



UR Universal Relay Series Revision 4.92 Release Notes

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Overview

Summary

The 4.92 release for the UR Universal Relay series corrects several minor issues affecting communications and FlexElements™. This document contains the release notes for the 4.92 release of the UR Universal Relay series.

- Affected products: UR Universal Relay series
- Date of release: June 30, 2006
- Firmware revision: 4.92

Description

The version 4.92 release is compatible with the EnerVista UR Setup software versions 4.9x and higher and UR-series relays operating with versions 4.00 and higher. The following relay models are covered by this note:

- B30 Bus Differential Relay
- C30 Controller
- C60 Breaker Management Relay
- D30 Line Distance Relay
- D60 Line Distance Relay
- F35 Multiple Feeder Management Relay
- F60 Feeder Management Relay
- G30 Generator Management Relay
- G60 Generator Management Relay
- L60 Line Phase Comparison Relay
- L90 Line Differential Relay
- M60 Motor Relay
- N60 Network Stability and Synchrophasor Measurement System
- T35 Transformer Management Relay
- T60 Transformer Management Relay

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.

Existing features modified

C **Communications: improvements to remote input and direct input default states**

Applicable to: all UR-series relays

The operation of the remote and direct inputs has been improved to prevent remote and direct input status from toggling from the "ON" state to the default "OFF" state for 1/8th of a cycle when the sending relay goes "Offline". This toggling of the remote and digital input states did not occur if the default state of the input was set to "OFF".

C **Communications: internal enhancements to DNP and IEC 60870-5-104 communications**

Applicable to: all UR-series relays

The DNP 3.0 slave communications in the UR-series relays 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 revisions, 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 its buffer of 500 events was filled.

C **Communications: internal enhancements to DNP and IEC 60870-5-104 communications**

Applicable to: all UR-series relays

The DNP 3.0 slave communications in the UR-series relays has been improved to provide faster unsolicited responses to new data being collected by the relay. All new data that should be sent as unsolicited messages to the master will occur within one second of that data being generated in the relay.

C **Communications: GSSE/GOOSE message reception latency**

Applicable to: all UR-series relays

The IEC61850 GSSE/GOOSE peer-to-peer messaging has been given a higher prioritization over other communication functions to reduce any possible delays that may occur in receiving GSSE/GOOSE messages in presence of other client-server traffic.

R **Event recorder: system time reset at power on**

Applicable to: all UR-series relays

The real time clock has been improved to correct an issue that would occasionally cause the UR system time to revert to January 1, 1970, 12:00AM after control power was cycled to the relay. Users that implemented IRIG-B time synchronization for accurate time stamping were not be affected due to the clock being set to the correct time once the relay has finished the boot up sequence.

D **FlexElements™: FlexElement™ value for df/dt incorrect**

Applicable to: F60, G30, G60, and N60 relays

The value displayed and evaluated for df/dt within FlexElements™ has been corrected to represent the actual value. In the previous revision, the value was represented as 1.0 Hz/sec rather than the properly scaled value.

G Internal enhancement: incorrect timestamp in relay records

Applicability: all UR-series relays

The process of retrieving the event record from the relay using the EnerVista UR Setup software has been improved to prevent the occurrence of the timestamp for the retrieved events being presented incorrectly. The previous version of the firmware occasionally cause the incorrect timestamp to be shown, however, a successive retrieval of the event data would show the correct timestamp of the data.

M Phasor measurement unit: per-unit base value for FlexAnalog quantities fixed

Applicable to: N60 relay

The PMU FlexAnalog data that was being shown and evaluated in the N60 FlexElements has been corrected to match the base units that are shown in Table 6.2: FLEXELEMENT™ BASE UNITS of the instruction manual. The previous revision caused the shown and evaluated value to be represented as 1.

Upgrade paths

It is our recommendation that all customers upgrade to the latest version of UR-series firmware to take advantage of the latest developments and feature enhancements. Firmware upgrades can be easily performed 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 revision 4.92 release can be uploaded to the relay CPU via the EnerVista UR Setup software.

Upgrade path for revisions below version 4.00

For UR-series versions below 4.00, 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:

- Exceeds new IEEE C37.90 requirements
 - Transient immunity (2 to 4 kV)
- 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, F60, L90, and N60 relays (revisions 5.2x and above)
 - Support for breaker-and-a-half transmission line protection (D60 and L90 relays)

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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