

B95^{Plus} Bus Protection System

Version 1.03

Release Notes

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Overview

This document contains the release notes for firmware 1.01, 1.02, and 1.03 of the GE Multilin B95^{Plus} Bus Protection System, which is part of the UR^{Plus} series of products.

Affected product: B95^{Plus}

Date of release 1.01: 31 January 2014

Date of release 1.02: 26 October 2015

Date of release 1.03: 20 July 2017

In the following descriptions, a category letter is placed to the left of the description. See the table near the end of this document for descriptions of the categories.

Firmware 1.01

Summary

Release 1.01 of the Multilin B95^{Plus} Bus Protection System introduces product-specific enhancements.

Highlights include:

- Protection and Control Elements
 - Time overcurrent (TOC) elements not performing as specified have been fixed
- Events and Records
 - The directional flags of the bus differential elements have been removed from event recording
- Display
 - Front panel mimic diagram for bus source isolator positions has been fixed

Protection and Control Elements

U 101-1 **Time overcurrent (TOC) elements fix to perform as specified**

Applicable: B95^{Plus}

The Time overcurrent (TOC) elements in each process card sources 2 to 12 do not operate unless process card source 1 is enabled.

Customers observed that with F/SRC1 Function set to Disabled, TOC elements in sources 2 to 12 did not operate if the injected current was above the pickup level. All TOC elements operated correctly when F/SRC1 Function was set to Enabled. The same issue applies to the sources J/SRC1 to J/SRC12.

This firmware release fixes this issue.

Events and Records

R 101-2 **Remove bus Z1 to Z6 A...C direction flags from Event Recording**

Applicable: B95^{Plus}

The bus Z1 to Z6 directional flags are prone to pickup regularly during normal operational conditions, with the consequence that the event recorder fills with these events.

The bus Z1 to Z6 directional A-phase to C-phase flags were removed from event recording in this firmware release. No functionality or availability (in FlexLogic or other programming functions) was changed.

Display

D 101-3 **Front panel fix for mimic bus source isolator positions**

Applicable: B95^{Plus}

The graphical component (referred to as an Isolator/Bypass in EnerVista B95^{Plus} Setup) connecting a Zone (Z1 to Z6) to the Network Element (circuit), should mimic the status of the Zone Connection FlexLogic parameter,

however it incorrectly mimics the state of the Isolator FlexLogic operand. Additionally, the Source Bypass state is also not displayed correctly on the HMI; its state is displayed as always "OFF".

This firmware release fixes this issue.

Firmware 1.02

Summary

Release 1.02 of the Multilin B95^{Plus} Bus Protection System introduces product-specific enhancements.

Highlights include:

- Platform
 - Fixed issue where B95^{Plus} exhibits communication self-test alarms after approximately 32 days and goes out of service

Platform

U **Fixed issue where B95^{Plus} exhibits communication self-test alarms after approximately 32 days and goes out of service**

102-1

Applicable: B95^{Plus}

Customers observed that B95^{Plus} exhibited 'Comms Card Trouble', 'Main CPU Card Trouble', 'Process Card F Trouble' and 'Process Card J Trouble' self-test messages after approximately 32 or 78 days and went out of service. This condition can only be reset by cycling power to the B95^{Plus}.

Debugging this issue after the relay went out of service; it was found that the process card DSP chip was in a locked state. This implies that the firmware was not processing any interrupts. This meant that metering values were not calculated and resulted in communication failure between all cards and in turn into an endless loop, thus locking up DSP functionality. A time drift between the main CPU clock that generates the Sample & Hold (or the SYNC) signals and the clock that triggers the 1s interrupt can be substantial enough after 32 days to cause the DSP lockup.

A software watchdog mechanism was added to monitor all DSP tasks to detect endless loops and recover. This allows the monitoring and detection of all DSP core activities and anomalies. This was additional functionality to the existing watchdog functionality between CPU module and process card.

This firmware release fixes this issue.

Firmware 1.03

Summary

Highlights include:

- Security
 - Changed password reset mechanism

Security

G 103-1 **Changed password reset mechanism**

Applicable: B95^{Plus}

Prior to this release, when the user forgot the configured settings or command passwords, they contacted GE Customer Services and provided an encrypted password to retrieve the passwords.

With this revision, the encrypted passwords are removed. The user must contact GE Customer Service to recover their relays.

Upgrade Paths

Customers can upgrade to the latest B95^{Plus} firmware to take advantage of the latest developments and enhancements. Upgrade the firmware using the EnerVista B95^{Plus} Setup software. This software can also convert settings files from an older version to the latest version and provides a Difference Report once the conversion is complete. This Difference Report identifies new settings and additional information to assist the user during the upgrade.

B95^{Plus} firmware is NOT compatible with the other UR^{Plus} devices, which are the C90^{Plus} and D90^{Plus}, or with the UR family of products.

Firmware Compatibility

Firmware version 1.03 is compatible with the B95^{Plus} hardware version 1.00.

Use of firmware version 1.03 requires EnerVista B95^{Plus} Setup software version 1.01 or higher.

Categories

This document uses the following categories to classify improvements.

Table 1: Revision categories

Code	Category	Comments
N	New feature	A separate feature added to the relay. Changes to existing features even if they significantly expand the functionality are not in this category.
G	Change	A neutral change that does not bring any new value and is not correcting any known problem
E	Enhancement	Modification of an existing feature bringing extra value to the application
D	Changed, incomplete, or false faceplate indications	Changes to, or problems with text messages, LEDs, and user pushbuttons
R	Changed, incomplete, or false relay records	Changes to, or problems with relay records (oscillography, demand, fault reports, and so on)
C	Protocols and communications	Changes to, or problems with protocols or communication features
M	Metering	Metering out of specification or other metering problems
P	Protection out of specification	Protection operates correctly but does not meet published specifications (example: delayed trip)
U	Unavailability of protection	Protection not available in a self-demonstrating way so that corrective actions can be taken immediately
H	Hidden failure to trip	Protection does not operate when appropriate
F	False trip	Protection operate when it is not appropriate
B	Unexpected restart	Relay restarts unexpectedly

For further assistance

For product support, contact the information and call center as follows:

GE Grid Solutions
650 Markland Street
Markham, Ontario
Canada L6C 0M1
Worldwide telephone: +1 905 927 7070
Europe/Middle East/Africa telephone: +34 94 485 88 54
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