



GE Consumer & Industrial



F650 Feeder/Bay Protection System

Revision 3.60 release notes

GE Publication Number: GER- 4099

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Overview

Summary

GE Multilin releases the 3.60 firmware version for F650 relays. Highlights of this release include:

- Introducing large graphical display option with Chinese language
- Broader applications for the IEC61850 protocol.
- New drag and drop based **IEC61850 Configuration Tool** in the 650 PC Setup Program.

This document contains the release notes for the 3.60 release of the F650 Protection System

- Affected product: F650 Feeder / Bay Protection System
- Date of release: April 13th, 2007
- Firmware revision: 3.60
- Boot code revision: 4.10

Description

The version 3.60 release is compatible with Energista 650 Setup version 3.60 and F650 relays operation with hardware 01 or higher (refer to Upgrade Paths).

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.

New Features

Support for Chinese Language in Graphical display

N Graphical display with Chinese characters available.

A graphical display [320x240 pixels] for Chinese language is available in F650 relay. User can configure a one-line diagram to be displayed in this graphical display using a library of standard IEC symbols.



Communications

N IEC61850: New Logical Nodes:

- **CSWI** for Switch Controller
- **XSWI** for Circuit Switch

N IEC61850: GOOSE functionality with user configurable datasets.

N A new user friendly (drag and drop based) tool for IEC 61850 configuration purposes, with options to:

- Browse and Edit F650 ICD files.
- Configure IEC 61850 reports.
- Configure Transmit (TX) and Receive (RX) GOOSE messaging.

This tool is included in Enervista 650 Setup software. Only F650 relays with firmware version 3.60 or higher can be configured using it.

Enhanced Features

Communications

E IEC61850: Increased number of Data Sets and Report Control Blocks.

- Up to 20 Data Sets available for GOOSE and Reports Configuration (up to 8 in previous firmware versions). The maximum number of Data Sets for transmission GOOSE is 4, thus if four transmission GOOSE are configured, a maximum of sixteen different Data Sets can be configured for Reports.
- Up to 64 elements in a Data set. (up to 24 in previous firmware versions)
- Up to 20 Report Control Blocks can be created. The user can decide for every control block to use it with Unbuffered or with Buffered Report.



Upgrade Paths

It is our recommendation that all customers upgrade to the latest version of F650 firmware to take advantage of the latest developments and feature enhancements. Firmware upgrades can be easily performed using the Enervista 650 Setup software. This software can also convert settings files from an older version to the latest version.

Upgrade path for hardware 01 and above

For F650 relays with hardware 01 and above, the 3.60 release can be uploaded to the relay CPU via the Enervista 650 Setup software. Upgrade package must be obtained from GE Multilin to upgrade the relays from hardware 01 to hardware 02.

Upgrade path for hardware 00

For F650 relays with hardware 00, an upgrade package must be obtained from GE Multilin to upgrade the relays CPU to hardware 0X.

Benefits of hardware 01 and above.

The benefits of hardware 01 and above are as follows:

- IEC 61850 communications protocol.
- 32 Digital Inputs and Analog Inputs options for I/O boards.
- IEC symbols in graphical display (only with hardware 02).
- Graphical display (IEC symbols) for Chinese Language (only with hardware 03).



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 programmable buttons.
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 specifications or other metering problems
P	Protection out of specifications	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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