



745 Transformer Protection System

Product Release Notes

GE Publication Number: GER-4080A

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Overview

Summary

- Affected products: 745 Transformer Protection System
- Date of release: May 8, 2006
- Firmware revision: 5.00
- Boot code revision: 3.00
- Hardware revision: H
- Manual revision: GEK-106635A

Release summary

GE Multilin has introduced a new generation of 745 Transformer Protection System with Ethernet connectivity and added memory to double the events record and oscillography capture. The EnerVista 745 Setup software with enhanced settings file features and Viewpoint Maintenance software with the new Security Audit Trail offer a complete package that protects against accidental changes in the settings file and increases ease of use.

The new firmware revision is V5.00 and the new hardware revision is H.

GE Multilin technical support

GE Multilin contact information and call center for product support is shown below:

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Release details

New features

Communications: 10Base-T Ethernet connectivity added to the 745

10Base-T Ethernet connectivity has been added to the 745 to allow customers to communicate via Ethernet networks. The Ethernet connection is at the back of the device through the RJ45 connector. Refer to the 745 instruction manual for details on the physical connection.

The Ethernet specifications are as follows:

Version 2.0/IEEE 802.3
10Base-T: RJ45 connection
Protocol: Modbus TCP/IP

To ensure optimal response from the 745, the typical connection timeout for master devices should be set as shown in the following table:

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

The following setpoints have been added for Ethernet communications under the network setup menu: [IP ADDRESS](#), [SUBNET IP MASK](#), and [GATEWAY IP ADDRESS](#).

The [ETHERNET STATUS](#) indicators and [MAC ADDRESS](#) actual values were added to the network status actual values menu.

Security: Security Audit Trail added to the 745

The Security Audit Trail is a new feature implemented in the firmware to help customers track device configuration changes. This feature will capture the following events:

- Changing setpoints
- Uploading new firmware to the 745 Transformer Protection System
- Load factory defaults setpoints
- Uploading setpoint file to the 745 Transformer Protection System

The changes record will be accessible through the EnerVista Maintenance software package.

Order codes: new models and options have been added

The order code has changed to introduce the Ethernet option by adding "-T" to the order code to indicate 10Base-T Ethernet connectivity. The new order code is shown below:

Table 1: 745 order codes

	745 - * - * - * - * - * - * - *											
Base	745											745 Transformer Protection System
Windings per phase	W2											Two windings per phase
	W3											Three windings per phase
Phase current input ratings		P1										Winding 1 = 1 A, Winding 2 = 1 A, Winding 3 = 1 A
		P5										Winding 1 = 5 A, Winding 2 = 5 A, Winding 3 = 5 A
		P15										Winding 1 = 1 A, Winding 2 = 5 A
		P51										Winding 1 = 5 A, Winding 2 = 1 A
		P115										Winding 1 = 1 A, Winding 2 = 1 A, Winding 3 = 5 A
		P151										Winding 1 = 1 A, Winding 2 = 5 A, Winding 3 = 1 A
		P155										Winding 1 = 1 A, Winding 2 = 5 A, Winding 3 = 5 A
		P511										Winding 1 = 5 A, Winding 2 = 1 A, Winding 3 = 1 A
		P515										Winding 1 = 5 A, Winding 2 = 1 A, Winding 3 = 5 A
		P551										Winding 1 = 5 A, Winding 2 = 5 A, Winding 3 = 1 A
Ground current input ratings			G1									Winding 1/2 = 1 A, Winding 2/3 = 1 A
			G5									Winding 1/2 = 5 A, Winding 2/3 = 5 A
			G15									Winding 1/2 = 1 A, Winding 2/3 = 5 A
			G51									Winding 1/2 = 5 A, Winding 2/3 = 1 A
Control power				LO								40 to 60 V DC; 20 to 48 V AC at 48 to 62 Hz
				HI								90 to 300 V DC; 70 to 265 V AC at 48 to 62 Hz
Options						A						Analog inputs/outputs
						L						Loss of life
						R						Restricted ground fault
Display/Ethernet							B					Basic display
							E					Enhanced display, larger LCD
							T					Enhanced display, larger LCD, with Ethernet (10Base-T)
Harsh environment									H			Harsh (chemical) environment conformal coating

Modified features

Firmware: new firmware design

Firmware revision 5.00 has been redesigned to accommodate the new hardware. This version is not backwards compatible with versions 4.00 and lower.

Event recorder: enhanced event recorder function

The Event recorder can now capture 256 events. The 745 Transformer Protection System records the event cause with a 1 ms time stamp.

Oscillography: enhanced waveform capture function

The oscillography capture has been increased from 64 to 128 cycles at a sample rate of 64 samples per power cycle.

Software updates

The EnerVista 745 Setup software version 5.00 has been enhanced to support Ethernet and new hardware. Newly introduced features provide better support for customers during setup:

- Quick Connect feature simplifies serial connection to the 745 Transformer Protection System
- Offline serial number locking feature

Instruction manual updates

The following have been added or changed in the 745 Transformer Protection System instruction manual for revision 5.00 (GE publication number GEK-106635A):

- Ethernet order code
- Ethernet setpoints added to the [S1 RELAY SETUP](#) page
- Installation details for the Ethernet option
- Instructions on the number of Modbus TCP/IP sessions
- Updated events record and oscillography capture information
- Latest standards added to the type test list

Upgrade option

The newly designed 745 Transformer Protection System maintains the identical footprint, functionality, and memory map as previous versions. The EnerVista 745 Setup software with the Quick Connect feature allows for easy configuration of the relay. The Viewpoint Monitoring and Maintenance package offers critical information on equipment health, allowing users to take action to prevent failures.

GE Multilin encourages customers to upgrade to the new 745 Transformer Protection System to take advantage of the above mentioned features. Contact GE Multilin for upgrade inquiries.