

Multilin 8 Series Protection and Control Relay Platform

8 Series Firmware Version 2.90 and EnerVista Setup Software Version 4.01

Release Notes

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Summary

GE Grid Solutions releases 8 Series Firmware Version 2.90 and EnerVista Setup Software Version 4.01 for Multilin 8 Series Protection Relays. Highlights of this release include the following:

Multilin 8 Series Firmware Version 2.90

- **Platform**
 - Identical frames broadcasted on Modbus socket termination
 - Added Fault Data to IEC61850 Logical node RptRFLO
 - IEC 61850 added Select before Operate selection attribute
 - Adjusted Self-test target messages implementation
 - Directional Power accuracy at lower range improved
 - Relay with missing Magnetics Module Self-test error behavior improved
- **845**
 - Transformer Status Detection
- **850**
 - New 8 DPO-C Cards supported on 850 (P Option)
 - Frequency Tracking
- **869**
 - Single Line Diagram
 - Average phase voltage for Delta connected VTs added
 - Updated Current Unbalance calculation
 - Phase VT Connection
 - Corrected invalid assertion of AnyBlock FlexLogic operand

- **889**
 - Third Harmonic Voltage calculation corrected

EnerVista Setup Software Version 4.01

- **8 Series**
 - Added warning message if action will result in 8Series product going Out of Service
 - Warning message implemented for Trip/Close Relay setting change
 - USB Driver connection issue resolved
 - Service Report extraction over Ethernet and USB was reported as slow
 - Issues with intermittent Setting file transfers resolved
- **850**
 - New 8 DPO-C Cards supported on 850 (P Option)
- **859**
 - FlexLogic
 - Compatibility mode
 - 369 to 859 file conversion
 - Ethernet IP does not transfer to the relay during CID transfer
 - Thermal Model screen cleanup
 - Event and Electrical Signature records (ESA)
 - Target message sequence
- **869**
 - Compatibility Mode status changes when User-Map setting is changed
 - 469-869 File conversion error corrected
 - Power Metering
- **869/889**
 - Setup software crash
- **889**
 - Improved setting file conversion from 489 to 889
 - Single Line Diagram (SLD) Current Unbalance display issue

Release Date: **Sept 21, 2022**

Multilin 8 Series firmware versions 1.2x and below cannot be upgraded to firmware version 2.71. Please contact us to upgrade the product.

Upgrade the firmware to version 2.71 by downloading the file directly from our website:

[850 Feeder Protection System](#)

The latest EnerVista 8 Series Setup software is available at the same location. The software supports Windows 7, 8.1, and 10.

Please contact your local Multilin sales representative or Multilin Customer Service Department for any questions regarding this upgrade.

Release details

In the following release descriptions, a revision category letter is placed to the left of the description. See the Appendix at the end of this document for a description of the categories displayed.

Firmware version 2.90

Platform

- C** **Identical frames broadcasted on Modbus socket termination**
Resolved broadcasting of identical frames (0x8888) with the same MAC address on Modbus socket termination, which could lead to Ethernet switch ports being blocked if multiple 8Series devices are connected on the network. Issue impacts FW v2.80.
 - C** **Added Fault Data to IEC61850 Logical node RptRFLO**
Fault data added to IEC61850 logical node RptRFLO.
 - C** **IEC 61850 added Select before Operate selection attribute**
Support added for 'stSeld' attribute on IEC61850 for both Breakers (XCBR) and Disconnect Switches
 - D** **Adjusted Self-test target messages implementation**
Modified self-test target messages behavior from clearing when Reset key was pressed or Reset command was send, while the self-test condition was still active. On previous FW versions, Reset would clear the self-test messages despite the condition being active leaving the alarm LED flashing without a target message.
 - E** **Directional Power accuracy at lower range improved**
Improved Directional Power element's accuracy at lower end by eliminating rounding-off error
 - D** **Relay with missing Magnetics Module Self-test error behavior improved**
In previous versions of the 8Series relays missing magnetics module would be briefly detected by the relay upon power up, but it would self-reset. In current version Self-test error detection mechanism updated to consistently alarm and keep the relay out of service.
- 845**
- E** **Transformer Status Detection**
Updated Sensing by voltage under Xfmr Status Detection to support Aux VT Bank1-J2 as an added option.
- 850**
- N** **New 8 DPO-C Cards supported on 850 (P Option)**
P option (8 DPO Outputs card with dual poles on separate discrete components) is now supported on slots G and H on the 850-relays. Refer to the manual for detailed I/O card terminal mapping.

- E Frequency Tracking**
 Introduced second alternate frequency tracking mechanism Vx (J2) as an alternative Freq. Source on 850E and 850D to allow frequency tracking to continue when both the phase voltage and phase current are below minimum threshold of acceptable magnitude.
- 869**

 - G Single Line Diagram**
 Single Line Diagram (SLD) updated to show Motor RMS Current, instead Phasor Current.
 - G Average phase voltage for Delta connected VTs added**
 Support added to display Average phase voltage for delta configuration, under metering page
 - H Updated Current Unbalance calculation**
 Current Unbalance is calculated as a ratio of Negative Sequence current divided by Positive Sequence current, and if the positive sequence current was below current cut-off the result of our calculation was inconsistent with our established and field proven methods. This calculation was now updated.
 - E Phase VT Connection**
 Phase VT connection setting selection of Single VT is now visible on HMI.
 - G Corrected invalid assertion of AnyBlock flexlogic operand**
 Resolved the FlexLogic Any Block operand from turning-on when Motor status is Stopped. This issue was only present on relays with BRB or ESA features enabled.
- 889**

 - P Third Harmonic Voltage calculation corrected**
 Corrected the scaling of Nominal Secondary Voltage and Neutral Secondary Voltage for correct computation of VN+VO.

Setup Software Version 4.01

8 Series

Added warning message if action will result in 8Series product going Out of Service

Setup software will display warning message if any changes to CID file will result in relay being out of service while the settings are sent to the relay.

Warning message implemented for Trip/Close Relay setting change

Setup software will initiate warning messages when the Trip/Close relay settings are changed under Breaker, warning users' changes will impact protection and control elements relay selection for users to review the changes as needed.

USB Driver connection issue resolved

Resolved USB driver conflict that was occurring on Setup Software version 4.00, failing to establish USB connection with 8 Series devices

Service Report extraction over Ethernet and USB was reported as slow
Resolved service report download times.

Issues with intermittent Setting file transfers resolved

Resolved timeout errors on setup software version 4.00, that prevented successful setting file transfers to the 8 Series devices.

850

New 8 DPO-C Cards supported on 850 (P Option)

P option (8 DPO Outputs card with dual poles on separate discrete components) is now supported on slots G and H on the 850-relays. Refer to the manual for detailed I/O card terminal mapping.

859

FlexLogic

Resolved transfer of FlexLogic graphic content and notes to the 859 relay, while writing from offline to online

Compatibility mode

Resolved Flexmap compatibility mode, setup software was forcing 32-bit dependency despite user entering a 16-bit value.

369 to 859 file conversion

Resolved incorrect subnet address conversion that may occur during 369 to 859 file conversion.

Ethernet IP does not transfer to the relay during CID transfer

Resolved writing of Ethernet IP address.

Thermal Model screen cleanup

Removed unrelated data from being shown on Thermal Model screen.

Event and Electrical Signature records (ESA)

Resolved ability to open Event and ESA records from setup software's file menu tab.

Target message sequence

Corrected target messages sequence, to match relay's sequence.

869

Compatibility Mode status changes when User-Map setting is changed

In previous versions if a User-Map setting under Compatibility mode was changed it would disable the Compatibility mode. In version 4.01 we have resolved this issue.

469-869 File conversion error corrected

In previous version if 469 setting for Thermal Model curve was Custom or Voltage dependent, the software would always default Overload Curve to Flex Curve A. In version 4.01, this conversion is corrected.

Power Metering

Corrected VT dependencies on Power metering page, to match what was displayed on actual device

869/889**Setup software crash**

Resolved crashing of setup software that used to occur, whenever a saved converted 469-869 or 489 to 889 settings file was opened.

889**Improved setting file conversion from 489 to 889**

The following settings are now included in the setting file conversion

- V/Hz TD Multiplier
- Ground CT ratio
- Phase reversal protection time delay setting
- Phase undervoltage Curve setting
- RTD Trouble setting Undervoltage Block parameter

Single Line Diagram (SLD) Current Unbalance display issue

Resolved current unbalance value on SLD to show actual values instead of zero all the time.

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

For further assistance

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

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