CT Fail Alarm PKP	CT Fail Alarm PKP
0xB882		CT Fail Alarm OP	CT Fail Alarm OP
F89B	unsigned 16 bits	Start Thermal Protection	
0		Off	Off
1		On	On
0x40		Contact Input 1	Contact Input 1
0x41		Contact Input 2	Contact Input 2
0x42		Contact Input 3	Contact Input 3
0x43		Contact Input 4	Contact Input 4
0x44		Contact Input 5	Contact Input 5
0x45		Contact Input 6	Contact Input 6
0x46		Contact Input 7	Contact Input 7
0x47		Contact Input 8	Contact Input 8
0x48		Contact Input 9	Contact Input 9
0x49		Contact Input 10	Contact Input 10
0x80		Virtual Input 1	Virtual Input 1
0x81		Virtual Input 2	Virtual Input 2
0x82		Virtual Input 3	Virtual Input 3
0x83		Virtual Input 4	Virtual Input 4
0x84		Virtual Input 5	Virtual Input 5
0x85		Virtual Input 6	Virtual Input 6
0x86		Virtual Input 7	Virtual Input 7
0x87		Virtual Input 8	Virtual Input 8
0x88		Virtual Input 9	Virtual Input 9
0x89		Virtual Input 10	Virtual Input 10
0x8A		Virtual Input 11	Virtual Input 11

Code	Type	Definition	Long Definition
0x8B		Virtual Input 12	Virtual Input 12
0x8C		Virtual Input 13	Virtual Input 13
0x8D		Virtual Input 14	Virtual Input 14
0x8E		Virtual Input 15	Virtual Input 15
0x8F		Virtual Input 16	Virtual Input 16
0x90		Virtual Input 17	Virtual Input 17
0x91		Virtual Input 18	Virtual Input 18
0x92		Virtual Input 19	Virtual Input 19
0x93		Virtual Input 20	Virtual Input 20
0x94		Virtual Input 21	Virtual Input 21
0x95		Virtual Input 22	Virtual Input 22
0x96		Virtual Input 23	Virtual Input 23
0x97		Virtual Input 24	Virtual Input 24
0x98		Virtual Input 25	Virtual Input 25
0x99		Virtual Input 26	Virtual Input 26
0x9A		Virtual Input 27	Virtual Input 27
0x9B		Virtual Input 28	Virtual Input 28
0x9C		Virtual Input 29	Virtual Input 29
0x9D		Virtual Input 30	Virtual Input 30
0x9E		Virtual Input 31	Virtual Input 31
0x9F		Virtual Input 32	Virtual Input 32
0xC0		Logic Element 1	Logic Element 1
0xC1		Logic Element 2	Logic Element 2
0xC2		Logic Element 3	Logic Element 3
0xC3		Logic Element 4	Logic Element 4
0xC4		Logic Element 5	Logic Element 5
0xC5		Logic Element 6	Logic Element 6
0xC6		Logic Element 7	Logic Element 7
0xC7		Logic Element 8	Logic Element 8
0xC8		Logic Element 9	Logic Element 9
0xC9		Logic Element 10	Logic Element 10
0xCA		Logic Element 11	Logic Element 11
0xCB		Logic Element 12	Logic Element 12
0xCC		Logic Element 13	Logic Element 13
0xCD		Logic Element 14	Logic Element 14
0xCE		Logic Element 15	Logic Element 15
0xCF		Logic Element 16	Logic Element 16
0x1C0		Remote Input 1	Remote Input 1
0x1C1		Remote Input 2	Remote Input 2
0x1C2		Remote Input 3	Remote Input 3
0x1C3		Remote Input 4	Remote Input 4
0x1C4		Remote Input 5	Remote Input 5
0x1C5		Remote Input 6	Remote Input 6
0x1C6		Remote Input 7	Remote Input 7
0x1C7		Remote Input 8	Remote Input 8
0x1C8		Remote Input 9	Remote Input 9
0x1C9		Remote Input 10	Remote Input 10

Code	Type	Definition	Long Definition
0x1CA		Remote Input 11	Remote Input 11
0x1CB		Remote Input 12	Remote Input 12
0x1CC		Remote Input 13	Remote Input 13
0x1CD		Remote Input 14	Remote Input 14
0x1CE		Remote Input 15	Remote Input 15
0x1CF		Remote Input 16	Remote Input 16
0x1D0		Remote Input 17	Remote Input 17
0x1D1		Remote Input 18	Remote Input 18
0x1D2		Remote Input 19	Remote Input 19
0x1D3		Remote Input 20	Remote Input 20
0x1D4		Remote Input 21	Remote Input 21
0x1D5		Remote Input 22	Remote Input 22
0x1D6		Remote Input 23	Remote Input 23
0x1D7		Remote Input 24	Remote Input 24
0x1D8		Remote Input 25	Remote Input 25
0x1D9		Remote Input 26	Remote Input 26
0x1DA		Remote Input 27	Remote Input 27
0x1DB		Remote Input 28	Remote Input 28
0x1DC		Remote Input 29	Remote Input 29
0x1DD		Remote Input 30	Remote Input 30
0x1DE		Remote Input 31	Remote Input 31
0x1DF		Remote Input 32	Remote Input 32
F90	unsigned 16 bits	Operate / Do Not Operate	
0		Do Not Operate	Do Not Operate
1		Operate	Operate
F91	signed 16 bits	Edit Group	
-1		Active Group	Active Group
0		SP Group 1 Active	Setpoint Group 1 Active
1		SP Group 2 Active	Setpoint Group 2 Active
F92	unsigned 16 bits	Phases	
1		Any One	Any One
2		Any Two	Any Two
3		All Three	All Three
F92A	unsigned 16 bits	Phases + Average	
0		Any One	Any One
1		Any Two	Any Two
2		All Three	All Three
3		Average	Average
F93	unsigned 16 bits	Phase UV Curve	
0		Definite Time	Definite Time
1		Inverse Time	Inverse Time
F94	unsigned 16 bits	Breaker Control	
0		Disabled	Disabled
1		Contact Input 1	Contact Input 1
2		Contact Input 2	Contact Input 2
3		Contact Input 3	Contact Input 3
4		Contact Input 4	Contact Input 4

Code	Type	Definition	Long Definition
5		Contact Input 5	Contact Input 5
6		Contact Input 6	Contact Input 6
7		Contact Input 7	Contact Input 7
8		Contact Input 8	Contact Input 8
9		Contact Input 9	Contact Input 9
10		Contact Input 10	Contact Input 10
F95	unsigned 16 bits	Transient Recorder Buffer	
0		1	1
1		3	3
2		6	6
F96	unsigned 16 bits	Directional Polarizing	
1		Voltage	Voltage
2		Current	Current
3		Dual	Dual
F97	unsigned 16 bits	Rear 485 Port Protocol	
0		Modbus	Modbus
1		IEC60870-5-103	IEC60870-5-103
2		DNP 3.0	DNP 3.0
F98	unsigned 16 bits	Simulated Key Press	
0		No Key Press	No Key Press
1		Nav Up Key	Nav Up Key
2		Nav Left Key	Nav Left Key
3		Nav Down Key	Navigation Down Key
4		Nav Right Key	Navigation Right Key
5		Up Key	Up Key
6		Down Key	Down Key
7		Enter Key	Enter Key
8		Menu Key	Menu Key
9		Escape Key	Escape Key
10		Reset Key	Reset Key
F99	unsigned 16 bits	SR 3 Relay Status	
0		Not Ready	Not Ready
1		Ready	Ready
FC100	unsigned 16 bits	SNTP Mode	
0		Disabled	Disabled
1		Unicast	Unicast
2		Anycast	Anycast
3		Broadcast	Broadcast
FC101	unsigned 16 bits	RS 485 Baud Rate	
0		9600 baud	9600 baud
1		19200 baud	19200 baud
2		38400 baud	38400 baud
3		57600 baud	57600 baud
4		115200 baud	115200 baud
FC102	unsigned 16 bits	RS 485 Parity	
0		None	None
1		Odd	Odd

Code	Type	Definition	Long Definition
2		Even	Even
FC103	unsigned 16 bits	Off / On Selection	
0		Off	Off
1		On	On
FC103A	unsigned 16 bits	No / Yes Selection	
0		NO	NO
1		YES	YES
FC104	unsigned 16 bits	Ground CT Type	
0		1 A Secondary	1 A Secondary
1		5 A Secondary	5 A Secondary
FC105	unsigned 16 bits	Differential CT Type	
0		None	None
1		1 A Secondary	1 A Secondary
2		5 A Secondary	5 A Secondary
3		Direct Connect	Direct Connect
FC106	unsigned 16 bits	Voltage Transformer Connection Type	
0		Wye	Wye
1		Delta	Delta
FC107	unsigned 16 bits	Supply Frequency	
0		60 Hz	60 Hz
1		50 Hz	50 Hz
FC108	unsigned 16 bits	61850 Status	
0		Not Ready	Not Ready
1		Ready	Ready
2		Default CID	Default CID
FC109	unsigned 16 bits	Flex Logic Status	
0		OK	OK
1		Unknown Token	Unknown Token
2		TooMany Latches	Too Many Latches
3		TooMany Timers	Too Many Timers
4		TooMany + OneShots	Too Many + One Shots
5		TooMany - OneShots	Too Many - One Shots
6		TooMany Duel1Shots	Too Many Duel One Shots
7		Stack Overflow	Stack Overflow
8		Stack Underflow	Stack Underflow
9		Program Too Long	Program Too Long
FC111	unsigned 16 bits	Trip Relays	
0		Trip	Trip
1		Alarm	Alarm
FC112	unsigned 16 bits	Communication Status	
0		Error	Error
1		OK	OK
FC115	unsigned 16 bits	Alarm Type Selection	
0		Off	Off
1		Trip	Trip
2		Alarm	Alarm
FC116	unsigned 16 bits	Switch Type	

Code	Type	Definition	Long Definition
0		Open	Open
1		Closed	Closed
FC117	unsigned 16 bits	Directional Voltage	
0		Measured (Vx)	Measured (Vx)
1		Calculated (VTs)	Calculated (VTs)
FC118	unsigned 16 bits	WGF Voltage	
0		Calculated (Vn)	Calculated (Vn)
1		Measured (Vx)	Measured (Vx)
FC119	unsigned 16 bits	WGF Current	
0		Calculated (In)	Calculated (In)
1		Measured (Ig)	Measured (Ig)
FC120	unsigned 16 bits	RTD Type	
FC121	unsigned 16 bits	RTD Application	
0		None	None
4		Other	Other
FC122	unsigned 16 bits	RTD Voting Selection	
0		Off	Off
FC123	unsigned 16 bits	Select DV Voltage	
0		17V Threshold	17V Threshold
1		33V Threshold	33V Threshold
2		84V Threshold	84V Threshold
3		166V Threshold	166V Threshold
FC124	unsigned 16 bits	Phase Rotation	
0		ABC	ABC
1		CBA	CBA
FC124A	unsigned 16 bits	Phase Rotation	
0		ABC	ABC
1		ACB	ACB
FC125	unsigned 16 bits	Coil Monitor	
0		Healthy	Healthy
1		Unhealthy	Unhealthy
FC126	unsigned 16 bits	Disabled / Enabled Selection	
0		Disabled	Disabled
1		Enabled	Enabled
FC127	unsigned 16 bits	System Language	
0		English	English
1		Chinese	Chinese
FC128	unsigned 16 bits	Command Status	
5		None	None
FC129	unsigned 16 bits	Relay Status	
FC130	unsigned 16 bits	LED Flash	
FC131	unsigned 16 bits	Comm Fail Mode	
1		Serial	Serial
2		Serial & Ethernet	Serial & Ethernet
4		Serial & FieldBus	Serial & FieldBus
8		Ethernet	Ethernet
16		FieldBus	FieldBus

Code	Type	Definition	Long Definition
32		Ethernet&Fieldbus	Ethernet & Fieldbus
64		All	All
FC133	unsigned 16 bits	Cause of Waveform Trigger	
0		None	None
1		Command	Command
0x00C0		VO 1	Virtual Output 1
0x00C1		VO 2	Virtual Output 2
0x00C2		VO 3	Virtual Output 3
0x00C3		VO 4	Virtual Output 4
0x00C4		VO 5	Virtual Output 5
0x00C5		VO 6	Virtual Output 6
0x00C6		VO 7	Virtual Output 7
0x00C7		VO 8	Virtual Output 8
0x00C8		VO 9	Virtual Output 9
0x00C9		VO 10	Virtual Output 10
0x00CA		VO 11	Virtual Output 11
0x00CB		VO 12	Virtual Output 12
0x00CC		VO 13	Virtual Output 13
0x00CD		VO 14	Virtual Output 14
0x00CE		VO 15	Virtual Output 15
0x00CF		VO 16	Virtual Output 16
0x00D0		VO 17	Virtual Output 17
0x00D1		VO 18	Virtual Output 18
0x00D2		VO 19	Virtual Output 19
0x00D3		VO 20	Virtual Output 20
0x00D4		VO 21	Virtual Output 21
0x00D5		VO 22	Virtual Output 22
0x00D6		VO 23	Virtual Output 23
0x00D7		VO 24	Virtual Output 24
0x00D8		VO 25	Virtual Output 25
0x00D9		VO 26	Virtual Output 26
0x00DA		VO 27	Virtual Output 27
0x00DB		VO 28	Virtual Output 28
0x00DC		VO 29	Virtual Output 29
0x00DD		VO 30	Virtual Output 30
0x00DE		VO 31	Virtual Output 31
0x00DF		VO 32	Virtual Output 32
0x8001		Any Trip PickUp	Any Trip PickUp
0x8002		Any Trip	Any Trip
0x8004		Any Trip DropOut	Any Trip DropOut
0xA001		Any Alarm PickUp	Any Alarm PickUp
0xA002		Any Alarm	Any Alarm
0xA004		Any Alarm DropOut	Any Alarm DropOut
0xC002		Any Inhibit	Any Inhibit
0xD000		Input 1	Input 1
0xD001		Input 2	Input 2
0xD002		Input 3	Input 3

Code	Type	Definition	Long Definition
FC133A	unsigned 16 bits	Data Log Trigger	
0		None	None
1		Command	Command
0x00C0		VO 1	Virtual Output 1
0x00C1		VO 2	Virtual Output 2
0x00C2		VO 3	Virtual Output 3
0x00C3		VO 4	Virtual Output 4
0x00C4		VO 5	Virtual Output 5
0x00C5		VO 6	Virtual Output 6
0x00C6		VO 7	Virtual Output 7
0x00C7		VO 8	Virtual Output 8
0x00C8		VO 9	Virtual Output 9
0x00C9		VO 10	Virtual Output 10
0x00CA		VO 11	Virtual Output 11
0x00CB		VO 12	Virtual Output 12
0x00CC		VO 13	Virtual Output 13
0x00CD		VO 14	Virtual Output 14
0x00CE		VO 15	Virtual Output 15
0x00CF		VO 16	Virtual Output 16
0x00D0		VO 17	Virtual Output 17
0x00D1		VO 18	Virtual Output 18
0x00D2		VO 19	Virtual Output 19
0x00D3		VO 20	Virtual Output 20
0x00D4		VO 21	Virtual Output 21
0x00D5		VO 22	Virtual Output 22
0x00D6		VO 23	Virtual Output 23
0x00D7		VO 24	Virtual Output 24
0x00D8		VO 25	Virtual Output 25
0x00D9		VO 26	Virtual Output 26
0x00DA		VO 27	Virtual Output 27
0x00DB		VO 28	Virtual Output 28
0x00DC		VO 29	Virtual Output 29
0x00DD		VO 30	Virtual Output 30
0x00DE		VO 31	Virtual Output 31
0x00DF		VO 32	Virtual Output 32
0x8001		Any Trip PickUp	Any Trip PickUp
0x8002		Any Trip	Any Trip
0x8004		Any Trip DropOut	Any Trip DropOut
0xA001		Any Alarm PickUp	Any Alarm PickUp
0xA002		Any Alarm	Any Alarm
0xA004		Any Alarm DropOut	Any Alarm DropOut
0xC002		Any Inhibit	Any Inhibit
FC134	unsigned 16 bits	Cause of Event	
0		No Evnt/Trp ToDate	No Event/Trip To Date
1		Ctrl. Pwr Lost	Control Power Lost
2		Ctrl. Pwr Applied	Control Power Applied
3		Date or Time Set	Date or Time Set

Code	Type	Definition	Long Definition
4		Reset	Reset
5		Lockout Rst Closed	Lockout Reset Closed
6		Factory Reload	Factory Reload
7		Clock Not Set	Clock Not Set
8		IRIG-B Failure	IRIG-B Failure
9		Reset Trip Counter	Reset Trip Counter
10		BKR Status Unknown	Breaker Status Unknown
11		Clear Event Rec	Clear Event Records
12		Clear Transt Rec	Clear Transient Records
13		Clear Therm Cap	Clear Thermal Capacity
14		Comm. Alert 1	Comm. Alert 1
15		Comm. Alert 2	Comm. Alert 2
16		Comm. Alert 3	Comm. Alert 3
17		Ethernet Link Fail	Ethernet Link Failure
18		High ENET Traffic	High Ethernet Traffic
19		Intern Temp. >80C	Internal Temperature High
22		Emergency Restart	Emergency Restart
23		Trace Mem. Trigger	Trace Mem. Trigger
24		Rx Goose 1 ON	Rx Goose 1 ON
25		Rx Goose 1 OFF	Rx Goose 1 OFF
26		Rx Goose 2 ON	Rx Goose 2 ON
27		Rx Goose 2 OFF	Rx Goose 2 OFF
28		Rx Goose 3 ON	Rx Goose 3 ON
29		Rx Goose 3 OFF	Rx Goose 3 OFF
30		Rx Goose 4 ON	Rx Goose 4 ON
31		Rx Goose 4 OFF	Rx Goose 4 OFF
32		Rx Goose 5 ON	Rx Goose 5 ON
33		Rx Goose 5 OFF	Rx Goose 5 OFF
34		Rx Goose 6 ON	Rx Goose 6 ON
35		Rx Goose 6 OFF	Rx Goose 6 OFF
36		Rx Goose 7 ON	Rx Goose 7 ON
37		Rx Goose 7 OFF	Rx Goose 7 OFF
38		Rx Goose 8 ON	Rx Goose 8 ON
39		Rx Goose 8 OFF	Rx Goose 8 OFF
40		Eth Link A Fail	Ethernet Link A Fail
41		Eth Link B Fail	Ethernet Link B Fail
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off

Code	Type	Definition	Long Definition
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off

Code	Type	Definition	Long Definition
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On

Code	Type	Definition	Long Definition
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x0200		Contact OUT 1 On	Contact Output 1 On
0x0201		Contact OUT 2 On	Contact Output 2 On
0x0202		Contact OUT 3 On	Contact Output 3 On
0x0203		Contact OUT 4 On	Contact Output 4 On

Code	Type	Definition	Long Definition
0x0204		Contact OUT 5 On	Contact Output 5 On
0x0205		Contact OUT 6 On	Contact Output 6 On
0x0206		Contact OUT 7 On	Contact Output 7 On
0x0220		Contact OUT 1 Off	Contact Output 1 Off
0x0221		Contact OUT 2 Off	Contact Output 2 Off
0x0222		Contact OUT 3 Off	Contact Output 3 Off
0x0223		Contact OUT 4 Off	Contact Output 4 Off
0x0224		Contact OUT 5 Off	Contact Output 5 Off
0x0225		Contact OUT 6 Off	Contact Output 6 Off
0x0226		Contact OUT 7 Off	Contact Output 7 Off
0x0240		Remote OUT 1 On	Remote Output 1 On
0x0241		Remote OUT 2 On	Remote Output 2 On
0x0242		Remote OUT 3 On	Remote Output 3 On
0x0243		Remote OUT 4 On	Remote Output 4 On
0x0244		Remote OUT 5 On	Remote Output 5 On
0x0245		Remote OUT 6 On	Remote Output 6 On
0x0246		Remote OUT 7 On	Remote Output 7 On
0x0247		Remote OUT 8 On	Remote Output 8 On
0x0248		Remote OUT 9 On	Remote Output 9 On
0x0249		Remote OUT 10 On	Remote Output 10 On
0x024A		Remote OUT 11 On	Remote Output 11 On
0x024B		Remote OUT 12 On	Remote Output 12 On
0x024C		Remote OUT 13 On	Remote Output 13 On
0x024D		Remote OUT 14 On	Remote Output 14 On
0x024E		Remote OUT 15 On	Remote Output 15 On
0x024F		Remote OUT 16 On	Remote Output 16 On
0x0250		Remote OUT 17 On	Remote Output 17 On
0x0251		Remote OUT 18 On	Remote Output 18 On
0x0252		Remote OUT 19 On	Remote Output 19 On
0x0253		Remote OUT 20 On	Remote Output 20 On
0x0254		Remote OUT 21 On	Remote Output 21 On
0x0255		Remote OUT 22 On	Remote Output 22 On
0x0256		Remote OUT 23 On	Remote Output 23 On
0x0257		Remote OUT 24 On	Remote Output 24 On
0x0258		Remote OUT 25 On	Remote Output 25 On
0x0259		Remote OUT 26 On	Remote Output 26 On
0x025A		Remote OUT 27 On	Remote Output 27 On
0x025B		Remote OUT 28 On	Remote Output 28 On
0x025C		Remote OUT 29 On	Remote Output 29 On
0x025D		Remote OUT 30 On	Remote Output 30 On
0x025E		Remote OUT 31 On	Remote Output 31 On
0x025F		Remote OUT 32 On	Remote Output 32 On
0x0260		Remote OUT 1 Off	Remote Output 1 Off
0x0261		Remote OUT 2 Off	Remote Output 2 Off
0x0262		Remote OUT 3 Off	Remote Output 3 Off
0x0263		Remote OUT 4 Off	Remote Output 4 Off
0x0264		Remote OUT 5 Off	Remote Output 5 Off

Code	Type	Definition	Long Definition
0x0265		Remote OUT 6 Off	Remote Output 6 Off
0x0266		Remote OUT 7 Off	Remote Output 7 Off
0x0267		Remote OUT 8 Off	Remote Output 8 Off
0x0268		Remote OUT 9 Off	Remote Output 9 Off
0x0269		Remote OUT 10 Off	Remote Output 10 Off
0x026A		Remote OUT 11 Off	Remote Output 11 Off
0x026B		Remote OUT 12 Off	Remote Output 12 Off
0x026C		Remote OUT 13 Off	Remote Output 13 Off
0x026D		Remote OUT 14 Off	Remote Output 14 Off
0x026E		Remote OUT 15 Off	Remote Output 15 Off
0x026F		Remote OUT 16 Off	Remote Output 16 Off
0x0270		Remote OUT 17 Off	Remote Output 17 Off
0x0271		Remote OUT 18 Off	Remote Output 18 Off
0x0272		Remote OUT 19 Off	Remote Output 19 Off
0x0273		Remote OUT 20 Off	Remote Output 20 Off
0x0274		Remote OUT 21 Off	Remote Output 21 Off
0x0275		Remote OUT 22 Off	Remote Output 22 Off
0x0276		Remote OUT 23 Off	Remote Output 23 Off
0x0277		Remote OUT 24 Off	Remote Output 24 Off
0x0278		Remote OUT 25 Off	Remote Output 25 Off
0x0279		Remote OUT 26 Off	Remote Output 26 Off
0x027A		Remote OUT 27 Off	Remote Output 27 Off
0x027B		Remote OUT 28 Off	Remote Output 28 Off
0x027C		Remote OUT 29 Off	Remote Output 29 Off
0x027D		Remote OUT 30 Off	Remote Output 30 Off
0x027E		Remote OUT 31 Off	Remote Output 31 Off
0x027F		Remote OUT 32 Off	Remote Output 32 Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP
0x804C		Therm PhA Trip DPO	Thermal Phase A Trip DPO
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8054		Therm PhB Trip DPO	Thermal Phase B Trip DPO
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8064		Therm PhC Trip DPO	Thermal Phase C Trip DPO
0x8081		PosSeq UV1 Trp PKP	Positive Sequence UV 1 Trp PKP
0x8082		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8084		PosSeq UV1 Trp DPO	Positive Sequence UV 1 Trp DPO
0x8242		Arc Flash Trip OP	Arc Flash Trip OP
0x83C1		Volt Hz Trip PKP	Volt Hz Trip PKP
0x83C2		Volt Hz Trip OP	Volt Hz Trip OP
0x83C4		Volt Hz Trip DPO	Volt Hz Trip DPO
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP

Code	Type	Definition	Long Definition
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x89C2		Self Test OP	Self Test OP
0x89C4		Self Test DPO	Self Test Trip DPO
0x8E81		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x8E82		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x8EC1		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x8EC2		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x8F81		Fuse Fail Trip PKP	Fuse Fail Trip PKP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8F84		Fuse Fail Trip DPO	Fuse Fail Trip DPO
0x8FC1		Brkn Cond Trip PKP	Broken Cond Trip PKP
0x8FC2		Brkn Cond Trip OP	Broken Cond Trip OP
0x8FC4		Brkn Cond Trip DPO	Broken Cond Trip DPO
0x9001		Ph IOC1 Trip PKP	Phase IOC 1 Trip PKP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x9004		Ph IOC1 Trip DPO	Phase IOC 1 Trip DPO
0x9009		Ph A IOC1 Trip PKP	Phase A IOC 1 Trip PKP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x900C		Ph A IOC1 Trip DPO	Phase A IOC 1 Trip DPO
0x9011		Ph B IOC1 Trip PKP	Phase B IOC 1 Trip PKP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP
0x9014		Ph B IOC1 Trip DPO	Phase B IOC 1 Trip DPO
0x9021		Ph C IOC1 Trip PKP	Phase C IOC 1 Trip PKP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9024		Ph C IOC1 Trip DPO	Phase C IOC 1 Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO

Code	Type	Definition	Long Definition
0x9081		Gnd IOC1 Trip PKP	Ground IOC 1 Trip PKP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x9084		Gnd IOC1 Trip DPO	Ground IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x90C9		Ph A TOC1 Trip PKP	Phase A TOC 1 Trip PKP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90CC		Ph A TOC1 Trip DPO	Phase A TOC 1 Trip DPO
0x90D1		Ph B TOC1 Trip PKP	Phase B TOC 1 Trip PKP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90D4		Ph B TOC1 Trip DPO	Phase B TOC 1 Trip DPO
0x90E1		Ph C TOC1 Trip PKP	Phase C TOC 1 Trip PKP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x90E4		Ph C TOC1 Trip DPO	Phase C TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9141		Gnd TOC1 Trip PKP	Ground TOC Trip PKP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9144		Gnd TOC1 Trip DPO	Ground TOC Trip DPO
0x9181		Ph IOC2 Trip PKP	Phase IOC 2 Trip PKP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x9184		Ph IOC2 Trip DPO	Phase IOC 2 Trip DPO
0x9189		Ph A IOC2 Trip PKP	Phase A IOC 2 Trip PKP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x918C		Ph A IOC2 Trip DPO	Phase A IOC 2 Trip DPO
0x9191		Ph B IOC2 Trip PKP	Phase B IOC 2 Trip PKP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x9194		Ph B IOC2 Trip DPO	Phase B IOC 2 Trip DPO
0x91A1		Ph C IOC2 Trip PKP	Phase C IOC 2 Trip PKP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91A4		Ph C IOC2 Trip DPO	Phase C IOC 2 Trip DPO
0x91C1		Ntrl IOC2 Trip PKP	Neutral IOC 2 Trip PKP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x91C4		Ntrl IOC2 Trip DPO	Neutral IOC 2 Trip DPO
0x9201		Gnd IOC2 Trip PKP	Ground IOC 2 Trip PKP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9204		Gnd IOC2 Trip DPO	Ground IOC 2 Trip DPO
0x9301		SGnd TOC1 Trip PKP	Sensitive Ground TOC 1 Trip PKP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9304		SGnd TOC1 Trip DPO	Sensitive Ground TOC 1 Trip DPO
0x93C1		NSeq OV Trp PKP	Negative Sequence OV Trip PKP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x93C4		NSeq OV Trp DPO	Negative Sequence OV Trip DPO
0x9401		Ntrl OV Trip PKP	Neutral OV Trip PKP
0x9402		Ntrl OV Trp OP	Neutral OV Trip OP

Code	Type	Definition	Long Definition
0x9404		Ntrl OV Trip DPO	Neutral OV Trip DPO
0x9441		Ph OV1 Trip PKP	Phase OV1 Trip PKP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x9444		Ph OV1 Trip DPO	Phase OV1 Trip DPO
0x9449		Ph A OV1 Trip PKP	Phase A OV1 Trip PKP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x944C		Ph A OV1 Trip DPO	Phase A OV1 Trip DPO
0x9451		Ph B OV1 Trip PKP	Phase B OV1 Trip PKP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP
0x9454		Ph B OV1 Trip DPO	Phase B OV1 Trip DPO
0x9461		Ph C OV1 Trip PKP	Phase C OV1 Trip PKP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9464		Ph C OV1 Trip DPO	Phase C OV1 Trip DPO
0x9481		Ph UV1 Trip PKP	Phase UV1 Trip PKP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x9484		Ph UV1 Trip DPO	Phase UV1 Trip DPO
0x9489		Ph A UV1 Trip PKP	Phase A UV1 Trip PKP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x948C		Ph A UV1 Trip DPO	Phase A UV1 Trip DPO
0x9491		Ph B UV1 Trip PKP	Phase B UV1 Trip PKP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x9494		Ph B UV1 Trip DPO	Phase B UV1 Trip DPO
0x94A1		Ph C UV1 Trip PKP	Phase C UV1 Trip PKP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP
0x94A4		Ph C UV1 Trip DPO	Phase C UV1 Trip DPO
0x94C1		Aux OV Trip PKP	Auxiliary OV Trip PKP
0x94C2		Aux OV Trip OP	Auxiliary OV Trip OP
0x94C4		Aux OV Trip DPO	Auxiliary OV Trip DPO
0x9501		Aux UV Trip PKP	Auxiliary UV Trip PKP
0x9502		Aux UV Trip OP	Auxiliary UV Trip OP
0x9504		Aux UV Trip DPO	Auxiliary UV Trip DPO
0x9541		UndrFreq1 Trip PKP	Underfrequency 1 Trip PKP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9544		UndrFreq1 Trip DPO	Underfrequency 1 Trip DPO
0x9581		UndrFreq2 Trip PKP	Underfrequency 2 Trip PKP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x9584		UndrFreq2 Trip DPO	Underfrequency 2 Trip DPO
0x95C1		OverFreq1 Trip PKP	Overfrequency 1 Trip PKP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x95C4		OverFreq1 Trip DPO	Overfrequency 1 Trip DPO
0x9601		OverFreq2 Trip PKP	Overfrequency 2 Trip PKP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9604		OverFreq2 Trip DPO	Overfrequency 2 Trip DPO
0x9641		SGnd IOC1 Trip PKP	Sensitive Ground IOC 1 Trip PKP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9644		SGnd IOC1 Trip DPO	Sensitive Ground IOC 1 Trip DPO
0x9681		SGnd IOC2 Trip PKP	Sensitive Ground IOC 2 Trip PKP

Code	Type	Definition	Long Definition
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x9684		SGnd IOC2 Trip DPO	Sensitive Ground IOC 2 Trip DPO
0x96C1		NSeq IOC Trp PKP	Negative Sequence IOC Trip PKP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x96C4		NSeq IOC Trp DPO	Negative Sequence IOC Trip DPO
0x9701		Ph UV2 Trip PKP	Phase UV 2 Trip PKP
0x9702		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x9704		Ph UV2 Trip DPO	Phase UV 2 Trip DPO
0x9709		Ph A UV2 Trip PKP	Phase A UV 2 Trip PKP
0x970A		Ph A UV2 Trip OP	Phase A UV 2 Trip OP
0x970C		Ph A UV2 Trip DPO	Phase A UV 2 Trip DPO
0x9711		Ph B UV2 Trip PKP	Phase B UV 2 Trip PKP
0x9712		Ph B UV2 Trip OP	Phase B UV 2 Trip OP
0x9714		Ph B UV2 Trip DPO	Phase B UV 2 Trip DPO
0x9721		Ph C UV2 Trip PKP	Phase C UV 2 Trip PKP
0x9722		Ph C UV2 Trip OP	Phase C UV 2 Trip OP
0x9724		Ph C UV2 Trip DPO	Phase C UV 2 Trip DPO
0x9741		Ph UV3 Trip PKP	Phase UV 3 Trip PKP
0x9742		Ph UV3 Trip OP	Phase UV 3 Trip OP
0x9744		Ph UV3 Trip DPO	Phase UV 3 Trip DPO
0x9749		Ph A UV3 Trip PKP	Phase A UV 3 Trip PKP
0x974A		Ph A UV3 Trip OP	Phase A UV 3 Trip OP
0x974C		Ph A UV3 Trip DPO	Phase A UV 3 Trip DPO
0x9751		Ph B UV3 Trip PKP	Phase B UV 3 Trip PKP
0x9752		Ph B UV3 Trip OP	Phase B UV 3 Trip OP
0x9754		Ph B UV3 Trip DPO	Phase B UV 3 Trip DPO
0x9761		Ph C UV3 Trip PKP	Phase C UV 3 Trip PKP
0x9762		Ph C UV3 Trip OP	Phase C UV 3 Trip OP
0x9764		Ph C UV3 Trip DPO	Phase C UV 3 Trip DPO
0x9781		Ph UV4 Trip PKP	Phase UV 4 Trip PKP
0x9782		Ph UV4 Trip OP	Phase UV 4 Trip OP
0x9784		Ph UV4 Trip DPO	Phase UV 4 Trip DPO
0x9789		Ph A UV4 Trip PKP	Phase A UV 4 Trip PKP
0x978A		Ph A UV4 Trip OP	Phase A UV 4 Trip OP
0x978C		Ph A UV4 Trip DPO	Phase A UV 4 Trip DPO
0x9791		Ph B UV4 Trip PKP	Phase B UV 4 Trip PKP
0x9792		Ph B UV4 Trip OP	Phase B UV 4 Trip OP
0x9794		Ph B UV4 Trip DPO	Phase B UV 4 Trip DPO
0x97A1		Ph C UV4 Trip PKP	Phase C UV 4 Trip PKP
0x97A2		Ph C UV4 Trip OP	Phase C UV 4 Trip OP
0x97A4		Ph C UV4 Trip DPO	Phase C UV 4 Trip DPO
0x97C1		NSeq OV2 Trp PKP	Negative Sequence OV2 Trp PKP
0x97C2		NSeq OV2 Trp OP	Negative Sequence OV2 Trp OP
0x97C4		NSeq OV2 Trp DPO	Negative Sequence OV2 Trp DPO
0x9801		NSeq TOC1 Trip PKP	Negative Sequence TOC 1 Trip PKP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9804		NSeq TOC1 Trip DPO	Negative Sequence TOC 1 Trip DPO

Code	Type	Definition	Long Definition
0x98C1		Ph OV2 Trip PKP	Phase OV 2 Trip PKP
0x98C2		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x98C4		Ph OV2 Trip DPO	Phase OV 2 Trip DPO
0x98C9		Ph A OV2 Trip PKP	Phase A OV2 Trip PKP
0x98CA		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x98CC		Ph A OV2 Trip DPO	Phase A OV2 Trip DPO
0x98D1		Ph B OV2 Trip PKP	Phase B OV2 Trip PKP
0x98D2		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x98D4		Ph B OV2 Trip DPO	Phase B OV2 Trip DPO
0x98E1		Ph C OV2 Trip PKP	Phase C OV2 Trip PKP
0x98E2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x98E4		Ph C OV2 Trip DPO	Phase C OV2 Trip DPO
0x9901		Ph OV3 Trip PKP	Phase OV 3 Trip PKP
0x9902		Ph OV3 Trip OP	Phase OV 3 Trip OP
0x9904		Ph OV3 Trip DPO	Phase OV 3 Trip DPO
0x9909		Ph A OV3 Trip PKP	Phase A OV 3 Trip PKP
0x990A		Ph A OV3 Trip OP	Phase A OV 3 Trip OP
0x990C		Ph A OV3 Trip DPO	Phase A OV 3 Trip DPO
0x9911		Ph B OV3 Trip PKP	Phase B OV 3 Trip PKP
0x9912		Ph B OV3 Trip OP	Phase B OV 3 Trip OP
0x9914		Ph B OV3 Trip DPO	Phase B OV 3 Trip DPO
0x9921		Ph C OV3 Trip PKP	Phase C OV 3 Trip PKP
0x9922		Ph C OV3 Trip OP	Phase C OV 3 Trip OP
0x9924		Ph C OV3 Trip DPO	Phase C OV 3 Trip DPO
0x9941		Ph OV4 Trip PKP	Phase OV 4 Trip PKP
0x9942		Ph OV4 Trip OP	Phase OV 4 Trip OP
0x9944		Ph OV4 Trip DPO	Phase OV 4 Trip DPO
0x9949		Ph A OV4 Trip PKP	Phase A OV 4 Trip PKP
0x994A		Ph A OV4 Trip OP	Phase A OV 4 Trip OP
0x994C		Ph A OV4 Trip DPO	Phase A OV 4 Trip DPO
0x9951		Ph B OV4 Trip PKP	Phase B OV 4 Trip PKP
0x9952		Ph B OV4 Trip OP	Phase B OV 4 Trip OP
0x9954		Ph B OV4 Trip DPO	Phase B OV 4 Trip DPO
0x9961		Ph C OV4 Trip PKP	Phase C OV 4 Trip PKP
0x9962		Ph C OV4 Trip OP	Phase C OV 4 Trip OP
0x9964		Ph C OV4 Trip DPO	Phase C OV 4 Trip DPO
0x9981		Ntrl OV2 Trip PKP	Neutral OV 2 Trip PKP
0x9982		Ntrl OV2 Trip OP	Neutral OV 2 Trip OP
0x9984		Ntrl OV2 Trip DPO	Neutral OV 2 Trip DPO
0x99C1		Ntrl OV3 Trip PKP	Neutral OV 3 Trip PKP
0x99C2		Ntrl OV3 Trip OP	Neutral OV 3 Trip OP
0x99C4		Ntrl OV3 Trip DPO	Neutral OV 3 Trip DPO
0x9A01		Ntrl OV4 Trip PKP	Neutral OV 4 Trip PKP
0x9A02		Ntrl OV4 Trip OP	Neutral OV 4 Trip OP
0x9A04		Ntrl OV4 Trip DPO	Neutral OV 4 Trip DPO
0x9A41		OverFreq3 Trip PKP	Overfrequency 3 Trip PKP
0x9A42		OverFreq3 Trip OP	Overfrequency 3 Trip OP

Code	Type	Definition	Long Definition
0x9A44		OverFreq3 Trip DPO	Overfrequency 3 Trip DPO
0x9A81		OverFreq4 Trip PKP	Overfrequency 4 Trip PKP
0x9A82		OverFreq4 Trip OP	Overfrequency 4 Trip OP
0x9A84		OverFreq4 Trip DPO	Overfrequency 4 Trip DPO
0x9AC1		UndFreq3 Trip PKP	Underfrequency 3 Trip PKP
0x9AC2		UndFreq3 Trip OP	Underfrequency 3 Trip OP
0x9AC4		UndFreq3 Trip DPO	Underfrequency 3 Trip DPO
0x9B01		UndFreq4 Trip PKP	Underfrequency 4 Trip PKP
0x9B02		UndFreq4 Trip OP	Underfrequency 4 Trip OP
0x9B04		UndFreq4 Trip DPO	Underfrequency 4 Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0x9F01		WGF 1 Trip PKP	Wattmetric Gnd Fault 1 Trip PKP
0x9F02		WGF 1 Trip OP	Wattmetric Gnd Fault 1 Trip OP
0x9F04		WGF 1 Trip DPO	Wattmetric Gnd Fault 1 Trip DPO
0x9F41		WGF 2 Trip PKP	Wattmetric Gnd Fault 2 Trip PKP
0x9F42		WGF 2 Trip OP	Wattmetric Gnd Fault 2 Trip OP
0x9F44		WGF 2 Trip DPO	Wattmetric Gnd Fault 2 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA04A		Therm PhA Alrm OP	Thermal Phase A Alarm OP
0xA04C		Therm PhA Alrm DPO	Thermal Phase A Alarm DPO
0xA052		Therm PhB Alrm OP	Thermal Phase B Alarm OP
0xA054		Therm PhB Alrm DPO	Thermal Phase B Alarm DPO

Code	Type	Definition	Long Definition
0xA062		Therm PhC Alrm OP	Thermal Phase C Alarm OP
0xA064		Therm PhC Alrm DPO	Thermal Phase C Alarm DPO
0xA081		PosSeq UV1 AlrmPKP	Positive Sequence UV 1 Alarm PKP
0xA082		PosSeq UV1 Alrm OP	Positive Sequence UV 1 Alarm OP
0xA084		PosSeq UV1 AlrmDPO	Positive Sequence UV 1 Alarm DPO
0xA242		Arc Flash Alarm OP	Arc Flash Alarm OP
0xA2C2		LightSns1 Trbl	Light Sensor 1 Trouble
0xA302		LightSns2 Trbl	Light Sensor 2 Trouble
0xA342		LightSns3 Trbl	Light Sensor 3 Trouble
0xA382		LightSns4 Trbl	Light Sensor 4 Trouble
0xA3C1		Volt Hz Alarm PKP	Volt Hz Alarm PKP
0xA3C2		Volt Hz Alarm OP	Volt Hz Alarm OP
0xA3C4		Volt Hz Alarm DPO	Volt Hz Alarm DPO
0xA442		Light Sns Trbl	Light Sensor Trouble
0xA482		Relay Not Ready	Relay Not Ready
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA742		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xA74A		C Dmd1 PhA Alrm OP	Current Demand 1 PhA Alarm OP
0xA752		C Dmd1 PhB Alrm OP	Current Demand 1 PhB Alarm OP
0xA762		C Dmd1 PhC Alrm OP	Current Demand 1 PhC Alarm OP
0xA782		RealP Dmd Alrm OP	Real Power Demand Alarm OP
0xA7C2		ReacP Dmd Alrm OP	Reactive Power Demand Alarm OP
0xA802		AppP Dmd Alrm OP	Apparent Power Demand Alarm OP
0xAA02		BKR Alarm	Breaker Alarm

Code	Type	Definition	Long Definition
0xAA42		BKR Trip Time	Breaker Trip Time
0xAA82		BKR Close Time	Breaker Close Time
0xAAC2		BKR Charge Time	Breaker Charge Time
0xAB02		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAB42		BKR Charge Fail	Breaker Charge Fail
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xAC44		Self Test Alrm DPO	Self Test Alarm DPO
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xACC4		BKRTrpCntrAlrm DPO	Breaker Trip Control Alarm DPO
0xAD01		R1 CoilMonAlrm PKP	Trip Coil Monitor Alarm PKP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD04		R1 CoilMonAlrm DPO	Trip Coil Monitor Alarm DPO
0xAD41		R2 CoilMonAlrm PKP	Close Coil Monitor Alarm PKP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD44		R2 CoilMonAlrm DPO	Close Coil Monitor Alarm DPO
0xAD81		BKR Fail Alrm PKP	Breaker Fail Alarm PKP
0xAD82		BKR Fail Alrm OP	Breaker Fail Alarm OP
0xAD84		BKR Fail Alrm DPO	Breaker Fail Alarm DPO
0xADC1		BKR Stat Fail PKP	Breaker Status Fail PKP
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xADC4		BKR Stat Fail DPO	Breaker Status Fail DPO
0xAE41		CLP Alarm PKP	Cold Load PKP Alarm PKP
0xAE42		CLP Alarm OP	Cold Load PKP Alarm OP
0xAE44		CLP Alarm DPO	Cold Load PKP Alarm DPO
0xAE81		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xAE82		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xAEC1		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP
0xAEC2		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xAF01		2nd Hrmc Alarm PKP	2nd Harmonic Alarm PKP
0xAF02		2nd Hrmc Alarm OP	2nd Harmonic Alarm OP
0xAF04		2nd Hrmc Alarm DPO	2nd Harmonic Alarm DPO
0xAF81		Fuse Fail Alrm PKP	Fuse Fail Alarm PKP
0xAF82		Fuse Fail Alrm OP	Fuse Fail Alarm OP
0xAF84		Fuse Fail Alrm DPO	Fuse Fail Alarm DPO
0xAFC1		Brkn Cond Alrm PKP	Broken Cond Alarm PKP
0xAFC2		Brkn Cond Alarm OP	Broken Cond Alarm OP
0xAFC4		Brkn Cond Alrm DPO	Broken Cond Alarm DPO
0xB001		Ph IOC1 Alarm PKP	Phase IOC 1 Alarm PKP
0xB002		Ph IOC1 Alarm OP	Phase IOC 1 Alarm OP
0xB004		Ph IOC1 Alarm DPO	Phase IOC 1 Alarm DPO
0xB009		Ph A IOC1 Alrm PKP	Phase A IOC 1 Alarm PKP

Code	Type	Definition	Long Definition
0xB00A		Ph A IOC1 Alrm OP	Phase A IOC 1 Alarm OP
0xB00C		Ph A IOC1 Alrm DPO	Phase A IOC 1 Alarm DPO
0xB011		Ph B IOC1 Alrm PKP	Phase B IOC 1 Alarm PKP
0xB012		Ph B IOC1 Alrm OP	Phase B IOC 1 Alarm OP
0xB014		Ph B IOC1 Alrm DPO	Phase B IOC 1 Alarm DPO
0xB021		Ph C IOC1 Alrm PKP	Phase C IOC 1 Alarm PKP
0xB022		Ph C IOC1 Alrm OP	Phase C IOC 1 Alarm OP
0xB024		Ph C IOC1 Alrm DPO	Phase C IOC 1 Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB081		Gnd IOC1 Alarm PKP	Ground IOC 1 Alarm PKP
0xB082		Gnd IOC1 Alarm OP	Ground IOC 1 Alarm OP
0xB084		Gnd IOC1 Alarm DPO	Ground IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB0C9		Ph A TOC1 Alrm PKP	Phase A TOC 1 Alarm PKP
0xB0CA		Ph A TOC1 Alrm OP	Phase A TOC 1 Alarm OP
0xB0CC		Ph A TOC1 Alrm DPO	Phase A TOC 1 Alarm DPO
0xB0D1		Ph B TOC1 Alrm PKP	Phase B TOC 1 Alarm PKP
0xB0D2		Ph B TOC1 Alrm OP	Phase B TOC 1 Alarm OP
0xB0D4		Ph B TOC1 Alrm DPO	Phase B TOC 1 Alarm DPO
0xB0E1		Ph C TOC1 Alrm PKP	Phase C TOC 1 Alarm PKP
0xB0E2		Ph C TOC1 Alrm OP	Phase C TOC 1 Alarm OP
0xB0E4		Ph C TOC1 Alrm DPO	Phase C TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB141		Gnd TOC1 Alarm PKP	Ground TOC Alarm PKP
0xB142		Gnd TOC1 Alarm OP	Ground TOC 1 Alarm OP
0xB144		Gnd TOC1 Alarm DPO	Ground TOC Alarm DPO
0xB181		Ph IOC2 Alarm PKP	Phase IOC 2 Alarm PKP
0xB182		Ph IOC2 Alarm OP	Phase IOC 2 Alarm OP
0xB184		Ph IOC2 Alarm DPO	Phase IOC 2 Alarm DPO
0xB189		Ph A IOC2 Alrm PKP	Phase A IOC 2 Alarm PKP
0xB18A		Ph A IOC2 Alrm OP	Phase A IOC 2 Alarm OP
0xB18C		Ph A IOC2 Alrm DPO	Phase A IOC 2 Alarm DPO
0xB191		Ph B IOC2 Alrm PKP	Phase B IOC 2 Alarm PKP
0xB192		Ph B IOC2 Alrm OP	Phase B IOC 2 Alarm OP
0xB194		Ph B IOC2 Alrm DPO	Phase B IOC 2 Alarm DPO
0xB1A1		Ph C IOC2 Alrm PKP	Phase C IOC 2 Alarm PKP
0xB1A2		Ph C IOC2 Alrm OP	Phase C IOC 2 Alarm OP
0xB1A4		Ph C IOC2 Alrm DPO	Phase C IOC 2 Alarm DPO
0xB1C1		Ntrl IOC2 Alrm PKP	Neutral IOC 2 Alarm PKP
0xB1C2		Ntrl IOC2 Alrm OP	Neutral IOC 2 Alarm OP
0xB1C4		Ntrl IOC2 Alrm DPO	Neutral IOC 2 Alarm DPO

Code	Type	Definition	Long Definition
0xB201		Gnd IOC2 Alarm PKP	Ground IOC 2 Alarm PKP
0xB202		Gnd IOC2 Alarm OP	Ground IOC 2 Alarm OP
0xB204		Gnd IOC2 Alarm DPO	Ground IOC 2 Alarm DPO
0xB301		SGnd TOC1 Alrm PKP	Sensitive Ground TOC 1 Alarm PKP
0xB302		SGnd TOC1 Alrm OP	Sensitive Ground TOC 1 Alarm OP
0xB304		SGnd TOC1 Alrm DPO	Sensitive Ground TOC 1 Alarm DPO
0xB341		NtrlDir RevAlmPKP	Neutral Directional Reverse Alarm PKP
0xB342		NtrlDir RevAlm OP	Neutral Directional Alarm OP
0xB344		NtrlDir RevAlmDPO	Neutral Directional Reverse Alarm DPO
0xB381		GndDir Alm PKP	Ground Directional Alarm PKP
0xB382		GndDir Alm OP	Ground Directional Alarm OP
0xB384		GndDir Alm DPO	Ground Directional Alarm DPO
0xB3C1		NSeq OV Alrm PKP	Negative Sequence OV Alarm PKP
0xB3C2		NSeq OV Alrm OP	Negative Sequence OV Alarm OP
0xB3C4		NSeq OV Alrm DPO	Negative Sequence OV Alarm DPO
0xB401		Ntrl OV Alrm PKP	Neutral OV Alarm PKP
0xB402		Ntrl OV Alrm OP	Neutral OV Alarm OP
0xB404		Ntrl OV Alrm DPO	Neutral OV Alarm DPO
0xB441		Ph OV1 Alarm PKP	Phase OV1 Alarm PKP
0xB442		Ph OV1 Alarm OP	Phase OV 1 Alarm OP
0xB444		Ph OV1 Alarm DPO	Phase OV1 Alarm DPO
0xB449		Ph A OV1 Alarm PKP	Phase A OV1 Alarm PKP
0xB44A		Ph A OV1 Alarm OP	Phase A OV1 Alarm OP
0xB44C		Ph A OV1 Alarm DPO	Phase A OV1 Alarm DPO
0xB451		Ph B OV1 Alarm PKP	Phase B OV1 Alarm PKP
0xB452		Ph B OV1 Alarm OP	Phase B OV1 Alarm OP
0xB454		Ph B OV1 Alarm DPO	Phase B OV1 Alarm DPO
0xB461		Ph C OV1 Alarm PKP	Phase C OV1 Alarm PKP
0xB462		Ph C OV1 Alarm OP	Phase C OV1 Alarm OP
0xB464		Ph C OV1 Alarm DPO	Phase C OV1 Alarm DPO
0xB481		Ph UV1 Alarm PKP	Phase UV1 Alarm PKP
0xB482		Ph UV1 Alarm OP	Phase UV 1 Alarm OP
0xB484		Ph UV1 Alarm DPO	Phase UV1 Alarm DPO
0xB489		Ph A UV1 Alarm PKP	Phase A UV1 Alarm PKP
0xB48A		Ph A UV1 Alarm OP	Phase A UV1 Alarm OP
0xB48C		Ph A UV1 Alarm DPO	Phase A UV1 Alarm DPO
0xB491		Ph B UV1 Alarm PKP	Phase B UV1 Alarm PKP
0xB492		Ph B UV1 Alarm OP	Phase B UV1 Alarm OP
0xB494		Ph B UV1 Alarm DPO	Phase B UV1 Alarm DPO
0xB4A1		Ph C UV1 Alarm PKP	Phase C UV1 Alarm PKP
0xB4A2		Ph C UV1 Alarm OP	Phase C UV1 Alarm OP
0xB4A4		Ph C UV1 Alarm DPO	Phase C UV1 Alarm DPO
0xB4C1		Aux OV Alarm PKP	Auxiliary OV Alarm PKP
0xB4C2		Aux OV Alarm OP	Auxiliary OV Alarm OP
0xB4C4		Aux OV Alarm DPO	Auxiliary OV Alarm DPO
0xB501		Aux UV Alarm PKP	Auxiliary UV Alarm PKP
0xB502		Aux UV Alarm OP	Auxiliary UV Alarm OP

Code	Type	Definition	Long Definition
0xB504		Aux UV Alarm DPO	Auxiliary UV Alarm DPO
0xB541		UndrFreq1 Alrm PKP	Underfrequency 1 Alarm PKP
0xB542		UndrFreq1 Alrm OP	Underfrequency 1 Alarm OP
0xB544		UndrFreq1 Alrm DPO	Underfrequency 1 Alarm DPO
0xB581		UndrFreq2 Alrm PKP	Underfrequency 2 Alarm PKP
0xB582		UndrFreq2 Alrm OP	Underfrequency 2 Alarm OP
0xB584		UndrFreq2 Alrm DPO	Underfrequency 2 Alarm DPO
0xB5C1		OverFreq1 Alrm PKP	Overfrequency 1 Alarm PKP
0xB5C2		OverFreq1 Alrm OP	Overfrequency 1 Alarm OP
0xB5C4		OverFreq1 Alrm DPO	Overfrequency 1 Alarm DPO
0xB601		OverFreq2 Alrm PKP	Overfrequency 2 Alarm PKP
0xB602		OverFreq2 Alrm OP	Overfrequency 2 Alarm OP
0xB604		OverFreq2 Alrm DPO	Overfrequency 2 Alarm DPO
0xB641		SGnd IOC1 Alrm PKP	Sensitive Ground IOC 1 Alarm PKP
0xB642		SGnd IOC1 Alrm OP	Sensitive Ground IOC 1 Alarm OP
0xB644		SGnd IOC1 Alrm DPO	Sensitive Ground IOC 1 Alarm DPO
0xB681		SGnd IOC2 Alrm PKP	Sensitive Ground IOC 2 Alarm PKP
0xB682		SGnd IOC2 Alrm OP	Sensitive Ground IOC 2 Alarm OP
0xB684		SGnd IOC2 Alrm DPO	Sensitive Ground IOC 2 Alarm DPO
0xB6C1		NSeq IOC Alrm PKP	Negative Sequence IOC Alarm PKP
0xB6C2		NSeq IOC Alrm OP	NSeq IOC Alrm OP
0xB6C4		NSeq IOC Alrm DPO	Negative Sequence IOC Alarm DPO
0xB701		Ph UV2 Alrm PKP	Phase UV 2 Alrm PKP
0xB702		Ph UV2 Alrm OP	Phase UV 2 Alrm OP
0xB704		Ph UV2 Alrm DPO	Phase UV 2 Alrm DPO
0xB709		Ph A UV2 Alrm PKP	Phase A UV 2 Alrm PKP
0xB70A		Ph A UV2 Alrm OP	Phase A UV 2 Alrm OP
0xB70C		Ph A UV2 Alrm DPO	Phase A UV 2 Alrm DPO
0xB711		Ph B UV2 Alrm PKP	Phase B UV 2 Alrm PKP
0xB712		Ph B UV2 Alrm OP	Phase B UV 2 Alrm OP
0xB714		Ph B UV2 Alrm DPO	Phase B UV 2 Alrm DPO
0xB721		Ph C UV2 Alrm PKP	Phase C UV 2 Alrm PKP
0xB722		Ph C UV2 Alrm OP	Phase C UV 2 Alrm OP
0xB724		Ph C UV2 Alrm DPO	Phase C UV 2 Alrm DPO
0xB741		Ph UV3 Alrm PKP	Phase UV 3 Alrm PKP
0xB742		Ph UV3 Alrm OP	Phase UV 3 Alrm OP
0xB744		Ph UV3 Alrm DPO	Phase UV 3 Alrm DPO
0xB749		Ph A UV3 Alrm PKP	Phase A UV 3 Alrm PKP
0xB74A		Ph A UV3 Alrm OP	Phase A UV 3 Alrm OP
0xB74C		Ph A UV3 Alrm DPO	Phase A UV 3 Alrm DPO
0xB751		Ph B UV3 Alrm PKP	Phase B UV 3 Alrm PKP
0xB752		Ph B UV3 Alrm OP	Phase B UV 3 Alrm OP
0xB754		Ph B UV3 Alrm DPO	Phase B UV 3 Alrm DPO
0xB761		Ph C UV3 Alrm PKP	Phase C UV 3 Alrm PKP
0xB762		Ph C UV3 Alrm OP	Phase C UV 3 Alrm OP
0xB764		Ph C UV3 Alrm DPO	Phase C UV 3 Alrm DPO
0xB781		Ph UV4 Alrm PKP	Phase UV 4 Alrm PKP

Code	Type	Definition	Long Definition
0xB782		Ph UV4 Alrm OP	Phase UV 4 Alrm OP
0xB784		Ph UV4 Alrm DPO	Phase UV 4 Alrm DPO
0xB789		Ph A UV4 Alrm PKP	Phase A UV 4 Alrm PKP
0xB78A		Ph A UV4 Alrm OP	Phase A UV 4 Alrm OP
0xB78C		Ph A UV4 Alrm DPO	Phase A UV 4 Alrm DPO
0xB791		Ph B UV4 Alrm PKP	Phase B UV 4 Alrm PKP
0xB792		Ph B UV4 Alrm OP	Phase B UV 4 Alrm OP
0xB794		Ph B UV4 Alrm DPO	Phase B UV 4 Alrm DPO
0xB7A1		Ph C UV4 Alrm PKP	Phase C UV 4 Alrm PKP
0xB7A2		Ph C UV4 Alrm OP	Phase C UV 4 Alrm OP
0xB7A4		Ph C UV4 Alrm DPO	Phase C UV 4 Alrm DPO
0xB7C1		NSeq OV2 Alrm PKP	Negative Sequence OV2 Alrm PKP
0xB7C2		NSeq OV2 Alrm OP	Negative Sequence OV2 Alrm OP
0xB7C4		NSeq OV2 Alrm DPO	Negative Sequence OV2 Alrm DPO
0xB801		NSeq TOC1 Alrm PKP	Negative Sequence TOC 1 Alarm PKP
0xB802		NSeq TOC1 Alrm OP	Negative Sequence TOC 1 Alarm OP
0xB804		NSeq TOC1 Alrm DPO	Negative Sequence TOC 1 Alarm DPO
0xB881		CTFail Alrm PKP	CT Fail Alarm PKP
0xB882		CTFail Alrm OP	CT Fail Alarm OP
0xB884		CTFail Alrm DPO	CT Fail Alarm DPO
0xB8C1		Ph OV2 Alarm PKP	Phase OV 2 Alarm PKP
0xB8C2		Ph OV2 Alarm OP	Phase OV 2 Alarm OP
0xB8C4		Ph OV2 Alarm DPO	Phase OV 2 Alarm DPO
0xB8C9		Ph A OV2 Alarm PKP	Ph A OV2 Alarm PKP
0xB8CA		Ph A OV2 Alarm OP	Ph A OV2 Alarm OP
0xB8CC		Ph A OV2 Alarm DPO	Ph A OV2 Alarm DPO
0xB8D1		Ph B OV2 Alarm PKP	Ph B OV2 Alarm PKP
0xB8D2		Ph B OV2 Alarm OP	Ph B OV2 Alarm OP
0xB8D4		Ph B OV2 Alarm DPO	Ph B OV2 Alarm DPO
0xB8E1		Ph C OV2 Alarm PKP	Ph C OV2 Alarm PKP
0xB8E2		Ph C OV2 Alarm OP	Ph C OV2 Alarm OP
0xB8E4		Ph C OV2 Alarm DPO	Ph C OV2 Alarm DPO
0xB901		Ph OV3 Alarm PKP	Phase OV 3 Alarm PKP
0xB902		Ph OV3 Alarm OP	Phase OV 3 Alarm OP
0xB904		Ph OV3 Alarm DPO	Phase OV 3 Alarm DPO
0xB909		Ph A OV3 Alarm PKP	Phase A OV 3 Alarm PKP
0xB90A		Ph A OV3 Alarm OP	Phase A OV 3 Alarm OP
0xB90C		Ph A OV3 Alarm DPO	Phase A OV 3 Alarm DPO
0xB911		Ph B OV3 Alarm PKP	Phase B OV 3 Alarm PKP
0xB912		Ph B OV3 Alarm OP	Phase B OV 3 Alarm OP
0xB914		Ph B OV3 Alarm DPO	Phase B OV 3 Alarm DPO
0xB921		Ph C OV3 Alarm PKP	Phase C OV 3 Alarm PKP
0xB922		Ph C OV3 Alarm OP	Phase C OV 3 Alarm OP
0xB924		Ph C OV3 Alarm DPO	Phase C OV 3 Alarm DPO
0xB941		Ph OV4 Alarm PKP	Phase OV 4 Alarm PKP
0xB942		Ph OV4 Alarm OP	Phase OV 4 Alarm OP
0xB944		Ph OV4 Alarm DPO	Phase OV 4 Alarm DPO

Code	Type	Definition	Long Definition
0xB949		Ph A OV4 Alarm PKP	Phase A OV 4 Alarm PKP
0xB94A		Ph A OV4 Alarm OP	Phase A OV 4 Alarm OP
0xB94C		Ph A OV4 Alarm DPO	Phase A OV 4 Alarm DPO
0xB951		Ph B OV4 Alarm PKP	Phase B OV 4 Alarm PKP
0xB952		Ph B OV4 Alarm OP	Phase B OV 4 Alarm OP
0xB954		Ph B OV4 Alarm DPO	Phase B OV 4 Alarm DPO
0xB961		Ph C OV4 Alarm PKP	Phase C OV 4 Alarm PKP
0xB962		Ph C OV4 Alarm OP	Phase C OV 4 Alarm OP
0xB964		Ph C OV4 Alarm DPO	Phase C OV 4 Alarm DPO
0xB981		Ntrl OV2 Alrm PKP	Neutral OV 2 Alarm PKP
0xB982		Ntrl OV2 Alrm OP	Neutral OV 2 Alarm OP
0xB984		Ntrl OV2 Alrm DPO	Neutral OV 2 Alarm DPO
0xB9C1		Ntrl OV3 Alrm PKP	Neutral OV 3 Alarm PKP
0xB9C2		Ntrl OV3 Alrm OP	Neutral OV 3 Alarm OP
0xB9C4		Ntrl OV3 Alrm DPO	Neutral OV 3 Alarm DPO
0xBA01		Ntrl OV4 Alrm PKP	Neutral OV 4 Alarm PKP
0xBA02		Ntrl OV4 Alrm OP	Neutral OV 4 Alarm OP
0xBA04		Ntrl OV4 Alrm DPO	Neutral OV 4 Alarm DPO
0xBA41		OverFreq3 Alrm PKP	Overfrequency 3 Alrm PKP
0xBA42		OverFreq3 Alrm OP	Overfrequency 3 Alrm OP
0xBA44		OverFreq3 Alrm DPO	Overfrequency 3 Alrm DPO
0xBA81		OverFreq4 Alrm PKP	Overfrequency 4 Alrm PKP
0xBA82		OverFreq4 Alrm OP	Overfrequency 4 Alrm OP
0xBA84		OverFreq4 Alrm DPO	Overfrequency 4 Alrm DPO
0xBAC1		UndFreq3 Alrm PKP	Underfrequency 3 Alrm PKP
0xBAC2		UndFreq3 Alarm OP	Underfrequency 3 Alarm OP
0xBAC4		UndFreq3 Alrm DPO	Underfrequency 3 Alrm DPO
0xBB01		UndFreq4 Alarm PKP	Underfrequency 4 Alarm PKP
0xBB02		UndFreq4 Alarm OP	Underfrequency 4 Alarm OP
0xBB04		UndFreq4 Alarm DPO	Underfrequency 4 Alarm DPO
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP

Code	Type	Definition	Long Definition
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xBE02		PhDir RevAlm OP	Ph Directional Reverse Alarm OP
0xBE04		PhDir RevAlm DPO	Ph Directional Reverse Alarm DPO
0xBE0A		PhADir RevAlm OP	Ph A Directional Reverse Alarm OP
0xBE0C		PhADir RevAlm DPO	Ph A Directional Reverse Alarm DPO
0xBE12		PhBDir RevAlm OP	Ph B Directional Reverse Alarm OP
0xBE14		PhBDir RevAlm DPO	Ph B Directional Reverse Alarm DPO
0xBE22		PhCDir RevAlm OP	Ph C Directional Reverse Alarm OP
0xBE24		PhCDir RevAlm DPO	Ph C Directional Reverse Alarm DPO
0xBE42		PhDir UndAlm OP	Ph Directional Und Alarm OP
0xBE44		PhDir UndAlm DPO	Ph Directional Und Alarm DPO
0xBE4A		PhADir UndAlm OP	Ph A Directional Und Alarm OP
0xBE4C		PhADir UndAlm DPO	Ph A Directional Und Alarm DPO
0xBE52		PhBDir UndAlm OP	Ph B Directional Und Alarm OP
0xBE54		PhBDir UndAlm DPO	Ph B Directional Und Alarm DPO
0xBE62		PhCDir UndAlm OP	Ph C Directional Und Alarm OP
0xBE64		PhCDir UndAlm DPO	Ph C Directional Und Alarm DPO
0xBE82		GndDir UndAlm OP	Ground Directional Und Alarm OP
0xBE84		GndDir UndAlm DPO	Ground Directional Und Alarm DPO
0xBEC2		NtrlDir UndAlm OP	Neutral Directional Und Alarm OP
0xBEC4		NtrlDir UndAlm DPO	Neutral Directional Und Alarm DPO
0xBF01		WGF 1 Alarm PKP	Wattmetric Gnd Fault 1 Alarm PKP
0xBF02		WGF 1 Alarm OP	Wattmetric Gnd Fault 1 Alarm OP
0xBF04		WGF 1 Alarm DPO	Wattmetric Gnd Fault 1 Alarm DPO
0xBF41		WGF 2 Alarm PKP	Wattmetric Gnd Fault 2 Alarm PKP
0xBF42		WGF 2 Alarm OP	Wattmetric Gnd Fault 2 Alarm OP
0xBF44		WGF 2 Alarm DPO	Wattmetric Gnd Fault 2 Alarm DPO
0xC042		Output Relay 3 On	Output Relay 3 On
0xC044		Output Relay 3 Off	Output Relay 3 Off
0xC082		Output Relay 4 On	Output Relay 4 On
0xC084		Output Relay 4 Off	Output Relay 4 Off
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC0C4		Output Relay 5 Off	Output Relay 5 Off
0xC102		Output Relay 6 On	Output Relay 6 On
0xC104		Output Relay 6 Off	Output Relay 6 Off
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC144		Self-Tst Rly 7 DPO	Self-Tst Rly 7 DPO
0xC202		BKR Connected	Breaker Connected OP
0xC242		Arc Flash OP	Arc Flash OP
0xC282		Any Pkp OP	Any Pkp OP
0xC2C1		Lockout PKP	Lockout PKP

Code	Type	Definition	Long Definition
0xC2C2		Lockout OP	Lockout OP
0xC2C4		Lockout DPO	Lockout DPO
0xC302		Sync Operation	Synchrocheck Operation
0xC342		Sync Close OP	Synchrocheck Close OP
0xC382		Sync Condition	Synchrocheck Condition
0xC442		HS Phase IOC OP	HS Phase IOC OP
0xC44A		HS PhA IOC OP	HS PhA IOC OP
0xC452		HS PhB IOC OP	HS PhB IOC OP
0xC462		HS PhC IOC OP	HS PhC IOC OP
0xC482		HSGnd IOC OP	HS Ground IOC OP
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC742		Testing ON	Testing ON
0xC744		Testing OFF	Testing OFF
0xC882		Setpoint Group2 On	Setpoint Group2 On
0xC902		BKR Open	Breaker Open
0xC942		BKR Close	Breaker Close
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCA44		52b Contact DPO	52b Contact DPO
0xCA82		Reset OK	Reset OK
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCAC4		L/O Rst Closed DPO	Lockout Reset Closed DPO
0xCB02		AR Close	AR Close

Code	Type	Definition	Long Definition
0xCB42		AR N/Ready	AR N/Ready
0xCB44		AR N/Ready DPO	AR N/Ready DPO
0xCB82		AR In Progress	AR In Progress
0xCBC2		AR Disabled	AR Disabled
0xCC02		AR Ext. Init	AR Ext. Init
0xCC42		AR Ready	AR Ready
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD42		Setpoint Group1 On	Setpoint Group1 On
0xCD82		Light Sensor 1 OP	Light Sensor 1 OP
0xCDC2		Light Sensor 2 OP	Light Sensor 2 OP
0xCE81		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xCE82		Dir Pwr 1 OP	Directional Pwr 1 OP
0xCEC1		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xCEC2		Dir Pwr 2 OP	Directional Pwr 2 OP
0xCF01		2nd Hrmc PKP	2nd Harmonic PKP
0xCF02		2nd Hrmc OP	2nd Harmonic OP
0xCF04		2nd Hrmc DPO	2nd Harmonic DPO
0xCF42		Light Sensor 3 OP	Light Sensor 3 OP
0xCF82		Light Sensor 4 OP	Light Sensor 4 OP
0xCFC1		Brkn Cond PKP	Broken Cond PKP
0xCFC2		Brkn Cond OP	Broken Cond OP
0xCFC4		Brkn Cond DPO	Broken Cond DPO
0xD341		Ntrl Dir Rev PKP	Neutral Directional Reverse PKP
0xD342		Ntrl Dir Rev OP	Neutral Directional Rev OP
0xD344		Ntrl Dir Rev DPO	Neutral Directional Reverse DPO
0xD382		Gnd Dir OP	Ground Directional OP
0xD384		Gnd Dir DPO	Ground Directional DPO
0xD441		Ph OV1 PKP	Phase OV1 PKP
0xD442		Ph OV1 OP	Ph OV 1 OP
0xD444		Ph OV1 DPO	Phase OV1 DPO
0xD481		Ph UV1 PKP	Phase UV1 PKP
0xD482		Ph UV1 OP	Ph UV 1 OP
0xD484		Ph UV1 DPO	Phase UV1 DPO
0xD701		Ph UV2 PKP	Phase UV 2 PKP
0xD702		Ph UV2 OP	Phase UV 2 OP
0xD704		Ph UV2 DPO	Phase UV 2 DPO
0xD741		Ph UV3 PKP	Phase UV 3 PKP
0xD742		Ph UV3 OP	Phase UV 3 OP
0xD744		Ph UV3 DPO	Phase UV 3 DPO
0xD781		Ph UV4 PKP	Phase UV 4 PKP
0xD782		Ph UV4 OP	Phase UV 4 OP
0xD784		Ph UV4 DPO	Phase UV 4 DPO
0xD801		NSeq TOC1 PKP	Negative Sequence TOC 1 PKP
0xD802		NSeq TOC1 OP	Negative Sequence TOC 1 OP
0xD804		NSeq TOC1 DPO	Negative Sequence TOC 1 DPO
0xD8C1		Ph OV2 PKP	Ph OV2 PKP

Code	Type	Definition	Long Definition
0xD8C2		Ph OV2 OP	Ph OV2 OP
0xD8C4		Ph OV2 DPO	Ph OV2 DPO
0xD901		Ph OV3 PKP	Phase OV 3 PKP
0xD902		Ph OV3 OP	Phase OV 3 OP
0xD904		Ph OV3 DPO	Phase OV 3 DPO
0xD941		Ph OV4 PKP	Phase OV 4 PKP
0xD942		Ph OV4 OP	Phase OV 4 OP
0xD944		Ph OV4 DPO	Phase OV 4 DPO
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xDE02		PhDir Rev OP	Ph Directional Reverse OP
0xDE04		PhDir Rev DPO	Ph Directional Reverse DPO
0xDE0A		PhADir Rev OP	Ph A Directional Reverse OP
0xDE0C		PhADir Rev DPO	Ph A Directional Reverse DPO
0xDE12		PhBDir Rev OP	Ph B Directional Reverse OP
0xDE14		PhBDir Rev DPO	Ph B Directional Reverse DPO
0xDE22		PhCDir Rev OP	Ph C Directional Reverse OP
0xDE24		PhCDir Rev DPO	Ph C Directional Reverse DPO
0xDE42		PhDir Und OP	Ph Directional Und OP
0xDE44		PhDir Und DPO	Ph Directional Und DPO
0xDE4A		PhADir Und OP	Ph A Directional Und OP
0xDE4C		PhADir Und DPO	Ph A Directional Und DPO
0xDE52		PhBDir Und OP	Ph B Directional Und OP
0xDE54		PhBDir Und DPO	Ph B Directional Und DPO
0xDE62		PhCDir Und OP	Ph C Directional Und OP

Code	Type	Definition	Long Definition
0xDE64		PhCDir Und DPO	Ph C Directional Und DPO
0xDE82		GndDir Und OP	Ground Directional Und OP
0xDE84		GndDir Und DPO	Ground Directional Und DPO
0xDEC2		NtrlDir Und OP	Neutral Directional Und OP
0xDEC4		NtrlDir Und DPO	Neutral Directional Und DPO
0xDF01		WGF 1 PKP	Wattmetric Gnd Fault 1 PKP
0xDF02		WGF 1 OP	Wattmetric Gnd Fault 1 OP
0xDF04		WGF 1 DPO	Wattmetric Gnd Fault 1 DPO
0xDF41		WGF 2 PKP	Wattmetric Gnd Fault 2 PKP
0xDF42		WGF 2 OP	Wattmetric Gnd Fault 2 OP
0xDF44		WGF 2 DPO	Wattmetric Gnd Fault 2 DPO
0xE002		Any Block	Any Block
0xE004		Any Block DPO	Any Block DPO
0xE042		Therm O/L Block	Thermal Level Block
0xE044		Therm O/L Blk DPO	Thermal Level Block DPO
0xE082		PosSeq UV1 Block	Positive Sequence UV 1 Block
0xE084		PosSeq UV1 BlckDPO	Positive Sequence UV 1 Block DPO
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE184		Relay 1 Blk DPO	Relay 1 Block DPO
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE1C4		Relay 2 Blk DPO	Relay 2 Block DPO
0xE242		Arc Flash Block	Arc Flash Block
0xE244		Arc Flash Blck DPO	Arc Flash Blck DPO
0xE2C2		Lockout Block	Lockout Block
0xE2C4		Lockout Block DPO	Lockout Block DPO
0xE3C2		Volt Hz Block	Volt Hz Block
0xE3C4		Volt Hz Block DPO	Volt Hz Block DPO
0xE742		Curr Dmd1 Block	Current Demand 1 Block OP
0xE744		Curr Dmd1 Blk DPO	Current Demand 1 Block DPO
0xE782		RealP Dmd Block	Real Power Demand Block OP
0xE784		RealP Dmd Blk DPO	Real Power Demand Block DPO
0xE7C2		ReacP Dmd Block	Reactive Power Demand Block OP
0xE7C4		ReacP Dmd Blk DPO	Reactive Power Demand Block DPO
0xE802		AppP Dmd Block	Apparent Power Demand Block OP
0xE804		AppP Dmd Block DPO	Apparent Power Demand Block DPO
0xE882		Group Change Blk	Group Change Blk
0xE884		Grp Change Blk DPO	Group Change Block DPO
0xEB02		AR Block	AR Block
0xEB04		AR Block DPO	AR Block DPO
0xEE82		Dir Pwr 1 Block	Directional Pwr 1 Block
0xEE84		Dir Pwr 1 Blk DPO	Directional Pwr 1 Block DPO
0xEEC2		Dir Pwr 2 Block	Directional Pwr 2 Block
0xEEC4		Dir Pwr 2 Blk DPO	Directional Pwr 2 Block DPO
0xEFC2		Brkn Cond Block	Broken Cond Block
0xEFC4		Brkn Cond Blk DPO	Broken Cond Block DPO
0xF002		Ph IOC1 Block	Phase IOC 1 Block
0xF004		Ph IOC1 Block DPO	Phase IOC 1 Block DPO

Code	Type	Definition	Long Definition
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF044		Ntrl IOC1 Blk DPO	Neutral IOC 1 Block DPO
0xF082		Gnd IOC1 Block	Ground IOC 1 Block
0xF084		Gnd IOC1 Block DPO	Ground IOC 1 Block DPO
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF0C4		Ph TOC1 Block DPO	Phase TOC 1 Block DPO
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF104		Ntrl TOC1 BlockDPO	Neutral TOC 1 Block DPO
0xF142		Gnd TOC1 Block	Ground TOC 1 Block
0xF144		Gnd TOC1 Block DPO	Ground TOC 1 Block DPO
0xF182		Ph IOC2 Block	Phase IOC 2 Block
0xF184		Ph IOC2 Block DPO	Phase IOC 2 Block DPO
0xF1C2		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF1C4		Ntrl IOC2 Blk DPO	Neutral IOC 2 Block DPO
0xF202		Gnd IOC2 Block	Ground IOC 2 Block
0xF204		Gnd IOC2 Block DPO	Ground IOC 2 Block DPO
0xF302		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF304		SGnd TOC1 BlockDPO	Sensitive Ground TOC 1 Block DPO
0xF342		Ntrl Dir Rev Block	Neutral Directional Rev Block
0xF344		Ntrl Dir Block DPO	Neutral Directional Block DPO
0xF382		Gnd Dir Block	Ground Directional Block
0xF384		Gnd Dir Block DPO	Ground Directional Block DPO
0xF3C2		NSeq OV Block	Negative Sequence OV OP
0xF3C4		NSeq OV Blk DPO	Negative Sequence OV Block DPO
0xF402		Ntrl OV Block	Neutral OV Block
0xF404		Ntrl OV Block DPO	Neutral OV Block DPO
0xF442		Ph OV1 Block	Ph OV 1 Block
0xF444		Ph OV1 Block DPO	Ph OV 1 Block DPO
0xF482		Ph UV1 Block	Ph UV 1 Block
0xF484		Ph UV1 Block DPO	Ph UV 1 Block DPO
0xF4C2		Aux OV Block	Auxiliary OV Block
0xF4C4		Aux OV Block DPO	Auxiliary OV Block DPO
0xF502		Aux UV Block	Auxiliary UV Block
0xF504		Aux UV Block DPO	Auxiliary UV Block DPO
0xF542		UndrFreq1 Block	Underfrequency 1 Block
0xF544		UndrFreq1 BlockDPO	Underfrequency 1 Block DPO
0xF582		UndrFreq2 Block	Underfrequency 2 Block
0xF584		UndrFreq2 BlockDPO	Underfrequency 2 Block DPO
0xF5C2		OverFreq1 Block	Overfrequency 1 Block
0xF5C4		OverFreq1 Blk DPO	Overfrequency 1 Block DPO
0xF602		OverFreq2 Block	Overfrequency 2 Block
0xF604		OverFreq2 BlockDPO	Overfrequency 2 Block DPO
0xF642		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF644		SGnd IOC1 Blk DPO	Sensitive Ground IOC 1 Block DPO
0xF682		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF684		SGnd IOC2 Blk DPO	Sensitive Ground IOC 2 Block DPO
0xF6C2		NSeq IOC Block	Negative Sequence IOC Block

Code	Type	Definition	Long Definition
0xF6C4		NSeq IOC Block DPO	Negative Sequence IOC Block DPO
0xF702		Ph UV2 Block	Phase UV 2 Block OP
0xF704		Ph UV2 Block DPO	Phase UV 2 Block DPO
0xF742		Ph UV3 Block	Phase UV 3 Block OP
0xF744		Ph UV3 Block DPO	Phase UV 3 Block DPO
0xF782		Ph UV4 Block	Phase UV 4 Block OP
0xF784		Ph UV4 Block DPO	Phase UV 4 Block DPO
0xF7C2		NSeq OV2 Block	Negative Sequence OV2 Block
0xF7C4		NSeq OV2 Blk DPO	Negative Sequence OV2 Blk DPO
0xF802		NSeq TOC1 Blk	Negative Sequence TOC 1 Block
0xF804		NSeq TOC1 Blk DPO	Negative Sequence TOC 1 Block DPO
0xF882		CTFail Block	CT Fail Block
0xF884		CTFail Block DPO	CT Fail Block DPO
0xF8C2		Ph OV2 Block	Ph OV2 Block
0xF8C4		Ph OV2 Block DPO	Ph OV2 Block DPO
0xF902		Ph OV3 Block	Phase OV 3 Block OP
0xF904		Ph OV3 Block DPO	Phase OV 3 Block DPO
0xF942		Ph OV4 Block	Phase OV 4 Block OP
0xF944		Ph OV4 Block DPO	Phase OV 4 Block DPO
0xF982		Ntrl OV2 Block	Neutral OV 2 Block
0xF984		Ntrl OV2 Block DPO	Neutral OV 2 Block DPO
0xF9C2		Ntrl OV3 Block	Neutral OV 3 Block
0xF9C4		Ntrl OV3 Block DPO	Neutral OV 3 Block DPO
0xFA02		Ntrl OV4 Block	Neutral OV 4 Block
0xFA04		Ntrl OV4 Block DPO	Neutral OV 4 Block DPO
0xFA42		OverFreq3 Block	Overfrequency 3 Block
0xFA44		OverFreq3 Blk DPO	Overfrequency 3 Blk DPO
0xFA82		OverFreq4 Block	Overfrequency 4 Block
0xFA84		OverFreq4 Blk DPO	Overfrequency 4 Blk DPO
0xFAC2		UndFreq3 Block	Underfrequency 3 Block
0xFAC4		UndFreq3 Block DPO	Underfrequency 3 Block DPO
0xFB02		UndFreq4 Block	Underfrequency 4 Block
0xFB04		UndFreq4 Block DPO	Underfrequency 4 Block DPO
0xFE02		PhDir Block	Ph Directional Block
0xFE04		PhDir Block DPO	Ph Directional Block DPO
0xFE0A		PhADir Block	PhA Directional Block
0xFE0C		PhADir Block DPO	PhA Directional Block DPO
0xFE12		PhBDir Block	PhB Directional Block
0xFE14		PhBDir Block DPO	PhB Directional Block DPO
0xFE22		PhCDir Block	PhC Directional Block
0xFE24		PhCDir Block DPO	PhC Directional Block DPO
0xFF02		WGF 1 Block	Wattmetric Gnd Fault 1 Block
0xFF04		WGF 1 BlockDPO	Wattmetric Gnd Fault 1 Block DPO
0xFF42		WGF 2 Block	Wattmetric Gnd Fault 2 Block
0xFF44		WGF 2 BlockDPO	Wattmetric Gnd Fault 2 Block DPO
FC134A	unsigned 16 bits	Active Targets	
0		No Active Targets	No Active Targets

Code	Type	Definition	Long Definition
7		Clock Not Set	Clock Not Set
8		IRIG-B Failure	IRIG-B Failure
14		Comm. Alert 1	Comm. Alert 1
15		Comm. Alert 2	Comm. Alert 2
16		Comm. Alert 3	Comm. Alert 3
17		Ethernet Link Fail	Ethernet Link Failure
18		High ENET Traffic	High Ethernet Traffic
19		Intern Temp. >80C	Internal Temperature High
40		Eth Link A Fail	Ethernet Link A Fail
41		Eth Link B Fail	Ethernet Link B Fail
0x8040		Therm O/L Trip	Therm O/L Trip
0x8080		PosSeq UV1 Trip	Positive Sequence UV 1 Trip
0x8240		Arc Flash Trip	Arc Flash Trip
0x83C0		Volt Hz Trip	Volt Hz Trip
0x8480		Relay Not Config	Relay Not Config
0x84C0		LE 1 Trip	Logic Element 1 Trip
0x8500		LE 2 Trip	Logic Element 2 Trip
0x8540		LE 3 Trip	Logic Element 3 Trip
0x8580		LE 4 Trip	Logic Element 4 Trip
0x85C0		LE 5 Trip	Logic Element 5 Trip
0x8600		LE 6 Trip	Logic Element 6 Trip
0x8640		LE 7 Trip	Logic Element 7 Trip
0x8680		LE 8 Trip	Logic Element 8 Trip
0x89C0		Self Test Trip	Self Test Trip
0x8D00		Rly #1 Trip OP	Rly #1 Trip OP
0x8D40		Rly #2 Trip OP	Rly #2 Trip OP
0x8D80		BKR Failure	BKR Failure
0x8E80		Dir Pwr 1 Trip	Directional Pwr 1 Trip
0x8EC0		Dir Pwr 2 Trip	Directional Pwr 2 Trip
0x8F80		Fuse Fail Trip	Fuse Fail Trip
0x8FC0		Brkn Cond Trip	Broken Cond Trip
0x9000		Ph IOC1 Trip	Phase IOC 1 Trip
0x9040		Ntrl IOC1 Trip	Neutral IOC 1 Trip
0x9080		Gnd IOC1 Trip	Ground IOC 1 Trip
0x90C0		Ph TOC1 Trip	Phase TOC 1 Trip
0x9100		Ntrl TOC1 Trip	Neutral TOC 1 Trip
0x9140		Gnd TOC1 Trip	Ground TOC 1 Trip
0x9180		Ph IOC2 Trip	Phase IOC 2 Trip
0x91C0		Ntrl IOC2 Trip	Neutral IOC 2 Trip
0x9200		Gnd IOC2 Trip	Ground IOC 2 Trip
0x9300		SGnd TOC1 Trip	Sensitive Ground TOC 1 Trip
0x93C0		NSeq OV Trip	Negative Sequence OV Trip
0x9400		Ntrl OV Trip	Neutral OV Trip
0x9440		Ph OV1 Trip	Phase OV 1 Trip
0x9480		Ph UV1 Trip	Phase UV 1 Trip
0x94C0		Aux OV Trip	Auxiliary OV Trip
0x9500		Aux UV Trip	Auxiliary UV Trip

Code	Type	Definition	Long Definition
0x9540		UndrFreq1 Trip	Underfrequency 1 Trip
0x9580		UndrFreq2 Trip	Underfrequency 2 Trip
0x95C0		OverFreq1 Trip	Overfrequency 1 Trip
0x9600		OverFreq2 Trip	Overfrequency 2 Trip
0x9640		SGnd IOC1 Trip	Sensitive Ground IOC 1 Trip
0x9680		SGnd IOC2 Trip	Sensitive Ground IOC 2 Trip
0x96C0		NSeq IOC Trip	Negative Sequence IOC Trip
0x9700		Ph UV2 Trip	Phase UV 2 Trip
0x9740		Ph UV3 Trip	Phase UV 3 Trip
0x9780		Ph UV4 Trip	Phase UV 4 Trip
0x97C0		NSeq OV2 Trip	Negative Sequence OV2 Trip
0x9800		NSeq TOC1 Trip	Negative Sequence TOC 1 Trip
0x98C0		Ph OV2 Trip	Ph OV2 Trip
0x9900		Ph OV3 Trip	Ph OV3 Trip
0x9940		Ph OV4 Trip	Ph OV4 Trip
0x9980		Ntrl OV2 Trip	Neutral OV 2 Trip
0x99C0		Ntrl OV3 Trip	Neutral OV 3 Trip
0x9A00		Ntrl OV4 Trip	Neutral OV 4 Trip
0x9A40		OverFreq3 Trip	Overfrequency 3 Trip
0x9A80		OverFreq4 Trip	Overfrequency 4 Trip
0x9AC0		UndFreq3 Trip	Underfrequency 3 Trip
0x9B00		UndFreq4 Trip	Underfrequency 4 Trip
0x9C00		LE 9 Trip	Logic Element 9 Trip
0x9C40		LE 10 Trip	Logic Element 10 Trip
0x9C80		LE 11 Trip	Logic Element 11 Trip
0x9CC0		LE 12 Trip	Logic Element 12 Trip
0x9D00		LE 13 Trip	Logic Element 13 Trip
0x9D40		LE 14 Trip	Logic Element 14 Trip
0x9D80		LE 15 Trip	Logic Element 15 Trip
0x9DC0		LE 16 Trip	Logic Element 16 Trip
0x9F00		WGF 1 Trip	Wattmetric Gnd Fault 1 Trip
0x9F40		WGF 2 Trip	Wattmetric Gnd Fault 2 Trip
0xA040		Therm Lvl Alrm	Thermal Level Alarm
0xA080		PosSeq UV1 Alrm	Positive Sequence UV 1 Alarm
0xA240		Arc Flash Alarm	Arc Flash Alarm
0xA2C0		Light Sens1 Trouble	Light Sensor 1 Trouble
0xA300		Light Sens2 Trouble	Light Sensor 2 Trouble
0xA340		Light Sens3 Trouble	Light Sensor 3 Trouble
0xA380		Light Sens4 Trouble	Light Sensor 4 Trouble
0xA3C0		Volt Hz Alarm	Volt Hz Alarm
0xA440		LightSns Trbl Alrm	Light Sensor Trouble Alarm
0xA480		Not Configured	Not Configured
0xA4C0		LE 1 Alarm	Logic Element 1 Alarm
0xA500		LE 2 Alarm	Logic Element 2 Alarm
0xA540		LE 3 Alarm	Logic Element 3 Alarm
0xA580		LE 4 Alarm	Logic Element 4 Alarm
0xA5C0		LE 5 Alarm	Logic Element 5 Alarm

Code	Type	Definition	Long Definition
0xA600		LE 6 Alarm	Logic Element 6 Alarm
0xA640		LE 7 Alarm	Logic Element 7 Alarm
0xA680		LE 8 Alarm	Logic Element 8 Alarm
0xA740		Curr Dmd1 Alrm	Current Demand 1 Alarm
0xA780		RealP Dmd Alrm	Real Power Demand Alarm
0xA7C0		ReacP Dmd Alrm	Reactive Power Demand Alarm
0xA800		AppP Dmd Alrm	Apparent Power Demand Alarm
0xAA00		BKR Alarm	Breaker Alarm
0xAA40		BKR Trip Time	Breaker Trip Time
0xAA80		BKR Close Time	Breaker Close Time
0xAAC0		BKR Charge Time	Breaker Charge Time
0xAB00		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAB40		BKR Charge Fail	Breaker Charge Fail
0xABC0		HI Ambient Temp	High Ambient Temperature Alarm
0xAC00		LO Ambient Temp	Low Ambient Temperature Alarm
0xAC40		Self Test Alarm	Self Test Alarm
0xACC0		BKRTrpCntrAlrm	Breaker Trip Control Alarm
0xAD00		Rly1 Coil Mn Alrm	Relay # 1 Coil Monitor Alarm
0xAD40		Rly2 Coil Mn Alrm	Relay # 2 Coil Monitor Alarm
0xAD80		BKR Fail Alrm	BKR Fail Alrm
0xADC0		BKRStatus Fail	Breaker Status Fail
0xAE40		CLP Alarm	Cold Load PKP Alarm
0xAE80		Dir Pwr 1 Alarm	Directional Pwr 1 Alarm
0xAEC0		Dir Pwr 2 Alarm	Directional Pwr 2 Alarm
0xAF00		2nd Hrmc Alarm	2nd Harmonic Alarm
0xAF80		Fuse Fail Alrm	Fuse Fail Alrm
0xAFC0		Brkn Cond Alarm	Broken Cond Alarm
0xB000		Ph IOC1 Alarm	Phase IOC 1 Alarm
0xB040		Ntrl IOC1 Alarm	Neutral IOC 1 Alarm
0xB080		Gnd IOC1 Alarm	Ground IOC 1 Alarm
0xB0C0		Ph TOC1 Alarm	Phase TOC 1 Alarm
0xB100		Ntrl TOC1 Alrm	Neutral TOC 1 Alarm
0xB140		Gnd TOC1 Alarm	Ground TOC 1 Alarm
0xB180		Ph IOC2 Alarm	Phase IOC 2 Alarm
0xB1C0		Ntrl IOC2 Alarm	Neutral IOC 2 Alarm
0xB200		Gnd IOC2 Alarm	Ground IOC 2 Alarm
0xB300		SGnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0xB340		NtrlDir RevAlm	Neutral Directional Alarm
0xB3C0		NSeq OV Alarm	Negative Sequence OV Alarm
0xB400		Ntrl OV Alarm	Neutral OV Alarm
0xB440		Ph OV1 Alarm	Phase OV 1 Alarm
0xB480		Ph UV1 Alarm	Phase UV 1 Alarm
0xB4C0		Aux OV Alarm	Auxiliary OV Alarm
0xB500		Aux UV Alarm	Auxiliary UV Alarm
0xB540		UndrFreq1 Alarm	Underfrequency 1 Alarm
0xB580		UndrFreq2 Alarm	Underfrequency 2 Alarm
0xB5C0		OverFreq1 Alrm	Overfrequency 1 Alarm

Code	Type	Definition	Long Definition
0xB600		OverFreq2 Alrm	Overfrequency 2 Alarm
0xB640		SGnd IOC1 Alarm	Sensitive Ground IOC 1 Alarm
0xB680		SGnd IOC2 Alarm	Sensitive Ground IOC 2 Alarm
0xB6C0		NSeq IOC Alrm	Negative Sequence IOC Alarm
0xB700		Ph UV2 Alarm	Phase UV 2 Alarm
0xB740		Ph UV3 Alarm	Phase UV 3 Alarm
0xB780		Ph UV4 Alarm	Phase UV 4 Alarm
0xB7C0		NSeq OV2 Alrm	Negative Sequence OV2 Alrm
0xB800		NSeq TOC1 Alarm	Negative Sequence TOC 1 Alarm
0xB880		CTFail Alrm	CT Fail Alarm
0xB8C0		Ph OV2 Alarm	Ph OV2 Alarm
0xB900		Ph OV3 Alarm	Ph OV3 Alarm
0xB940		Ph OV4 Alarm	Ph OV4 Alarm
0xB980		Ntrl OV2 Alarm	Neutral OV 2 Alarm
0xB9C0		Ntrl OV3 Alarm	Neutral OV 3 Alarm
0xBA00		Ntrl OV4 Alarm	Neutral OV 4 Alarm
0xBA40		OverFreq3 Alarm	Overfrequency 3 Alarm
0xBA80		OverFreq4 Alarm	Overfrequency 4 Alarm
0xBAC0		UndFreq3 Alarm	Underfrequency 3 Alarm
0xBB00		UndFreq4 Alarm	Underfrequency 4 Alarm
0xBC00		LE 9 Alarm	Logic Element 9 Alarm
0xBC40		LE 10 Alarm	Logic Element 10 Alarm
0xBC80		LE 11 Alarm	Logic Element 11 Alarm
0xBCC0		LE 12 Alarm	Logic Element 12 Alarm
0xBD00		LE 13 Alarm	Logic Element 13 Alarm
0xBD40		LE 14 Alarm	Logic Element 14 Alarm
0xBD80		LE 15 Alarm	Logic Element 15 Alarm
0xBDC0		LE 16 Alarm	Logic Element 16 Alarm
0xBE00		PhDir RevAlm	Ph Directional Reverse Alarm
0xBE40		PhDir UndAlm	Ph Directional Und Alarm
0xBE80		GndDir UndAlm	Ground Directional Und Alarm
0xBEC0		NtrlDir UndAlm	Neutral Directional Und Alarm
0xBF00		WGF 1 Alarm	Wattmetric Gnd Fault 1 Alarm
0xBF40		WGF 2 Alarm	Wattmetric Gnd Fault 2 Alarm
0xC040		Output Relay 3	Output Relay 3
0xC080		Output Relay 4	Output Relay 4
0xC0C0		Output Relay 5	Output Relay 5
0xC100		Output Relay 6	Output Relay 6
0xC140		Output Relay 7	Output Relay 7
0xC180		Relay1 Coil	Relay # 1 Coil
0xC1C0		Relay2 Coil	Relay # 2 Coil
0xC240		Arc Flash	Arc Flash
0xC2C0		Lockout	Lockout
0xC300		Sync Operation	Synchrocheck Operation
0xC340		Sync Close OP	Synchrocheck Close OP
0xC380		Sync Condition	Synchrocheck Condition
0xC440		HS Phase IOC	HS Phase IOC

Code	Type	Definition	Long Definition
0xC480		HS Gnd IOC	HS Gnd IOC
0xC4C0		LE 1	LE 1
0xC500		LE 2	LE 2
0xC540		LE 3	LE 3
0xC580		LE 4	LE 4
0xC5C0		LE 5	LE 5
0xC600		LE 6	LE 6
0xC640		LE 7	LE 7
0xC680		LE 8	LE 8
0xC6C0		DeadBus >= LiveBus	DeadBus >= LiveBus
0xC700		DeadLine>=LiveLine	DeadLine >= LiveLine
0xC740		Testing	Testing
0xC880		Setpoint Group2	Setpoint Group2
0xC900		Open BKR	Open Breaker
0xC940		Close BKR	Close Breaker
0xC980		Maint Required	Maint Required
0xCA00		52a Contact	52a Contact
0xCA40		52b Contact	52b Contact
0xCA80		Reset OK	Reset OK
0xCAC0		L/O Rst Closed	Lockout Reset Closed
0xCB00		AR Close	AR Close
0xCB40		AR N/Ready	AR N/Ready
0xCB80		AR In Progress	AR In Progress
0xCBC0		AR Disabled	AR Disabled
0xCC00		AR Ext. Init	AR Ext. Init
0xCC40		AR Ready	AR Ready
0xCCC0		BKR Stat Open	Breaker Status Open
0xCD00		BKR Stat Clsd	Breaker Status Closed
0xCD40		Setpoint Group1	Setpoint Group1
0xCD80		Light Sensor 1	Light Sensor 1
0xCDC0		Light Sensor 2	Light Sensor 2
0xCE80		Dir Pwr 1	Directional Pwr 1
0xCEC0		Dir Pwr 2	Directional Pwr 2
0xCF00		2nd Hrmc	2nd Harmonic
0xCF40		Light Sensor 3	Light Sensor 3
0xCF80		Light Sensor 4	Light Sensor 4
0xCFC0		Brkn Cond	Broken Cond
0xD340		Ntrl Dir Rev	Neutral Directional Rev
0xD380		Gnd Dir	Ground Directional
0xD700		Ph UV2	Phase UV 2
0xD740		Ph UV3	Phase UV 3
0xD780		Ph UV4	Phase UV 4
0xD8C0		Ph OV2	Ph OV2
0xD900		Ph OV3	Ph OV3
0xD940		Ph OV4	Ph OV4
0xDC00		LE 9	LE 9
0xDC40		LE 10	LE 10

Code	Type	Definition	Long Definition
0xDC80		LE 11	LE 11
0xDCC0		LE 12	LE 12
0xDD00		LE 13	LE 13
0xDD40		LE 14	LE 14
0xDD80		LE 15	LE 15
0xDDC0		LE 16	LE 16
0xDE00		PhDir Rev	Ph Directional Reverse
0xDE40		PhDir Und	Ph Directional Und
0xDE80		GndDir Und	Ground Directional Und
0xDEC0		NtrlDir Und	Neutral Directional Und
0xDF00		WGF 1	Wattmetric Gnd Fault 1
0xDF40		WGF 2	Wattmetric Gnd Fault 2
0xE040		Therm O/L Block	Thermal Level Block
0xE080		PosSeq UV1 Block	Positive Sequence UV 1 Block
0xE180		Output Relay 1 BLK	Output Relay 1 BLK
0xE1C0		Output Relay 2 BLK	Output Relay 2 BLK
0xE240		Arc Flash Block	Arc Flash Block
0xE2C0		Lockout Block	Lockout Block
0xE3C0		Volt Hz Block	Volt Hz Block
0xE440		LightSns Trbl Blk	Light Sensor Trouble Block
0xE740		Curr Dmd1 Block	Current Demand 1 Block
0xE780		RealPwr Dmd Block	Real Power Demand Block
0xE7C0		ReacPwr Dmd Block	Reactive Power Demand Block
0xE800		AppPwr Dmd Block	Apparent Power Demand Block
0xE880		Group Change Blk	Group Change Blk
0xEB00		AR Block	AR Block
0xEE80		Dir Pwr 1 Block	Directional Pwr 1 Block
0xEEC0		Dir Pwr 2 Block	Directional Pwr 2 Block
0xEF00		2nd Hrmc Block	2nd Harmonic Block
0xEFC0		Brkn Cond Block	Broken Cond Block
0xF000		Ph IOC1 Block	Phase IOC 1 Block
0xF040		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF080		Gnd IOC1 Block	Ground IOC 1 Block
0xF0C0		Ph TOC1 Block	Phase TOC 1 Block
0xF100		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF140		Gnd TOC1 Block	Ground TOC 1 Block
0xF180		Ph IOC2 Block	Phase IOC 2 Block
0xF1C0		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF200		Gnd IOC2 Block	Ground IOC 2 Block
0xF300		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF340		Ntrl Dir Rev Block	Neutral Directional Block
0xF380		Gnd Dir Block	Ground Directional Block
0xF3C0		NSeq OV Block	Negative Sequence OV Block
0xF400		Ntrl OV Block	Neutral OV Block
0xF440		Ph OV1 Block	Phase OV 1 Block
0xF480		Ph UV1 Block	Phase UV 1 Block
0xF4C0		Aux OV Block	Auxiliary OV Block

Code	Type	Definition	Long Definition
0xF500		Aux UV Block	Auxiliary UV Block
0xF540		UndrFreq1 Block	Underfrequency 1 Block
0xF580		UndrFreq2 Block	Underfrequency 2 Block
0xF5C0		OverFreq1 Block	Overfrequency 1 Block
0xF600		OverFreq2 Block	Overfrequency 2 Block
0xF640		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF680		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF6C0		NSeq IOC Block	Negative Sequence IOC Block
0xF700		Ph UV2 Block	Phase UV 2 Block OP
0xF740		Ph UV3 Block	Phase UV 3 Block OP
0xF780		Ph UV4 Block	Phase UV 4 Block OP
0xF7C0		NSeq OV2 Blk	Negative Sequence OV2 Blk
0xF800		NSeq TOC1 Block	Negative Sequence TOC 1 Block
0xF880		CTFail Block	CT Fail Block
0xF8C0		Ph OV2 Block	Ph OV2 Block
0xF900		Ph OV3 Block	Ph OV3 Block
0xF940		Ph OV4 Block	Ph OV4 Block
0xF980		Ntrl OV2 Block	Neutral OV 2 Block
0xF9C0		Ntrl OV3 Block	Neutral OV 3 Block
0xFA00		Ntrl OV4 Block	Neutral OV 4 Block
0xFA40		OverFreq3 Block	Overfrequency 3 Block
0xFA80		OverFreq4 Block	Overfrequency 4 Block
0xFAC0		UndFreq3 Block	Underfrequency 3 Block
0xFB00		UndFreq4 Block	Underfrequency 4 Block
0xFE00		PhDir Block	Ph Directional Block
0xFF00		WGF 1 Block	Wattmetric Gnd Fault 1 Block
0xFF40		WGF 2 Block	Wattmetric Gnd Fault 2 Block
FC134B	unsigned 16 bits	DNP Binary Inputs	
0		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off

Code	Type	Definition	Long Definition
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On

Code	Type	Definition	Long Definition
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off

Code	Type	Definition	Long Definition
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x06C6		Clock Not Set	Clock Not Set
0x06C9		Relay Not Ready	Relay Not Ready
0x06CA		IRIG-B Failure	IRIG-B Failure
0x06CE		Ethernet Link Fail	Ethernet Link Failure
0x06D0		Intern Temp. >80C	Internal Temperature High
0x06D5		Eth Link A Fail	Ethernet Link A Fail
0x06D6		Eth Link B Fail	Ethernet Link B Fail
0x06E0		Order Code Error	Order Code Error
0x06E1		RTC Error	RTC Error
0x06E2		Cal Error	Cal Error
0x06E3		EEPROM Error	EEPROM Error
0x06E4		Sys Health Error	Sys Health Error
0x06E5		CPU 33V Error	CPU 33V Error
0x06E6		Analog V Rail Fail	Analog Voltage Rail Fail
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP
0x804C		Therm PhA Trip DPO	Thermal Phase A Trip DPO
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8054		Therm PhB Trip DPO	Thermal Phase B Trip DPO
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8064		Therm PhC Trip DPO	Thermal Phase C Trip DPO
0x8081		PosSeq UV1 Trp PKP	Positive Sequence UV 1 Trp PKP
0x8082		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8084		PosSeq UV1 Trp DPO	Positive Sequence UV 1 Trp DPO
0x8242		Arc Flash Trip OP	Arc Flash Trip OP
0x83C1		Volt Hz Trip PKP	Volt Hz Trip PKP
0x83C2		Volt Hz Trip OP	Volt Hz Trip OP
0x83C4		Volt Hz Trip DPO	Volt Hz Trip DPO
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO

Code	Type	Definition	Long Definition
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x89C2		Self Test OP	Self Test OP
0x8E81		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x8E82		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x8EC1		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x8EC2		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x8F81		Fuse Fail Trip PKP	Fuse Fail Trip PKP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8F84		Fuse Fail Trip DPO	Fuse Fail Trip DPO
0x8FC1		Brkn Cond Trip PKP	Broken Cond Trip PKP
0x8FC2		Brkn Cond Trip OP	Broken Cond Trip OP
0x8FC4		Brkn Cond Trip DPO	Broken Cond Trip DPO
0x9001		Ph IOC1 Trip PKP	Phase IOC 1 Trip PKP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x9004		Ph IOC1 Trip DPO	Phase IOC 1 Trip DPO
0x9009		Ph A IOC1 Trip PKP	Phase A IOC 1 Trip PKP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x900C		Ph A IOC1 Trip DPO	Phase A IOC 1 Trip DPO
0x9011		Ph B IOC1 Trip PKP	Phase B IOC 1 Trip PKP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP
0x9014		Ph B IOC1 Trip DPO	Phase B IOC 1 Trip DPO
0x9021		Ph C IOC1 Trip PKP	Phase C IOC 1 Trip PKP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9024		Ph C IOC1 Trip DPO	Phase C IOC 1 Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x9081		Gnd IOC1 Trip PKP	Ground IOC 1 Trip PKP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x9084		Gnd IOC1 Trip DPO	Ground IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x90C9		Ph A TOC1 Trip PKP	Phase A TOC 1 Trip PKP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90CC		Ph A TOC1 Trip DPO	Phase A TOC 1 Trip DPO

Code	Type	Definition	Long Definition
0x90D1		Ph B TOC1 Trip PKP	Phase B TOC 1 Trip PKP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90D4		Ph B TOC1 Trip DPO	Phase B TOC 1 Trip DPO
0x90E1		Ph C TOC1 Trip PKP	Phase C TOC 1 Trip PKP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x90E4		Ph C TOC1 Trip DPO	Phase C TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9141		Gnd TOC1 Trip PKP	Ground TOC Trip PKP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9144		Gnd TOC1 Trip DPO	Ground TOC Trip DPO
0x9181		Ph IOC2 Trip PKP	Phase IOC 2 Trip PKP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x9184		Ph IOC2 Trip DPO	Phase IOC 2 Trip DPO
0x9189		Ph A IOC2 Trip PKP	Phase A IOC 2 Trip PKP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x918C		Ph A IOC2 Trip DPO	Phase A IOC 2 Trip DPO
0x9191		Ph B IOC2 Trip PKP	Phase B IOC 2 Trip PKP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x9194		Ph B IOC2 Trip DPO	Phase B IOC 2 Trip DPO
0x91A1		Ph C IOC2 Trip PKP	Phase C IOC 2 Trip PKP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91A4		Ph C IOC2 Trip DPO	Phase C IOC 2 Trip DPO
0x91C1		Ntrl IOC2 Trip PKP	Neutral IOC 2 Trip PKP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x91C4		Ntrl IOC2 Trip DPO	Neutral IOC 2 Trip DPO
0x9201		Gnd IOC2 Trip PKP	Ground IOC 2 Trip PKP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9204		Gnd IOC2 Trip DPO	Ground IOC 2 Trip DPO
0x9301		SGnd TOC1 Trip PKP	Sensitive Ground TOC 1 Trip PKP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9304		SGnd TOC1 Trip DPO	Sensitive Ground TOC 1 Trip DPO
0x93C1		NSeq OV Trp PKP	Negative Sequence OV Trip PKP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x93C4		NSeq OV Trp DPO	Negative Sequence OV Trip DPO
0x9401		Ntrl OV Trip PKP	Neutral OV Trip PKP
0x9402		Ntrl OV Trp OP	Neutral OV Trip OP
0x9404		Ntrl OV Trip DPO	Neutral OV Trip DPO
0x9441		Ph OV1 Trip PKP	Phase OV1 Trip PKP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x9444		Ph OV1 Trip DPO	Phase OV1 Trip DPO
0x9449		Ph A OV1 Trip PKP	Phase A OV1 Trip PKP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x944C		Ph A OV1 Trip DPO	Phase A OV1 Trip DPO
0x9451		Ph B OV1 Trip PKP	Phase B OV1 Trip PKP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP

Code	Type	Definition	Long Definition
0x9454		Ph B OV1 Trip DPO	Phase B OV1 Trip DPO
0x9461		Ph C OV1 Trip PKP	Phase C OV1 Trip PKP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9464		Ph C OV1 Trip DPO	Phase C OV1 Trip DPO
0x9481		Ph UV1 Trip PKP	Phase UV1 Trip PKP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x9484		Ph UV1 Trip DPO	Phase UV1 Trip DPO
0x9489		Ph A UV1 Trip PKP	Phase A UV1 Trip PKP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x948C		Ph A UV1 Trip DPO	Phase A UV1 Trip DPO
0x9491		Ph B UV1 Trip PKP	Phase B UV1 Trip PKP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x9494		Ph B UV1 Trip DPO	Phase B UV1 Trip DPO
0x94A1		Ph C UV1 Trip PKP	Phase C UV1 Trip PKP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP
0x94A4		Ph C UV1 Trip DPO	Phase C UV1 Trip DPO
0x94C1		Aux OV Trip PKP	Auxiliary OV Trip PKP
0x94C2		Aux OV Trip OP	Auxiliary OV Trip OP
0x94C4		Aux OV Trip DPO	Auxiliary OV Trip DPO
0x9501		Aux UV Trip PKP	Auxiliary UV Trip PKP
0x9502		Aux UV Trip OP	Auxiliary UV Trip OP
0x9504		Aux UV Trip DPO	Auxiliary UV Trip DPO
0x9541		UndrFreq1 Trip PKP	Underfrequency 1 Trip PKP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9544		UndrFreq1 Trip DPO	Underfrequency 1 Trip DPO
0x9581		UndrFreq2 Trip PKP	Underfrequency 2 Trip PKP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x9584		UndrFreq2 Trip DPO	Underfrequency 2 Trip DPO
0x95C1		OverFreq1 Trip PKP	Overfrequency 1 Trip PKP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x95C4		OverFreq1 Trip DPO	Overfrequency 1 Trip DPO
0x9601		OverFreq2 Trip PKP	Overfrequency 2 Trip PKP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9604		OverFreq2 Trip DPO	Overfrequency 2 Trip DPO
0x9641		SGnd IOC1 Trip PKP	Sensitive Ground IOC 1 Trip PKP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9644		SGnd IOC1 Trip DPO	Sensitive Ground IOC 1 Trip DPO
0x9681		SGnd IOC2 Trip PKP	Sensitive Ground IOC 2 Trip PKP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x9684		SGnd IOC2 Trip DPO	Sensitive Ground IOC 2 Trip DPO
0x96C1		NSeq IOC Trp PKP	Negative Sequence IOC Trip PKP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x96C4		NSeq IOC Trp DPO	Negative Sequence IOC Trip DPO
0x9701		Ph UV2 Trip PKP	Phase UV 2 Trip PKP
0x9702		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x9704		Ph UV2 Trip DPO	Phase UV 2 Trip DPO
0x9709		Ph A UV2 Trip PKP	Phase A UV 2 Trip PKP

Code	Type	Definition	Long Definition
0x970A		Ph A UV2 Trip OP	Phase A UV 2 Trip OP
0x970C		Ph A UV2 Trip DPO	Phase A UV 2 Trip DPO
0x9711		Ph B UV2 Trip PKP	Phase B UV 2 Trip PKP
0x9712		Ph B UV2 Trip OP	Phase B UV 2 Trip OP
0x9714		Ph B UV2 Trip DPO	Phase B UV 2 Trip DPO
0x9721		Ph C UV2 Trip PKP	Phase C UV 2 Trip PKP
0x9722		Ph C UV2 Trip OP	Phase C UV 2 Trip OP
0x9724		Ph C UV2 Trip DPO	Phase C UV 2 Trip DPO
0x9741		Ph UV3 Trip PKP	Phase UV 3 Trip PKP
0x9742		Ph UV3 Trip OP	Phase UV 3 Trip OP
0x9744		Ph UV3 Trip DPO	Phase UV 3 Trip DPO
0x9749		Ph A UV3 Trip PKP	Phase A UV 3 Trip PKP
0x974A		Ph A UV3 Trip OP	Phase A UV 3 Trip OP
0x974C		Ph A UV3 Trip DPO	Phase A UV 3 Trip DPO
0x9751		Ph B UV3 Trip PKP	Phase B UV 3 Trip PKP
0x9752		Ph B UV3 Trip OP	Phase B UV 3 Trip OP
0x9754		Ph B UV3 Trip DPO	Phase B UV 3 Trip DPO
0x9761		Ph C UV3 Trip PKP	Phase C UV 3 Trip PKP
0x9762		Ph C UV3 Trip OP	Phase C UV 3 Trip OP
0x9764		Ph C UV3 Trip DPO	Phase C UV 3 Trip DPO
0x9781		Ph UV4 Trip PKP	Phase UV 4 Trip PKP
0x9782		Ph UV4 Trip OP	Phase UV 4 Trip OP
0x9784		Ph UV4 Trip DPO	Phase UV 4 Trip DPO
0x9789		Ph A UV4 Trip PKP	Phase A UV 4 Trip PKP
0x978A		Ph A UV4 Trip OP	Phase A UV 4 Trip OP
0x978C		Ph A UV4 Trip DPO	Phase A UV 4 Trip DPO
0x9791		Ph B UV4 Trip PKP	Phase B UV 4 Trip PKP
0x9792		Ph B UV4 Trip OP	Phase B UV 4 Trip OP
0x9794		Ph B UV4 Trip DPO	Phase B UV 4 Trip DPO
0x97A1		Ph C UV4 Trip PKP	Phase C UV 4 Trip PKP
0x97A2		Ph C UV4 Trip OP	Phase C UV 4 Trip OP
0x97A4		Ph C UV4 Trip DPO	Phase C UV 4 Trip DPO
0x97C1		NSeq OV2 Trp PKP	Negative Sequence OV2 Trp PKP
0x97C2		NSeq OV2 Trp OP	Negative Sequence OV2 Trp OP
0x97C4		NSeq OV2 Trp DPO	Negative Sequence OV2 Trp DPO
0x9801		NSeq TOC1 Trip PKP	Negative Sequence TOC 1 Trip PKP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9804		NSeq TOC1 Trip DPO	Negative Sequence TOC 1 Trip DPO
0x98C1		Ph OV2 Trip PKP	Phase OV 2 Trip PKP
0x98C2		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x98C4		Ph OV2 Trip DPO	Phase OV 2 Trip DPO
0x98C9		Ph A OV2 Trip PKP	Phase A OV2 Trip PKP
0x98CA		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x98CC		Ph A OV2 Trip DPO	Phase A OV2 Trip DPO
0x98D1		Ph B OV2 Trip PKP	Phase B OV2 Trip PKP
0x98D2		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x98D4		Ph B OV2 Trip DPO	Phase B OV2 Trip DPO

Code	Type	Definition	Long Definition
0x98E1		Ph C OV2 Trip PKP	Phase C OV2 Trip PKP
0x98E2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x98E4		Ph C OV2 Trip DPO	Phase C OV2 Trip DPO
0x9901		Ph OV3 Trip PKP	Phase OV 3 Trip PKP
0x9902		Ph OV3 Trip OP	Phase OV 3 Trip OP
0x9904		Ph OV3 Trip DPO	Phase OV 3 Trip DPO
0x9909		Ph A OV3 Trip PKP	Phase A OV 3 Trip PKP
0x990A		Ph A OV3 Trip OP	Phase A OV 3 Trip OP
0x990C		Ph A OV3 Trip DPO	Phase A OV 3 Trip DPO
0x9911		Ph B OV3 Trip PKP	Phase B OV 3 Trip PKP
0x9912		Ph B OV3 Trip OP	Phase B OV 3 Trip OP
0x9914		Ph B OV3 Trip DPO	Phase B OV 3 Trip DPO
0x9921		Ph C OV3 Trip PKP	Phase C OV 3 Trip PKP
0x9922		Ph C OV3 Trip OP	Phase C OV 3 Trip OP
0x9924		Ph C OV3 Trip DPO	Phase C OV 3 Trip DPO
0x9941		Ph OV4 Trip PKP	Phase OV 4 Trip PKP
0x9942		Ph OV4 Trip OP	Phase OV 4 Trip OP
0x9944		Ph OV4 Trip DPO	Phase OV 4 Trip DPO
0x9949		Ph A OV4 Trip PKP	Phase A OV 4 Trip PKP
0x994A		Ph A OV4 Trip OP	Phase A OV 4 Trip OP
0x994C		Ph A OV4 Trip DPO	Phase A OV 4 Trip DPO
0x9951		Ph B OV4 Trip PKP	Phase B OV 4 Trip PKP
0x9952		Ph B OV4 Trip OP	Phase B OV 4 Trip OP
0x9954		Ph B OV4 Trip DPO	Phase B OV 4 Trip DPO
0x9961		Ph C OV4 Trip PKP	Phase C OV 4 Trip PKP
0x9962		Ph C OV4 Trip OP	Phase C OV 4 Trip OP
0x9964		Ph C OV4 Trip DPO	Phase C OV 4 Trip DPO
0x9981		Ntrl OV2 Trip PKP	Neutral OV 2 Trip PKP
0x9982		Ntrl OV2 Trip OP	Neutral OV 2 Trip OP
0x9984		Ntrl OV2 Trip DPO	Neutral OV 2 Trip DPO
0x99C1		Ntrl OV3 Trip PKP	Neutral OV 3 Trip PKP
0x99C2		Ntrl OV3 Trip OP	Neutral OV 3 Trip OP
0x99C4		Ntrl OV3 Trip DPO	Neutral OV 3 Trip DPO
0x9A01		Ntrl OV4 Trip PKP	Neutral OV 4 Trip PKP
0x9A02		Ntrl OV4 Trip OP	Neutral OV 4 Trip OP
0x9A04		Ntrl OV4 Trip DPO	Neutral OV 4 Trip DPO
0x9A41		OverFreq3 Trip PKP	Overfrequency 3 Trip PKP
0x9A42		OverFreq3 Trip OP	Overfrequency 3 Trip OP
0x9A44		OverFreq3 Trip DPO	Overfrequency 3 Trip DPO
0x9A81		OverFreq4 Trip PKP	Overfrequency 4 Trip PKP
0x9A82		OverFreq4 Trip OP	Overfrequency 4 Trip OP
0x9A84		OverFreq4 Trip DPO	Overfrequency 4 Trip DPO
0x9AC1		UndFreq3 Trip PKP	Underfrequency 3 Trip PKP
0x9AC2		UndFreq3 Trip OP	Underfrequency 3 Trip OP
0x9AC4		UndFreq3 Trip DPO	Underfrequency 3 Trip DPO
0x9B01		UndFreq4 Trip PKP	Underfrequency 4 Trip PKP
0x9B02		UndFreq4 Trip OP	Underfrequency 4 Trip OP

Code	Type	Definition	Long Definition
0x9B04		UndFreq4 Trip DPO	Underfrequency 4 Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0x9F01		WGF 1 Trip PKP	Wattmetric Gnd Fault 1 Trip PKP
0x9F02		WGF 1 Trip OP	Wattmetric Gnd Fault 1 Trip OP
0x9F04		WGF 1 Trip DPO	Wattmetric Gnd Fault 1 Trip DPO
0x9F41		WGF 2 Trip PKP	Wattmetric Gnd Fault 2 Trip PKP
0x9F42		WGF 2 Trip OP	Wattmetric Gnd Fault 2 Trip OP
0x9F44		WGF 2 Trip DPO	Wattmetric Gnd Fault 2 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA04A		Therm PhA Alrm OP	Thermal Phase A Alarm OP
0xA04C		Therm PhA Alrm DPO	Thermal Phase A Alarm DPO
0xA052		Therm PhB Alrm OP	Thermal Phase B Alarm OP
0xA054		Therm PhB Alrm DPO	Thermal Phase B Alarm DPO
0xA062		Therm PhC Alrm OP	Thermal Phase C Alarm OP
0xA064		Therm PhC Alrm DPO	Thermal Phase C Alarm DPO
0xA081		PosSeq UV1 AlrmPKP	Positive Sequence UV 1 Alarm PKP
0xA082		PosSeq UV1 Alrm OP	Positive Sequence UV 1 Alarm OP
0xA084		PosSeq UV1 AlrmDPO	Positive Sequence UV 1 Alarm DPO
0xA242		Arc Flash Alarm OP	Arc Flash Alarm OP
0xA2C2		LightSns1 Trbl	Light Sensor 1 Trouble
0xA302		LightSns2 Trbl	Light Sensor 2 Trouble
0xA342		LightSns3 Trbl	Light Sensor 3 Trouble

Code	Type	Definition	Long Definition
0xA382		LightSns4 Trbl	Light Sensor 4 Trouble
0xA3C1		Volt Hz Alarm PKP	Volt Hz Alarm PKP
0xA3C2		Volt Hz Alarm OP	Volt Hz Alarm OP
0xA3C4		Volt Hz Alarm DPO	Volt Hz Alarm DPO
0xA442		Light Sns Trbl	Light Sensor Trouble
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA742		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xA74A		C Dmd1 PhA Alrm OP	Current Demand 1 PhA Alarm OP
0xA752		C Dmd1 PhB Alrm OP	Current Demand 1 PhB Alarm OP
0xA762		C Dmd1 PhC Alrm OP	Current Demand 1 PhC Alarm OP
0xA782		RealP Dmd Alrm OP	Real Power Demand Alarm OP
0xA7C2		ReacP Dmd Alrm OP	Reactive Power Demand Alarm OP
0xA802		AppP Dmd Alrm OP	Apparent Power Demand Alarm OP
0xAA02		BKR Alarm	Breaker Alarm
0xAA42		BKR Trip Time	Breaker Trip Time
0xAA82		BKR Close Time	Breaker Close Time
0xAAC2		BKR Charge Time	Breaker Charge Time
0xAB02		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAB42		BKR Charge Fail	Breaker Charge Fail
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm

Code	Type	Definition	Long Definition
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD81		BKR Fail Alrm PKP	Breaker Fail Alarm PKP
0xAD82		BKR Fail Alrm OP	Breaker Fail Alarm OP
0xAD84		BKR Fail Alrm DPO	Breaker Fail Alarm DPO
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xAE41		CLP Alarm PKP	Cold Load PKP Alarm PKP
0xAE42		CLP Alarm OP	Cold Load PKP Alarm OP
0xAE81		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xAE82		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xAEC1		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP
0xAEC2		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xAF01		2nd Hrmc Alarm PKP	2nd Harmonic Alarm PKP
0xAF02		2nd Hrmc Alarm OP	2nd Harmonic Alarm OP
0xAF04		2nd Hrmc Alarm DPO	2nd Harmonic Alarm DPO
0xAF81		Fuse Fail Alrm PKP	Fuse Fail Alarm PKP
0xAF82		Fuse Fail Alrm OP	Fuse Fail Alarm OP
0xAF84		Fuse Fail Alrm DPO	Fuse Fail Alarm DPO
0xAFC1		Brkn Cond Alrm PKP	Broken Cond Alarm PKP
0xAFC2		Brkn Cond Alarm OP	Broken Cond Alarm OP
0xAFC4		Brkn Cond Alrm DPO	Broken Cond Alarm DPO
0xB001		Ph IOC1 Alarm PKP	Phase IOC 1 Alarm PKP
0xB002		Ph IOC1 Alarm OP	Phase IOC 1 Alarm OP
0xB004		Ph IOC1 Alarm DPO	Phase IOC 1 Alarm DPO
0xB009		Ph A IOC1 Alrm PKP	Phase A IOC 1 Alarm PKP
0xB00A		Ph A IOC1 Alrm OP	Phase A IOC 1 Alarm OP
0xB00C		Ph A IOC1 Alrm DPO	Phase A IOC 1 Alarm DPO
0xB011		Ph B IOC1 Alrm PKP	Phase B IOC 1 Alarm PKP
0xB012		Ph B IOC1 Alrm OP	Phase B IOC 1 Alarm OP
0xB014		Ph B IOC1 Alrm DPO	Phase B IOC 1 Alarm DPO
0xB021		Ph C IOC1 Alrm PKP	Phase C IOC 1 Alarm PKP
0xB022		Ph C IOC1 Alrm OP	Phase C IOC 1 Alarm OP
0xB024		Ph C IOC1 Alrm DPO	Phase C IOC 1 Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB081		Gnd IOC1 Alarm PKP	Ground IOC 1 Alarm PKP
0xB082		Gnd IOC1 Alarm OP	Ground IOC 1 Alarm OP
0xB084		Gnd IOC1 Alarm DPO	Ground IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB0C9		Ph A TOC1 Alrm PKP	Phase A TOC 1 Alarm PKP
0xB0CA		Ph A TOC1 Alrm OP	Phase A TOC 1 Alarm OP

Code	Type	Definition	Long Definition
0xB0CC		Ph A TOC1 Alrm DPO	Phase A TOC 1 Alarm DPO
0xB0D1		Ph B TOC1 Alrm PKP	Phase B TOC 1 Alarm PKP
0xB0D2		Ph B TOC1 Alrm OP	Phase B TOC 1 Alarm OP
0xB0D4		Ph B TOC1 Alrm DPO	Phase B TOC 1 Alarm DPO
0xB0E1		Ph C TOC1 Alrm PKP	Phase C TOC 1 Alarm PKP
0xB0E2		Ph C TOC1 Alrm OP	Phase C TOC 1 Alarm OP
0xB0E4		Ph C TOC1 Alrm DPO	Phase C TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB141		Gnd TOC1 Alarm PKP	Ground TOC Alarm PKP
0xB142		Gnd TOC1 Alarm OP	Ground TOC 1 Alarm OP
0xB144		Gnd TOC1 Alarm DPO	Ground TOC Alarm DPO
0xB181		Ph IOC2 Alarm PKP	Phase IOC 2 Alarm PKP
0xB182		Ph IOC2 Alarm OP	Phase IOC 2 Alarm OP
0xB184		Ph IOC2 Alarm DPO	Phase IOC 2 Alarm DPO
0xB189		Ph A IOC2 Alrm PKP	Phase A IOC 2 Alarm PKP
0xB18A		Ph A IOC2 Alrm OP	Phase A IOC 2 Alarm OP
0xB18C		Ph A IOC2 Alrm DPO	Phase A IOC 2 Alarm DPO
0xB191		Ph B IOC2 Alrm PKP	Phase B IOC 2 Alarm PKP
0xB192		Ph B IOC2 Alrm OP	Phase B IOC 2 Alarm OP
0xB194		Ph B IOC2 Alrm DPO	Phase B IOC 2 Alarm DPO
0xB1A1		Ph C IOC2 Alrm PKP	Phase C IOC 2 Alarm PKP
0xB1A2		Ph C IOC2 Alrm OP	Phase C IOC 2 Alarm OP
0xB1A4		Ph C IOC2 Alrm DPO	Phase C IOC 2 Alarm DPO
0xB1C1		Ntrl IOC2 Alrm PKP	Neutral IOC 2 Alarm PKP
0xB1C2		Ntrl IOC2 Alrm OP	Neutral IOC 2 Alarm OP
0xB1C4		Ntrl IOC2 Alrm DPO	Neutral IOC 2 Alarm DPO
0xB201		Gnd IOC2 Alarm PKP	Ground IOC 2 Alarm PKP
0xB202		Gnd IOC2 Alarm OP	Ground IOC 2 Alarm OP
0xB204		Gnd IOC2 Alarm DPO	Ground IOC 2 Alarm DPO
0xB301		SGnd TOC1 Alrm PKP	Sensitive Ground TOC 1 Alarm PKP
0xB302		SGnd TOC1 Alrm OP	Sensitive Ground TOC 1 Alarm OP
0xB304		SGnd TOC1 Alrm DPO	Sensitive Ground TOC 1 Alarm DPO
0xB342		NtrlDir RevAlm OP	Neutral Directional Alarm OP
0xB344		NtrlDir RevAlmDPO	Neutral Directional Reverse Alarm DPO
0xB382		GndDir Alm OP	Ground Directional Alarm OP
0xB384		GndDir Alm DPO	Ground Directional Alarm DPO
0xB3C1		NSeq OV Alrm PKP	Negative Sequence OV Alarm PKP
0xB3C2		NSeq OV Alrm OP	Negative Sequence OV Alarm OP
0xB3C4		NSeq OV Alrm DPO	Negative Sequence OV Alarm DPO
0xB401		Ntrl OV Alrm PKP	Neutral OV Alarm PKP
0xB402		Ntrl OV Alrm OP	Neutral OV Alarm OP
0xB404		Ntrl OV Alrm DPO	Neutral OV Alarm DPO
0xB441		Ph OV1 Alarm PKP	Phase OV1 Alarm PKP
0xB442		Ph OV1 Alarm OP	Phase OV 1 Alarm OP
0xB444		Ph OV1 Alarm DPO	Phase OV1 Alarm DPO

Code	Type	Definition	Long Definition
0xB449		Ph A OV1 Alarm PKP	Phase A OV1 Alarm PKP
0xB44A		Ph A OV1 Alarm OP	Phase A OV1 Alarm OP
0xB44C		Ph A OV1 Alarm DPO	Phase A OV1 Alarm DPO
0xB451		Ph B OV1 Alarm PKP	Phase B OV1 Alarm PKP
0xB452		Ph B OV1 Alarm OP	Phase B OV1 Alarm OP
0xB454		Ph B OV1 Alarm DPO	Phase B OV1 Alarm DPO
0xB461		Ph C OV1 Alarm PKP	Phase C OV1 Alarm PKP
0xB462		Ph C OV1 Alarm OP	Phase C OV1 Alarm OP
0xB464		Ph C OV1 Alarm DPO	Phase C OV1 Alarm DPO
0xB481		Ph UV1 Alarm PKP	Phase UV1 Alarm PKP
0xB482		Ph UV1 Alarm OP	Phase UV 1 Alarm OP
0xB484		Ph UV1 Alarm DPO	Phase UV1 Alarm DPO
0xB489		Ph A UV1 Alarm PKP	Phase A UV1 Alarm PKP
0xB48A		Ph A UV1 Alarm OP	Phase A UV1 Alarm OP
0xB48C		Ph A UV1 Alarm DPO	Phase A UV1 Alarm DPO
0xB491		Ph B UV1 Alarm PKP	Phase B UV1 Alarm PKP
0xB492		Ph B UV1 Alarm OP	Phase B UV1 Alarm OP
0xB494		Ph B UV1 Alarm DPO	Phase B UV1 Alarm DPO
0xB4A1		Ph C UV1 Alarm PKP	Phase C UV1 Alarm PKP
0xB4A2		Ph C UV1 Alarm OP	Phase C UV1 Alarm OP
0xB4A4		Ph C UV1 Alarm DPO	Phase C UV1 Alarm DPO
0xB4C1		Aux OV Alarm PKP	Auxiliary OV Alarm PKP
0xB4C2		Aux OV Alarm OP	Auxiliary OV Alarm OP
0xB4C4		Aux OV Alarm DPO	Auxiliary OV Alarm DPO
0xB501		Aux UV Alarm PKP	Auxiliary UV Alarm PKP
0xB502		Aux UV Alarm OP	Auxiliary UV Alarm OP
0xB504		Aux UV Alarm DPO	Auxiliary UV Alarm DPO
0xB541		UndrFreq1 Alrm PKP	Underfrequency 1 Alarm PKP
0xB542		UndrFreq1 Alrm OP	Underfrequency 1 Alarm OP
0xB544		UndrFreq1 Alrm DPO	Underfrequency 1 Alarm DPO
0xB581		UndrFreq2 Alrm PKP	Underfrequency 2 Alarm PKP
0xB582		UndrFreq2 Alrm OP	Underfrequency 2 Alarm OP
0xB584		UndrFreq2 Alrm DPO	Underfrequency 2 Alarm DPO
0xB5C1		OverFreq1 Alrm PKP	Overfrequency 1 Alarm PKP
0xB5C2		OverFreq1 Alrm OP	Overfrequency 1 Alarm OP
0xB5C4		OverFreq1 Alrm DPO	Overfrequency 1 Alarm DPO
0xB601		OverFreq2 Alrm PKP	Overfrequency 2 Alarm PKP
0xB602		OverFreq2 Alrm OP	Overfrequency 2 Alarm OP
0xB604		OverFreq2 Alrm DPO	Overfrequency 2 Alarm DPO
0xB641		SGnd IOC1 Alrm PKP	Sensitive Ground IOC 1 Alarm PKP
0xB642		SGnd IOC1 Alrm OP	Sensitive Ground IOC 1 Alarm OP
0xB644		SGnd IOC1 Alrm DPO	Sensitive Ground IOC 1 Alarm DPO
0xB681		SGnd IOC2 Alrm PKP	Sensitive Ground IOC 2 Alarm PKP
0xB682		SGnd IOC2 Alrm OP	Sensitive Ground IOC 2 Alarm OP
0xB684		SGnd IOC2 Alrm DPO	Sensitive Ground IOC 2 Alarm DPO
0xB6C1		NSeq IOC Alrm PKP	Negative Sequence IOC Alarm PKP
0xB6C2		NSeq IOC Alrm OP	NSeq IOC Alrm OP

Code	Type	Definition	Long Definition
0xB6C4		NSeq IOC Alrm DPO	Negative Sequence IOC Alarm DPO
0xB701		Ph UV2 Alrm PKP	Phase UV 2 Alrm PKP
0xB702		Ph UV2 Alrm OP	Phase UV 2 Alrm OP
0xB704		Ph UV2 Alrm DPO	Phase UV 2 Alrm DPO
0xB709		Ph A UV2 Alrm PKP	Phase A UV 2 Alrm PKP
0xB70A		Ph A UV2 Alrm OP	Phase A UV 2 Alrm OP
0xB70C		Ph A UV2 Alrm DPO	Phase A UV 2 Alrm DPO
0xB711		Ph B UV2 Alrm PKP	Phase B UV 2 Alrm PKP
0xB712		Ph B UV2 Alrm OP	Phase B UV 2 Alrm OP
0xB714		Ph B UV2 Alrm DPO	Phase B UV 2 Alrm DPO
0xB721		Ph C UV2 Alrm PKP	Phase C UV 2 Alrm PKP
0xB722		Ph C UV2 Alrm OP	Phase C UV 2 Alrm OP
0xB724		Ph C UV2 Alrm DPO	Phase C UV 2 Alrm DPO
0xB741		Ph UV3 Alrm PKP	Phase UV 3 Alrm PKP
0xB742		Ph UV3 Alrm OP	Phase UV 3 Alrm OP
0xB744		Ph UV3 Alrm DPO	Phase UV 3 Alrm DPO
0xB749		Ph A UV3 Alrm PKP	Phase A UV 3 Alrm PKP
0xB74A		Ph A UV3 Alrm OP	Phase A UV 3 Alrm OP
0xB74C		Ph A UV3 Alrm DPO	Phase A UV 3 Alrm DPO
0xB751		Ph B UV3 Alrm PKP	Phase B UV 3 Alrm PKP
0xB752		Ph B UV3 Alrm OP	Phase B UV 3 Alrm OP
0xB754		Ph B UV3 Alrm DPO	Phase B UV 3 Alrm DPO
0xB761		Ph C UV3 Alrm PKP	Phase C UV 3 Alrm PKP
0xB762		Ph C UV3 Alrm OP	Phase C UV 3 Alrm OP
0xB764		Ph C UV3 Alrm DPO	Phase C UV 3 Alrm DPO
0xB781		Ph UV4 Alrm PKP	Phase UV 4 Alrm PKP
0xB782		Ph UV4 Alrm OP	Phase UV 4 Alrm OP
0xB784		Ph UV4 Alrm DPO	Phase UV 4 Alrm DPO
0xB789		Ph A UV4 Alrm PKP	Phase A UV 4 Alrm PKP
0xB78A		Ph A UV4 Alrm OP	Phase A UV 4 Alrm OP
0xB78C		Ph A UV4 Alrm DPO	Phase A UV 4 Alrm DPO
0xB791		Ph B UV4 Alrm PKP	Phase B UV 4 Alrm PKP
0xB792		Ph B UV4 Alrm OP	Phase B UV 4 Alrm OP
0xB794		Ph B UV4 Alrm DPO	Phase B UV 4 Alrm DPO
0xB7A1		Ph C UV4 Alrm PKP	Phase C UV 4 Alrm PKP
0xB7A2		Ph C UV4 Alrm OP	Phase C UV 4 Alrm OP
0xB7A4		Ph C UV4 Alrm DPO	Phase C UV 4 Alrm DPO
0xB7C1		NSeq OV2 Alrm PKP	Negative Sequence OV2 Alrm PKP
0xB7C2		NSeq OV2 Alrm OP	Negative Sequence OV2 Alrm OP
0xB7C4		NSeq OV2 Alrm DPO	Negative Sequence OV2 Alrm DPO
0xB801		NSeq TOC1 Alrm PKP	Negative Sequence TOC 1 Alarm PKP
0xB802		NSeq TOC1 Alrm OP	Negative Sequence TOC 1 Alarm OP
0xB804		NSeq TOC1 Alrm DPO	Negative Sequence TOC 1 Alarm DPO
0xB881		CTFail Alrm PKP	CT Fail Alarm PKP
0xB882		CTFail Alrm OP	CT Fail Alarm OP
0xB884		CTFail Alrm DPO	CT Fail Alarm DPO
0xB8C1		Ph OV2 Alarm PKP	Phase OV 2 Alarm PKP

Code	Type	Definition	Long Definition
0xB8C2		Ph OV2 Alarm OP	Phase OV 2 Alarm OP
0xB8C4		Ph OV2 Alarm DPO	Phase OV 2 Alarm DPO
0xB8C9		Ph A OV2 Alarm PKP	Ph A OV2 Alarm PKP
0xB8CA		Ph A OV2 Alarm OP	Ph A OV2 Alarm OP
0xB8CC		Ph A OV2 Alarm DPO	Ph A OV2 Alarm DPO
0xB8D1		Ph B OV2 Alarm PKP	Ph B OV2 Alarm PKP
0xB8D2		Ph B OV2 Alarm OP	Ph B OV2 Alarm OP
0xB8D4		Ph B OV2 Alarm DPO	Ph B OV2 Alarm DPO
0xB8E1		Ph C OV2 Alarm PKP	Ph C OV2 Alarm PKP
0xB8E2		Ph C OV2 Alarm OP	Ph C OV2 Alarm OP
0xB8E4		Ph C OV2 Alarm DPO	Ph C OV2 Alarm DPO
0xB901		Ph OV3 Alarm PKP	Phase OV 3 Alarm PKP
0xB902		Ph OV3 Alarm OP	Phase OV 3 Alarm OP
0xB904		Ph OV3 Alarm DPO	Phase OV 3 Alarm DPO
0xB909		Ph A OV3 Alarm PKP	Phase A OV 3 Alarm PKP
0xB90A		Ph A OV3 Alarm OP	Phase A OV 3 Alarm OP
0xB90C		Ph A OV3 Alarm DPO	Phase A OV 3 Alarm DPO
0xB911		Ph B OV3 Alarm PKP	Phase B OV 3 Alarm PKP
0xB912		Ph B OV3 Alarm OP	Phase B OV 3 Alarm OP
0xB914		Ph B OV3 Alarm DPO	Phase B OV 3 Alarm DPO
0xB921		Ph C OV3 Alarm PKP	Phase C OV 3 Alarm PKP
0xB922		Ph C OV3 Alarm OP	Phase C OV 3 Alarm OP
0xB924		Ph C OV3 Alarm DPO	Phase C OV 3 Alarm DPO
0xB941		Ph OV4 Alarm PKP	Phase OV 4 Alarm PKP
0xB942		Ph OV4 Alarm OP	Phase OV 4 Alarm OP
0xB944		Ph OV4 Alarm DPO	Phase OV 4 Alarm DPO
0xB949		Ph A OV4 Alarm PKP	Phase A OV 4 Alarm PKP
0xB94A		Ph A OV4 Alarm OP	Phase A OV 4 Alarm OP
0xB94C		Ph A OV4 Alarm DPO	Phase A OV 4 Alarm DPO
0xB951		Ph B OV4 Alarm PKP	Phase B OV 4 Alarm PKP
0xB952		Ph B OV4 Alarm OP	Phase B OV 4 Alarm OP
0xB954		Ph B OV4 Alarm DPO	Phase B OV 4 Alarm DPO
0xB961		Ph C OV4 Alarm PKP	Phase C OV 4 Alarm PKP
0xB962		Ph C OV4 Alarm OP	Phase C OV 4 Alarm OP
0xB964		Ph C OV4 Alarm DPO	Phase C OV 4 Alarm DPO
0xB981		Ntrl OV2 Alrm PKP	Neutral OV 2 Alarm PKP
0xB982		Ntrl OV2 Alrm OP	Neutral OV 2 Alarm OP
0xB984		Ntrl OV2 Alrm DPO	Neutral OV 2 Alarm DPO
0xB9C1		Ntrl OV3 Alrm PKP	Neutral OV 3 Alarm PKP
0xB9C2		Ntrl OV3 Alrm OP	Neutral OV 3 Alarm OP
0xB9C4		Ntrl OV3 Alrm DPO	Neutral OV 3 Alarm DPO
0xBA01		Ntrl OV4 Alrm PKP	Neutral OV 4 Alarm PKP
0xBA02		Ntrl OV4 Alrm OP	Neutral OV 4 Alarm OP
0xBA04		Ntrl OV4 Alrm DPO	Neutral OV 4 Alarm DPO
0xBA41		OverFreq3 Alrm PKP	Overfrequency 3 Alrm PKP
0xBA42		OverFreq3 Alrm OP	Overfrequency 3 Alrm OP
0xBA44		OverFreq3 Alrm DPO	Overfrequency 3 Alrm DPO

Code	Type	Definition	Long Definition
0xBA81		OverFreq4 Alrm PKP	Overfrequency 4 Alrm PKP
0xBA82		OverFreq4 Alrm OP	Overfrequency 4 Alrm OP
0xBA84		OverFreq4 Alrm DPO	Overfrequency 4 Alrm DPO
0xBAC1		UndFreq3 Alrm PKP	Underfrequency 3 Alrm PKP
0xBAC2		UndFreq3 Alarm OP	Underfrequency 3 Alarm OP
0xBAC4		UndFreq3 Alrm DPO	Underfrequency 3 Alrm DPO
0xBB01		UndFreq4 Alarm PKP	Underfrequency 4 Alarm PKP
0xBB02		UndFreq4 Alarm OP	Underfrequency 4 Alarm OP
0xBB04		UndFreq4 Alarm DPO	Underfrequency 4 Alarm DPO
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xBE02		PhDir RevAlm OP	Ph Directional Reverse Alarm OP
0xBE04		PhDir RevAlm DPO	Ph Directional Reverse Alarm DPO
0xBE0A		PhADir RevAlm OP	Ph A Directional Reverse Alarm OP
0xBE0C		PhADir RevAlm DPO	Ph A Directional Reverse Alarm DPO
0xBE12		PhBDir RevAlm OP	Ph B Directional Reverse Alarm OP
0xBE14		PhBDir RevAlm DPO	Ph B Directional Reverse Alarm DPO
0xBE22		PhCDir RevAlm OP	Ph C Directional Reverse Alarm OP
0xBE24		PhCDir RevAlm DPO	Ph C Directional Reverse Alarm DPO
0xBE42		PhDir UndAlm OP	Ph Directional Und Alarm OP
0xBE44		PhDir UndAlm DPO	Ph Directional Und Alarm DPO
0xBE4A		PhADir UndAlm OP	Ph A Directional Und Alarm OP
0xBE4C		PhADir UndAlm DPO	Ph A Directional Und Alarm DPO
0xBE52		PhBDir UndAlm OP	Ph B Directional Und Alarm OP
0xBE54		PhBDir UndAlm DPO	Ph B Directional Und Alarm DPO

Code	Type	Definition	Long Definition
0xBE62		PhCDir UndAlm OP	Ph C Directional Und Alarm OP
0xBE64		PhCDir UndAlm DPO	Ph C Directional Und Alarm DPO
0xBE82		GndDir UndAlm OP	Ground Directional Und Alarm OP
0xBE84		GndDir UndAlm DPO	Ground Directional Und Alarm DPO
0xBEC2		NtrlDir UndAlm OP	Neutral Directional Und Alarm OP
0xBEC4		NtrlDir UndAlm DPO	Neutral Directional Und Alarm DPO
0xBF01		WGF 1 Alarm PKP	Wattmetric Gnd Fault 1 Alarm PKP
0xBF02		WGF 1 Alarm OP	Wattmetric Gnd Fault 1 Alarm OP
0xBF04		WGF 1 Alarm DPO	Wattmetric Gnd Fault 1 Alarm DPO
0xBF41		WGF 2 Alarm PKP	Wattmetric Gnd Fault 2 Alarm PKP
0xBF42		WGF 2 Alarm OP	Wattmetric Gnd Fault 2 Alarm OP
0xBF44		WGF 2 Alarm DPO	Wattmetric Gnd Fault 2 Alarm DPO
0xC042		Output Relay 3 On	Output Relay 3 On
0xC082		Output Relay 4 On	Output Relay 4 On
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC102		Output Relay 6 On	Output Relay 6 On
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC182		Rly1 Coil OP	Relay # 1 Coil OP
0xC1C2		Rly2 Coil OP	Relay # 2 Coil OP
0xC202		BKR Connected	Breaker Connected OP
0xC242		Arc Flash OP	Arc Flash OP
0xC282		Any Pkp OP	Any Pkp OP
0xC2C2		Lockout OP	Lockout OP
0xC2C4		Lockout DPO	Lockout DPO
0xC302		Sync Operation	Synchrocheck Operation
0xC342		Sync Close OP	Synchrocheck Close OP
0xC382		Sync Condition	Synchrocheck Condition
0xC442		HS Phase IOC OP	HS Phase IOC OP
0xC44A		HS PhA IOC OP	HS PhA IOC OP
0xC452		HS PhB IOC OP	HS PhB IOC OP
0xC462		HS PhC IOC OP	HS PhC IOC OP
0xC482		HSGnd IOC OP	HS Ground IOC OP
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO

Code	Type	Definition	Long Definition
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC742		Testing ON	Testing ON
0xC744		Testing OFF	Testing OFF
0xC882		Setpoint Group2 On	Setpoint Group2 On
0xC902		BKR Open	Breaker Open
0xC942		BKR Close	Breaker Close
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCA82		Reset OK	Reset OK
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCB02		AR Close	AR Close
0xCB42		AR N/Ready	AR N/Ready
0xCB82		AR In Progress	AR In Progress
0xCBC2		AR Disabled	AR Disabled
0xCC02		AR Ext. Init	AR Ext. Init
0xCC42		AR Ready	AR Ready
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD42		Setpoint Group1 On	Setpoint Group1 On
0xCD82		Light Sensor 1 OP	Light Sensor 1 OP
0xCDC2		Light Sensor 2 OP	Light Sensor 2 OP
0xCE81		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xCE82		Dir Pwr 1 OP	Directional Pwr 1 OP
0xCEC1		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xCEC2		Dir Pwr 2 OP	Directional Pwr 2 OP
0xCF01		2nd Hrmc PKP	2nd Harmonic PKP
0xCF02		2nd Hrmc OP	2nd Harmonic OP
0xCF04		2nd Hrmc DPO	2nd Harmonic DPO
0xCF42		Light Sensor 3 OP	Light Sensor 3 OP
0xCF82		Light Sensor 4 OP	Light Sensor 4 OP
0xCFC1		Brkn Cond PKP	Broken Cond PKP
0xCFC2		Brkn Cond OP	Broken Cond OP
0xCFC4		Brkn Cond DPO	Broken Cond DPO
0xD342		Ntrl Dir Rev OP	Neutral Directional Rev OP
0xD344		Ntrl Dir Rev DPO	Neutral Directional Reverse DPO
0xD382		Gnd Dir OP	Ground Directional OP
0xD384		Gnd Dir DPO	Ground Directional DPO
0xDC01		LE 9 PKP	Logic Element 9 PKP

Code	Type	Definition	Long Definition
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP
0xDDC2		LE 16 OP	Logic Element 16 OP
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xDE02		PhDir Rev OP	Ph Directional Reverse OP
0xDE04		PhDir Rev DPO	Ph Directional Reverse DPO
0xDE0A		PhADir Rev OP	Ph A Directional Reverse OP
0xDE0C		PhADir Rev DPO	Ph A Directional Reverse DPO
0xDE12		PhBDir Rev OP	Ph B Directional Reverse OP
0xDE14		PhBDir Rev DPO	Ph B Directional Reverse DPO
0xDE22		PhCDir Rev OP	Ph C Directional Reverse OP
0xDE24		PhCDir Rev DPO	Ph C Directional Reverse DPO
0xDE42		PhDir Und OP	Ph Directional Und OP
0xDE44		PhDir Und DPO	Ph Directional Und DPO
0xDE4A		PhADir Und OP	Ph A Directional Und OP
0xDE4C		PhADir Und DPO	Ph A Directional Und DPO
0xDE52		PhBDir Und OP	Ph B Directional Und OP
0xDE54		PhBDir Und DPO	Ph B Directional Und DPO
0xDE62		PhCDir Und OP	Ph C Directional Und OP
0xDE64		PhCDir Und DPO	Ph C Directional Und DPO
0xDE82		GndDir Und OP	Ground Directional Und OP
0xDE84		GndDir Und DPO	Ground Directional Und DPO
0xDEC2		NtrlDir Und OP	Neutral Directional Und OP
0xDEC4		NtrlDir Und DPO	Neutral Directional Und DPO
0xDF01		WGF 1 PKP	Wattmetric Gnd Fault 1 PKP
0xDF02		WGF 1 OP	Wattmetric Gnd Fault 1 OP
0xDF04		WGF 1 DPO	Wattmetric Gnd Fault 1 DPO
0xDF41		WGF 2 PKP	Wattmetric Gnd Fault 2 PKP

Code	Type	Definition	Long Definition
0xDF42		WGF 2 OP	Wattmetric Gnd Fault 2 OP
0xDF44		WGF 2 DPO	Wattmetric Gnd Fault 2 DPO
0xE002		Any Block	Any Block
0xE042		Therm O/L Block	Thermal Level Block
0xE082		PosSeq UV1 Block	Positive Sequence UV 1 Block
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE242		Arc Flash Block	Arc Flash Block
0xE2C2		Lockout Block	Lockout Block
0xE3C2		Volt Hz Block	Volt Hz Block
0xE742		Curr Dmd1 Block	Current Demand 1 Block OP
0xE782		RealP Dmd Block	Real Power Demand Block OP
0xE7C2		ReacP Dmd Block	Reactive Power Demand Block OP
0xE802		AppP Dmd Block	Apparent Power Demand Block OP
0xE882		Group Change Blk	Group Change Blk
0xEB02		AR Block	AR Block
0xEE82		Dir Pwr 1 Block	Directional Pwr 1 Block
0xEEC2		Dir Pwr 2 Block	Directional Pwr 2 Block
0xEFC2		Brkn Cond Block	Broken Cond Block
0xF002		Ph IOC1 Block	Phase IOC 1 Block
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF082		Gnd IOC1 Block	Ground IOC 1 Block
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF142		Gnd TOC1 Block	Ground TOC 1 Block
0xF182		Ph IOC2 Block	Phase IOC 2 Block
0xF1C2		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF202		Gnd IOC2 Block	Ground IOC 2 Block
0xF302		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF342		Ntrl Dir Rev Block	Neutral Directional Rev Block
0xF382		Gnd Dir Block	Ground Directional Block
0xF3C2		NSeq OV Block	Negative Sequence OV OP
0xF402		Ntrl OV Block	Neutral OV Block
0xF442		Ph OV1 Block	Ph OV 1 Block
0xF482		Ph UV1 Block	Ph UV 1 Block
0xF4C2		Aux OV Block	Auxiliary OV Block
0xF502		Aux UV Block	Auxiliary UV Block
0xF542		UndrFreq1 Block	Underfrequency 1 Block
0xF582		UndrFreq2 Block	Underfrequency 2 Block
0xF5C2		OverFreq1 Block	Overfrequency 1 Block
0xF602		OverFreq2 Block	Overfrequency 2 Block
0xF642		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF682		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF6C2		NSeq IOC Block	Negative Sequence IOC Block
0xF702		Ph UV2 Block	Phase UV 2 Block OP
0xF742		Ph UV3 Block	Phase UV 3 Block OP
0xF782		Ph UV4 Block	Phase UV 4 Block OP

Code	Type	Definition	Long Definition
0xF7C2		NSeq OV2 Block	Negative Sequence OV2 Block
0xF802		NSeq TOC1 Blk	Negative Sequence TOC 1 Block
0xF882		CTFail Block	CT Fail Block
0xF8C2		Ph OV2 Block	Ph OV2 Block
0xF902		Ph OV3 Block	Phase OV 3 Block OP
0xF942		Ph OV4 Block	Phase OV 4 Block OP
0xF982		Ntrl OV2 Block	Neutral OV 2 Block
0xF9C2		Ntrl OV3 Block	Neutral OV 3 Block
0xFA02		Ntrl OV4 Block	Neutral OV 4 Block
0xFA42		OverFreq3 Block	Overfrequency 3 Block
0xFA82		OverFreq4 Block	Overfrequency 4 Block
0xFAC2		UndFreq3 Block	Underfrequency 3 Block
0xFB02		UndFreq4 Block	Underfrequency 4 Block
0xFE02		PhDir Block	Ph Directional Block
0xFF02		WGF 1 Block	Wattmetric Gnd Fault 1 Block
0xFF42		WGF 2 Block	Wattmetric Gnd Fault 2 Block
FC134C	unsigned 16 bits	Logic Element Trigger	
0x0000		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On

Code	Type	Definition	Long Definition
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off

Code	Type	Definition	Long Definition
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x01C0		Remote IN 1 On	Remote Input 1 On
0x01C1		Remote IN 2 On	Remote Input 2 On
0x01C2		Remote IN 3 On	Remote Input 3 On
0x01C3		Remote IN 4 On	Remote Input 4 On
0x01C4		Remote IN 5 On	Remote Input 5 On
0x01C5		Remote IN 6 On	Remote Input 6 On
0x01C6		Remote IN 7 On	Remote Input 7 On
0x01C7		Remote IN 8 On	Remote Input 8 On
0x01C8		Remote IN 9 On	Remote Input 9 On
0x01C9		Remote IN 10 On	Remote Input 10 On
0x01CA		Remote IN 11 On	Remote Input 11 On
0x01CB		Remote IN 12 On	Remote Input 12 On
0x01CC		Remote IN 13 On	Remote Input 13 On
0x01CD		Remote IN 14 On	Remote Input 14 On
0x01CE		Remote IN 15 On	Remote Input 15 On
0x01CF		Remote IN 16 On	Remote Input 16 On
0x01D0		Remote IN 17 On	Remote Input 17 On
0x01D1		Remote IN 18 On	Remote Input 18 On
0x01D2		Remote IN 19 On	Remote Input 19 On
0x01D3		Remote IN 20 On	Remote Input 20 On
0x01D4		Remote IN 21 On	Remote Input 21 On
0x01D5		Remote IN 22 On	Remote Input 22 On
0x01D6		Remote IN 23 On	Remote Input 23 On
0x01D7		Remote IN 24 On	Remote Input 24 On
0x01D8		Remote IN 25 On	Remote Input 25 On
0x01D9		Remote IN 26 On	Remote Input 26 On
0x01DA		Remote IN 27 On	Remote Input 27 On
0x01DB		Remote IN 28 On	Remote Input 28 On
0x01DC		Remote IN 29 On	Remote Input 29 On
0x01DD		Remote IN 30 On	Remote Input 30 On
0x01DE		Remote IN 31 On	Remote Input 31 On
0x01DF		Remote IN 32 On	Remote Input 32 On
0x01E0		Remote IN 1 Off	Remote Input 1 Off
0x01E1		Remote IN 2 Off	Remote Input 2 Off
0x01E2		Remote IN 3 Off	Remote Input 3 Off
0x01E3		Remote IN 4 Off	Remote Input 4 Off
0x01E4		Remote IN 5 Off	Remote Input 5 Off
0x01E5		Remote IN 6 Off	Remote Input 6 Off

Code	Type	Definition	Long Definition
0x01E6		Remote IN 7 Off	Remote Input 7 Off
0x01E7		Remote IN 8 Off	Remote Input 8 Off
0x01E8		Remote IN 9 Off	Remote Input 9 Off
0x01E9		Remote IN 10 Off	Remote Input 10 Off
0x01EA		Remote IN 11 Off	Remote Input 11 Off
0x01EB		Remote IN 12 Off	Remote Input 12 Off
0x01EC		Remote IN 13 Off	Remote Input 13 Off
0x01ED		Remote IN 14 Off	Remote Input 14 Off
0x01EE		Remote IN 15 Off	Remote Input 15 Off
0x01EF		Remote IN 16 Off	Remote Input 16 Off
0x01F0		Remote IN 17 Off	Remote Input 17 Off
0x01F1		Remote IN 18 Off	Remote Input 18 Off
0x01F2		Remote IN 19 Off	Remote Input 19 Off
0x01F3		Remote IN 20 Off	Remote Input 20 Off
0x01F4		Remote IN 21 Off	Remote Input 21 Off
0x01F5		Remote IN 22 Off	Remote Input 22 Off
0x01F6		Remote IN 23 Off	Remote Input 23 Off
0x01F7		Remote IN 24 Off	Remote Input 24 Off
0x01F8		Remote IN 25 Off	Remote Input 25 Off
0x01F9		Remote IN 26 Off	Remote Input 26 Off
0x01FA		Remote IN 27 Off	Remote Input 27 Off
0x01FB		Remote IN 28 Off	Remote Input 28 Off
0x01FC		Remote IN 29 Off	Remote Input 29 Off
0x01FD		Remote IN 30 Off	Remote Input 30 Off
0x01FE		Remote IN 31 Off	Remote Input 31 Off
0x01FF		Remote IN 32 Off	Remote Input 32 Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x8044		Therm O/L Trip DPO	Thermal Overload Trip DPO
0x8081		PosSeq UV1 Trp PKP	Positive Sequence UV 1 Trp PKP
0x8082		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8084		PosSeq UV1 Trp DPO	Positive Sequence UV 1 Trp DPO
0x8242		Arc Flash Trip OP	Arc Flash Trip OP
0x83C1		Volt Hz Trip PKP	Volt Hz Trip PKP
0x83C2		Volt Hz Trip OP	Volt Hz Trip OP
0x83C4		Volt Hz Trip DPO	Volt Hz Trip DPO
0x84C1		LE 1 Trip PKP	Logic Element 1 Trip PKP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x84C4		LE 1 Trip DPO	Logic Element 1 Trip DPO
0x8501		LE 2 Trip PKP	Logic Element 2 Trip PKP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8504		LE 2 Trip DPO	Logic Element 2 Trip DPO
0x8541		LE 3 Trip PKP	Logic Element 3 Trip PKP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8544		LE 3 Trip DPO	Logic Element 3 Trip DPO
0x8581		LE 4 Trip PKP	Logic Element 4 Trip PKP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP

Code	Type	Definition	Long Definition
0x8584		LE 4 Trip DPO	Logic Element 4 Trip DPO
0x85C1		LE 5 Trip PKP	Logic Element 5 Trip PKP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x85C4		LE 5 Trip DPO	Logic Element 5 Trip DPO
0x8601		LE 6 Trip PKP	Logic Element 6 Trip PKP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8604		LE 6 Trip DPO	Logic Element 6 Trip DPO
0x8641		LE 7 Trip PKP	Logic Element 7 Trip PKP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8644		LE 7 Trip DPO	Logic Element 7 Trip DPO
0x8681		LE 8 Trip PKP	Logic Element 8 Trip PKP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x8684		LE 8 Trip DPO	Logic Element 8 Trip DPO
0x8E81		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x8E82		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x8EC1		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x8EC2		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x8F81		Fuse Fail Trip PKP	Fuse Fail Trip PKP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8F84		Fuse Fail Trip DPO	Fuse Fail Trip DPO
0x8FC1		Brkn Cond Trip PKP	Broken Cond Trip PKP
0x8FC2		Brkn Cond Trip OP	Broken Cond Trip OP
0x8FC4		Brkn Cond Trip DPO	Broken Cond Trip DPO
0x9001		Ph IOC1 Trip PKP	Phase IOC 1 Trip PKP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x9004		Ph IOC1 Trip DPO	Phase IOC 1 Trip DPO
0x9041		Ntrl IOC1 Trip PKP	Neutral IOC 1 Trip PKP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9044		Ntrl IOC1 Trip DPO	Neutral IOC 1 Trip DPO
0x9081		Gnd IOC1 Trip PKP	Ground IOC 1 Trip PKP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x9084		Gnd IOC1 Trip DPO	Ground IOC 1 Trip DPO
0x90C1		Ph TOC1 Trip PKP	Phase TOC 1 Trip PKP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90C4		Ph TOC1 Trip DPO	Phase TOC 1 Trip DPO
0x9101		Ntrl TOC1 Trip PKP	Neutral TOC 1 Trip PKP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9104		Ntrl TOC1 Trip DPO	Neutral TOC 1 Trip DPO
0x9141		Gnd TOC1 Trip PKP	Ground TOC Trip PKP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9144		Gnd TOC1 Trip DPO	Ground TOC Trip DPO
0x9181		Ph IOC2 Trip PKP	Phase IOC 2 Trip PKP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x9184		Ph IOC2 Trip DPO	Phase IOC 2 Trip DPO
0x91C1		Ntrl IOC2 Trip PKP	Neutral IOC 2 Trip PKP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x91C4		Ntrl IOC2 Trip DPO	Neutral IOC 2 Trip DPO

Code	Type	Definition	Long Definition
0x9201		Gnd IOC2 Trip PKP	Ground IOC 2 Trip PKP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9204		Gnd IOC2 Trip DPO	Ground IOC 2 Trip DPO
0x9301		SGnd TOC1 Trip PKP	Sensitive Ground TOC 1 Trip PKP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x9304		SGnd TOC1 Trip DPO	Sensitive Ground TOC 1 Trip DPO
0x93C1		NSeq OV Trp PKP	Negative Sequence OV Trip PKP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x93C4		NSeq OV Trp DPO	Negative Sequence OV Trip DPO
0x9401		Ntrl OV Trip PKP	Neutral OV Trip PKP
0x9402		Ntrl OV Trp OP	Neutral OV Trip OP
0x9404		Ntrl OV Trip DPO	Neutral OV Trip DPO
0x9441		Ph OV1 Trip PKP	Phase OV1 Trip PKP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x9444		Ph OV1 Trip DPO	Phase OV1 Trip DPO
0x9481		Ph UV1 Trip PKP	Phase UV1 Trip PKP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x9484		Ph UV1 Trip DPO	Phase UV1 Trip DPO
0x94C1		Aux OV Trip PKP	Auxiliary OV Trip PKP
0x94C2		Aux OV Trip OP	Auxiliary OV Trip OP
0x94C4		Aux OV Trip DPO	Auxiliary OV Trip DPO
0x9501		Aux UV Trip PKP	Auxiliary UV Trip PKP
0x9502		Aux UV Trip OP	Auxiliary UV Trip OP
0x9504		Aux UV Trip DPO	Auxiliary UV Trip DPO
0x9541		UndrFreq1 Trip PKP	Underfrequency 1 Trip PKP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9544		UndrFreq1 Trip DPO	Underfrequency 1 Trip DPO
0x9581		UndrFreq2 Trip PKP	Underfrequency 2 Trip PKP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x9584		UndrFreq2 Trip DPO	Underfrequency 2 Trip DPO
0x95C1		OverFreq1 Trip PKP	Overfrequency 1 Trip PKP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x95C4		OverFreq1 Trip DPO	Overfrequency 1 Trip DPO
0x9601		OverFreq2 Trip PKP	Overfrequency 2 Trip PKP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9604		OverFreq2 Trip DPO	Overfrequency 2 Trip DPO
0x9641		SGnd IOC1 Trip PKP	Sensitive Ground IOC 1 Trip PKP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9644		SGnd IOC1 Trip DPO	Sensitive Ground IOC 1 Trip DPO
0x9681		SGnd IOC2 Trip PKP	Sensitive Ground IOC 2 Trip PKP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x9684		SGnd IOC2 Trip DPO	Sensitive Ground IOC 2 Trip DPO
0x96C1		NSeq IOC Trp PKP	Negative Sequence IOC Trip PKP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x96C4		NSeq IOC Trp DPO	Negative Sequence IOC Trip DPO
0x9701		Ph UV2 Trip PKP	Phase UV 2 Trip PKP
0x9702		Ph UV2 Trip OP	Phase UV 2 Trip OP

Code	Type	Definition	Long Definition
0x9704		Ph UV2 Trip DPO	Phase UV 2 Trip DPO
0x9741		Ph UV3 Trip PKP	Phase UV 3 Trip PKP
0x9742		Ph UV3 Trip OP	Phase UV 3 Trip OP
0x9744		Ph UV3 Trip DPO	Phase UV 3 Trip DPO
0x9781		Ph UV4 Trip PKP	Phase UV 4 Trip PKP
0x9782		Ph UV4 Trip OP	Phase UV 4 Trip OP
0x9784		Ph UV4 Trip DPO	Phase UV 4 Trip DPO
0x97C1		NSeq OV2 Trp PKP	Negative Sequence OV2 Trp PKP
0x97C2		NSeq OV2 Trp OP	Negative Sequence OV2 Trp OP
0x97C4		NSeq OV2 Trp DPO	Negative Sequence OV2 Trp DPO
0x9801		NSeq TOC1 Trip PKP	Negative Sequence TOC 1 Trip PKP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x9804		NSeq TOC1 Trip DPO	Negative Sequence TOC 1 Trip DPO
0x98C1		Ph OV2 Trip PKP	Phase OV 2 Trip PKP
0x98C2		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x98C4		Ph OV2 Trip DPO	Phase OV 2 Trip DPO
0x9901		Ph OV3 Trip PKP	Phase OV 3 Trip PKP
0x9902		Ph OV3 Trip OP	Phase OV 3 Trip OP
0x9904		Ph OV3 Trip DPO	Phase OV 3 Trip DPO
0x9941		Ph OV4 Trip PKP	Phase OV 4 Trip PKP
0x9942		Ph OV4 Trip OP	Phase OV 4 Trip OP
0x9944		Ph OV4 Trip DPO	Phase OV 4 Trip DPO
0x9981		Ntrl OV2 Trip PKP	Neutral OV 2 Trip PKP
0x9982		Ntrl OV2 Trip OP	Neutral OV 2 Trip OP
0x9984		Ntrl OV2 Trip DPO	Neutral OV 2 Trip DPO
0x99C1		Ntrl OV3 Trip PKP	Neutral OV 3 Trip PKP
0x99C2		Ntrl OV3 Trip OP	Neutral OV 3 Trip OP
0x99C4		Ntrl OV3 Trip DPO	Neutral OV 3 Trip DPO
0x9A01		Ntrl OV4 Trip PKP	Neutral OV 4 Trip PKP
0x9A02		Ntrl OV4 Trip OP	Neutral OV 4 Trip OP
0x9A04		Ntrl OV4 Trip DPO	Neutral OV 4 Trip DPO
0x9A41		OverFreq3 Trip PKP	Overfrequency 3 Trip PKP
0x9A42		OverFreq3 Trip OP	Overfrequency 3 Trip OP
0x9A44		OverFreq3 Trip DPO	Overfrequency 3 Trip DPO
0x9A81		OverFreq4 Trip PKP	Overfrequency 4 Trip PKP
0x9A82		OverFreq4 Trip OP	Overfrequency 4 Trip OP
0x9A84		OverFreq4 Trip DPO	Overfrequency 4 Trip DPO
0x9AC1		UndFreq3 Trip PKP	Underfrequency 3 Trip PKP
0x9AC2		UndFreq3 Trip OP	Underfrequency 3 Trip OP
0x9AC4		UndFreq3 Trip DPO	Underfrequency 3 Trip DPO
0x9B01		UndFreq4 Trip PKP	Underfrequency 4 Trip PKP
0x9B02		UndFreq4 Trip OP	Underfrequency 4 Trip OP
0x9B04		UndFreq4 Trip DPO	Underfrequency 4 Trip DPO
0x9C01		LE 9 Trip PKP	Logic Element 9 Trip PKP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C04		LE 9 Trip DPO	Logic Element 9 Trip DPO
0x9C41		LE 10 Trip PKP	Logic Element 10 Trip PKP

Code	Type	Definition	Long Definition
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C44		LE 10 Trip DPO	Logic Element 10 Trip DPO
0x9C81		LE 11 Trip PKP	Logic Element 11 Trip PKP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9C84		LE 11 Trip DPO	Logic Element 11 Trip DPO
0x9CC1		LE 12 Trip PKP	Logic Element 12 Trip PKP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9CC4		LE 12 Trip DPO	Logic Element 12 Trip DPO
0x9D01		LE 13 Trip PKP	Logic Element 13 Trip PKP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D04		LE 13 Trip DPO	Logic Element 13 Trip DPO
0x9D41		LE 14 Trip PKP	Logic Element 14 Trip PKP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D44		LE 14 Trip DPO	Logic Element 14 Trip DPO
0x9D81		LE 15 Trip PKP	Logic Element 15 Trip PKP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9D84		LE 15 Trip DPO	Logic Element 15 Trip DPO
0x9DC1		LE 16 Trip PKP	Logic Element 16 Trip PKP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9DC4		LE 16 Trip DPO	Logic Element 16 Trip DPO
0x9F01		WGF 1 Trip PKP	Wattmetric Gnd Fault 1 Trip PKP
0x9F02		WGF 1 Trip OP	Wattmetric Gnd Fault 1 Trip OP
0x9F04		WGF 1 Trip DPO	Wattmetric Gnd Fault 1 Trip DPO
0x9F41		WGF 2 Trip PKP	Wattmetric Gnd Fault 2 Trip PKP
0x9F42		WGF 2 Trip OP	Wattmetric Gnd Fault 2 Trip OP
0x9F44		WGF 2 Trip DPO	Wattmetric Gnd Fault 2 Trip DPO
0xA002		Any Alarm	Any Alarm
0xA042		Therm Lvl Alrm OP	Thermal Level Alarm OP
0xA044		Therm Lvl Alrm DPO	Thermal Level Alarm DPO
0xA081		PosSeq UV1 AlrmPKP	Positive Sequence UV 1 Alarm PKP
0xA082		PosSeq UV1 Alrm OP	Positive Sequence UV 1 Alarm OP
0xA084		PosSeq UV1 AlrmDPO	Positive Sequence UV 1 Alarm DPO
0xA242		Arc Flash Alarm OP	Arc Flash Alarm OP
0xA2C2		LightSns1 Trbl	Light Sensor 1 Trouble
0xA302		LightSns2 Trbl	Light Sensor 2 Trouble
0xA342		LightSns3 Trbl	Light Sensor 3 Trouble
0xA382		LightSns4 Trbl	Light Sensor 4 Trouble
0xA3C1		Volt Hz Alarm PKP	Volt Hz Alarm PKP
0xA3C2		Volt Hz Alarm OP	Volt Hz Alarm OP
0xA3C4		Volt Hz Alarm DPO	Volt Hz Alarm DPO
0xA442		Light Sns Trbl	Light Sensor Trouble
0xA4C1		LE 1 Alarm PKP	Logic Element 1 Alarm PKP
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA4C4		LE 1 Alarm DPO	Logic Element 1 Alarm DPO
0xA501		LE 2 Alarm PKP	Logic Element 2 Alarm PKP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA504		LE 2 Alarm DPO	Logic Element 2 Alarm DPO

Code	Type	Definition	Long Definition
0xA541		LE 3 Alarm PKP	Logic Element 3 Alarm PKP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA544		LE 3 Alarm DPO	Logic Element 3 Alarm DPO
0xA581		LE 4 Alarm PKP	Logic Element 4 Alarm PKP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA584		LE 4 Alarm DPO	Logic Element 4 Alarm DPO
0xA5C1		LE 5 Alarm PKP	Logic Element 5 Alarm PKP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA5C4		LE 5 Alarm DPO	Logic Element 5 Alarm DPO
0xA601		LE 6 Alarm PKP	Logic Element 6 Alarm PKP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA604		LE 6 Alarm DPO	Logic Element 6 Alarm DPO
0xA641		LE 7 Alarm PKP	Logic Element 7 Alarm PKP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA644		LE 7 Alarm DPO	Logic Element 7 Alarm DPO
0xA681		LE 8 Alarm PKP	Logic Element 8 Alarm PKP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xA684		LE 8 Alarm DPO	Logic Element 8 Alarm DPO
0xA742		Curr Dmd1 Alrm OP	Current Demand 1 Alarm OP
0xA782		RealP Dmd Alrm OP	Real Power Demand Alarm OP
0xA7C2		ReacP Dmd Alrm OP	Reactive Power Demand Alarm OP
0xA802		AppP Dmd Alrm OP	Apparent Power Demand Alarm OP
0xAA02		BKR Alarm	Breaker Alarm
0xAA42		BKR Trip Time	Breaker Trip Time
0xAA82		BKR Close Time	Breaker Close Time
0xAAC2		BKR Charge Time	Breaker Charge Time
0xAB02		BKR Trp/Cls Fail	Breaker Trip/Close Fail
0xAB42		BKR Charge Fail	Breaker Charge Fail
0xABC1		HI Amb Temp PKP	High Ambient Temperature Alarm PKP
0xABC2		HI Amb Temp OP	High Ambient Temperature Alarm
0xABC4		HI Amb Temp DPO	High Ambient Temperature Alarm DPO
0xAC01		LO Amb Temp PKP	Low Ambient Temperature Alarm PKP
0xAC02		LO Amb Temp OP	Low Ambient Temperature Alarm
0xAC04		LO Amb Temp DPO	Low Ambient Temperature Alarm DPO
0xAC42		Self Test Alarm OP	Self Test Alarm OP
0xACC2		BKRTrpCntrAlrm OP	Breaker Trip Control Alarm OP
0xAD02		R1 CoilMonAlrm OP	Trip Coil Monitor Alarm OP
0xAD42		R2 CoilMonAlrm OP	Close Coil Monitor Alarm OP
0xAD81		BKR Fail Alrm PKP	Breaker Fail Alarm PKP
0xAD82		BKR Fail Alrm OP	Breaker Fail Alarm OP
0xAD84		BKR Fail Alrm DPO	Breaker Fail Alarm DPO
0xADC2		BKR Stat Fail OP	Breaker Status Fail OP
0xAE41		CLP Alarm PKP	Cold Load PKP Alarm PKP
0xAE42		CLP Alarm OP	Cold Load PKP Alarm OP
0xAE81		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xAE82		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xAEC1		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP

Code	Type	Definition	Long Definition
0xAEC2		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xAF01		2nd Hrmc Alarm PKP	2nd Harmonic Alarm PKP
0xAF02		2nd Hrmc Alarm OP	2nd Harmonic Alarm OP
0xAF04		2nd Hrmc Alarm DPO	2nd Harmonic Alarm DPO
0xAF81		Fuse Fail Alrm PKP	Fuse Fail Alarm PKP
0xAF82		Fuse Fail Alrm OP	Fuse Fail Alarm OP
0xAF84		Fuse Fail Alrm DPO	Fuse Fail Alarm DPO
0xAFC1		Brkn Cond Alrm PKP	Broken Cond Alarm PKP
0xAFC2		Brkn Cond Alarm OP	Broken Cond Alarm OP
0xAFC4		Brkn Cond Alrm DPO	Broken Cond Alarm DPO
0xB001		Ph IOC1 Alarm PKP	Phase IOC 1 Alarm PKP
0xB002		Ph IOC1 Alarm OP	Phase IOC 1 Alarm OP
0xB004		Ph IOC1 Alarm DPO	Phase IOC 1 Alarm DPO
0xB041		Ntrl IOC1 Alrm PKP	Neutral IOC 1 Alarm PKP
0xB042		Ntrl IOC1 Alrm OP	Neutral IOC 1 Alarm OP
0xB044		Ntrl IOC1 Alrm DPO	Neutral IOC 1 Alarm DPO
0xB081		Gnd IOC1 Alarm PKP	Ground IOC 1 Alarm PKP
0xB082		Gnd IOC1 Alarm OP	Ground IOC 1 Alarm OP
0xB084		Gnd IOC1 Alarm DPO	Ground IOC 1 Alarm DPO
0xB0C1		Ph TOC1 Alarm PKP	Phase TOC 1 Alarm PKP
0xB0C2		Ph TOC1 Alarm OP	Phase TOC 1 Alarm OP
0xB0C4		Ph TOC1 Alarm DPO	Phase TOC 1 Alarm DPO
0xB101		Ntrl TOC1 Alrm PKP	Neutral TOC 1 Alarm PKP
0xB102		Ntrl TOC1 Alrm OP	Neutral TOC 1 Alarm OP
0xB104		Ntrl TOC1 Alrm DPO	Neutral TOC 1 Alarm DPO
0xB141		Gnd TOC1 Alarm PKP	Ground TOC Alarm PKP
0xB142		Gnd TOC1 Alarm OP	Ground TOC 1 Alarm OP
0xB144		Gnd TOC1 Alarm DPO	Ground TOC Alarm DPO
0xB181		Ph IOC2 Alarm PKP	Phase IOC 2 Alarm PKP
0xB182		Ph IOC2 Alarm OP	Phase IOC 2 Alarm OP
0xB184		Ph IOC2 Alarm DPO	Phase IOC 2 Alarm DPO
0xB1C1		Ntrl IOC2 Alrm PKP	Neutral IOC 2 Alarm PKP
0xB1C2		Ntrl IOC2 Alrm OP	Neutral IOC 2 Alarm OP
0xB1C4		Ntrl IOC2 Alrm DPO	Neutral IOC 2 Alarm DPO
0xB201		Gnd IOC2 Alarm PKP	Ground IOC 2 Alarm PKP
0xB202		Gnd IOC2 Alarm OP	Ground IOC 2 Alarm OP
0xB204		Gnd IOC2 Alarm DPO	Ground IOC 2 Alarm DPO
0xB301		SGnd TOC1 Alrm PKP	Sensitive Ground TOC 1 Alarm PKP
0xB302		SGnd TOC1 Alrm OP	Sensitive Ground TOC 1 Alarm OP
0xB304		SGnd TOC1 Alrm DPO	Sensitive Ground TOC 1 Alarm DPO
0xB342		NtrlDir RevAlm OP	Neutral Directional Alarm OP
0xB344		NtrlDir RevAlmDPO	Neutral Directional Reverse Alarm DPO
0xB382		GndDir Alm OP	Ground Directional Alarm OP
0xB384		GndDir Alm DPO	Ground Directional Alarm DPO
0xB3C1		NSeq OV Alrm PKP	Negative Sequence OV Alarm PKP
0xB3C2		NSeq OV Alrm OP	Negative Sequence OV Alarm OP
0xB3C4		NSeq OV Alrm DPO	Negative Sequence OV Alarm DPO

Code	Type	Definition	Long Definition
0xB401		Ntrl OV Alrm PKP	Neutral OV Alarm PKP
0xB402		Ntrl OV Alrm OP	Neutral OV Alarm OP
0xB404		Ntrl OV Alrm DPO	Neutral OV Alarm DPO
0xB441		Ph OV1 Alarm PKP	Phase OV1 Alarm PKP
0xB442		Ph OV1 Alarm OP	Phase OV 1 Alarm OP
0xB444		Ph OV1 Alarm DPO	Phase OV1 Alarm DPO
0xB481		Ph UV1 Alarm PKP	Phase UV1 Alarm PKP
0xB482		Ph UV1 Alarm OP	Phase UV 1 Alarm OP
0xB484		Ph UV1 Alarm DPO	Phase UV1 Alarm DPO
0xB4C1		Aux OV Alarm PKP	Auxiliary OV Alarm PKP
0xB4C2		Aux OV Alarm OP	Auxiliary OV Alarm OP
0xB4C4		Aux OV Alarm DPO	Auxiliary OV Alarm DPO
0xB501		Aux UV Alarm PKP	Auxiliary UV Alarm PKP
0xB502		Aux UV Alarm OP	Auxiliary UV Alarm OP
0xB504		Aux UV Alarm DPO	Auxiliary UV Alarm DPO
0xB541		UndrFreq1 Alrm PKP	Underfrequency 1 Alarm PKP
0xB542		UndrFreq1 Alrm OP	Underfrequency 1 Alarm OP
0xB544		UndrFreq1 Alrm DPO	Underfrequency 1 Alarm DPO
0xB581		UndrFreq2 Alrm PKP	Underfrequency 2 Alarm PKP
0xB582		UndrFreq2 Alrm OP	Underfrequency 2 Alarm OP
0xB584		UndrFreq2 Alrm DPO	Underfrequency 2 Alarm DPO
0xB5C1		OverFreq1 Alrm PKP	Overfrequency 1 Alarm PKP
0xB5C2		OverFreq1 Alrm OP	Overfrequency 1 Alarm OP
0xB5C4		OverFreq1 Alrm DPO	Overfrequency 1 Alarm DPO
0xB601		OverFreq2 Alrm PKP	Overfrequency 2 Alarm PKP
0xB602		OverFreq2 Alrm OP	Overfrequency 2 Alarm OP
0xB604		OverFreq2 Alrm DPO	Overfrequency 2 Alarm DPO
0xB641		SGnd IOC1 Alrm PKP	Sensitive Ground IOC 1 Alarm PKP
0xB642		SGnd IOC1 Alrm OP	Sensitive Ground IOC 1 Alarm OP
0xB644		SGnd IOC1 Alrm DPO	Sensitive Ground IOC 1 Alarm DPO
0xB681		SGnd IOC2 Alrm PKP	Sensitive Ground IOC 2 Alarm PKP
0xB682		SGnd IOC2 Alrm OP	Sensitive Ground IOC 2 Alarm OP
0xB684		SGnd IOC2 Alrm DPO	Sensitive Ground IOC 2 Alarm DPO
0xB6C1		NSeq IOC Alrm PKP	Negative Sequence IOC Alarm PKP
0xB6C2		NSeq IOC Alrm OP	NSeq IOC Alrm OP
0xB6C4		NSeq IOC Alrm DPO	Negative Sequence IOC Alarm DPO
0xB701		Ph UV2 Alrm PKP	Phase UV 2 Alrm PKP
0xB702		Ph UV2 Alrm OP	Phase UV 2 Alrm OP
0xB704		Ph UV2 Alrm DPO	Phase UV 2 Alrm DPO
0xB741		Ph UV3 Alrm PKP	Phase UV 3 Alrm PKP
0xB742		Ph UV3 Alrm OP	Phase UV 3 Alrm OP
0xB744		Ph UV3 Alrm DPO	Phase UV 3 Alrm DPO
0xB781		Ph UV4 Alrm PKP	Phase UV 4 Alrm PKP
0xB782		Ph UV4 Alrm OP	Phase UV 4 Alrm OP
0xB784		Ph UV4 Alrm DPO	Phase UV 4 Alrm DPO
0xB7C1		NSeq OV2 Alrm PKP	Negative Sequence OV2 Alrm PKP
0xB7C2		NSeq OV2 Alrm OP	Negative Sequence OV2 Alrm OP

Code	Type	Definition	Long Definition
0xB7C4		NSeq OV2 Alrm DPO	Negative Sequence OV2 Alrm DPO
0xB801		NSeq TOC1 Alrm PKP	Negative Sequence TOC 1 Alarm PKP
0xB802		NSeq TOC1 Alrm OP	Negative Sequence TOC 1 Alarm OP
0xB804		NSeq TOC1 Alrm DPO	Negative Sequence TOC 1 Alarm DPO
0xB881		CTFail Alrm PKP	CT Fail Alarm PKP
0xB882		CTFail Alrm OP	CT Fail Alarm OP
0xB884		CTFail Alrm DPO	CT Fail Alarm DPO
0xB8C1		Ph OV2 Alarm PKP	Phase OV 2 Alarm PKP
0xB8C2		Ph OV2 Alarm OP	Phase OV 2 Alarm OP
0xB8C4		Ph OV2 Alarm DPO	Phase OV 2 Alarm DPO
0xB901		Ph OV3 Alarm PKP	Phase OV 3 Alarm PKP
0xB902		Ph OV3 Alarm OP	Phase OV 3 Alarm OP
0xB904		Ph OV3 Alarm DPO	Phase OV 3 Alarm DPO
0xB941		Ph OV4 Alarm PKP	Phase OV 4 Alarm PKP
0xB942		Ph OV4 Alarm OP	Phase OV 4 Alarm OP
0xB944		Ph OV4 Alarm DPO	Phase OV 4 Alarm DPO
0xB981		Ntrl OV2 Alrm PKP	Neutral OV 2 Alarm PKP
0xB982		Ntrl OV2 Alrm OP	Neutral OV 2 Alarm OP
0xB984		Ntrl OV2 Alrm DPO	Neutral OV 2 Alarm DPO
0xB9C1		Ntrl OV3 Alrm PKP	Neutral OV 3 Alarm PKP
0xB9C2		Ntrl OV3 Alrm OP	Neutral OV 3 Alarm OP
0xB9C4		Ntrl OV3 Alrm DPO	Neutral OV 3 Alarm DPO
0xBA01		Ntrl OV4 Alrm PKP	Neutral OV 4 Alarm PKP
0xBA02		Ntrl OV4 Alrm OP	Neutral OV 4 Alarm OP
0xBA04		Ntrl OV4 Alrm DPO	Neutral OV 4 Alarm DPO
0xBA41		OverFreq3 Alrm PKP	Overfrequency 3 Alrm PKP
0xBA42		OverFreq3 Alrm OP	Overfrequency 3 Alrm OP
0xBA44		OverFreq3 Alrm DPO	Overfrequency 3 Alrm DPO
0xBA81		OverFreq4 Alrm PKP	Overfrequency 4 Alrm PKP
0xBA82		OverFreq4 Alrm OP	Overfrequency 4 Alrm OP
0xBA84		OverFreq4 Alrm DPO	Overfrequency 4 Alrm DPO
0xBAC1		UndFreq3 Alrm PKP	Underfrequency 3 Alrm PKP
0xBAC2		UndFreq3 Alarm OP	Underfrequency 3 Alarm OP
0xBAC4		UndFreq3 Alrm DPO	Underfrequency 3 Alrm DPO
0xBB01		UndFreq4 Alarm PKP	Underfrequency 4 Alarm PKP
0xBB02		UndFreq4 Alarm OP	Underfrequency 4 Alarm OP
0xBB04		UndFreq4 Alarm DPO	Underfrequency 4 Alarm DPO
0xBC01		LE 9 Alarm PKP	Logic Element 9 Alarm PKP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC04		LE 9 Alarm DPO	Logic Element 9 Alarm DPO
0xBC41		LE 10 Alarm PKP	Logic Element 10 Alarm PKP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC44		LE 10 Alarm DPO	Logic Element 10 Alarm DPO
0xBC81		LE 11 Alarm PKP	Logic Element 11 Alarm PKP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBC84		LE 11 Alarm DPO	Logic Element 11 Alarm DPO
0xBCC1		LE 12 Alarm PKP	Logic Element 12 Alarm PKP

Code	Type	Definition	Long Definition
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBCC4		LE 12 Alarm DPO	Logic Element 12 Alarm DPO
0xBD01		LE 13 Alarm PKP	Logic Element 13 Alarm PKP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD04		LE 13 Alarm DPO	Logic Element 13 Alarm DPO
0xBD41		LE 14 Alarm PKP	Logic Element 14 Alarm PKP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD44		LE 14 Alarm DPO	Logic Element 14 Alarm DPO
0xBD81		LE 15 Alarm PKP	Logic Element 15 Alarm PKP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBD84		LE 15 Alarm DPO	Logic Element 15 Alarm DPO
0xBDC1		LE 16 Alarm PKP	Logic Element 16 Alarm PKP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xBDC4		LE 16 Alarm DPO	Logic Element 16 Alarm DPO
0xBE02		PhDir RevAlm OP	Ph Directional Reverse Alarm OP
0xBE04		PhDir RevAlm DPO	Ph Directional Reverse Alarm DPO
0xBE0A		PhADir RevAlm OP	Ph A Directional Reverse Alarm OP
0xBE0C		PhADir RevAlm DPO	Ph A Directional Reverse Alarm DPO
0xBE12		PhBDir RevAlm OP	Ph B Directional Reverse Alarm OP
0xBE14		PhBDir RevAlm DPO	Ph B Directional Reverse Alarm DPO
0xBE22		PhCDir RevAlm OP	Ph C Directional Reverse Alarm OP
0xBE24		PhCDir RevAlm DPO	Ph C Directional Reverse Alarm DPO
0xBE42		PhDir UndAlm OP	Ph Directional Und Alarm OP
0xBE44		PhDir UndAlm DPO	Ph Directional Und Alarm DPO
0xBE4A		PhADir UndAlm OP	Ph A Directional Und Alarm OP
0xBE4C		PhADir UndAlm DPO	Ph A Directional Und Alarm DPO
0xBE52		PhBDir UndAlm OP	Ph B Directional Und Alarm OP
0xBE54		PhBDir UndAlm DPO	Ph B Directional Und Alarm DPO
0xBE62		PhCDir UndAlm OP	Ph C Directional Und Alarm OP
0xBE64		PhCDir UndAlm DPO	Ph C Directional Und Alarm DPO
0xBE82		GndDir UndAlm OP	Ground Directional Und Alarm OP
0xBE84		GndDir UndAlm DPO	Ground Directional Und Alarm DPO
0xBEC2		NtrlDir UndAlm OP	Neutral Directional Und Alarm OP
0xBEC4		NtrlDir UndAlm DPO	Neutral Directional Und Alarm DPO
0xBF01		WGF 1 Alarm PKP	Wattmetric Gnd Fault 1 Alarm PKP
0xBF02		WGF 1 Alarm OP	Wattmetric Gnd Fault 1 Alarm OP
0xBF04		WGF 1 Alarm DPO	Wattmetric Gnd Fault 1 Alarm DPO
0xBF41		WGF 2 Alarm PKP	Wattmetric Gnd Fault 2 Alarm PKP
0xBF42		WGF 2 Alarm OP	Wattmetric Gnd Fault 2 Alarm OP
0xBF44		WGF 2 Alarm DPO	Wattmetric Gnd Fault 2 Alarm DPO
0xC042		Output Relay 3 On	Output Relay 3 On
0xC082		Output Relay 4 On	Output Relay 4 On
0xC0C2		Output Relay 5 On	Output Relay 5 On
0xC102		Output Relay 6 On	Output Relay 6 On
0xC142		Self-Test Rly 7 OP	Self-Test Rly 7 OP
0xC182		Rly1 Coil OP	Relay # 1 Coil OP
0xC1C2		Rly2 Coil OP	Relay # 2 Coil OP

Code	Type	Definition	Long Definition
0xC202		BKR Connected	Breaker Connected OP
0xC242		Arc Flash OP	Arc Flash OP
0xC282		Any Pkp OP	Any Pkp OP
0xC2C2		Lockout OP	Lockout OP
0xC2C4		Lockout DPO	Lockout DPO
0xC302		Sync Operation	Synchrocheck Operation
0xC342		Sync Close OP	Synchrocheck Close OP
0xC382		Sync Condition	Synchrocheck Condition
0xC442		HS Phase IOC OP	HS Phase IOC OP
0xC482		HSGnd IOC OP	HS Ground IOC OP
0xC4C1		LE 1 PKP	Logic Element 1 PKP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC4C4		LE 1 DPO	Logic Element 1 DPO
0xC501		LE 2 PKP	Logic Element 2 PKP
0xC502		LE 2 OP	Logic Element 2 OP
0xC504		LE 2 DPO	Logic Element 2 DPO
0xC541		LE 3 PKP	Logic Element 3 PKP
0xC542		LE 3 OP	Logic Element 3 OP
0xC544		LE 3 DPO	Logic Element 3 DPO
0xC581		LE 4 PKP	Logic Element 4 PKP
0xC582		LE 4 OP	Logic Element 4 OP
0xC584		LE 4 DPO	Logic Element 4 DPO
0xC5C1		LE 5 PKP	Logic Element 5 PKP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC5C4		LE 5 DPO	Logic Element 5 DPO
0xC601		LE 6 PKP	Logic Element 6 PKP
0xC602		LE 6 OP	Logic Element 6 OP
0xC604		LE 6 DPO	Logic Element 6 DPO
0xC641		LE 7 PKP	Logic Element 7 PKP
0xC642		LE 7 OP	Logic Element 7 OP
0xC644		LE 7 DPO	Logic Element 7 DPO
0xC681		LE 8 PKP	Logic Element 8 PKP
0xC682		LE 8 OP	Logic Element 8 OP
0xC684		LE 8 DPO	Logic Element 8 DPO
0xC742		Testing ON	Testing ON
0xC744		Testing OFF	Testing OFF
0xC882		Setpoint Group2 On	Setpoint Group2 On
0xC902		BKR Open	Breaker Open
0xC942		BKR Close	Breaker Close
0xC982		Maint. Req. OP	Maintenance Required OP
0xCA02		52a Contact OP	52a Contact OP
0xCA42		52b Contact OP	52b Contact OP
0xCA82		Reset OK	Reset OK
0xCAC2		L/O Rst Closed OP	Lockout Reset Closed OP
0xCB02		AR Close	AR Close
0xCB42		AR N/Ready	AR N/Ready
0xCB82		AR In Progress	AR In Progress

Code	Type	Definition	Long Definition
0xCBC2		AR Disabled	AR Disabled
0xCC02		AR Ext. Init	AR Ext. Init
0xCC42		AR Ready	AR Ready
0xCCC2		BKR Stat Open	Breaker Status Open OP
0xCD02		BKR Stat Clsd	Breaker Status Closed OP
0xCD42		Setpoint Group1 On	Setpoint Group1 On
0xCD82		Light Sensor 1 OP	Light Sensor 1 OP
0xCDC2		Light Sensor 2 OP	Light Sensor 2 OP
0xCE81		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xCE82		Dir Pwr 1 OP	Directional Pwr 1 OP
0xCEC1		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xCEC2		Dir Pwr 2 OP	Directional Pwr 2 OP
0xCF01		2nd Hrmc PKP	2nd Harmonic PKP
0xCF02		2nd Hrmc OP	2nd Harmonic OP
0xCF04		2nd Hrmc DPO	2nd Harmonic DPO
0xCF42		Light Sensor 3 OP	Light Sensor 3 OP
0xCF82		Light Sensor 4 OP	Light Sensor 4 OP
0xCFC1		Brkn Cond PKP	Broken Cond PKP
0xCFC2		Brkn Cond OP	Broken Cond OP
0xCFC4		Brkn Cond DPO	Broken Cond DPO
0xD342		Ntrl Dir Rev OP	Neutral Directional Rev OP
0xD344		Ntrl Dir Rev DPO	Neutral Directional Reverse DPO
0xD382		Gnd Dir OP	Ground Directional OP
0xD384		Gnd Dir DPO	Ground Directional DPO
0xDC01		LE 9 PKP	Logic Element 9 PKP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC04		LE 9 DPO	Logic Element 9 DPO
0xDC41		LE 10 PKP	Logic Element 10 PKP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC44		LE 10 DPO	Logic Element 10 DPO
0xDC81		LE 11 PKP	Logic Element 11 PKP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDC84		LE 11 DPO	Logic Element 11 DPO
0xDCC1		LE 12 PKP	Logic Element 12 PKP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDCC4		LE 12 DPO	Logic Element 12 DPO
0xDD01		LE 13 PKP	Logic Element 13 PKP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD04		LE 13 DPO	Logic Element 13 DPO
0xDD41		LE 14 PKP	Logic Element 14 PKP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD44		LE 14 DPO	Logic Element 14 DPO
0xDD81		LE 15 PKP	Logic Element 15 PKP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDD84		LE 15 DPO	Logic Element 15 DPO
0xDDC1		LE 16 PKP	Logic Element 16 PKP
0xDDC2		LE 16 OP	Logic Element 16 OP

Code	Type	Definition	Long Definition
0xDDC4		LE 16 DPO	Logic Element 16 DPO
0xDE02		PhDir Rev OP	Ph Directional Reverse OP
0xDE04		PhDir Rev DPO	Ph Directional Reverse DPO
0xDE0A		PhADir Rev OP	Ph A Directional Reverse OP
0xDE0C		PhADir Rev DPO	Ph A Directional Reverse DPO
0xDE12		PhBDir Rev OP	Ph B Directional Reverse OP
0xDE14		PhBDir Rev DPO	Ph B Directional Reverse DPO
0xDE22		PhCDir Rev OP	Ph C Directional Reverse OP
0xDE24		PhCDir Rev DPO	Ph C Directional Reverse DPO
0xDE42		PhDir Und OP	Ph Directional Und OP
0xDE44		PhDir Und DPO	Ph Directional Und DPO
0xDE4A		PhADir Und OP	Ph A Directional Und OP
0xDE4C		PhADir Und DPO	Ph A Directional Und DPO
0xDE52		PhBDir Und OP	Ph B Directional Und OP
0xDE54		PhBDir Und DPO	Ph B Directional Und DPO
0xDE62		PhCDir Und OP	Ph C Directional Und OP
0xDE64		PhCDir Und DPO	Ph C Directional Und DPO
0xDE82		GndDir Und OP	Ground Directional Und OP
0xDE84		GndDir Und DPO	Ground Directional Und DPO
0xDEC2		NtrlDir Und OP	Neutral Directional Und OP
0xDEC4		NtrlDir Und DPO	Neutral Directional Und DPO
0xDF01		WGF 1 PKP	Wattmetric Gnd Fault 1 PKP
0xDF02		WGF 1 OP	Wattmetric Gnd Fault 1 OP
0xDF04		WGF 1 DPO	Wattmetric Gnd Fault 1 DPO
0xDF41		WGF 2 PKP	Wattmetric Gnd Fault 2 PKP
0xDF42		WGF 2 OP	Wattmetric Gnd Fault 2 OP
0xDF44		WGF 2 DPO	Wattmetric Gnd Fault 2 DPO
0xE002		Any Block	Any Block
0xE042		Therm O/L Block	Thermal Level Block
0xE082		PosSeq UV1 Block	Positive Sequence UV 1 Block
0xE182		Output Relay 1 Blk	Output Relay 1 Block
0xE1C2		Output Relay 2 Blk	Output Relay 2 Block
0xE242		Arc Flash Block	Arc Flash Block
0xE2C2		Lockout Block	Lockout Block
0xE3C2		Volt Hz Block	Volt Hz Block
0xE742		Curr Dmd1 Block	Current Demand 1 Block OP
0xE782		RealP Dmd Block	Real Power Demand Block OP
0xE7C2		ReacP Dmd Block	Reactive Power Demand Block OP
0xE802		AppP Dmd Block	Apparent Power Demand Block OP
0xE882		Group Change Blk	Group Change Blk
0xEB02		AR Block	AR Block
0xEE82		Dir Pwr 1 Block	Directional Pwr 1 Block
0xEEC2		Dir Pwr 2 Block	Directional Pwr 2 Block
0xEFC2		Brkn Cond Block	Broken Cond Block
0xF002		Ph IOC1 Block	Phase IOC 1 Block
0xF042		Ntrl IOC1 Block	Neutral IOC 1 Block
0xF082		Gnd IOC1 Block	Ground IOC 1 Block

Code	Type	Definition	Long Definition
0xF0C2		Ph TOC1 Block	Phase TOC 1 Block
0xF102		Ntrl TOC1 Block	Neutral TOC 1 Block
0xF142		Gnd TOC1 Block	Ground TOC 1 Block
0xF182		Ph IOC2 Block	Phase IOC 2 Block
0xF1C2		Ntrl IOC2 Block	Neutral IOC 2 Block
0xF202		Gnd IOC2 Block	Ground IOC 2 Block
0xF302		SGnd TOC1 Block	Sensitive Ground TOC 1 Block
0xF342		Ntrl Dir Rev Block	Neutral Directional Rev Block
0xF382		Gnd Dir Block	Ground Directional Block
0xF3C2		NSeq OV Block	Negative Sequence OV OP
0xF402		Ntrl OV Block	Neutral OV Block
0xF442		Ph OV1 Block	Ph OV 1 Block
0xF482		Ph UV1 Block	Ph UV 1 Block
0xF4C2		Aux OV Block	Auxiliary OV Block
0xF502		Aux UV Block	Auxiliary UV Block
0xF542		UndrFreq1 Block	Underfrequency 1 Block
0xF582		UndrFreq2 Block	Underfrequency 2 Block
0xF5C2		OverFreq1 Block	Overfrequency 1 Block
0xF602		OverFreq2 Block	Overfrequency 2 Block
0xF642		SGnd IOC1 Block	Sensitive Ground IOC 1 Block
0xF682		SGnd IOC2 Block	Sensitive Ground IOC 2 Block
0xF6C2		NSeq IOC Block	Negative Sequence IOC Block
0xF702		Ph UV2 Block	Phase UV 2 Block OP
0xF742		Ph UV3 Block	Phase UV 3 Block OP
0xF782		Ph UV4 Block	Phase UV 4 Block OP
0xF7C2		NSeq OV2 Block	Negative Sequence OV2 Block
0xF802		NSeq TOC1 Blk	Negative Sequence TOC 1 Block
0xF882		CTFail Block	CT Fail Block
0xF8C2		Ph OV2 Block	Ph OV2 Block
0xF902		Ph OV3 Block	Phase OV 3 Block OP
0xF942		Ph OV4 Block	Phase OV 4 Block OP
0xF982		Ntrl OV2 Block	Neutral OV 2 Block
0xF9C2		Ntrl OV3 Block	Neutral OV 3 Block
0xFA02		Ntrl OV4 Block	Neutral OV 4 Block
0xFA42		OverFreq3 Block	Overfrequency 3 Block
0xFA82		OverFreq4 Block	Overfrequency 4 Block
0xFAC2		UndFreq3 Block	Underfrequency 3 Block
0xFB02		UndFreq4 Block	Underfrequency 4 Block
0xFE02		PhDir Block	Ph Directional Block
0xFF02		WGF 1 Block	Wattmetric Gnd Fault 1 Block
0xFF42		WGF 2 Block	Wattmetric Gnd Fault 2 Block
FC134D	unsigned 16 bits	Lockout Trigger	
0x0000		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On

Code	Type	Definition	Long Definition
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On

Code	Type	Definition	Long Definition
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0x00A0		Virtual IN 1 Off	Virtual Input 1 Off
0x00A1		Virtual IN 2 Off	Virtual Input 2 Off
0x00A2		Virtual IN 3 Off	Virtual Input 3 Off
0x00A3		Virtual IN 4 Off	Virtual Input 4 Off
0x00A4		Virtual IN 5 Off	Virtual Input 5 Off
0x00A5		Virtual IN 6 Off	Virtual Input 6 Off
0x00A6		Virtual IN 7 Off	Virtual Input 7 Off
0x00A7		Virtual IN 8 Off	Virtual Input 8 Off
0x00A8		Virtual IN 9 Off	Virtual Input 9 Off
0x00A9		Virtual IN 10 Off	Virtual Input 10 Off
0x00AA		Virtual IN 11 Off	Virtual Input 11 Off
0x00AB		Virtual IN 12 Off	Virtual Input 12 Off
0x00AC		Virtual IN 13 Off	Virtual Input 13 Off
0x00AD		Virtual IN 14 Off	Virtual Input 14 Off
0x00AE		Virtual IN 15 Off	Virtual Input 15 Off
0x00AF		Virtual IN 16 Off	Virtual Input 16 Off
0x00B0		Virtual IN 17 Off	Virtual Input 17 Off
0x00B1		Virtual IN 18 Off	Virtual Input 18 Off
0x00B2		Virtual IN 19 Off	Virtual Input 19 Off
0x00B3		Virtual IN 20 Off	Virtual Input 20 Off
0x00B4		Virtual IN 21 Off	Virtual Input 21 Off
0x00B5		Virtual IN 22 Off	Virtual Input 22 Off
0x00B6		Virtual IN 23 Off	Virtual Input 23 Off
0x00B7		Virtual IN 24 Off	Virtual Input 24 Off
0x00B8		Virtual IN 25 Off	Virtual Input 25 Off
0x00B9		Virtual IN 26 Off	Virtual Input 26 Off
0x00BA		Virtual IN 27 Off	Virtual Input 27 Off
0x00BB		Virtual IN 28 Off	Virtual Input 28 Off
0x00BC		Virtual IN 29 Off	Virtual Input 29 Off
0x00BD		Virtual IN 30 Off	Virtual Input 30 Off
0x00BE		Virtual IN 31 Off	Virtual Input 31 Off
0x00BF		Virtual IN 32 Off	Virtual Input 32 Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8082		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8242		Arc Flash Trip OP	Arc Flash Trip OP
0x83C2		Volt Hz Trip OP	Volt Hz Trip OP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP

Code	Type	Definition	Long Definition
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x89C2		Self Test OP	Self Test OP
0x8E82		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x8EC2		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8FC2		Brkn Cond Trip OP	Broken Cond Trip OP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x9402		Ntrl OV Trp OP	Neutral OV Trip OP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP
0x94C2		Aux OV Trip OP	Auxiliary OV Trip OP
0x9502		Aux UV Trip OP	Auxiliary UV Trip OP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x9702		Ph UV2 Trip OP	Phase UV 2 Trip OP

Code	Type	Definition	Long Definition
0x970A		Ph A UV2 Trip OP	Phase A UV 2 Trip OP
0x9712		Ph B UV2 Trip OP	Phase B UV 2 Trip OP
0x9722		Ph C UV2 Trip OP	Phase C UV 2 Trip OP
0x9742		Ph UV3 Trip OP	Phase UV 3 Trip OP
0x974A		Ph A UV3 Trip OP	Phase A UV 3 Trip OP
0x9752		Ph B UV3 Trip OP	Phase B UV 3 Trip OP
0x9762		Ph C UV3 Trip OP	Phase C UV 3 Trip OP
0x9782		Ph UV4 Trip OP	Phase UV 4 Trip OP
0x978A		Ph A UV4 Trip OP	Phase A UV 4 Trip OP
0x9792		Ph B UV4 Trip OP	Phase B UV 4 Trip OP
0x97A2		Ph C UV4 Trip OP	Phase C UV 4 Trip OP
0x97C2		NSeq OV2 Trp OP	Negative Sequence OV2 Trp OP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x98C2		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x98CA		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x98D2		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x98E2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x9902		Ph OV3 Trip OP	Phase OV 3 Trip OP
0x990A		Ph A OV3 Trip OP	Phase A OV 3 Trip OP
0x9912		Ph B OV3 Trip OP	Phase B OV 3 Trip OP
0x9922		Ph C OV3 Trip OP	Phase C OV 3 Trip OP
0x9942		Ph OV4 Trip OP	Phase OV 4 Trip OP
0x994A		Ph A OV4 Trip OP	Phase A OV 4 Trip OP
0x9952		Ph B OV4 Trip OP	Phase B OV 4 Trip OP
0x9962		Ph C OV4 Trip OP	Phase C OV 4 Trip OP
0x9982		Ntrl OV2 Trip OP	Neutral OV 2 Trip OP
0x99C2		Ntrl OV3 Trip OP	Neutral OV 3 Trip OP
0x9A02		Ntrl OV4 Trip OP	Neutral OV 4 Trip OP
0x9A42		OverFreq3 Trip OP	Overfrequency 3 Trip OP
0x9A82		OverFreq4 Trip OP	Overfrequency 4 Trip OP
0x9AC2		UndFreq3 Trip OP	Underfrequency 3 Trip OP
0x9B02		UndFreq4 Trip OP	Underfrequency 4 Trip OP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9F02		WGF 1 Trip OP	Wattmetric Gnd Fault 1 Trip OP
0x9F42		WGF 2 Trip OP	Wattmetric Gnd Fault 2 Trip OP
FC134E	unsigned 16 bits	Fault Report Trigger	
0x0000		Off	Off
0x8002		Any Trip	Any Trip
0x8042		Therm O/L Trip OP	Thermal Overload Trip OP
0x804A		Therm PhA Trip OP	Thermal Phase A Trip OP

Code	Type	Definition	Long Definition
0x8052		Therm PhB Trip OP	Thermal Phase B Trip OP
0x8062		Therm PhC Trip OP	Thermal Phase C Trip OP
0x8082		PosSeq UV1 Trip OP	Positive Sequence UV 1 Trip OP
0x8242		Arc Flash Trip OP	Arc Flash Trip OP
0x83C2		Volt Hz Trip OP	Volt Hz Trip OP
0x84C2		LE 1 Trip OP	Logic Element 1 Trip OP
0x8502		LE 2 Trip OP	Logic Element 2 Trip OP
0x8542		LE 3 Trip OP	Logic Element 3 Trip OP
0x8582		LE 4 Trip OP	Logic Element 4 Trip OP
0x85C2		LE 5 Trip OP	Logic Element 5 Trip OP
0x8602		LE 6 Trip OP	Logic Element 6 Trip OP
0x8642		LE 7 Trip OP	Logic Element 7 Trip OP
0x8682		LE 8 Trip OP	Logic Element 8 Trip OP
0x89C2		Self Test OP	Self Test OP
0x8E82		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x8EC2		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x8F82		Fuse Fail Trip OP	Fuse Fail Trip OP
0x8FC2		Brkn Cond Trip OP	Broken Cond Trip OP
0x9002		Ph IOC1 Trip OP	Phase IOC 1 Trip OP
0x900A		Ph A IOC1 Trip OP	Phase A IOC 1 Trip OP
0x9012		Ph B IOC1 Trip OP	Phase B IOC 1 Trip OP
0x9022		Ph C IOC1 Trip OP	Phase C IOC 1 Trip OP
0x9042		Ntrl IOC1 Trip OP	Neutral IOC 1 Trip OP
0x9082		Gnd IOC1 Trip OP	Ground IOC 1 Trip OP
0x90C2		Ph TOC1 Trip OP	Phase TOC 1 Trip OP
0x90CA		Ph A TOC1 Trip OP	Phase A TOC 1 Trip OP
0x90D2		Ph B TOC1 Trip OP	Phase B TOC 1 Trip OP
0x90E2		Ph C TOC1 Trip OP	Phase C TOC 1 Trip OP
0x9102		Ntrl TOC1 Trip OP	Neutral TOC 1 Trip OP
0x9142		Gnd TOC1 Trip OP	Ground TOC 1 Trip OP
0x9182		Ph IOC2 Trip OP	Phase IOC 2 Trip OP
0x918A		Ph A IOC2 Trip OP	Phase A IOC 2 Trip OP
0x9192		Ph B IOC2 Trip OP	Phase B IOC 2 Trip OP
0x91A2		Ph C IOC2 Trip OP	Phase C IOC 2 Trip OP
0x91C2		Ntrl IOC2 Trip OP	Neutral IOC 2 Trip OP
0x9202		Gnd IOC2 Trip OP	Ground IOC 2 Trip OP
0x9302		SGnd TOC1 Trip OP	Sensitive Ground TOC 1 Trip OP
0x93C2		NSeq OV Trp OP	Negative Sequence OV Trip OP
0x9402		Ntrl OV Trp OP	Neutral OV Trip OP
0x9442		Ph OV1 Trip OP	Phase OV 1 Trip OP
0x944A		Ph A OV1 Trip OP	Phase A OV1 Trip OP
0x9452		Ph B OV1 Trip OP	Phase B OV1 Trip OP
0x9462		Ph C OV1 Trip OP	Phase C OV1 Trip OP
0x9482		Ph UV1 Trip OP	Phase UV 1 Trip OP
0x948A		Ph A UV1 Trip OP	Phase A UV1 Trip OP
0x9492		Ph B UV1 Trip OP	Phase B UV1 Trip OP
0x94A2		Ph C UV1 Trip OP	Phase C UV1 Trip OP

Code	Type	Definition	Long Definition
0x94C2		Aux OV Trip OP	Auxiliary OV Trip OP
0x9502		Aux UV Trip OP	Auxiliary UV Trip OP
0x9542		UndrFreq1 Trip OP	Underfrequency 1 Trip OP
0x9582		UndrFreq2 Trip OP	Underfrequency 2 Trip OP
0x95C2		OverFreq1 Trip OP	Overfrequency 1 Trip OP
0x9602		OverFreq2 Trip OP	Overfrequency 2 Trip OP
0x9642		SGnd IOC1 Trip OP	Sensitive Ground IOC 1 Trip OP
0x9682		SGnd IOC2 Trip OP	Sensitive Ground IOC 2 Trip OP
0x96C2		NSeq IOC Trp OP	Negative Sequence IOC Trip OP
0x9702		Ph UV2 Trip OP	Phase UV 2 Trip OP
0x970A		Ph A UV2 Trip OP	Phase A UV 2 Trip OP
0x9712		Ph B UV2 Trip OP	Phase B UV 2 Trip OP
0x9722		Ph C UV2 Trip OP	Phase C UV 2 Trip OP
0x9742		Ph UV3 Trip OP	Phase UV 3 Trip OP
0x974A		Ph A UV3 Trip OP	Phase A UV 3 Trip OP
0x9752		Ph B UV3 Trip OP	Phase B UV 3 Trip OP
0x9762		Ph C UV3 Trip OP	Phase C UV 3 Trip OP
0x9782		Ph UV4 Trip OP	Phase UV 4 Trip OP
0x978A		Ph A UV4 Trip OP	Phase A UV 4 Trip OP
0x9792		Ph B UV4 Trip OP	Phase B UV 4 Trip OP
0x97A2		Ph C UV4 Trip OP	Phase C UV 4 Trip OP
0x97C2		NSeq OV2 Trp OP	Negative Sequence OV2 Trp OP
0x9802		NSeq TOC1 Trip OP	Negative Sequence TOC 1 Trip OP
0x98C2		Ph OV2 Trip OP	Phase OV 2 Trip OP
0x98CA		Ph A OV2 Trip OP	Phase A OV2 Trip OP
0x98D2		Ph B OV2 Trip OP	Phase B OV2 Trip OP
0x98E2		Ph C OV2 Trip OP	Phase C OV2 Trip OP
0x9902		Ph OV3 Trip OP	Phase OV 3 Trip OP
0x990A		Ph A OV3 Trip OP	Phase A OV 3 Trip OP
0x9912		Ph B OV3 Trip OP	Phase B OV 3 Trip OP
0x9922		Ph C OV3 Trip OP	Phase C OV 3 Trip OP
0x9942		Ph OV4 Trip OP	Phase OV 4 Trip OP
0x994A		Ph A OV4 Trip OP	Phase A OV 4 Trip OP
0x9952		Ph B OV4 Trip OP	Phase B OV 4 Trip OP
0x9962		Ph C OV4 Trip OP	Phase C OV 4 Trip OP
0x9982		Ntrl OV2 Trip OP	Neutral OV 2 Trip OP
0x99C2		Ntrl OV3 Trip OP	Neutral OV 3 Trip OP
0x9A02		Ntrl OV4 Trip OP	Neutral OV 4 Trip OP
0x9A42		OverFreq3 Trip OP	Overfrequency 3 Trip OP
0x9A82		OverFreq4 Trip OP	Overfrequency 4 Trip OP
0x9AC2		UndFreq3 Trip OP	Underfrequency 3 Trip OP
0x9B02		UndFreq4 Trip OP	Underfrequency 4 Trip OP
0x9C02		LE 9 Trip OP	Logic Element 9 Trip OP
0x9C42		LE 10 Trip OP	Logic Element 10 Trip OP
0x9C82		LE 11 Trip OP	Logic Element 11 Trip OP
0x9CC2		LE 12 Trip OP	Logic Element 12 Trip OP
0x9D02		LE 13 Trip OP	Logic Element 13 Trip OP

Code	Type	Definition	Long Definition
0x9D42		LE 14 Trip OP	Logic Element 14 Trip OP
0x9D82		LE 15 Trip OP	Logic Element 15 Trip OP
0x9DC2		LE 16 Trip OP	Logic Element 16 Trip OP
0x9F02		WGF 1 Trip OP	Wattmetric Gnd Fault 1 Trip OP
0x9F42		WGF 2 Trip OP	Wattmetric Gnd Fault 2 Trip OP
FC134F	unsigned 16 bits	Lockout Reset	
0		Off	Off
0x0001		On	On
0x0040		Contact IN 1 On	Contact Input 1 On
0x0041		Contact IN 2 On	Contact Input 2 On
0x0042		Contact IN 3 On	Contact Input 3 On
0x0043		Contact IN 4 On	Contact Input 4 On
0x0044		Contact IN 5 On	Contact Input 5 On
0x0045		Contact IN 6 On	Contact Input 6 On
0x0046		Contact IN 7 On	Contact Input 7 On
0x0047		Contact IN 8 On	Contact Input 8 On
0x0048		Contact IN 9 On	Contact Input 9 On
0x0049		Contact IN 10 On	Contact Input 10 On
0x0060		Contact IN 1 Off	Contact Input 1 Off
0x0061		Contact IN 2 Off	Contact Input 2 Off
0x0062		Contact IN 3 Off	Contact Input 3 Off
0x0063		Contact IN 4 Off	Contact Input 4 Off
0x0064		Contact IN 5 Off	Contact Input 5 Off
0x0065		Contact IN 6 Off	Contact Input 6 Off
0x0066		Contact IN 7 Off	Contact Input 7 Off
0x0067		Contact IN 8 Off	Contact Input 8 Off
0x0068		Contact IN 9 Off	Contact Input 9 Off
0x0069		Contact IN 10 Off	Contact Input 10 Off
0x0080		Virtual IN 1 On	Virtual Input 1 On
0x0081		Virtual IN 2 On	Virtual Input 2 On
0x0082		Virtual IN 3 On	Virtual Input 3 On
0x0083		Virtual IN 4 On	Virtual Input 4 On
0x0084		Virtual IN 5 On	Virtual Input 5 On
0x0085		Virtual IN 6 On	Virtual Input 6 On
0x0086		Virtual IN 7 On	Virtual Input 7 On
0x0087		Virtual IN 8 On	Virtual Input 8 On
0x0088		Virtual IN 9 On	Virtual Input 9 On
0x0089		Virtual IN 10 On	Virtual Input 10 On
0x008A		Virtual IN 11 On	Virtual Input 11 On
0x008B		Virtual IN 12 On	Virtual Input 12 On
0x008C		Virtual IN 13 On	Virtual Input 13 On
0x008D		Virtual IN 14 On	Virtual Input 14 On
0x008E		Virtual IN 15 On	Virtual Input 15 On
0x008F		Virtual IN 16 On	Virtual Input 16 On
0x0090		Virtual IN 17 On	Virtual Input 17 On
0x0091		Virtual IN 18 On	Virtual Input 18 On
0x0092		Virtual IN 19 On	Virtual Input 19 On

Code	Type	Definition	Long Definition
0x0093		Virtual IN 20 On	Virtual Input 20 On
0x0094		Virtual IN 21 On	Virtual Input 21 On
0x0095		Virtual IN 22 On	Virtual Input 22 On
0x0096		Virtual IN 23 On	Virtual Input 23 On
0x0097		Virtual IN 24 On	Virtual Input 24 On
0x0098		Virtual IN 25 On	Virtual Input 25 On
0x0099		Virtual IN 26 On	Virtual Input 26 On
0x009A		Virtual IN 27 On	Virtual Input 27 On
0x009B		Virtual IN 28 On	Virtual Input 28 On
0x009C		Virtual IN 29 On	Virtual Input 29 On
0x009D		Virtual IN 30 On	Virtual Input 30 On
0x009E		Virtual IN 31 On	Virtual Input 31 On
0x009F		Virtual IN 32 On	Virtual Input 32 On
0xA4C2		LE 1 Alarm OP	Logic Element 1 Alarm OP
0xA502		LE 2 Alarm OP	Logic Element 2 Alarm OP
0xA542		LE 3 Alarm OP	Logic Element 3 Alarm OP
0xA582		LE 4 Alarm OP	Logic Element 4 Alarm OP
0xA5C2		LE 5 Alarm OP	Logic Element 5 Alarm OP
0xA602		LE 6 Alarm OP	Logic Element 6 Alarm OP
0xA642		LE 7 Alarm OP	Logic Element 7 Alarm OP
0xA682		LE 8 Alarm OP	Logic Element 8 Alarm OP
0xBC02		LE 9 Alarm OP	Logic Element 9 Alarm OP
0xBC42		LE 10 Alarm OP	Logic Element 10 Alarm OP
0xBC82		LE 11 Alarm OP	Logic Element 11 Alarm OP
0xBCC2		LE 12 Alarm OP	Logic Element 12 Alarm OP
0xBD02		LE 13 Alarm OP	Logic Element 13 Alarm OP
0xBD42		LE 14 Alarm OP	Logic Element 14 Alarm OP
0xBD82		LE 15 Alarm OP	Logic Element 15 Alarm OP
0xBDC2		LE 16 Alarm OP	Logic Element 16 Alarm OP
0xC4C2		LE 1 OP	Logic Element 1 OP
0xC502		LE 2 OP	Logic Element 2 OP
0xC542		LE 3 OP	Logic Element 3 OP
0xC582		LE 4 OP	Logic Element 4 OP
0xC5C2		LE 5 OP	Logic Element 5 OP
0xC602		LE 6 OP	Logic Element 6 OP
0xC642		LE 7 OP	Logic Element 7 OP
0xC682		LE 8 OP	Logic Element 8 OP
0xDC02		LE 9 OP	Logic Element 9 OP
0xDC42		LE 10 OP	Logic Element 10 OP
0xDC82		LE 11 OP	Logic Element 11 OP
0xDCC2		LE 12 OP	Logic Element 12 OP
0xDD02		LE 13 OP	Logic Element 13 OP
0xDD42		LE 14 OP	Logic Element 14 OP
0xDD82		LE 15 OP	Logic Element 15 OP
0xDDC2		LE 16 OP	Logic Element 16 OP
FC135	unsigned 16 bits	Motor Speed During Trip / Motor Speed During Event	

Code	Type	Definition	Long Definition
FC136	unsigned 16 bits	Motor Speed During Trip / Motor Speed During Event	
0		None	None
1		A	A
2		B	B
FC139	unsigned 16 bits	Starter Type	
0		None	None
4		Wye-Delta	Wye-Delta
5		Inverter	Inverter
6		Soft Starter	Soft Starter
7		Custom Starter	Custom Starter
FC140	unsigned 16 bits	Interlock Function	
0		Disabled	Disabled
1		Trip	Trip
2		Alarm	Alarm
FC141	unsigned 16 bits	Timer Type	
0		Millisecond	Millisecond
1		Second	Second
2		Minute	Minute
FC142	unsigned 16 bits	FlexLogic Bit Field EEETTTTTTTSSSSSS	
0x0000		Off	Off
0x0001		On	On
0x0040		Contact Inputs	Contact Inputs
0x0080		Virtual Inputs	Virtual Inputs
0x00C0		Virtual Outputs	Virtual Outputs
0x01C0		Remote Inputs	Remote Inputs
0x0380		Insert	Insert
0x0400		End	End
0x0440		NOT	NOT
0x0480		XOR	XOR
0x04C0		LATCH	LATCH
0x0500		OR	OR
0x0540		AND	AND
0x0580		NOR	NOR
0x05C0		NAND	NAND
0x0600		TIMER	TIMER
0x0640		ASSIGN	ASSIGN
0x8000		Trip	Trip
0x8E81		Dir Pwr 1 Trip PKP	Directional Pwr 1 Trip PKP
0x8E82		Dir Pwr 1 Trip OP	Directional Pwr 1 Trip OP
0x8EC1		Dir Pwr 2 Trip PKP	Directional Pwr 2 Trip PKP
0x8EC2		Dir Pwr 2 Trip OP	Directional Pwr 2 Trip OP
0x8FC1		Brkn Cond Trip PKP	Broken Cond Trip PKP
0x8FC2		Brkn Cond Trip OP	Broken Cond Trip OP
0x8FC4		Brkn Cond Trip DPO	Broken Cond Trip DPO
0x9F01		WGF 1 Trip PKP	Wattmetric Gnd Fault 1 Trip PKP
0x9F02		WGF 1 Trip OP	Wattmetric Gnd Fault 1 Trip OP

Code	Type	Definition	Long Definition
0x9F04		WGF 1 Trip DPO	Wattmetric Gnd Fault 1 Trip DPO
0x9F41		WGF 2 Trip PKP	Wattmetric Gnd Fault 2 Trip PKP
0x9F42		WGF 2 Trip OP	Wattmetric Gnd Fault 2 Trip OP
0x9F44		WGF 2 Trip DPO	Wattmetric Gnd Fault 2 Trip DPO
0xA000		Alarm	Alarm
0xAE81		Dir Pwr 1 Alrm PKP	Directional Pwr 1 Alarm PKP
0xAE82		Dir Pwr 1 Alarm OP	Directional Pwr 1 Alarm OP
0xAEC1		Dir Pwr 2 Alrm PKP	Directional Pwr 2 Alarm PKP
0xAEC2		Dir Pwr 2 Alarm OP	Directional Pwr 2 Alarm OP
0xAF01		2nd Hrmc Alarm PKP	2nd Harmonic Alarm PKP
0xAF02		2nd Hrmc Alarm OP	2nd Harmonic Alarm OP
0xAF04		2nd Hrmc Alarm DPO	2nd Harmonic Alarm DPO
0xAFC1		Brkn Cond Alrm PKP	Broken Cond Alarm PKP
0xAFC2		Brkn Cond Alarm OP	Broken Cond Alarm OP
0xAFC4		Brkn Cond Alrm DPO	Broken Cond Alarm DPO
0xB881		CTFail Alrm PKP	CT Fail Alarm PKP
0xB882		CTFail Alrm OP	CT Fail Alarm OP
0xB884		CTFail Alrm DPO	CT Fail Alarm DPO
0xBE02		PhDir RevAlm OP	Ph Directional Reverse Alarm OP
0xBE04		PhDir RevAlm DPO	Ph Directional Reverse Alarm DPO
0xBE0A		PhADir RevAlm OP	Ph A Directional Reverse Alarm OP
0xBE0C		PhADir RevAlm DPO	Ph A Directional Reverse Alarm DPO
0xBE12		PhBDir RevAlm OP	Ph B Directional Reverse Alarm OP
0xBE14		PhBDir RevAlm DPO	Ph B Directional Reverse Alarm DPO
0xBE22		PhCDir RevAlm OP	Ph C Directional Reverse Alarm OP
0xBE24		PhCDir RevAlm DPO	Ph C Directional Reverse Alarm DPO
0xBE42		PhDir UndAlm OP	Ph Directional Und Alarm OP
0xBE44		PhDir UndAlm DPO	Ph Directional Und Alarm DPO
0xBE4A		PhADir UndAlm OP	Ph A Directional Und Alarm OP
0xBE4C		PhADir UndAlm DPO	Ph A Directional Und Alarm DPO
0xBE52		PhBDir UndAlm OP	Ph B Directional Und Alarm OP
0xBE54		PhBDir UndAlm DPO	Ph B Directional Und Alarm DPO
0xBE62		PhCDir UndAlm OP	Ph C Directional Und Alarm OP
0xBE64		PhCDir UndAlm DPO	Ph C Directional Und Alarm DPO
0xBE82		GndDir UndAlm OP	Ground Directional Und Alarm OP
0xBE84		GndDir UndAlm DPO	Ground Directional Und Alarm DPO
0xBEC2		NtrlDir UndAlm OP	Neutral Directional Und Alarm OP
0xBEC4		NtrlDir UndAlm DPO	Neutral Directional Und Alarm DPO
0xBF01		WGF 1 Alarm PKP	Wattmetric Gnd Fault 1 Alarm PKP
0xBF02		WGF 1 Alarm OP	Wattmetric Gnd Fault 1 Alarm OP
0xBF04		WGF 1 Alarm DPO	Wattmetric Gnd Fault 1 Alarm DPO
0xBF41		WGF 2 Alarm PKP	Wattmetric Gnd Fault 2 Alarm PKP
0xBF42		WGF 2 Alarm OP	Wattmetric Gnd Fault 2 Alarm OP
0xBF44		WGF 2 Alarm DPO	Wattmetric Gnd Fault 2 Alarm DPO
0xC000		Control	Control
0xC302		Sync Operation	Synchrocheck Operation
0xC342		Sync Close OP	Synchrocheck Close OP

Code	Type	Definition	Long Definition
0xC382		Sync Condition	Synchrocheck Condition
0xCE81		Dir Pwr 1 PKP	Directional Pwr 1 PKP
0xCE82		Dir Pwr 1 OP	Directional Pwr 1 OP
0xCEC1		Dir Pwr 2 PKP	Directional Pwr 2 PKP
0xCEC2		Dir Pwr 2 OP	Directional Pwr 2 OP
0xCF01		2nd Hrmc PKP	2nd Harmonic PKP
0xCF02		2nd Hrmc OP	2nd Harmonic OP
0xCF04		2nd Hrmc DPO	2nd Harmonic DPO
0xCFC1		Brkn Cond PKP	Broken Cond PKP
0xCFC2		Brkn Cond OP	Broken Cond OP
0xCFC4		Brkn Cond DPO	Broken Cond DPO
0xD881		CTFail PKP	CT Fail PKP
0xD882		CTFail OP	CT Fail OP
0xD884		CTFail DPO	CT Fail DPO
0xDE02		PhDir Rev OP	Ph Directional Reverse OP
0xDE04		PhDir Rev DPO	Ph Directional Reverse DPO
0xDE0A		PhADir Rev OP	Ph A Directional Reverse OP
0xDE0C		PhADir Rev DPO	Ph A Directional Reverse DPO
0xDE12		PhBDir Rev OP	Ph B Directional Reverse OP
0xDE14		PhBDir Rev DPO	Ph B Directional Reverse DPO
0xDE22		PhCDir Rev OP	Ph C Directional Reverse OP
0xDE24		PhCDir Rev DPO	Ph C Directional Reverse DPO
0xDE42		PhDir Und OP	Ph Directional Und OP
0xDE44		PhDir Und DPO	Ph Directional Und DPO
0xDE4A		PhADir Und OP	Ph A Directional Und OP
0xDE4C		PhADir Und DPO	Ph A Directional Und DPO
0xDE52		PhBDir Und OP	Ph B Directional Und OP
0xDE54		PhBDir Und DPO	Ph B Directional Und DPO
0xDE62		PhCDir Und OP	Ph C Directional Und OP
0xDE64		PhCDir Und DPO	Ph C Directional Und DPO
0xDE82		GndDir Und OP	Ground Directional Und OP
0xDE84		GndDir Und DPO	Ground Directional Und DPO
0xDEC2		NtrlDir Und OP	Neutral Directional Und OP
0xDEC4		NtrlDir Und DPO	Neutral Directional Und DPO
0xDF01		WGF 1 PKP	Wattmetric Gnd Fault 1 PKP
0xDF02		WGF 1 OP	Wattmetric Gnd Fault 1 OP
0xDF04		WGF 1 DPO	Wattmetric Gnd Fault 1 DPO
0xDF41		WGF 2 PKP	Wattmetric Gnd Fault 2 PKP
0xDF42		WGF 2 OP	Wattmetric Gnd Fault 2 OP
0xDF44		WGF 2 DPO	Wattmetric Gnd Fault 2 DPO
0xEE81		Dir Pwr 1 Blk PKP	Directional Pwr 1 Block PKP
0xEE82		Dir Pwr 1 Block	Directional Pwr 1 Block
0xEEC1		Dir Pwr 2 Blk PKP	Directional Pwr 2 Block PKP
0xEEC2		Dir Pwr 2 Block	Directional Pwr 2 Block
0xEFC1		Brkn Cond Blk PKP	Broken Cond Block PKP
0xEFC2		Brkn Cond Block	Broken Cond Block
0xF881		CTFail Block PKP	CT Fail Block PKP

Code	Type	Definition	Long Definition
0xF882		CTFail Block	CT Fail Block
0xFE02		PhDir Block	Ph Directional Block
0xFE0A		PhADir Block	PhA Directional Block
0xFE12		PhBDir Block	PhB Directional Block
0xFE22		PhCDir Block	PhC Directional Block
0xFF01		WGF 1 BlockPKP	Wattmetric Gnd Fault 1 Block PKP
0xFF02		WGF 1 Block	Wattmetric Gnd Fault 1 Block
0xFF41		WGF 2 BlockPKP	Wattmetric Gnd Fault 2 Block PKP
0xFF42		WGF 2 Block	Wattmetric Gnd Fault 2 Block
FC143	unsigned 16 bits	Drive Status	
0		Drive Unavailable	Drive Unavailable
1		Available Auto	Available Auto
2		Available Manual	Available Manual
3		Available	Available
4		Running	Running
5		ESD Trip / Stop	ESD Trip / Stop
FC144	unsigned 32 bits	LED Status - 350	
0x00000002		In Service Green	In Service Green
0x00000004		Trouble Red	Trouble Red
0x00000008		Trouble Green	Trouble Green
0x00000020		SP Group 1 Green	SP Group 1 Green
0x00000080		SP Group 2 Green	SP Group 2 Green
0x00000040		Trip Red	Trip Red
0x00000400		Alarm Red	Alarm Red
0x00000800		Alarm Green	Alarm Green
0x00001000		Pickup Red	Pickup Red
0x00002000		Pickup Green	Pickup Green
0x00004000		Maintenance Red	Maintenance Red
0x00008000		Maintenance Green	Maintenance Green
0x00010000		BKR Open Red	BKR Open Red
0x00020000		BKR Open Green	BKR Open Green
0x00040000		BKR Closed Red	BKR Closed Red
0x00080000		BKR Closed Green	BKR Closed Green
FC144A	unsigned 32 bits	LED Status - 339	
FC144B	unsigned 32 bits	LED Status - 345	
FC145	unsigned 16 bits	Element Status 1	
FC146	unsigned 16 bits	Element Status 2	
FC147	unsigned 16 bits	LED Intensity	
0		Level 1	Level 1
12		Level 5	Level 5
15		Level 6	Level 6
3		Level 2	Level 2
6		Level 3	Level 3
9		Level 4	Level 4
FC148	unsigned 16 bits	Trigger Mode	
0		Overwrite	Overwrite
1		Protected	Protected

Code	Type	Definition	Long Definition
FC149	unsigned 16 bits	OR / AND Selection	
0		OR	OR
1		AND	AND
2		NOR	NOR
3		NAND	NAND
4		XOR	XOR
5		XNOR	XNOR
FC149A	unsigned 16 bits	AND / LATCH Selection	
0		AND	AND
1		LATCH	LATCH
FC150	unsigned 32 bits	IP Address	
FC155	unsigned 16 bits	Profibus Baud Rate	
0x0001		9600	9600
0x0002		19200	19200
0x0004		31250	31250
0x0008		45450	45450
0x0010		93750	93750
0x0020		187500	187500
0x0040		500000	500000
0x0080		1500000	1500000
0x07E2		Auto Detect	Auto Detect
FC156	unsigned 16 bits	DeviceNet Baud Rate	
0		125 kbps	125 kbps
1		250 kbps	250 kbps
2		500 kbps	500 kbps
FC157	unsigned 16 bits	LED Colour	
0		Off	Off
1		Red	Red
2		Green	Green
3		Orange	Orange
FC157A	unsigned 16 bits	LED Colour (Subset A)	
0		None	None
1		Red	Red
2		Green	Green
FC160	unsigned 16 bits	Auto/Manual Mode	
0		Auto	Auto
1		Manual	Manual
FC167	unsigned 32 bits	Contact/Virtual Input/Output Status	
FC168	unsigned 32 bits	Contact/Virtual Input/Output Status	
FC169	unsigned 16 bits	Month	
0		Not Set	Not Set
1		January	January
2		February	February
3		March	March
4		April	April
5		May	May
6		June	June

Code	Type	Definition	Long Definition
7		July	July
8		August	August
9		September	September
10		October	October
11		November	November
12		December	December
FC170	unsigned 16 bits	Count of Week	
0		Not Set	Not Set
1		1st	1st
2		2nd	2nd
3		3rd	3rd
4		4th	4th
5		Last	Last
FC171	unsigned 16 bits	Weekdays	
0		Not Set	Not Set
1		SUN	SUN
2		MON	MON
3		TUE	TUE
4		WED	WED
5		THU	THU
6		FRI	FRI
7		SAT	SAT
FC172	unsigned 16 bits	Auto/Manual Control Stop Mode	
0		Always Enabled	Always Enabled
1		Follow Ctrl Mode	Follow Control Mode
FC173	unsigned 16 bits	Wire Selection	
0		2W	2W
1		3W	3W
FC174	unsigned 16 bits	Source Stop Action	
0		Stop	Stop
1		Trip	Trip
FC175	unsigned 16 bits	Test Auto/Manual Mode	
0		On	On
1		Off	Off
2		Unaffected	Unaffected
FC176	unsigned 16 bits	Auxiliary VT Connection	
0		Vab VT	Vab VT
1		Vbc VT	Vbc VT
2		Vca VT	Vca VT
3		Van VT	Van VT
4		Vbn VT	Vbn VT
5		Vcn VT	Vcn VT
6		Vn	Vn
FC177	unsigned 16 bits	LED Color Invert	
0		Green/Red	Green/Red
1		Red/Green	Red/Green
FC178	unsigned 16 bits	Motor Status	

Code	Type	Definition	Long Definition
FC179	unsigned 32 bits	Alarm Status 1	
0x00000001		Any Alarm	Any Alarm
0x00000002		Therm Level Alarm	Thermal Level Alarm
0x00000004		Gnd Fault Alarm	Gnd Fault Alarm
0x00000008		Acceleration Alarm	Acceleration Alarm
0x00000020		Under Pwr Alarm	Under Power Alarm
0x00000040		Reserved	Reserved
0x00000080		Reserved	Reserved
0x00000100		Mech Jam Alarm	Mechanical Jam Alarm
0x00000200		Under Curr Alarm	Undercurrent Alarm
0x00000400		Unbalance Alarm	Unbalance Alarm
0x00000800		RTD 1 Alarm	RTD 1 Alarm
0x00001000		RTD 2 Alarm	RTD 2 Alarm
0x00002000		RTD 3 Alarm	RTD 3 Alarm
0x00004000		RTD 4 Alarm	RTD 4 Alarm
0x00008000		RTD 5 Alarm	RTD 5 Alarm
0x00010000		RTD 6 Alarm	RTD 6 Alarm
0x00020000		RTD Trouble Alarm	RTD Trouble Alarm
0x00040000		Not Configured	Not Configured
0x00080000		LE 1 Alarm	Logic Element 1 Alarm
0x00100000		LE 2 Alarm	Logic Element 2 Alarm
0x00200000		LE 3 Alarm	Logic Element 3 Alarm
0x00400000		LE 4 Alarm	Logic Element 4 Alarm
0x00800000		LE 5 Alarm	Logic Element 5 Alarm
0x01000000		LE 6 Alarm	Logic Element 6 Alarm
0x02000000		LE 7 Alarm	Logic Element 7 Alarm
0x04000000		LE 8 Alarm	Logic Element 8 Alarm
0x08000000		RTD 7 Alarm	RTD 7 Alarm
0x10000000		RTD 8 Alarm	RTD 8 Alarm
0x20000000		RTD 9 Alarm	RTD 9 Alarm
0x40000000		RTD 10 Alarm	RTD 10 Alarm
0x80000000		RTD 11 Alarm	RTD 11 Alarm
FC180	unsigned 32 bits	Alarm Status 2	
0x00000001		RTD 12 Alarm	RTD 12 Alarm
0x00000002		Reserved	Reserved
0x00000004		Reserved	Reserved
0x00000008		Reserved	Reserved
0x00000010		Reserved	Reserved
0x00000020		Reserved	Reserved
0x00000040		Motor Run Hrs	Motor Running Hours
0x00000080		I^2 Counter Alarm	I^2 Counter Alarm
0x00000100		Welded Contactor	Welded Contactor
0x00000800		Reserved	Reserved
0x00001000		Load Increase Alrm	Load Increase Alarm
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		High Ambient Temp	High Ambient Temperature Alarm

Code	Type	Definition	Long Definition
0x00010000		Low Ambient Temp	Low Ambient Temperature Alarm
0x00020000		Self Test Alarm	Self Test Alarm
0x00040000		Comm Fail Alarm	Comm Fail Alarm
0x00080000		BKRTrip Cntr Alarm	Breaker Trip Counter Alarm
0x00100000		Rly1 74 Alarm	Relay 1 74 Alarm
0x00200000		Rly2 74 Alarm	Relay 2 74 Alarm
0x00400000		BKR Fail Alarm	Breaker Fail Alarm
0x00800000		BKR Status Failure	Breaker Status Failure
0x01000000		Reserved	Reserved
0x02000000		CLP Alarm	Cold Load PKP Alarm
0x04000000		Reserved	Reserved
0x08000000		BKR2 Status Fail	Breaker 2 Status Failure
0x10000000		Reserved	Reserved
0x20000000		BKR2 Fail Alrm	Breaker 2 Failure Alarm
0x40000000		FuseFail Alarm	Fuse Fail Alarm
0x80000000		Ph Revrsl Alarm	Phase Reversal Alarm
FC181	unsigned 32 bits	Alarm Status 3	
0x00000001		Ph IOC1 Alarm	Phase IOC 1 Alarm
0x00000002		Ntrl IOC1 Alarm	Neutral IOC 1 Alarm
0x00000004		Gnd IOC1 Alarm	Ground IOC 1 Alarm
0x00000008		Ph TOC1 Alarm	Phase TOC 1 Alarm
0x00000010		Ntrl TOC1 Alarm	Neutral TOC1 Alarm
0x00000020		Gnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0x00000040		Ph IOC2 Alarm	Phase IOC 2 Alarm
0x00000080		Ntrl IOC2 Alarm	Neutral IOC 2 Alarm
0x00000100		Gnd IOC2 Alarm	Ground IOC 2 Alarm
0x00000200		Ph TOC2 Alrm	Phase TOC 2 Alarm
0x00000400		Ntrl TOC2 Alarm	Neutral TOC 2 Alarm
0x00000800		Gnd TOC2 Alrm	Sensitive Ground TOC 2 Alarm
0x00001000		SGnd TOC1 Alarm	Sensitive Ground TOC 1 Alarm
0x00002000		Ntrl Dir Rev Alm	Neutral Directional Alarm
0x00004000		Gnd Dir Alarm	Ground Directional Alarm
0x00008000		NSeq OV Alarm	Negative Sequence OV Alarm
0x00010000		Ntrl OV Alarm	Ntrl OV Alarm
0x00020000		Phase OV Alarm	Phase OV Alarm
0x00040000		Phase UV Alarm	Phase UV Alarm
0x00080000		Aux OV Alarm	Auxiliary OV Alarm
0x00100000		Aux UV Alarm	Auxiliary UV Alarm
0x00200000		UnderFreq1 Alarm	Underfrequency 1 Alarm
0x00400000		UnderFreq2 Alarm	Underfrequency 2 Alarm
0x00800000		OverFreq1 Alrm	Overfrequency 1 Alarm
0x01000000		OverFreq2 Alrm	Overfrequency 2 Alarm
0x02000000		SGnd IOC1 Alarm	Sensitive Ground IOC 1 Alarm
0x04000000		SGnd IOC2 Alarm	Sensitive Ground IOC 2 Alarm
0x08000000		Nseq IOC Alarm	Negative Sequence IOC Alarm
0x10000000		Diff 87P Alarm	Diff 87P Alarm
0x20000000		Diff 87REF 1 Alarm	Diff 87REF 1 Alarm

Code	Type	Definition	Long Definition
0x40000000		Diff 87REF 2 Alarm	Diff 87REF 2 Alarm
0x80000000		Inst 50/87P Alarm	Inst 50/87P Alarm
FC182	unsigned 32 bits	Alarm Status 4	
0x00000001		NSeq TOC1 Alarm	Negative Sequence TOC 1 Alarm
0x00000002		NSeq TOC2 Alarm	Negative Sequence TOC 2 Alarm
0x00000004		Ph OV2 Alarm	Phase OV 2 Alarm
0x00000008		Ph UV2 Alarm	Phase UV 2 Alarm
0x00000010		Short Circuit Alrm	Short Circuit Alarm
0x00000020		SPD2 S/C Alarm	SPD2 S/C Alarm
0x00000040		SPD2 U/C Alarm	SPD2 U/C Alarm
0x00000080		SGnd TOC2 Alarm	Sensitive Ground TOC 2 Alarm
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		LE 9 Alarm	Logic Element 9 Alarm
0x00020000		LE 10 Alarm	Logic Element 10 Alarm
0x00040000		LE 11 Alarm	Logic Element 11 Alarm
0x00080000		LE 12 Alarm	Logic Element 12 Alarm
0x00100000		LE 13 Alarm	Logic Element 13 Alarm
0x00200000		LE 14 Alarm	Logic Element 14 Alarm
0x00400000		LE 15 Alarm	Logic Element 15 Alarm
0x00800000		LE 16 Alarm	Logic Element 16 Alarm
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		Reserved	Reserved
0x40000000		Reserved	Reserved
0x80000000		Reserved	Reserved
FC183	unsigned 32 bits	Trip Status 1	
0x00000001		Any Trip	Any Trip
0x00000002		Therm O/L Trip	Thermal O/L Trip
0x00000004		Gnd Fault Trip	Gnd Fault Trip
0x00000008		Acceleration Trip	Acceleration Trip
0x00000020		Under Pwr Trip	Under Power Trip
0x00000040		Single Phase Trip	Single Phase Trip
0x00000080		Reserved	Reserved
0x00000100		Mech Jam Trip	Mechanical Jam Trip
0x00000200		Under Curr Trip	Undercurrent Trip
0x00000400		Unbalance Trip	Unbalance Trip
0x00000800		RTD 1 Trip	RTD 1 Trip

Code	Type	Definition	Long Definition
0x00001000		RTD 2 Trip	RTD 2 Trip
0x00002000		RTD 3 Trip	RTD 3 Trip
0x00004000		RTD 4 Trip	RTD 4 Trip
0x00008000		RTD 5 Trip	RTD 5 Trip
0x00010000		RTD 6 Trip	RTD 6 Trip
0x00020000		Comm Fail Trip	Comm Fail Trip
0x00040000		Relay Not Config.	Relay Not Configured
0x00080000		LE 1 Trip	Logic Element 1 Trip
0x00100000		LE 2 Trip	Logic Element 2 Trip
0x00200000		LE 3 Trip	Logic Element 3 Trip
0x00400000		LE 4 Trip	Logic Element 4 Trip
0x00800000		LE 5 Trip	Logic Element 5 Trip
0x01000000		LE 6 Trip	Logic Element 6 Trip
0x02000000		LE 7 Trip	Logic Element 7 Trip
0x04000000		LE 8 Trip	Logic Element 8 Trip
0x08000000		RTD 7 Trip	RTD 7 Trip
0x10000000		RTD 8 Trip	RTD 8 Trip
0x20000000		RTD 9 Trip	RTD 9 Trip
0x40000000		RTD 10 Trip	RTD 10 Trip
0x80000000		RTD 11 Trip	RTD 11 Trip
FC184	unsigned 32 bits	Trip Status 2	
0x00000001		RTD 12 Trip	RTD 12 Trip
0x00000002		Reserved	Reserved
0x00000004		Reserved	Reserved
0x00000008		Reserved	Reserved
0x00000010		Reserved	Reserved
0x00000020		Reserved	Reserved
0x00000040		Reserved	Internal Temperature Trip
0x00000080		Self Test Trip	Self Test Trip
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		Reserved	Reserved
0x00020000		Reserved	Reserved
0x00040000		Reserved	Reserved
0x00080000		BKRTrip Cntr Trip	Breaker Trip Counter Trip
0x00100000		Rly1 74 Trip	Relay 1 74 Trip
0x00200000		Rly2 74 Trip	Relay 2 74 Trip
0x00400000		BKR Failure	Breaker Failure
0x00800000		Reserved	Reserved
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved

Code	Type	Definition	Long Definition
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		BKR 2 Failure	Breaker 2 Failure
0x40000000		FuseFail Trip	FuseFail Trip
0x80000000		Ph Revrsl Trip	Phase Reversal Trip
FC185	unsigned 32 bits	Trip Status 3	
0x00000001		Ph IOC1 Trip	Phase IOC 1 Trip
0x00000002		Ntrl IOC1 Trip	Neutral IOC 1 Trip
0x00000004		Gnd IOC1 Trip	Ground IOC 1 Trip
0x00000008		Ph TOC1 Trip	Phase TOC 1 Trip
0x00000010		Ntrl TOC1 Trip	Neutral TOC1 Trip
0x00000020		Gnd TOC1 Trip	Sensitive Ground TOC 1 Trip
0x00000040		Ph IOC2 Trip	Phase IOC 2 Trip
0x00000080		Ntrl IOC2 Trip	Neutral IOC 2 Trip
0x00000100		Gnd IOC2 Trip	Ground IOC 2 Trip
0x00000200		Ph TOC2 Trip	Phase TOC 2 Trip
0x00000400		Ntrl TOC2 Trip	Neutral TOC 2 Trip
0x00000800		Gnd TOC2 Trip	Sensitive Ground TOC 2 Trip
0x00001000		SGnd TOC1 Trip	Sensitive Ground TOC 1 Trip
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		NSeq OV Trip	Negative Sequence OV Trip
0x00010000		Ntrl OV Trip	Ntrl OV Trip
0x00020000		Phase OV Trip	Phase OV Trip
0x00040000		Phase UV Trip	Phase UV Trip
0x00080000		Aux OV Trip	Auxiliary OV Trip
0x00100000		Aux UV Trip	Auxiliary UV Trip
0x00200000		UnderFreq1 Trip	Underfrequency 1 Trip
0x00400000		UnderFreq2 Trip	Underfrequency 2 Trip
0x00800000		OVERFREQ1 TRIP	Overfrequency 1 Trip
0x01000000		OVERFREQ2 TRIP	Overfrequency 2 Trip
0x02000000		SGnd IOC1 Trip	Sensitive Ground IOC 1 Trip
0x04000000		SGnd IOC2 Trip	Sensitive Ground IOC 2 Trip
0x08000000		Nseq IOC Trip	Negative Sequence IOC Trip
0x10000000		Diff 87P Trip	Diff 87P Trip
0x20000000		Diff 87REF 1 Trip	Diff 87REF 1 Trip
0x40000000		Diff 87REF 2 Trip	Diff 87REF 2 Trip
0x80000000		Inst 50/87P Trip	Inst 50/87P Trip
FC186	unsigned 32 bits	Trip Status 4	
0x00000001		NSeq TOC1 Trip	Negative Sequence TOC 1 Trip
0x00000002		NSeq TOC2 Trip	Negative Sequence TOC 2 Trip
0x00000004		Phase OV 2 Trip	Phase OV 2 Trip
0x00000008		Phase UV 2 Trip	Phase UV 2 Trip
0x00000010		Short Circuit Trip	Short Circuit Trip
0x00000020		SPD2 S/C Trip	SPD2 S/C Trip
0x00000040		SPD2 U/C Trip	SPD2 U/C Trip

Code	Type	Definition	Long Definition
0x00000080		SGnd TOC2 Trip	Sensitive Ground TOC 2 Trip
0x00000100		Reserved	Reserved
0x00000200		Reserved	Reserved
0x00000400		Reserved	Reserved
0x00000800		Reserved	Reserved
0x00001000		Reserved	Reserved
0x00002000		Reserved	Reserved
0x00004000		Reserved	Reserved
0x00008000		Reserved	Reserved
0x00010000		LE 9 Trip	Logic Element 9 Trip
0x00020000		LE 10 Trip	Logic Element 10 Trip
0x00040000		LE 11 Trip	Logic Element 11 Trip
0x00080000		LE 12 Trip	Logic Element 12 Trip
0x00100000		LE 13 Trip	Logic Element 13 Trip
0x00200000		LE 14 Trip	Logic Element 14 Trip
0x00400000		LE 15 Trip	Logic Element 15 Trip
0x00800000		LE 16 Trip	Logic Element 16 Trip
0x01000000		Reserved	Reserved
0x02000000		Reserved	Reserved
0x04000000		Reserved	Reserved
0x08000000		Reserved	Reserved
0x10000000		Reserved	Reserved
0x20000000		Reserved	Reserved
0x40000000		Reserved	Reserved
0x80000000		Reserved	Reserved
FC187	unsigned 32 bits	Message Status 1	
FC188	unsigned 32 bits	Message Status 2	
FC189	unsigned 32 bits	Message Status 3	
FC190	unsigned 32 bits	Message Status 4	
FC191	unsigned 32 bits	Ctrl Element Status 1	
FC192	unsigned 32 bits	Ctrl Element Status 2	
FC193	unsigned 32 bits	Ctrl Status 3	
FC194	unsigned 32 bits	Ctrl Status 4	
FC195	unsigned 16 bits	Command Status	
0		Normal	Normal
1		Gain Forced to X1	Gain Forced to X1
FC196	unsigned 16 bits	Digital Alarm	
0		Active Low	Active Low
1		Active High	Active High
FC197	unsigned 16 bits	Breaker Counter Alarm	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Trip	Trip
FC198	unsigned 16 bits	Output Relay Operation	
FC199	unsigned 16 bits	Output Relay Type	
0		Self-Reset	Self-Reset

Code	Type	Definition	Long Definition
1		Latched	Latched
FC200	unsigned 32 bits	Block Status 1	
FC201	unsigned 32 bits	Block Status 2	
FC202	unsigned 32 bits	Block Status 3	
FC203	unsigned 32 bits	Block Status 4	
FC204	unsigned 16 bits	Contact Input FlexLogic Bit Field Values	
0x0000		Disabled	Disabled
0x0040		Contact Input 1	Contact Input 1
0x0041		Contact Input 2	Contact Input 2
0x0042		Contact Input 3	Contact Input 3
0x0043		Contact Input 4	Contact Input 4
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204A	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset A)	
0x0000		Disabled	Disabled
0x0040		Contact Input 1	Contact Input 1
FC204B	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset B)	
0x0000		Disabled	Disabled
0x0042		Contact Input 3	Contact Input 3
0x0043		Contact Input 4	Contact Input 4
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9
0x0049		Contact Input 10	Contact Input 10
FC204C	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset C)	
0x0000		Disabled	Disabled
0x0041		Contact Input 2	Contact Input 2
FC204D	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset D)	
0x0000		Disabled	Disabled
0x0042		Contact Input 3	W2 Breaker 52a (CI#3)
FC204E	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset E)	
0x0000		Disabled	Disabled
0x0044		Contact Input 5	Contact Input 5
0x0045		Contact Input 6	Contact Input 6
0x0046		Contact Input 7	Contact Input 7
0x0047		Contact Input 8	Contact Input 8
0x0048		Contact Input 9	Contact Input 9

Code	Type	Definition	Long Definition
0x0049		Contact Input 10	Contact Input 10
FC204F	unsigned 16 bits	Contact Input FlexLogic Bit Field Values (Subset F)	
0x0000		Disabled	Disabled
0x0043		Contact Input 4	W2 Breaker 52b (CI#4)
FC205	unsigned 16 bits	Element Type 1	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Trip	Trip
4		Control	Control
FC206	unsigned 16 bits	Element Type 2	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
FC207	unsigned 16 bits	Element Type 3	
0		Disabled	Disabled
1		Alarm	Alarm
2		Latched Alarm	Latched Alarm
3		Control	Control
FC208	unsigned 16 bits	Relay Operation (Failsafe	
0		Failsafe	Failsafe
1		Non-Failsafe	Non-Failsafe
FC212	unsigned 16 bits	LCD Test Paint Color	
0		None	None
1		Red	Red
2		Green	Green
3		Blue	Blue
FC214	unsigned 16 bits	MAC Address	
FC215	unsigned 32 bits	GOOSE Receive Status	
FC216	unsigned 16 bits	Received GOOSE Message Formatting	
0x0000		{	{
0x0001		}	}
0x0002		Bool	Bool
0x0003		Byte	Byte
0x0004		Ubyte	Ubyte
0x0005		Short	Short
0x0006		Ushort	Ushort
0x0007		Long	Long
0x0008		Ulong	Ulong
0x0009		Int64	Int64
0x000A		Uint64	Uint64
0x000B		Float	Float
0x000C		Double	Double
0x000D		Btime4	Btime4
0x000E		Btime6	Btime6
0x000F		Utctime	Utctime

Code	Type	Definition	Long Definition
0x0010		Bcd	Bcd
0x0011		Vstring	Vstring
0x0012		Ostring	Ostring
0x0013		Ovstring	Ovstring
0x0014		Bstring	Bstring
0x0015		Bvstring	Bvstring
0x00FF		Row	Row
FC217	unsigned 16 bits	Remote Input Item Source	
FC218	unsigned 16 bits	Remote Input Item Mask	
FC219	unsigned 32 bits	GOOSE Source	
0x0000		Disabled	Disabled
0x0001		1	1
0x0002		2	2
0x0004		3	3
0x0008		4	4
0x0010		5	5
0x0020		6	6
0x0040		7	7
0x0080		8	8
FC220	unsigned 16 bits	Remote Input Default State	
0		On	On
1		Off	Off
2		Latest/On	Latest/On
3		Latest/Off	Latest/Off
FC221	unsigned 16 bits	IEC103 ASDU Identification Type	
3		3	3
9		9	9
FC222	unsigned 16 bits	GOOSE Type	
0		Simplified	Simplified
1		Advanced	Advanced
FC225	unsigned 16 bits	Security Audit Trail Change Method	
0		Unknown	Unknown
1		USB	USB
2		COM1	COM1
3		Ethernet	Ethernet
4		KeyPad	KeyPad
FC226	unsigned 16 bits	Security Audit Trail Event Type	
0		Unknown	Unknown
1		Setpoint Change	Setpoint Change
2		Firmware File	Firmware File
3		Factory Reload	Factory Reload
4		Setpoint File	Setpoint File
FC230	unsigned 16 bits	Ethernet Connection Type	
0		Copper	Copper
1		Fiber	Fiber
FC235	unsigned 16 bits	Switching Device	
0		BKR	Breaker

Code	Type	Definition	Long Definition
1		Contactor	Contactor
FC236	unsigned 16 bits	Thermal O/L Curve	
0		Standard	Standard
1		Flex Curve	Flex Curve
2		Flex Curve B	Flex Curve B
FC240	unsigned 16 bits	Self Test Error	
0		None	None
1		Order Code Error	Order Code Error
2		RTC Error	RTC Error
4		Cal Error	Cal Error
8		EEPROM Error	EEPROM Error
16		System Health	System Health
17		PSU Serial# Blank	PSU Serial# Blank
18		INP Serial# Blank	INP Serial# Blank
19		ANLG Serial# Blank	ANLG Serial# Blank
20		MAG Serial# Blank	MAG Serial# Blank
21		COMM Serial# Blank	COMM Serial# Blank
22		CCP Serial# Blank	CCP Serial# Blank
23		CPU Serial# Blank	CPU Serial# Blank
24		PSU Serial# Inval	PSU Serial# Invalid
25		INP Serial# Inval	INP Serial# Invalid
26		ANLG Serial# Inval	ANLG Serial# Invalid
27		MAG Serial# Inval	MAG Serial# Invalid
28		COMM Serial# Inval	COMM Serial# Invalid
29		CCP Serial# Inval	CCP Serial# Invalid
30		CPU Serial# Inval	CPU Serial# Invalid
32		3.3V Error	3.3V Error
64		Analog V Error	Analog V Error
128		DPRAM Checksum	DPRAM Checksum
256		DPRAM Heart Beat	DPRAM Heart Beat
512		COMM Error	COMM Error
513		DAUGHTER Error	DAUGHTER Error
514		COMM HW Rev Error	COMM HW Revision Error
1024		Link Error	Link Error
2048		Traffic Error	Traffic Error
4096		Internal Temp	Internal Temp
FC401	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC402	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC403	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		None	None
FC404	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		Off	Off

Code	Type	Definition	Long Definition
1		On	On
FC405	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		100 Ohm Pt	100 Ohm Platinum
1		120 Ohm Ni	120 Ohm Nickel
2		100 Ohm Ni	100 Ohm Nickel
FC406	unsigned 16 bits	PC Program Reserved for FlexLogic Bit (Do Not Use)	
0		Off	Off
1		On	On
FC407	unsigned 16 bits	PC Program Reserved for Output Relay Bits (Do Not Use)	
0		Disabled	Disabled
3		3	3
4		4	4
5		5	5
6		6	6
7		7	7
FC408	unsigned 16 bits	Inrush Function	
FC409	unsigned 16 bits	Inhibit Mode	
0		Per Phase	Per Phase
1		2-out-of-3	2-out-of-3
2		Average	Average
FC410	unsigned 16 bits	Overexcitation Function	
FC411	unsigned 16 bits	Internal Compensation	
0		Internal(software)	Internal(software)
1		External(with CTs)	External(with CTs)
FC412	unsigned 16 bits	Winding Connection	
0		Wye	Wye
1		Delta	Delta
2		Zig-Zag	Zig-Zag
FC413	unsigned 16 bits	Grounding Connection	
0		Not Within zone	Not Within zone
1		Within zone	Within zone
FC415	unsigned 16 bits	SR345 CT Type	
0		1 A Secondary	1 A Secondary
1		5 A Secondary	5 A Secondary
FC418	unsigned 16 bits	CT Inputs	
FC419	unsigned 16 bits	XFMR Type	
FC420	unsigned 16 bits	Modbus File Transfer State	
0		Idle	Idle
1		Write	Write
2		Read	Read
3		File Error	File Error
4		File OK	File OK
5		Start	Start
6		Ready	Ready
7		File Over	File Over

Code	Type	Definition	Long Definition
FC421	unsigned 16 bits	Redundancy type	
0		None	None
1		LLA	LLA
2		PRP	PRP
3		HSR	HSR
4		DAISY CHAIN	DAISY CHAIN
FC422	unsigned 16 bits	Redundancy Port	
0		Internal(software)	Internal(software)
1		PTP	PTP
3		SNTP	SNTP
5		IRIGB	IRIGB
FC423	unsigned 16 bits	Redundancy State	
0		Disabled	Disabled
1		No Signal	No Signal
2		Calibrating	Calibrating
3		Synchronized	Synchronized
FC424	unsigned 16 bits	Dead Condition	
0		None	None
1		Dead Line-Dead Bus	Dead Line-Dead Bus
2		Live Line-Dead Bus	Live Line-Dead Bus
3		Dead Line-Live Bus	Dead Line-Live Bus
4		Any Line-Dead Bus	Any Line-Dead Bus
5		Dead Line-Any Bus	Dead Line-Any Bus
6		One Live-Othr Dead	One Live-Other Dead
7		Not Both Live	Not Both Live
FC425	unsigned 16 bits	Epoch type	
0		UTC since 1995	UTC since 1995
1		UTC since 1900	UTC since 1900
2		UTC since 1970	UTC since 1970
3		TAI since 1970	TAI since 1970
FC426	unsigned 16 bits	RSTP State	
0		Discarding	Discarding
1		Learning	Learning
2		Forwarding	Forwarding
FC427	unsigned 16 bits	WGF Curve Selection	
0		Inverse	Inverse
4		Definite Time	Definite Time
8		Flex Curve A	Flex Curve A
9		Flex Curve B	Flex Curve B
FC428	unsigned 16 bits	Fault Recorder Type	
0		TOC A	TOC A
1		TOC B	TOC B
2		TOC C	TOC C
FC429	unsigned 16 bits	Transient Sampling Rate	
0		4	4
1		8	8
2		16	16

Code	Type	Definition	Long Definition
3		32	32
FC430	unsigned 16 bits	Power Unit	
0		Kw	Kw
1		Mw	Mw
FC431	unsigned 16 bits	Demand Measurement Type	
0		Blk Interval	Blk Interval
1		Exponential	Exponential
2		Rolling Dmd	Rolling Dmd
FC432	unsigned 16 bits	Demand Time	
0		5 min	5 min
1		10 min	10 min
2		15 min	15 min
3		20 min	20 min
4		30 min	30 min
FC433	unsigned 16 bits	BKR Alarm Counter	
0		Detection	Detection
1		Monitoring	Monitoring
FC434	unsigned 16 bits	61850 NV Status	
0		Unknown	Unknown
1		Header Error	Header Error
2		Parse Error	Parse Error
3		Passed to Validated	Passed to Validated
4		Empty	Empty
FC435	unsigned 16 bits	Volts Per Herz Voltage Mode	
0		Phase-Gnd	Phase-Gnd
1		Phase-Phase	Phase-Phase
FC436	unsigned 16 bits	Volts Per Herz Curves	
4		Definite Time	Definite Time
8		Flex Curve A	Flex Curve A
9		Flex Curve B	Flex Curve B
16		Inverse A	Inverse A
17		Inverse B	Inverse B
18		Inverse C	Inverse C
None			

GE
Grid Solutions

3 Series Protective Relay Platform

Appendix A: IEC 61850 Implementation Details

MICS

This sections contains the Model Implementation Conformance Statement (MICS) for the IEC 61850 interface in 3 Series Family of protective relays.

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Version: 1.13

1 INTRODUCTION

This model implementation conformance statement is applicable for 3 Series Family, with firmware 2.30:

This MICS document specifies the modelling extensions compared to IEC 61850 edition 1. For the exact details on the standardized model please compare the ICD substation configuration file: SR350.icd, SR339.icd, SR345.icd, version 2.30.

- Clause 2 contains the list of implemented logical nodes.
- Clause 3 describes the new and extended logical nodes.
- Clause 4 describes the new and extended common data classes.

1.1 Logical Nodes List

The following is a list of logical nodes and number of instances that will be supported* within the 3 Series relays:

*Note: Depending on the relay order code, the number of LN may changer.

L: System Logical Nodes	Description	ANSI	350	339	345
LPHD 1	Physical device information	-	Yes	Yes	Yes
LLN0	Logical node zero	-	Yes	Yes	Yes
P:Logical Nodes for protection functions	**Description**	**ANSI**	**350**	**339**	**345**
phsPIOC	Instantaneous Overcurrent	50P	Yes(2)	-	Yes(2)
ndPIOC	Instantaneous Neutral Overcurrent	50N	Yes(2)	Yes(1)	Yes(2)
gndPIOC	Instantaneous Ground Overcurrent	50G	Yes(2)	-	Yes(2)
gndPIOC	Ground Fault	50G	-	Yes(1)	-
hsePIOC	Instantaneous Sensitive Ground Overcurrent	50SG	Yes(2)	-	Yes(2)
ngseqPIOC	Instantaneous Negative Sequence Overcurrent	50_2(46)	Yes(1)	-	Yes(2)
scPIOC	Short Circuit	50P	-	Yes(1)	-
phsPTOC	Time Phase Overcurrent	51P	Yes(1)	Yes(1)	Yes(2)
ndPTOC	Time Neutral Overcurrent	51N	Yes(1)	Yes(1)	Yes(2)
gndPTOC	Time Ground Overcurrent	51G	Yes(1)	-	Yes(2)
hsePTOC	Time Sensitive Ground Overcurrent	51SG	Yes(1)	-	Yes(2)
ngseqPTOC	Time Negative Sequence Overcurrent	51_2(46)	Yes(1)	-	Yes(2)
jamPTOC	Mechanical Jam	51R	-	Yes(1)	-
unbalPTOC	Current Unbalance	46	-	Yes(1)	-
accelPTOC	Acceleration	48	-	Yes(1)	-
ldincPTOC	Load Increase	-	-	Yes(1)	-
PTUC	Phase undecurrent	37	-	Yes(1)	-
PTOF	Overfrequency	81O	Yes(4)	Yes(2)	-
phsPTOV	Phase Overvoltage	59P	Yes(4)	Yes(2)	-
auxPTOV	Auxiliary Overvoltage	59X	Yes(1)	-	-
ndPTOV	Neutral Overvoltage	59N	Yes(4)	-	-
ngseqPTOV	Negative Sequence Overvoltage	59_2	Yes(2)	Yes(1)	-
phsrevPTOV	Phase Reversal Overvoltage	47	-	Yes(1)	-
phsPTUV	Phase Undervoltage	27P	Yes(4)	Yes(2)	-
auxPTUV	Auxiliary Undervoltage	27X	Yes(1)		-
psseqPTUV	Positive Sequence Undervoltage	27P_1	Yes(1)	Yes(2)	-
PTUF	Underfrequency	81U	Yes(4)	Yes(2)	-
PTTR	Thermal O/L	49	Yes(1)	Yes(1)	Yes(1)
PDOP	Directional Power	32	Yes(2)	Yes(2)	-
ndPDOP	Wattmetric Ground Fault	32N	Yes(2)	-	-
PMRI	Restart Inhibit	66	-	Yes(1)	-
PDUP	UnderPower	37P	-	Yes(1)	-
pcntPDIF	Percent Differential	87T	-	-	Yes(1)
instPDIF	Instantaneous Differential	87T-50	-	-	Yes(1)
rgfPDIF	Restricted Ground Fault	RGF	-	-	Yes(2)
PVPH	Volts per Hertz	24	Yes(1)	-	-

R:Logical Nodes for protection functions	**Description**	**ANSI**	**350**	**339**	**345**
ndRDIR	Neutral Directional Overcurrent	67N	Yes(1)	Yes(1)	-
gndRDIR	Ground Directional Overcurrent	67G	Yes(1)	-	-
hseRDIR	Sensitive Ground Directional Overcurrent	67SG	Yes(1)	-	-
phsRDIR	Phase Directional Overcurrent	67P	Yes(1)	-	-
RREC	Autorecloser	79	Yes(1)	-	-
rptRFLO	Fault Report	-	Yes(1)	Yes(1)	Yes(1)
RBRF	Breaker Failure	50BF	Yes(1)	Yes(1)	Yes(2)
RSYN	Synchrocheck	25	Yes(1)	-	-
G:Logical Nodes for generic functions	**Description**	**ANSI**	**350**	**339**	**345**
GGIO1	Remote Outputs	-	Yes	Yes	Yes
GGIO2	Contact Inputs/Outputs	-	Yes	Yes	Yes
GGIO3	Virtual Inputs	-	Yes	Yes	Yes
GGIO4	Logic Elements	-	Yes	Yes	Yes
GGIO5	Remote Inputs	-	Yes	Yes	Yes
rtdGGIO6	RTD's	-	-	Yes	Yes
GGIO7	Analog Operands	-	Yes	Yes	Yes
M:Logical Nodes for metering and measurement	**Description**	**ANSI**	**350**	**339**	**345**
MMXU1	Measurement	-	Yes	Yes	Yes
MMXU2	Measurement	-	-	-	Yes
MMXU3	Differential Current	-	-	-	Yes
MMXU4	Differential 2 Harmonic	-	-	-	Yes
MMXU5	Differential 5 Harmonic	-	-	-	Yes
MMXU6	Restraint Current	-	-	-	Yes
MSQI1	Sequence and Imbalance	-	Yes	Yes	Yes
MSQI2	Sequence and Imbalance	-	-	-	Yes
MMTR1	Metering (Energy)	-	Yes	Yes	-
X:Logical Nodes for switchgear	**Description**	**ANSI**	**350**	**339**	**345**
XCBR	Circuit Breaker	-	Yes	Yes	Yes(2)

2 LOGICAL NODES

The tables in this section use the following abbreviations:

- M: Data is mandatory in the IEC 61850-7-4.
- O: Data is optional in the IEC 61850-7-4 and is used in the device.
- C: Data is conditional in the IEC 61850-7-4 and is used in the device.
- E: Data is an extension to the IEC 61850-7-4.
- AC_CO_M: The attribute is mandatory, if the controllable status class supports control.
- AC_CO_O: The attribute is optional, if the controllable status class supports control
- AC_ST: The attribute is mandatory, if the controllable status class supports status information.
- AC_LN0_M: The attribute shall be present if the data NamPlt belongs to LLN0
- AC_DLD_M: Applies to lnNs in all CDC LPL only, shall be present if LN name space of this LN deviates from the LN name space referenced by ldNs of the logical device in which this LN is contained.
- AC_DLN_M: Applies to dataNs in all CDCs, dataNs shall be present if the name space of the DATA deviates from the name space defined in ldNs/lnNs
- AC_DLNDA_M: Applies to cdcNs and cdcName in all CDCs only, shall be present if CDC name space of this data deviates from the CDC name space referenced by either the dataNs of the data, the lnNs of the logical node in which the data is defined or ldNs of the logical device in which the data is contained.

2.1 System Logical Nodes. LN Group: L

2.1.1 LPHD (Physical device information)

LPHD class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
LPHD		Physical device information	M	
Data				
Common Logical Node Information				
PhyNam	DPL_0	Physical device name plate	M	
PhyHealth	INS_1	Physical device health	M	1: when normal. (No errors) 2: when minor error is present (e.g. "High ENET Traffic" alarm) 3: when major error is present. (e.g. "Error Code 1" or "RELAY NOT READY")
Proxy	SPS_1	Indicates if this LN is a proxy	M	
SetChang	SPS_2	Setting Change	O	
FWSuccess	SPS_2	Firmware Updated	O	

2.1.2 LLN0 (Logical node zero)

LLN0 class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
LLN0		Logical node zero		
Data				
Common Logical Node Information				

Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_0	Name plate	M	
GoCB (ACSI class GOOSE control block)				
GoCB	GoCB			

2.1.3 GoCB (GOOSE control block class definition)

GoCB class			
Attribute Name	**Attribute Type**	**FC**	**Notes**
GoEna	BOOLEAN	GO	Enable (TRUE), disable (FALSE)
GoID	VISIBLE STRING65	GO	
DatSet	Object Reference	GO	
ConfRev	INT32U	GO	
NdsCom	BOOLEAN	GO	
DstAddress	PHYCOMADDR	GO	

2.2 Logical Nodes for protection functions. LN Group:P

2.2.1 PDIF (Differential)

pcntPDIF: Transformer Percent Differential

PDIF class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PcntPDIF		Overpower		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_0	Start	M	XRFM PCNT DIFF PKP
Op	ACT_0	Operate	M	XRFM PCNT DIFF OP
Blk	ACT_3	Block	E	XRFM PCNT DIFF BLK

instPDIF: Transformer Instantaneous Differential

PDIF class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
InstPDIF		Overpower		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	XRFM INST DIFF PKP
Op	ACT_2	Operate	M	XRFM INST DIFF OP
Blk	ACT_3	Block	E	XRFM INST DIFF BLK

rgfPDIF: Restricted Ground Fault Differential

PDIF class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
RgfPDIF		Overpower		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	RESTD GND FAULT PKP
Op	ACT_2	Operate	M	RESTD GND FAULT OP
Blk	ACT_3	Block	E	RESTD GND FAULT BLK

2.2.2 PDOP (Directional Overpower)

PDOP: Directional overpower

PDOP class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PDOP		Overpower		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Directional Power PKP
Op	ACT_2	Operate	M	Directional Power OP
Blk	ACT_3	Block	E	Directional Power BLK

NdPDOP: Wattmetric Ground Fault

PDOP class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NdPDOP		Overpower		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured Values				
Watt	MV_6	Wattmetric Power	E	
Status Information				
Str	ACD_2	Start	M	Wattmetric Ground Fault PKP
Op	ACT_2	Operate	M	Wattmetric Ground Fault OP
Blk	ACT_3	Block	E	Wattmetric Ground Fault BLK

2.2.3 PDUP (Directional Underpower)

PDUP: Directional underpower

PDUP class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PDUP		Underpower		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	M	UnderPower PKP
Op	ACT_1	Operate	M	UnderPower OP
Blk	ACT_3	Block	E	UnderPower BLK

2.2.4 PIOC (Instantaneous overcurrent)

phsPIOC: phase IOC

PIOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PhsPIOC		Instantaneous overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_0	Start	O	Phase IOC PKP
Op	ACT_0	Operate	M	Phase IOC OP
Blk	ACT_3	Block	E	Phase IOC BLK

ndPIOC: neutral IOC

PIOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NdPIOC		Instantaneous overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Neutral IOC PKP
Op	ACT_1	Operate	M	Neutral IOC OP
Blk	ACT_3	Block	E	Neutral IOC BLK

gndPIOC: ground fault IOC

PIOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GndPIOC		Instantaneous overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Ground IOC PKP
Op	ACT_1	Operate	M	Ground IOC OP
Blk	ACT_3	Block	E	Ground IOC BLK

hsePIOC: Sensitive Ground IOC

PIOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
HsePIOC		Instantaneous overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Sens Gnd IOC PKP
Op	ACT_1	Operate	M	Sens Gnd IOC OP
Blk	ACT_3	Block	E	Sens Gnd IOC BLK

ngseqPIOC: Negative Sequence IOC

PIOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NgSeqPIOC		Instantaneous overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	O	Neq Seq IOC PKP
Op	ACT_2	Operate	M	Neq Seq IOC OP
Blk	ACT_3	Block	E	Neq Seq IOC BLK

2.2.5 PMRI (Motor restart inhibition)

PMRI: Motor restart inhibition

PMRI class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PMRI		Motor restart inhibition		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
StrInh	SPS_0	Restart inhibited	O	

2.2.6 PTOC (Time overcurrent)

phsPTOC: Phase TOC

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PhsPTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_0	Start	O	Phase TOC PKP
Op	ACT_0	Operate	M	Phase TOC OP
Blk	ACT_3	Block	E	Phase TOC BLK

ndPTOC: neutral TOC

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NdPTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Neutral TOC PKP
Op	ACT_1	Operate	M	Neutral TOC OP
Blk	ACT_3	Block	E	Neutral TOC BLK

gndPTOC: ground TOC

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GndPTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Ground TOC PKP
Op	ACT_1	Operate	M	Ground TOC OP
Blk	ACT_3	Block	E	Ground TOC BLK

hsePTOC: sensitive ground TOC

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
HsePTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Sensitive Ground TOC PKP
Op	ACT_1	Operate	M	Sensitive Ground TOC OP
Blk	ACT_3	Block	E	Sensitive Ground TOC BLK

NgSeqPTOC: Negative Sequence TOC(339/350)

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NgSeqPTOC_0		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	O	Negative Sequence TOC PKP
Op	ACT_2	Operate	M	Negative Sequence TOC OP
Blk	ACT_3	Block	E	Negative Sequence TOC BLK

NgSeqPTOC: Negative Sequence TOC(345)

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NgSeqPTOC_1		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Negative Sequence TOC PKP
Op	ACT_1	Operate	M	Negative Sequence TOC OP
Blk	ACT_3	Block	E	Negative Sequence TOC BLK

jamPTOC: Mechanical Jam

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
jamPTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Mechanical Jam PKP
Op	ACT_1	Operate	M	Mechanical JamOP
Blk	ACT_3	Block	E	Mechanical Jam BLK

unbalPTOC: Current unbalanced

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
unbalPTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Current unbal PKP
Op	ACT_1	Operate	M	Current unbal OP
Blk	ACT_3	Block	E	Current unbal BLK

accelPTOC: Acceleration

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
accelPTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Acceleration PKP
Op	ACT_1	Operate	M	Acceleration OP
Blk	ACT_3	Block	E	Acceleration BLK

ldincPTOC: Load Increase

PTOC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
ldincPTOC		Time overcurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	O	Load Increase Alarm PKP
Op	ACT_1	Operate	M	Load Increase Alarm OP
Blk	ACT_3	Block	E	Load Increase Alarm BLK

2.2.7 PTOF (OverFrequency)

PTOF: over frequency

PTOF class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PTOF		OverFrequency		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	PTOF PKP
Op	ACT_2	Operate	M	PTOF OP
Blk	ACT_3	Block	E	PTOF BLK

2.2.8 PTOV (Overvoltage)

phsPTOV: phase overvoltage

PTOV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PhsPTOV		Overvoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_0	Start	M	Phase TOV PKP
Op	ACT_0	Operate	M	Phase TOV OP
Blk	ACT_3	Block	E	Phase TOV BLK

auxPTOV: auxiliary overvoltage

PTOV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
AuxPTOV		Overvoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Auxiliary PTOV PKP
Op	ACT_2	Operate	M	Auxiliary PTOV OP
Blk	ACT_3	Block	E	Auxiliary PTOV BLK

ndPTOV: neutral overvoltage

PTOV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NdPTOV		Overvoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Neutral TOV PKP
Op	ACT_2	Operate	M	Neutral TOV OP
Blk	ACT_3	Block	E	Neutral TOV BLK

ngseqPTOV: negative sequence overvoltage

PTOV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NgSeqPTOV		Overvoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Negative Sequence TOV PKP
Op	ACT_2	Operate	M	Negative Sequence TOV OP
Blk	ACT_3	Block	E	Negative Sequence TOV BLK

phsrevPTOV: phase reversal overvoltage

PTOV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PhsRevPTOV		Overvoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Phase Reversal PKP
Op	ACT_2	Operate	M	Phase Reversal TOV OP
Blk	ACT_3	Block	E	Phase Reversal TOV BLK

2.2.9 PTTR (Thermal overload)

PTTR: Thermal O/L (350/345)

PTTR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PTTR_0		Thermal Overload		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
ThmCapPhsA	MV_5	Thermal Capacity Phs A	E	
ThmCapPhsB	MV_5	Thermal Capacity Phs B	E	
ThmCapPhsC	MV_5	Thermal Capacity Phs C	E	
Status Information				
Str	ACD_0	Start	M	PTTR PKP
Op	ACT_0	Operate	M	PTTR OP
Blk	ACT_3	Block	E	PTTR BLK

PTTR: Thermal O/L(339)

PTTR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PTTR_1		Thermal Overload		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
Amp	MV_0	Motor Load (x FLA)	O	
OvlTripTm	MV_5	Time to O/L Trip	E	
ThmCap	MV_5	Motor Thermal Capacity Used (%)	E	
ThmLOTm	MV_5	Overload Lockout Time	E	
MotUnb	MV_5	Current Unbalance (%)	E	
BiasMotLod	MV_5	Biased Motor Load (x FLA)	E	
TotLOTm	MV_5	Motor Lockout Time	E	
Status Information				
Str	ACD_2	Start	M	PTTR PKP
Op	ACT_2	Operate	M	PTTR OP
Blk	ACT_3	Block	E	PTTR BLK

2.2.10 PTUC (UnderCurrent)

PTUC: under current

PTUC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PTUC		Undercurrent		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_1	Start	M	Undercurrent PKP
Op	ACT_1	Operate	M	Undercurrent OP
Blk	ACT_3	Block	E	Undercurrent BLK

2.2.11 PTUF (Underfrequency)

PTUF: under frequency

PTUF class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PTUF		UnderFrequency		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	PTUF PKP
Op	ACT_2	Operate	M	PTUF OP
Blk	ACT_3	Block	E	PTUF BLK

2.2.12 PTUV (Undervoltage)

phsPTUV: phase undervoltage

PTUV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PhsPTUV		Undervoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_0	Start	M	Phase PTUV PKP
Op	ACT_0	Operate	M	Phase PTUV OP
Blk	ACT_3	Block	E	Phase PTUV BLK

auxPTUV: auxiliary undervoltage

PTUV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
AuxPTUV		Undervoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Auxiliary UV PKP
Op	ACT_2	Operate	M	Auxiliary UV OP
Blk	ACT_3	Block	E	Auxiliary UV BLK

psseqPTUV: positive sequence undervoltage

PTUV class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PsSeqPTUV		Undervoltage		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Positive Seq UV PKP
Op	ACT_2	Operate	M	Positive Seq UV OP
Blk	ACT_3	Block	E	Positive Seq UV BLK

2.2.13 PVPH (Volts per Hz)

PVPH: Volts per Hz

PVPH class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PVPH		Volts per Hz		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	Volts Hz PKP
Op	ACT_2	Operate	M	Volts Hz OP
Blk	ACT_3	Block	E	Volts Hz BLK

2.3 Logical Nodes for protection related functions. LN Group: R

2.3.1 RDIR (Directional element)

phsRDIR: phase directional overcurrent

RDIR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
PhsRDIR		Directional Element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Dir	ACD_0	Directions	M	
Op	ACT_5	Operate	E	
Blk	ACT_3	Block	E	

ndRDIR: neutral directional overcurrent

RDIR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
NdRDIR_0		Directional Element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Dir	ACD_1	Directions	M	
Op	ACT_4	Operate	E	
Blk	ACT_3	Block	E	

gndRDIR: ground directional overcurrent

RDIR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GndRDIR		Directional Element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Dir	ACD_1	Directions	M	
Op	ACT_4	Operate	E	
Blk	ACT_3	Block	E	

hseRDIR: ground directional overcurrent

RDIR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
HseRDIR		Directional Element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Dir	ACD_1	Directions	M	
Op	ACT_4	Operate	E	
Blk	ACT_3	Block	E	

2.3.2 RBRF (Breaker failure)

RBRF: breaker failure (350)

RBRF class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
RBRF_0		Breaker failure element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	
OpIn	ACT_2	Operate	C	

RBRF: breaker failure (339/345)

RBRF class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
RBRF_1		Breaker failure element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Str	ACD_2	Start	M	
OpEx	ACT_2	Operate	C	

2.3.3 RFLO (Fault locator)

rptRFLO: Fault report (350/339)

RFLO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
RFLO_0		Fault locator element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured Values				
FltZ	CMV_2	Fault Impedance	M	
FltDiskm	MV_2	Fault Distance in Km	M	
FltCause	INS_5		E	
FltPhases	INS_5		E	

FltIa	CMV_3		E	
FltIb	CMV_3		E	
FltIc	CMV_3		E	
FltIg	CMV_3		E	
FltIn	CMV_3		E	
FltVan	CMV_3		E	
FltVbn	CMV_3		E	
FltVcn	CMV_3		E	
FltVab	CMV_3		E	
FltVbc	CMV_3		E	
FltVca	CMV_3		E	
FltVn	CMV_3		E	
FltVaux	CMV_3		E	
FltFreq	MV_3		E	

rptRFLO: Fault report (345)

RFLO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
RFLO_1		Fault locator element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured Values				
FltZ	CMV_2	Fault Impedance	M	
FltDiskm	MV_2	Fault Distance in Km	M	
FltCause	INS_5		E	
FltPhases	INS_5		E	
FltIa	CMV_3		E	
FltIb	CMV_3		E	
FltIc	CMV_3		E	
FltIg	CMV_3		E	
FltIn	CMV_3		E	
FltIa2	CMV_3		E	
FltIb2	CMV_3		E	
FltIc2	CMV_3		E	
FltIg2	CMV_3		E	
FltIn2	CMV_3		E	
FltIaDiff	CMV_3		E	
FltIaRest	CMV_3		E	
FltIbDiff	CMV_3		E	
FltIbRest	CMV_3		E	
FltIcDiff	CMV_3		E	
FltIcRest	CMV_3		E	
FltFreq	MV_3		E	

2.3.4RREC (Autoreclosing)

RREC: Recloser

RREC class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
RREC		Autoreclosing element		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Op	ACT_2		M	
AutoRecSt	INS_3	Operate	M	

2.3.5RSYN (Synchronism-check)

RSYN: Synchronism-check

RSYN class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
RSYN		Synchronism-check		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status Information				
Rel	SPS_0	Release	M	

2.4 Logical Nodes for generic references. LN Group: G

2.4.1 GGIO (Generic process I/O)

GGIO1: Remote Outputs logical node

GGIO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GGIO_0		Generic process I/O		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status information				
Ind1	SPS_0	Remote Output 1	O	
Ind2	SPS_0	Remote Output 2	O	
..	..	..	..	
Ind32	SPS_0	Remote Output 32	O	

GGIO2: Contact I/O logical node

GGIO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GGIO_1		Generic process I/O		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Controls				
Ind1	SPS_0	Contact input 1	O	
Ind2	SPS_0	Contact input 2	O	
..	..	..	..	
Ind10	SPS_0	Contact input 10	O	
Ind11	SPS_0	Contact Output 1	O	
Ind12	SPS_0	Contact Output 2	O	
..	..		..	
Ind17	SPS_0	Contact Output 7	O	

GGIO3: Virtual Inputs logical node.

GGIO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GGIO_2		Generic process I/O		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Controls				
SPCSO1	SPC_0	Single point controllable status output	O	
SPCSO2	SPC_0	Single point controllable status output	O	
..	..	..	..	
SPCSO32	SPC_0	Single point controllable status output	O	
Status information				
Ind1	SPS_0	Virtual Input 1	O	
Ind2	SPS_0	Virtual Input 2	O	
..	..	..	..	
Ind32	SPS_0	Virtual Input 32	O	

GGIO4: Logic Elements logical node.

GGIO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GGIO_3		Generic process I/O		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status information				
Ind1	SPS_0	Logic Element 1	O	
Ind2	SPS_0	Logic Element 2	O	
..	..	..	..	
Ind16	SPS_0	Logic Element 16	O	

GGIO5: remote inputs logical node.

GGIO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GGIO_0		Generic process I/O		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Status information				
Ind1	SPS_0	Remote digital input 1	O	
Ind2	SPS_0	Remote digital input 2	O	
..	..	..	..	
Ind32	SPS_0	Remote digital input 32	O	

rtdGGIO6: RTDs.

GGIO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GGIO_4		Generic process I/O		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured Values				
AnIn1	MV_0	RTD 1 Temp	O	
AnIn2	MV_0	RTD 2 Temp	O	
..	..	..	..	
AnIn12	MV_0	RTD 12 Temp	O	
Status information				
Alm1	SPS_0	RTD 1 Alarm	O	
Alm 2	SPS_0	RTD 2 Alarm	O	
..	..	..	..	
Alm 12	SPS_0	RTD 12 Alarm	O	
Ind1	SPS_0	RTD 1 Trip	O	
Ind2	SPS_0	RTD 2 Trip	O	
..	..	..	..	
Ind12	SPS_0	RTD 12 Trip	O	

GGIO7: Analog Operands logical node.

GGIO class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
GGIO_5		Generic process I/O		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured Values				
AnIn1	MV_0	Analog Operand 1	O	
AnIn2	MV_0	Analog Operand 2	O	
..	..	..	..	
AnIn8	MV_0	Analog Operand 8	O	

2.5 Logical Nodes for metering and measurement. LN Group: M

2.5.1 MMXU

MMXU1: measurements (339/350).

MMXU class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
MMXU_0		Measurement		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
TotW	MV_0	Total active power (P)	O	
TotVAr	MV_0	Total reactive power (Q)	O	
TotVA	MV_0	Total apparent power (S)	O	
TotPF	MV_0	Average power factor (PF)	O	
Hz	MV_0	Line Frequency	O	
PPV	DEL_0	Phase to phase voltages (VL1L2,...)	O	
PhV	WYE_0	Phase to ground voltages (VL1ER, ...)	O	
A	WYE_1	Phase currents (IL1, ...)	O	
AuxV	CMV_1	Auxiliary Phase Voltage	E	

MMXU1: W1 Phase currents (345).

MMXU class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
MMXU_1		Measurement		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
A	WYE_1	Phase currents (IL1, ...)	O	W1 Phase currents

MMXU2: W2 Phase currents(345).

MMXU class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
MMXU_1		Measurement		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
A	WYE_1	Phase currents (IL1, ...)	O	W2 Phase currents

MMXU3: Idiff 1 Phase Currents (345)

MMXU class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
DiffMMXU		Measurement		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
A	WYE_2	Phase currents (IL1, ...)	O	Idiff 1 Phase Currents

MMXU4: Idiff 2 Phase Currents (345)

MMXU class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
DiffMMXU		Measurement		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
A	WYE_2	Phase currents (IL1, ...)	O	Idiff 2 Phase Currents

MMXU5: Idiff 5 Phase Currents (345)

MMXU class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
DiffMMXU		Measurement		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
A	WYE_2	Phase currents (IL1, ...)	O	Idiff 5 Phase Currents

MMXU6: I Restraint Phase Currents (345).

MMXU class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
DiffMMXU		Measurement		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
A	WYE_2	Phase currents (IL1, ...)	O	I Restraint Phase Currents

2.5.2 MSQI

MSQI: Sequence and imbalance (339/350)

MSQI class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
MSQI		Sequence and imbalance		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
SeqA	SEQ_0		O	
SeqV	SEQ_0		O	

MSQI: Sequence and imbalance (345)

MSQI class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
MSQI_1		Sequence and imbalance		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
SeqA	SEQ_0		O	

2.5.3 MMTR

MMTR: Metering

MMTR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
MMTR_0		Metering		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Measured values				
PosTotWh	MV_5		E	
NegTotWh	MV_5		E	
PosTotVArh	MV_5		E	
NegTotVArh	MV_5		E	

2.6 Logical Nodes for switchgear. LN Group: X

2.6.1 XCBR (Circuit breaker)

XCBR: circuit breaker

XCBR class				
Attribute Name	**Attr. Type**	**Explanation**	**M/O/C/E**	**Notes**
XCBR		Circuit breaker		
Data				
Common Logical Node Information				
Mod	INC_0	Mode	M	
Beh	INS_0	Behaviour	M	
Health	INS_1	Health	M	
NamPlt	LPL_1	Name plate	M	
Loc	SPS_0	Local operation	M	Local / Remote
OpCnt	INS_2	Operation counter	M	Breaker openings
Controls				
Pos	DPC_0	Switch position	M	Breaker open, close
BlkOpn	SPC_1	Block opening	M	
BlkCls	SPC_1	Block closing	M	
Status information				
CBOpCap	INS_4	Cicruit breaker operating capability	O	

3 COMMON DATA CLASS

3.1 Common data class specifications for status information

3.1.1 Single Point Status (SPS)

SPS_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	Boolean	ST	dchg		M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O

SPS_1					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	Boolean	ST	dchg		M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M

3.1.2 Integer Status (INS)

INS_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	Enum	ST	dchg	Beh	M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M

INS_1					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	Enum	ST	dchg	Health 1: when normal. (No errors) 2: when minor error is present (e.g. "High ENET Traffic" alarm) 3: when major error is present. (e.g. "Error Code 1" or "RELAY NOT READY")	M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M

INS_2					
Attribute					
Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	INT32	ST	dchg		M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M

INS_3					
Attribute					
Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
lstVal	Enum	ST	dchg	AutoRecSt	M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M

INS_4					
Attribute					
Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	Enum	ST	dchg	CBOpCap	M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M

INS_5					
Attribute					
Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	INT32	ST	dchg		M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M
configuration, descripcion and extension					
d	Vstring255	DC			O
dataNs	Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLN_M

3.1.3 Protection activation information (ACT)

ACT_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
phsA	Boolean	ST	dchg		O
phsB	Boolean	ST	dchg		O
phsC	Boolean	ST	dchg		O
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O

ACT_1					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
neut	Boolean	ST	dchg		O
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O

ACT_2					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O

ACT_3					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O
dataNs	Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLN_M

ACT_4					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
neut	Boolean	ST	dchg		O
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O
dataNs	Vstring255	EX		IEC 61850-7-4:2003	AC_DLN_M

ACT_5					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
phsA	Boolean	ST	dchg		O
phsB	Boolean	ST	dchg		O
phsC	Boolean	ST	dchg		O
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O
dataNs	Vstring255	EX		IEC 61850-7-4:2003	AC_DLN_M

3.1.4 Directional protection activation information (ACD)

ACD_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
dirGeneral	Enumerated (Byte)	ST	dchg	unknown | forward | backward | both	M
phsA	Boolean	ST	dchg		GC_2(1)
dirPhsA	Enumerated (Byte)	ST	dchg	unknown | forward | backward	GC_2(1)
phsB	Boolean	ST	dchg		GC_2(2)
dirPhsB	Enumerated (Byte)	ST	dchg	unknown | forward | backward	GC_2(2)
phsC	Boolean	ST	dchg		GC_2(3)
dirPhsC	Enumerated (Byte)	ST	dchg	unknown | forward | backward	GC_2(3)
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O

ACD_1					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
dirGeneral	Enumerated (Byte)	ST	dchg	unknown | forward | backward | both	M
neut	Boolean	ST	dchg		GC_2(1)
dirNeut	Enumerated (Byte)	ST	dchg	unknown | forward | backward	GC_2(1)
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O

ACD_2					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
general	Boolean	ST	dchg		M
dirGeneral	Enumerated (Byte)	ST	dchg	unknown | forward | backward | both	M
q	Bvstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
d	Vstring255	DC			O

3.2 Common data class specifications for measurand information

3.2.1 Measured Value (MV)

MV_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
instMag	FloatAnalogueValue	MX	------		O
f	FLOAT32				GC_1
mag	FloatAnalogueValue	MX	dchg		M
f	FLOAT32				GC_1
range	ENUMERATED(Byte)	MX	dchg		O
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	ENUMERATED(Byte)				M
Multiplier	ENUMERATED(Byte)				O
db	INT32U	CF			O
zeroDb	INT32U	CF			O
rangeC	RangeConfig	CF			O
hhLim	FloatAnalogueValue				
f	FLOAT32				GC_1
hlim	FloatAnalogueValue				
f	FLOAT32				GC_1
lLim	FloatAnalogueValue				
f	FLOAT32				GC_1
llLim	FloatAnalogueValue				
f	FLOAT32				GC_1
min	FloatAnalogueValue				
f	FLOAT32				GC_1
max	FloatAnalogueValue				
f	FLOAT32				GC_1
limDb	INT32U				
d	Vstring255	DC			O

MV_2					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
mag	FloatAnalogueValue	MX	dchg		M
f	FLOAT32				GC_1
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	ENUMERATED(Byte)				M
Multiplier	ENUMERATED(Byte)				O
d	Vstring255	DC			O

MV_3					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
mag	FloatAnalogueValue	MX	dchg		M
f	FLOAT32				GC_1
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	ENUMERATED(Byte)				M
Multiplier	ENUMERATED(Byte)				O
d	Vstring255	DC			O
dataNs	Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLN_M

MV_4					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
mag	IntAnalogueValue	MX	dchg		M
f	INT32				GC_1
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	ENUMERATED(Byte)				M
Multiplier	ENUMERATED(Byte)				O
d	Vstring255	DC			O

MV_5					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
instMag	FloatAnalogueValue	MX	------		O
f	FLOAT32				GC_1
mag	FloatAnalogueValue	MX	dchg		M
f	FLOAT32				GC_1
range	ENUMERATED(Byte)	MX	dchg		O
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	ENUMERATED(Byte)				M
Multiplier	ENUMERATED(Byte)				O
db	INT32U	CF			O
zeroDb	INT32U	CF			O
rangeC	RangeConfig	CF			O
hhLim	FloatAnalogueValue				
f	FLOAT32				GC_1
hlim	FloatAnalogueValue				
f	FLOAT32				GC_1
lLim	FloatAnalogueValue				
f	FLOAT32				GC_1
llLim	FloatAnalogueValue				
f	FLOAT32				GC_1
min	FloatAnalogueValue				
f	FLOAT32				GC_1
max	FloatAnalogueValue				
f	FLOAT32				GC_1
limDb	INT32U				
d	Vstring255	DC			O
dataNs	Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLN_M

MV_6					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
instMag	FloatAnalogueValue	MX	------		O
f	FLOAT32				GC_1
mag	FloatAnalogueValue	MX	dchg		M
f	FLOAT32				GC_1
range	ENUMERATED(Byte)	MX	dchg		O
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	ENUMERATED(Byte)				M
Multiplier	ENUMERATED(Byte)				O
db	INT32U	CF			O
zeroDb	INT32U	CF			O
rangeC	RangeConfig	CF			O
hhLim	FloatAnalogueValue				
f	FLOAT32				GC_1
hlim	FloatAnalogueValue				
f	FLOAT32				GC_1
lLim	FloatAnalogueValue				
f	FLOAT32				GC_1
llLim	FloatAnalogueValue				
f	FLOAT32				GC_1
min	FloatAnalogueValue				
f	FLOAT32				GC_1
max	FloatAnalogueValue				
f	FLOAT32				GC_1
limDb	INT32U				
d	Vstring255	DC			O
dataNs	Vstring255	EX		IEC 61850-7-4:2003	AC_DLN_M

3.2.2 Complex Measured Value (CMV)

CMV_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
instCVal	FloatVector	MX	------		O
mag	FloatAnalogueValue				
f	FLOAT32				
cVal	FloatVector	MX	dchg		M
mag	FloatAnalogueValue				
f	FLOAT32				
range	ENUMERATED(Byte)	MX	dchg		O
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	Byte				M
Multiplier	Byte				O
db	INT32U	CF			O
dbAng	INT32U	CF			O
zeroDb	INT32U	CF			O
rangeC	RangeConfig	CF			O
d	Vstring255	DC			O
cdcNs	Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLNDA_M
cdcName	Vstring255	EX		CMV	AC_DLNDA_M

CMV_1					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
instCVal	FloatVector	MX	------		O
mag	FloatAnalogueValue				
f	FLOAT32				
cVal	FloatVector	MX	dchg		M
mag	FloatAnalogueValue				
f	FLOAT32				
range	ENUMERATED(Byte)	MX	dchg		O
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	Byte				M
Multiplier	Byte				O
db	INT32U	CF			O
dbAng	INT32U	CF			O
zeroDb	INT32U	CF			O
rangeC	RangeConfig	CF			O
d	Vstring255	DC			O
dataNs	Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLN_M

CMV_2					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
cVal	FloatVector	MX	dchg		M
mag	FloatAnalogueValue				
f	FLOAT32				
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	Byte				M
Multiplier	Byte				O
d	Vstring255	DC			O

CMV_3					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
measured attributes					
cVal	FloatVector	MX	dchg		M
mag	FloatAnalogueValue				
f	FLOAT32				
q	BVstring13	MX	qchg		M
t	Utctime	MX			M
configuration, description and extension					
units	Unit	CF			O
SIUnit	Byte				M
Multiplier	Byte				O
d	Vstring255	DC			O
dataNs	Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLN_M

3.2.3 Phase to ground related measured values of a three phase system (WYE)

WYE_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
Data					
phsA	CMV_0		GC_1		
phsB	CMV_0		GC_1		
phsC	CMV_0		GC_1		
neut	CMV_0		GC_1		
configuration, description and extension					
d	Vstring255	DC			O

WYE_1					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
Data					
phsA	CMV_0		GC_1		
phsB	CMV_0		GC_1		
phsC	CMV_0		GC_1		
neut	CMV_0		GC_1		
net	CMV_0		GC_1		
res	CMV_0		GC_1		
configuration, description and extension					
d	Vstring255	DC			O

WYE_2					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
Data					
phsA	CMV_0		GC_1		
phsB	CMV_0		GC_1		
phsC	CMV_0		GC_1		
configuration, description and extension					
d	Vstring255	DC			O

3.2.4 Phase to phase related measured values of a three phase system (DEL)

DEL_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
Data					
phsAB	CMV_0		GC_1		
phsBC	CMV_0		GC_1		
phsCA	CMV_0		GC_1		
configuration, description and extension					
d	Vstring255	DC			O

3.2.5 Sequence (SEQ)

SEQ_0					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
Data					
c1	CMV_0		GC_1		
c2	CMV_0		GC_1		
c3	CMV_0		GC_1		
configuration, description and extension					
d	Vstring255	DC			O

3.3 Common data class specifications for controllable status information

3.3.1 Controllable single point (SPC)

SPC_0						
Attribute Name		**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute						
control and status						
Oper	ctlVal	Boolean	CO			AC_CO_M
	origin	Originator	CO			AC_CO_M
	orCat	ENUMERATED				M
	orIdent	OCTECT64				M
	ctlNum	INT8U	CO			M
	T	Btime6	CO			M
	Test	Boolean	CO			M
	Check	ENUMERATED	CO			M
stVal		Boolean	ST		FALSE | TRUE	AC_ST
q		Quality	ST			AC_ST
t		TimeStamp	ST			AC_ST
configuration, description and extension						
ctlModel		ENUMERATED	CF		ctlModel_1	M
operTimeout		INT32U	CF			AC_CO_O
cdcNs		Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLNDA_M
cdcName		Vstring255	EX		SPC	AC_DLNDA_M

SPC_1					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
stVal	Boolean	ST		FALSE | TRUE	AC_ST
q	Quality	ST			AC_ST
t	TimeStamp	ST			AC_ST
configuration, description and extension					
ctlModel	ENUMERATED	CF		ctlModel	M

3.3.2 Controllable double point (DPC).

DPC_0						
Attribute Name		**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute						
control and status						
SBO						
SBOw						
Oper	ctlVal	Boolean	CO			AC_CO_M
	origin	Originator	CO,ST			AC_CO_M
	orCat	ENUMERATED				M
	orIdent	OCTECT64				M
	ctlNum	INT8U	CO,ST			M
	T	Btime6	CO			M
	Test	Boolean	CO			M
	Check	ENUMERATED	CO			M
Cancel						
stVal		CODE ENUM	ST	dchg	intermediate-state | off | on | bad-state	M
q		BVstring13	ST	qchg		AC_ST
t		Utctime	ST			AC_ST
configuration, description and extension						
ctlModel		ENUMERATED	CF			M
sboTimeout		INT32U	CF			AC_CO_O
sboClass		ENUMERATED	CF			AC_CO_O
operTimeout		INT32U	CF			AC_CO_O
d		Vstring255	DC			O
cdcNs		Vstring255	EX		GE Multilin SR3 Namespace:2003	AC_DLNDA_M
cdcName		Vstring255	EX		DPC	AC_DLNDA_M

3.3.3 Controllable integer status (INC)

INC_0 (type Mod)					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
status					
stVal	Enum	ST	dcgh		M
q	BVstring13	ST	qchg		M
t	Utctime	ST			M
configuration, description and extension					
ctlModel	ENUMERATED	CF			M

3.4 Common data class specifications for description information

3.4.1 Device name plate (DPL)

DPL_0 (type Mod)					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
vendor	Vstring255	DC			M
swRev	Vstring255	DC			O
serNum	Vstring255	DC			O
model	Vstring255	DC			O
location	Vstring255	DC			O

3.4.2 Logical node name plate (LPL)

LPL_0 (type Mod)					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
vendor	Vstring255	DC			M
swRev	Vstring255	DC			M
d	Vstring255	DC			M
configRev	Vstring255	DC			AC_LN0_M
ldNs	Vstring255	EX			AC_DLD_M

LPL_1 (type Mod)					
Attribute Name	**Attribute Type**	**FC**	**TrgOp**	**Value/Value Range**	**M/O/C/E**
DataAttribute					
control and status					
vendor	Vstring255	DC			M
swRev	Vstring255	DC			M
d	Vstring255	DC			M

TICS

This section contains the TISSUES (Technical Issues) Implementation Conformance Statement (TICS) for the IEC 61850 interface in the 3 Series Family of protective relays.

Date: January 3, 2017
Version 1.10

1 Introduction

This tissues conformance statement is applicable to the 3 Series family with firmware version 2.30.

2 Implemented IntOp TISSUES

During the October 2006 meeting IEC TC57 working group 10 decided that:

- green Tissues with the category "IntOp" are mandatory for IEC 61850 edition 1
- Tissues with the category "Ed.2" Tissues should not be implemented.

Mandatory Edition 1 Tissues

The following table gives an overview of the implemented mandatory Tissues.

Part	Tissue Nr	Description	Implemented Y/na
8-1	116	GetNameList with empty response?	Y
	165	Improper Error Response for GetDataSetValues	Y
	183	GetNameList error handling	Y
	226	Control negative response (SBOns) with LastApplError	na
	545	Skip file directories with no files	na
7-4	252	AlmThm should have CDC SPS	na
7-3	28	Definition of APC	na
	54	Point def xVal, not cVal	na
	55	Ineut = Ires ?	Y
	63	mag in CDC CMV	Y
	65	Deadband calculation of a Vector and trigger option	Y
	219	operTm in ACT	na
	270	WYE and DEL rms values	na
	1199	BCR	na
7-2	30	control parameter T	na
	31	Typo	na
	32	Typo in syntax	na
	35	Typo Syntax Control time	na
	36	Syntax parameter DSet-Ref missing	na
	37	Syntax GOOSE "T" type	Y
	39	Add DstAddr to GoCB	Y
	40	GOOSE Message "AppID" to "GoID	"Y
	41	GsCB "AppID" to "GsID	"na
	42	SV timestamp: "EntryTime" to "TimeStamp	"na

Part	Tissue Nr	Description	Implemented Y/na
	43	Control "T" semantic	na
	44	AddCause - Object not sel	Y
	45	Missing AddCauses	na
	46	Synchro check cancel	na
	47	"." in LD Name?	Y
	49	BRCB TimeOfEntry (part of #453)	-
	50	LNName start with number?	na
	51	ARRAY [0..num] missing	na
	52	Ambiguity GOOSE SqNum	Y
	53	Add DstAddr to GsCB, SV	na
	151	Name constraint for control blocks etc.	Y
	166	DataRef attribute in Log	na
	185	Logging - Integrity periode	na
	189	SV Format	na
	190	BRCB: EntryId and TimeOfEntry (part of #453)	-
	191	BRCB: Integrity and buffering reports (part of #453)	-
	234	New type CtxInt (Enum are mapped to 8 bit integer)	na
	275	Confusing statement on GI usage (part of #453)	-
	278	EntryId not valid for a server (part of #453)	-
	297	Sequence Number	Y
	298	Type of SqNum	Y
	305	Reporting with BufTm = 0	na
	322	Write Configuration attribute of BRCBs	Y
	329	Reporting and BufOvl	
	333	Enabling of an incomplete GoCB	na
	335	Clearing of BufOvfl	Y
	348	URCB class and report	na
	349	BRCB TimeofEntry has two definitions	na
	453	Combination of all reporting and logging tissues	Y
	1281	Trigger option GI is by default	Y
6	1	Syntax	na
	5	tExtensionAttributeNameEnum is restricted	Y
	8	SIUnit enumeration for W	Y
	10	Base type for bitstring usage	Y
	17	DAI/SDI elements syntax	Y
	169	Ordering of enum differs from 7-3	na

NOTE

- Tissue 49, 190, 191, 275 and 278 are part of tissue #453, all other technical tissues in the table are mandatory if applicable.
- Editorial tissues are marked as "na".

3 Other Implemented TISSUES

Part	Tissue Nr	Description
8-1	177	Ignoring OptFlds bits for URCB
7-4	79	AutoRecSt value 4 = "unsuccessful"

PICS

This section contains the Protocol Implementation Conformance Statement (PICS) for the IEC 61850 interface in the 3 Series Family of protective relays.

Version 1.10

Date: January 3, 2017

1 General

The following ACSI conformance statements are used to provide an overview and details about 3 Series Family, with firmware 2.30:

- ACSI basic conformance statement,
- ACSI models conformance statement,
- ACSI service conformance statement

The statements specify the communication features mapped to IEC 61850-8-1 and IEC 61850-9-2.

2 ASCI basic conformance statement

The basic conformance statement is defined in Table A.1.

Table A.1: Basic conformance statement

		Client/ Subscriber	Server/ Publisher	Value/ Comments
Client-Server roles				
B11	Server side (of TWO-PARTY-APPLICATION-ASSOCIATION)	-	Y	
B12	Client side of (TWO-PARTY-APPLICATION-ASSOCIATION)		-	
SCSMs supported				
B21	SCSM: IEC 6185-8-1 used		Y	
B22	SCSM: IEC 6185-9-1 used			Deprecated
B23	SCSM: IEC 6185-9-2 used			
B24	SCSM: other			
Generic substation event model (GSE)				
B31	Publisher side	-	Y	
B32	Subscriber side	Y	-	
Transmission of sampled value model (SVC)				
B41	Publisher side	-		
B42	Subscriber side		-	

- = not applicable
Y = supported
N or empty = not supported

3 ACSI models conformance statement

The ACSI models conformance statement is defined in Table A.2.

Table A.2: ACSI models conformance statement

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If Server or Client side (B11/12) supported				
M1	**Logical device**		Y	
M2	**Logical node**		Y	
M3	**Data**		Y	
M4	**Data set**		Y	
M5	**Substitution**			
M6	**Setting group control**			
	Reporting			
M7	**Buffered report control**		Y	
M7-1	sequence-number		Y	
M7-2	report-time-stamp		Y	
M7-3	reason-for-inclusion		Y	
M7-4	data-set-name		Y	
M7-5	data-reference		Y	
M7-6	buffer-overflow		Y	
M7-7	entryID		Y	
M7-8	BufTm		Y	
M7-9	IntgPd		Y	
M7-10	GI		Y	
M7-11	conf-revision		Y	
M8	**Unbuffered report control**		Y	
M8-1	sequence-number		Y	
M8-2	report-time-stamp		Y	
M8-3	reason-for-inclusion		Y	
M8-4	data-set-name		Y	
M8-5	data-reference		Y	
M8-6	BufTm		Y	
M8-7	IntgPd		Y	
M8-8	GI		Y	
M8-9	conf-revision		Y	
	Logging			
M9	**Log control**			
M9-1	IntgPd			
M10	**Log**			
M11	**Control**		Y	
M17	**File Transfer**			
M18	**Application association**		Y	
M19	**GOOSE Control Block**		Y	
M20	**Sampled Value Control Block**			
If GSE (B31/32) is supported				
M12	**GOOSE**		Y	
M13	**GSSE**			Deprecated

		Client/ Subscriber	Server/ Publisher	Value/ Comments
If SVC (B41/B42) is supported				
M14	**Multicast SVC**			
M15	**Unicast SVC**			
For all IEDs				
M16	**Time**	Y	Y	Time source with required accu-racy shall be available. Only Time Masters are SNTP (Mode4 response) time servers. All other Client/Server devices require SNTP (Mode 3 request) clients
Y = service is supported N or empty = service is not supported				

4 ACSI service conformance statement

The ACSI service conformance statement is defined in Table A.3 (depending on the statements in Table A.1).

Table A.3: Table A.3 - ACSI service Conformance statement

	Ed	ACSI Service	AA: TP/MC	Client Sub (C)	Server Pub (S)	Comments
Server						
S1	1,2	GetServerDirectory(LOGICAL-DEVICE)	TP		Y	
Application association						
S2	1,2	Associate	TP		Y	
S3	1,2	Abort	TP		Y	
S4	1,2	Release	TP		Y	
Logical device						
S5	1,2	GetLogicalDeviceDirectory	TP		Y	
Logical node						
S6	1,2	GetLogicalNodeDirectory	TP		Y	
S7	1,2	GetAllDataValues	TP		Y	
Data						
S8	1,2	GetDataValues	TP		Y	
S9	1,2	SetDataValues	TP		Y	
S10	1,2	GetDataDirectory	TP		Y	
S11	1,2	GetDataDefinition	TP		Y	
Data set						
S12	1,2	GetDataSetValues	TP		Y	
S13	1,2	SetDataSetValues	TP		N	
S14	1,2	CreateDataSet	TP		N	
S15	1,2	DeleteDataSet	TP		N	
S16	1,2	GetDataSetDirectory	TP		Y	
Substitution						
S17	1	SetDataValues	TP			Ed1 only
Setting group control						
S18	1,2	SelectActiveSG	TP			
S19	1,2	SelectEditSG	TP			
S20	1,2	SetEditSGValues	TP			
S21	1,2	ConfirmEditSGValues	TP			
S22	1,2	GetEditSGValues	TP			
S23	1,2	GetSGCBValues	TP			
Reporting						
Buffered report control block (BRCB)						

	Ed	ACSI Service	AA: TP/MC	Client Sub (C)	Server Pub (S)	Comments
S24	1,2	Report	TP		Y	
S24-1	1,2		data-change (dchg)			Y
S24-2	1,2		quality-change (qchg)			N
S24-3	1,2		data-update (dupd)			N
S25	1,2	GetBRCBValues	TP		Y	
S26	1,2	SetBRCBValues	TP		Y	
Unbuffered report control block (URCB)						
S27	1,2	Report	TP		Y	
S27-1	1,2		data-change (dchg)			Y
S27-2	1,2		quality-change (qchg)			N
S27-3	1,2		data-update (dupd)			N
S28	1,2	GetURCBValues	TP		Y	
S29	1,2	SetURCBValues	TP		Y	
Logging						
Log control						
S30	1,2	GetLCBValues	TP		N	
S31	1,2	SetLCBValues	TP		N	
Log						
S32	1,2	QueryLogByTime	TP		N	
S33	1,2	QueryLogAfter	TP		N	
S34	1,2	GetLogStatusValues	TP		N	
Generic substation event model (GSE)						
GOOSE						
S35	1,2	SendGOOSEMessage	MC		Y	
GOOSE Control Block						
S36	1,2	GetGoReference	TP			
S37	1,2	GetGOOSEElementNumber	TP			
S38	1,2	GetGoCBValues	TP		Y	
S39	1,2	SetGoCBValues	TP		Y	
GSSE (Ed2:61850-7-2 Annex C)						
S40	1,2	SendGSSEMessage	MC		N	Deprecated in Edition 2
GSSE Control Block (Ed2:61850-7-2 Annex C)						
S41	1,2	GetGsReference	TP		N	Deprecated in Edition 2
S42	1,2	GetGSSEDataOffset	TP		N	Deprecated in Edition 2
S43	1,2	GetGsCBValues	TP		N	Deprecated in Edition 2
S44	1,2	SetGsCBValues	TP		N	Deprecated in Edition 2

	Ed	ACSI Service	AA: TP/MC	Client Sub (C)	Server Pub (S)	Comments
Transmission of sampled value model (SVC)						
Multicast SV						
S45	1,2	SendMSVMessage	MC		N	Use for 9-2LE or IEC 61869-9
Multicast Sampled Value Control Block						
S46	1,2	GetMSVCBValues	TP		N	
S47	1,2	SetMSVCBValues	TP		N	
Unicast SV						
S48	1,2	SendUSVMessage	TP		N	
Unicast Sampled Value Control Block						
S49	1,2	GetUSVCBValues	TP		N	
S50	1,2	SetUSVCBValues	TP		N	
Control						
S51	1,2	Select	TP		Y	SBO Normal Security
S52	1,2	SelectWithValue	TP		Y	SBO Enhanced Security
S53	1,2	Cancel	TP		Y	
S54	1,2	Operate	TP		Y	
S55	1,2	CommandTermination	TP		Y	
S56	1,2	TimeActivatedOperate	TP		N	
File transfer						
S57	1,2	GetFile	TP		N	
S58	1,2	SetFile	TP		N	
S59	1,2	DeleteFile	TP		N	
S60	1,2	GetFileAttributeValues	TP		N	
S61	1,2	GetServerDirectory (FILE)	TP		N	
Time						
T1	1,2	Time resolution of internal clock	-		10(1ms)	nearest negative power of 2 in seconds
T2	2	Time accuracy of internal clock	-			TL (ms) (low accuracy), T3 < 7) (only Ed2)
	1,2		-			T0 (ms) (<= 10 ms), 7 <= T3 < 10)
	1,2		-		Y	T1 (µs) (<= 1 ms), 10 <= T3 < 13
	1,2		-			T2 (µs) (<= 100 µS), 13 <= T3 < 15
	1,2		-			T3 (µs) (<= 25 µS), 15 <= T3 < 18
	1,2		-			T4 (µs) (<= 4 µS), 18 <= T3 < 20
	1,2		-			T5 (µs) (<= 1 µS), T3 >= 20)
T3	1,2	Supported TimeStamp resolution	-		10(1ms)	nearest negative power of 2 in seconds

PIXIT

This section contains the Protocol Implementation eXtra Information for Testing (PIXIT) for the IEC 61850 interface in the 3 Series Family of protective relays.

Version 1.10

Date: January 3, 2017

Introduction

This document specifies the protocol implementation extra information for testing (PIXIT) of the IEC 61850 interface in the 3 Series Family with firmware version 2.30

Together with the PICS and the MICS, the PIXIT forms the basis for a conformance test according to IEC 61850-10. The PIXIT entries contain information which is not available in the PICS, MICS, TICS documents or SCL file.

Each table specifies the PIXIT for applicable ACSI service model as structured in IEC 61850-10. The "Ed" column indicates if the entry is applicable for IEC 61850 Edition 1 and/or Edition 2.

PIXIT for Association model

ID	Ed	Description	Value / Clarification
As1	1	Maximum number of clients that can set-up an association simultaneously	3
As2	1,2	TCP_KEEPALIVE value. The recommended range is 1..20s	20 seconds but if no application message is detected within the As3 value, the device will close the connection.
As3	1,2	Lost connection detection time	120 seconds (Configurable)
As4	-	Authentication is not supported yet	
As5	1,2	What association parameters are necessary for successful association	Transport selector Y **Session selector** Y **Presentation selector** Y **AP Title** N **AE Qualifier** N
As6	1,2	If association parameters are necessary for association, describe the correct values e.g.	Transport selector 0001 **Session selector** 0001 **Presentation selector** 00000001 **AP Title** NA **AE Qualifier** NA
As7	1,2	What is the maximum and minimum MMS PDU size	Max MMS PDU size 120000 **Min MMS PDU size** 700.
As8	1,2	What is the maximum start up time after a power supply interrupt	45-50 seconds. **(90 seconds in the worst case when creating default.cid)**

PIXIT for Server model

ID	Ed	Description	Value / Clarification
Sr1	1,2	Which analogue value (MX) quality bits are supported (can be set by server)	Validity: Y Good, N Invalid, N Reserved, N Questionable **Details:** N Overflow N OutofRange N BadReference N Oscillatory N Failure N OldData N Inconsistent N Inaccurate Source: Y Process N Substituted N Test N OperatorBlocked
Sr2	1,2	Which status value (ST) quality bits are supported (can be set by server)	Validity: Y Good, N Invalid, N Reserved, N Questionable **Details:** N BadReference N Oscillatory N Failure N OldData N Inconsistent N Inaccurate Source: Y Process N Substituted N Test N OperatorBlocked
Sr3	-	What is the maximum number of data object references in one GetDataValues request	Deprecated
Sr4	-	What is the maximum number of data object references in one SetDataValues request	Deprecated
Sr5	1	Which Mode values are supported*	On Y [On-]Blocked N Test N Test/Blocked N Off N

* IEC 61850-6:2009 clause 9.5.6 states that if only a subrange of the enumeration value set is supported, this shall be indicated within an ICD file by an enumeration type, where the unsupported values are missing

PIXIT for Data set model

ID	Ed	Description	Value / Clarification
Ds1	1	What is the maximum number of data elements in one data set (compare ICD setting)	64
Ds2	1	How many persistent data sets can be created by one or more clients (this number includes predefined datasets)	NOT SUPPORTED
Ds3	1	How many non-persistent data sets can be created by one or more clients	NOT SUPPORTED

PIXIT for Substitution model

ID	Ed	Description	Value / Clarification
Sb1	1	Are substituted values stored in volatile memory	NOT SUPPORTED

PIXIT for Setting group control model

ID	Ed	Description	Value / Clarification
Sg1	1	What is the number of supported setting groups for each logical device	NOT SUPPORTED
Sg2	1,2	What is the effect of when and how the non-volatile storage is updated **(compare IEC 61850-8-1 $16.2.4)**	NOT SUPPORTED
Sg3	1	Can multiple clients edit the same setting group	NOT SUPPORTED
Sg4	1	What happens if the association is lost while editing a setting group	NOT SUPPORTED
Sg5	1	Is EditSG value 0 allowed	NOT SUPPORTED
Sg6	2	When ResvTms is not present how long is an edit setting group locked	NOT SUPPORTED

PIXIT for Reporting model

ID	Ed	Description	Value / Clarification
Rp1	1	The supported trigger conditions are (compare PICS)	integrity Y data change Y quality change N data update N general interrogation Y Y
Rp2	1	The supported optional fields are	sequence-number Y report-time-stamp Y reason-for-inclusion Y data-set-name Y data-reference Y buffer-overflow Y entryID Y conf-rev Y segmentation Y
Rp3	1,2	Can the server send segmented reports	Y
Rp4	1,2	Mechanism on second internal data change notification of the same analogue data value within buffer period (Compare IEC 61850-7-2 $14.2.2.9)	Send report immediately
Rp5	1	Multi client URCB approach (compare IEC 61850-7-2:2003 $14.2.1)	Each URCB is visible to all clients
Rp6	-	What is the format of EntryID	Deprecated
Rp7	1,2	What is the buffer size for each BRCB or how many reports can be buffered	Buffer size = 50000 Bytes
Rp8	-	Pre-configured RCB attributes that are dynamic, compare SCL report settings	Deprecated
Rp9	1	May the reported data set contain: - structured data objects - data attributes	 Y Y
Rp10	1,2	What is the scan cycle for binary events Is this fixed, configurable	Event Driven Fixed
Rp11	1	Does the device support to pre-assign a RCB to a specific client in the SCL	N
Rp12	2	After restart of the server is the value of ConfRev restored from the original configuration or retained prior to restart	Restored from original configuration

PIXIT for Logging model

ID	Ed	Description	Value / Clarification
Lg1	1,2	What is the default value of LogEna (Compare IEC 61850-8-1 $17.3.3.2.1, the default value should be FALSE)	NOT SUPPORTED
Lg2	-	What is the format of EntryID	Deprecated
Lg3	1,2	Are there are multiple Log Control Blocks that specify the Journaling of the same MMS NamedVariable and TrgOps and the Event Condition (Compare IEC 61850-8-1 $17.3.3.3.2)	NOT SUPPORTED
Lg4	1	Pre-configured LCB attributes that cannot be changed online	NOT SUPPORTED

PIXIT for GOOSE publish model

ID	Ed	Description	Value / Clarification
Gp1	1,2	Can the test (Ed1) / simulation (Ed2) flag in the published GOOSE be set	N
Gp2	1	What is the behaviour when the GOOSE publish configuration is incorrect	DUT keeps GoEna=F Relay will not send GOOSE message.
Gp3	1,2	Published FCD supported common data classes are	SPS, INS, ENS, ACT, ACD, MV, CMV, SAV, WYE, DEL, SEQ, INC, ENC, SPC, DPC, INC, ENC. (Only the elements with FC=ST or MX will be published).
Gp4	1,2	What is the slow retransmission time Is it fixed or configurable	Configured by Enervista on GoCB MaxTime (0-60000 ms)
Gp5	1,2	What is the fastest retransmission time Is it fixed or configurable	Fixed. MinTime = 4 ms
Gp6	-	Can the GOOSE publish be turned on / off by using SetGoCBValues(GoEna)	Y
Gp7	1,2	What is the initial GOOSE sqNum after restart	sqNum = 1
Gp8	1	May the GOOSE data set contain: - structured data objects (FCD) **- timestamp data attributes**	 Y Y
Gp9	1	How is the retransmission curve after a change.	- sqNum = 0 New change - sqNum = 1 -> 4ms later with TAL = 1000 - sqNum = 2 -> 8ms later with TAL = 1000 - sqNum = 3 -> 16ms later with TAL = 4000 - sqNum = 4 -> 1000ms later with TAL = Update time* x 4 - sqNum = 5 -> Update time* later with TAL = Update time* x 4 - sqNum = 6-> Update time* later with TAL = Update time* x 4 - sqNum = 7 ..... - ..... *Update time is configured in the Enervista 3 Series Setup

PIXIT for GOOSE subscribe model

ID	Ed	Description	Value / Clarification
Gs1	1,2	What elements of a subscribed GOOSE header are checked to decide the message is valid and the allData values are accepted? If yes, describe the conditions. Notes: - the VLAN tag may be removed by a ethernet switch and shall not be checked - the simulation flag shall always be checked (Ed2) - the ndsCom shall always be checked (Ed2)	Y destination MAC address Y APPID N gocbRef Y timeAllowedtoLive N datSet Y goID N t N stNum N sqNum N simulation / test N confRev Y ndsCom Y numDatSetEntries
Gs2	1,2	When is a subscribed GOOSE marked as lost (TAL = time allowed to live value from the last received GOOSE message)	message does not arrive after TAL
Gs3	1,2	What is the behaviour when one or more subscribed GOOSE messages isn't received or syntactically incorrect (missing GOOSE)	Message will be ignored, but when the next correct message will be received, it will be proceed as normal.
Gs4	1,2	What is the behaviour when a subscribed GOOSE message is out-of-order	Message will be proceeded
Gs5	1,2	What is the behaviour when a subscribed GOOSE message is duplicated	Message will be ignored
Gs6	1	Does the device subscribe to GOOSE messages with/without the VLAN tag	Y, with the VLAN tag Y, without the VLAN tag
Gs7	1	May the GOOSE data set contain: - structured data objects (FCD) - timestamp data attributes	 Y N
Gs8	1,2	Subscribed FCD supported common data classes are	DUT can receive all kinds of data but only digitals can be mapped.
Gs9	1,2	Are subscribed GOOSE with test=T (Ed1) / simulation=T (Ed2) accepted in test/simulation mode	N
Gs10	1	What is the behaviour when a subscribed GOOSE message with TAL = 0 is received by the subscriber.	The message will be ignored.
Gs11	1	What is the behaviour when a subscribed GOOSE message hasn't the expected data structure.	The message will be ignored.

PIXIT for GOOSE performance

ID	Ed	Description	Value / Clarification
Gf1	1,2	Performance class	P2/P3
Gf2	1,2	GOOSE ping-pong processing method	Event driven based
Gf3	1,2	Application logic scan cycle (ms)	Max. <8 ms Min. <4 ms
Gf4	1	Maximum number of data attributes in GOOSEdataset (value and quality has to be counted asseparate attributes)	64

PIXIT for Control model

ID	Ed	Description	Value / Clarification
Ct1	-	What control models are supported (compare PICS)	Deprecated
Ct2	1,2	Is the control model fixed, configurable and/or dynamic	Configurable & Dynamic
Ct3	-	Is TimeActivatedOperate supported (compare PICS or SCL)	Deprecated
Ct4	1,2	Is "operate-many" supported (compare sboClass)	Deprecated
Ct5	1	Will the DUT activate the control output when the test attribute is set in the SelectWithValue and/or Operate request (when N test procedure Ctl2 is applicable)	N
Ct6	-	What are the conditions for the time (T) attribute in the SelectWithValue and/or Operate request	Deprecated
Ct7	-	Is pulse configuration supported (compare pulseConfig)	Deprecated
Ct8	1	What is the behaviour of the DUT when the check conditions are set Is this behaviour fixed, configurable, online changeable	N synchrocheck N interlock-check DUT ignores the check value and always perform the check
Ct9	1,2	Which additional cause diagnosis are supported	Y Unknown Y Not-supported Y Blocked-by-switching-hierarchy Y Select-failed Y Invalid-position Y Position-reached N Step-limit N Blocked-by-Mode N Blocked-by-process N Blocked-by-interlocking N Blocked-by-synchrocheck Y Command-already-in-execution N Blocked-by-health N 1-of-n-control N Abortion-by-cancel Y Time-limit-over N Abortion-by-trip Y Object-not-selected **Edition 1 specific values:** N Parameter-change-in-execution **Edition 2 specific values:** N Object-already-selected N No-access-authority N Ended-with-overshoot N Abortion-due-to-deviation N Abortion-by-communication-loss N Blocked-by-command N None N Inconsistent-parameters N Locked-by-other-client N Parameter-change-in-execution
Ct10	1,2	How to force a "test-not-ok" respond with SelectWithValue request	Device in local mode
Ct11	1,2	How to force a "test-not-ok" respond with Select request	Device in local mode
Ct12	1,2	How to force a "test-not-ok" respond with Operate request	DOns: Sending T=1 SBOns: Sending T=1 DOes: Sending T=1 SBOes: Sending T=1
Ct13	1,2	Which origin categories are supported / accepted	N bay-control Y station-control Y remote-control N automatic-bay Y automatic-station Y automatic-remote N maintenance N process

ID	Ed	Description	Value / Clarification
Ct14	1,2	What happens if the orCat value is not supported or invalid	DOns: control is rejected (Oper-ObjectAccessDenied). SBOns: control is rejected (Oper-ObjectAccessDenied). DOes: control is rejected (Oper- ServiceError, ObjectAccessDenied). SBOes: control is rejected (SBOw- ServiceError, ObjectAccessDenied). orCat supported: 2 (station control), 3 (remote-control), 5 (automatic-station), 6 (automatic-remote)
Ct15	1,2	Does the IED accept a SelectWithValue / Operate with the same control value as the current status value Is this behaviour configurable	DOns: N SBOns: N DOes: N SBOes: N Configurable: N
Ct16	1,2	Does the IED accept a select/operate on the same control object from 2 different clients at the same time	DOns: N SBOns: N DOes: Y SBOes: N
Ct17	1	Does the IED accept a Select/SelectWithValue from the same client when the control object is already selected (Tissue #334)	SBOns: N SBOes: N
Ct18	1,2	Is for SBOes the internal validation performed during the SelectWithValue and/or Operate step	SelectWithValue and Operate
Ct19	-	Can a control operation be blocked by Mod=Off or [On-]Blocked (Compare PIXIT-Sr5)	Deprecated
Ct20	1,2	Does the IED support local / remote operation	Y (Only for XCBR)
Ct21	1,2	Does the IED send an InformationReport with LastApplError as part of the Operate response- for control with normal security	SBOns: N DOns: N
Ct22	2	How to force a "parameter-change-in-execution	"SBOns:Not Applicable SBOes:Not Applicable
Ct23	1,2	How many SBOns/SBOes control objects be selected at the same time?	SBOns: n = "1" SBOes: n = "1"
Ct24	1,2	Does the DUT support any operate timeout > 0	Y
Ct25	1,2	When CDC=DPC is supported, is it possible to have DPC (Controllable Double Point) go to the intermediate state? (00)	N

PIXIT for Time synchronisation model

ID	Ed	Description	Value / Clarification
Tm1	1,2	What time quality bits are supported (may be set by the IED)	Y LeapSecondsKnown N ClockFailure Y ClockNotSynchronized.
Tm2	1,2	Describe the behaviour when the time server(s) ceases to respond **What is the time server lost detection time**	On one time server: An event is generated On all time servers: An event is generated 60 seconds (AnyCast) 30 seconds (Unicast) 8 min (Broadcast
Tm3	1,2	How long does it take to take over the new time from time server	2 seconds
Tm4	1,2	When is the time quality bit "ClockFailure" set	Never
Tm5	1,2	When is the time quality bit "Clock not Synchronized" set	60 seconds (Unicast) or 30 seconds (Anycast) after the time server(s) ceases to respond or 8 min in Broadcast.
Tm6	-	Is the timestamp of a binary event adjusted to the configured scan cycle	Deprecated
Tm7	1	Does the device support time zone and daylight saving	Y
Tm8	1,2	Which attributes of the SNTP response packet are validated	Y Leap indicator not equal to 3 Y Mode is equal to SERVER N OriginateTimestamp is equal to value sent by the SNTP client as Transmit Timestamp Y RX/TX timestamp fields are checked for reasonableness Y SNTP version 3 and/or 4 N other (describe)
Tm9	1,2	Do the COMTRADE files have local time or UTC time and is this configurable	Local N

PIXIT for File transfer model

ID	Ed	Description	Value / Clarification
Ft1	1	What is structure of files and directories Where are the COMTRADE files stored Are comtrade files zipped and what files are included in each zip file	Not Applicable Not Applicable Not Applicable
Ft2	1,2	Directory names are separated from the file name by	Not Applicable
Ft3	1	The maximum file name size including path (recommended 64 chars)	Not Applicable
Ft4	1,2	Are directory/file name case sensitive	Not Applicable
Ft5	1,2	Maximum file size for SetFile	Not Applicable
Ft6	1	Is the requested file path included in the MMS fileDirectory respond file name	Not Applicable
Ft7	1	Is the wild char supported MMS fileDirectory request	Not Applicable
Ft8	1,2	Is it allowed that 2 clients get a file at the same time	Not Applicable
Ft9	1,2	Which files can be deleted	Not Applicable

PIXIT for Service tracking model

ID	Ed	Description	Value / Clarification
Tr1	2	Which ACSI services are tracked by LTRK.GenTrk	Not Applicable

GE
Grid Solutions

3 Series Protective Relay Platform

Appendix B: Warranty and Revision History

Warranty

For products shipped as of 1 October 2013, GE warrants most of its GE manufactured products for 10 years. For warranty details including any limitations and disclaimers, see our Terms and Conditions at https://www.gegridsolutions.com/multilin/warranty.htm

For products shipped before 1 October 2013, the standard 24-month warranty applies.

Change notes

Manual Revision history

Table 1: Revision History

MANUAL P/N	RELEASE DATE
1601-0246-A1	June 2016
1601-0246-A2	March 2017
1601-0246-A3	September 2017
1601-0246-A4	July 2019
1601-0246-A5	June 2021

Major Updates

For information on the updates included in this release of the 3 Series Communications Guide, please refer to the latest release notes for the 3 Series 2.6x version online.



This manual replaces the following individual product Communications Guides:

- 350 Feeder Protection System Communications Guide (1601-9094-AB)
- 345 Transformer Protection System Communications Guide (1601-9099-A5)
- 339 Motor Protection System Communications Guide (1601-9102-A6)