EnerVista

The EnerVista™ suite is designed to simplify every aspect of your workflow processes

LAUNCHPAD

Device Setup & Document Management Toolset

The EnerVista launchpad software is a powerful toolset used for the complete support and management of GE Multilin products. Support application including product software, manuals, and setting files management is used to ensure your important files are kept up-to-date and easily accessible. Site Management will allow you to properly maintain your asset and devices by providing real-time diagnostic data and reports.

VIEWPOINT engineer

Logic, IEC61850 System Configuration and Real-Time Monitoring

Viewpoint Engineer is the most advanced tool for protection & control engineers and commissioning staff available. Use the full-featured Graphical Logic Designer to build and annotate complex Flexlogic™ and then observe it in real-time with the Graphical Logic Monitor. Use the System Designer option to design and annotate IEC61850 communication schemes, including ICD file import and SCD file export for non-GE IEDs.

VIEWPOINT maintenance

Security Auditing, Device and Asset Health Reporting and Fault Data Retrieval

Comprehensive Security Report outlines changes to device settings, including the MAC address if the change was made via Ethernet for compliance with NERC Critical Infrastructure Protection standards. Device and Asset Status Reports detail current and historical health for both the IED and the asset being protected.

VIEWPOINT monitoring

Easy-to-Use Monitoring and Data Recording

Viewpoint Monitoring provides simplified visualization of real-time data from all GE Multilin using ready-made Plug-and-Play screens. Built-in data logger, alarm annunciator and time synchronization round out this HMI package. Third-party devices can be incorporated using either generic Modbus RTU or Modbus TCP/IP or IEC61850 and optional OPC/DDE server connectivity can link to existing facility DCS or SCADA systems.

INTEGRATOR

OPC Connectivity to Automation and Historian Applications

Seamless integration of GE Multilin and generic Modbus devices into existing DCS, SCADA systems and other data consumer applications (data historians, data visualization tools) using standard open OPC/DDE connectivity.

Digital Energy
Multilin

Software

LAUNCH▽PAD

DEVICE SETUP, DOCUMENT & SITE MANAGEMENT TOOLSET

The EnerVista™ Launchpad software is a powerful toolset used for the complete support and management of Multilin products. Support applications including product software, manuals, and setting files management used to ensure your important files are kept up-to-date and easily accessible. Site Management allows you to properly maintain your asset and devices by providing real-time diagnostic data and reports.

KEY BENEFITS

- Provides a simple and intuitive method for configuring all Multilin devices

- Ensures setup software, manuals and other support documentation is available to you and is always up to date

- Supplies all the tools necessary for analyzing faults to get your equipment back up and running

- Provides Asset and Device management capability at the click of a button

KEY FEATURES

- Configure and access all your Multilin devices from a single application

- Create and edit setting files offline or in real-time directly to your relays and meters

- Manage all of your support documents in a single reference library

- Provides an intuitive device health logic tool, which helps you to maximize your device capability.

- Receive automatic firmware, software, and hardware upgrade notices. Keep informed with the latest innovation and technology on your device when you register your Multilin products.

- Contains real-time metering, fault diagnostic and maintenance data for each connected device.

Software

Site Management

- Organize your protection devices with one interface
- Automated power system monitoring directly from Launchpad
- A management toolset for all Multilin devices settings
- Receive comprehensive Site and Device reports from Launchpad

Software & Document Management

- Instantly identify, download, and install new versions of setup software when available with a single click
- Directly install new setup software and support documents without having to navigate to the website

Device Management & Health Logic

The device metering window provides system critical and diagnostics data such as Current, Voltages, and Event Records at your finger tips. The device health logic monitors defined setpoints and actual values, then returns results in a graphical, user friendly display. This tool will help you maintain the minimum required setting and assist you to maximize your relay capabilities. The 4 categories that are monitored are:
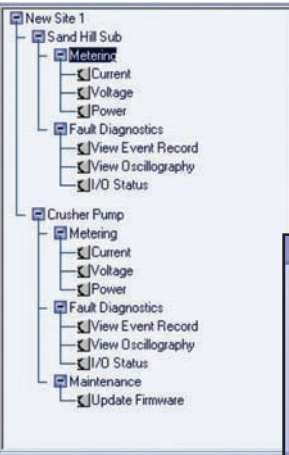
1. Device Security – This tool will prevent unauthorized access to your relay setpoint file.
2. Protection - This tool ensures your relay is configured with the minimum required protection settings.
3. Fault Diagnostics – This feature monitors the main diagnostics tool in your relay and indicates when they are configured.
4. Device Status - Ensures your protection relay is online and ready to protect your valuable assets.
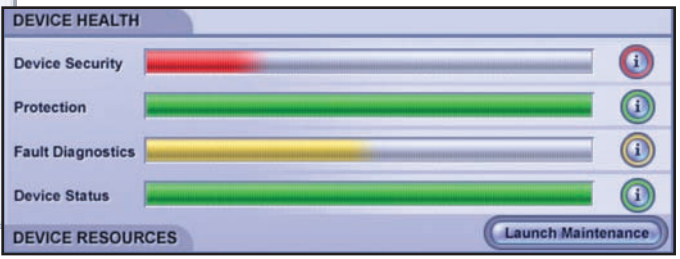
Device Metering Window

Device Health logic

Easily Configure and Manage your Multilin Setting Files

The setting file management tool comes standard with EnerVista Launchpad and provides a single platform to configure your Multilin protection device setting files. Additionally, you will have the ability to link related documents, such as specifications and equipment data sheets, to their respective protection device useful for day-to-day operation.

- Retrieve your device setting files and organize them according to the asset being protected
- Manage documents such as data sheets, and engineer white papers related to your protection device assets
- Access and save setpoint files for your devices regardless if the device is offline or online

Site Reports

Enervista Launchpad software can be used to generate comprehensive site reports for your install base and provide recommendations useful to determine upgrade and maintenance schedules for your assets and protection devices. With the click of a button, you can download critical data, which includes:

- Hardware upgrades and replacement recommendations
- Firmware upgrade recommendations, if applicable
- Complete Installed based configured by age and device type
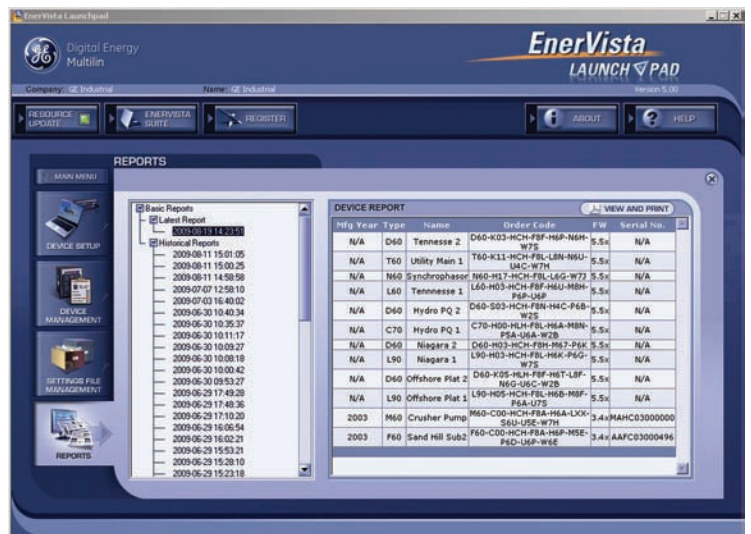
Device Setup

Organize your installed base devices with a single user-friendly interface.

Save precious time when establishing communications to your protection devices. Whether you have a small or large installed base, individual or networked connection, Device Setup will help you organize and manage your valuable assets:

- Manage your asset by organizing your site and protection device configurations
- Allows seamless communication with multiple devices
- Provides resources related to your protection scheme and individual protection device
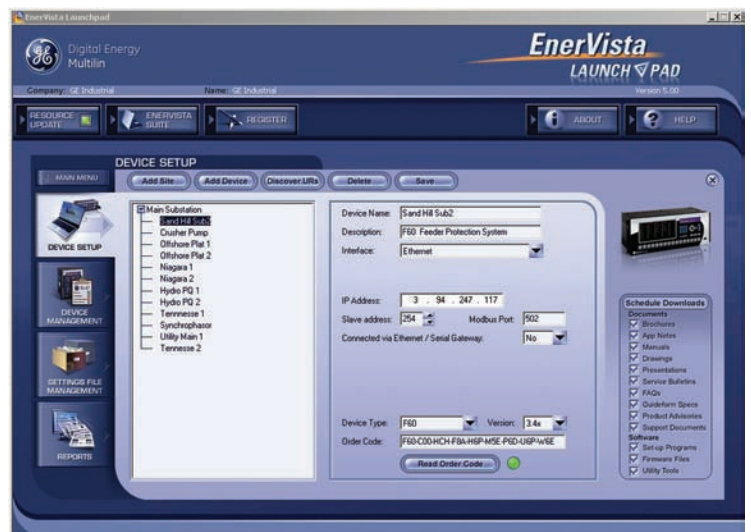
A Complete Up-To-Date Reference Library

EnerVista™ Launchpad will make sure that all necessary documents, setup programs and software tools are up-to-date by automatically retrieving them from our web site or Product CD, or by sending you an email whenever new information is available.

Manage all of your Support Documents in a Single Desktop Library

Launchpad offers a complete library of document resources that is automatically updated and organized for you.
The Document Library includes:

- Manuals
- Application Notes
- Service Bulletins
- Guideform Specifications
- Drawings
- Support Documents
- FAQ's
- Brochures

Launchpad's subscription application will keep you up-to-date on the new product resources as soon as they are available. Launchpad will allow you to sign up to receive notification about new information by one of the following methods:

- Alerting you whenever you open up EnerVista™ Launchpad
- Emailing you about the new resource available
- Automatically downloading new documents into Launchpad

All critical information about Multilin products will be up to date and at your fingertips

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Create Templates to Reduce Configuration Time

The template creation tool included with EnerVista™ Launchpad will greatly reduce the amount of time required to configure relays that are performing similar functions. The example below demonstrates how the time required to configure 10 similar relays can be reduced by up to one third using Launchpad templates.

Traditional Device Configuration Method

4 Hours	+	2 Hours	+	1 Hour	+	1 Hour	+	2 Hours	= 10 Hours per Relay
Create Relay Control Logic		Calculate Protection Settings		Enter Protection Settings		Check Settings for Errors		Compare Files for Discrepancies	x 10 Relays

= 100 Hours

Launchpad Template Configuration Method

4 Hours Once only	+	2 Hours	+	1 Hour	4 Hours + 3 Hours per Relay
Create Control Logic for all Relays		Calculate Protection Settings		Enter Protection Settings	x 10 Relays

= 34 Hours

SYSTEM CONFIGURATOR AND COMMISSIONING TOOLSET

Viewpoint Engineer is a set of tools that will allow you manage, configure, and test your UR and UR^{Plus} relays at a system level in an easy to use graphical drag-and-drop environment. This software will streamline the steps required to configure devices, commission relays and manage the assets in your power system .

KEY BENEFITS

- Reduce the amount of time required to create complex logic schemes
- Configure your IEC61850 devices at a system level using a single application
- Program Remote I/O communications for multiple relays in an intuitive graphical interface
- Simplify commissioning by identifying the status of the relay logic in real-time
- Test protection relaying at a system or substation level rather than as an isolated device

- Provides a means for managing all documentation about all assets in your substation
- Decreases the number of support documents engineers require for commissioning and maintenance
- Full online functionality including uploading and downloading of settings files, actual values and event record metering and monitoring, and firmware updates

KEY FEATURES

- Configure UR, UR^{Plus} and MM300 relays in an intuitive Graphical environment.
- Program Remote I/O relay communication settings for multiple devices in one simple step
- Evaluate the status of Flexlogic™ equations and Remote I/O messaging in real time

- Annotate UR, UR^{Plus} and MM300 settings and store this documentation in the setting file.
- Link support documents to the System Designer Project to create a single location for substation asset management
- Reduce integration time by automatically detecting and configuring your UR devices

Software

System Designer

Design Control Logic at a System or Substation Level

The System Designer allows you to inter-connect the control logic distributed across multiple UR and UR^{Plus} devices by programming Remote I/O messages in an intuitive, graphical drag-&-drop environment.

System Level Settings Configuration

- Design automation logic distributed across multiple UR and UR^{Plus} devices
- Configure Remote I/O messaging in both the Sending and Receiving devices in one simple step
- View "Virtual Wiring" communication diagrams in a manner that is similar to hard wiring schematics

Multiple Setting Files Created

- Configure the settings for multiple UR and UR^{Plus} devices at one time
- A separate setting file will be created for each UR device used in the System Logic Designer
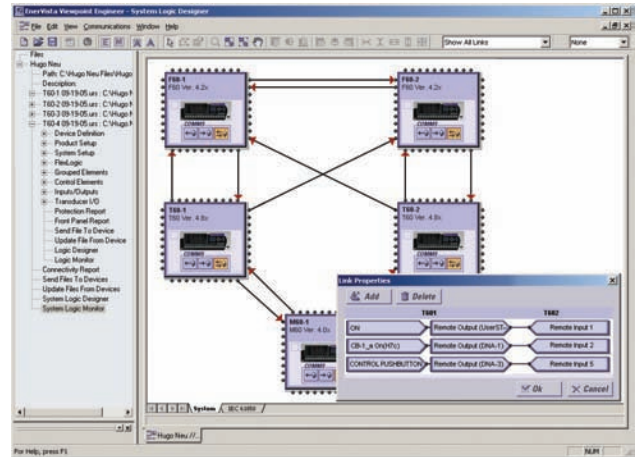
Configure Remote I/O communications for multiple relays in one easy drag-&-drop step

Connectivity Report

The connectivity report provides a detailed report of all peer-to-peer mappings between the settings files associated with a project, including:

- IEC61850 GSSE/GOOSE and UCA2 GOOSE messaging
- Direct I/O configured between the UR relays.

The report will be generated as a PDF for simple archiving and emailing. A sparate PDF report will be generated for each UR or UR^{Plus} device

Document System Level Setting Diagrams

- Annotate Remote I/O System diagrams to describe Inter-Relay messaging for testing engineers
- Documentation of Remote I/O System diagram stored in a project folder for permanent archiving
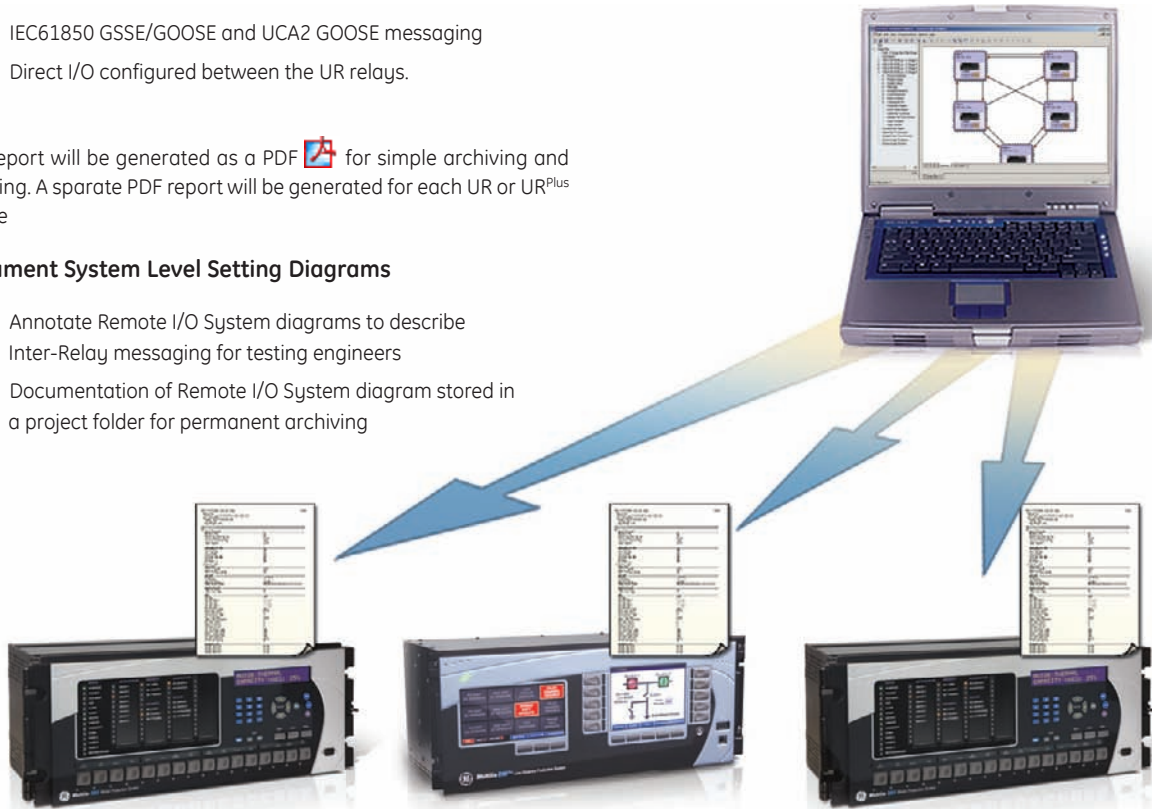
Viewpoint Engineer will create a separate setting file for each UR or UR^{Plus} device that is configured in the System Designer. These setting files will contain all communication settings needed for Remote I/O communications

IEC61850 Configurator

Import ICD and Generate SCD files using a single application

The IEC61850 enables system level configuration of the communications between all IEC61850 devices.

Importing ICD Files

- Import ICD files from any IEC61850 Compliant device
- Create a library of ICD files, organized by device location, device type, or project
- View file information in an easy to understand ICD viewer
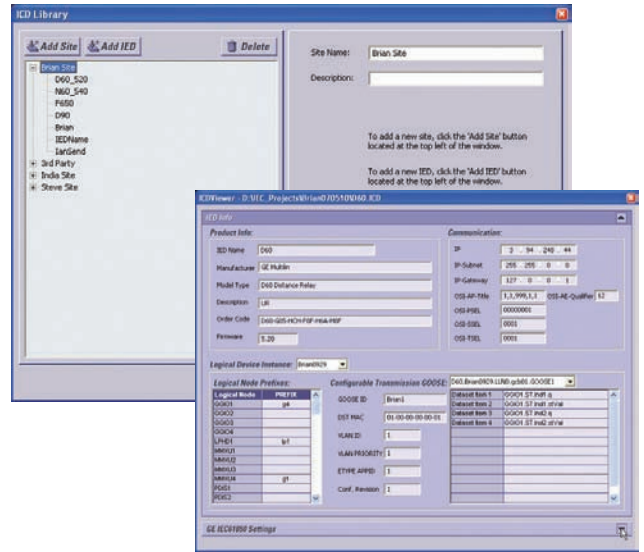
Create SCD Files

- Organize files by creating projects. Project files contain all subnet communication parameters as well as the associated device ICD files
- Configure the communications between relays by having the IED's subscribe to the appropriate transmission GOOSE messages
- The saved project becomes the SCD file needed to generate the GOOSE reception settings files for the IED's in the system

Device ICD Files

IEC61850 Configurator

SCD File

IED 1

IED 2

IED 3

Settings Files
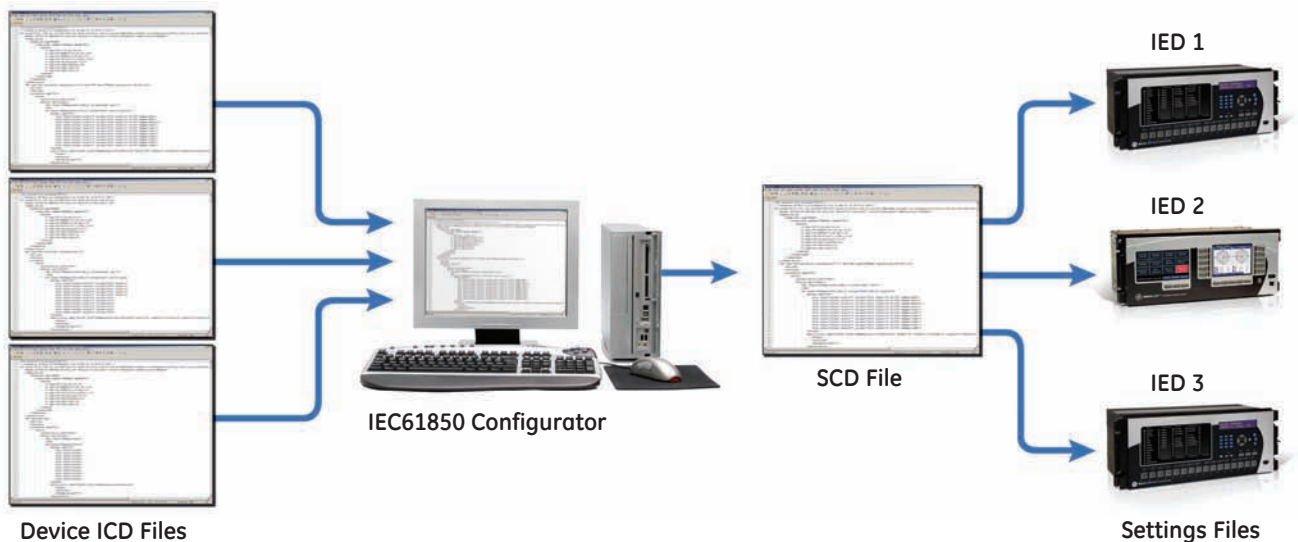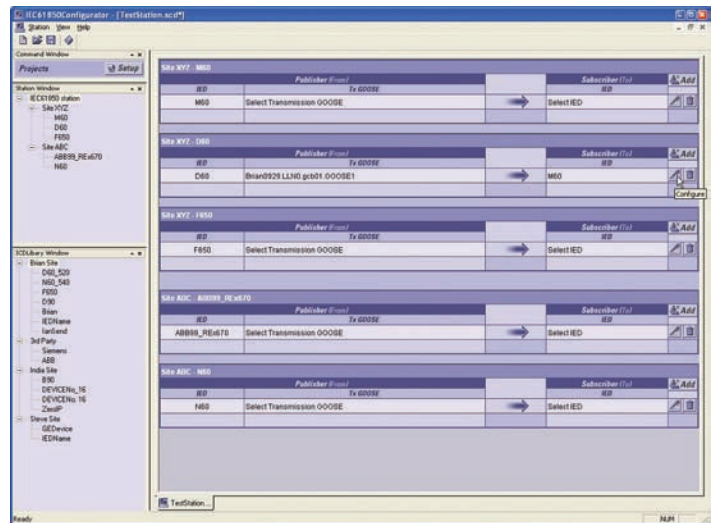
Asset Manager

Manage all Assets in Your Substation or Power System

The Asset Manager will provide you with a tool to archive and manage critical information about any asset in your substation. All information in your power system can be stored in a Project Folder that can be shared between engineers and act as a single repository for any information required for your installed equipment.

Central Link to all Critical Information

- Create a Project folder that will act as a single location to reference all information about equipment in a substation
- Create an intuitive layout and navigation interface for your project by importing existing schematics or using the drawing tools provided
- Link documents, drawings, or setting files for all substation equipment into the project for complete system asset management
- Launch directly from the Asset Manager into the System Designer or Graphical Flexlogic™ Designer for programming your devices
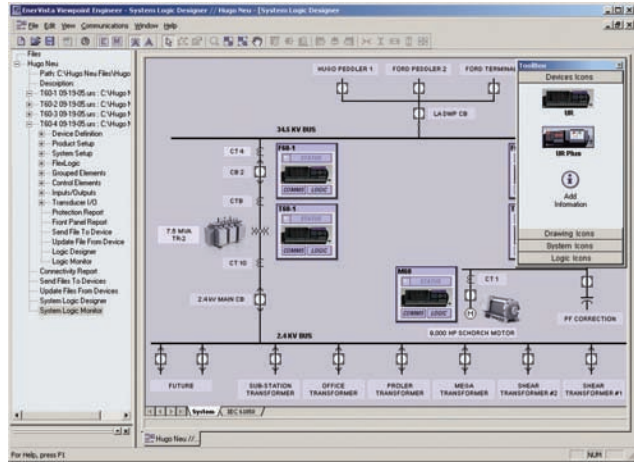
Create a Project that will identify, document, and archive information about all assets in your substation (relays, breakers, t ransformers etc.)

Graphical Flexlogic™ Designer

Design Flexlogic™ with Drag-&-Drop Ease

Simplify the process of creating complex control logic for substation automation in your UR, UR^Plus, and MM300 relays to perform functions such as advanced tripping, reclosing, interlocking, and transfer schemes.

Simplified Control Logic Creation

- Create FlexLogic™ with drag-and-drop ease
- Connect outputs of Flexlogic™ equations directly to contact outputs and LEDs
- Configure logic over multiple worksheets to keep logic structured and organized

Documentation of Settings

- Annotate control logic with documentation and graphics
- Store all settings documentation directly in the relay's setting files

Powerful Intuitive Complier

- Optimizes Flexlogic™ equations to use as few lines as necessary
- Detects and alerts user of errors and problems in Flexlogic™ design
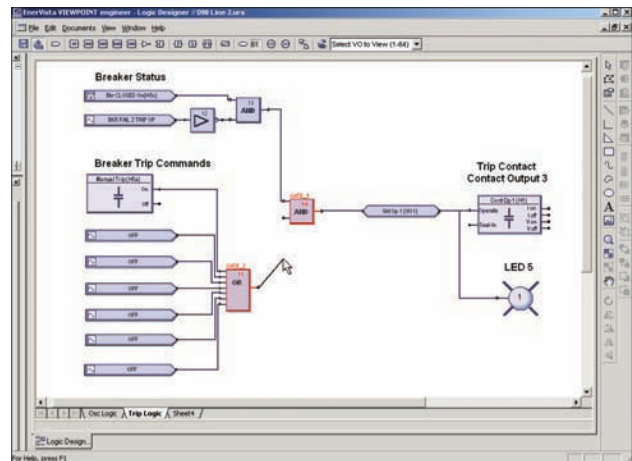
Design and document relay control logic in an intuitive drag-and-drop interface

MM300, Universal Relay, and UR^Plus

Software

Logic Analyzer

Real-Time Feedback of Flexlogic™ Status

When connected to your UR, UR^Plus, and MM300 relays, Viewpoint Engineer will provide real-time feedback of the status of the Flexlogic™ inputs, logic gates, timers, latches and outputs for every equation in the relay.

Simplified Troubleshooting

- Follow the operation of your relay through each step of the Flexlogic™ equations
- Detect problems in wiring or programming by viewing the status of all inputs in one screen
- Determine which inputs are causing each logic gate to be asserted
- Identify the logic that is causing the relay to not act as expected

Real-Time Feedback of Peer-to-Peer Message Status

Connecting Viewpoint Engineer to the local area network allows you to receive real-time feedback of the status of Remote I/O messages from both the relay sending the message and the relay receiving the Remote I/O message.

Simplified System Troubleshooting

- Determine the status of all Remote I/O messages sent to other devices in the network
- Verifies that Remote I/O signals are received and interpreted correctly by the intended devices
- Reads settings from UR and UR^Plus devices on the network and automatically creates a Remote I/O System Diagram
- Analyzes the settings in all UR and UR^Plus devices and verifies correct programming between sending and receiving devices

Relay internal logic represented visually to simplify commissioning and troubleshooting
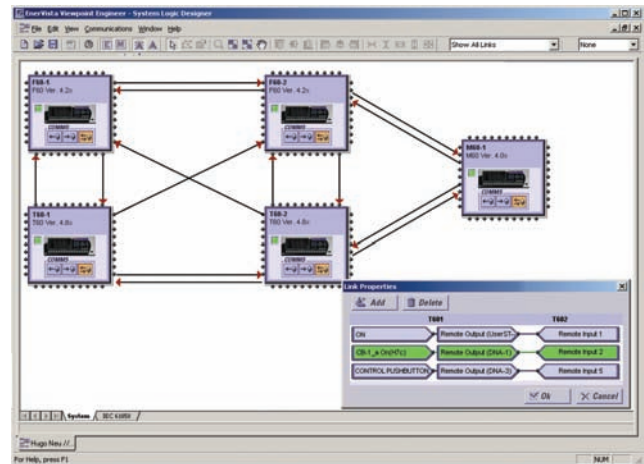
Analyze the status of Remote I/O messages from both the Sending and Receiving devices in Real- Time

Viewpoint Engineer Software Selection Guide

	*	*	*	
VPE VPE - UR Plus VPE - MM300				Viewpoint Engineer for UR Relays Viewpoint Engineer for UR Plus Relays Viewpoint Engineer for MM300 Relays
	1 5 10 50			Single License 5 Pack 10 Pack 50 Pack
		S		No System Designer System Designer Option/IEC61850 Configurator
			G1	Additional 1 Year Updates

TROUBLESHOOTING AND REPORTING TOOLS

Viewpoint Maintenance is a must-have tool for any integrators or electrical staff involved in power system protection and maintenance. This software increases the security of your relays, reports your device's operating status and simplifies the steps to troubleshoot your device.

KEY BENEFITS

- Reduce the time required to perform maintenance on your device
- Increase the security of your relays by identifying relay settings that have been changed
- Avoid costly downtime by reducing the time required to collect data for troubleshooting faults

- Improve maintenance scheduling by prioritizing service needed for your power system equipment
- Identify potential system problems before they become critical

KEY FEATURES

- Security Audit Trail tracks settings and configuration changes, who changed them, and the time and method of the change
- Single button click to download and compile all fault diagnostics into a single zip file for easy sharing with engineers who can help assess system problems
- Retrieve critical system information that will help asses potential system faults

- On-line and hard copy reports for easy viewing
- Easily identify the file name of the settings file loaded on the relays
- Support for the following GE Multilin IEDs: MM300, 350, 369, 469, 489, 745, 750/760, PQM II, B30, C30, C60, C70, C90 Plus, D30, D60, D90 Plus, F35, F60, G30, G60, L30, L60, L90, M60, N60, T35, T60*

* Consult the latest Viewpoint Maintenance release notes for a complete list of devices supported by this function.

Security Audit Trail*

The Security Audit Trail feature in Viewpoint Maintenance is the first of it's kind, automatically tracking the details of settings changes to your relays along with the MAC address of the user who changed them. This traceability helps map out where a problem may have occurred and will help improve maintenance procedures to prevent them from happening again. This is also a valuable tool for ensuring the system configuration is the same as when it was commissioned.

Security Audit Trail Features:

- Date and time of hardware, firmware or setting changes made to your relays
- Logging of the MAC address of computers making settings changes
- Track method of how settings changes were made (*i.e.* keypad, serial port, Ethernet)

- Printer-friendly option to view hard copy reports
- Filter by date to identify changes to settings over time
- Ability to identify the name of settings files for accurate identification

Date and Time that the Security Report was generated

Description of the GE Multilin Relay
- Equipment Name
- Relay Model Number and Firmware version
- Relay Serial Number

Summary of the last time the configuration was changed
- Name of settings file
- Who loaded the file
- When the file was loaded

History of last 10 occurrences the configuration was changed
- Date and time of configuration change
- Number of settings changed at this time
- Method used to change the relay settings
- MAC address of computer sending settings
- Name of the setting file sent to the Relay
- The relay status after the settings changes

Detailed description of all changes made to the relay's configuration
- Date and time of configuration change
- Description of the setting that was changed
- Setting value before change was made
- Setting value after change was made

Convenient File Format
- On-line and off-line copies
- Easily zip these reports with other pertinent files such as settings files and fault reports to share with engineers

Supported in the following GE IED devices: UR, UR Plus, 350, 369, 745

* Consult the latest Viewpoint Maintenance release notes for a complete list of devices supported by this function.

Device Status Reports*

Reduce the time required to perform maintenance on your device by receiving a report that shows the health and operating status of your relays, meters, and the power system being monitored.

Status Reports Include:

- Current operating condition of the GE Multilin device
- Operating status of the equipment being protected
- Critical device settings that have not been programmed

- Operating history of the monitored devices
- Maintenance issues that need to be addressed
- LED simulated view of equipment targets and alarms detected
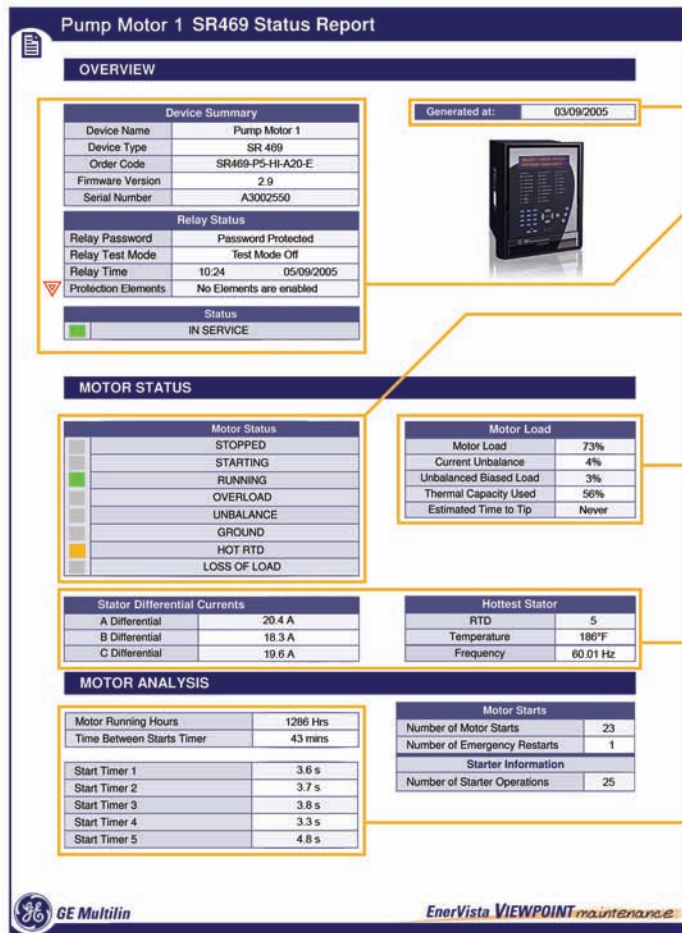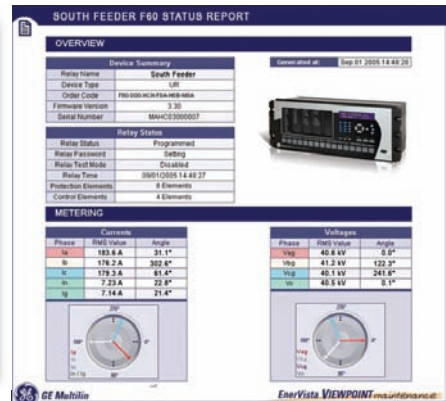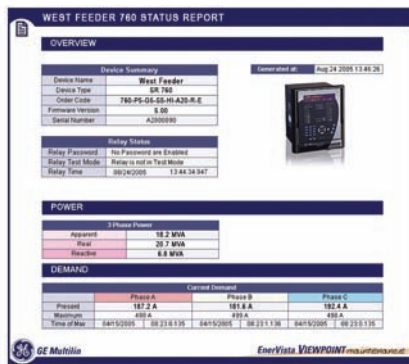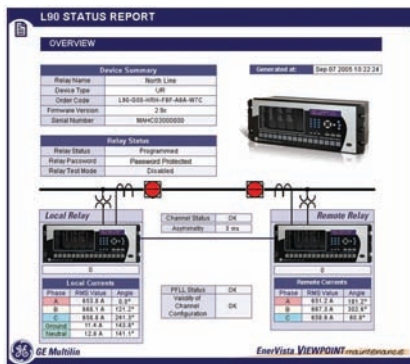
Date and Time that the Status Report was generated

Description of the GE Multilin Relay and equipment being protected
- Equipment Name
- Relay Model Number and Firmware version
- Relay serial Number
- Intelligent Reporting raises red flags to draw attention to disabled protection or control elements

Equipment Targets and Alarms detected by the relay
- Motor Overload
- Hot RTD Alarm
- Loss of Load

Current Operating Condition of the equipment
- Motor Speed
- Transformer Load
- Tap Changer Position
- Estimated Time to Trip

Critical information that can aid in anticipating faults
- Differential Currents
- Temperature
- Frequency

Historical Information about the asset that aids in predicting maintenance requirements
- Motor Running hours
- Accumulated Loss of Life
- Number of Breaker Operations

Software

* Consult the latest Viewpoint Maintenance release notes for a complete list of devices supported by this function.

Comprehensive Fault Diagnostics*

Reduce time required to collect data for troubleshooting a fault with Viewpoint Maintenance. There is no need to access the setup program for the device or sift through settings to figure out what data is needed. With the click of a button, Viewpoint Maintenance will gather the required information including pertinent settings files, oscillography, events, fault reports, data logger and health reports and package it into a single zip file to allow for easy sharing with engineers to assist with your fault analysis.

Fault Diagnostics Features:

- Effortlessly collect the data required to diagnose a fault
- Automatically package all pertinent information into a .zip for easy file sharing
- Eliminate costly hours of troubleshooting by filtering data at the click of a button

- Assess why and how the fault occurred to improve preemptive maintenance procedures
- Avoid costly downtime and customer interruptions
- Reduce the amount of time required to troubleshoot a fault to get your system back up and running
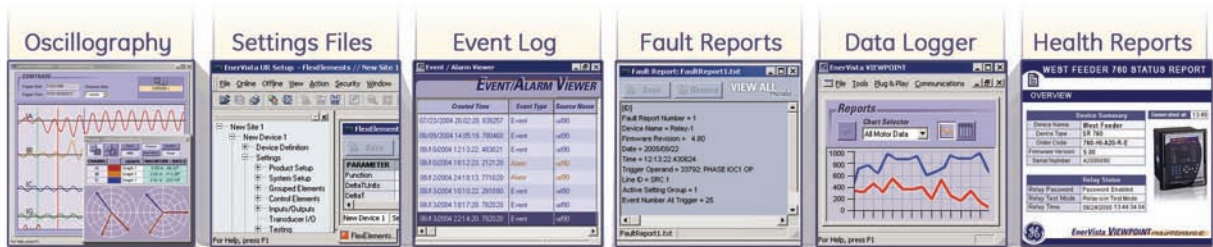
① At the click of a button Viewpoint Maintenance will gather all required information including pertinent Settings Files, Oscillography, Events, Fault, Data Logger and Health Reports...

② ...Viewpoint Maintenance then automatically packages and compresses these files into a single .zip file...

③ ...and stores the zipped file on your hard drive for easy emailing to your engineers or instantly emails to GE Tech support

Viewpoint Maintenance Software Selection Guide

VPM	*	*	EnerVista™ Viewpoint Maintenance
	1		Single License
	5		5 Pack
	10		10 Pack
	50		50 Pack
		G1	Additional 1 Year Updates

* Consult the latest Viewpoint Maintenance release notes for a complete list of devices supported by this function.

EASY TO USE MONITORING AND DATA RECORDING

Viewpoint Monitoring is a powerful yet simple to use monitoring and data recording software application for electrical systems that will provide you with total visibility and control of your power system or substation. By communicating with your Intelligent Electronic Devices (IED's), Viewpoint Monitoring will give you an overall view of your entire power system as well as collect critical real-time and historical disturbance data to assist with analyzing past or impending power system events.

KEY BENEFITS

- Save time and cost integrating your GE Multilin devices using pre-programmed memory maps
- Reduces fault analysis time by storing critical fault data in a central location
- Reduce integration time by automatically detecting and configuring your UR devices

- Perform load analysis by recording and trending power equipment load levels
- Automatically generated monitoring screens provide instant equipment visibility
- Remote viewing of Viewpoint Monitoring systems using ViewNodes

KEY FEATURES

- Monitor up to 150 devices or 9000 data points
- Plug-and-Play analysis of power system equipment
- Single-line monitoring and control
- Communicate with any Modbus compliant IED
- Simplify the monitoring of devices from multiple vendors - IEC61850 option
- Pre-configured memory maps of GE Multilin devices
- Annunciator alarming with visual, audio, and email notification

- Trending of up to 500 power system data points with 1 minute resolution
- Automatic collection of events and waveforms from GE Multilin devices
- Construct single-line monitoring screens in minutes with drag-and-drop ease
- Diagnose waveform fault data recorded in power system devices

Plug-and-Play Monitoring

Instantly View Device and Asset Monitoring Screens

Viewpoint Plug and Play monitoring is a series of pre-configured modules for analyzing the health and status of your power system equipment. Viewpoint Monitoring will detect the devices you are using and automatically generate monitoring screens that are tailored to your devices and wiring configurations. Save hours of engineering effort and begin monitoring your protection devices right away.

Auto-Discovery of Devices

Viewpoint Monitoring reduces integration time, as well as the opportunity for error when configuring your devices, by automatically detecting and configuring your UR devices.

Viewpoint Monitoring Advantage

How to save time and costs using Viewpoint Monitoring

Example of connecting and communicating with a 469 Motor Protection Relay to monitor the following relay and motor data:

Equipment Overview | **Power Metering** | **Trip Analysis**

OVERVIEW
- Operating condition of your motor
- Status of your GE Multilin Relay

METERING
- All metering quantities (Amps, Volts, Power, Demand)
- Motor temperature monitored by the RTD's

ALARMS
- Active Alarms detected by the relay
- Latched Alarms that require clearing

TRIP
- Cause of the last motor trip
- Pre-trip data

LEARNED
- Learned motor and RTD data
- Learned motor load

MAINTENANCE
- Trip counters and motor starts
- Total motor running hours

With other HMIs

1 Hour	+	10 Hours	+	1 Hour	+	10 Hours	+	3 Minutes	+	8 Hours	= 33 Hours per Relay
Select data points for use in your system		Type in all required mnemonics		Scale the values		Test memory map to ensure loaded accurately		Type in IP address of your device		Create your monitoring screens	x 10 Relays

= 330 Hours

With Viewpoint Monitoring

| 3 Minutes	*Viewpoint Monitoring Automatically creates your memory maps and monitoring screens*	= 3 Minutes per Relay
Type in IP address of your device		x 10 Relays

= 30 Minutes

Software

Plug-and-Play Motor Monitoring

Use Viewpoint Monitoring with your Motor Protection Equipment

Instantly created overview screens will show the operating condition of your motor and the status of your GE Multilin Relay. Additional monitoring screens available can show you the value of all metering quantities, the motor temperature monitored by the RTDs and any alarms that have been detected by the relay. Historical data that is shown on other available screens can indicate the cause of the last motor trip, operating information the relay has learned about the motor, and any maintenance issues that may need addressing.

Instantly view critical information such as:

- Number of motor starts
- Learned motor starting current
- Motor running hours
- History of motor trips
- Real time power quantities (amps, motor load)
- Motor temperature

Supported Devices:

- M60 Motor Protection System
- 469 Motor Protection System
- 369 Motor Protection System
- 269 Motor Protection System
- 239 Motor Protection System
- MM300 Motor Management System
- MM2/MM3 Intelligent MCC Controller
- SPM Synchronous Motor Protection System
- RRTD Remote RTD Module

View motor status using digital inputs, analog inputs and RTD inputs

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Plug-and-Play Transformer Monitoring

Use Viewpoint Monitoring with your Transformer Protection Equipment

Instantly created overview screens will show the operating condition of your transformer and the status of your GE Multilin relay. Additional monitoring screens allow further analysis of your transformer by viewing the metering, power, demand, energy, and harmonic data that is being measured by your relay.

Instantly view critical information such as:

- Transformer energization status
- Real time power quantities (amps, transformer loading, demand)
- Current harmonic analysis
- Accumulated loss of life
- Tap changer position
- Hottest transformer winding temperature

Supported Devices:

- T60 Transformer Protection System
- 745 Transformer Protection System
- T35 Transformer Protection System
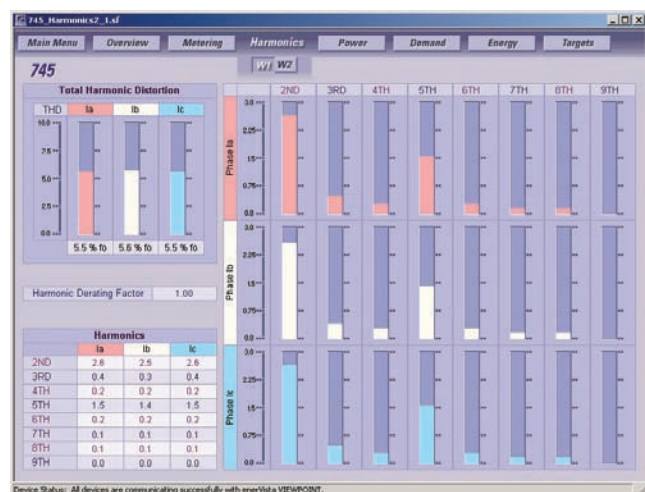
Monitor total harmonic content in each phase for all windings

Software

Plug-and-Play Generator Monitoring

Use Viewpoint Monitoring with your Generator Protection Equipment

Instantly created overview screens show the operating condition of your generator and the status of your GE Multilin relay. Further generator analysis can be performed with additional monitoring screens that monitor the value of all metered quantities, the generator temperature monitored by RTD's, and any alarms that have been detected by the relay. Additional screens provide historical information, indicating cause of the last generator trip, operating information the relay has learned about the generator, and any maintenance issues that may need addressing.

Instantly view critical information such as:

- Generator loading
- Real time power quantities (amps, volts)
- Cause of trip data
- Generator running hours
- History of generator trips
- Generator temperature

Improve maintenance efficiency by analyzing trip operations
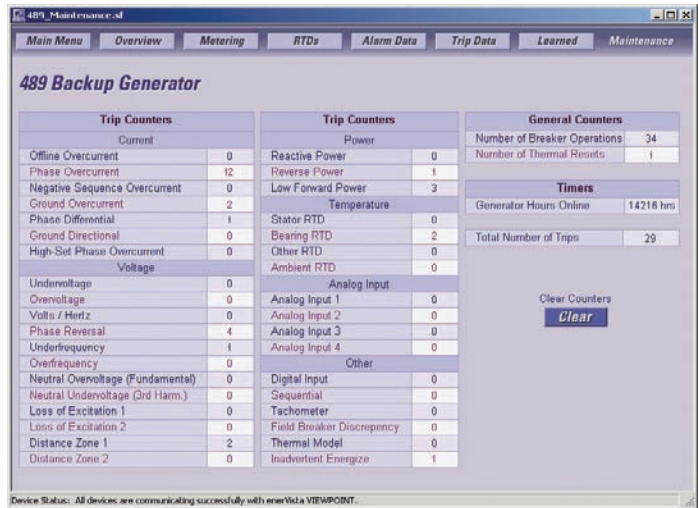
Supported Devices:

- ■ G60 Generator Protection System ■ 489 Generator Protection System
- ■ G30 Generator Protection System

Plug-and-Play Feeder Monitoring

Use Viewpoint Monitoring with your Feeder Protection Equipment

Instantly created overview screens will show the operating condition of your feeder and the status of your GE Multilin relay. Additional monitoring screens are available for analyzing all metering quantities, along with the power, demand and energy values that may be measured by the relay. If supported by the relay, synchronism screens will also be available for helping to determine if it is safe to close the breaker and energize the feeder.

Instantly view critical information such as:

- Breaker status
- Accumulated breaker arcing current
- Real time power quantities (amps, volts, demand, energy)
- Synchronism data

Easily monitor synchronism levels needed for reclosing of circuit breakers

Supported Devices:

- ■ F60 Feeder Protection System ■ F650 Feeder Protection System
- ■ F35 Multiple Feeder Protection System ■ 735/737 Feeder Protection System
- ■ 750/760 Feeder Protection System ■ MIFII Feeder Protection with Recloser

Software

Plug-and-Play Breaker Monitoring

Use Viewpoint Monitoring with you Breaker Equipment

Instantly view critical information such as:

- Breaker status
- Number of breaker trip operations
- Real time current, voltage and power levels

Supported Devices:

- MVT Microversa Trip Unit
- EMVT Enhanced Microversa Trip unit
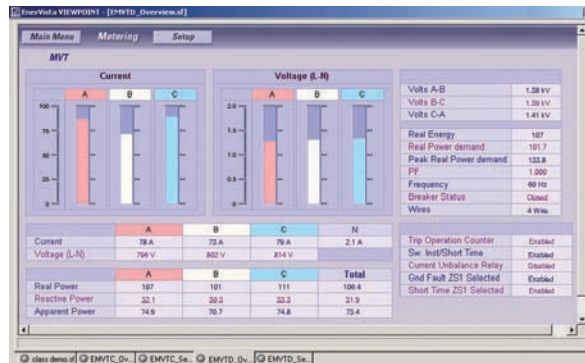
Plug-and-Play Power Quality Monitoring

Use Viewpoint Monitoring with your Power Quality Equipment

Instantly view critical information such as:

- Power quality and equipment status
- Load unbalances using real-time and maximum & minimum values
- Cost of energy using inputs from revenue meters
- Amount of total harmonic distortion on the power system

Supported Devices:

- PQM / PQM II Power Quality Meter
- EPM 1000 Electronic Power Meter
- EPM 4000 Electronic Power Meter
- EPM 5000 Electronic Power Meter
- EPM 5200/5300/5350 Electronic Power Meter
- EPM 9450/9650 Electronic Power Meter

Plug-and-Play Backup Power Monitoring

Use Viewpoint Monitoring with your Backup Equipment

Instantly view critical information such as:

- Availability of normal and emergency power sources
- Status of power source connections
- Real time voltages and frequency
- Switch status, timer settings, and control switch position
- Stored events and exerciser schedules

Supported Devices:

- MX200 Controller
- MX150 Controller
- MX250 Controller
- MX350 Controller
- Lan Pro UPS
- SG-Series UPS

Software

Single-Line Monitoring and Control

View the status of your Power System on Customizable Single-line Diagrams

Viewpoint Monitoring provides the tools to easily create customized single-line diagrams, providing full monitoring and control. This powerful tool will communicate with your supported devices and put your facility's energy system at your fingertips from either a local or a remote location.

Monitor all Power System Devices

- Provide a system wide view of your power system on one single-line monitoring screen
- Analyze the magnitude of all critical power quantities measured by your devices
- Generate alarm warnings when measured values exceed critical levels
- Create links to multiple monitoring screens to analyze power system equipment in more details
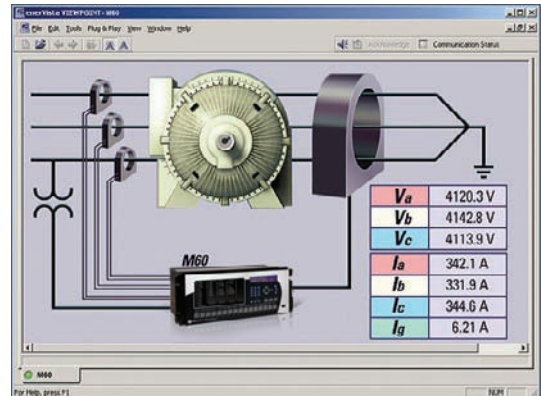
Monitor the status and loading of your motors from anywhere in your facility

Control Power System Equipment from Remote Locations

- Send commands to your devices to control and change the status of power system equipment (breakers, switches, isolators)
- Verifies intent of operation by requiring a two-step process by the operator sending the command
- Validates users authority by requiring passwords to be sent to protection relays or other devices before operation occurs
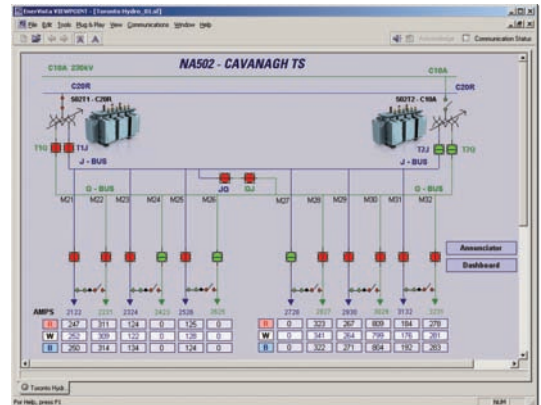
Monitor the status of your entire power system on one screen

Easily Create Customized Single Line Monitoring Screens

- Drag and Drop tools for creating single line diagrams
- Provides all necessary symbols for replicating power systems (transformers, breakers, CT's and PT's)
- Import graphics to make single-line diagrams intuitive and easy to understand
- Contains pre-loaded memory maps for easy displaying of power system values and status
- Provides ability to create customized or "Virtual" monitoring points in a powerful Formula Editor
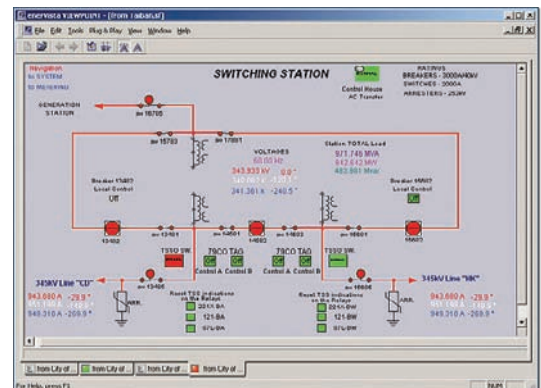
Easily monitor the state of your power system

Automatic Event and Waveform Retrieval

Automated archiving of event and waveform data from GE Multilin devices ensures you will always have data available for diagnosing power system events.

Event Logging

The event records from GE Multilin devices can be automatically downloaded from each device and stored in a system wide sequence of event record. Viewpoint Monitoring will continually poll each GE Multilin device to see if any new events have been added to that device's event record. Once a new event has been detected, the event record will be downloaded and the new events will be stored in the system wide sequence of events record.

Waveform Archiving

The waveform (oscillography) files from GE Multilin devices can be automatically downloaded from each device and stored on your hard drive. Viewpoint Monitoring will continually poll each GE Multilin device to see if any new waveform files have been created. Once a new waveform has been detected, the file will be downloaded and stored onto your PC.

Event Viewing

The Event Viewer stores and displays information about all of the events recorded in your system. Each event in the record contains the following information:

- Event Time
- Event Type
- Source Name
- Source Type
- Event Cause

This data can be sorted by any of the fields indicated above.

Create system wide Sequence of Event Records to determine that your equipment operated correctly for power system Faults

Waveform Viewing

Diagnose waveform fault data that has been recorded in any power system device in a Time-based, Phasor Quantity or Tabular view. This Waveform View utility will also allow you to:

- Convert waveforms that were stored in CSV format to COMTRADE compatible files (SR Family, PQM)
- Merge and overlay waveforms that were recorded from multiple devices
- Identify the harmonic content in the monitored parameters

Analyze waveform fault data recorded from your devices

Trending Reports

Create a Historical Archive of Monitored Data from Multiple Devices

Data Logging
- Log and Trend the value of any monitored analog or digital point
- View logged data for any recorded time period you desire

Records
- Create up to 10 customized records
- Store up to 50 points per record for 500 points logged in total

Chart
- View logged data in a pre-configured or customized date range for trending analysis

Archiving Data
- Manually archive recorded data for storage onto network drives to free space on your local computer

Exporting Data and Print
- Export data into an Excel format for easy data manipulation and analysis
- Printer-friendly option for the data that is logged in the trending reports

Historical Record of Monitored Data

- Trend up to 500 data points
- Records data with 1 minute resolution indefinitely
- View data in time based graphical or tabular format
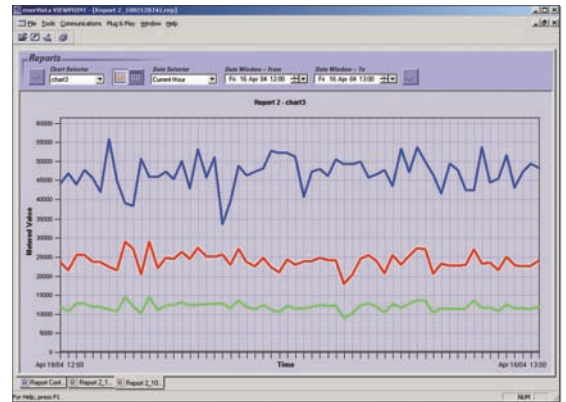
Log power level data from multiple devices at one time

Third Party Device Support

Any 3rd Party Device that supports the Modbus RTU or Modbus TCP/IP protocol can be added to the Viewpoint Monitoring database.

This allows you to use other non-GE Multilin devices that may be found in your facility in Viewpoint Monitoring.

3rd party devices can be used in your:

Single-Line Diagrams
- Read the status of digital point
- Read the value of analog data
- Send commands to control power system equipment

Annunciator Panel
- Alarm when analog value surpasses a preset level
- Alarm when digital points change state

Trending Reports
- Log the value of analog points over prolonged time periods
- Log the status of digital points on your device
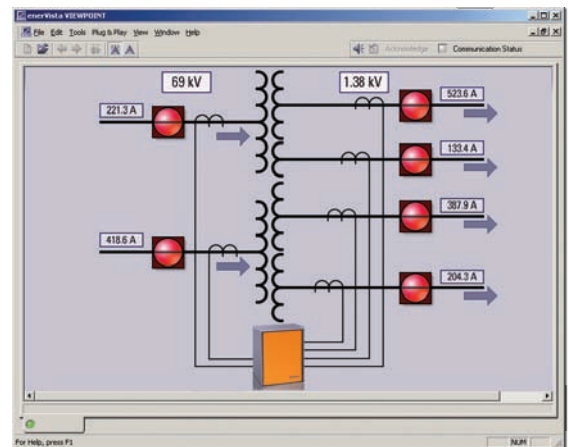
Easily integrate third party devices into Single-Line Diagrams, Annunciator Alarms, and Trending Reports

Annunciator Alarming

Receive Instant Notification of System Alarms from any Device on your Network

Viewpoint Monitoring Annunciator Alarming enables you to monitor any measured value and generate alarms whenever a digital status changes state, or an analog value drifts beyond a preset value.

System Alarming
- Create an alarm on the changing of state of any monitored digital point or when an analog point changes beyond any programmed threshold.
- Alarms can be performed through visual, audio, or e-mail notification

Audio Notification
- Separate sounds for Alert Status and Alarm Status
- Audio notification of alarms and alerts will continue until the alarm state is acknowledged by the operator

Monitoring and Alarm watchdog
- Ensures your annunciators and alarms are always active, even when the annunciator screens or the Viewpoint Monitoring software is closed in error

Visual Notification
- Annunciator screen shows the status of the monitored point
- The alarmed point will flash in a color chosen by the user until the Alarm is reset by the operator

Email Notification
- Alarming of any monitored point can automatically generate an email to notify users of the alarm
- A different email address can be entered for each monitored point

Instant Alarm Notification
- Create alarms on any monitored analog or digital data point
- Receive alarm warnings through Audio, Visual or Email Notification
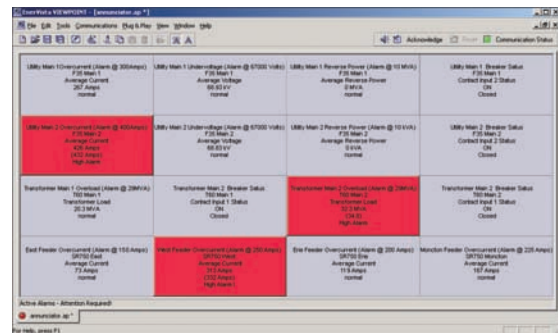
Get Instant notification of system alarms from any device on your network

View Nodes - Viewpoint Monitoring Remote Viewer

Remotely monitor and control your Viewpoint Monitoring system using EnerVista ViewNodes.

- Connect remotely to existing Viewpoint Monitoring systems over the network
- Multiple user accounts allow different levels of security access and control
- Up to 10 ViewNodes can connect to a single Viewpoint Monitoring system
- Complete access to
  - Plug-and-Play screens
  - One Line diagrams
  - Annunciator Panels / Trending Reports
  - Events
  - Waveforms

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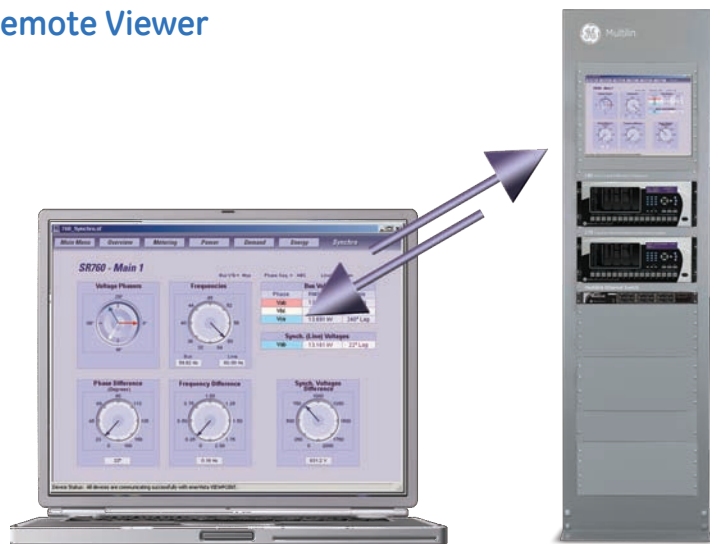
OPC/DDE Server Option
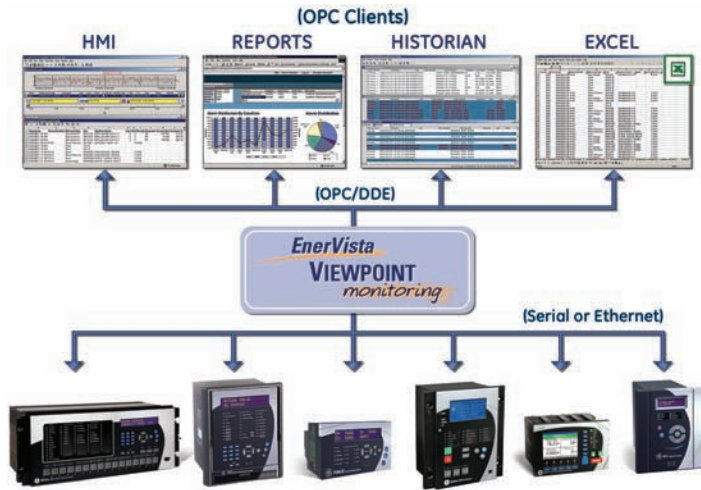
Integrate the data retrieved by Viewpoint Monitoring into a larger monitoring or automation system

Viewpoint Monitoring can send the data that is being read from the relays and meters to any third party OPC compliant automation or monitoring system. With the pre-configured memory maps of GE Multilin devices that comes with Viewpoint Monitoring, you can reduce the time and effort required to import essential data into your monitoring, automation and control systems.

- Send up to 3000 data points (Base package) or 9000 (Extended package) data points to an OPC/DDE client
- Supports the entire library of devices that comes with Viewpoint Monitoring
- Provides the ability to send data from third party devices added to the Viewpoint Monitoring database

Viewpoint Monitoring Software Selection Guide

VP	*	*	*	*	*	Viewpoint Monitoring Base Package -50 devices/3000 points
	1 5 10 50					Single Pack 5 Pack 10 Pack 50 Pack
		61850	OPC			No Additional Option IEC61850 Option OPC/DDE Server Option
				G1		No Upgrade Option Additional 1 Year Updates
					E	Extended Package Option -150 devices/9000 points

View Nodes

VPV	*	View Nodes
	1 5 10 50	Single Pack 5 Pack 10 Pack 50 Pack
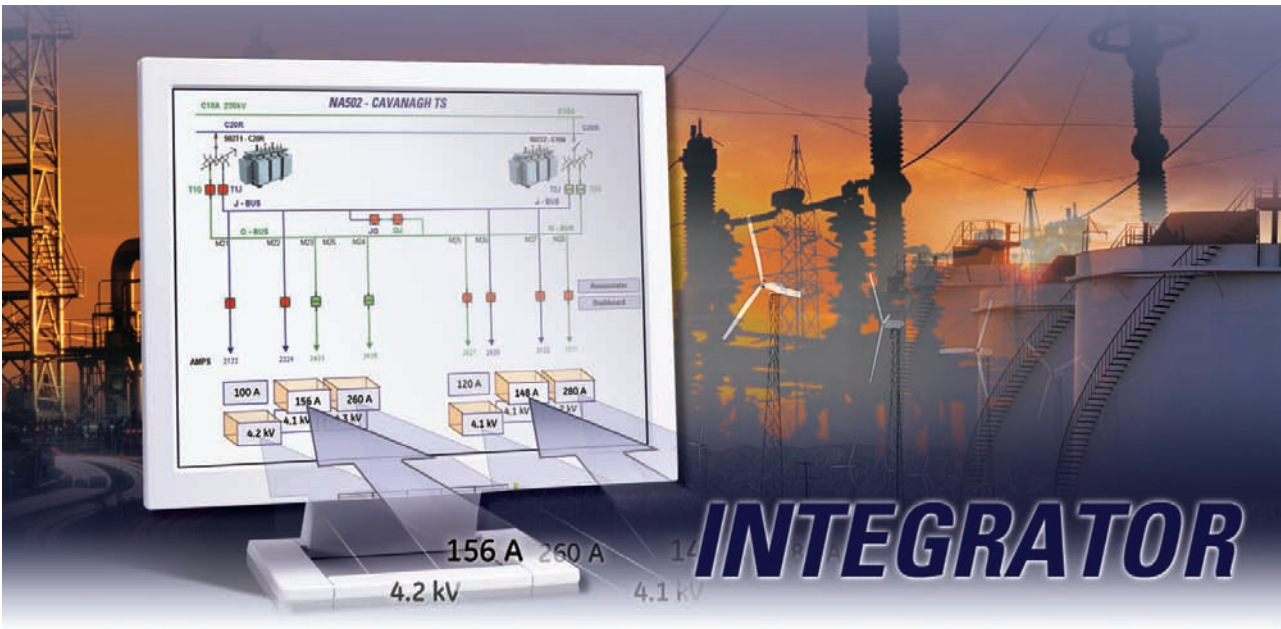
POWERFUL OPC/DDE SERVER FOR GE MULTILIN DEVICES

EnerVista™ Integrator enables you to seamlessly integrate data from your GE Multilin device into a new or existing automation system. With EnerVista™ Integrator, you receive pre-configured memory maps for all GE Multilin devices, reducing the time and effort required to import essential data into your EMS, DCS, or SCADA systems.

KEY BENEFITS

- Reduce the time and cost required to integrate GE Multilin relays and meters into new or existing DCS, energy management or SCADA systems.

- Ensures fault data recorded in relays and meters is archived and always available for fault analysis

- Requires no firmware upgrades or setting changes to incorporate devices into monitoring systems

- Allows for integrating of 3rd party Modbus devices into OPC compliant monitoring systems

- Windows Vista compatable

KEY FEATURES

- Provides data from GE Multilin devices to any OPC or DDE client (i.e. Cimplicity, iFIX, WonderWare, Citect)

- Contains pre-configured memory maps for most GE Multilin devices

- Automatically collect event records stored in GE Multilin devices

- Merge event records from multiple GE Multilin devices into a single system wide Sequence-of-Event Record

- Automatically retrieve waveforms recorded in GE Multilin devices and archives them onto the server's hard-drive

- Communicate with up to 300 devices using up to 30000 tags (points) of data
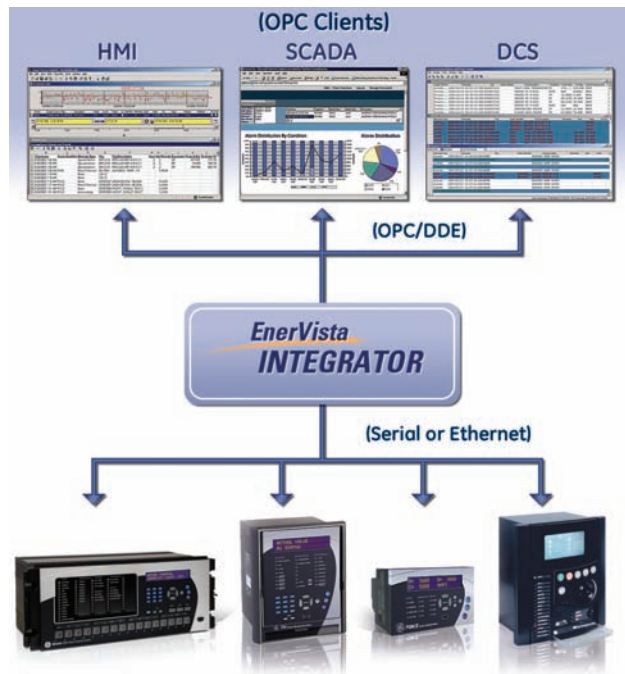
EnerVista™ Integrator will efficiently link the information from your GE Multilin devices to your monitoring, control and data collection systems

Software

Device Setup

EnerVista™ Integrator Device Setup is designed to allow quick configuration of your GE Multilin devices. Third party devices that support Modbus RTU or Modbus TCP/IP can also be configured in the Device Setup.

Waveform Archiving

The waveform (oscillography) files from GE Multilin devices can be automatically downloaded from each device and stored on your hard drive. Viewpoint Monitoring will continually poll each GE Multilin device to see if any new waveform files have been created. Once a new waveform has been detected, the file will be downloaded and stored onto your PC.

Waveform Viewing

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- Merge and overlay waveforms that were recorded from multiple devices
- Identify the harmonic content in the monitored parameters

Analyze waveform fault data recorded from your devices

Integrator Software Selection Guide

EVI	*	EnerVista™ Integrator
	1000	1000 Point License OPC/DDE Server with Waveform and Event Server
	5000	5000 Point License OPC/DDE Server with Waveform and Event Server
	30000	30000 Point License OPC/DDE Server with Waveform and Event Server

Integrator Add-On Packages

Cimplicity HMI Packages

PLCMCSWCMPLG01	EnerVista™ Integrator 30,000 points GE Device Wizard Screens for Cimplicity DDE Simulator
PLCMPLMODBRTG01	EnerVista™ Integrator 30,000 points Cimplicity Runtime License
PLCMPLWIZG01	EnerVista™ Integrator 30,000 points Cimplicity Development License GE Device Wizard Screens for Cimplicity DDE Simulator
PLCMPLVIEWERG01	Cimplicity Viewnode Waveform Viewer and Event Logger

WonderWare HMI Packages

PL50PMCSMWWG01	EnerVista™ Integrator 30,000 points GE Device Wizard Screens for InTouch DDE Simulator
PL50MODBRTG01	EnerVista™ Integrator 30,000 points InTouch Runtime License
PL50PMCSWIZG01	EnerVista™ Integrator 30,000 points InTouch Development License GE Device Wizard Screens for InTouch DDE Simulator
PL50PMCSVIEWG01	InTouch Viewnode Waveform Viewer and Event Logger