

GE Energy's Human-Machine Interface (HMI) is the window to the control system, allowing all operator and maintenance interfaces to be viewed on one, user-friendly platform. Replacing outdated <I> interface applications, the HMI enables uncomplicated operation with enhanced functionality based on a standard Windows® operating system.

Whether your existing <I> is used for gas or steam turbines, generator-excitation, compressors, heat recovery steam generators, or balance-of-plant equipment, GE Energy's HMI can be configured to meet your needs.

Enhanced Functionality, Sustained Product Support

Support of <I> operator and maintenance stations for Mark V turbine controls is now severely limited due to production discontinuation of ISA board 90C198 ARCNET® chips. Specifically, this includes chips on <G> gateways used for DCS communications, as well as BIOS, DOS, IDOS, and other software packages.

Available to replace the <I>, the HMI is standard on all current GE turbine and generator controls, providing vastly improved display graphics, screen navigation, alarm management, and overall ease of operation. Animated, full-color graphic displays, enhanced alarm and event management, and versatile trending and data analysis tools deliver real-time monitoring and performance evaluation of the system. Pre-configured graphic building blocks facilitate consistent screen development and modification for an easy-to-use, standardized platform.

With GE Energy's HMI, you have access to critical HMI upgrades to keep your software up-to-date with current GE and industry standards. GE's engineers are continuously trained on the latest software packages, enabling precise and immediate service for your specific HMI. Additionally, an HMI Maintenance Program is available with regular updates that



can be installed from CD-ROM. Updates include software enhancements, bug fixes, virus protection updates, and overall security updates to ensure site compliance with new government security standards.

Upgrade Benefits

- Improved operator interface, graphics, and alarm/event management
- Industry standard platforms, including Windows and CIMPLICITY®
- Easy to upgrade software packages
- Eliminate outdated 90C198 ARCNET chip on ISA boards
- Available cyber security programs for full compliance with U.S. government regulations
- Faster service by a larger pool of trained engineers

Simplified HMI Integration

- Retain: ARCNET topology, source files, I/O configuration
- Change: Mark V PROM set, compilers, editors, screens
- New Ethernet ports on HMI
- New hardware options
- New communications options



product overview

Seamless System Integration

GE Energy's HMI is fully compatible with your existing controls system. The stage-link for the Mark V or EX2000 controls can easily be connected to the interface. For sites with multiple HMIs, an independent Ethernet TCP/IP link can be added for file transfers and to connect with third-party computers. GE Energy's HMI can be used to replace any existing <G> gateways with GSM protocol and add a variety of additional protocols not available with the <I> product.

Unlike the proprietary software utilized by the <I> interface, the HMI leverages industry standard software packages for seamless integration, including a Windows operating system and a CIMPLICITY HMI Plant Edition™ graphical user interface. The transition to GE Energy's HMI is straightforward; the <I> file structure, source files, and I/O configuration are all retained from the existing interface, while the compilers, editors, screens, and Mark V PROM set are upgraded.

Flexible Communications Options

The HMI can communicate with other systems with the existing serial MODBUS® or GSM interface. Some additional protocol options include:

Feature	MODBUS	GSM	OPC	DNP 3.0
Physical Layer	Serial/ Ethernet	Ethernet	Ethernet	Serial/ Ethernet
Client/Server	Client/ Server	Server	Server	Yes
Time Tags		Yes	Yes	
Alarm Queue & Commands		Yes		
Alarm/Event Exception Reports		Yes		

HMI client to PI server interfaces are also available. Using PI API node buffering, the server interface transmits 500 points at 1Hz without local time tags.



Hardware Options

A variety of hardware options are available for tower or rack mount enclosures, including:

- **PC Hardware:** Processor, hard drive, keyboard, mouse, internal speakers, CD-RW & floppy, up to six USB ports, one serial port, one parallel port, and two Ethernet ports
- **Monitors:** Desktop screens available in 17", 19", 21", desktop LCD screens available in 19", 20 / 21", 18" panel & rack mount (with or without touch screen), and dual monitors
- **Printers:** Black and white or color lasers, inkjet (8 ½ x 11), and dot matrix for logging
- **Time-Synch Boards:** IRIG-B input or GPS receiver



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