GE Consumer & Industrial

UR Universal Relay Series

Revision 5.01 Release Notes

GE Publication Number: GER-4129

Overview

Summary

GE Multilin releases the 5.01 version of firmware for the Universal Relay Platform that modifies only the operation of the DNP3.0 and the IEC60870-5-104 communications protocols.

Description

This document contains the release notes for the 5.01 release of the UR firmware.

- Affected products: B30, C30, C60, C70, D30, D60, F35, F60, G60, L60, L90, M60, N60, T35, T60
- Date of release: October 15th, 2007
- Firmware revision: 5.01
- EnerVista Setup Software revision: 5.0x and above

If users have existing UR Family relays installed with older versions of firmware, they can download and install this new firmware to benefit from the enhancements described in this release note. If the user does not require these new features and enhancements, no upgrading of the relays is required.

Release details

In the following change descriptions, a revision category letter is placed to the left of the description. Refer to the Appendix at the end of this document for additional details.

Communications

C

DNP3.0: Analog Values not being reported correctly

Applicable: all UR-Series Relays

The DNP3.0 Analog reporting has been enhanced to ensure that analog values are correctly updated and reported to the DNP master. In the previous version of firmware, the Universal Relay would meter analog values properly however, after prolonged periods of time, the analog values being reported over DNP would stop being updated and continually report the last known value. All protection and control functions continued to operate correctly when this occurred.

C

DNP3.0 & IEC60870-5-104: Ability to buffer more than 500 Binary Inputs

Applicable to: all UR-series relays

The DNP3.0 and IEC61870-5-104 communications in the UR has been enhanced to allow for the relay to locally buffer more than 500 Binary Input events between requests by the master for new data. In previous firmware versions, delayed requests for new Binary Inputs that can be caused by the link from the master being broken would cause the relay to not report the new events that occurred once it's buffer of 500 events was filled.

C

DNP3.0: Binary Counters (Object 20, 21) Responding with Incorrect Data Variation

Applicable: all UR-Series Relays

The DNP3.0 Binary Counters (Object 20 and 21) have been improved to respond with the correct Variation requested for by the master. In previous versions, the Binary Counters responded to requests for data in Variation 1, regardless of what Variation was requested.

Upgrade paths

Customers are able to upgrade to the latest version of the UR firmware to take advantage of the latest developments and feature enhancements. Firmware upgrades can be easily preformed using the EnerVista UR 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 has been completed. This Difference Report identifies new settings and additional information to assist the user during the upgrade.

Upgrade path for versions 4.00 and above

For UR-series versions 4.00 and above, the new firmware release can be uploaded to the relay CPU via the EnerVista UR Setup software.

Upgrade path for revisions below version 4.00

For Universal relays with versions of hardware with firmware versions below 4.00 installed on it, an upgrade package must be obtained from GE Multilin to upgrade the relay CPU and CT/VT modules to revision 4.xx.

Benefits of revision 4.00 and above:

The benefits of revision 4.00 and above are as follows:

- Supports many new features and functionality
  - IEC 61850 communications protocol
  - 100 Mb Ethernet
  - IRIG-B repeater
  - Isolated RS485 and IRIG-B
  - Synchrophasors in the D60, L90, N60 (5.2x firmware and above)
  - Support for Breaker-and-a-Half Transmission Line Protection (D60, L90)
- Exceeds new IEEE C37.90 requirements
  - Transient immunity (2 to 4 kV)

Appendix

Change categories

This document uses the following categories to classify the changes.

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, etc.)
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 could be taken immediately
H	Hidden failure to trip	Protection may not operate when it should
F	False trip	Protection may operate when it should not
B	Unexpected restart	Relay restarts unexpectedly

The revision category letter is placed to the left of the change description.

GE Multilin technical support

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