



GE VERNOVA

Multilin EPM 4600

Multi-feed Power and Energy Metering Solution



Instruction Manual

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Multilin™ EPM 4600 Metering System Instruction Manual for product revision 1.0x.

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Part number: 1601-0296-A2 (February 2014)



GENERAL SAFETY PRECAUTIONS - EPM 4600

Failure to observe and follow the instructions provided in the equipment manual(s) could cause irreversible damage to the equipment and could lead to property damage, personal injury and/or death.

Before attempting to use the equipment, it is important that all danger and caution indicators are reviewed.

If the equipment is used in a manner not specified by the manufacturer or functions abnormally, proceed with caution. Otherwise, the protection provided by the equipment may be impaired and can result in impaired operation and injury.

Caution: Hazardous voltages can cause shock, burns or death.

Installation/service personnel must be familiar with general device test practices, electrical awareness and safety precautions must be followed.

Before performing visual inspections, tests, or periodic maintenance on this device or associated circuits, isolate or disconnect all hazardous live circuits and sources of electric power.

Failure to shut equipment off prior to removing the power connections could expose you to dangerous voltages causing injury or death.

All recommended equipment that should be grounded and must have a reliable and un-compromised grounding path for safety purposes, protection against electromagnetic interference and proper device operation.

Equipment grounds should be bonded together and connected to the facility's main ground system for primary power.

Keep all ground leads as short as possible.

At all times, equipment ground terminal must be grounded during device operation and service.

In addition to the safety precautions mentioned all electrical connections made must respect the applicable local jurisdiction electrical code.

Before working on CTs, they must be short-circuited.

To be certified for revenue metering, power providers and utility companies must verify that the billing energy meter performs to the stated accuracy. To confirm the meter's performance and calibration, power providers use field test standards to ensure that the unit's energy measurements are correct.

FCC/Industry Canada

This device complies with FCC Rules Part 15 and Industry Canada RSS-210 (Rev. 7). Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'appareil conforme aux CNR d'Industrie Canada applicables aux appareils radioexempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

1. L'appareil ne doit pas produire de brouillage.
2. L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

The antenna provided must not be replaced with a different type. Attaching a different antenna will void the FCC approval, and the FCC ID can no longer be considered.

Safety Words and Definitions

The following symbols used in this document indicate the following conditions



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



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



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



Indicates significant issues and practices that are not related to personal injury.



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

For further assistance

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Warranty

For products shipped as of 1 October 2013, GE Vernova Digital Energy warrants most of its GE Vernova manufactured products for 10 years. For warranty details including any limitations and disclaimers, see the GE Vernova Digital Energy Terms and Conditions at <https://www.gevernova.com/grid-solutions/multilin/warranty>

For products shipped before 1 October 2013, the standard 24-month warranty applies.

GLOSSARY

0.2 Second Values:

These values are the RMS values of the indicated quantity as calculated after approximately 200 milliseconds (3 cycles) of sampling.

1- Second Values:

These values are the RMS values of the indicated quantity as calculated after one second (60 cycles) of sampling.

Alarm:

An event or condition in a meter that can cause a trigger or call-back to occur.

Annunciator:

A short label that identifies particular quantities or values displayed, for example kWh.

Average (Current):

When applied to current values (Amps) the average is a calculated value that corresponds to the thermal average over a specified time interval.

The interval is specified by the user in the meter profile. The interval is typically 15 minutes. So, Average Amps is the thermal average of Amps over the previous 15-minute interval. The thermal average rises to 90% of the actual value in each time interval. For example, if a constant 100 Amp load is applied, the thermal average will indicate 90 Amps after one time interval, 99 Amps after two time intervals and 99.9 Amps after three time intervals.

Average (Input Pulse Accumulations):

When applied to Input Pulse Accumulations, the "Average" refers to the block (fixed) window average value of the input pulses.

Average (Power):

When applied to power values (Watts, VARs, VA), the average is a calculated value that corresponds to the thermal average over a specified time interval.

The interval is specified by the user in the meter profile. The interval is typically 15 minutes. So, the Average Watts is the thermal average of Watts over the previous 15-minute interval. The thermal average rises to 90% of the actual value in each time interval. For example, if a constant 100 kW load is applied, the thermal average will indicate 90 kW after one time interval, 99 kW after two time intervals and 99.9 kW after three time intervals.

Bit:

A unit of computer information equivalent to the result of a choice between two alternatives (Yes/No, On/Off, for example).

Or, the physical representation of a bit by an electrical pulse whose presence or absence indicates data.

Binary:

Relating to a system of numbers having 2 as its base (digits 0 and 1).

Block Window Avg. (Power):

The Block (Fixed) Window Average is the average power calculated over a user-set time interval, typically 15 minutes. This calculated average corresponds to the demand calculations performed by most electric utilities in monitoring user power demand. (See Rolling Window Average.)

Byte:

A group of 8 binary digits processed as a unit by a computer (or device) and used especially to represent an alphanumeric character.

CBEMA Curve:

A voltage quality curve established originally by the Computer Business Equipment Manufacturers Association. The CBEMA Curve defines voltage disturbances that could cause malfunction or damage in microprocessor devices. The curve is characterized by voltage magnitude and the duration which the voltage is outside of tolerance. (See ITIC Curve.)

Channel:

The storage of a single value in each interval in a load profile.

Cold Load Pickup:

This value is the delay from the time control power is restored to the time when the user wants to resume demand accumulation.

CRC Field:

Cyclic Redundancy Check Field (Modbus communication) is an error checksum calculation that enables a Slave device to determine if a request packet from a Master device has been corrupted during transmission. If the calculated value does not match the value in the request packet, the Slave ignores the request.

CT (Current) Ratio:

A Current Transformer Ratio is used to scale the value of the current from a secondary value up to the primary side of an instrument transformer.

Cumulative Demand:

The sum of the previous billing period maximum demand readings at the time of billing period reset. The maximum demand for the most recent billing period is added to the previously accumulated total of the maximum demands.

Demand:

The average value of power or a similar quantity over a specified period of time.

Demand Interval:

A specified time over which demand is calculated.

Display:

User-configurable visual indication of data in a meter.

DNP 3.0:

A robust, non-proprietary protocol based on existing open standards. DNP 3.0 is used to operate between various systems in electric and other utility industries and SCADA networks.

EEPROM:

Nonvolatile memory; Electrically Erasable Programmable Read Only Memory that retains its data during a power outage without need for a battery. Also refers to meter's FLASH memory.

Energy Register:

Programmable record that monitors any energy quantity. Example: Watt-hours, VAR-hours, VA-hours.

Ethernet:

A type of LAN network connection that connects two or more devices on a common communications backbone. An Ethernet LAN consists of at least one hub device (the network backbone) with multiple devices connected to it in a star configuration. The most common versions of Ethernet in use are 10BaseT and 100BaseT as defined in IEEE 802.3 standards. However, several other versions of Ethernet are also available.

Flicker:

Flicker is the sensation that is experienced by the human visual system when it is subjected to changes occurring in the illumination intensity of light sources. IEC 61000-4-15 and former IEC 868 describe the methods used to determine Flicker severity.

Harmonics:

Measuring values of the fundamental current and voltage and percent of the fundamental.

I²T Threshold:

Data will not accumulate until current reaches programmed level.

Integer:

Any of the natural numbers, the negatives of those numbers, or zero.

Invalid Register:

In the EPM 4600 meter's Modbus Map there are gaps between Registers. For example, the next Register after 08320 is 34817. Any unmapped Register stores no information and is said to be invalid.

ITIC Curve:

An updated version of the CBEMA Curve that reflects further study into the performance of microprocessor devices. The curve consists of a series of steps but still defines combinations of voltage magnitude and duration that will cause malfunction or damage.

Ke:

kWh per pulse; i.e. the energy.

kWh:

Kilowatt hours; kW x demand interval in hours.

KYZ Output:

Output where the rate of changes between 1 and 0 reflects the magnitude of a metered quantity.

LCD:

Liquid Crystal Display.

LED:

Light Emitting Diode.

Maximum Demand:

The largest demand calculated during any interval over a billing period.

Modbus ASCII:

Alternate version of the Modbus protocol that utilizes a different data transfer format. This version is not dependent upon strict timing, as is the RTU version. This is the best choice for telecommunications applications (via modems).

Modbus RTU:

The most common form of Modbus protocol. Modbus RTU is an open protocol spoken by many field devices to enable devices from multiple vendors to communicate in a common language. Data is transmitted in a timed binary format, providing increased throughput and therefore, increased performance.

Network:

A communications connection between two or more devices to enable those devices to send to and receive data from one another. In most applications, the network is either a serial type or a LAN type.

NVRAM:

Nonvolatile Random Access Memory: able to keep the stored values in memory even during the loss of circuit or control power. High speed NVRAM is used in the EPM 4600 meter to gather measured information and to insure that no information is lost.

Optical Port:

A port that facilitates infrared communication with a meter. Using an ANSI C12.13 Type II magnetic optical communications coupler and an RS232 cable from the coupler to a PC, the meter can be programmed with GE Vernova Communicator software.

Packet:

A short fixed-length section of data that is transmitted as a unit. Example: a serial string of 8-bit bytes.

Percent (%) THD:

Percent Total Harmonic Distortion. (See THD.)

Protocol:

A language that is spoken between two or more devices connected on a network.

PT Ratio:

Potential Transformer Ratio used to scale the value of the voltage to the primary side of an instrument transformer. Also referred to as VT Ratio.

Pulse:

The closing and opening of the circuit of a two-wire pulse system or the alternate closing and opening of one side and then the other of a three-wire system (which is equal to two pulses).

Q Readings:

Q is the quantity obtained by lagging the applied voltage to a wattmeter by 60 degrees. Values are displayed on the Uncompensated Power and Q Readings screen.

Quadrant (Programmable Values and Factors on the EPM 4600 meter):

Watt and VAR flow is typically represented using an X-Y coordinate system. The four corners of the X-Y plane are referred to as quadrants. Most power applications label the right hand corner as the first quadrant and number the remaining quadrants in a counter-clockwise rotation. Following are the positions of the quadrants: 1st - upper right, 2nd - upper left, 3rd - lower left and 4th - lower right.

Power flow is generally positive in quadrants 1 and 4.

VAR flow is positive in quadrants 1 and 2. The most common load conditions are: Quadrant 1 - power flow positive, VAR flow positive, inductive load, lagging or positive power factor; Quadrant 2 - power flow negative, VAR flow positive, capacitive load, leading or negative power factor.

Register:

An entry or record that stores a small amount of data.

Register Rollover:

A point at which a Register reaches its maximum value and rolls over to zero.

Reset:

Logs are cleared or new (or default) values are sent to counters or timers.

Rolling Window Average (Power):

The Rolling (Sliding) Window Average is the average power calculated over a user-set time interval that is derived from a specified number of sub-intervals, each of a specified time. For example, the average is calculated over a 15-minute interval by calculating the sum of the average of three consecutive 5-minute intervals. This demand calculation methodology has been adopted by several utilities to prevent customer manipulation of kW demand by simply spreading peak demand across two intervals.

RS232:

A type of serial network connection that connects two devices to enable communication between the devices. An RS232 connection connects only two points. Distance between devices is typically limited to fairly short runs.

Current standards recommend a maximum of 50 feet but some users have had success with runs up to 100 feet. Communications speed is typically in the range of 1200 bits per second to 57,600 bits per second. RS232 connection can be accomplished using Port 1 of the EPM 4600 9450/9650 meter.

RS485:

A type of serial network connection that connects two or more devices to enable communication between the devices. An RS485 connection allows multi-drop communication from one to many points.

Distance between devices is typically limited to around 2,000 to 3,000 wire feet. Communications speed is typically in the range of 120 bits per second to 115,000 bits per second.

Sag:

A voltage quality event during which the RMS voltage is lower than normal for a period of time, typically from 1/2 cycle to 1 minute.

Secondary Rated:

Any Register or pulse output that does not use any CT or PT(VT) Ratio.

Serial Port:

The type of port used to directly interface with a device using the RS232 standard.

Swell:

A voltage quality event during which the RMS voltage is higher than normal for a period of time, typically from 1/2 cycle to 1 minute.

TDD:

The Total Demand Distortion of the current waveform. The ratio of the root-sum-square value of the harmonic current to the maximum demand load current. (See equation below.)

NOTE: The TDD displayed in the Harmonics screen is calculated by GE Vernova Communicator software, using the Max Average Demand.

$$1TDD \square \sqrt{\frac{I_2^2 + I_3^2 + I_4^2 + I_5^2 + \dots \times 100\%}{I_L}}$$

THD:

Total Harmonic Distortion is the combined effect of all harmonics measured in a voltage or current. The THD number is expressed as a percent of the fundamental. For example, a 3% THD indicates that the magnitude of all harmonic distortion measured equals 3% of the magnitude of the fundamental 60Hz quantity. The %THD displayed is calculated by your EPM 4600 meter.

Time Stamp:

A stored representation of the time of an event. Time Stamp can include year, month, day, hour, minute, second and Daylight Savings Time indication.

TOU:

Time of Use.

Uncompensated Power:

VA, Watt and VAR readings not adjusted by Transformer Loss Compensation.

V2T Threshold:

Data stops accumulating when voltage falls below programmed level.

Voltage Imbalance:

The ratio of the voltage on a phase to the average voltage on all phases.

Voltage Quality Event:

An instance of abnormal voltage on a phase. The events the meter tracks include sags, swells, interruptions and imbalances.

VT Ratio:

The Voltage Transformer Ratio is used to scale the value of the voltage to the primary side of an instrument transformer. Also referred to as PT Ratio.

Voltage, Vab:

Vab, Vbc, Vca are all Phase-to-Phase voltage measurements. These voltages are measured between the three phase voltage inputs to the meter.

Voltage, Van:

Van, Vbn, Vcn are all Phase-to-Neutral voltages applied to the monitor. These voltages are measured between the phase voltage inputs and Vn input to the meter. Technologically, these voltages can be "measured" even when the meter is in a Delta configuration and there is no connection to the Vn input. However, in this configuration, these voltages have limited meaning and are typically not reported.

Voltage, Vaux:

This is the fourth voltage input measured from between the Vaux and Vref inputs. This input can be scaled to any value. However, the actual input voltage to the meter should be of the same magnitude as the voltages applied to the Va, Vb and Vc terminals.

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Multilin™ EPM 4600 Metering System

Chapter 1: Three-Phase Power Measurement

This introduction to three-phase power and power measurement is intended to provide only a brief overview of the subject. The professional meter engineer or meter technician should refer to more advanced documents such as the EEI Handbook for Electricity Metering and the application standards for more in-depth and technical coverage of the subject.

Three Phase System Configurations

Three-phase power is most commonly used in situations where large amounts of power will be used because it is a more effective way to transmit the power and because it provides a smoother delivery of power to the end load. There are two commonly used connections for three-phase power, a wye connection or a delta connection. Each connection has several different manifestations in actual use.

When attempting to determine the type of connection in use, it is a good practice to follow the circuit back to the transformer that is serving the circuit. It is often not possible to conclusively determine the correct circuit connection simply by counting the wires in the service or checking voltages. Checking the transformer connection will provide conclusive evidence of the circuit connection and the relationships between the phase voltages and ground.

Wye Connection

The wye connection is so called because when you look at the phase relationships and the winding relationships between the phases it looks like a Y. Figure 1.1 depicts the winding relationships for a wye-connected service. In a wye service the neutral (or center point of the wye) is typically grounded. This leads to common voltages of 208/ 120 and 480/277 (where the first number represents the phase-to-phase voltage and the second number represents the phase-to-ground voltage).

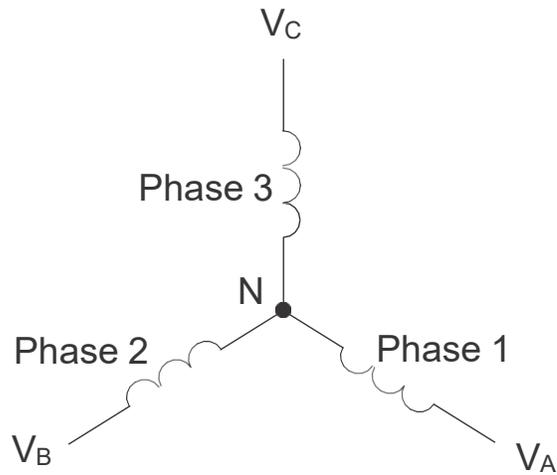


FIGURE 1.1: Three-phase Wye Winding

The three voltages are separated by 120° electrically. Under balanced load conditions the currents are also separated by 120° . However, unbalanced loads and other conditions can cause the currents to depart from the ideal 120° separation. Three-phase voltages and currents are usually represented with a phasor diagram. A phasor diagram for the typical connected voltages and currents is shown in Figure 1.2.

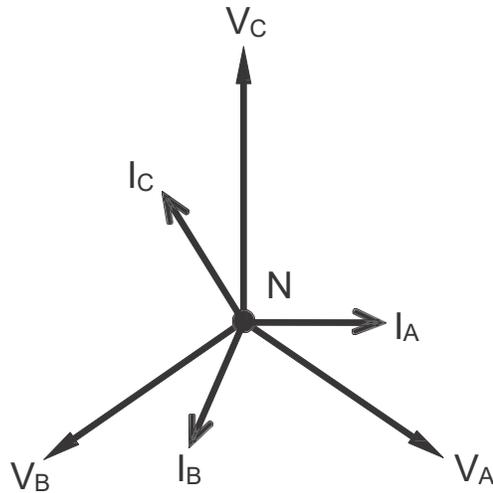


FIGURE 1.2: Phasor Diagram Showing Three-phase Voltages and Currents

The phasor diagram shows the 120° angular separation between the phase voltages. The phase-to-phase voltage in a balanced three-phase wye system is 1.732 times the phase-to-neutral voltage. The center point of the wye is tied together and is typically grounded. Table 1.1 shows the common voltages used in the United States for wye-connected systems.

Table 1.1: Common Phase Voltages on Wye Services

Phase to Ground Voltage	Phase to Phase Voltage
120 volts	208 volts

277 volts	480 volts
-----------	-----------

Table 1.1: Common Phase Voltages on Wye Services

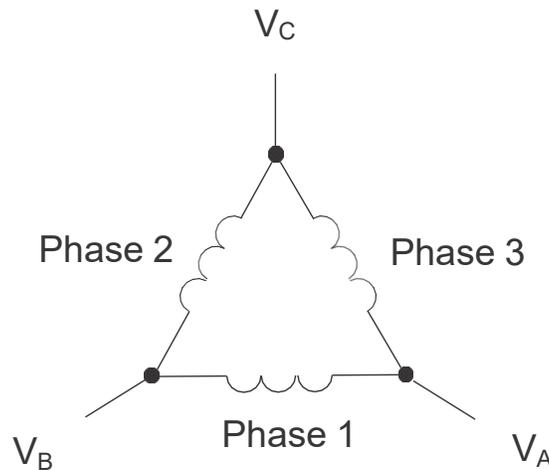
Phase to Ground Voltage	Phase to Phase Voltage
2,400 volts	4,160 volts
7,200 volts	12,470 volts
7,620 volts	13,200 volts

Usually a wye-connected service will have four wires: three wires for the phases and one for the neutral. The three-phase wires connect to the three phases (as shown in Figure 1.1). The neutral wire is typically tied to the ground or center point of the wye.

In many industrial applications the facility will be fed with a four-wire wye service but only three wires will be run to individual loads. The load is then often referred to as a delta-connected load but the service to the facility is still a wye service; it contains four wires if you trace the circuit back to its source (usually a transformer). In this type of connection the phase to ground voltage will be the phase-to-ground voltage indicated in Table 1, even though a neutral or ground wire is not physically present at the load. The transformer is the best place to determine the circuit connection type because this is a location where the voltage reference to ground can be conclusively identified.

Delta Connection

Delta-connected services may be fed with either three wires or four wires. In a three-phase delta service the load windings are connected from phase-to-phase rather than from phase-to-ground. Figure 1.3 shows the physical load connections for a delta service.

**FIGURE 1.3: Three-phase Delta Winding Relationship**

In this example of a delta service, three wires will transmit the power to the load. In a true delta service, the phase-to-ground voltage will usually not be balanced because the ground is not at the center of the delta.

Figure 1.4 shows the phasor relationships between voltage and current on a three-phase delta circuit.

In many delta services, one corner of the delta is grounded. This means the phase to ground voltage will be zero for one phase and will be full phase-to-phase voltage for the other two phases. This is done for protective purposes.

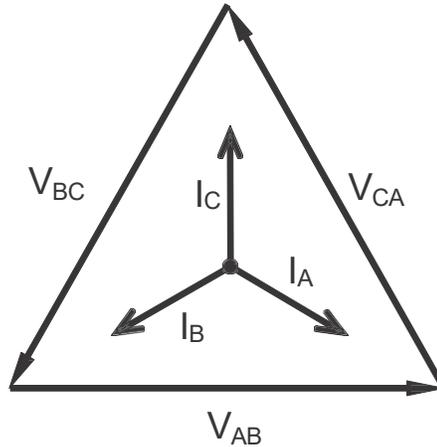


FIGURE 1.4: Phasor Diagram, Three-Phase Voltages and Currents, Delta-Connected

Another common delta connection is the four-wire, grounded delta used for lighting loads. In this connection the center point of one winding is grounded. On a 120/240 volt, four-wire, grounded delta service the phase-to-ground voltage would be 120 volts on two phases and 208 volts on the third phase. Figure 1.5 shows the phasor diagram for the voltages in a three-phase, four-wire delta system.

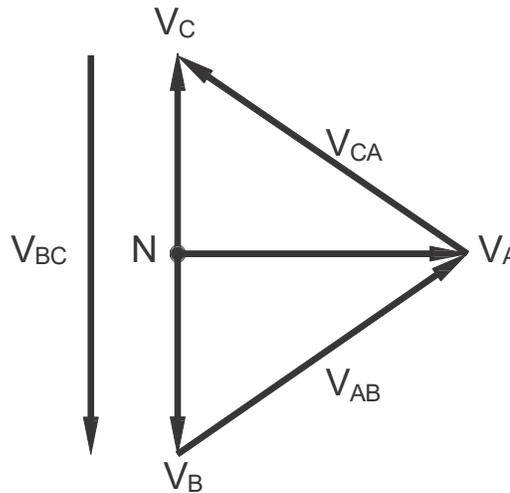


FIGURE 1.5: Phasor Diagram Showing Three-phase Four-Wire Delta-Connected System

Blondel's Theorem and Three Phase Measurement

In 1893 an engineer and mathematician named Andre E. Blondel set forth the first scientific basis for polyphase metering. His theorem states:

If energy is supplied to any system of conductors through N wires, the total power in the system is given by the algebraic sum of the readings of N wattmeters so arranged that each of the N wires contains one current coil, the corresponding potential coil being connected between that wire and some common point. If this common point is on one of the N wires, the measurement may be made by the use of N-1 Wattmeters.

The theorem may be stated more simply, in modern language:

In a system of N conductors, N-1 meter elements will measure the power or energy taken provided that all the potential coils have a common tie to the conductor in which there is no current coil.

Three-phase power measurement is accomplished by measuring the three individual phases and adding them together to obtain the total three phase value. In older analog meters, this measurement was accomplished using up to three separate elements. Each element combined the single-phase voltage and current to produce a torque on the meter disk. All three elements were arranged around the disk so that the disk was subjected to the combined torque of the three elements. As a result the disk would turn at a higher speed and register power supplied by each of the three wires.

According to Blondel's Theorem, it was possible to reduce the number of elements under certain conditions. For example, a three-phase, three-wire delta system could be correctly measured with two elements (two potential coils and two current coils) if the potential coils were connected between the three phases with one phase in common.

In a three-phase, four-wire wye system it is necessary to use three elements. Three voltage coils are connected between the three phases and the common neutral conductor. A current coil is required in each of the three phases.

In modern digital meters, Blondel's Theorem is still applied to obtain proper metering. The difference in modern meters is that the digital meter measures each phase voltage and current and calculates the single-phase power for each phase. The meter then sums the three phase powers to a single three-phase reading.

Some digital meters measure the individual phase power values one phase at a time. This means the meter samples the voltage and current on one phase and calculates a power value. Then it samples the second phase and calculates the power for the second phase. Finally, it samples the third phase and calculates that phase power.

After sampling all three phases, the meter adds the three readings to create the equivalent three-phase power value. Using mathematical averaging techniques, this method can derive a quite accurate measurement of three-phase power.

More advanced meters actually sample all three phases of voltage and current simultaneously and calculate the individual phase and three-phase power values. The advantage of simultaneous sampling is the reduction of error introduced due to the difference in time when the samples were taken.

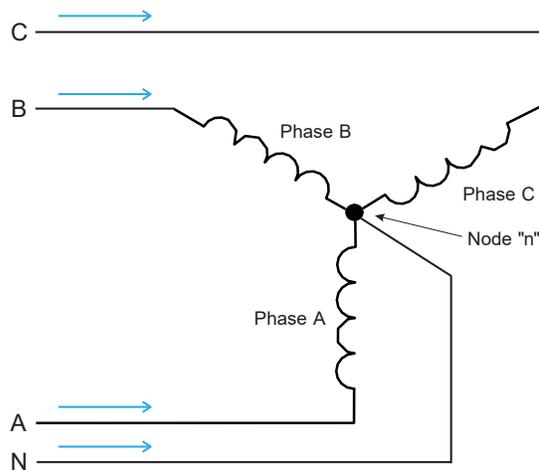


FIGURE 1.6: Three-Phase Wye Load Illustrating Kirchoff's Law and Blondel's Theorem

Blondel's Theorem is a derivation that results from Kirchoff's Law. Kirchoff's Law states that the sum of the currents into a node is zero. Another way of stating the same thing is that the current into a node (connection point) must equal the current out of the node. The law can be applied to measuring three-phase loads. Figure 1.6 shows a typical connection of a three-phase load applied to a three-phase, four-wire service. Kirchoff's Law holds that the sum of currents A, B, C and N must equal zero or that the sum of currents into Node "n" must equal zero.

If we measure the currents in wires A, B and C, we then know the current in wire N by Kirchoff's Law and it is not necessary to measure it. This fact leads us to the conclusion of Blondel's Theorem- that we only need to measure the power in three of the four wires if they are connected by a common node. In the circuit of Figure 1.6 we must measure the power flow in three wires. This will require three voltage coils and three current coils (a three-element meter). Similar figures and conclusions could be reached for other circuit configurations involving Delta-connected loads.

Power, Energy and Demand

It is quite common to exchange power, energy and demand without differentiating between the three. Because this practice can lead to confusion, the differences between these three measurements will be discussed.

Power is an instantaneous reading. The power reading provided by a meter is the present flow of watts. Power is measured immediately just like current. In many digital meters, the power value is actually measured and calculated over a one second interval because it takes some amount of time to calculate the RMS values of voltage and current. But this time interval is kept small to preserve the instantaneous nature of power.

Energy is always based on some time increment; it is the integration of power over a defined time increment. Energy is an important value because almost all electric bills are based, in part, on the amount of energy used.

Typically, electrical energy is measured in units of kilowatt-hours (kWh). A kilowatt-hour represents a constant load of one thousand watts (one kilowatt) for one hour. Stated another way, if the power delivered (instantaneous watts) is measured as 1,000 watts and the load was served for a one hour time interval then the load would have absorbed one kilowatt-hour of energy. A different load may have a constant power requirement of 4,000 watts. If the load were served for one hour it would absorb four kWh. If the load were served for 15 minutes it would absorb $\frac{1}{4}$ of that total or one kWh.

Figure 1.7 shows a graph of power and the resulting energy that would be transmitted as a result of the illustrated power values. For this illustration, it is assumed that the power level is held constant for each minute when a measurement is taken. Each bar in the graph will represent the power load for the one-minute increment of time. In real life the power value moves almost constantly.

The data from Figure 1.7 is reproduced in Table 1.2 to illustrate the calculation of energy. Since the time increment of the measurement is one minute and since we specified that the load is constant over that minute, we can convert the power reading to an equivalent consumed energy reading by multiplying the power reading times 1/60 (converting the time base from minutes to hours).

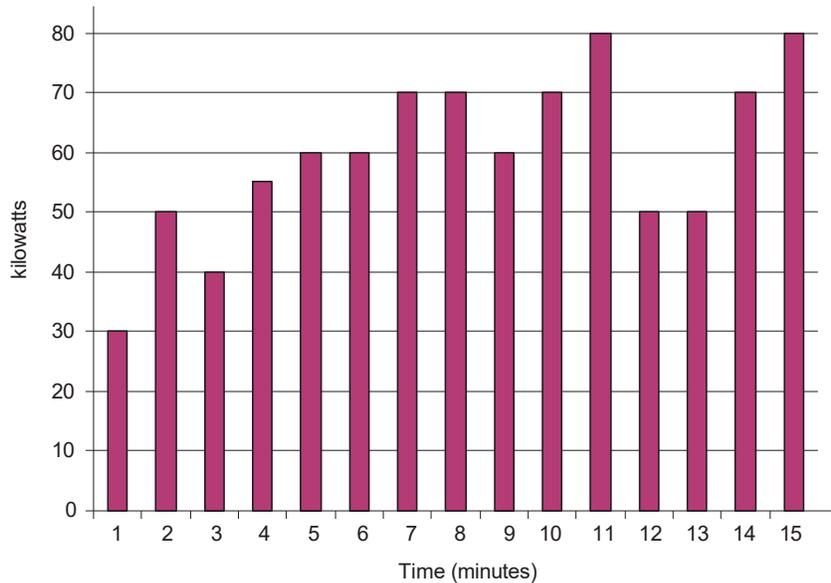


FIGURE 1.7: Power Use over Time

Table 1.2: Power and Energy Relationship over Time

Time Interval (minute)	Power (kW)	Energy (kWh)	Accumulated Energy (kWh)
1	30	0.50	0.50

Table 1.2: Power and Energy Relationship over Time

Time Interval (minute)	Power (kW)	Energy (kWh)	Accumulated Energy (kWh)
2	50	0.83	1.33
3	40	0.67	2.00
4	55	0.92	2.92
5	60	1.00	3.92
6	60	1.00	4.92
7	70	1.17	6.09
8	70	1.17	7.26
9	60	1.00	8.26
10	70	1.17	9.43
11	80	1.33	10.76
12	50	0.83	12.42
13	50	0.83	12.42
14	70	1.17	13.59
15	80	1.33	14.92

As in Table 1.2, the accumulated energy for the power load profile of Figure 1.7 is 14.92 kWh.

Demand is also a time-based value. The demand is the average rate of energy use over time. The actual label for demand is kilowatt-hours/hour but this is normally reduced to kilowatts. This makes it easy to confuse demand with power, but demand is not an instantaneous value. To calculate demand it is necessary to accumulate the energy readings (as illustrated in Figure 1.7) and adjust the energy reading to an hourly value that constitutes the demand.

In the example, the accumulated energy is 14.92 kWh. But this measurement was made over a 15-minute interval. To convert the reading to a demand value, it must be normalized to a 60-minute interval. If the pattern were repeated for an additional three 15-minute intervals the total energy would be four times the measured value or 59.68 kWh. The same process is applied to calculate the 15-minute demand value. The demand value associated with the example load is 59.68 kWh/hr or 59.68 kWd. Note that the peak instantaneous value of power is 80 kW, significantly more than the demand value.

Figure 1.8 shows another example of energy and demand. In this case, each bar represents the energy consumed in a 15-minute interval. The energy use in each interval typically falls between 50 and 70 kWh. However, during two intervals the energy rises sharply and peaks at 100 kWh in interval number 7. This peak of usage will result in setting a high demand reading. For each interval shown the demand value would be four times the indicated energy reading. So interval 1 would have an associated demand of 240 kWh/hr. Interval 7 will have a demand value of 400 kWh/hr. In the data shown, this is the peak demand value and would be the number that would set the demand charge on the utility bill.

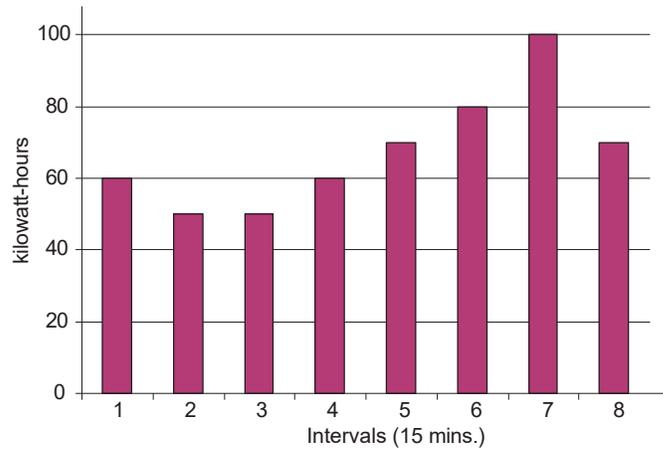


FIGURE 1.8: Energy Use and Demand

As can be seen from this example, it is important to recognize the relationships between power, energy and demand in order to control loads effectively or to monitor use correctly.

Reactive Energy and Power Factor

The real power and energy measurements discussed in the previous section relate to the quantities that are most used in electrical systems. But it is often not sufficient to only measure real power and energy. Reactive power is a critical component of the total power picture because almost all real-life applications have an impact on reactive power. Reactive power and power factor concepts relate to both load and generation applications. However, this discussion will be limited to analysis of reactive power and power factor as they relate to loads. To simplify the discussion, generation will not be considered.

Real power (and energy) is the component of power that is the combination of the voltage and the value of corresponding current that is directly in phase with the voltage. However, in actual practice the total current is almost never in phase with the voltage. Since the current is not in phase with the voltage, it is necessary to consider both the in-phase component and the component that is at quadrature (angularly rotated 90° or perpendicular) to the voltage. Figure 1.9 shows a single-phase voltage and current and breaks the current into its in-phase and quadrature components.

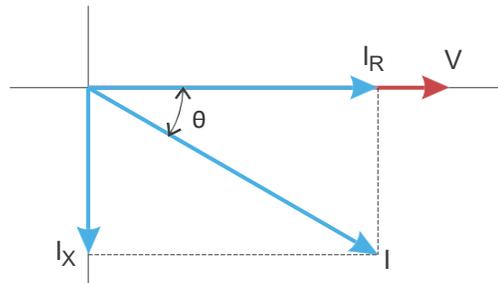


FIGURE 1.9: Voltage and Complex Current

The voltage (V) and the total current (I) can be combined to calculate the apparent power or VA. The voltage and the in-phase current (I_R) are combined to produce the real power or watts. The voltage and the quadrature current (I_X) are combined to calculate the reactive power.

The quadrature current may be lagging the voltage (as shown in Figure 1.9) or it may lead the voltage. When the quadrature current lags the voltage the load is requiring both real power (watts) and reactive power (VARs). When the quadrature current leads the voltage the load is requiring real power (watts) but is delivering reactive power (VARs) back into the system; that is VARs are flowing in the opposite direction of the real power flow.

Reactive power (VARs) is required in all power systems. Any equipment that uses magnetization to operate requires VARs. Usually the magnitude of VARs is relatively low compared to the real power quantities. Utilities have an interest in maintaining VAR requirements at the customer to a low value in order to maximize the return on plant invested to deliver energy. When lines are carrying VARs, they cannot carry as many watts. So keeping the VAR content low allows a line to carry its full capacity of watts. In order to encourage customers to keep VAR requirements low, some utilities impose a penalty if the VAR content of the load rises above a specified value.

A common method of measuring reactive power requirements is power factor. Power factor can be defined in two different ways. The more common method of calculating power factor is the ratio of the real power to the apparent power. This relationship is expressed in the following formula:

$$\text{Total PF} = \text{real power} / \text{apparent power} = \text{watts/VA}$$

This formula calculates a power factor quantity known as Total Power Factor. It is called Total PF because it is based on the ratios of the power delivered. The delivered power quantities will include the impacts of any existing harmonic content. If the voltage or current includes high levels of harmonic distortion the power values will be affected. By calculating power factor from the power values, the power factor will include the impact of harmonic distortion. In many cases this is the preferred method of calculation because the entire impact of the actual voltage and current are included.

A second type of power factor is Displacement Power Factor. Displacement PF is based on the angular relationship between the voltage and current. Displacement power factor does not consider the magnitudes of voltage, current or power. It is solely based on the phase angle differences. As a result, it does not include the impact of harmonic distortion. Displacement power factor is calculated using the following equation:

$$\text{Displacement PF} = \cos \phi$$

where ϕ is the angle between the voltage and the current (see Fig. 1.9).

In applications where the voltage and current are not distorted, the Total Power Factor will equal the Displacement Power Factor. But if harmonic distortion is present, the two power factors will not be equal.

Harmonic Distortion

Harmonic distortion is primarily the result of high concentrations of non-linear loads. Devices such as computer power supplies, variable speed drives and fluorescent light ballasts make current demands that do not match the sinusoidal waveform of AC electricity. As a result, the current waveform feeding these loads is periodic but not sinusoidal. Figure 1.10 shows a normal, sinusoidal current waveform. This example has no distortion.

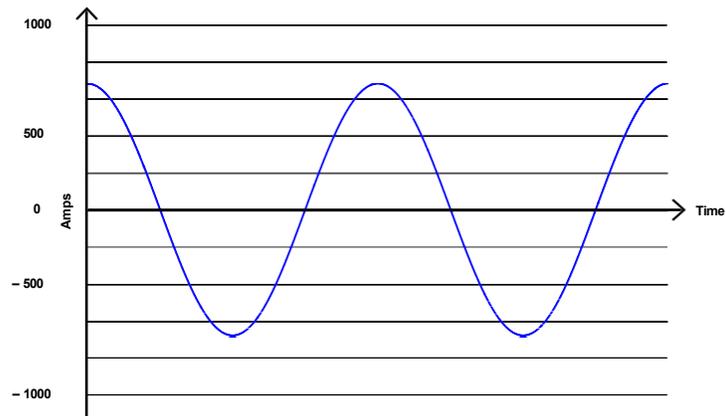


FIGURE 1.10: Nondistorted Current Waveform

Figure 1.11 shows a current waveform with a slight amount of harmonic distortion. The waveform is still periodic and is fluctuating at the normal 60 Hz frequency.

However, the waveform is not a smooth sinusoidal form as seen in Figure 1.10.

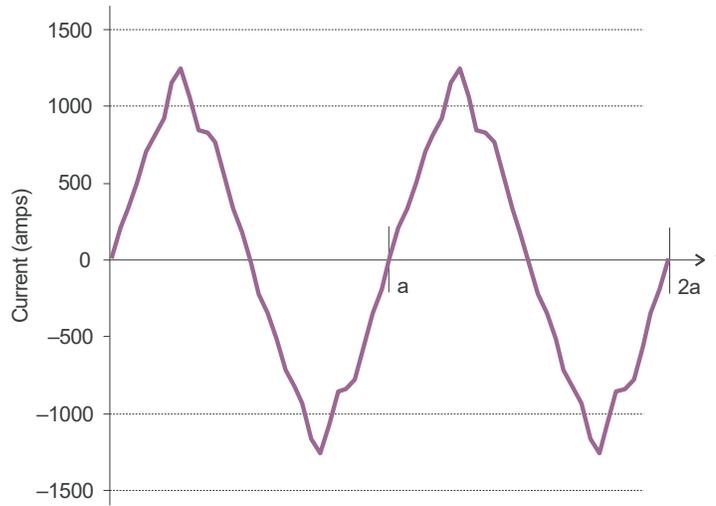


FIGURE 1.11: Distorted Current Waveform

The distortion observed in Figure 1.11 can be modeled as the sum of several sinusoidal waveforms of frequencies that are multiples of the fundamental 60 Hz frequency. This modeling is performed by mathematically disassembling the distorted waveform into a collection of higher frequency waveforms.

These higher frequency waveforms are referred to as harmonics. Figure 1.12 shows the content of the harmonic frequencies that make up the distortion portion of the waveform in Figure 1.11.

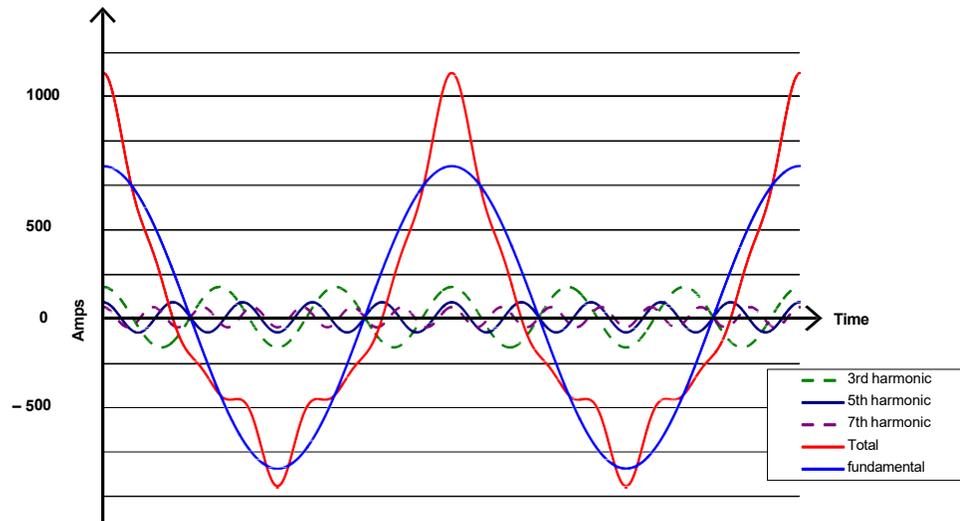


FIGURE 1.12: Waveforms of the Harmonics

The waveforms shown in Figure 1.12 are not smoothed but do provide an indication of the impact of combining multiple harmonic frequencies together.

When harmonics are present it is important to remember that these quantities are operating at higher frequencies. Therefore, they do not always respond in the same manner as 60 Hz values.

Inductive and capacitive impedance are present in all power systems. We are accustomed to thinking about these impedances as they perform at 60 Hz. However, these impedances are subject to frequency variation.

$$X_L = j\omega L \quad \text{and}$$

$$X_C = 1/j\omega C$$

At 60 Hz, $\omega = 377$; but at 300 Hz (5th harmonic) $\omega = 1,885$. As frequency changes impedance changes and system impedance characteristics that are normal at 60 Hz may behave entirely differently in the presence of higher order harmonic waveforms.

Traditionally, the most common harmonics have been the low order, odd frequencies, such as the 3rd, 5th, 7th, and 9th. However newer, non-linear loads are introducing significant quantities of higher order harmonics.

Since much voltage monitoring and almost all current monitoring is performed using instrument transformers, the higher order harmonics are often not visible. Instrument transformers are designed to pass 60 Hz quantities with high accuracy. These devices, when designed for accuracy at low frequency, do not pass high frequencies with high accuracy; at frequencies above about 1200 Hz they pass almost no information. So when instrument transformers are used, they effectively filter out higher frequency harmonic distortion making it impossible to see.

However, when monitors can be connected directly to the measured circuit (such as direct connection to a 480 volt bus) the user may often see higher order harmonic distortion. An important rule in any harmonics study is to evaluate the type of equipment and connections before drawing a conclusion. Not being able to see harmonic distortion is not the same as not having harmonic distortion.

It is common in advanced meters to perform a function commonly referred to as waveform capture. Waveform capture is the ability of a meter to capture a present picture of the voltage or current waveform for viewing and harmonic analysis.

Typically a waveform capture will be one or two cycles in duration and can be viewed as the actual waveform, as a spectral view of the harmonic content, or a tabular view showing the magnitude and phase shift of each harmonic value. Data collected with waveform capture is typically not saved to memory. Waveform capture is a real-time data collection event.

Waveform capture should not be confused with waveform recording that is used to record multiple cycles of all voltage and current waveforms in response to a transient condition.

Power Quality

Power quality can mean several different things. The terms “power quality” and “power quality problem” have been applied to all types of conditions. A simple definition of “power quality problem” is any voltage, current or frequency deviation

that results in mis-operation or failure of customer equipment or systems. The causes of power quality problems vary widely and may originate in the customer equipment, in an adjacent customer facility or with the utility.

In his book *Power Quality Primer*, Barry Kennedy provided information on different types of power quality problems. Some of that information is summarized in Table 1.3.

Table 1.3: Typical Power Quality Problems and Sources

Cause	Disturbance Type	Source
Impulse transient	Transient voltage disturbance, sub-cycle duration	Lightning Electrostatic discharge Load switching Capacitor switching
Oscillatory transient with decay	Transient voltage, sub-cycle duration	Line/cable switching Capacitor switching Load switching
Sag/swell	RMS voltage, multiple cycle duration	Remote system faults
Interruptions	RMS voltage, multiple seconds or longer duration	System protection Circuit breakers Fuses Maintenance
Under voltage/over voltage	RMS voltage, steady state, multiple seconds or longer duration	Motor starting Load variations Load dropping
Voltage flicker	RMS voltage, steady state, repetitive condition	Intermittent loads Motor starting Arc furnaces
Harmonic distortion	Steady state current or voltage, long-term duration	Non-linear loads System resonance

It is often assumed that power quality problems originate with the utility. While it is true that power quality problems can originate with the utility system, many problems originate with customer equipment. Customer-caused problems may manifest themselves inside the customer location or they may be transported by the utility system to another adjacent customer. Often, equipment that is sensitive to power quality problems may in fact also be the cause of the problem.

If a power quality problem is suspected, it is generally wise to consult a power quality professional for assistance in defining the cause and possible solutions to the problem.

Multilin™ EPM 4600 Metering System

Chapter 2: EPM 4600 Metering System Overview and Specifications

The EPM 4600 unit is a multi-port, high-density power and energy metering system, designed to be used in high-density metering environments such as data centers, commercial high-rise complexes, high-density power distribution panels, and branch circuits.

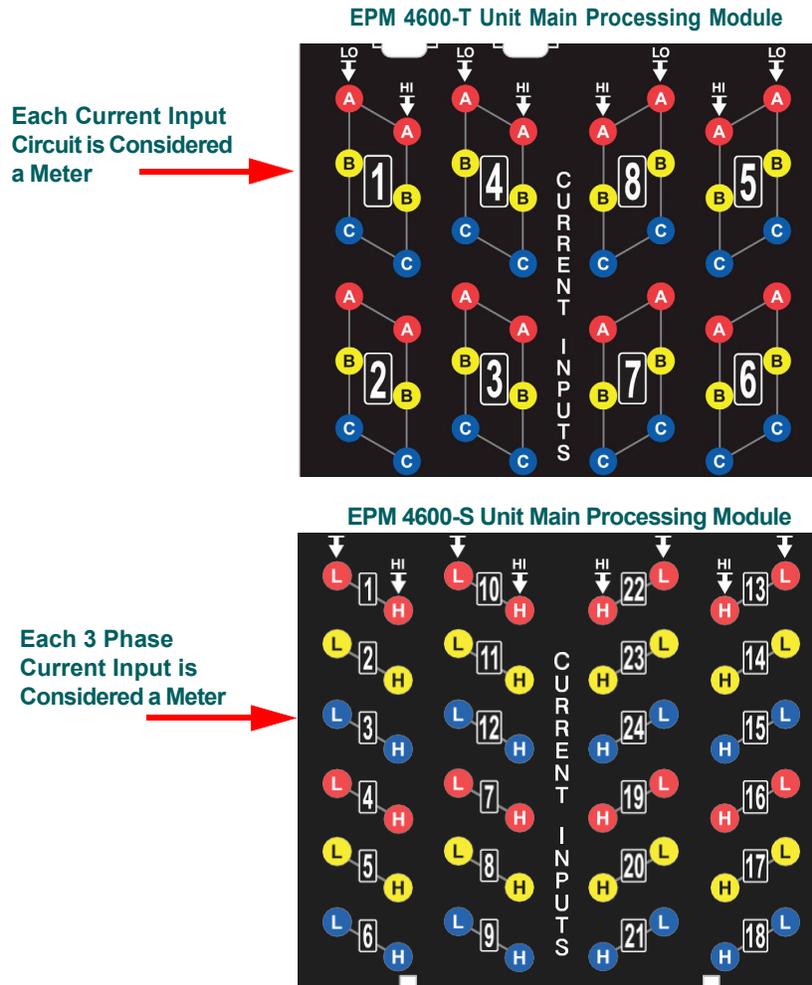


FIGURE 2.1: EPM 4600 Metering System

The EPM 4600 metering system provides 8 three phase or 24 single phase meters served by one central processing unit, which delivers the measured data in multiple formats via RS485 serial communication, USB port communication, RJ45 Ethernet, or 802.11 WiFi Ethernet options. The EPM 4600 metering system also has data logging and load profiling capability to provide historical data analysis.

The EPM 4600 unit can be ordered as either an EPM 4600-T for three phase systems or as an EPM 4600-S for single phase systems. The EPM 4600 unit is designed to be a cost-effective instrument for high density metering. It is important to note that for this design to function properly, all loads must be powered from a common voltage (or three phase voltage) set.

The EPM 4600 metering system was designed using the following concept:



The EPM 4600 metering system offers up to 32 MegaBytes of non-volatile memory for per-circuit Energy usage trending. The EPM 4600 unit provides you with up to 5 logs: two historical logs, a log of limit alarms, a log of I/O changes, and a sequence of events log.

The EPM 4600 metering system is designed with advanced measurement capabilities, allowing it to achieve high performance accuracy. It is rated as a 0.5% Class accuracy metering device, meeting ANSI C12.20 and IEC 62053-22 0.5% classes.

Optional Display

The EPM 4600 unit offers an optional touch-screen color LED display. The display is available in two sizes: 3.5" (DIS3500) and 5.7" (DIS5700). The display lets you view readings from all of the meters on the EPM 4600 unit. See "Using the Optional Display" on page 10-1 for DIS3500/DIS5700 display details.

Voltage and Current Inputs

Universal Voltage Inputs

Voltage inputs allow measurement up to Nominal 480VAC (Phase to Reference) and 600VAC (Phase to Phase). This insures proper safety when wiring directly to high voltage systems. The EPM 4600 unit will perform to specification on 69 Volt, 120 Volt, 230 Volt, 277 Volt, and 347 Volt power systems.

Higher voltages require the use of potential transformers (PTs). The EPM 4600 unit is programmable to any PT ratio needed.

Current Inputs

The EPM 4600 unit can be ordered with either a 10 Amp or a 2 Amp secondary for current measurements. Depending on the EPM 4600 metering system model, there are either 8 three phase current inputs, or 24 single phase current inputs. The current inputs are only to be connected to external current transformers that are approved or certified.

The 10 Amp or 2 Amp secondary is an ordering option and as such it cannot be changed in the field. The 10 Amp secondary model (10A) allows the unit to over-range to 10 Amps per current circuit. The 2 Amp secondary model (02A) allows the unit to overrange to 2 Amps per current circuit.

Ordering Information

Table 2-2: EPM 4600 Meter Order Codes

PL4600	—	*	—	*	—	*	—	*	—	*	Description
Base Unit	PL4600										
Feed Configuration		T									Three Phase
		S									Single Phase
Frequency			5								50 Hz AC frequency system
			6								60 Hz AC frequency system
Current Inputs					10A						Up to 10A Current
					02A						Up to 2A Current
Software							A				Transducer
							B				Basic Logging-2MB Memory
							C				Advanced Logging-32MB Memory
Communications									S		Serial (RS485) Modbus
									W		WiFi, RJ45 100BaseT Ethernet

Example:

PL4600-T-6-10A-B-S

EPM 4600 metering system with three phase circuit configuration, 60 Hz Frequency, 10 Amp Secondary, B Software option, and Serial (RS485) Modbus communication.

NOTE on Frequency: It is important to specify the frequency to insure the highest possible calibration accuracy from the factory.

Table 2–3: EPM 4600 Display Order Codes

	PL4600	–	*	Description
Displays	PL4600	-	DIS3500	3.5" Touch Screen Display with Installation Kit
			DIS5700	5.7" Touch Screen Display with Installation Kit

Software option

The EPM 4600 metering system is equipped with a Software option, which is a virtual firmware-based switch that lets you enable features through software communication. The Software option allows feature upgrades after installation without removal from service.

Available Software option upgrades are as follows:

- Software option A: Transducer
- Software option B: Basic logging with 2 MegaBytes* memory
- Software option C: Advanced logging with 32 MegaBytes* memory

* The table below shows the number of days of logging available with B and C, for the EPM 4600-T and EPM 4600-S circuit configurations, based on a 15 minute logging interval. Note that both EPM 4600-T and EPM 4600-S units have Log 1; Log 2 is used for EPM 4600-T units, only, and Log 3 is used for EPM 4600-S units, only.

Model	Wiring	Log 1 B	Log 2/3 B	Log 1 C	Log 2/3 C
EPM 4600-T	Three Phase/ 8 circuits	68 days	105 days	3617 days	2872 days
EPM 4600-S	Single Phase/24 circuits	136 days	47 days	7235 days	1247 days

Obtaining a Software option:

Contact GE Vernova Digital Energy's inside sales staff at sales@gedigitalenergy.com and provide the following information:

1. Serial number(s) of the EPM 4600 unit(s) you are upgrading. Use the number(s), with leading zeros, shown in the GE Vernova Communicator Device Status screen (from the GE Vernova Communicator Main screen, click **Tools>Device Status**).
2. Desired Software option.
3. Credit card or Purchase Order number. GE Vernova Digital Energy will issue a Software option encrypted key.

Enabling the Software option:

1. Open GE Vernova Communicator software.
2. Power up your EPM 4600 unit.
3. Connect to the EPM 4600 unit through GE Vernova Communicator software (see "Communicating with the Meter" on page 5-1).
4. Click **Tools>Change Software option** from the Title Bar. A screen opens, requesting the encrypted key.
5. Enter the Software option key provided by GE Vernova Digital Energy.
6. Click the **OK** button. The Software option is enabled and the EPM 4600 unit resets.

Measured Values

The EPM 4600 metering system provides the following measured values, all in real time instantaneous. As the following tables show, some values are also available in average, maximum and minimum.

Table 2.1: Single Phase Circuit Configuration

Measured Values	Instantaneous	Avg	Max	Min
Voltage L-N	X		X	X
Current	X	X	X	X
WATT	X	X	X	X
VAR	X	X	X	X
VA	X	X	X	X
PF	X	X	X	X
+Watt-Hour	X			
-Watt-Hour	X			
Watt-Hour Net	X			
+VAR-Hour	X			
-VAR-Hour	X			
VAR-Hour Net	X			
VA-Hour	X			
Frequency	X		X	X
Current Angle	X			

Table 2.2: Three Phase Circuit Configuration

Measured Values	Instantaneous	Avg	Max	Min
Voltage L-N	X		X	X
Voltage L-L	X		X	X
Current per Phase	X	X	X	X
Current Neutral (see NOTE, below)	X	X	X	X
WATT (A,B,C,Tot.)	X	X	X	X
VAR (A,B,C,Tot.)	X	X	X	X
VA (A,B,C,Tot.)	X	X	X	X
PF (A,B,C,Tot.)	X	X	X	X
+Watt-Hour (A,B,C,Tot.)	X			
-Watt-Hour (A,B,C,Tot.)	X			
Watt-Hour Net	X			
+VAR-Hour (A,B,C,Tot.)	X			
-VAR-Hour (A,B,C,Tot.)	X			
VAR-Hour Net (A,B,C,Tot.)	X			
VA-Hour (A,B,C,Tot.)	X			
Frequency	X		X	X
Voltage Angles	X			
Current Angles	X			



NOTE

Neutral current is calculated only when the voltages are connected; if voltages are not connected, the neutral current will not be calculated.

Utility Peak Demand

The EPM 4600 metering system provides user-configured Block (Fixed) window or Rolling window Demand modes. This feature lets you set up a customized Demand profile. Block window Demand mode records the average demand for time intervals you define (usually 5, 15 or 30 minutes). Rolling window Demand mode functions like multiple, overlapping Block windows. You define the subintervals at which an average of Demand is calculated. An example of Rolling window Demand mode would be a 15-minute Demand block using 5-minute subintervals, thus providing a new Demand reading every 5 minutes, based on the last 15 minutes.

Utility Demand features can be used to calculate Watt, VAR, VA and PF readings. Voltage provides an instantaneous Max and Min reading which displays the highest surge and lowest sag seen by the meters. All other parameters offer Max and Min capability over the user-selectable averaging period.

Specifications

Power Supply

Range: Universal, 90-300VAC @50/60Hz or
150VDC Power Consumption: 18VA, 12W, Maximum

Voltage Inputs (Measurement Category III)

(For Accuracy specifications, see "Accuracy" on page 2-12.)

Range: Universal, Auto-ranging up to 576VAC L-N, 721VAC
L-L Supported hookups: EPM 4600-T: 3 Element Wye
EPM 4600-S: Single Phase, 2 wire, 3 wire
Input Impedance: 4.2M Ohm/Phase
Burden: 0.09VA/Phase Max at 600 Volts; 0.014VA at 120 Volts
Pickup Voltage: 20VAC
Connection: 7 Pin 0.400" Pluggable Terminal
Block AWG#12 -26/ (0.08 -2.5)
mm²
Fault Withstand: Meets IEEE C37.90.1
Reading: Programmable Full Scale to any PT ratio

Current Inputs

(For Accuracy specifications, see "Accuracy" on page 2-12.)

Class 10: 5A Nominal, 10A Maximum
Class 2: 1A Nominal, 2A Maximum
Burden: 0.005VA Per Input Max at 11 Amps
Pickup Current: 0.1% of
Nominal Class
10: 5mA
Class 2: 1mA
Current Input Terminals: 8-32 Threaded Studs
Reading: Programmable Full Scale to any CT
ratio Continuous Current Withstand: 20 Amps

Maximum Voltage across Current Inputs: 1VAC

Maximum Voltage from Current Inputs to Ground: 50VAC



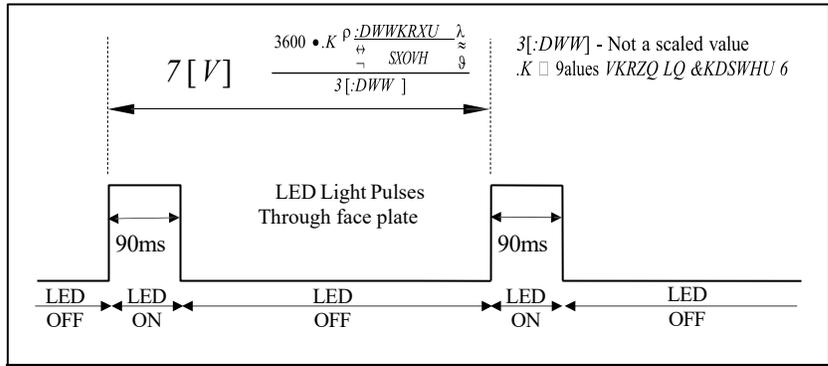
For detailed electrical specifications for the optional display see “DIS3500/DIS5700 Specifications” on page 10-3

Wh Pulses

Red LED light pulses through top cover (see “Performing Watt-Hour Accuracy Testing” on page 6-2 for Kh values):

Peak Spectral wavelength: 574nm

Output timing:



See “Performing Watt-Hour Accuracy Testing” on page 6-2 for Kh values.

Isolation

All Inputs and Outputs are galvanically isolated to 2500 VAC

Environmental Rating with and without Optional Display DIS3500/DIS5700

Storage: (-20 to +70)° C/(-4 to +158)° F

F Storage with Display: (-20 to +60)° C/(-4 to +140)° F

Operating: (-20 to +60)° C/(-4 to +140)° F

F Operating with Display: (0 to +50)° C/(+32 to +122)° F

Humidity: to 95% RH Non-condensing

Humidity with Display: to 85% RH Non-condensing; Wet bulb temperature 39°C/ 102.2° F or less

Measurement Methods

Voltage, current: True RMS

Power: Sampling at over 400 samples per cycle on each channel simultaneously

Update Rate

All parameters: Every 60 cycles (e.g., 1 s @ 60 Hz)

Communication

Standard:

1. RS485 port (Com 1)
2. USB port (Com 2)
3. RS485/Display port (Com 3)

4. Energy pulse output LED for meter testing: there are 8 pulses, one for each of the three phase loads of the EPM 4600-T; for the EPM 4600-S, the test pulses are shared, with one pulse for every three loads (see “Using the Metering System’s Watt-Hour Test Pulses” on page 6-1 for more details and instructions for using the Test pulses).

Optional:

Ethernet/WiFi port (Com 1):802.11b Wireless or RJ45
Connection 10/100BaseT Ethernet

Com Specifications

RS485 Ports (Com 1 and Com3):

RS485 Transceiver; meets or exceeds EIA/TIA-485

Standard Type: Two-wire, half duplex

Min. input impedance: 96k Ω

Max. output current:
 ± 60 m

A

Protocol: Modbus RTU, Modbus

ASCII Com port baud rates: 9600 to 57600 bps

Device address: 001-247

Data format: 8 Bit

WiFi/Ethernet Port (optional Com 1):

Wireless security: 64 or 128 bit WEP; WPA; or

WPA2 Protocol: Modbus TCP

Device address: 001-247

USB Port (Com 2):

Protocol: Modbus

ASCII Com port baud rate:57600 bps

Device address: 1

Com Specifications for Optional Displays DIS3500/DIS5700

Serial Interface COM1:

Asynchronous Transmission: RS232C / RS422 /

RS485 Data Length: 7 or 8 bits

Stop Bit: 1 or 2 bits

Parity: None, odd or even

Data Transmission Speed: 2,400 to 115.200 kbps,

187,500 bps Connector: D-Sub 9-pin (plug)

Ethernet Interface:

Ethernet (LAN): IEEE802.3i/ IEEE802.3u, 10BASE-T/100BASE-TX

Connector: D-Sub 9-pin

(plug) LED:

Green, lit: Data transmission is available

Green, blinking: Data transmission is occurring

Relay Output/Digital Input Board Specifications at 25° C

Relay outputs:

Number of outputs: 2

Contact type:	Changeover (SPDT)
Relay type:	Mechanically
latching Switching voltage:	AC 150V /
DC 30V Switching power:	750VA /
	150W
Switching current:	5A
Switching rate max.:	10/s
Mechanical life:	5 x 10 ⁷ switching operations
Electrical life:	10 ⁵ switching operations at rated current
Breakdown voltage:	AC 1000V between open contacts
Isolation:	AC 3000V / 5000V surge system to contacts
Reset/power down state:	No change - last state is retained
Inputs:	
Number of inputs:	4
Sensing type:	Wet or dry contact status
detection Wetting voltage:	DC (1-24)V, internally generated
Input current:	2.5mA – constant current regulated
Minimum input voltage:	0V (input shorted to common)
Maximum input voltage:	DC 150V (diode protected against polarity reversal)
Filtering:	De-bouncing with 50ms delay time
Detection scan rate:	100ms
Isolation:	AC 2500V system to inputs
External Connection:	AWG 12-26/(0.129 - 3.31)mm ²
	11 pin, 0.200" pluggable terminal block

Mechanical Parameters

Dimensions:	7.6(L) x 11.28(W) x 4.36(H) in / 19.3(L) x 28.65(W) x 11.07(H) cm
Weight:	7 pounds (3.18kg)

Compliance

- UL Listing: UL61010-1, CAN/CSA C22.2 No. 61010-1, UL file number E250818
- IEC 62053-22 (0.5% Class)
- ANSI C12.20 (0.5% Accuracy)
- ANSI (IEEE) C37.90.1 Surge Withstand
- ANSI C62.41 (Burst)
- EN61000-6-2 Immunity for Industrial Environments
- EN61000-6-4 Emission Standards for Industrial Environments
- EN61326 EMC Requirements

Accuracy

(For full Range specifications see “Specifications” on page 2-8.) EPM 4600 metering system Clock accuracy:
 ± 3.5 ppm max. (± 0.3024 second/day) over the rated temperature range For 23 °C, three phase or single phase 3 wire connected balanced load:

Parameter	Accuracy	Accuracy Input Range
Voltage L-N [V]	0.3% of reading*	(69 to 480)V
Voltage L-L [V]	0.5% of reading	(120 to 600)V
Current Phase [A]	0.3% of reading	(0.15 to 5)A
Current Neutral (calculated) [A]	2.0% of Full Scale	(0.15 to 5)A @ (45 to 65)Hz
Active Power Total [W]	0.5% of reading*	(0.15 to 5)A @ (69 to 480)V @ +/- (0.5 to 1) lag/lead PF
Active Energy Total [Wh]	0.5% of reading*	(0.15 to 5)A @ (69 to 480)V @ +/- (0.5 to 1) lag/lead PF
Reactive Power Total [VAR]	1.0% of reading*	(0.15 to 5)A @ (69 to 480)V @ +/- (0 to 0.8) lag/lead PF
Reactive Energy Total [VARh]	1.0% of reading*	(0.15 to 5)A @ (69 to 480)V @ +/- (0 to 0.8) lag/lead PF
Apparent Power Total [VA]	1.0% of reading*	(0.15 to 5)A @ (69 to 480)V @ +/- (0.5 to 1) lag/lead PF
Apparent Energy Total [VAh]	1.0% of reading*	(0.15 to 5)A @ (69 to 480)V @ +/- (0.5 to 1) lag/lead PF
Power Factor	1.0% of reading*	(0.15 to 5)A @ (69 to 480)V @ +/- (0.5 to 1) lag/lead PF
Frequency	+/- 0.01Hz	(45 to 65)Hz

* For unbalanced voltage inputs where at least one crosses the 150V auto-scale threshold (for example, 120V/120V/208V system), degrade accuracy by additional 0.4%.

The EPM 4600 metering system's accuracy meets the IEC62053-22 and ANSI C12.20 Accuracy Standards for 0.5% Class Energy meters.

Multilin™ EPM 4600 Metering System

Chapter 3: Mechanical Installation and Maintenance

EPM 4600 Unit Dimensions

The drawings shown below and on the next page give you the EPM 4600 unit dimensions in inches and millimeters [mm shown in brackets]. Tolerance is +/- 0.1" [.25 cm].

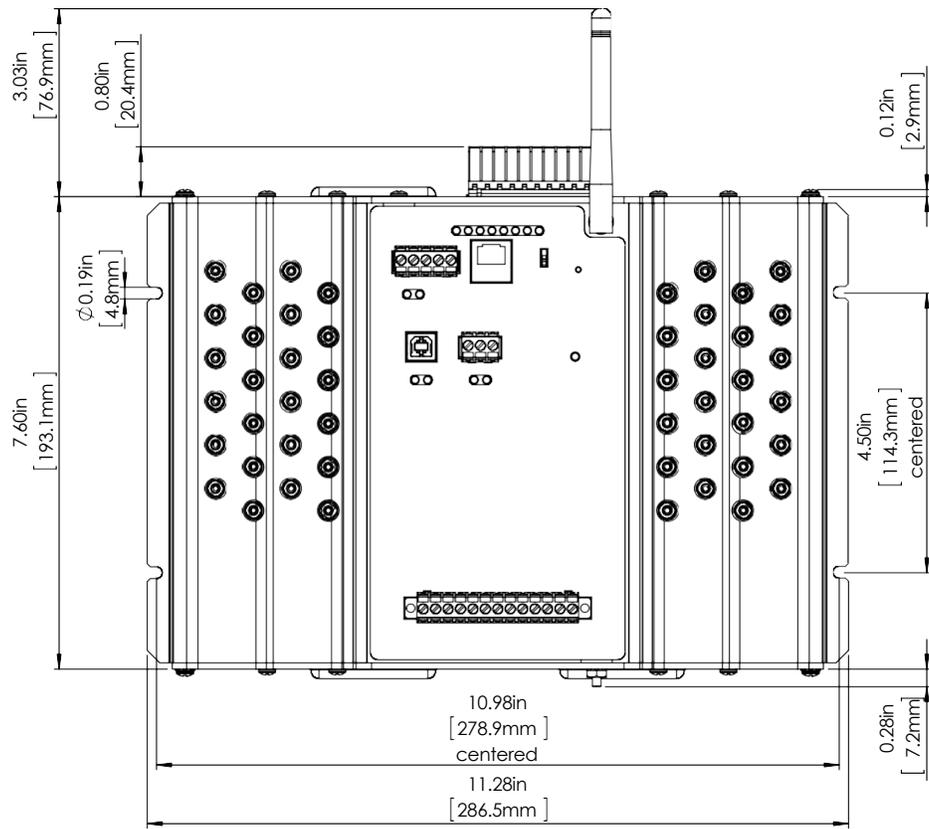


FIGURE 3.1: EPM 4600 Unit Front Dimensions

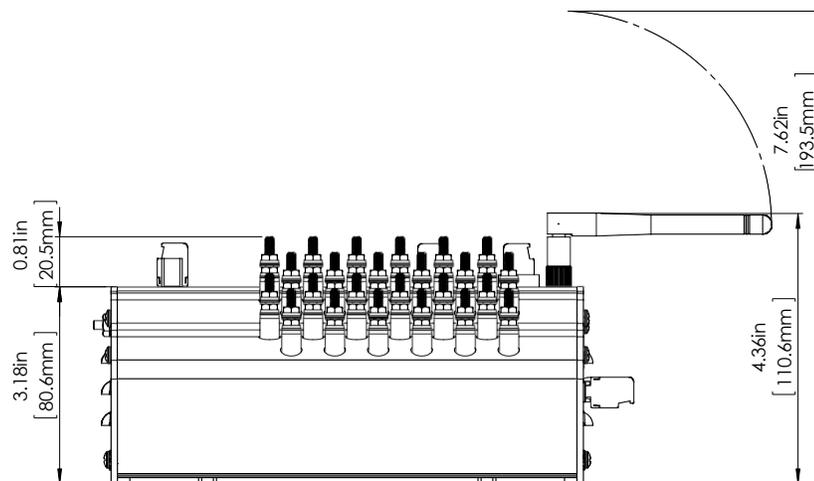


FIGURE 3.2: EPM 4600 Unit Side Dimensions

Mounting the EPM 4600 Unit

The EPM 4600 unit is designed to mount against any firm, flat surface. Use a #8 screw in each of the four slots on the flange to ensure that the EPM 4600 unit is installed securely. For safety reasons, mount the EPM 4600 unit in an enclosed and protected environment, such as in a switchgear cabinet. Install a switch or circuit breaker nearby; label it clearly as the EPM 4600 unit's disconnecting mechanism.

Recommended tools for EPM 4600 unit installation:

- #2 Phillips screwdriver
- 1/4-inch (0.250") nut driver, socket, box, or open-end wrench
- Wire cutters

The EPM 4600 unit is designed to withstand harsh environmental conditions; however it is recommended you install it in a dry location, free from dirt and corrosive substances. See "Electrical Installation" on page 4-1 for electrical installation instructions.

Cleaning the EPM 4600 Unit



Do NOT clean with power applied. Disconnect power from the EPM 4600 metering system before following the cleaning procedure.

1. Wipe the EPM 4600 unit with a dry cloth. If stains or other material cannot be removed with a dry cloth, slightly moisten a cloth with a consumer window cleaner and use this to remove the stains or other material. Immediately wipe the unit down with a dry cloth to eliminate remaining moisture. The unit must be completely dry before being re-energized.
2. Dust may be blown off using room temperature compressed air at a maximum of 20 PSI.

Multilin™ EPM 4600 Metering System

Chapter 4: Electrical Installation

Considerations When Installing the EPM 4600 Metering System

CAUTION

Installation of the EPM 4600 metering system must be performed only by qualified personnel who follow standard safety precautions during all procedures. Those personnel should have appropriate training and experience with high voltage devices. Appropriate safety gloves, safety glasses and protective clothing is recommended.

During normal operation of the EPM 4600 unit, dangerous voltages flow through many parts of the unit, including: terminals and any connected CTs (current transformers) and PTs (potential transformers), all I/O Modules (inputs and outputs) and their circuits.

All Primary and Secondary circuits can, at times, produce lethal voltages and currents. Avoid contact with any current-carrying surfaces.

WARNING

Do not use the EPM 4600 metering system or any I/O output device for primary protection or in an energy-limiting capacity. The EPM 4600 metering system can only be used as secondary protection.

WARNING

Do not use the unit as the only notification device for critical alarms, such as device overheating or over-current.

WARNING

Do not use the EPM 4600 unit for applications where failure of the EPM 4600 unit may cause harm or death.

WARNING

Do not use the EPM 4600 unit for any application where there may be a risk of fire.

All EPM 4600 unit terminals should be inaccessible after installation.

WARNING

Do not apply more than the maximum voltage the EPM 4600 unit or any attached device can withstand. Refer to EPM 4600 unit and/or device labels and to the specifications for all devices before applying voltages. Do not HIPOT/Dielectric test any outputs, inputs or communication terminals.

⚠ WARNING

GE Vernova Digital Energy recommends the use of fuses for voltage leads and power supply, and shorting blocks to prevent hazardous voltage conditions or damage to CTs, if the EPM 4600 unit needs to be removed from service. One side of the CT must be grounded.



The current inputs are only to be connected to external current transformers provided by the installer. The CTs shall be Approved or Certified and rated for the current of the meter used.

⚠ DANGER

IF THE EQUIPMENT IS USED IN A MANNER NOT SPECIFIED BY THE MANUFACTURER, THE PROTECTION PROVIDED BY THE EQUIPMENT MAY BE IMPAIRED.

- THERE IS NO REQUIRED PREVENTIVE MAINTENANCE OR INSPECTION NECESSARY FOR SAFETY. HOWEVER, ANY REPAIR OR MAINTENANCE SHOULD BE PERFORMED BY THE FACTORY.

⚠ DANGER

DISCONNECT DEVICE: The following part is considered the equipment disconnect device. A SWITCH OR CIRCUIT-BREAKER SHALL BE INCLUDED IN THE END-USE EQUIPMENT OR BUILDING INSTALLATION. THE SWITCH SHALL BE IN CLOSE PROXIMITY TO THE EQUIPMENT AND WITHIN EASY REACH OF THE OPERATOR. THE SWITCH SHALL BE MARKED AS THE DISCONNECTING DEVICE FOR THE EQUIPMENT.

Ground Connections

The EPM 4600 unit's Ground terminal should be connected directly to the installation's protective earth ground. Use AWG# 12/2.5 mm² wire for this connection. See Figure 4.1.



FIGURE 4.1: Ground Lug Connection

Voltage and Power Supply Connections

Voltage inputs are connected to the bottom of the EPM 4600 unit via wire connectors. The connectors accommodate AWG# 12 -26/ (0.129 - 3.31)mm².

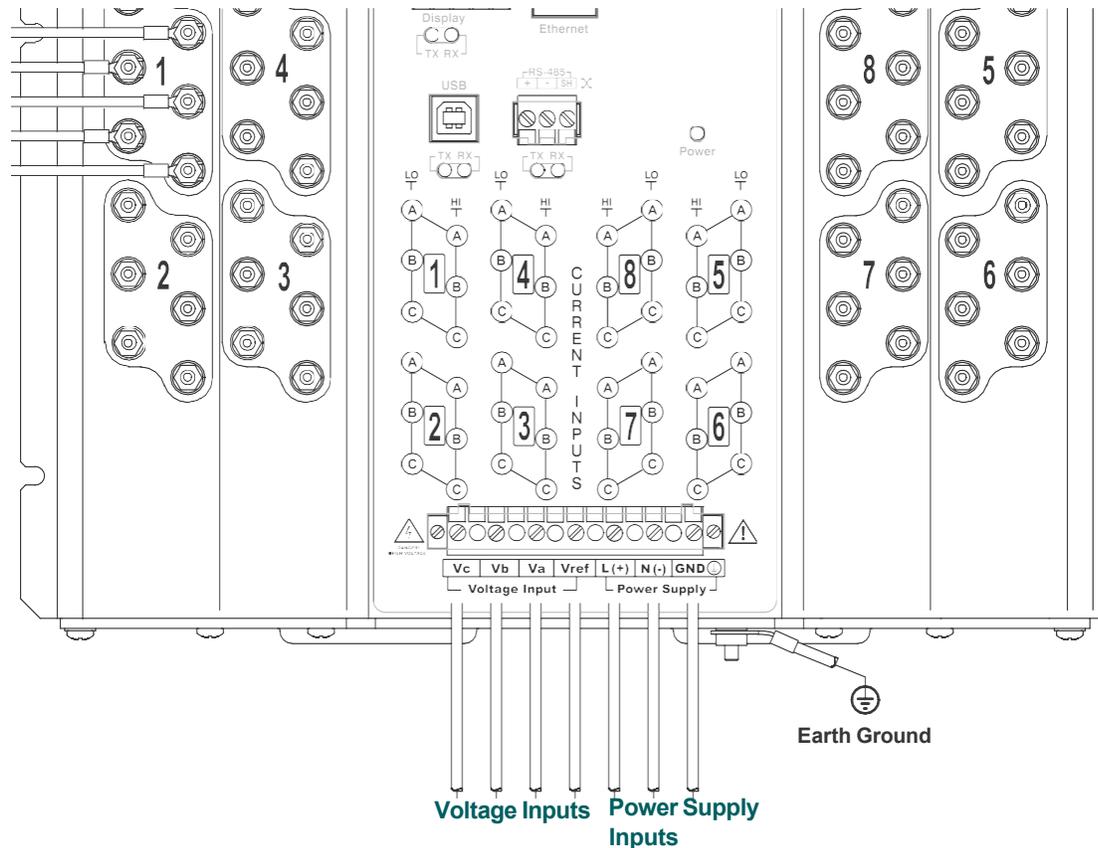


FIGURE 4.2: EPM 4600 Unit Connections

Voltage Fuses

GE Vernova Digital Energy recommends the use of fuses on each of the sense voltages and on the control power, even though the wiring diagrams in this chapter do not show them.

- Use a 0.1 Amp fuse on each voltage input (rated for 600 Volts).
- Use a 3 Amp Slow Blow fuse on the power supply (rated at 500 Volts).

Wiring the Monitored Inputs - Currents

The cables to the current inputs shall be rated for a minimum of 600 VAC and 10 Amps (14 AWG copper cable, cross sectional area of 2.08 mm²).

Mount the current transformers (CTs) as close as possible to the EPM 4600 unit's meters. The following table illustrates the maximum recommended distances for various CT sizes, assuming the connection is via 14 AWG copper cable.

CT size (VA)	Maximum Distance from CT to EPM 4600 Unit Meters (Ft)
2.5	10
5	15
7.5	30
10	40
15	60
30	120

DO NOT leave the secondary of the CT open when primary current is flowing. This may cause high voltage, which will overheat the CT. If the CT is not connected, provide a shorting block on the secondary of the CT.

GE Vernova Digital Energy highly recommends using shorting blocks to allow removal of the EPM 4600 unit from an energized circuit, if necessary (see “Removing the EPM 4600 Unit From Service/Reinstalling the EPM 4600 Unit” on page 4-11 for instructions). GE Vernova Digital Energy recommends using a three phase shorting block for every three phase load.

You need 8 shorting blocks for the 8 three phase circuits.

CAUTION

Shorting blocks allow you to short an installed current transformer so that the meter can be uninstalled, if necessary, for servicing. This is a highly important safety feature.



FIGURE 4.3: Typical Shorting Block (Good for 1 set of three phase CTs)

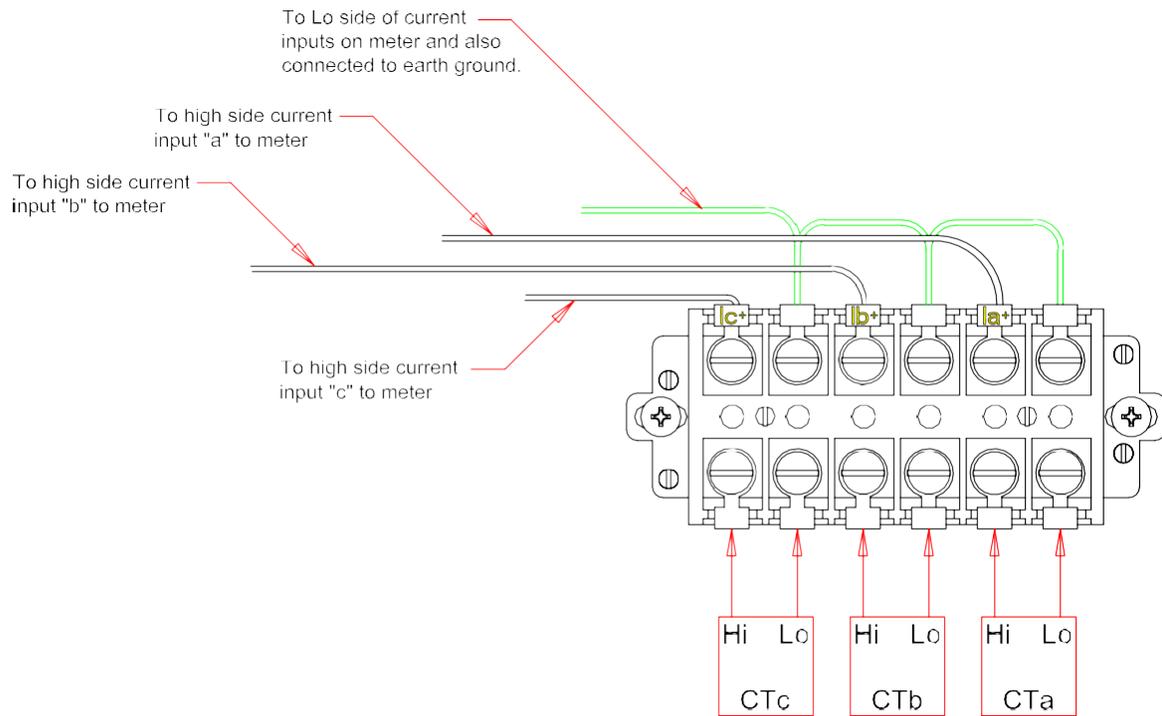


FIGURE 4.4: Shorting Block Wiring Diagram

It is important to maintain the polarity of the CT circuit when connecting to the EPM 4600 unit's meters. If the polarity is reversed, the meters will not provide accurate readings. CT polarities are dependent upon correct connection of CT leads and the direction CTs are facing when clamped around the conductors.

Electrical Connection Diagrams

The following pages contain electrical connection diagrams for the EPM 4600 unit's meters. Choose the diagram that best suits your application. Be sure to maintain the CT polarity when wiring.

The diagrams are presented in the following order:

1. Three Phase, 4-Wire Wye Service with Direct Voltage and 3 CT Connection (EPM 4600-T): for Metering 8 Three Phase Loads
2. Three-Phase, 4-Wire Wye Service with 3 PT Voltage and 3 CT Connection (EPM 4600-T): for Metering 8 Three Phase Loads
3. Single Phase, 2-Wire Service with Direct Voltage and 1 CT Connection (EPM 4600-S): for Metering 24 Single Phase Loads
4. Single Phase, 3-Wire Service with Direct Voltage and 2 CT Connection (EPM 4600-T): for Metering 8 Single Phase Loads

5. Single phase, 3-Wire Service with Direct Voltage and 1 CT Connection (EPM 4600-S): for Metering 24 Single Phase Loads.

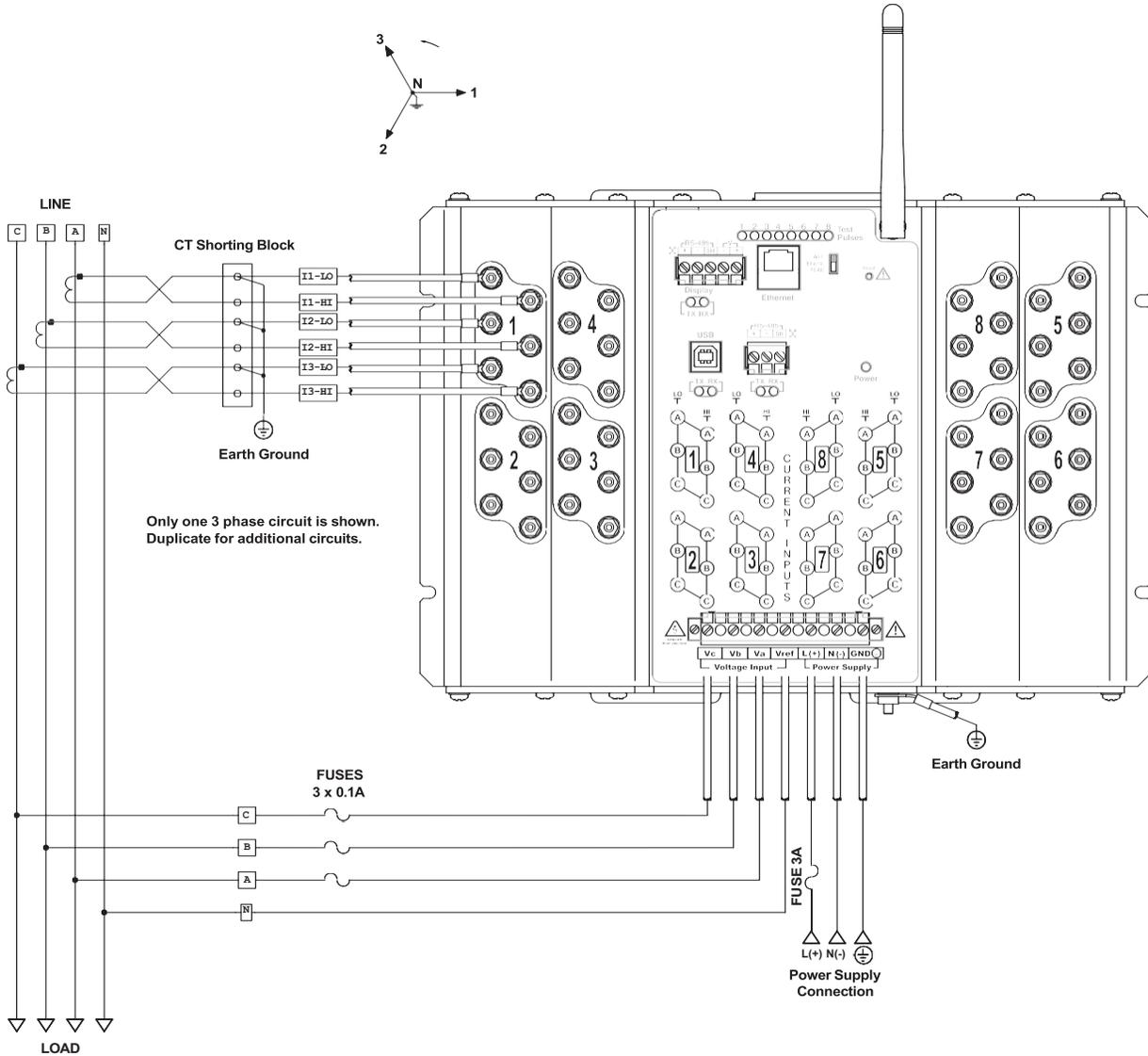


FIGURE 4.5: Three Phase, 4-Wire WYE Service Direct Voltage and 3 CT Connection for Metering 8 Three Phase Loads: EPM 4600-T



- All CTs must have one side grounded to reduce shock hazard.
- You must order the EPM 4600-T unit for the three phase operation.
- GE Vernova Digital Energy highly recommends using shorting blocks so that the meter can be removed from service while the CT is energized.
- 8 shorting blocks should be used for all 8 three phase circuits.

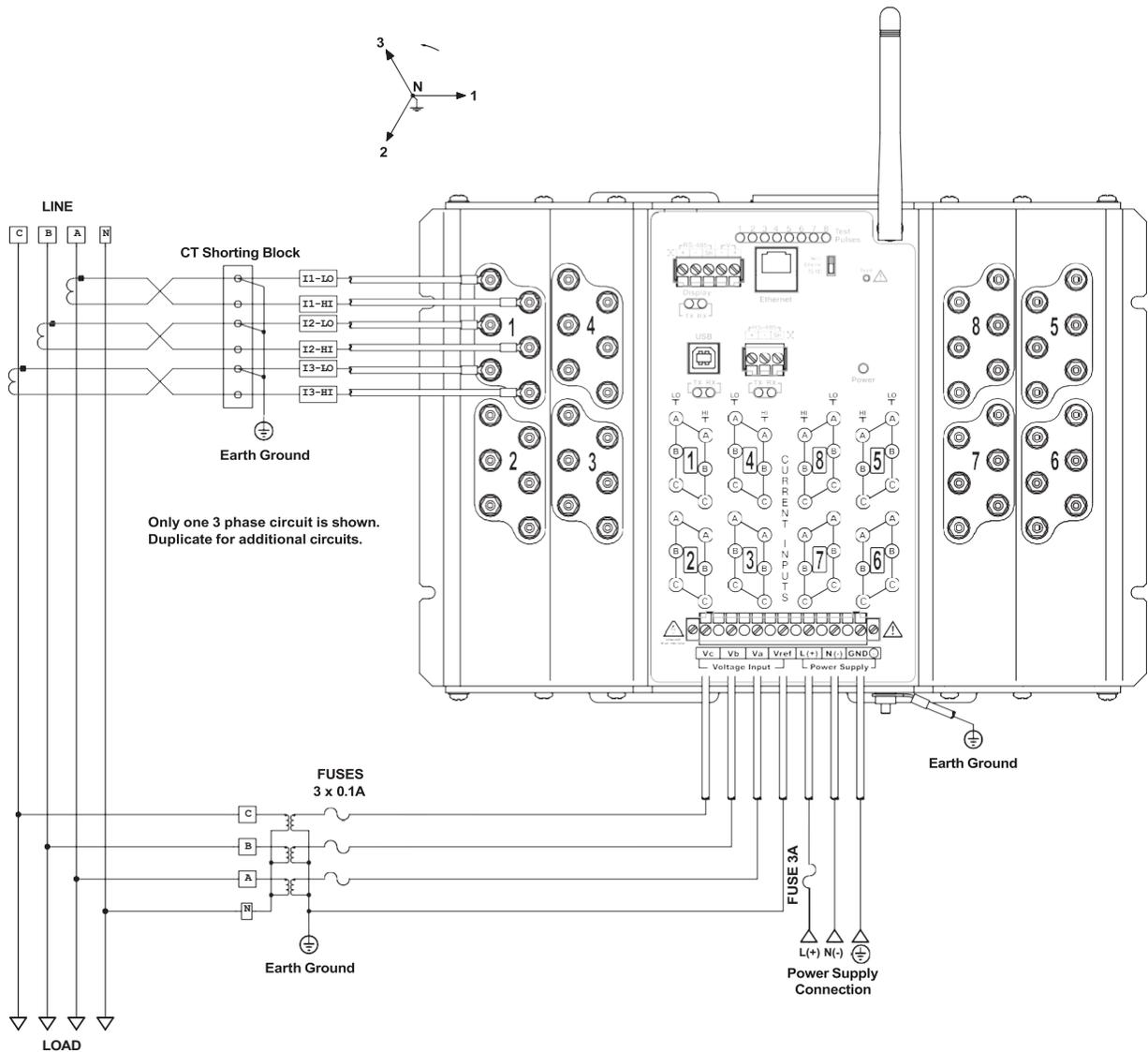


FIGURE 4.6: Three Phase, 4-Wire WYE Service with 3 PT Voltage and 3 CT Connection for Metering 8 Three Phase Loads: EPM 4600-T



- All CTs must have one side grounded to reduce shock hazard.
- You must order the EPM 4600-T unit for the three phase operation.
- GE Vernova Digital Energy highly recommends using shorting blocks so that the meter can be removed from service while the CT is energized.
- 8 shorting blocks should be used for all 8 three phase circuits.

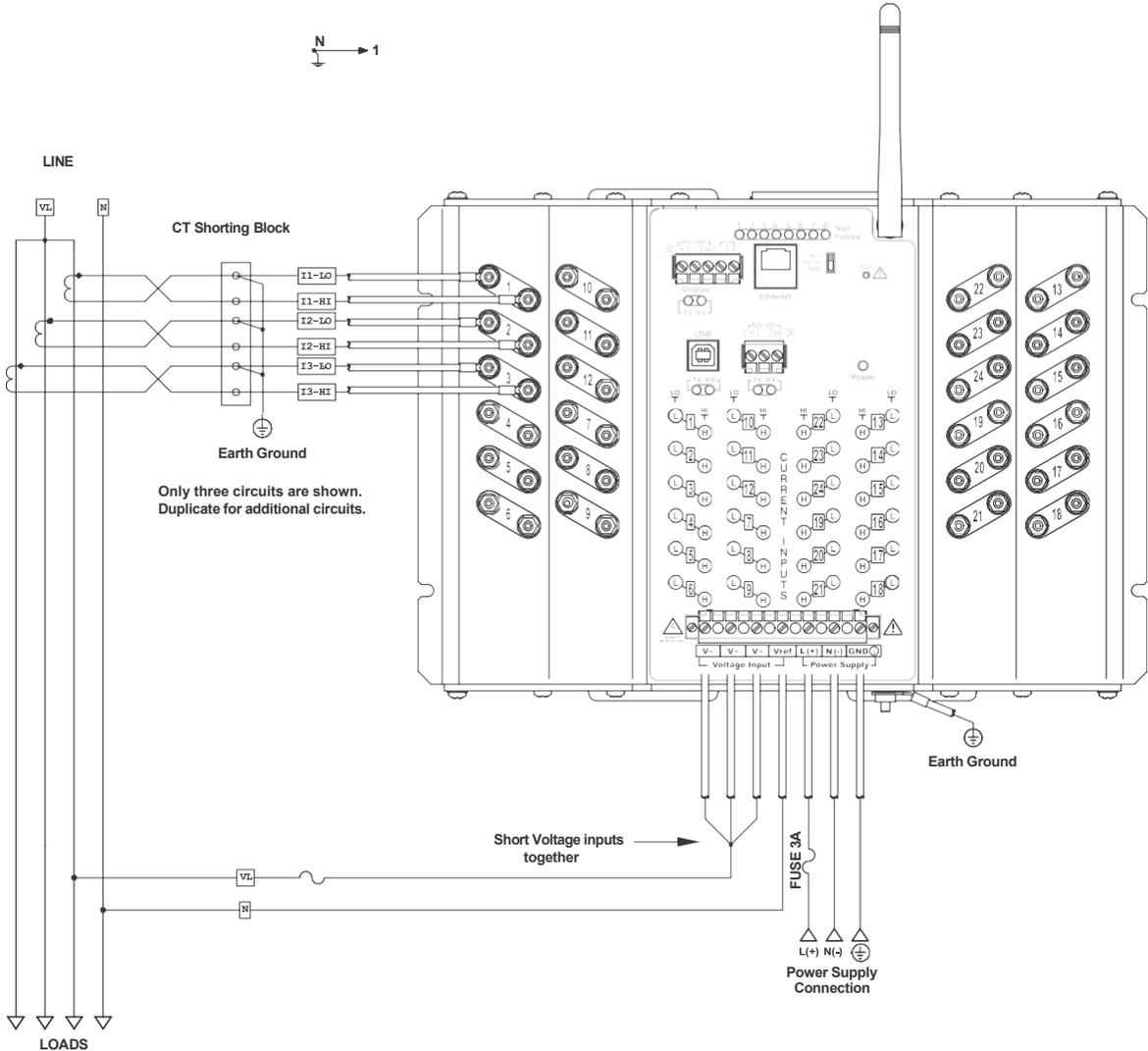


FIGURE 4.7: Single Phase, 2-Wire Service with Direct Voltage and 1 CT Connection for Metering 24 Single Phase Loads: EPM 4600-S



- All CTs must have one side grounded to reduce shock hazard.
- You must order the EPM 4600-S unit for single phase 3-wire operation.
- GE Vernova Digital Energy highly recommends using shorting blocks so that the meter can be removed from service while the CT is energized.

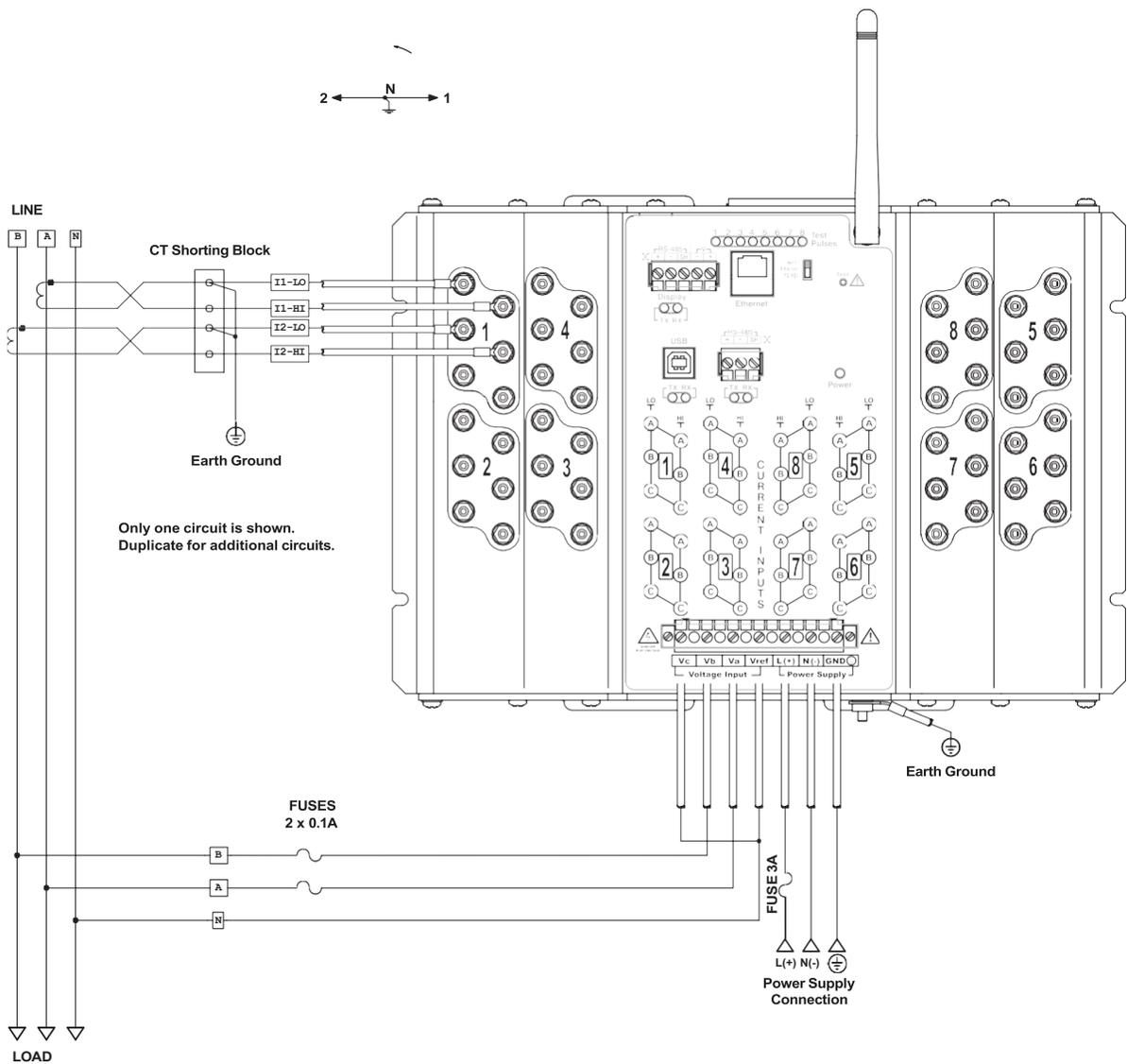


FIGURE 4.8: (Service) Single Phase, 3-Wire Service with Direct Voltage and 2 CT Connection for Metering 8 Single Phase Loads: EPM 4600-T



- All CTs must have one side grounded to reduce shock hazard.
- You must order the EPM 4600-T unit for this operation.
- GE Vernova Digital Energy highly recommends using shorting blocks so that the meter can be removed from service while the CT is energized.
- A higher density connection is available using the single phase version of the meter. The difference is that the higher density uses a single CT for both legs of a three wire system.

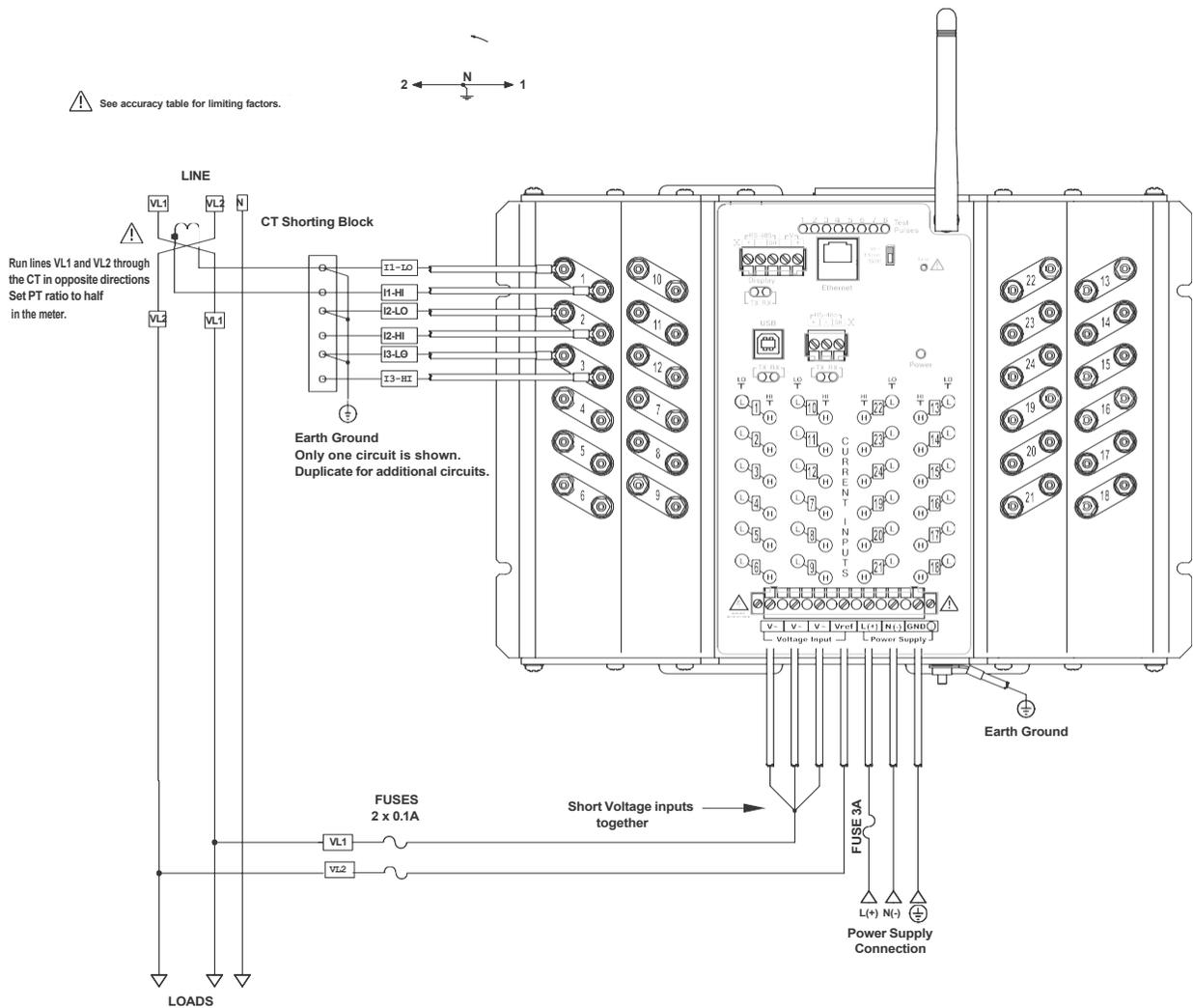


FIGURE 4.9: (Service) Single Phase, 3-Wire Service with Direct Voltage and 1 CT Connection for Metering 24 Single Phase Loads: EPM 4600-S



- All CTs must have one side grounded to reduce shock hazard.
- You must order the EPM 4600-S unit for single phase operation.
- GE Vernova Digital Energy highly recommends using shunting blocks so that the meter can be removed from service while the CT is energized.

Removing the EPM 4600 Unit From Service/Reinstalling the EPM 4600 Unit

⚠ WARNING

Before attempting any work on the EPM 4600 unit or associated components, all power must be removed and all circuits de-energized. Verify the de-energized status of all circuitry with appropriate portable measuring equipment.

If the EPM 4600 unit was directly wired to the CTs without a shorting block as disclosed in this manual, then all the electrical primary circuits must be shut down prior to removing the meter. Failure to do so could result in possible high voltage on the open CT terminals.

Removing the EPM 4600 Unit Using a Third-party Shorting Block



Please follow Manufacturer Safety Precautions for handling shorting blocks.

1. Verify that all circuits are de-energized and locked out.
2. All shorting blocks shall be wired as per the wiring diagrams in this manual with one side of each CT at ground potential. Refer to Figure 4.4.
3. All shorting blocks are equipped with 4 brass shorting screws stored in the four corners of the base. Refer to Figure 4.5. **IMPORTANT!** If all 4 brass shorting screws are not on the shorting blocks do not continue until replacements are obtained.

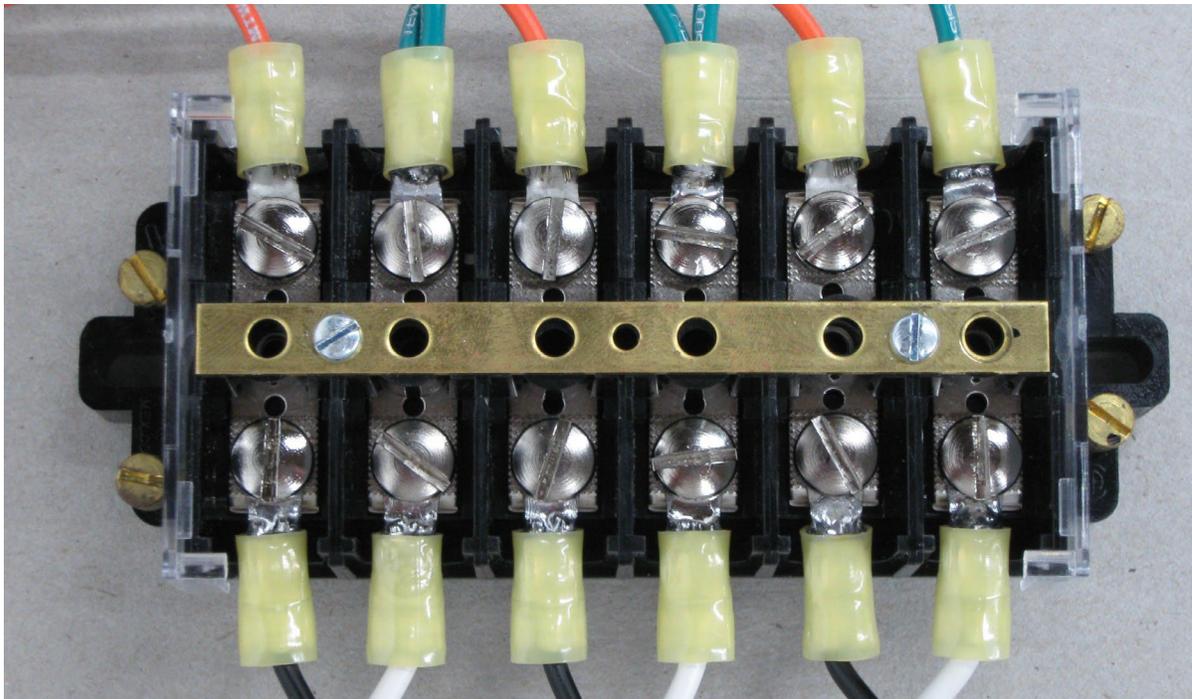


FIGURE 4.10: Typical Shorting Block with Wiring Installed

4. Select one of the shorting blocks.

5. Remove one of the brass shorting screws from the plastic base and place it through the brass shorting bar over one of the grounded terminals and tighten (max torque of 16.2 in-lb, 1.8 N-m).

Verify that, when tightened, the screw head is in full contact with the brass bar.

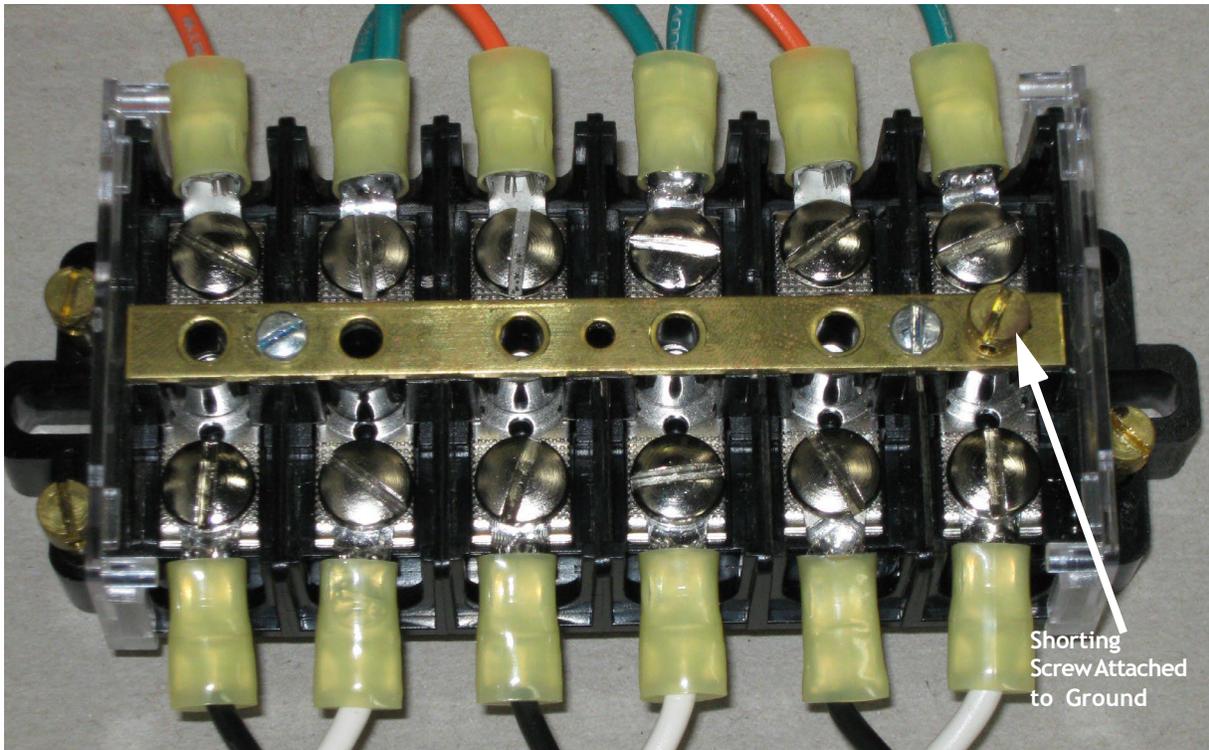


FIGURE 4.11: Shunting Block with Shorting Screw Attached to Ground Terminal

6. Remove another brass shorting screw and place it through the brass bar over an un-grounded lead of a CT and tighten (max torque of 16.2 in-lb, 1.8 N-m).

Verify that, when tightened, the screw head is in full contact with the brass bar.

7. If necessary, remove another brass shorting screw and place it through the brass bar over an un-grounded lead of the second CT and tighten (max torque of 16.2 in-lb, 1.8 N-m).

Verify that, when tightened, the screw head is in full contact with the brass bar.

8. If necessary, remove another brass shorting screw and place it through the brass bar over an un-grounded lead of the third CT and tighten (max torque of 16.2 in-lb, 1.8 N-m).

Verify that, when tightened, the screw head is in full contact with the brass bar.

9. If necessary, repeat steps 4 through 8 until all CTs are shorted.

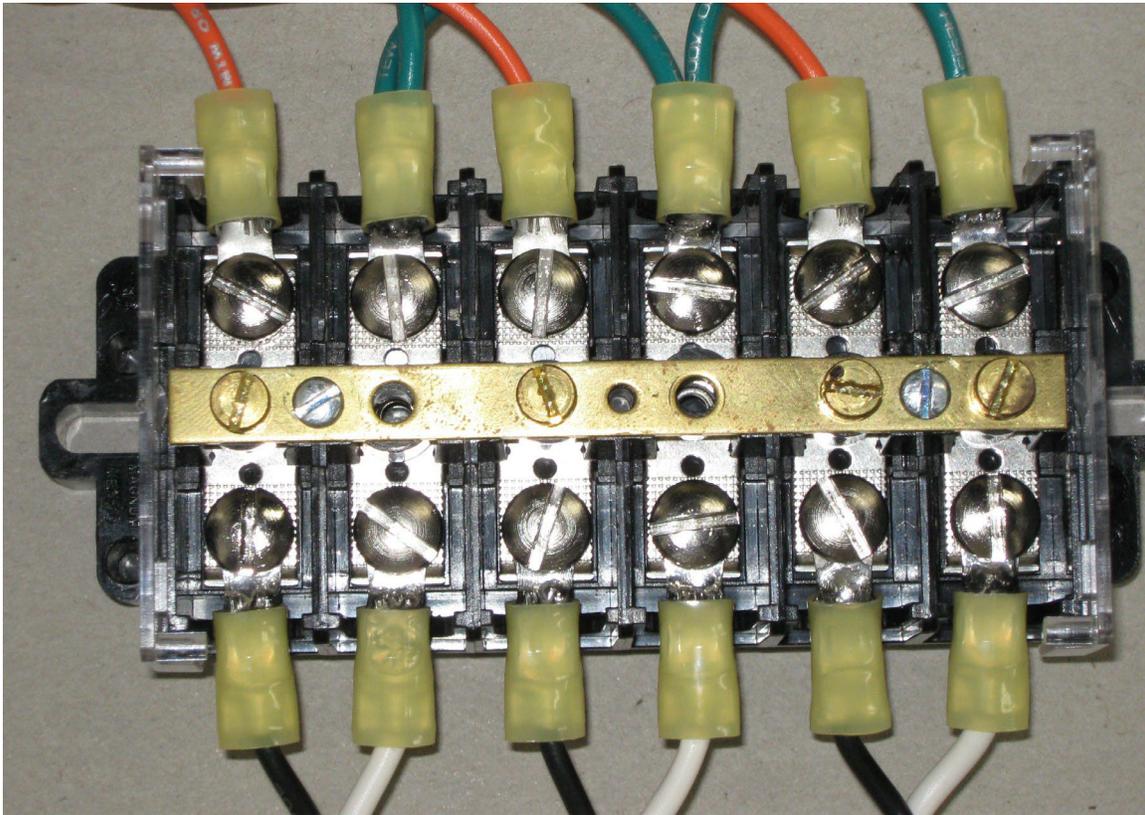


FIGURE 4.12: Shorting Block with All CTs Shorted Properly

10. Mark or record the location of the current input wires on the EPM 4600 unit.
11. Disconnect all current input wires from the EPM 4600 unit.
12. Remove all connectors from the EPM 4600 unit.
13. Remove the Ground connection from the stud on the EPM 4600 unit (see Figure 4.2).
14. Remove the 4 mounting screws holding the EPM 4600 unit in place.
15. Remove the EPM 4600 unit.

Reinstalling the EPM 4600 Unit Using a Shorting Block

1. Place the EPM 4600 unit in the desired location over the mounting holes.
2. Insert and tighten all 4 mounting screws.
3. Connect the Ground wire to the stud on the EPM 4600 unit and tighten the nut to 8.8 in-lb (1 N-m) (see Figure 4.2).
4. Connect the current inputs to the EPM 4600 unit as per the locations marked on the wires or recorded. Refer to Figure 4.4 and the wiring diagrams in this manual.
5. Tighten nuts to 8.8 in-lb (1 N-m).

6. Insert all connectors into the EPM 4600 unit.
7. Select a shorting block and remove the screws shorting the ungrounded side of the CTs and screw them into their storage locations in the corner of the block (max torque of 1 in-lb, 0.11 N-m).



The screw that is grounding the brass bar should be removed last and also stored on the block.

8. If necessary, repeat step 7 until all shorting blocks are returned to their operating configuration.
9. Apply power to the meter and energize all circuits.
10. Verify correct operation of the EPM 4600 unit.

Multilin™ EPM 4600 Metering System

Chapter 5: Communicating with the Meter

EPM 4600 Metering System Communication

The EPM 4600 metering system provides three independent Communication ports.

The first port, Com 1, is an RS485 port speaking Modbus ASCII or Modbus RTU. This port also has an optional Ethernet/WiFi that supports both RJ45 and wireless Ethernet and that uses Modbus TCP protocol. The EPM 4600 unit has a switch that enables either the standard RS485 or optional Ethernet for Port 1.

The second port, Com 2, provides USB serial connection.

The third port is an RS485 port with voltage connections that can be used by the optional display (see “Using the Optional Display” on page 10-1 for details on the optional display).

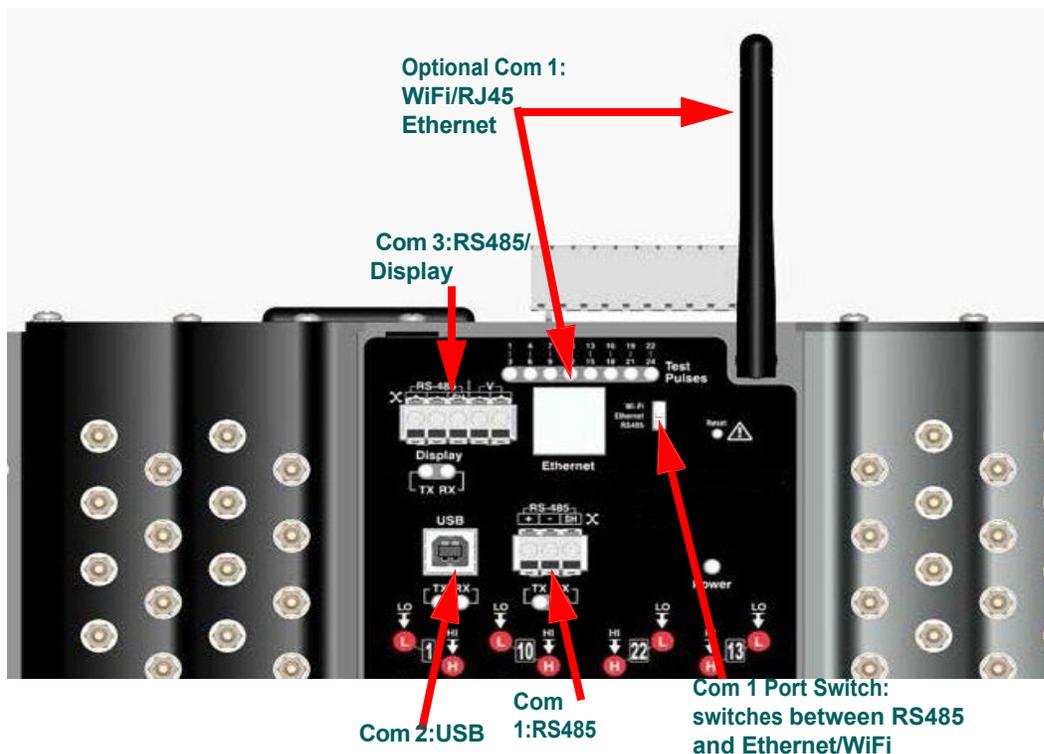


FIGURE 5.1: EPM 4600 Unit Communication Ports



If the installation requires that the WiFi antenna be remotely located, a 50 Ohm coaxial cable (approved for use at 2.4 GHz) with M/F SMA connectors shall be used. Make the cable as short as possible (maximum 20 foot, 6.1m) to avoid losing too much power.

RS485 / Ethernet or WiFi (Com 1)

Com 1 provides RS485 standard and optional Ethernet or WiFi communication. It supports Modbus RTU/ASCII/TCP. The RJ45 port and the WiFi antenna will be present if this option was ordered. If you did not order the option, it will not be present.

The following sections explain the RS485 configuration in detail. Refer to Chapter 8 for the Ethernet/WiFi configuration. Note that there are Transmission (TX) and Receiving (RX) LED indicators under the RS485 port. These lights also work with the Ethernet option, if it is being used.



Com 3 also provides RS485 communication - see “RS485/Display Port (Com 3)” on page 5-6.

RS485 Connections

The optional RS485 connections allow multiple EPM 4600 meters to communicate with another device at a local or remote site. All RS485 links are viable for a distance of up to 4000 feet (1219 meters). RS485 ports 1 and 2 on the EPM 4600 meter are optional two-wire, RS485 connections with a baud rate of up to 115200.

You need to use an RS485 to Ethernet converter, such as GE Vernova Digital Energy's Multinet. Refer to the section below, *Using the Multinet*, for information on using the Multinet with the EPM 4600 meter.

You can order the Multinet from GE Vernova Digital Energy's webstore:

<https://www.governova.com/grid-solutions/automation/protection-control-metering>

NOTE

Figure 5.2 shows the detail of a 2-wire RS485 connection.

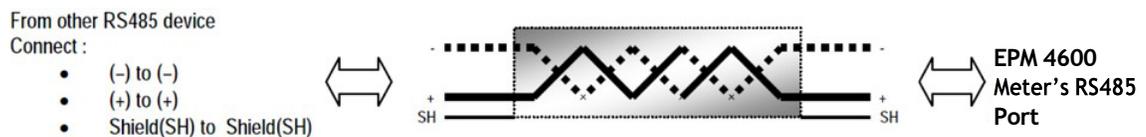


FIGURE 5.2: 2-wire RS485 Connection



Notes on RS485 Communication:

- Use a shielded twisted pair cable 22 AWG (0.33 mm²) or thicker, and ground the shield, preferably at one location only.
- Establish point-to-point configurations for each device on a RS485 bus: connect (+) terminals to (+) terminals; connect (-) terminals to (-) terminals.
- Connect up to 31 meters on a single bus using RS485. Before assembling the bus, each meter must have a unique address: refer to Chapter 19 of the GE Vernova Communicator User Manual for instructions.
- Protect cables from sources of electrical noise.
- Avoid both "Star" and "Tee" connections (see Figure 5.4).
- Connect no more than two cables at any one point on an RS485 network, whether the connections are for devices, converters, or terminal strips.
- Include all segments when calculating the total cable length of a network. If you are not using an RS485 repeater, the maximum length for cable connecting all devices is 4000 feet (1219 meters).
- Connect shield to RS485 Master and individual devices as shown in Figure 5.3. You may also connect the shield to earth-ground at one point.

NOTICE

Termination Resistors (RT) may be needed on both ends for longer length transmission lines. When they are used, the value of the Termination Resistors is determined by the electrical parameters of the cable.

Figure 5.3 shows a representation of an RS485 Daisy Chain connection. Refer to the section below, *Using the Multinet*, for details on RS485 connection for the Multinet.

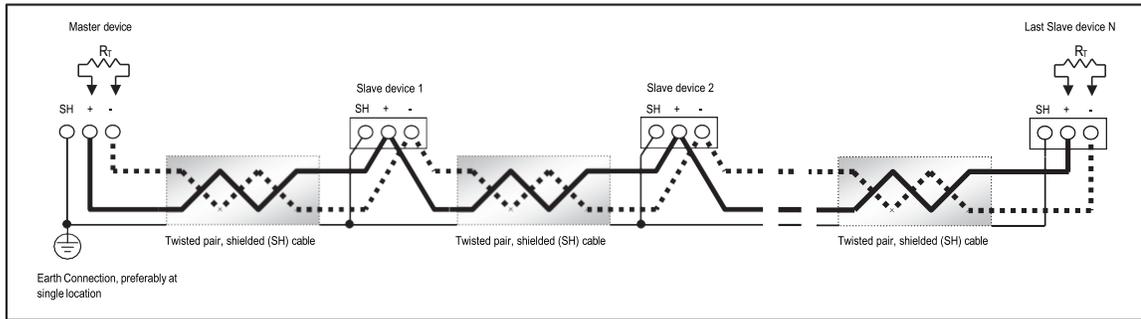


FIGURE 5.3: RS485 Daisy Chain Connection

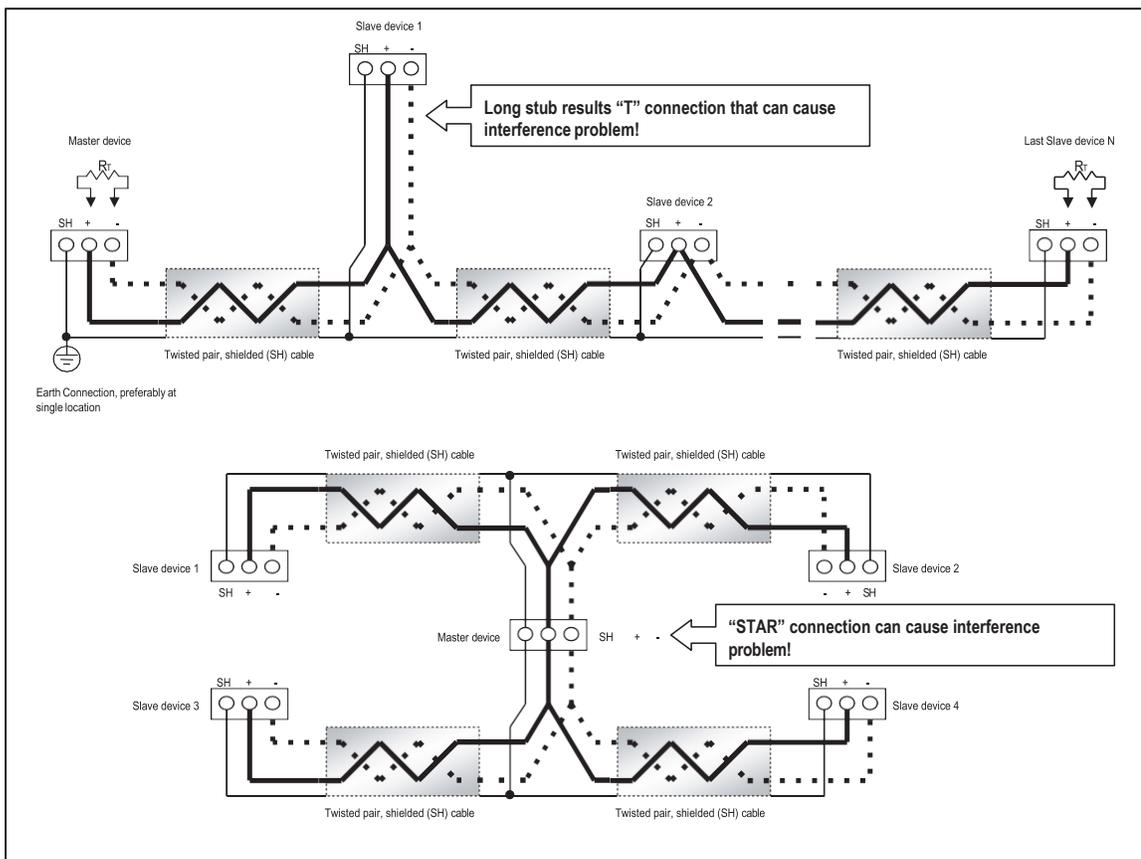


FIGURE 5.4: Incorrect "T" and "Star" Topologies

Using the Multinet

The Multinet provides RS485/Ethernet connection, allowing an EPM 4600 meter with the optional RS485 port to communicate with a PC. See the *Multinet Installation and Operation Manual* for additional information.

USB Port (Com 2)

The EPM 4600 unit's Com 2 USB port allows it to communicate with a computer that has a USB 1.1 or USB 2.0 Host port. The EPM 4600 unit's USB port is configured to operate as a virtual serial communication channel that the PC sees as a simple COM port. The USB virtual serial communication channel:

- Is compatible with standard USB cables that terminate with a USB Type B plug (see Figure 5.8)
- The maximum length of the USB cable is 5 meters. Greater lengths require hubs or active extension cables (active repeaters).



FIGURE 5.5: USB Type B Plug

If you are using a PC with the Windows® 7 (or later) Operating System, connect the USB cable from your PC to the unit's USB port on the front panel. The Windows® 7 Operating System will install a driver for you. For earlier operating systems, GE Vernova Digital Energy provides a driver for PC compatible computers. The driver configures the computer's USB Host port as a virtual serial port compatible with the EPM 4600 unit's USB device port. See "Installing the USB Virtual COM Port" on page 1.

The EPM 4600 unit's USB port settings are:

- Address: 1
- Protocol: Modbus ASCII
- Baud rate: 57600 bps



NOTE

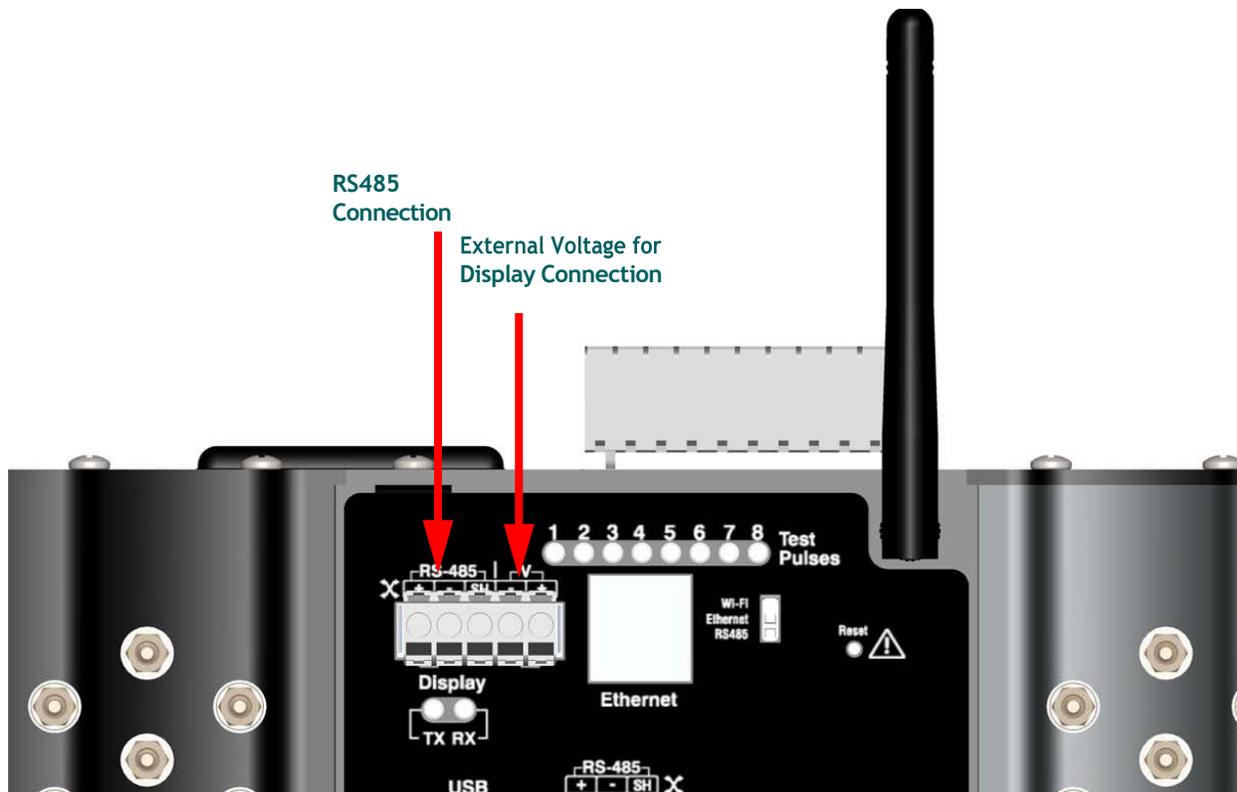
There are Transmission (TX) and Receiving (RX) LED indicators under the port.

The Virtual Com Port (USB serial port) settings are:

- Bits per second: 57600
- Data bits: 8
- Parity: None
- Stop bits: 1
- Flow control: None

RS485/Display Port (Com 3)

This port supports RS485 communication. The voltage connection is intended for use with the optional display - see “Using the Optional Display” on page 10-1 for details. Note that there are Transmission (TX) and Receiving (RX) LED indicators



under the port.

FIGURE 5.6: Com 3 RS485/Display Port

To use Com 3 with the optional display, see “Using the Optional Display” on page 10-1.

To use Com 3 as an RS485 port only, connect the communication wires of the supplied RS485 cable to the EPM 4600 unit’s Com 3 port - see FIGURE 5.6: *Com 3 RS485/Display Port*. Set the port’s baud rate to 9600, address to 1, protocol to Modbus RTU or Modbus ASCII and mode to Slave using the communication software.

RS485 communication is viable for up to 4000 feet (1219 meters). Be sure to do the following (See “RS485 / Ethernet or WiFi (Com 1)” on page 2. for additional information on RS485 communication):

1. Connect the shield to the shield (S) terminal on the other device’s port. The (S) terminal on the EPM 4600 unit is used to reference its port to the same potential as the source. Connect the shield to protective earth-ground at one point.
2. Provide termination resistors at each end, connected to the + and - lines. RT is approximately 120 Ohms.



The Com 3 RS485 port has a supply voltage connection that is used by the optional display. If you are using the RS485 connection for something other than the display, make sure the RS485 bus is not mistakenly connected to the voltage supply points as it can damage devices connected to the RS485 bus.

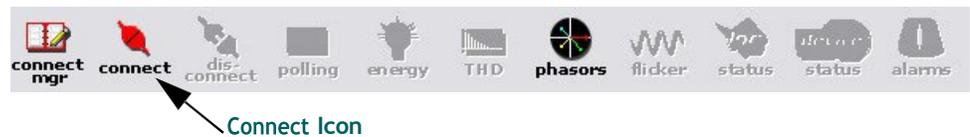
EPM 4600 Metering System Communication and Programming Overview

Only the basic EPM 4600 metering system's Device Profile settings are explained in this manual. Refer to the *GE Vernova Communicator Instruction Manual* for detailed instructions on configuring all settings of the EPM 4600 metering system Device Profile. You can also view the manual online by clicking **Help > Contents** from the GE Vernova Communicator main screen.

Connecting to the EPM 4600 Unit through GE Vernova Communicator Software

How to Connect:

1. Open the GE Vernova Communicator software.
2. Click the Connect icon in the Icon bar.



3. You can connect to the EPM 4600 unit using RS485, Ethernet, or the USB port (for Ethernet connection, the Ethernet/WiFi option must be installed). See the screens below.

Connect

Serial Port Network

Device Address: 1

Baud Rate: 9600

Port: COM1

Protocol: Modbus RTU

Flow Control: None

Echo Mode: No Echo

Buttons: Connect, Cancel, Help

RS485
connection

Connect

Serial Port Network

Device Address: 1

Baud Rate: 57600

Port: COM3 (USB Serial Port (COM3))

Protocol: Modbus ASCII

Flow Control: None

Echo Mode: No Echo

Buttons: Connect, Cancel, Help

USB
connection

Connect

Serial Port Network

Device Address: 1

Host: 172.20.167.133

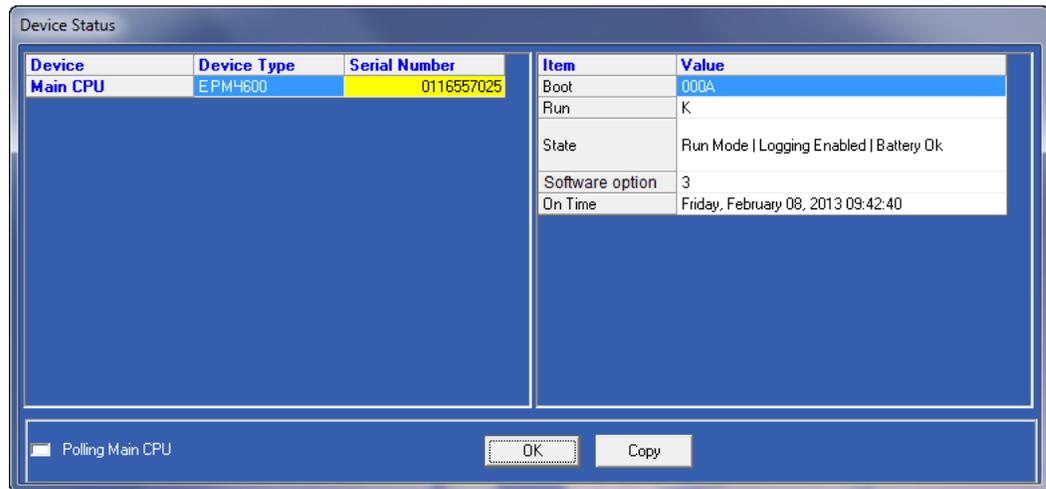
Network Port: 502

Protocol: Modbus TCP

Buttons: Connect, Cancel, Help

Ethernet
connection

- Click the **Connect** button. You will see the Device Status screen, confirming connection to the EPM 4600 unit. Click **OK**.



The fields on the right of the screen give you information about the connected EPM 4600 unit:

- **Boot:** the version of the Boot firmware the meter currently has.
 - **Run:** the version of the Runtime firmware the meter currently has.
 - **State:** information about the meter, e.g., shown above Run Mode, Logging Enabled, Battery OK means that the meter is running, logging is enabled for the meter, and the meter battery has sufficient operating power.
 - **Software option:** the letter of the Software option currently installed in the meter.
 - **On Time:** the date and time the meter was last powered on.
- Click the **Profile** icon in the Title Bar.
 - You will see the EPM 4600 metering system's Device Profile screen. The menu on the left side of the screen lets you navigate between Settings screens (see screens on next page).



The settings you see on the first screen depend on your EPM 4600 unit's circuit configuration.

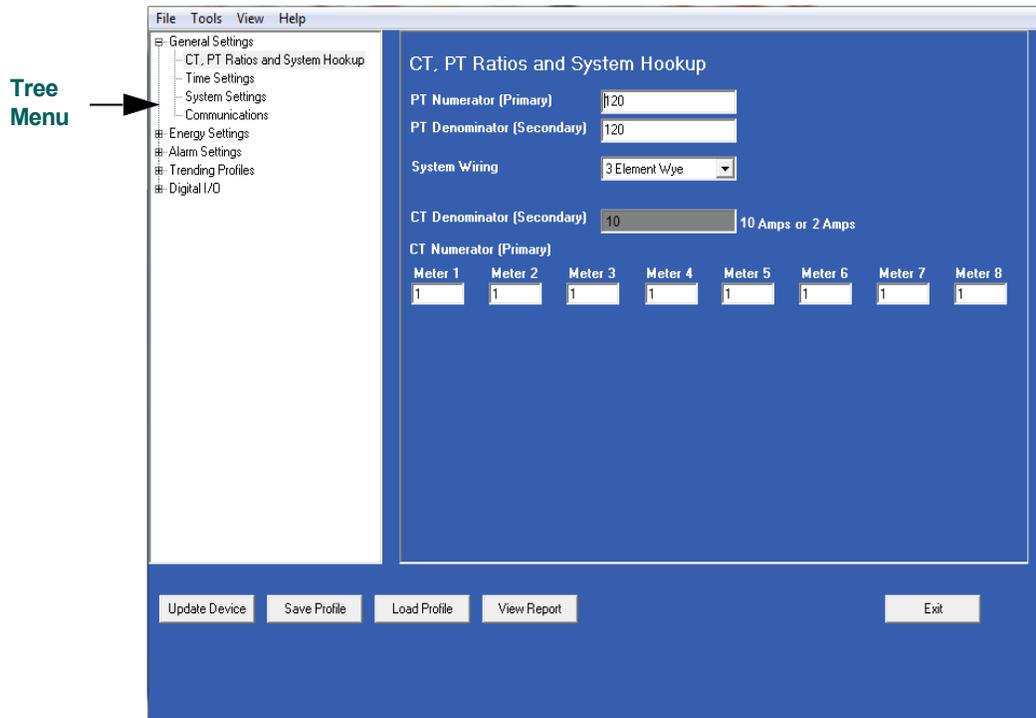


FIGURE 5.7: EPM 4600 Unit with Three Phase Configuration - EPM 4600-T

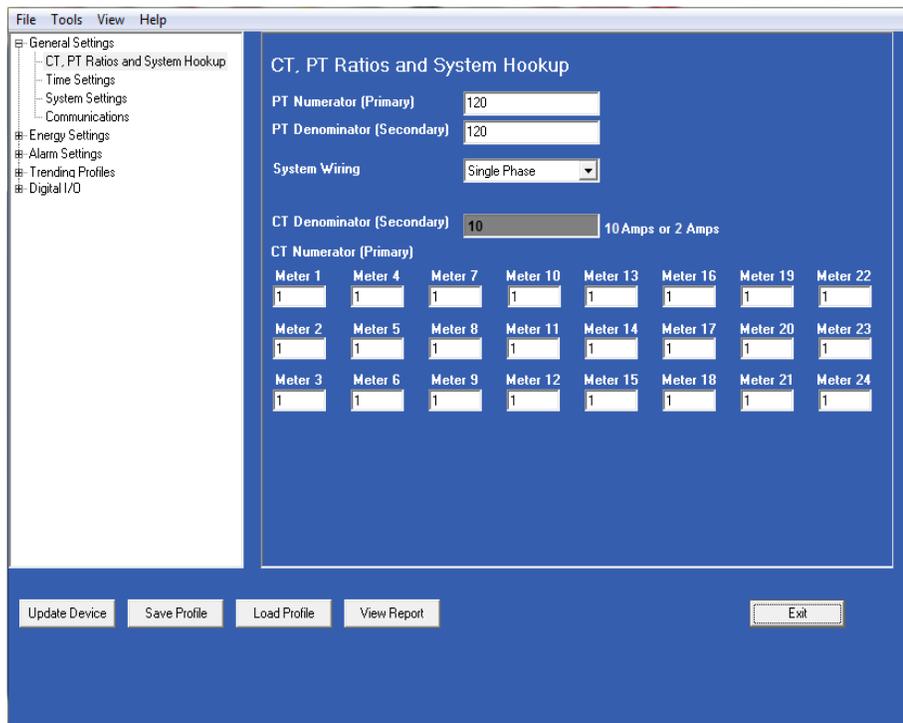


FIGURE 5.8: EPM 4600 Unit with Single Phase Configuration - EPM 4600-S



See “Additional EPM 4600 Unit Device Profile Settings” on page 12. for instructions on using the screens shown above.

7. Click **Communications**. You will see the screen shown below. Use this screen to enter communication settings for the EPM 4600 unit's communications ports.

The screenshot shows the 'Communications' configuration window. The left sidebar lists settings categories: General Settings (CT, PT Ratios and System Hookup, Time Settings, System Settings, Communications), Energy Settings, Alarm Settings, Trending Profiles, and Digital I/O. The main panel is titled 'Communications' and is divided into three sections:

- COM1 (RS485/TCP/IP/WiFi):** Address: 1, Protocol: Modbus RTU, Baud Rate: 9600, Response Delay (msec): 0, Parity: None. A 'Default for Ethernet' button is present.
- COM2 (USB):** Address: 1, Protocol: Modbus ASCII, Baud Rate: 57600, Response Delay (msec): 0.
- COM3 (RS485/Display Port):** Address: 1, Protocol: Modbus RTU, Baud Rate: 57600, Response Delay (msec): 0. A 'Default for Display' button is present.

At the bottom of the window are buttons for 'Update Device', 'Save Profile', 'Load Profile', 'View Report', and 'Exit'.

Valid Communication Settings are as follows:

- COM 1: RS485/ Ethernet/WIFI (optional)
- Address: 1-247
- Baud Rate: 9600, 19200, 38400, 57600 (For WiFi/Ethernet, only 57600)
- Protocol: Modbus RTU/ASCII (For WiFi/Ethernet, only Modbus RTU)
- Response Delay: 0-750ms
- Parity: Odd, Even or None
- COM 2: USB port
- Protocol: MODBUS ASCII
- Baud Rate: 57600
- Address: 1



The USB port settings are fixed, i.e., they cannot be changed.

- COM 3: RS485/Display port
- Address: 1-247
- Protocol: Modbus RTU/ASCII

- Baud Rate: 9600, 19200, 38400, 57600
- Response Delay: 0-750ms



Click the (1)Default to Ethernet or (2)Default to Display button to set either the (1)Ethernet settings for COM1 or (2)Display settings for COM3, to their default values.

See “Configuring the EPM 4600 Metering System” on page 11-1 for more information.

8. When changes are complete, click the **Update Device** button to send a new profile to the meter.
9. Click **Exit** to leave the Device Profile or click other menu items to change other aspects of the Device Profile (see the following section for instructions).

Additional EPM 4600 Unit Device Profile Settings

CT, PT Ratios and System Hookup

File Tools View Help

General Settings

- CT, PT Ratios and System Hookup
- Time Settings
- System Settings
- Communications

Energy Settings

Alarm Settings

Trending Profiles

Digital I/O

CT, PT Ratios and System Hookup

PT Numerator (Primary)

PT Denominator (Secondary)

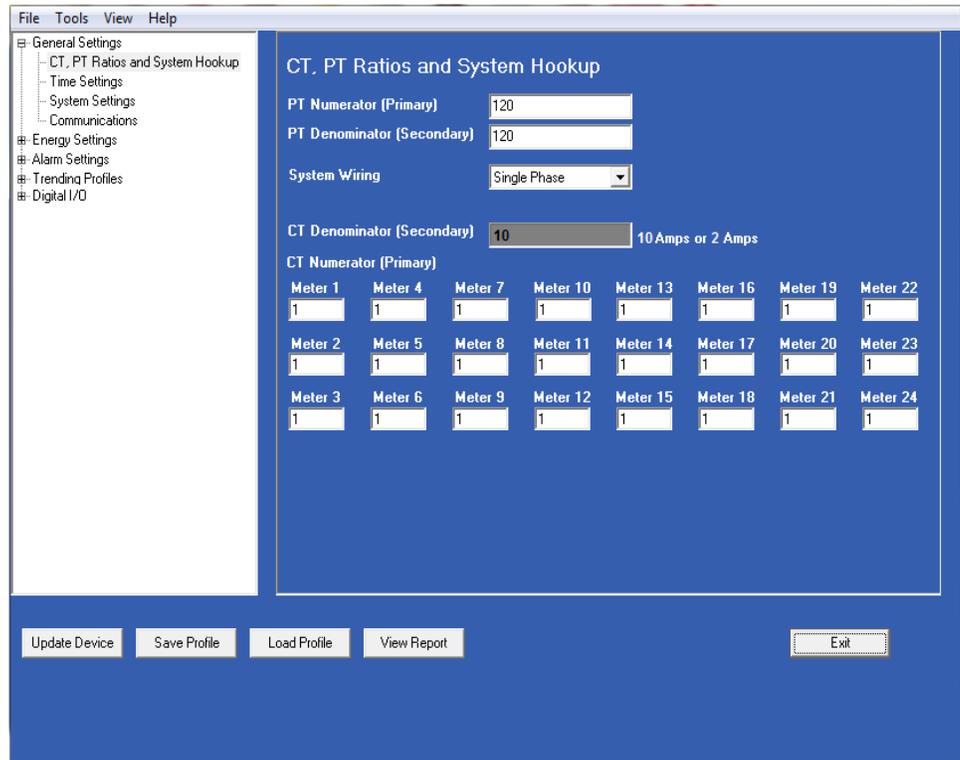
System Wiring

CT Denominator (Secondary) 10 Amps or 2 Amps

CT Numerator (Primary)

Meter 1	Meter 2	Meter 3	Meter 4	Meter 5	Meter 6	Meter 7	Meter 8
<input type="text" value="1"/>							

Update Device Save Profile Load Profile View Report Exit



The settings you see on the screen depend on your EPM 4600 unit's circuit configuration. The top screen on the previous page is for an EPM 4600 unit with the three phase circuit configuration. The bottom screen is for an EPM 4600 unit with the single phase circuit configuration.

The settings for this screen are as follows:

PT Ratios

PT Numerator (Primary): 1 - 99999999

PT Denominator (Secondary): 40 - 65535

System Wiring

3 Element Wye; Single Phase

CT Ratios

CT Numerator (Primary): 1 - 65535

CT Denominator (Secondary): 10 or 2 Amp, depending on the EPM 4600 unit's ordered option. This field is display only - it cannot be changed.

Example Settings:

For a system that has 14400V primary with a 120V secondary line to neutral (PT Ratio of 120:1), set the following PT Ratios in the entry fields:

PT Numerator (Primary): 14400

PT Denominator (Secondary): 120

For a CT of 2000/5A, set the

following:

CT Numerator (Primary): 2000

Energy, Power Scaling, and Averaging Method

The screenshot shows a software interface for configuring meter settings. The window title is "Energy, Power Settings, and Averaging Method". On the left is a tree view with categories: General Settings (CT, PT Ratios and System Hookup, Time Settings, System Settings, Communications), Energy Settings (Energy, Power Settings, and Averaging Method), Alarm Settings, Trending Profiles, and Digital I/O. The main content area is divided into sections:

- Energy Settings:** Energy Digits (8), Energy Decimal Places (3), Energy Scale (unit). A note says "Settings apply to all meters in CPU" with an example: "Example: 99999.999 WH".
- Power Settings:** Apparent Power (VA) Calculation Method (Arithmetic Sum), Power Direction (View as load), Flip Power Factor Sign (No), Watts Direction (Unidirectional and Bidirectional radio buttons).
- Demand Averaging:** Type (Rolling), Sub-Interval (Minutes) (5), Number of Sub Intervals (1), Interval Window (5 minutes).

At the bottom of the window are buttons: Update Device, Save Profile, Load Profile, View Report, and Exit.

The screen fields and acceptable entries are as follows:

Energy Settings

Energy Digits: 5; 6; 7; 8

Energy Decimal Places: 0 - 6

Energy Scale: unit; kilo (K); Mega

(M)

Example: a reading for Digits: 8; Decimals: 3; Scale: K would be formatted as 00123.456k

Power Settings

Apparent Power (VA) Calculation Method: Arithmetic Sum; Vector

Sum Power Direction: View as Load; View as Generator

Flip Power Factor Sign: No; Yes

Watts Direction: Unidirectional; Bidirectional

Demand Averaging

Type: Block or Rolling

Interval (Block demand) or Sub-Interval (Rolling demand) in minutes: 5; 15; 30; 60

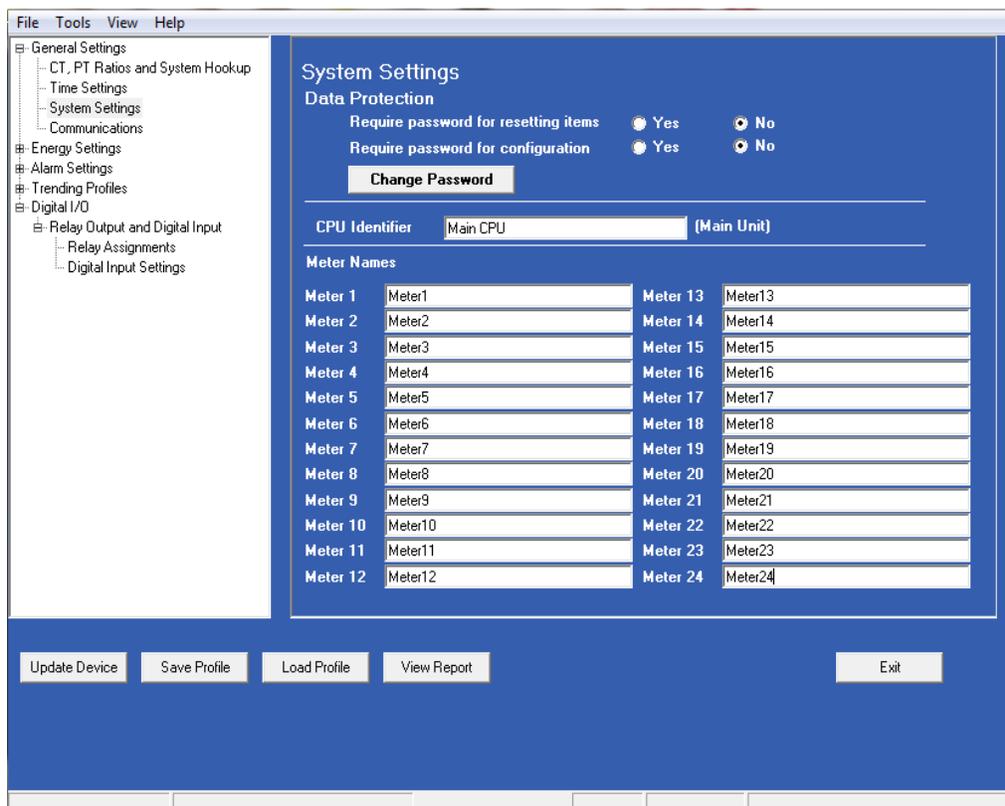
Number of Subintervals: 1; 2; 3; 4

Interval Window: This field is display only. It is the product of the values entered in the Sub-Interval and Number of Subintervals fields.



You will only see the Number of Subintervals and Interval Window fields if you select Rolling Demand.

System Settings



The settings you see on the System Settings screen depend on your EPM 4600 unit's circuit configuration. The top screen on the previous page is for an EPM 4600 unit with the three phase circuit configuration. The bottom screen is for an EPM 4600 unit with a single phase configuration.

From this screen, you can do the following:

- Enable or disable password for Reset (reset max/min Energy settings, Energy accumulators, and the individual logs) and/or Configuration (Device profile): click the radio button next to Yes or No.



If you enable a password for reset, you must also enable it for configuration. The EPM 4600 unit's default is password disabled. Enabling Password protection prevents unauthorized tampering with devices. When a user attempts to make a change that is under Password protection, GE Vernova Communicator software opens a screen asking for the password. If the correct password is not entered, the change does not take place.

NOTICE

You must set up a password before enabling Password protection. Click the **Change** button next to **Change Password** if you have not already set up a password.

- Change the Password: click the **Change** button. You will see the Enter the New Password screen, shown below.

1. Type in the new password (0 - 9999).
2. Retype the password.
3. Click **Change**. The new password is saved and the EPM 4600 unit restarts.



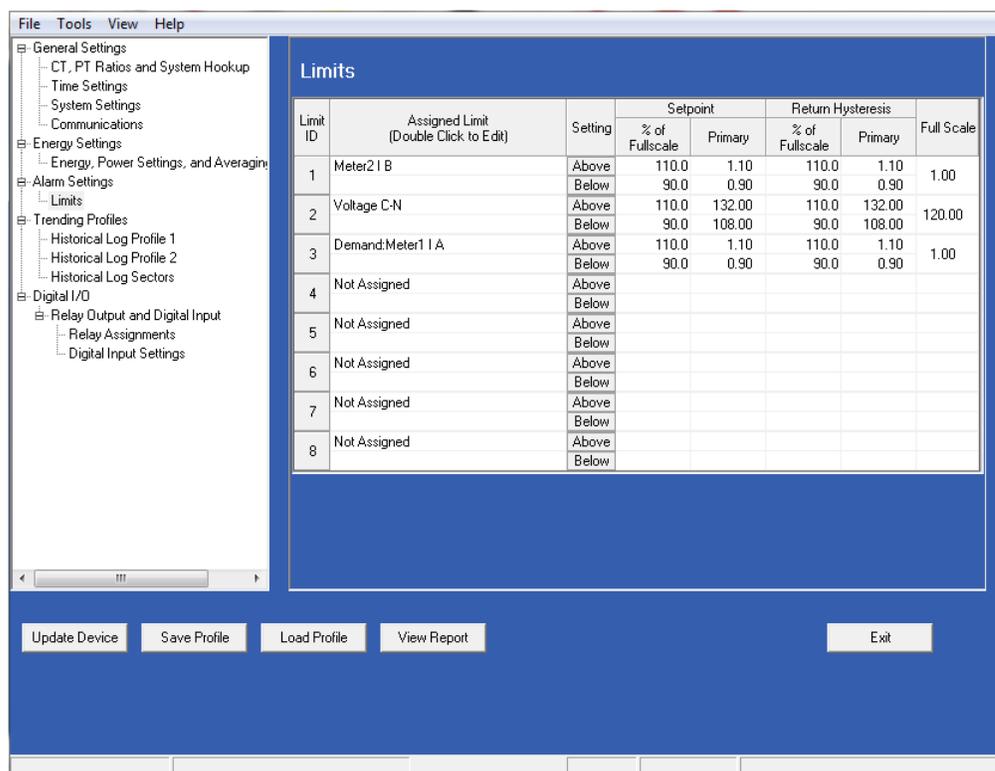
NOTE

If Password protection has already been enabled for configuration and you attempt to change the password, you will see the Enter Password screen after you click Change. Enter the old password and click OK to proceed with the password change.

- Change the EPM 4600 metering system's identification label: input a new label for the EPM 4600 unit into the CPU Identifier field.
- Enter a name for the eight meters in a three phase circuit configuration, or the 24 meters in a single phase circuit configuration, so that you can easily identify each meter's information. These names are used throughout the software, e.g., in the logging and polling screens. For example, if you have a shopping mall with 8 stores, each having a three phase system that is attached to the EPM 4600-T, you can name the meters Store 1 - Store 8, to identify each meter with its store. Then when you look at the polling screens or logging screens, you can easily identify each store's data, without needing to check the circuit configuration.

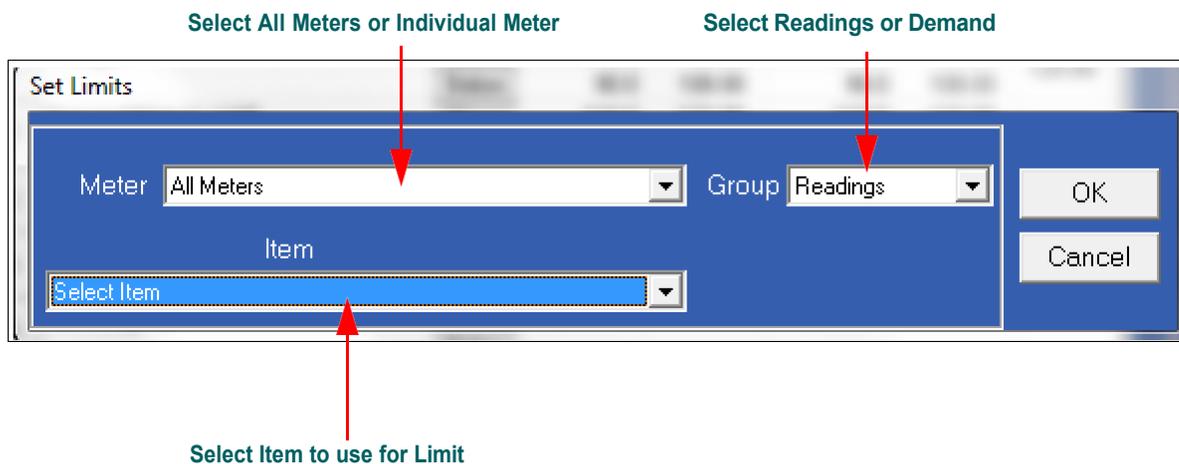
Limits

Limits are transition points used to separate acceptable and unacceptable measurements. When a value goes above or below the limit, an out-of-limit condition occurs. Once they are configured, you can view the out-of-limits (or alarm) conditions in the Limits log or Limits polling screen. You can also use limits to trigger relays.



The current settings for limits are shown in the screen. You can set and configure up to eight limits for the EPM 4600 unit. To set up a limit:

1. Select a limit by double-clicking on the **Assigned Channel** field.
2. You will see the screen shown below.



This screen lets you configure the limits. The settings you can make depend on your EPM 4600 unit's configuration:

- For a three phase configuration, you can set up limits from the Readings group's items for all meters or any individual meter (select from the Meter pull-down)

menu).

The items you can select for Readings limits for All Meters are:

Phase to Neutral voltage, Phase to Phase Voltage, and Frequency.

The items you can select for Reading limits for individual meters are:

Current phases A, B, and C, Total Watts, Total VAR, Total VA, Total PF, Current Neutral, Watts per Phase, VAR per Phase, VA per Phase, and PF per Phase.

- The Demand group (select from the Group pull-down menu) can only have limits set for individual meters (not All Meters). The items you can select for Demand limits are: Current phases A, B, and C, Total +Watts, Total +VAR, Total -Watts, Total - VAR, Total VA, Total +PF, Total -PF, +Watts per Phase, -Watts per Phase, +VAR per Phase, -VAR per Phase, VA per Phase, + PF per Phase, and -PF per Phase.
- For a single phase configuration, you can set up limits from the Readings group's items for All meters or any individual meter (select from the Meter pull-down menu).

The Items you can select for Readings limits for All Meters are:
Voltage and Frequency.

The items you can select for Reading limits for individual meters are:
Current, Watts, VAR, VA, and PF.

- The Demand group (select from the Group pull-down menu) can only have limits set for individual meters (not All Meters). The items you can select for Demand limits are: Current, +Watts, +VAR, -Watts, -VAR, VA, +PF, and -PF.

3. Click **OK**. The limit item you selected is displayed in the Limit field.

Example Limit: Current Phase B for Meter 4

Setting Fields for the Limit

Limit ID	Assigned Limit (Double Click to Edit)	Setting	Setpoint		Return Hysteresis		Full Scale
			% of Fullscale	Primary	% of Fullscale	Primary	
1	Meter2 | B	Above	110.0	1.10	110.0	1.10	1.00
		Below	90.0	0.90	90.0	0.90	
2	Voltage C-N	Above	110.0	132.00	110.0	132.00	120.00
		Below	90.0	108.00	90.0	108.00	
3	Demand: Meter1 | A	Above	110.0	1.10	110.0	1.10	1.00
		Below	90.0	0.90	90.0	0.90	
4	Not Assigned	Above					
		Below					
5	Not Assigned	Above					
		Below					
6	Not Assigned	Above					
		Below					
7	Not Assigned	Above					
		Below					
8	Not Assigned	Above					
		Below					

4. To configure a limit, double-click on the field to set the following values:

- **Above and Below Setpoint:** % of Full Scale (the point at which the reading goes out of limit)

Examples:

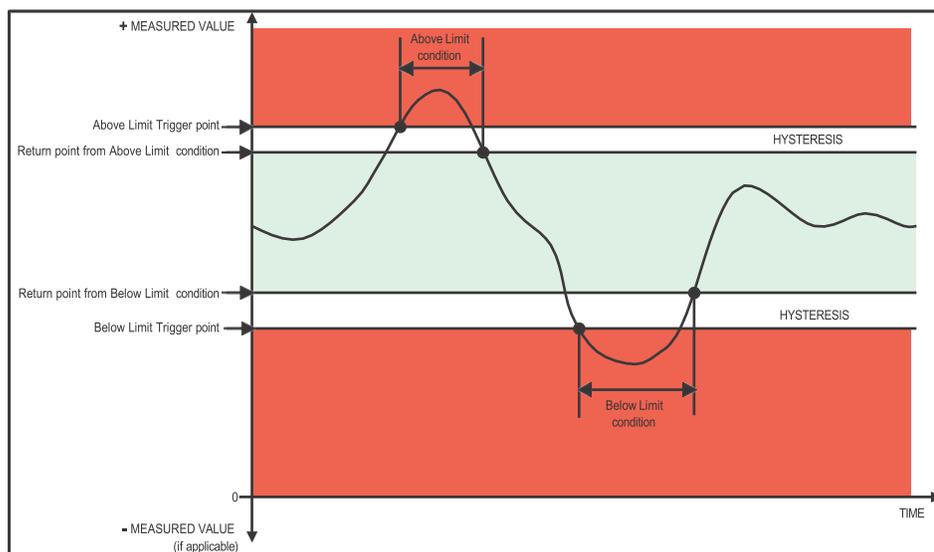
100% of 120V Full Scale =
 120V 90% of 120V Full Scale
 = 108V

- **Above and Below Return Hysteresis:** the point at which the reading goes back within limit (see figure below)

Examples:

Above Setpoint = 110%; Below Setpoint = 90%
 (Out of Limit above 132V);(Out of Limit below
 108V)

Above Return Hysteresis = 105%; Below Return Hysteresis =
 95% (Stay out of Limit until below 126V)(Stay out of Limit until
 above 114V)



- **Primary Fields:** These fields are display only. They show what the setpoint and return hysteresis value are for each limit.
- If you are entering negative limits, be aware that the negative value affects the way the above and below limits function, since negative numbers are processed as signed values.
- If the Above Return Hysteresis is greater than the Above Setpoint, the Above Limit is Disabled; if the Below Return Hysteresis is less than the Below Setpoint, the Below Limit is Disabled. You may want to use this feature to disable either Above or Below Limit conditions for a reading.



NOTE

Time Settings

Use this setting to enable or disable Daylight Savings Time for the EPM 4600 unit and to set the beginning and ending times for Daylight Savings Time.

1. From the Tree Menu, click **General Settings>Time Settings**.

The screenshot shows a software window titled 'Daylight Savings Information'. On the left is a tree menu with 'General Settings' expanded to 'Time Settings'. The main panel contains a checkbox labeled 'Check to enable Daylight savings time in the meter'. Below this are two rows, 'Begin' and 'End', each with four dropdown menus: 'Month' (set to 'January'), 'Week' (set to 'First'), 'Day of Week' (set to 'Sunday'), and 'Hour' (set to '0'). To the right of these dropdowns is a button labeled 'USA Daylight Savings'. At the bottom of the window are five buttons: 'Update Device', 'Save Profile', 'Load Profile', 'View Report', and 'Exit'.

2. Check the box to enable Daylight Savings time, or un-check it to disable Daylight Savings Time.
3. Click the USA Daylight Savings button to fill the entry fields with the US DST beginning and ending times, or use the entry fields to manually set the start and end times for the Daylight Savings Time feature, if enabled.



NOTE

The Hour field uses a 24-Hour clock.

NOTICE

When you finish making changes to the Device Profile, click Update Device to send the new Device Profile settings to the connected EPM 4600 unit.



NOTE

Refer to “Configuring the EPM 4600 Metering System” on page 11-1 for additional instructions on configuring the EPM 4600 metering system’s settings.

Multilin™ EPM 4600 Metering System

Chapter 6: Using the Metering System's Watt-Hour Test Pulses

Overview

To be certified for revenue metering, power providers and utility companies must verify that a billing energy meter performs to the stated accuracy. To confirm the meter's performance and calibration, power providers use field test standards to ensure that the EPM 4600 metering system's energy measurements are correct. Since the EPM 4600 unit contains traceable revenue meters, it has utility grade test pulses that can be used to gate an accuracy standard. This is an essential feature required of all billing grade meters.

The EPM 4600 unit has 8 Watt-hour test pulses. These pulses are located at the top of the EPM 4600 unit. Each test pulse is set up to provide a visible red LED output that is proportional to the energy of each of the meters, as follows:

- For the EPM 4600-T unit, test pulses 1-8 are matched to the three phase meters 1-8.
- For the EPM 4600-S unit with 24 single phase metering points, the pulses are shared, with three metering points being set up for each pulse. To test one of the metering points, you must be sure that no load is on the other two metering points assigned to the pulse.

See the following sections for details, examples, and procedures for using the test pulses. For information on the pulse specifications, see "EPM 4600 Metering System Overview and Specifications" on page 2-1.

Performing Watt-Hour Accuracy Testing

Table 6.1 shows the Wh/Pulse constants for accuracy testing.

Input Voltage Level	Class 10 Models	Class 2 Models
Below 150V	0.125004444	0.025000889
Above 150V	0.500017776	0.100003555

Table 6.1: LED Pulse Constants for Accuracy Testing - Kh Watt-hour per pulse



Minimum pulse width is 90 milliseconds.

Examples

For the EPM 4600-T unit, use the test pulse assigned to each meter. For example, to verify meter 1, you would measure the pulses from test pulse 1.

Test pulse 1 will blink

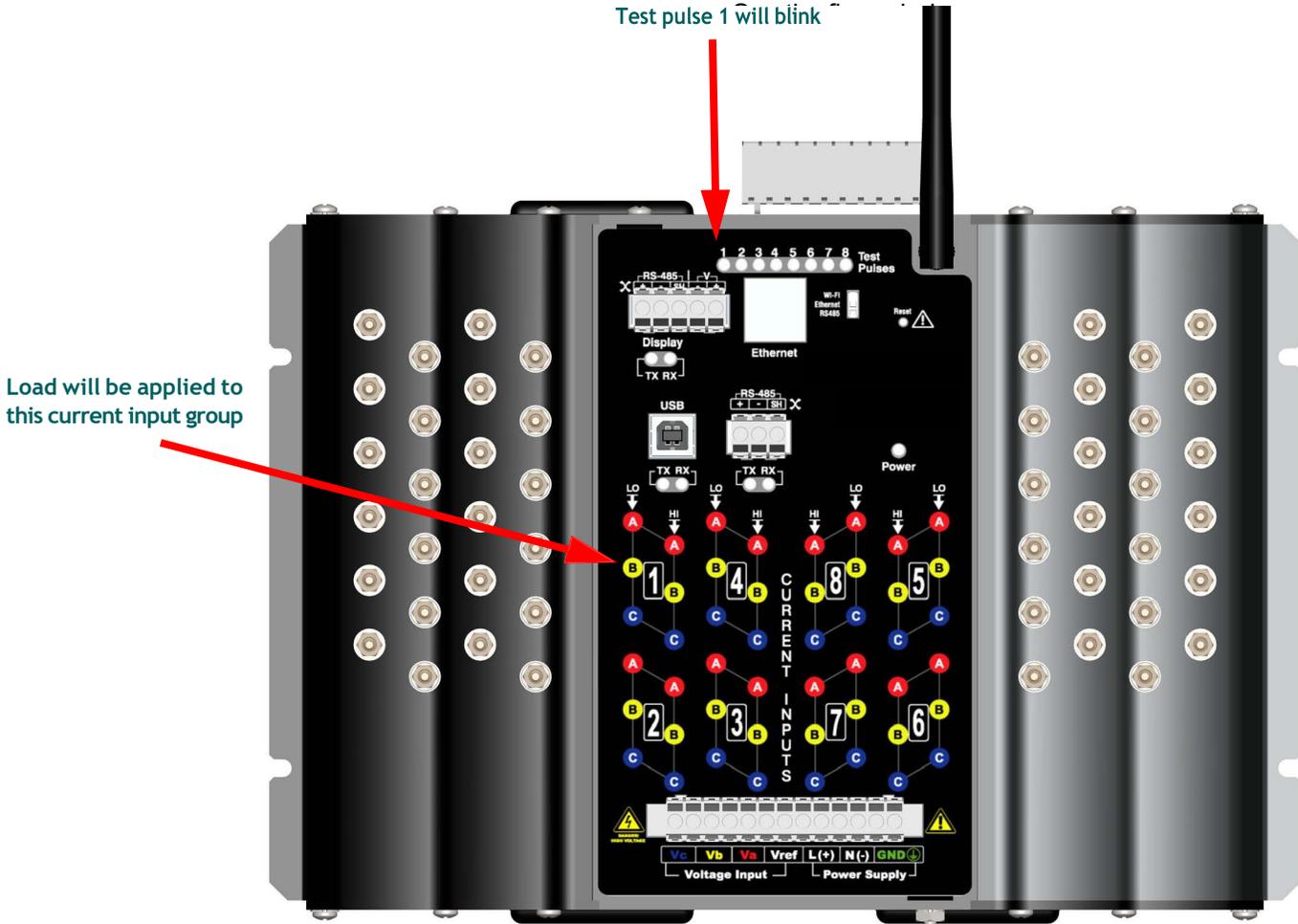


FIGURE 6.1: Meter 1 and Test Pulse 1 for EPM 4600-T Unit



Each test pulse will work for the respective meter number. Be careful to test only one meter group at a time, because the light can “bleed,” affecting accuracy of pulse counts.

For the EPM 4600-S unit, use the test pulse assigned to the metering point, but be sure that there is no load on the other two metering points assigned to the test pulse. So to measure meter 1, you would use test pulse 1, making sure that meters 2 and 3 had no load. See the figure below.

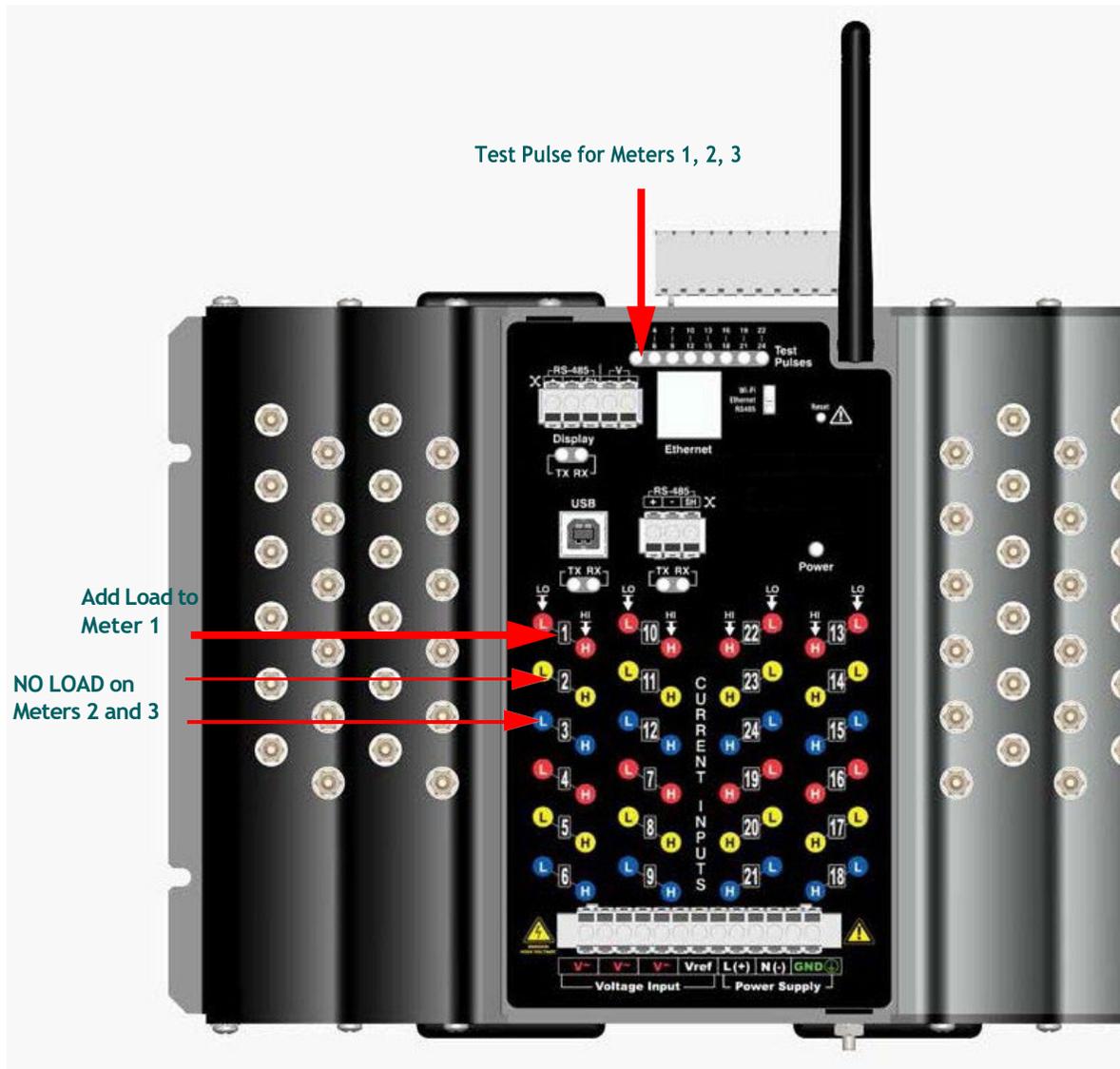


FIGURE 6.2: Meter 1 and Test Pulse 1 for EPM 4600-S Unit: NO LOAD on Meters 2 and 3

If you want to measure meter 2, make sure that meters 1 and 3 have no load; and if you want to measure meter 3, make sure that meters 1 and 2 have no load.

NOTE: Make sure you measure only one meter at a time, because additional meters measured simultaneously will cause errors in pulse counts.

The following table shows the meters that are associated with each of the test pulses.

Test Pulse 1	Test Pulse 2	Test Pulse 3	Test Pulse 4	Test Pulse 5	Test Pulse 6	Test Pulse 7	Test Pulse 8
Meter 1	Meter 4	Meter 7	Meter 10	Meter 13	Meter 16	Meter 19	Meter 22
Meter 2	Meter 5	Meter 8	Meter 11	Meter 14	Meter 17	Meter 20	Meter 23
Meter 3	Meter 6	Meter 9	Meter 12	Meter 15	Meter 18	Meter 21	Meter 24

Table 6.2: Test Pulses and Their Single Phase Meters - EPM 4600-S

Kh Testing Procedure

As mentioned earlier, the EPM 4600 unit is equipped with eight light pulse outputs, each of which generates one pulse when a defined unit of energy is measured by the meter. The defined unit of energy is given as Kh (Pulse Constant) times "1 kilowatt-hour." The Pulse Constants are given in Table 6.1 and are printed on the EPM 4600 unit's serial number label next to "Kh-TV<150V" and "Kh-TV>150V."

The diagram below shows a typical test setup:

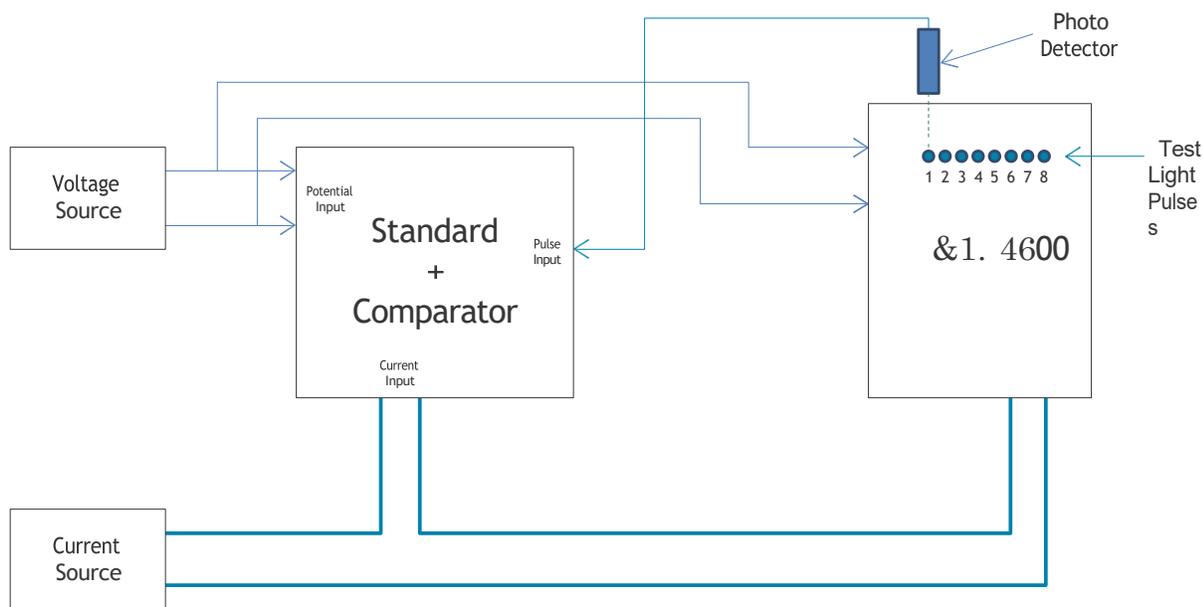


FIGURE 6.3: Typical Kh Test Setup

Typical standards are: Radian Research RD20 & RD21 or a Watt-hour Engineering Company Three Phase Automated Test System.



NOTE

Watt-hour Standards offer pulse inputs that take in the CPU's test pulses. The accuracy is computed by ratio-metrically comparing the period of the meter's pulse to the period of the Standard's internal pulse. You must program the test pulse value (Kh) into the Standard for the results to be accurate.

The example test procedure that follows covers only the testing of the three phase and single phase versions of the EPM 4600 unit. The test procedure used for the Standard shall be determined by the manufacturer of the Standard used.

Three Phase Test Procedure

1. All circuits and equipment must be de-energized.
2. Connect the three phase potential input lines to "Va", "Vb", and "Vc" and the neutral to "V-Ref" & "GND."
3. Connect power leads to the "L" and "N" connections.
4. Monitor the #1 test pulse by placing the photo detector over the #1 LED.
5. Connect the three phase current inputs to the current terminals associated with the test pulse LED being monitored. There must be no other current inputs connected.
6. Energize the Standard and the EPM 4600 unit. To assure accuracy, both must be on for a minimum of 30 minutes.
7. Energize the sources and wait for the outputs to stabilize before starting the test.
8. Start the test as per the appropriate procedure for the Standard and/or comparator used.
9. When the test is completed, de-energize the sources.
10. Place the photo detector over the next test pulse to be monitored.
11. Repeat steps 5 through 10 until all test pulses are checked.
12. De-energize all circuits and remove power from the Standard, sources, and the EPM 4600 unit.
13. Disconnect all connections from the EPM 4600 unit.

Single Phase Test Procedure



Unlike the three phase configuration, the single phase configuration uses each test pulse LED to display the energy measured for three current inputs (see Table 6.2).

1. All circuits and equipment must be de-energized.
2. Connect one line of the potential source to the three "V~" inputs and connect the other line to the "V-Ref" input and "GND."
3. Connect power to the "L" and "N" connections.
4. Monitor the #1 test pulse by placing the photo detector over the #1 LED.
5. Connect the current input to the first pair of current terminals associated with the test pulse LED being monitored. Make sure that no other current inputs (refer to Table 6.2) are connected.
6. Energize the Standard and the EPM 4600 unit. To assure accuracy, both must

be on for a minimum of
30 minutes.

7. Energize the sources and wait for the outputs to stabilize before starting the test.
8. Start the test as per the appropriate procedure for the Standard used.
9. When the test is completed, de-energize the sources.
10. Remove the current connections to the EPM 4600 unit and connect them to the second current input pair for the test pulse LED being monitored.
11. Energize the sources and wait at least 5 seconds before starting of test.
12. Start the test as per the appropriate procedure for the Standard and/or comparator used.
13. When the test is completed, de-energize the sources.
14. Remove the current connections from the EPM 4600 unit and connect them to the third current input pair for the test pulse LED being monitored.
15. Energize the sources and wait at least 5 seconds before starting of test.
16. Start the test as per the appropriate procedure for the Standard used.
17. When the test is completed, remove the current inputs from the meter.
18. Remove power from the sources.
19. Place the photo detector over the next test pulse LED to be monitored.
20. Repeat 5 through 19 until all current inputs and test pulses have been tested.
21. De-energize all circuits and remove power from the Standard, sources, and the EPM 4600 unit.
22. Disconnect all connections from the EPM 4600 unit.

Multilin™ EPM 4600 Metering System

Chapter 7: Using the EPM 4600 Metering System's I/O

Overview

The EPM 4600 unit has an embedded relay outputs/digital inputs board.

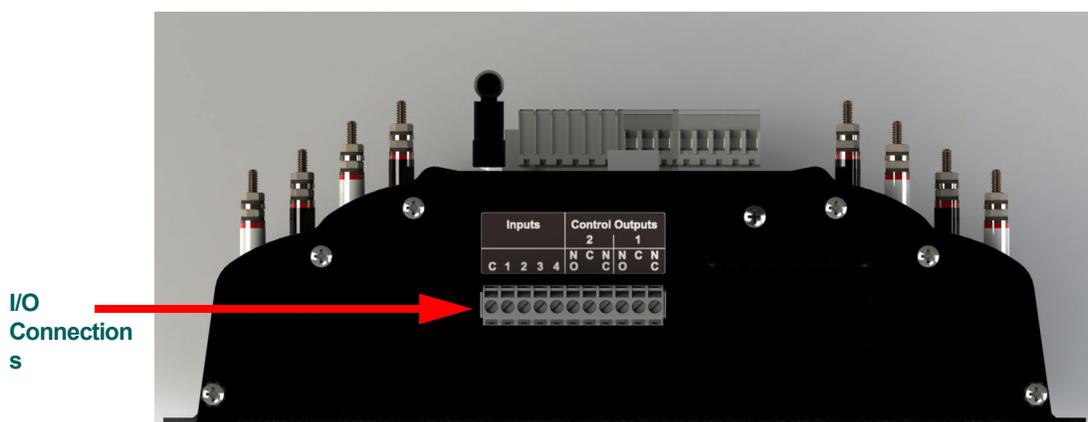


FIGURE 7.1: Location of I/O Board

Digital Output (Relay Contact) / Digital Input Board

The Digital Output/Input card is a combination of relay contact outputs for load switching or alarming and dry/wet contact sensing or KYZ pulse counting digital inputs. The outputs are electrically isolated from the inputs and from any other internal circuits.

- The I/O board's 2 relay outputs are used for control applications. This is an essential feature when looking to control equipment on alarm condition or to reduce peak demand by shutting down equipment or generating a peak demand alarm. The meter can be configured to trigger relay output when an alarm condition occurs. Up to 16 limits can be assigned through GE Vernova Communicator software (see "Communicating with

the Meter” on page 5-1 in this manual and the GE Vernova Communicator Software User Manual for instructions).

- The I/O board has 4 KYZ pulse counting inputs. These dry contact inputs are designed to count pulses from other devices such as gas meters, water meters, condensate (steam) meters or any other commodity meter that provides a pulse output. This feature is ideal for a total energy management solution; the information it provides can be used as part of a comprehensive energy usage reporting system.

Wiring Diagram

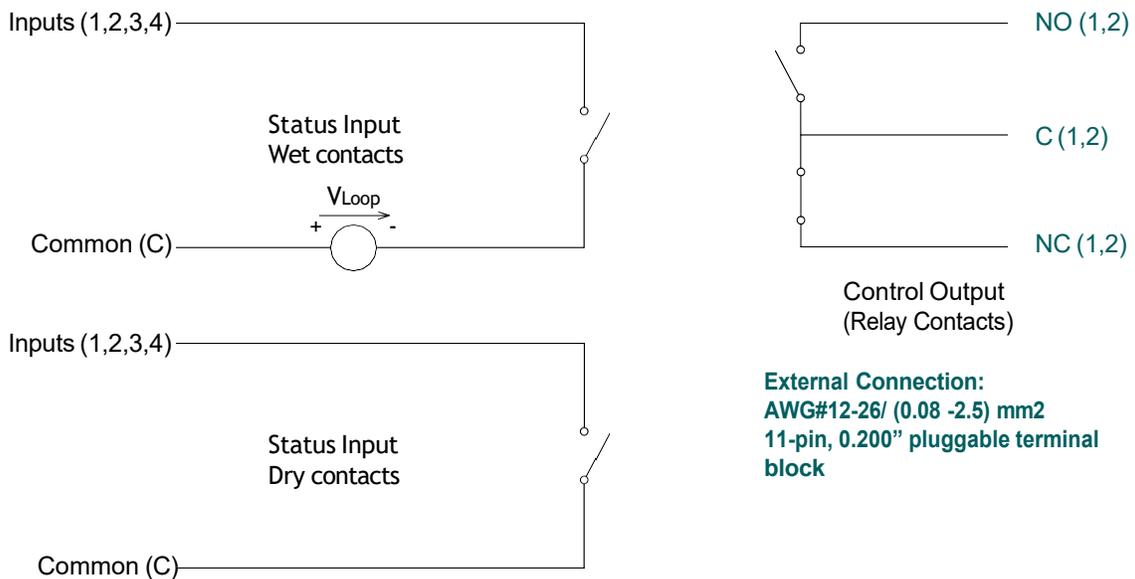
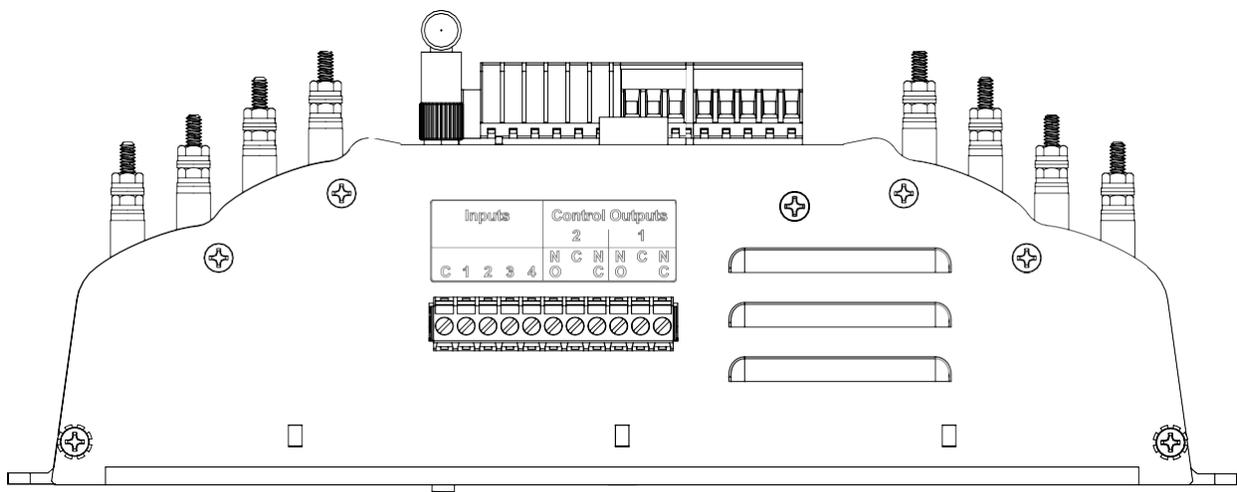


FIGURE 7.2: Relay Contact (4) / Status Input (2) I/O Wiring

Multilin™ EPM 4600 Metering System

Chapter 8: Using Ethernet Communication (RJ45 and WiFi)

Overview

The Ethernet/WiFi option for the EPM 4600 metering system gives Ethernet communication to Com 1 via either WiFi (Wireless) or RJ45 connections.

- The EPM 4600 unit's WiFi connection lets you set it up for use in a LAN (Local Area Network), using standard WiFi base stations. Then you can access the EPM 4600 unit to perform functions directly through any computer on your LAN: the EPM 4600 unit does not need to be directly connected (wired) to these computers for it to be accessed.
- The EPM 4600 unit's RJ45 connection lets you use standard Ethernet cable to connect the EPM 4600 unit to a wired Ethernet network.

To enable Ethernet communication for Com 1, set the switch to WiFi/Ethernet - see Figure 8.1.

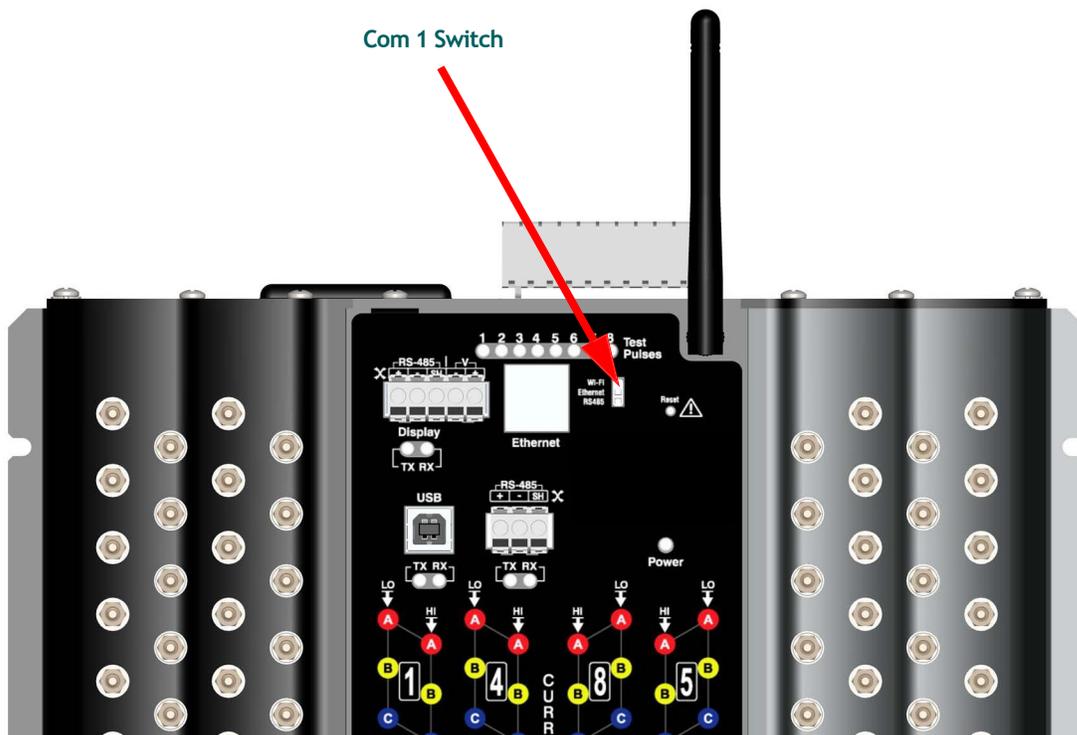


FIGURE 8.1: Location of Com 1 Switch

If you are using RJ45 Ethernet, connect the Ethernet cable to the EPM 4600 unit as shown in Figure 8.2.

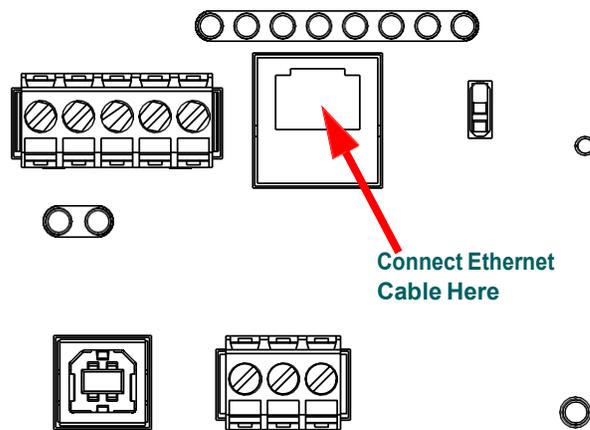


FIGURE 8.2: RJ45 Ethernet Connection

Configuration for both WiFi and RJ45 connections is easily accomplished through your PC using Telnet connections. The rest of this chapter gives the procedures for setting up the parameters for Ethernet communication.

Factory Default Settings

The settings shown in “Modbus/TCP to RTU Bridge Setup Default Settings” on page 8-3 are the default settings for the EPM 4600 metering system: they are the settings programmed into your EPM 4600 unit when it is shipped to you. You may need to modify some of these settings (for example, IP address) when you set up your Ethernet configuration.



- You should ONLY change Settings 1, 6, and 7. Settings 2, 3, and 4 must be the same as shown in “Modbus/TCP to RTU Bridge Setup Default Settings” on page 8-3. If they are not, reset them to the values shown in “Modbus/TCP to RTU Bridge Setup Default Settings” on page 8-3, using the reset instructions in “Network Module Hardware Initialization” on page 8-13.
- If setting 3 is not CP0..! Defaults (In), the procedure for Network Module Hardware Initialization (“Network Module Hardware Initialization” on page 8-13) will not work.

Modbus/TCP to RTU Bridge Setup Default Settings

1) Network/IP Settings:

Network Mode: Wired Only

IP Address: 10.0.0.1

Default Gateway: --- not set ---

Netmask: 255.255.255.0

2) Serial & Mode Settings:

Protocol: Modbus/RTU,Slave<s> attached

Serial Interface: 57600,8,N,1,RS232,CH1

3) Modem/Configurable Pin Settings:

CP0..! Defaults <In> Wired CP1..! GPIO <In> CP2..!

GPIO <In> CP3..! GPIO <In> CP4..! GPIO

<In> CP5..! GPIO <In> CP6..! GPIO <In>

CP7..! GPIO <In> CP8..! GPIO

<In> CP9..! GPIO <In> CP10..! GPIO <In>

RTS Output: Fixed High/Active

4) Advanced Modbus Protocol settings:

Slave Addr/Unit Id Source: Modbus/TCP header

Modbus Serial Broadcasts: Disabled (Id=0 auto-mapped to 1) MB/TCP Exception Codes: Yes (return 00AH and 00BH)

Char, Message Timeout: 00050msec, 05000msec

6) WLAN Settings:

WLAN: Disabled, network:LTRX_IBSS

Topology: AdHoc, Country: US, Channel:

11

Security: None
TX Data rate: 54 Mbps auto fallback
Power management: Disabled
Soft AP Roaming: N/A
Ad-hoc merging: Enabled
WLAN Max failed packets: 0

7) Security Settings:

SNMP: Enabled
SNMP Community Name: Public
Telnet Setup: Enabled
TFTP Download:
Enabled Port 77FEh:
Enabled
Enhanced Password: Disabled

Default settings, **S**ave, **Q**uit without save

Select Command or parameter set (1..7) to change:

Configure Network Module

These procedures explain how to set up the EPM 4600 unit on the Network Module.

Only one person at a time can be logged into the network port. This eliminates the possibility of several people trying to configure the Ethernet interface simultaneously.

Configuration Requirements

- You may want to consult your Network Administrator before performing these procedures, since some functions may be restricted to the Network Administrator.
- If you have only one Ethernet adapter (network card), the screen displays only that configuration. You will use this Ethernet adapter to access the EPM 4600 unit's Network Module. You may have to configure the Ethernet adapter in order to use it with the EPM 4600 unit's Network Module, using the instructions in "Configuring the Ethernet Adapter" on page 8-5.
- If you have multiple Ethernet adapters (network cards) installed on your computer, you must choose, configure and use the correct one to access the Network Module.
- The Ethernet Adapter must be set up for point-to-point connection in order for it to connect to the EPM 4600 unit's Network module, as follows:

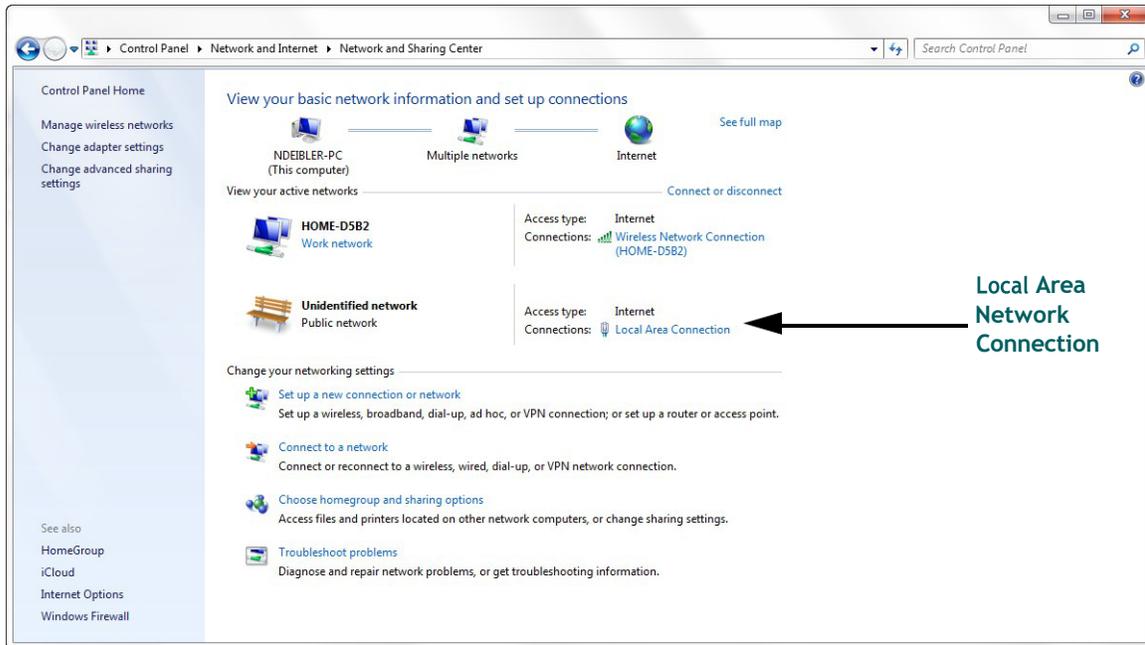
IP Address should be 10.0.0.2
Subnet Mask should be 255.255.255.0

These settings can be made in the Ethernet Adapter. Follow the procedure in

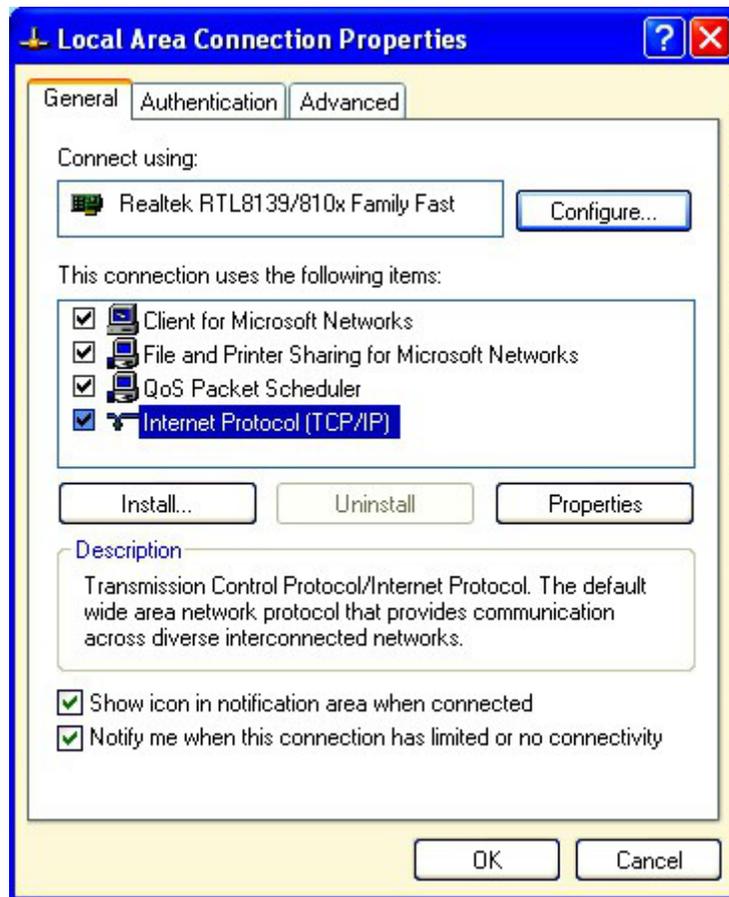
CHAPTER 8: USING ETHERNET COMMUNICATION (RJ45 AND WIFI)
“Configuring the Ethernet Adapter” on page 8-5.

Configuring the Ethernet Adapter

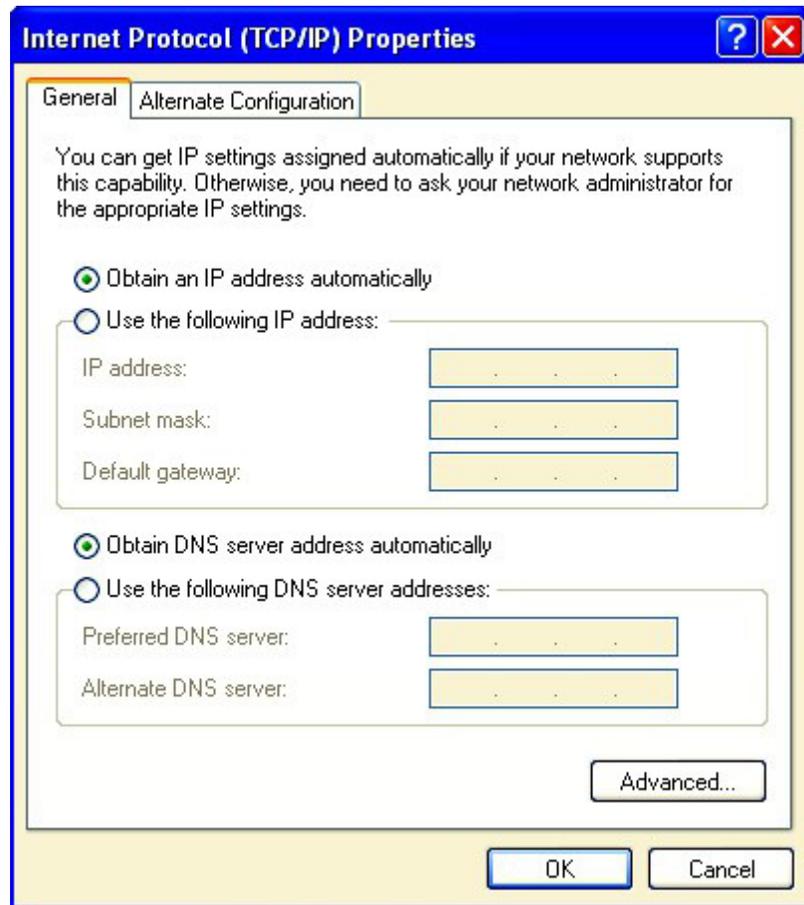
1. From the PC's Start Menu, select **Settings>Network Connections** or **Control Panel>Network Connections**. You will see a screen showing your network connections. An example is shown below. Depending on your Operating system, the screen you see may look a bit different.



2. Right click on the Local Area Network connection you will be using to connect to the EPM 4600 unit, and select Properties from the pull-down menu. You will see a screen similar to the one shown on the next page.



3. Select Internet Protocol [TCP/IP] from the middle of the screen and click the **Properties** button. You will see the screen shown on the next page.



4. Click the **Use the Following IP Address** radio button. The screen changes to allow you to enter the IP Address and Subnet Mask.
Enter 10.0.0.2 in the IP Address field.
Enter 255.255.255.0 in the Subnet Mask field.
5. Click the **OK** button.
6. You can now close the Local Area Connection Properties and Network Connection windows.

Detailed Configuration Parameters

Certain parameters must be configured before the Ethernet interface can function on a network. The following procedure can be locally or remotely configured.

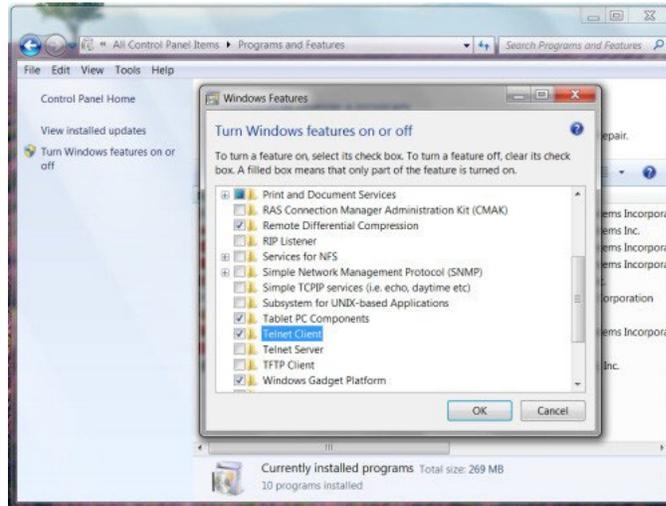
Use a Telnet connection to configure the EPM 4600 unit over the network. The Ethernet interface's configuration is stored in meter memory and is retained without power. The configuration can be changed at any time. The Ethernet interface performs a reset after the configuration has been changed and stored.



NOTE

If your PC is running the Windows® 7 Operating System, you need to enable Telnet before using it.

1. Open the Control Panel.
2. Select Programs and Features.
3. Select Turn Windows features on or off.
4. Check the box for Telnet Client.
5. Click **OK**. The Telnet client is now available.



Establish a Telnet connection to port 9999:

1. From the Windows Start menu, click Run and type 'cmd'.
2. Click the **OK** button to bring up Windows's Command Prompt window.
3. In the Command Prompt window, type `telnet 10.0.0.1 9999` and press the Enter key. NOTE: Be sure to include a space between the IP address and 9999.

You will see the following information.

```

c:\. Telnet 172.20.167.133
Modbus/TCP to RTU Bridge
MAC address 00204ACED2DC
Software version U3.3.25.0RC3 (130429)
Press Enter for Setup Mode

```

4. Press Enter.
5. You are now in Setup Mode. You can configure the parameters for the software you are using by either:
 - Keying a new value next to a setting and pressing Enter
 - Keeping the default value (the value in brackets after a setting) by just pressing Enter without keying in anything
6. Be sure to press "S" once you are finished, in order to store any new settings. The Ethernet interface will then perform a power reset.

Setup Details

This section illustrates how each section of settings appears on the screen, when you select the setting number (1, 6, or 7).

NOTICE

Change Settings 1, 6, and 7 ONLY. Settings 2, 3, and 4 MUST be the same as shown in “Modbus/TCP to RTU Bridge Setup Default Settings” on page 8-3. If they are not, reset them to the values shown in “Modbus/TCP to RTU Bridge Setup Default Settings” on page 8-3, using the reset instructions in “Network Module Hardware Initialization” on page 8-13.

Network IP Settings Detail (1) (Set device with static IP Address.)

Network Mode: 0=Wired only, 1=Wireless Only <0> ? Press 1 and then Enter for WiFi mode.

IP Address <010> 192.<000> 168.<000> .<000> .<001> You can change the IP address in this setting.

Set Gateway IP Address <N> ? Y (If you want to change the Gateway address.)

Gateway IP Address : <192> .<168> .<000> .<001> (You can change the Gateway address in this setting.)

Set Netmask <N for default> <Y> ? Y (If you want to change the Netmask.)
<255> .<255> .<255> .<000> (You can change the Netmask in this setting.)

Change telnet config password <N> ? N

WLAN Settings Detail (6) (The settings shown are recommended by GE Vernova Digital Energy for use with the EPM 4600 metering system. You will only be able to access these settings if you have set Network Mode to “1” (to select Wireless mode) in the Network IP Settings Detail, shown previously.)

Topology: 0=Infrastructure, 1=Ad-Hoc <1> ? 0

Network Name: <SSID> <LTRX_IBSS>?

EPM_METERS

Security suite: 0=none, 1=WEP, 2=WPA, 3=WPA2/802.11i <0> ? Enter the number of the encryption method are using, e.g., 3 for WPA2/802.11i.

If you select “1” (WEP), you will see the following settings:

Authentication 0=open/none, 1=shared <0> ? (Enter 1 if you want the encryption key matched with a communication partner before messages are passed through.)

Encryption 1=WEP64, 2=WEP128 <1>

2 Change Key <N> Y

Display Key <N> N

Key Type 0=hex, 1=passphrase

<0> 0 Enter Key:

You can manually enter 26 hexadecimal characters (required for 128-bit encryption) or you can use a WEP Key provider online (for example: www.powerdog.com/wepkey.cgi). WEP Key providers should note on their website that their encryption algorithm is for the Wired Equivalent Privacy portion of IEEE 802.11b/g.

WEP Key Provider Steps

1. Input 26 alphanumeric characters as your Passphrase. **IMPORTANT!** Remember your Passphrase.

PASSPHRASE TO HEXADECIMAL WEP KEYS

Enter the passphrase below.

1009egbck001036ab

2. Click the **Generate Keys** button. Your Hexadecimal WEP Keys display.

PASSPHRASE TO HEXADECIMAL WEP KEYS

The passphrase 1009egbck001036ab produces the following keys:

64-BIT (40-BIT KEYS)

1. AA43FB768D
2. 637D8DB9CE
3. AFDE50AF61
4. 0c35E73E25

128-BIT (104-BIT) KEY

041D7773D8B2C1D97BE9531DC

3. Enter the 128-bit Key.
 - TX Key Index <1> ? 1 (The WEP key used for transmissions - must be a value between 1 and 4.)
 - TX Data Rate: 0=fixed, 1=auto fallback <1> ? 1
 - TX Data rate: 0=1, 1=2, 2=5.5, 3=11, 4=18, 5=24, 6=36, 7=54 Mbps <7> ? Enter data transmission rate, e.g., 7 for 54Mbps.
 - Minimum Tx Data rate: 0=1, 1=2, 2=5.5, 3=11, 4=18, 5=24, 6=36, 7=54 Mbps <0> ? 0
 - Enable Power management <N> ?
 - Y Enable Soft AP Roaming <N> ?
 - N
 - Max Failed Packets (6-64, 255=disable) <6>? 6

If you select "2" (WPA), you will make the following settings:

Change Key <N>

Y Display Key

<N> N

Key Type 0=hex, 1=passphrase <0> 1

Enter Key: (The maximum length of the passphrase is 63 characters. GE Vernova Digital Energy recommends using a passphrase of 20 characters or more for maximum security.)

Encryption: 0=TKIP, 1=TKIP+WEP <0> ? Set the type to the minimum required security level. The “+” sign indicates that the group (broadcast) encryption method is different from the pairwise (unicast) encryption (WEP and TKIP).

TX Data rate: 0=fixed, 1=auto fallback <1> ? 1

TX Data rate: 0=1, 1=2, 2=5.5, 3=11, 4=18, 5=24, 6=36, 7=54 Mbps <7> ? Enter data transmission rate, e.g., 7 for 54Mbps.

Minimum Tx Data rate: 0=1, 1=2, 2=5.5, 3=11, 4=18, 5=24, 6=36, 7=54 Mbps <0> ? 0

Enable Power management <N>

? Y Enable Soft AP Roaming

<N> ? N

Max Failed Packets (6-64, 255=disable) <6>? 6

If you select “3” (WPA2/802.11i), you will make the following settings:

Change Key <N>

Y Display Key

<N> N

Key Type 0=hex, 1=passphrase <0> 1

Enter Key: (The maximum length of the passphrase is 63 characters. GE Vernova Digital Energy recommends using a passphrase of 20 characters or more for maximum security.)

Encryption: 0=CCMP, 1=CCMP+TKIP, 2=CCMP+WEP, 3=TKIP, 4=TKIP+WEP <3> ? (Set the type to the minimum required security level. The “+” sign indicates that the group (broadcast) encryption method is different from the pairwise (unicast) encryption. For example, for CCMP+TKIP, CCMP is the pairwise encryption and TKIP is the group encryption. CCMP is the default for WPA2.)

TX Data rate: 0=fixed, 1=auto fallback <1> ? 1

TX Data rate: 0=1, 1=2, 2=5.5, 3=11, 4=18, 5=24, 6=36, 7=54 Mbps <7> ? Enter data transmission rate, e.g., 7 for 54Mbps.

Minimum Tx Data rate: 0=1, 1=2, 2=5.5, 3=11, 4=18, 5=24, 6=36, 7=54 Mbps <0> ? 0

Enable Power management <N> ? Y

Enable Soft AP Roaming <N> ? N

Max Failed Packets (6-64, 255=disable) <6>? 6

Security Settings (7)

Disable SNMP <N> ? N

SNMP Community Name <public>: (You can enter an SNMP community name here.)

Disable Telnet Setup <N> ? N (If you change this setting to Y, you will not be able to use Telnet to re-configure the Network card once you save the settings, without resetting the Network card, as shown in “Network Module Hardware Initialization” on page 8-

13. However, you may want to disable Telnet setup and Port 77FEh to prevent users from accessing the setup from the network.)

Disable TFTP Firmware Update <N> ? N

Disable Port 77FEh <N> ? N (For security purposes, you may want to disable Telnet setup and Port 77FEh to prevent users from accessing the setup from the network.)

Enable Enhanced Password <N> ? N

Exiting the screen

NOTICE

DO NOT PRESS 'D': that will restore the Default Settings.

Press 'S' to Save the settings you've entered.

Network Module Hardware Initialization

If you don't know your current Network Module settings, or if the settings are lost, you can use the meter's Reset button to initialize the hardware with known settings you can then work with. The Reset button is located to the right of the RS485/Ethernet/ WiFi switch.



FIGURE 8.3: Location of Reset Button

Using a pointed implement such as a ballpoint pen tip, press and release the **Reset** button. The Network card settings will return to the default settings shown in “Modbus/TCP to RTU Bridge Setup Default Settings” on page 8-3.

Multilin™ EPM 4600 Metering System

Chapter 9: Data Logging

Overview

Optional Software option B or C gives the EPM 4600 metering system memory for data logging. The EPM 4600 metering system can log historical trends, limit alarms, I/O changes, and sequence of events. In addition, the EPM 4600 unit has a real-time clock that allows all events to be time-stamped when they occur. Refer to “Configuring the EPM 4600 Metering System” on page 11-1 for additional information and instructions.

Available Logs

The following logs are available for an EPM 4600 unit equipped with Software option B or C. These meters have 2 and 32 MB, respectively, of non-volatile memory for data logging.

- Historical logs: Each EPM 4600 unit with Software option B or C has two historical logs. The meter stores 6 channels of Voltage and Frequency in Log 1. This allows an end user to conduct studies on measured voltage reliability and stability. Log 2 is configured to log energy usage for each metered circuit over time for the three phase meter model. Log 3 logs energy usage for each metered circuit over time for the single phase meter model. If your EPM 4600 unit has the single phase configuration it will have Historical logs 1 and 3; if it has the three phase configuration it will have Historical logs 1 and 2. Note that the meter is configured to automatically store logs and that the logs default to a 15 minute interval. There is no user configuration necessary to insure that all data is being trended and logged using the software.
- For the EPM 4600-T unit, Historical log 1 records readings for Volts Line-to-Line and Line to Neutral, and Frequency. Historical Log 2 records readings for Watt-hours, Interval Energy for each of the eight meters, and accumulator readings for the four digital inputs.
- For the EPM 4600-S unit, Historical log 1 records readings for voltage and frequency. Historical log 2 records readings for Interval Energy for each of the 24 meters, and accumulator readings for the four digital

inputs.

- Interval Energy is the amount of energy consumed during the storage interval. For example, if you choose a 15 minute interval (the typical setting), the meter profiles the load used during the 15 minute period for each storage period. This lets you trend and graph an energy use profile for each meter (circuit).
- The EPM 4600 metering system's logging capability works with GE Vernova Communicator software applications to enable you to create detailed usage reports for analysis and to easily generate sub-tenant billing. The digital input accumulators can be used to accumulate pulses from other than electrical energy usage, e.g., gas or condensate (steam); to offer you a multi-commodity billing solution.
- Limit/Alarm log: This log provides the magnitude and duration of alarms that fall outside of configured acceptable limits. Time stamps and alarm value are provided in the log. Up to 16,382 events can be logged.
- I/O Change log: This log provides a time-stamped record of the Relay Output/ Digital Input board's output or input status changes. Up to 16,382 events can be logged.
- System Events log: In order to protect critical billing information, the EPM 4600 unit records and logs the following information with a timestamp:
 - Demand resets
 - Password requests
 - System startup
 - Energy resets
 - Log resets
 - Log reads
 - Programmable settings changes

All of the EPM 4600 unit logs can be viewed through the GE Vernova Digital Energy Log Viewer. Refer to the "Configuring the EPM 4600 Metering System" on page 11-1 for additional information and instructions regarding logs and the Log Viewer. Also, see "Retrieving and Viewing Logs" on page 11-50 for instructions on retrieving logs using the EPM 4600 unit's Modbus map.

Multilin™ EPM 4600 Metering System

Chapter 10: Using the Optional Display

Overview

This chapter describes the optional display for the EPM 4600 Metering System. The display lets you view meter readings remotely. The display comes pre-configured to match the EPM 4600 Meter default factory settings, but you can change the default settings such as the IP address if necessary. There are two available display models:

- The DIS3500 display has a 3.5" screen.
- The DIS5700 display has a 5.7" screen.



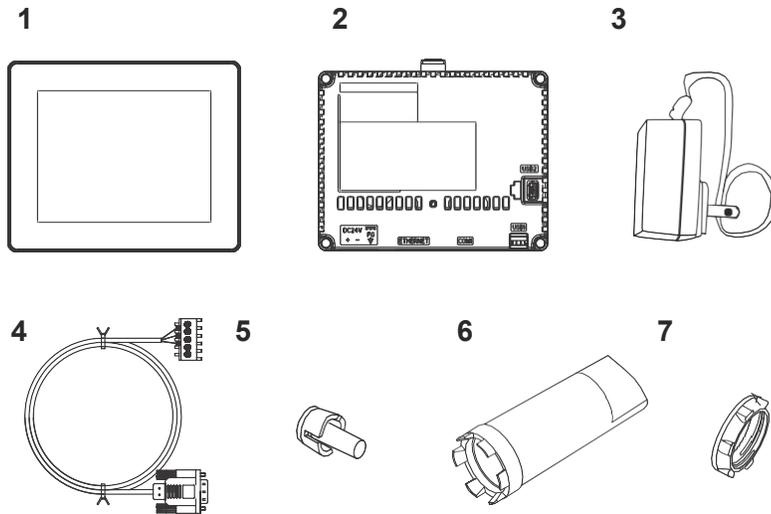
The displays are touch-screen capable and offer both serial and Ethernet communication:

- Serial port configured for 2-wire RS485 communication
- RJ45 Ethernet Port for 10/100BaseT communication

Display Features

- Low power consumption
- Compact size
- Easy installation - fits in standard 22mm mounting hole
- Easy communication connection - RJ45 Ethernet and RS485 serial communication options
- Display automatically detects communication connection
- 65k color touch screen
- Pre-programmed EPM 4600-T and EPM 4600-S readings and status display screens

Contents of Display Kit



1. Display
2. Rear Module
3. Power Supply
4. RS485 Serial Cable (10 feet)

Mounting Hardware:

5. Anti-rotation tee
6. Socket wrench
7. Installation nut, attached to the back of the display

DIS3500/DIS5700 Specifications

General Specifications

Electrical Specifications

Display Model	Rated Input Voltage	Input Voltage Limits	Voltage Drop	Power Consumption	In-Rush Current	Voltage Endurance	Insulation Resistance
DIS3500	24VDC	(20.4 to 28.8)VDC	10 ms or less	6.5W or less	30A or less	1,000VAC 20mA for 1 min (between charging and FG terminals)	500VDC, 10MW or more (between charging and FG terminals)
DIS5700	24VDC	(20.4 to 28.8)VDC	7 ms or less	6.8W or less	30A or less	1,000VAC 20mA for 1 min (between charging and FG terminals)	500 VDC, 10MW or more (between charging and FG terminals)

Display Specifications

	DIS3500	DIS5700	
Display Type	TFT Color LCD	TFT Color LCD	
Resolution	320 x 240 pixels (QVGA)	320 x 240 pixels (QVGA)	
Effective Display Area	W70.56 x H52.92 mm/ W2.78 x H2.08 in.	W115.2 x H86.4 mm/ W4.53 x H3.40 in.	
Display Colors	65,536 colors	65,536 colors	
Backlight	White LED (User non-replaceable part)	White LED (User non-replaceable part)	
Backlight Service Life	50,000 hrs. or more (continuous operation at 25° C/ 77° F before backlight brightness decreases to 50%)	50,000 hrs. or more (continuous operation at 25° C/ 77° F before backlight brightness decreases to 50%)	
Brightness Control	16 Levels (Adjusted with the touch panel or the software)	16 Levels (Adjusted with the touch panel or the software)	
Character Sizes (2)	Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 pixel fonts Stroke font: 6 to 127 pixel fonts Image font: 8 to 72 pixel fonts	Standard font: 8 x 8, 8 x 16, 16 x 16 and 32 x 32 pixel fonts Stroke font: 6 to 127 pixel fonts Image font: 8 to 72 pixel fonts	
Font Sizes	Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times.	Standard font: Width can be expanded up to 8 times. Height can be expanded up to 8 times.	
Text	8 x 8 pixels	40 characters x 30 rows	40 characters x 30 rows
	8 x 16 pixels	40 characters x 15 rows	40 characters x 15 rows
	16 x 16 pixels	20 characters x 15 rows	20 characters x 15 rows
	32 x 32 pixels	10 characters x 7 rows	10 characters x 7 rows

Communication Port Specifications for Display Module

Serial Interface COM1

Asynchronous Transmission	RS232C / RS422 / RS485
Data Length	7 or 8 bits
Stop Bit	1 or 2 bits
Parity	None, odd or even
Data Transmission Speed	2,400 to 115,200 kbps, 187,500 bps
Connector	D-Sub 9 pin (plug)

Ethernet Interface

Ethernet (LAN)	IEEE802.3i/ IEEE802.3u, 10BASE-T/100BASE-TX
Connector	Modular jack (RJ45) x 1



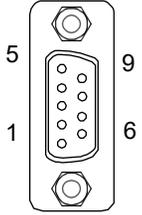
Ethernet networks must be installed by a trained and qualified person.

LED

LED		Contents
Green	lit	Data transmission is available
	blinking	Data transmission is occurring

Specs for Com 1 D-Sub 9 pin plug connector via an RS485 cable.

Interfit bracket is #4-40 (UNC).

Pin Arrangement	Pin No.	RS485		
		Signal Name	Direction	Meaning
 (Display unit)	1	RDA	Input	Receive Data A(+)
	2	RDB	Input	Receive Data B(-)
	3	SDA	Output	Send Data A(+)
	4	ERA	Output	Data Terminal Ready A(+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B(-)
	7	SDB	Output	Send Data B(-)
	8	CSA	Input	Send Possible A(+)
	9	ERB	Output	Data Terminal Ready B(-)
	Shell	FG	-	Frame Ground (Common with SG)

DIS3500/DIS5700 Compliance and Standards

- UL 508 and CSA C22.2 no. 142 for Industrial Control Equipment
- UL1604, ANSI/ISA 12.12.01 and CSA C22.2 no. 213 for Electrical Equipment for Use in Class I, Division 2 Groups A, B, C and D Hazardous (classified) Locations Hazardous Substances

Important Safety and Product Usage Information**Handling the LCD Panel**

The following characteristics are specific to the LCD unit and are considered normal behavior:

- The LCD screen may show unevenness in the brightness of certain images or may appear different when seen from outside the specified viewing angle. Extended shadows, or cross-talk, may also appear on the sides of screen images.
- The LCD screen pixels may contain black and white colored spots and color display may seem to have changed over time.

- When the same image is displayed on the screen for a long period, an afterimage may appear when the image is changed.



NOTE

Do not display the same image for a long time: change the screen image periodically.

WARNING

SERIOUS EYE AND SKIN INJURY. The liquid present in the LCD panel contains an irritant:

- Avoid direct skin contact with the liquid.
- Wear gloves when you handle a broken or leaking unit.
- Do not use sharp objects or tools in the vicinity of the LCD touch panel.
- Handle the LCD panel carefully to prevent puncture, bursting, or cracking of the panel material.
- If the panel is damaged and any liquid comes in contact with your skin, immediately rinse the area with running water for at least 15 minutes.
- If the liquid gets in your eyes, immediately rinse your eyes with running water for at least 15 minutes and consult a doctor.

Failure to follow these instructions can result in serious injury or equipment damage.

Using the Touch Panel Correctly

- Use only one finger to select an object on the touch panel.
- If the touch panel receives pressure at two or more points at the same time, an unintended object could be selected.

COM 1 Serial Port Warning and Cautions

WARNING

DANGER OF ELECTRIC SHOCK!

- The serial port is not isolated. The SG (signal ground) and the FG (frame ground) terminals are connected inside the unit. When using the SG terminal to connect an external device to the unit:
- Verify that a short-circuit loop is not created when you set up the system.
- Connect the #5 SG terminal to remote equipment when the host (PLC) unit is not isolated. Connect the #5 SG terminal to a known reliable ground connection to reduce the risk of damaging the RS485 circuit.

Failure to follow these instructions can result in death or serious injury.

NOTICE

LOSS OF COMMUNICATION

- All connections to the communication ports must not put excessive stress on the ports.
- Securely attach communication cables to the panel or cabinet.

Critical systems, Detected Alarms and Handling Requirements

Critical detected alarm indicators require independent and redundant protection hardware and/or mechanical interlocks. If the display unit for any reason becomes inoperative (for example, an inoperative backlight) it may be difficult or impossible to identify an alarm condition. Alarms tied to critical functions, such as emergency stop,

must be provided independently of the display unit. The design of the control system must take into account an inoperative unit (backlight) and that the operator is unable to view alarms using the display unit.

When the power is cycled, wait at least 10 seconds before restoring the power to the GP Unit. Switching the power OFF and ON quickly can damage the unit.

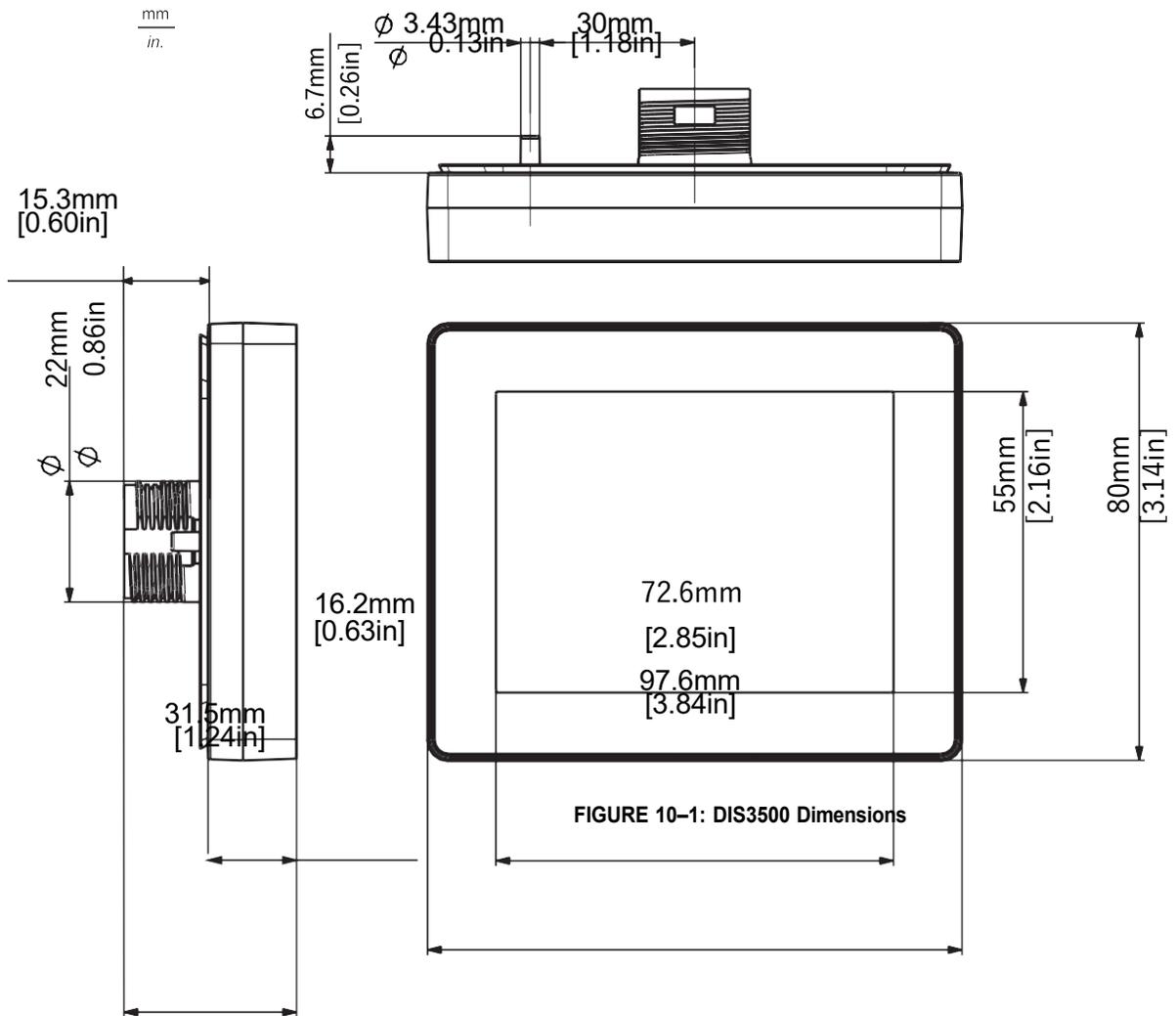
⚠ CAUTION

LOSS OF CONTROL: Consider the potential failure modes of alarm notification, such as:

- The possibility of backlight failure
- Unanticipated link transmission delays or failures
- The operator being unable to operate the display correctly
- Provide a means to achieve a safe state during and after a path failure for critical alarms.
- Provide separate or redundant control paths for critical alarms.
- Test individually and thoroughly each implementation of the display unit for correct operation before service.

Display Dimensions

The following figures give the dimensions of the DIS3500 and DIS5700 displays and the back of the displays (the back dimensions are the same for both display models).



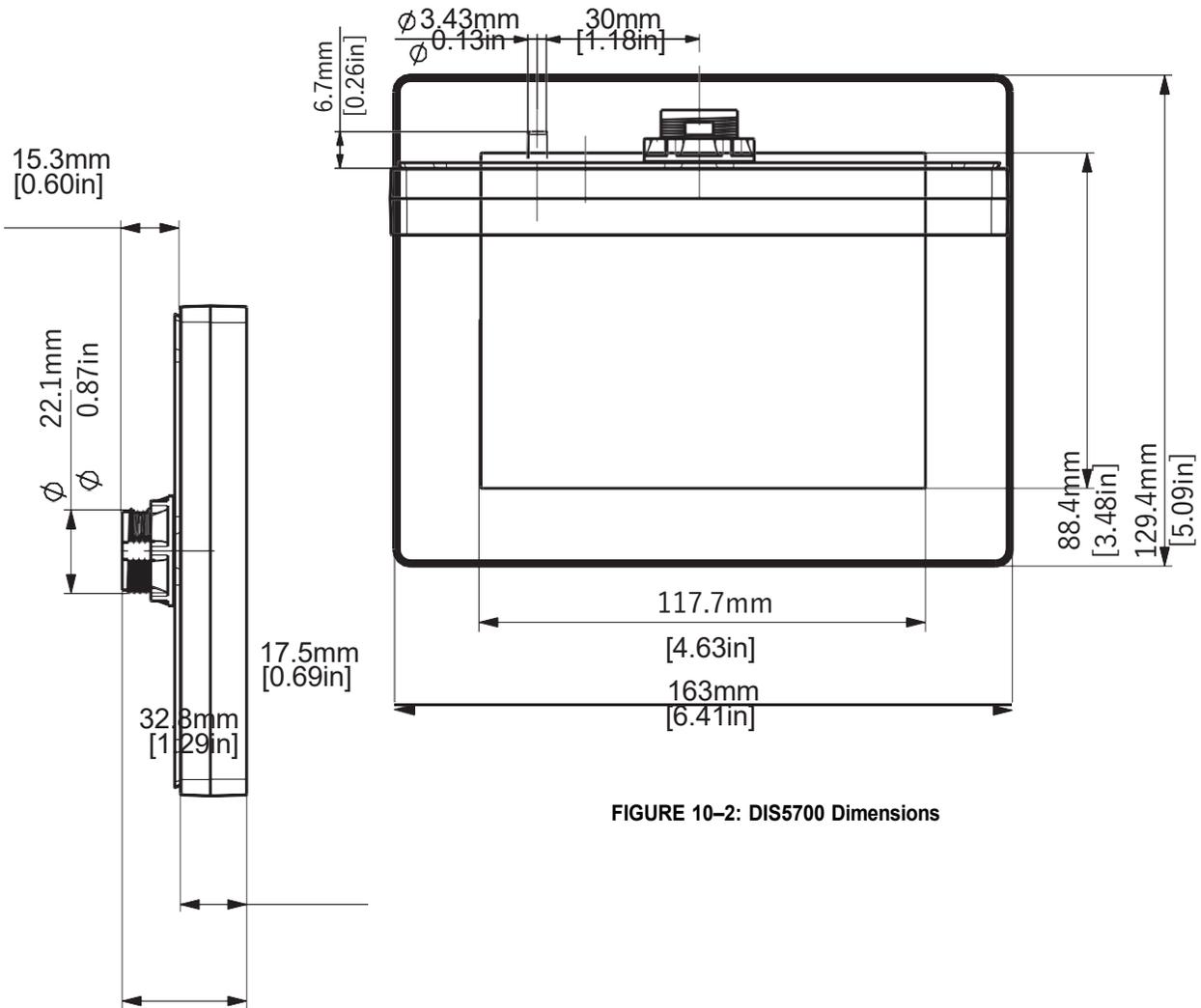


FIGURE 10-2: DIS5700 Dimensions

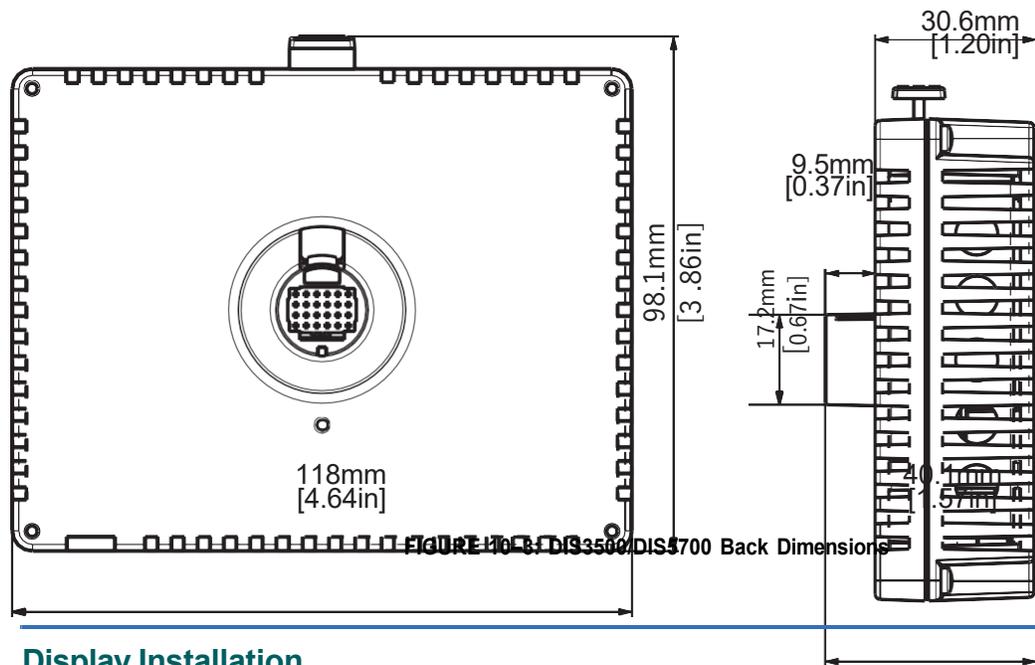


FIGURE 10-3: DIS3500/DIS5700 Back Dimensions

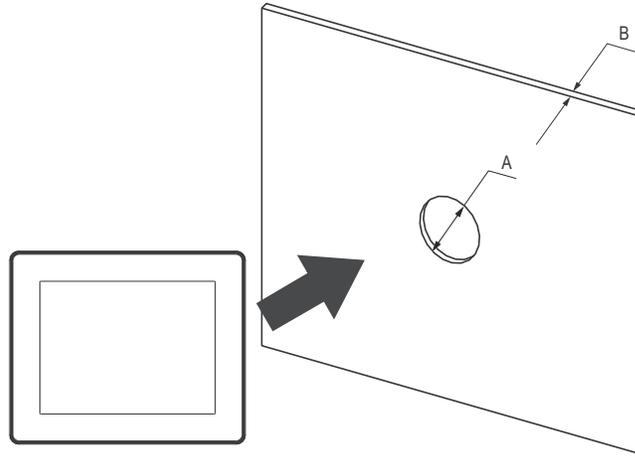
Display Installation

Mount the unit in an enclosure that provides a clean, dry, and controlled environment (IP65f enclosure or UL508 4x, if indoors). Before installing the display verify that:

- The gasket is flat and undamaged.
- The installation panel or cabinet surface is flat (the planarity tolerance is 0.5 mm/ 0.019 in.) and in good condition with no jagged edges. Metal reinforcing strips may be attached to the inside of the panel, near the panel cut-out, to increase the rigidity.
- The panel must be designed to avoid any induced vibration resonance on the rear module that exceeds a punctual factor of 10, and to avoid any induced permanent vibration resonance.
- The ambient operating temperature and the ambient humidity are within their specified ranges (see “Environmental Rating with and without Optional Display DIS3500/DIS5700” on page 2-9).
- The heat from surrounding equipment does not cause the unit to exceed its specified operating temperature (see “Environmental Rating with and without Optional Display DIS3500/DIS5700” on page 2-9).
- The panel face is not inclined more than 30° when installing the unit in a slanted panel.
- When mounting the display vertically, the right side of the unit faces up (the yellow button should be on the left).
- The unit is at least 100 mm/3.94 in. away from adjacent structures and other equipment for easier maintenance, operation, and improved ventilation.

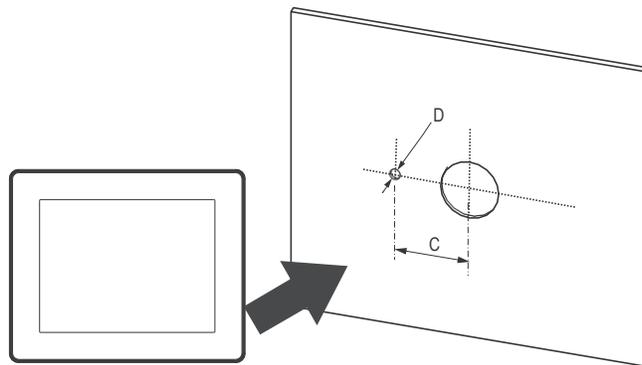
Follow this procedure to install the DIS3500/DIS5700:

- I. Create a panel cutout based on the following information, and install the display from the front. You can use a tee insert (included with the display) to stop display rotation when you apply torque during installation. With the tee option, the rotating torque is 6Nm/53.10 in-lb. Without the tee option the rotating torque is 2.5Nm/ 22.12 in-lb.



Unit	A (mm)	A (in.)	B (mm) (1)	B (in.) (1)	B (mm) (2)	B (in.) (2)
DIS3500	22.50	0.88	1.5 to 6	0.06 to 0.23	3 to 6	0.11 to 0.23
DIS5700	22.20	0.87	1.5 to 6	0.06 to 0.23	3 to 6	0.11 to 0.23
The Material of the panel (1) Steel sheet (2) Fiberglass (minimum GF30)						

FIGURE 10-4: Cutout Dimensions without Tee Insert



Unit	C (mm)	C (in.)	D (mm)	D (in.)
DIS3500	30.00	1.18	4.00	0.15
DIS5700	29.80	1.173	3.80	0.143

FIGURE 10-5: Cutout Dimensions with Tee Insert

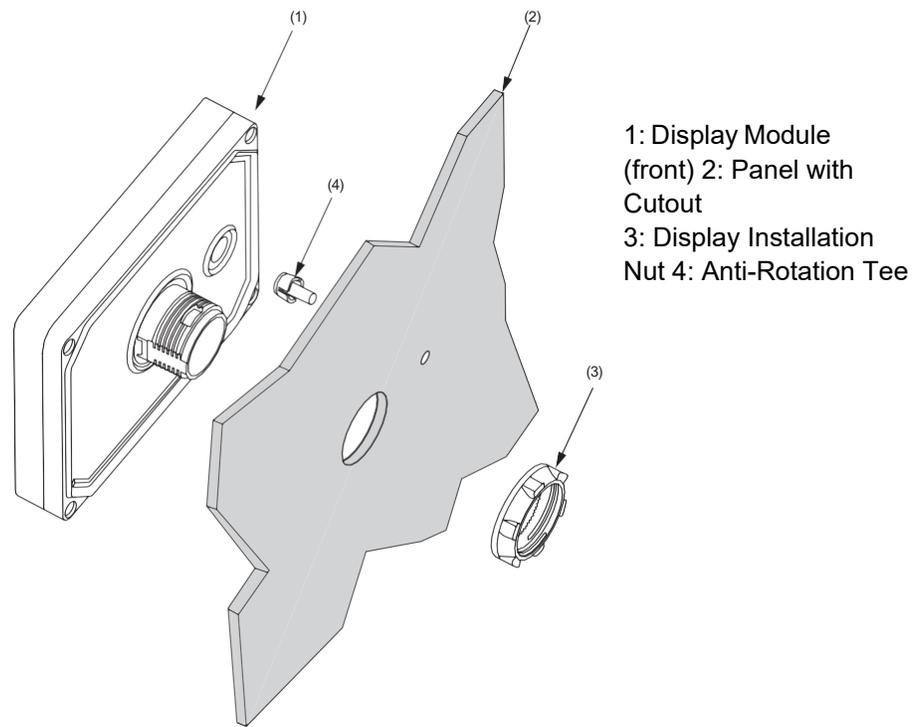


FIGURE 10-6: Installation Components

2. Insert the display module (along with the tee insert if you are using it) into the panel hole (see figure above).
3. Screw the nut using the socket wrench with a torque between 1.2 and 2Nm/10.62 and 17.70 in-lb - see figure below.

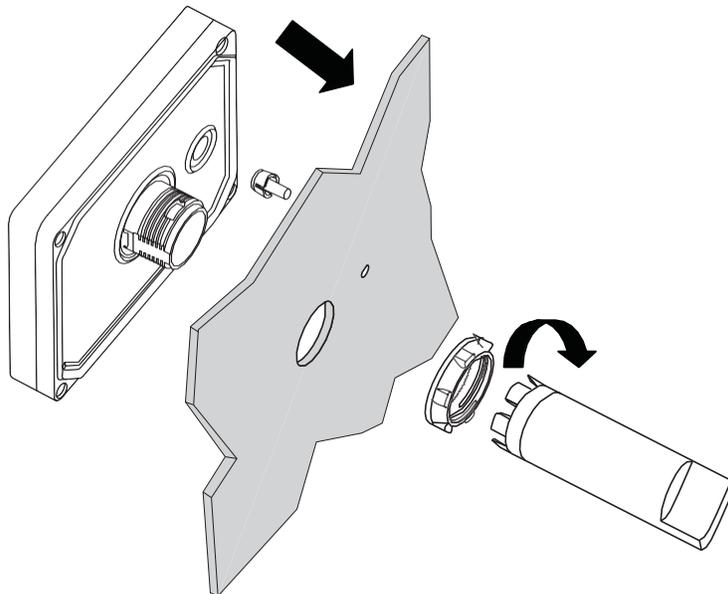


FIGURE 10-7: Attaching the Nut Using the Socket Wrench

4. Insert and push the rear module until it locks into place.



Install the display module and the rear module as shown below. If either unit is installed incorrectly, the connector may be damaged.

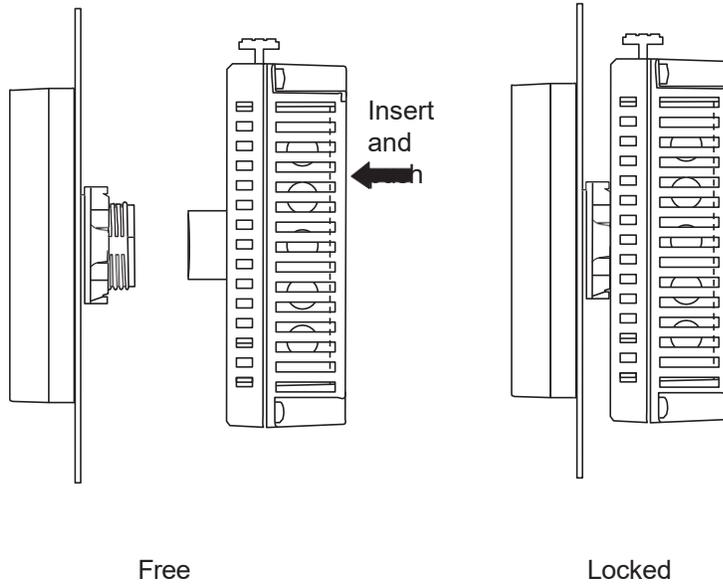


FIGURE 10-8: Connecting the Rear Module to the Display Module

To remove the rear module, press the yellow button to unlock it and pull the rear module away from the display module.

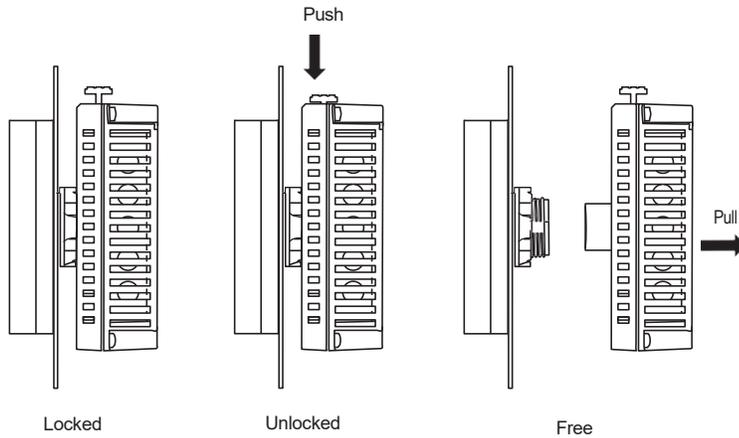


FIGURE 10-9: Removing the Rear Module from the Display Module

Display Configuration

The optional display can communicate with the EPM 4600 Metering System through either of two ways:

- RS485 serial communication through the EPM 4600 unit Com 3 serial port
- RJ45 Ethernet through the EPM 4600 unit optional Ethernet/WiFi on Com 1



NOTE

The DIS3500/DIS5700 display unit default factory settings match the EPM 4600 Meter default factory settings. If the EPM 4600 settings have been changed, the display settings

must be changed to match.

Both the EPM 4600 and the display need to have specific settings to enable their communication. The display is pre-programmed to communicate with the EPM 4600 metering system default IP address and RS485 Com port settings.

- If you have changed the EPM 4600 unit IP address: follow the procedure in “Setting Communication through Offline Mode” on page 10-30 to set a different, compatible IP address for the display.
- If you receive a communication error message: follow the instructions in “Offline Mode” on page 10-28 to correct it.

RS485 Communication Configuration

RS485 serial communication is set up between the EPM 4600 unit Com 3 and the DIS3500/DIS5700 RS485 port.



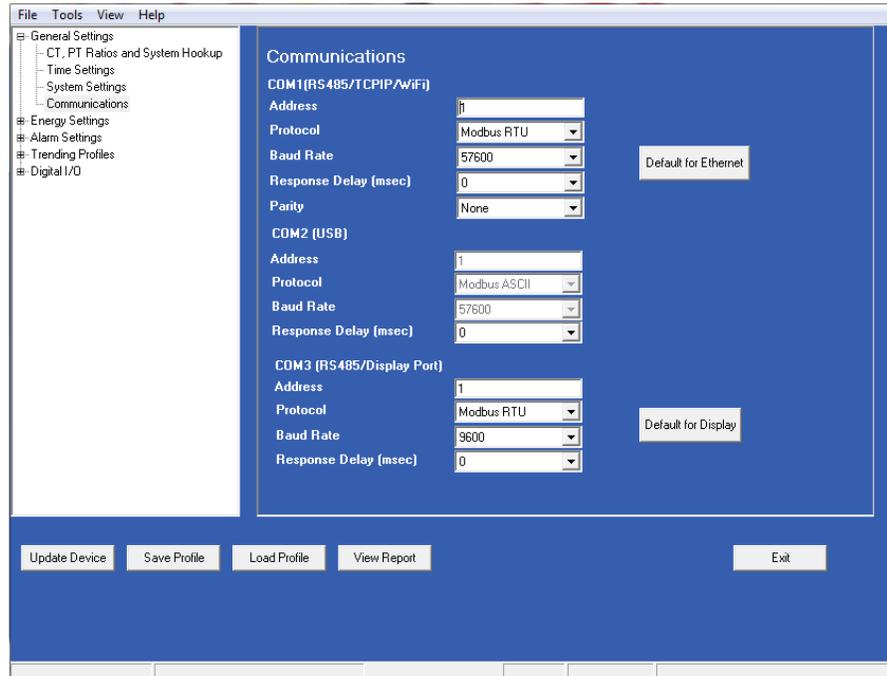
NOTE

See “RS485 Connections” on page 5-3 for general information concerning RS485 communication.

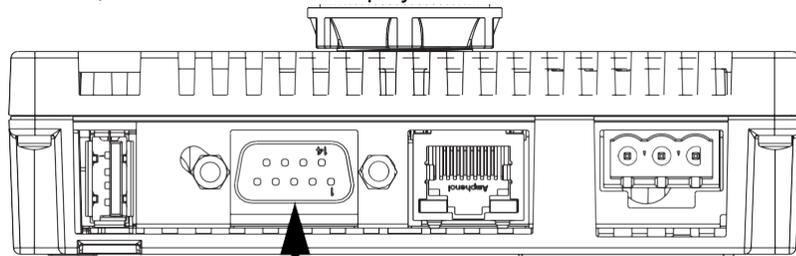
Follow this procedure:

- I. For the EPM 4600 unit:
 - a. From the EPM 4600 unit Device Profile (see Chapter 5), open the Communications screen.

- b. Make sure the Com 3 settings are the same as those shown in the screen below. If they are not, click the Default for Display button to bring these settings into the Com 3 fields.



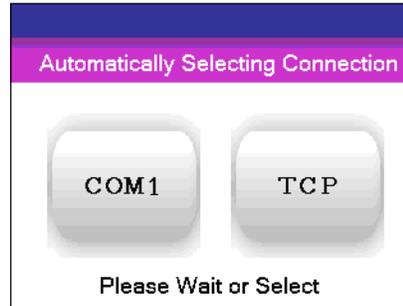
- c. If you have changed the Com 3 settings to make them match those shown above, click Update Device to send the new settings to the meter. If you did not need to make any changes, click Exit to close the Device Profile screen.
2. Connect the EPM 4600 unit Com 3 to the DIS3500/DIS5700 9-pin RS485 connection, at the bottom of the display.



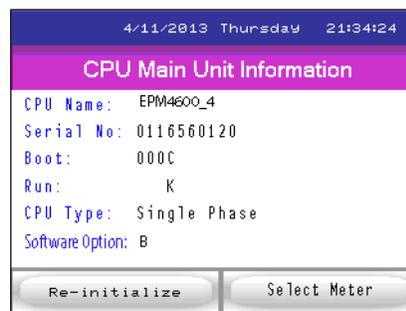
Display 9-pin RS485 Connection

FIGURE 10–10: Display RS485 Connection

3. Plug in the display. The display will show messages as it boots up. You will then see the screen below. You can either touch the COM 1 button or else wait for the display to select the RS485 connection automatically.



4. The display will initialize and then show the first screen, which lists information about the EPM 4600 unit. An example screen is shown below. Continue to "Display Screens" on page 10-18.



RJ45 Ethernet Configuration

Ethernet communication is set up between the EPM 4600 unit Com 1 RJ45 port and the DIS3500/DIS5700 RJ45 port.

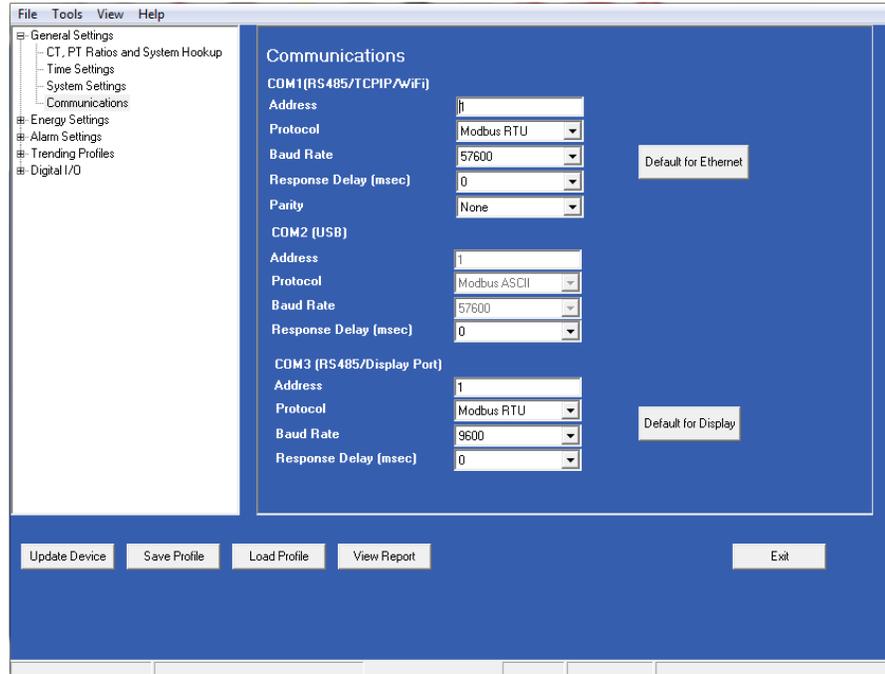
Follow this procedure:

- I. Set the EPM 4600 unit Com1 switch to Ethernet/WiFi.

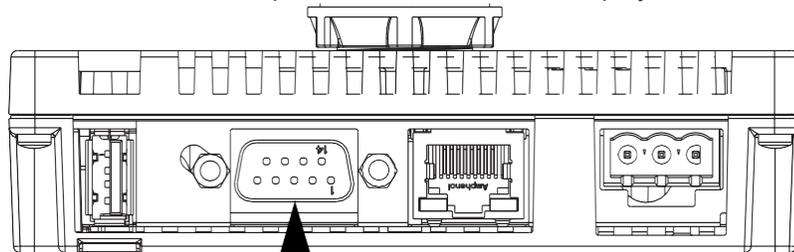


FIGURE 10-11: Com 1 Switch Set to Ethernet/WiFi

2. Configure the EPM 4600 unit:
 - a. From the EPM 4600 unit Device Profile (see Chapter 5), open the Communications screen.
 - b. Make sure the Com 1 settings are the same as those shown in the screen below. If they are not, click the Default for Ethernet button to bring these settings into the Com 1 fields.



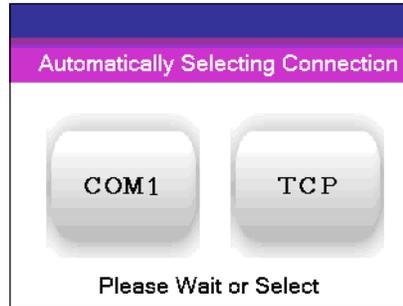
- c. If you changed the Com 1 settings to make them match those shown above, click Update Device to send the new settings to the meter. If you did not need to make any changes, click Exit to close the Device Profile screen.
3. Use an Ethernet cable to connect the EPM 4600 unit RJ45 port to the DIS3500/ DIS5700 RJ45 port, at the bottom of the display.



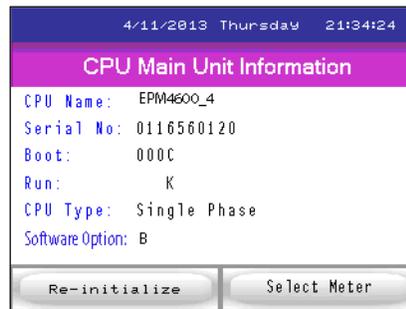
Display RJ45 Connection

FIGURE 10–12: RJ45 Connection

4. Plug in the display. The display will show messages as it boots up.
You can either touch the TCP button or wait for the display to select the TCP connection automatically.



5. The display will initialize and then show the first screen, which lists information about the EPM 4600 unit.
An example screen is shown below. Continue to "Display Screens" on page 10-18.



Display Screens

The CPU Main Unit Information screen (shown on the previous page) is shown as the display is being initialized. You can touch the Re-initialize button if you need to restart the display initialization, or press the Select Meter button to proceed directly to the Home screen (shown below); the Home screen, listing the individual meters, will appear on its own if you don't touch either button. Depending on your system configuration, you will see either the screen on the left (EPM 4600-T with 8 three phase circuits/meters) or the one on the screen on the right (EPM 4600-S with 24 single phase circuits/meters).

Home			
Choose Meter			
1	2	3	4
5	6	7	8

Home							
Choose Meter							
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24

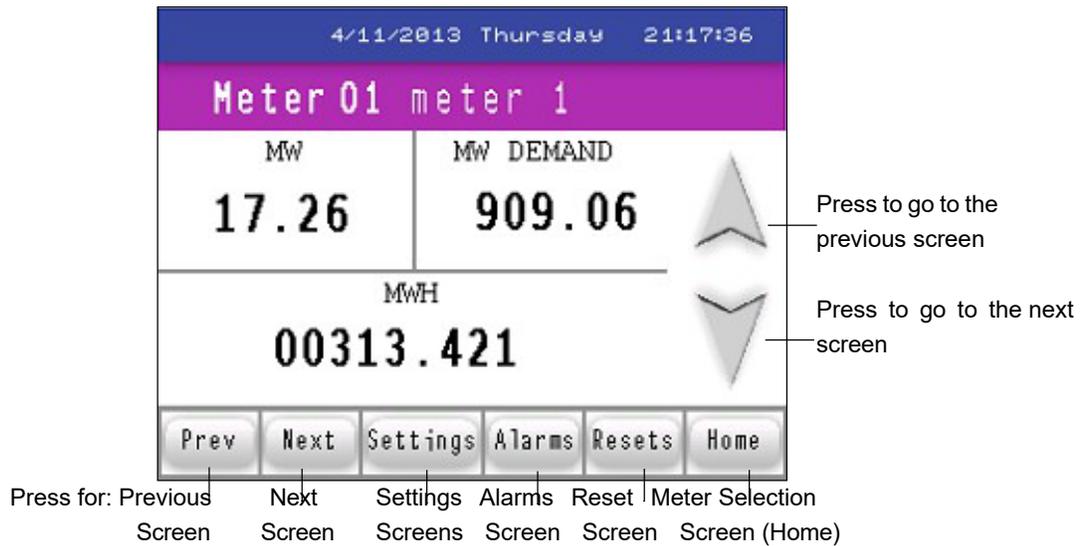
Touch a number to view readings for that meter. The first screen of readings for the display is shown (an example screen is shown below).

4/11/2013 Thursday 21:17:36	
Meter 01 meter 1	
MW	MW DEMAND
17.26	909.06
MWH	
00313.421	
Prev	Next Settings Alarms Resets Home

Readings Screens

The first Readings screen is the Watt, Whr, Watt Demand. This screen is the same for both the EPM 4600-T and EPM 4600-S units, though some of the screens are different for the three phase (EPM 4600-T) and single phase (EPM 4600-S) configurations.

To access the next screen in sequence, either touch the down arrow button or the Next button. See the figure below for an explanation of the arrow and button actions.



Following are example Readings screens, in the sequence they appear if you keep touching the Next button or the Down arrow. The caption underneath the screen tells you whether it is for the EPM 4600-T unit three phase configuration or the EPM 4600-S unit single phase configuration. Some screens are shared by both EPM 4600 unit configurations.

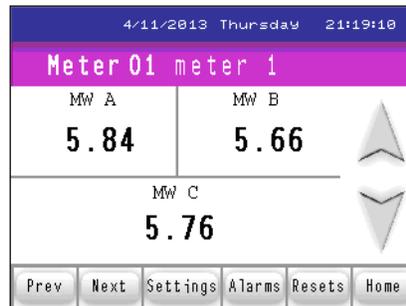


FIGURE 10-13: Three Phase Watts per Phase screen

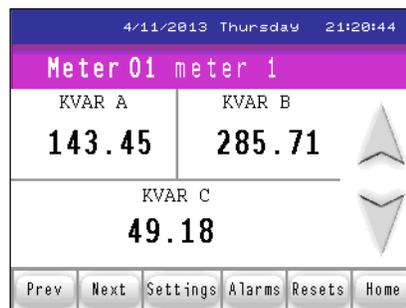


FIGURE 10-14: Three Phase VARS per Phase screen

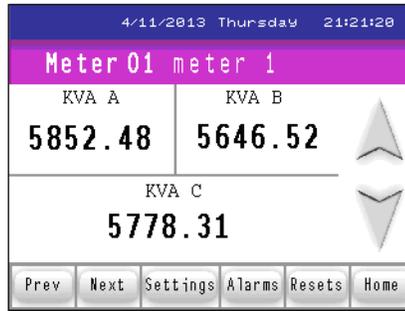


FIGURE 10–15: Three Phase VAs per Phase screen

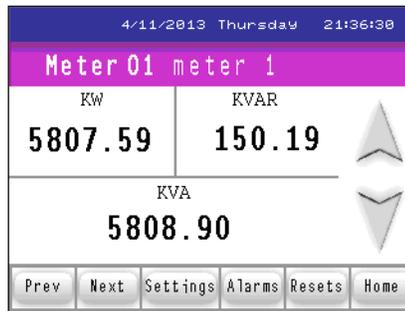


FIGURE 10–16: Single Phase KW, KVAR, KVA screen

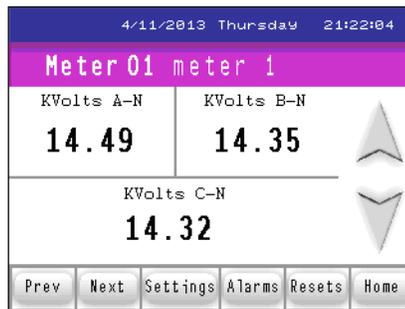


FIGURE 10–17: Three Phase Volts Line to Neutral screen

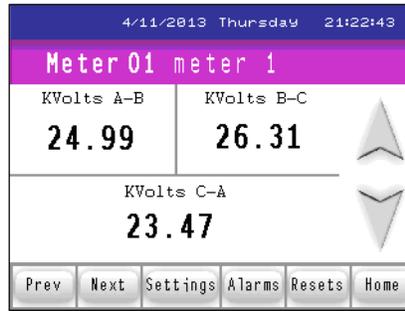


FIGURE 10-18: Three Phase Volts Line to Line screen

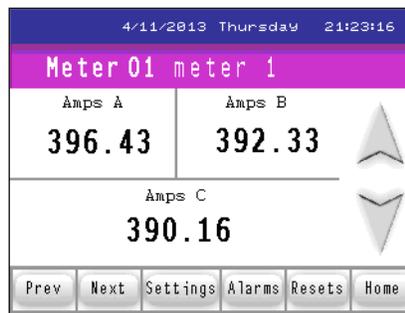


FIGURE 10-19: Three Phase Amps per Phase screen

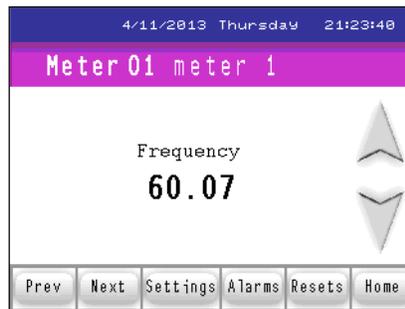


FIGURE 10-20: Three Phase Frequency screen

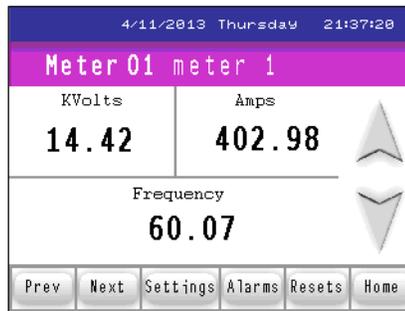


FIGURE 10–21: Single Phase Volts, Amps, Frequency screen

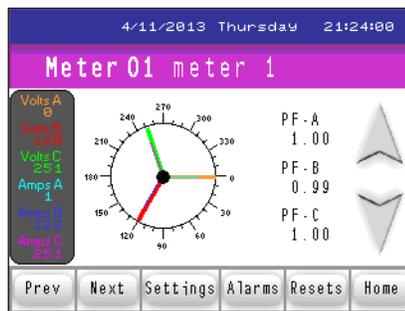


FIGURE 10–22: Three Phase Phasor Diagram screen

Touch the Options button to display the following screen.

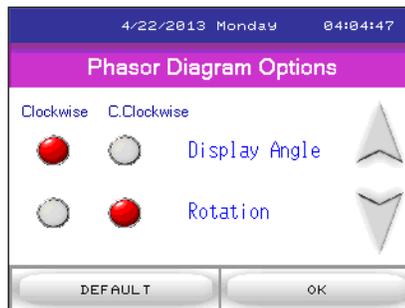


FIGURE 10–23: Three Phase Phasor Options Screen

Touch the buttons to change the Display Angle and/or Rotation. Touch the Default button to return to the original settings. Touch OK to redisplay the Phasor Diagram screen.

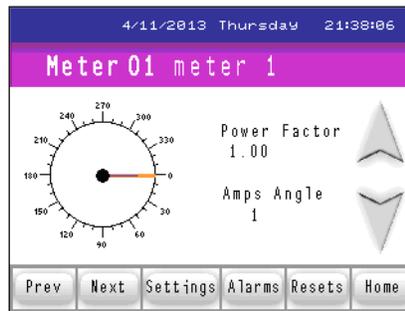


FIGURE 10-24: Single Phase Phasor Diagram screen

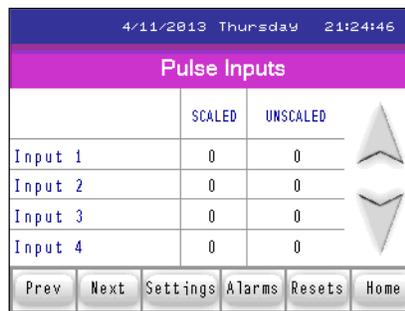


FIGURE 10-25: Three Phase/Single Phase Pulse Inputs screen

Touch the down arrow to display the following screen.

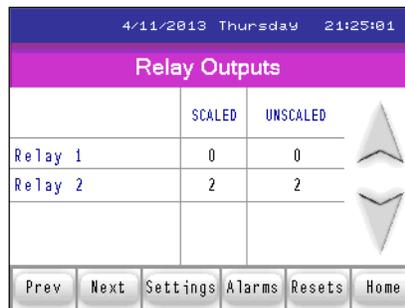


FIGURE 10-26: Three Phase/Single Phase Relay Outputs screen

This is the last Readings screen. From here you can:

- Touch the Back button to begin at the first screen of readings for the meter.
- Touch Settings to access the Settings screens (shown next).
- Touch Alarms to see the Alarm/Limits screens (continue on to read about these screens).
- Touch Resets to reset the meter (continue on to read about these screens).
- Touch Home to choose another meter.

Settings Screens

When you touch the Settings button, you see the screen shown below. It has the settings for EPM 4600 Com 1.

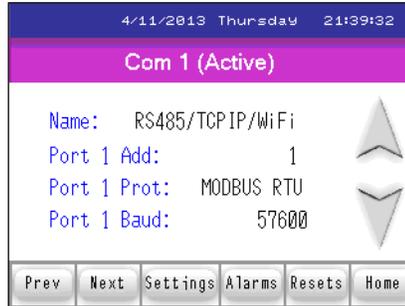


FIGURE 10–27: Three Phase/Single Phase Com 1 Settings EPM 4600

Touch the Down arrow to see the screen shown below, which displays the settings for the EPM 4600 Com 2.

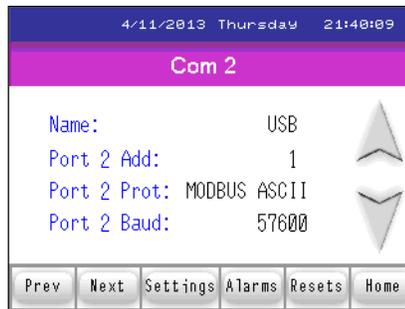


FIGURE 10–28: Three Phase/Single Phase Com 2 Settings for EPM 4600

Touch the Down arrow to see the following, which displays the settings for EPM 4600 Com 3.

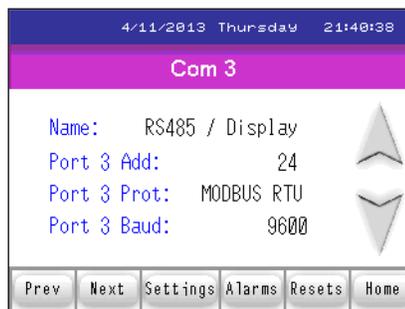


FIGURE 10–29: Three Phase/Single Phase Com 3 Settings for EPM 4600 Unit

Touch the Down arrow to see the screen shown below, which displays information about the EPM 4600 unit: hookup, run state, battery state, whether logging is enabled, and firmware version.

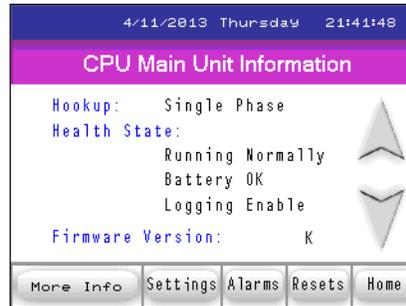


FIGURE 10–30: CPU Main Unit Information screen

Touch the Down arrow to see the following screen, which displays information about the display: firmware version and active connection.



NOTE

If you touch the More Info button, you will see the screen shown during initialization, which lists the CPU's name, serial number, boot and runtime firmware versions, circuit connection and V-Switch. This screen is shown at the end of "Display Configuration" on page 10-13.

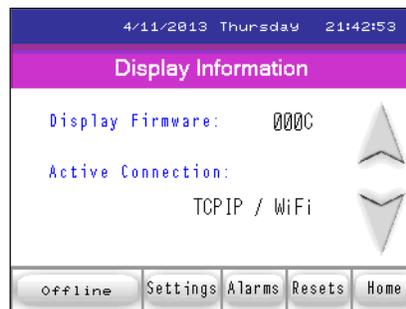


FIGURE 10–31: Three Phase/Single Phase Display Information screen

This is the last **Settings** screen. From here you can:

- Touch the Offline button to access Offline mode (described in "Offline Mode" on page 10-28).
- Touch Alarms to see the Alarm/Limits screens (described next).
- Touch Resets to reset the meter (continue on to read about these screens).
- Touch Home to choose another meter.

Alarms/Limits Screens



FIGURE 10–32: Three Phase/Single Phase Out of Limit Alarm screen

When you touch Alarm you will see the Out of Limits screen, which displays the first four limits. Touch the down button to display limits 5-8, shown below.



FIGURE 10–33: Three Phase/Single Phase Out of Limit Alarm screen #2

Touch the Down button to display the screen shown below, which gives you the status of the I/O card inputs.

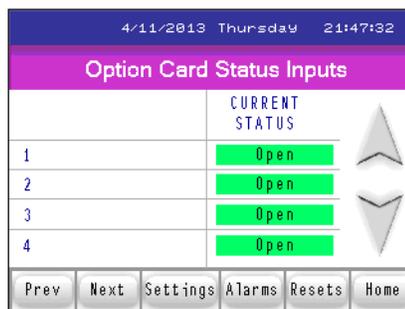


FIGURE 10–34: Three Phase/Single Phase Option Card Status Inputs screen

Touch the Down arrow to display the following screen, which displays the status of the I/O card relays.

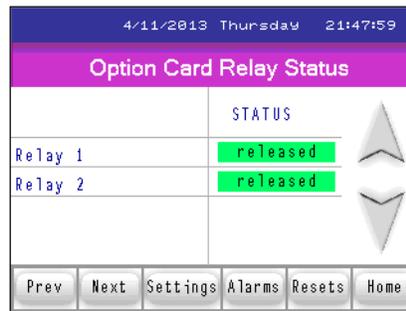


FIGURE 10-35: Three Phase/Single Phase Option Card Relay Status screen

This is the last Alarms/Limits screen. From here you can:

- Touch the Back button to return to the first Readings screen.
- Touch Settings to access the Settings screens.
- Touch Resets to reset the meter (described next).
- Touch Home to choose another meter.

Reset Screens



FIGURE 10-36: Three Phase/Single Phase Reset Device Information screen

When you touch the Resets button you see the screen shown above. Touch either Reset option to reset either the Max/Min Demand and/or Max/Min Voltage and Frequency for all of the meters in the EPM 4600 unit. Touch the Down arrow to display the following screen.



FIGURE 10-37: Three Phase/Single Phase Meter Reset Demand screen

Touch the button to reset Max/Min Demand for the current meter. This is the meter you selected from the Home screen.
Touch the Reset button to perform the reset.

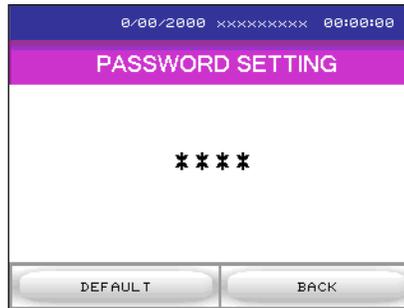


FIGURE 10–38: Three Phase/Single Phase Password screen

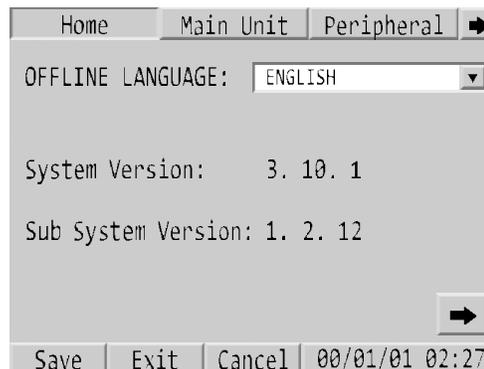
If a password has been set for Reset, this screen will be displayed after you select one of the Reset options. You can touch the Default button to enter the password that has already been set up. To set a new password touch the New button to display the screen below.



FIGURE 10–39: Three Phase/Single Phase Password Entry screen

Offline Mode

The display Offline mode lets you can change settings for the display. To access Offline mode, touch the Offline button from the Display Information screen: the display will beep and then will enter Offline mode.



The screen above is the Home screen, which is the first screen you will see in Offline mode. It tells you information about the system and lets you select a language for Offline mode (the choices are English and Japanese; English is the default). Press the right arrow button at the bottom of the screen to see additional system information.

To access this screen from one of the other Offline screens, touch the Home tab at the top of the screen.

The buttons at the bottom of the screen let you save any setting changes and stay in Offline mode (Save), Exit Offline mode, with or without saving changes (Exit - you will see a confirmation screen that asks if you want to save changes and exit, or exit without saving changes), return settings to their previous state (Cancel).

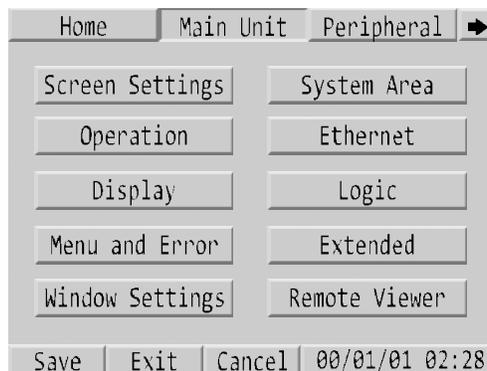


In this manual we only describe in detail the Offline screens with settings you may need to change when working with the EPM 4600 metering system.

Main Unit tab

Touch the Main Unit tab to access the following setting:

- Screen settings
- Operation
- Display
- Menu and Error
- Window Settings
- System Area
- Ethernet (see “Setting Communication through Offline Mode” on page 10-30 for information on this setting)
- Logic
- Extended
- Remote Viewer



To access a setting, touch its button. Other screens will display that will let you make changes to the settings.

Peripheral Tab

Touch the Peripheral tab to access the following settings:

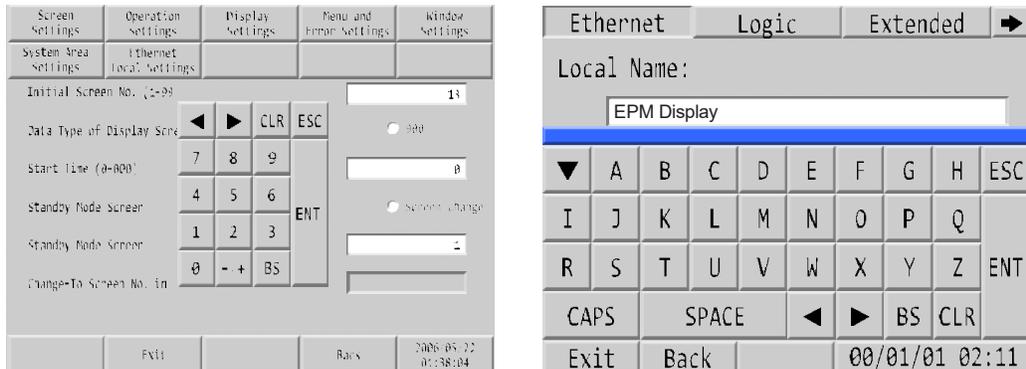
- Device/PLC Settings (see “Setting Communication through Offline Mode” on page 10-30 for information on this setting)
- Printer Settings
- Bar Code Settings
- USB

- Script Settings

To access a setting, touch its button. Other settings screens will display.

Making Selections and Entering Information in Offline Mode

The Offline screens operate in the same touch-screen mode as the display's other screens: touch the buttons you want to select. For certain settings you may need to enter letters and/or numbers. If an entry field calls for letters/numbers, a numeric or letter window opens up. These windows operate the same as a normal computer keyboard. See the examples below.



To make an entry, you touch the numbers or letters you want to enter in the field. You can use the arrow buttons to move forward or backward in the entry field. When you are done, touch ENT (Enter) to save the new settings.

- You can touch CLR (Clear) to remove all data from the entry field.
- You can touch ESC (Escape) to close the numeric or letter window without saving any changes.
- You can touch BS (Backspace) to delete the character or number to the left of where the cursor is.
- You can touch CAPS to toggle between uppercase and lowercase letters in the letter window.
- You can touch SPACE to insert a space in a letter entry.

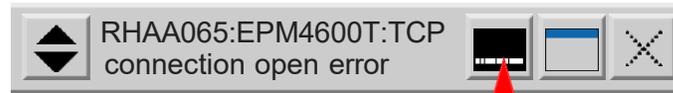
Setting Communication through Offline Mode

If the display is not able to communicate with the EPM 4600 metering system (for example, if you have changed the default IP address of the EPM 4600 unit), you will see an error message similar to the one shown below, at the bottom of the display screen. The exact message you see depends on whether an RS485 or RJ45 cable is displayed: the message will say EPM4600_T: TCP for an RJ45 communication error and EPM4600_C: Com1 for an RS485 communication error.



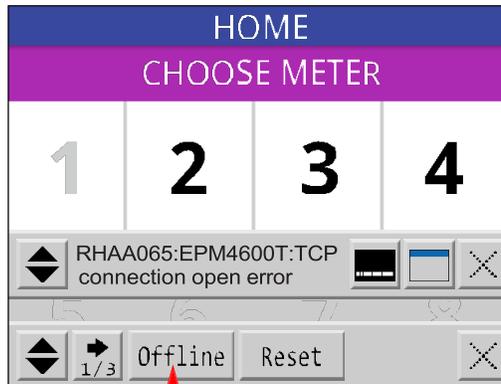
Refer to “Making Selections and Entering Information in Offline Mode” on page 10-30 for instructions on making entries in Offline mode.

1. Touch the black screen button at the bottom of the display.



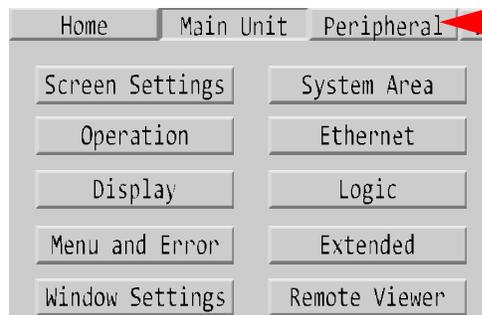
Touch this button

2. The bottom of the screen will display the Offline and Reset buttons, as shown below. Touch the Offline button.



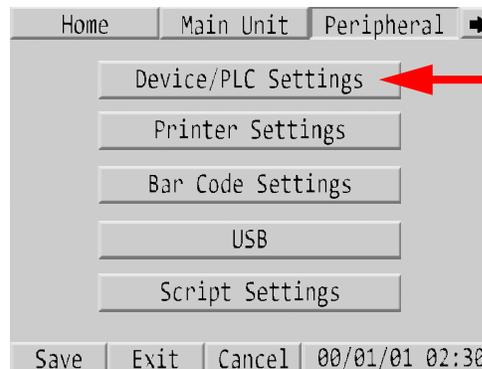
Touch this button

3. From the Offline Home screen, touch the Peripheral tab.



Touch this tab

4. From the Peripheral menu, touch the Device/PLC Settings button.

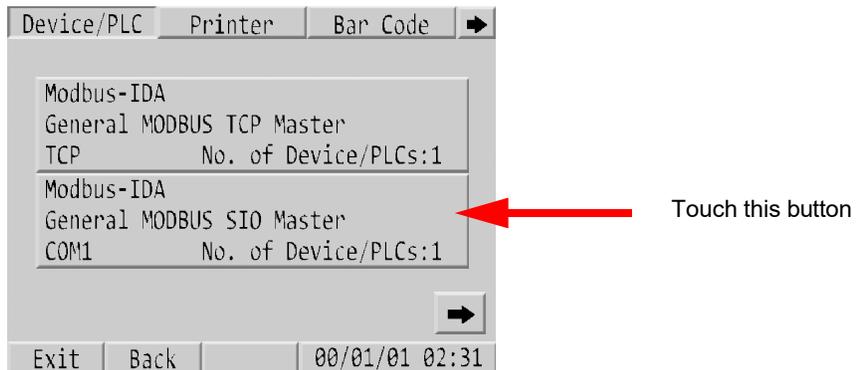


Touch this button

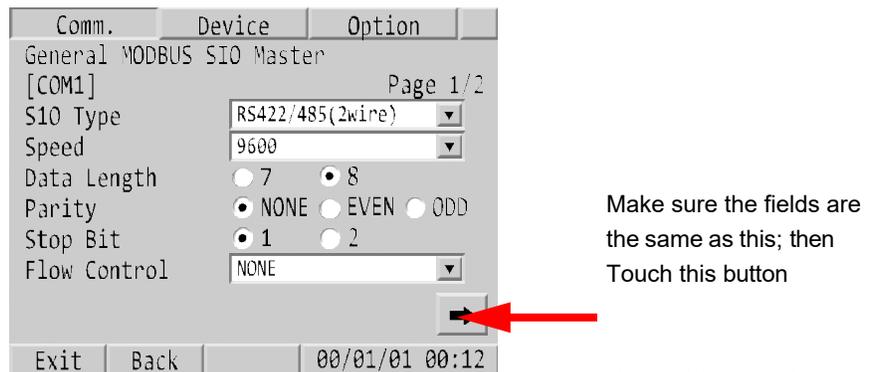
5. What you do now depends on your communication connection.

- If you are connecting via RS485:

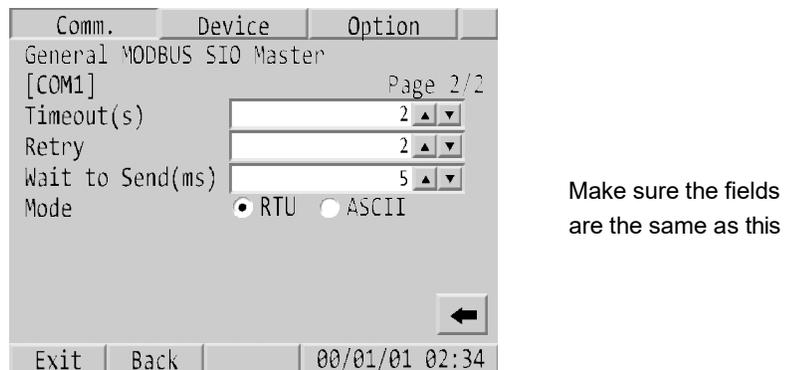
i. Touch the second button for Com1.



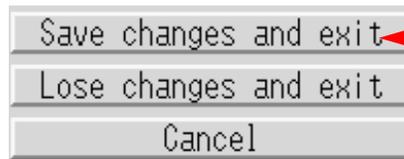
ii. You will see the screen shown below- make sure the settings match the ones shown here. Then press the right arrow at the bottom of the screen.



iii. You will see the screen shown below- make sure the settings match the ones shown here.



- iv. Touch Exit at the bottom of the screen. You will see a confirmation screen with the buttons shown below.

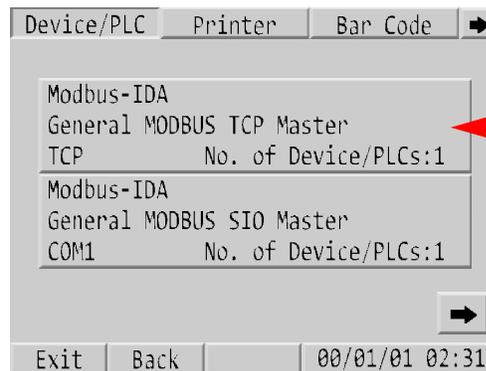


Touch this button

- v. Touch the Save Changes and Exit button. The display should begin to communicate with the EPM 4600 unit as shown in "RS485 Communication Configuration" on page 10-13.

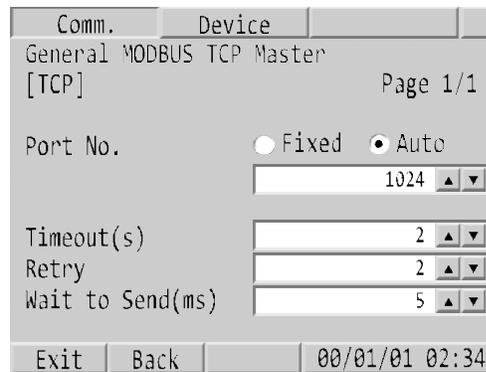
- If you are connecting via Ethernet:

- i. Touch the first button for TCP.



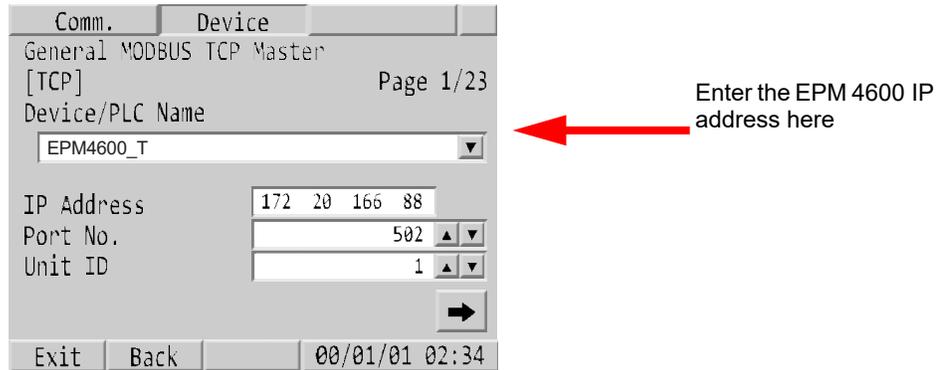
Touch this button

- ii. Make sure your settings match those shown below.

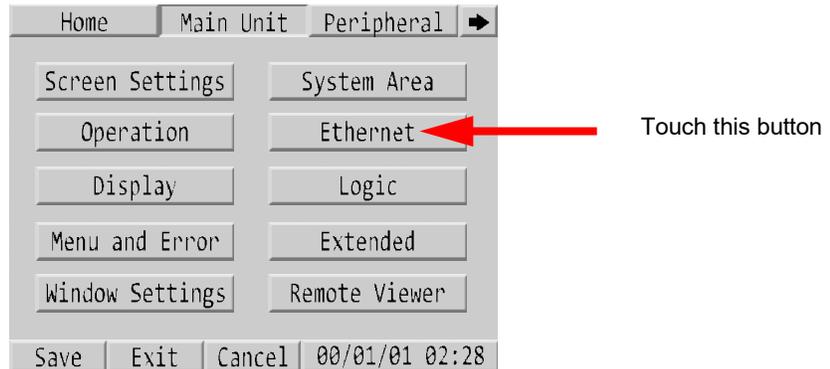


Make sure the fields are the same as this

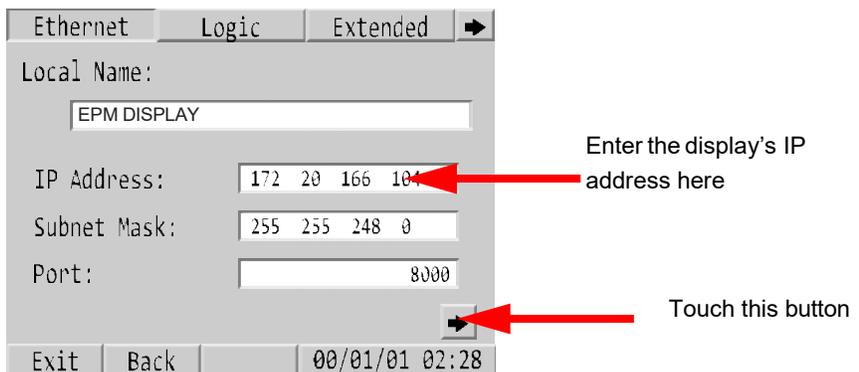
- iii. Touch the Device tab. Enter the EPM 4600 unit IP address (when you touch the IP address field, a numeric window opens - see “Making Selections and Entering Information in Offline Mode” on page 10-30). The other settings should be the same as shown below.



- iv. Touch the Back button at the bottom of the display two times; then touch the Main Unit tab. You will see the screen below - touch the Ethernet button.



- v. Enter the IP address of the display. It must be on the same network and sub-net mask as the EPM 4600 unit IP address and subnet mask. The port should be 8000. Then touch the right arrow at the bottom of the display.



- vi. You will see the screen shown below. This is where you enter the display gateway IP address if the display and EPM 4600 unit are not on the same subnet. (If they are on the same subnet you do not need to make any entries on this screen.) The other fields should remain the same.

Ethernet Logic Extended ▶

Gateway: 172 20 161 23 ← Enter the gateway's IP address here, if applicable

MAC Address: 00 01 23 21 A3 44

Auto Recognition: Enable Disable

Speed Settings: 100M 10M

Duplex Settings: Half Full

Exit Back 00/01/01 02:30

- vii. Touch the Exit button at the bottom of the screen. You will a confirmation window with the buttons shown below.

Save changes and exit ← Touch this button

Lose changes and exit

Cancel

- viii. Touch the Save Changes and Exit button. The display will begin to communicate with the EPM 4600 unit as shown in “RJ45 Ethernet Configuration” on page 10-15.

Maintenance

Cleaning the Display

CAUTION

EQUIPMENT DAMAGE:

- Power off the unit before cleaning it.
- Do not use hard or pointed objects to operate the touch panel, since it can damage the panel surface.

Failure to follow these instructions can result in equipment damage.

When the surface or the frame of the display gets dirty, soak a soft cloth in water with a neutral detergent, wring the cloth tightly and wipe the display.

Periodic Checks

Operation Environment

Refer to “Electrical Specifications” on page 10-3.

Electrical Specifications

The input voltage must be within 20.4 to 28.8 VDC.

Related Items

- Are all power cords and cables connected properly? Are there any loose cables?
- Is the display installation nut holding the unit securely?
- Are there scratches or traces of dirt on the installation gasket?



NOTE

A gasket with scratches or dirt may have lost much of its water resistance. Make sure to change the gasket for one with a water resistance equivalent to IP65f when scratches or dirt become visible.

Multilin™ EPM 4600 Metering System

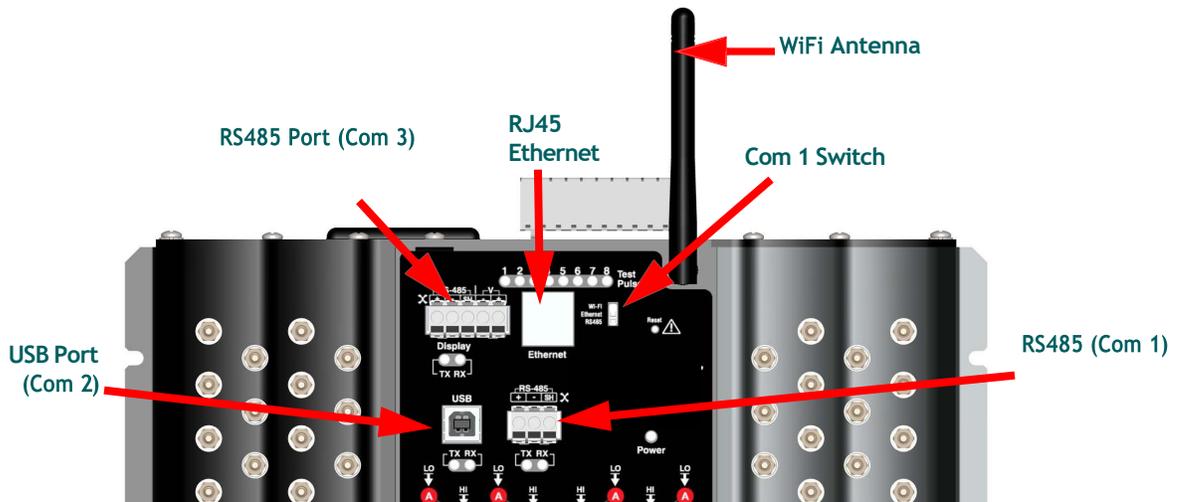
Chapter 11: Configuring the EPM 4600 Metering System

EPM 4600 Metering System Configuration

You can connect to the EPM 4600 unit for software configuration, using either of the RS485 ports (Com 1 or Com 3), the Ethernet/WiFi port if your EPM 4600 unit has that option (Com 1) or the USB port (Com 2). Once GE Vernova Communicator software has been installed on your computer and a wired or wireless connection has been established, you can begin to communicate with the EPM 4600 metering system.



To set Com 1 as either RS485 or Ethernet/WiFi (if your EPM 4600 unit has that option), use the Com 1 switch. See the figure below.



Connect to the EPM 4600 Unit

1. From the GE Vernova Communicator Main screen, click the **Connect icon**.



2. The Connect screen opens, showing the Default settings. Example settings for connecting to the EPM 4600 unit using the RS485, Ethernet, or USB ports are shown in the screens below. For specifics of Ethernet configuration, see “Using Ethernet Communication (RJ45 and WiFi)” on page 8-1.

Connect

Serial Port Network

Device Address 1

Baud Rate 9600

Port Available Ports All Ports

 COM1

Protocol Modbus RTU

Flow Control None

Echo Mode No Echo

Connect Cancel Help

RS485
connection

Connect

Serial Port Network

Device Address 1

Baud Rate 57600

Port Available Ports All Ports

 COM3 (USB Serial Port (COM3))

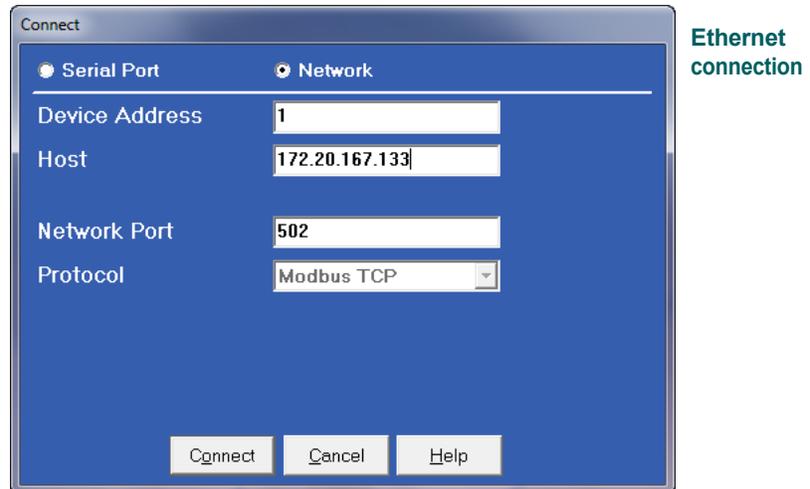
Protocol Modbus ASCII

Flow Control None

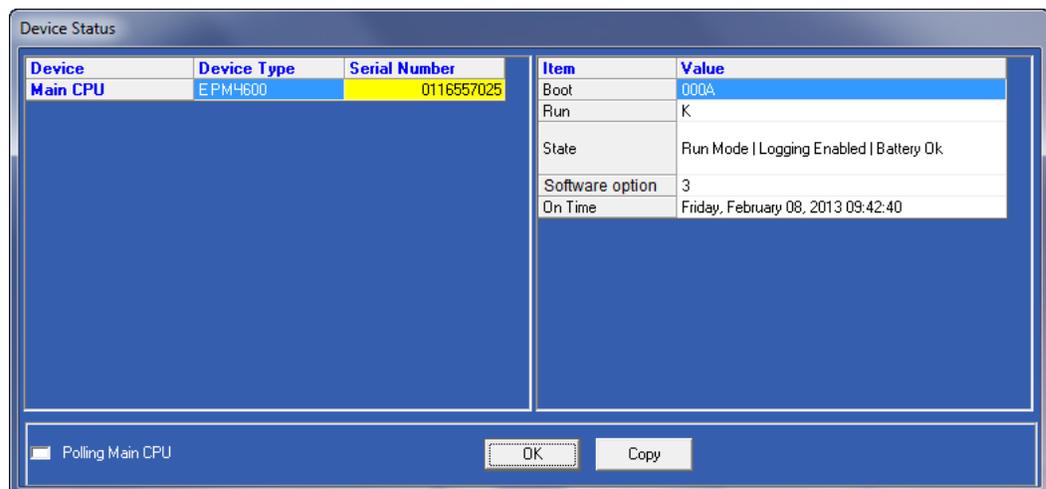
Echo Mode No Echo

Connect Cancel Help

USB
connection



- You will see the Device Status screen, confirming connection to your EPM 4600 unit.



The fields on the right of the screen give you information about the connected EPM 4600 unit:

- **Boot:** the version of the Boot firmware the meter currently has.
 - **Run:** the version of the Runtime firmware the meter currently has.
 - **State:** information about the meter, e.g., shown above Run Mode, Logging Enabled, Battery OK means that the meter is running, logging is enabled for the meter, and the meter battery has sufficient operating power.
 - **Software option:** the letter of the Software option currently installed in the meter.
 - **On Time:** the date and time the meter was last powered on.
- Click **OK** to close the Device Status screen.

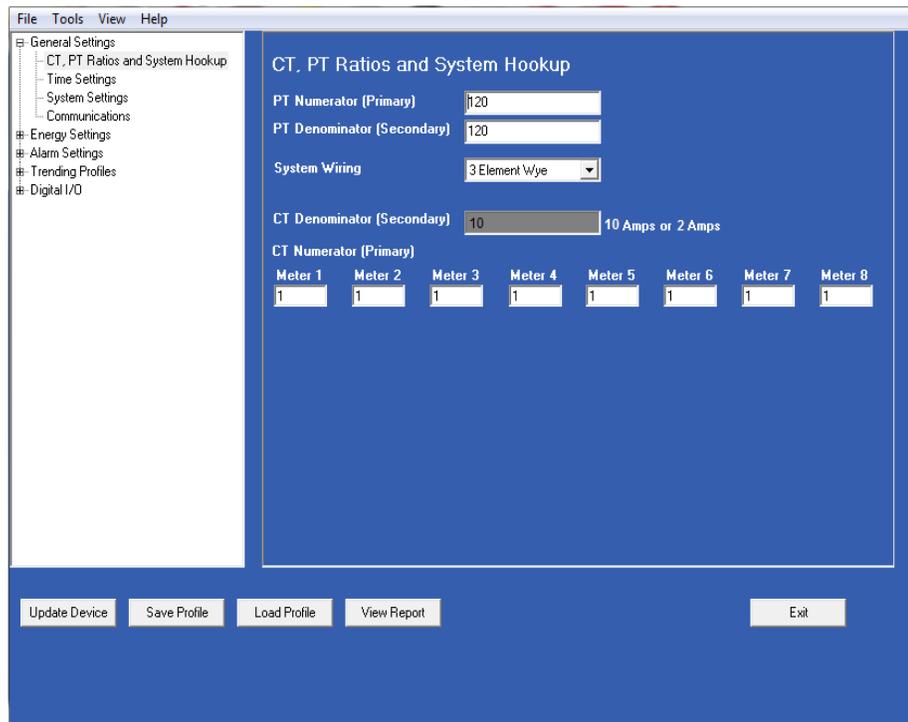
- Click the **Profile** icon in the Title Bar.



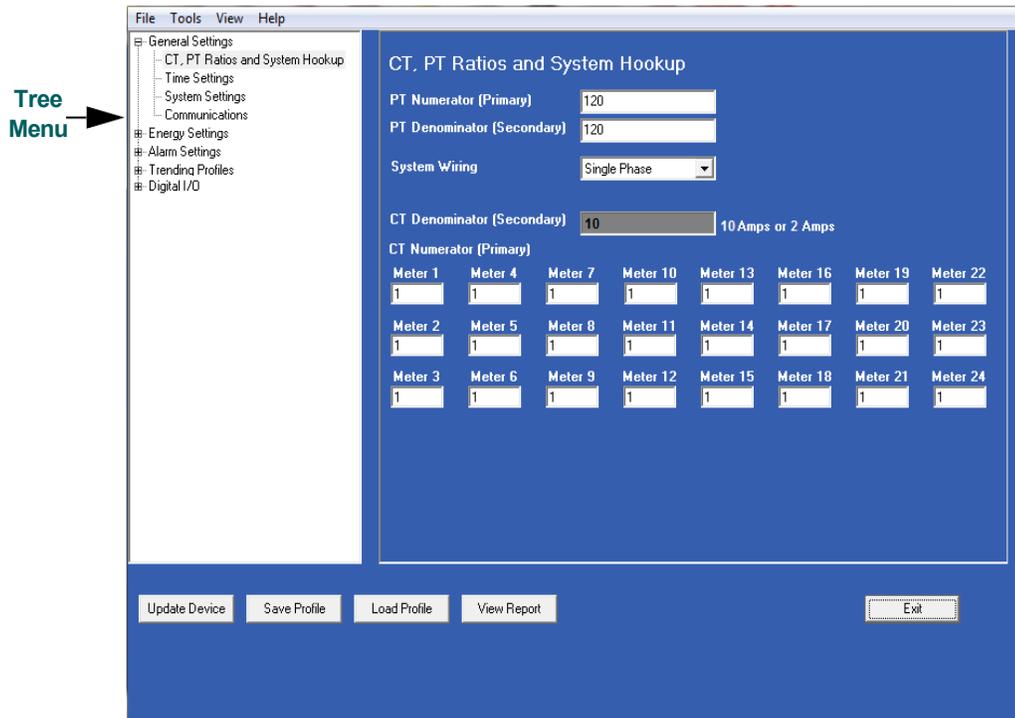
- You will see the EPM 4600 Metering System’s Device Profile screen. The menu on the left side of the screen lets you navigate between Settings screens (see screens on next page).



The settings you see on the first screen depend on your EPM 4600 unit’s circuit configuration.



EPM 4600 Unit with Three Phase Configuration - EPM 4600-T



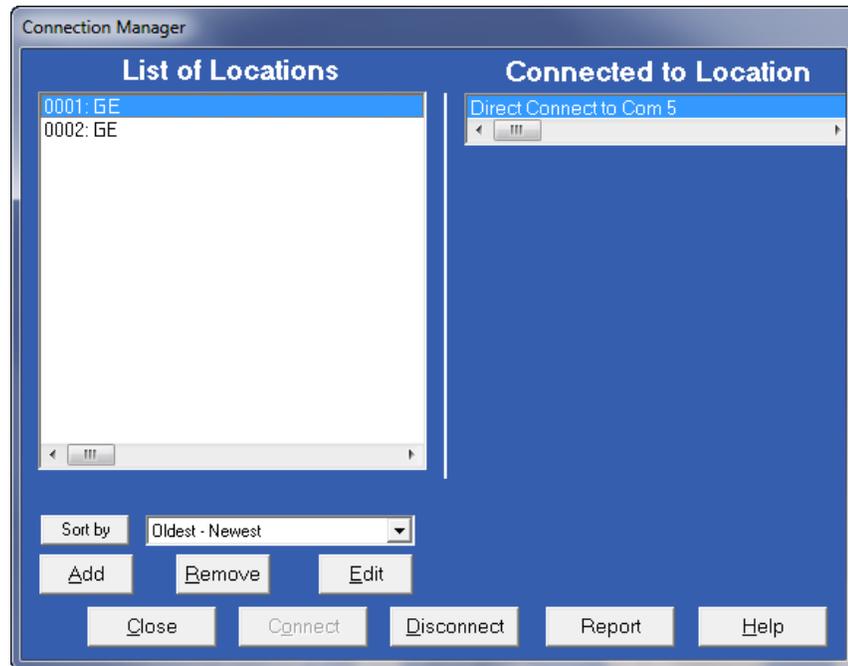
EPM 4600 Unit with Single Phase Configuration - EPM 4600-S

“Configuring the EPM 4600 Metering System’s Device Profile” on page 11-10 gives you instructions for configuring the device profile settings.

Using Connection Manager

Use Connection Manager to add or remove connection locations and/or devices at locations.

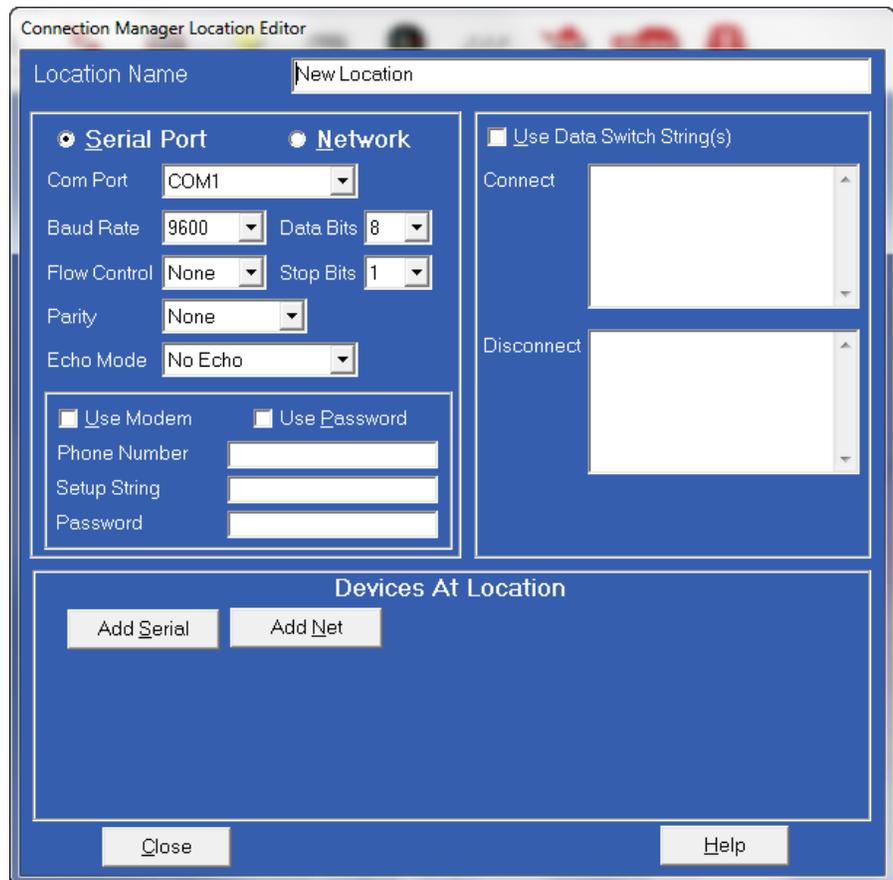
- I. From the GE Vernova Communicator Main screen, click **Connection>Connection Manager** or click on the **Connect Mgr icon**. You will see the Connection Manager screen, shown below.



List of Locations:

On the left side of the Connection Manager screen is a List of Locations. These are the locations of one or more devices to which you can connect. You can add a location and/or a device; edit a location and/or device; or remove a location and/or device.

2. Click **Add**. You will see the screen below. Use this screen to program the communication settings for each New Location.



- a. Type a Name for the New Location.
- b. Click **Serial Port** or **Network**.
- c. Enter Communications Settings: Com Port: COM 1 - 99
Baud Rate: 1200 - 115200
Flow Control: None or
Hardware Data Bits: 8 (or 7)
Parity: None (Even, Odd)

To Add a Device:

Click **Add Serial** (to add a Serial Port Connected Device) or **Add Net** (to add a Network Connected Device) in the Devices at Location box. You can add up to 255 Devices (Serial Port and/or Network connected) at one Location.



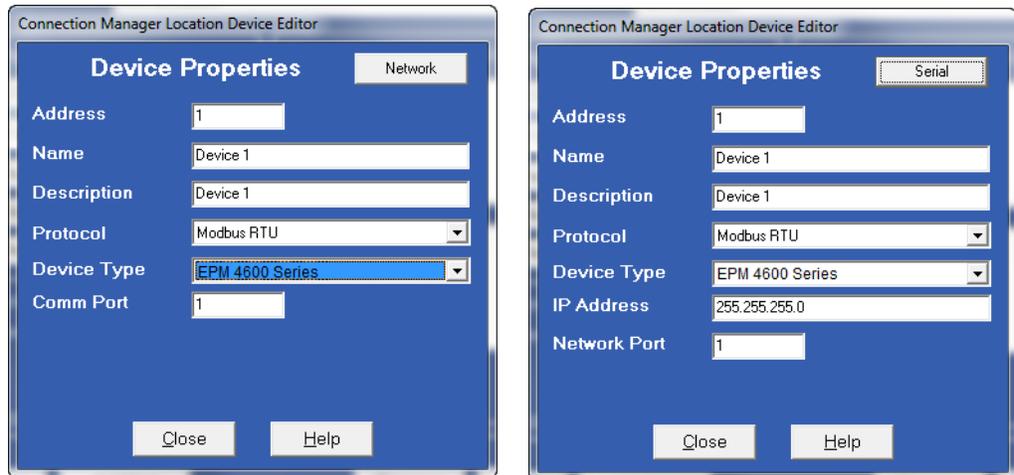
- All devices must have the same connection parameters: Baud, Parity and Flow Control.
- Having multiple devices slows down polling.

Follow the instructions beginning with step b, in the Edit a Device section that follows.

To Edit a Device:

1. Select the Device from the Devices at Location box and click **Edit** (scroll down to find all devices).

- You will see the Connection Manager Location Device Editor screen, which you use to program the Device Properties for each device at a Location. If the Device is for a Serial Port Device Connection, you will see the example screen on the left. If the Device is for a Network Device Connection, you will see the example screen on the right. Click the **Network** or **Serial** buttons at the top of the screen to switch between Network and Serial connection screens.



- Enter Device Properties:
 Address: 1 - 247 (Unique Address)
 Name: Device Name
 Description: (Device Type and Number, for example)
 Protocol: (Modbus RTU, Modbus ASCII Modbus TCP, GE Vernova Protocol) Device Type: (EPM 4600 series)
 Comm Port: 1 or 2 (Serial Port Only)
 IP Address: 100.10.10.10 (for example) (Network Only) Port Number: 502 (Default) (Network Only)
- Click **Close** to save settings and return to the Connection Manager Location Editor screen.

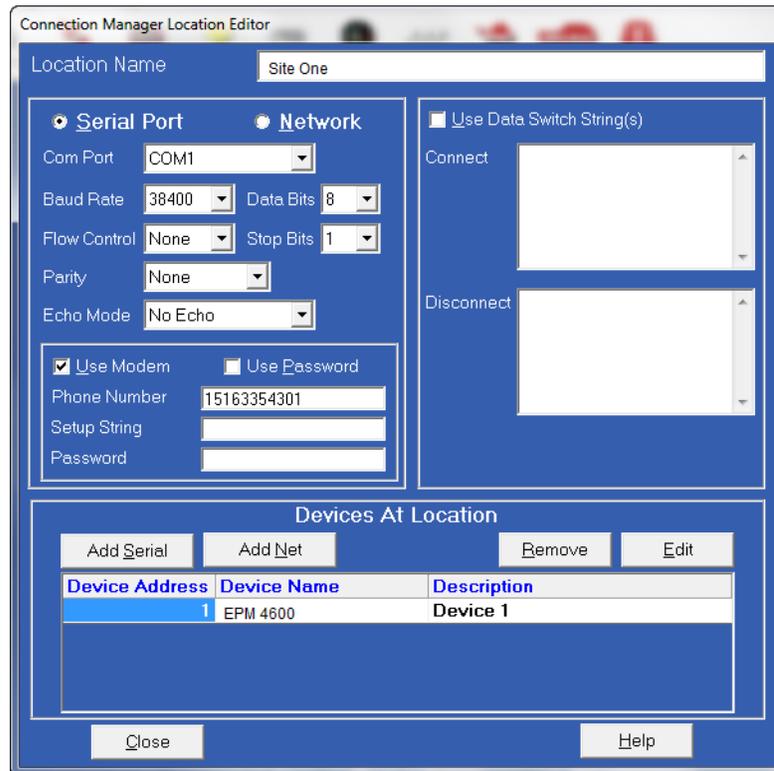
To Remove a Device:

- Select the Device from the Devices at Location box and click **Remove**.
- Click **Close** to return to the Connection Manager screen.

To Edit a Location:

- Select a Location from the List of Locations box.

2. Click **Edit**. The Connection Manager Location Editor screen appears, displaying the current settings for the location.



3. Make any changes to settings and/or devices at the location.
4. Click **Close** to exit the screen.

To Remove a Location:

1. Select a Location from the List of Locations box.
2. Click **Remove**.
3. Click **Yes** in the Confirmation window that happens.

To Sort the List of Locations:

1. Select a sort method (A-Z, Z-A, Newest-Oldest or Oldest-Newest) from the pull-down menu.
2. Click **Sort By**.

To Connect to a Location:

1. Select the Location you want to connect to from the List of Locations box.



You may only connect to one location at a time. To change to a different location, you must disconnect from the current location by selecting it and clicking **Disconnect**.

2. Click **Connect**. When the connection is made, the selected location appears in the Connected To Location field at the top of the screen.

- Click **Close**. The Device Status screen opens, confirming the connection. The Computer Status Bar at the bottom of the screen also confirms the computer's connection parameters.



NOTE

If the connection fails, a popup screen will alert you. Check that all cables are secure, that the cable is connected to the correct COM Port on the computer and that the computer is set to use the same baud rate and protocol as the Com port of the device to which the computer is connected.

Disconnecting from the EPM 4600 Unit

To disconnect from an EPM 4600 unit or from a location, do one of the following:

- From the GE Vernova Communicator Main screen, click the **Disconnect** icon.
- From the GE Vernova Communicator Main screen, select **Connection>Disconnect**.
- From the Connection Manager screen, select the location from the Connected to Location field and click **Disconnect**.

Configuring the EPM 4600 Metering System's Device Profile

File Tools View Help

- General Settings
 - CT, PT Ratios and System Hookup
 - Time Settings
 - System Settings
 - Communications
- Energy Settings
- Alarm Settings
- Trending Profiles
- Digital I/O

CT, PT Ratios and System Hookup

PT Numerator (Primary)

PT Denominator (Secondary)

System Wiring

CT Denominator (Secondary) 10 Amps or 2 Amps

CT Numerator (Primary)

Meter 1	Meter 2	Meter 3	Meter 4	Meter 5	Meter 6	Meter 7	Meter 8
<input type="text" value="1"/>							

Update Device Save Profile Load Profile View Report Exit

The example Device Profile screen shown above is for an EPM 4600 unit with the three-phase circuit configuration. The Device Profile screen has the following buttons on the bottom:

Update Device: click to update the Device Profile settings.

IMPORTANT! If you make changes to the Device Profile you **MUST** click this button to send the changes to the connected device.

Load Profile: click to load a previously saved Device Profile Settings file.

Save Profile: click to save the Device Profile settings to a file. You may want to do this if you will be making the same settings for multiple devices.

View Report: click to view or print a list of current Device Settings.

Exit: click to close the Device Profile screen. You will see a Confirmation window - click Yes to exit, click No to keep the screen open.



NOTE

It is important that you either save the Device Profile settings in a file or update the connected device before you exit the screen - if you don't do this, any changed settings are lost.

The following sections provide instructions for configuring the EPM 4600 unit's settings.

Configuring CT, PT Ratios and System Hookup

The first screen you see when you open the Device Profile is the CT, PT Ratios and System Hookup screen. Use this setting to configure Current Transformer and Potential Transformer ratios and to select the System Hookup.

Functional Overview of CT and PT Ratios:

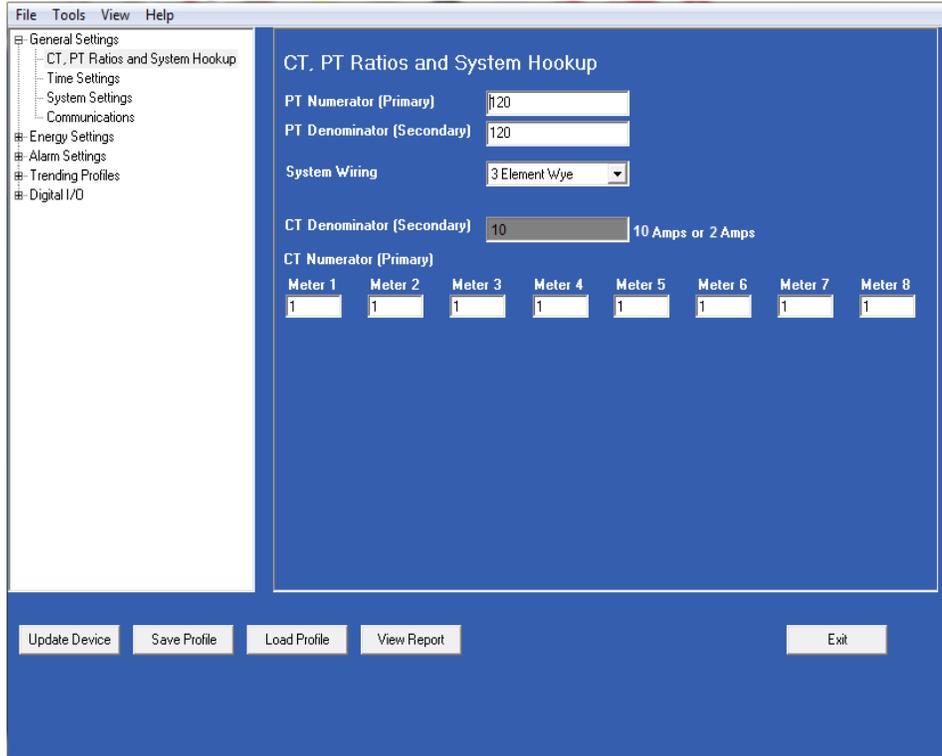
Current and Potential Transformers are used mainly for the following reasons:

- To insulate, and as a result isolate, the meter from high-voltage circuits.
- To change the primary voltage and current to standard values and sizes that the meter can measure.

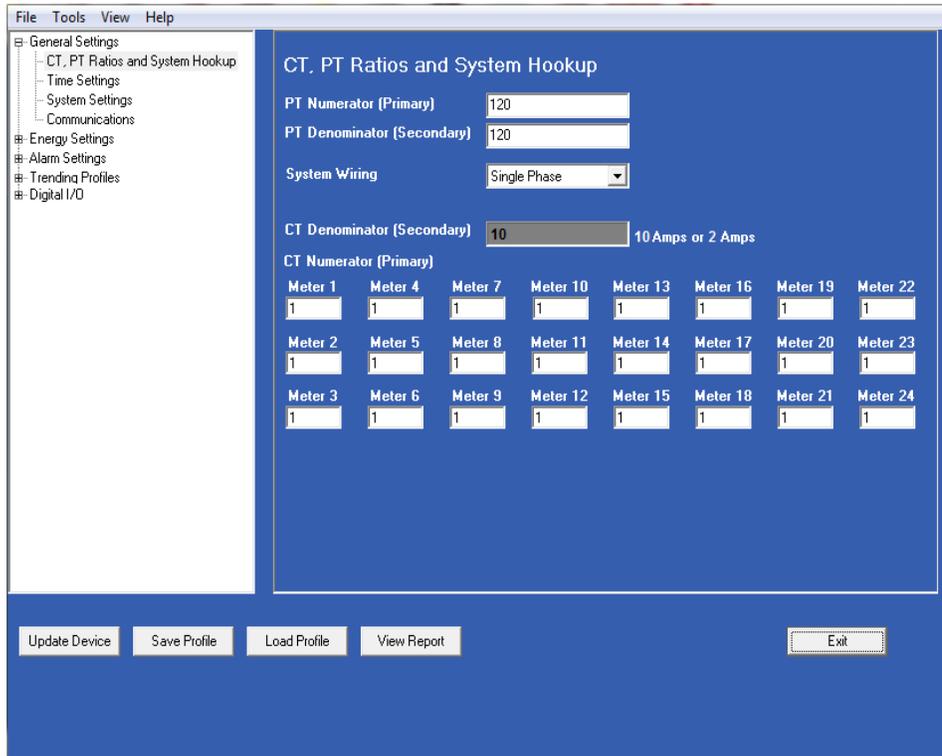
The CT and PT transformers deliver fractions of the primary voltage and current to the meter. With properly set ratios and multipliers, the readings of the meter can be used to determine the energy, voltage, current, or power of the system.

Depending on your EPM 4600 unit's circuit configuration you will see one of the screens shown on the next page. (To return to this screen from a different Device

Profile screen, click **General Settings>Configuring CT, PT Ratios and System Hookup** from the Tree menu.)



Screen for Three Phase Circuit Configuration



Screen for Single Phase Circuit Configuration

Make the following settings:

PT Ratios

PT Numerator (Primary): 1 - 99999999

PT Denominator (Secondary): 40 - 65535

System Wiring

3 Element Wye; Single

Phase CT Ratios

CT Numerator (Primary): 1 - 65535

CT Denominator (Secondary): 10 or 2 Amp, depending on the EPM 4600 unit's ordered option. This field is display only - it cannot be changed.

Example Settings:

For a system that has 14400V primary with a 120V secondary line to neutral (PT Ratio of 120:1), set the following PT Ratios in the entry fields:

PT Numerator (Primary):

14400 PT Denominator

(Secondary): 120 For a CT of

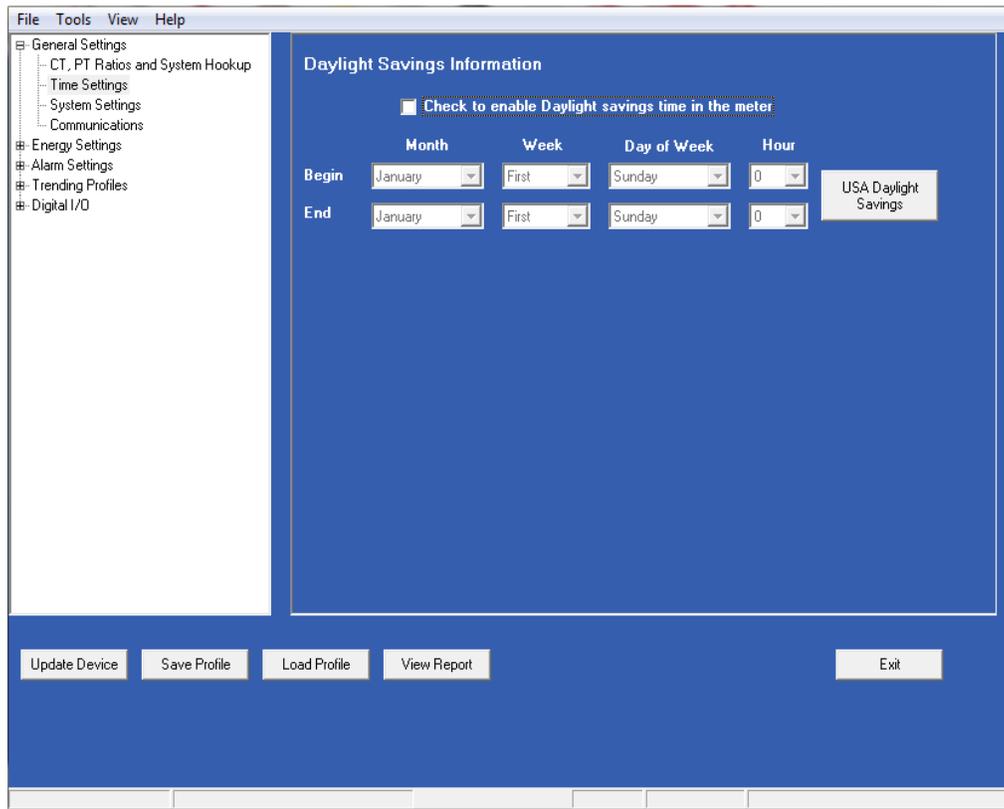
2000/5A, set the following: CT

Numerator (Primary): 2000

Configuring Time Settings

Use the Time Settings screen to select Daylight Savings Time for the meter and to set the beginning and ending date and time for Daylight Savings Time. If you enable Daylight Savings Time, the EPM 4600 unit will use this information to adjust its clock accordingly, on the dates and time entered. For example if you set Daylight Savings Time to begin on the second Sunday in March at 2 am, and end on the first Sunday in October at 2 am, the unit's clock will advance from 2 am to 3 am on the second Sunday in March, and move from 2 am back to 1 am on the first Sunday in October.

1. From the Tree Menu, click **General Settings>Time Settings**.



2. Check the box to Enable Daylight Savings time, or un-check it to Disable Daylight Savings Time.
3. Click the USA Daylight Savings button to fill the entry fields with the US DST beginning and ending times or use the entry fields to manually set the start and end times for the Daylight Savings Time feature, if enabled.



NOTE

The Hour field uses a 24-Hour clock.

Configuring System Settings

- I. From the Tree menu, click **General Settings>System Settings**. The screen you see depends on whether your EPM 4600 unit has a three phase or a single phase configuration. The top screen below is for a three phase configuration; the bottom screen is for a single phase configuration.

System Settings

Data Protection

Require password for resetting items Yes No

Require password for configuration Yes No

Change Password

CPU Identifier (Main Unit)

Meter Names

Meter 1	<input type="text" value="Meter1"/>	Meter 5	<input type="text" value="Meter5"/>
Meter 2	<input type="text" value="Meter2"/>	Meter 6	<input type="text" value="Meter6"/>
Meter 3	<input type="text" value="Meter3"/>	Meter 7	<input type="text" value="Meter7"/>
Meter 4	<input type="text" value="Meter4"/>	Meter 8	<input type="text" value="Meter8"/>

Update Device Save Profile Load Profile View Report Exit

System Settings

Data Protection

Require password for resetting items Yes No

Require password for configuration Yes No

Change Password

CPU Identifier (Main Unit)

Meter Names

Meter 1	<input type="text" value="Meter1"/>	Meter 13	<input type="text" value="Meter13"/>
Meter 2	<input type="text" value="Meter2"/>	Meter 14	<input type="text" value="Meter14"/>
Meter 3	<input type="text" value="Meter3"/>	Meter 15	<input type="text" value="Meter15"/>
Meter 4	<input type="text" value="Meter4"/>	Meter 16	<input type="text" value="Meter16"/>
Meter 5	<input type="text" value="Meter5"/>	Meter 17	<input type="text" value="Meter17"/>
Meter 6	<input type="text" value="Meter6"/>	Meter 18	<input type="text" value="Meter18"/>
Meter 7	<input type="text" value="Meter7"/>	Meter 19	<input type="text" value="Meter19"/>
Meter 8	<input type="text" value="Meter8"/>	Meter 20	<input type="text" value="Meter20"/>
Meter 9	<input type="text" value="Meter9"/>	Meter 21	<input type="text" value="Meter21"/>
Meter 10	<input type="text" value="Meter10"/>	Meter 22	<input type="text" value="Meter22"/>
Meter 11	<input type="text" value="Meter11"/>	Meter 23	<input type="text" value="Meter23"/>
Meter 12	<input type="text" value="Meter12"/>	Meter 24	<input type="text" value="Meter24"/>

Update Device Save Profile Load Profile View Report Exit

2. From this screen, you can do the following:
 - Enable or disable password for Resetting (reset max/min Energy settings, Energy accumulators (three phase configuration only), and the individual logs) and/or configuration (Device profile): click the radio button next to Yes or No.



- If you enable a password for reset, you must also enable it for configuration.
- The EPM 4600 unit's default is password disabled.
- Enabling Password protection prevents unauthorized tampering with devices.
When a user attempts to make a change that is under Password protection, GE Vernova Communicator software opens a screen asking for the password. If the correct password is not entered, the change does not take place.

NOTICE

You must set up a password before enabling Password protection. Click the Change Password button if you have not already set up a password. You will see the Enter the New Password screen, shown below.

3. Type in the new password (0 - 9999).
4. Retype the password.
5. Click **Change**. The new password is saved and the EPM 4600 unit restarts.
NOTE: If Password protection has already been enabled for configuration and you attempt to change the password, you will see the Enter Password screen after you click **Change**. Enter the old password and click **OK** to proceed with the password change.

- Change the EPM 4600 unit's identification label: input a new label for the EPM 4600 metering system into the CPU Identifier field.
- Enter a name for the eight meters in a three phase circuit configuration, or the 24 meters in a single phase circuit configuration. These names are used to identify the meters in logging and polling screens and are also used in the naming of the log files.

For example, if you have a shopping mall with 8 stores, each having a three phase system that is attached to the EPM 4600-T, you can name the meters Store 1 - Store 8, to identify each meter with its store. Then when you look at the polling screens or logging screens, you can easily identify each store's data, without needing to check the circuit configuration.

Configuring Communications

- From the Tree menu, click **General Settings>Communications** to display the screen shown below. Use this screen to enter communication settings for the EPM 4600 unit's communications ports.

The screenshot shows the 'Communications' configuration window. On the left is a tree menu with 'Communications' selected. The main area is divided into three sections for COM1, COM2, and COM3. Each section has a title, an 'Address' field, a 'Protocol' dropdown, a 'Baud Rate' dropdown, a 'Response Delay (msec)' dropdown, and a 'Parity' dropdown. COM1 has a 'Default for Ethernet' button, COM2 has a 'Default for USB' button, and COM3 has a 'Default for Display' button. At the bottom are buttons for 'Update Device', 'Save Profile', 'Load Profile', 'View Report', and 'Exit'.

- Valid Communication Settings are as follows: COM 1: RS485/ Ethernet/WIFI
(optional) Address: 1-247
Baud Rate: 9600, 19200, 38400, 57600 (For WiFi/Ethernet, only 57600) Protocol: Modbus RTU/ASCII (For WiFi/Ethernet, only Modbus RTU) Response Delay: 0-750ms
Parity: Odd, Even or None

COM 2: USB port

Protocol: MODBUS

ASCII Baud Rate:

57600

Address: 1

NOTE: The USB port settings are fixed, i.e., they cannot be changed. COM 3: RS485

Address: 1-247

Protocol: Modbus RTU/ASCII

Baud Rate: 9600, 19200, 38400, 57600



Click the (1)Default to Ethernet or (2)Default to Display button to set either the (1)Ethernet settings for COM1 or (2)Display settings for COM3, to their default values.

Configuring Energy Settings

Use this setting to configure:

- The display and storage of Energy data in the meter
- The display of Power data in the meter and the method of VA computation
- The interval over which Average values are computed

Functional Overview of Energy Settings, VA Computation, and Averaging:

Energy Setting

The Energy Setting includes:

Digits (the number of digits in the reading)

Decimals (the number of decimal places in the reading)

Energy Scale: the scale of the reading - unit; kilo (number times 1000); Mega (number times 1 million).

Energy settings allow you to balance the resolution (or accuracy) of the energy stored, with the interval over which energy rollover occurs. For example, the maximum resolution for a k scale reading is: 99999.999k. To calculate the speed at which the energy will rollover, you must know the Energy Full Scale, which is computed from the CT and PT Full Scale values (see “Configuring CT, PT Ratios and System Hookup” on page 11-11). The formula for calculating Energy Full Scale is:

Wye system: $CT \text{ Full Scale} \times PT \text{ Full Scale} \times 3$

For example, for a CT Full Scale of 2000, PT Full Scale of 14400, Wye system: $2000 \times 14400 \times 3 = 86400000$

In this example, the energy will increment at 86400000 Watts per hour, or 24000 Watts per second.

This value allows you to determine the number of digits, decimal places, and energy scale you want to configure for the Energy settings, when you take into account the rollover time.

To determine the number of hours before rollover, use this formula:
 $[\text{Max Resolution}]/[\text{Full Scale}] = \text{\#Hours}$, where Max Resolution = maximum digits and decimals for the Energy scale in use.



To increase the number of days until rollover, you can increase the number of digits (to 8), decrease the number of decimal places (to 0), or increase the Energy Scale (to M).

Apparent Power (VA) Computation:

There are two optional methods of VA Computation:

Arithmetic Sum - the formula for this calculation is:

$$VA_T \square VA_a \square VA_b \square VA_c$$

Vector Sum - the formula for this calculation is:

$$VA_T \square \sqrt{W_T^2 + VAR_T^2}$$

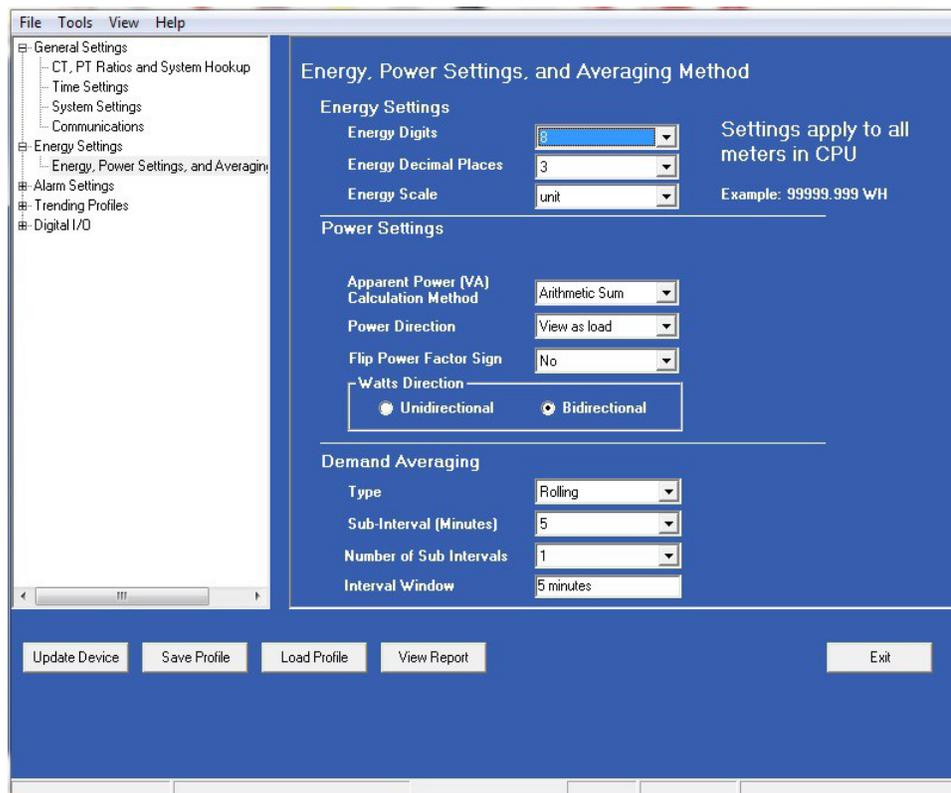
Demand Averaging

Demand is the average rate of energy use over time. The EPM7000 meter supports two types of demand averaging: Block demand and Rolling demand.

Block demand records the average demand for time intervals that you define (usually 5, 15 or 30 minutes).

Rolling demand functions like multiple, overlapping Block demand. You define the subintervals at which an average of demand is calculated. An example of Rolling demand would be a 15-minute Demand block using 5-minute subintervals, thus providing a new demand reading every 5 minutes, based on the last 15 minutes.

1. From the Tree menu, click **Energy Settings>Energy, Power Scaling and Averaging Method** to display the screen shown below.



2. The screen fields and acceptable entries are as follows:

Energy Settings

Energy Digits: 5; 6; 7; 8

Energy Decimal Places: 0 - 6

Energy Scale: unit; kilo (K); Mega
(M)

Example: a reading for Digits: 8; Decimals: 3; Scale: K would be formatted as
00123.456k

Power Settings

Apparent Power (VA) Calculation Method: Arithmetic Sum; Vector Sum

Power Direction: View as Load; View as Generator

Flip Power Factor Sign: No; Yes

Watts Direction: Unidirectional; Bidirectional

Demand Averaging

Type: Block or Rolling

Interval (Block demand) or Sub-Interval (Rolling demand) in minutes: 5;
15; 30; 60

Number of Subintervals: 1; 2; 3; 4

Interval Window: This field is display only. It is the product of the values entered in the Sub-Interval and Number of Subintervals fields.



You will only see the Number of Subintervals and Interval Window fields if you select Rolling Demand.

Configuring Limits

Limits are transition points used to divide acceptable and unacceptable measurements. When a value goes above or below the limit an out-of-limit condition occurs. Once they are configured, you can view the out-of-Limits (or Alarm) conditions in the Limits log or Limits polling screen. You can also use Limits to trigger relays.

From the Tree menu, click **Power Quality & Alarm Settings>Limits** to display the screen shown below.

Limit ID	Assigned Channel (Double Click to Edit)	Setting	Setpoint		Return Hysteresis		Full Scale
			% of Fullscale	Primary	% of Fullscale	Primary	
1	Voltage C-N	Above	110.0	132.00	110.0	132.00	120.00
		Below	90.0	108.00	90.0	108.00	
2	Not Assigned	Above					
		Below					
3	Not Assigned	Above					
		Below					
4	Not Assigned	Above					
		Below					
5	Not Assigned	Above					
		Below					
6	Not Assigned	Above					
		Below					
7	Not Assigned	Above					
		Below					
8	Not Assigned	Above					
		Below					

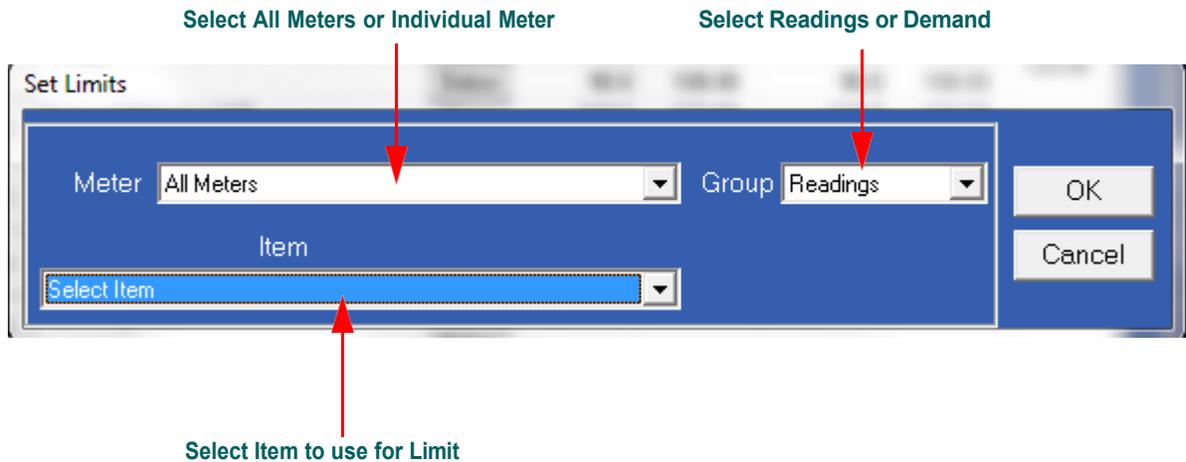
Buttons at the bottom: Update Device, Save Profile, Load Profile, View Report, Exit

The current settings for Limits are shown in the screen. You can set and configure up to eight Limits for the EPM 4600 unit.

To set up a Limit:

- I. Select a Limit by double-clicking on the Assigned Channel field.

2. You will see the screen shown below.



This screen lets you configure the limits. The settings you can make depend on your EPM 4600 unit's configuration:

- For a three phase configuration, you can set up limits from the Readings group's items for all meters or any individual meter (select from the Meter pull-down menu).
The items you can select for Readings limits for All Meters are: Phase to Neutral voltage, Phase to Phase Voltage, and Frequency.
The items you can select for Reading limits for individual meters are: Current phases A, B, and C, Total Watts, Total VAR, Total VA, Total PF, Current Neutral, Watts per Phase, VAR per Phase, VA per Phase, and PF per Phase.

The Demand group (select from the Group pull-down menu) can only have limits set for individual meters (not All Meters).

The items you can select for Demand limits are: Current phases A, B, and C, Total +Watts, Total +VAR, Total -Watts, Total -VAR, Total VA, Total +PF, Total -PF, +Watts per Phase, -Watts per Phase, +VAR per Phase, -VAR per Phase, VA per Phase, + PF per Phase, and - PF per Phase.

- For a single phase configuration, you can set up limits from the Readings group's items for All meters or any individual meter (select from the Meter pull-down menu).
The Items you can select for Readings limits for All Meters are: Voltage and Frequency.
The items you can select for Reading limits for individual meters are: Current, Watts, VAR, VA, and PF.

The Demand group (select from the Group pull-down menu) can only have limits set for individual meters (not All Meters).

The items you can select for Demand limits are: Current, +Watts, +VAR, - Watts, -VAR, VA, +PF, and -PF.

3. Click **OK**. The limit item you selected is displayed in the Limit field.

Limit ID	Assigned Limit (Double Click to Edit)	Setting	Setpoint		Return Hysteresis		Full Scale
			% of Fullscale	Primary	% of Fullscale	Primary	
1	Meter2 | B	Above	110.0	1.10	110.0	1.10	1.00
		Below	90.0	0.90	90.0	0.90	
2	Voltage C-N	Above	110.0	132.00	110.0	132.00	120.00
		Below	90.0	108.00	90.0	108.00	
3	Demand: Meter1 | A	Above	110.0	1.10	110.0	1.10	1.00
		Below	90.0	0.90	90.0	0.90	
4	Not Assigned	Above					
		Below					
5	Not Assigned	Above					
		Below					
6	Not Assigned	Above					

4. To configure a Limit, double-click on the field to set the following values:

- **Above and Below Setpoint:** % of Full Scale (the point at which the reading goes out of limit)

Examples:

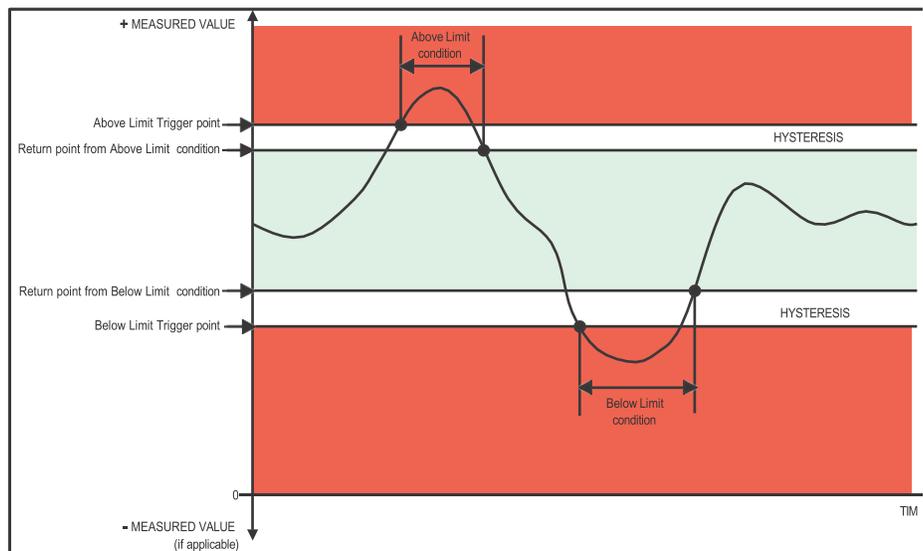
100% of 120V Full Scale =
120V 90% of 120V Full
Scale = 108V

- **Above and Below Return Hysteresis:** the point at which the reading goes back within limit (see figure below)

Examples:

Above Setpoint = 110%; Below Setpoint = 90%
(Out of Limit above 132V);(Out of Limit below 108V)

Above Return Hysteresis = 105%; Below Return Hysteresis = 95%
(Stay out of Limit until below 126V)(Stay out of Limit until above 114V)



Primary Fields: These fields are display only. They show what the setpoint and return hysteresis value are for each limit.



NOTE

- If you are entering negative Limits, be aware that the negative value affects the way the above and below Limits function, since negative numbers are processed as signed values.
- If the Above Return Hysteresis is greater than the Above Setpoint, the Above Limit is Disabled; if the Below Return Hysteresis is less than the Below Setpoint, the Below Limit is Disabled. You may want to use this feature to disable either Above or Below Limit conditions for a reading.

Configuring Historical Logs

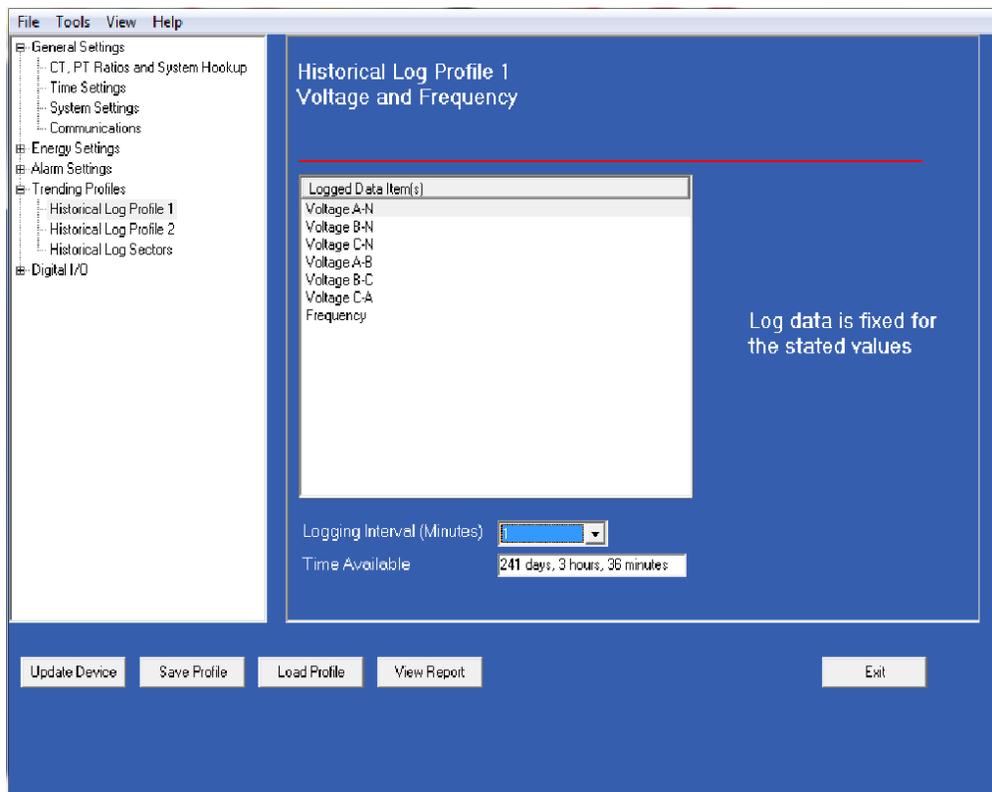
From the Tree Menu, click **Trending Profiles>Historical Log Profile 1-3**, depending on your EPM 4600 unit's circuit configuration, to display a screen that lets you select the logging interval for the historical log you selected. Historical logs 1 and 2 are used for the three phase configuration; Historical logs 1 and 3 are used for the single phase configuration.

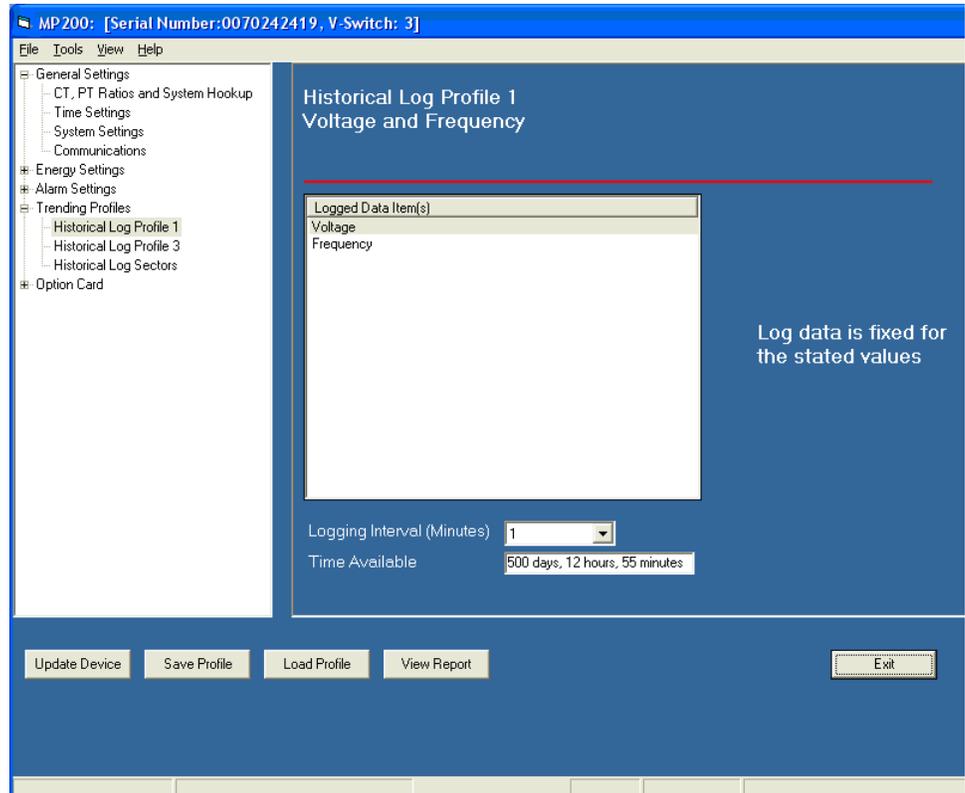


NOTE

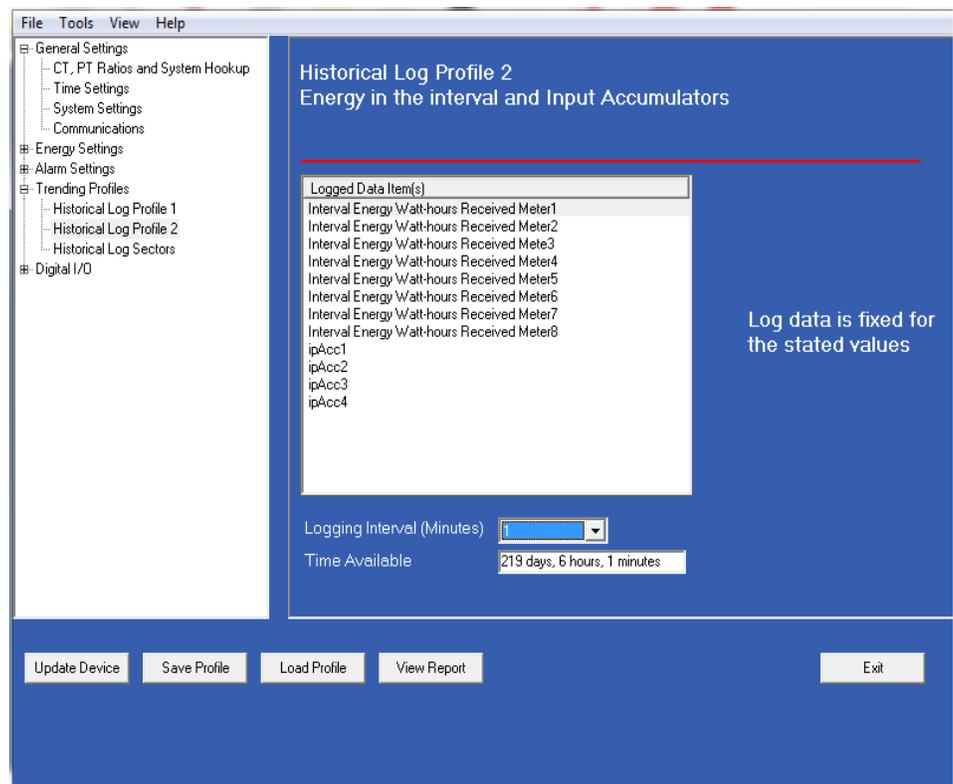
All of the EPM 4600 unit's Historical logs are pre-configured to log specific readings. Historical Log 1 logs Voltage and Frequency readings, Historical log 2 logs Energy in the Interval for the 8 three phase circuit, and Historical log 3 logs Energy in the Interval for each phase of the 24 single phase circuits.

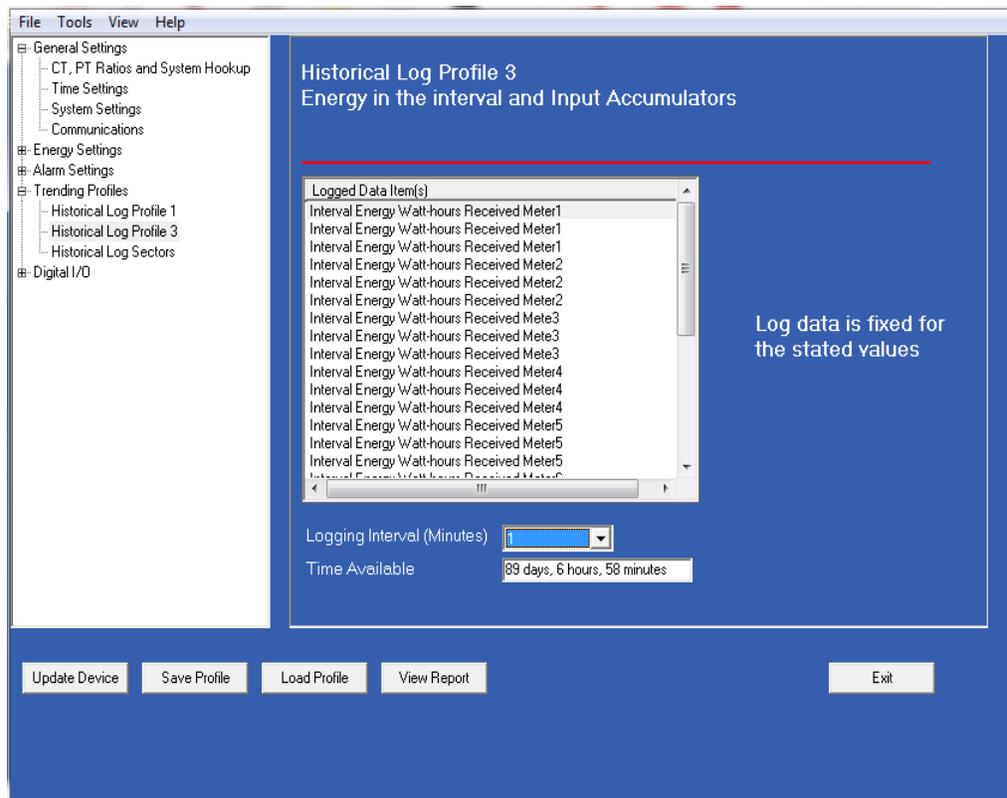
Sample screens for the three Historical logs follow.





(Log 1 for a Single Phase Configuration)





The only change you can make on any of the Historical Log Profile screens is to set the Logging Interval. The available choices are: 1, 3, 5, 10, 15, 30, or 60 minutes, or EOI (End of Interval) Pulse. The Logging Interval determines when the EPM 4600 unit takes a snapshot of the data values being trended.

NOTICE

If you are trending Energy in the Interval (Historical logs 2 and 3), the Logging interval must be the same as the Demand interval.



- Only one I/O Card input or output can be set to trigger an EOI pulse.
- The maximum rate for EOI Pulse used to trigger a log is once per minute.
- When you choose EOI Pulse, the EPM 4600 unit takes a snapshot on the End of Interval Pulse condition, rather than on a time interval. Following are two examples of using EOI Pulse for log recording.

Examples of EOI Pulse Recording:

- The Relay Output/Digital Input card installed in your EPM 4600 unit is set to trigger on a state change. You can use EOI pulse to take a snapshot upon that state change.
- An EPM 4600 unit is connected on each side of a load. You want to take a snapshot of both sides of the load at the same time. You can do this by connecting the Relay Output/Digital Input card in each of the EPM 4600 units to a device that will trigger them. Then set the EOI pulse to take a snapshot when the devices are triggered. See “Configuring Relay Assignments” on page 29. for additional information.

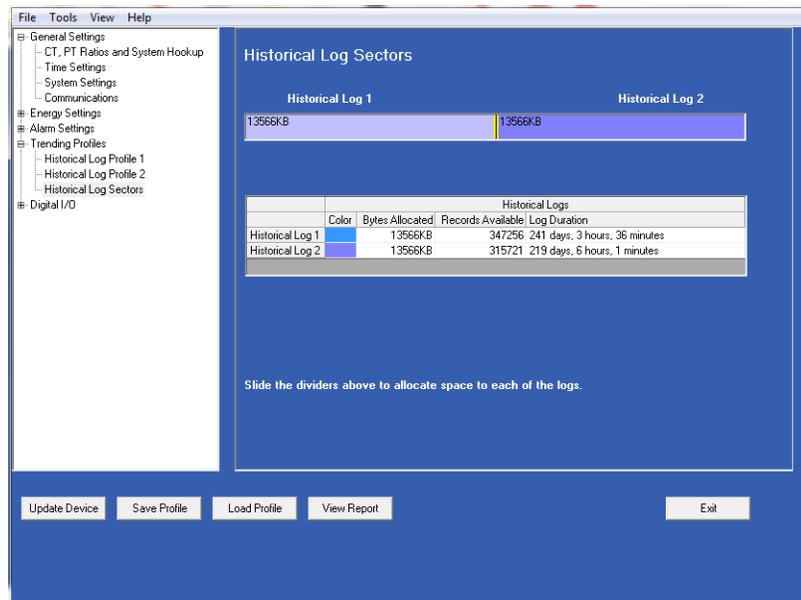


There are three display fields at the bottom of the Historical Log Profile screen. They show the Time Remaining, the Total Bytes Used, and the Bytes Remaining for this historical log. These fields are updated as you make selections on the screen.

Configuring Historical Log Sectors

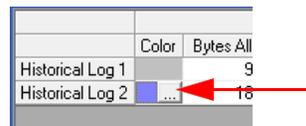
For Software options B and C, use this setting to increase or decrease the amount of records each of the EPM 4600 unit's Historical logs can store, and the duration each log can run, before becoming filled.

1. From the Tree Menu, click **Trending Profiles>Historical Log Sectors** to display the screen shown below.

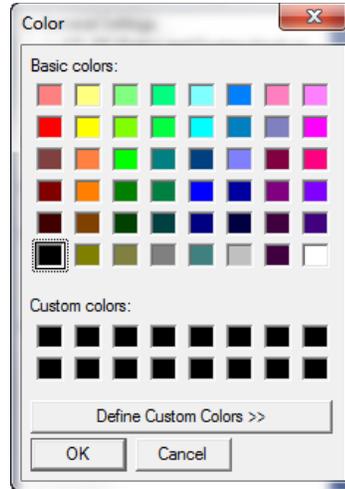


The screen above is for a three phase circuit configuration; if you are connected to an EPM 4600 with a single phase circuit configuration you will see Historical Logs 1 and 3.

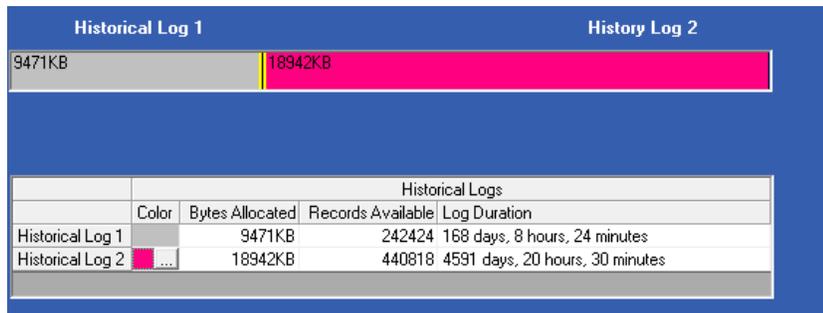
2. The Historical logs are color-coded for ease of use. The color key is shown in the box(es) labeled Historical Log 1 and Historical Log 2 or 3. To change the color assigned to each log:
 - a. Click in the Color field. A small box with three dots will appear.



- b. Click in the box to open a screen that lets you choose an alternate color.



- c. Click on the color you want and then click OK to select the new color and close the color selection screen. The new color will now be used for the Historical log. See the example below.



1. The screen shows the current space allocation for the EPM 4600 unit's Historical logs, including:
 - The number of bytes allocated to each log
 - The number of records available for each log
 - The duration of each log
2. To change the current allocation for a log:
 - a. Click on the double yellow line dividing the logs.
 - b. You will see a line with arrows on each side. Drag the line in either direction to increase or decrease the log allocation. The display fields for the logs will reflect any changes you make to the allocation.



When EOI Pulse is set as the Logging Interval for a Historical log (see “Configuring Historical Logs” on page 11-24), the Log Duration field for that log will be blank.

Configuring Relay Assignments

The EPM 4600 unit has an embedded Relay Output/Digital Input card. Accumulators in the GE Vernova Communicator software count the transitions of the Inputs and Outputs.

An example use of the Relay Card is in monitoring the status of circuit breakers or relays in your electrical system. The two status inputs could be used to monitor two circuit breakers, and the two relay outputs could be used to sound an alarm upon the occurrence of a programmed out of limit condition.

- From the Tree menu, click **Option Card>Digital I/O>Relay Output and Digital Input>Relay Relay Assignments** to open the screen shown below.

Limit ID	Relay 1	Relay 2
Meter2 I B	Above Limit	Below Limit
Voltage C-N	Above Limit	Below Limit
Demand: Meter 1 I A	Not Assigned	Not Assigned
Not Assigned	Not Assigned	Not Assigned
Not Assigned	Not Assigned	Not Assigned
Not Assigned	Not Assigned	Not Assigned
Not Assigned	Not Assigned	Not Assigned
Not Assigned	Not Assigned	Not Assigned
Not Assigned	Not Assigned	Not Assigned

Set Delay(Seconds) 0.0 0.0

Reset Delay(Seconds) 0.0 0.0

Log status change for Relay 1 Relay 2

Output Label Relay01 Relay02

Open Label RlyOpen1 RlyOpen2

Closed Label RlyClosed1 RlyClosed2

Accumulation Compression Factor 1 1

Update Device Save Profile Load Profile View Report Exit

From the Relay Assignments screen, you can:

- Configure up to 8 limits for each of the two Relay Outputs.
- Set a Delay and Reset Delay for the Outputs.
- Choose to log Status Changes for each Relay Output.
- Assign each Output an Output Label, Open Label, and Closed Label, which are used when viewing the Relay Status Log.
- Assign an Accumulation Compression Factor for each output.

NOTICE

First use the Limits screen to set up the limits you want to assign to an Output. See “Configuring Limits” on page 21. for instructions.

The available Limits appear in the Limit ID column.

To Assign a Limit to an Output Relay:

1. Select the Alarm trigger from the pull-down menu next to the Limit ID. The options are: Above Limit (the Output is triggered when the Above Limit condition occurs) and Below Limit (the Output is triggered when the Below Limit condition occurs). You can assign the limit to one or both (or neither) of the Relay Outputs.



NOTE

A Relay operates when any one assigned Limit is tripped, and stays in the Set condition as long as one Limit is in the Alarm state.

2. You can enter Set Delay and/or Reset Delay. These values are the delay before the Output is changed: Set is when the common is shorted to Normal Open (this is the Set Condition).
3. Check the box next to Log Status Change for if you want to log output status changes for either or both Relay. See “Using Ethernet Communication (RJ45 and WiFi)” on page 1. for information on the I/O Change Log.
4. The current Output Labels are displayed in the screen. These labels are used for Logging. To change the Output labels, click in the Labels field you want to change, and enter a new label. The fields that can be changed are:
 - Output Label - Label ID
 - Open Label - Open state ID
 - Closed Label - Closed state ID
5. You can specify an Accumulation Compression Factor. The Compression Factor is used to adjust how high an accumulator will go before rolling over. Because of this, it is useful in delaying rollover. For example, if you select a Compression Factor of 10, each time 10 Pulse/State changes occur, the accumulator count increments by 1. The available Compression Factors are: 1, 10, 100, 1000, 10000, and 100000. The default Compression Factor is 1.

Configuring Digital Input Settings

- From the Tree menu, click **Option Card>Digital I/O>Relay Output and Digital Input>Digital Input Settings**. Use this screen to assign labels and functions to the Relay Output/Digital Input card's Inputs.

Digital Input Settings

Input ID	Assigned to	Trigger	Accumulator			Label
			Multiplier	Divider	Result	
1	Digital Input Log	Change	0.0000	1	X 0	ipAcc1
2	Digital Input Log	Change	0.0000	1	X 0	ipAcc2
3	Digital Input Log	Change	0.0000	1	X 0	ipAcc3
4	Digital Input Log	Change	0.0000	1	X 0	ipAcc4

Note: The Divider field is used to adjust how high an accumulator will go before rolling over. If the Divider is set to 1, each time a Pulse/State change occurs, the accumulator count will increment by 1. If the Divider is set to 0.1, each time 10 Pulses/State changes occur, the accumulator count will increment by 1.

Input Labels

Input	Label	Open Label	Closed Label
1	ip1	ip1Open	ip1Closed
2	ip2	ip2Open	ip2Closed
3	ip3	ip3Open	ip3Closed
4	ip4	ip4Open	ip4Closed

Update Device Save Profile Load Profile View Report Exit

- Make a selection in the Assigned to field. The available selections are:

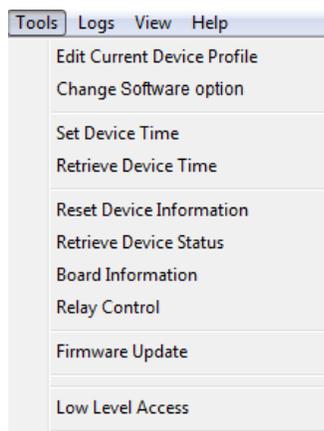
- Status Only
- Accumulator
- Digital Input Log
- EOI Pulse - only one Input can be set as EOI pulse.
- EOI is triggered when the selected condition is met. Only one I/O card's input or output can be set to trigger an EOI pulse. EOI is used for the following:
 - As a trigger for demand averaging: when the selected condition is met, the EOI delineates an interval that results in demand averaging being performed. The minimum interval between EOI Pulses used to trigger demand averaging should be 5 minutes.
 - For historical logging: when the selected condition is met, EOI causes any log that has been configured for EOI Pulse interval to capture a record. Refer to "Configuring Historical Logs" on page 11-24 for additional information on EOI Pulse and logging.



3. Select Trigger from the pull-down menu. The Trigger options depend on your Assigned to selection:
 - For Status Only, select None.
 - For Accumulator, select from Closing or Opening.
 - For Digital Input Log, select Change.
 - For EOI Pulse, select from Closing, Opening, or Change.
4. Use the Scaling Factor fields as follows:
 - a. Enter Multiplier. The Multiplier is the output ratio from the device that is being input into the EPM 4600 unit. For example, if you have a KYZ module that is outputting a pulse every 1.8 kWh, with the input set to Accumulator, Increment on Contact Opening, you would set the Multiplier to be the value of the KYZ; in this case either 1.8 or a ratio of that number.
 - b. Enter Divider. The Divider is used to adjust how high an accumulator will go before rolling over. For example, if you select a Divider of 10, each time 10 Pulse/ State changes occur, the accumulator count increments by 1. The available Dividers are: 1, 10, 100, 1000, 10000, and 100000. The default Divider is 1.
 - c. The Result field is display only. It shows the result of the Multiplier entry divided by the Divider entry. For example, Multiplier=4.000; Divider=0.01; Result will be $4 / 0.01 = x 400$. The Result factor is multiplied by the number of pulses to give you the total accumulated value.
5. Enter a Label for the Accumulator.
6. The current Input Labels are displayed in the screen. To change the Input Labels, click in the Labels field you want to change, and enter a new label. The fields that can be changed are:
 - Input Label - Input ID
 - Open Label - Open state ID
 - Closed Label - Closed state ID

EPM 4600 Metering System Tools Menu

The Tools screens for the EPM 4600 metering system are similar to those of the other GE Vernova Digital Energy devices. They are accessed from the Tools menu in the GE Vernova Communicator software's Title Bar.

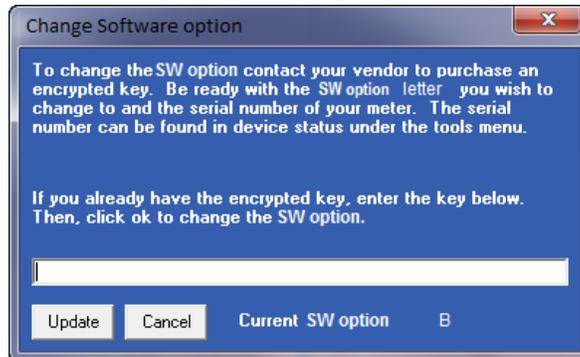


Edit Current Device Profile: opens the EPM 4600 metering system's Device Profile screen.

Change Software option: opens the Change Software option screen.

The EPM 4600 metering system is equipped with different Software options. The Software option is a virtual firmware-based switch that allows you to enable features through communication, using an encrypted key obtained from GE Vernova Digital Energy. This means you can upgrade the EPM 4600 unit to a “higher” model after installation without removing it from service.

1. When you click Change Software option, you will see the screen shown below.



2. Enter the key provided by GE Vernova Digital Energy.
3. Click **Update**. The Software option is changed and the EPM 4600 unit restarts.



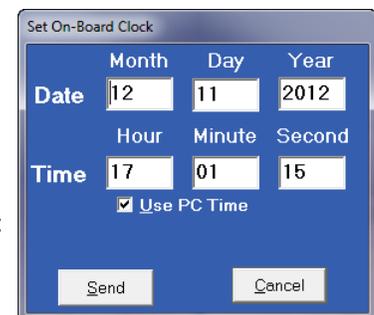
Software option keys are based on the serial number of the ordered device. To purchase a key, you need to provide GE Vernova Digital Energy with the following information:

Serial Number(s) of the device(s) that you want to upgrade.

- Desired Software option.
- A Credit Card or Purchase Order Number.

Contact GE Vernova Digital Energy's inside sales staff with the above information at sales@gedigitalenergy.com to receive the Upgrade key.

Set Device Time: opens the screen shown on the right. This screen allows you to set the EPM 4600 unit's clock and/or synchronize it to PC time. The EPM 4600 unit's clock is used for logging and other time retrieval purposes.



1. To set the device time, do one of the following:
 - To use PC time, click the checkbox.
 - To set the EPM 4600 units time, enter the time and date information.
2. Click Send to send the time to the EPM 4600 unit.



When changing the clock, all logs should be retrieved and then reset.

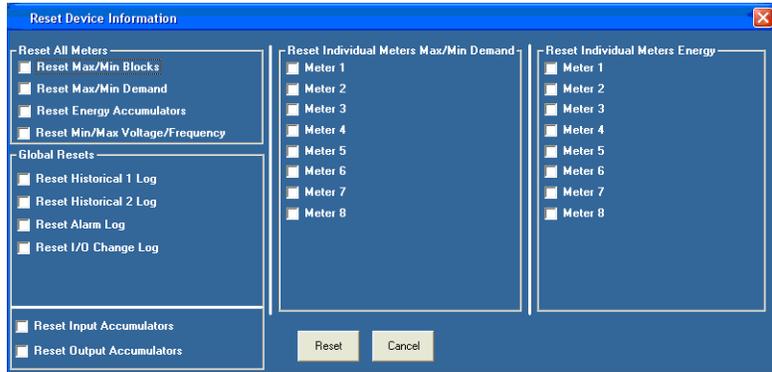
Retrieve Device Time:

opens a screen that displays the EPM 4600 unit's internal time.

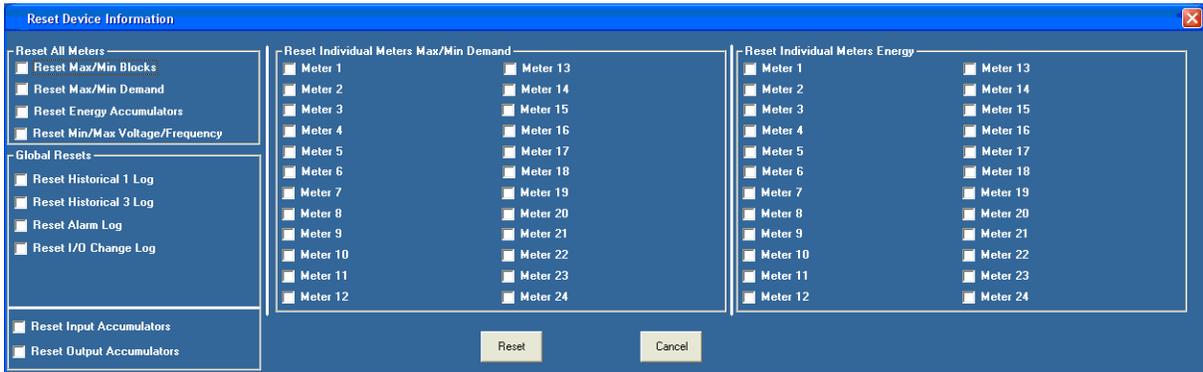


Reset Device Information:

depending on your EPM 4600 unit's circuit configuration, opens one of the screens shown below. Click the item(s) you want to reset and click Reset.



Three Phase Meter Configuration



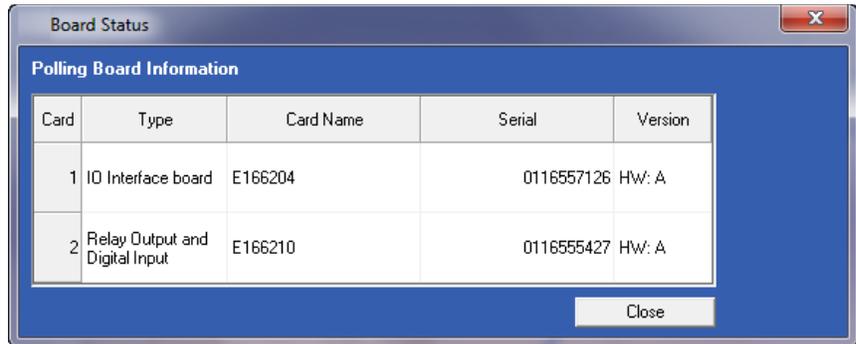
Single Phase Meter Configuration



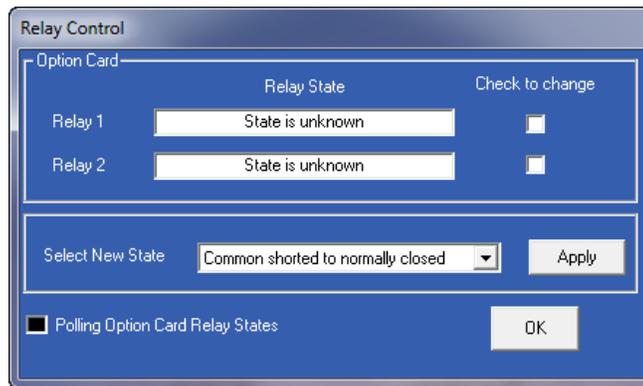
- You can perform a reset for all of the meters or individual meters.
- This feature requires a Password if "Password for Resetting" is enabled. See "Configuring System Settings" on page 15..

Retrieve Device Status: opens the Device Status screen. See "Configuring the EPM 4600 Metering System's Device Profile" on page 10..

Board Information: opens the screen shown below. It displays information about the Relay Output/Digital Input card: Type, Card Name, Serial Number, and Version.



Relay Control: opens the screen shown below. This screen allows you to manually set the state of the Relay Outputs.



The screen displays the current Relay states. To change the state:

1. Select the desired state in the Select New State field.
2. Click the checkbox next to the Relays you want to change to that state.
3. Click **Apply**. If this feature is Password Protected, the Enter Password screen opens.
4. Click **OK** to close the screen.



- A Relay cannot be manually controlled if a Limit has been assigned to it.
- If the Relay State field is "State is Unknown," verify that the Relay configuration is correct. You may also see this message after you have performed a Reset. Select a New State for the Relay and click **Apply**.

Firmware Update: opens a screen that allows you to update the EPM 4600 unit's firmware.

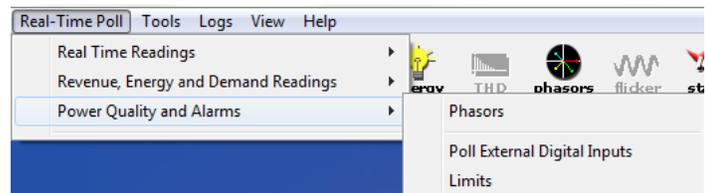
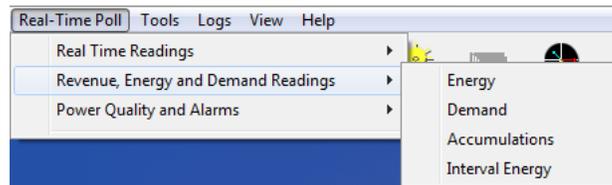
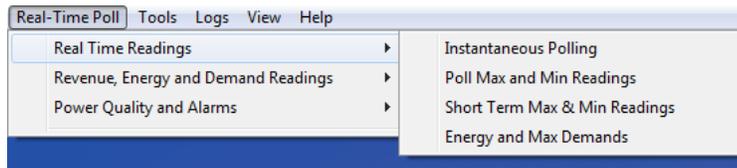


1. Click Browse to locate the firmware file you want to upload.
2. Click **Flash** to begin the firmware upgrade.

See “Modbus Map Overview” on page 1. for general information regarding Flash upgrading of firmware.

EPM 4600 Metering System Polling Screens

The Polling screens for the EPM 4600 metering system are accessed from the Real-Time Poll menus in the Title Bar.



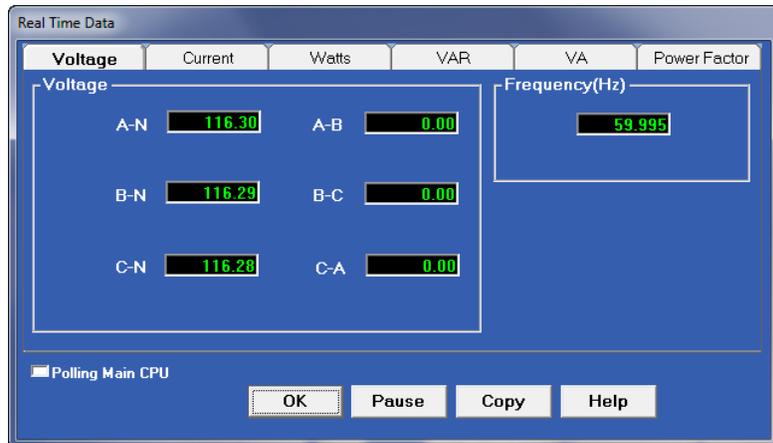
The buttons on the Polling screens perform the following functions:

- **OK:** click to close the screen.
- **Print:** click to send the polling screen to the printer.
- **Pause:** click to stop instantaneous polling.
- **Resume:** click to resume instantaneous polling which has been paused.

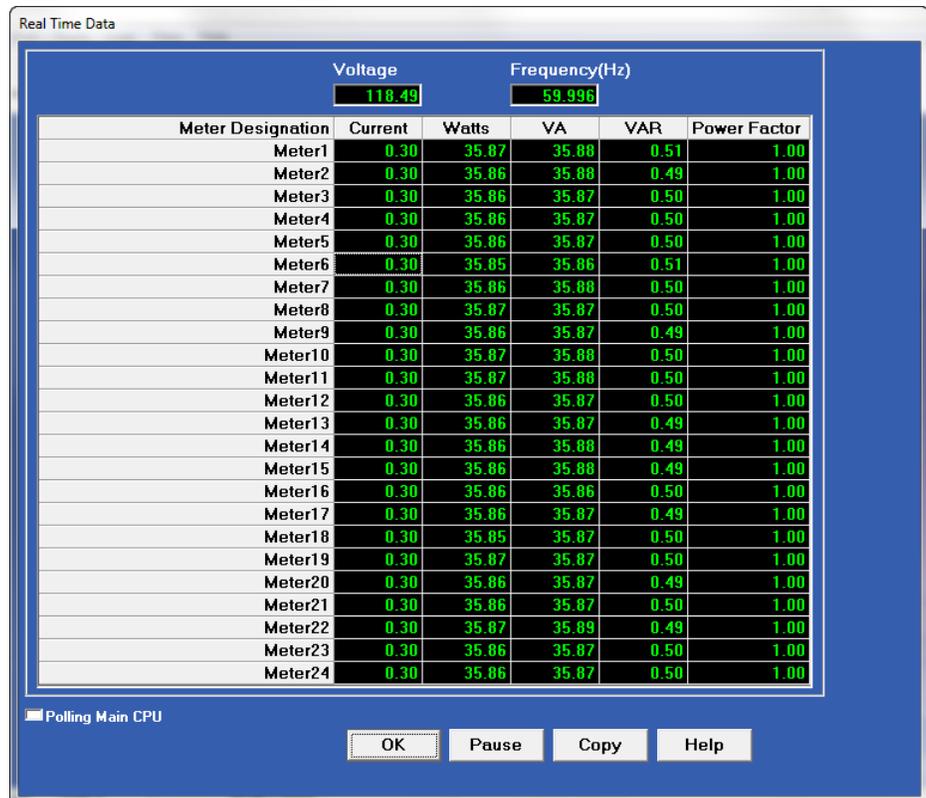
- **Copy:** click to copy the polling screen to the clipboard - from there you can paste it into another application.
- **Help:** click to open the GE Vernova Communicator application's User Manual.

Instantaneous Polling

1. Click **Real-Time Poll>Real Time Readings>Instantaneous Polling**. Depending on your circuit configuration, you will see one of the screens shown below.



Three Phase Configuration



Single Phase Configuration

- For the three phase configuration, click on the tabs to see additional readings. Click **Pause** to stop the polling and Resume to start it again.

Poll Max and Min Readings

- Click **Real-Time Poll>Real Time Readings>Poll Max and Min Readings**. Depending on your circuit configuration, you will see one of the following screens.

Maximum and Minimum Readings							
Meter5		Meter6		Meter7		Meter8	
Meter1	Meter2		Meter3		Meter4		
Reading Name	Maximum		Minimum				Polling
	Value	Time	Value	Time			
Volts A-N	936.072M	2/7/2013 10:27:53	0.000	10/26/2012 09:45:53			<input type="button" value="OK"/> <input type="button" value="Copy"/> <input type="button" value="Help"/>
Volts B-N	935.970M	2/7/2013 10:27:53	0.000	10/26/2012 09:45:53			
Volts C-N	935.914M	2/7/2013 10:27:53	0.000	10/26/2012 09:45:53			
Volts A-B	8.566	1/29/2013 14:56:39	0.000	10/26/2012 09:45:53			
Volts B-C	7.989	12/7/2012 12:10:41	0.000	10/26/2012 09:45:53			
Volts C-A	8.076	1/29/2013 14:56:39	0.000	10/26/2012 09:45:53			
Frequency	60.061	1/10/2013 06:27:23	0.000	10/26/2012 09:45:53			
I A	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
I B	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
I C	1.571	10/29/2012 03:00:00	0.000	4/18/2013 14:25:00			
+Watts Total	561.655	10/28/2012 01:45:00	0.000	10/26/2012 10:00:00			
+VAR Total	7.971	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
-Watts Total	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
-VAR Total	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
VA Total	561.863	10/28/2012 01:45:00	0.000	10/26/2012 10:00:00			
+Power Factor Total	0.999	2/7/2013 12:25:00	1.000	10/26/2012 10:00:00			
-Power Factor Total	1.000	10/26/2012 10:00:00	0.000	10/26/2012 09:45:45			
I N	4.712	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
+Watts A	98.199M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			
+Watts B	97.719M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			
+Watts C	97.632M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			
+VAR A	20.191M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			
+VAR B	19.638M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			
+VAR C	20.007M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			
-Watts A	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
-Watts B	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
-Watts C	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
-VAR A	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
-VAR B	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
-VAR C	0.000	10/26/2012 09:45:45	0.000	10/26/2012 10:00:00			
VA A	98.645M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			
VA B	98.394M	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			

Three Phase Configuration

- Click the tabs to see additional readings.

Maximum and Minimum Readings

Parameters	Maximum		Minimum	
	Value	Time	Value	Time
Voltage	936.072M	2/7/2013 10:27:53	0.000	10/26/2012 09:45:53
Frequency	60.061	1/10/2013 06:27:23	0.000	10/26/2012 09:45:53

Poling

Current	+ Watts	- Watts	VA	+ VAR	- VAR	+ PF	- PF
Meter	Maximum Value	Maximum Time	Minimum Value	Minimum Time			
Meter1	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter2	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter3	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter4	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter5	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter6	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:45:00			
Meter7	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter8	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter9	1.571	10/29/2012 03:00:00	0.000	10/26/2012 16:00:00			
Meter10	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter11	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter12	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter13	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter14	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter15	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter16	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter17	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter18	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter19	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter20	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter21	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter22	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter23	1.571	10/29/2012 03:00:00	0.000	10/26/2012 10:00:00			
Meter24	36.471	2/7/2013 10:35:00	0.000	10/26/2012 10:00:00			

OK
Copy
Help

Single Phase Configuration

Short Term Max & Min Readings

Click **Real-Time Poll>Real Time Readings>Short Term Max & Min Readings**. Depending on your circuit configuration, you will see one of the screens shown below.

Description	Readings
Short term Primary Maximum Block	
Volts A-N, Previous Interval Maximum	118.1119
Volts B-N, Previous Interval Maximum	118.0928
Volts C-N, Previous Interval Maximum	118.084
Volts A-B, Previous Interval Maximum	0
Volts B-C, Previous Interval Maximum	0
Volts C-A, Previous Interval Maximum	0
Volts A-N, Maximum	118.1242
Volts B-N, Maximum	118.0965
Volts C-N, Maximum	118.0816
Volts A-B, Maximum	0
Volts B-C, Maximum	0
Volts C-A, Maximum	0
Short term Primary Minimum Block	
Volts A-N, Previous Interval Minimum	0
Volts B-N, Previous Interval Minimum	0
Volts C-N, Previous Interval Minimum	0
Volts A-B, Previous Interval Minimum	0
Volts B-C, Previous Interval Minimum	0
Volts C-A, Previous Interval Minimum	0

Three Phase Configuration

Description	Readings
Short term Primary Maximum Block	
Volts, Previous Interval Maximum	118.704
Volts, Maximum	118.7182
Short term Primary Minimum Block	
Volts, Previous Interval Minimum	0
Volts, Minimum	117.8377

Single Phase Configuration

Energy and Max Demands

1. Click **Real-Time Poll>Real Time Readings>Energy and Max Demands**. Depending on your circuit configuration, you will see one of the screens shown below.



Three Phase Configuration



Single Phase Configuration

2. Click the tabs to see readings for the meters marked on the tab.

Energy

1. Click **Real-Time Poll>Revenue, Energy and Demand Readings>Energy**. Depending on your circuit configuration, you will see one of the screens shown below.

Watt Hour	VA Hour		VAR Hour	
	Watt Hour A	Watt Hour B	Watt Hour C	Watt Hour Total
Watt Hour A	Received	Delivered	Net	Total
Meter1	00100.005	00000.000	00100.005	00100.005
Meter2	00100.004	00000.000	00100.004	00100.004
Meter3	00100.004	00000.000	00100.004	00100.004
Meter4	00100.009	00000.000	00100.009	00100.009
Meter5	00099.993	00000.000	00099.993	00099.993
Meter6	00099.995	00000.000	00099.995	00099.995
Meter7	00100.001	00000.000	00100.001	00100.001
Meter8	00100.002	00000.000	00100.002	00100.002

Three Phase Configuration

Watt-Hours	VA-Hours		VAR-Hours	
	Received	Delivered	Net	Total
Meter1	01038.812	00000.000	01038.812	01038.812
Meter2	01027.929	00000.000	01027.929	01027.929
Meter3	01025.959	00000.000	01025.959	01025.959
Meter4	01033.750	00000.000	01033.750	01033.750
Meter5	01029.542	00000.000	01029.542	01029.542
Meter6	01024.315	00000.000	01024.315	01024.315
Meter7	01039.315	00000.000	01039.315	01039.315
Meter8	01042.400	00000.000	01042.400	01042.400
Meter9	01036.172	00000.000	01036.172	01036.172
Meter10	01039.420	00000.000	01039.420	01039.420
Meter11	01037.838	00000.000	01037.838	01037.838
Meter12	01034.009	00000.000	01034.009	01034.009
Meter13	01032.558	00000.000	01032.558	01032.558
Meter14	01031.690	00000.000	01031.690	01031.690
Meter15	01027.483	00000.000	01027.483	01027.483
Meter16	01034.335	00000.000	01034.335	01034.335
Meter17	01033.638	00000.000	01033.638	01033.638
Meter18	01028.459	00000.000	01028.459	01028.459
Meter19	01036.806	00000.000	01036.806	01036.806
Meter20	01034.202	00000.000	01034.202	01034.202
Meter21	01029.277	00000.000	01029.277	01029.277
Meter22	01037.001	00000.000	01037.001	01037.001
Meter23	01031.292	00000.000	01031.292	01031.292
Meter24	01074.468	00000.000	01074.468	01074.468

Single Phase Configuration

2. For the three phase configuration, click on the tabs to see additional readings. Click **Pause** to stop the polling and Resume to start it again.

Demand

1. Click **Real-Time Poll>Revenue, Energy and Demand Readings>Demand**. Depending on your circuit configuration, you will see one of the screens shown below.

	Current	Watts	VAR	VA	Power Factor
Amps					
		A	B	C	Neutral
Meter1	0.00	0.00	0.00	0.00	0.00
Meter2	0.00	0.00	0.00	0.00	0.00
Meter3	0.00	0.00	0.00	0.00	0.00
Meter4	0.00	0.00	0.00	0.00	0.00
Meter5	0.00	0.00	0.00	0.00	0.00
Meter6	0.00	0.00	0.00	0.00	0.00
Meter7	0.00	0.00	0.00	0.00	0.00
Meter8	0.00	0.00	0.00	0.00	0.00

Polling Main CPU
 OK
Copy
Help

Three Phase Configuration

	Current	Watts	VAR	VA	Power Factor
Meters Demand values					
	Current				
Meter1	0.30				
Meter2	0.30				
Meter3	0.30				
Meter4	0.30				
Meter5	0.30				
Meter6	0.30				
Meter7	0.30				
Meter8	0.30				
Meter9	0.30				
Meter10	0.30				
Meter11	0.30				
Meter12	0.30				
Meter13	0.30				
Meter14	0.30				
Meter15	0.30				
Meter16	0.30				
Meter17	0.30				
Meter18	0.30				
Meter19	0.30				
Meter20	0.30				
Meter21	0.30				
Meter22	0.30				
Meter23	0.30				
Meter24	0.30				

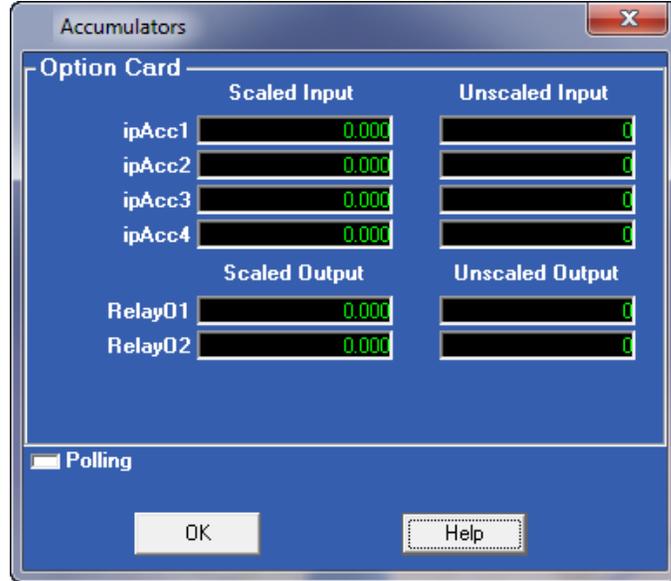
Polling Main CPU
 OK
Copy
Help

Single Phase Configuration

2. Click the tabs to see additional readings.

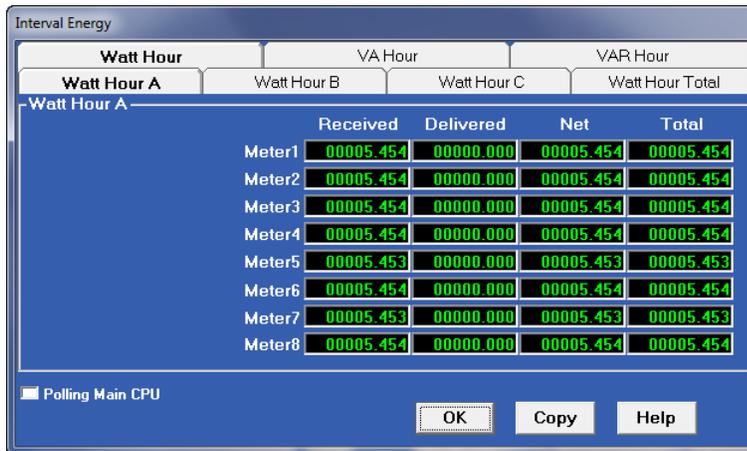
Accumulations

Click **Real-Time Poll>Revenue, Energy and Demand Readings>Accumulations** to see the screen shown below.



Interval Energy

- I. Click **Real-Time Poll>Revenue, Energy and Demand Readings>Interval Energy**. Depending on your circuit configuration, you will see one of the screens shown below.



Three Phase Configuration

Interval Energy

Meters	Watt Hour	VA Hour		VAR Hour
	Received	Delivered	Net	Total
Meter1	00002.972	00000.000	00002.972	00002.972
Meter2	00002.970	00000.000	00002.970	00002.970
Meter3	00002.970	00000.000	00002.970	00002.970
Meter4	00002.971	00000.000	00002.971	00002.971
Meter5	00002.970	00000.000	00002.970	00002.970
Meter6	00002.969	00000.000	00002.969	00002.969
Meter7	00002.971	00000.000	00002.971	00002.971
Meter8	00002.972	00000.000	00002.972	00002.972
Meter9	00002.971	00000.000	00002.971	00002.971
Meter10	00002.971	00000.000	00002.971	00002.971
Meter11	00002.971	00000.000	00002.971	00002.971
Meter12	00002.971	00000.000	00002.971	00002.971
Meter13	00002.970	00000.000	00002.970	00002.970
Meter14	00002.971	00000.000	00002.971	00002.971
Meter15	00002.970	00000.000	00002.970	00002.970
Meter16	00002.971	00000.000	00002.971	00002.971
Meter17	00002.970	00000.000	00002.970	00002.970
Meter18	00002.971	00000.000	00002.971	00002.971
Meter19	00002.971	00000.000	00002.971	00002.971
Meter20	00002.971	00000.000	00002.971	00002.971
Meter21	00002.971	00000.000	00002.971	00002.971
Meter22	00002.971	00000.000	00002.971	00002.971
Meter23	00002.970	00000.000	00002.970	00002.970
Meter24	00002.970	00000.000	00002.970	00002.970

■ Polling Main CPU

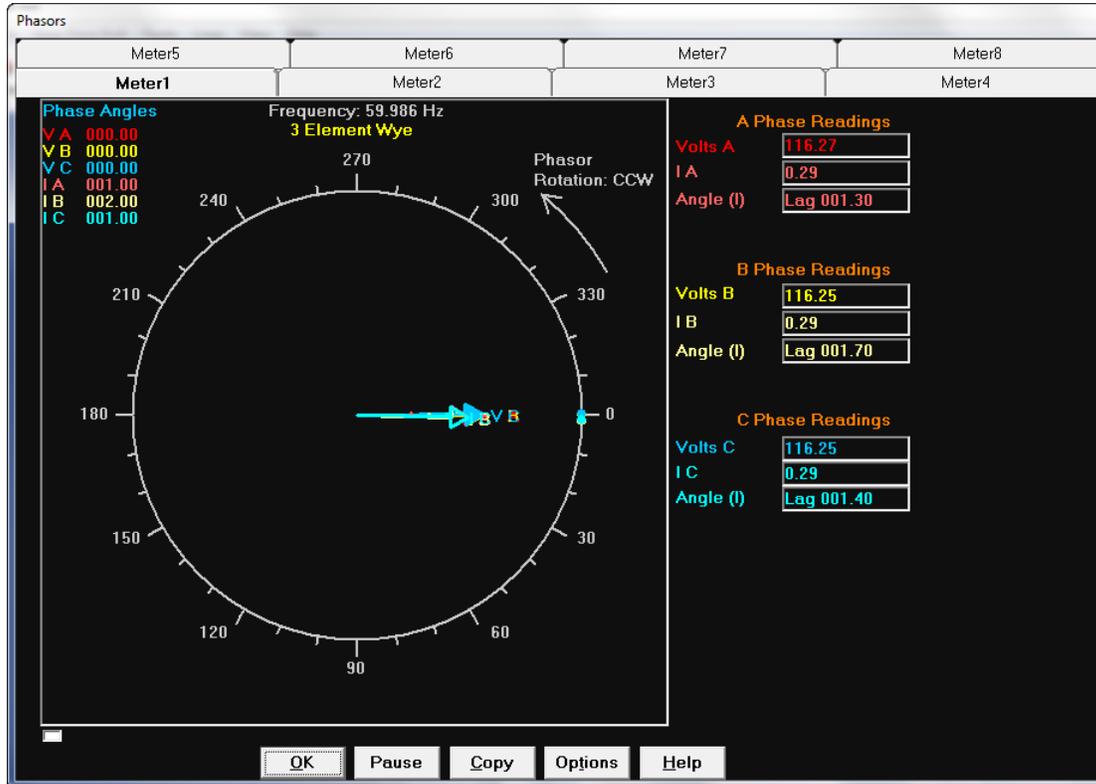
OK Copy Help

Single Phase Configuration

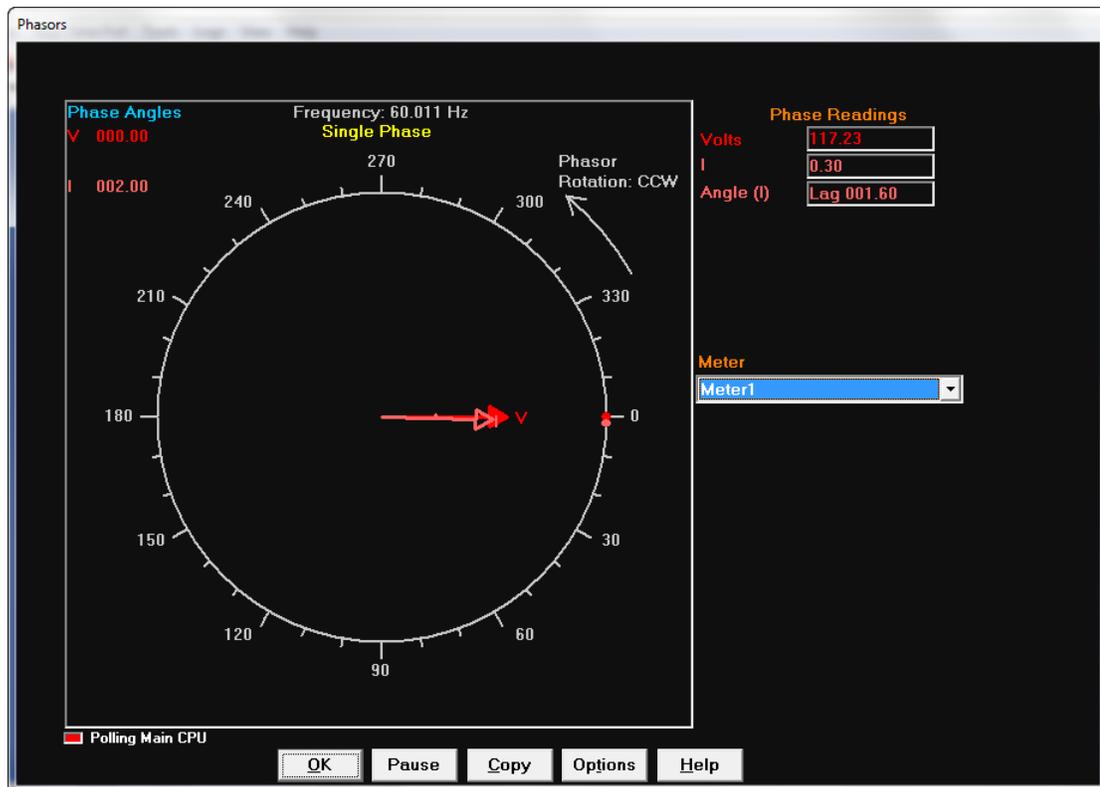
2. Click the tabs to see additional readings.

Phasors

1. Click **Real-Time Poll>Power Quality and Alarms>Phasors**. Depending on your circuit configuration, you will see one of the following screens.



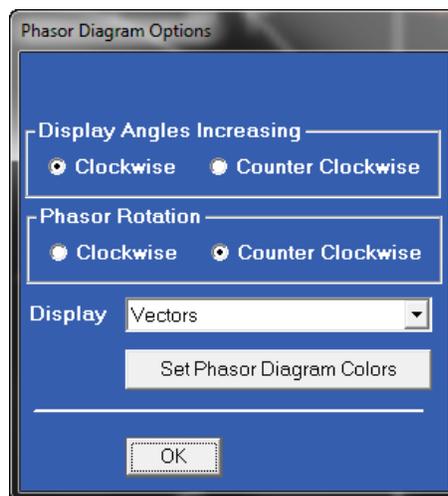
Three Phase Configuration



Single Phase Configuration

From the pull-down menu, select the meter who's phasor readings you want to see.

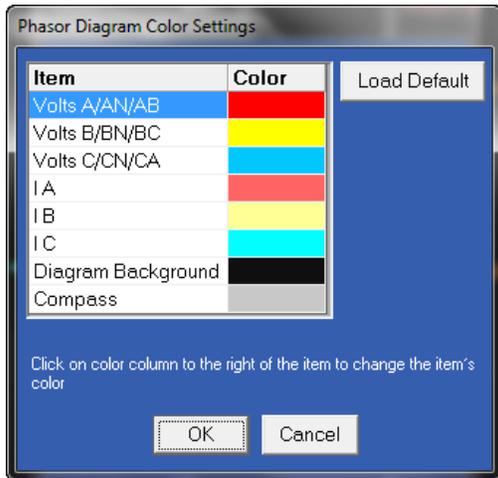
- a. Click **Pause** to stop polling and click Resume to start it again.
- b. Click **Options** to display the screen shown below.



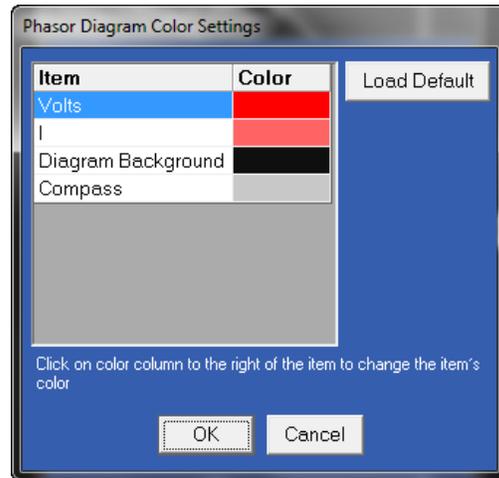
You can select display options for the Phasors screen.

- a. Click **OK** to process your selection.

- b. Click **Set Phasor Diagram Colors** to open one of the screens shown below.



Three Phase Configuration

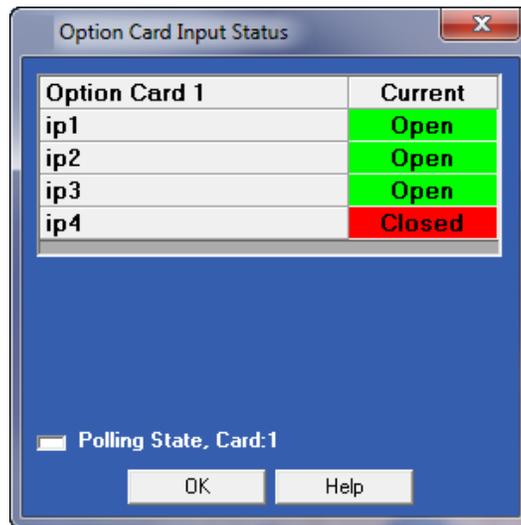


Single Phase Configuration

- c. Click in the Color field next to a reading to choose an alternate color. Click **OK** to save your selection.

Poll External Digital Inputs

Click **Real-Time Poll>Power Quality** and **Alarms>Poll External Digital Inputs** to see the screen shown below, which shows the Digital Inputs' status.



Limits

If you have programmed limits for your EPM 4600 unit, click **Real-Time Poll>Power Quality** and **Alarms>Limits** to see the screen shown below, which shows the settings and the status of any limits you've programmed.

Limit ID	Label	Value	Status		Limit 1			Limit 2		
			Limit 1	Limit 2	Setting	Point	Hysteresis	Setting	Point	Hysteresis
Limit 1	Meter2 I B	0.30	In	Out	Above	1.100	1.100	Below	0.900	0.900
Limit 2	Voltage C-N	116.57	In	In	Above	132.000	132.000	Below	108.000	108.000
Limit 3	Demand:Meter1 I A	0.29	In	Out	Above	1.100	1.100	Below	0.900	0.900

EPM 4600 Metering System Logging Screens

If your EPM 4600 unit has Software option B or C, it has memory for logging - 2 MB for basic logging with B and 32MB of logging with C. See Chapter 9 for information on the Software option keys and logging.

Follow the instructions in “Configuring Historical Logs” on page 11-24 and “Configuring Historical Log Sectors” on page 11-27 to setup logging for your EPM 4600 unit with B or C. Logging is automatic once it is set up.

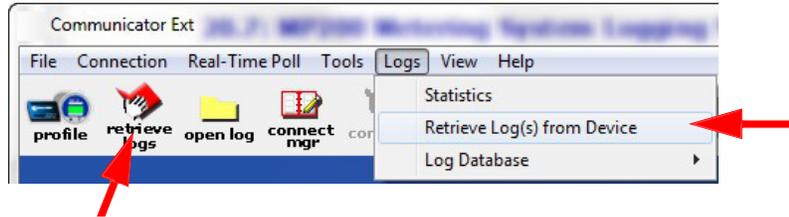
EPM 4600 Metering System Logs

If your EPM 4600 unit has memory for logging, it will have two Historical logs and a System Events log. If you have set limits, there will be an Alarms log; there will be an I/ O Change log.

Retrieving and Viewing Logs

To retrieve your EPM 4600 unit's logs, follow these steps.

1. From the Title Bar, click either **Logs>Retrieve Log(s) from Device** or the Retrieve Logs icon.



2. The screen shown on the next page opens. It displays the logs, and their status. Click the **Retrieve** checkbox for any log you want to retrieve, which has the status of "Available."



- The screen shown is for an EPM 4600-T unit; if you are connected to an EPM 4600-S unit you will see Historical logs 1 and 3.

Log Status for Main CPU

Log	% In Use	# Records	Max Records	Record Size	Newest Record	Logging Started	Retrieve Log	Status
Historical 1	4.0%	14475	360415	34	5/8/2013 08:49:00	2/27/2013 09:34:00	<input type="checkbox"/>	Available
Historical 2	10.5%	29506	282240	46	5/8/2013 08:50:00	2/7/2013 17:12:32	<input type="checkbox"/>	Available
System Events	0.4%	50	13106	14	5/8/2013 08:41:34	4/24/2013 06:11:02	<input checked="" type="checkbox"/>	Available
I/O Change	100.0%	16382	16382	10	5/8/2013 08:46:13	4/14/2013 16:24:46	<input type="checkbox"/>	Available
Alarm Log	0.5%	80	16382	10	5/8/2013 08:45:00	2/7/2013 17:12:25	<input type="checkbox"/>	Available

Polling [I/O Change]
 Retrieval Mode: Partial Retrieval

- The System Events log is always retrieved whenever a log is retrieved.
3. After you have selected your logs, click **Retrieve**. You will see progress messages as the logs are being retrieved.

When retrieval is done, the Log Viewer screen opens. The Log Viewer application lets you easily see the retrieved log data.

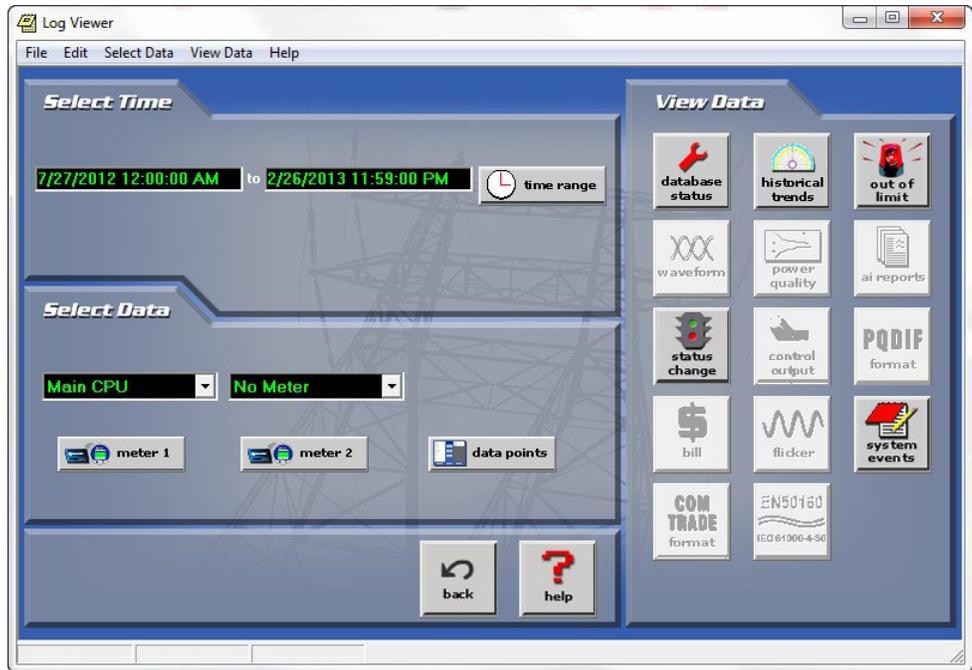
Log Retrieval Status:

Log	Retrieval Progress	Time Elapsed	Status
Historical 1	24.1%	0:06	23 sec, remaining @ 1769.717 bps
Historical 2			
System Events			
Programmable Settings			
I/O Change Log			
Alarm Log			

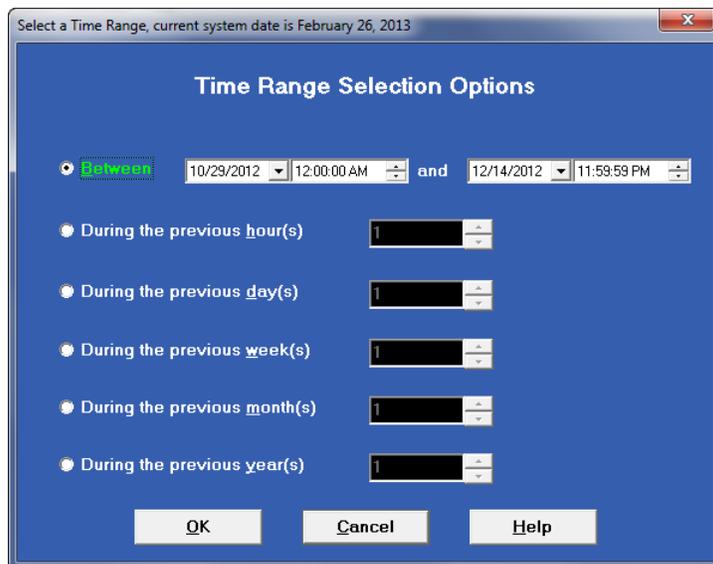


You can also open the Log Viewer by selecting the Open Log icon from the Title Bar. Once you select a retrieved log, the Log Viewer will open.

The icons on the right side of the screen under “View Data” represent the available logs, e.g., the Historical Trends icon represents the Historical logs.

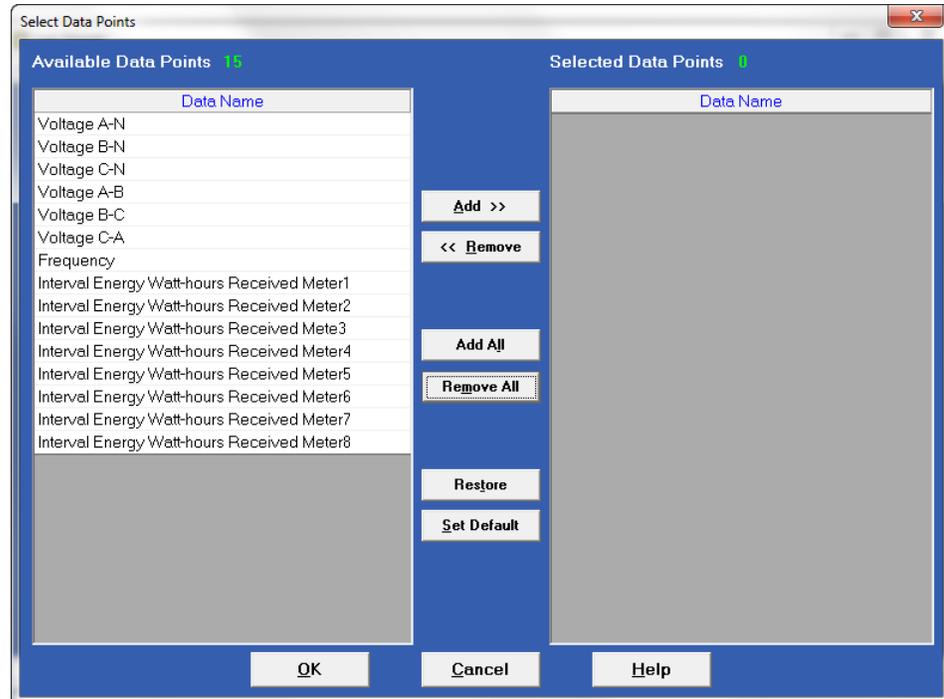


1. Click the **Time Range** button to select the starting and ending date and time range for the log data. You will see the screen shown below.



2. Click in the fields to choose the time and date range and then click **OK**.
3. The Meter 1 and Meter 2 buttons let you select the downloaded meter logs you will view. Meter 1 will default as the EPM 4600 unit you just retrieved logs from. Click the **Meter 1** and/or **Meter 2** button to select the retrieved log file to use.

- Click on the log you want to use to display it in the File Name box and click the **Open** button.
- Click the **Data Points** button to select the data you want to see on the trending chart. See the example screen shown below.



NOTE

The data points shown in the box on the left are the data points from the two historical logs that your EPM 4600 unit has.

- Click on the data points in the box on the left and click **Add** to move them to the box on the right. The number of available data points is shown on the top of the screen - it is updated as you select data points.
- When you have selected the data points you want to view on the trending charts, click **OK**.
- From the Log Viewer screen, click on one of the Report types. The following sections show samples of the different screens.



NOTE

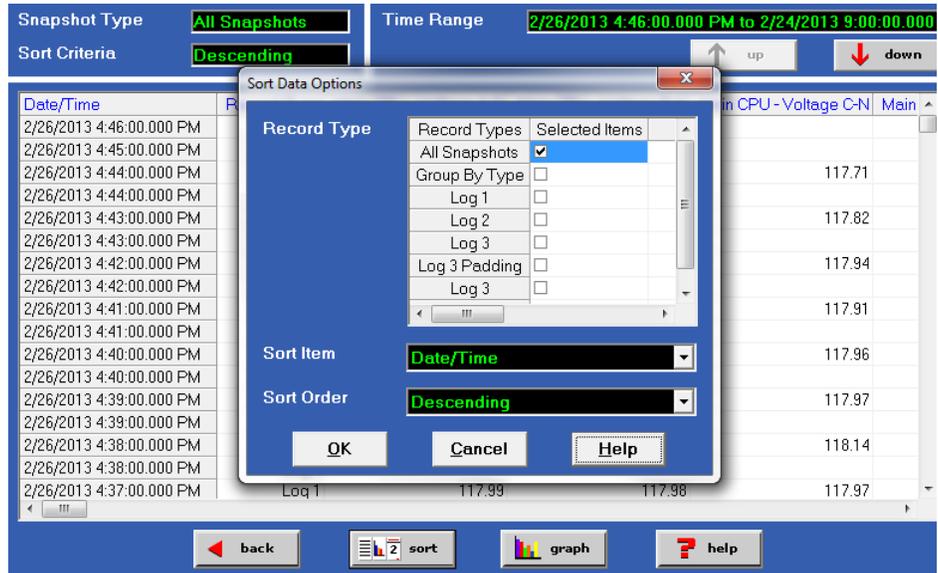
See the *Viewing Logs* Chapter in the *GE Vernova Communicator Instruction Manual* for additional information on logging and the XY Graph, Circular Chart, and Advanced Graph screens available for viewing historical log data.

Log Viewer Screens

When you have made your selections as shown in the previous section, and selected one of the Log buttons, you will see a message screen as the data points are being processed. Then you will see the data screen for your log.

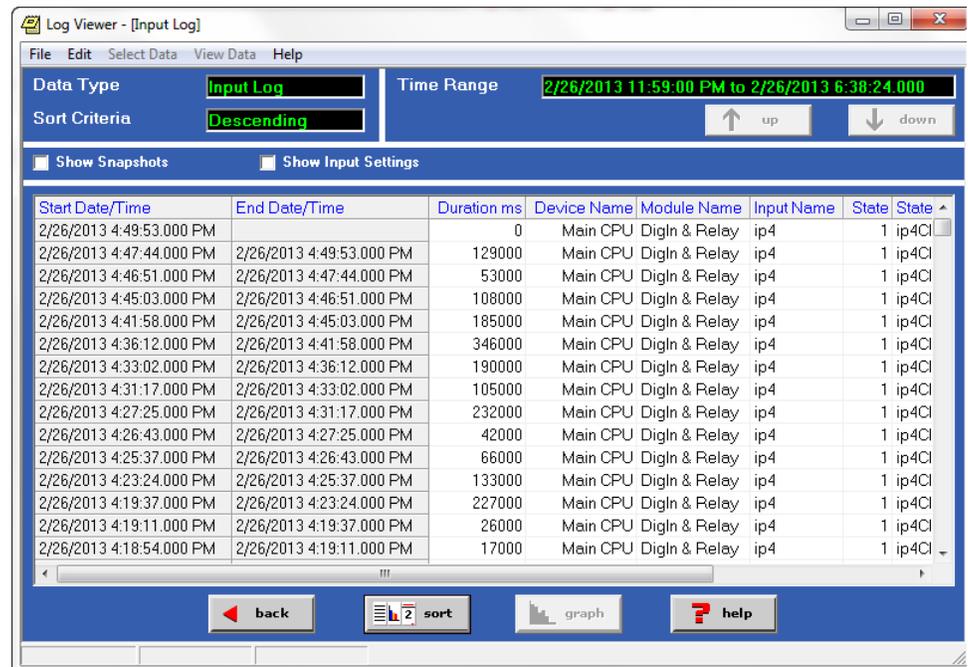
- Click the **Sort** button to open the window shown below, which lets you change the presentation of the data.

2. Make your selection and press **OK**.

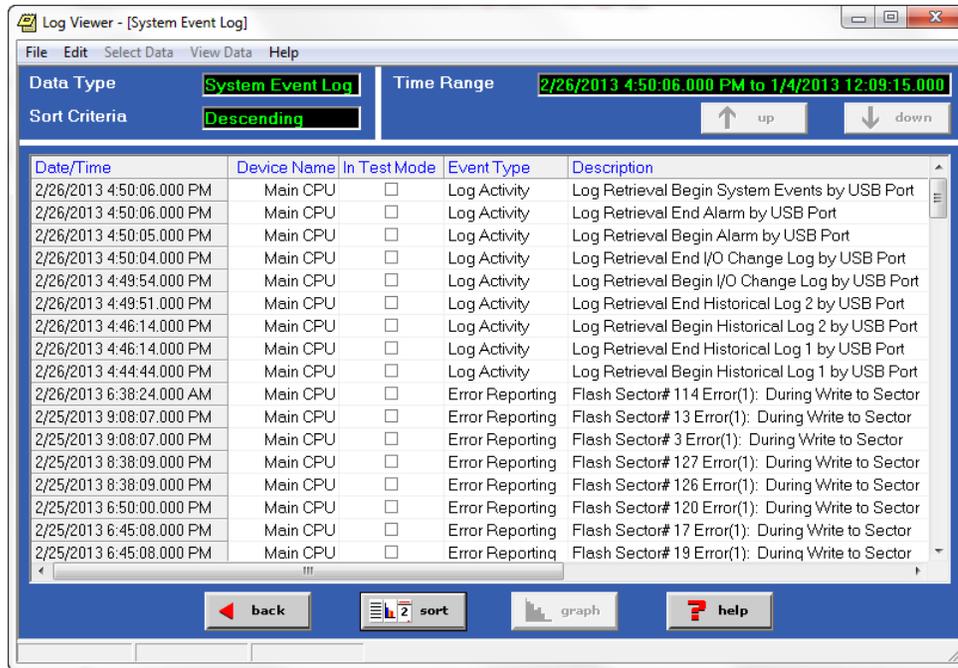


3. Click the **Back** button to return to the main Log Viewer screen.
4. The historical trending screen has graphing options accessible through the **Graph** button. For detailed explanations of the graphs, see the *Viewing Logs* Chapter in the *GE Vernova Communicator Instruction Manual*.

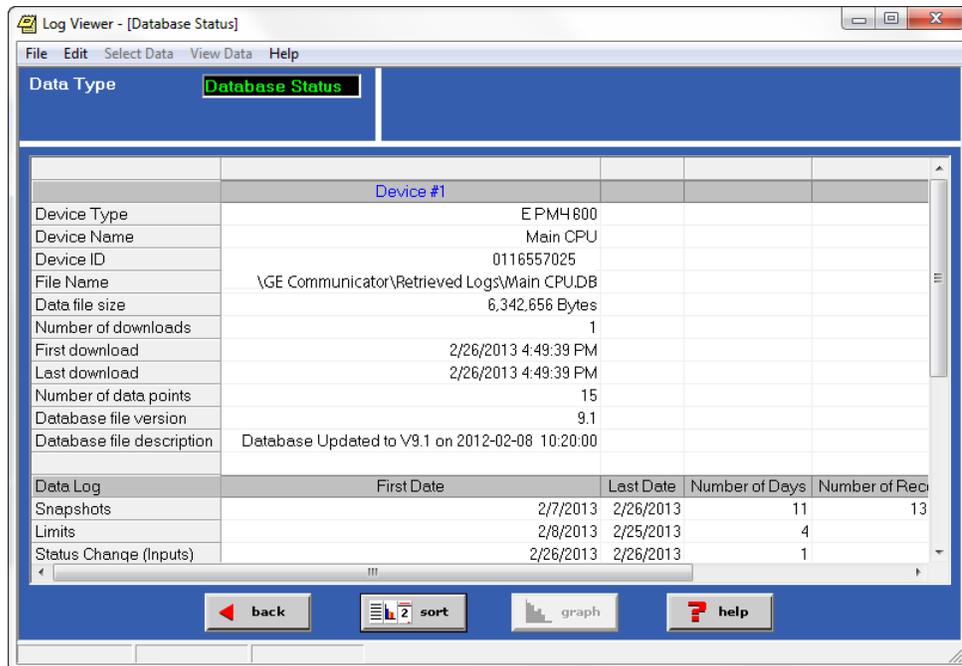
Example log data screens are shown on the next few pages.



Status Change Log Example



System Events Log Example



Database Status Example

Log Viewer - [Limits Log]

File Edit Select Data View Data Help

Data Type: **Limits Log** Time Range: **2/26/2013 11:59:00 PM to 2/8/2013 9:42:49.000 AM**

Sort Criteria: **Descending** [up] [down]

Show Snapshots

Start Date/Time	End Date/Time	Duration (S)	Device	Set Index	Limit ID	State	Data	Value
2/25/2013 5:30:00.000 PM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0
2/25/2013 5:29:01.000 PM			0 Main CPU	1	Limit 2	Below	Meter2 IB	0
2/25/2013 6:35:00.000 AM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0
2/25/2013 6:31:16.000 AM			0 Main CPU	1	Limit 2	Below	Meter2 IB	0
2/23/2013 9:15:00.000 PM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0
2/23/2013 9:14:14.000 PM			0 Main CPU	1	Limit 2	Below	Meter2 IB	0
2/23/2013 7:05:00.000 PM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0
2/23/2013 7:01:13.000 PM			0 Main CPU	1	Limit 2	Below	Meter2 IB	0
2/23/2013 1:30:00.000 AM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0
2/23/2013 1:25:13.000 AM			0 Main CPU	1	Limit 2	Below	Meter2 IB	0
2/23/2013 1:10:00.000 AM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0
2/23/2013 1:06:13.000 AM			0 Main CPU	1	Limit 2	Below	Meter2 IB	0
2/23/2013 12:50:00.000 AM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0
2/23/2013 12:45:11.000 AM			0 Main CPU	1	Limit 2	Below	Meter2 IB	0
2/21/2013 12:15:00.000 PM			0 Main CPU	3	Limit 2	Below	Meter1 IA	0

[back] [sort] [graph] [help]

Limits Log Example

Log Viewer - [All Snapshots]

File Edit Select Data View Data Help

Snapshot Type: **All Snapshots** Time Range: **2/26/2013 4:46:00.000 PM to 2/24/2013 9:00:00.000**

Sort Criteria: **Descending** [up] [down]

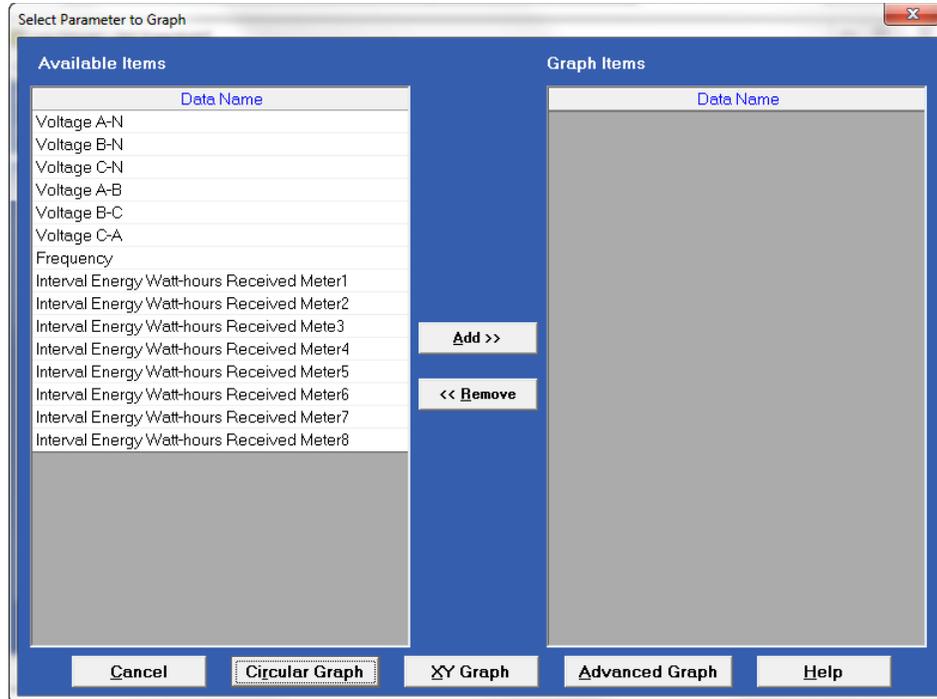
Date/Time	Record Type	Main CPU - Voltage A-N	Main CPU - Voltage B-N	Main CPU - Voltage C-N	Main
2/26/2013 4:46:00.000 PM	Log 2				
2/26/2013 4:45:00.000 PM	Log 2				
2/26/2013 4:44:00.000 PM	Log 1	117.73	117.71	117.71	
2/26/2013 4:44:00.000 PM	Log 2				
2/26/2013 4:43:00.000 PM	Log 1	117.84	117.83	117.82	
2/26/2013 4:43:00.000 PM	Log 2				
2/26/2013 4:42:00.000 PM	Log 1	117.96	117.94	117.94	
2/26/2013 4:42:00.000 PM	Log 2				
2/26/2013 4:41:00.000 PM	Log 1	117.93	117.91	117.91	
2/26/2013 4:41:00.000 PM	Log 2				
2/26/2013 4:40:00.000 PM	Log 1	117.98	117.96	117.96	
2/26/2013 4:40:00.000 PM	Log 2				
2/26/2013 4:39:00.000 PM	Log 1	117.99	117.97	117.97	
2/26/2013 4:39:00.000 PM	Log 2				
2/26/2013 4:38:00.000 PM	Log 1	118.16	118.14	118.14	
2/26/2013 4:38:00.000 PM	Log 2				
2/26/2013 4:37:00.000 PM	Log 1	117.99	117.98	117.97	

[back] [sort] [graph] [help]

Historical Trending Log Example



The Historical Trending Log has a graphing option. Click the Graph button to display a screen that lets you choose data points to display, and the type of graph you want to see: Circular Graph, XY Graph or Advanced Graph. See the *Viewing Logs* Chapter in the *GE Vernova Communicator Instruction Manual* for detailed information on, and instructions for using, these graphs.



Multilin™ EPM 4600 Metering System

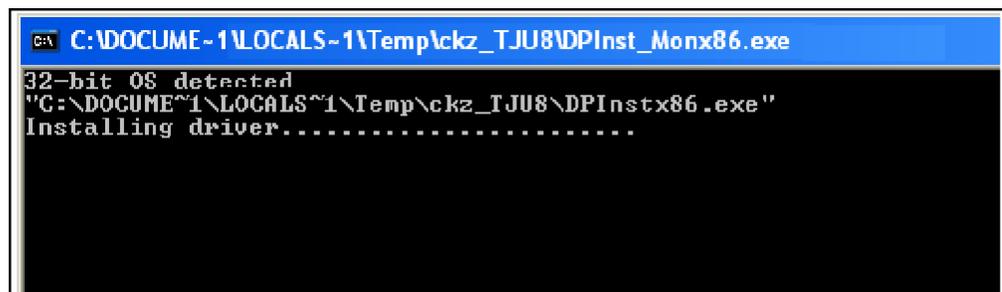
Chapter 12: Installing the USB Virtual COM Port

Introduction

As mentioned in Chapter 5, GE Vernova Digital Energy provides a driver (for operating systems earlier than Windows® 7) that lets you configure the EPM 4600 unit's USB port as a Virtual Serial port. The driver is on the CD that came with your meter. Follow the instructions in this chapter to install the driver and connect to the meter's Virtual port.

Installing the Virtual Port's Driver

1. Insert the CD that came with your meter into your PC's CD drive.
2. Click the Install USB Driver button.
3. The setup program opens a DOS command screen on your PC, as shown below. You will see a message indicating that the driver is being installed.



```
C:\> C:\DOCUME~1\LOCALS~1\Temp\ckz_TJU8\DPInst_Monx86.exe
32-bit OS detected
"C:\DOCUME~1\LOCALS~1\Temp\ckz_TJU8\DPInstx86.exe"
Installing driver.....
```

Once the driver installation is complete, you will see the following message on the DOS command screen.

```

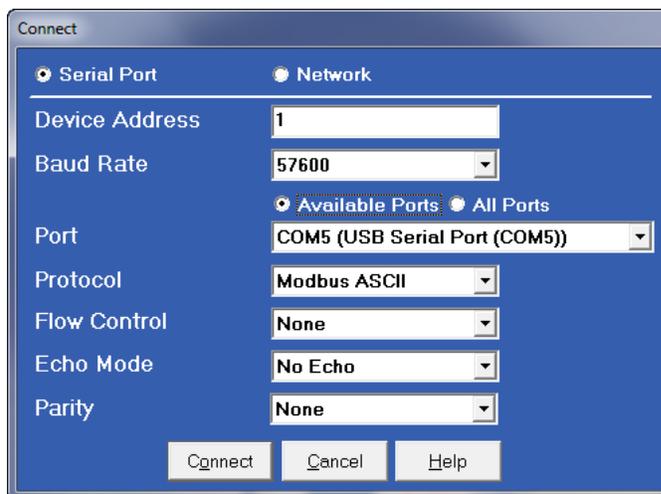
C:\> C:\DOCUME~1\LOCALS~1\Temp\ckz_TJU8\DPInst_Monx86.exe
32-bit OS detected
"C:\DOCUME~1\LOCALS~1\Temp\ckz_TJU8\DPInstx86.exe"
Installing driver.....
FTDI CDM Driver Installation process completed.
Press enter.

```

4. Press Enter. The DOS screen closes.
5. Plug a USB cable into your PC and the EPM 4600 unit's USB port. You will see pop-up message windows telling you that new hardware has been found and that it is installed and ready to use.

Connecting to the Virtual Port

1. Open GE Vernova Communicator.
2. Click the Connect icon. You will see the Connect screen, shown below.



3. Click the Serial Port and Available Ports radio buttons and select the Port labelled as the USB Serial Port.
4. Click **Connect**.

Multilin™ EPM 4600 Metering System

Chapter 13: Modbus Map Overview

Introduction

The Modbus map for the EPM 4600 metering system gives details and information about its possible readings and its programming. The EPM 4600 unit can be programmed using GE Vernova Communicator software. For a programming overview, see “EPM 4600 Metering System Communication and Programming Overview” on page 5-7. For further details, see “Configuring the EPM 4600 Metering System” on page 11-1.

Modbus Register Map Sections

The EPM 4600 unit's Modbus Register map includes the following sections:

- Fixed Data Section, Registers 1- 37, details the EPM 4600 unit's fixed information.
- Meter Data Section, Registers 1000 - 12011, details the EPM 4600 unit's readings, including Primary Readings, Energy Block, Demand Block, Phase Angle Block, Status Block, Minimum and Maximum in Regular and Time Stamp Blocks, Interval Energy Blocks, I/O Card Blocks, and Accumulators.
- Commands Section, Registers 20000 - 26011, details the EPM 4600 unit's Resets Block, Privileged Commands Block and Encryption Block.
- Programmable Settings Section, Registers 30000 - 32575, details all the settings you can program to configure your EPM 4600 unit.
- Log Retrieval Section, Registers 49997 - 51095, details Log Retrieval Block and Log Status Block. See “Retrieving Logs with the Metering System's Modbus Map” on page 14-1

Data Formats

ASCII: ASCII characters packed 2 per register in high, low order and without any termination characters

SINT16/UINT16: 16-bit signed/unsigned integer

SINT32/UINT32: 32-bit signed/unsigned integer spanning 2 registers - the lower-addressed register is the high order half

FLOAT: 32-bit IEEE floating point number spanning 2 registers - the lower-addressed register is the high order half (i.e., contains the exponent)

Floating Point Values

Floating Point Values are represented in the following format:

Register	0																1															
Byte	0								1								0								1							
Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
Meaning	s	e	e	e	e	e	e	e	e	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m
	sign		exponent						mantissa																							

The formula to interpret a Floating Point Value is:

$$-1^{\text{sign}} \times 2^{\text{exponent}-127} \times 1.\text{mantissa} = 0x0C4E11DB9$$

$$-1^{\text{sign}} \times 2^{137-127} \times 1.1000010001110110111001$$

$$-1 \times 2^{10} \times 1.75871956$$

$$-1800.929$$

Register	0x0C4E1																0x01DB9															
Byte	0x0C4								0x0E1								0x01D								0x0B9v							
Bit	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0	7	6	5	4	3	2	1	0
	1	1	0	0	0	1	0	0	1	1	1	0	0	0	0	1	0	0	0	1	1	1	0	1	1	1	0	1	1	1	0	1
Meaning	s	e	e	e	e	e	e	e	e	m	m	m	m	m	m	m																
	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m	m																
	sign		exponent						mantissa																							
	1		0x089 + 137						0b011000010001110110111001																							

Formula Explanation:

C4E11DB9 (hex) 11000100 11100001 00011101 10111001
(binary)

The sign of the mantissa (and therefore the number) is 1, which represents a negative value.

The Exponent is 10001001 (binary) or 137 decimal.

The Exponent is a value in excess 127. So, the Exponent value is 10. The Mantissa is 11000010001110110111001 binary.

With the implied leading 1, the Mantissa is (1).611DB9 (hex).

The Floating Point Representation is therefore -1.75871956 times 2 to the 10. Decimal equivalent: -1800.929



- Exponent = the whole number before the decimal point.
- Mantissa = the positive fraction after the decimal point.

Important Note Concerning the EPM 4600 Unit's Modbus Map

In depicting Modbus registers (Addresses), the EPM 4600 unit's Modbus map uses Holding Registers only.

Hex Representation

The representation shown in the table below is used by developers of Modbus drivers and libraries, SEL 2020/2030 programmers and Firmware Developers. The EPM 4600 unit's Modbus map also uses this representation.

Hex	Description
0008 - 000F	EPM 4600 Unit Serial Number

Decimal Representation

The EPM 4600 unit's Modbus map defines Holding Registers as (4X) registers. Many popular SCADA and HMI packages and their Modbus drivers have user interfaces that require users to enter these Registers starting at 40001. So instead of entering two separate values, one for register type and one for the actual register, they have been combined into one number.

The EPM 4600 unit's Modbus map uses a shorthand version to depict the decimal fields, i.e., not all of the digits required for entry into the SCADA package UI are shown. For example:

You need to display the EPM 4600 unit's serial number in your SCADA application. The EPM 4600 unit's Modbus map shows the following information for EPM 4600 unit serial number:

Decimal	Description
9 - 16	EPM 4600 Unit Serial Number

In order to retrieve the EPM 4600 unit's serial number, enter 40009 into the SCADA UI as the starting register, and 8 as the number of registers.

- In order to work with SCADA and Driver packages that use the 40001 to 49999 method for requesting holding registers, take 40000 and add the value of the register (Address) in the decimal column of the Modbus map. Then enter the number (e.g., 4009) into the UI as the starting register.
- For SCADA and Driver packages that use the 400001 to 465536 method for requesting holding registers take 400000 and add the value of the register (Address) in the decimal column of the Modbus map. Then enter the number (e.g., 400009) into the UI as the starting register. The drivers for these packages strip off the leading four and subtract 1 from the remaining value. This final value is used as the starting register or register to be included when building the actual modbus message.

Modbus Register Maps and Retrieving Logs

- Appendix A: "EPM 4600-T (Three Phase) Modbus Map" on page A-1 contains the EPM 4600-T Modbus map.
- Appendix B: "EPM 4600-S (Single Phase) Modbus Map" on page B-1 contains the EPM 4600-S Modbus map.
- Chapter 13: "Retrieving Logs with the Metering System's Modbus Map" on page 14-1 contains instructions on retrieving EPM 4600 unit logs via the Modbus map.

Multilin™ EPM 4600 Metering System

Chapter 14: Retrieving Logs with the Metering System's Modbus Map

Overview

This chapter describes the log interface system of the EPM 4600 unit from a programming point of view. It is intended for programmers implementing independent drivers for log retrieval from the EPM 4600 unit. It describes the meaning of the EPM 4600's Modbus Registers related to log retrieval and conversion, and details the procedure for retrieving a log's records.



- All references assume the use of Modbus function codes 0x03, 0x06, and 0x10, where each register is a 2 byte MSB (Most Significant Byte) word, except where otherwise noted.
- The carat symbol (^) notation is used to indicate mathematical "power." For example, 2^8 is 2 x 2 x 2 x 2 x 2 x 2 x 2 x 2, which equals 256.

Data Formats

Time stamp: Stores a date from 2000 to 2099. Time stamp has a Minimum resolution of 1 second.

Byte	0	1	2	3	4	5
Value	Year	Month	Day	Hour	Minute	Second
Range	0-99 (+2000)	1-12	1-31	0-23	0-59	0-59
Mask	0x7F	0x0F	0x1F	0x1F	0x3F	0x3F

The high bits of each time stamp byte are used as flags to record EPM 4600 unit state information at the time of the time stamp. These bits should be masked out, unless needed.

EPM 4600 Metering System Logs

The EPM 4600 unit has 6 logs: System Event, Alarm (Limits), 3 Historical, and I/O Change. Each log is described below.

1. **System Event (0):** The System Event log is used to store events which happen in, and to, the EPM 4600 unit. Events include Startup, Reset Commands, Log Retrievals, etc. The System Event Log Record takes 20 bytes, 14 bytes of which are available when the log is retrieved.

Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Value	timestamp					Group	Event	Mod	Chan	Param1	Param2	Param3	Param4	



The complete Systems Events table is shown in "Log Record Interpretation" on page 14-18.

2. **Alarm Log (1):** The Alarm Log records the states of the 8 Limits programmed in the EPM 4600 unit.
 - Whenever a limit goes out (above or below), a record is stored with the value that caused the limit to go out.
 - Whenever a limit returns within limit, a record is stored with the "most out of limit" value for that limit while it was out of limit.

The Alarm Log Record uses 16 bytes, 10 bytes of which are available when the log is retrieved.

Byte	0	1	2	3	4	5	6	7	8	9
Value	timestamp					direction	limit#	Value%		

The limit # byte is broken into a type and an ID.

Bit	0	1	2	3	4	5	6	7
Value	type	0	0	0	0	Limit ID		

3. **Historical Log 1 (2):** The Historical Log records the values of its assigned registers at the programmed interval.



See "Block Definitions" on page 3. for details on programming and interpreting the log.

Byte	0	1	2	3	4	5	6	-	-	N
Value	timestamp						values . . .			

4. **Historical Log 2 (3):** Same as Historical Log 1.
5. **Historical Log 3 (4):** Same as Historical Log 1.

6. **I/O Change Log (5):** The I/O Change Log records changes in the input and output of the Digital I/O Board (Relay Contact Outputs/Contact Sensing Inputs).

I/O Change Log tables:

Byte	0	1	2	3	4	5	6	7
Value	Timestamp					Card 1 Changes		Card 1 States

Card Change Flags:

Bit	7	6	5	4	3	2	1	0
Value	Out 4 Change	Out 3 Change	Out 2 Change	Out 1 Change	In 4 Change	In 3 Change	In 2 Change	In 1 Change

Card Current States:

Bit	7	6	5	4	3	2	1	0
Value	Out 4 State	Out 3 State	Out 2 State	Out 1 State	In 4 State	In 3 State	In 2 State	In 1 State

Block Definitions

This section describes the Modbus Registers involved in retrieving and interpreting an EPM 4600 unit Log. Other sections refer to certain 'values' contained in this section.

See the corresponding value in this section for details.



NOTE

- "Register" is the Modbus Register Address in 0-based Hexadecimal notation. To convert it to 1-based decimal notation, convert from hex16 to decimal10 and add 1. For example: 0x03E7 = 1000.
- "Size" is the number of Modbus Registers (2 byte) in a block of data.

Historical Log Programmable Settings:

The Historical Logs are programmed using a list of Modbus Registers that will be copied into the Historical Log record. In other words, Historical Log uses a direct copy of the Modbus Registers to control what is recorded at the time of record capture.

To supplement this, the programmable settings for the Historical Logs contain a list of descriptors, which group registers into items. Each item descriptor lists the data type of the item, and the number of bytes for that item. By combining these two lists, the Historical Log record can be interpreted.

For example: Registers 0x03E7 and 0x03E8 are programmed to be recorded by the historical log. The matching descriptor gives the data type as float, and the size as 4 bytes. These registers program the log to record "Primary Readings Volts A-N."

Historical Log Blocks:

Start Register: 0x7917 (Historical Log
1) 0x79D7 (Historical
Log 2) 0x7A97
(Historical Log 3)

Block Size: 192 registers per log (384 bytes)

The Historical Log programmable settings are comprised of 3 blocks, one for each log. Each is identical to the others, so only Historical Log 1 is described here. All register addresses in this section are given as the Historical Log 1 address (0x7917).

Each Historical Log Block is composed of 3 sections: The header, the list of registers to log, and the list of item descriptors.

Header:

Registers: 0x7917 - 0x7918

Size: 2 registers

Byte	0	1	2	3
Value	# Registers	# Sectors		Interval

- **# Registers:** The number of registers to log in the record. The size of the record in memory is $[12 + (\# \text{ Registers} \times 2)]$. The size during normal log retrieval is $[6 + (\# \text{ Registers} \times 2)]$. If this value is 0, the log is disabled. Valid values are {0-117}.
- **# Sectors:** The number of Flash Sectors allocated to this log. Each sector is 262114 bytes, minus a sector header of 20 bytes. 3 sectors for Software option B, and 111 sectors for Software option C, are available for allocation between Historical Logs 1, 2, and 3. The sum of all Historical Logs may be less than 3 sectors for Software option B, and 111 sectors for Software option C. If this value is 0, the log is disabled. Valid values are {0-111}.
- **Interval:** The interval at which the Historical Log's Records are captured. This value is an enumeration:

0x01	1 minute
0x02	3 minute
0x04	5 minute
0x08	10 minute
0x10	15 minute
0x20	30 minute
0x40	60 minute
0x80	End of Interval (EOI) Pulse*

* Setting the interval to EOI causes a record to be logged whenever an EOI pulse event is generated. This is most commonly used in conjunction with the Digital I/O Option Cards.



The interval between records will not be even (fixed), and thus should not be used with programs that expect a fixed interval.

Register List:

Registers: 0x7919 - 0x798D

Size: 1 register per list item, 117 list items

The Register List controls what Modbus Registers are recorded in each record of the Historical Log. Since many items, such as Voltage, Energy, etc., take up more than 1 register, multiple registers need to be listed to record those items.

For example: Registers 0x03E7 and 0x03E8 are programmed to be recorded by the historical log. These registers program the log to record "Primary Readings Volts A-N."

- Each unused register item should be set to 0x0000 or 0xFFFF to indicate that it should be ignored.
- The actual size of the record, and the number of items in the register list which are used, is determined by the # registers in the header.
- Each register item is the Modbus Address in the range of 0x0000 to 0xFFFF.

Item Descriptor List:

Registers: 0x798E - 0x79C8

Size: 1 byte per item, 117 bytes (59 registers)

While the Register List describes what to log, the Item Descriptor List describes how to interpret that information. Each descriptor describes a group of register items, and what they mean.

Each descriptor is composed of 2 parts:

- Type: The data type of this descriptor, such as signed integer, IEEE floating point, etc. This is the high nibble of the descriptor byte, with a value in the range of 0-14. If this value is 0xFF, the descriptor should be ignored.

0	ASCII: An ASCII string, or byte array
1	Bitmap: A collection of bit flags
2	Signed Integer: A 2's Complement integer
3	Float: An IEEE floating point
4	Energy: Special Signed Integer, where the value is adjusted by the energy settings in the EPM 4600 unit's Programmable Settings.
5	Unsigned Integer
6	Signed Integer 0.1 scale: Special Signed Integer, where the value is divided by 10 to give a 0.1 scale.
7-14	Unused
15	Disabled: used as end list marker.

- Size: The size in bytes of the item described. This number is used to determine the pairing of descriptors with register items.

For example: If the first descriptor is 4 bytes, and the second descriptor is 2 bytes, then the first 2 register items belong to the 1st descriptor, and the 3rd register item belongs to the 2nd descriptor.



As can be seen from the example, above, there is not a 1-to-1 relation between the register list and the descriptor list. A single descriptor may refer to multiple register items.

Register Items	Descriptors
0x03C7/ byte 0x03C8	Float, 4
0x1234	Signed Int, 2 byte



The sum of all descriptor sizes must equal the number of bytes in the data portion of the Historical Log record.

Log Status Block:

The Log Status Block describes the current status of the log in question. There is one header block for each of the logs. Each log's header has the following base address:

Log	Base Address
System:	0xC737
Historical 1:	0xC747
Historical 2:	0xC757
Historical 3:	0xC767
Alarm:	0xC777
I/O Change:	0xC787

Bytes	Value	Type	Range	# Bytes
0-3	Max Records	UINT32	0 to 4,294,967,294	4
4-7	Number of Records Used	UINT32	1 to 4,294,967,294	4
8-9	Record Size in Bytes	UINT16	4 to 250	2
10-11	Log Availability	UINT16		2
12-17	Timestamp, First Record	TSTAMP	1Jan2000 - 31Dec2099	6
18-23	Timestamp, Last Record	TSTAMP	1Jan2000 - 31Dec2099	6
24-31	Reserved			8

- Max Records: The maximum number of records the log can hold given the record size, and sector allocation. The data type is an unsigned integer from 0 - 2³².

- Records Used: The number of records stored in the log. This number will equal the Max Records when the log has filled. This value will be set to 1 when the log is reset. The data type is an unsigned integer from 1 - 2³².



The first record in every log before it has rolled over is a "dummy" record, filled with all 0xFF's. When the log is filled and rolls over, this record is overwritten.

- Record Size: The number of bytes in this record, including the timestamp. The data type is an unsigned integer in the range of 14 - 242.
- Log Availability: A flag indicating if the log is available for retrieval, or if it is in use by another port.

0	Log Available for retrieval
1	In use by COM1 (RS485/Ethernet/WiFi)
2	In use by COM2 (USB)
3	In use by COM3 (RS485)
0xFFFF	Log Not Available - the log cannot be retrieved. This indicates that the log is disabled.



To query the port by which you are currently connected, use the Port ID

register: Register: 0x1193
Size: 1 register

Description: A value from 1-4, which enumerates the port that the requestor is currently connected on.



- When Log Retrieval is engaged, the Log Availability value will be set to the port that engaged the log. The Log Availability value will stay the same until either the log has been disengaged, or 5 minutes have passed with no activity. It will then reset to 0 (available).
- Each log can only be retrieved by one port at a time.
 - Only one log at a time can be retrieved.
- First Timestamp: Timestamp of the oldest record.
- Last Timestamp: Timestamp of the newest record.

Log Retrieval Block:

The Log Retrieval Block is the main interface for retrieving logs. It is comprised of 2 parts: the header and the window. The header is used to program the particular data the EPM 4600 unit presents when a log window is requested. The window is a sliding block of data that can be used to access any record in the specified log.

Session Com Port: The EPM 4600 unit's Com Port which is currently retrieving logs. Only one Com Port can retrieve logs at any one time.

Registers: 0xC34E - 0xC34E

Size: 1 register

0	No Session Active
1	COM1 (RS485/Ethernet/WiFi)

- 2 COM2 (USB)
- 3 COM3 (RS485)

To get the current Com Port, see the NOTE on querying the port, on the previous page.

Log Retrieval Header:

The Log Retrieval Header is used to program the log to be retrieved, the record(s) of that log to be accessed, and other settings concerning the log retrieval.

Registers: 0xC34F - 0xC350

Size: 2 registers

Bytes	Value	Type	Format	Description	# Bytes
0-1	Log Number, Enable, Scope	UINT16	nnnnnnnn e s s s s s s s	nnnnnnnn - log to retrieve, e - retrieval session enable s s s s s s s - retrieval mode	2
2-3	Records per Window, Number of Repeats	UINT16	wwwwwwww nnnnnnnn	wwwwwwww - records per window, nnnnnnnn - repeat count	2

- Log Number: The log to be retrieved. Write this value to set which log is being retrieved.

- 0 System Events
- 1 Historical Log 1
- 2 Historical Log 2
- 3 Historical Log 3
- 4 Alarm Log
- 5 I/O Change Log

Enable: This value sets if a log retrieval session is engaged (locked for retrieval) or disengaged (unlocked, read for another to engage). Write this value with 1(enable) to begin log retrieval. Write this value with 0(disable) to end log retrieval.

- 0 Disable
- 1 Enable

Scope: Sets the amount of data to be retrieved for each record. The default should be 0 (normal).

- 0 Normal
- 1 Timestamp Only
- 2 Image

- Normal [0]: The default record. Contains a 6-byte timestamp at the beginning, then N data bytes for the record data.

- Timestamp [1]: The record only contains the 6-byte timestamp. This is most useful to determine a range of available data for non-interval based logs, such as Alarms and System Events.
- Image [2]: The full record, as it is stored in memory. Contains a 2-byte checksum, 4-byte sequence number, 6-byte timestamp, and then N data bytes for the record data.

Records Per Window: The number of records that fit evenly into a window. This value is set-able, as less than a full window may be used. This number tells the retrieving program how many records to expect to find in the window.



This must be set to 1 for waveform retrieval.

$(\text{RecPerWindow} \times \text{RecSize}) = \text{\#bytes used in the window. This value should be } ((123 \times 2) \setminus \text{recSize}),$
rounded down.

For example, with a record size of 30, the $\text{RecPerWindow} = ((123 \times 2) \setminus 30) = 8.2 \sim = 8$

- Number of Repeats: Specifies the number of repeats to use for the Modbus Function Code 0x23 (35). Since the EPM 4600 unit must pre-build the response to each log window request, this value must be set once, and each request must use the same repeat count. Upon reading the last register in the specified window, the record index will increment by the number of repeats, if auto-increment is enabled. “Modbus Function Code 0x23” on page 14-10 has additional information on Function Code 0x23.

- 0 Disables auto-increment
- 1 No Repeat count, each request will only get 1 window.
- 2-8 2-8 windows returned for each Function Code 0x23 request.

Bytes	Value	Type	Format	Description	# Bytes
0-3	Offset of First Record in Window	UINT32	sssssss nnnnnnnn nnnnnnnn nnnnnnnn	sssssss - window status nn...nn - 24-bit record index number.	4
4-249	Log Retrieve Window	UINT16			246

Log Retrieval Window Block:

The Log Retrieval Window block is used to program the data you want to retrieve from the log. It also provides the interface used to retrieve that data.

Registers: 0xC351 - 0xC3CD

Size: 125 registers

- Window Status: The status of the current window. Since the time to prepare a window may exceed an acceptable modbus delay (1 second), this acts as a state flag, signifying when the window is ready for retrieval. When this value indicates

that the window is not ready, the data in the window should be ignored. Window Status is Read-only, any writes are ignored.

0 Window is Ready

0xFF Window is Not Ready

- Record Number: The record number of the first record in the data window. Setting this value controls which records will be available in the data window.
 - When the log is engaged, the first (oldest) record is "latched." This means that record number 0 will always point to the oldest record at the time of latching, until the log is disengaged (unlocked).
 - To retrieve the entire log using auto-increment, set this value to 0, and retrieve the window repeatedly, until all records have been retrieved.
- When auto-increment is enabled, this value will automatically increment so that the window will "page" through the records, increasing by RecordsPerWindow each time that the last register in the window is read.
- When auto-increment is not enabled, this value must be written-to manually, for each window to be retrieved.
- Log Retrieval Data Window: The actual data of the records, arranged according to the above settings.

Log Retrieval

Log Retrieval is accomplished in 3 basic steps:

1. Engage the log.
2. Retrieve each of the records.
3. Disengage the log.

Auto-Increment

In GE Vernova Digital Energy's traditional Modbus retrieval system, you write the index of the block of data to retrieve, then read that data from a buffer (window). To improve the speed of retrieval, the index can be automatically incremented each time the buffer is read.

In the EPM 4600 unit, when the last register in the data window is read, the record index is incremented by the Records per Window.

Modbus Function Code 0x23

QUERY

Field Name	Example (Hex)
Slave Address	01
Function	23
Starting Address Hi	C3

Starting Address Lo	51
# Points Hi	00
# Points Lo	7D
Repeat Count	04

RESPONSE

Field Name	Example (Hex)
Slave Address	01
Function	23
# Bytes Hi	03
# Bytes Lo	E0
Data	...

Function Code 0x23 is a user defined Modbus function code, which has a format similar to Function Code 0x03, except for the inclusion of a "repeat count." The repeat count (RC) is used to indicate that the same N registers should be read RC number of times. (See "Block Definitions" on page 3..)



NOTE

- By itself this feature would not provide any advantage, as the same data will be returned RC times. However, when used with auto-incrementing, this function condenses up to 8 requests into 1 request, which decreases communication time, as fewer transactions are being made.
- Keep in mind that the contents of the response data is the block of data you requested, repeated N times. For example, when retrieving log windows, you normally request both the window index, and the window data. This means that the first couple of bytes of every repeated block will contain the index of that window.
- In the EPM 4600 unit repeat counts are limited to 8 times for Modbus RTU, and 4 times for Modbus ASCII.

The response for Function Code 0x23 is the same as for Function Code 0x03, with the data blocks in sequence.

NOTICE

Before using Function code 0x23, always check to see if the current connection supports it. Some relay devices do not support user defined function codes; if that is the case, the message will stall. Other devices don't support 8 repeat counts.

Log Retrieval Procedure

The following procedure documents how to retrieve a single log from the oldest record to the newest record, using the "normal" record type (see Scope). All logs are retrieved using the same method. See "Log Retrieval Example" on page 14-13.



NOTE

- This example uses auto-increment.
- In this example, Function Code 0x23 is not used.
- You will find referenced topics in "Block Definitions" on page 14-3.
- Modbus Register numbers are listed in brackets.

I. Engage the Log:

a. Read the Log Status Block.

- i. Read the contents of the specific logs' status block [0xC737+, 16 registers] (see Log Headers).
- ii. Store the # of Records Used, the Record Size, and the Log Availability.
- iii. If the Log Availability is not 0, stop Log Retrieval; this log is not available at this time. If Log Availability is 0, proceed to step 1b (Engage the log).

This step is done to ensure that the log is available for retrieval, as well as retrieving information for later use.

b. Engage the log: write log to engage to Log Number, 1 to Enable, and the desired mode to Scope (default 0 (Normal)) [0xC34F, 1 register]. This is best done as a single-register write.

This step will latch the first (oldest) record to index 0, and lock the log so that only this port can retrieve the log, until it is disengaged.

c. Verify the log is engaged: read the contents of the specific logs' status block [0xC737+, 16 registers] again to see if the log is engaged for the current port (see Log Availability). If the Log is not engaged for the current port, repeat step 1b (Engage the log).

d. Write the retrieval information.

- i. Compute the number of records per window, as follows: $\text{RecordsPerWindow} = (246 \setminus \text{RecordSize})$

If using 0x23, set the repeat count to 2-8. Otherwise, set it to 1.

Since we are starting from the beginning for retrieval, the first record index is 0.

- ii. Write the Records per window, the Number of repeats (1), and Record Index (0) [0xC350, 3 registers].

This step tells the EPM 4600 unit what data to return in the window.

2. Retrieve the records:

a. Read the record index and window: read the record index, and the data window [0xC351, 125 registers].

- If the EPM 4600 unit Returns a Slave Busy Exception, repeat the request.
- If the Window Status is 0xFF, repeat the request.
- If the Window Status is 0, go to step 2b (Verify record index).
- We read the index and window in 1 request to minimize communication time, and to ensure that the record index matches the data in the data window returned.
- Space in the window after the last specified record ($\text{RecordSize} \times \text{RecordPerWindow}$) is padded with 0xFF, and can be safely discarded.

b. Verify that the record index incremented by Records Per Window. The record index of the retrieved window is the index of the first record in the window. This value will increase by Records Per Window each time the window is read, so it should be 0, N, N x 2, N x 3 . . . for each window retrieved.



- If the record index matches the expected record index, go to step 2c (Compute next expected record index).
 - If the record index does not match the expected record index, then go to step 1d (Write the retrieval information), where the record index will be the same as the expected record index. This will tell the EPM 4600 unit to repeat the records you were expecting.
- c. Compute next Expected Record Index.
- If there are no remaining records after the current record window, go to step 3 (Disengage the log).
 - Compute the next expected record index by adding Records Per Window, to the current expected record index. If this value is greater than the number of records, re-size the window so it only contains the remaining records and go to step 1d (Write the retrieval information), where the Records Per Window will be the same as the remaining records.
3. Disengage the log: write the Log Number (of log being disengaged) to the Log Index and 0 to the Enable bit [0xC34F, 1 register].

Log Retrieval Example

The following example illustrates a log retrieval session. The example makes the following assumptions:

- Log Retrieved is Historical Log 1 (Log Index 1).
 - Auto-Incrementing is used.
 - Function Code 0x23 is not used (Repeat Count of 1).
 - The Log contains Volts-AN, Volts-BN, Volts-CN (12 bytes).
 - 100 Records are available (0-99).
 - COM Port 2 (USB) is being used (see Log Availability).
 - There are no Errors.
 - Retrieval is starting at Record Index 0 (oldest record).
 - Protocol used is Modbus ASCII. The checksum is left off for simplicity.
 - The EPM 4600 unit is at device address 1.
 - No new records are recorded to the log during the log retrieval process.
- I. Read [0xC747, 16 registers], Historical Log 1 Header Block.

Send: 0103 C747 0010

Command:

Register Address: 0xC747

Registers: 16

Receive: 010320 00000100 00000064 0012
0000 0C0717101511
0C0718101511***

0000000000000000

Data:

Max Records: 0x100 = 256 records maximum.
 Num Records: 0x64 = 100 records currently
 logged. Record Size: 0x12 = 18 bytes per record.
 Log Availability: 0x00 = 0, not in use, available for
 retrieval. First Timestamp: 0x0C0717101511 = July 23, 2012,
 16:21:17
 Last Timestamp: 0x0C0717101511 = July 24, 2012, 16:21:17



This indicates that Historical Log 1 is available for retrieval.

2. Write 0x0180 -> [0xC34F, 1 register], Log Enable.

Send: 0106 C34F 0180

Command:

Register Address: 0xC34F
 # Registers: 1 (Write Single Register Command)

Data:

Log Number: 1 (Historical Log 1)
 Enable: 1 (Engage log)
 Scope: 0 (Normal Mode)

Receive: 0106C34F0180 (echo)



This engages the log for use on this COM Port, and latches the oldest record as record index 0.

3. Read [0xC747, 16 registers], Availability is 0.

Send: 0103 C747 0010

Command:

Register Address: 0xC747
 # Registers: 16

Receive: 010320 00000100 00000064 0012
 0002 0C0717101511 0C0718101511
 0000000000000000

Data:

Max Records: 0x100 = 256 records maximum.
 Num Records: 0x64 = 100 records currently
 logged.

Record Size: 0x12 = 18 bytes per record.
 Log Availability: 0x02 = 1, In use by COM2, USB (the currentport)
 First Timestamp: 0x0C0717101511 = July 23, 2012, 16:21:17
 Last Timestamp: 0x0C0717101511 = July 24, 2012, 16:21:17



This indicates that the log has been engaged properly in step 2. Proceed to retrieve the log.

4. Compute #RecPerWin as $(246 \div 18) = 13$. Write 0x0D01 0000 0000 -> [0xC350, 3 registers] Write Retrieval Info. Set Current Index as 0.

Send: 0110 C350 0003 06 0D01 00 000000

Command:

Register Address: 0xC350

Registers: 3, 6 bytes

Data:

Records per Window: 13. Since the window is 246 bytes, and the record is 18 bytes, $246 \div 18 = 13.66$, which means that 13 records evenly fit into a single window. This is 234 bytes, which means later on, we only need to read 234 bytes (117 registers) of the window to retrieve the records.

of Repeats: 1. We are using auto-increment (so not 0), but not function code 0x23.

Window Status: 0 (ignore)

Record Index: 0, start at the first record.

Receive: 0110C3500003 (command ok)



- This sets up the window for retrieval; now we can start retrieving the records.
- As noted above, we compute the records per window as $246 \div 18 = 13.66$, which is rounded to 13 records per window. This allows the minimum number of requests to be made to the EPM 4600 unit, which increases retrieval speed.

5. Read [0xC351, 125 registers], first 2 registers are status/index, last 123 registers are window data. Status OK.

Send: 0103 C351 007D

Command:

Register Address: 0xC351

Registers: 0x7D, 125 registers

Receive: 0103FA 00000000
 0C0717101511FFFFFFFFFFFFFFFFFFFFFFFF

FFFFF

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0C071710160042FAAACF42FAAD1842FAA9A8 . . .

Data:

Window Status: 0x00 = the window is ready.
 Index: 0x00 = 0, The window starts with the 0'th record, which is the oldest record.
 Record 0: The next 18 bytes is the 0'th record (filler).
 Timestamp: 0x0C0717101511, = July 23, 2012, 16:21:17
 Data: This record is the "filler" record. It is used by the EPM 4600 unit so that there is never 0 records. It should be ignored. It can be identified by the data being all 0xFF.

NOTE: Once a log has rolled over, the 0'th record will be a valid record, and the filler record will disappear.

Record 1: The next 18 bytes is the 1'st record.
 Timestamp: 0x0C0717101600 July 23, 2012, 16:22:00
 Data:
 Volts AN: 0x42FAAACF, float = 125.33~
 Volts BN: 0x42FAAD18, float = 125.33~
 Volts CN: 0x42FAA9A8, float = 125.33~

. . . 13 records



- This retrieves the actual window. Repeat this command as many times as necessary to retrieve all of the records when auto-increment is enabled.
- Note the filler record. When a log is reset (cleared) in the EPM 4600 unit, the EPM 4600 unit always adds a first "filler" record, so that there is always at least 1 record in the log. This "filler" record can be identified by the data being all 0xFF, and it being index 0. If a record has all 0xFF for data, the timestamp is valid, and the index is NOT 0, then the record is legitimate.
- When the "filler" record is logged, its timestamp may not be "on the interval." The next record taken will be on the next "proper interval," adjusted to the hour. For example, if the interval is 1 minute, the first "real" record will be taken on the next minute (no seconds). If the interval is 15 minutes, the next record will be taken at :15, :30, :45, or :00 - whichever of those values is next in sequence.

6. Compare the index with Current Index.



NOTE

- The Current Index is 0 at this point, and the record index retrieved in step 5 is 0: thus we go to step 8.
- If the Current Index and the record index do not match, go to step 7. The data that was received in the window may be invalid, and should be discarded.

7. Write the Current Index to [0xC351, 2 registers].

Send: 0110 C351 0002 04 00 00000D

Command:

Register Address:

0x

C351

Registers: 2, 4 bytes
Data:
 Window Status: 0 (ignore)
 Record Index: 0x0D = 13, start at the 14th record.

Receive: 0110C3510002 (command ok)



- This step manually sets the record index, and is primarily used when an out-of-order record index is returned on a read (step 6).
 - The example assumes that the second window retrieval failed somehow, and we need to recover by requesting the records starting at index 13 again.
8. For each record in the retrieved window, copy and save the data for later interpretation.
 9. Increment Current Index by RecordsPerWindow.



- This is the step that determines how much more of the log we need to retrieve.
 - On the first N passes, Records Per Window should be 13 (as computed in step 4), and the current index should be a multiple of that (0, 13, 26, . . .). This amount will decrease when we reach the end (see step 10).
 - If the current index is greater than or equal to the number of records (in this case 100), then all records have been retrieved; go to step 12. Otherwise, go to step 10 to check if we are nearing the end of the records.
10. If number records - current index < RecordsPerWindow, decrease to match.



- Here we bounds-check the current index, so we don't exceed the records available.
 - If the number of remaining records (#records - current index) is less than the Records per Window, then the next window is the last, and contains less than a full window of records. Make records per window equal to remaining records (#records-current index). In this example, this occurs when current index is 91 (the 8'th window). There are now 9 records available (100-91), so make Records per Window equal 9.
11. Repeat steps 5 through 10.



- Go back to step 5, where a couple of values have changed.

Pass	CurIndex	FirstReclIndex	RecPerWindow
0	0	0	13
1	13	13	13
2	26	26	13
3	39	39	13
4	52	52	13
5	65	65	13
6	78	78	13
7	91	91	9

```

Pas      CurlIndex  FirstReclIndex  RecPerWindow
  S
  8         100          -----          -----
    
```

- At pass 8, since Current Index is equal to the number of records (100), log retrieval should stop; go to step 12 (see step 9 Notes).

12. No more records available, clean up.

13. Write 0x0000 -> [0xC34F, 1 register], disengage the log.

Send: 0106 C34F 0000

Command:

Register Address: 0xC34F

Registers: 1 (Write Single Register Command)

Data:

Log Number: 0 (ignore)

Enable: 0 (Disengage log)

Scope: 0 (ignore)

 Receive: 0106C34F0000 (echo)



- This disengages the log, allowing it to be retrieved by other COM ports.
- The log will automatically disengage if no log retrieval action is taken for 5 minutes.

Log Record Interpretation

The records of each log are composed of a 6 byte timestamp, and N data. The content of the data portion depends on the log.

System Event Record:

Byte	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Value	timestamp						Group	Event	Mod	Chan	Para m 1	Para m 2	Para m 3	Para m 4

Size: 14 bytes (20 bytes image).

Data: The System Event data is 8 bytes; each byte is an enumerated value.

- Group: Group of the event.
- Event: Event within a group.
- Modifier: Additional information about the event, such as number of sectors or log number.
- Channel: The port of the EPM 4600 unit that caused the event.

```

0          Firmware
1          COM 1 (RS485/Ethernet/WiFi)
2          COM 2 (USB)
    
```

3 COM 3 (RS485)

Param 1-4: These are defined for each event (see following table).



The System Log Record is 20 bytes, consisting of the Record Header (12 bytes) and Payload (8 bytes). The Timestamp (6 bytes) is in the header. Typically, software will retrieve only the timestamp and payload, yielding a 14-byte record. The table below shows all defined payloads.

Group (Event group)	Event (Event within group)	Mod (Event modifier)	Channel (1-3 for COMs, 0 for FW)	Parm1	Parm2	Parm3	Parm4	Comments
0								Startup
	0	0	0	FW version				Meter Run Firmware Startup
1								Log Activity
	1	log#	1-3	0xFF	0xFF	0xFF	0xFF	Reset
	2	log#	1-3	0xFF	0xFF	0xFF	0xFF	Log Retrieval Begin
	3	log#	0-3	0xFF	0xFF	0xFF	0xFF	Log Retrieval End
2								Clock Activity
	1	old year	1-3	old month, day, hour, minute, second				Clock Changed
	2	0	0	0xFF	0xFF	0xFF	0xFF	Daylight Time On
	3	0	0	0xFF	0xFF	0xFF	0xFF	Daylight Time Off
3								System Resets
	1	0	0-3	0xFF	id mm#	0xFF	0xFF	Max & Min Reset
	2	0	0-3	0xFF	id e#	0xFF	0xFF	Energy Reset
	3	slot#	0-3	0xFF	acc_typ#	0xFF	0xFF	Reset Relay Board Accumulators
4								Settings Activity
	1	0	1-3	0xFF	0xFF	0xFF	0xFF	Password

								Change d
--	--	--	--	--	--	--	--	-------------

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Group (Event group)	Event (Event within group)	Mod (Event modifier)	Channel (1-3 for COMs, 0 for FW)	Parm1	Parm2	Parm3	Parm4	Comments
	2	0	1-3	old Software option	new Software option	0xFF	0xFF	Software option Changed
	3	0	1-3	0xFF	0xFF	0xFF	0xFF	Programmable Settings Changed
	4	0	1-3	0xFF	0xFF	0xFF	0xFF	Measurement Stopped
5								Boot Activity
	1	0	1-3	FW version				Exit to Boot
6								Error Reporting & Recovery
	4	log #	0	0xFF	0xFF	0xFF	0xFF	Log Babbling Detected
	5	log #	0	# records discarded		time in seconds		Babbling Log Periodic Summary
	6	log #	0	# records discarded		time in seconds		Log Babbling End Detected
	7	sector#	0	error count		stimulus		Flash Sector Error
	8	0	0	0xFF	0xFF	0xFF	0xFF	Flash Error Counters Reset
	9	0	0	0xFF	0xFF	0xFF	0xFF	Flash Job Queue Overflow
0x88								
	1	sector#	0	log #	0xFF	error count		acquire sector
	2	sector#	0	log #	0xFF	0xFF	0xFF	release sector
	3	sector#	0	erase count				erase sector
	4	log#	0	0xFF	0xFF	0xFF	0xFF	write log start record



- log# values: 0 = system log, 1-3 = historical logs, 4 = alarm log, 5 = I/O change log
- sector# values: 0-128
- slot# values: 1

- The clock changed event shows the clock value just before the change in the Mod and Parm bytes. Parms are bit-mapped:

b31 - b28	month
b27 - b23	day
b22	daylight savings time flag
b20 - b16	hour
b13 - b8	minute
b5 - b0	second
unused bits are always 0	

- Stimulus for a flash sector error indicates what the flash was doing when the error occurred: 1 = acquire sector, 2 = startup, 3 = empty sector, 4 = release sector, 5 = write data.
- Flash error counters are reset to zero in the unlikely event that both copies in EEPROM are corrupted.
- The flash job queue is flushed (and log records are lost) in the unlikely event that the queue runs out of space.
- A "babbling log" is one that is saving records faster than the EPM 4600 unit can handle long term. When babbling is detected, the log is frozen and no records are appended until babbling ceases. For as long as babbling persists, a summary of records discarded is logged every 60 minutes. Normal logging resumes when there have been no new append attempts for 30 seconds. Onset of babbling occurs when a log fills a flash sector in less than an hour (applies only to Alarm, I/O Change, and Historical logs), when the log fills, or when a log grows so far beyond its normal bounds that it is in danger of crashing the system. This applies to all logs except the System log, which does not babble. It is possible for the other logs during an extended log retrieval session.
- Logging of diagnostic records may be suppressed via a bit in programmable settings.

acc_typ# values 0 = output accumulators
 1 = input accumulators

id_mm# values 0xFF = Reset all min. max. values
 1 = voltage and frequency reset
 2-9 = Meters 1-8 Demand resets, respectively, in three phase configuration
 1-33 = Meters 1-24 Demand resets, respectively, in single phase configuration

id_e# values 0xFF = Reset all energy values
 1-8 = Meters 1-8 energy resets, respectively, in three phase configuration
 9-32 = Meters 1-24 energy resets, respectively, in single phase configuration

Alarm Record:

Byte	0	1	2	3	4	5	6	7	8	9
Value	timestamp					direction		limit#	Value%	

Size: 10 bytes (16 bytes image)

Data: The Alarm record data is 4 bytes, and specifies which limit the event occurred on, and the direction of the event (going out of limit, or coming back into limit).

- Direction: The direction of the alarm event: whether this record indicates the limit going out, or coming back into limit.
 1. Going out of limit
 2. Coming back into limit

Bit	0	1	2	3	4	5	6	7
Value	type	0	0	0	0	Limit ID		

- Limit Type: Each limit (1-8) has both an above condition and a below condition. Limit Type indicates which of those the record represents.

0 High Limit
 1 Low Limit

- Limit ID: The specific limit this record represents. A value in the range 0-7, Limit ID represents Limits 1-8. The specific details for this limit are stored in the programmable settings.
- Value: Depends on the Direction:
 1. If the record is "Going out of limit," this is the value of the limit when the "Out" condition occurred.
 2. If the record is "Coming back into limit," this is the "worst" value of the limit during the period of being "out": for High (above) limits, this is the highest value during the "out" period; for Low (below) limits, this is the lowest value during the "out" period.

Byte	0	1	2	3	4	5	6	7	8	9
Value	Identifier		Above Setpoint		Above Hyst.		Below Setpoint		Below Hyst.	

Interpretation of Alarm Data:

To interpret the data from the alarm records, you need the limit data from the Programmable Settings [0x754B, 40 registers].

There are 8 limits, each with an Above Setpoint, and a Below Setpoint. Each setpoint also has a threshold (hysteresis), which is the value at which the limit returns "into" limit after the setpoint has been exceeded. This prevents "babbling" limits, which can be caused by the limit value fluttering over the setpoint, causing it to go in and out of limit continuously.

- Identifier: The first modbus register of the value that is being watched by this limit. While any modbus register is valid, only values that can have a Full Scale will be used by the EPM 4600 unit.
- Above Setpoint: The percent of the Full Scale above which the value for this limit will be considered "out."
 - Valid in the range of -200.0% to +200.0%
 - Stored as an integer with 0.1 resolution. (Multiply % by 10 to get the integer, divide integer by 10 to get %. For example, 105.2% = 1052.)
- Above Hysteresis: The percent of the Full Scale below which the limit will return "into" limit, if it is out. If this value is above the Above Setpoint, this Above limit will be disabled.
 - Valid in the range of -200.0% to +200.0%.
 - Stored as an integer with 0.1 resolution. (Multiply % by 10 to get the integer, divide integer by 10 to get %. For example, 104.1% = 1041.)
- Below Setpoint: The percent of the Full Scale below which the value for this limit will be considered "out."
 - Valid in the range of -200.0% to +200.0%.
 - Stored as an integer with 0.1 resolution. (Multiply % by 10 to get the integer, divide integer by 10 to get %. For example, 93.5% = 935.)
- Below Hysteresis: The percent of the Full Scale above which the limit will return "into" limit, if it is out. If this value is below the Below Setpoint, this Below limit will be disabled.
 - Valid in the range of -200.0% to +200.0%.
 - Stored as an integer with 0.1 resolution. (Multiply % by 10 to get the integer, divide integer by 10 to get %. For example, 94.9% = 949.)



NOTE

- The Full Scale is the "nominal" value for each of the different types of readings. To compute the Full Scale, use the following formulas:

Current [CT Numerator]
 Voltage [PT Numerator]
 Power 3-Phase (WYE) [CT Numerator] x [PT Numerator] x 3
 Power 3-Phase (Delta) [CT Numerator] x [PT Numerator] x 3 x sqrt(3)
 Power Single Phase (WYE)[CT Numerator] x [PT Numerator]
 Power Single Phase (Delta)[CT Numerator] x [PT Numerator] x sqrt(3)
 Frequency (Calibrated at 60 Hz)60
 Frequency (Calibrated at 50 Hz)50
 Power Factor 1.0
 Angles 180°

- To interpret a limit alarm fully, you need both the start and end record (for duration).
- There are a few special conditions related to limits:

- When the EPM 4600 unit powers up, it detects limits from scratch. This means that multiple "out of limit" records can be in sequence with no "into limit" records. Cross-reference the System Events for Power Up events.
 - This also means that if a limit is "out," and it goes back in during the power off condition, no "into limit" record will be recorded.
 - The "worst" value of the "into limit" record follows the above restrictions; it only represents the values since power up. Any values before the power up condition are lost.

Historical Log Record:

Byte	0	1	2	3	4	5	6	-	-	N	
Value	timestamp						values . . .				

Size: 6+2 x N bytes (12+2 x N bytes), where N is the number of registers stored.

Data: The Historical Log Record data is 2 x N bytes, which contains snapshots of the values of the associated registers at the time the record was taken. Since the EPM 4600 unit uses specific registers to log, with no knowledge of the data it contains, the Programmable Settings need to be used to interpret the data in the record. See Historical Logs Programmable Settings for details.

I/O Change Log Record:

I/O Change Log tables:

Byte	0	1	2	3	4	5	6	7	8	9	
Value	Timestamp						Card 1 Changes	Card 1 States	Card 2 Changes	Card 2 States	

I/O Board Change Flags:

Bit	7	6	5	4	3	2	1	0
Value	Out 4 Change	Out 3 Change	Out 2 Change	Out 1 Change	In 4 Change	In 3 Change	In 2 Change	In 1 Change

I/O Board Current States:

Bit	7	6	5	4	3	2	1	0
Value	Out 4 State	Out 3 State	Out 2 State	Out 1 State	In 4 State	In 3 State	In 2 State	In 1 State

Size: 10 bytes (16 bytes)

Data: The states of the relay and digital inputs at the time of capture for the I/O board.

- An I/O Change log record will be taken for each Relay and Digital Input that has been configured in the Programmable Settings to record when its state changes.
- When any one configured Relay or Digital Input changes, the values of all



Relays
and
Digital
Inputs
are
recorded,
even if
they are
not so
configure
d.


```

send:          01 10 C3 51 00 02 04 00 00 00 01 - Set the retrieval index
recv:          01 10 C3 51 00 02 D9
send:          01 23 C3 51 00 79 04 00 00 - Read the first Window
recv:          01 23 03 C8 00 00 00 01 0D 01 17 0D 17 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 0D 01 17 0D 18 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D
01 1B 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 1C 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 0D 01 17 0D 1D 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 0D 01 17 0D 1E 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17
0D 1F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 0D 01 01 00 00 03 17
0D 19 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 1A 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 0D 01 17 0D 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D 01 17 0D 1E 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D
1F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 0D 01 17 0D 20 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 0D 01 17 0D 21 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D 01 17 0D 02 00 00 05 1B 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D 01 17 0D 1C 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D
1D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 0D 01 17 0D 20 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 0D 01 17 0D 21 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D 01 17 0D 22 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D
23 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 0D 01 17 0D 24 00 03 00 00
07 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 0D 01 17 0D 1E 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 0D 01 17 0D 1F 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01
17 0D 22 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 11 70 D2 30 00
    
```

```

00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 00 00 00 00 00 00 00 D0 11 70 D2 40 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 00 D0 11 70 D 25 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01
17 0D 26 00 00 00 15

send: 01 23 C3 51 00 79 04 00 00 - Read the last Window

recv: 01 23 03 C8 04 00 00 09 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D
20 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 21 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 0D 01 17 0D 24 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D
01 17 0D 25 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 26
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 00 00 00 00 00 00 00 0D 01 17 0D 27 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 00 00 0D 01 17 0D 28 00 00 00 00 00 05 00 00 0B 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 00 0D 01 17 0D 22 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D
01 17 0D 23 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 26 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 00 00 00 00 00 0D 01 17 0D 27 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 0D 01 17 0D 28 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01
17 0D 29 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 2A 00
00 00 00 00 00 00 06 00 00 0D 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 24 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 00 00 00 00 00 0D 01 17 0D 25 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 0D 01 17 0D 28 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17
0D 29 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 2A 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00

```

CHAPTER 14: RETRIEVING LOGS WITH THE METERING SYSTEM'S MODBUS MAP

```
00 00 00 00 00 00 00 00 0D 01 17 0D 2B 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 00 0D 01 17 0D 2C 00 00 00 00 00 00 00 00 00 07 00 00
0F 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00
00 0D 01 17 0D 26 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17
0D 27 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
```

```

00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 2A 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 0D 01 17 0D 2B 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
0D 01 17 0D 2C 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 0D 01 17 0D
2D 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00 00
00 00 00 00 00 00 00 00 00 00 0D 01 17 0D 2E 00 00 00
00 00 00 00 00 00 00 00 03
    
```

```

send:      01 06 C3 4F 00 00 - Disengage Log
recv:     01 06 C3 4F 00 00 E7
    
```

Sample Historical Log 1 Record:

Historical Log 1 Record and Programmable

Settings 14 0D 01 17 0D 16 15 00 14 0D 01 17

0D 24 00 00

22 00 00 00 0E 00 00 00 00 00 00 00 00 00 00 00 |07| 00

DF 7F 05 00 00 00 00 00 00 00 00 00 00 00 00 00 00

|37| 00 00 00 |01| 00 00 00 00 00 00 00 00 00 00 00 00

00 00 00.....

|E7 03|04| 00 |0A| 00 00 00 00 00 00 00 00 00 00 00 00

|E9 03|04 00 |0A| 00 00 00 00 00 00 00 00 00 00 00 00

|EB 03|04| 00 |0A| 00 00 00 00 00 00 00 00 00 00 00 00

|ED 03|04| 00 |0A| 00 00 00 00 00 00 00 00 00 00 00 00

|EF 03|04| 00 |0A| 00 00 00 00 00 00 00 00 00 00 00 00

|F1 03|04| 00 |0A| 00 00 00 00 00 00 00 00 00 00 00 00

|F3 03|04| 00 |0A| 00 00 00 00 00 00 00 00 00 00 00 00

Item values	Type and Size	Descriptions
07	# registers	
37	# sectors	
01	interval	
E7 03	0A 04	(SINT 2 byte)Voltage A-N
E9 03	0A 04	(SINT 2 byte)Voltage B-N
EB 03	0A 04	(SINT 2 byte)Voltage C-N
ED 03	0A 04	(SINT 2 byte)Voltage A-B
EF 03	0A 04	(SINT 2 byte)Voltage B-C
F1 03	0A 04	(SINT 2 byte)Voltage C-A

F3 03

0A 04

(SINT 2 byte)Frequency

Sample Record

```

0D 01 18 0B 18 00|42 EF ED AB|42 EF ED
41|42 EF EC 39|00 00 00 00|00 00 00 00|00
00 00 00|42 70
00 7D|....
0D 01 18 0B 18 00      2013 January,24
                        11:24:00
42 EF ED AB            119.9641 V
42 EF ED 41            119.9634 V
42 EF EC 39            119.9613 V
00 00 00 00            0 V
00 00 00 00            0 V
00 00 00 00            0 V
42 70 00 7D            60.0004 Hz
    
```


Multilin™ EPM 4600 Metering System

Appendix A: EPM 4600-T (Three Phase) Modbus Map

EPM 4600-T (Three Phase) Modbus Map

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Fixed Data Section							
Identification Block						read-only	
0000 - 0007	1 - 8	&38 1DPH	\$6&,,	16 FKDU	QRQH		8
0008 - 0009	9 - 16	&38 6HULDO 1XPEHU	\$6&,,	16 FKDU	QRQH		8
0010 - 0010	17 - 17	&38 7\SH	8,1716	ELW-PDSSHG	- ----- m vvvvvv	P &38 W\SH 0: 7KUHH SKDVH 1 : 6LQJOH 3KDVH YYYYYYYY 9-VZLWFK 81: %DVLF 8QLW 82: 8QLW ZLWK 20% ORJLQJ PHPRU 83: 8QLW ZLWK 320% ORJLQJ PHPRU	1
0011 - 0012	18 - 19	]\LUPZDUH 9HUVLRQ	\$6&,,	4 FKDU	QRQH		2
0013 - 0013	20 - 20	0DS 9HUVLRQ	8,1716	0 WR 65535	QRQH		1
0014 - 0014	21 - 21	&38 &RQILJXUDWLRQ	8,1716	ELW-PDSSHG	----ccc--ffff	FFF &7 GHQRPLQDWURU (1 RU 5), IIIIII FDOLEUDWLRQ IUHTXHQF\ (50 RU 60)	1
0015 - 0015	22 - 22	\$6,& 9HUVLRQ 0HWHU1	8,1716	0-65535	QRQH		1
0016 - 0016	23 - 23	\$6,& 9HUVLRQ 0HWHU2	8,1716	0-65536	QRQH		1
0017 - 0017	24 - 24	\$6,& 9HUVLRQ 0HWHU3	8,1716	0-65537	QRQH		1
0018 - 0018	25 - 25	\$6,& 9HUVLRQ 0HWHU4	8,1716	0-65538	QRQH		1
0019 - 0019	26 - 26	\$6,& 9HUVLRQ 0HWHU5	8,1716	0-65539	QRQH		1
001\$ - 001\$	27 - 27	\$6,& 9HUVLRQ 0HWHU6	8,1716	0-65540	QRQH		1
001% - 001%	28 - 28	\$6,& 9HUVLRQ 0HWHU7	8,1716	0-65541	QRQH		1
001& - 001&	29 - 29	\$6,& 9HUVLRQ 0HWHU8	8,1716	0-65542	QRQH		1
001' - 001(	30 - 31	%RRW \LUPZDUH 9HUVLRQ	\$6&,,	4 FKDU	QRQH		2
001) - 001)	32 - 32	5HOD\ FDUG LG			QRQH		1
0020 - 0020	33 - 33	5HVHUYHG					1
0021 - 0024	34 - 37	&38 7\SH 1DPH	\$6&,,	8 FKDU	QRQH		4
						%ORFN 6LJH:	37

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
CPU Data Section							
Primary Voltage Readings Block							
03(7 - 03(8	1000 - 1001	9ROWV \$-1	) / 2 \$ 7	0 WR 9999 0	YROWV	read-only	
03(9 - 03(\$	1002 - 1003	9ROWV %-1	) / 2 \$ 7	0 WR 9999 0	YROWV		
03(% - 03(8	1004 - 1005	9ROWV &-1	) / 2 \$ 7	0 WR 9999 0	YROWV		
03(' - 03(0	1006 - 1007	9ROWV \$-%	) / 2 \$ 7	0 WR 9999 0	YROWV		
03() - 03)0	1008 - 1009	9ROWV %-&	) / 2 \$ 7	0 WR 9999 0	YROWV		
03)1 - 03)2	1010 - 1011	9ROWV &-\$	) / 2 \$ 7	0 WR 9999 0	YROWV		
03)3 - 03)4	1012 - 1013	)UHTXHQF\	) / 2 \$ 7	0 WR 65.00	+]		
						%ORFN 6L]H:	12
Primary Readings Block Meter 1							
044% - 0448	1100 - 1101	\$PSV \$	) / 2 \$ 7	0 WR 9999 0	DPSV	read-only	
044' - 0440	1102 - 1103	\$PSV %	) / 2 \$ 7	0 WR 9999 0	DPSV		
044) - 0450	1104 - 1105	\$PSV &	) / 2 \$ 7	0 WR 9999 0	DPSV		
0451 - 0452	1106 - 1107	:DWWV, 3-3K WRWDO	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		
0453 - 0454	1108 - 1109	9\$5V, 3-3K WRWDO	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		
0455 - 0456	1110 - 1111	9\$V, 3-3K WRWDO	) / 2 \$ 7	0 WR +9999 0	9\$V		
0457 - 0458	1112 - 1113	3RZHU)DFWRU, 3-3K WRWDO	) / 2 \$ 7	-1.00 WR +1.00	QRQH		
0459 - 045\$	1114 - 1115	1HXWUDO &XUJHQW	) / 2 \$ 7	0 WR 9999 0	DPSV		
045% - 0458	1116 - 1117	:DWWV, 3KDVH \$	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQO\ IRU :-(KRRNXS DQG ZLOO EH]HUR IRU DOO RWKHU KRRNXSV.	
045' - 0450	1118 - 1119	:DWWV, 3KDVH %	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		
045) - 0460	1120 - 1121	:DWWV, 3KDVH &	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV	]RU VLQJOH SKDVH KRRN XS RQO\ SHU SKDVH YDOXH DUH YDOLG. 30HDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	
0461 - 0462	1122 - 1123	9\$5V, 3KDVH \$	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		
0463 - 0464	1124 - 1125	9\$5V, 3KDVH %	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		
0465 - 0466	1126 - 1127	9\$5V, 3KDVH &	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		
0467 - 0468	1128 - 1129	9\$V, 3KDVH \$	) / 2 \$ 7	0 WR +9999 0	9\$V		

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
0469 -	0469	1130 - 1131	9\$V, 3KDVH %	)/2\$7	0 WR +9999 0	9\$V	(Cont'd)	2
046% -	0468	1132 - 1133	9\$V, 3KDVH &	)/2\$7	0 WR +9999 0	9\$V		2
046' -	0460	1134 - 1135	3RZHU)DFWRU, 3KDVH \$	)/2\$7	-1.00 WR +1.00	QRQH		2
046) -	0470	1136 - 1137	3RZHU)DFWRU, 3KDVH %	)/2\$7	-1.00 WR +1.00	QRQH		2
0471 -	0472	1138 - 1139	3RZHU)DFWRU, 3KDVH &	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:		40
Primary Readings Block Meter 2						read-only		
04\$) -	04%0	1200 - 1201	\$PSV \$	)/2\$7	0 WR 9999 0	DPSV		2
04%1 -	04%2	1202 - 1203	\$PSV %	)/2\$7	0 WR 9999 0	DPSV		2
04%3 -	04%4	1204 - 1205	\$PSV &	)/2\$7	0 WR 9999 0	DPSV		2
04%5 -	04%6	1206 - 1207	:DWWW, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
04%7 -	04%8	1208 - 1209	9\$5V, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
04%9 -	04%9	1210 - 1211	9\$V, 3-3K WRWDO	)/2\$7	0 WR +9999 0	9\$V		2
04%% -	04%8	1212 - 1213	3RZHU)DFWRU, 3-3K WRWDO	)/2\$7	-1.00 WR +1.00	QRQH		2
04%' -	04%0	1214 - 1215	1HXWUDO &XUJHQW	)/2\$7	0 WR 9999 0	DPSV		2
04%) -	04&0	1216 - 1217	:DWWW, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQO\ IRU :- (KRRNXS DQG ZLOO EH	2
04&1 -	04&2	1218 - 1219	:DWWW, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	ZDWWW	JHUR IRU DOO RWKHU KRRNXS.	2
04&3 -	04&4	1220 - 1221	:DWWW, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	ZDWWW	JRU VLQJOH SKDVH KRRN XS RQO\ SHU SKDVH YDOXH DUH YDOLG. 3OHDVH GRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
04&5 -	04&6	1222 - 1223	9\$5V, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
04&7 -	04&8	1224 - 1225	9\$5V, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
04&9 -	04&9	1226 - 1227	9\$5V, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
04%& -	04&&	1228 - 1229	9\$V, 3KDVH \$	)/2\$7	0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
04&' - 04&(	1230 - 1231	9\$V, 3KDVH %	)/2\$7	0 WR +9999 0	9\$V	(Cont'd)	2
04&) - 04'0	1232 - 1233	9\$V, 3KDVH &	)/2\$7	0 WR +9999 0	9\$V		2
04'1 - 04'2	1234 - 1235	3RZHU)DFWRU, 3KDVH \$	)/2\$7	-1.00 WR +1.00	QRQH		2
04'3 - 04'4	1236 - 1237	3RZHU)DFWRU, 3KDVH %	)/2\$7	-1.00 WR +1.00	QRQH		2
04'5 - 04'6	1238 - 1239	3RZHU)DFWRU, 3KDVH &	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN VL]H:	40
Primary Readings Block Meter 3						read-only	
0513 - 0514	1300 - 1301	\$PSV \$	)/2\$7	0 WR 9999 0	DPSV		2
0515 - 0516	1302 - 1303	\$PSV %	)/2\$7	0 WR 9999 0	DPSV		2
0517 - 0518	1304 - 1305	\$PSV &	)/2\$7	0 WR 9999 0	DPSV		2
0519 - 051\$	1306 - 1307	:DWWV, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
051% - 0518	1308 - 1309	9\$5V, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
051' - 051(	1310 - 1311	9\$V, 3-3K WRWDO	)/2\$7	0 WR +9999 0	9\$V		2
051) - 0520	1312 - 1313	3RZHU)DFWRU, 3-3K WRWDO	)/2\$7	-1.00 WR +1.00	QRQH		2
0521 - 0522	1314 - 1315	1HXWUDO &XUJHQW	)/2\$7	0 WR 9999 0	DPSV		2
0523 - 0524	1316 - 1317	:DWWV, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXH V RQO\ IRU :- (KRRNXS DQG ZLOO EH	2
0525 - 0526	1318 - 1319	:DWWV, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	ZDWWW	]HUR IRU DOO RWKHU KRRXSV.	2
0527 - 0528	1320 - 1321	:DWWV, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	ZDWWW	]RU VLQJOH SKDVH KRRN XS RQO\ SHU SKDVH YDOXH V DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH V DUH LQYDOLG.	2
0529 - 052\$	1322 - 1323	9\$5V, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
052% - 0528	1324 - 1325	9\$5V, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
052' - 052(	1326 - 1327	9\$5V, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
052) - 0530	1328 - 1329	9\$V, 3KDVH \$	)/2\$7	0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
0531 -	0532	1330 - 1331	9\$V, 3KDVH %	) / 2 \$ 7	0 WR +9999 0	9\$V	----- (Cont'd)	2
0533 -	0534	1332 - 1333	9\$V, 3KDVH &	) / 2 \$ 7	0 WR +9999 0	9\$V		2
0535 -	0536	1334 - 1335	3RZHU)DFWRU, 3KDVH \$	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0537 -	0538	1336 - 1337	3RZHU)DFWRU, 3KDVH %	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0539 -	0539	1338 - 1339	3RZHU)DFWRU, 3KDVH &	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:		40
Primary Readings Block Meter 4						read-only		
0577 -	0578	1400 - 1401	\$PSV \$	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0579 -	0579	1402 - 1403	\$PSV %	) / 2 \$ 7	0 WR 9999 0	DPSV		2
057% -	0578	1404 - 1405	\$PSV &	) / 2 \$ 7	0 WR 9999 0	DPSV		2
057' -	057(	1406 - 1407	:DWWW, 3-3K WRWDO	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
057) -	0580	1408 - 1409	9\$5V, 3-3K WRWDO	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0581 -	0582	1410 - 1411	9\$V, 3-3K WRWDO	) / 2 \$ 7	0 WR +9999 0	9\$V		2
0583 -	0584	1412 - 1413	3RZHU)DFWRU, 3-3K WRWDO	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0585 -	0586	1414 - 1415	1HXWUDO &XUUHQW	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0587 -	0588	1416 - 1417	:DWWW, 3KDVH \$	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQO\ IRU :-(KRRNXS DQG ZLOO EH	2
0589 -	0589	1418 - 1419	:DWWW, 3KDVH %	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	1HUR IRU DOO RWKHU KRRNXS.	2
058% -	058&	1420 - 1421	:DWWW, 3KDVH &	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	IRU VLQJOH SKDVH KRRN XS RQO\ SHU SKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
058' -	058(	1422 - 1423	9\$5V, 3KDVH \$	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
058) -	0590	1424 - 1425	9\$5V, 3KDVH %	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0591 -	0592	1426 - 1427	9\$5V, 3KDVH &	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0593 -	0594	1428 - 1429	9\$V, 3KDVH \$	) / 2 \$ 7	0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
0595 -	0596	1430 - 1431	9\$V, 3KDVH %	)/2\$7	0 WR +9999 0	9\$V	(Cont'd)	2
0597 -	0598	1432 - 1433	9\$V, 3KDVH &	)/2\$7	0 WR +9999 0	9\$V		2
0599 -	0599	1434 - 1435	3RZHU)DFWRU, 3KDVH \$	)/2\$7	-1.00 WR +1.00	QRQH		2
059% -	0598	1436 - 1437	3RZHU)DFWRU, 3KDVH %	)/2\$7	-1.00 WR +1.00	QRQH		2
059' -	0596	1438 - 1439	3RZHU)DFWRU, 3KDVH &	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:		40
Primary Readings Block Meter 5						read-only		
05% -	058	1500 - 1501	\$PSV \$	)/2\$7	0 WR 9999 0	DPSV		2
05" -	056	1502 - 1503	\$PSV %	)/2\$7	0 WR 9999 0	DPSV		2
05' -	050	1504 - 1505	\$PSV &	)/2\$7	0 WR 9999 0	DPSV		2
05(1 -	052	1506 - 1507	:DWWV, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
05(3 -	054	1508 - 1509	9\$5V, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
05(5 -	056	1510 - 1511	9\$V, 3-3K WRWDO	)/2\$7	0 WR +9999 0	9\$V		2
05(7 -	058	1512 - 1513	3RZHU)DFWRU, 3-3K WRWDO	)/2\$7	-1.00 WR +1.00	QRQH		2
05(9 -	05\$	1514 - 1515	1HXWUDO &XUUHQW	)/2\$7	0 WR 9999 0	DPSV		2
05(% -	058	1516 - 1517	:DWWV, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXH RQOI IRU :-(KRRNXS DQG ZLOO EH	2
05(' -	050	1518 - 1519	:DWWV, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	ZDWWW	JHUR IRU DOO RWKHU KRRNXSV.	2
05() -	050	1520 - 1521	:DWWV, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	ZDWWW	)RU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
05)1 -	052	1522 - 1523	9\$5V, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
05)3 -	054	1524 - 1525	9\$5V, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
05)5 -	056	1526 - 1527	9\$5V, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
05)7 -	058	1528 - 1529	9\$V, 3KDVH \$	)/2\$7	0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
05)9 -	05)\$	1530 - 1531	9\$V, 3KDVH %	)/2\$7	0 WR +9999 0	9\$V	(Cont'd)	2
05)% -	05)&	1532 - 1533	9\$V, 3KDVH &	)/2\$7	0 WR +9999 0	9\$V		2
05)' -	05)(	1534 - 1535	3RZHU)DFWRU, 3KDVH \$	)/2\$7	-1.00 WR +1.00	QRQH		2
05)) -	0600	1536 - 1537	3RZHU)DFWRU, 3KDVH %	)/2\$7	-1.00 WR +1.00	QRQH		2
0601 -	0602	1538 - 1539	3RZHU)DFWRU, 3KDVH &	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:		40
Primary Readings Block Meter 6						read-only		
063) -	0640	1600 - 1601	\$PSV \$	)/2\$7	0 WR 9999 0	DPSV		2
0641 -	0642	1602 - 1603	\$PSV %	)/2\$7	0 WR 9999 0	DPSV		2
0643 -	0644	1604 - 1605	\$PSV &	)/2\$7	0 WR 9999 0	DPSV		2
0645 -	0646	1606 - 1607	:DWWV, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0647 -	0648	1608 - 1609	9\$5V, 3-3K WRWDO	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0649 -	064\$	1610 - 1611	9\$V, 3-3K WRWDO	)/2\$7	0 WR +9999 0	9\$V		2
064% -	064&	1612 - 1613	3RZHU)DFWRU, 3-3K WRWDO	)/2\$7	-1.00 WR +1.00	QRQH		2
064' -	064(	1614 - 1615	1HXWUDO &XUUHQW	)/2\$7	0 WR 9999 0	DPSV		2
064) -	0650	1616 - 1617	:DWWV, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQOI IRU :-(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV.	2
0651 -	0652	1618 - 1619	:DWWV, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0653 -	0654	1620 - 1621	:DWWV, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	ZDWWV	)RU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 30HDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
0655 -	0656	1622 - 1623	9\$5V, 3KDVH \$	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0657 -	0658	1624 - 1625	9\$5V, 3KDVH %	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0659 -	065\$	1626 - 1627	9\$5V, 3KDVH &	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
065% -	065&	1628 - 1629	9\$V, 3KDVH \$	)/2\$7	0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
065' - 065)	1630 - 1631	9\$V, 3KDVH %	) / 2 \$ 7	0 WR +9999 0	9\$V	(Cont'd)	2
065) - 0660	1632 - 1633	9\$V, 3KDVH &	) / 2 \$ 7	0 WR +9999 0	9\$V		2
0661 - 0662	1634 - 1635	3RZHU)DFWRU, 3KDVH \$	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0663 - 0664	1636 - 1637	3RZHU)DFWRU, 3KDVH %	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0665 - 0666	1638 - 1639	3RZHU)DFWRU, 3KDVH &	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:	40
Primary Readings Block Meter 7						read-only	
06\$3 - 06\$4	1700 - 1701	\$PSV \$	) / 2 \$ 7	0 WR 9999 0	DPSV		2
06\$5 - 06\$6	1702 - 1703	\$PSV %	) / 2 \$ 7	0 WR 9999 0	DPSV		2
06\$7 - 06\$8	1704 - 1705	\$PSV &	) / 2 \$ 7	0 WR 9999 0	DPSV		2
06\$9 - 06\$\$	1706 - 1707	:DWWV, 3-3K WRWDO	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
06\$% - 06\$&	1708 - 1709	9\$5V, 3-3K WRWDO	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
06\$' - 06\$(	1710 - 1711	9\$V, 3-3K WRWDO	) / 2 \$ 7	0 WR +9999 0	9\$V		2
06\$) - 06%0	1712 - 1713	3RZHU)DFWRU, 3-3K WRWDO	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
06%1 - 06%2	1714 - 1715	1HXWUDO &XUUHQW	) / 2 \$ 7	0 WR 9999 0	DPSV		2
06%3 - 06%4	1716 - 1717	:DWWV, 3KDVH \$	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQO\ IRU : < (KRRNXS DQG ZLOO EH	2
06%5 - 06%6	1718 - 1719	:DWWV, 3KDVH %	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV	JHUR IRU DOO RWKHU KRRNXSV.	2
06%7 - 06%8	1720 - 1721	:DWWV, 3KDVH &	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV	)RU VLQJOH SKDVH KRRN XS RQO\ SHU SKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
06%9 - 06%\$	1722 - 1723	9\$5V, 3KDVH \$	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
06%% - 06%&	1724 - 1725	9\$5V, 3KDVH %	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
06%' - 06%(	1726 - 1727	9\$5V, 3KDVH &	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
06%) - 06&0	1728 - 1729	9\$V, 3KDVH \$	) / 2 \$ 7	0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
06&1 -	06&2	1730 - 1731	9\$V, 3KDVH %	) / 2\$7	0 WR +9999 0	9\$V	(Cont'd)	2
06&3 -	06&4	1732 - 1733	9\$V, 3KDVH &	) / 2\$7	0 WR +9999 0	9\$V		2
06&5 -	06&6	1734 - 1735	3RZHU)DFWRU, 3KDVH \$	) / 2\$7	-1.00 WR +1.00	QRQH		2
06&7 -	06&8	1736 - 1737	3RZHU)DFWRU, 3KDVH %	) / 2\$7	-1.00 WR +1.00	QRQH		2
06&9 -	06&A	1738 - 1739	3RZHU)DFWRU, 3KDVH &	) / 2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:		40
Primary Readings Block Meter 8						read-only		
0707 -	0708	1800 - 1801	\$PSV \$	) / 2\$7	0 WR 9999 0	DPSV		2
0709 -	0709	1802 - 1803	\$PSV %	) / 2\$7	0 WR 9999 0	DPSV		2
070% -	0708	1804 - 1805	\$PSV &	) / 2\$7	0 WR 9999 0	DPSV		2
070' -	0700	1806 - 1807	:DWWW, 3-3K WRWDO	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2
070) -	0710	1808 - 1809	9\$5V, 3-3K WRWDO	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
0711 -	0712	1810 - 1811	9\$V, 3-3K WRWDO	) / 2\$7	0 WR +9999 0	9\$V		2
0713 -	0714	1812 - 1813	3RZHU)DFWRU, 3-3K WRWDO	) / 2\$7	-1.00 WR +1.00	QRQH		2
0715 -	0716	1814 - 1815	!HXWUDO &XUUHQW	) / 2\$7	0 WR 9999 0	DPSV		2
0717 -	0718	1816 - 1817	:DWWW, 3KDVH \$	) / 2\$7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQO! IRU :-(KRRNXS DQG ZLOO EH	2
0719 -	0719	1818 - 1819	:DWWW, 3KDVH %	) / 2\$7	-9999 0 WR +9999 0	ZDWWW	JHUR IRU DOO RWKHU KRRNXSV.	2
071% -	0718	1820 - 1821	:DWWW, 3KDVH &	) / 2\$7	-9999 0 WR +9999 0	ZDWWW	JRU VLQJOH SKDVH KRRN XS RQO! SHU SKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
071' -	0710	1822 - 1823	9\$5V, 3KDVH \$	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
071) -	0720	1824 - 1825	9\$5V, 3KDVH %	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
0721 -	0722	1826 - 1827	9\$5V, 3KDVH &	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
0723 -	0724	1828 - 1829	9\$V, 3KDVH \$	) / 2\$7	0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0725 -	0726	1830 - 1831	9\$V, 3KDVH %) / 2\$7	0 WR +9999 0	9\$V	(Cont'd)
0727 -	0728	1832 - 1833	9\$V, 3KDVH &	) / 2\$7	0 WR +9999 0	9\$V
0729 -	0729	1834 - 1835	3RZHU)DFWRU, 3KDVH \$	) / 2\$7	-1.00 WR +1.00	QRQH
072% -	0728	1836 - 1837	3RZHU)DFWRU, 3KDVH %	) / 2\$7	-1.00 WR +1.00	QRQH
072' -	0720	1838 - 1839	3RZHU)DFWRU, 3KDVH &	) / 2\$7	-1.00 WR +1.00	QRQH
						%ORFN 6LJH:	40
Primary Energy Block Meter 1						read-only	
076% -	0768	1900 - 1901	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDW KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU" * 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ IRUPDW * UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ IRUPDW * VHH QRWH 10
076' -	0760	1902 - 1903	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	
076) -	0770	1904 - 1905	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW	
0771 -	0772	1906 - 1907	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ IRUPDW	
0773 -	0774	1908 - 1909	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	
0775 -	0776	1910 - 1911	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW	
0777 -	0778	1912 - 1913	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW	
0779 -	0779	1914 - 1915	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
077% - 0778	1916 - 1917	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	(Cont'd)	2
077' - 0779	1918 - 1919	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
077) - 0780	1920 - 1921	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0781 - 0782	1922 - 1923	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0783 - 0784	1924 - 1925	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0785 - 0786	1926 - 1927	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0787 - 0788	1928 - 1929	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0789 - 0789	1930 - 1931	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
078% - 078A	1932 - 1933	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
078' - 078B	1934 - 1935	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
078) - 0790	1936 - 1937	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0791 -	0792 1938 - 1939	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUUJ IRUPDW	(Cont'd)	2
0793 -	0794 1940 - 1941	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUUJ IRUPDW		2
0795 -	0796 1942 - 1943	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
0797 -	0798 1944 - 1945	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
0799 -	0799 1946 - 1947	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
079% -	0798 1948 - 1949	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUUJ IRUPDW		2
079' -	0790 1950 - 1951	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUUJ IRUPDW		2
079) -	0790 1952 - 1953	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUUJ IRUPDW		2
07\$1 -	07\$2 1954 - 1955	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
07\$3 -	07\$4 1956 - 1957	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
07\$5 -	07\$6 1958 - 1959	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
07\$7 -	07\$8 1960 - 1961	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
07\$9 -	07\$9 1962 - 1963	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
07\$% - 07\$8	1964 - 1965	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
07\$' - 07\$0	1966 - 1967	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
07\$) - 07%0	1968 - 1969	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
07%1 - 07%2	1970 - 1971	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
Primary Energy Block Meter 2						%ORFN 6LJH: read-only	72
07& - 07'0	2000 - 2001	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDW KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
07'1 - 07'2	2002 - 2003	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
07'3 - 07'4	2004 - 2005	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
07'5 - 07'6	2006 - 2007	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
07'7 - 07'8	2008 - 2009	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
07'9 - 07'\$	2010 - 2011	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
07%' - 07'8	2012 - 2013	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
07'' - 07'0	2014 - 2015	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
07') -	07(0	2016 - 2017	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	(Cont'd)	2
07(1 -	07(2	2018 - 2019	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999		2
07(3 -	07(4	2020 - 2021	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999		2
07(5 -	07(6	2022 - 2023	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999		2
07(7 -	07(8	2024 - 2025	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999		2
07(9 -	07(\$	2026 - 2027	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999		2
07(% -	07(&	2028 - 2029	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999		2
07(' -	07((	2030 - 2031	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999		2
07() -	07)0	2032 - 2033	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999		2
07)1 -	07)2	2034 - 2035	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999		2
07)3 -	07)4	2036 - 2037	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
07)5 - 07)6	2038 - 2039	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW	(Cont'd)	2
07)7 - 07)8	2040 - 2041	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW		2
07)9 - 07)A	2042 - 2043	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
07)B - 07)C	2044 - 2045	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
07)D - 07)E	2046 - 2047	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
07)F - 0800	2048 - 2049	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
0801 - 0802	2050 - 2051	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
0803 - 0804	2052 - 2053	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
0805 - 0806	2054 - 2055	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
0807 - 0808	2056 - 2057	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
0809 - 080A	2058 - 2059	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
080B - 080C	2060 - 2061	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
080D - 080E	2062 - 2063	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
080) -	0810	2064 - 2065	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
0811 -	0812	2066 - 2067	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0813 -	0814	2068 - 2069	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0815 -	0816	2070 - 2071	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
							%ORFN 6LJH:	72
Primary Energy Block Meter 3							read-only	
0833 -	0834	2100 - 2101	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDW KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
0835 -	0836	2102 - 2103	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
0837 -	0838	2104 - 2105	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
0839 -	0839	2106 - 2107	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
083% -	0838	2108 - 2109	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
083' -	0830	2110 - 2111	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
083) -	0840	2112 - 2113	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0841 -	0842	2114 - 2115	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0843 -	0844	2116 - 2117	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
0845 -	0846	2118 - 2119	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0847 -	0848	2120 - 2121	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0849 -	0849	2122 - 2123	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
084% -	0848	2124 - 2125	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
084' -	0848	2126 - 2127	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
084) -	0850	2128 - 2129	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0851 -	0852	2130 - 2131	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0853 -	0854	2132 - 2133	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0855 -	0856	2134 - 2135	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0857 -	0858	2136 - 2137	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0859 -	0859	2138 - 2139	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUJ IRUPDW	2
085% -	0858	2140 - 2141	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUJ IRUPDW	2
085' -	0850	2142 - 2143	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
085) -	0860	2144 - 2145	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
0861 -	0862	2146 - 2147	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
0863 -	0864	2148 - 2149	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW	2
0865 -	0866	2150 - 2151	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW	2
0867 -	0868	2152 - 2153	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW	2
0869 -	0869	2154 - 2155	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
086% -	0868	2156 - 2157	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
086' -	0860	2158 - 2159	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
086) -	0870	2160 - 2161	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
0871 -	0872	2162 - 2163	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0873 -	0874	2164 - 2165	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)
0875 -	0876	2166 - 2167	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	
0877 -	0878	2168 - 2169	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	
0879 -	0879	2170 - 2171	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	
Primary Energy Block Meter 4							read-only
0897 -	0898	2200 - 2201	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDV KDYH RSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU" * 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW * VHH QRWH 10
0899 -	0899	2202 - 2203	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	
089% -	0898	2204 - 2205	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	
089' -	0890	2206 - 2207	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	
089) -	08\$0	2208 - 2209	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	
08\$1 -	08\$2	2210 - 2211	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW	
08\$3 -	08\$4	2212 - 2213	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	
08\$5 -	08\$6	2214 - 2215	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
08\$7 -	08\$8	2216 - 2217	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
08\$9 -	08\$9	2218 - 2219	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
08\$% -	08\$&	2220 - 2221	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
08\$' -	08\$0	2222 - 2223	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
08\$) -	08%0	2224 - 2225	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
08%1 -	08%2	2226 - 2227	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
08%3 -	08%4	2228 - 2229	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
08%5 -	08%6	2230 - 2231	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
08%7 -	08%8	2232 - 2233	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
08%9 -	08\$9	2234 - 2235	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
08%% -	08%&	2236 - 2237	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
08%' - 08%0	2238 - 2239	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW	(Cont'd)	2
08%) - 08&0	2240 - 2241	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW		2
08&1 - 08&2	2242 - 2243	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
08&3 - 08&4	2244 - 2245	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
08&5 - 08&6	2246 - 2247	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
08&7 - 08&8	2248 - 2249	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
08&9 - 08&A	2250 - 2251	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
08&% - 08&B	2252 - 2253	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
08&' - 08&C	2254 - 2255	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
08&.) - 08'0	2256 - 2257	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
08'1 - 08'2	2258 - 2259	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
08'3 - 08'4	2260 - 2261	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
08'5 - 08'6	2262 - 2263	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
08'7 - 08'8	2264 - 2265	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	(Cont'd)	2
08'9 - 08'\$	2266 - 2267	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ IRUPDW		2
08'% - 08'&	2268 - 2269	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ IRUPDW		2
08'" - 08'('	2270 - 2271	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ IRUPDW		2
Primary Energy Block Meter 5						%ORFN 6LJH:	72
Primary Energy Block Meter 5						read-only	
08)' - 08)8	2300 - 2301	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
08)' - 08)(	2302 - 2303	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	* 5 WR 8 GLJLWW * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ IRUPDW	2
08)) - 0900	2304 - 2305	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW	* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ IRUPDW	2
0901 - 0902	2306 - 2307	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ IRUPDW	* VHH QRWH 10	2
0903 - 0904	2308 - 2309	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0905 - 0906	2310 - 2311	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW		2
0907 - 0908	2312 - 2313	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0909 - 090\$	2314 - 2315	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
090% - 0908	2316 - 2317	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HGHUJ\ IRUPDW	(Cont'd)	2
090' - 0909	2318 - 2319	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
090) - 0910	2320 - 2321	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0911 - 0912	2322 - 2323	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0913 - 0914	2324 - 2325	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0915 - 0916	2326 - 2327	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0917 - 0918	2328 - 2329	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0919 - 0919	2330 - 2331	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HGHUJ\ IRUPDW		2
091% - 0918	2332 - 2333	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HGHUJ\ IRUPDW		2
091' - 0919	2334 - 2335	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HGHUJ\ IRUPDW		2
091) - 0920	2336 - 2337	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HGHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0921 -	0922 2338 - 2339	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUJ IRUPDW	(Cont'd)	2
0923 -	0924 2340 - 2341	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUJ IRUPDW		2
0925 -	0926 2342 - 2343	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0927 -	0928 2344 - 2345	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0929 -	0929 2346 - 2347	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
092% -	0928 2348 - 2349	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW		2
092' -	0929 2350 - 2351	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW		2
092) -	0930 2352 - 2353	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ IRUPDW		2
0931 -	0932 2354 - 2355	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0933 -	0934 2356 - 2357	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0935 -	0936 2358 - 2359	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0937 -	0938 2360 - 2361	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
0939 -	0939 2362 - 2363	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
093%	0938	2364 - 2365	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
093'	0936	2366 - 2367	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
093)	0940	2368 - 2369	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0941	0942	2370 - 2371	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
-							%ORFN 6LJH:	72
Primary Energy Block Meter 6							read-only	
095)	0960	2400 - 2401	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDV KDYH RSSVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
0961	0962	2402 - 2403	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
0963	0964	2404 - 2405	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOV, RU PHJD, SHU HQHUJ\ IRUPDW	2
0965	0966	2406 - 2407	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
0967	0968	2408 - 2409	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0969	0969	2410 - 2411	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
096%	0968	2412 - 2413	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
096'	0960	2414 - 2415	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
096) -	0970	2416 - 2417	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
0971 -	0972	2418 - 2419	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0973 -	0974	2420 - 2421	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0975 -	0976	2422 - 2423	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0977 -	0978	2424 - 2425	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0979 -	0979	2426 - 2427	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
097% -	0978	2428 - 2429	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
097' -	0970	2430 - 2431	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
097) -	0980	2432 - 2433	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0981 -	0982	2434 - 2435	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0983 -	0984	2436 - 2437	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0985 -	0986	2438 - 2439	-:KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUU IRUPDW	2
0987 -	0988	2440 - 2441	-:KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUU IRUPDW	2
0989 -	0989	2442 - 2443	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW	2
098% -	0988	2444 - 2445	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW	2
098' -	0986	2446 - 2447	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW	2
098) -	0990	2448 - 2449	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUU IRUPDW	2
0991 -	0992	2450 - 2451	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUU IRUPDW	2
0993 -	0994	2452 - 2453	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUU IRUPDW	2
0995 -	0996	2454 - 2455	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUU IRUPDW	2
0997 -	0998	2456 - 2457	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUU IRUPDW	2
0999 -	0999	2458 - 2459	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUU IRUPDW	2
099% -	0998	2460 - 2461	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW	2
099' -	0996	2462 - 2463	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
099) -	09\$0	2464 - 2465	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2
09\$1 -	09\$2	2466 - 2467	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
09\$3 -	09\$4	2468 - 2469	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
09\$5 -	09\$6	2470 - 2471	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
						%ORFN 6LJH:	72
Primary Energy Block Meter 7						read-only	
09&3 -	09&4	2500 - 2501	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW * :K UHFHLYHG & GHOLYHUHG DOZDV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
09&5 -	09&6	2502 - 2503	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW * 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
09&7 -	09&8	2504 - 2505	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
09&9 -	09&9	2506 - 2507	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW * VHH QRWH 10	2
09&% -	09&8	2508 - 2509	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2
09&' -	09&0	2510 - 2511	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW	2
09&) -	09'0	2512 - 2513	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2
09'1 -	09'2	2514 - 2515	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
09'3 - 09'4	2516 - 2517	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	(Cont'd)	2
09'5 - 09'6	2518 - 2519	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
09'7 - 09'8	2520 - 2521	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
09'9 - 09'\$	2522 - 2523	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
09%' - 09'&	2524 - 2525	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
09'" - 09'(	2526 - 2527	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
09') - 09(0	2528 - 2529	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
09(1 - 09(2	2530 - 2531	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
09(3 - 09(4	2532 - 2533	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
09(5 - 09(6	2534 - 2535	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
09(7 - 09(8	2536 - 2537	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
09(9 - 09(\$	2538 - 2539	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW	(Cont'd)	2
09(% - 09(8	2540 - 2541	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW		2
09(' - 09((	2542 - 2543	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
09() - 09(0	2544 - 2545	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)1 - 09)2	2546 - 2547	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)3 - 09)4	2548 - 2549	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)5 - 09)6	2550 - 2551	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)7 - 09)8	2552 - 2553	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)9 - 09)\$	2554 - 2555	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)% - 09)&	2556 - 2557	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)' - 09)(	2558 - 2559	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
09)) - 0\$00	2560 - 2561	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
0\$01 - 0\$02	2562 - 2563	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$03 - 0\$04	2564 - 2565	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
0\$05 - 0\$06	2566 - 2567	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0\$07 - 0\$08	2568 - 2569	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0\$09 - 0\$0\$	2570 - 2571	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
Primary Energy Block Meter 8						%ORFN 6LJH: read-only	72
0\$27 - 0\$28	2600 - 2601	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
0\$29 - 0\$2\$	2602 - 2603	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
0\$2% - 0\$2&	2604 - 2605	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
0\$2' - 0\$2(	2606 - 2607	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
0\$2) - 0\$30	2608 - 2609	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0\$31 - 0\$32	2610 - 2611	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0\$33 - 0\$34	2612 - 2613	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0\$35 - 0\$36	2614 - 2615	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$37 -	0\$38	2616 - 2617	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
0\$39 -	0\$39	2618 - 2619	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$3% -	0\$38	2620 - 2621	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$3' -	0\$30	2622 - 2623	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$3) -	0\$40	2624 - 2625	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$41 -	0\$42	2626 - 2627	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$43 -	0\$44	2628 - 2629	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$45 -	0\$46	2630 - 2631	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$47 -	0\$48	2632 - 2633	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$49 -	0\$49	2634 - 2635	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
0\$4% -	0\$48	2636 - 2637	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$4' -	0\$40	2638 - 2639	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQUJL IRUPDW	2
0\$4) -	0\$50	2640 - 2641	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQUJL IRUPDW	2
0\$51 -	0\$52	2642 - 2643	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$53 -	0\$54	2644 - 2645	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$55 -	0\$56	2646 - 2647	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$57 -	0\$58	2648 - 2649	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$59 -	0\$59	2650 - 2651	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$5% -	0\$5&	2652 - 2653	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$5' -	0\$50	2654 - 2655	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$5) -	0\$60	2656 - 2657	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$61 -	0\$62	2658 - 2659	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$63 -	0\$64	2660 - 2661	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
0\$65 -	0\$66	2662 - 2663	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$67 - 0\$68	2664 - 2665	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQUHUA IRUPDW	----- (Cont'd)	2
0\$69 - 0\$6A	2666 - 2667	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQUHUA IRUPDW		2
0\$6B - 0\$6C	2668 - 2669	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQUHUA IRUPDW		2
0\$6D - 0\$6E	2670 - 2671	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQUHUA IRUPDW		2
Primary Demand Block Meter 1						%ORFN 6LJH: read-only	72
0\$8% - 0\$8A	2700 - 2701	\$PSV \$, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0\$8' - 0\$8B	2702 - 2703	\$PSV %, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0\$8) - 0\$8C	2704 - 2705	\$PSV &, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0\$91 - 0\$92	2706 - 2707	3RVLWLYH :DWWW, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0\$93 - 0\$94	2708 - 2709	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0\$95 - 0\$96	2710 - 2711	1HJDWLYH :DWWW, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0\$97 - 0\$98	2712 - 2713	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0\$99 - 0\$9A	2714 - 2715	9\$V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0\$9% - 0\$9B	2716 - 2717	3RVLWLYH 3), 3-3K, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0\$9' - 0\$9C	2718 - 2719	1HJDWLYH 3), 3-3), \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0\$9) - 0\$9D	2720 - 2721	1HXWUDO &XUHQW, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0\$A1 - 0\$A2	2722 - 2723	3RVLWLYH :DWWW, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0\$A3 - 0\$A4	2724 - 2725	3RVLWLYH :DWWW, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0\$A5 - 0\$A6	2726 - 2727	3RVLWLYH :DWWW, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0\$A7 - 0\$A8	2728 - 2729	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$9 - 0\$9	2730 - 2731	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$\$ - 0\$\$	2732 - 2733	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$\$' - 0\$\$'	2734 - 2735	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0\$\$) - 0\$\$)	2736 - 2737	1HJDWLYH :DWWW, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0\$%1 - 0\$%2	2738 - 2739	1HJDWLYH :DWWW, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0\$%3 - 0\$%4	2740 - 2741	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$%5 - 0\$%6	2742 - 2743	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$%7 - 0\$%8	2744 - 2745	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$%9 - 0\$%9	2746 - 2747	9\$V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0\$%% - 0\$%%	2748 - 2749	9\$V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0\$%' - 0\$%'	2750 - 2751	9\$V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0\$%) - 0\$%)	2752 - 2753	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0\$&1 - 0\$&2	2754 - 2755	3RVLWLYH 3), 3KDVH %, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0\$&3 - 0\$&4	2756 - 2757	3RVLWLYH 3), 3KDVH &, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0\$&5 - 0\$&6	2758 - 2759	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0\$&7 - 0\$&8	2760 - 2761	1HJDWLYH 3), 3KDVH %, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0\$&9 - 0\$&9	2762 - 2763	1HJDWLYH 3), 3KDVH &, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary Demand Block Meter 2							
0\$() - 0\$()	2800 - 2801	\$PSV \$, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0\$)1 - 0\$)2	2802 - 2803	\$PSV %, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0\$)3 - 0\$)4	2804 - 2805	\$PSV &, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$)5 - 0\$)6	2806 - 2807	3RVLWLYH :DWWV, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0\$)7 - 0\$)8	2808 - 2809	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0\$)9 - 0\$)A	2810 - 2811	1HJDWLYH :DWWV, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0\$)B - 0\$)C	2812 - 2813	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0\$)D - 0\$)E	2814 - 2815	9\$V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0\$)F - 0%00	2816 - 2817	3RVLWLYH 3), 3-3K, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0%01 - 0%02	2818 - 2819	1HJDWLYH 3), 3-3), \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0%03 - 0%04	2820 - 2821	1HXWUDO &XUHQW, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0%05 - 0%06	2822 - 2823	3RVLWLYH :DWWV, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%07 - 0%08	2824 - 2825	3RVLWLYH :DWWV, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%09 - 0%0A	2826 - 2827	3RVLWLYH :DWWV, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%0B - 0%0C	2828 - 2829	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%0D - 0%0E	2830 - 2831	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%0F - 0%10	2832 - 2833	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%11 - 0%12	2834 - 2835	1HJDWLYH :DWWV, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%13 - 0%14	2836 - 2837	1HJDWLYH :DWWV, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%15 - 0%16	2838 - 2839	1HJDWLYH :DWWV, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%17 - 0%18	2840 - 2841	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%19 - 0%1A	2842 - 2843	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%1B - 0%1C	2844 - 2845	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%1' - 0%10	2846 - 2847	9\$V, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0%1) - 0%20	2848 - 2849	9\$V, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0%21 - 0%22	2850 - 2851	9\$V, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0%23 - 0%24	2852 - 2853	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%25 - 0%26	2854 - 2855	3RVLWLYH 3), 3KDVH %, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%27 - 0%28	2856 - 2857	3RVLWLYH 3), 3KDVH &, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%29 - 0%29	2858 - 2859	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%2% - 0%28	2860 - 2861	1HJDWLYH 3), 3KDVH %, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%2' - 0%20	2862 - 2863	1HJDWLYH 3), 3KDVH &, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Demand Block Meter 3						read-only	
0%53 - 0%54	2900 - 2901	\$PSV \$, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0%55 - 0%56	2902 - 2903	\$PSV %, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0%57 - 0%58	2904 - 2905	\$PSV &, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0%59 - 0%59	2906 - 2907	3RVLWLYH :DWWV, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%5% - 0%58	2908 - 2909	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0%5' - 0%50	2910 - 2911	1HJDWLYH :DWWV, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%5) - 0%60	2912 - 2913	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0%61 - 0%62	2914 - 2915	9\$V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0%63 - 0%64	2916 - 2917	3RVLWLYH 3), 3-3K, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%65 - 0%66	2918 - 2919	1HJDWLYH 3), 3-3), \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%67 - 0%68	2920 - 2921	1HXWUDO &XUHQW, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0%69 - 0%69	2922 - 2923	3RVLWLYH :DWWV, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%6% - 0%68	2924 - 2925	3RVLWLYH :DWWW, 3KDVH %, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	ZDWWW		2
0%6' - 0%66	2926 - 2927	3RVLWLYH :DWWW, 3KDVH &, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	ZDWWW		2
0%6) - 0%70	2928 - 2929	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$5V		2
0%71 - 0%72	2930 - 2931	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$5V		2
0%73 - 0%74	2932 - 2933	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$5V		2
0%75 - 0%76	2934 - 2935	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	ZDWWW		2
0%77 - 0%78	2936 - 2937	1HJDWLYH :DWWW, 3KDVH %, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	ZDWWW		2
0%79 - 0%79	2938 - 2939	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	ZDWWW		2
0%7% - 0%78	2940 - 2941	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$5V		2
0%7' - 0%77	2942 - 2943	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$5V		2
0%7) - 0%80	2944 - 2945	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$5V		2
0%81 - 0%82	2946 - 2947	9\$V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$V		2
0%83 - 0%84	2948 - 2949	9\$V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$V		2
0%85 - 0%86	2950 - 2951	9\$V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 O WR +9999 O	9\$V		2
0%87 - 0%88	2952 - 2953	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%89 - 0%89	2954 - 2955	3RVLWLYH 3), 3KDVH %, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%8% - 0%88	2956 - 2957	3RVLWLYH 3), 3KDVH &, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%8' - 0%88	2958 - 2959	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%8) - 0%90	2960 - 2961	1HJDWLYH 3), 3KDVH %, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0%91 - 0%92	2962 - 2963	1HJDWLYH 3), 3KDVH &, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Demand Block Meter 4							
0%7 - 0%8	3000 - 3001	\$PSV \$, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0%9 - 0%9	3002 - 3003	\$PSV %, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0%9 - 0%8	3004 - 3005	\$PSV &, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0%' - 0%0	3006 - 3007	3RVLWLYH :DWWW, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%0) - 0%&0	3008 - 3009	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%&1 - 0%&2	3010 - 3011	1HJDWLYH :DWWW, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%&3 - 0%&4	3012 - 3013	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%&5 - 0%&6	3014 - 3015	9\$V, 3-3K, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0%&7 - 0%&8	3016 - 3017	3RVLWLYH 3), 3-3K, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0%&9 - 0%&9	3018 - 3019	1HJDWLYH 3), 3-3), \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0%&% - 0%&8	3020 - 3021	1HXWUDO &XUHQW, \$YHUDJH	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0%&' - 0%&0	3022 - 3023	3RVLWLYH :DWWW, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%&) - 0%0	3024 - 3025	3RVLWLYH :DWWW, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%'1 - 0%'2	3026 - 3027	3RVLWLYH :DWWW, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%'3 - 0%'4	3028 - 3029	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%'5 - 0%'6	3030 - 3031	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%'7 - 0%'8	3032 - 3033	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0%'9 - 0%'9	3034 - 3035	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0%'% - 0%'&	3036 - 3037	1HJDWLYH :DWWW, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0% - 0%	3038 - 3039	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%) - 0%(0	3040 - 3041	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%(1 - 0%(2	3042 - 3043	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%(3 - 0%(4	3044 - 3045	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%(5 - 0%(6	3046 - 3047	9\$V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%(7 - 0%(8	3048 - 3049	9\$V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%(9 - 0%(\$	3050 - 3051	9\$V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%(% - 0%(&	3052 - 3053	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%((' - 0%(0	3054 - 3055	3RVLWLYH 3), 3KDVH %, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%(() - 0%(0	3056 - 3057	3RVLWLYH 3), 3KDVH &, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%)1 - 0%)2	3058 - 3059	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%)3 - 0%)4	3060 - 3061	1HJDWLYH 3), 3KDVH %, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%)5 - 0%)6	3062 - 3063	1HJDWLYH 3), 3KDVH &, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Demand Block Meter 5							
0&1% - 0&1&	3100 - 3101	\$PSV \$, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0&1' - 0&1(	3102 - 3103	\$PSV %, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0&1) - 0&20	3104 - 3105	\$PSV &, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0&21 - 0&22	3106 - 3107	3RVLWLYH :DWWW, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&23 - 0&24	3108 - 3109	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&25 - 0&26	3110 - 3111	1HJDWLYH :DWWW, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&27 - 0&28	3112 - 3113	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0&29 - 0&2A	3114 - 3115	9\$V, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0&2% - 0&2B	3116 - 3117	3RVLWLYH 3), 3-3K, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0&2' - 0&2C	3118 - 3119	1HJDWLYH 3), 3-3), \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0&2) - 0&30	3120 - 3121	1HXWUDO &XUHQW, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0&31 - 0&32	3122 - 3123	3RVLWLYH :DWWW, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&33 - 0&34	3124 - 3125	3RVLWLYH :DWWW, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&35 - 0&36	3126 - 3127	3RVLWLYH :DWWW, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&37 - 0&38	3128 - 3129	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&39 - 0&3A	3130 - 3131	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&3% - 0&3B	3132 - 3133	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&3' - 0&3C	3134 - 3135	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&3) - 0&40	3136 - 3137	1HJDWLYH :DWWW, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&41 - 0&42	3138 - 3139	1HJDWLYH :DWWW, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&43 - 0&44	3140 - 3141	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&45 - 0&46	3142 - 3143	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&47 - 0&48	3144 - 3145	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&49 - 0&4A	3146 - 3147	9\$V, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0&4% - 0&4B	3148 - 3149	9\$V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0&4' - 0&4C	3150 - 3151	9\$V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0&4) - 0&50	3152 - 3153	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0&51 - 0&52	3154 - 3155	3RVLWLYH 3), 3KDVH %, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&53 - 0&54	3156 - 3157	3RVLWLYH 3), 3KDVH &, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&55 - 0&56	3158 - 3159	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&57 - 0&58	3160 - 3161	1HJDWLYH 3), 3KDVH %, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&59 - 0&5A	3162 - 3163	1HJDWLYH 3), 3KDVH &, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary Demand Block Meter 6						read-only	
0&7) - 0&80	3200 - 3201	\$PSV \$, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&81 - 0&82	3202 - 3203	\$PSV %, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&83 - 0&84	3204 - 3205	\$PSV &, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&85 - 0&86	3206 - 3207	3RVLWLYH :DWWW, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&87 - 0&88	3208 - 3209	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0&89 - 0&8A	3210 - 3211	1HJDWLYH :DWWW, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&8B - 0&8C	3212 - 3213	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0&8D - 0&8E	3214 - 3215	9\$V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0&8F - 0&90	3216 - 3217	3RVLWLYH 3), 3-3K, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&91 - 0&92	3218 - 3219	1HJDWLYH 3), 3-3), \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&93 - 0&94	3220 - 3221	1HXWUDO &XUHQW, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&95 - 0&96	3222 - 3223	3RVLWLYH :DWWW, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&97 - 0&98	3224 - 3225	3RVLWLYH :DWWW, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&99 - 0&9A	3226 - 3227	3RVLWLYH :DWWW, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&9B - 0&9C	3228 - 3229	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0&9D - 0&9E	3230 - 3231	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0&9) -	0&&0	3232 - 3233	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
0&\$1 -	0&&2	3234 - 3235	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
0&\$3 -	0&&4	3236 - 3237	1HJDWLYH :DWWW, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
0&\$5 -	0&&6	3238 - 3239	1HJDWLYH :DWWW, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
0&\$7 -	0&&8	3240 - 3241	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
0&\$9 -	0&&\$	3242 - 3243	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
0&\$% -	0&&8	3244 - 3245	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
0&\$' -	0&&0	3246 - 3247	9\$V, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V	2
0&\$) -	0&&0	3248 - 3249	9\$V, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V	2
0&%1 -	0&&2	3250 - 3251	9\$V, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V	2
0&%3 -	0&&4	3252 - 3253	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH	2
0&%5 -	0&&6	3254 - 3255	3RVLWLYH 3), 3KDVH %, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH	2
0&%7 -	0&&8	3256 - 3257	3RVLWLYH 3), 3KDVH &, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH	2
0&%9 -	0&&\$	3258 - 3259	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH	2
0&%% -	0&&8	3260 - 3261	1HJDWLYH 3), 3KDVH %, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH	2
0&%' -	0&&0	3262 - 3263	1HJDWLYH 3), 3KDVH &, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH	2
						%ORFN 6LJH:	64
Primary Demand Block Meter 7						read-only	
0&(3 -	0&(4	3300 - 3301	\$PSV \$, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV	2
0&(5 -	0&(6	3302 - 3303	\$PSV %, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV	2
0&(7 -	0&(8	3304 - 3305	\$PSV &, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV	2
0&(9 -	0&(\$	3306 - 3307	3RVLWLYH :DWWW, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0&(% - 0&(&	3308 - 3309	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0&(' - 0&(0	3310 - 3311	1HJDWLYH :DWWW, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&() - 0&0	3312 - 3313	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0&1 - 0&)2	3314 - 3315	9\$V, 3-3K, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0&)3 - 0&)4	3316 - 3317	3RVLWLYH 3), 3-3K, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&)5 - 0&)6	3318 - 3319	1HJDWLYH 3), 3-3), \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&)7 - 0&)&	3320 - 3321	1HXWUDO &XUHQW, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&)& - 0&)\$	3322 - 3323	3RVLWLYH :DWWW, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&)% - 0&)&	3324 - 3325	3RVLWLYH :DWWW, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&)' - 0&)(	3326 - 3327	3RVLWLYH :DWWW, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&)) - 0'00	3328 - 3329	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'01 - 0'02	3330 - 3331	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'03 - 0'04	3332 - 3333	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'05 - 0'06	3334 - 3335	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'07 - 0'08	3336 - 3337	1HJDWLYH :DWWW, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'09 - 0'0\$	3338 - 3339	1HJDWLYH :DWWW, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'0% - 0'0&	3340 - 3341	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'0' - 0'00	3342 - 3343	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'0) - 0'10	3344 - 3345	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'11 - 0'12	3346 - 3347	9\$V, 3KDVH \$, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0'13 -	0'14	3348 - 3349	9\$V, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V	2
0'15 -	0'16	3350 - 3351	9\$V, 3KDVH &, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V	2
0'17 -	0'18	3352 - 3353	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
0'19 -	0'19	3354 - 3355	3RVLWLYH 3), 3KDVH %, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
0'1% -	0'18	3356 - 3357	3RVLWLYH 3), 3KDVH &, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
0'1' -	0'10	3358 - 3359	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
0'1) -	0'20	3360 - 3361	1HJDWLYH 3), 3KDVH %, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
0'21 -	0'22	3362 - 3363	1HJDWLYH 3), 3KDVH &, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
						%ORFN 6LJH:	64
Primary Demand Block Meter 8							read-only
0'47 -	0'48	3400 - 3401	\$PSV \$, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV	2
0'49 -	0'49	3402 - 3403	\$PSV %, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV	2
0'4% -	0'48	3404 - 3405	\$PSV &, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV	2
0'4' -	0'40	3406 - 3407	3RVLWLYH :DWWV, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW	2
0'4) -	0'50	3408 - 3409	3RVLWLYH 9\$5V, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V	2
0'51 -	0'52	3410 - 3411	1HJDWLYH :DWWV, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW	2
0'53 -	0'54	3412 - 3413	1HJDWLYH 9\$5V, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V	2
0'55 -	0'56	3414 - 3415	9\$V, 3-3K, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V	2
0'57 -	0'58	3416 - 3417	3RVLWLYH 3), 3-3K, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
0'59 -	0'59	3418 - 3419	1HJDWLYH 3), 3-3), \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH	2
0'5% -	0'58	3420 - 3421	1HXWUDO &XUHQW, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV	2
0'5' -	0'50	3422 - 3423	3RVLWLYH :DWWV, 3KDVH \$, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW	2
0'5) -	0'60	3424 - 3425	3RVLWLYH :DWWV, 3KDVH %, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0'61 -	0'62	3426 - 3427	3RVLWLYH :DWWW, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	2
0'63 -	0'64	3428 - 3429	3RVLWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
0'65 -	0'66	3430 - 3431	3RVLWLYH 9\$5V, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
0'67 -	0'68	3432 - 3433	3RVLWLYH 9\$5V, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
0'69 -	0'69	3434 - 3435	1HJDWLYH :DWWW, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	2
0'6% -	0'6&	3436 - 3437	1HJDWLYH :DWWW, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	2
0'6' -	0'6(	3438 - 3439	1HJDWLYH :DWWW, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	2
0'6) -	0'70	3440 - 3441	1HJDWLYH 9\$5V, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
0'71 -	0'72	3442 - 3443	1HJDWLYH 9\$5V, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
0'73 -	0'74	3444 - 3445	1HJDWLYH 9\$5V, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
0'75 -	0'76	3446 - 3447	9\$V, 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V	2
0'77 -	0'78	3448 - 3449	9\$V, 3KDVH %, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V	2
0'79 -	0'79	3450 - 3451	9\$V, 3KDVH &, \$YHUDJH	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V	2
0'7% -	0'7&	3452 - 3453	3RVLWLYH 3), 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
0'7' -	0'7(	3454 - 3455	3RVLWLYH 3), 3KDVH %, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
0'7) -	0'80	3456 - 3457	3RVLWLYH 3), 3KDVH &, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
0'81 -	0'82	3458 - 3459	1HJDWLYH 3), 3KDVH \$, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
0'83 -	0'84	3460 - 3461	1HJDWLYH 3), 3KDVH %, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
0'85 -	0'86	3462 - 3463	1HJDWLYH 3), 3KDVH &, \$YHUDJH	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
						%ORFN 6LJH:	64

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
Phase Angle Block (voltage)							read-only	
0'\$% - 0'\$%	3500 - 3500	\$QJOH, 9ROWV \$-%	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'\$& - 0'\$&	3501 - 3501	\$QJOH, 9ROWV %-&	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'\$' - 0'\$'	3502 - 3502	\$QJOH, 9ROWV &-\$	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
Phase Angle Block (Current Meter 1)							read-only	
0'\$(- 0'\$(	3503 - 3503	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'\$(- 0'\$(	3504 - 3504	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'%0 - 0'%0	3505 - 3505	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
							%ORFN 6LJH:	3
Phase Angle Block (Current Meter 2)							read-only	
0'%1 - 0'%1	3506 - 3506	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%2 - 0'%2	3507 - 3507	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%3 - 0'%3	3508 - 3508	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
							%ORFN 6LJH:	3
Phase Angle Block (Current Meter 3)							read-only	
0'%4 - 0'%4	3509 - 3509	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%5 - 0'%5	3510 - 3510	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%6 - 0'%6	3511 - 3511	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
							%ORFN 6LJH:	3
Phase Angle Block (Current Meter 4)							read-only	
0'%7 - 0'%7	3512 - 3512	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%8 - 0'%8	3513 - 3513	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%9 - 0'%9	3514 - 3514	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
							%ORFN 6LJH:	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
Phase Angle Block (Current Meter 5)							read-only	
0'%\$ - 0'%\$	3515 - 3515	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%% - 0'%%	3516 - 3516	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'%& - 0'%&	3517 - 3517	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
							%ORFN 6LJH:	3
Phase Angle Block (Current Meter 6)							read-only	
0%' - 0%'	3518 - 3518	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0%'(- 0%'(	3519 - 3519	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%') - 0%')	3520 - 3520	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
							%ORFN 6LJH:	3
Phase Angle Block (Current Meter 7)							read-only	
0'&0 - 0'&0	3521 - 3521	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'&1 - 0'&1	3522 - 3522	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'&2 - 0'&2	3523 - 3523	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
							%ORFN 6LJH:	3
Phase Angle Block (Current Meter 8)							read-only	
0'&3 - 0'&3	3524 - 3524	\$QJOH, 3KDVH \$ FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'&4 - 0'&4	3525 - 3525	\$QJOH, 3KDVH % FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	
0'&5 - 0'&5	3526 - 3526	\$QJOH, 3KDVH & FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Status Block						read-only	
0'&9 - 0'&9	3530 - 3530	3RUW ,*	8,1716	1 WR 3	none	.GHQWLILHV ZKLFK &20 SRUW D PDVWHV LV FRQQHFVHG WR; 1 IRU &201, 2 IRU &202, HWF.	1
0'&\$ - 0'&\$	3531 - 3531	&38 6WDWXV	8,1716	ELW-PDSSHG	mmpch-- bfee-cc	PPP PHDVXUHPHQW VWDWH (0 RII, 1 UXQLLQJ QRUPDO), 2 OLPS PRGH, 3 ZDUPXS, 6&7 ERRW, RWKHUV XQXVHG) 6HH QRWH 15. SFK 190(O EORFN 2. IODJV (S SURILOH, F FDOLEUDWLRQ, K KHDGHU), IODJ LV 1 LI 2. E - %DWWHU\ VWDWXV. (0 EDWWHU\ ORZ,1 EDWWHU\ 2) II IODVK VWDWH (0 LQLWLDOLJLQJ, 1 ORJLQJ GLVDEOHG E\ 9VZLWFK, 3 ORJLQJ) HH HGLW VWDWH (0 VWDUWS, 1 QRUPDO, 2 SULYLOHJHG FRPPDQG VHVLRQ, 3 SURILOH XSGDWH PRGH) FF SRUW HQDEOHG IRU HGLW(0 QRQH, 1-3 &201-&203)	1
0'&% - 0'&%	3532 - 3532	/LPLWV 6WDWXV	8,1716	ELW-PDSSHG	87654321 87654321	KLJK EWH LV VHWWS 1, 0 LQ, 1 RXW ORZ EWH LV VHWWS 2, 0 LQ, 1 RXW VHH QRWHV 11, 12, 17	1
0'&& - 0'&&	3533 - 3534	7LPH 6LQFH 5HVHW	8,1732	0 WR 4294967294	4 PVHF		2
0'&(- 0''0	3535 - 3537	&38 2Q 7LPH	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
0''1 - 0''3	3538 - 3540	&XUHQW 'DWH DQG 7LPH	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
0''4 - 0''4	3541 - 3541	5HVHUYHG				5HVHUYHG	1
0''5 - 0''5	3542 - 3542	&XUHQW 'D\ RI :HHN	8,1716	1 WR 7	1 GD\	1 6XQ, 2 0RQ, HWF.	1
						%ORFN 6LJH:	13
Short term Primary Minimum Block						read-only	
0''' - 0'''(	3550 - 3551	9ROWV \$-1, SUHYLRXV 'HPDQG LQWHUYDO 6KRUV 7HUP 0LQLXP	)/2\$7	0 WR 9999 0	YROW	0LQLXP LQVWDQWQRXV YDOXH PHDVXUHGXULQJ WKH GHPDQG LQWHUYDO EHIRUH WKH RQH PRVU UHFHQW\ FRPSOHWHG.	2
0''') - 0'''(0	3552 - 3553	9ROWV %-1, SUHYLRXV 'HPDQG LQWHUYDO 6KRUV 7HUP 0LQLXP	)/2\$7	0 WR 9999 0	YROW		2
0'''(1 - 0'''(2	3554 - 3555	9ROWV &-1, SUHYLRXV 'HPDQG LQWHUYDO 6KRUV 7HUP 0LQLXP	)/2\$7	0 WR 9999 0	YROW		2
0'''(3 - 0'''(4	3556 - 3557	9ROWV \$-%, SUHYLRXV 'HPDQG LQWHUYDO 6KRUV 7HUP 0LQLXP	)/2\$7	0 WR 9999 0	YROW		2
0'''(5 - 0'''(6	3558 - 3559	9ROWV %-&, SUHYLRXV 'HPDQG LQWHUYDO 6KRUV 7HUP 0LQLXP	)/2\$7	0 WR 9999 0	YROW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0'(7 - 0'(8	3560 - 3561	9ROWV &-\$, SUHYLRXV 'HPDQG LQWHUYDO 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV	(Cont'd)	2
0'(9 - 0'(\$	3562 - 3563	9ROWV \$-1, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV	0LQLPXP LQVWDQWDQHRXV YDOXH PHDVXUHG GXULQJ WKH PRVW UHFHQW\ FRPSOHWHG GHPDQG LQWHUYDO.	2
0'(% - 0'(&	3564 - 3565	9ROWV %-1, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0'(* - 0'((	3566 - 3567	9ROWV &-1, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0'() - 0'()0	3568 - 3569	9ROWV \$-%, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0')1 - 0')2	3570 - 3571	9ROWV %-&, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0')3 - 0')4	3572 - 3573	9ROWV &-\$, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0')5 - 0')6	3574 - 3575	9ROWV %-&, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0')7 - 0')8	3576 - 3577	9ROWV &-\$, 6KRUW 7HUP 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
						%ORFN 6LJH:	24
Primary Minimum Block (Voltage)						read-only	
0')% - 0')&	3580 - 3581	9ROWV \$-1, 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0')* - 0')((	3582 - 3583	9ROWV %-1, 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0')() - 0'()00	3584 - 3585	9ROWV &-1, 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0'()1 - 0'()02	3586 - 3587	9ROWV \$-%, 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0'()3 - 0'()04	3588 - 3589	9ROWV %-&, 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0'()5 - 0'()06	3590 - 3591	9ROWV &-\$, 0LQLPXP	) /2\$7	0 WR 9999 0	YROWV		2
0'()7 - 0'()08	3592 - 3593	)UHTXHQF, 0LQLPXP	) /2\$7	0 WR 65.00	+]		2
						%ORFN 6LJH:	14
Primary Minimum Block Meter 1						read-only	
0'()0 - 0'()10	3600 - 3601	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0'()11 - 0'()12	3602 - 3603	\$PSV %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0'()13 - 0'()14	3604 - 3605	\$PSV &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0'()15 - 0'()16	3606 - 3607	3RVLWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
0'()17 - 0'()18	3608 - 3609	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
0'()19 - 0'()19	3610 - 3611	1HJDWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
0'()1% - 0'()1&	3612 - 3613	1HJDWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
0'()1' - 0'()10	3614 - 3615	9\$V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0'()1) - 0'()20	3616 - 3617	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0'()21 - 0'()22	3618 - 3619	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0'()23 - 0'()24	3620 - 3621	1HXWUDO &XUHQW, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0(25 - 0(26	3622 - 3623	3RVLWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(27 - 0(28	3624 - 3625	3RVLWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(29 - 0(29	3626 - 3627	3RVLWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(2% - 0(28	3628 - 3629	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(2' - 0(29	3630 - 3631	3RVLWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(2) - 0(30	3632 - 3633	3RVLWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(31 - 0(32	3634 - 3635	1HJDWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(33 - 0(34	3636 - 3637	1HJDWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(35 - 0(36	3638 - 3639	1HJDWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(37 - 0(38	3640 - 3641	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(39 - 0(39	3642 - 3643	1HJDWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(3% - 0(38	3644 - 3645	1HJDWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(3' - 0(39	3646 - 3647	9\$V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0(3) - 0(40	3648 - 3649	9\$V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0(41 - 0(42	3650 - 3651	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0(43 - 0(44	3652 - 3653	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(45 - 0(46	3654 - 3655	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(47 - 0(48	3656 - 3657	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(49 - 0(49	3658 - 3659	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0(4% - 0(4&	3660 - 3661	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(4' - 0(4(	3662 - 3663	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Minimum Block Meter 2						read-only	
0(73 - 0(74	3700 - 3701	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0(75 - 0(76	3702 - 3703	\$PSV %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0(77 - 0(78	3704 - 3705	\$PSV &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0(79 - 0(7\$	3706 - 3707	3RVLWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
0(7% - 0(7&	3708 - 3709	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
0(7' - 0(7(	3710 - 3711	1HJDWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
0(7) - 0(8(	3712 - 3713	1HJDWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
0(81 - 0(82	3714 - 3715	9\$V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0(83 - 0(84	3716 - 3717	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(85 - 0(86	3718 - 3719	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(87 - 0(88	3720 - 3721	1HXWUDO &XUHQW, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0(89 - 0(8\$	3722 - 3723	3RVLWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(8% - 0(8&	3724 - 3725	3RVLWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(8' - 0(8(	3726 - 3727	3RVLWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(8) - 0(9(	3728 - 3729	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(91 - 0(92	3730 - 3731	3RVLWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(93 - 0(94	3732 - 3733	3RVLWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(95 - 0(96	3734 - 3735	1HJDWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0(97 - 0(98	3736 - 3737	1HJDWLYH :DWWV, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(99 - 0(9\$	3738 - 3739	1HJDWLYH :DWWV, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(9% - 0(9&	3740 - 3741	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(9' - 0(9(	3742 - 3743	1HJDWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(9) - 0(\$0	3744 - 3745	1HJDWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0(\$1 - 0(\$2	3746 - 3747	9\$V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0(\$3 - 0(\$4	3748 - 3749	9\$V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0(\$5 - 0(\$6	3750 - 3751	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0(\$7 - 0(\$8	3752 - 3753	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(\$9 - 0(\$\$	3754 - 3755	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(\$% - 0(\$&	3756 - 3757	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(\$' - 0(\$('	3758 - 3759	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(\$) - 0(%0	3760 - 3761	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0(%1 - 0(%2	3762 - 3763	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Minimum Block Meter 3						read-only	
0('7 - 0('8	3800 - 3801	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0('9 - 0('\$	3802 - 3803	\$PSV %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0('% - 0('&	3804 - 3805	\$PSV &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0('" - 0('('	3806 - 3807	3RVLWLYH :DWWV, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	ZDWWW		2
0(') - 0('0	3808 - 3809	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	9\$5V		2
0((1 - 0((2	3810 - 3811	1HJDWLYH :DWWV, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0((3 - 0((4	3812 - 3813	1HJDWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	9\$5V		2
0((5 - 0((6	3814 - 3815	9\$V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0((7 - 0((8	3816 - 3817	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0((9 - 0(((\$	3818 - 3819	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0((% - 0((&	3820 - 3821	1HXWUDO &XUUHQW, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
0((' - 0((()	3822 - 3823	3RVLWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0(() - 0((()	3824 - 3825	3RVLWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0()1 - 0()2	3826 - 3827	3RVLWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0()3 - 0()4	3828 - 3829	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0()5 - 0()6	3830 - 3831	3RVLWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0()7 - 0()8	3832 - 3833	3RVLWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0()9 - 0()(\$	3834 - 3835	1HJDWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0()% - 0()&	3836 - 3837	1HJDWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0() ' - 0()()	3838 - 3839	1HJDWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0()) - 0()00	3840 - 3841	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0()01 - 0()02	3842 - 3843	1HJDWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0()03 - 0()04	3844 - 3845	1HJDWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0()05 - 0()06	3846 - 3847	9\$V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0()07 - 0()08	3848 - 3849	9\$V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0()09 - 0()0(\$	3850 - 3851	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0)0% - 0)08	3852 - 3853	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)0' - 0)00	3854 - 3855	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)0) - 0)10	3856 - 3857	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)11 - 0)12	3858 - 3859	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)13 - 0)14	3860 - 3861	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)15 - 0)16	3862 - 3863	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Minimum Block Meter 4							
0)3% - 0)38	3900 - 3901	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0)3' - 0)30	3902 - 3903	\$PSV %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0)3) - 0)40	3904 - 3905	\$PSV &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0)41 - 0)42	3906 - 3907	3RVLWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
0)43 - 0)44	3908 - 3909	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
0)45 - 0)46	3910 - 3911	1HJDWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
0)47 - 0)48	3912 - 3913	1HJDWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
0)49 - 0)49	3914 - 3915	9\$V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0)4% - 0)48	3916 - 3917	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)4' - 0)40	3918 - 3919	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)4) - 0)50	3920 - 3921	1HXWUDO &XUUHQW, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0)51 - 0)52	3922 - 3923	3RVLWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)53 - 0)54	3924 - 3925	3RVLWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)55 - 0)56	3926 - 3927	3RVLWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0)57 - 0)58	3928 - 3929	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)59 - 0)5A	3930 - 3931	3RVLWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)5B - 0)5C	3932 - 3933	3RVLWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)5D - 0)5E	3934 - 3935	1HJDWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0)5F - 0)60	3936 - 3937	1HJDWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0)61 - 0)62	3938 - 3939	1HJDWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
0)63 - 0)64	3940 - 3941	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)65 - 0)66	3942 - 3943	1HJDWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)67 - 0)68	3944 - 3945	1HJDWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)69 - 0)6A	3946 - 3947	9\$V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0)6B - 0)6C	3948 - 3949	9\$V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0)6D - 0)6E	3950 - 3951	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0)6F - 0)70	3952 - 3953	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)71 - 0)72	3954 - 3955	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)73 - 0)74	3956 - 3957	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)75 - 0)76	3958 - 3959	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)77 - 0)78	3960 - 3961	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)79 - 0)7A	3962 - 3963	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Primary Minimum Block Meter 5						read-only	
0)9) - 0)\$0	4000 - 4001	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
0)\$1 - 0)\$2	4002 - 4003	\$PSV %, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
0)\$3 - 0)\$4	4004 - 4005	\$PSV &, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
0)\$5 - 0)\$6	4006 - 4007	3RVLWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR +9999 0	ZDWWW		2
0)\$7 - 0)\$8	4008 - 4009	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR +9999 0	9\$5V		2
0)\$9 - 0)\$A	4010 - 4011	1HJDWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR +9999 0	ZDWWW		2
0)\$% - 0)\$&	4012 - 4013	1HJDWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR +9999 0	9\$5V		2
0)\$' - 0)\$('	4014 - 4015	9\$V, 3-3K, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0)\$) - 0)%0	4016 - 4017	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
0)%1 - 0)%2	4018 - 4019	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
0)%3 - 0)%4	4020 - 4021	1HXWUDO &XUUHQW, 0LQLPXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
0)%5 - 0)%6	4022 - 4023	3RVLWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)%7 - 0)%8	4024 - 4025	3RVLWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)%9 - 0)%A	4026 - 4027	3RVLWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)%% - 0)%&	4028 - 4029	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%' - 0)%('	4030 - 4031	3RVLWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%& - 0)%&('	4032 - 4033	3RVLWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%1 - 0)%2	4034 - 4035	1HJDWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)%3 - 0)%4	4036 - 4037	1HJDWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)%5 - 0)%6	4038 - 4039	1HJDWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)%7 - 0)%8	4040 - 4041	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0)&9 - 0)&\$	4042 - 4043	1HJDWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)&% - 0)&&	4044 - 4045	1HJDWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
0)&' - 0)&(	4046 - 4047	9\$V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0)&) - 0)'0	4048 - 4049	9\$V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0)'1 - 0)'2	4050 - 4051	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
0)'3 - 0)'4	4052 - 4053	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)'5 - 0)'6	4054 - 4055	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)'7 - 0)'8	4056 - 4057	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)'9 - 0)'\$	4058 - 4059	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)'% - 0)'&	4060 - 4061	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
0)'* - 0)'(	4062 - 4063	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Minimum Block Meter 6						read-only	
1003 - 1004	4100 - 4101	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1005 - 1006	4102 - 4103	\$PSV %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1007 - 1008	4104 - 4105	\$PSV &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1009 - 100\$	4106 - 4107	3RVLWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	ZDWWW		2
100% - 100&	4108 - 4109	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	9\$5V		2
100' - 100(	4110 - 4111	1HJDWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	ZDWWW		2
100) - 100)	4112 - 4113	1HJDWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	9\$5V		2
1011 - 1012	4114 - 4115	9\$V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
1013 - 1014	4116 - 4117	3RVLWLYH 3RZHU JDFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1015 -	1016	4118 - 4119	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
1017 -	1018	4120 - 4121	1HXWUDO &XUUHQW, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
1019 -	1019	4122 - 4123	3RVLWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
101% -	1018	4124 - 4125	3RVLWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
101' -	1010	4126 - 4127	3RVLWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
101) -	1020	4128 - 4129	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1021 -	1022	4130 - 4131	3RVLWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1023 -	1024	4132 - 4133	3RVLWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1025 -	1026	4134 - 4135	1HJDWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
1027 -	1028	4136 - 4137	1HJDWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
1029 -	1029	4138 - 4139	1HJDWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
102% -	1028	4140 - 4141	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
102' -	1020	4142 - 4143	1HJDWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
102) -	1030	4144 - 4145	1HJDWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1031 -	1032	4146 - 4147	9\$V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
1033 -	1034	4148 - 4149	9\$V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
1035 -	1036	4150 - 4151	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
1037 -	1038	4152 - 4153	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
1039 -	1039	4154 - 4155	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
103% -	1038	4156 - 4157	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
103' - 103)	4158 - 4159	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
103) - 1040	4160 - 4161	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
1041 - 1042	4162 - 4163	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Minimum Block Meter 7						read-only	
1067 - 1068	4200 - 4201	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1069 - 1069	4202 - 4203	\$PSV %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
106% - 1068	4204 - 4205	\$PSV &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
106' - 1060	4206 - 4207	3RVLWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	ZDWWW		2
106) - 1070	4208 - 4209	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	9\$5V		2
1071 - 1072	4210 - 4211	1HJDWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	ZDWWW		2
1073 - 1074	4212 - 4213	1HJDWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	9\$5V		2
1075 - 1076	4214 - 4215	9\$V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
1077 - 1078	4216 - 4217	3RVLWLYH 3RZHU JDFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
1079 - 1079	4218 - 4219	1HJDWLYH 3RZHU JDFWRU, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
107% - 1078	4220 - 4221	1HXWUDO &XUHQW, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
107' - 1070	4222 - 4223	3RVLWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
107) - 1080	4224 - 4225	3RVLWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
1081 - 1082	4226 - 4227	3RVLWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW		2
1083 - 1084	4228 - 4229	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1085 - 1086	4230 - 4231	3RVLWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1087 - 1088	4232 - 4233	3RVLWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1089 -	108\$	4234 - 4235	1HJDWLYH :DWWW, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	2
108% -	108&	4236 - 4237	1HJDWLYH :DWWW, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	2
108' -	108(	4238 - 4239	1HJDWLYH :DWWW, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWW	2
108) -	1090	4240 - 4241	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
1091 -	1092	4242 - 4243	1HJDWLYH 9\$5V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
1093 -	1094	4244 - 4245	1HJDWLYH 9\$5V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V	2
1095 -	1096	4246 - 4247	9\$V, 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V	2
1097 -	1098	4248 - 4249	9\$V, 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V	2
1099 -	109\$	4250 - 4251	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V	2
109% -	109&	4252 - 4253	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
109' -	109(	4254 - 4255	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
109) -	10\$0	4256 - 4257	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
10\$1 -	10\$2	4258 - 4259	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
10\$3 -	10\$4	4260 - 4261	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
10\$5 -	10\$6	4262 - 4263	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH	2
						%ORFN 6LJH:	64
Primary Minimum Block Meter 8						read-only	
10&% -	10&&	4300 - 4301	\$PSV \$, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV	2
10&' -	10&(	4302 - 4303	\$PSV %, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV	2
10&) -	10'0	4304 - 4305	\$PSV &, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV	2
10'1 -	10'2	4306 - 4307	3RVLWLYH :DWWW, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	ZDWWW	2
10'3 -	10'4	4308 - 4309	3RVLWLYH 9\$5V, 3-3K, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR +9999 0	9\$5V	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
10'5 - 10'6	4310 - 4311	1HJDWLYH :DWWW, 3-3K, 0LQLXPX \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
10'7 - 10'8	4312 - 4313	1HJDWLYH 9\$5V, 3-3K, 0LQLXPX \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
10'9 - 10'\$	4314 - 4315	9\$V, 3-3K, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
10'% - 10'8	4316 - 4317	3RVLWLYH 3RZHU JDFWRU, 3-3K, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
10'' - 10'0	4318 - 4319	1HJDWLYH 3RZHU JDFWRU, 3-3K, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
10') - 10(0	4320 - 4321	1HXWUDO &XUHQW, 0LQLXPX \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
10(1 - 10(2	4322 - 4323	3RVLWLYH :DWWW, 3KDVH \$, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
10(3 - 10(4	4324 - 4325	3RVLWLYH :DWWW, 3KDVH %, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
10(5 - 10(6	4326 - 4327	3RVLWLYH :DWWW, 3KDVH &, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
10(7 - 10(8	4328 - 4329	3RVLWLYH 9\$5V, 3KDVH \$, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
10(9 - 10(\$	4330 - 4331	3RVLWLYH 9\$5V, 3KDVH %, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
10(% - 10(8	4332 - 4333	3RVLWLYH 9\$5V, 3KDVH &, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
10(' - 10(0	4334 - 4335	1HJDWLYH :DWWW, 3KDVH \$, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
10() - 10(0	4336 - 4337	1HJDWLYH :DWWW, 3KDVH %, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
10)1 - 10)2	4338 - 4339	1HJDWLYH :DWWW, 3KDVH &, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
10)3 - 10)4	4340 - 4341	1HJDWLYH 9\$5V, 3KDVH \$, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
10)5 - 10)6	4342 - 4343	1HJDWLYH 9\$5V, 3KDVH %, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
10)7 - 10)8	4344 - 4345	1HJDWLYH 9\$5V, 3KDVH &, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
10)9 - 10)\$	4346 - 4347	9\$V, 3KDVH \$, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
10)% - 10)8	4348 - 4349	9\$V, 3KDVH %, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
10)' - 10)(	4350 - 4351	9\$V, 3KDVH &, 0LQLPXP \$YJ 'HPDQG	)/\$7	-9999 0 WR +9999 0	9\$V		2
10)) - 1100	4352 - 4353	3RVLWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	)/\$7	-1.00 WR +1.00	QRQH		2
1101 - 1102	4354 - 4355	3RVLWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	)/\$7	-1.00 WR +1.00	QRQH		2
1103 - 1104	4356 - 4357	3RVLWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	)/\$7	-1.00 WR +1.00	QRQH		2
1105 - 1106	4358 - 4359	1HJDWLYH 3), 3KDVH \$, 0LQLPXP \$YJ 'HPDQG	)/\$7	-1.00 WR +1.00	QRQH		2
1107 - 1108	4360 - 4361	1HJDWLYH 3), 3KDVH %, 0LQLPXP \$YJ 'HPDQG	)/\$7	-1.00 WR +1.00	QRQH		2
1109 - 1109	4362 - 4363	1HJDWLYH 3), 3KDVH &, 0LQLPXP \$YJ 'HPDQG	)/\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary Minimum Timestamp Block						read-only	
112) - 1131	4400 - 4402	9ROWV \$-1, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1132 - 1134	4403 - 4405	9ROWV %-1, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1135 - 1137	4406 - 4408	9ROWV &-1, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1138 - 1139	4409 - 4411	9ROWV \$-%, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
113% - 113	4412 - 4414	9ROWV %-&, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
113(- 1140	4415 - 4417	9ROWV &-\$, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1141 - 1143	4418 - 4420	)UHTXHQF, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	21
Primary Minimum Timestamp Block Meter 1						read-only	
1193 - 1195	4500 - 4502	\$PSV \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1196 - 1198	4503 - 4505	\$PSV %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1199 - 119%	4506 - 4508	\$PSV &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
119& - 119(	4509 - 4511	3RVLWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
119) - 11\$1	4512 - 4514	3RVLWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11\$2 - 11\$4	4515 - 4517	1HJDWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11\$5 - 11\$7	4518 - 4520	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11\$8 - 11\$\$	4521 - 4523	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11\$% - 11\$	4524 - 4526	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11\$(- 11%0	4527 - 4529	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%1 - 11%3	4530 - 4532	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3
11%4 - 11%6	4533 - 4535	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%7 - 11%9	4536 - 4538	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%\$ - 11%&	4539 - 4541	3RVLWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%' - 11%)	4542 - 4544	3RVLWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&0 - 11&2	4545 - 4547	3RVLWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&3 - 11&5	4548 - 4550	3RVLWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&6 - 11&8	4551 - 4553	1HJDWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&9 - 11%0	4554 - 4556	1HJDWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%& - 11%0	4557 - 4559	1HJDWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%) - 11'1	4560 - 4562	1HJDWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'2 - 11'4	4563 - 4565	1HJDWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'5 - 11'7	4566 - 4568	1HJDWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'8 - 11'\$	4569 - 4571	9\$V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
11)% - 11"	4572 - 4574	9\$V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(' - 11(0	4575 - 4577	9\$V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(1 - 11(3	4578 - 4580	3RVLWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(4 - 11(6	4581 - 4583	3RVLWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(7 - 11(9	4584 - 4586	3RVLWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(\$ - 11(8	4587 - 4589	1HJDWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(' - 11(0	4590 - 4592	1HJDWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11)0 - 11)2	4593 - 4595	1HJDWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
Primary Minimum Timestamp Block Meter 2						read-only	
11)7 - 11)9	4600 - 4602	\$PSV \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11)\$ - 11)&	4603 - 4605	\$PSV %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11)' - 11))	4606 - 4608	\$PSV &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1200 - 1202	4609 - 4611	3RVLWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1203 - 1205	4612 - 4614	3RVLWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1206 - 1208	4615 - 4617	1HJDWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1209 - 120%	4618 - 4620	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
120& - 120(	4621 - 4623	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
120) - 1211	4624 - 4626	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1212 - 1214	4627 - 4629	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1215 - 1217	4630 - 4632	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1218 -	1219	4633 - 4635	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
121% -	121	4636 - 4638	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
121(-	1220	4639 - 4641	3RVLWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1221 -	1223	4642 - 4644	3RVLWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1224 -	1226	4645 - 4647	3RVLWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1227 -	1229	4648 - 4650	3RVLWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
122\$ -	1228	4651 - 4653	1HJDWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
122' -	122	4654 - 4656	1HJDWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1230 -	1232	4657 - 4659	1HJDWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1233 -	1235	4660 - 4662	1HJDWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1236 -	1238	4663 - 4665	1HJDWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1239 -	123%	4666 - 4668	1HJDWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
123& -	1236	4669 - 4671	9\$V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
123) -	1241	4672 - 4674	9\$V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1242 -	1244	4675 - 4677	9\$V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1245 -	1247	4678 - 4680	3RVLWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1248 -	124\$	4681 - 4683	3RVLWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
124% -	124	4684 - 4686	3RVLWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
124(-	1250	4687 - 4689	1HJDWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1251 -	1253	4690 - 4692	1HJDWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1254 -	1256	4693 - 4695	1HJDWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
						%ORFN 6LJH:	96
Primary Minimum Timestamp Block Meter 3							read-only
125% -	125	4700 - 4702	\$PSV \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
125(-	1260	4703 - 4705	\$PSV %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1261 -	1263	4706 - 4708	\$PSV &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1264 -	1266	4709 - 4711	3RVLWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1267 -	1269	4712 - 4714	3RVLWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
126\$ -	1268	4715 - 4717	1HJDWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
126' -	126	4718 - 4720	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1270 -	1272	4721 - 4723	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1273 -	1275	4724 - 4726	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1276 -	1278	4727 - 4729	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1279 -	1279	4730 - 4732	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF	3
127& -	1270	4733 - 4735	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
127) -	1281	4736 - 4738	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1282 -	1284	4739 - 4741	3RVLWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1285 -	1287	4742 - 4744	3RVLWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1288 -	1288	4745 - 4747	3RVLWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
128% -	128	4748 - 4750	3RVLWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
128(-	1290	4751 - 4753	1HJDWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1291 -	1293	4754 - 4756	1HJDWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1294 -	1296	4757 - 4759	1HJDWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1297 -	1299	4760 - 4762	1HJDWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
129\$ -	1298	4763 - 4765	1HJDWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
129' -	1297	4766 - 4768	1HJDWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12\$0 -	12\$2	4769 - 4771	9\$V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12\$3 -	12\$5	4772 - 4774	9\$V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12\$6 -	12\$8	4775 - 4777	9\$V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12\$9 -	12\$4	4778 - 4780	3RVLWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12\$& -	12\$0	4781 - 4783	3RVLWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12\$) -	12%1	4784 - 4786	3RVLWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12%2 -	12%4	4787 - 4789	1HJDWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12%5 -	12%7	4790 - 4792	1HJDWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12%8 -	12%9	4793 - 4795	1HJDWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
						%ORFN 6LJH:	96
Primary Minimum Timestamp Block Meter 4						read-only	
12%) -	12&1	4800 - 4802	\$PSV \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12&2 -	12&4	4803 - 4805	\$PSV %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12&5 -	12&7	4806 - 4808	\$PSV &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12&8 -	12&9	4809 - 4811	3RVLWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
12&% -	12&	4812 - 4814	3RVLWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
12& - 120	4815 - 4817	1HJDWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12' - 12'3	4818 - 4820	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12'4 - 12'6	4821 - 4823	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12'7 - 12'9	4824 - 4826	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12'\$ - 12'8	4827 - 4829	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12'' - 12'9	4830 - 4832	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3
12(0 - 12(2	4833 - 4835	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(3 - 12(5	4836 - 4838	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(6 - 12(8	4839 - 4841	3RVLWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(9 - 12(%	4842 - 4844	3RVLWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(& - 12(0	4845 - 4847	3RVLWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(- 12)1	4848 - 4850	3RVLWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)2 - 12)4	4851 - 4853	1HJDWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)5 - 12)7	4854 - 4856	1HJDWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)8 - 12)\$	4857 - 4859	1HJDWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)% - 12)	4860 - 4862	1HJDWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)(- 1300	4863 - 4865	1HJDWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1301 - 1303	4866 - 4868	1HJDWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1304 - 1306	4869 - 4871	9\$V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1307 - 1309	4872 - 4874	9\$V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
130\$ -	1308	4875 - 4877	9\$V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
130' -	1309	4878 - 4880	3RVLWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1310 -	1312	4881 - 4883	3RVLWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1313 -	1315	4884 - 4886	3RVLWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1316 -	1318	4887 - 4889	1HJDWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1319 -	1319	4890 - 4892	1HJDWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
131& -	1310	4893 - 4895	1HJDWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
						%ORFN 6LJH:	96
Primary Minimum Timestamp Block Meter 5						read-only	
1323 -	1325	4900 - 4902	\$PSV \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1326 -	1328	4903 - 4905	\$PSV %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1329 -	1329	4906 - 4908	\$PSV &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
132& -	1320	4909 - 4911	3RVLWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
132) -	1331	4912 - 4914	3RVLWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1332 -	1334	4915 - 4917	1HJDWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1335 -	1337	4918 - 4920	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1338 -	1338	4921 - 4923	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
133% -	1330	4924 - 4926	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
133(-	1340	4927 - 4929	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1341 -	1343	4930 - 4932	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF	
1344 -	1346	4933 - 4935	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1347 -	1349	4936 - 4938	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
134\$ -	1348	4939 - 4941	3RVLWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
134' -	1347	4942 - 4944	3RVLWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1350 -	1352	4945 - 4947	3RVLWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1353 -	1355	4948 - 4950	3RVLWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1356 -	1358	4951 - 4953	1HJDWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1359 -	1359	4954 - 4956	1HJDWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
135& -	1356	4957 - 4959	1HJDWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
135) -	1361	4960 - 4962	1HJDWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1362 -	1364	4963 - 4965	1HJDWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1365 -	1367	4966 - 4968	1HJDWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1368 -	1368	4969 - 4971	9\$V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
136% -	1366	4972 - 4974	9\$V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
136(-	1370	4975 - 4977	9\$V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1371 -	1373	4978 - 4980	3RVLWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1374 -	1376	4981 - 4983	3RVLWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1377 -	1379	4984 - 4986	3RVLWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
137\$ -	1378	4987 - 4989	1HJDWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
137' -	1377	4990 - 4992	1HJDWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1380 -	1382	4993 - 4995	1HJDWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
						%ORFN 6LJH:	96
Primary Minimum Timestamp Block Meter 6						read-only	
1387 -	1389	5000 - 5002	\$PSV \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
138\$ -	1388	5003 - 5005	\$PSV %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
138' -	1387	5006 - 5008	\$PSV &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1390 -	1392	5009 - 5011	3RVLWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1393 -	1395	5012 - 5014	3RVLWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1396 -	1398	5015 - 5017	1HJDWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1399 -	1394	5018 - 5020	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
139& -	1390	5021 - 5023	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
139) -	13\$1	5024 - 5026	3RVLWLYH 3RZHU JDFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13\$2 -	13\$4	5027 - 5029	1HJDWLYH 3RZHU JDFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13\$5 -	13\$7	5030 - 5032	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF	3
13\$8 -	13\$\$	5033 - 5035	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13\$% -	13\$	5036 - 5038	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13\$(-	13%0	5039 - 5041	3RVLWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13%1 -	13%3	5042 - 5044	3RVLWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13%4 -	13%6	5045 - 5047	3RVLWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13%7 -	13%9	5048 - 5050	3RVLWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13%\$ -	13%&	5051 - 5053	1HJDWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
13%' -	13%)	5054 - 5056	1HJDWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg		
Hex	Decimal								
13C0 -	13C2	5057 - 5059		Negative Watts, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13C3 -	13C5	5060 - 5062		Negative VARs, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13C6 -	13C8	5063 - 5065		Negative VARs, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13C9 -	13CB	5066 - 5068		Negative VARs, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13CC -	13CE	5069 - 5071		VAs, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13CF -	13D1	5072 - 5074		VAs, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13D2 -	13D4	5075 - 5077		VAs, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13D5 -	13D7	5078 - 5080		Positive PF, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13D8 -	13DA	5081 - 5083		Positive PF, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13DB -	13DD	5084 - 5086		Positive PF, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13DE -	13E0	5087 - 5089		Negative PF, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13E1 -	13E3	5090 - 5092		Negative PF, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13E4 -	13E6	5093 - 5095		Negative PF, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
								Block Size:	96
Primary Minimum Timestamp Block Meter 7								read-only	
13EB -	13ED	5100 - 5102		Amps A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13EE -	13F0	5103 - 5105		Amps B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13F1 -	13F3	5106 - 5108		Amps C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13F4 -	13F6	5109 - 5111		Positive Watts, 3-Ph, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13F7 -	13F9	5112 - 5114		Positive VARs, 3-Ph, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3
13FA -	13FC	5115 - 5117		Negative Watts, 3-Ph, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
133 - 133	5118 - 5120	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1400 - 1402	5121 - 5123	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1403 - 1405	5124 - 5126	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1406 - 1408	5127 - 5129	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1409 - 140%	5130 - 5132	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3
140& - 140(	5133 - 5135	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
140) - 1411	5136 - 5138	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1412 - 1414	5139 - 5141	3RVLWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1415 - 1417	5142 - 5144	3RVLWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1418 - 141\$	5145 - 5147	3RVLWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
141% - 141	5148 - 5150	3RVLWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
141(- 1420	5151 - 5153	1HJDWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1421 - 1423	5154 - 5156	1HJDWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1424 - 1426	5157 - 5159	1HJDWLYH :DWWV, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1427 - 1429	5160 - 5162	1HJDWLYH 9\$5V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
142\$ - 142&	5163 - 5165	1HJDWLYH 9\$5V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
142' - 142)	5166 - 5168	1HJDWLYH 9\$5V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1430 - 1432	5169 - 5171	9\$V, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1433 - 1435	5172 - 5174	9\$V, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1436 - 1438	5175 - 5177	9\$V, 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1439 -	1439	5178 - 5180	3RVLWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1438 -	1438	5181 - 5183	3RVLWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
143) -	1441	5184 - 5186	3RVLWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1442 -	1444	5187 - 5189	1HJDWLYH 3), 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1445 -	1447	5190 - 5192	1HJDWLYH 3), 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1448 -	1449	5193 - 5195	1HJDWLYH 3), 3KDVH &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
						%ORFN 6LJH:	96
Primary Minimum Timestamp Block Meter 8						read-only	
144) -	1451	5200 - 5202	\$PSV \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1452 -	1454	5203 - 5205	\$PSV %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1455 -	1457	5206 - 5208	\$PSV &, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1458 -	1459	5209 - 5211	3RVLWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
145% -	145	5212 - 5214	3RVLWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
145(-	1460	5215 - 5217	1HJDWLYH :DWWV, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1461 -	1463	5218 - 5220	1HJDWLYH 9\$5V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1464 -	1466	5221 - 5223	9\$V, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1467 -	1469	5224 - 5226	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
146\$ -	1468	5227 - 5229	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
146' -	146	5230 - 5232	1HXWUDO &XUUHQW, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF	3
1470 -	1472	5233 - 5235	3RVLWLYH :DWWV, 3KDVH \$, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1473 -	1475	5236 - 5238	3RVLWLYH :DWWV, 3KDVH %, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1476 -	1478	5239 - 5241	Positive Watts, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
1479 -	147B	5242 - 5244	Positive VARs, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
147C -	147E	5245 - 5247	Positive VARs, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
147F -	1481	5248 - 5250	Positive VARs, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
1482 -	1484	5251 - 5253	Negative Watts, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
1485 -	1487	5254 - 5256	Negative Watts, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
1488 -	148A	5257 - 5259	Negative Watts, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
148B -	148D	5260 - 5262	Negative VARs, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
148E -	1490	5263 - 5265	Negative VARs, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
1491 -	1493	5266 - 5268	Negative VARs, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
1494 -	1496	5269 - 5271	VAs, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
1497 -	1499	5272 - 5274	VAs, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
149A -	149C	5275 - 5277	VAs, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
149D -	149F	5278 - 5280	Positive PF, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
14A0 -	14A2	5281 - 5283	Positive PF, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
14A3 -	14A5	5284 - 5286	Positive PF, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
14A6 -	14A8	5287 - 5289	Negative PF, Phase A, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
14A9 -	14AB	5290 - 5292	Negative PF, Phase B, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
14AC -	14AE	5293 - 5295	Negative PF, Phase C, Min Avg Dmd Timestamp	TSTAMP	1Jan2000 - 31Dec2099	1 sec	3
Block Size:							96

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
Short term Primary Maximum Block						read-only		
14%3 - 14%4	5300 - 5301	9ROWV \$-1, SUHYLRXV 'HPDQG LQWHUYDO 6KRUW 7HUP 0D[LXP	)/2\$7	0 WR 9999 0	YROW	0D[LXP LQVWDQWQDQHRXV YDOXH PHDVXUHG GXULQJ WKH GHPDQG LQWHUYDO EHIRUH WKH RQH PRVW UHFHQW\ FRPSOHWHG.	2
14%5 - 14%6	5302 - 5303	9ROWV %-1, SUHYLRXV 'HPDQG LQWHUYDO 6KRUW 7HUP 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14%7 - 14%8	5304 - 5305	9ROWV &-1, SUHYLRXV 'HPDQG LQWHUYDO 6KRUW 7HUP 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14%9 - 14%\$	5306 - 5307	9ROWV \$-%, SUHYLRXV 'HPDQG LQWHUYDO 6KRUW 7HUP 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14%% - 14%&	5308 - 5309	9ROWV %-&, SUHYLRXV 'HPDQG LQWHUYDO 6KRUW 7HUP 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14%' - 14%(	5310 - 5311	9ROWV &-\$, SUHYLRXV 'HPDQG LQWHUYDO 6KRUW 7HUP 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14%) - 14&0	5312 - 5313	9ROWV \$-1, 0D[LXP)/2\$7	0 WR 9999 0	YROW		0D[LXP LQVWDQWQDQHRXV YDOXH PHDVXUHG GXULQJ WKH PRVW UHFHQW\ FRPSOHWHG GHPDQG LQWHUYDO.	2
14&1 - 14&2	5314 - 5315	9ROWV %-1, 0D[LXP)/2\$7	0 WR 9999 0	YROW			2
14&3 - 14&4	5316 - 5317	9ROWV &-1, 0D[LXP)/2\$7	0 WR 9999 0	YROW			2
14&5 - 14&6	5318 - 5319	9ROWV \$-%, 0D[LXP)/2\$7	0 WR 9999 0	YROW			2
14&7 - 14&8	5320 - 5321	9ROWV %-&, 0D[LXP	)/2\$7	0 WR 9999 0	YROW	2	
14&9 - 14&\$	5322 - 5323	9ROWV &-\$, 0D[LXP	)/2\$7	0 WR 9999 0	YROW	2	
						%ORFN 6L]H:		24
Primary Maximum Block (Voltage and frequency)						read-only		
14'1 - 14'2	5330 - 5331	9ROWV \$-1, 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14'3 - 14'4	5332 - 5333	9ROWV %-1, 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14'5 - 14'6	5334 - 5335	9ROWV &-1, 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14'7 - 14'8	5336 - 5337	9ROWV \$-%, 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14'9 - 14'\$	5338 - 5339	9ROWV %-&, 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14'% - 14'&	5340 - 5341	9ROWV &-\$, 0D[LXP	)/2\$7	0 WR 9999 0	YROW		2
14'' - 14'0	5342 - 5343	UHTXHQF, 0D[LXP	)/2\$7	0 WR 65.00	+]]		2
						%ORFN 6L]H:	14	
Primary Maximum Block Meter 1						read-only		
1517 - 1518	5400 - 5401	\$PSV \$, 0D[LXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
1519 - 151\$	5402 - 5403	\$PSV %, 0D[LXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
151% - 151&	5404 - 5405	\$PSV &, 0D[LXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
151' - 151(	5406 - 5407	3RVLWLYH :DWWW, 3-3K, 0D[LXP \$YJ 'HPDQG	)/2\$7	0 WR +9999 0	ZDWWW		2
151) - 1520	5408 - 5409	3RVLWLYH 9\$5V, 3-3K, 0D[LXP \$YJ 'HPDQG	)/2\$7	0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1521 -	1522	5410 - 5411	1HJDWLYH :DWWV, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWV	2
1523 -	1524	5412 - 5413	1HJDWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V	2
1525 -	1526	5414 - 5415	9\$V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
1527 -	1528	5416 - 5417	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
1529 -	1529	5418 - 5419	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
152% -	1528	5420 - 5421	1HXWUDO &XUUHQW, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
152' -	1520	5422 - 5423	3RVLWLYH :DWWV, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
152) -	1530	5424 - 5425	3RVLWLYH :DWWV, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
1531 -	1532	5426 - 5427	3RVLWLYH :DWWV, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
1533 -	1534	5428 - 5429	3RVLWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1535 -	1536	5430 - 5431	3RVLWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1537 -	1538	5432 - 5433	3RVLWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1539 -	1539	5434 - 5435	1HJDWLYH :DWWV, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
153% -	1538	5436 - 5437	1HJDWLYH :DWWV, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
153' -	1530	5438 - 5439	1HJDWLYH :DWWV, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
153) -	1540	5440 - 5441	1HJDWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1541 -	1542	5442 - 5443	1HJDWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1543 -	1544	5444 - 5445	1HJDWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1545 -	1546	5446 - 5447	9\$V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
1547 -	1548	5448 - 5449	9\$V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1549 - 1549	5450 - 5451	9\$V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
154% - 1548	5452 - 5453	3RVLWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
154' - 1546	5454 - 5455	3RVLWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
154) - 1550	5456 - 5457	3RVLWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1551 - 1552	5458 - 5459	1HJDWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1553 - 1554	5460 - 5461	1HJDWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1555 - 1556	5462 - 5463	1HJDWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary Maximum Block Meter 2						read-only	
157% - 1578	5500 - 5501	\$PSV \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
157' - 1576	5502 - 5503	\$PSV %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
157) - 1580	5504 - 5505	\$PSV &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
1581 - 1582	5506 - 5507	3RVLWLYH :DWWW, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
1583 - 1584	5508 - 5509	3RVLWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
1585 - 1586	5510 - 5511	1HJDWLYH :DWWW, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW		2
1587 - 1588	5512 - 5513	1HJDWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V		2
1589 - 1589	5514 - 5515	9\$V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
158% - 1588	5516 - 5517	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
158' - 1586	5518 - 5519	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
158) - 1590	5520 - 5521	1HXWUDO &XUUHQW, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
1591 - 1592	5522 - 5523	3RVLWLYH :DWWW, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
1593 - 1594	5524 - 5525	3RVLWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1595 - 1596	5526 - 5527	3RVLWLYH :DWWW, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
1597 - 1598	5528 - 5529	3RVLWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
1599 - 1599	5530 - 5531	3RVLWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
159% - 1598	5532 - 5533	3RVLWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
159' - 1590	5534 - 5535	1HJDWLYH :DWWW, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
159) - 15\$0	5536 - 5537	1HJDWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
15\$1 - 15\$2	5538 - 5539	1HJDWLYH :DWWW, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
15\$3 - 15\$4	5540 - 5541	1HJDWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
15\$5 - 15\$6	5542 - 5543	1HJDWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
15\$7 - 15\$8	5544 - 5545	1HJDWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
15\$9 - 15\$\$	5546 - 5547	9\$V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
15\$% - 15\$\$	5548 - 5549	9\$V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
15\$' - 15\$(	5550 - 5551	9\$V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
15\$) - 15%0	5552 - 5553	3RVLWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
15%1 - 15%2	5554 - 5555	3RVLWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
15%3 - 15%4	5556 - 5557	3RVLWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
15%5 - 15%6	5558 - 5559	1HJDWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
15%7 - 15%8	5560 - 5561	1HJDWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
15%9 - 15\$\$	5562 - 5563	1HJDWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
%ORFN 6L]H:							64

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Primary Maximum Block Meter 3						read-only	
15') -	15(0	5600 - 5601	\$PSV \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
15(1 -	15(2	5602 - 5603	\$PSV %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
15(3 -	15(4	5604 - 5605	\$PSV &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
15(5 -	15(6	5606 - 5607	3RVLWLYH :DWWV, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWV	2
15(7 -	15(8	5608 - 5609	3RVLWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V	2
15(9 -	15(\$	5610 - 5611	1HJDWLYH :DWWV, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWV	2
15(% -	15(&	5612 - 5613	1HJDWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V	2
15(' -	15((	5614 - 5615	9\$V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
15() -	15)0	5616 - 5617	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
15)1 -	15)2	5618 - 5619	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
15)3 -	15)4	5620 - 5621	1HXWUDO &XUHQW, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
15)5 -	15)6	5622 - 5623	3RVLWLYH :DWWV, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
15)7 -	15)8	5624 - 5625	3RVLWLYH :DWWV, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
15)9 -	15)\$	5626 - 5627	3RVLWLYH :DWWV, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
15)% -	15)&	5628 - 5629	3RVLWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
15)' -	15)(	5630 - 5631	3RVLWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
15)) -	1600	5632 - 5633	3RVLWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1601 -	1602	5634 - 5635	1HJDWLYH :DWWV, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
1603 -	1604	5636 - 5637	1HJDWLYH :DWWV, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2
1605 -	1606	5638 - 5639	1HJDWLYH :DWWV, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1607 -	1608	5640 - 5641	1HJDWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	
1609 -	1609	5642 - 5643	1HJDWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	
160% -	160A	5644 - 5645	1HJDWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	
160' -	160B	5646 - 5647	9\$V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	
160) -	160C	5648 - 5649	9\$V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	
1611 -	1612	5650 - 5651	9\$V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	
1613 -	1614	5652 - 5653	3RVLWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	
1615 -	1615	5654 - 5655	3RVLWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	
1617 -	1616	5656 - 5657	3RVLWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	
1619 -	1617	5658 - 5659	1HJDWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	
161% -	1618	5660 - 5661	1HJDWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	
161' -	1619	5662 - 5663	1HJDWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	
						%ORFN 6L]H:	64
Primary Maximum Block Meter 4						read-only	
1643 -	1644	5700 - 5701	\$PSV \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	
1645 -	1645	5702 - 5703	\$PSV %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	
1647 -	1647	5704 - 5705	\$PSV &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	
1649 -	1648	5706 - 5707	3RVLWLYH :DWWV, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWV	
164% -	1649	5708 - 5709	3RVLWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V	
164' -	164A	5710 - 5711	1HJDWLYH :DWWV, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWV	
164) -	164B	5712 - 5713	1HJDWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V	
1651 -	1652	5714 - 5715	9\$V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1653 - 1654	5716 - 5717	3RVLWLYH 3RZHU)DFWRU, 3-3K, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
1655 - 1656	5718 - 5719	1HJDWLYH 3RZHU)DFWRU, 3-3K, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
1657 - 1658	5720 - 5721	1HXWUDO & XUHQW, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1659 - 1659	5722 - 5723	3RVLWLYH :DWWV, 3KDVH \$, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
165% - 1658	5724 - 5725	3RVLWLYH :DWWV, 3KDVH %, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
165' - 1659	5726 - 5727	3RVLWLYH :DWWV, 3KDVH &, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
165) - 1660	5728 - 5729	3RVLWLYH 9\$5V, 3KDVH \$, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1661 - 1662	5730 - 5731	3RVLWLYH 9\$5V, 3KDVH %, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1663 - 1664	5732 - 5733	3RVLWLYH 9\$5V, 3KDVH &, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1665 - 1666	5734 - 5735	1HJDWLYH :DWWV, 3KDVH \$, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1667 - 1668	5736 - 5737	1HJDWLYH :DWWV, 3KDVH %, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1669 - 1669	5738 - 5739	1HJDWLYH :DWWV, 3KDVH &, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
166% - 1668	5740 - 5741	1HJDWLYH 9\$5V, 3KDVH \$, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
166' - 1669	5742 - 5743	1HJDWLYH 9\$5V, 3KDVH %, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
166) - 1670	5744 - 5745	1HJDWLYH 9\$5V, 3KDVH &, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1671 - 1672	5746 - 5747	9\$V, 3KDVH \$, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
1673 - 1674	5748 - 5749	9\$V, 3KDVH %, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
1675 - 1676	5750 - 5751	9\$V, 3KDVH &, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
1677 - 1678	5752 - 5753	3RVLWLYH 3), 3KDVH \$, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
1679 - 1679	5754 - 5755	3RVLWLYH 3), 3KDVH %, OD[LPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
167% -	1678	5756 - 5757	3RVLWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
167' -	1670	5758 - 5759	1HJDWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
167) -	1680	5760 - 5761	1HJDWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
1681 -	1682	5762 - 5763	1HJDWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
							64
Primary Maximum Block Meter 5							read-only
16\$7 -	16\$8	5800 - 5801	\$PSV \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
16\$9 -	16\$\$	5802 - 5803	\$PSV %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
16\$% -	16\$8	5804 - 5805	\$PSV &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
16\$' -	16\$0	5806 - 5807	3RVLWLYH :DWWW, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW	2
16\$) -	16\$0	5808 - 5809	3RVLWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V	2
16%1 -	16%2	5810 - 5811	1HJDWLYH :DWWW, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	ZDWWW	2
16%3 -	16%4	5812 - 5813	1HJDWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR +9999 0	9\$5V	2
16%5 -	16%6	5814 - 5815	9\$V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
16%7 -	16%8	5816 - 5817	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
16%9 -	16%9	5818 - 5819	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
16%% -	16%8	5820 - 5821	1HXWUDO &XUUHQW, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV	2
16%' -	16%0	5822 - 5823	3RVLWLYH :DWWW, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
16%) -	16&0	5824 - 5825	3RVLWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
16&1 -	16&2	5826 - 5827	3RVLWLYH :DWWW, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
16&3 -	16&4	5828 - 5829	3RVLWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
16&5 -	16&6	5830 - 5831	3RVLWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
16&7 - 16&8	5832 - 5833	3RVLWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
16&9 - 16&A	5834 - 5835	1HJDWLYH :DWWV, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&B - 16&C	5836 - 5837	1HJDWLYH :DWWV, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&D - 16&E	5838 - 5839	1HJDWLYH :DWWV, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&F - 16'0	5840 - 5841	1HJDWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
16'1 - 16'2	5842 - 5843	1HJDWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
16'3 - 16'4	5844 - 5845	1HJDWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
16'5 - 16'6	5846 - 5847	9\$V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$V		2
16'7 - 16'8	5848 - 5849	9\$V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$V		2
16'9 - 16'\$	5850 - 5851	9\$V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$V		2
16%" - 16'&	5852 - 5853	3RVLWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
16'" - 16'()	5854 - 5855	3RVLWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
16'& - 16(	5856 - 5857	3RVLWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
16(1 - 16(2	5858 - 5859	1HJDWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
16(3 - 16(4	5860 - 5861	1HJDWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
16(5 - 16(6	5862 - 5863	1HJDWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Maximum Block Meter 6						read-only	
170% - 170&	5900 - 5901	\$PSV \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
170' - 170()	5902 - 5903	\$PSV %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
170) - 1710	5904 - 5905	\$PSV &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
1711 - 1712	5906 - 5907	3RVLWLYH :DWWV, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1713 -	1714	5908 - 5909	3RVLWLYH 9\$5V, 3-3K, 0D[LXPX \$YJ 'HPDQG	)2\$7	0 WR +9999 0	9\$5V	
1715 -	1716	5910 - 5911	1HJDWLYH :DWWW, 3-3K, 0D[LXPX \$YJ 'HPDQG	)2\$7	0 WR +9999 0	ZDWWW	
1717 -	1718	5912 - 5913	1HJDWLYH 9\$5V, 3-3K, 0D[LXPX \$YJ 'HPDQG	)2\$7	0 WR +9999 0	9\$5V	
1719 -	1719	5914 - 5915	9\$V, 3-3K, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V	
171% -	1718	5916 - 5917	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0D[LXPX \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH	
171' -	1716	5918 - 5919	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0D[LXPX \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH	
171) -	1720	5920 - 5921	1HXWUDO &XUUHQW, 0D[LXPX \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV	
1721 -	1722	5922 - 5923	3RVLWLYH :DWWW, 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW	
1723 -	1724	5924 - 5925	3RVLWLYH :DWWW, 3KDVH %, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW	
1725 -	1726	5926 - 5927	3RVLWLYH :DWWW, 3KDVH &, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW	
1727 -	1728	5928 - 5929	3RVLWLYH 9\$5V, 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V	
1729 -	1729	5930 - 5931	3RVLWLYH 9\$5V, 3KDVH %, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V	
172% -	1728	5932 - 5933	3RVLWLYH 9\$5V, 3KDVH &, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V	
172' -	1726	5934 - 5935	1HJDWLYH :DWWW, 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW	
172) -	1730	5936 - 5937	1HJDWLYH :DWWW, 3KDVH %, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW	
1731 -	1732	5938 - 5939	1HJDWLYH :DWWW, 3KDVH &, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW	
1733 -	1734	5940 - 5941	1HJDWLYH 9\$5V, 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V	
1735 -	1736	5942 - 5943	1HJDWLYH 9\$5V, 3KDVH %, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V	
1737 -	1738	5944 - 5945	1HJDWLYH 9\$5V, 3KDVH &, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V	
1739 -	1739	5946 - 5947	9\$V, 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
173% - 1738	5948 - 5949	9\$V, 3KDVH %, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$V		2
173' - 1730	5950 - 5951	9\$V, 3KDVH &, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$V		2
173) - 1740	5952 - 5953	3RVLWLYH 3), 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
1741 - 1742	5954 - 5955	3RVLWLYH 3), 3KDVH %, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
1743 - 1744	5956 - 5957	3RVLWLYH 3), 3KDVH &, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
1745 - 1746	5958 - 5959	1HJDWLYH 3), 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
1747 - 1748	5960 - 5961	1HJDWLYH 3), 3KDVH %, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
1749 - 1749	5962 - 5963	1HJDWLYH 3), 3KDVH &, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary Maximum Block Meter 7						read-only	
176) - 1770	6000 - 6001	\$PSV \$, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
1771 - 1772	6002 - 6003	\$PSV %, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
1773 - 1774	6004 - 6005	\$PSV &, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
1775 - 1776	6006 - 6007	3RVLWLYH :DWWW, 3-3K, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	ZDWWW		2
1777 - 1778	6008 - 6009	3RVLWLYH 9\$5V, 3-3K, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	9\$5V		2
1779 - 1779	6010 - 6011	1HJDWLYH :DWWW, 3-3K, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	ZDWWW		2
177% - 1778	6012 - 6013	1HJDWLYH 9\$5V, 3-3K, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	9\$5V		2
177' - 1770	6014 - 6015	9\$V, 3-3K, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$V		2
177) - 1780	6016 - 6017	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
1781 - 1782	6018 - 6019	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
1783 - 1784	6020 - 6021	1HXWUDO &XUUHQW, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
1785 - 1786	6022 - 6023	3RVLWLYH :DWWW, 3KDVH \$, 0D[LXPX \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1787 -	1788	6024 - 6025	3RVLWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
1789 -	1789	6026 - 6027	3RVLWLYH :DWWW, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
178% -	1788	6028 - 6029	3RVLWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
178' -	1780	6030 - 6031	3RVLWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
178) -	1790	6032 - 6033	3RVLWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1791 -	1792	6034 - 6035	1HJDWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
1793 -	1794	6036 - 6037	1HJDWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
1795 -	1796	6038 - 6039	1HJDWLYH :DWWW, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW	2
1797 -	1798	6040 - 6041	1HJDWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
1799 -	1799	6042 - 6043	1HJDWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
179% -	1798	6044 - 6045	1HJDWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V	2
179' -	1790	6046 - 6047	9\$V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
179) -	1790	6048 - 6049	9\$V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
17\$1 -	17\$2	6050 - 6051	9\$V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V	2
17\$3 -	17\$4	6052 - 6053	3RVLWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
17\$5 -	17\$6	6054 - 6055	3RVLWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
17\$7 -	17\$8	6056 - 6057	3RVLWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2
17\$9 -	17\$9	6058 - 6059	1HJDWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
17\$% - 17\$&	6060 - 6061	1HJDWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
17\$' - 17\$(	6062 - 6063	1HJDWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary Maximum Block Meter 8							
read-only							
17'3 - 17'4	6100 - 6101	\$PSV \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
17'5 - 17'6	6102 - 6103	\$PSV %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
17'7 - 17'8	6104 - 6105	\$PSV &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
17'9 - 17'\$	6106 - 6107	3RVLWLYH :DWWW, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	ZDWWW		2
17"% - 17"&	6108 - 6109	3RVLWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	9\$5V		2
17'" - 17'()	6110 - 6111	1HJDWLYH :DWWW, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	ZDWWW		2
17') - 17'(	6112 - 6113	1HJDWLYH 9\$5V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR +9999 0	9\$5V		2
17(1 - 17(2	6114 - 6115	9\$V, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$V		2
17(3 - 17(4	6116 - 6117	3RVLWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
17(5 - 17(6	6118 - 6119	1HJDWLYH 3RZHU)DFWRU, 3-3K, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-1.00 WR +1.00	QRQH		2
17(7 - 17(8	6120 - 6121	1HXWUDO &XUUHQW, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	0 WR 9999 0	DPSV		2
17(9 - 17(\$	6122 - 6123	3RVLWLYH :DWWW, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2
17(% - 17(&	6124 - 6125	3RVLWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2
17(' - 17'(	6126 - 6127	3RVLWLYH :DWWW, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2
17() - 17(	6128 - 6129	3RVLWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
17)1 - 17)2	6130 - 6131	3RVLWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
17)3 - 17)4	6132 - 6133	3RVLWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	9\$5V		2
17)5 - 17)6	6134 - 6135	1HJDWLYH :DWWW, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	) / 2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
17)7 - 17)8	6136 - 6137	1HJDWLYH :DWWW, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17)9 - 17)9	6138 - 6139	1HJDWLYH :DWWW, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17)% - 17)8	6140 - 6141	1HJDWLYH 9\$5V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
17)' - 17)0	6142 - 6143	1HJDWLYH 9\$5V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
17)) - 1800	6144 - 6145	1HJDWLYH 9\$5V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1801 - 1802	6146 - 6147	9\$V, 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1803 - 1804	6148 - 6149	9\$V, 3KDVH %, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1805 - 1806	6150 - 6151	9\$V, 3KDVH &, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1807 - 1808	6152 - 6153	3RVLWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1809 - 1809	6154 - 6155	3RVLWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
180% - 1808	6156 - 6157	3RVLWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
180' - 1800	6158 - 6159	1HJDWLYH 3), 3KDVH \$, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
180) - 1810	6160 - 6161	1HJDWLYH 3), 3KDVH %, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1811 - 1812	6162 - 6163	1HJDWLYH 3), 3KDVH &, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary maximum Timestamp Block						read-only	
1837 - 1839	6200 - 6202	9ROWV \$-1, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
183\$ - 1838	6203 - 6205	9ROWV %-1, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
183' - 183)	6206 - 6208	9ROWV &-1, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1840 - 1842	6209 - 6211	9ROWV \$-%, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1843 - 1845	6212 - 6214	9ROWV %-&, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
1846 -	1848	6215 - 6217	9ROWV &-\$, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
1849 -	184%	6218 - 6220	)UHTXHQF\, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
						%ORFN 6L]H:	21	
Primary maximum Timestamp Block Meter 1							read-only	
189% -	189	6300 - 6302	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
189(-	1890	6303 - 6305	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18\$1 -	18\$3	6306 - 6308	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18\$4 -	18\$6	6309 - 6311	3RVLWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18\$7 -	18\$9	6312 - 6314	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18\$\$ -	18\$\$	6315 - 6317	1HJDWLYH :DWWW, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18\$' -	18\$)	6318 - 6320	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18%0 -	18%2	6321 - 6323	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18%3 -	18%5	6324 - 6326	3RVLWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18%6 -	18%8	6327 - 6329	1HJDWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18%9 -	18%0	6330 - 6332	1HXWUDO &XUUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF	3	
18%& -	18%(	6333 - 6335	3RVLWLYH :DWWW, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
18%) -	18&1	6336 - 6338	3RVLWLYH :DWWW, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18&2 -	18&4	6339 - 6341	3RVLWLYH :DWWW, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18&5 -	18&7	6342 - 6344	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18&8 -	18&\$	6345 - 6347	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	
18&% -	18&)	6348 - 6350	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
18& - 18'0	6351 - 6353	1HJDWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'1 - 18'3	6354 - 6356	1HJDWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'4 - 18'6	6357 - 6359	1HJDWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'7 - 18'9	6360 - 6362	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'\$ - 18'&	6363 - 6365	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'' - 18')	6366 - 6368	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(0 - 18(2	6369 - 6371	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(3 - 18(5	6372 - 6374	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(6 - 18(8	6375 - 6377	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(9 - 18(%	6378 - 6380	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(& - 18((	6381 - 6383	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18() - 18)1	6384 - 6386	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18)2 - 18)4	6387 - 6389	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18)5 - 18)7	6390 - 6392	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18)8 - 18)\$	6393 - 6395	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
Primary maximum Timestamp Block Meter 2						read-only	
18)) - 1901	6400 - 6402	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1902 - 1904	6403 - 6405	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1905 - 1907	6406 - 6408	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1908 - 190\$	6409 - 6411	3RVLWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
190%	1907	6412 - 6414	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
190(	1910	6415 - 6417	1HJDWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1911	1913	6418 - 6420	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1914	1916	6421 - 6423	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1917	1919	6424 - 6426	3RVLWLYH 3RZHU JDFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
191\$	1918	6427 - 6429	1HJDWLYH 3RZHU JDFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
191'	1919	6430 - 6432	1HXWUDO &XUUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF	
1920	1922	6433 - 6435	3RVLWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1923	1925	6436 - 6438	3RVLWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1926	1928	6439 - 6441	3RVLWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1929	1929	6442 - 6444	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
192&	1920	6445 - 6447	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
192)	1931	6448 - 6450	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1932	1934	6451 - 6453	1HJDWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1935	1937	6454 - 6456	1HJDWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1938	1938	6457 - 6459	1HJDWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
193%	1933	6460 - 6462	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
193(	1940	6463 - 6465	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1941	1943	6466 - 6468	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1944	1946	6469 - 6471	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1947 -	1949	6472 - 6474	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
194\$ -	1948	6475 - 6477	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
194' -	1947	6478 - 6480	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1950 -	1952	6481 - 6483	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1953 -	1955	6484 - 6486	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1956 -	1958	6487 - 6489	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1959 -	1959	6490 - 6492	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
195& -	1959	6493 - 6495	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
							96
Primary maximum Timestamp Block Meter 3						%ORFN 6L]H:	
							read-only
1963 -	1965	6500 - 6502	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1966 -	1968	6503 - 6505	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1969 -	1969	6506 - 6508	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
196& -	1969	6509 - 6511	3RVLWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
196) -	1971	6512 - 6514	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1972 -	1974	6515 - 6517	1HJDWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1975 -	1977	6518 - 6520	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1978 -	1979	6521 - 6523	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
197% -	1979	6524 - 6526	3RVLWLYH 3RZHU]DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
197(-	1980	6527 - 6529	1HJDWLYH 3RZHU]DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	
1981 -	1983	6530 - 6532	1HXWUDO &XUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1984 -	1986	6533 - 6535	3RVLWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1987 -	1989	6536 - 6538	3RVLWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
198\$ -	1988	6539 - 6541	3RVLWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
198' -	1987	6542 - 6544	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1990 -	1992	6545 - 6547	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1993 -	1995	6548 - 6550	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1996 -	1998	6551 - 6553	1HJDWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
1999 -	1999	6554 - 6556	1HJDWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
199& -	1990	6557 - 6559	1HJDWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
199) -	19\$1	6560 - 6562	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19\$2 -	19\$4	6563 - 6565	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19\$5 -	19\$7	6566 - 6568	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19\$8 -	19\$\$	6569 - 6571	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19\$% -	19\$	6572 - 6574	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19\$(-	19%0	6575 - 6577	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19%1 -	19%3	6578 - 6580	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19%4 -	19%6	6581 - 6583	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19%7 -	19%9	6584 - 6586	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3
19%\$ -	19%&	6587 - 6589	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
19%' - 19%	6590 - 6592	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19&0 - 19&2	6593 - 6595	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
Primary maximum Timestamp Block Meter 4						read-only	
19&7 - 19&9	6600 - 6602	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19&\$ - 19&&	6603 - 6605	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19&' - 19&)	6606 - 6608	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19'0 - 19'2	6609 - 6611	3RVLWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19'3 - 19'5	6612 - 6614	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19'6 - 19'8	6615 - 6617	1HJDWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19'9 - 19'%	6618 - 6620	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19'& - 19'()	6621 - 6623	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19') - 19'(	6624 - 6626	3RVLWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19(2 - 19(4	6627 - 6629	1HJDWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19(5 - 19(7	6630 - 6632	1HXWUDO &XUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3
19(8 - 19(\$	6633 - 6635	3RVLWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19(% - 19(	6636 - 6638	3RVLWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19((- 19()0	6639 - 6641	3RVLWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)1 - 19)3	6642 - 6644	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)4 - 19)6	6645 - 6647	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)7 - 19)9	6648 - 6650	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
19)8 - 19)8	6651 - 6653	1HJDWLYH :DWWW, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)9 - 19)9	6654 - 6656	1HJDWLYH :DWWW, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$00 - 1\$02	6657 - 6659	1HJDWLYH :DWWW, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$03 - 1\$05	6660 - 6662	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$06 - 1\$08	6663 - 6665	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$09 - 1\$0A	6666 - 6668	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$0B - 1\$0C	6669 - 6671	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$0D - 1\$0E	6672 - 6674	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$12 - 1\$14	6675 - 6677	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$15 - 1\$17	6678 - 6680	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$18 - 1\$19	6681 - 6683	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$1A - 1\$1B	6684 - 6686	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$1C - 1\$1D	6687 - 6689	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$21 - 1\$23	6690 - 6692	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$24 - 1\$26	6693 - 6695	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
Primary maximum Timestamp Block Meter 5						read-only	
1\$27 - 1\$28	6700 - 6702	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$29 - 1\$30	6703 - 6705	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$31 - 1\$33	6706 - 6708	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$34 - 1\$36	6709 - 6711	3RVLWLYH :DWWW, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1\$37 - 1\$39	6712 - 6714	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$3\$ - 1\$3&	6715 - 6717	1HJDWLYH :DWWW, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$3' - 1\$3)	6718 - 6720	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$40 - 1\$42	6721 - 6723	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$43 - 1\$45	6724 - 6726	3RVLWLYH 3RZHU]DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$46 - 1\$48	6727 - 6729	1HJDWLYH 3RZHU]DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$49 - 1\$4%	6730 - 6732	1HXWUDO &XUUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3
1\$4& - 1\$4(	6733 - 6735	3RVLWLYH :DWWW, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$4) - 1\$51	6736 - 6738	3RVLWLYH :DWWW, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$52 - 1\$54	6739 - 6741	3RVLWLYH :DWWW, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$55 - 1\$57	6742 - 6744	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$58 - 1\$5\$	6745 - 6747	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$5% - 1\$5'	6748 - 6750	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$5(- 1\$60	6751 - 6753	1HJDWLYH :DWWW, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$61 - 1\$63	6754 - 6756	1HJDWLYH :DWWW, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$64 - 1\$66	6757 - 6759	1HJDWLYH :DWWW, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$67 - 1\$69	6760 - 6762	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$6\$ - 1\$6&	6763 - 6765	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$6' - 1\$6)	6766 - 6768	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$70 - 1\$72	6769 - 6771	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1\$73 - 1\$75	6772 - 6774	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$76 - 1\$78	6775 - 6777	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$79 - 1\$7%	6778 - 6780	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$7& - 1\$7(	6781 - 6783	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$7) - 1\$81	6784 - 6786	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$82 - 1\$84	6787 - 6789	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$85 - 1\$87	6790 - 6792	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$88 - 1\$8\$	6793 - 6795	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
Primary maximum Timestamp Block Meter 6						read-only	
1\$8) - 1\$91	6800 - 6802	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$92 - 1\$94	6803 - 6805	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$95 - 1\$97	6806 - 6808	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$98 - 1\$9\$	6809 - 6811	3RVLWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$9% - 1\$9'	6812 - 6814	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$9(- 1\$90	6815 - 6817	1HJDWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$91 - 1\$93	6818 - 6820	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$94 - 1\$96	6821 - 6823	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$97 - 1\$99	6824 - 6826	3RVLWLYH 3RZHU]DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$9\$ - 1\$9&	6827 - 6829	1HJDWLYH 3RZHU]DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$9' - 1\$9)	6830 - 6832	1HXWUDO &XUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1\$%0 - 1\$%2	6833 - 6835	3RVLWLYH :DWWW, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%3 - 1\$%5	6836 - 6838	3RVLWLYH :DWWW, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%6 - 1\$%8	6839 - 6841	3RVLWLYH :DWWW, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%9 - 1\$%%	6842 - 6844	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%& - 1\$%(	6845 - 6847	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%) - 1\$&1	6848 - 6850	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&2 - 1\$&4	6851 - 6853	1HJDWLYH :DWWW, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&5 - 1\$&7	6854 - 6856	1HJDWLYH :DWWW, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&8 - 1\$&\$	6857 - 6859	1HJDWLYH :DWWW, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&% - 1\$&'	6860 - 6862	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&(- 1\$'0	6863 - 6865	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'1 - 1\$'3	6866 - 6868	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'4 - 1\$'6	6869 - 6871	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'7 - 1\$'9	6872 - 6874	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'\$ - 1\$'&	6875 - 6877	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'" - 1\$')	6878 - 6880	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(0 - 1\$(2	6881 - 6883	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(3 - 1\$(5	6884 - 6886	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(6 - 1\$(8	6887 - 6889	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1\$(9 - 1\$(%	6890 - 6892	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(& - 1\$(0	6893 - 6895	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
Primary maximum Timestamp Block Meter 7						read-only	
1\$)3 - 1\$)5	6900 - 6902	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$)6 - 1\$)8	6903 - 6905	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$)9 - 1\$)%	6906 - 6908	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$)& - 1\$)(	6909 - 6911	3RVLWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$)) - 1%)0	6912 - 6914	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)02 - 1%)04	6915 - 6917	1HJDWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)05 - 1%)07	6918 - 6920	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)08 - 1%)09	6921 - 6923	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)0% - 1%)0	6924 - 6926	3RVLWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)0(- 1%)10	6927 - 6929	1HJDWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)11 - 1%)13	6930 - 6932	1HXWUDO &XUUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3
1%)14 - 1%)16	6933 - 6935	3RVLWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)17 - 1%)19	6936 - 6938	3RVLWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)1\$ - 1%)1&	6939 - 6941	3RVLWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)1' - 1%)1)	6942 - 6944	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)20 - 1%)22	6945 - 6947	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%)23 - 1%)25	6948 - 6950	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1%26 - 1%28	6951 - 6953	1HJDWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%29 - 1%2%	6954 - 6956	1HJDWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%2& - 1%20	6957 - 6959	1HJDWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%2) - 1%31	6960 - 6962	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%32 - 1%34	6963 - 6965	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%35 - 1%37	6966 - 6968	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%38 - 1%3\$	6969 - 6971	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%3% - 1%3	6972 - 6974	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%3(- 1%40	6975 - 6977	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%41 - 1%43	6978 - 6980	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%44 - 1%46	6981 - 6983	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%47 - 1%49	6984 - 6986	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%4\$ - 1%4&	6987 - 6989	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%4' - 1%4)	6990 - 6992	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%50 - 1%52	6993 - 6995	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
Primary maximum Timestamp Block Meter 8						read-only	
1%57 - 1%59	7000 - 7002	\$PSV \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%5\$ - 1%5&	7003 - 7005	\$PSV %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%5' - 1%5)	7006 - 7008	\$PSV &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%60 - 1%62	7009 - 7011	3RVLWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1%63 - 1%65	7012 - 7014	3RVLWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%66 - 1%68	7015 - 7017	1HJDWLYH :DWWV, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%69 - 1%6B	7018 - 7020	1HJDWLYH 9\$5V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%6C - 1%6E	7021 - 7023	9\$V, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%6F - 1%71	7024 - 7026	3RVLWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%72 - 1%74	7027 - 7029	1HJDWLYH 3RZHU)DFWRU, 3-3K, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%75 - 1%77	7030 - 7032	1HXWUDO &XUHQW, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2100	1 VHF		3
1%78 - 1%7A	7033 - 7035	3RVLWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%7B - 1%7D	7036 - 7038	3RVLWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%7E - 1%80	7039 - 7041	3RVLWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%81 - 1%83	7042 - 7044	3RVLWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%84 - 1%86	7045 - 7047	3RVLWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%87 - 1%89	7048 - 7050	3RVLWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%8A - 1%8C	7051 - 7053	1HJDWLYH :DWWV, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%8D - 1%8F	7054 - 7056	1HJDWLYH :DWWV, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%90 - 1%92	7057 - 7059	1HJDWLYH :DWWV, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%93 - 1%95	7060 - 7062	1HJDWLYH 9\$5V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%96 - 1%98	7063 - 7065	1HJDWLYH 9\$5V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%99 - 1%9B	7066 - 7068	1HJDWLYH 9\$5V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%9C - 1%9E	7069 - 7071	9\$V, 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1%9) - 1%\$1	7072 - 7074	9\$V, 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$2 - 1%\$4	7075 - 7077	9\$V, 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$5 - 1%\$7	7078 - 7080	3RVLWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$8 - 1%\$\$	7081 - 7083	3RVLWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$\$ - 1%\$	7084 - 7086	3RVLWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$(- 1%\$0	7087 - 7089	1HJDWLYH 3), 3KDVH \$, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$1 - 1%\$3	7090 - 7092	1HJDWLYH 3), 3KDVH %, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$4 - 1%\$6	7093 - 7095	1HJDWLYH 3), 3KDVH &, PD[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
Interval Energy Block Meter 1							
1)3) - 1)40	8000 - 8001	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ/ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
1)41 - 1)42	8002 - 8003	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ/ IRUPDW	* 5 WR 8 GLJLWV	2
1)43 - 1)44	8004 - 8005	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ/ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ/ IRUPDW	2
1)45 - 1)46	8006 - 8007	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ/ IRUPDW	* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ/ IRUPDW	2
1)47 - 1)48	8008 - 8009	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ/ IRUPDW	* VHH QRWH 10	2
1)49 - 1)4\$	8010 - 8011	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ/ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)4% - 1)4&	8012 - 8013	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
1)4' - 1)4(	8014 - 8015	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
1)4) - 1)50	8016 - 8017	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
1)51 - 1)52	8018 - 8019	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)53 - 1)54	8020 - 8021	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)55 - 1)56	8022 - 8023	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)57 - 1)58	8024 - 8025	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)59 - 1)5\$	8026 - 8027	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)5% - 1)5&	8028 - 8029	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)5' - 1)5(	8030 - 8031	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
1)5) - 1)60	8032 - 8033	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)61 -	1)62	8034 - 8035	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQUHJ IRUPDW	2
1)63 -	1)64	8036 - 8037	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW	2
1)65 -	1)66	8038 - 8039	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW	2
1)67 -	1)68	8040 - 8041	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW	2
1)69 -	1)69	8042 - 8043	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)6A -	1)6A	8044 - 8045	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)6B -	1)6B	8046 - 8047	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)6C -	1)70	8048 - 8049	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)71 -	1)72	8050 - 8051	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)73 -	1)74	8052 - 8053	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)75 -	1)76	8054 - 8055	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)77 -	1)78	8056 - 8057	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW	2
1)79 -	1)79	8058 - 8059	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
1)7% - 1)7&	8060 - 8061	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2	
1)7' - 1)7(	8062 - 8063	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
1)7) - 1)80	8064 - 8065	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2	
1)81 - 1)82	8066 - 8067	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2	
1)83 - 1)84	8068 - 8069	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2	
1)85 - 1)86	8070 - 8071	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2	
							%ORFN 6LJH: read-only	72
Interval Energy Block Meter 2								
1)\$3 - 1)\$4	8100 - 8101	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2	
1)\$5 - 1)\$6	8102 - 8103	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* 5 WR 8 GLJLWW * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2	
1)\$7 - 1)\$8	8104 - 8105	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2	
1)\$9 - 1)\$	8106 - 8107	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2	
1)\$% - 1)\$&	8108 - 8109	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2	
1)\$' - 1)\$(	8110 - 8111	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)%) - 1)%0	8112 - 8113	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW	(Cont'd)	2
1)%1 - 1)%2	8114 - 8115	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW		2
1)%3 - 1)%4	8116 - 8117	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ IRUPDW		2
1)%5 - 1)%6	8118 - 8119	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW		2
1)%7 - 1)%8	8120 - 8121	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW		2
1)%9 - 1)%\$	8122 - 8123	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW		2
1)%% - 1)%&	8124 - 8125	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW		2
1)%' - 1)%('	8126 - 8127	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW		2
1)%> - 1)%@	8128 - 8129	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW		2
1)&1 - 1)&2	8130 - 8131	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW		2
1)&3 - 1)&4	8132 - 8133	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)&5 - 1)&6	8134 - 8135	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQUHJ IRUPDW	(Cont'd)	2
1)&7 - 1)&8	8136 - 8137	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
1)&9 - 1)&\$	8138 - 8139	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
1)&% - 1)&&	8140 - 8141	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
1)&' - 1)&(	8142 - 8143	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)&) - 1)'0	8144 - 8145	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)'1 - 1)'2	8146 - 8147	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)'3 - 1)'4	8148 - 8149	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)'5 - 1)'6	8150 - 8151	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)'7 - 1)'8	8152 - 8153	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)'9 - 1)'\$	8154 - 8155	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)%' - 1)'&	8156 - 8157	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
1)'* - 1)'(	8158 - 8159	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)' - 1)(0	8160 - 8161	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW	(Cont'd)	2
1)(1 - 1)(2	8162 - 8163	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
1)(3 - 1)(4	8164 - 8165	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
1)(5 - 1)(6	8166 - 8167	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
1)(7 - 1)(8	8168 - 8169	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
1)(9 - 1)(\$	8170 - 8171	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
							%ORFN 6LJH: read-only	72
Interval Energy Block Meter 3							
2007 - 2008	8200 - 8201	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
2009 - 200\$	8202 - 8203	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* 5 WR 8 GLJLWW * GHFLPDO SRLQW LPSOLHG, SHU HQHUJL IRUPDW	2
200% - 200&	8204 - 8205	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJL IRUPDW	* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJL IRUPDW	2
200' - 200(	8206 - 8207	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW	* VHH QRWH 10	2
200) - 2010	8208 - 8209	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
2011 - 2012	8210 - 8211	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2013 -	2014	8212 - 8213	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
2015 -	2016	8214 - 8215	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
2017 -	2018	8216 - 8217	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ IRUPDW	2
2019 -	2019	8218 - 8219	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
201% -	2018	8220 - 8221	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
201' -	2010	8222 - 8223	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
201) -	2020	8224 - 8225	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
2021 -	2022	8226 - 8227	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
2023 -	2024	8228 - 8229	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
2025 -	2026	8230 - 8231	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW	2
2027 -	2028	8232 - 8233	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2029 -	2029	8234 - 8235	6,1732	-99999999 WR 99999999	:K SHU HQHUA IRUPDW	(Cont'd)	2
202% -	2028	8236 - 8237	6,1732	0 WR 99999999	:K SHU HQHUA IRUPDW		2
202' -	2020	8238 - 8239	6,1732	0 WR 99999999	:K SHU HQHUA IRUPDW		2
202) -	2030	8240 - 8241	6,1732	0 WR 99999999	:K SHU HQHUA IRUPDW		2
2031 -	2032	8242 - 8243	6,1732	0 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2033 -	2034	8244 - 8245	6,1732	0 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2035 -	2036	8246 - 8247	6,1732	0 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2037 -	2038	8248 - 8249	6,1732	0 WR - 99999999	9\$5K SHU HQHUA IRUPDW		2
2039 -	2035	8250 - 8251	6,1732	0 WR - 99999999	9\$5K SHU HQHUA IRUPDW		2
203% -	2038	8252 - 8253	6,1732	0 WR - 99999999	9\$5K SHU HQHUA IRUPDW		2
203' -	2030	8254 - 8255	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
203) -	2040	8256 - 8257	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2041 -	2042	8258 - 8259	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUA IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2043 - 2044	8260 - 8261	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW	(Cont'd)	2
2045 - 2046	8262 - 8263	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
2047 - 2048	8264 - 8265	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
2049 - 204A	8266 - 8267	9\$5-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
204% - 2048	8268 - 8269	9\$5-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
204' - 2040	8270 - 8271	9\$5-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
Interval Energy Block Meter 4							72
read-only							
206% - 2068	8300 - 8301	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
206' - 2060	8302 - 8303	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* 5 WR 8 GLJLWW	2
206) - 2070	8304 - 8305	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJL IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJL IRUPDW * UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLW, NLOR, RU PHJD, SHU HQHUJL IRUPDW	2
2071 - 2072	8306 - 8307	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW	* VHH QRWH 10	2
2073 - 2074	8308 - 8309	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
2075 - 2076	8310 - 8311	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2077 -	2078	8312 - 8313	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJ\ IRUPDW	2
2079 -	2079	8314 - 8315	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW	2
207% -	2078	8316 - 8317	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQUJ\ IRUPDW	2
207' -	2070	8318 - 8319	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJ\ IRUPDW	2
207) -	2080	8320 - 8321	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJ\ IRUPDW	2
2081 -	2082	8322 - 8323	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJ\ IRUPDW	2
2083 -	2084	8324 - 8325	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJ\ IRUPDW	2
2085 -	2086	8326 - 8327	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJ\ IRUPDW	2
2087 -	2088	8328 - 8329	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJ\ IRUPDW	2
2089 -	2089	8330 - 8331	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQUJ\ IRUPDW	2
208% -	2088	8332 - 8333	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQUJ\ IRUPDW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
208' - 2080	8334 - 8335	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQUHJ IRUPDW	(Cont'd)	2
208) - 2090	8336 - 8337	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
2091 - 2092	8338 - 8339	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
2093 - 2094	8340 - 8341	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
2095 - 2096	8342 - 8343	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
2097 - 2098	8344 - 8345	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
2099 - 2099	8346 - 8347	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
209% - 2098	8348 - 8349	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
209' - 2090	8350 - 8351	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
209) - 2090	8352 - 8353	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
20\$1 - 2092	8354 - 8355	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
20\$3 - 2094	8356 - 8357	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
20\$5 - 2096	8358 - 8359	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
20\$7 -	20\$8	8360 - 8361	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW	(Cont'd)	2
20\$9 -	20\$9	8362 - 8363	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
20\$% -	20\$8	8364 - 8365	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
20\$' -	20\$6	8366 - 8367	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
20\$) -	20%0	8368 - 8369	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
20%1 -	20%2	8370 - 8371	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
							%ORFN 6LJH:	72
Interval Energy Block Meter 5							read-only	
20&) -	20'0	8400 - 8401	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
20'1 -	20'2	8402 - 8403	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
20'3 -	20'4	8404 - 8405	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJL IRUPDW	* 5 WR 8 GLJLWW	2
20'5 -	20'6	8406 - 8407	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJL IRUPDW	2
20'7 -	20'8	8408 - 8409	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW	* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJL IRUPDW	2
20'9 -	20'\$	8410 - 8411	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW	* VHH QRWH 10	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
20% - 20&	8412 - 8413	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
20" - 20('	8414 - 8415	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
20') - 20(0	8416 - 8417	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
20(1 - 20(2	8418 - 8419	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
20(3 - 20(4	8420 - 8421	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
20(5 - 20(6	8422 - 8423	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
20(7 - 20(8	8424 - 8425	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
20(9 - 20(\$	8426 - 8427	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
20(% - 20(&	8428 - 8429	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
20(' - 20(0	8430 - 8431	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
20() - 20)0	8432 - 8433	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
20)1 - 20)2	8434 - 8435	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUU IRUPDW	(Cont'd)	2
20)3 - 20)4	8436 - 8437	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUU IRUPDW		2
20)5 - 20)6	8438 - 8439	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUU IRUPDW		2
20)7 - 20)8	8440 - 8441	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUU IRUPDW		2
20)9 - 20)A	8442 - 8443	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW		2
20)B - 20)C	8444 - 8445	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW		2
20)D - 20)E	8446 - 8447	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUU IRUPDW		2
20)F - 2100	8448 - 8449	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUU IRUPDW		2
2101 - 2102	8450 - 8451	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUU IRUPDW		2
2103 - 2104	8452 - 8453	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUU IRUPDW		2
2105 - 2106	8454 - 8455	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUU IRUPDW		2
2107 - 2108	8456 - 8457	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUU IRUPDW		2
2109 - 210A	8458 - 8459	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUU IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
210%	2108	8460 - 8461	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
210'	2100	8462 - 8463	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
210)	2110	8464 - 8465	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2111	2112	8466 - 8467	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
2113	2114	8468 - 8469	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
2115	2116	8470 - 8471	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
							%ORFN 6LJH:	72
Interval Energy Block Meter 6							read-only	
2133	2134	8500 - 8501	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRWLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
2135	2136	8502 - 8503	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* 5 WR 8 GLJLWW	2
2137	2138	8504 - 8505	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
2139	2139	8506 - 8507	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
213%	2138	8508 - 8509	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
213'	2130	8510 - 8511	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
213) -	2140	8512 - 8513	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
2141 -	2142	8514 - 8515	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ IRUPDW	2
2143 -	2144	8516 - 8517	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ IRUPDW	2
2145 -	2146	8518 - 8519	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
2147 -	2148	8520 - 8521	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
2149 -	2149	8522 - 8523	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
214% -	2148	8524 - 8525	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
214' -	2140	8526 - 8527	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
214) -	2150	8528 - 8529	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ IRUPDW	2
2151 -	2152	8530 - 8531	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW	2
2153 -	2154	8532 - 8533	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ IRUPDW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2155 - 2156	8534 - 8535	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQHUA IRUPDW	(Cont'd)	2
2157 - 2158	8536 - 8537	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQHUA IRUPDW		2
2159 - 2159	8538 - 8539	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQHUA IRUPDW		2
2159 - 2159	8540 - 8541	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQHUA IRUPDW		2
2159 - 2159	8542 - 8543	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2159 - 2160	8544 - 8545	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2161 - 2162	8546 - 8547	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2163 - 2164	8548 - 8549	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQHUA IRUPDW		2
2165 - 2166	8550 - 8551	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQHUA IRUPDW		2
2167 - 2168	8552 - 8553	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQHUA IRUPDW		2
2169 - 2169	8554 - 8555	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2169 - 2169	8556 - 8557	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUA IRUPDW		2
2169 - 2169	8558 - 8559	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUA IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
216) -	2170	8560 - 8561	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW	(Cont'd)	2
2171 -	2172	8562 - 8563	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
2173 -	2174	8564 - 8565	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW		2
2175 -	2176	8566 - 8567	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
2177 -	2178	8568 - 8569	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
2179 -	2179	8570 - 8571	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJL IRUPDW		2
							%ORFN 6L]H:	72
Interval Energy Block Meter 7							read-only	
2197 -	2198	8600 - 8601	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
2199 -	2199	8602 - 8603	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJL IRUPDW	* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
2199 -	2199	8604 - 8605	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJL IRUPDW	* 5 WR 8 GLJLWV * GHFLPDO SRLQW LPSOLHG, SHU HQHUJL IRUPDW	2
219' -	2190	8606 - 8607	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJL IRUPDW	* UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJL IRUPDW	2
219) -	2190	8608 - 8609	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJL IRUPDW	* VHH QRWH 10	2
2191 -	2192	8610 - 8611	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJL IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
21\$3 - 21\$4	8612 - 8613	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
21\$5 - 21\$6	8614 - 8615	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21\$7 - 21\$8	8616 - 8617	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
21\$9 - 21\$\$	8618 - 8619	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21\$% - 21\$&	8620 - 8621	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21\$' - 21\$(	8622 - 8623	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21\$) - 21%0	8624 - 8625	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21%1 - 21%2	8626 - 8627	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21%3 - 21%4	8628 - 8629	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21%5 - 21%6	8630 - 8631	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
21%7 - 21%8	8632 - 8633	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
21%9 - 21%\$	8634 - 8635	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQUHJ IRUPDW	(Cont'd)	2
21%& - 21%&	8636 - 8637	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
21%' - 21%(	8638 - 8639	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
21%) - 21%0	8640 - 8641	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQUHJ IRUPDW		2
21&1 - 21&2	8642 - 8643	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
21&3 - 21&4	8644 - 8645	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
21&5 - 21&6	8646 - 8647	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
21&7 - 21&8	8648 - 8649	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
21&9 - 21&\$	8650 - 8651	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
21&% - 21&&	8652 - 8653	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ IRUPDW		2
21&' - 21%(	8654 - 8655	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
21&) - 21'0	8656 - 8657	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
21'1 - 21'2	8658 - 8659	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW	2	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
21'3 -	21'4	8660 - 8661	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	
21'5 -	21'6	8662 - 8663	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		
21'7 -	21'8	8664 - 8665	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		
21'9 -	21'9	8666 - 8667	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		
21'0 -	21'8	8668 - 8669	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		
21'' -	21'0	8670 - 8671	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		
							%ORFN 6LJH:	72
Interval Energy Block Meter 8							read-only	
21)0 -	21)8	8700 - 8701	:-KRXUV, 5HFHLYHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW * :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV * :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2	
21)' -	21)0	8702 - 8703	:-KRXUV, 'HOLYHUHG	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW * 5 WR 8 GLJLWW * GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2	
21)) -	2200	8704 - 8705	:-KRXUV, 1HW	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2	
2201 -	2202	8706 - 8707	:-KRXUV, 7RWDO	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW * VHH QRWH 10	2	
2203 -	2204	8708 - 8709	9\$5-KRXUV, 3RVLWLYH	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2	
2205 -	2206	8710 - 8711	9\$5-KRXUV, 1HJDWLYH	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW	2	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2207 -	2208	8712 - 8713	9\$5-KRXUV, 1HW	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2
2209 -	220\$	8714 - 8715	9\$5-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2
220% -	220&	8716 - 8717	9\$-KRXUV, 7RWDO	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	2
220' -	220(	8718 - 8719	:-KRXUV, 5HFHLYHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
220) -	2210	8720 - 8721	:-KRXUV, 5HFHLYHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
2211 -	2212	8722 - 8723	:-KRXUV, 5HFHLYHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
2213 -	2214	8724 - 8725	:-KRXUV, 'HOLYHUHG, 3KDVH \$	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
2215 -	2216	8726 - 8727	:-KRXUV, 'HOLYHUHG, 3KDVH %	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
2217 -	2218	8728 - 8729	:-KRXUV, 'HOLYHUHG, 3KDVH &	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	2
2219 -	221\$	8730 - 8731	:-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2
221% -	221&	8732 - 8733	:-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
221' -	2210	8734 - 8735	:-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	:K SHU HQUJL IRUPDW	2
221) -	2220	8736 - 8737	:-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	:K SHU HQUJL IRUPDW	2
2221 -	2222	8738 - 8739	:-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	:K SHU HQUJL IRUPDW	2
2223 -	2224	8740 - 8741	:-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	:K SHU HQUJL IRUPDW	2
2225 -	2226	8742 - 8743	9\$5-KRXUV, 3RVLWLYH, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
2227 -	2228	8744 - 8745	9\$5-KRXUV, 3RVLWLYH, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
2229 -	2229	8746 - 8747	9\$5-KRXUV, 3RVLWLYH, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
222% -	2228	8748 - 8749	9\$5-KRXUV, 1HJDWLYH, 3KDVH \$	6,1732	0 WR - 99999999	9\$5K SHU HQUJL IRUPDW	2
222' -	2220	8750 - 8751	9\$5-KRXUV, 1HJDWLYH, 3KDVH %	6,1732	0 WR - 99999999	9\$5K SHU HQUJL IRUPDW	2
222) -	2230	8752 - 8753	9\$5-KRXUV, 1HJDWLYH, 3KDVH &	6,1732	0 WR - 99999999	9\$5K SHU HQUJL IRUPDW	2
2231 -	2232	8754 - 8755	9\$5-KRXUV, 1HW, 3KDVH \$	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
2233 -	2234	8756 - 8757	9\$5-KRXUV, 1HW, 3KDVH %	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJL IRUPDW	2
2235 -	2236	8758 - 8759	9\$5-KRXUV, 1HW, 3KDVH &	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJL IRUPDW	2

(Cont'd)

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2237 - 2238	8760 - 8761	9\$5-KRXUV, 7RWDO, 3KDVH \$	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW	(Cont'd)	2
2239 - 223\$	8762 - 8763	9\$5-KRXUV, 7RWDO, 3KDVH %	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
223% - 223&	8764 - 8765	9\$5-KRXUV, 7RWDO, 3KDVH &	6,1732	0 WR 99999999	9\$5K SHU HQHUUJ IRUPDW		2
223' - 223(	8766 - 8767	9\$-KRXUV, 3KDVH \$	6,1732	0 WR 99999999	9\$K SHU HQHUUJ IRUPDW		2
223) - 2240	8768 - 8769	9\$-KRXUV, 3KDVH %	6,1732	0 WR 99999999	9\$K SHU HQHUUJ IRUPDW		2
2241 - 2242	8770 - 8771	9\$-KRXUV, 3KDVH &	6,1732	0 WR 99999999	9\$K SHU HQHUUJ IRUPDW		2
Card Identification and Configuration Block (Note 13) (IO Interface Board)							read-only
270) - 270)	10000 - 10000	((3520 YHUVLRQ DQG %RDUG ,'	8,1716	ELW-PDSSHG	eeeeeeee cccccccc	HHHHHHHH: HHSURP YHUVLRQ FFFFFFFF: %RDUG LG	7
2710 - 2710	10001 - 10001	%RDUG 5HYLVLRLQ	8,1716	ELW-PDSSHG	EEEEEEEE -----	EEEEEEEE : ERDUG UHYLVLRLQ	7
2711 - 2718	10002 - 10009	%RDUG QXPEHU	\$6&,,	16 FKDU	QRQH	\$6&,, QDPH RI WKH LQVWDOOHG FDUG	8
2719 - 2720	10010 - 10017	6HULDO QXPEHU	\$6&,,	16 FKDU	QRQH	6HULDO 1XPEHU LQ \$6&,, RI WKH LQVWDOOHG FDUG	8
2721 - 2722	10018 - 10019	7HVV LQIR DQG RSHUDWRU	8,1716	ELW-PDSSHG	VVFF ----RRRRRRRR	VVFF --- ZKHUH X- 7HVV VWDWXV ELW - 00 : 5HVHUYHG - 01 : 7HVV)DLOHG - 10 : 7HVV 3DVVHG - 11 : 7HVV QRW SHUIRUPHG FF - &DOLEUDWLRQ VWDWXV ELW - 00 : 1R FDOLEUDWLRQ QHGHG - 01 : &DOLEUDWLRQ)DLOHG - 10 : &DOLEUDWLRQ 3DVVHG - 11 : &DOLEUDWLRQ QRW SHUIRUPHG RRRRRRRR: RSHUDWRU LG	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
						%ORFN 6L]H:	58
Accumulators Block						read-only	
2(1 - 2(10	12000 - 12001	.QSXW 1 \$FFXPXDWRU	8,1732	0 WR 999999999	QXPEHU RI WUDQVLWLRQV		2
2(11 - 2(16	12002 - 12007	.QSXWV 2-4 \$FFXPXDWRUV	8,1732	0 WR 999999999	QXPEHU RI WUDQVLWLRQV		6
2(17 - 2(18	12008 - 12009	2XWSXW RU 5HOD\ 1 \$FFXPXDWRU	8,1732	0 WR 999999999	QXPEHU RI WUDQVLWLRQV		2
2(19 - 2(1\$	12010 - 12011	2XWSXW RU 5HOD\ 2 \$FFXPXDWRU	8,1732	0 WR 999999999	QXPEHU RI WUDQVLWLRQV		6
						%ORFN 6L]H:	16
Commands Section (Note 4)							
Resets Block (Note 9)						write-only	
4(1) - 4(1)	20000 - 20000	5HVHW 0D[/0LQ %ORFNV	8,1716	SDVVZRUG (1RWH 5)		5HSO\ WR D UHVHW ORJ FRPPDQG LQGLFDWHV WKDW WKH FRPPDQG ZDV DFFHSWHG EXW QRW QHFHVVDULO\ WKDW WKH UHVHW LV ILQLVKHG. 3ROO ORJ VWDWXV EORFN WR GHWHUPLQH WKLV.	1
4(20 - 4(20	20001 - 20001	5HVHW (QHUU) \$FFXPXDWRUV	8,1716	SDVVZRUG (1RWH 5)			1
4(21 - 4(21	20002 - 20002	6VWHP (YHQW ORJ (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(22 - 4(22	20003 - 20003	5HVHW +LVWRULFDO /RJ 1 (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(23 - 4(23	20004 - 20004	5HVHW +LVWRULFDO /RJ 2 (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(24 - 4(24	20005 - 20005	5HVHW +LVWRULFDO /RJ 3 (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(25 - 4(25	20006 - 20006	5HVHW \$ODUP /RJ (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(26 - 4(26	20007 - 20007	5HVHW ,2/RJ (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(27 - 4(27	20008 - 20008	5HVHW ,2 &DUG ,QSXW \$FFXPXDWRUV	8,1716	SDVVZRUG (1RWH 5)			1
4(28 - 4(28	20009 - 20009	5HVHW ,2 &DUG 2XWSXW \$FFXPXDWRUV	8,1716	SDVVZRUG (1RWH 5)			1
4(29 - 4(29	20010 - 20010	5HVHW YROWDJH)UHTXHQF	8,1716	SDVVZRUG (1RWH 5)			1
4(2\$ - 4(2\$	20011 - 20011	5HVHW 0D[/0LQ %ORFNV 0HWHU 1	8,1716	SDVVZRUG (1RWH 5)			1
4(2% - 4(2%	20012 - 20012	5HVHW 0D[/0LQ %ORFNV 0HWHU 2	8,1716	SDVVZRUG (1RWH 5)			1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2%0\$ - 2%0\$	11019 - 11019	7LPHVWDPS	8,1716	ELW-PDSSHG	\\\\\\\\\\\\\\\\PPPPGG GGG	\\\\\\\\\\\\\\\\ - \\HDU PPPP - PRQWK GGGGG - GD\\	1
2%0% - 2%16	11020 - 11031	5HVHUYHG				5HVHUYHG	12
2%17 - 2%17	11032 - 11032	*LJLWDO LQSW GHVFULSWRU				5HVHUYHG	1
2%18 - 2%18	11033 - 11033	*LJLWDO RXXSW GHVFULSWRU				5HVHUYHG	1
2%19 - 2%19	11034 - 11034	*LJLWDO RXXSW ODWHQF					1
2%1\$ - 2%35	11035 - 11062	5HVHUYHG					28
2%36 - 2%36	11063 - 11063	&5&					1
						%ORFN 6LJH:	64
Data and Control Block -- Digital I/O Relay Card Overlay (Note 14)						read-only except as indicated	
2%3) - 2%3)	11072 - 11072	*LJLWDO ,QSW 6WDWHV	8,1716	ELW-PDSSHG	44443333 22221111	7ZR QLEEOH ILHOGV: (2222) IRU LQSW#2 DQG (1111) IRU LQSW #1. /VE LQ HDFK QLEEOH LV WKH FXUHQW VWDWH RI WKH LQSW. OVE LQ HDFK QLEEOH LV WKH ROGHVW UHJLVWHUHG VWDWH.	1
2%40 - 2%40	11073 - 11073	*LJLWDO 5HOD\\ 6WDWHV	8,1716	ELW-PDSSHG	- - - - - ab- -cd	,I "D" LV 1 WKHQ VWDWH RI 5HOD\\#2 LV XQNQRZQ, RWKHUZH VWDWH RI 5HOD\\#2 LV LQ "F": (1 WULSSHG, 0 UHOHDVHG). ,I "E" LV 1 WKHQ VWDWH RI 5HOD\\#1 LV XQNQRZQ, RWKHUZH VWDWH RI 5HOD\\#1 LV LQ "G": (1 WULSSHG, 0 UHOHDVHG).	1
2%41 - 2%41	11074 - 11074	7XUQ UHOD\\ RQ	8,1716	ELW-PDSSHG	- - - - - -21	:ULWLQJ D 1 LQ ELW 1 WXUQV UHOD\\ 1+1 21 (WKLW UHJLVWHU LV ZULWHDEOH RQO\\ LQ SULYLOHJHG VHWLRQ)	1
2%42 - 2%42	11075 - 11075	7XUQ UHOD\\ RI	8,1716	ELW-PDSSHG	- - - - - -21	:ULWLQJ D 1 LQ ELW 1 WXUQV UHOD\\ 1+1 2)) (WKLW UHJLVWHU LV ZULWHDEOH RQO\\ LQ SULYLOHJHG VHWLRQ)	1
2%43 - 2%43	11076 - 11076	7ULS/5HOHDVH GHOD\\ WLPHU IRU 5HOD\\ 1	8,1716	0 WR 9999	0.1 VHF	WLPH WR WULS RU UHOHDVH	1
2%44 - 2%44	11077 - 11077	7ULS/5HOHDVH GHOD\\ WLPHU IRU 5HOD\\ 2	8,1716	0 WR 9999	0.1 VHF	WLPH WR WULS RU UHOHDVH	1
2%45 - 2%46	11078 - 11079	5HVHUYHG				5HVHUYHG	2
2%47 - 2%47	11080 - 11080	,QSW 1 \$FFXPXDWRU, 6FDOHG	8,1716	0 WR 9999	UHVROXWLRQ LV 1, 10, 100, 1000, 10000, RU 100000 FRXQVW	'LVDEOHG DFFXPXDWRUV DOZDIV UHGD 0.	1
2%48 - 2%48	11081 - 11081	,QSW 2 \$FFXPXDWRU, 6FDOHG	8,1716	0 WR 9999			1
2%49 - 2%49	11082 - 11082	,QSW 3 \$FFXPXDWRU, 6FDOHG	8,1716	0 WR 9999			2
2%4% - 2%4%	11084 - 11084	5HOD\\ 1 \$FFXPXDWRU, 6FDOHG	8,1716	0 WR 9999	UHVROXWLRQ LV 1, 10, 100, 1000, 10000, RU 100000 FRXQVW	'LVDEOHG DFFXPXDWRUV DOZDIV UHGD 0.	1
2%4& - 2%4&	11085 - 11085	5HOD\\ 2 \$FFXPXDWRU, 6FDOHG	8,1716	0 WR 9999			1
2%4' - 2%78	11086 - 11129	5HVHUYHG				5HVHUYHG	44

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
520\$ - 520\$	21003 - 21003	,QLWLDWH 3URJUDPPDEOH 6HWWLQJV 8SGDWH	8,1716	SDVVZRUG (1RWH 5)		&38 HQWHUV 36 XSGDWH PRGH	1
520% - 520%	21004 - 21004	&DOFXODWH 3URJUDPPDEOH 6HWWLQJV &KHFNVXP (1RWH 3)	8,1716	0000 WR 9999		&38 FDOFXODWHV FKHFNVXP RQ 5\$0 FRS\ RI 36 EORFN	1
520& - 520&	21005 - 21005	3URJUDPPDEOH 6HWWLQJV &KHFNVXP (1RWH 3)	8,1716	0000 WR 9999		UHDG/ZULWH FKHFNVXP UHJLVWHU; 36 EORFN VDYHG LQ QRQYRODWLOH PHPRU; RQ ZULWH (1RWH 8)	1
520' - 520'	21006 - 21006	:ULWH 1HZ 3DVVZRUG (1RWH 3)	8,1716	0000 WR 9999		ZULWH-RQ\ UHJLVWHU; DOZDIV UHDGV JHUR	1
520(- 520(	21007 - 21007	7HUPLDQWH 3URJUDPPDEOH 6HWWLQJV 8SGDWH (1RWH 3)	8,1716	DQ\ YDOXH		&38 OHDYHV 36 XSGDWH PRGH YLD UHVHW	1
520) - 5211	21008 - 21010	6HW &38 &ORFN	767\$03	1-DQ2000 - 31*HF2099	1 VHF	VDYHG RQ\ ZKHQ 3UG UHJLVWHU LV ZULWWHQ	3
5212 - 5212	21011 - 21011	5HVHUYHG	8,1716	DQ\ YDOXH		5HVHUYHG	1
5213 - 5219	21012 - 21018	5HVHUYHG				5HVHUYHG	7
521\$ - 521\$	21019 - 21019	&ORVH 3ULYLOHJHG &RPPDQG 6HVLRQ	8,1716	DQ\ YDOXH		HQGQ DQ RSHQ FRPPDQG VHVLRQ	1
						%ORFN 6LJH:	20
Encryption Block						read/write	
658) - 659\$	26000 - 26011	3HUIRUP D 6HFUXH 2SHUDWLRQ	8,1716			HQFUISWHG FRPPDQG WR UHDG SDVVZRUG RU FKDQJH &38 WASH	12
						%ORFN 6LJH:	12
Programmable Settings Section							
Basic Setups Block						write only in PS update mode	
752)	752)	30000 30000	&7 GHQRPLQDWRU	8,1716	1 RU 5	none	1
7530	7530	30001 30001	&7 QXPHUDWRU 0HWHU 1, 3KDVH \$	8,1716	1 WR 65535	none	1
7531	7531	30002 30002	&7 QXPHUDWRU 0HWHU 1, 3KDVH %	8,1716	1 WR 65535	none	1
7532	7532	30003 30003	&7 QXPHUDWRU 0HWHU 1, 3KDVH &	8,1716	1 WR 65535	none	1
7533	7533	30004 30004	&7 QXPHUDWRU 0HWHU 2, 3KDVH \$	8,1716	1 WR 65535	none	1
7534	7534	30005 30005	&7 QXPHUDWRU 0HWHU 2, 3KDVH %	8,1716	1 WR 65535	none	1
7535	7535	30006 30006	&7 QXPHUDWRU 0HWHU 2, 3KDVH &	8,1716	1 WR 65535	none	1
7536	7536	30007 30007	&7 QXPHUDWRU 0HWHU 3, 3KDVH \$	8,1716	1 WR 65535	none	1
7537	7537	30008 30008	&7 QXPHUDWRU 0HWHU 3, 3KDVH %	8,1716	1 WR 65535	none	1
7538	7538	30009 30009	&7 QXPHUDWRU 0HWHU 3, 3KDVH &	8,1716	1 WR 65535	none	1
7539	7539	30010 30010	&7 QXPHUDWRU 0HWHU 4, 3KDVH \$	8,1716	1 WR 65535	none	1
753\$	753\$	30011 30011	&7 QXPHUDWRU 0HWHU 4, 3KDVH %	8,1716	1 WR 65535	none	1
753%	753%	30012 30012	&7 QXPHUDWRU 0HWHU 4, 3KDVH &	8,1716	1 WR 65535	none	1
753&	753&	30013 30013	&7 QXPHUDWRU 0HWHU 5, 3KDVH \$	8,1716	1 WR 65535	none	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
4(2& - 4(2&	20013 - 20013	5HVHW 0D]/0LQ %ORFNV 0HWHU 3	8,1716	SDVVZRUG (1RWH 5)			1
4(2' - 4(2'	20014 - 20014	5HVHW 0D]/0LQ %ORFNV 0HWHU 4	8,1716	SDVVZRUG (1RWH 5)			1
4(2(- 4(2(	20015 - 20015	5HVHW 0D]/0LQ %ORFNV 0HWHU 5	8,1716	SDVVZRUG (1RWH 5)			1
4(2) - 4(2)	20016 - 20016	5HVHW 0D]/0LQ %ORFNV 0HWHU 6	8,1716	SDVVZRUG (1RWH 5)			1
4(30 - 4(30	20017 - 20017	5HVHW 0D]/0LQ %ORFNV 0HWHU 7	8,1716	SDVVZRUG (1RWH 5)			1
4(31 - 4(31	20018 - 20018	5HVHW 0D]/0LQ %ORFNV 0HWHU 8	8,1716	SDVVZRUG (1RWH 5)			1
4(32 - 4(32	20019 - 20019	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 1	8,1716	SDVVZRUG (1RWH 5)			1
4(33 - 4(33	20020 - 20020	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 2	8,1716	SDVVZRUG (1RWH 5)			1
4(34 - 4(34	20021 - 20021	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 3	8,1716	SDVVZRUG (1RWH 5)			1
4(35 - 4(35	20022 - 20022	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 4	8,1716	SDVVZRUG (1RWH 5)			1
4(36 - 4(36	20023 - 20023	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 5	8,1716	SDVVZRUG (1RWH 5)			1
4(37 - 4(37	20024 - 20024	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 6	8,1716	SDVVZRUG (1RWH 5)			1
4(38 - 4(38	20025 - 20025	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 7	8,1716	SDVVZRUG (1RWH 5)			1
4(39 - 4(39	20026 - 20026	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 8	8,1716	SDVVZRUG (1RWH 5)			1
4(3\$ 4(69	20027 - 20074	5HVHUYHG				5HVHUYHG	48
						%ORFN 6L]H:	75
Priviledged Commands Block							
5207 - 5207	21000 - 21000	,QLWLDWH &38]LUPZDUH 5HSURJUDPPLQJ	8,1716	SDVVZRUG (1RWH 5)			1
5208 - 5208	21001 - 21001	]RUFH &38 5HWWDUW	8,1716	SDVVZRUG (1RWH 5)		FDXVHV D ZDWFKGRJ UHVHW, DOZD]V UHGDV 0	1
5209 - 5209	21002 - 21002	2SHQ 3ULYLOHJHG &RPPDQG 6HVVLRQ	8,1716	SDVVZRUG (1RWH 5)		&38 ZLOO SURFHVV FRPPDQG UHJLVVHVU (WKLV UHJLVVHVU WKURXJK' &ORVH 3ULYLOHJHG &RPPDQG 6HVVLRQ' UHJLVVHVU EHORZ)]RU 5 PLQXWHV RU XQWLO WKH VHVVLRQ LV FORVHG, ZKLFKHYHU FRPHV ILUVV.	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
753'	753	30014 30014	8,1716	1 WR 65535	none	(Cont'd)	1
753(	753(	30015 30015	8,1716	1 WR 65535	none		1
753)	753)	30016 30016	8,1716	1 WR 65535	none		1
7540	7540	30017 30017	8,1716	1 WR 65535	none		1
7541	7541	30018 30018	8,1716	1 WR 65535	none		1
7542	7542	30019 30019	8,1716	1 WR 65535	none		1
7543	7543	30020 30020	8,1716	1 WR 65535	none		1
7544	7544	30021 30021	8,1716	1 WR 65535	none		1
7545	7545	30022 30022	8,1716	1 WR 65535	none		1
7546	7546	30023 30023	8,1716	1 WR 65535	none		1
7547	7547	30024 30024	8,1716	1 WR 65535	none		1
7548	7549	30025 30026	8,1732	1 WR 9999999	QRQH		2
754\$	754\$	30027 30027	8,1716	1 WR 65535	QRQH		1
754%	754%	30028 30028	8,1716	ELW-PDSSHG	----- ---- hhhh	KKKK KRRNXS HQXPHUDWLRQ (0 3 HOHPHQW ZH>96@, 1 UHVHUYHG, 3 UHVHUYHG, 4 6LQJOH 3KDVH)	1
754&	754&	30029 30029	8,1716	ELW-PDSSHG	--iiii b----sss	LLLLL LQWHUYDO (5,15,30,60) E 0-EORFN RU 1-UR00LQJ VV # VXELQWHUYDOV (1,2,3,4)	1
754'	754'	30030 30030	8,1716	ELW-PDSSHG	-----nn-eee-ddd	QQ QXPEHU RI HQHUJ\ GLJLWV (5-8 --1 0-3) HHH HQHUJ\ VFDOH (0-XQLW, 3-NLOR, 6-PHJD) GGG HQHUJ\ GLJLWV DIWHU GHFLPDO SRLQW (0-6) 6HH QRWH 10.	1
754(	754(	30031 30031	8,1716	ELW-PDSSHG	hhhhhwww- ddmmmm	DSSOLHV RQ\ LI GD\OLJKW VDYLQJV LQ 8VHU 6HWWLQJV JODJV RQ: VSHFLILHV ZKHQ WR PDNH FKDQJHRYHU	1
754)	754)	30032 30032	8,1716	ELW-PDSSHG	hhhhhwww- ddmmmm	KKKKK KRXU, 0-23 ZZZ ZHHN, 1-4 IRU 1VW - 4WK, 5 IRU ODVW GGG GD\ RI ZHHN, 1-7 IRU 6XQ - 6DW PPPP PRQWK, 1-12 (DPSOH: 2\$0 RQ WKH 4WK 6XQGD\ RI 0DUFK KKKKK 2, ZZZ 4, GGG 1, PPPP 3	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
7550	7550	30033 30033	8VHU 6HWWLQJV JODJV	8,1716	ELW-PDSSHG	----- urpdywfa	X (QHUJ) GLUHFWLRQ (0 EL GLUHFWLRQDO, 1 XQLW GLUHFWLRQDO) U SDVVZRUG IRU UHVHW LQ XVH (1 RQ, 0 RII) S SDVVZRUG IRU FRQILJXUDWLRQ LQ XVH (1 RQ, 0 RII) G GD'OLJKW VDYLLQJ WLPH FKDJJHV (0 RII, 1 RQ) I GLD.JQRVWLF HYHQWV LQ VVWHP ORJ (1 HV, 0 QR) Z SRZHU GLUHFWLRQ (0 YLHZ DV ORDG, 1 YLHZ DV JHQHUDWRU) I IOLS SRZHU IDFWRU VLJQ (1 HV, 0 QR) D DSSDUHQW SRZHU FRPSXWDWLRQ PHWKRG (0 DULWKPHWLF VXP, 1 YHFWRU VXP)	1
7551	7558	30034 30041	&38 GHVLJQDWLRQ				8	
7559	7559	30042 30042	&201 VHWXS	8,1716	ELW-PDSSHG	----dddd-ppp-bbb	GGGG UHSOI GHOD (* 50 PVHF) SSS SURWRFRQ (1-ORGEXV 578, 2-ORGEXV \$6&.,)	1
755\$	755\$	30043 30043	&202 VHWXS	8,1716	ELW-PDSSHG	----dddd-ppp-bbb	EEE EDXG UDWH (1-9600, 2-19200, 4-38400, 6-57600)	1
755%	755%	30044 30044	&203 VHWXS	8,1716	ELW-PDSSHG	----dddd-ppp-bbb		1
755&	755	30045 30046	5HVHUYHG				2	
755(	755(	30047 30047	&201 DGGUHV	8,1716	1 WR 247	QRQH		1
755)	755)	30048 30048	&202 DGGUHV	8,1716	1 WR 247	QRQH		1
7560	7560	30049 30049	&203 DGGUHV	8,1716	1 WR 247	QRQH		1
7561	7578	30050 30073	5HVHUYHG	8,1716			5HVHUYHG	24
7579	7579	30074 30074	3URJUDPPDEOH 6HWWLQJV 8SGDWH &RXQWHU	8,1716	0-65535		.QFUHPHQW HDFK WLPH SURJUDPPDEOH VHWLQJV DUH FKDJJHG; RFFXUV ZKHQ QHZ FKHFNVXP LV FDOFXODWHG.	1
757\$	7569	30075 30138	5HVHUYHG IRU 6RIWZDUH 8VH				5HVHUYHG	64
757\$ -	757\$	30139 - 30139	/LPLW #1 ,GHQWLILHU	8,1716	0 WR 65535		XVH ORGEXV DGGUHV DV WKH LGHQWLILHU (VH QRWHV 7, 11, 12)	1
757% -	757%	30140 - 30140	/LPLW #1 2XW +LJK 6HWSRLQW	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	6HWSRLQW IRU WKH "DERYH" OLPLW (/01), VHH QRWHV 11-12.	1
757& -	757&	30141 - 30141	/LPLW #1 ,Q +LJK 7KHVVKROG	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	7KHVVKROG DW ZLJK "DERYH" OLPLW FOHDUV; QRUPDOO OHVV WKDQ RU HTXDO WR WKH "DERYH" VHWLQW; VHH QRWHV 11-12.	1
757' -	757'	30142 - 30142	/LPLW #1 2XW /RZ 6HWSRLQW	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	6HWSRLQW IRU WKH "EHORZ" OLPLW (/02), VHH QRWHV 11-12.	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
75%(- 75%	30143 - 30143	/LPLW #1 ,Q /RZ 7KUHVKROG	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	7KUHVKROG DW ZKLFK "EHORZ" OLPLW FOHDUV; QRUPDOO JUHDPWHU WKDQ RU HTXDO WR WKH "EHORZ" VHWSRLQW; VHH QRWHV 11-12.	1
75%) - 75&3	30144 - 30148	/LPLW #2	6,1716	VDPH DV /LPLW #1	VDPH DV /LPLW #1	VDPH DV /LPLW #1	2
75&4 - 75&8	30149 - 30153	/LPLW #3	6,1716				3
75&9 - 75&C	30154 - 30158	/LPLW #4	6,1716				4
75&D - 75'2	30159 - 30163	/LPLW #5	6,1716				5
75'3 - 75'7	30164 - 30168	/LPLW #6	6,1716				6
75'8 - 75'8	30169 - 30173	/LPLW #7	6,1716				7
75" - 75(1	30174 - 30178	/LPLW #8	6,1716				8
75(2 - 75(9	30179 - 30186	0HWHU 1 'HVLJQDWLRQ, 3KDVH \$	\$6&.,				16 FKDU	QRQH	1RWH:	8
75(\$ - 75)1	30187 - 30194	0HWHU 1 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH	)RU HDFK 0HWHU WKH0HWHU 'HVLJQDWLRQ IRU DOO 3 SKDVHV VKRXOG EH SURJUDPPHG ZLWK VDPH YDOXH.	8
75)2 - 75)9	30195 - 30202	0HWHU 1 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH		8
75)\$ - 7601	30203 - 30210	0HWHU 2 'HVLJQDWLRQ, 3KDVH \$	\$6&.,	16 FKDU	QRQH		8
7602 - 7609	30211 - 30218	0HWHU 2 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH		8
760\$ - 7611	30219 - 30226	0HWHU 2 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH		8
7612 - 7619	30227 - 30234	0HWHU 3 'HVLJQDWLRQ, 3KDVH \$	\$6&.,	16 FKDU	QRQH		8
761\$ - 7621	30235 - 30242	0HWHU 3 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH		8
7622 - 7629	30243 - 30250	0HWHU 3 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH		8
762\$ - 7631	30251 - 30258	0HWHU 4 'HVLJQDWLRQ, 3KDVH \$	\$6&.,	16 FKDU	QRQH		8
7632 - 7639	30259 - 30266	0HWHU 4 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH		8
763\$ - 7641	30267 - 30274	0HWHU 4 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH		8
7642 - 7649	30275 - 30282	0HWHU 5 'HVLJQDWLRQ, 3KDVH \$	\$6&.,	16 FKDU	QRQH		8
764\$ - 7651	30283 - 30290	0HWHU 5 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH		8
7652 - 7659	30291 - 30298	0HWHU 5 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH		8
765\$ - 7661	30299 - 30306	0HWHU 6 'HVLJQDWLRQ, 3KDVH \$	\$6&.,	16 FKDU	QRQH		8
7662 - 7669	30307 - 30314	0HWHU 6 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH		8
766\$ - 7671	30315 - 30322	0HWHU 6 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH		8
7672 - 7679	30323 - 30330	0HWHU 7 'HVLJQDWLRQ, 3KDVH \$	\$6&.,	16 FKDU	QRQH		8
767\$ - 7681	30331 - 30338	0HWHU 7 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH		8
7682 - 7689	30339 - 30346	0HWHU 7 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH		8
768\$ - 7691	30347 - 30354	0HWHU 8 'HVLJQDWLRQ, 3KDVH \$	\$6&.,	16 FKDU	QRQH	8	
7692 - 7699	30355 - 30362	0HWHU 8 'HVLJQDWLRQ, 3KDVH %	\$6&.,	16 FKDU	QRQH	8	
769\$ - 76\$1	30363 - 30370	0HWHU 8 'HVLJQDWLRQ, 3KDVH &	\$6&.,	16 FKDU	QRQH	8	
						%ORFN 6LJH:	371

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
Log Setups Block								
7917	7917	31000 31000	+LVWRULFDO /RJ #1 6LJHV	8,1716	ELW-PDSSHG	eeeeeeee ssssssss	KLJK EWH LV QXPEHU RI UHJLVWHUV WR ORJ LQ HDFK UHFRUG (0-117), ORZ EWH LV QXPEHU RI IODVK VHFWRUV IRU WKH ORJ (VHH QRWH 17) 0 LQ HLWKHU EWH GLVDEOHV WKH ORJ	1
7918	7918	31001 31001	+LVWRULFDO /RJ #1 ,QWHUYDO	8,1716	ELW-PDSSHG	00000000 hgfedcba	RQO\ 1 ELW VHWH: D 1 PLQ, E 3 PLQ, F 5 PLQ, G 10 PLQ, H 15 PLQ, I 30 PLQ, J 60 PLQ, K (2, SXOVH	1
7919	7919	31002 31002	+LVWRULFDO /RJ #1, 5HJLVWHU #1 ,GHQWLILHU	8,1716	0 WR 65535		XVH ORGEXV DGGUHV DV WKH LGHQWLILHU (VHH QRWH 7)	1
791\$	798'	31003 31118	+LVWRULFDO /RJ #1, 5HJLVWHU #2 - #117 ,GHQWLILHUV	8,1716	0 WR 65535		VDPH DV 5HJLVWHU #1 ,GHQWLILHU	116
798(	79'6	31119 31191	+LVWRULFDO /RJ #1 6RIWZDUH %XIIHU				5HVHUYHG IRU VRIWZDUH XVH.	73
79'7	7\$96	31192 31383	+LVWRULFDO /RJ #2 6LJHV, ,QWHUYDO, 5HJLVWHUV & 6RIWZDUH %XIIHU				VDPH DV +LVWRULFDO /RJ #1	192
7\$97	7%56	31384 31575	+LVWRULFDO /RJ #3 6LJHV, ,QWHUYDO, 5HJLVWHUV & 6RIWZDUH %XIIHU				VDPH DV +LVWRULFDO /RJ #1	192
7%57	7%75	31576 31606	5HVHUYHG				5HVHUYHG	31
							%ORFN 6LJH:	608
Settings Registers for Digital I/O Relay Card					First Overlay	write only in PS update mode		
7'00 - 7'00		32001 - 32001	.QSW#1 - 4 ELQGLQJV & ORJLQJ HQDEOHV	8,1716	ELW-PDSSHG	44443333 22221111	2QH QLEEOH IRU HDFK LQSW. \$VVPXPLQJ "DEFF" DV WKH ELWV LQ HDFK QLEEOH: "D": VHOHFV WKLV LQSW IRU (2, ((QG 2I ,QWHUYDO)SXOVH VHQVLQJ. "E": ORJ WKLV LQSW ZKHQ SXOVH LV GHWHFWHG "FF": .QSW HYHQW WULJHU PRGH - &RQDFW VHQVLQJ PHWKRG; 00 QRQH; 01 RSHQ WR FORVH; 10 FORVH WR RSHQ; 11 DQ\ FKDQJH. (YHU) LQSW KDV DQ DVVRFDWHG LQWHUQDO DFFXPXODWRU (6HH LQSW \$FFXPXODWRU 6FDOLQJ), ZKLFK LV LQFUHPHQWHG HYHU\ WLP WKH LQSW FKDQJH DFFRUGLQJ ZLWK WKH WULJHU PRGH FULHWHULD "FF"	1
7'01 - 7'01		32002 - 32002	5HOD\ #1 'HOD\ WR 2SHUDWH	8,1716	0.1 VHFRRG XQLWV		'HOD\ WR RSHUDWH WKH UHOD\ VLQFH UHTXHW.	1
7'02 - 7'02		32003 - 32003	5HOD\ #1 'HOD\ WR 5HOHDVH	8,1716	0.1 VHFRRG XQLWV		'HOD\ WR UHOHDVH WKH UHOD\ VLQFH UHTXHW.	1
7'03 - 7'08		32004 - 32009	5HVHUYHG	8,1716			6HW WR 0.	6

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
7'09 - 7'09	32010 - 32010	5HOD\ #2 'HOD\ WR 2SHUDWH	8,1716	0.1 VHFRQG XQLWV		'HOD\ WR RSHUDWH WKH UHOD\ VLQFH UHTXHW.	1
7'0\$ - 7'0\$	32011 - 32011	5HOD\ #2 'HOD\ WR 5HOHDVH	8,1716	0.1 VHFRQG XQLWV		'HOD\ WR UHOHDVH WKH UHOD\ VLQFH UHTXHW.	1
7'0% - 7'20	32012 - 32033	5HVHUYHG	8,1716			6HW WR 0.	22
7'21 - 7'21	32034 - 32034	.QSXW \$FFXPXDWRUV 6FDOLQJ	8,1716	ELW-PDSSHG	44443333 22221111	4 ELWV SHU LQSXW RU RXWSXW DFFXPXDWRU 7KH QLEEOH LQIRUPV ZKDW VKRXOG EH WKH VFDOLQJ RI WKH DFFXPXDWRU 0 QR-VFDOLQJ, 1 0.1, 2 0.01, 3 1P, 4 0.1P, 5 0.01P, 6 1X, 7 0.1X; WKH YDOXH 15 GLVDEOH WKH DFFXPXDWRU. (DPSOH: VXSSRVH WKDW WKH LQWUQDO LQSXW DFFXPXDWRU #1 LV 12345, DQG LWV FRUUVSRQGLQJ VFDOLQJ VHWLQJ LV '0011' (3 GHFLPDO). 7KHQ, WKH DFFXPXDWRU ZLOO EH UHGD DV: 6FDOLQJ 3, PHDQV 1P RU 0.001. 6FDOHG DFFXPXDWRU 12345 * 0.001 12 (7ZHOYH).	1
7'22 - 7'22	32035 - 32035	5HOD\ \$FFXPXDWRUV 6FDOLQJ	8,1716	ELW-PDSSHG	44443333 22221111	4 ELWV SHU LQSXW RU RXWSXW DFFXPXDWRU 7KH QLEEOH LQIRUPV ZKDW VKRXOG EH WKH VFDOLQJ RI WKH DFFXPXDWRU 0 QR-VFDOLQJ, 1 0.1, 2 0.01, 3 1P, 4 0.1P, 5 0.01P, 6 1X, 7 0.1X; WKH YDOXH 15 GLVDEOH WKH DFFXPXDWRU. (DPSOH: VXSSRVH WKDW WKH LQWUQDO LQSXW DFFXPXDWRU #1 LV 12345, DQG LWV FRUUVSRQGLQJ VFDOLQJ VHWLQJ LV '0011' (3 GHFLPDO). 7KHQ, WKH DFFXPXDWRU ZLOO EH UHGD DV: 6FDOLQJ 3, PHDQV 1P RU 0.001. 6FDOHG DFFXPXDWRU 12345 * 0.001 12 (7ZHOYH).	1
7'23 - 7'3(	32037 - 32063	5HVHUYHG				6HW WR 0.	8
7'3) - 7'46	32064 - 32071	.QSXW#1 /DEHO	\$6&,,	16 FKDU			8
7'47 - 7'4(	32072 - 32079	.QSXW#1 /RZ 6WDWH 1DPH	\$6&,,	16 FKDU			8
7'4) - 7'56	32080 - 32087	.QSXW#1 +LJK 6WDWH 1DPH	\$6&,,	16 FKDU			8
7'57 - 7'6(	32088 - 32111	.QSXW#2 /DEHO DQG 6WDWH 1DPHV				VDPH DV ,QSXW#1	24
7'6) - 7'86	32112 - 32135	.QSXW#3 /DEHO DQG 6WDWH 1DPHV				VDPH DV ,QSXW#1	24
7'87 - 7'9(	32136 - 32159	.QSXW#4 /DEHO DQG 6WDWH 1DPHV				VDPH DV ,QSXW#1	24
7'9) - 7'\$6	32160 - 32167	5HOD\#1 /DEHO	\$6&,,	16 FKDU			8
7'\$7 - 7'\$(	32168 - 32175	5HOD\#1 2SHQ 6WDWH 1DPH	\$6&,,	16 FKDU			8
7'\$) - 7'%6	32176 - 32183	5HOD\#1 &ORVHG 6WDWH 1DPH	\$6&,,	16 FKDU			8
7'%7 - 7'&(	32184 - 32207	5HOD\#2 /DEHO DQG 6WDWH 1DPHV				VDPH DV 5HOD\#1	24
7'&) - 7')('	32208 - 32255	5HVHUYHG				5HVHUYHG	48
7')) - 7(06	32256 - 32263	.QSXW#1 \$FFXPXDWRU /DEHO	\$6&,,	16 FKDU			8
7(07 - 7(0(	32264 - 32271	.QSXW#2 \$FFXPXDWRU /DEHO	\$6&,,	16 FKDU			8
7(0) - 7(14	32272 - 32277	.QSXW#3 \$FFXPXDWRU /DEHO	\$6&,,	16 FKDU			8
7(15 - 7(1(	32278 - 32287	.QSXW#4 \$FFXPXDWRU /DEHO	\$6&,,	16 FKDU			8

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
7(1) - 7(1)	32288 - 32288	.QSXW#1 \$FFXPXODWRU .W	8,1716	ELW-PDSSHG	ddVVVVV V VVVVVV V	.7 SRZHU IDFWRU IRU WKH 3XOVH 2XWSXW "9" LV UDZ SRZHU YDOXH LQ :K/SXOVH IUWP 0 WR 9999. "GG" GHFLPDO SRLQW SRVLWLRQ: 00 0.;:;;, 01 ;:;;, 10 ;:;;, 11 ;:;;.	1
7(20) - 7(20)	32289 - 32289	.QSXW#2 \$FFXPXODWRU .W	8,1716	ELW-PDSSHG	ddVVVVV V VVVVVV V		1
7(21) - 7(21)	32290 - 32290	.QSXW#3 \$FFXPXODWRU .W	8,1716	ELW-PDSSHG	ddVVVVV V VVVVVV V		1
7(22) - 7(22)	32291 - 32291	.QSXW#4 \$FFXPXODWRU .W	8,1716	ELW-PDSSHG	ddVVVVV V VVVVVV V		1
7(23) - 7(53)	32292 - 32596	5HVHUYHG				5HVHUYHG	305
						%ORFN 6LJH:	576
Log Retrieval Section							
Log Retrieval Block						read/write except as noted	
&34& - &34'	49997 - 49998	/RJ 5HWULHYDO 6HVVLQR 'XUDWLRQ	8,1732	0 WR 4294967294	4 PVHF	0 LI QR VHVVLQR DFWLYH; ZUDSV DURXQG DIWHU PD[FRXQW	2
&34(- &34(	49999 - 49999	/RJ 5HWULHYDO 6HVVLQR &RP 3RUW	8,1716	0 WR 3		0 LI QR VHVVLQR DFWLYH, 1-3 IRU VHVVLQR DFWLYH RQ &201 - &203	1
&34) - &34)	50000 - 50000	/RJ 1XPEHU, (QDEOH, 6FRSH	8,1716	ELW-PDSSHG	nnnnnnnn esssssss	KLJK EWH LV WKH ORJ QXPEHU (0-VVWHP, 1-KLVWRU1, 2- KLVWRU2, 3-KLVWRU3,4-DODUP ORJ, 5,-/2 FKDJQJHV) H LV UHWULHYDO VHVVLQR HQDEOH(1) RU GLVDEOH(0) VVVVVV LV ZKDW WR UHWULHYH (0-QRUPDO UHFVRUG, 1- WLPVWWDPSV RQO, 2-FRPSOHWH PHPRU\ LPDJH (QR GDWD YDOLGDWLRQ LI LPDJH)	1
&350 - &350	50001 - 50001	5HFRUGV SHU :LQGRZ RU %DWFK, 5HFRUG 6FRSH 6HOHFWRU, 1XPEHU RI 5HSHDWW	8,1716	ELW-PDSSHG	wwwwww ww snnnnnnn	KLJK EWH LV UHFVRUGV SHU ZLQGRZ LI V 0 RU UHFVRUGV SHU EDWFK LI V 1, ORZ EWH LV QXPEHU RI UHSHDWW IRU IXQFWLRQ 35 RU 0 WR VXSSUHVV DXWR-LQFUHPHQWLQJ; PD[QXPEHU RI UHSHDWW LV 8 (578) RU 4 (\$6&.,) WRWDO ZLQGRZV, D EDWFK LV DOO WKH ZLQGRZV	1
&351 - &352	50002 - 50003	2IIVHW RI \LUVW 5HFRUG LQ :LQGRZ	8,1732	ELW-PDSSHG	ssssssss nnnnnnnn nnnnnnnn nnnnnnnn	VVVVVVVV LV ZLQGRZ VWDWXV (0 WR 7-ZLQGRZ QXPEHU, 0))--QRW UHDFG); WKLV EWH LV UHDFG-RQO. QQ«QQ LV D 24-ELW UHFVRUG QXPEHU. 7KH ORJ\V ILUVW UHFVRUG LV ODWFKHG DV D UHIHUHQFH SRLQW ZKHQ WKH VHVVLQR LV HQDEOHG. 7KLV RIIVHW LV D UHFVRUG LQGH[UHODWLYH WR WKDW SRLQW. 9DOXH SURYLGHG LV WKH UHODWLYH LQGH[RI WKH ZKROH RU SDUWLDO UHFVRUG WKDW EHJLQV WKH ZLQGRZ.	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
&353' - &3&3'	50004 - 50126	/RJ 5HWULHYH :LQGRZ	8,1716	VHH FRPPHQWV	QRQH	PDSSHG SHU UHFRUG ODIRXW DQG UHWULHYDO VFRSH, UHGD-RQO\	2
						%ORFN 6LJH:	9
Log Status Block						read only	3
		System Log Status Block					3
&737' - &738	51000 - 51001	/RJ 6LJH LQ 5HFRUGV	8,1732	0 WR 4,294,967,294	UHFRUG		4
&739' - &73\$	51002 - 51003	1XPEHU RI 5HFRUGV 8VHG	8,1732	1 WR 4,294,967,294	UHFRUG		23
&73% - &73%	51004 - 51004	5HFRUG 6LJH LQ %\WHV	8,1716	14 WR 242	EIWH		16
&73& - &73&	51005 - 51005	/RJ \$YDLODELQW	8,1716		QRQH	0 DYDLODEOH, 1-3 LQ XVH E\ &201-3, 0)))) QRW DYDLODEOH (ORJ VLJH 0)	16
&73' - &73)	51006 - 51008	7LPHVWDPS,)LUVW 5HFRUG	767\$03	1-DQ2000 - 31'HF2099	1 VHF		16
&740 - &742	51009 - 51011	7LPHVWDPS, /DVW 5HFRUG	767\$03	1-DQ2000 - 31'HF2099	1 VHF		16
&743 - &746	51012 - 51015	5HVHUYHG				5HVHUYHG	16
						,QGLYLGXDO /RJ 6WDWXV %ORFN 6LJH:	110
&747 - &756	51016 - 51031	Historical Log 1 Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN	110
&757 - &766	51032 - 51047	Historical Log 2 Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN	110
&767 - &776	51048 - 51063	Historical Log 3 Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN	110
&777 - &786	51064 - 51079	Alarm Log Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN	110
&787 - &796	51080 - 51095	I/O Log Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN	110
						%ORFN 6LJH:	660
End of Map							

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Data Formats							
\$6&,	\$6&,	FKDUDFWHUV SDFNHG 2 SHU UHJLVWHU LQ KLJK, ORZ RUGHU DQG ZLWKRXW DQ\ WHUPLQDWLRQ FKDUDFWHUV.					
6,1716 / 8,1716	16-ELW	VLJQHJG / XQVLJQHJG LQWHJHU.					
6,1732 / 8,1732	32-ELW	VLJQHJG / XQVLJQHJG LQWHJHU VSDQQLQJ 2 UHJLVWHUV. 7KH ORZHU-DGGUHVVHG UHJLVWHU LV WKH KLJK RUGHU KDOI.					
)2\$7	32-ELW	,(((IORDWLQJ SRLQW QXPEHU VSDQQLQJ 2 UHJLVWHUV. 7KH ORZHU-DGGUHVVHG UHJLVWHU LV WKH KLJK RUGHU KDOI (L.H., FRQWDLQV WKH H[SRQHQW).					
767\$03	3	DGMDFHQW UHJLVWHUV, 2 EIWV HDFK.)LUVV (ORZHV-DGGUHVVHG) UHJLVWHU KLJK EIW LV \HDU (0-99), ORZ EIW LV PRQWK (1-12). 0LGGOH UHJLVWHU KLJK EIW LV GD(1-31), ORZ EIW LV KRXU (0-23 SOXV '67 ELW). '67 (GDIOLJKW VDYLQJ WLP) ELW LV ELW 6 (0[40). 7KLUG UHJLVWHU KLJK EIW LV PLQXWHV (0-59), ORZ EIW LV VFHRQGV (0-59).)RU H[DPSOH, 9:35:07\$0 RQ 2FWREHU 12, 2049 ZRXOG EH 0[310\$, 0[0&49, 0[2307, DVVXPLQJ '67 LV LQ HIIHFW.					
Notes							
1	\$00	UHJLVWHUV QRW H[SOLFWR\ OLVWHG LQ WKH WDEOH UHGD DV 0. :ULWHV WR WKHVH UHJLVWHUV ZLOO EH DFFHSWHG EXW ZRQW DFWXDOO\ FKDQJH WKH UHJLVWHU (VLQFH LW GRHVQW H[LW).					
2	&38	'DWD 6HFWRQ LWHPV UHGD DV 0 XQWLO ILUVV UHGLQV DUH DYDLOEORU RU LI WKH &38 LV QRW LQ RSHUDWLQJ PRGH. :ULWHV WR WKHVH UHJLVWHUV ZLOO EH DFFHSWHG EXW ZRQW DFWXDOO\ FKDQJH WKH UHJLVWHU.					
3	5HJLVWHU	YDOLG RQO\ LQ SURJUDPPDEOH VHWWLQJ XSGDWH PRGH. ,Q RWKHU PRGHV WKHVH UHJLVWHUV UHGD DV 0 DQG UHWXUQ DQ LOOHJDO GDWD DGGUHV H[FHSWLRQ LI D ZULWH LV DWWHPSWHG.					
4	&38	FRPPDQ UHJLVWHUV DOZDIV UHGD DV 0. 7KH\ PD\ EH ZULWHW RQO\ ZKHQ WKH &38 LV LQ D VXLWDEOH PRGH. 7KH UHJLVWHUV UHWXUQ DQ LOOHJDO GDWD DGGUHV H[FHSWLRQ LI D ZULWH LV DWWHPSWHG LQ DQ LQFRUUHFW PRGH.					
5	,I	WKH SDVVZRUG LV LQFRUUHFW, D YDOLG UHVSQRVH LV UHWXUQHG EXW WKH FRPPDQ LV QRW H[FXWHG. 8VH 5555 IRU WKH SDVVZRUG LI SDVVZRUGV DUH GLVDEOHG LQ WKH SURJUDPPDEOH VHWWLQJ.					
6	0	GHQRWHV D 1,000,000 PXOWLSOLHU.					
7	(DFK	LGHQWLILHU LV D 0RGEXV UHJLVWHU.)RU HQWLWLHV WKDW RFFXS\ PXOWLSOH UHJLVWHUV (2\$7, 6,1732, HWF.) DOO UHJLVWHUV PDNLQJ XS WKH HQWLW\ PXVW EH OLVWHG, LQ DVFHQGLQJ RUGHU.)RU H[DPSOH, WR ORJ SKDVH \$ YROWV, 9\$V DQG 9\$ KRXUV, WKH UHJLVWHU OLWV ZRXOG EH 0[3(7, 0[3(8, 0[411, 0[412, 0[176), 0[6'1, 0[61(DQG WKH QXPEHU RI UHJLVWHUV (0[7917 KLJK EIW) ZRXOG EH 7.					
8	:ULWLQJ	WKLV UHJLVWHU FDXVH GDWD WR EH VDYHG SHUPDQHWO\ LQ QRQYRODWOH PHRU\ 5HSO\ WR WKH FRPPDQ LQGLDWHV WKDW LW ZDV DFFHSWHG EXW QRW ZKHWHU RU QRW WKH VDYH ZDV VFFHVVIXO. 7KLV FDQ RQO\ EH GHWHUPLQHG DIWHU WKH &38 KDV UHVWUWHG.					
9	5HVHW	FRPPDQV PDNH QR VHQVH LI WKH &38 VWDWH LV /03. \$Q LOOHJDO IXQFWLRQ H[FHSWLRQ ZLOO EH UHWXUQHG.					
10	(QHUJ	UHJLVWHUV VKRXOG EH UHVHW DIWHU D IRUPDW FKDQJH.)RU VLQJOH SKDVH RSWLRQ RQO\ SHUSKDVH YDOXH DUH YDOLG. 30HDVH QRWH WKDW WKH WKUHH SKDVH WRWDO YDOXH DUH LQYDOLG LQ WKLV FDVH. \$OVR WKH WHW SXOVH DUH LQYDOLG VLQFH LW LV EDVHG RQ 7RWDO YDOXH.					
11	(QWLWLHV	WR EH PRQLRUHG DJDLQW OLPLWV DUH LGHQWLILHG E\ 0RGEXV DGGUHV. (QWLWLHV RFFXS\Q PXOWLSOH 0RGEXV UHJLVWHUV, VXFK DV IORDWLQJ SRLQW YDOXH, DUH LGHQWLILHG E\ WKH ORZHU UHJLVWHU DGGUHV. ,I DQ\ RI WKH 8 OLPLWV LV XQVHG, VHW LWV LGHQWLILHU WR]HUR. ,I WKH LQGLDWHG 0RGEXV UHJLVWHU LV QRW XVHG RU LV D QRQVHQLFDO HQWLW\ IRU OLPLWV, LW ZLOO EH KDYH DV DQ XQVHG OLPLW.					
12	7KHU	DUH 2 VHWLQJ SHU OLPLW, RQH DERYH DQG RQH EHORZ WKH H[SHFWHG UDQJH RI YDOXH. /01 LV WKH "WRR KLJK" OLPLW, /02 LV "WRR ORZ". 7KH HQWLW\ JRHV "RXW RI OLPLW" RQ /01 ZKHQ LW YDOXH LV JUHDWU WKDQ WKH VHWLQJ. ,W UHPDLQ "RXW RI OLPLW" XQWLO WKH YDOXH GURSV EHORZ WKH LQ WKUHKROG. /02 ZRUNV VLQDODUO\ LQ WKH RSSRWLGH GLUHFWRQ. ,I OLPLWV LQ RQO\ RQH GLUHFWRQ DUH RI LQWHUHV, VHW WKH LQ WKUHKROG RQ WKH "ZURQJ" VLGH RI WKH VHWLQJ.)LPLWV DUH VSHFLHG DV 0 IRXOO VFDH, ZKHU IRXOO VFDH LV DXWRPDWLFDO\ VHW DSSURSULDWO\ IRU WKH HQWLW\ EHLQJ PROLWRUHG:					
		FXUHQW)6 &7 QXPHUDWRU * &7 PXOWLSOLHU					
		YROWDJH)6 37 QXPHUDWRU * 37 PXOWLSOLHU					
		3 SKDVH SRZHU)6 &7 QXPHUDWRU * 37 QXPHUDWRU * 3 > * 6457(3) IRU GHWD KRRNXS@					

- VLQJOH SKDVH SRZHU)6 &7 QXPHUDWRU * 37 QXPHUDWRU > * 6457(3) IRU GHOWD KRRNXS@
 IUHTXHQF\)6 60 (RU 50)
 SRZHU IDFWRU)6 1.0
 SHUFHQWDJH)6 100.0
 DQJOH)6 180.0
- 13 &DUG ,GHQWLILFDWLRQ %ORFN LV DQ LPDJH RI WKH ((3520 RQ WKH FDUG.
 14 \$ EORFN RI GDWD DQG FRQWURO UHJLWVHUV LV DOORFDWHG IRU WKH ,/2 FDUG.
 15 0HDVXUHPHQW VWDWHV: 2II RFFXUV GXULQJ SURJUDPPDEOH VHWWLQJ XSGLWHV; 5XQ LV WKH QRUPDO PHDVXULQJ VWDWH; /LPS LQGLFDWHV WKDW DQ HVVHQWLO QRQ-YRODWLOH PHPRUI EORFN LV FRUUXSWHG; DQG :DUPXS RFFXUV EULHIO (DSSURILPDWHOI 4 VHFROGV) DW VWDUWXS ZKLOH WKH UHGLQJ VWELOLJH. 5XQ VWDWH LV UHTXLUHG IRU PHDVXUHPHQW, KLVWRULFDO ORJLQJ, GHPDQG LQWHUYDO SURFHVVWLQJ, OLPLW DODUP HYDOXDWLRQ, PLQ/PDJ FRPSDULVRQ. 5HVHWWLQJ PLQ/PDJ RU HQHU\ LV DOORZHG RQI LQ UXQ DQG RII VWDWHV; ZDUPXS ZLOO UHWXUQ D EXV\ H\FHSLWRQ. ,Q OLPS VWDWH, WKH &38 UHERRWV DW 5 PLQXWH LQWHUYDOV LQ DQ HIRUW WR FOHDU WKH SUREOHP.
- 16 /LPLWV HYDOXDWLRQ IRU DOO HQWLWHV H\FHSLWRQ GHPDQG DYHJDJH FRPPHQFHV LPPHGLWHOI DIWHU WKH ZDUPXS SHULRG. (YDOXDWLRQ IRU GHPDQG DYHJDJH, PD[LXP GHPDQG, DQG PLQLXP GHPDQG FRPPHQFHV DW WKH HQG RI WKH ILUVW GHPDQG LQWHUYDO DIWHU VWDUWXS.
- 17 'HSHQLQJ RQ WKH 6RIWZDUH RSWLRQ VHWWLQJ, WKHUH DUH 3 RU 106 IODVK VHFWRUV DYDLODEOH LQ D FRPPRO SRRO IRU GLVWULEXWLRQ DPRQJ WKH 3 KLVWRULFDO ORJV. 7KH SRRO VLJH, QXPEHU RI VHFWRUV IRU HDFK DQG WKH QXPEHU RI UHJLWVHUV SHU UHFRUG WRJHWKHU GHWHUPLQH WKH PD[LXP QXPEHU RI UHFRUGV D ORJ FDQ KROG.
 6 QXPEHU RI VHFWRUV DVVLJQH WR WKH ORJ,
 + QXPEHU RI ORGEXV UHJLWVHUV WR EH PRQLWRUH LQ HDFK KLVWRULFDO UHFRUG (XS WR 117)
 5 QXPEHU RI EWHV SHU UHFRUG (12 + 2+) IRU KLVWRULFDO ORJV
 1 QXPEHU RI UHFRUGV SHU VHFWRU 6516 / 5, URXQG HG GRZQ WR DQ LQWHUJHU YDOXH (QR SDUWLDO UHFRUGV LQ D VHFWRU)
 7 WRWDO QXPEHU RI UHFRUGV WKH ORJ FDQ KROG 6 * 1
- 18 /RJV FDQQRW EH UHVHW GXULQJ ORJ UHWULHYDO. %XV\ H\FHSLWRQ ZLOO EH UHWXUQHG.
 19 &RPELQDWLRQ RI FODV DQG WSH FXUUHQWOI GHILQH DUH:
 O[01 ,2 LQWHUIDFH ERDUG
 O[02 5HOD\ &DUG

Multilin™ EPM 4600 Metering System

Appendix B: EPM 4600-S (Single Phase) Modbus Map

EPM 4600-S (Single Phase) Modbus Map

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Fixed Data Section							
Identification Block						read-only	
0000 - 0007	1 - 8	!LUPZDUH 9HUVLRQ	\$6&.,	16 FKDU	QRQH		8
0008 - 0009	9 - 16	&38 6HULDO 1XPEHU	\$6&.,	16 FKDU	QRQH		8
0010 - 0010	17 - 17	&38 7!SH	8,1716	ELW-PDSSHG	-----m vvvvvvv	P &38 W!SH 0: 7KUHH SKDVH 1 : 6LQJOH 3KDVH YYYYYYYY 9-VZLWFK 81: %DVLF XQLW 82: 8QLW ZLWK 20% ORJLQJ PHPRU! 83: 8QLW ZLWK 320% ORJLQJ PHPRU!	1
0011 - 0012	18 - 19	!LUPZDUH 9HUVLRQ	\$6&.,	4 FKDU	QRQH		2
0013 - 0013	20 - 20	0DS 9HUVLRQ	8,1716	0 WR 65535	QRQH		1
0014 - 0014	21 - 21	&38 &RQILXJUDWLRQ	8,1716	ELW-PDSSHG	-----ccc--ffff	FFF &7 GHQRPLQDWURU (1 RU 5), IIIIII FDLEUDWLRQ IUHTXHQF\ (50 RU 60)	1
0015 - 0015	22 - 22	\$6,& 9HUVLRQ 0HWHU1	8,1716	0-65535	QRQH		1
0016 - 0016	23 - 23	\$6,& 9HUVLRQ 0HWHU2	8,1716	0-65536	QRQH		1
0017 - 0017	24 - 24	\$6,& 9HUVLRQ 0HWHU3	8,1716	0-65537	QRQH		1
0018 - 0018	25 - 25	\$6,& 9HUVLRQ 0HWHU4	8,1716	0-65538	QRQH		1
0019 - 0019	26 - 26	\$6,& 9HUVLRQ 0HWHU5	8,1716	0-65539	QRQH		1
001\$ - 001\$	27 - 27	\$6,& 9HUVLRQ 0HWHU6	8,1716	0-65540	QRQH		1
001% - 001%	28 - 28	\$6,& 9HUVLRQ 0HWHU7	8,1716	0-65541	QRQH		1
001& - 001&	29 - 29	\$6,& 9HUVLRQ 0HWHU8	8,1716	0-65542	QRQH		1
001' - 001(	30 - 31	%RRW !LUPZDUH 9HUVLRQ	\$6&.,	4 FKDU	QRQH		2
001) - 001)	32 - 32	5HOD\ FDUG LG			QRQH		1
0020 - 0020	33 - 33	5HVHUYHG					1
0021 - 0024	34 - 37	&38 7!SH 1DPH	\$6&.,	8 FKDU	QRQH		4
						%ORFN 6L]H:	37
CPU Data Section							
Primary Voltage Readings Block						read-only	
03(7 - 03(8	1000 - 1001	9ROW	)/2\$7	0 WR 9999 0	YROW		2
03(9 - 03(\$	1002 - 1003	5HVHUYHG					2
03(% - 03(&	1004 - 1005	5HVHUYHG					2
03(' - 03((	1006 - 1007	5HVHUYHG					2
03() - 03)0	1008 - 1009	5HVHUYHG					2
03)1 - 03)2	1010 - 1011	5HVHUYHG					2
03)3 - 03)4	1012 - 1013	!UHTXHQF\	)/2\$7	0 WR 65.00	+]		2

APPENDIX B: EPM 4600-S (SINGLE PHASE) MODBUS MAP

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
						%ORFN 6LJH:	12
Primary Readings Block						read-only	
044% - 044&	1100 - 1101	\$PSV 0HWHU 1	)2\$7	0 WR 9999 0	DPSV		2
044' - 044(	1102 - 1103	\$PSV 0HWHU 2	)2\$7	0 WR 9999 0	DPSV		2
044) - 0450	1104 - 1105	\$PSV 0HWHU 3	)2\$7	0 WR 9999 0	DPSV		2
0451 - 0452	1106 - 1107	5HVHUYHG					2
0453 - 0454	1108 - 1109	5HVHUYHG					2
0455 - 0456	1110 - 1111	5HVHUYHG					2
0457 - 0458	1112 - 1113	5HVHUYHG					2
0459 - 045\$	1114 - 1115	5HVHUYHG					2
045% - 045&	1116 - 1117	:DWWW, 0HWHU 1	)2\$7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXH	2
045' - 045(	1118 - 1119	:DWWW, 0HWHU 2	)2\$7	-9999 0 WR +9999 0	ZDWWW	RQOI IRU :-(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV.	2
045) - 0460	1120 - 1121	:DWWW, 0HWHU 3	)2\$7	-9999 0 WR +9999 0	ZDWWW	JRU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 30HDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
0461 - 0462	1122 - 1123	9\$5V, 0HWHU 1	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0463 - 0464	1124 - 1125	9\$5V, 0HWHU 2	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0465 - 0466	1126 - 1127	9\$5V, 0HWHU 3	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0467 - 0468	1128 - 1129	9\$V, 0HWHU 1	)2\$7	0 WR +9999 0	9\$V		2
0469 - 046\$	1130 - 1131	9\$V, 0HWHU 2	)2\$7	0 WR +9999 0	9\$V		2
046% - 046&	1132 - 1133	9\$V, 0HWHU 3	)2\$7	0 WR +9999 0	9\$V		2
046' - 046(	1134 - 1135	3RZHU)DFWRU, 0HWHU 1	)2\$7	-1.00 WR +1.00	QRQH		2
046) - 0470	1136 - 1137	3RZHU)DFWRU, 0HWHU 2	)2\$7	-1.00 WR +1.00	QRQH		2
0471 - 0472	1138 - 1139	3RZHU)DFWRU, 0HWHU 3	)2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:	40

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
04\$) - 04%0	1200 - 1201	\$PSV 0HWHU 4	)/2\$7	0 WR 9999 0	DPSV		2
04%1 - 04%2	1202 - 1203	\$PSV 0HWHU 5	)/2\$7	0 WR 9999 0	DPSV		2
04%3 - 04%4	1204 - 1205	\$PSV 0HWHU 6	)/2\$7	0 WR 9999 0	DPSV		2
04%5 - 04%6	1206 - 1207	5HVHUYHG					2
04%7 - 04%8	1208 - 1209	5HVHUYHG					2
04%9 - 04%\$	1210 - 1211	5HVHUYHG					2
04%% - 04%&	1212 - 1213	5HVHUYHG					2
04%' - 04%(	1214 - 1215	5HVHUYHG					2
04%) - 04&0	1216 - 1217	:DWWV, 0HWHU 4	)/2\$7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXH	2
04&1 - 04&2	1218 - 1219	:DWWV, 0HWHU 5	)/2\$7	-9999 0 WR +9999 0	ZDWWV	RQOI IRU :-(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV.	2
04&3 - 04&4	1220 - 1221	:DWWV, 0HWHU 6	)/2\$7	-9999 0 WR +9999 0	ZDWWV	JRU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 3OHVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
04&5 - 04&6	1222 - 1223	9\$5V, 0HWHU 4	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
04&7 - 04&8	1224 - 1225	9\$5V, 0HWHU 5	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
04&9 - 04&\$	1226 - 1227	9\$5V, 0HWHU 6	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
04&% - 04&&	1228 - 1229	9\$V, 0HWHU 4	)/2\$7	0 WR +9999 0	9\$V		2
04&' - 04&(	1230 - 1231	9\$V, 0HWHU 5	)/2\$7	0 WR +9999 0	9\$V		2
04&.) - 04'0	1232 - 1233	9\$V, 0HWHU 6	)/2\$7	0 WR +9999 0	9\$V		2
04'1 - 04'2	1234 - 1235	3RZHU)DFWRU, 0HWHU 4	)/2\$7	-1.00 WR +1.00	QRQH		2
04'3 - 04'4	1236 - 1237	3RZHU)DFWRU, 0HWHU 5	)/2\$7	-1.00 WR +1.00	QRQH		2
04'5 - 04'6	1238 - 1239	3RZHU)DFWRU, 0HWHU 6	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN VLJH:	40
0513 - 0514	1300 - 1301	\$PSV 0HWHU 7	)/2\$7	0 WR 9999 0	DPSV		2
0515 - 0516	1302 - 1303	\$PSV 0HWHU 8	)/2\$7	0 WR 9999 0	DPSV		2
0517 - 0518	1304 - 1305	\$PSV 0HWHU 9	)/2\$7	0 WR 9999 0	DPSV		2
0519 - 051\$	1306 - 1307	5HVHUYHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
051% - 051&	1308 - 1309	5HVHUYHG					2
051' - 051(	1310 - 1311	5HVHUYHG					2
051) - 0520	1312 - 1313	5HVHUYHG					2
0521 - 0522	1314 - 1315	5HVHUYHG					2
0523 - 0524	1316 - 1317	:DWWV, 0HWHU 7	)/2\$7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXH RQOI IRU :-(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV. JRU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 30HDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
0525 - 0526	1318 - 1319	:DWWV, 0HWHU 8	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0527 - 0528	1320 - 1321	:DWWV, 0HWHU 9	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0529 - 052\$	1322 - 1323	9\$5V, 0HWHU 7	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
052% - 052&	1324 - 1325	9\$5V, 0HWHU 8	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
052' - 052(	1326 - 1327	9\$5V, 0HWHU 9	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
052) - 0530	1328 - 1329	9\$V, 0HWHU 7	)/2\$7	0 WR +9999 0	9\$V		2
0531 - 0532	1330 - 1331	9\$V, 0HWHU 8	)/2\$7	0 WR +9999 0	9\$V		2
0533 - 0534	1332 - 1333	9\$V, 0HWHU 9	)/2\$7	0 WR +9999 0	9\$V		2
0535 - 0536	1334 - 1335	3RZHU)DFWRU, 0HWHU 7	)/2\$7	-1.00 WR +1.00	QRQH		2
0537 - 0538	1336 - 1337	3RZHU)DFWRU, 0HWHU 8	)/2\$7	-1.00 WR +1.00	QRQH		2
0539 - 053\$	1338 - 1339	3RZHU)DFWRU, 0HWHU 9	)/2\$7	-1.00 WR +1.00	QRQH		2
							%ORFN VLJH:	40
0577 - 0578	1400 - 1401	\$PSV 0HWHU 10	)/2\$7	0 WR 9999 0	DPSV		2
0579 - 057\$	1402 - 1403	\$PSV 0HWHU 11	)/2\$7	0 WR 9999 0	DPSV		2
057% - 057&	1404 - 1405	\$PSV 0HWHU 12	)/2\$7	0 WR 9999 0	DPSV		2
057' - 057(	1406 - 1407	5HVHUYHG					2
057) - 0580	1408 - 1409	5HVHUYHG					2
0581 - 0582	1410 - 1411	5HVHUYHG					2
0583 - 0584	1412 - 1413	5HVHUYHG					2
0585 - 0586	1414 - 1415	5HVHUYHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0587 - 0588	1416 - 1417	:DWWV, 0HWHU 10	)/2\$7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQOI IRU :-(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV. JRU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
0589 - 058\$	1418 - 1419	:DWWV, 0HWHU 11	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
058% - 058&	1420 - 1421	:DWWV, 0HWHU 12	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
058' - 058(	1422 - 1423	9\$5V, 0HWHU 10	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
058) - 0590	1424 - 1425	9\$5V, 0HWHU 11	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0591 - 0592	1426 - 1427	9\$5V, 0HWHU 12	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0593 - 0594	1428 - 1429	9\$V, 0HWHU 10	)/2\$7	0 WR +9999 0	9\$V		2
0595 - 0596	1430 - 1431	9\$V, 0HWHU 11	)/2\$7	0 WR +9999 0	9\$V		2
0597 - 0598	1432 - 1433	9\$V, 0HWHU 12	)/2\$7	0 WR +9999 0	9\$V		2
0599 - 059\$	1434 - 1435	3RZHU)DFWRU, 0HWHU 10	)/2\$7	-1.00 WR +1.00	QRQH		2
059% - 059&	1436 - 1437	3RZHU)DFWRU, 0HWHU 11	)/2\$7	-1.00 WR +1.00	QRQH		2
059' - 059(	1438 - 1439	3RZHU)DFWRU, 0HWHU 12	)/2\$7	-1.00 WR +1.00	QRQH		2
							%ORFN VLJH:	40
05% - 05&	1500 - 1501	\$PSV 0HWHU 13	)/2\$7	0 WR 9999 0	DPSV		2
05" - 05'	1502 - 1503	\$PSV 0HWHU 14	)/2\$7	0 WR 9999 0	DPSV		2
05) - 05(0	1504 - 1505	\$PSV 0HWHU 15	)/2\$7	0 WR 9999 0	DPSV		2
05(1 - 05(2	1506 - 1507	5HVHUYHG					2
05(3 - 05(4	1508 - 1509	5HVHUYHG					2
05(5 - 05(6	1510 - 1511	5HVHUYHG					2
05(7 - 05(8	1512 - 1513	5HVHUYHG					2
05(9 - 05(\$	1514 - 1515	5HVHUYHG					2

APPENDIX B: EPM 4600-S (SINGLE PHASE) MODBUS MAP

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
05(% - 05(&	1516 - 1517	:DWWV, 0HWHU 13	)\2\$7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQOI IRU :<(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV. JRU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 30HDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
05(' - 05((	1518 - 1519	:DWWV, 0HWHU 14	)\2\$7	-9999 0 WR +9999 0	ZDWWV		2
05() - 05)0	1520 - 1521	:DWWV, 0HWHU 15	)\2\$7	-9999 0 WR +9999 0	ZDWWV		2
05)1 - 05)2	1522 - 1523	9\$5V, 0HWHU 13	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
05)3 - 05)4	1524 - 1525	9\$5V, 0HWHU 14	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
05)5 - 05)6	1526 - 1527	9\$5V, 0HWHU 15	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
05)7 - 05)8	1528 - 1529	9\$V, 0HWHU 13	)\2\$7	0 WR +9999 0	9\$V		2
05)9 - 05)\$	1530 - 1531	9\$V, 0HWHU 14	)\2\$7	0 WR +9999 0	9\$V		2
05)% - 05)&	1532 - 1533	9\$V, 0HWHU 15	)\2\$7	0 WR +9999 0	9\$V		2
05)' - 05)(	1534 - 1535	3RZHU)DFWRU, 0HWHU 13	)\2\$7	-1.00 WR +1.00	QRQH		2
05)) - 0600	1536 - 1537	3RZHU)DFWRU, 0HWHU 14	)\2\$7	-1.00 WR +1.00	QRQH		2
0601 - 0602	1538 - 1539	3RZHU)DFWRU, 0HWHU 15	)\2\$7	-1.00 WR +1.00	QRQH		2
							%ORFN VLJH:	40
063) - 0640	1600 - 1601	\$PSV 0HWHU 16	)\2\$7	0 WR 9999 0	DPSV		2
0641 - 0642	1602 - 1603	\$PSV 0HWHU 17	)\2\$7	0 WR 9999 0	DPSV		2
0643 - 0644	1604 - 1605	\$PSV 0HWHU 18	)\2\$7	0 WR 9999 0	DPSV		2
0645 - 0646	1606 - 1607	5HVHUYHG					2
0647 - 0648	1608 - 1609	5HVHUYHG					2
0649 - 064\$	1610 - 1611	5HVHUYHG					2
064% - 064&	1612 - 1613	5HVHUYHG					2
064' - 064(	1614 - 1615	5HVHUYHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
064) - 0650	1616 - 1617	:DWWW, 0HWHU 16	) /2\$7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXH RQO) IRU :-(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRXSV. JRU VLQJOH SKDVH KRRN XS RQO) SHU SKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
0651 - 0652	1618 - 1619	:DWWW, 0HWHU 17	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0653 - 0654	1620 - 1621	:DWWW, 0HWHU 18	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0655 - 0656	1622 - 1623	9\$5V, 0HWHU 16	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0657 - 0658	1624 - 1625	9\$5V, 0HWHU 17	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0659 - 065\$	1626 - 1627	9\$5V, 0HWHU 18	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
065% - 065&	1628 - 1629	9\$V, 0HWHU 16	) /2\$7	0 WR +9999 0	9\$V		2
065' - 065(	1630 - 1631	9\$V, 0HWHU 17	) /2\$7	0 WR +9999 0	9\$V		2
065) - 0660	1632 - 1633	9\$V, 0HWHU 18	) /2\$7	0 WR +9999 0	9\$V		2
0661 - 0662	1634 - 1635	3RZHU JDFWRU, 0HWHU 16	) /2\$7	-1.00 WR +1.00	QRQH		2
0663 - 0664	1636 - 1637	3RZHU JDFWRU, 0HWHU 17	) /2\$7	-1.00 WR +1.00	QRQH		2
0665 - 0666	1638 - 1639	3RZHU JDFWRU, 0HWHU 18	) /2\$7	-1.00 WR +1.00	QRQH		2
							%ORFN VLJH:	40
06\$3 - 06\$4	1700 - 1701	\$PSV 0HWHU 19	) /2\$7	0 WR 9999 0	DPSV		2
06\$5 - 06\$6	1702 - 1703	\$PSV 0HWHU 20	) /2\$7	0 WR 9999 0	DPSV		2
06\$7 - 06\$8	1704 - 1705	\$PSV 0HWHU 21	) /2\$7	0 WR 9999 0	DPSV		2
06\$9 - 06\$\$	1706 - 1707	5HVHUYHG					2
06\$% - 06\$&	1708 - 1709	5HVHUYHG					2
06\$(' - 06\$(	1710 - 1711	5HVHUYHG					2
06\$) - 06%0	1712 - 1713	5HVHUYHG					2
06%1 - 06%2	1714 - 1715	5HVHUYHG					2

APPENDIX B: EPM 4600-S (SINGLE PHASE) MODBUS MAP

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
06%3 - 06%4	1716 - 1717	:DWWV, 0HWHU 19	)/2\$7	-9999 0 WR +9999 0	ZDWWV	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQOI IRU :-(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV. JRU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
06%5 - 06%6	1718 - 1719	:DWWV, 0HWHU 20	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
06%7 - 06%8	1720 - 1721	:DWWV, 0HWHU 21	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
06%9 - 06%\$	1722 - 1723	9\$5V, 0HWHU 19	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
06%% - 06%&	1724 - 1725	9\$5V, 0HWHU 20	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
06%' - 06%(	1726 - 1727	9\$5V, 0HWHU 21	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
06%) - 06&0	1728 - 1729	9\$V, 0HWHU 19	)/2\$7	0 WR +9999 0	9\$V		2
06&1 - 06&2	1730 - 1731	9\$V, 0HWHU 20	)/2\$7	0 WR +9999 0	9\$V		2
06&3 - 06&4	1732 - 1733	9\$V, 0HWHU 21	)/2\$7	0 WR +9999 0	9\$V		2
06&5 - 06&6	1734 - 1735	3RZHU)DFWRU, 0HWHU 19	)/2\$7	-1.00 WR +1.00	QRQH		2
06&7 - 06&8	1736 - 1737	3RZHU)DFWRU, 0HWHU 20	)/2\$7	-1.00 WR +1.00	QRQH		2
06&9 - 06&\$	1738 - 1739	3RZHU)DFWRU, 0HWHU 21	)/2\$7	-1.00 WR +1.00	QRQH		2
							%ORFN VLJH:	40
0707 - 0708	1800 - 1801	\$PSV 0HWHU 22	)/2\$7	0 WR 9999 0	DPSV		2
0709 - 070\$	1802 - 1803	\$PSV 0HWHU 23	)/2\$7	0 WR 9999 0	DPSV		2
070% - 070&	1804 - 1805	\$PSV 0HWHU 24	)/2\$7	0 WR 9999 0	DPSV		2
070' - 070(	1806 - 1807	5HVHUUYHG					2
070) - 0710	1808 - 1809	5HVHUUYHG					2
0711 - 0712	1810 - 1811	5HVHUUYHG					2
0713 - 0714	1812 - 1813	5HVHUUYHG					2
0715 - 0716	1814 - 1815	5HVHUUYHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0717 - 0718	1816 - 1817	:DWWW, 0HWHU 22	)/2\$7	-9999 0 WR +9999 0	ZDWWW	3HU SKDVH SRZHU DQG 3) KDYH YDOXHV RQOI IRU :<(KRRNXS DQG ZLOO EH JHUR IRU DOO RWKHU KRRNXSV. JRU VLQJOH SKDVH KRRN XS RQOI SHU SKDVH YDOXH DUH YDOLG. 30HDVH QRWH WKDW WKH WRWDO YDOXH DUH LQYDOLG.	2
0719 - 071\$	1818 - 1819	:DWWW, 0HWHU 23	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
071% - 071&	1820 - 1821	:DWWW, 0HWHU 24	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
071' - 071(	1822 - 1823	9\$5V, 0HWHU 22	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
071) - 0720	1824 - 1825	9\$5V, 0HWHU 23	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0721 - 0722	1826 - 1827	9\$5V, 0HWHU 24	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0723 - 0724	1828 - 1829	9\$V, 0HWHU 22	)/2\$7	0 WR +9999 0	9\$V		2
0725 - 0726	1830 - 1831	9\$V, 0HWHU 23	)/2\$7	0 WR +9999 0	9\$V		2
0727 - 0728	1832 - 1833	9\$V, 0HWHU 24	)/2\$7	0 WR +9999 0	9\$V		2
0729 - 072\$	1834 - 1835	3RZHU JDFWRU, 0HWHU 22	)/2\$7	-1.00 WR +1.00	QRQH		2
072% - 072&	1836 - 1837	3RZHU JDFWRU, 0HWHU 23	)/2\$7	-1.00 WR +1.00	QRQH		2
072' - 072(	1838 - 1839	3RZHU JDFWRU, 0HWHU 24	)/2\$7	-1.00 WR +1.00	QRQH		2
							%ORFN 6LJH:	40

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Primary Energy Block							
076% - 076&	1900 - 1901	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
076' - 076(	1902 - 1903	5HVHUYHG					2
076) - 0770	1904 - 1905	5HVHUYHG					2
0771 - 0772	1906 - 1907	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
0773 - 0774	1908 - 1909	5HVHUYHG					2
0775 - 0776	1910 - 1911	5HVHUYHG					2
0777 - 0778	1912 - 1913	5HVHUYHG					2
0779 - 077\$	1914 - 1915	5HVHUYHG				* 5 WR 8 GLJLWW	2
077% - 077&	1916 - 1917	5HVHUYHG					2
077' - 077(	1918 - 1919	:-KRXUV, 5HFHLYHG, 0HWHU 1	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HGHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWW, NLOR, RU PHJD, SHU HGHUJ\ IRUPDW	2
077) - 0780	1920 - 1921	:-KRXUV, 5HFHLYHG, 0HWHU 2	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW	* VHH QRWH 10	2
0781 - 0782	1922 - 1923	:-KRXUV, 5HFHLYHG, 0HWHU 3	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0783 - 0784	1924 - 1925	:-KRXUV, 'HOLYHUHG, 0HWHU 1	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0785 - 0786	1926 - 1927	:-KRXUV, 'HOLYHUHG, 0HWHU 2	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
0787 - 0788	1928 - 1929	:-KRXUV, 'HOLYHUHG, 0HWHU 3	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0789 - 078\$	1930 - 1931	:-KRXUV, 1HW, 0HWHU 1	6,1732	-99999999 WR 99999999	:K SHU HQUJ\ IRUPDW	(Cont'd)	2
078% - 078&	1932 - 1933	:-KRXUV, 1HW, 0HWHU 2	6,1732	-99999999 WR 99999999	:K SHU HQUJ\ IRUPDW		2
078' - 078(	1934 - 1935	:-KRXUV, 1HW, 0HWHU 3	6,1732	-99999999 WR 99999999	:K SHU HQUJ\ IRUPDW		2
078) - 0790	1936 - 1937	:-KRXUV, 7RWDO, 0HWHU 1	6,1732	0 WR 99999999	:K SHU HQUJ\ IRUPDW		2
0791 - 0792	1938 - 1939	:-KRXUV, 7RWDO, 0HWHU 2	6,1732	0 WR 99999999	:K SHU HQUJ\ IRUPDW		2
0793 - 0794	1940 - 1941	:-KRXUV, 7RWDO, 0HWHU 3	6,1732	0 WR 99999999	:K SHU HQUJ\ IRUPDW		2
0795 - 0796	1942 - 1943	9\$5-KRXUV, 3RVLWLYH, 0HWHU 1	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
0797 - 0798	1944 - 1945	9\$5-KRXUV, 3RVLWLYH, 0HWHU 2	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
0799 - 079\$	1946 - 1947	9\$5-KRXUV, 3RVLWLYH, 0HWHU 3	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
079% - 079&	1948 - 1949	9\$5-KRXUV, 1HJDWLYH, 0HWHU 1	6,1732	0 WR - 99999999	9\$5K SHU HQUJ\ IRUPDW		2
079' - 079(	1950 - 1951	9\$5-KRXUV, 1HJDWLYH, 0HWHU 2	6,1732	0 WR - 99999999	9\$5K SHU HQUJ\ IRUPDW		2
079) - 07\$0	1952 - 1953	9\$5-KRXUV, 1HJDWLYH, 0HWHU 3	6,1732	0 WR - 99999999	9\$5K SHU HQUJ\ IRUPDW		2
07\$1 - 07\$2	1954 - 1955	9\$5-KRXUV, 1HW, 0HWHU 1	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
07\$3 - 07\$4	1956 - 1957	9\$5-KRXUV, 1HW, 0HWHU 2	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
07\$5 - 07\$6	1958 - 1959	9\$5-KRXUV, 1HW, 0HWHU 3	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
07\$7 - 07\$8	1960 - 1961	9\$5-KRXUV, 7RWDO, 0HWHU 1	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
07\$9 - 07\$\$	1962 - 1963	9\$5-KRXUV, 7RWDO, 0HWHU 2	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
07\$% - 07\$&	1964 - 1965	9\$5-KRXUV, 7RWDO, 0HWHU 3	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
07\$(' - 07\$(	1966 - 1967	9\$-KRXUV, 0HWHU 1	6,1732	0 WR 99999999	9\$K SHU HQUJ\ IRUPDW		2
07\$) - 07%0	1968 - 1969	9\$-KRXUV, 0HWHU 2	6,1732	0 WR 99999999	9\$K SHU HQUJ\ IRUPDW	2	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
07%1 - 07%2	1970 - 1971	9\$-KRXUV, 0HWHU 3	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	(Cont'd)	2
						%ORFN 6LJH:	72
07&) - 07'0	2000 - 2001	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDV KDYH RSSLVLWH VLJQV	2
07'1 - 07'2	2002 - 2003	5HVHUYHG					2
07'3 - 07'4	2004 - 2005	5HVHUYHG					2
07'5 - 07'6	2006 - 2007	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU *YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU *YLHZ DV JHQHUDWRU"	2
07'7 - 07'8	2008 - 2009	5HVHUYHG					2
07'9 - 07'\$	2010 - 2011	5HVHUYHG					2
07'% - 07'&	2012 - 2013	5HVHUYHG					2
07'" - 07'(07') - 07(0	2014 - 2015 2016 - 2017	5HVHUYHG 5HVHUYHG				* 5 WR 8 GLJLWV	2 2
07(1 - 07(2	2018 - 2019	:-KRXUV, 5HFHLYHG, 0HWHU 4	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2 2
07(3 - 07(4	2020 - 2021	:-KRXUV, 5HFHLYHG, 0HWHU 5	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
07(5 - 07(6	2022 - 2023	:-KRXUV, 5HFHLYHG, 0HWHU 6	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
07(7 - 07(8	2024 - 2025	:-KRXUV, 'HOLYHUHG, 0HWHU 4	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
07(9 - 07(\$	2026 - 2027	:-KRXUV, 'HOLYHUHG, 0HWHU 5	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
07(% - 07(&	2028 - 2029	:-KRXUV, 'HOLYHUHG, 0HWHU 6	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
07(' - 07((	2030 - 2031	:-KRXUV, 1HW, 0HWHU 4	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
07() - 07)0	2032 - 2033	:-KRXUV, 1HW, 0HWHU 5	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
07)1 - 07)2	2034 - 2035	:-KRXUV, 1HW, 0HWHU 6	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
07)3 - 07)4	2036 - 2037	:-KRXUV, 7RWDO, 0HWHU 4	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
07)5 - 07)6	2038 - 2039	:-KRXUV, 7RWDO, 0HWHU 5	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
07)7 - 07)8	2040 - 2041	:-KRXUV, 7RWDO, 0HWHU 6	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
07)9 - 07)\$	2042 - 2043	9\$5-KRXUV, 3RVLWLYH, 0HWHU 4	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
07)% - 07)&	2044 - 2045	9\$5-KRXUV, 3RVLWLYH, 0HWHU 5	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
07)' - 07)(	2046 - 2047	9\$5-KRXUV, 3RVLWLYH, 0HWHU 6	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
07)) - 0800	2048 - 2049	9\$5-KRXUV, 1HJDWLYH, 0HWHU 4	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0801 - 0802	2050 - 2051	9\$5-KRXUV, 1HJDWLYH, 0HWHU 5	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0803 - 0804	2052 - 2053	9\$5-KRXUV, 1HJDWLYH, 0HWHU 6	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0805 - 0806	2054 - 2055	9\$5-KRXUV, 1HW, 0HWHU 4	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0807 - 0808	2056 - 2057	9\$5-KRXUV, 1HW, 0HWHU 5	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0809 - 080\$	2058 - 2059	9\$5-KRXUV, 1HW, 0HWHU 6	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
080% - 080&	2060 - 2061	9\$5-KRXUV, 7RWDO, 0HWHU 4	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
080' - 080(	2062 - 2063	9\$5-KRXUV, 7RWDO, 0HWHU 5	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
080) - 0810	2064 - 2065	9\$5-KRXUV, 7RWDO, 0HWHU 6	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0811 - 0812	2066 - 2067	9\$-KRXUV, 0HWHU 4	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	(Cont'd)	2
0813 - 0814	2068 - 2069	9\$-KRXUV, 0HWHU 5	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0815 - 0816	2070 - 2071	9\$-KRXUV, 0HWHU 6	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
						%ORFN 6LJH:	72
0833 - 0834	2100 - 2101	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV	2
0835 - 0836	2102 - 2103	5HVHUYHG				KDYH RSSRVLWH VLJQV	2
0837 - 0838	2104 - 2105	5HVHUYHG					2
0839 - 083\$	2106 - 2107	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV	2
083% - 083&	2108 - 2109	5HVHUYHG				ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ	2
083' - 083(	2110 - 2111	5HVHUYHG				DV JHQHUDWRU"	2
083) - 0840	2112 - 2113	5HVHUYHG					2
0841 - 0842	2114 - 2115	5HVHUYHG				* 5 WR 8 GLJLWW	2
0843 - 0844	2116 - 2117	5HVHUYHG					2
0845 - 0846	2118 - 2119	:-KRXUV, 5HFHLYHG, 0HWHU 7	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
						* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWW, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	
0847 - 0848	2120 - 2121	:-KRXUV, 5HFHLYHG, 0HWHU 8	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
0849 - 084\$	2122 - 2123	:-KRXUV, 5HFHLYHG, 0HWHU 9	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
084% - 084&	2124 - 2125	:-KRXUV, 'HOLYHUHG, 0HWHU 7	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
084' - 084(	2126 - 2127	:-KRXUV, 'HOLYHUHG, 0HWHU 8	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW	(Cont'd)	2
084) - 0850	2128 - 2129	:-KRXUV, 'HOLYHUHG, 0HWHU 9	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
0851 - 0852	2130 - 2131	:-KRXUV, 1HW, 0HWHU 7	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0853 - 0854	2132 - 2133	:-KRXUV, 1HW, 0HWHU 8	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0855 - 0856	2134 - 2135	:-KRXUV, 1HW, 0HWHU 9	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0857 - 0858	2136 - 2137	:-KRXUV, 7RWDO, 0HWHU 7	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0859 - 085\$	2138 - 2139	:-KRXUV, 7RWDO, 0HWHU 8	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
085% - 085&	2140 - 2141	:-KRXUV, 7RWDO, 0HWHU 9	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
085' - 085(	2142 - 2143	9\$5-KRXUV, 3RVLWLYH, 0HWHU 7	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
085) - 0860	2144 - 2145	9\$5-KRXUV, 3RVLWLYH, 0HWHU 8	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0861 - 0862	2146 - 2147	9\$5-KRXUV, 3RVLWLYH, 0HWHU 9	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0863 - 0864	2148 - 2149	9\$5-KRXUV, 1HJDWLYH, 0HWHU 7	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0865 - 0866	2150 - 2151	9\$5-KRXUV, 1HJDWLYH, 0HWHU 8	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0867 - 0868	2152 - 2153	9\$5-KRXUV, 1HJDWLYH, 0HWHU 9	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0869 - 086\$	2154 - 2155	9\$5-KRXUV, 1HW, 0HWHU 7	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
086% - 086&	2156 - 2157	9\$5-KRXUV, 1HW, 0HWHU 8	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
086' - 086(	2158 - 2159	9\$5-KRXUV, 1HW, 0HWHU 9	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
086) - 0870	2160 - 2161	9\$5-KRXUV, 7RWDO, 0HWHU 7	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0871 - 0872	2162 - 2163	9\$5-KRXUV, 7RWDO, 0HWHU 8	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0873 - 0874	2164 - 2165	9\$5-KRXUV, 7RWDO, 0HWHU 9	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
0875 - 0876	2166 - 2167	9\$-KRXUV, 0HWHU 7	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0877 - 0878	2168 - 2169	9\$-KRXUV, 0HWHU 8	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0879 - 087\$	2170 - 2171	9\$-KRXUV, 0HWHU 9	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
							%ORFN 6LJH:	72
0897 - 0898	2200 - 2201	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV	2
0899 - 089\$	2202 - 2203	5HVHUYHG				KDYH RSSRVLWH VLJQV	2
089% - 089&	2204 - 2205	5HVHUYHG					2
089' - 089(	2206 - 2207	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV	2
089) - 0890	2208 - 2209	5HVHUYHG				ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ	2
08\$1 - 08\$2	2210 - 2211	5HVHUYHG				DV JHQHUDWRU"	2
08\$3 - 08\$4	2212 - 2213	5HVHUYHG					2
08\$5 - 08\$6	2214 - 2215	5HVHUYHG				* 5 WR 8 GLJLWV	2
08\$7 - 08\$8	2216 - 2217	5HVHUYHG					2
08\$9 - 08\$\$	2218 - 2219	:-KRXUV, 5HFHLYHG, 0HWHU 10	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
08\$% - 08\$&	2220 - 2221	:-KRXUV, 5HFHLYHG, 0HWHU 11	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
08\$' - 08\$(	2222 - 2223	:-KRXUV, 5HFHLYHG, 0HWHU 12	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
08\$) - 08%0	2224 - 2225	:-KRXUV, 'HOLYHUHG, 0HWHU 10	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	-(Cont'd) - - - - -	2
08%1 - 08%2	2226 - 2227	:-KRXUV, 'HOLYHUHG, 0HWHU 11	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
08%3 - 08%4	2228 - 2229	:-KRXUV, 'HOLYHUHG, 0HWHU 12	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
08%5 - 08%6	2230 - 2231	:-KRXUV, 1HW, 0HWHU 10	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
08%7 - 08%8	2232 - 2233	:-KRXUV, 1HW, 0HWHU 11	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
08%9 - 08%\$	2234 - 2235	:-KRXUV, 1HW, 0HWHU 12	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
08%% - 08%&	2236 - 2237	:-KRXUV, 7RWDO, 0HWHU 10	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
08%' - 08%(	2238 - 2239	:-KRXUV, 7RWDO, 0HWHU 11	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
08%) - 08&0	2240 - 2241	:-KRXUV, 7RWDO, 0HWHU 12	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
08&1 - 08&2	2242 - 2243	9\$5-KRXUV, 3RVLWLYH, 0HWHU 10	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
08&3 - 08&4	2244 - 2245	9\$5-KRXUV, 3RVLWLYH, 0HWHU 11	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
08&5 - 08&6	2246 - 2247	9\$5-KRXUV, 3RVLWLYH, 0HWHU 12	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
08&7 - 08&8	2248 - 2249	9\$5-KRXUV, 1HJDWLYH, 0HWHU 10	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
08&9 - 08&\$	2250 - 2251	9\$5-KRXUV, 1HJDWLYH, 0HWHU 11	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
08%% - 08%&	2252 - 2253	9\$5-KRXUV, 1HJDWLYH, 0HWHU 12	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
08&' - 08%(	2254 - 2255	9\$5-KRXUV, 1HW, 0HWHU 10	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0913 - 0914	2324 - 2325	:-KRXUV, 'HOLYHUHG, 0HWHU 13	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0915 - 0916	2326 - 2327	:-KRXUV, 'HOLYHUHG, 0HWHU 14	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0917 - 0918	2328 - 2329	:-KRXUV, 'HOLYHUHG, 0HWHU 15	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0919 - 091\$	2330 - 2331	:-KRXUV, 1HW, 0HWHU 13	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
091% - 091&	2332 - 2333	:-KRXUV, 1HW, 0HWHU 14	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
091' - 091(	2334 - 2335	:-KRXUV, 1HW, 0HWHU 15	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
091) - 0920	2336 - 2337	:-KRXUV, 7RWDO, 0HWHU 13	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0921 - 0922	2338 - 2339	:-KRXUV, 7RWDO, 0HWHU 14	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0923 - 0924	2340 - 2341	:-KRXUV, 7RWDO, 0HWHU 15	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0925 - 0926	2342 - 2343	9\$5-KRXUV, 3RVLWLYH, 0HWHU 13	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0927 - 0928	2344 - 2345	9\$5-KRXUV, 3RVLWLYH, 0HWHU 14	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0929 - 092\$	2346 - 2347	9\$5-KRXUV, 3RVLWLYH, 0HWHU 15	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
092% - 092&	2348 - 2349	9\$5-KRXUV, 1HJDWLYH, 0HWHU 13	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
092' - 092(	2350 - 2351	9\$5-KRXUV, 1HJDWLYH, 0HWHU 14	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW	----- (Cont'd)	2
092) - 0930	2352 - 2353	9\$5-KRXUV, 1HJDWLYH, 0HWHU 15	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0931 - 0932	2354 - 2355	9\$5-KRXUV, 1HW, 0HWHU 13	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0933 - 0934	2356 - 2357	9\$5-KRXUV, 1HW, 0HWHU 14	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0935 - 0936	2358 - 2359	9\$5-KRXUV, 1HW, 0HWHU 15	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0937 - 0938	2360 - 2361	9\$5-KRXUV, 7RWDO, 0HWHU 13	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
0939 - 093\$	2362 - 2363	9\$5-KRXUV, 7RWDO, 0HWHU 14	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
093% - 093&	2364 - 2365	9\$5-KRXUV, 7RWDO, 0HWHU 15	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
093' - 093(	2366 - 2367	9\$-KRXUV, 0HWHU 13	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
093) - 0940	2368 - 2369	9\$-KRXUV, 0HWHU 14	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0941 - 0942	2370 - 2371	9\$-KRXUV, 0HWHU 15	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
							%ORFN 6LJH:	72
095) - 0960	2400 - 2401	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZD\VKDYH RSSRVLWH VLJQV	2
0961 - 0962	2402 - 2403	5HVHUYHG					2
0963 - 0964	2404 - 2405	5HVHUYHG					2
0965 - 0966	2406 - 2407	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU *YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU *YLHZ DV JHQHUDWRU"	2
0967 - 0968	2408 - 2409	5HVHUYHG					2
0969 - 096\$	2410 - 2411	5HVHUYHG					2
096% - 096&	2412 - 2413	5HVHUYHG					2
096' - 096(	2414 - 2415	5HVHUYHG				* 5 WR 8 GLJLWW	2
096) - 0970	2416 - 2417	5HVHUYHG					2
0971 - 0972	2418 - 2419	:-KRXUV, 5HFHLYHG, 0HWHU 16	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0973 - 0974	2420 - 2421	:-KRXUV, 5HFHLYHG, 0HWHU 17	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	(Cont'd) * VHH QRWH 10	2
0975 - 0976	2422 - 2423	:-KRXUV, 5HFHLYHG, 0HWHU 18	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0977 - 0978	2424 - 2425	:-KRXUV, 'HOLYHUHG, 0HWHU 16	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0979 - 097\$	2426 - 2427	:-KRXUV, 'HOLYHUHG, 0HWHU 17	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
097% - 097&	2428 - 2429	:-KRXUV, 'HOLYHUHG, 0HWHU 18	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
097' - 097(	2430 - 2431	:-KRXUV, 1HW, 0HWHU 16	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
097) - 0980	2432 - 2433	:-KRXUV, 1HW, 0HWHU 17	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0981 - 0982	2434 - 2435	:-KRXUV, 1HW, 0HWHU 18	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0983 - 0984	2436 - 2437	:-KRXUV, 7RWDO, 0HWHU 16	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0985 - 0986	2438 - 2439	:-KRXUV, 7RWDO, 0HWHU 17	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0987 - 0988	2440 - 2441	:-KRXUV, 7RWDO, 0HWHU 18	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
0989 - 098\$	2442 - 2443	9\$5-KRXUV, 3RVLWLYH, 0HWHU 16	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
098% - 098&	2444 - 2445	9\$5-KRXUV, 3RVLWLYH, 0HWHU 17	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
098' - 098(	2446 - 2447	9\$5-KRXUV, 3RVLWLYH, 0HWHU 18	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW	(Cont'd)	2
098) - 0990	2448 - 2449	9\$5-KRXUV, 1HJDWLYH, 0HWHU 16	6,1732	0 WR - 99999999	9\$5K SHU HQUJ\ IRUPDW		2
0991 - 0992	2450 - 2451	9\$5-KRXUV, 1HJDWLYH, 0HWHU 17	6,1732	0 WR - 99999999	9\$5K SHU HQUJ\ IRUPDW		2
0993 - 0994	2452 - 2453	9\$5-KRXUV, 1HJDWLYH, 0HWHU 18	6,1732	0 WR - 99999999	9\$5K SHU HQUJ\ IRUPDW		2
0995 - 0996	2454 - 2455	9\$5-KRXUV, 1HW, 0HWHU 16	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
0997 - 0998	2456 - 2457	9\$5-KRXUV, 1HW, 0HWHU 17	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
0999 - 099\$	2458 - 2459	9\$5-KRXUV, 1HW, 0HWHU 18	6,1732	-99999999 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
099% - 099&	2460 - 2461	9\$5-KRXUV, 7RWDO, 0HWHU 16	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
099' - 099(	2462 - 2463	9\$5-KRXUV, 7RWDO, 0HWHU 17	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
099) - 0990	2464 - 2465	9\$5-KRXUV, 7RWDO, 0HWHU 18	6,1732	0 WR 99999999	9\$5K SHU HQUJ\ IRUPDW		2
099\$ - 099&	2466 - 2467	9\$-KRXUV, 0HWHU 16	6,1732	0 WR 99999999	9\$K SHU HQUJ\ IRUPDW		2
099' - 099(	2468 - 2469	9\$-KRXUV, 0HWHU 17	6,1732	0 WR 99999999	9\$K SHU HQUJ\ IRUPDW		2
099) - 0990	2470 - 2471	9\$-KRXUV, 0HWHU 18	6,1732	0 WR 99999999	9\$K SHU HQUJ\ IRUPDW		2
							%ORFN 6LJH:	72

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
09&3 - 09&4	2500 - 2501	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSLRLWH VLJQV	2
09&5 - 09&6	2502 - 2503	5HVHUYHG					2
09&7 - 09&8	2504 - 2505	5HVHUYHG					2
09&9 - 09&\$	2506 - 2507	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
09&% - 09&&	2508 - 2509	5HVHUYHG					2
09&' - 09&(	2510 - 2511	5HVHUYHG					2
09&.) - 09'0	2512 - 2513	5HVHUYHG					2
09'1 - 09'2	2514 - 2515	5HVHUYHG				* 5 WR 8 GLJLWV	2
09'3 - 09'4	2516 - 2517	5HVHUYHG					2
09'5 - 09'6	2518 - 2519	:-KRXUV, 5HFHLYHG, 0HWHU 19	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HGHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HGHUJ\ IRUPDW	2
09'7 - 09'8	2520 - 2521	:-KRXUV, 5HFHLYHG, 0HWHU 20	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW	* VHH QRWH 10	2
09'9 - 09'\$	2522 - 2523	:-KRXUV, 5HFHLYHG, 0HWHU 21	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
09'% - 09'&	2524 - 2525	:-KRXUV, 'HOLYHUHG, 0HWHU 19	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2
09'" - 09'(`	2526 - 2527	:-KRXUV, 'HOLYHUHG, 0HWHU 20	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HGHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
09') - 09(0	2528 - 2529	:-KRXUV, 'HOLYHUG, 0HWHU 21	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW	(Cont'd)	2
09(1 - 09(2	2530 - 2531	:-KRXUV, 1HW, 0HWHU 19	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
09(3 - 09(4	2532 - 2533	:-KRXUV, 1HW, 0HWHU 20	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
09(5 - 09(6	2534 - 2535	:-KRXUV, 1HW, 0HWHU 21	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
09(7 - 09(8	2536 - 2537	:-KRXUV, 7RWDO, 0HWHU 19	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
09(9 - 09(\$	2538 - 2539	:-KRXUV, 7RWDO, 0HWHU 20	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
09(% - 09(&	2540 - 2541	:-KRXUV, 7RWDO, 0HWHU 21	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
09(' - 09((	2542 - 2543	9\$5-KRXUV, 3RVLWLYH, 0HWHU 19	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09() - 09)0	2544 - 2545	9\$5-KRXUV, 3RVLWLYH, 0HWHU 20	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)1 - 09)2	2546 - 2547	9\$5-KRXUV, 3RVLWLYH, 0HWHU 21	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)3 - 09)4	2548 - 2549	9\$5-KRXUV, 1HJDWLYH, 0HWHU 19	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)5 - 09)6	2550 - 2551	9\$5-KRXUV, 1HJDWLYH, 0HWHU 20	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)7 - 09)8	2552 - 2553	9\$5-KRXUV, 1HJDWLYH, 0HWHU 21	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)9 - 09)\$	2554 - 2555	9\$5-KRXUV, 1HW, 0HWHU 19	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)% - 09)&	2556 - 2557	9\$5-KRXUV, 1HW, 0HWHU 20	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)' - 09)(	2558 - 2559	9\$5-KRXUV, 1HW, 0HWHU 21	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
09)) - 0\$00	2560 - 2561	9\$5-KRXUV, 7RWDO, 0HWHU 19	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0\$01 - 0\$02	2562 - 2563	9\$5-KRXUV, 7RWDO, 0HWHU 20	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0\$03 - 0\$04	2564 - 2565	9\$5-KRXUV, 7RWDO, 0HWHU 21	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$05 - 0\$06	2566 - 2567	9\$-KRXUV, 0HWHU 19	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	--- (Cont'd) ---	2
0\$07 - 0\$08	2568 - 2569	9\$-KRXUV, 0HWHU 20	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
0\$09 - 0\$0\$	2570 - 2571	9\$-KRXUV, 0HWHU 21	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
						%ORFN 6LJH:	72
0\$27 - 0\$28	2600 - 2601	5HVHUYYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV	2
0\$29 - 0\$2\$	2602 - 2603	5HVHUYYHG				KDYH RSSRVLWH VLJQV	2
0\$2% - 0\$2&	2604 - 2605	5HVHUYYHG					2
0\$2' - 0\$2(	2606 - 2607	5HVHUYYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV	2
0\$2) - 0\$30	2608 - 2609	5HVHUYYHG				ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ	2
0\$31 - 0\$32	2610 - 2611	5HVHUYYHG				DV JHQHUDWRU"	2
0\$33 - 0\$34	2612 - 2613	5HVHUYYHG					2
0\$35 - 0\$36	2614 - 2615	5HVHUYYHG				* 5 WR 8 GLJLWV	2
0\$37 - 0\$38	2616 - 2617	5HVHUYYHG					2
0\$39 - 0\$3\$	2618 - 2619	:-KRXUV, 5HFHLYHG, 0HWHU 22	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
						* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	
0\$3% - 0\$3&	2620 - 2621	:-KRXUV, 5HFHLYHG, 0HWHU 23	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
0\$3' - 0\$3(	2622 - 2623	:-KRXUV, 5HFHLYHG, 0HWHU 24	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
0\$3) - 0\$40	2624 - 2625	:-KRXUV, 'HOLYHUHG, 0HWHU 22	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$41 - 0\$42	2626 - 2627	:-KRXUV, 'HOLYHUHG, 0HWHU 23	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW	(Cont'd)	2
0\$43 - 0\$44	2628 - 2629	:-KRXUV, 'HOLYHUHG, 0HWHU 24	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
0\$45 - 0\$46	2630 - 2631	:-KRXUV, 1HW, 0HWHU 22	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0\$47 - 0\$48	2632 - 2633	:-KRXUV, 1HW, 0HWHU 23	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0\$49 - 0\$4\$	2634 - 2635	:-KRXUV, 1HW, 0HWHU 24	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0\$4% - 0\$4&	2636 - 2637	:-KRXUV, 7RWDO, 0HWHU 22	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0\$4' - 0\$4(	2638 - 2639	:-KRXUV, 7RWDO, 0HWHU 23	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0\$4) - 0\$50	2640 - 2641	:-KRXUV, 7RWDO, 0HWHU 24	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
0\$51 - 0\$52	2642 - 2643	9\$5-KRXUV, 3RVLWLYH, 0HWHU 22	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0\$53 - 0\$54	2644 - 2645	9\$5-KRXUV, 3RVLWLYH, 0HWHU 23	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0\$55 - 0\$56	2646 - 2647	9\$5-KRXUV, 3RVLWLYH, 0HWHU 24	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0\$57 - 0\$58	2648 - 2649	9\$5-KRXUV, 1HJDWLYH, 0HWHU 22	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0\$59 - 0\$5\$	2650 - 2651	9\$5-KRXUV, 1HJDWLYH, 0HWHU 23	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
0\$5% - 0\$5&	2652 - 2653	9\$5-KRXUV, 1HJDWLYH, 0HWHU 24	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$5' - 0\$5(	2654 - 2655	9\$5-KRXUV, 1HW, 0HWHU 22	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW	(Cont'd)	2
0\$5) - 0\$60	2656 - 2657	9\$5-KRXUV, 1HW, 0HWHU 23	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
0\$61 - 0\$62	2658 - 2659	9\$5-KRXUV, 1HW, 0HWHU 24	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
0\$63 - 0\$64	2660 - 2661	9\$5-KRXUV, 7RWDO, 0HWHU 22	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
0\$65 - 0\$66	2662 - 2663	9\$5-KRXUV, 7RWDO, 0HWHU 23	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
0\$67 - 0\$68	2664 - 2665	9\$5-KRXUV, 7RWDO, 0HWHU 24	6,1732	0 WR 99999999	9\$5K SHU HQUHJ IRUPDW		2
0\$69 - 0\$6\$	2666 - 2667	9\$-KRXUV, 0HWHU 22	6,1732	0 WR 99999999	9\$K SHU HQUHJ IRUPDW		2
0\$6% - 0\$6&	2668 - 2669	9\$-KRXUV, 0HWHU 23	6,1732	0 WR 99999999	9\$K SHU HQUHJ IRUPDW		2
0\$6' - 0\$6(	2670 - 2671	9\$-KRXUV, 0HWHU 24	6,1732	0 WR 99999999	9\$K SHU HQUHJ IRUPDW		2
							%ORFN 6LJH: read-only	72
Primary Demand Block							
0\$8% - 0\$8&	2700 - 2701	\$PSV 0HWHU 1, \$YHUDJH	)2\$7	0 WR 9999 0	DPSV		2
0\$8' - 0\$8(	2702 - 2703	\$PSV 0HWHU 2, \$YHUDJH	)2\$7	0 WR 9999 0	DPSV		2
0\$8) - 0\$90	2704 - 2705	\$PSV 0HWHU 3, \$YHUDJH	)2\$7	0 WR 9999 0	DPSV		2
0\$91 - 0\$92	2706 - 2707	5HVHUYHG					2
0\$93 - 0\$94	2708 - 2709	5HVHUYHG					2
0\$95 - 0\$96	2710 - 2711	5HVHUYHG					2
0\$97 - 0\$98	2712 - 2713	5HVHUYHG					2
0\$99 - 0\$9\$	2714 - 2715	5HVHUYHG					2
0\$9% - 0\$9&	2716 - 2717	5HVHUYHG					2
0\$9' - 0\$9(	2718 - 2719	5HVHUYHG					2
0\$9) - 0\$90	2720 - 2721	5HVHUYHG					2
0\$\$1 - 0\$\$2	2722 - 2723	3RVLWLYH:DWWW, 0HWHU 1, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0\$\$3 - 0\$\$4	2724 - 2725	3RVLWLYH:DWWW, 0HWHU 2, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0\$\$5 - 0\$\$6	2726 - 2727	3RVLWLYH:DWWW, 0HWHU 3, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0\$\$7 - 0\$\$8	2728 - 2729	3RVLWLYH 9\$5V, 0HWHU 1, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$\$9 - 0\$\$	2730 - 2731	3RVLWLYH 9\$5V, 0HWHU 2, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$\$% - 0\$\$&	2732 - 2733	3RVLWLYH 9\$5V, 0HWHU 3, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$\$' - 0\$\$(\$	2734 - 2735	1HJDWLYH :DWWV, 0HWHU 1, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWV		2
0\$\$) - 0\$\$%0	2736 - 2737	1HJDWLYH :DWWV, 0HWHU 2, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWV		2
0\$\$%1 - 0\$\$%2	2738 - 2739	1HJDWLYH :DWWV, 0HWHU 3, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWV		2
0\$\$%3 - 0\$\$%4	2740 - 2741	1HJDWLYH 9\$5V, 0HWHU 1, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$\$%5 - 0\$\$%6	2742 - 2743	1HJDWLYH 9\$5V, 0HWHU 2, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$\$%7 - 0\$\$%8	2744 - 2745	1HJDWLYH 9\$5V, 0HWHU 3, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0\$\$%9 - 0\$\$%\$	2746 - 2747	9\$V, 0HWHU 1, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0\$\$%% - 0\$\$%&	2748 - 2749	9\$V, 0HWHU 2, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0\$\$%' - 0\$\$%(	2750 - 2751	9\$V, 0HWHU 3, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0\$\$%) - 0\$\$&0	2752 - 2753	3RVLWLYH 3), 0HWHU 1, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0\$\$&1 - 0\$\$&2	2754 - 2755	3RVLWLYH 3), 0HWHU 2, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0\$\$&3 - 0\$\$&4	2756 - 2757	3RVLWLYH 3), 0HWHU 3, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0\$\$&5 - 0\$\$&6	2758 - 2759	1HJDWLYH 3), 0HWHU 1, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0\$\$&7 - 0\$\$&8	2760 - 2761	1HJDWLYH 3), 0HWHU 2, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0\$\$&9 - 0\$\$&\$	2762 - 2763	1HJDWLYH 3), 0HWHU 3, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0\$() - 0\$)0	2800 - 2801	\$PSV 0HWHU 4, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0\$)1 - 0\$)2	2802 - 2803	\$PSV 0HWHU 5, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0\$)3 - 0\$)4	2804 - 2805	\$PSV 0HWHU 6, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0\$)5 - 0\$)6	2806 - 2807	5HVHUYHG					2
0\$)7 - 0\$)8	2808 - 2809	5HVHUYHG					2
0\$)9 - 0\$)\$	2810 - 2811	5HVHUYHG					2
0\$)% - 0\$)&	2812 - 2813	5HVHUYHG					2
0\$)' - 0\$)(	2814 - 2815	5HVHUYHG					2
0\$)) - 0%00	2816 - 2817	5HVHUYHG					2
0%01 - 0%02	2818 - 2819	5HVHUYHG					2
0%03 - 0%04	2820 - 2821	5HVHUYHG					2
0%05 - 0%06	2822 - 2823	3RVLWLYH :DWWV, 0HWHU 4, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0%07 - 0%08	2824 - 2825	3RVLWLYH :DWWV, 0HWHU 5, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0%09 - 0%0\$	2826 - 2827	3RVLWLYH :DWWV, 0HWHU 6, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0%0% - 0%0&	2828 - 2829	3RVLWLYH 9\$5V, 0HWHU 4, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%0' - 0%0(	2830 - 2831	3RVLWLYH 9\$5V, 0HWHU 5, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%0) - 0%10	2832 - 2833	3RVLWLYH 9\$5V, 0HWHU 6, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%11 - 0%12	2834 - 2835	1HJDWLYH :DWWV, 0HWHU 4, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0%13 - 0%14	2836 - 2837	1HJDWLYH :DWWV, 0HWHU 5, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0%15 - 0%16	2838 - 2839	1HJDWLYH :DWWV, 0HWHU 6, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0%17 - 0%18	2840 - 2841	1HJDWLYH 9\$5V, 0HWHU 4, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%19 - 0%1\$	2842 - 2843	1HJDWLYH 9\$5V, 0HWHU 5, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%1% - 0%1&	2844 - 2845	1HJDWLYH 9\$5V, 0HWHU 6, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%1' - 0%1(	2846 - 2847	9\$V, 0HWHU 4, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%1) - 0%20	2848 - 2849	9\$V, 0HWHU 5, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%21 - 0%22	2850 - 2851	9\$V, 0HWHU 6, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0%23 - 0%24	2852 - 2853	3RVLWLYH 3), 0HWHU 4, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%25 - 0%26	2854 - 2855	3RVLWLYH 3), 0HWHU 5, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%27 - 0%28	2856 - 2857	3RVLWLYH 3), 0HWHU 6, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%29 - 0%2\$	2858 - 2859	1HJDWLYH 3), 0HWHU 4, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%2% - 0%2&	2860 - 2861	1HJDWLYH 3), 0HWHU 5, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0%2' - 0%2(	2862 - 2863	1HJDWLYH 3), 0HWHU 6, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
0%53 - 0%54	2900 - 2901	\$PSV 0HWHU 7, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0%55 - 0%56	2902 - 2903	\$PSV 0HWHU 8, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0%57 - 0%58	2904 - 2905	\$PSV 0HWHU 9, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0%59 - 0%5\$	2906 - 2907	5HVHUYHG					2
0%5% - 0%5&	2908 - 2909	5HVHUYHG					2
0%5' - 0%5(	2910 - 2911	5HVHUYHG					2
0%5) - 0%60	2912 - 2913	5HVHUYHG					2
0%61 - 0%62	2914 - 2915	5HVHUYHG					2
0%63 - 0%64	2916 - 2917	5HVHUYHG					2
0%65 - 0%66	2918 - 2919	5HVHUYHG					2
0%67 - 0%68	2920 - 2921	5HVHUYHG					2
0%69 - 0%6\$	2922 - 2923	3RVLWLYH :DWWW, 0HWHU 7, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%6% - 0%6&	2924 - 2925	3RVLWLYH :DWWW, 0HWHU 8, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%6' - 0%6(	2926 - 2927	3RVLWLYH :DWWW, 0HWHU 9, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%6) - 0%70	2928 - 2929	3RVLWLYH 9\$5V, 0HWHU 7, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0%71 - 0%72	2930 - 2931	3RVLWLYH 9\$5V, 0HWHU 8, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0%73 - 0%74	2932 - 2933	3RVLWLYH 9\$5V, 0HWHU 9, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0%75 - 0%76	2934 - 2935	1HJDWLYH :DWWW, 0HWHU 7, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%77 - 0%78	2936 - 2937	1HJDWLYH :DWWW, 0HWHU 8, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%7 - 0%8	3000 - 3001	\$PSV 0HWHU 10, \$YHUDJH	)2\$7	0 WR 9999 0	DPSV		2
0%9 - 0%\$	3002 - 3003	\$PSV 0HWHU 11, \$YHUDJH	)2\$7	0 WR 9999 0	DPSV		2
0%% - 0%&	3004 - 3005	\$PSV 0HWHU 12, \$YHUDJH	)2\$7	0 WR 9999 0	DPSV		2
0%' - 0%(	3006 - 3007	5HVHUYHG					2
0%) - 0%0	3008 - 3009	5HVHUYHG					2
0%&1 - 0%&2	3010 - 3011	5HVHUYHG					2
0%&3 - 0%&4	3012 - 3013	5HVHUYHG					2
0%&5 - 0%&6	3014 - 3015	5HVHUYHG					2
0%&7 - 0%&8	3016 - 3017	5HVHUYHG					2
0%&9 - 0%&\$	3018 - 3019	5HVHUYHG					2
0%&% - 0%&&	3020 - 3021	5HVHUYHG					2
0%&' - 0%&(	3022 - 3023	3RVLWLYH :DWWW, 0HWHU 10, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%&) - 0%0	3024 - 3025	3RVLWLYH :DWWW, 0HWHU 11, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'1 - 0%'2	3026 - 3027	3RVLWLYH :DWWW, 0HWHU 12, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'3 - 0%'4	3028 - 3029	3RVLWLYH 9\$5V, 0HWHU 10, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'5 - 0%'6	3030 - 3031	3RVLWLYH 9\$5V, 0HWHU 11, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'7 - 0%'8	3032 - 3033	3RVLWLYH 9\$5V, 0HWHU 12, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'9 - 0%'\$	3034 - 3035	1HJDWLYH :DWWW, 0HWHU 10, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'% - 0%'&	3036 - 3037	1HJDWLYH :DWWW, 0HWHU 11, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'" - 0%'(	3038 - 3039	1HJDWLYH :DWWW, 0HWHU 12, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%') - 0%'0	3040 - 3041	1HJDWLYH 9\$5V, 0HWHU 10, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'(1 - 0%'(2	3042 - 3043	1HJDWLYH 9\$5V, 0HWHU 11, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'(3 - 0%'(4	3044 - 3045	1HJDWLYH 9\$5V, 0HWHU 12, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'(5 - 0%'(6	3046 - 3047	9\$V, 0HWHU 10, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$V		2
0%'(7 - 0%'(8	3048 - 3049	9\$V, 0HWHU 11, \$YHUDJH	)2\$7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%7 - 0%8	3000 - 3001	\$PSV OHWHU 10, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0%9 - 0%\$	3002 - 3003	\$PSV OHWHU 11, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0%% - 0%&	3004 - 3005	\$PSV OHWHU 12, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0%' - 0%(	3006 - 3007	5HVHUYHG					2
0%) - 0%0	3008 - 3009	5HVHUYHG					2
0%&1 - 0%&2	3010 - 3011	5HVHUYHG					2
0%&3 - 0%&4	3012 - 3013	5HVHUYHG					2
0%&5 - 0%&6	3014 - 3015	5HVHUYHG					2
0%&7 - 0%&8	3016 - 3017	5HVHUYHG					2
0%&9 - 0%&\$	3018 - 3019	5HVHUYHG					2
0%&% - 0%&&	3020 - 3021	5HVHUYHG					2
0%&' - 0%&(	3022 - 3023	3RVLWLYH :DWWW, OHWHU 10, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%&) - 0%'0	3024 - 3025	3RVLWLYH :DWWW, OHWHU 11, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'1 - 0%'2	3026 - 3027	3RVLWLYH :DWWW, OHWHU 12, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'3 - 0%'4	3028 - 3029	3RVLWLYH 9\$5V, OHWHU 10, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'5 - 0%'6	3030 - 3031	3RVLWLYH 9\$5V, OHWHU 11, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'7 - 0%'8	3032 - 3033	3RVLWLYH 9\$5V, OHWHU 12, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'9 - 0%'\$	3034 - 3035	1HJDWLYH :DWWW, OHWHU 10, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'% - 0%'&	3036 - 3037	1HJDWLYH :DWWW, OHWHU 11, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%'" - 0%'(	3038 - 3039	1HJDWLYH :DWWW, OHWHU 12, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%') - 0%'(0	3040 - 3041	1HJDWLYH 9\$5V, OHWHU 10, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'(1 - 0%'(2	3042 - 3043	1HJDWLYH 9\$5V, OHWHU 11, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'(3 - 0%'(4	3044 - 3045	1HJDWLYH 9\$5V, OHWHU 12, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%'(5 - 0%'(6	3046 - 3047	9\$V, OHWHU 10, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%'(7 - 0%'(8	3048 - 3049	9\$V, OHWHU 11, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%79 - 0%7\$	2938 - 2939	1HJDWLYH :DWWW, 0HWHU 9, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0%7% - 0%7&	2940 - 2941	1HJDWLYH 9\$5V, 0HWHU 7, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%7' - 0%7(	2942 - 2943	1HJDWLYH 9\$5V, 0HWHU 8, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%7) - 0%80	2944 - 2945	1HJDWLYH 9\$5V, 0HWHU 9, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0%81 - 0%82	2946 - 2947	9\$V, 0HWHU 7, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%83 - 0%84	2948 - 2949	9\$V, 0HWHU 8, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%85 - 0%86	2950 - 2951	9\$V, 0HWHU 9, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%87 - 0%88	2952 - 2953	3RVLWLYH 3), 0HWHU 7, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%89 - 0%8\$	2954 - 2955	3RVLWLYH 3), 0HWHU 8, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%8% - 0%8&	2956 - 2957	3RVLWLYH 3), 0HWHU 9, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%8' - 0%8(	2958 - 2959	1HJDWLYH 3), 0HWHU 7, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%8) - 0%90	2960 - 2961	1HJDWLYH 3), 0HWHU 8, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%91 - 0%92	2962 - 2963	1HJDWLYH 3), 0HWHU 9, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%(9 - 0%(\$	3050 - 3051	9\$V, 0HWHU 12, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0%(% - 0%(&	3052 - 3053	3RVLWLYH 3), 0HWHU 10, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%(' - 0%((	3054 - 3055	3RVLWLYH 3), 0HWHU 11, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%() - 0%)0	3056 - 3057	3RVLWLYH 3), 0HWHU 12, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%)1 - 0%)2	3058 - 3059	1HJDWLYH 3), 0HWHU 10, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%)3 - 0%)4	3060 - 3061	1HJDWLYH 3), 0HWHU 11, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0%)5 - 0%)6	3062 - 3063	1HJDWLYH 3), 0HWHU 12, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
0&1% - 0&1&	3100 - 3101	\$PSV 0HWHU 13, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0&1' - 0&1(	3102 - 3103	\$PSV 0HWHU 14, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0&1) - 0&20	3104 - 3105	\$PSV 0HWHU 15, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0&21 - 0&22	3106 - 3107	5HVHUYHG					2
0&23 - 0&24	3108 - 3109	5HVHUYHG					2
0&25 - 0&26	3110 - 3111	5HVHUYHG					2
0&27 - 0&28	3112 - 3113	5HVHUYHG					2
0&29 - 0&2\$	3114 - 3115	5HVHUYHG					2
0&2% - 0&2&	3116 - 3117	5HVHUYHG					2
0&2' - 0&2(	3118 - 3119	5HVHUYHG					2
0&2) - 0&30	3120 - 3121	5HVHUYHG					2
0&31 - 0&32	3122 - 3123	3RVLWLYH :DWWV, 0HWHU 13, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0&33 - 0&34	3124 - 3125	3RVLWLYH :DWWV, 0HWHU 14, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0&35 - 0&36	3126 - 3127	3RVLWLYH :DWWV, 0HWHU 15, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0&37 - 0&38	3128 - 3129	3RVLWLYH 9\$5V, 0HWHU 13, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&39 - 0&3\$	3130 - 3131	3RVLWLYH 9\$5V, 0HWHU 14, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&3% - 0&3&	3132 - 3133	3RVLWLYH 9\$5V, 0HWHU 15, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&3' - 0&3(	3134 - 3135	1HJDWLYH :DWWV, 0HWHU 13, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0&3) - 0&40	3136 - 3137	1HJDWLYH :DWWV, 0HWHU 14, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0&41 - 0&42	3138 - 3139	1HJDWLYH :DWWV, 0HWHU 15, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0&43 - 0&44	3140 - 3141	1HJDWLYH 9\$5V, 0HWHU 13, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&45 - 0&46	3142 - 3143	1HJDWLYH 9\$5V, 0HWHU 14, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&47 - 0&48	3144 - 3145	1HJDWLYH 9\$5V, 0HWHU 15, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0&49 - 0&4\$	3146 - 3147	9\$V, 0HWHU 13, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0&4% - 0&4&	3148 - 3149	9\$V, 0HWHU 14, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0&4' - 0&4(	3150 - 3151	9\$V, 0HWHU 15, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0&4) - 0&50	3152 - 3153	3RVLWLYH 3), 0HWHU 13, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0&51 - 0&52	3154 - 3155	3RVLWLYH 3), 0HWHU 14, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0&53 - 0&54	3156 - 3157	3RVLWLYH 3), 0HWHU 15, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0&55 - 0&56	3158 - 3159	1HJDWLYH 3), 0HWHU 13, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0&57 - 0&58	3160 - 3161	1HJDWLYH 3), 0HWHU 14, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0&59 - 0&5\$	3162 - 3163	1HJDWLYH 3), 0HWHU 15, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0&7) - 0&80	3200 - 3201	\$PSV 0HWHU 16, \$YHUDJH	)\2\$7	0 WR 9999 0	DPSV		2
0&81 - 0&82	3202 - 3203	\$PSV 0HWHU 17, \$YHUDJH	)\2\$7	0 WR 9999 0	DPSV		2
0&83 - 0&84	3204 - 3205	\$PSV 0HWHU 18, \$YHUDJH	)\2\$7	0 WR 9999 0	DPSV		2
0&85 - 0&86	3206 - 3207	5HVHUYHG					2
0&87 - 0&88	3208 - 3209	5HVHUYHG					2
0&89 - 0&8\$	3210 - 3211	5HVHUYHG					2
0&8% - 0&8&	3212 - 3213	5HVHUYHG					2
0&8' - 0&8(	3214 - 3215	5HVHUYHG					2
0&8) - 0&80	3216 - 3217	5HVHUYHG					2
0&81 - 0&82	3218 - 3219	5HVHUYHG					2
0&83 - 0&84	3220 - 3221	5HVHUYHG					2
0&85 - 0&86	3222 - 3223	3RVLWLYH :DWWW, 0HWHU 16, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&87 - 0&88	3224 - 3225	3RVLWLYH :DWWW, 0HWHU 17, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&89 - 0&8\$	3226 - 3227	3RVLWLYH :DWWW, 0HWHU 18, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&8% - 0&8&	3228 - 3229	3RVLWLYH 9\$5V, 0HWHU 16, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
0&8' - 0&8(	3230 - 3231	3RVLWLYH 9\$5V, 0HWHU 17, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
0&8) - 0&80	3232 - 3233	3RVLWLYH 9\$5V, 0HWHU 18, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
0&81 - 0&82	3234 - 3235	1HJDWLYH :DWWW, 0HWHU 16, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&83 - 0&84	3236 - 3237	1HJDWLYH :DWWW, 0HWHU 17, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&85 - 0&86	3238 - 3239	1HJDWLYH :DWWW, 0HWHU 18, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&87 - 0&88	3240 - 3241	1HJDWLYH 9\$5V, 0HWHU 16, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
0&89 - 0&8\$	3242 - 3243	1HJDWLYH 9\$5V, 0HWHU 17, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
0&8% - 0&8&	3244 - 3245	1HJDWLYH 9\$5V, 0HWHU 18, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$5V		2
0&8' - 0&8(	3246 - 3247	9\$V, 0HWHU 16, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$V		2
0&8) - 0&80	3248 - 3249	9\$V, 0HWHU 17, \$YHUDJH	)\2\$7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0&%1 - 0&%2	3250 - 3251	9\$V, 0HWHU 18, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0&%3 - 0&%4	3252 - 3253	3RVLWLYH 3), 0HWHU 16, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&%5 - 0&%6	3254 - 3255	3RVLWLYH 3), 0HWHU 17, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&%7 - 0&%8	3256 - 3257	3RVLWLYH 3), 0HWHU 18, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&%9 - 0&%\$	3258 - 3259	1HJDWLYH 3), 0HWHU 16, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&%% - 0&%%	3260 - 3261	1HJDWLYH 3), 0HWHU 17, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0&%' - 0&%('	3262 - 3263	1HJDWLYH 3), 0HWHU 18, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
0&(3 - 0&(4	3300 - 3301	\$PSV 0HWHU 19, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&(5 - 0&(6	3302 - 3303	\$PSV 0HWHU 20, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&(7 - 0&(8	3304 - 3305	\$PSV 0HWHU 21, \$YHUDJH	) /2\$7	0 WR 9999 0	DPSV		2
0&(9 - 0&(\$	3306 - 3307	5HVHUYHG					2
0&(% - 0&(&	3308 - 3309	5HVHUYHG					2
0&(' - 0&((	3310 - 3311	5HVHUYHG					2
0&() - 0&()0	3312 - 3313	5HVHUYHG					2
0&)1 - 0&)2	3314 - 3315	5HVHUYHG					2
0&)3 - 0&)4	3316 - 3317	5HVHUYHG					2
0&)5 - 0&)6	3318 - 3319	5HVHUYHG					2
0&)7 - 0&)8	3320 - 3321	5HVHUYHG					2
0&)9 - 0&)\$	3322 - 3323	3RVLWLYH :DWWW, 0HWHU 19, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&)% - 0&)&	3324 - 3325	3RVLWLYH :DWWW, 0HWHU 20, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&)' - 0&)('	3326 - 3327	3RVLWLYH :DWWW, 0HWHU 21, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0&)) - 0'00	3328 - 3329	3RVLWLYH 9\$5V, 0HWHU 19, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'01 - 0'02	3330 - 3331	3RVLWLYH 9\$5V, 0HWHU 20, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'03 - 0'04	3332 - 3333	3RVLWLYH 9\$5V, 0HWHU 21, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0'05 - 0'06	3334 - 3335	1HJDWLYH :DWWW, 0HWHU 19, \$YHUDJH	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0'07 - 0'08	3336 - 3337	1HJDWLYH :DWWV, 0HWHU 20, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0'09 - 0'0\$	3338 - 3339	1HJDWLYH :DWWV, 0HWHU 21, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0'0% - 0'0&	3340 - 3341	1HJDWLYH 9\$5V, 0HWHU 19, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'0' - 0'0(	3342 - 3343	1HJDWLYH 9\$5V, 0HWHU 20, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'0) - 0'10	3344 - 3345	1HJDWLYH 9\$5V, 0HWHU 21, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'11 - 0'12	3346 - 3347	9\$V, 0HWHU 19, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0'13 - 0'14	3348 - 3349	9\$V, 0HWHU 20, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0'15 - 0'16	3350 - 3351	9\$V, 0HWHU 21, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0'17 - 0'18	3352 - 3353	3RVLWLYH 3), 0HWHU 19, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0'19 - 0'1\$	3354 - 3355	3RVLWLYH 3), 0HWHU 20, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0'1% - 0'1&	3356 - 3357	3RVLWLYH 3), 0HWHU 21, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0'1' - 0'1(	3358 - 3359	1HJDWLYH 3), 0HWHU 19, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0'1) - 0'20	3360 - 3361	1HJDWLYH 3), 0HWHU 20, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0'21 - 0'22	3362 - 3363	1HJDWLYH 3), 0HWHU 21, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
0'47 - 0'48	3400 - 3401	\$PSV 0HWHU 22, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0'49 - 0'4\$	3402 - 3403	\$PSV 0HWHU 23, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0'4% - 0'4&	3404 - 3405	\$PSV 0HWHU 24, \$YHUDJH	)/2\$7	0 WR 9999 0	DPSV		2
0'4' - 0'4(	3406 - 3407	5HVHUYPHG					2
0'4) - 0'50	3408 - 3409	5HVHUYPHG					2
0'51 - 0'52	3410 - 3411	5HVHUYPHG					2
0'53 - 0'54	3412 - 3413	5HVHUYPHG					2
0'55 - 0'56	3414 - 3415	5HVHUYPHG					2
0'57 - 0'58	3416 - 3417	5HVHUYPHG					2
0'59 - 0'5\$	3418 - 3419	5HVHUYPHG					2
0'5% - 0'5&	3420 - 3421	5HVHUYPHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0'5' - 0'5(	3422 - 3423	3RVLWLYH :DWWW, 0HWHU 22, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'5) - 0'60	3424 - 3425	3RVLWLYH :DWWW, 0HWHU 23, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'61 - 0'62	3426 - 3427	3RVLWLYH :DWWW, 0HWHU 24, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'63 - 0'64	3428 - 3429	3RVLWLYH 9\$5V, 0HWHU 22, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'65 - 0'66	3430 - 3431	3RVLWLYH 9\$5V, 0HWHU 23, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'67 - 0'68	3432 - 3433	3RVLWLYH 9\$5V, 0HWHU 24, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'69 - 0'6\$	3434 - 3435	1HJDWLYH :DWWW, 0HWHU 22, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'6% - 0'6&	3436 - 3437	1HJDWLYH :DWWW, 0HWHU 23, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'6' - 0'6(	3438 - 3439	1HJDWLYH :DWWW, 0HWHU 24, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0'6) - 0'70	3440 - 3441	1HJDWLYH 9\$5V, 0HWHU 22, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'71 - 0'72	3442 - 3443	1HJDWLYH 9\$5V, 0HWHU 23, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'73 - 0'74	3444 - 3445	1HJDWLYH 9\$5V, 0HWHU 24, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0'75 - 0'76	3446 - 3447	9\$V, 0HWHU 22, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0'77 - 0'78	3448 - 3449	9\$V, 0HWHU 23, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0'79 - 0'7\$	3450 - 3451	9\$V, 0HWHU 24, \$YHUDJH	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0'7% - 0'7&	3452 - 3453	3RVLWLYH 3), 0HWHU 22, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2
0'7' - 0'7(	3454 - 3455	3RVLWLYH 3), 0HWHU 23, \$YHUDJH	)/2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0'7) - 0'80	3456 - 3457	3RVLWLYH 3), 0HWHU 24, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0'81 - 0'82	3458 - 3459	1HJDWLYH 3), 0HWHU 22, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0'83 - 0'84	3460 - 3461	1HJDWLYH 3), 0HWHU 23, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
0'85 - 0'86	3462 - 3463	1HJDWLYH 3), 0HWHU 24, \$YHUDJH	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Phase Angle Block (voltage)							
0'\$% - 0'\$%	3500 - 3500	5HVHUYHG					1
0'\$& - 0'\$&	3501 - 3501	5HVHUYHG					1
0'\$' - 0'\$'	3502 - 3502	5HVHUYHG					1
						read-only	
0'\$(- 0'\$(	3503 - 3503	\$QJOH, 0HWHU 1 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'\$(- 0'\$(	3504 - 3504	\$QJOH, 0HWHU 2 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'%0 - 0'%0	3505 - 3505	\$QJOH, 0HWHU 3 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6L]H:	3
0'%1 - 0'%1	3506 - 3506	\$QJOH, 0HWHU 4 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'%2 - 0'%2	3507 - 3507	\$QJOH, 0HWHU 5 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'%3 - 0'%3	3508 - 3508	\$QJOH, 0HWHU 6 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6L]H:	3
0'%4 - 0'%4	3509 - 3509	\$QJOH, 0HWHU 7 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'%5 - 0'%5	3510 - 3510	\$QJOH, 0HWHU 8 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0'%6 - 0'%6	3511 - 3511	\$QJOH, 0HWHU 9 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6L]H:	3
0'%7 - 0'%7	3512 - 3512	\$QJOH, 0HWHU 10 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0%8 - 0%8	3513 - 3513	\$QJOH, 0HWHU 11 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%9 - 0%9	3514 - 3514	\$QJOH, 0HWHU 12 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6LJH:	3
0%\$ - 0%\$	3515 - 3515	\$QJOH, 0HWHU 13 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%% - 0%%	3516 - 3516	\$QJOH, 0HWHU 14 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%& - 0%&	3517 - 3517	\$QJOH, 0HWHU 15 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6LJH:	3
0%' - 0%'	3518 - 3518	\$QJOH, 0HWHU 16 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%(- 0%(	3519 - 3519	\$QJOH, 0HWHU 17 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%) - 0%)	3520 - 3520	\$QJOH, 0HWHU 18 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6LJH:	3
0%0 - 0%0	3521 - 3521	\$QJOH, 0HWHU 19 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%1 - 0%1	3522 - 3522	\$QJOH, 0HWHU 20 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%2 - 0%2	3523 - 3523	\$QJOH, 0HWHU 21 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6LJH:	3
0%3 - 0%3	3524 - 3524	\$QJOH, 0HWHU 22 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%4 - 0%4	3525 - 3525	\$QJOH, 0HWHU 23 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
0%5 - 0%5	3526 - 3526	\$QJOH, 0HWHU 24 FXUUHQW	6,1716	-1800 WR +1800	0.1 GHJUHH		1
						%ORFN 6LJH:	3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Status Block							read-only
0'&9 - 0'&9	3530 - 3530	3RUW ,*	8,1716	1 WR 3	none	.GHQWLILHV ZKLFK &20 SRUW D PDVWHU LV FRQQHFVHG WR; 1 IRU &201, 2 IRU &202, HWF.	1
0'&\$ - 0'&\$	3531 - 3531	&38 6WDWXV	8,1716	ELW-PDSSHG	mmpch-- bfee-cc	PPP PHDVXUHPHQW VWDWH (0 RII, 1 UXQLQJ QRUPDOO, 2 OLPS PRGH, 3 ZDUPXS, 6&7 ERRW, RWKHUV XQXVHG) 6HH QRWH 15. SFK 190(0 EORFN 2. IODJV (S SURILOH, F FDOLEUDWLRQ, K KHDGHU), IODJ LV 1 LI 2. E - %DWWHU\ VWDWXV, (0 EDWWHU\ ORZ,1 EDWWHU\ 2.) II IODVK VWDWH (0 LQLWDO\JLQJ, 1 ORJLQJ GLVDEOHG EI 9VZLWFK, 3 ORJLQJ) HH HGLW VWDWH (0 VWDUWXS, 1 QRUPDO, 2 SULYLOHJHG FRPPDQG VHVVLRQ, 3 SURILOH XSGDWH PRGH) FF SRUW HQDEOHG IRU HGLW(0 QRQH, 1-3 &201-&203)	1
0'&% - 0'&%	3532 - 3532	/LPLWV 6WDWXV	8,1716	ELW-PDSSHG	87654321 87654321	KLJK EIWV LV VHWSW 1, 0 LQ, 1 RXW ORZ EIWV LV VHWSW 2, 0 LQ, 1 RXW VHH QRWHV 11, 12, 17	1
0'&& - 0'&'	3533 - 3534	7LPH 6LQFH 5HVHW	8,1732	0 WR 4294967294	4 PVHF	ZUDSV DURXQG DIWHU PD[FRXQW	2
0'&(- 0''0	3535 - 3537	&38 2Q 7LPH	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
0''1 - 0''3	3538 - 3540	&XUHQW 'DWH DQG 7LPH	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
0''4 - 0''4	3541 - 3541	5HVHUYHG				5HVHUYHG	1
0''5 - 0''5	3542 - 3542	&XUHQW 'D RI :HHN	8,1716	1 WR 7	1 GD\	1 6XQ, 2 ORQ, HWF. %ORFN 6L]H:	1
							13

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Short term Primary Minimum Block						read-only	
0*** - 0*(	3550 - 3551	9ROWV , SUHYLRXV 'HPDQG LQWHUYDO 6KRJW 7HUP 0LQLPXP	)2\$7	0 WR 9999 0	YROW	0LQLPXP LQVWDQWDQHRXV YDOXH PHDVXUHG GXULQJ WKH GHPDQG LQWHUYDO EHIRUH WKH RQH PRW UHFHQWOL FRPSOHWHG.	2
0** - 0'(0	3552 - 3553	5HVHUYHG					2
0'(1 - 0'(2	3554 - 3555	5HVHUYHG					2
0'(3 - 0'(4	3556 - 3557	5HVHUYHG					2
0'(5 - 0'(6	3558 - 3559	5HVHUYHG					2
0'(7 - 0'(8	3560 - 3561	5HVHUYHG					2
0'(9 - 0'(\$	3562 - 3563	9ROWV , 6KRJW 7HUP 0LQLPXP	)2\$7	0 WR 9999 0	YROW	0LQLPXP LQVWDQWDQHRXV YDOXH PHDVXUHG GXULQJ WKH PRW UHFHQWOL FRPSOHWHG GHPDQG LQWHUYDO.	2
0'(% - 0'(&	3564 - 3565	5HVHUYHG					2
0'(' - 0'((	3566 - 3567	5HVHUYHG					2
0'() - 0')0	3568 - 3569	5HVHUYHG					2
0')1 - 0')2	3570 - 3571	5HVHUYHG					2
0')3 - 0')4	3572 - 3573	5HVHUYHG					2
0')5 - 0')6	3574 - 3575	5HVHUYHG					2
0')7 - 0')8	3576 - 3577	5HVHUYHG					2
						%ORFN 6LJH:	24
Primary Minimum Block (Voltage)						read-only	
0')% - 0')&	3580 - 3581	9ROWV , 0LQLPXP	)2\$7	0 WR 9999 0	YROW		2
0')' - 0')(0') - 0(00	3582 - 3583 3584 - 3585	5HVHUYHG 5HVHUYHG					2 2
0(01 - 0(02	3586 - 3587	5HVHUYHG					2
0(03 - 0(04	3588 - 3589	5HVHUYHG					2
0(05 - 0(06	3590 - 3591	5HVHUYHG					2
0(07 - 0(08	3592 - 3593	)UHTXHQF, 0LQLPXP	)2\$7	0 WR 65.00	+]		2
						%ORFN 6LJH:	14
Primary Minimum Block						read-only	
0(0) - 0(10	3600 - 3601	\$PSV 0HWHU 1, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
0(11 - 0(12	3602 - 3603	\$PSV 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
0(13 - 0(14	3604 - 3605	\$PSV 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
0(15 - 0(16	3606 - 3607	5HVHUYHG					2
0(17 - 0(18	3608 - 3609	5HVHUYHG					2
0(19 - 0(1\$	3610 - 3611	5HVHUYHG					2
0(1% - 0(1&	3612 - 3613	5HVHUYHG					2
0(1' - 0(1(0(1) - 0(20	3614 - 3615 3616 - 3617	5HVHUYHG 5HVHUYHG					2 2
0(21 - 0(22	3618 - 3619	5HVHUYHG					2
0(23 - 0(24	3620 - 3621	5HVHUYHG					2
0(25 - 0(26	3622 - 3623	3RVLWLYH :DWWV, 0HWHU 1 , 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	DWWV		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0(27 - 0(28	3624 - 3625	3RVLWLYH :DWWV, 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0(29 - 0(2\$	3626 - 3627	3RVLWLYH :DWWV, 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0(2% - 0(2&	3628 - 3629	3RVLWLYH 9\$5V, 0HWHU 1, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0(2' - 0(2(	3630 - 3631	3RVLWLYH 9\$5V, 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0(2) - 0(30	3632 - 3633	3RVLWLYH 9\$5V, 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0(31 - 0(32	3634 - 3635	1HJDWLYH :DWWV, 0HWHU 1, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0(33 - 0(34	3636 - 3637	1HJDWLYH :DWWV, 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0(35 - 0(36	3638 - 3639	1HJDWLYH :DWWV, 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWV		2
0(37 - 0(38	3640 - 3641	1HJDWLYH 9\$5V, 0HWHU 1, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0(39 - 0(3\$	3642 - 3643	1HJDWLYH 9\$5V, 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0(3% - 0(3&	3644 - 3645	1HJDWLYH 9\$5V, 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0(3' - 0(3(	3646 - 3647	9\$V, 0HWHU 1, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0(3) - 0(40	3648 - 3649	9\$V, 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0(41 - 0(42	3650 - 3651	9\$V, 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0(43 - 0(44	3652 - 3653	3RVLWLYH 3), 0HWHU 1, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
0(45 - 0(46	3654 - 3655	3RVLWLYH 3), 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
0(47 - 0(48	3656 - 3657	3RVLWLYH 3), 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0(49 - 0(4\$	3658 - 3659	1HJDWLYH 3), 0HWHU 1, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(4% - 0(4&	3660 - 3661	1HJDWLYH 3), 0HWHU 2, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(4' - 0(4(	3662 - 3663	1HJDWLYH 3), 0HWHU 3, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
0(73 - 0(74	3700 - 3701	\$PSV 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0(75 - 0(76	3702 - 3703	\$PSV 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0(77 - 0(78	3704 - 3705	\$PSV 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0(79 - 0(7\$	3706 - 3707	5HVHUYHG					2
0(7% - 0(7&	3708 - 3709	5HVHUYHG					2
0(7' - 0(7(	3710 - 3711	5HVHUYHG					2
0(7) - 0(80	3712 - 3713	5HVHUYHG					2
0(81 - 0(82	3714 - 3715	5HVHUYHG					2
0(83 - 0(84	3716 - 3717	5HVHUYHG					2
0(85 - 0(86	3718 - 3719	5HVHUYHG					2
0(87 - 0(88	3720 - 3721	5HVHUYHG					2
0(89 - 0(8\$	3722 - 3723	3RVLWLYH :DWWW, 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(8% - 0(8&	3724 - 3725	3RVLWLYH :DWWW, 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(8' - 0(8(	3726 - 3727	3RVLWLYH :DWWW, 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(8) - 0(90	3728 - 3729	3RVLWLYH 9\$5V, 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(91 - 0(92	3730 - 3731	3RVLWLYH 9\$5V, 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(93 - 0(94	3732 - 3733	3RVLWLYH 9\$5V, 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(95 - 0(96	3734 - 3735	1HJDWLYH :DWWW, 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(97 - 0(98	3736 - 3737	1HJDWLYH :DWWW, 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0(99 - 0(9\$	3738 - 3739	1HJDWLYH :DWWW, 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0(9% - 0(9&	3740 - 3741	1HJDWLYH 9\$5V, 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(9' - 0(9(	3742 - 3743	1HJDWLYH 9\$5V, 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(9) - 0(\$0	3744 - 3745	1HJDWLYH 9\$5V, 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0(\$1 - 0(\$2	3746 - 3747	9\$V, 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0(\$3 - 0(\$4	3748 - 3749	9\$V, 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0(\$5 - 0(\$6	3750 - 3751	9\$V, 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0(\$7 - 0(\$8	3752 - 3753	3RVLWLYH 3), 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(\$9 - 0(\$\$	3754 - 3755	3RVLWLYH 3), 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(\$% - 0(\$&	3756 - 3757	3RVLWLYH 3), 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(\$' - 0(\$(<	3758 - 3759	1HJDWLYH 3), 0HWHU 4, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(\$) - 0(%0	3760 - 3761	1HJDWLYH 3), 0HWHU 5, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0(%1 - 0(%2	3762 - 3763	1HJDWLYH 3), 0HWHU 6, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
0('7 - 0('8	3800 - 3801	\$PSV 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0('9 - 0('\$	3802 - 3803	\$PSV 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0('% - 0('&	3804 - 3805	\$PSV 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0('' - 0('(<	3806 - 3807	5HVHUYHG					2
0(') - 0('0	3808 - 3809	5HVHUYHG					2
0('(1 - 0('(2	3810 - 3811	5HVHUYHG					2
0('(3 - 0('(4	3812 - 3813	5HVHUYHG					2
0('(5 - 0('(6	3814 - 3815	5HVHUYHG					2
0('(7 - 0('(8	3816 - 3817	5HVHUYHG					2
0('(9 - 0('(\$	3818 - 3819	5HVHUYHG					2
0('(% - 0('(&	3820 - 3821	5HVHUYHG					2
0('(' - 0('((	3822 - 3823	3RVLWLYH :DWWV, 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV		2
0('() - 0(')0	3824 - 3825	3RVLWLYH :DWWV, 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0()1 - 0()2	3826 - 3827	3RVLWLYH :DWWW, 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0()3 - 0()4	3828 - 3829	3RVLWLYH 9\$5V, 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0()5 - 0()6	3830 - 3831	3RVLWLYH 9\$5V, 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0()7 - 0()8	3832 - 3833	3RVLWLYH 9\$5V, 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0()9 - 0()\$	3834 - 3835	1HJDWLYH :DWWW, 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0()% - 0()&	3836 - 3837	1HJDWLYH :DWWW, 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0()' - 0()('	3838 - 3839	1HJDWLYH :DWWW, 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
0() - 0)00	3840 - 3841	1HJDWLYH 9\$5V, 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0)01 - 0)02	3842 - 3843	1HJDWLYH 9\$5V, 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0)03 - 0)04	3844 - 3845	1HJDWLYH 9\$5V, 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
0)05 - 0)06	3846 - 3847	9\$V, 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0)07 - 0)08	3848 - 3849	9\$V, 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
- 0)0\$	3850 - 3851	9\$V, 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
0)0% - 0)0&	3852 - 3853	3RVLWLYH 3), 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
0)0' - 0)0('	3854 - 3855	3RVLWLYH 3), 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
0)0) - 0)010	3856 - 3857	3RVLWLYH 3), 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0)11 - 0)12	3858 - 3859	1HJDWLYH 3), 0HWHU 7, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
0)13 - 0)14	3860 - 3861	1HJDWLYH 3), 0HWHU 8, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
0)15 - 0)16	3862 - 3863	1HJDWLYH 3), 0HWHU 9, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
0)3% - 0)3&	3900 - 3901	\$PSV 0HWHU 10, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
0)3' - 0)3(	3902 - 3903	\$PSV 0HWHU 11, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
0)3) - 0)40	3904 - 3905	\$PSV 0HWHU 12, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
0)41 - 0)42	3906 - 3907	5HVHUYHG					2
0)43 - 0)44	3908 - 3909	5HVHUYHG					2
0)45 - 0)46	3910 - 3911	5HVHUYHG					2
0)47 - 0)48	3912 - 3913	5HVHUYHG					2
0)49 - 0)4\$	3914 - 3915	5HVHUYHG					2
0)4% - 0)4&	3916 - 3917	5HVHUYHG					2
0)4' - 0)4(	3918 - 3919	5HVHUYHG					2
0)4) - 0)50	3920 - 3921	5HVHUYHG					2
0)51 - 0)52	3922 - 3923	3RVLWLYH :DWWW, 0HWHU 10, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)53 - 0)54	3924 - 3925	3RVLWLYH :DWWW, 0HWHU 11, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)55 - 0)56	3926 - 3927	3RVLWLYH :DWWW, 0HWHU 12, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)57 - 0)58	3928 - 3929	3RVLWLYH 9\$5V, 0HWHU 10, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)59 - 0)5\$	3930 - 3931	3RVLWLYH 9\$5V, 0HWHU 11, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)5% - 0)5&	3932 - 3933	3RVLWLYH 9\$5V, 0HWHU 12, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)5' - 0)5(	3934 - 3935	1HJDWLYH :DWWW, 0HWHU 10, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)5) - 0)60	3936 - 3937	1HJDWLYH :DWWW, 0HWHU 11, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)61 - 0)62	3938 - 3939	1HJDWLYH :DWWW, 0HWHU 12, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0)63 - 0)64	3940 - 3941	1HJDWLYH 9\$5V, 0HWHU 10, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0)65 - 0)66	3942 - 3943	1HJDWLYH 9\$5V, 0HWHU 11, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0)67 - 0)68	3944 - 3945	1HJDWLYH 9\$5V, 0HWHU 12, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
0)69 - 0)6\$	3946 - 3947	9\$V, 0HWHU 10, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0)6% - 0)6&	3948 - 3949	9\$V, 0HWHU 11, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0)6' - 0)6(	3950 - 3951	9\$V, 0HWHU 12, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
0)6) - 0)70	3952 - 3953	3RVLWLYH 3), 0HWHU 10, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)71 - 0)72	3954 - 3955	3RVLWLYH 3), 0HWHU 11, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)73 - 0)74	3956 - 3957	3RVLWLYH 3), 0HWHU 12, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)75 - 0)76	3958 - 3959	1HJDWLYH 3), 0HWHU 10, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)77 - 0)78	3960 - 3961	1HJDWLYH 3), 0HWHU 11, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
0)79 - 0)7\$	3962 - 3963	1HJDWLYH 3), 0HWHU 12, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH: read-only	64
0)9) - 0)\$0	4000 - 4001	\$PSV 0HWHU 13, 0LQLXPX \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0)\$1 - 0)\$2	4002 - 4003	\$PSV 0HWHU 14, 0LQLXPX \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0)\$3 - 0)\$4	4004 - 4005	\$PSV 0HWHU 15, 0LQLXPX \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
0)\$5 - 0)\$6	4006 - 4007	5HVHUYHG					2
0)\$7 - 0)\$8	4008 - 4009	5HVHUYHG					2
0)\$9 - 0)\$	4010 - 4011	5HVHUYHG					2
0)\$% - 0)\$&	4012 - 4013	5HVHUYHG					2
0)\$' - 0)\$(	4014 - 4015	5HVHUYHG					2
0)\$) - 0)\$%	4016 - 4017	5HVHUYHG					2
0)\$%1 - 0)\$%2	4018 - 4019	5HVHUYHG					2
0)\$%3 - 0)\$%4	4020 - 4021	5HVHUYHG					2
0)\$%5 - 0)\$%6	4022 - 4023	3RVLWLYH :DWWW, 0HWHU 13, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
0)\$%7 - 0)\$%8	4024 - 4025	3RVLWLYH :DWWW, 0HWHU 14, 0LQLXPX \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0)%9 - 0)%\$	4026 - 4027	3RVLWLYH :DWWV, 0HWHU 15, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
0)%% - 0)%&	4028 - 4029	3RVLWLYH 9\$5V, 0HWHU 13, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%' - 0)%('	4030 - 4031	3RVLWLYH 9\$5V, 0HWHU 14, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)% - 0)%&0	4032 - 4033	3RVLWLYH 9\$5V, 0HWHU 15, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%1 - 0)%&2	4034 - 4035	1HJDWLYH :DWWV, 0HWHU 13, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
0)%3 - 0)%&4	4036 - 4037	1HJDWLYH :DWWV, 0HWHU 14, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
0)%5 - 0)%&6	4038 - 4039	1HJDWLYH :DWWV, 0HWHU 15, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
0)%7 - 0)%&8	4040 - 4041	1HJDWLYH 9\$5V, 0HWHU 13, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%9 - 0)%&\$	4042 - 4043	1HJDWLYH 9\$5V, 0HWHU 14, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%% - 0)%&&	4044 - 4045	1HJDWLYH 9\$5V, 0HWHU 15, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
0)%' - 0)%&('	4046 - 4047	9\$V, 0HWHU 13, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
0)%& - 0)%'0	4048 - 4049	9\$V, 0HWHU 14, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
0)'1 - 0)'2	4050 - 4051	9\$V, 0HWHU 15, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
0)'3 - 0)'4	4052 - 4053	3RVLWLYH 3), 0HWHU 13, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
0)'5 - 0)'6	4054 - 4055	3RVLWLYH 3), 0HWHU 14, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
0)'7 - 0)'8	4056 - 4057	3RVLWLYH 3), 0HWHU 15, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
0)'9 - 0) '\$	4058 - 4059	1HJDWLYH 3), 0HWHU 13, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
0)'% - 0)'&	4060 - 4061	1HJDWLYH 3), 0HWHU 14, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
0)' - 0)('	4062 - 4063	1HJDWLYH 3), 0HWHU 15, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
1003 - 1004	4100 - 4101	\$PSV 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1005 - 1006	4102 - 4103	\$PSV 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1007 - 1008	4104 - 4105	\$PSV 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1009 - 100\$	4106 - 4107	5HVHUYHG					2
100% - 100&	4108 - 4109	5HVHUYHG					2
100' - 100(	4110 - 4111	5HVHUYHG					2
100) - 1010	4112 - 4113	5HVHUYHG					2
1011 - 1012	4114 - 4115	5HVHUYHG					2
1013 - 1014	4116 - 4117	5HVHUYHG					2
1015 - 1016	4118 - 4119	5HVHUYHG					2
1017 - 1018	4120 - 4121	5HVHUYHG					2
1019 - 101\$	4122 - 4123	3RVLWLYH :DWWV, 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
101% - 101&	4124 - 4125	3RVLWLYH :DWWV, 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
101' - 101(	4126 - 4127	3RVLWLYH :DWWV, 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
101) - 1020	4128 - 4129	3RVLWLYH 9\$5V, 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1021 - 1022	4130 - 4131	3RVLWLYH 9\$5V, 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1023 - 1024	4132 - 4133	3RVLWLYH 9\$5V, 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1025 - 1026	4134 - 4135	1HJDWLYH :DWWV, 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1027 - 1028	4136 - 4137	1HJDWLYH :DWWV, 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1029 - 102\$	4138 - 4139	1HJDWLYH :DWWV, 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
102% - 102&	4140 - 4141	1HJDWLYH 9\$5V, 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
102' - 102(	4142 - 4143	1HJDWLYH 9\$5V, 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
102) - 1030	4144 - 4145	1HJDWLYH 9\$5V, 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
1031 - 1032	4146 - 4147	9\$V, 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
1033 - 1034	4148 - 4149	9\$V, 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
1035 - 1036	4150 - 4151	9\$V, 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
1037 - 1038	4152 - 4153	3RVLWLYH 3), 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1039 - 103\$	4154 - 4155	3RVLWLYH 3), 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
103% - 103&	4156 - 4157	3RVLWLYH 3), 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
103' - 103(	4158 - 4159	1HJDWLYH 3), 0HWHU 16, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
103) - 1040	4160 - 4161	1HJDWLYH 3), 0HWHU 17, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1041 - 1042	4162 - 4163	1HJDWLYH 3), 0HWHU 18, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
1067 - 1068	4200 - 4201	\$PSV 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
1069 - 106\$	4202 - 4203	\$PSV 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
106% - 106&	4204 - 4205	\$PSV 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
106' - 106(	4206 - 4207	5HVHUYHG					2
106) - 1070	4208 - 4209	5HVHUYHG					2
1071 - 1072	4210 - 4211	5HVHUYHG					2
1073 - 1074	4212 - 4213	5HVHUYHG					2
1075 - 1076	4214 - 4215	5HVHUYHG					2
1077 - 1078	4216 - 4217	5HVHUYHG					2
1079 - 107\$	4218 - 4219	5HVHUYHG					2
107% - 107&	4220 - 4221	5HVHUYHG					2
107' - 107(	4222 - 4223	3RVLWLYH :DWWW, 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
107) - 1080	4224 - 4225	3RVLWLYH :DWWW, 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
1081 - 1082	4226 - 4227	3RVLWLYH :DWWW, 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWW		2
1083 - 1084	4228 - 4229	3RVLWLYH 9\$5V, 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1085 - 1086	4230 - 4231	3RVLWLYH 9\$5V, 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1087 - 1088	4232 - 4233	3RVLWLYH 9\$5V, 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1089 - 108\$	4234 - 4235	1HJDWLYH :DWWW, 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
108% - 108&	4236 - 4237	1HJDWLYH :DWWW, 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
108' - 108(	4238 - 4239	1HJDWLYH :DWWW, 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
108) - 1090	4240 - 4241	1HJDWLYH 9\$5V, 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1091 - 1092	4242 - 4243	1HJDWLYH 9\$5V, 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1093 - 1094	4244 - 4245	1HJDWLYH 9\$5V, 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1095 - 1096	4246 - 4247	9\$V, 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1097 - 1098	4248 - 4249	9\$V, 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1099 - 109\$	4250 - 4251	9\$V, 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
109% - 109&	4252 - 4253	3RVLWLYH 3), 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
109' - 109(	4254 - 4255	3RVLWLYH 3), 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
109) - 1090	4256 - 4257	3RVLWLYH 3), 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
10\$1 - 10\$2	4258 - 4259	1HJDWLYH 3), 0HWHU 19, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
10\$3 - 10\$4	4260 - 4261	1HJDWLYH 3), 0HWHU 20, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
10\$5 - 10\$6	4262 - 4263	1HJDWLYH 3), 0HWHU 21, 0LQLPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
						%ORFN 6LJH:	64
10&% - 10&&	4300 - 4301	\$PSV 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
10&' - 10&(	4302 - 4303	\$PSV 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
10&) - 10'0	4304 - 4305	\$PSV 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
10'1 - 10'2	4306 - 4307	5HVHUYHG					2
10'3 - 10'4	4308 - 4309	5HVHUYHG					2
10'5 - 10'6	4310 - 4311	5HVHUYHG					2
10'7 - 10'8	4312 - 4313	5HVHUYHG					2
10'9 - 10'\$	4314 - 4315	5HVHUYHG					2
10'% - 10'&	4316 - 4317	5HVHUYHG					2
10'" - 10'(<	4318 - 4319	5HVHUYHG					2
10') - 10(0	4320 - 4321	5HVHUYHG					2
10(1 - 10(2	4322 - 4323	3RVLWLYH :DWWV, 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
10(3 - 10(4	4324 - 4325	3RVLWLYH :DWWV, 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
10(5 - 10(6	4326 - 4327	3RVLWLYH :DWWV, 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
10(7 - 10(8	4328 - 4329	3RVLWLYH 9\$5V, 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
10(9 - 10(\$	4330 - 4331	3RVLWLYH 9\$5V, 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
10(% - 10(&	4332 - 4333	3RVLWLYH 9\$5V, 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
10(' - 10((	4334 - 4335	1HJDWLYH :DWWV, 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
10() - 10)0	4336 - 4337	1HJDWLYH :DWWV, 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
10)1 - 10)2	4338 - 4339	1HJDWLYH :DWWV, 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
10)3 - 10)4	4340 - 4341	1HJDWLYH 9\$5V, 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
10)5 - 10)6	4342 - 4343	1HJDWLYH 9\$5V, 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
10)7 - 10)8	4344 - 4345	1HJDWLYH 9\$5V, 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
10)9 - 10)9\$	4346 - 4347	9\$V, 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
10)% - 10)%&	4348 - 4349	9\$V, 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
10)' - 10)'(	4350 - 4351	9\$V, 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
10)) - 1100	4352 - 4353	3RVLWLYH 3), 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1101 - 1102	4354 - 4355	3RVLWLYH 3), 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1103 - 1104	4356 - 4357	3RVLWLYH 3), 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1105 - 1106	4358 - 4359	1HJDWLYH 3), 0HWHU 22, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1107 - 1108	4360 - 4361	1HJDWLYH 3), 0HWHU 23, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1109 - 1109\$	4362 - 4363	1HJDWLYH 3), 0HWHU 24, 0LQLPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
Primary Minimum Timestamp Block						read-only	
112) - 1131	4400 - 4402	9ROWV 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1132 - 1134	4403 - 4405	5HVHUYHG					3
1135 - 1137	4406 - 4408	9ROWV &-1, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1138 - 1138\$	4409 - 4411	9ROWV \$-%, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
113% - 113'	4412 - 4414	9ROWV %-&, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
113(- 1140	4415 - 4417	9ROWV &-\$, 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1141 - 1143	4418 - 4420	)UHTXHQF), 0LQ 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	21
Primary Minimum Timestamp Block						read-only	
1193 - 1195	4500 - 4502	\$PSV 0HWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1196 - 1198	4503 - 4505	\$PSV 0HWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1199 - 1199%	4506 - 4508	\$PSV 0HWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
119& - 119(	4509 - 4511	5HVHUYHG					3
119) - 119\$	4512 - 4514	5HVHUYHG					3
119% - 119'	4515 - 4517	5HVHUYHG					3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
11\$5 - 11\$7	4518 - 4520	5HVHUYHG					3
11\$8 - 11\$\$	4521 - 4523	5HVHUYHG					3
11\$% - 11\$'	4524 - 4526	5HVHUYHG					3
11\$(- 11%0	4527 - 4529	5HVHUYHG					3
11%1 - 11%3	4530 - 4532	5HVHUYHG					3
11%4 - 11%6	4533 - 4535	3RVLWLYH :DWWW, OHWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%7 - 11%9	4536 - 4538	3RVLWLYH :DWWW, OHWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%\$ - 11%&	4539 - 4541	3RVLWLYH :DWWW, OHWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11%' - 11%)	4542 - 4544	3RVLWLYH 9\$5V, OHWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&0 - 11&2	4545 - 4547	3RVLWLYH 9\$5V, OHWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&3 - 11&5	4548 - 4550	3RVLWLYH 9\$5V, OHWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&6 - 11&8	4551 - 4553	1HJDWLYH :DWWW, OHWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&9 - 11&%	4554 - 4556	1HJDWLYH :DWWW, OHWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&& - 11&(<	4557 - 4559	1HJDWLYH :DWWW, OHWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11&) - 11'1	4560 - 4562	1HJDWLYH 9\$5V, OHWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'2 - 11'4	4563 - 4565	1HJDWLYH 9\$5V, OHWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'5 - 11'7	4566 - 4568	1HJDWLYH 9\$5V, OHWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'8 - 11'\$	4569 - 4571	9\$V, OHWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'% - 11''	4572 - 4574	9\$V, OHWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11'(< - 11(0	4575 - 4577	9\$V, OHWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(1 - 11(3	4578 - 4580	3RVLWLYH 3), OHWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(4 - 11(6	4581 - 4583	3RVLWLYH 3), OHWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(7 - 11(9	4584 - 4586	3RVLWLYH 3), OHWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11(\$ - 11(&	4587 - 4589	1HJDWLYH 3), OHWHU 1, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
11(' - 11()	4590 - 4592	1HJDWLYH 3), 0HWHU 2, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11)0 - 11)2	4593 - 4595	1HJDWLYH 3), 0HWHU 3, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
11)7 - 11)9	4600 - 4602	\$PSV 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11)\$ - 11)&	4603 - 4605	\$PSV 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
11)' - 11))	4606 - 4608	\$PSV 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1200 - 1202	4609 - 4611	5HVHUYHG					3
1203 - 1205	4612 - 4614	5HVHUYHG					3
1206 - 1208	4615 - 4617	5HVHUYHG					3
1209 - 120%	4618 - 4620	5HVHUYHG					3
120& - 120(	4621 - 4623	5HVHUYHG					3
120) - 1211	4624 - 4626	5HVHUYHG					3
1212 - 1214	4627 - 4629	5HVHUYHG					3
1215 - 1217	4630 - 4632	5HVHUYHG					3
1218 - 121\$	4633 - 4635	3RVLWLYH :DWWW, 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
121% - 121'	4636 - 4638	3RVLWLYH :DWWW, 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
121(- 1220	4639 - 4641	3RVLWLYH :DWWW, 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1221 - 1223	4642 - 4644	3RVLWLYH 9\$5V, 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1224 - 1226	4645 - 4647	3RVLWLYH 9\$5V, 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1227 - 1229	4648 - 4650	3RVLWLYH 9\$5V, 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
122\$ - 122&	4651 - 4653	1HJDWLYH :DWWW, 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
122' - 122)	4654 - 4656	1HJDWLYH:DWV, 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1230 - 1232	4657 - 4659	1HJDWLYH:DWV, 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1233 - 1235	4660 - 4662	1HJDWLYH 9\$5V, 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1236 - 1238	4663 - 4665	1HJDWLYH 9\$5V, 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1239 - 123%	4666 - 4668	1HJDWLYH 9\$5V, 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
123& - 123(	4669 - 4671	9\$V, 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
123) - 1241	4672 - 4674	9\$V, 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1242 - 1244	4675 - 4677	9\$V, 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1245 - 1247	4678 - 4680	3RVLWLYH 3), 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1248 - 124\$	4681 - 4683	3RVLWLYH 3), 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
124% - 124'	4684 - 4686	3RVLWLYH 3), 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
124(- 1250	4687 - 4689	1HJDWLYH 3), 0HWHU 4, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1251 - 1253	4690 - 4692	1HJDWLYH 3), 0HWHU 5, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1254 - 1256	4693 - 4695	1HJDWLYH 3), 0HWHU 6, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
125% - 125'	4700 - 4702	\$PSV 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
125(- 1260	4703 - 4705	\$PSV 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1261 - 1263	4706 - 4708	\$PSV 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1264 - 1266	4709 - 4711	5HVHUYHG					3
1267 - 1269	4712 - 4714	5HVHUYHG					3
126\$ - 126&	4715 - 4717	5HVHUYHG					3
126' - 126)	4718 - 4720	5HVHUYHG					3
1270 - 1272	4721 - 4723	5HVHUYHG					3
1273 - 1275	4724 - 4726	5HVHUYHG					3
1276 - 1278	4727 - 4729	5HVHUYHG					3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1279 - 127%	4730 - 4732	5HVHUYHG					3
127& - 127(	4733 - 4735	3RVLWLYH :DWWW, 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
127) - 1281	4736 - 4738	3RVLWLYH :DWWW, 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1282 - 1284	4739 - 4741	3RVLWLYH :DWWW, 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1285 - 1287	4742 - 4744	3RVLWLYH 9\$5V, 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1288 - 128\$	4745 - 4747	3RVLWLYH 9\$5V, 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
128% - 128'	4748 - 4750	3RVLWLYH 9\$5V, 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
128(- 1290	4751 - 4753	1HJDWLYH :DWWW, 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1291 - 1293	4754 - 4756	1HJDWLYH :DWWW, 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1294 - 1296	4757 - 4759	1HJDWLYH :DWWW, 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1297 - 1299	4760 - 4762	1HJDWLYH 9\$5V, 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
129\$ - 129&	4763 - 4765	1HJDWLYH 9\$5V, 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
129' - 129)	4766 - 4768	1HJDWLYH 9\$5V, 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12\$0 - 12\$2	4769 - 4771	9\$V, 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12\$3 - 12\$5	4772 - 4774	9\$V, 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12\$6 - 12\$8	4775 - 4777	9\$V, 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12\$9 - 12\$%	4778 - 4780	3RVLWLYH 3), 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12\$& - 12\$(	4781 - 4783	3RVLWLYH 3), 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12\$) - 12%1	4784 - 4786	3RVLWLYH 3), 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
12%2 - 12%4	4787 - 4789	1HJDWLYH 3), 0HWHU 7, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12%5 - 12%7	4790 - 4792	1HJDWLYH 3), 0HWHU 8, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12%8 - 12%\$	4793 - 4795	1HJDWLYH 3), 0HWHU 9, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
12%) - 12&1	4800 - 4802	\$PSV 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12&2 - 12&4	4803 - 4805	\$PSV 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12&5 - 12&7	4806 - 4808	\$PSV 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12&8 - 12&\$	4809 - 4811	5HVHUYHG					3
12&% - 12&'	4812 - 4814	5HVHUYHG					3
12&(- 12'0	4815 - 4817	5HVHUYHG					3
12'1 - 12'3	4818 - 4820	5HVHUYHG					3
12'4 - 12'6	4821 - 4823	5HVHUYHG					3
12'7 - 12'9	4824 - 4826	5HVHUYHG					3
12'\$ - 12'&	4827 - 4829	5HVHUYHG					3
12'' - 12')	4830 - 4832	5HVHUYHG					3
12(0 - 12(2	4833 - 4835	3RVLWLYH :DWWW, 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(3 - 12(5	4836 - 4838	3RVLWLYH :DWWW, 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(6 - 12(8	4839 - 4841	3RVLWLYH :DWWW, 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(9 - 12(%	4842 - 4844	3RVLWLYH 9\$5V, 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12(& - 12((	4845 - 4847	3RVLWLYH 9\$5V, 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12() - 12)1	4848 - 4850	3RVLWLYH 9\$5V, 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)2 - 12)4	4851 - 4853	1HJDWLYH :DWWW, 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)5 - 12)7	4854 - 4856	1HJDWLYH :DWWW, 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)8 - 12)\$	4857 - 4859	1HJDWLYH :DWWW, 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
12)% - 12)'	4860 - 4862	1HJDWLYH 9\$5V, 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
12)(- 1300	4863 - 4865	1HJDWLYH 9\$5V, 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1301 - 1303	4866 - 4868	1HJDWLYH 9\$5V, 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1304 - 1306	4869 - 4871	9\$V, 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1307 - 1309	4872 - 4874	9\$V, 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
130\$ - 130&	4875 - 4877	9\$V, 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
130' - 130)	4878 - 4880	3RVLWLYH 3), 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1310 - 1312	4881 - 4883	3RVLWLYH 3), 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1313 - 1315	4884 - 4886	3RVLWLYH 3), 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1316 - 1318	4887 - 4889	1HJDWLYH 3), 0HWHU 10, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1319 - 131%	4890 - 4892	1HJDWLYH 3), 0HWHU 11, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
131& - 131(	4893 - 4895	1HJDWLYH 3), 0HWHU 12, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
1323 - 1325	4900 - 4902	\$PSV 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1326 - 1328	4903 - 4905	\$PSV 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1329 - 132%	4906 - 4908	\$PSV 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
132& - 132(	4909 - 4911	5HVHUYHG					3
132) - 1331	4912 - 4914	5HVHUYHG					3
1332 - 1334	4915 - 4917	5HVHUYHG					3
1335 - 1337	4918 - 4920	5HVHUYHG					3
1338 - 133\$	4921 - 4923	5HVHUYHG					3
133% - 133'	4924 - 4926	5HVHUYHG					3
133(- 1340	4927 - 4929	5HVHUYHG					3
1341 - 1343	4930 - 4932	5HVHUYHG					3
1344 - 1346	4933 - 4935	3RVLWLYH :DWWW, 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1347 - 1349	4936 - 4938	3RVLWLYH :DWWW, 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
134\$ - 134&	4939 - 4941	3RVLWLYH :DWWW, 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
134' - 134)	4942 - 4944	3RVLWLYH 9\$5V, 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1350 - 1352	4945 - 4947	3RVLWLYH 9\$5V, 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1353 - 1355	4948 - 4950	3RVLWLYH 9\$5V, 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1356 - 1358	4951 - 4953	1HJDWLYH :DWWW, 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1359 - 135%	4954 - 4956	1HJDWLYH :DWWW, 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
135& - 135(	4957 - 4959	1HJDWLYH :DWWW, 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
135) - 1361	4960 - 4962	1HJDWLYH 9\$5V, 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1362 - 1364	4963 - 4965	1HJDWLYH 9\$5V, 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1365 - 1367	4966 - 4968	1HJDWLYH 9\$5V, 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1368 - 136\$	4969 - 4971	9\$V, 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
136% - 136'	4972 - 4974	9\$V, 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
136(- 1370	4975 - 4977	9\$V, 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1371 - 1373	4978 - 4980	3RVLWLYH 3), 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1374 - 1376	4981 - 4983	3RVLWLYH 3), 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1377 - 1379	4984 - 4986	3RVLWLYH 3), 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
137\$ - 137&	4987 - 4989	1HJDWLYH 3), 0HWHU 13, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
137' - 137)	4990 - 4992	1HJDWLYH 3), 0HWHU 14, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1380 - 1382	4993 - 4995	1HJDWLYH 3), 0HWHU 15, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
1387 - 1389	5000 - 5002	\$PSV 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
138\$ - 138&	5003 - 5005	\$PSV 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
138' - 138)	5006 - 5008	\$PSV 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1390 - 1392	5009 - 5011	5HVHUYHG					3
1393 - 1395	5012 - 5014	5HVHUYHG					3
1396 - 1398	5015 - 5017	5HVHUYHG					3
1399 - 139%	5018 - 5020	5HVHUYHG					3
139& - 139(	5021 - 5023	5HVHUYHG					3
139) - 13\$1	5024 - 5026	5HVHUYHG					3
13\$2 - 13\$4	5027 - 5029	5HVHUYHG					3
13\$5 - 13\$7	5030 - 5032	5HVHUYHG					3
13\$8 - 13\$\$	5033 - 5035	3RVLWLYH :DWWV, 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13\$% - 13\$'	5036 - 5038	3RVLWLYH :DWWV, 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13\$(- 13%0	5039 - 5041	3RVLWLYH :DWWV, 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13%1 - 13%3	5042 - 5044	3RVLWLYH 9\$5V, 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13%4 - 13%6	5045 - 5047	3RVLWLYH 9\$5V, 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13%7 - 13%9	5048 - 5050	3RVLWLYH 9\$5V, 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13%\$ - 13%&	5051 - 5053	1HJDWLYH :DWWV, 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13%' - 13%)	5054 - 5056	1HJDWLYH :DWWV, 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13&0 - 13&2	5057 - 5059	1HJDWLYH :DWWV, 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13&3 - 13&5	5060 - 5062	1HJDWLYH 9\$5V, 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13&6 - 13&8	5063 - 5065	1HJDWLYH 9\$5V, 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
13&9 - 13&%	5066 - 5068	1HJDWLYH 9\$5V, 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13&& - 13&(	5069 - 5071	9\$V, 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13&) - 13'1	5072 - 5074	9\$V, 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13'2 - 13'4	5075 - 5077	9\$V, 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13'5 - 13'7	5078 - 5080	3RVLWLYH 3), 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13'8 - 13'\$	5081 - 5083	3RVLWLYH 3), 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13'% - 13"	5084 - 5086	3RVLWLYH 3), 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13'(- 13(0	5087 - 5089	1HJDWLYH 3), 0HWHU 16, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13(1 - 13(3	5090 - 5092	1HJDWLYH 3), 0HWHU 17, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13(4 - 13(6	5093 - 5095	1HJDWLYH 3), 0HWHU 18, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
13(% - 13('	5100 - 5102	\$PSV 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13((- 13(0	5103 - 5105	\$PSV 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13)1 - 13)3	5106 - 5108	\$PSV 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
13)4 - 13)6	5109 - 5111	5HVHUYHG					3
13)7 - 13)9	5112 - 5114	5HVHUYHG					3
13)\$ - 13)&	5115 - 5117	5HVHUYHG					3
13)' - 13))	5118 - 5120	5HVHUYHG					3
1400 - 1402	5121 - 5123	5HVHUYHG					3
1403 - 1405	5124 - 5126	5HVHUYHG					3
1406 - 1408	5127 - 5129	5HVHUYHG					3
1409 - 140%	5130 - 5132	5HVHUYHG					3
140& - 140(	5133 - 5135	3RVLWLYH :DWWV, 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
140) - 1411	5136 - 5138	3RVLWLYH :DWWV, 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1412 - 1414	5139 - 5141	3RVLWLYH :DWWV, 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1415 - 1417	5142 - 5144	3RVLWLYH 9\$5V, 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1418 - 141\$	5145 - 5147	3RVLWLYH 9\$5V, 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
141% - 141'	5148 - 5150	3RVLWLYH 9\$5V, 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
141(- 1420	5151 - 5153	1HJDWLYH :DWWV, 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1421 - 1423	5154 - 5156	1HJDWLYH :DWWV, 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1424 - 1426	5157 - 5159	1HJDWLYH :DWWV, 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1427 - 1429	5160 - 5162	1HJDWLYH 9\$5V, 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
142\$ - 142&	5163 - 5165	1HJDWLYH 9\$5V, 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
142' - 142)	5166 - 5168	1HJDWLYH 9\$5V, 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1430 - 1432	5169 - 5171	9\$V, 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1433 - 1435	5172 - 5174	9\$V, 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1436 - 1438	5175 - 5177	9\$V, 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1439 - 143%	5178 - 5180	3RVLWLYH 3), 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
143& - 143(	5181 - 5183	3RVLWLYH 3), 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
143) - 1441	5184 - 5186	3RVLWLYH 3), 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1442 - 1444	5187 - 5189	1HJDWLYH 3), 0HWHU 19, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1445 - 1447	5190 - 5192	1HJDWLYH 3), 0HWHU 20, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1448 - 144\$	5193 - 5195	1HJDWLYH 3), 0HWHU 21, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
144) - 1451	5200 - 5202	\$PSV 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1452 - 1454	5203 - 5205	\$PSV 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1455 - 1457	5206 - 5208	\$PSV 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1458 - 145\$	5209 - 5211	5HVHUYHG					3
145% - 145'	5212 - 5214	5HVHUYHG					3
145(- 1460	5215 - 5217	5HVHUYHG					3
1461 - 1463	5218 - 5220	5HVHUYHG					3
1464 - 1466	5221 - 5223	5HVHUYHG					3
1467 - 1469	5224 - 5226	5HVHUYHG					3
146\$ - 146&	5227 - 5229	5HVHUYHG					3
146' - 146)	5230 - 5232	5HVHUYHG					3
1470 - 1472	5233 - 5235	3RVLWLYH :DWWW, 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1473 - 1475	5236 - 5238	3RVLWLYH :DWWW, 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1476 - 1478	5239 - 5241	3RVLWLYH :DWWW, 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1479 - 147%	5242 - 5244	3RVLWLYH 9\$5V, 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
147& - 147(	5245 - 5247	3RVLWLYH 9\$5V, 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
147) - 1481	5248 - 5250	3RVLWLYH 9\$5V, 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1482 - 1484	5251 - 5253	1HJDWLYH :DWWW, 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1485 - 1487	5254 - 5256	1HJDWLYH :DWWW, 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1488 - 148\$	5257 - 5259	1HJDWLYH :DWWW, 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
148% - 148'	5260 - 5262	1HJDWLYH 9\$5V, 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
148(- 1490	5263 - 5265	1HJDWLYH 9\$5V, 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1491 - 1493	5266 - 5268	1HJDWLYH 9\$5V, 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1494 - 1496	5269 - 5271	9\$V, 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1497 - 1499	5272 - 5274	9\$V, 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
149\$ - 149&	5275 - 5277	9\$V, 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
149' - 149)	5278 - 5280	3RVLWLYH 3), 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
14\$0 - 14\$2	5281 - 5283	3RVLWLYH 3), 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
14\$3 - 14\$5	5284 - 5286	3RVLWLYH 3), 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
14\$6 - 14\$8	5287 - 5289	1HJDWLYH 3), 0HWHU 22, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
14\$9 - 14\$%	5290 - 5292	1HJDWLYH 3), 0HWHU 23, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
14\$& - 14\$(	5293 - 5295	1HJDWLYH 3), 0HWHU 24, 0LQ \$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
Short term Primary Maximum Block						read-only	
14%3 - 14%4	5300 - 5301	9ROWV \$UHYLXV 'HPDQG LQWHUYDO 6KRUV 7HUP 0D[LXP	)2\$7	0 WR 9999 0	YROW	0D[LXP LQVWDQWQDHRXV YDOXH PHDVXUHG GXULQJ WKH GHPDQG LQWHUYDO EHURH WKH RQH PRVW UHFHQWV FRPSOHWHG.	2
14%5 - 14%6	5302 - 5303	5HVHUYHG					2
14%7 - 14%8	5304 - 5305	5HVHUYHG					2
14%9 - 14%\$	5306 - 5307	5HVHUYHG					2
14%% - 14%&	5308 - 5309	5HVHUYHG					2
14%' - 14%(	5310 - 5311	5HVHUYHG					2
14%) - 14&0	5312 - 5313	9ROWV , 0D[LXP	)2\$7	0 WR 9999 0	YROW		2
14&1 - 14&2	5314 - 5315	5HVHUYHG					2
14&3 - 14&4	5316 - 5317	5HVHUYHG					2
14&5 - 14&6	5318 - 5319	5HVHUYHG					2
14&7 - 14&8	5320 - 5321	5HVHUYHG				2	
14&9 - 14&\$	5322 - 5323	9ROWV , 0D[LXP	)2\$7	0 WR 9999 0	YROW	2	
						%ORFN 6LJH:	24
Primary Maximum Block (Voltage and frequency)						read-only	
14'1 - 14'2	5330 - 5331	9ROWV \$-1, 0D[LXP	)2\$7	0 WR 9999 0	YROW		2
14'3 - 14'4	5332 - 5333	5HVHUYHG					2
14'5 - 14'6	5334 - 5335	5HVHUYHG					2
14'7 - 14'8	5336 - 5337	5HVHUYHG					2
14'9 - 14'\$	5338 - 5339	5HVHUYHG					2
14'% - 14'&	5340 - 5341	5HVHUYHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
14" - 14'(	5342 - 5343	)UHTXHQF, 0D[LPXP	)2\$7	0 WR 65.00	+]		2
						%ORFN 6LJH:	14
Primary Maximum Block						read-only	
1517 - 1518	5400 - 5401	\$PSV 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
1519 - 151\$	5402 - 5403	\$PSV 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
151% - 151&	5404 - 5405	\$PSV 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
151' - 151(	5406 - 5407	5HVHUYHG					2
151) - 1520	5408 - 5409	5HVHUYHG					2
1521 - 1522	5410 - 5411	5HVHUYHG					2
1523 - 1524	5412 - 5413	5HVHUYHG					2
1525 - 1526	5414 - 5415	5HVHUYHG					2
1527 - 1528	5416 - 5417	5HVHUYHG					2
1529 - 152\$	5418 - 5419	5HVHUYHG					2
152% - 152&	5420 - 5421	5HVHUYHG					2
152' - 152(	5422 - 5423	3RVLWLYH :DWWV, 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
152) - 1530	5424 - 5425	3RVLWLYH :DWWV, 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
1531 - 1532	5426 - 5427	3RVLWLYH :DWWV, 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
1533 - 1534	5428 - 5429	3RVLWLYH 9\$5V, 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1535 - 1536	5430 - 5431	3RVLWLYH 9\$5V, 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1537 - 1538	5432 - 5433	3RVLWLYH 9\$5V, 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1539 - 153\$	5434 - 5435	1HJDWLYH :DWWV, 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
153% - 153&	5436 - 5437	1HJDWLYH :DWWV, 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
153' - 153(	5438 - 5439	1HJDWLYH :DWWV, 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
153) - 1540	5440 - 5441	1HJDWLYH 9\$5V, 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1541 - 1542	5442 - 5443	1HJDWLYH 9\$5V, 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1543 - 1544	5444 - 5445	1HJDWLYH 9\$5V, 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1545 - 1546	5446 - 5447	9\$V, 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1547 - 1548	5448 - 5449	9\$V, 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1549 - 154\$	5450 - 5451	9\$V, 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
154% - 154&	5452 - 5453	3RVLWLYH 3), 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
154' - 154(	5454 - 5455	3RVLWLYH 3), 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
154) - 1550	5456 - 5457	3RVLWLYH 3), 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1551 - 1552	5458 - 5459	1HJDWLYH 3), 0HWHU 1, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1553 - 1554	5460 - 5461	1HJDWLYH 3), 0HWHU 2, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1555 - 1556	5462 - 5463	1HJDWLYH 3), 0HWHU 3, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
157% - 157&	5500 - 5501	\$PSV 0HWHU 4, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
157' - 157(	5502 - 5503	\$PSV 0HWHU 5, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
157) - 1580	5504 - 5505	\$PSV 0HWHU 6, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
1581 - 1582	5506 - 5507	5HVHUYHG					2
1583 - 1584	5508 - 5509	5HVHUYHG					2
1585 - 1586	5510 - 5511	5HVHUYHG					2
1587 - 1588	5512 - 5513	5HVHUYHG					2
1589 - 158\$	5514 - 5515	5HVHUYHG					2
158% - 158&	5516 - 5517	5HVHUYHG					2
158' - 158(	5518 - 5519	5HVHUYHG					2
158) - 1590	5520 - 5521	5HVHUYHG					2
1591 - 1592	5522 - 5523	3RVLWLYH :DWWV, 0HWHU 4 , 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2
1593 - 1594	5524 - 5525	3RVLWLYH :DWWV, 0HWHU 5, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWV		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
15(3 - 15(4	5604 - 5605	\$PSV 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
15(5 - 15(6	5606 - 5607	5HVHUYHG					2
15(7 - 15(8	5608 - 5609	5HVHUYHG					2
15(9 - 15(\$	5610 - 5611	5HVHUYHG					2
15(% - 15(&	5612 - 5613	5HVHUYHG					2
15(' - 15((	5614 - 5615	5HVHUYHG					2
15() - 15)0	5616 - 5617	5HVHUYHG					2
15)1 - 15)2	5618 - 5619	5HVHUYHG					2
15)3 - 15)4	5620 - 5621	5HVHUYHG					2
15)5 - 15)6	5622 - 5623	3RVLWLYH :DWWW, 0HWHU 7 , 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
15)7 - 15)8	5624 - 5625	3RVLWLYH :DWWW, 0HWHU 8, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
15)9 - 15)\$	5626 - 5627	3RVLWLYH :DWWW, 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
15)% - 15)&	5628 - 5629	3RVLWLYH 9\$5V, 0HWHU 7, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
15)' - 15)(	5630 - 5631	3RVLWLYH 9\$5V, 0HWHU 8, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
15)) - 1600	5632 - 5633	3RVLWLYH 9\$5V, 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1601 - 1602	5634 - 5635	1HJDWLYH :DWWW, 0HWHU 7, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
1603 - 1604	5636 - 5637	1HJDWLYH :DWWW, 0HWHU 8, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
1605 - 1606	5638 - 5639	1HJDWLYH :DWWW, 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
1607 - 1608	5640 - 5641	1HJDWLYH 9\$5V, 0HWHU 7, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1609 - 160\$	5642 - 5643	1HJDWLYH 9\$5V, 0HWHU 8, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
160% - 160&	5644 - 5645	1HJDWLYH 9\$5V, 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
160' - 160(	5646 - 5647	9\$V, 0HWHU 7, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
160) - 1610	5648 - 5649	9\$V, 0HWHU 8, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1611 - 1612	5650 - 5651	9\$V, 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1613 - 1614	5652 - 5653	3RVLWLYH 3), 0HWHU 7, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1615 - 1616	5654 - 5655	3RVLWLYH 3), 0HWHU 8, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1617 - 1618	5656 - 5657	3RVLWLYH 3), 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1619 - 161\$	5658 - 5659	1HJDWLYH 3), 0HWHU 7, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
161% - 161&	5660 - 5661	1HJDWLYH 3), 0HWHU 8, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
161' - 161(	5662 - 5663	1HJDWLYH 3), 0HWHU 9, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6LJH:	64
1643 - 1644	5700 - 5701	\$PSV 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
1645 - 1646	5702 - 5703	\$PSV 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
1647 - 1648	5704 - 5705	\$PSV 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
1649 - 164\$	5706 - 5707	5HVHUYHG					2
164% - 164&	5708 - 5709	5HVHUYHG					2
164' - 164(	5710 - 5711	5HVHUYHG					2
164) - 1650	5712 - 5713	5HVHUYHG					2
1651 - 1652	5714 - 5715	5HVHUYHG					2
1653 - 1654	5716 - 5717	5HVHUYHG					2
1655 - 1656	5718 - 5719	5HVHUYHG					2
1657 - 1658	5720 - 5721	5HVHUYHG					2
1659 - 165\$	5722 - 5723	3RVLWLYH :DWWW, 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
165% - 165&	5724 - 5725	3RVLWLYH :DWWW, 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
165' - 165(	5726 - 5727	3RVLWLYH :DWWW, 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
165) - 1660	5728 - 5729	3RVLWLYH 9\$5V, 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1661 - 1662	5730 - 5731	3RVLWLYH 9\$5V, 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1663 - 1664	5732 - 5733	3RVLWLYH 9\$5V, 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1665 - 1666	5734 - 5735	1HJDWLYH :DWWW, 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
1667 - 1668	5736 - 5737	1HJDWLYH :DWWW, 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1669 - 166\$	5738 - 5739	1HJDWLYH :DWWV, 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	ZDWWV		2
166% - 166&	5740 - 5741	1HJDWLYH 9\$5V, 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
166' - 166(	5742 - 5743	1HJDWLYH 9\$5V, 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
166) - 1670	5744 - 5745	1HJDWLYH 9\$5V, 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$5V		2
1671 - 1672	5746 - 5747	9\$V, 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
1673 - 1674	5748 - 5749	9\$V, 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
1675 - 1676	5750 - 5751	9\$V, 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-9999 0 WR +9999 0	9\$V		2
1677 - 1678	5752 - 5753	3RVLWLYH 3), 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1679 - 167\$	5754 - 5755	3RVLWLYH 3), 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
167% - 167&	5756 - 5757	3RVLWLYH 3), 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
167' - 167(	5758 - 5759	1HJDWLYH 3), 0HWHU 10, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
167) - 1680	5760 - 5761	1HJDWLYH 3), 0HWHU 11, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
1681 - 1682	5762 - 5763	1HJDWLYH 3), 0HWHU 12, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
16\$7 - 16\$8	5800 - 5801	\$PSV 0HWHU 13, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
16\$9 - 16\$\$	5802 - 5803	\$PSV 0HWHU 14, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
16\$% - 16\$&	5804 - 5805	\$PSV 0HWHU 15, 0D[LPXP \$YJ 'HPDQG	) /2\$7	0 WR 9999 0	DPSV		2
16\$' - 16\$(	5806 - 5807	5HVHUYHG					2
16\$) - 16%0	5808 - 5809	5HVHUYHG					2
16%1 - 16%2	5810 - 5811	5HVHUYHG					2
16%3 - 16%4	5812 - 5813	5HVHUYHG					2
16%5 - 16%6	5814 - 5815	5HVHUYHG					2
16%7 - 16%8	5816 - 5817	5HVHUYHG					2
16%9 - 16%\$	5818 - 5819	5HVHUYHG					2
16%% - 16%&	5820 - 5821	5HVHUYHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
16%' - 16%(	5822 - 5823	3RVLWLYH :DWWV, 0HWHU 13, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
16%) - 16&0	5824 - 5825	3RVLWLYH :DWWV, 0HWHU 14, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&1 - 16&2	5826 - 5827	3RVLWLYH :DWWV, 0HWHU 15, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&3 - 16&4	5828 - 5829	3RVLWLYH 9\$5V, 0HWHU 13, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
16&5 - 16&6	5830 - 5831	3RVLWLYH 9\$5V, 0HWHU 14, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
16&7 - 16&8	5832 - 5833	3RVLWLYH 9\$5V, 0HWHU 15, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
16&9 - 16&\$	5834 - 5835	1HJDWLYH :DWWV, 0HWHU 13, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&% - 16&&	5836 - 5837	1HJDWLYH :DWWV, 0HWHU 14, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&' - 16&(	5838 - 5839	1HJDWLYH :DWWV, 0HWHU 15, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
16&) - 16'0	5840 - 5841	1HJDWLYH 9\$5V, 0HWHU 13, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
16'1 - 16'2	5842 - 5843	1HJDWLYH 9\$5V, 0HWHU 14, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
16'3 - 16'4	5844 - 5845	1HJDWLYH 9\$5V, 0HWHU 15, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
16'5 - 16'6	5846 - 5847	9\$V, 0HWHU 13, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
16'7 - 16'8	5848 - 5849	9\$V, 0HWHU 14, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
16'9 - 16'\$	5850 - 5851	9\$V, 0HWHU 15, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
16%' - 16'&	5852 - 5853	3RVLWLYH 3), 0HWHU 13, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
16'' - 16'(<	5854 - 5855	3RVLWLYH 3), 0HWHU 14, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
16') - 16(0	5856 - 5857	3RVLWLYH 3), 0HWHU 15, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
16(1 - 16(2	5858 - 5859	1HJDWLYH 3), 0HWHU 13, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
16(3 - 16(4	5860 - 5861	1HJDWLYH 3), 0HWHU 14, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
16(5 - 16(6	5862 - 5863	1HJDWLYH 3), 0HWHU 15, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
170% - 170&	5900 - 5901	\$PSV 0HWHU 16, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
170' - 170(	5902 - 5903	\$PSV 0HWHU 17, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
170) - 1710	5904 - 5905	\$PSV 0HWHU 18, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	0 WR 9999 0	DPSV		2
1711 - 1712	5906 - 5907	5HVHUYHG					2
1713 - 1714	5908 - 5909	5HVHUYHG					2
1715 - 1716	5910 - 5911	5HVHUYHG					2
1717 - 1718	5912 - 5913	5HVHUYHG					2
1719 - 171\$	5914 - 5915	5HVHUYHG					2
171% - 171&	5916 - 5917	5HVHUYHG					2
171' - 171(	5918 - 5919	5HVHUYHG					2
171) - 1720	5920 - 5921	5HVHUYHG					2
1721 - 1722	5922 - 5923	3RVLWLYH :DWWV, 0HWHU 16, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1723 - 1724	5924 - 5925	3RVLWLYH :DWWV, 0HWHU 17, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1725 - 1726	5926 - 5927	3RVLWLYH :DWWV, 0HWHU 18, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1727 - 1728	5928 - 5929	3RVLWLYH 9\$5V, 0HWHU 16, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1729 - 172\$	5930 - 5931	3RVLWLYH 9\$5V, 0HWHU 17, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
172% - 172&	5932 - 5933	3RVLWLYH 9\$5V, 0HWHU 18, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
172' - 172(	5934 - 5935	1HJDWLYH :DWWV, 0HWHU 16, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
172) - 1730	5936 - 5937	1HJDWLYH :DWWV, 0HWHU 17, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1731 - 1732	5938 - 5939	1HJDWLYH :DWWV, 0HWHU 18, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	ZDWWV		2
1733 - 1734	5940 - 5941	1HJDWLYH 9\$5V, 0HWHU 16, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1735 - 1736	5942 - 5943	1HJDWLYH 9\$5V, 0HWHU 17, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1737 - 1738	5944 - 5945	1HJDWLYH 9\$5V, 0HWHU 18, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$5V		2
1739 - 173\$	5946 - 5947	9\$V, 0HWHU 16, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2
173% - 173&	5948 - 5949	9\$V, 0HWHU 17, 0D[LXPX \$YJ 'HPDQG	) / 2 \$ 7	-9999 0 WR +9999 0	9\$V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
173' - 173(	5950 - 5951	9\$V, 0HWHU 18, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$V		2
173) - 1740	5952 - 5953	3RVLWLYH 3), 0HWHU 16, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
1741 - 1742	5954 - 5955	3RVLWLYH 3), 0HWHU 17, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
1743 - 1744	5956 - 5957	3RVLWLYH 3), 0HWHU 18, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
1745 - 1746	5958 - 5959	1HJDWLYH 3), 0HWHU 16, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
1747 - 1748	5960 - 5961	1HJDWLYH 3), 0HWHU 17, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
1749 - 174\$	5962 - 5963	1HJDWLYH 3), 0HWHU 18, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
176) - 1770	6000 - 6001	\$PSV 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
1771 - 1772	6002 - 6003	\$PSV 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
1773 - 1774	6004 - 6005	\$PSV 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)/2\$7	0 WR 9999 0	DPSV		2
1775 - 1776	6006 - 6007	5HVHUYHG					2
1777 - 1778	6008 - 6009	5HVHUYHG					2
1779 - 177\$	6010 - 6011	5HVHUYHG					2
177% - 177&	6012 - 6013	5HVHUYHG					2
177' - 177(	6014 - 6015	5HVHUYHG					2
177) - 1780	6016 - 6017	5HVHUYHG					2
1781 - 1782	6018 - 6019	5HVHUYHG					2
1783 - 1784	6020 - 6021	5HVHUYHG					2
1785 - 1786	6022 - 6023	3RVLWLYH :DWWW, 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
1787 - 1788	6024 - 6025	3RVLWLYH :DWWW, 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
1789 - 178\$	6026 - 6027	3RVLWLYH :DWWW, 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	ZDWWW		2
178% - 178&	6028 - 6029	3RVLWLYH 9\$5V, 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
178' - 178(	6030 - 6031	3RVLWLYH 9\$5V, 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2
178) - 1790	6032 - 6033	3RVLWLYH 9\$5V, 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)/2\$7	-9999 0 WR +9999 0	9\$5V		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1791 - 1792	6034 - 6035	1HJDWLYH :DWWW, 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
1793 - 1794	6036 - 6037	1HJDWLYH :DWWW, 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
1795 - 1796	6038 - 6039	1HJDWLYH :DWWW, 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
1797 - 1798	6040 - 6041	1HJDWLYH 9\$5V, 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1799 - 179\$	6042 - 6043	1HJDWLYH 9\$5V, 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
179% - 179&	6044 - 6045	1HJDWLYH 9\$5V, 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
179' - 179(	6046 - 6047	9\$V, 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
179) - 1790	6048 - 6049	9\$V, 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
17\$1 - 17\$2	6050 - 6051	9\$V, 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
17\$3 - 17\$4	6052 - 6053	3RVLWLYH 3), 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
17\$5 - 17\$6	6054 - 6055	3RVLWLYH 3), 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
17\$7 - 17\$8	6056 - 6057	3RVLWLYH 3), 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
17\$9 - 17\$\$	6058 - 6059	1HJDWLYH 3), 0HWHU 19, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
17\$% - 17\$&	6060 - 6061	1HJDWLYH 3), 0HWHU 20, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
17\$(' - 17\$(	6062 - 6063	1HJDWLYH 3), 0HWHU 21, 0D[LPXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
17'3 - 17'4	6100 - 6101	\$PSV 0HWHU 22, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
17'5 - 17'6	6102 - 6103	\$PSV 0HWHU 23, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
17'7 - 17'8	6104 - 6105	\$PSV 0HWHU 24, 0D[LPXP \$YJ 'HPDQG	)2\$7	0 WR 9999 0	DPSV		2
17'9 - 17'\$	6106 - 6107	5HVHUYHG					2
17'% - 17'&	6108 - 6109	5HVHUYHG					2
17'" - 17'(<	6110 - 6111	5HVHUYHG					2
17') - 17'(0	6112 - 6113	5HVHUYHG					2
17'(1 - 17'(2	6114 - 6115	5HVHUYHG					2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
17(3 - 17(4	6116 - 6117	5HVHUYPHG					2
17(5 - 17(6	6118 - 6119	5HVHUYPHG					2
17(7 - 17(8	6120 - 6121	5HVHUYPHG					2
17(9 - 17(\$	6122 - 6123	3RVLWLYH :DWWW, 0HWHU 22, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17(% - 17(&	6124 - 6125	3RVLWLYH :DWWW, 0HWHU 23, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17(' - 17((	6126 - 6127	3RVLWLYH :DWWW, 0HWHU 24, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17() - 17)0	6128 - 6129	3RVLWLYH 9\$5V, 0HWHU 22, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
17)1 - 17)2	6130 - 6131	3RVLWLYH 9\$5V, 0HWHU 23, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
17)3 - 17)4	6132 - 6133	3RVLWLYH 9\$5V, 0HWHU 24, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
17)5 - 17)6	6134 - 6135	1HJDWLYH :DWWW, 0HWHU 22, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17)7 - 17)8	6136 - 6137	1HJDWLYH :DWWW, 0HWHU 23, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17)9 - 17)\$	6138 - 6139	1HJDWLYH :DWWW, 0HWHU 24, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	ZDWWW		2
17)% - 17)&	6140 - 6141	1HJDWLYH 9\$5V, 0HWHU 22, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
17)' - 17)(	6142 - 6143	1HJDWLYH 9\$5V, 0HWHU 23, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
17)) - 1800	6144 - 6145	1HJDWLYH 9\$5V, 0HWHU 24, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$5V		2
1801 - 1802	6146 - 6147	9\$V, 0HWHU 22, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1803 - 1804	6148 - 6149	9\$V, 0HWHU 23, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1805 - 1806	6150 - 6151	9\$V, 0HWHU 24, 0D[LXP \$YJ 'HPDQG	)2\$7	-9999 0 WR +9999 0	9\$V		2
1807 - 1808	6152 - 6153	3RVLWLYH 3), 0HWHU 22, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
1809 - 180\$	6154 - 6155	3RVLWLYH 3), 0HWHU 23, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
180% - 180&	6156 - 6157	3RVLWLYH 3), 0HWHU 24, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
180' - 180(	6158 - 6159	1HJDWLYH 3), 0HWHU 22, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2
180) - 1810	6160 - 6161	1HJDWLYH 3), 0HWHU 23, 0D[LXP \$YJ 'HPDQG	)2\$7	-1.00 WR +1.00	QRQH		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1811 - 1812	6162 - 6163	1HJDWLYH 3), 0HWHU 24, 0D[LPXP \$YJ 'HPDQG	) /2\$7	-1.00 WR +1.00	QRQH		2
						%ORFN 6L]H:	64
Primary maximum Timestamp Block							read-only
1837 - 1839	6200 - 6202	9ROWV , PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
183\$ - 183&	6203 - 6205	5HVHUYHG					3
183' - 183)	6206 - 6208	5HVHUYHG					3
1840 - 1842	6209 - 6211	5HVHUYHG					3
1843 - 1845	6212 - 6214	5HVHUYHG					3
1846 - 1848	6215 - 6217	5HVHUYHG					3
1849 - 184%	6218 - 6220	)JHTXHQF, PD[7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	21
Primary maximum Timestamp Block							read-only
189% - 189'	6300 - 6302	\$PSV 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189(- 189\$	6303 - 6305	\$PSV 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189! - 189&	6306 - 6308	\$PSV 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189\$ - 189&	6309 - 6311	5HVHUYHG					3
189% - 189&	6312 - 6314	5HVHUYHG					3
189& - 189\$	6315 - 6317	5HVHUYHG					3
189\$' - 189\$)	6318 - 6320	5HVHUYHG					3
189%0 - 189%2	6321 - 6323	5HVHUYHG					3
189%3 - 189%5	6324 - 6326	5HVHUYHG					3
189%6 - 189%8	6327 - 6329	5HVHUYHG					3
189%9 - 189%%	6330 - 6332	5HVHUYHG					3
189%& - 189%(	6333 - 6335	3RVLWLYH :DWWV, 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189%) - 189&1	6336 - 6338	3RVLWLYH :DWWV, 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189%2 - 189%4	6339 - 6341	3RVLWLYH :DWWV, 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189%5 - 189%7	6342 - 6344	3RVLWLYH 9\$5V, 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189%8 - 189%\$	6345 - 6347	3RVLWLYH 9\$5V, 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
189%& - 189%'	6348 - 6350	3RVLWLYH 9\$5V, 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
18& - 18'0	6351 - 6353	1HJDWLYH :DWWW, 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'1 - 18'3	6354 - 6356	1HJDWLYH :DWWW, 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'4 - 18'6	6357 - 6359	1HJDWLYH :DWWW, 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'7 - 18'9	6360 - 6362	1HJDWLYH 9\$5V, 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'\$ - 18'&	6363 - 6365	1HJDWLYH 9\$5V, 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18'' - 18')	6366 - 6368	1HJDWLYH 9\$5V, 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(0 - 18(2	6369 - 6371	9\$V, 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(3 - 18(5	6372 - 6374	9\$V, 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(6 - 18(8	6375 - 6377	9\$V, 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(9 - 18(%	6378 - 6380	3RVLWLYH 3), 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18(& - 18((	6381 - 6383	3RVLWLYH 3), 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18() - 18)1	6384 - 6386	3RVLWLYH 3), 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18)2 - 18)4	6387 - 6389	1HJDWLYH 3), 0HWHU 1, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18)5 - 18)7	6390 - 6392	1HJDWLYH 3), 0HWHU 2, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
18)8 - 18)\$	6393 - 6395	1HJDWLYH 3), 0HWHU 3, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
18)) - 1901	6400 - 6402	\$PSV 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1902 - 1904	6403 - 6405	\$PSV 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1905 - 1907	6406 - 6408	\$PSV 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1908 - 190\$	6409 - 6411	5HVHUYHG					3
190% - 190'	6412 - 6414	5HVHUYHG					3
190(- 1910	6415 - 6417	5HVHUYHG					3
1911 - 1913	6418 - 6420	5HVHUYHG					3
1914 - 1916	6421 - 6423	5HVHUYHG					3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1917 - 1919	6424 - 6426	5HVHUYHG					3
191\$ - 191&	6427 - 6429	5HVHUYHG					3
191' - 191)	6430 - 6432	5HVHUYHG					3
1920 - 1922	6433 - 6435	3RVLWLYH :DWWV, 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1923 - 1925	6436 - 6438	3RVLWLYH :DWWV, 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1926 - 1928	6439 - 6441	3RVLWLYH :DWWV, 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1929 - 192%	6442 - 6444	3RVLWLYH 9\$5V, 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
192& - 192(192) - 1931	6445 - 6447	3RVLWLYH 9\$5V, 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
192) - 1931	6448 - 6450	3RVLWLYH 9\$5V, 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1932 - 1934	6451 - 6453	1HJDWLYH :DWWV, 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1935 - 1937	6454 - 6456	1HJDWLYH :DWWV, 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1938 - 193\$	6457 - 6459	1HJDWLYH :DWWV, 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
193% - 193'	6460 - 6462	1HJDWLYH 9\$5V, 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
193(- 1940	6463 - 6465	1HJDWLYH 9\$5V, 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1941 - 1943	6466 - 6468	1HJDWLYH 9\$5V, 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1944 - 1946	6469 - 6471	9\$V, 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1947 - 1949	6472 - 6474	9\$V, 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
194\$ - 194&	6475 - 6477	9\$V, 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
194' - 194)	6478 - 6480	3RVLWLYH 3), 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1950 - 1952	6481 - 6483	3RVLWLYH 3), 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1953 - 1955	6484 - 6486	3RVLWLYH 3), 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1956 - 1958	6487 - 6489	1HJDWLYH 3), 0HWHU 4, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1959 - 195%	6490 - 6492	1HJDWLYH 3), 0HWHU 5, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
195& - 195(	6493 - 6495	1HJDWLYH 3, 0HWHU 6, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
1963 - 1965	6500 - 6502	\$PSV 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1966 - 1968	6503 - 6505	\$PSV 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1969 - 196%	6506 - 6508	\$PSV 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
196& - 196(	6509 - 6511	5HVHUYHG					3
196) - 1971	6512 - 6514	5HVHUYHG					3
1972 - 1974	6515 - 6517	5HVHUYHG					3
1975 - 1977	6518 - 6520	5HVHUYHG					3
1978 - 197\$	6521 - 6523	5HVHUYHG					3
197% - 197'	6524 - 6526	5HVHUYHG					3
197(- 1980	6527 - 6529	5HVHUYHG					3
1981 - 1983	6530 - 6532	5HVHUYHG					3
1984 - 1986	6533 - 6535	3RVLWLYH :DWWW, 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1987 - 1989	6536 - 6538	3RVLWLYH :DWWW, 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
198\$ - 198&	6539 - 6541	3RVLWLYH :DWWW, 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
198' - 198)	6542 - 6544	3RVLWLYH 9\$5V, 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1990 - 1992	6545 - 6547	3RVLWLYH 9\$5V, 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1993 - 1995	6548 - 6550	3RVLWLYH 9\$5V, 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1996 - 1998	6551 - 6553	1HJDWLYH :DWWW, 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1999 - 199%	6554 - 6556	1HJDWLYH :DWWW, 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
199& - 199(	6557 - 6559	1HJDWLYH :DWWW, 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
199) - 19\$1	6560 - 6562	1HJDWLYH 9\$5V, 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19\$2 - 19\$4	6563 - 6565	1HJDWLYH 9\$5V, 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19\$5 - 19\$7	6566 - 6568	1HJDWLYH 9\$5V, 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
19\$8 - 19\$\$	6569 - 6571	9\$V, 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19\$% - 19\$'	6572 - 6574	9\$V, 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19\$(- 19%0	6575 - 6577	9\$V, 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19%1 - 19%3	6578 - 6580	3RVLWLYH 3), 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19%4 - 19%6	6581 - 6583	3RVLWLYH 3), 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19%7 - 19%9	6584 - 6586	3RVLWLYH 3), 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19%\$ - 19%&	6587 - 6589	1HJDWLYH 3), 0HWHU 7, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19%' - 19%)	6590 - 6592	1HJDWLYH 3), 0HWHU 8, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19&0 - 19&2	6593 - 6595	1HJDWLYH 3), 0HWHU 9, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
19&7 - 19&9	6600 - 6602	\$PSV 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19&\$ - 19&&	6603 - 6605	\$PSV 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19&' - 19&)	6606 - 6608	\$PSV 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19'0 - 19'2	6609 - 6611	5HVHUYHG					3
19'3 - 19'5	6612 - 6614	5HVHUYHG					3
19'6 - 19'8	6615 - 6617	5HVHUYHG					3
19'9 - 19'%	6618 - 6620	5HVHUYHG					3
19'& - 19'('	6621 - 6623	5HVHUYHG					3
19') - 19'(1	6624 - 6626	5HVHUYHG					3
19(2 - 19(4	6627 - 6629	5HVHUYHG					3
19(5 - 19(7	6630 - 6632	5HVHUYHG					3
19(8 - 19(\$	6633 - 6635	3RVLWLYH :DWWV, 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19(% - 19('	6636 - 6638	3RVLWLYH :DWWV, 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19((- 19)0	6639 - 6641	3RVLWLYH :DWWV, 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)1 - 19)3	6642 - 6644	3RVLWLYH 9\$5V, 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
19)4 - 19)6	6645 - 6647	3RVLWLYH 9\$5V, 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)7 - 19)9	6648 - 6650	3RVLWLYH 9\$5V, 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)\$ - 19)&	6651 - 6653	1HJDWLYH :DWWV, 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
19)' - 19))	6654 - 6656	1HJDWLYH :DWWV, 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$00 - 1\$02	6657 - 6659	1HJDWLYH :DWWV, 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$03 - 1\$05	6660 - 6662	1HJDWLYH 9\$5V, 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$06 - 1\$08	6663 - 6665	1HJDWLYH 9\$5V, 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$09 - 1\$0%	6666 - 6668	1HJDWLYH 9\$5V, 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$0& - 1\$0(	6669 - 6671	9\$V, 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$0) - 1\$11	6672 - 6674	9\$V, 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$12 - 1\$14	6675 - 6677	9\$V, 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$15 - 1\$17	6678 - 6680	3RVLWLYH 3), 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$18 - 1\$1\$	6681 - 6683	3RVLWLYH 3), 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$1% - 1\$1'	6684 - 6686	3RVLWLYH 3), 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$1(- 1\$20	6687 - 6689	1HJDWLYH 3), 0HWHU 10, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$21 - 1\$23	6690 - 6692	1HJDWLYH 3), 0HWHU 11, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$24 - 1\$26	6693 - 6695	1HJDWLYH 3), 0HWHU 12, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96
1\$2% - 1\$2'	6700 - 6702	\$PSV 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$2(- 1\$30	6703 - 6705	\$PSV 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$31 - 1\$33	6706 - 6708	\$PSV 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$34 - 1\$36	6709 - 6711	5HVHUYHG					3
1\$37 - 1\$39	6712 - 6714	5HVHUYHG					3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1\$3\$ - 1\$3&	6715 - 6717	5HVHUYHG					3
1\$3' - 1\$3)	6718 - 6720	5HVHUYHG					3
1\$40 - 1\$42	6721 - 6723	5HVHUYHG					3
1\$43 - 1\$45	6724 - 6726	5HVHUYHG					3
1\$46 - 1\$48	6727 - 6729	5HVHUYHG					3
1\$49 - 1\$4%	6730 - 6732	5HVHUYHG					3
1\$4& - 1\$4(	6733 - 6735	3RVLWLYH :DWWV, 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$4) - 1\$51	6736 - 6738	3RVLWLYH :DWWV, 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$52 - 1\$54	6739 - 6741	3RVLWLYH :DWWV, 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$55 - 1\$57	6742 - 6744	3RVLWLYH 9\$5V, 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$58 - 1\$5\$	6745 - 6747	3RVLWLYH 9\$5V, 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$5% - 1\$5'	6748 - 6750	3RVLWLYH 9\$5V, 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$5(- 1\$60	6751 - 6753	1HJDWLYH :DWWV, 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$61 - 1\$63	6754 - 6756	1HJDWLYH :DWWV, 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$64 - 1\$66	6757 - 6759	1HJDWLYH :DWWV, 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$67 - 1\$69	6760 - 6762	1HJDWLYH 9\$5V, 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$6\$ - 1\$6&	6763 - 6765	1HJDWLYH 9\$5V, 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$6' - 1\$6)	6766 - 6768	1HJDWLYH 9\$5V, 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$70 - 1\$72	6769 - 6771	9\$V, 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$73 - 1\$75	6772 - 6774	9\$V, 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$76 - 1\$78	6775 - 6777	9\$V, 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$79 - 1\$7%	6778 - 6780	3RVLWLYH 3), 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$7& - 1\$7(	6781 - 6783	3RVLWLYH 3), 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$7) - 1\$81	6784 - 6786	3RVLWLYH 3), 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1\$82 - 1\$84	6787 - 6789	1HJDWLYH 3), 0HWHU 13, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$85 - 1\$87	6790 - 6792	1HJDWLYH 3), 0HWHU 14, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$88 - 1\$8\$	6793 - 6795	1HJDWLYH 3), 0HWHU 15, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
1\$8) - 1\$91	6800 - 6802	\$PSV 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$92 - 1\$94	6803 - 6805	\$PSV 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$95 - 1\$97	6806 - 6808	\$PSV 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$98 - 1\$9\$	6809 - 6811	5HVHUYHG					3
1\$9% - 1\$9'	6812 - 6814	5HVHUYHG					3
1\$9(- 1\$90	6815 - 6817	5HVHUYHG					3
1\$9! - 1\$93	6818 - 6820	5HVHUYHG					3
1\$9\$ - 1\$96	6821 - 6823	5HVHUYHG					3
1\$97 - 1\$99	6824 - 6826	5HVHUYHG					3
1\$9\$ - 1\$9&	6827 - 6829	5HVHUYHG					3
1\$9' - 1\$9)	6830 - 6832	5HVHUYHG					3
1\$%0 - 1\$%2	6833 - 6835	3RVLWLYH :DWWW, 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%3 - 1\$%5	6836 - 6838	3RVLWLYH :DWWW, 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%6 - 1\$%8	6839 - 6841	3RVLWLYH :DWWW, 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%9 - 1\$%%	6842 - 6844	3RVLWLYH 9\$5V, 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%& - 1\$%(	6845 - 6847	3RVLWLYH 9\$5V, 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$%) - 1\$&1	6848 - 6850	3RVLWLYH 9\$5V, 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&2 - 1\$&4	6851 - 6853	1HJDWLYH :DWWW, 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1\$&5 - 1\$&7	6854 - 6856	1HJDWLYH :DWWV, 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&8 - 1\$&\$	6857 - 6859	1HJDWLYH :DWWV, 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&% - 1\$&'	6860 - 6862	1HJDWLYH 9\$5V, 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$&(- 1\$'0	6863 - 6865	1HJDWLYH 9\$5V, 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'1 - 1\$'3	6866 - 6868	1HJDWLYH 9\$5V, 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'4 - 1\$'6	6869 - 6871	9\$V, 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'7 - 1\$'9	6872 - 6874	9\$V, 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'\$ - 1\$'&	6875 - 6877	9\$V, 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$'' - 1\$')	6878 - 6880	3RVLWLYH 3), 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(0 - 1\$(2	6881 - 6883	3RVLWLYH 3), 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(3 - 1\$(5	6884 - 6886	3RVLWLYH 3), 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(6 - 1\$(8	6887 - 6889	1HJDWLYH 3), 0HWHU 16, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(9 - 1\$(%	6890 - 6892	1HJDWLYH 3), 0HWHU 17, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$(& - 1\$((	6893 - 6895	1HJDWLYH 3), 0HWHU 18, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96
1\$)3 - 1\$)5	6900 - 6902	\$PSV 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$)6 - 1\$)8	6903 - 6905	\$PSV 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$)9 - 1\$)%	6906 - 6908	\$PSV 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1\$)& - 1\$)(	6909 - 6911	5HVHUYHG					3
1\$)) - 1%01	6912 - 6914	5HVHUYHG					3
1%02 - 1%04	6915 - 6917	5HVHUYHG					3
1%05 - 1%07	6918 - 6920	5HVHUYHG					3
1%08 - 1%0\$	6921 - 6923	5HVHUYHG					3
1%0% - 1%0'	6924 - 6926	5HVHUYHG					3
1%0(- 1%10	6927 - 6929	5HVHUYHG					3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1%11 - 1%13	6930 - 6932	5HVHUYHG					3
1%14 - 1%16	6933 - 6935	3RVLWLYH :DWWV, 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%17 - 1%19	6936 - 6938	3RVLWLYH :DWWV, 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%1\$ - 1%1&	6939 - 6941	3RVLWLYH :DWWV, 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%1' - 1%1)	6942 - 6944	3RVLWLYH 9\$5V, 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%20 - 1%22	6945 - 6947	3RVLWLYH 9\$5V, 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%23 - 1%25	6948 - 6950	3RVLWLYH 9\$5V, 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%26 - 1%28	6951 - 6953	1HJDWLYH :DWWV, 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%29 - 1%2%	6954 - 6956	1HJDWLYH :DWWV, 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%2& - 1%2(	6957 - 6959	1HJDWLYH :DWWV, 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%2) - 1%31	6960 - 6962	1HJDWLYH 9\$5V, 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%32 - 1%34	6963 - 6965	1HJDWLYH 9\$5V, 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%35 - 1%37	6966 - 6968	1HJDWLYH 9\$5V, 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%38 - 1%3\$	6969 - 6971	9\$V, 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%3% - 1%3'	6972 - 6974	9\$V, 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%3(- 1%40	6975 - 6977	9\$V, 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%41 - 1%43	6978 - 6980	3RVLWLYH 3), 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%44 - 1%46	6981 - 6983	3RVLWLYH 3), 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%47 - 1%49	6984 - 6986	3RVLWLYH 3), 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%4\$ - 1%4&	6987 - 6989	1HJDWLYH 3), 0HWHU 19, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%4' - 1%4)	6990 - 6992	1HJDWLYH 3), 0HWHU 20, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%50 - 1%52	6993 - 6995	1HJDWLYH 3), 0HWHU 21, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6L]H:	96

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1%57 - 1%59	7000 - 7002	\$PSV 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%5\$ - 1%5&	7003 - 7005	\$PSV 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%5' - 1%5)	7006 - 7008	\$PSV 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%60 - 1%62	7009 - 7011	5HVHUYHG					3
1%63 - 1%65	7012 - 7014	5HVHUYHG					3
1%66 - 1%68	7015 - 7017	5HVHUYHG					3
1%69 - 1%6%	7018 - 7020	5HVHUYHG					3
1%6& - 1%6(	7021 - 7023	5HVHUYHG					3
1%6) - 1%67	7024 - 7026	5HVHUYHG					3
1%68 - 1%6)	7027 - 7029	5HVHUYHG					3
1%6\$ - 1%6&	7030 - 7032	5HVHUYHG					3
1%6' - 1%62	7033 - 7035	3RVLWLYH :DWWV, 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%6% - 1%6&	7036 - 7038	3RVLWLYH :DWWV, 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%6(- 1%6)	7039 - 7041	3RVLWLYH :DWWV, 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%6) - 1%67	7042 - 7044	3RVLWLYH 9\$5V, 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%6& - 1%6(	7045 - 7047	3RVLWLYH 9\$5V, 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%6' - 1%62	7048 - 7050	3RVLWLYH 9\$5V, 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%62 - 1%64	7051 - 7053	1HJDWLYH :DWWV, 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1%8' - 1%8)	7054 - 7056	1HJDWLYH :DWWV, 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%90 - 1%92	7057 - 7059	1HJDWLYH :DWWV, 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%93 - 1%95	7060 - 7062	1HJDWLYH 9\$5V, 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%96 - 1%98	7063 - 7065	1HJDWLYH 9\$5V, 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%99 - 1%9%	7066 - 7068	1HJDWLYH 9\$5V, 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%9& - 1%9(	7069 - 7071	9\$V, 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%9) - 1%\$1	7072 - 7074	9\$V, 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$2 - 1%\$4	7075 - 7077	9\$V, 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$5 - 1%\$7	7078 - 7080	3RVLWLYH 3), 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$8 - 1%\$\$	7081 - 7083	3RVLWLYH 3), 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$\$% - 1%\$'	7084 - 7086	3RVLWLYH 3), 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$(- 1%\$0	7087 - 7089	1HJDWLYH 3), 0HWHU 22, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$1 - 1%\$3	7090 - 7092	1HJDWLYH 3), 0HWHU 23, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
1%\$4 - 1%\$6	7093 - 7095	1HJDWLYH 3), 0HWHU 24, 0D[\$YJ 'PG 7LPHVWDPS	767\$03	1-DQ2000 - 31'HF2099	1 VHF		3
						%ORFN 6LJH:	96

Modbus Hex	Address Decimal	Description	Format	Range	Units or Resolution	Comments	# Reg
Interval Energy Block						read-only	
1)3) - 1)40	8000 - 8001	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRLVWH VJQV	2
1)41 - 1)42	8002 - 8003	5HVHUYHG					2
1)43 - 1)44	8004 - 8005	5HVHUYHG					2
1)45 - 1)46	8006 - 8007	5HVHUYHG				*:K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
1)47 - 1)48	8008 - 8009	5HVHUYHG					2
1)49 - 1)4\$	8010 - 8011	5HVHUYHG					2
1)4% - 1)4&	8012 - 8013	5HVHUYHG					2
1)4' - 1)4(	8014 - 8015	5HVHUYHG				* 5 WR 8 GLJLWV	2
1)4) - 1)50	8016 - 8017	5HVHUYHG					2
1)51 - 1)52	8018 - 8019	:-KRXUV, 5HFHLYHG, 0HWHU 1	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXLWU RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
1)53 - 1)54	8020 - 8021	:-KRXUV, 5HFHLYHG, 0HWHU 2	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
1)55 - 1)56	8022 - 8023	:-KRXUV, 5HFHLYHG, 0HWHU 3	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)57 - 1)58	8024 - 8025	:-KRXUV, 'HOLYHUHG, 0HWHU 1	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)59 - 1)5\$	8026 - 8027	:-KRXUV, 'HOLYHUHG, 0HWHU 2	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)5% - 1)5&	8028 - 8029	:-KRXUV, 'HOLYHUHG, 0HWHU 3	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)5' - 1)5(	8030 - 8031	:-KRXUV, 1HW, 0HWHU 1	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
1)5) - 1)60	8032 - 8033	:-KRXUV, 1HW, 0HWHU 2	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)61 - 1)62	8034 - 8035	:-KRXUV, 1HW, 0HWHU 3	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW	(Cont'd)	2
1)63 - 1)64	8036 - 8037	:-KRXUV, 7RWDO, 0HWHU 1	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)65 - 1)66	8038 - 8039	:-KRXUV, 7RWDO, 0HWHU 2	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)67 - 1)68	8040 - 8041	:-KRXUV, 7RWDO, 0HWHU 3	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)69 - 1)6\$	8042 - 8043	9\$5-KRXUV, 3RVLWLYH, 0HWHU 1	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)6% - 1)6&	8044 - 8045	9\$5-KRXUV, 3RVLWLYH, 0HWHU 2	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)6' - 1)6(	8046 - 8047	9\$5-KRXUV, 3RVLWLYH, 0HWHU 3	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)6) - 1)70	8048 - 8049	9\$5-KRXUV, 1HJDWLYH, 0HWHU 1	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)71 - 1)72	8050 - 8051	9\$5-KRXUV, 1HJDWLYH, 0HWHU 2	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)73 - 1)74	8052 - 8053	9\$5-KRXUV, 1HJDWLYH, 0HWHU 3	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)75 - 1)76	8054 - 8055	9\$5-KRXUV, 1HW, 0HWHU 1	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)77 - 1)78	8056 - 8057	9\$5-KRXUV, 1HW, 0HWHU 2	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)79 - 1)7\$	8058 - 8059	9\$5-KRXUV, 1HW, 0HWHU 3	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)7% - 1)7&	8060 - 8061	9\$5-KRXUV, 7RWDO, 0HWHU 1	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)7' - 1)7(	8062 - 8063	9\$5-KRXUV, 7RWDO, 0HWHU 2	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)7) - 1)80	8064 - 8065	9\$5-KRXUV, 7RWDO, 0HWHU 3	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)81 - 1)82	8066 - 8067	9\$-KRXUV, 0HWHU 1	6,1732	0 WR 99999999	9\$K SHU HQUHJ\ IRUPDW		2
1)83 - 1)84	8068 - 8069	9\$-KRXUV, 0HWHU 2	6,1732	0 WR 99999999	9\$K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)85 - 1)86	8070 - 8071	9\$-KRXUV, 0HWHU 3	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	(Cont'd)	2
						%ORFN 6LJH:	72
1)\$3 - 1)\$4	8100 - 8101	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
1)\$5 - 1)\$6	8102 - 8103	5HVHUYHG					2
1)\$7 - 1)\$8	8104 - 8105	5HVHUYHG					2
1)\$9 - 1)\$	8106 - 8107	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU *YLHZ DV ORDG*, GHOLYHUHG LV SRVLWLYH IRU *YLHZ DV JHQHUDWRU"	2
1)\$% - 1)\$&	8108 - 8109	5HVHUYHG					2
1)\$' - 1)\$('	8110 - 8111	5HVHUYHG					2
1)\$) - 1)\$0	8112 - 8113	5HVHUYHG					2
1)%1 - 1)%2	8114 - 8115	5HVHUYHG				* 5 WR 8 GLJLWV	2
1)%3 - 1)%4	8116 - 8117	5HVHUYHG					2
1)%5 - 1)%6	8118 - 8119	:-KRXUV, 5HFHLYHG, 0HWHU 4	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
1)%7 - 1)%8	8120 - 8121	:-KRXUV, 5HFHLYHG, 0HWHU 5	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
1)%9 - 1)%\$	8122 - 8123	:-KRXUV, 5HFHLYHG, 0HWHU 6	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)%% - 1)%&	8124 - 8125	:-KRXUV, 'HOLYHUHG, 0HWHU 4	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)%' - 1)%('	8126 - 8127	:-KRXUV, 'HOLYHUHG, 0HWHU 5	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
1)%) - 1)%&0	8128 - 8129	:-KRXUV, 'HOLYHUHG, 0HWHU 6	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)&1 - 1)&2	8130 - 8131	:-KRXUV, 1HW, 0HWHU 4	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW	(Cont'd)	2
1)&3 - 1)&4	8132 - 8133	:-KRXUV, 1HW, 0HWHU 5	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)&5 - 1)&6	8134 - 8135	:-KRXUV, 1HW, 0HWHU 6	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)&7 - 1)&8	8136 - 8137	:-KRXUV, 7RWDO, 0HWHU 4	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)&9 - 1)&\$	8138 - 8139	:-KRXUV, 7RWDO, 0HWHU 5	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)&% - 1)&&	8140 - 8141	:-KRXUV, 7RWDO, 0HWHU 6	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
1)&' - 1)&(	8142 - 8143	9\$5-KRXUV, 3RVLWLYH, 0HWHU 4	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)&) - 1)'0	8144 - 8145	9\$5-KRXUV, 3RVLWLYH, 0HWHU 5	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)'1 - 1)'2	8146 - 8147	9\$5-KRXUV, 3RVLWLYH, 0HWHU 6	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)'3 - 1)'4	8148 - 8149	9\$5-KRXUV, 1HJDWLYH, 0HWHU 4	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)'5 - 1)'6	8150 - 8151	9\$5-KRXUV, 1HJDWLYH, 0HWHU 5	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)'7 - 1)'8	8152 - 8153	9\$5-KRXUV, 1HJDWLYH, 0HWHU 6	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)'9 - 1) '\$	8154 - 8155	9\$5-KRXUV, 1HW, 0HWHU 4	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)'% - 1)'&	8156 - 8157	9\$5-KRXUV, 1HW, 0HWHU 5	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)'* - 1)'(	8158 - 8159	9\$5-KRXUV, 1HW, 0HWHU 6	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)') - 1)'(0	8160 - 8161	9\$5-KRXUV, 7RWDO, 0HWHU 4	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)(1 - 1)(2	8162 - 8163	9\$5-KRXUV, 7RWDO, 0HWHU 5	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
1)(3 - 1)(4	8164 - 8165	9\$5-KRXUV, 7RWDO, 0HWHU 6	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
1)(5 - 1)(6	8166 - 8167	9\$-KRXUV, 0HWHU 4	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	(Cont'd)	2
1)(7 - 1)(8	8168 - 8169	9\$-KRXUV, 0HWHU 5	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
1)(9 - 1)(\$	8170 - 8171	9\$-KRXUV, 0HWHU 6	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
						%ORFN 6LJH:	72
2007 - 2008	8200 - 8201	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV	2
2009 - 200\$	8202 - 8203	5HVHUYHG				KDYH RSSRVLWH VLJQV	2
200% - 200&	8204 - 8205	5HVHUYHG					2
200' - 200(	8206 - 8207	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV	2
200) - 2010	8208 - 8209	5HVHUYHG				ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ	2
2011 - 2012	8210 - 8211	5HVHUYHG				DV JHQHUDWRU"	2
2013 - 2014	8212 - 8213	5HVHUYHG					2
2015 - 2016	8214 - 8215	5HVHUYHG				* 5 WR 8 GLJLWV	2
2017 - 2018	8216 - 8217	5HVHUYHG					2
2019 - 201\$	8218 - 8219	:-KRXUV, 5HFHLYHG, 0HWHU 7	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
201% - 201&	8220 - 8221	:-KRXUV, 5HFHLYHG, 0HWHU 8	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
201' - 201(	8222 - 8223	:-KRXUV, 5HFHLYHG, 0HWHU 9	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
201) - 2020	8224 - 8225	:-KRXUV, 'HOLYHUHG, 0HWHU 7	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
2021 - 2022	8226 - 8227	:-KRXUV, 'HOLYHUHG, 0HWHU 8	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2023 - 2024	8228 - 8229	:-KRXUV, 'HOLYHUHG, 0HWHU 9	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW	(Cont'd)	2
2025 - 2026	8230 - 8231	:-KRXUV, 1HW, 0HWHU 7	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
2027 - 2028	8232 - 8233	:-KRXUV, 1HW, 0HWHU 8	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
2029 - 202\$	8234 - 8235	:-KRXUV, 1HW, 0HWHU 9	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
202% - 202&	8236 - 8237	:-KRXUV, 7RWDO, 0HWHU 7	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
202' - 202(	8238 - 8239	:-KRXUV, 7RWDO, 0HWHU 8	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
202) - 2030	8240 - 8241	:-KRXUV, 7RWDO, 0HWHU 9	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
2031 - 2032	8242 - 8243	9\$5-KRXUV, 3RVLWLYH, 0HWHU 7	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
2033 - 2034	8244 - 8245	9\$5-KRXUV, 3RVLWLYH, 0HWHU 8	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
2035 - 2036	8246 - 8247	9\$5-KRXUV, 3RVLWLYH, 0HWHU 9	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
2037 - 2038	8248 - 8249	9\$5-KRXUV, 1HJDWLYH, 0HWHU 7	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
2039 - 203\$	8250 - 8251	9\$5-KRXUV, 1HJDWLYH, 0HWHU 8	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
203% - 203&	8252 - 8253	9\$5-KRXUV, 1HJDWLYH, 0HWHU 9	6,1732	0 WR - 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
203' - 203(	8254 - 8255	9\$5-KRXUV, 1HW, 0HWHU 7	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
203) - 2040	8256 - 8257	9\$5-KRXUV, 1HW, 0HWHU 8	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
2041 - 2042	8258 - 8259	9\$5-KRXUV, 1HW, 0HWHU 9	6,1732	-99999999 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2043 - 2044	8260 - 8261	9\$5-KRXUV, 7RWDO, 0HWHU 7	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
2045 - 2046	8262 - 8263	9\$5-KRXUV, 7RWDO, 0HWHU 8	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2047 - 2048	8264 - 8265	9\$5-KRXUV, 7RWDO, 0HWHU 9	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2049 - 204\$	8266 - 8267	9\$-KRXUV, 0HWHU 7	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
204% - 204&	8268 - 8269	9\$-KRXUV, 0HWHU 8	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
204' - 204(	8270 - 8271	9\$-KRXUV, 0HWHU 9	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
							%ORFN 6L]H:	72
206% - 206&	8300 - 8301	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDV KDYH RSSRVLWH VLJQV	2
206' - 206(	8302 - 8303	5HVHUYHG					2
206) - 2070	8304 - 8305	5HVHUYHG					2
2071 - 2072	8306 - 8307	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
2073 - 2074	8308 - 8309	5HVHUYHG					2
2075 - 2076	8310 - 8311	5HVHUYHG					2
2077 - 2078	8312 - 8313	5HVHUYHG					2
2079 - 207\$	8314 - 8315	5HVHUYHG				* 5 WR 8 GLJLWV	2
207% - 207&	8316 - 8317	5HVHUYHG					2
207' - 207(	8318 - 8319	:-KRXUV, 5HFHLYHG, 0HWHU 10	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
207) - 2080	8320 - 8321	:-KRXUV, 5HFHLYHG, 0HWHU 11	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
2081 - 2082	8322 - 8323	:-KRXUV, 5HFHLYHG, 0HWHU 12	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
2083 - 2084	8324 - 8325	:-KRXUV, "HOLYHUHG, 0HWHU 10	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2085 - 2086	8326 - 8327	:-KRXUV, 'HOLYHUHG, 0HWHU 11	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	(Cont'd)	2
2087 - 2088	8328 - 8329	:-KRXUV, 'HOLYHUHG, 0HWHU 12	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
2089 - 208\$	8330 - 8331	:-KRXUV, 1HW, 0HWHU 10	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
208% - 208&	8332 - 8333	:-KRXUV, 1HW, 0HWHU 11	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
208' - 208(	8334 - 8335	:-KRXUV, 1HW, 0HWHU 12	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
208) - 2090	8336 - 8337	:-KRXUV, 7RWDO, 0HWHU 10	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
2091 - 2092	8338 - 8339	:-KRXUV, 7RWDO, 0HWHU 11	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
2093 - 2094	8340 - 8341	:-KRXUV, 7RWDO, 0HWHU 12	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
2095 - 2096	8342 - 8343	9\$5-KRXUV, 3RVLWLYH, 0HWHU 10	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2097 - 2098	8344 - 8345	9\$5-KRXUV, 3RVLWLYH, 0HWHU 11	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2099 - 209\$	8346 - 8347	9\$5-KRXUV, 3RVLWLYH, 0HWHU 12	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
209% - 209&	8348 - 8349	9\$5-KRXUV, 1HJDWLYH, 0HWHU 10	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
209' - 209(	8350 - 8351	9\$5-KRXUV, 1HJDWLYH, 0HWHU 11	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
209) - 2090	8352 - 8353	9\$5-KRXUV, 1HJDWLYH, 0HWHU 12	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
209\$ - 2092	8354 - 8355	9\$5-KRXUV, 1HW, 0HWHU 10	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
20\$3 - 20\$4	8356 - 8357	9\$5-KRXUV, 1HW, 0HWHU 11	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
20\$5 - 20\$6	8358 - 8359	9\$5-KRXUV, 1HW, 0HWHU 12	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
20\$7 - 20\$8	8360 - 8361	9\$5-KRXUV, 7RWDO, 0HWHU 10	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
20\$9 - 20\$\$	8362 - 8363	9\$5-KRXUV, 7RWDO, 0HWHU 11	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
20\$% - 20\$&	8364 - 8365	9\$5-KRXUV, 7RWDO, 0HWHU 12	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
20\$' - 20\$(	8366 - 8367	9\$-KRXUV, 0HWHU 10	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
20\$) - 20%0	8368 - 8369	9\$-KRXUV, 0HWHU 11	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
20%1 - 20%2	8370 - 8371	9\$-KRXUV, 0HWHU 12	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
						%ORFN 6LJH:	72
20&) - 20'0	8400 - 8401	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
20'1 - 20'2	8402 - 8403	5HVHUYHG					2
20'3 - 20'4	8404 - 8405	5HVHUYHG					2
20'5 - 20'6	8406 - 8407	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
20'7 - 20'8	8408 - 8409	5HVHUYHG					2
20'9 - 20'\$	8410 - 8411	5HVHUYHG					2
20'% - 20'&	8412 - 8413	5HVHUYHG					2
20'" - 20'(<	8414 - 8415	5HVHUYHG				* 5 WR 8 GLJLWV	2
20') - 20(0	8416 - 8417	5HVHUYHG				* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW	2
20(1 - 20(2	8418 - 8419	:-KRXUV, 5HFHLYHG, 0HWHU 13	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* UHVROXLWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
20(3 - 20(4	8420 - 8421	:-KRXUV, 5HFHLYHG, 0HWHU 14	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
20(5 - 20(6	8422 - 8423	:-KRXUV, 5HFHLYHG, 0HWHU 15	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW	(Cont'd)	2
20(7 - 20(8	8424 - 8425	:-KRXUV, 'HOLYHUHG, 0HWHU 13	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
20(9 - 20(\$	8426 - 8427	:-KRXUV, 'HOLYHUHG, 0HWHU 14	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
20(% - 20(&	8428 - 8429	:-KRXUV, 'HOLYHUHG, 0HWHU 15	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
20(' - 20((	8430 - 8431	:-KRXUV, 1HW, 0HWHU 13	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
20() - 20)0	8432 - 8433	:-KRXUV, 1HW, 0HWHU 14	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
20)1 - 20)2	8434 - 8435	:-KRXUV, 1HW, 0HWHU 15	6,1732	-99999999 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
20)3 - 20)4	8436 - 8437	:-KRXUV, 7RWDO, 0HWHU 13	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
20)5 - 20)6	8438 - 8439	:-KRXUV, 7RWDO, 0HWHU 14	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
20)7 - 20)8	8440 - 8441	:-KRXUV, 7RWDO, 0HWHU 15	6,1732	0 WR 99999999	:K SHU HQUHJ\ IRUPDW		2
20)9 - 20)\$	8442 - 8443	9\$5-KRXUV, 3RVLWLYH, 0HWHU 13	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2
20)% - 20)&	8444 - 8445	9\$5-KRXUV, 3RVLWLYH, 0HWHU 14	6,1732	0 WR 99999999	9\$5K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
20)* - 20)(	8446 - 8447	9\$5-KRXUV, 3RVLWLYH, 0HWHU 15	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2
20)) - 2100	8448 - 8449	9\$5-KRXUV, 1HJDWLYH, 0HWHU 13	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2101 - 2102	8450 - 8451	9\$5-KRXUV, 1HJDWLYH, 0HWHU 14	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2103 - 2104	8452 - 8453	9\$5-KRXUV, 1HJDWLYH, 0HWHU 15	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2105 - 2106	8454 - 8455	9\$5-KRXUV, 1HW, 0HWHU 13	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2107 - 2108	8456 - 8457	9\$5-KRXUV, 1HW, 0HWHU 14	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2109 - 210\$	8458 - 8459	9\$5-KRXUV, 1HW, 0HWHU 15	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
210% - 210&	8460 - 8461	9\$5-KRXUV, 7RWDO, 0HWHU 13	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
210' - 210(	8462 - 8463	9\$5-KRXUV, 7RWDO, 0HWHU 14	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
210) - 2110	8464 - 8465	9\$5-KRXUV, 7RWDO, 0HWHU 15	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2111 - 2112	8466 - 8467	9\$-KRXUV, 0HWHU 13	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
2113 - 2114	8468 - 8469	9\$-KRXUV, 0HWHU 14	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
2115 - 2116	8470 - 8471	9\$-KRXUV, 0HWHU 15	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
							%ORFN 6LJH:	72

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2133 - 2134	8500 - 8501	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
2135 - 2136	8502 - 8503	5HVHUYHG					2
2137 - 2138	8504 - 8505	5HVHUYHG					2
2139 - 213\$	8506 - 8507	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
213% - 213&	8508 - 8509	5HVHUYHG					2
213' - 213(	8510 - 8511	5HVHUYHG					2
213) - 2140	8512 - 8513	5HVHUYHG					2
2141 - 2142	8514 - 8515	5HVHUYHG				* 5 WR 8 GLJLWV	2
2143 - 2144	8516 - 8517	5HVHUYHG					2
2145 - 2146	8518 - 8519	:KRXUV, 5HFHLYHG, 0HWHU 16	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJJI IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQUJJI IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQUJJI IRUPDW	2
2147 - 2148	8520 - 8521	:KRXUV, 5HFHLYHG, 0HWHU 17	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJJI IRUPDW	* VHH QRWH 10	2
2149 - 214\$	8522 - 8523	:KRXUV, 5HFHLYHG, 0HWHU 18	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJJI IRUPDW		2
214% - 214&	8524 - 8525	:KRXUV, 'HOLYHUHG, 0HWHU 16	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJJI IRUPDW		2
214' - 214(	8526 - 8527	:KRXUV, 'HOLYHUHG, 0HWHU 17	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJJI IRUPDW		2
214) - 2150	8528 - 8529	:KRXUV, 'HOLYHUHG, 0HWHU 18	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUJJI IRUPDW		2
2151 - 2152	8530 - 8531	:KRXUV, 1HW, 0HWHU 16	6,1732	-99999999 WR 99999999	:K SHU HQUJJI IRUPDW		2
2153 - 2154	8532 - 8533	:KRXUV, 1HW, 0HWHU 17	6,1732	-99999999 WR 99999999	:K SHU HQUJJI IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2155 - 2156	8534 - 8535	:-KRXUV, 1HW, 0HWHU 18	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	(Cont'd)	2
2157 - 2158	8536 - 8537	:-KRXUV, 7RWDO, 0HWHU 16	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
2159 - 215\$	8538 - 8539	:-KRXUV, 7RWDO, 0HWHU 17	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
215% - 215&	8540 - 8541	:-KRXUV, 7RWDO, 0HWHU 18	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
215' - 215(	8542 - 8543	9\$5-KRXUV, 3RVLWLYH, 0HWHU 16	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
215) - 2160	8544 - 8545	9\$5-KRXUV, 3RVLWLYH, 0HWHU 17	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2161 - 2162	8546 - 8547	9\$5-KRXUV, 3RVLWLYH, 0HWHU 18	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2163 - 2164	8548 - 8549	9\$5-KRXUV, 1HJDWLYH, 0HWHU 16	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2165 - 2166	8550 - 8551	9\$5-KRXUV, 1HJDWLYH, 0HWHU 17	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2167 - 2168	8552 - 8553	9\$5-KRXUV, 1HJDWLYH, 0HWHU 18	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2169 - 216\$	8554 - 8555	9\$5-KRXUV, 1HW, 0HWHU 16	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
216% - 216&	8556 - 8557	9\$5-KRXUV, 1HW, 0HWHU 17	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
216' - 216(	8558 - 8559	9\$5-KRXUV, 1HW, 0HWHU 18	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
216) - 2170	8560 - 8561	9\$5-KRXUV, 7RWDO, 0HWHU 16	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2171 - 2172	8562 - 8563	9\$5-KRXUV, 7RWDO, 0HWHU 17	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2173 - 2174	8564 - 8565	9\$5-KRXUV, 7RWDO, 0HWHU 18	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2175 - 2176	8566 - 8567	9\$-KRXUV, 0HWHU 16	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
2177 - 2178	8568 - 8569	9\$-KRXUV, 0HWHU 17	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2179 - 217\$	8570 - 8571	9\$-KRXUV, 0HWHU 18	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW	(Cont'd)	2
						%ORFN 6LJH:	72
2197 - 2198	8600 - 8601	5HVHUUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
2199 - 219\$	8602 - 8603	5HVHUUYHG					2
219% - 219&	8604 - 8605	5HVHUUYHG					2
219' - 219(	8606 - 8607	5HVHUUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
219) - 21\$0	8608 - 8609	5HVHUUYHG					2
21\$1 - 21\$2	8610 - 8611	5HVHUUYHG					2
21\$3 - 21\$4	8612 - 8613	5HVHUUYHG					2
21\$5 - 21\$6	8614 - 8615	5HVHUUYHG				* 5 WR 8 GLJLWW	2
21\$7 - 21\$8	8616 - 8617	5HVHUUYHG					2
21\$9 - 21\$\$	8618 - 8619	:-KRXUV, 5HFHLYHG, 0HWHU 19	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* GHFLPDO SRLQW LPSOLHG, SHU HQHUJ\ IRUPDW * UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWW, NLOR, RU PHJD, SHU HQHUJ\ IRUPDW	2
21\$\$ - 21\$&	8620 - 8621	:-KRXUV, 5HFHLYHG, 0HWHU 20	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	* VHH QRWH 10	2
21\$' - 21\$(	8622 - 8623	:-KRXUV, 5HFHLYHG, 0HWHU 21	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21\$) - 21%0	8624 - 8625	:-KRXUV, 'HOLYHUHG, 0HWHU 19	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21%1 - 21%2	8626 - 8627	:-KRXUV, 'HOLYHUHG, 0HWHU 20	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2
21%3 - 21%4	8628 - 8629	:-KRXUV, 'HOLYHUHG, 0HWHU 21	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
21%5 - 21%6	8630 - 8631	:-KRXUV, 1HW, 0HWHU 19	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW	(Cont'd)	2
21%7 - 21%8	8632 - 8633	:-KRXUV, 1HW, 0HWHU 20	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
21%9 - 21%\$	8634 - 8635	:-KRXUV, 1HW, 0HWHU 21	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
21%% - 21%&	8636 - 8637	:-KRXUV, 7RWDO, 0HWHU 19	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
21%' - 21%(	8638 - 8639	:-KRXUV, 7RWDO, 0HWHU 20	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
21%) - 21%0	8640 - 8641	:-KRXUV, 7RWDO, 0HWHU 21	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
21&1 - 21&2	8642 - 8643	9\$5-KRXUV, 3RVLWLYH, 0HWHU 19	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21&3 - 21&4	8644 - 8645	9\$5-KRXUV, 3RVLWLYH, 0HWHU 20	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21&5 - 21&6	8646 - 8647	9\$5-KRXUV, 3RVLWLYH, 0HWHU 21	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21&7 - 21&8	8648 - 8649	9\$5-KRXUV, 1HJDWLYH, 0HWHU 19	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21&9 - 21&\$	8650 - 8651	9\$5-KRXUV, 1HJDWLYH, 0HWHU 20	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21%& - 21%&	8652 - 8653	9\$5-KRXUV, 1HJDWLYH, 0HWHU 21	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21%' - 21%(	8654 - 8655	9\$5-KRXUV, 1HW, 0HWHU 19	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21%) - 21'0	8656 - 8657	9\$5-KRXUV, 1HW, 0HWHU 20	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21'1 - 21'2	8658 - 8659	9\$5-KRXUV, 1HW, 0HWHU 21	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21'3 - 21'4	8660 - 8661	9\$5-KRXUV, 7RWDO, 0HWHU 19	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
21'5 - 21'6	8662 - 8663	9\$5-KRXUV, 7RWDO, 0HWHU 20	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2	
21'7 - 21'8	8664 - 8665	9\$5-KRXUV, 7RWDO, 0HWHU 21	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	2	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
21'9 - 21'\$	8666 - 8667	9\$-KRXUV, 0HWHU 19	6,1732	0 WR 99999999	9\$K SHU HQUHJ\ IRUPDW	(Cont'd)	2
21'% - 21'&	8668 - 8669	9\$-KRXUV, 0HWHU 20	6,1732	0 WR 99999999	9\$K SHU HQUHJ\ IRUPDW		2
21'' - 21'()	8670 - 8671	9\$-KRXUV, 0HWHU 21	6,1732	0 WR 99999999	9\$K SHU HQUHJ\ IRUPDW		2
						%ORFN 6LJH:	72
21)% - 21)&	8700 - 8701	5HVHUYHG				* :K UHFHLYHG & GHOLYHUHG DOZDIV KDYH RSSRVLWH VLJQV	2
21)' - 21)()	8702 - 8703	5HVHUYHG					2
21)) - 2200	8704 - 8705	5HVHUYHG				* :K UHFHLYHG LV SRVLWLYH IRU "YLHZ DV ORDG", GHOLYHUHG LV SRVLWLYH IRU "YLHZ DV JHQHUDWRU"	2
2201 - 2202	8706 - 8707	5HVHUYHG					2
2203 - 2204	8708 - 8709	5HVHUYHG				* 5 WR 8 GLJLWV	2
2205 - 2206	8710 - 8711	5HVHUYHG					2
2207 - 2208	8712 - 8713	5HVHUYHG				* GHFLPDO SRLQW LPSOLHG, SHU HQUHJ\ IRUPDW	2
2209 - 220\$	8714 - 8715	5HVHUYHG					2
220% - 220&	8716 - 8717	5HVHUYHG				* UHVROXWLRQ RI GLJLW EHIRUH GHFLPDO SRLQW XQLWV, NLOR, RU PHJD, SHU HQUHJ\ IRUPDW	2
220' - 220()	8718 - 8719	:-KRXUV, 5HFHLYHG, 0HWHU 22	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
220) - 2210	8720 - 8721	:-KRXUV, 5HFHLYHG, 0HWHU 23	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW	* VHH QRWH 10	2
2211 - 2212	8722 - 8723	:-KRXUV, 5HFHLYHG, 0HWHU 24	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
2213 - 2214	8724 - 8725	:-KRXUV, 'HOLYHUHG, 0HWHU 22	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2
2215 - 2216	8726 - 8727	:-KRXUV, 'HOLYHUHG, 0HWHU 23	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQUHJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
2217 - 2218	8728 - 8729	:-KRXUV, 'HOLYHUHG, 0HWHU 24	6,1732	0 WR 99999999 RU 0 WR - 99999999	:K SHU HQHUJ\ IRUPDW	(Cont'd)	2
2219 - 221\$	8730 - 8731	:-KRXUV, 1HW, 0HWHU 22	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
221% - 221&	8732 - 8733	:-KRXUV, 1HW, 0HWHU 23	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
221' - 221(	8734 - 8735	:-KRXUV, 1HW, 0HWHU 24	6,1732	-99999999 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
221) - 2220	8736 - 8737	:-KRXUV, 7RWDO, 0HWHU 22	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
2221 - 2222	8738 - 8739	:-KRXUV, 7RWDO, 0HWHU 23	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
2223 - 2224	8740 - 8741	:-KRXUV, 7RWDO, 0HWHU 24	6,1732	0 WR 99999999	:K SHU HQHUJ\ IRUPDW		2
2225 - 2226	8742 - 8743	9\$5-KRXUV, 3RVLWLYH, 0HWHU 22	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2227 - 2228	8744 - 8745	9\$5-KRXUV, 3RVLWLYH, 0HWHU 23	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2229 - 222\$	8746 - 8747	9\$5-KRXUV, 3RVLWLYH, 0HWHU 24	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
222% - 222&	8748 - 8749	9\$5-KRXUV, 1HJDWLYH, 0HWHU 22	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
222' - 222(	8750 - 8751	9\$5-KRXUV, 1HJDWLYH, 0HWHU 23	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
222) - 2230	8752 - 8753	9\$5-KRXUV, 1HJDWLYH, 0HWHU 24	6,1732	0 WR - 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2231 - 2232	8754 - 8755	9\$5-KRXUV, 1HW, 0HWHU 22	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2233 - 2234	8756 - 8757	9\$5-KRXUV, 1HW, 0HWHU 23	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2235 - 2236	8758 - 8759	9\$5-KRXUV, 1HW, 0HWHU 24	6,1732	-99999999 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2237 - 2238	8760 - 8761	9\$5-KRXUV, 7RWDO, 0HWHU 22	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2
2239 - 223\$	8762 - 8763	9\$5-KRXUV, 7RWDO, 0HWHU 23	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW		2

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
223% - 223&	8764 - 8765	9\$5-KRXUV, 7RWDO, 0HWHU 24	6,1732	0 WR 99999999	9\$5K SHU HQHUJ\ IRUPDW	(Cont'd)	2	
223' - 223(	8766 - 8767	9\$-KRXUV, 0HWHU 22	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2
223) - 2240	8768 - 8769	9\$-KRXUV, 0HWHU 23	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2	
2241 - 2242	8770 - 8771	9\$-KRXUV, 0HWHU 24	6,1732	0 WR 99999999	9\$K SHU HQHUJ\ IRUPDW		2	
Card Identification and Configuration Block (Note 13) (IO Interface Board)							read-only	
270) - 270)	10000 - 10000	((3520 YHUVLRQ DQG %RDUG ,'	8,1716	ELW-PDSSHG	eeeeeeee cccccccc	HHHHHHHH: HHSURP YHUVLRQ FFFFFFFF: %RDUG LG	1	
2710 - 2710	10001 - 10001	%RDUG 5HYLVLRQ	8,1716	ELW-PDSSHG	EEEEEEEE -----	EEEEEEEE : ERDUG UHYLVLRQ	1	
2711 - 2718	10002 - 10009	%RDUG QXPEHU	\$6&, ,	16 FKDU	QRQH	\$6&, QDPH RI WKH LQWDOOHG FDUG	8	
2719 - 2720	10010 - 10017	6HULDO QXPEHU	\$6&, ,	16 FKDU	QRQH	6HULDO 1XPEHU LQ \$6&, RI WKH LQWDOOHG FDUG	8	
2721 - 2722	10018 - 10019	7HVV LQIR DQG RSHUDWRU	8,1716	ELW-PDSSHG	VVFF --- RRRRRRRR	VVFF--- ZKHUH X- 7HVV VWDWXV ELWW - 00 : 5HVHUYHG - 01 : 7HVV)DLOHG - 10 : 7HVV 3DVVHG - 11 : 7HVV QRW SHUIRUPHG FF - &DOLEUDWLRQ VWDWXV ELWW - 00 : 1R FDOLEUDWLRQ QHHGHG - 01 : &DOLEUDWLRQ)DLOHG - 10 : &DOLEUDWLRQ 3DVVHG - 11 : &DOLEUDWLRQ QRW SHUIRUPHG RRRRRRRR: RSHUDWRU LG	2	
2723 - 2746	10020 - 10055	WLPHVWDPS	8,1716	ELW-PDSSHG	\\\\\\\\\\\\PPPPGGGGG	\\\\\\\\\\\\ - \\\HDU PPPP - PRQWK GGGGG - GDI	36	
2747 - 2748	10056 - 10057	5HVHUYHG				5HVHUYHG	2	
2749 - 274\$	10058 - 10059	5HVHUYHG				5HVHUYHG	2	
274% - 290(	10060 - 10511	5HVHUYHG				5HVHUYHG	452
						%ORFN 6LJH:	512	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Card Identification and Configuration Block (Note 13) (Relay/Digital IO Card)							read-only
2\$)7 - 2\$)7	11000 - 11000	((3520 YHUVLRQ DQG %RDUG ;	8,1716	ELW-PDSSHG	eeeeeeee cccccccc	HHHHHHHH: HHSURP YHUVLRQ FFFFFFFF: %RDUG LG	1
2\$)8 - 2\$)8	11001 - 11001	%RDUG 5HYLVLRQ	8,1716	ELW-PDSSHG	EEEEEEEE -----	EEEEEEEE : ERDUG UHYLVLRQ	1
2\$)9 - 2%00	11002 - 11009	%RDUG QXPEHU	\$6&,,	16 FKDU	QRQH	\$6&, QDPH RI WKH LQVWDOOHG FDUG	8
2%01 - 2%08	11010 - 11017	6HULDO QXPEHU	\$6&,,	16 FKDU	QRQH	6HULDO 1XPEHU LQ \$6&, RI WKH LQVWDOOHG FDUG	8
2%09 - 2%09	11018 - 11018	7HVW LQIR DQG RSHUDWRU	8,1716	ELW-PDSSHG	QRQH	VVFF---- ZKHUH X- 7HVW VWDWXV ELW - 00 : 5HVHUYHG - 01 : 7HVW)DLOHG - 10 : 7HVW 3DVVHG - 11 : 7HVW QRW SHUIRUPHG FF - &DOLEUDWLRQ VWDWXV ELW - 00 : 1R FDOLEUDWLRQ QHHGHG - 01 : &DOLEUDWLRQ)DLOHG - 10 : &DOLEUDWLRQ 3DVVHG - 11 : &DOLEUDWLRQ QRW SHUIRUPHG RRRRRRRR: RSHUDWRU LG	1
2%0\$ - 2%0\$	11019 - 11019	WLPHVWDPS	8,1716	ELW-PDSSHG	\\\\\\\\\\\\\\\\PPPPGGGGG	\\\\\\\\\\\\ - \\\\HDU PPPP - PRQWK GGGGG - GD\	1
2%0% - 2%16	11020 - 11031	5HVHUYHG				5HVHUYHG	12
2%17 - 2%17	11032 - 11032	'LJLWDO LQXSXW GHVFULSWRU				5HVHUYHG	1
2%18 - 2%18	11033 - 11033	'LJLWDO RXXSXW GHVFULSWRU				5HVHUYHG	1
2%19 - 2%19	11034 - 11034	'LJLWDO RXXSXW ODWHQF\					1
2%1\$ - 2%35	11035 - 11062	5HVHUYHG					28
2%36 - 2%36	11063 - 11063	&5&					1
						%ORFN 6LJH:	64
Data and Control Block -- Digital I/O Relay Card Overlay (Note 14)							read-only except as indicated
2%3) - 2%3)	11072 - 11072	'LJLWDO ,QSXW 6WDWHV	8,1716	ELW-PDSSHG	44443333 22221111	7ZR QLEEOH ILHOGV: (2222) IRU LQXSXW#2 DQG (1111) IRU LQXSXW #1. /VE LQ HDFK QLEEOH LV WKH FXUUHQW VWDWH RI WKH LQXSXW. OVE LQ HDFK QLEEOH LV WKH ROGHVV UHJLVWHUHG VWDWH.	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
2%40 - 2%40	11073 - 11073	LJLWDO 5HOD\ 6WDWHV	8,1716	ELW-PDSSHG	----- ab--cd	.J "D" LV 1 WKHQ VVDWH RI 5HOD\#2 LV XQNQRZQ, RWKHUZZLVH VVDWH RI 5HOD\#2 LV LQ "F": (1 WULSSHG, 0 UHOHDVHG). .J "E" LV 1 WKHQ VVDWH RI 5HOD\#1 LV XQNQRZQ, RWKHUZZLVH VVDWH RI 5HOD\#1 LV LQ "G": (1 WULSSHG, 0 UHOHDVHG).	1	
2%41 - 2%41	11074 - 11074	7XUQ UHOD\ RQ	8,1716	ELW-PDSSHG	-----21	.ULWLQJ D 1 LQ ELW 1 WXUQV UHOD\ 1+1 21 (WKLW UHJLVWHU LV ZULWHDEOH RQO\ LQ SULYLOHJHG VHVVLRQ)	1	
2%42 - 2%42	11075 - 11075	7XUQ UHOD\ RI	8,1716	ELW-PDSSHG	-----21	.ULWLQJ D 1 LQ ELW 1 WXUQV UHOD\ 1+1 21) (WKLW UHJLVWHU LV ZULWHDEOH RQO\ LQ SULYLOHJHG VHVVLRQ)	1	
2%43 - 2%43	11076 - 11076	7ULS\5HOHDVH GHOD\ WLPHU IRU 5HOD\ 1	8,1716	0 WR 9999	0.1 VHF	WLPH WR WULS RU UHOHDVH	1	
2%44 - 2%44	11077 - 11077	7ULS\5HOHDVH GHOD\ WLPHU IRU 5HOD\ 2	8,1716	0 WR 9999	0.1 VHF	WLPH WR WULS RU UHOHDVH	1	
2%45 - 2%46	11078 - 11079	5HVHUYHG				5HVHUYHG	2	
2%47 - 2%47	11080 - 11080	.QSXW 1 \$FFXPXODWRU, 6FDOHG	8,1716	0 WR 9999	UHVROXWLRQ LV 1, 10, 100, 1000, 10000, RU 100000 FRXQVV	.LVDEOHG DFFXPXODWRUV DOZDIV UHGD 0.	1	
2%48 - 2%48	11081 - 11081	.QSXW 2 \$FFXPXODWRU, 6FDOHG	8,1716	0 WR 9999			1	
2%49 - 2%49	11082 - 11082	.QSXW 3 \$FFXPXODWRU, 6FDOHG	8,1716	0 WR 9999			2	
2%4\$ 2%4\$	11083 11083	.QSXW 4 \$FFXPXODWRU, 6FDOHG	8,1716	0 WR 9999				
2%4% - 2%4%	11084 - 11084	5HOD\ 1 \$FFXPXODWRU, 6FDOHG	8,1716	0 WR 9999	UHVROXWLRQ LV 1, 10, 100, 1000, 10000, RU 100000 FRXQVV	.LVDEOHG DFFXPXODWRUV DOZDIV UHGD 0.	1	
2%4& - 2%4&	11085 - 11085	5HOD\ 2 \$FFXPXODWRU, 6FDOHG	8,1716	0 WR 9999			1	
2%4' - 2%78	11086 - 11129	5HVHUYHG				5HVHUYHG	44	
						%ORFN 6LJH:	58	
Accumulators Block							read-only	
2(') - 2((O	12000 - 12001	2SWLRQ &DUG , .QSXW 1 \$FFXPXODWRU	8,1732	0 WR 9999999999		QXPEHU RI WUDQVLWLRQV	2	
2((1 - 2((6	12002 - 12007	2SWLRQ &DUG , .QSXW 2-4 \$FFXPXODWRUV	8,1732	0 WR 9999999999		QXPEHU RI WUDQVLWLRQV	6	
2((7 2((8	12008 - 12009	2SWLRQ &DUG , 2XWSXW RU 5HOD\ 1 \$FFXPXODWRU	8,1732	0 WR 9999999999		QXPEHU RI WUDQVLWLRQV	2	
2((9 - 2(((\$	12010 - 12011	2SWLRQ &DUG , 2XWSXW RU 5HOD\ 2 \$FFXPXODWRU	8,1732	0 WR 9999999999		QXPEHU RI WUDQVLWLRQV	6	
						%ORFN 6LJH:	16	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Commands Section (Note 4)							
Resets Block (Note 9)						write-only	
4(1) - 4(1)	20000 - 20000	5HVHW 0D[0LQ %ORFNV	8,1716	SDVVZRUG (1RWH 5)			1
4(20 - 4(20)	20001 - 20001	5HVHW (QHUJ\ \$FFXPXODWRUV	8,1716	SDVVZRUG (1RWH 5)			1
4(21 - 4(21)	20002 - 20002	6VWHP (YHQW ORJ (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)		5HSOI WR D UHVHW ORJ FRPPDQG LQGLFDWHV WKDW WKH FRPPDQG ZDV DFFHSWHG EXW QRW QHFHVVDULO\ WKDW WKH UHVHW LV ILQLVKHG. 3ROO ORJ VWDWXV EORFN WR GHWHUPLQH WKLV.	1
4(22 - 4(22)	20003 - 20003	5HVHW +LVWRULFDO /RJ 1 (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(23 - 4(23)	20004 - 20004	5HVHW +LVWRULFDO /RJ 2 (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(24 - 4(24)	20005 - 20005	5HVHW +LVWRULFDO /RJ 3 (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(25 - 4(25)	20006 - 20006	5HVHW \$ODUP /RJ (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(26 - 4(26)	20007 - 20007	5HVHW ,2 /RJ (QRWH 18)	8,1716	SDVVZRUG (1RWH 5)			1
4(27 - 4(27)	20008 - 20008	5HVHW 2SWLRQ &DUG ,QSW \$FFXPXODWRUV	8,1716	SDVVZRUG (1RWH 5)			1
4(28 - 4(28)	20009 - 20009	5HVHW 2SWLRQ &DUG 2XWSXW \$FFXPXODWRUV	8,1716	SDVVZRUG (1RWH 5)		1	
4(29 - 4(29)	20010 - 20010	5HVHW YROWDJH\UHTXHQF\	8,1716	SDVVZRUG (1RWH 5)		1	
4(2\$ - 4(39)	20011 - 20026	5HVHUYHG					16
4(3\$ - 4(3\$)	20027 - 20027	5HVHW 0D[0LQ EORFN 0HWHU 1	8,1716	SDVVZRUG (1RWH 5)			1
4(3% - 4(3%	20028 - 20028	5HVHW 0D[0LQ EORFN 0HWHU 2	8,1716	SDVVZRUG (1RWH 5)			1
4(3& - 4(3&	20029 - 20029	5HVHW 0D[0LQ EORFN 0HWHU 3	8,1716	SDVVZRUG (1RWH 5)			1
4(3' - 4(3'	20030 - 20030	5HVHW 0D[0LQ EORFN 0HWHU 4	8,1716	SDVVZRUG (1RWH 5)			1
4(3(- 4(3(	20031 - 20031	5HVHW 0D[0LQ EORFN 0HWHU 5	8,1716	SDVVZRUG (1RWH 5)			1
4(3) - 4(3)	20032 - 20032	5HVHW 0D[0LQ EORFN 0HWHU 6	8,1716	SDVVZRUG (1RWH 5)			1
4(40 - 4(40)	20033 - 20033	5HVHW 0D[0LQ EORFN 0HWHU 7	8,1716	SDVVZRUG (1RWH 5)			1
4(41 - 4(41)	20034 - 20034	5HVHW 0D[0LQ EORFN 0HWHU 8	8,1716	SDVVZRUG (1RWH 5)			1
4(42 - 4(42)	20035 - 20035	5HVHW 0D[0LQ EORFN 0HWHU 9	8,1716	SDVVZRUG (1RWH 5)			1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
4(43 - 4(43	20036 - 20036	5HVHW OD/0LQ EORFN 0HWHU 10	8,1716	SDVVZRUG (1RWH 5)			
4(44 - 4(44	20037 - 20037	5HVHW OD/0LQ EORFN 0HWHU 11	8,1716	SDVVZRUG (1RWH 5)			
4(45 - 4(45	20038 - 20038	5HVHW OD/0LQ EORFN 0HWHU 12	8,1716	SDVVZRUG (1RWH 5)			
4(46 - 4(46	20039 - 20039	5HVHW OD/0LQ EORFN 0HWHU 13	8,1716	SDVVZRUG (1RWH 5)			
4(47 - 4(47	20040 - 20040	5HVHW OD/0LQ EORFN 0HWHU 14	8,1716	SDVVZRUG (1RWH 5)			
4(48 - 4(48	20041 - 20041	5HVHW OD/0LQ EORFN 0HWHU 15	8,1716	SDVVZRUG (1RWH 5)			
4(49 - 4(49	20042 - 20042	5HVHW OD/0LQ EORFN 0HWHU 16	8,1716	SDVVZRUG (1RWH 5)			
4(4\$ - 4(4\$	20043 - 20043	5HVHW OD/0LQ EORFN 0HWHU 17	8,1716	SDVVZRUG (1RWH 5)			
4(4% - 4(4%	20044 - 20044	5HVHW OD/0LQ EORFN 0HWHU 18	8,1716	SDVVZRUG (1RWH 5)			
4(4& - 4(4&	20045 - 20045	5HVHW OD/0LQ EORFN 0HWHU 19	8,1716	SDVVZRUG (1RWH 5)			
4(4' - 4(4'	20046 - 20046	5HVHW OD/0LQ EORFN 0HWHU 20	8,1716	SDVVZRUG (1RWH 5)			
4(4(- 4(4(	20047 - 20047	5HVHW OD/0LQ EORFN 0HWHU 21	8,1716	SDVVZRUG (1RWH 5)			
4(4) - 4(4)	20048 - 20048	5HVHW OD/0LQ EORFN 0HWHU 22	8,1716	SDVVZRUG (1RWH 5)			
4(50 - 4(50	20049 - 20049	5HVHW OD/0LQ EORFN 0HWHU 23	8,1716	SDVVZRUG (1RWH 5)			
4(51 - 4(51	20050 - 20050	5HVHW OD/0LQ EORFN 0HWHU 24	8,1716	SDVVZRUG (1RWH 5)			
4(52 - 4(52	20051 - 20051	5HVHW (QHUU) \$FFXPXODWRUV 0HWHU 1	8,1716	SDVVZRUG (1RWH 5)			
4(53 - 4(53	20052 - 20052	5HVHW (QHUU) \$FFXPXODWRUV 0HWHU 2	8,1716	SDVVZRUG (1RWH 5)			
4(54 - 4(54	20053 - 20053	5HVHW (QHUU) \$FFXPXODWRUV 0HWHU 3	8,1716	SDVVZRUG (1RWH 5)			
4(55 - 4(55	20054 - 20054	5HVHW (QHUU) \$FFXPXODWRUV 0HWHU 4	8,1716	SDVVZRUG (1RWH 5)			
4(56 - 4(56	20055 - 20055	5HVHW (QHUU) \$FFXPXODWRUV 0HWHU 5	8,1716	SDVVZRUG (1RWH 5)			
4(57 - 4(57	20056 - 20056	5HVHW (QHUU) \$FFXPXODWRUV 0HWHU 6	8,1716	SDVVZRUG (1RWH 5)			

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
4(58 - 4(58	20057 - 20057	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 7	8,1716	SDVVZRUG (1RWH 5)			1	
4(59 - 4(59	20058 - 20058	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 8	8,1716	SDVVZRUG (1RWH 5)			1	
4(5\$ - 4(5\$	20059 - 20059	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 9	8,1716	SDVVZRUG (1RWH 5)			1	
4(5% - 4(5%	20060 - 20060	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 10	8,1716	SDVVZRUG (1RWH 5)			1	
4(5& - 4(5&	20061 - 20061	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 11	8,1716	SDVVZRUG (1RWH 5)			1	
4(5' - 4(5'	20062 - 20062	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 12	8,1716	SDVVZRUG (1RWH 5)			1	
4(5(- 4(5(	20063 - 20063	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 13	8,1716	SDVVZRUG (1RWH 5)			1
4(5) - 4(5)	20064 - 20064	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 14	8,1716	SDVVZRUG (1RWH 5)			1	
4(60 - 4(60	20065 - 20065	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 15	8,1716	SDVVZRUG (1RWH 5)			1	
4(61 - 4(61	20066 - 20066	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 16	8,1716	SDVVZRUG (1RWH 5)			1	
4(62 - 4(62	20067 - 20067	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 17	8,1716	SDVVZRUG (1RWH 5)			1	
4(63 - 4(63	20068 - 20068	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 18	8,1716	SDVVZRUG (1RWH 5)			1	
4(64 - 4(64	20069 - 20069	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 19	8,1716	SDVVZRUG (1RWH 5)			1	
4(65 - 4(65	20070 - 20070	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 20	8,1716	SDVVZRUG (1RWH 5)			1	
4(66 - 4(66	20071 - 20071	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 21	8,1716	SDVVZRUG (1RWH 5)			1	
4(67 - 4(67	20072 - 20072	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 22	8,1716	SDVVZRUG (1RWH 5)			1	
4(68 - 4(68	20073 - 20073	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 23	8,1716	SDVVZRUG (1RWH 5)			1	
4(69 - 4(69	20074 - 20074	5HVHW (QHUJ) \$FFXPXODWRUV 0HWHU 24	8,1716	SDVVZRUG (1RWH 5)			1	
						%ORFN 6LJH:	75	
Priviledged Commands Block							conditional write	
5207 - 5207	21000 - 21000	.QLWLDWH &38)LUPZDUH 5HSURJUDPPLQJ	8,1716	SDVVZRUG (1RWH 5)			1	

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
5208 - 5208	21001 - 21001	JRUFH &38 5HVVDUW	8,1716	SDVVZRUG (1RWH 5)		FDXVHV D ZDWFKGRJ UHVHV, DOZDIV UHGDV 0	1
5209 - 5209	21002 - 21002	2SHQ 3ULYLOHJHG &RPPDQG 6HVVLRQ	8,1716	SDVVZRUG (1RWH 5)		&38 ZLOO SURFHVV FRPPDQG UHJLVWHUV (WKLW UHJLVWHU WKURXJK '&ORVH 3ULYLOHJHG &RPPDQG 6HVVLRQ' UHJLVWHU EHORZ) IRU 5 PLOXWHV RU XQWLO WKH VHVVLRQ LV FORVHG, ZKLFKHYHU FRPHV ILUVV.	1
520\$ - 520\$	21003 - 21003	.QLWLDWH 3URJUDPPDEOH 6HWWLQJV 8SGDWH	8,1716	SDVVZRUG (1RWH 5)		&38 HQWHUV 36 XSGDWH PRGH	1
520% - 520%	21004 - 21004	&DOFXODWH 3URJUDPPDEOH 6HWWLQJV &KHFNVXP (1RWH 3)	8,1716	0000 WR 9999		&38 FDOFXODWHV FKHFNVXP RQ 5\$0 FRS\ RI 36 EORFN	1
520& - 520&	21005 - 21005	3URJUDPPDEOH 6HWWLQJV &KHFNVXP (1RWH 3)	8,1716	0000 WR 9999		UHDG/ZULWH FKHFNVXP UHJLVWHU; 36 EORFN VDYHG LQ QRQYRODLOH PPHRU\ RQ ZULWH (1RWH 8)	1
520' - 520'	21006 - 21006	:ULWH 1HZ 3DVVZRUG (1RWH 3)	8,1716	0000 WR 9999		ZULWH-RQ\ UHJLVWHU; DOZDIV UHGDV]-HUR	1
520(- 520(	21007 - 21007	7HUPLODWH 3URJUDPPDEOH 6HWWLQJV 8SGDWH (1RWH 3)	8,1716	DQ\ YDOXH		&38 OHDYHV 36 XSGDWH PRGH YLD UHVHV	1
520) - 5211	21008 - 21010	6HW &38 &ORFN	767\$03	1-DQ2000 - 31'HF2099	1 VHF	VDYHG RQ\ ZKHQ 3UG UHJLVWHU LV ZULWWHQ	3
5212 - 5212	21011 - 21011	5HVHUYHG	8,1716	DQ\ YDOXH		5HVHUYHG	1
5213 5219	21012 21018	5HVHUYHG				5HVHUYHG	7
521\$ 521\$	21019 21019	&ORVH 3ULYLOHJHG &RPPDQG 6HVVLRQ	8,1716	DQ\ YDOXH		HQGV DQ RSHQ FRPPDQG VHVVLRQ	1
						%ORFN 6L]H:	20
Encryption Block						read/write	
658) 659\$	26000 26011	3HUIRUP D 6HFVXH 2SHUDWLRQ	8,1716			HQFUISWHG FRPPDQG WR UHGD SDVVZRUG RU FKDQJH &38 WSH	12
						%ORFN 6L]H:	12
Programmable Settings Section							
Basic Setups Block						write only in PS update mode	
752) 752)	30000 30000	&7 GHQRPLQDWRU	8,1716	1 RU 5	none		1
7530 7530	30001 30001	&7 QXPHUDWRU 0HWHU 1	8,1716	1 WR 65535	none		1
7531 7531	30002 30002	&7 QXPHUDWRU 0HWHU 2	8,1716	1 WR 65535	none		1
7532 7532	30003 30003	&7 QXPHUDWRU 0HWHU 3	8,1716	1 WR 65535	none		1
7533 7533	30004 30004	&7 QXPHUDWRU 0HWHU 4	8,1716	1 WR 65535	none		1
7534 7534	30005 30005	&7 QXPHUDWRU 0HWHU 5	8,1716	1 WR 65535	none		1
7535 7535	30006 30006	&7 QXPHUDWRU 0HWHU 6	8,1716	1 WR 65535	none		1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
7536	7536	30007 30007	&7 QXPHUDWRU 0HWHU 7	8,1716	1 WR 65535	none	
7537	7537	30008 30008	&7 QXPHUDWRU 0HWHU 8	8,1716	1 WR 65535	none	
7538	7538	30009 30009	&7 QXPHUDWRU 0HWHU 9	8,1716	1 WR 65535	none	
7539	7539	30010 30010	&7 QXPHUDWRU 0HWHU 10	8,1716	1 WR 65535	none	
753\$	753\$	30011 30011	&7 QXPHUDWRU 0HWHU 11	8,1716	1 WR 65535	none	
753%	753%	30012 30012	&7 QXPHUDWRU 0HWHU 12	8,1716	1 WR 65535	none	
753&	753&	30013 30013	&7 QXPHUDWRU 0HWHU 13	8,1716	1 WR 65535	none	
753'	753'	30014 30014	&7 QXPHUDWRU 0HWHU 14	8,1716	1 WR 65535	none	
753(	753(	30015 30015	&7 QXPHUDWRU 0HWHU 15	8,1716	1 WR 65535	none	
753)	753)	30016 30016	&7 QXPHUDWRU 0HWHU 16	8,1716	1 WR 65535	none	
7540	7540	30017 30017	&7 QXPHUDWRU 0HWHU 17	8,1716	1 WR 65535	none	
7541	7541	30018 30018	&7 QXPHUDWRU 0HWHU 18	8,1716	1 WR 65535	none	
7542	7542	30019 30019	&7 QXPHUDWRU 0HWHU 19	8,1716	1 WR 65535	none	
7543	7543	30020 30020	&7 QXPHUDWRU 0HWHU 20	8,1716	1 WR 65535	none	
7544	7544	30021 30021	&7 QXPHUDWRU 0HWHU 21	8,1716	1 WR 65535	none	
7545	7545	30022 30022	&7 QXPHUDWRU 0HWHU 22	8,1716	1 WR 65535	none	
7546	7546	30023 30023	&7 QXPHUDWRU 0HWHU 23	8,1716	1 WR 65535	none	
7547	7547	30024 30024	&7 QXPHUDWRU 0HWHU 24	8,1716	1 WR 65535	none	
7548	7549	30025 30026	37 QXPHUDWRU	8,1732	1 WR 4294967295	QRQH	
754\$	754\$	30027 30027	37 GHQRPLQDWRU	8,1716	1 WR 65535	QRQH	
754%	754%	30028 30028	+RRNXS	8,1716	ELW-PDSSHG	----- hhhh	KKKK KRRNXS HQXPHUDWLRQ (0 3 HOHPHQW ZIH>96@, 1 UHVHUYHG, 3 UHVHUYHG,4 6LQJOH 3KDVH)
754&	754&	30029 30029	\$YHUDJLQJ 0HWKRG	8,1716	ELW-PDSSHG	--iiii b ----- sss	LLLLL LQWHUYDO (5,15,30,60) E 0-EORFN RU 1-UR00LQJ VV # VXELQWHUYDOV (1,2,3,4)
754'	754'	30030 30030	3RZHU & (QHUU)RUPDW	8,1716	ELW-PDSSHG	-----nn -eee-ddd	QQ QXPEHU RI HQHUJLGLJLVV (5-8 -- 0-3) HHH HQHUJL VFDOH (0-XQLW, 3-NLOR, 6- PHJD) GGG HQHUJLGLJLVV DIWHU GHFLPDO SRLQW (0-6) 6HH QRWH 10.
754(	754(	30031 30031	'D'OLJKW 6DYLQJ 2Q 5XOH	8,1716	ELW-PDSSHG	hhhhwww -ddmmmm	DSSOLHV RQO,LI GD'OLJKW VDYLQJ LQ 8VHU 6HWWLQJ VJODJ VSHFLILHV ZKHQ WR

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
754) 754)	30032 30032	'D'IOIJKW 6DYLQJ 2II 5XOH	8,1716	ELW-PDSSHG	hhhhwww-dddmmm	KKKKK KR XU, 0-23 ZZZ ZHNN, 1-4 IRU 1VW - 4WK, 5 IRU ODVW GGG GDI RI ZHNN, 1-7 IRU 6XQ - 6DW PPPP PRQWK, 1-12 (IDPSOH: 2\$0 RQ WKH 4WK 6XQGD I RI 0DUFK KKKKK 2, ZZZ 4, GGG 1, PPPP 3	1
7550 7550	30033 30033	8VHU 6HWWLQJV JODJV	8,1716	ELW-PDSSHG	------urpdywfa	X (QHUJ GLUHFWRQ. (0 EL GLUHFWRQDO, 1 XQLW GLUHFWRQDO) U SDVZRUG IRU UHVHW LQ XVH (1 RQ, 0 RI) S SDVZRUG IRU FRQLXUDWRQ LQ XVH (1 RQ, 0 RI) G GDIOLJKW VDYLQJ WLPH FKDQJHV (0 RI, 1 RQ) I GLDJQRWLF HYHQWV LQ VVWHP ORJ (1 \HV, 0 QR) Z SRZHU GLUHFWRQ (0 YLHZ DV ORDG, 1 YLHZ DV JHQHUDWRU) I IOLS SRZHU IDFWRU VLJQ (1 \HV, 0 QR) D DSSDUHQW SRZHU FRPSXWDWRQ PHWKRG (0 DULWKPHWLF VXP, 1 YHFWRU VXP)	1
7551 7558	30034 30041	&38 GHVJQDWLRQ					8
7559 7559	30042 30042	&201 VHWXS	8,1716	ELW-PDSSHG	----dddd-ppp-bbb	GGGG UHSO\ GHOD\ (* 50 PVHF) SSS SURWRFRQ (1-0RGEXV 578, 2- 0RGEXV \$6&.)	1
755\$ 755\$	30043 30043	&202 VHWXS	8,1716	ELW-PDSSHG	----dddd-ppp-bbb	EEE EDXG UDWH (1-9600, 2-19200, 4- 38400, 6-57600)	1
755% 755%	30044 30044	&203 VHWXS	8,1716	ELW-PDSSHG	----dddd-ppp-bbb		1
755& 755'	30045 30046	5HVHUYHG					2
755(755(	30047 30047	&201 DGGUHV	8,1716	1 WR 247	QRQH		1
755) 755)	30048 30048	&202 DGGUHV	8,1716	1 WR 247	QRQH		1
7560 7560	30049 30049	&203 DGGUHV	8,1716	1 WR 247	QRQH		1
7561 7578	30050 30073	5HVHUYHG	8,1716			5HVHUYHG	24
7579 - 7579	30074 - 30074	3URJUDPPDEOH 6HWWLQJV 8SGDWH &RXQWHU	8,1716	0-65535		.QFUHPHQWV HDFK WLPH SURJUDPPDEOH VHWWLQJV DUH FKDQJHG; RFFXUV ZKHQ QHZ FKHFNVXP LV FDOFXODWHG.	1
757\$ - 75%9	30075 - 30138	5HVHUYHG IRU 6RIWZDUH 8VH				5HVHUYHG	64
75%\$ - 75%\$	30139 - 30139	/LPLW #1 ,GHQWLILHU	8,1716	0 WR 65535		XVH 0RGEXV DGGUHV DV WKH LGHQWLILHU (VHH QRWHV 7, 11, 12)	1
75%% - 75%%	30140 - 30140	/LPLW #1 2XW +LJK 6HWSRLQW	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	6HWSRLQW IRU WKH "DERYH" OLPLW (#1), VHH QRWHV 11-12.	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
75%& - 75%&	30141 - 30141	/LPLW #1 ,Q +LJK 7KUHVKROG	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	7KUHVKROG DW ZKLFK "DERYH" OLPLW FOHDUV; QRUPDOOJ OHVV WKDQ RU HTXDO WR WKH "DERYH" VHWSRLQW; VHH QRWHV 11-12.	1
75%' - 75%'	30142 - 30142	/LPLW #1 2XW /RZ 6HWSRLQW	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	6HWSRLQW IRU WKH "EHORZ" OLPLW (02), VHH QRWHV 11-12.	1
75%(- 75%(30143 - 30143	/LPLW #1 ,Q /RZ 7KUHVKROG	6,1716	-200.0 WR +200.0	0.1o RI IXOO VFDOH	7KUHVKROG DW ZKLFK "EHORZ" OLPLW FOHDUV; QRUPDOOJ JUHDWHU WKDQ RU HTXDO WR WKH "EHORZ" VHWSRLQW; VHH QRWHV 11-12.	1
75%) - 75&3	30144 - 30148	/LPLW #2	6,1716	VDPH DV /LPLW #1	VDPH DV /LPLW #1	VDPH DV /LPLW #1	5
75&4 - 75&8	30149 - 30153	/LPLW #3	6,1716				5
75&9 - 75&'	30154 - 30158	/LPLW #4	6,1716				5
75&(- 75'2	30159 - 30163	/LPLW #5	6,1716				5
75'3 - 75'7	30164 - 30168	/LPLW #6	6,1716				5
75'8 - 75'&	30169 - 30173	/LPLW #7	6,1716				5
75'' - 75(1	30174 - 30178	/LPLW #8	6,1716				5
75(2 - 75(9	30179 - 30186	0HWHU 1 'HVLJQDWLRQ	\$6&, ,				16 FKDU	QRQH	8
75(\$ - 75)1	30187 - 30194	0HWHU 2 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
75)2 - 75)9	30195 - 30202	0HWHU 3 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
75)\$ - 7601	30203 - 30210	0HWHU 4 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7602 - 7609	30211 - 30218	0HWHU 5 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
760\$ - 7611	30219 - 30226	0HWHU 6 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7612 - 7619	30227 - 30234	0HWHU 7 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
761\$ - 7621	30235 - 30242	0HWHU 8 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7622 - 7629	30243 - 30250	0HWHU 9 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
762\$ - 7631	30251 - 30258	0HWHU 10 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7632 - 7639	30259 - 30266	0HWHU 11 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
763\$ - 7641	30267 - 30274	0HWHU 12 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7642 - 7649	30275 - 30282	0HWHU 13 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
764\$ - 7651	30283 - 30290	0HWHU 14 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7652 - 7659	30291 - 30298	0HWHU 15 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
765\$ - 7661	30299 - 30306	0HWHU 16 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7662 - 7669	30307 - 30314	0HWHU 17 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
766\$ - 7671	30315 - 30322	0HWHU 18 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7672 - 7679	30323 - 30330	0HWHU 19 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
767\$ - 7681	30331 - 30338	0HWHU 20 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
7682 - 7689	30339 - 30346	0HWHU 21 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	
768\$ - 7691	30347 - 30354	0HWHU 22 'HVLJQDWLRQ	\$6&, ,	16 FKDU	QRQH	8	

Modbus Address				Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal								
7692	7699	30355	30362	0HWHU 23 'HVLJQDWLRQ	\$6&.,	16 FKDU	QRQH		8
769\$	76\$1	30363	30370	0HWHU 24 'HVLJQDWLRQ	\$6&.,	16 FKDU	QRQH		8
								%ORFN 6LJH:	371
Log Setups Block								write only in PS update mode	
7917	7917	31000	31000	+LVWRULFDO /RJ #1 6LJHV	8,1716	ELW-PDSSHG	eeeeeeee ssssssss	KLJK EWH LV QXPEHU RI UHJLVWHUV WR ORJ LQ HDFK UHFRUG (0-117), ORZ EWH LV QXPEHU RI IODVK VHFWRUV IRU WKH ORJ (VHH QRWH 17) 0 LQ HLVKHU EWH GLVDEOHV WKH ORJ	1
7918	7918	31001	31001	+LVWRULFDO /RJ #1 ,QWHUYDO	8,1716	ELW-PDSSHG	00000000 hgfedcba	RQO\ 1 ELW VHW: D 1 PLQ, E 3 PLQ, F 5 PLQ, G 10 PLQ, H 15 PLQ, I 30 PLQ, J 60 PLQ, K (2, SXOVH	1
7919	7919	31002	31002	+LVWRULFDO /RJ #1, 5HJLVWHU #1 ,GHQWLILHU	8,1716	0 WR 65535		XVH ORGEXV DGGUHV DV WKH LGHQWLILHU (VHH QRWH 7)	1
791\$	798'	31003	31118	+LVWRULFDO /RJ #1, 5HJLVWHU #2 - #117 ,GHQWLILHU	8,1716	0 WR 65535		VDPH DV 5HJLVWHU #1 ,GHQWLILHU	116
798(	79'6	31119	31191	+LVWRULFDO /RJ #1 6RIWZDUH %XIIHU				5HVHUYHG IRU VRIWZDUH XVH.	73
79'7	7\$96	31192	31383	+LVWRULFDO /RJ #2 6LJHV ,QWHUYDO, 5HJLVWHUV & 6RIWZDUH %XIIHU				VDPH DV +LVWRULFDO /RJ #1	192
7\$97	7%56	31384	31575	+LVWRULFDO /RJ #3 6LJHV ,QWHUYDO, 5HJLVWHUV & 6RIWZDUH %XIIHU				VDPH DV +LVWRULFDO /RJ #1	192
7%57	7%75	31576	31606	5HVHUYHG				5HVHUYHG	31
								%ORFN 6LJH:	608

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
Settings Registers for Digital I/O Relay Card					First Overlay	write only in PS update mode	
7D00 - 7D00	32001 - 32001	Input#1 - 4 bindings & logging enables	UINT16	bit-mapped	44443333 22221111	One nibble for each input. Assuming "abcc" as the bits in each nibble: "a": select this input for EOI (End Of Interval)pulse sensing. "b": log this input when pulse is detected "cc": Input event trigger mode - Contact sensing method; 00 = none; 01 = open to close; 10 = close to open; 11 = any change. Every input has an associated internal accumulator (See input Accumulator Scaling), which is incremented every time the input changes according with the trigger mode crieteria "cc"	1
7D01 - 7D01	32002 - 32002	Relay #1 Delay to Operate	UINT16	0.1 second units		Delay to operate the relay since request.	1
7D02 - 7D02	32003 - 32003	Relay #1 Delay to Release	UINT16	0.1 second units		Delay to release the relay since request.	1
7D03 - 7D08	32004 - 32009	Reserved	UINT16			Set to 0.	6
7D09 - 7D09	32010 - 32010	Relay #2 Delay to Operate	UINT16	0.1 second units		Delay to operate the relay since request.	1
7D0A - 7D0A	32011 - 32011	Relay #2 Delay to Release	UINT16	0.1 second units		Delay to release the relay since request.	1
7D0B - 7D20	32012 - 32033	Reserved	UINT16			Set to 0.	22

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
7D21 - 7D21	32034 - 32034	Input Accumulators Scaling	UINT16	bit-mapped	44443333 22221111	4 bits per input or output accumulator The nibble informs what should be the scaling of the accumulator 0=no-scaling, 1=0.1, 2=0.01, 3= 1m, 4=0.1m, 5=0.01m, 6=1u, 7=0.1u; the value 15 disable the accumulator. Example: suppose that the internal input accumulator #1 is 12345, and its corresponding scaling setting is "0011" (3 decimal). Then, the accumulator will be read as: Scaling 3, means 1m or 0.001. Scaled accumulator = 12345 * 0.001 = 12 (Twelve).	1
7D22 - 7D22	32035 - 32035	Relay Accumulators Scaling	UINT16	bit-mapped	44443333 22221111	"0011" (3 decimal). Then, the accumulator will be read as: Scaling 3, means 1m or 0.001. Scaled accumulator = 12345 * 0.001 = 12 (Twelve).	1
7D23 - 7D3E	32037 - 32063	Reserved				Set to 0.	8
7D3F - 7D46	32064 - 32071	Input#1 Label	ASCII	16 char			8
7D47 - 7D4E	32072 - 32079	Input#1 Low State Name	ASCII	16 char			8
7D4F - 7D56	32080 - 32087	Input#1 High State Name	ASCII	16 char			8
7D57 - 7D6E	32088 - 32111	Input#2 Label and State Names			same as Input#1		24
7D6F - 7D86	32112 - 32135	Input#3 Label and State Names			same as Input#1		24
7D87 - 7D9E	32136 - 32159	Input#4 Label and State Names			same as Input#1		24
7D9F - 7DA6	32160 - 32167	Relay#1 Label	ASCII	16 char			8
7DA7 - 7DAE	32168 - 32175	Relay#1 Open State Name	ASCII	16 char			8
7DAF - 7DB6	32176 - 32183	Relay#1 Closed State Name	ASCII	16 char			8
7DB7 - 7DCE	32184 - 32207	Relay#2 Label and State Names			same as Relay#1		24
7DCF - 7DFE	32208 - 32255	Reserved				Reserved	48
7DFF - 7E06	32256 - 32263	Input#1 Accumulator Label	ASCII	16 char			8
7E07 - 7E0E	32264 - 32271	Input#2 Accumulator Label	ASCII	16 char			8
7E0F - 7E14	32272 - 32277	Input#3 Accumulator Label	ASCII	16 char			8
7E15 - 7E1E	32278 - 32287	Input#4 Accumulator Label	ASCII	16 char			8
7E1F - 7E1F	32288 - 32288	Input#1 Accumulator Kt	UINT16	bit-mapped	ddVVVVVV VVVVVVVV	KT power factor for the Pulse Output "V" is raw power value in Wh/pulse from 0 to 9999. "dd"=decimal point position: 00=0.XXXX, 01=X.XXX, 10=XX.XX, 11= X.XXX.	1
7E20 - 7E20	32289 - 32289	Input#2 Accumulator Kt	UINT16	bit-mapped	ddVVVVVV VVVVVVVV	KT power factor for the Pulse Output "V" is raw power value in Wh/pulse from 0 to 9999. "dd"=decimal point position: 00=0.XXXX, 01=X.XXX, 10=XX.XX, 11= X.XXX.	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg
Hex	Decimal						
7E21	7E21	32290 - 32290	UINT16	bit-mapped	ddVVVVVV VVVVVVV	(Cont'd)	1
7E22	7E22	32291 - 32291	UINT16	bit-mapped	ddVVVVVV VVVVVVV		1
7E23	7F53	32292 - 32596				Reserved	305
						Block Size:	576
Log Retrieval Section							
Log Retrieval Block						read/write except as noted	
C34C - C34D	49997 - 49998	Log Retrieval Session Duration	UINT32	0 to 4294967294	4 msec	0 if no session active; wraps around after max count	2
C34E - C34E	49999 - 49999	Log Retrieval Session Com Port	UINT16	0 to 3		0 if no session active, 1-3 for session active on COM1 - COM3	1
C34F - C34F	50000 - 50000	Log Number, Enable, Scope	UINT16	bit-mapped	nnnnnnnn eSSSSSS	high byte is the log number (0-system, 1-history1, 2-history2, 3-history3, 4-alarm log, 5-I/O changes) e is retrieval session enable(1) or disable(0) SSSSSS is what to retrieve (0-normal record, 1-timestamps only, 2-complete memory image (no data validation if image))	1
C350 - C350	50001 - 50001	Records per Window or Batch, Record Scope Selector, Number of Repeats	UINT16	bit-mapped	wwwwwww snnnnnn	high byte is records per window if s=0 or records per batch if s=1, low byte is number of repeats for function 35 or 0 to suppress auto-incrementing; max number of repeats is 8 (RTU) or 4 (ASCII) total windows, a batch is all the windows	1

Modbus Address		Description	Format	Range	Units or Resolution	Comments	# Reg	
Hex	Decimal							
&351	&352	50002 50003	2IIIVHW RI)LUVW 5HFRUG LQ :LQGRZ	8,1732	ELW-PDSSHG	ssssssssnnnnnnnn nnnnnnnn nnnnnnnn	VVVVVVV LV ZLQGRZ VWDWXV (0 WR 7-ZLQGRZ QXPEHU, 0)))-QRW UHGDG); WKLV EWH LV UHGDG-RQOI. QQ«QQ LV D 24-ELW UHFRUG QXPEHU. 7KH ORJV ILUVW UHFRUG LV ODWFKHG DV D UHIHUHQFH SRLQW ZKHQ WKH VHWLRQ LV HQDEOHG. 7KLV RIIVHW LV D UHFRUG LQGH] UHODWLYH WR WKDW SRLQW. 9DOXH SURYLGHG LV WKH UHODWLYH LQGH] RI WKH ZKROH RU SDUWLDO UHFRUG WKDW EHJLQV WKH ZLQGRZ.	2
&353	&3&'	50004 50126	/RJ 5HWULHYH :LQGRZ	8,1716	VHH FRPPHQWV	QRQH	PDSSHG SHU UHFRUG ODIRXW DQG UHWULHYDO VFRSH, UHGDG-RQOI. %ORFN 6LJH:	2 9
Log Status Block							read only	
-	-	System Log Status Block						3
&737 - &738	51000 - 51001	/RJ 6LJH LQ 5HFRUGV	8,1732	0 WR 4,294,967,29 4	UHFRUG			4
&739 - &73\$	51002 - 51003	1XPEHU RI 5HFRUGV 8VHG	8,1732	1 WR 4,294,967,29 4	UHFRUG			23
&73% - &73%	51004 - 51004	5HFRUG 6LJH LQ %IWHV	8,1716	14 WR 242	EWH			16
&73& - &73&	51005 - 51005	/RJ \$YDLODELQW	8,1716		QRQH	0 DYDLODEOH, 1-3 LQ XVH E\ &201-3, 0))))) QRW DYDLODEOH (ORJ VLJH 0)		16
&73' - &73)	51006 - 51008	7LPHVWDPS,)LUVW 5HFRUG	767\$03	1-DQ2000 - 31'HF2099	1 VHF			16
&740	&742	51009 51011	7LPHVWDPS, /DVW 5HFRUG	767\$03	1-DQ2000 - 31'HF2099	1 VHF		16
&743 - &746	51012 - 51015	5HVHUYHG				5HVHUYHG		16
-	-					,QGLYLGXDO /RJ 6WDWXV %ORFN 6LJH:		110
&747 - &756	51016 - 51031	Historical Log 1 Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN		110
&757 - &766	51032 - 51047	Historical Log 2 Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN		110
&767 - &776	51048 - 51063	Historical Log 3 Status Block				VDPH DV VVWHP ORJ VWDWXV EORFN		110
&777	&786	51064 51079	Alarm Log Status Block			VDPH DV VVWHP ORJ VWDWXV EORFN		110
&787	&796	51080 51095	I/O Log Status Block			VDPH DV VVWHP ORJ VWDWXV EORFN		110
						%ORFN 6LJH:		660
End of Map								

Data Formats	
\$6&.,	\$6&., FKUDDFWHUV SDFNHG 2 SHU UHJLVWHU LQ KLJK. ORZ RUGHU DQG ZLWKRXW DQ\ WHUPLQDWLRQ FKUDDFWHUV.
6,1716 / 8,1716	16-ELW VLJQHJ / XQVLJQHJ LQWHJHU.
6,1732 / 8,1732	32-ELW VLJQHJ / XQVLJQHJ LQWHJHU VSDQQLQJ 2 UHJLVWHUV. 7KH ORZHU-DGGUHVHVG UHJLVWHU LV WKH KLJK RUGHU KDOI.
)2\$7	32-ELW ,(((IORDWLQJ SRLQW QXPEHU VSDQQLQJ 2 UHJLVWHUV. 7KH ORZHU-DGGUHVHVG UHJLVWHU LV WKH KLJK RUGHU KDOI (L.H., FRQWDLQV WKH H\SRQHGW).
767\$03	3 DGMDFHQW UHJLVWHUV, 2 EIWVH HDFK.)LUVV (ORZVHW-DGGUHVHVG) UHJLVWHU KLJK EIWV LV)HJU (0-99), ORZ EIWV LV PRQW (1-12). 0LGGOH UHJLVWHU KLJK EIWV LV GDI(1-31), ORZ EIWV LV KRXU (0-23 SOXV '67 ELW). '67 (GDIOLJKW VDYLQJ WLPH) ELW LV ELW 6 (0[40). 7KLUG UHJLVWHU KLJK EIWV LV PLQXWHV (0-59), ORZ EIWV LV VHFRQG (0-59).)RU H\DPSON, 9:35:07\$0 RQ 2FWREHU 12, 2049 ZRXOG EH 0[310\$, 0[0&49, 0[2307, DVVXPLQJ '67 LV LQ HIIHFW.
Notes	
1	\$00 UHJLVWHUV QRW H\SOLF\WO\ OLVWHG LQ WKH WDEOH UHJG DV 0. :ULWHV WR WKVH UHJLVWHUV ZLOO EH DFFHSWHG EXW ZRQV DFWXDO\ FKDQJ WKH UHJLVWHU (VLQFH LW GRHVQW H\LVW).
2	&38 'DWD 6HFWRQ LWHPV UHJG DV 0 XQWLO ILUVV UHJGLQJ DUH DYDLODEOH RU LI WKH &38 LV QRW LQ RSHUDWLQJ PRGH. :ULWHV WR WKVH UHJLVWHUV ZLOO EH DFFHSWHG EXW ZRQV DFWXDO\ FKDQJ WKH UHJLVWHU.
3	5HJLVWHU YDOLG RQO\ LQ SURJUDPPDEOH VHWLQJ\ XSGDWH PRGH. :RQWKHU PRGHV WKVH UHJLVWHUV UHJG DV 0 DQG UHWXUQ DQ LOOHJDO GDWD DGGUHV H\FHSLRQ LI D ZULWH LV DWWHPSWHG.
4	&38 FRPPDQG UHJLVWHUV DOZDV UHJG DV 0. 7KH\ PD\ EH ZULWHW RQO\ ZKHQ WKH &38 LV LQ D VXLWDEOH PRGH. 7KH UHJLVWHUV UHWXUQ DQ LOOHJDO GDWD DGGUHV H\FHSLRQ LI D ZULWH LV DWWHPSWHG LQ DQ LQFRUUHFW PRGH.
5	,I WKH SDVVZRUG LV LQFRUUHFW, D YDOLG UHVSRQVH LV UHWXUQHG EXW WKH FRPPDQG LV QRW H\FXWHG. 8VH 5555 IRU WKH SDVVZRUG LI SDVVZRUG DUH GLVDEOHG LQ WKH SURJUDPPDEOH VHWLQJ\.
6	0 GHQRWHV D 1,000,000 PXOWLSOLHU.
7	(DFK LGHQWLILHU LV D 0RGEXV UHJLVWHU.)RU HQWLWHV WKDW RFFXS\ PXOWLSOH UHJLVWHUV (/2\$7, 6,1732, HWF.) DOO UHJLVWHUV PDNLQJ XS WKH HQWLW\ PXVW EH OLVWHG, LQ DVFHQGLQJ RUGHU.)RU H\DPSON, WR ORJ SKDVH \$ YROWV, 9\$V, YROWDJH 7+*, DQG 9\$ KRXLV, WKH UHJLVWHU OLWV ZRXOG EH 0[3(7, 0[3(8, 0[411, 0[412, 0[176), 0[61', 0[61(DQG WKH QXPEHU RI UHJLVWHUV (0[7917 KLJK EIWV) ZRXOG EH 7.
8	:ULWLQJ WKLV UHJLVWHU FDXVH GDWD WR EH VDYHG SHUPDQH\WO\ LQ QRQYRQDLOH PHPRU\ 5HSO\ WR WKH FRPPDQG LQGLFVHV WKDW LW ZDV DFFHSWHG EXW QRW ZKHWKHU RU QRW WKH VDYH ZDV VXFFHVVIXO. 7KLV FDQ RQO\ EH GHWHUPLQHG DIWHU WKH &38 KDV UHVWUWHG.
9	5HVHW FRPPDQV PDNH QR VHQVH LI WKH &38 VWDWH LV /03. \$Q LOOHJDO IXQFWLRQ H\FHSLRQ ZLOO EH UHWXUQHG.
10	(QHUJ\ UHJLVWHUV VKRXOG EH UHVHW DIWHU D IRUPDW FKDQJH.)RU VLQJOH SKDVH RSWLRQ RQO\ SHUSKDVH YDOXH DUH YDOLG. 3OHDVH QRWH WKDW WKH WKUHH SKDVH WRWDO YDOXH DUH LQYDOLG LQ WKLV FDVH. \$OVR WKH WHVW SXOVH DUH LQYDOLG VLQFH LW LV EDVHG RQ 7RWDO YDOXH.
11	(QWLWHV WR EH PRQLWRUHG DJDLQVW OLPLWV DUH LGHQWLILHG E\ 0RGEXV DGGUHV. (QWLWHV RFFXS\Q PXOWLSOH 0RGEXV UHJLVWHUV, VXFK DV IORDWLQJ SRLQW YDOXH, DUH LGHQWLILHG E\ WKH ORZHU UHJLVWHU DGGUHV. ,I DQ\ RI WKH 8 OLPLWV LV XQVHG, VHW LW LGHQWLILHU WR)HUR. ,I WKH LQGLFVHV 0RGEXV UHJLVWHU LV QRW XVHG RU LV D QRQVHQLFDO HQWLW\ IRU OLPLWV, LW ZLOO EH KDYH DV DQ XQVHG OLPLW.
12	7KHUH DUH 2 VHWLQJ\ SHU OLPLW, RQH DERYH DQG RQH EHORZ WKH H\SHFWHG UDQJH RI YDOXH. /01 LV WKH "WRR KLJK" OLPLW, /02 LV "WRR ORZ". 7KH HQWLW\ JRVH "RXW RI OLPLW" RQ /01 ZKHQ LW YDOXH LV JUHDWHU WKDQ WKH VHWLQJ\ VHWLQJ\ "RXW RI OLPLW" XQWLO WKH YDOXH GURSV EHORZ WKH LQ WKUHVKROG. /02 ZRUNV VLPLQDQO\, LQ WKH RSSRVLWH GLUHFWLRQ. ,I OLPLWV LQ RQO\ RQH GLUHFWLRQ DUH RI LQWHUHVW, VHW WKH LQ WKUHVKROG RQ WKH "ZURQJ" VLGH RI WKH VHWLQJ\ VHWLQJ\ VHWLQJ\ DUH VSHFLILHG DV 0 RI IXOO VFDOH, ZKHUH IXOO VFDOH LV DXWRPDWLFDO\ VHW DSSURSULDWHO\ IRU WKH HQWLW\ EHLQJ PRQLWRUHG:
	FXUHQW)6 &7 QXPHUDWRU * &7 PXOWLSOLHU YROWDJH)6 &37 QXPHUDWRU * &37 PXOWLSOLHU 3 SKDVH SRZHU)6 &7 QXPHUDWRU * &37 QXPHUDWRU * 3 > * 6457(3) IRU GHOWD KRRNXS@ VLQJOH SKDVH SRZHU)6 &7 QXPHUDWRU * &37 QXPHUDWRU > * 6457(3) IRU GHOWD KRRNXS@ IUHTXHQF\)6 60 (RU 50) SRZHU IDFWRU)6 1.0 SHUFHQW DJH)6 100.0 DQJOH)6 180.0

- 13 &DUG ,GHQWLILFDWLRQ %ORFN LV DQ LPDJH RI WKH ((3520 RQ WKH FDUG.
- 14 \$ EORFN RI GDWD DQG FRQWURO UHJLVWHUV LV DOORFDWHG IRU HDFK RSWLRQ FDUG. ,QWHUSUHHWDLRQ RI WKH UHJLVWHU GDWD GHSHQGV LI WKH FDUG LV LQVWDOOHG.
- 15 0HDVXUHPHQW VWDWHV: 2II RFFXUV GXULQJ SURJUDPPDEOH VHWWLQJ XSGDWHV; 5XQ LV WKH QRUPDO PHDVXULQJ VWDWH; /LPS LQGLFDWHV WKDW DQ HVVHQWDO QRQ-YRODWHOH PHPRU\ EORFN LV FRUUXSWHG; DQG :DUPXS RFFXUV EULHIO\ (DSSUR[LPDWHO\ 4 VHFRRGV) DW VWDUWXS ZKLOH WKH UHDLQJ VWDLOLQJ. 5XQ VWDWH LV UHTXLUHG IRU PHDVXUHPHQW, KLVWRULFDO ORJLQJ, GHPDQG LQWHUYDO SURFHVVWLQJ, OLPLW DODUP HYDOXDWLRQ, PLQ/PD\ FRPSDULVRQV, DQG 7+ FDODWLRQV. 5HVHWWLQJ PLQ/PD\ RU HQHU\ LV DOORZHG RQI LQ UXQ DQG RII VWDWHV; ZDUPXS ZLOO UHWXUQ D EXVI H\FHSWLRQ. ,Q OLPS VWDWH, WKH &38 UHERRVV DW 5 PLQXWH LQWHUYDOV LQ DQ HIRUW WR FOHDU WKH SUREOHP.
- 16 /LPLWV HYDOXDWLRQ IRU DOO HQWLWHV H\FHSW GHPDQG DYHUDJHV FRPPHQFHV LPPHGLDWHO\ DIWHU WKH ZDUPXS SHULRG. (YDOXDWLRQ IRU GHPDQG DYHUDJHV, PD[LXP GHPDQGV, DQG PLQLXP GHPDQGV FRPPHQFHV DW WKH HQG RI WKH ILUVW GHPDQG LQWHUYDO DIWHU VWDUWXS.
- 17 'HSHQLQJ RQ WKH 9-VZLWFK VHWWLQJ, WKHUH DUH 3 RU 106 IODVK VHFWRUV DYDODEOH LQ D FRPPRQ SRRO IRU GLVWULEXWLRQ DPRQJ WKH 3 KLVWRULFDO ORJ. 7KH SRRO VLJH, QXPEHU RI VHFWRUV IRU HDFK ORJ, DQG WKH QXPEHU RI UHJLVWHUV SHU UHFRRUG WRJHWKHU GHWHUPLQH WKH PD[LXP QXPEHU RI UHFRRUG D ORJ FDQ KRQG.
- 6 QXPEHU RI VHFWRUV DVVLJQH WR WKH ORJ.
 + QXPEHU RI ORGEXV UHJLVWHUV WR EH PRQLWRUHG LQ HDFK KLVWRULFDO UHFRRUG (XS WR 117),
 5 QXPEHU RI EWHV SHU UHFRRUG (12 + 2+) IRU KLVWRULFDO ORJ
 1 QXPEHU RI UHFRRUGV SHU VHFWRU 65516 / 5. URXQGHG GRZQ WR DQ LQWHUJHU YDOXH (QR SDUWLDO UHFRRUGV LQ D VHFWRU)
 7 WRWDO QXPEHU RI UHFRRUGV WKH ORJ FDQ KRQG 6 * 1
 7 6 * 2 IRU WKH ZDYHIRUP ORJ.
- 18 /RJV FDQQRW EH UHVHW GXULQJ ORJ UHWULHYDO. %XVI H\FHSWLRQ ZLOO EH UHWXUQHG.
- 19 &PELQDWLRQ RI FODV DQG WSH FXUUHQWO\ GHILQH DUH:
 0[01 ,2 LQWHUIDFH ERDUG
 0[02 5HOD\ &DUG

Multilin™ EPM 4600 Metering System

Appendix C: Manual Revision History

C.1 Release Notes

Table C-1: Release Dates

MANUAL	GE Vernova PART NO.	RELEASE DATE
GEK-119589	1601-0296-A1	August 2013
GEK-119589A	1601-0296-A2	February 2014

Table C-2: Major Updates for 1601-0036-A2

SEC T (A1)	SEC T (A2)	DESCRIPTION
Title	Title	Manual part number to 1601-0036-A2.
CH 2	CH 2	Added optional display order codes
N/A	Ch 10	Added optional display chapter
N/A	N/A	Minor corrections throughout

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