



# 750/760 Feeder Management Relay

## Release notes

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## Overview

### Summary

- Affected products: 750/760 Feeder Management Relay
- Date of release: January 30, 2005
- Firmware revision: 7.00
- Hardware revision: K
- Boot code revision: 5.00

### Release summary

GE Multilin has released a new version of the enhanced 750/760 Feeder Management Relay that uses new technology components and allows for relay communications via Ethernet, along with enhanced EnerVista setup software. This new version records a greater number of events in the Event Recorder and allows for double oscillography capture.

Version 7.00 is not backwards-compatible with versions 6.00 and lower.

### GE Multilin technical support

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## Release details

### New features

#### Ethernet: 10Base-T Ethernet connectivity added to the 750/760 relays

Ethernet communication has been added to the 750/760 relays. The network connection is provided at the back of the relay via an RJ-45 connector. The Ethernet specifications are as follows:

Version: 2.0/IEEE 802.3  
 10BaseT: RJ-45 connection  
 Protocol: Modbus TCP/IP

With the introduction of the new Ethernet port, one of the RS485 ports will not be available. Ports will be available simultaneously as follows:




- RS232, 2 × RS485/422 with no Ethernet option
- RS232, 1 × RS485/422 with Ethernet option

To ensure optimum relay response, the typical connection timeout should be set as indicated below:

Number of TCP/IP sessions	Timeout setting
up to 2 sessions	2 seconds
up to 4 sessions	3 seconds

New setpoints have been added to configure the Ethernet port. These are indicated below.

#### PATH: SETPOINTS ▷ S1 RELAY SETUP ▷ COMMUNICATIONS ▷ NETWORK CONFIGURATION

<b>NETWORK CONFIGURATION</b> [▷]		<b>IP ADDRESS:</b> 000.000.000.000	<i>Range: standard IP address format</i>
	MESSAGE 	<b>SUBNET IP MASK:</b> 255.255.255.000	<i>Range: standard IP address format</i>
	MESSAGE 	<b>GATEWAY IP ADDRESS:</b> 000.000.000.000	<i>Range: standard IP address format</i>

Ethernet setpoints can be programmed through the relay keypad or via the EnerVista 750/760 Setup software.

## Modified features

### Event Recorder: number of events increased to 512

The Event Recorder feature records the event cause, three phase current phasors, one ground current phasor, sensitive ground current phasors, three voltage phasors, system frequency, synchronizing voltage, synchronizing frequency, and analog input level with a 1 ms time stamp.

### Order Code: the 750/760 order code has been changed to accommodate the Ethernet option

The updated 750/760 order code is indicated below. The "T" display option has been added, indicating a relay with an enhanced display and Ethernet communications.

	<b>750</b>	-	*	-	*	-	*	-	*	-	*	-	*	-	*	-	*	750 Feeder Management Relay
	<b>760</b>	-	*	-	*	-	*	-	*	-	*	-	*	-	*	-	*	760 Feeder Management Relay
<b>Base Unit</b>	750																	750 relay
	760																	760 relay with autoreclose
<b>Phase Current Inputs</b>	P1																	1 A phase current inputs
	P5																	5 A phase current inputs
<b>Zero-Sequence Current Inputs</b>			G1															1 A zero-sequence current inputs
			G5															5 A zero-sequence current inputs
<b>Sensitive Ground Current Input</b>					S1													1 A sensitive ground current input
					S5													5 A sensitive ground current input
<b>Control Power</b>							LO											25 to 60 V DC; 20 to 48 V AC at 48 to 62 Hz
							HI											88 to 300 V DC; 70 to 265 V AC at 48 to 62 Hz
<b>Analog Outputs</b>							A1											Eight (8) 0 to 1 mA analog outputs
							A5											Eight (8) 0 to 5 mA analog outputs
							A10											Eight (8) 0 to 10 mA analog outputs
							A20											Eight (8) 4 to 20 mA analog outputs
<b>Breaker Closed LED</b>									R									Red LED for Breaker Closed indicator
									G									Green LED for Breaker Closed indicator
<b>Display/Ethernet</b>										B								Basic display
										E								Enhanced display
										T								Enhanced display with Ethernet
<b>Environmental Protection</b>																H		Harsh (Chemical) Environment Conformal Coating

### Waveform Capture: enhanced to support double oscillography capture

The Waveform Capture feature has been modified to allow for double oscillography capture. The updated specifications are indicated below:

Data channels: 4 currents, 3 voltages, 14 logic input states and 8 output relays

Sample rate: 16 per cycle

Trigger source: Element pickup/trip/dropout, control/alarm event, logic input or manual command

Trigger position: 0 to 100%

Storage capacity: **2 to 16 events with 4096 to 512 samples of data, respectively**

## EnerVista 750/760 Setup changes

The EnerVista 750/760 Setup software has been redesigned to support Ethernet and the new relay hardware. The following features have been introduced with this release:

- Support for the new version 7.00 features
- Quick connect capability for Ethernet communications
- Settings file compare, rename, and duplicate capability

## Instruction manual changes

The following changes have been made to the 750/760 instruction manual:

- The order code has been updated.
- Ethernet setpoints have been added to the **S1 RELAY SETUP** page.
- Installation instructions for the Ethernet option have been added.
- Instructions on the number of Modbus TCP/IP sessions have been added.
- The event recorder and waveform capture specifications have been updated.
- The list of type tests has been update to reflect the latest conformity.

The instruction manual publication code has been updated to GEK-106471C.