GE
Intelligent Platforms

Control Systems Solutions Catalog

More choices for your applications

imagination at work

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Power and Flexibility Offering You a Choice to Meet Your Automation Challenges

With technology ranging from compact and economical micro programmable logic controllers (PLCs) to cutting-edge programmable automation controllers (PACs) and the open flexibility of industrial PCs, GE Intelligent Platforms have a wide array of off-the-shelf solutions offering you a choice to meet your exact needs. And because we integrate these flexible automation products with a single powerful software suite providing the universal engineering development environment for all of our controllers, motion and operator interface/HMI, both your knowledge and your applications are portable as you move from platform to platform and expand from generation to generation.

PACSystems

The GE PACSystems delivers the first Programmable Automation Control – one control engine and one development environment for multiple hardware platforms. PACSystems offers enhanced processing and communications speed and programming capacity over existing PLC technologies for high-speed processing, data acquisition and memory-intensive tasks like recipe storage and data-logging.

Both the VME-based RX7i and the PCI-based RX3i provide powerful CPUs and high-bandwidth backplanes, making complex programming easy to implement and faster to execute. The PACSystems also offers an industry leading migration platform for Series 90 PLCs with interchangeable I/O modules and easy software program conversion tools. PACSystems provide:

The Best of PLCs combined with the Best of PCs

- Multi-discipline, deterministic control for every application
- Application portability to multiple platforms

Performance and Productivity

- Follow technology enhancements for continuous performance improvement
- Single multi-discipline development platform

Flexibility and Openness

- Users' choice of appropriate platform, programming language and communication scheme
- Connectivity to all levels of production operations

Obsolescence Avoidance

- Bring applications forward, protect your investments in intellectual property, equipment and installed costs

PACSystems RX7i

The RX7i is designed to address mid- to high-end applications for OEMs, integrators, and end users. It is ideally suited for integrated solutions that require open architecture, large memory, distributed I/O, and high performance.

PACSystems RX3i

Using the same control engine as the RX7i, the RX3i offers a high level of automation functionality in a compact, cost-effective package. The PACSystems portable control engine provides high performance on several different platforms, allowing OEMs and end users with application variability to choose the exact control system hardware that best suits their needs.

Series 90 PLCs

Series 90-70

Series 90-70 PLCs have become the industry standard for complex applications requiring safety systems with large numbers of I/O and large amounts of process memory. The open architecture backplane of the Series 90-70 unlocks the versatility of hundreds of unique VME-based cards for applications involving elements such as vision, highly specialized motion, or fiber-optic networks.

You can customize your system architecture even further with a variety of available I/O and specialty modules as well as motion controllers for a broad range of stand-alone or distributed system configurations.

Series 90-30

With its modular design, over 100 different I/O modules, and a range of CPU options, Series 90-30 offers you the versatility to configure a system based on your specific performance needs. Superior networking and communications capabilities enable you to network, transfer data, upload and download programs and perform diagnostics over one non-proprietary network.

Motion control integrated into the Series 90-30 facilitates high performance point-to-point applications, and supports a variety of motor types and system architectures.

VersaMax PLC and Distributed I/O

Modular and scalable, VersaMax offers big PLC power in a small package. It is part of an innovative control family that combines a powerful CPU with a broad selection of discrete, analog, mixed and specialty I/O modules, terminations and power supplies, as well as communications modules to link to a variety of networks.

VersaMax Nano and Micro PLC

Palm-sized, powerful and economical, VersaMax® Nano and Micro PLCs give you all-in-one construction to save panel space. Its easy application provides you with a quick solution by snapping onto a DIN-rail or mounting in a panel.

Durus Controllers

The Durus Controllers are loaded with features such as easy to use built-in display/keypad, high current outputs and multiple communication options. These compact and affordable controllers are ideal for simple control applications including lighting control, gate control, HVAC, pump control and much more.

QuickPanel Control

QuickPanel Control combines flexible, integrated control with visualization on a single, rugged hardware platform for more functionality in a smaller space. It provides access to a broad range of I/O, communicates via a variety of networks, and enables remote monitoring of your systems.

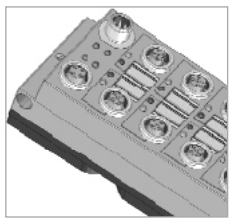
Genius Distributed I/O

In a host of industries, from steel to food processing to automotive, more than half a million Genius blocks are helping companies meet the challenge of an increasingly competitive marketplace. The Genius family includes 20 different I/O blocks, a variety of PLC interface modules, and a growing number of third-party interfaces.

VersaPoint Distributed I/O

Fast installation, reduced wiring, and more efficient use of cabinet space all come together to make VersaPoint Distributed I/O an exceptional value. Its modular construction is easily adaptable to scores of applications, and the extensive built-in diagnostics make identifying faults a routine matter, maximizing uptime.

VersaMax IP I/O



VersaMax IP I/O is designed for IP65 and IP67 environments to offer the ruggedness and reliability of a standard I/O system installed in a NEMA 4 cabinet, without the cost and effort to build the cabinet. Once installed, VersaMax IP's diagnostics make troubleshooting a snap.

Match Your Needs with the Right Controller Solution

	PACSystems RX7i	Series 90-70 PLC	PACSystems RX3i	Series 90-30 PLC	VersaMax PLC	QuickPanel Control	Nano and Micro PLCs	Durus Controllers
Pages	11-28	101-118	29-96	119-172	173-210	265-270	211-250	251-264
Specialized Control • Memory intensive • Coordinated control • Genius Modular Redundancy • High-speed processing • Typically 1,000 or more points of I/O • Applications such as SIL 1 and 2, automotive paint shop, fire and gas detection, reactor shutdown systems, and critical control								
Complex Control • High availability • High-speed data transfer • Integration with industry-standard technologies • Typically 200 to 5,000 points of I/O • Motion components • Applications such as printing, flying shear, and winding machines								
Moderate Control • Expanded communication via Fieldbus (Genius®, DeviceNet™, Profibus-DP) and Ethernet interfaces • Wide range of I/O requirements • Typically between 100 and 512 points of I/O • Applications such as food processing, semiconductor wafer fab, material handling, and plastic injection molding								
Simple Control • Minimal memory requirements • Simple communications • Typically fewer than 100 points of I/O • Applications such as vending machines, low-end labeling and packaging, and dispensing								

Match Your Needs with the Right Remote I/O Solution

	PACSystems RX3i	Series 90-30	VersaMax	Genius	VersaPoint	VersaMax IP and VersaMax IP Modular
Pages	29-96	119-172	173-210	275-288	289-302	303-308
Complex Rack I/O • Hot swap • Advanced analog • Supports Ethernet EGD • Dual LAN support • Motion control • High availability						
Simple Rack I/O • High density • Wide range of I/O options • Supports Ethernet EGD Network • Motion control • Low cost per point						
Modular and Network Independent • Supports Ethernet, Genius, Profibus and DeviceNet networks • Hot swap • Wide range of I/O options • Low cost per point						
High Availability • Advanced Diagnostics • Hot Swap • Supports Genius LAN • Redundant LAN Support • TUV approved						
Low Density Distributed • Single point I/O • Supports Ethernet, Profibus and DeviceNet networks • Granular discrete and analog I/O						
Harsh Environment • Block I/O • IP65 and IP67 compatible • Quick connect using M12 connectors • Support Profibus network						

Notes

Proficy Overview

At GE Intelligent Platforms, we understand that real-time information is the enabler of the e-business world and the foundation for fast and effective supply-chain execution. In order to help companies realize the full benefits of e-business, we are helping them adapt to a new manufacturing model that utilizes Web-based integration to free the flow of real-time data throughout the enterprise. By combining the best selection of software productivity tools with the latest communication and networking technologies, GE's Proficy software family provides solutions that make it easier for you to integrate your systems and empower your people.

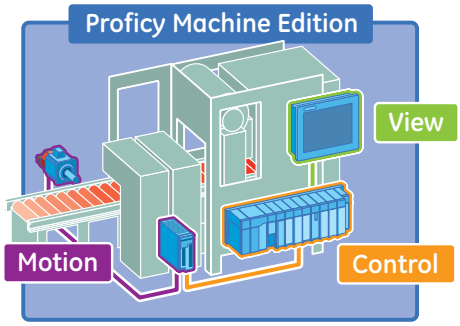
From the machine, to the cell, to the plant floor, and throughout the enterprise, Proficy's interactive set of software business tools provides real-time collaboration between customers, manufacturers, and suppliers.

Proficy Machine Edition

GE's Proficy Machine Edition is a universal development environment for all your operator interface, motion and control applications. Proficy Machine Edition provides a common user interface, drag-and-drop editing, and support for the many editing components required for a project.

Enabling fast, powerful, object-oriented programming, Proficy Machine Edition takes full advantage of industry-standard technologies like XML, COM/DCOM, OPC and ActiveX®. Machine Edition also includes Web-enabled functions like a built-in Web server that delivers real-time data and diagnostics to anyone in the enterprise.

All components and applications within Proficy Machine Edition share a single workspace and tool set. A standardized user interface results in a reduced learning curve, and the integration of new applications does not involve learning additional paradigms. This, coupled with an efficient, user-friendly design makes Proficy Machine Edition the perfect choice for HMI, motion, PLC, and PC-based control.



In addition to sharing common editing tools, all Proficy Machine Edition components share common objects across applications, including logic, scripts, graphical panels, and data structures. Once a variable is created, it can be reused in other components of the project. User Defined Data Types allows you to create custom data structures that represent real world equipment and objects. It significantly reduces application development time and increases productivity.

By combining the best of traditional programming and graphics applications with powerful open industry-standard technologies, Proficy Machine Edition provides a smooth migration path to the latest development tools.

Proficy Machine Edition Components:

Proficy View

An HMI specifically designed for the full range of machine-level operator interface/HMI applications. Includes support for the following Runtime options:

- QuickPanel
- QuickPanel View (Windows CE-based)
- Windows 2000/XP/NT

Proficy Logic Developer-PC

PC Control software combines ease of use and functionality for fast application development. Includes support for the following Runtime options:

- QuickPanel Control (Windows CE-based)
- Windows 2000/XP/NT

Proficy Logic Developer-PLC

Programs and configures all GE PLCs, PACSystems Controllers and Remote I/O

- Available in Professional, Standard, and Nano/Micro versions

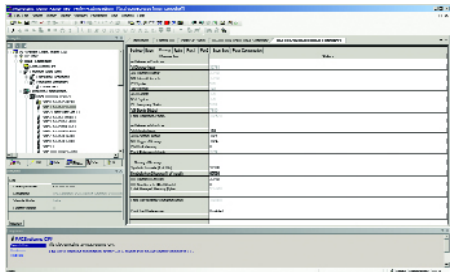
Proficy Motion Developer

Programs and configures GE S2K motion controllers

Proficy Logic Developer-PLC: A Superior Set of PLC Programming Tools

Fully Integrated Development System

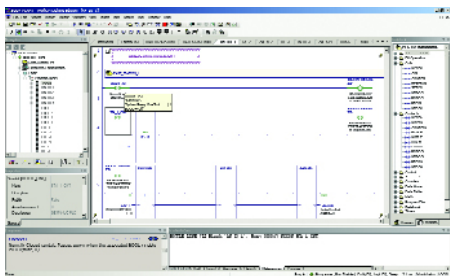
Proficy Machine Edition's development system provides an easy-to-learn interface for its components. Proficy Logic Developer-PLC automatically shares editing and configuration tools with other components when they are installed, creating an integrated, drag-and-drop workspace that makes developing applications simple. Just drag a PLC variable to an HMI animation panel to link them. Work on all parts of your automation system simultaneously, without switching between programs!

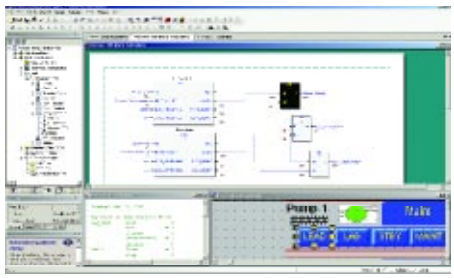


Configure: Supports the full array of GE PLCs, PACSystems controllers and remote I/O

Toolchest Offers Object Oriented Reusability and Pre-defined Tools

Build applications rapidly with pre-configured objects from the Toolchest, a storage system for objects including their associated logic or HMI elements and data structures. Drag your own work to the Toolchest for easy reuse—logic, scripting, graphical objects—anything you want to save and reuse.





Program: Full set of programming languages, including Ladder Diagram, Function Block Diagram, Structured Text, and C Blocks

Configure

Proficy Logic Developer-PLC supports the full range of GE PLCs, PACSystems controllers and Remote I/O products including the Series 90-30, Series 90-70, PACSystems RX3i and RX7i, VersaMax, and VersaMax Nano/Micro PLCs. Configuration support is also provided for a wide range of field busses such as Ethernet Global Data (EGD), Genius, DeviceNet™, ModBus TCP, and Profibus™.

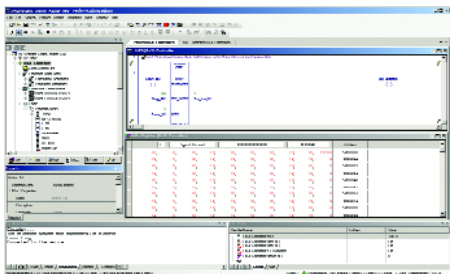
Program

Proficy Logic Developer-PLC provides a full set of programming languages for you to develop your PLC applications. Ladder Diagram (LD), Function Block Diagram (FBD), Structured Text (ST), and C Block programming languages are all supported by Logic Developer-PLC. Leverage the productivity advantages of Application Building Blocks by creating User Defined Function Blocks for your PACSystems controllers.

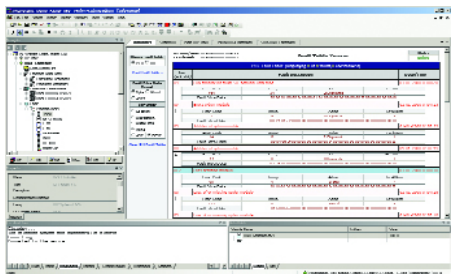
Commission

Proficy Logic Developer-PLC provides a complete set of on-line tools to aid in commissioning your PLC application. Tools such as Run Mode Store (RMS) of Logic, Online Test Mode and Word-for-Word Change of Logic allow you to tune the application in real-time without stopping the process. Data monitoring tools such as Data Watches and Reference View Tables allow you to create custom data monitor tables and provide a window into your PLC application execution.

Use the PACSystems Online LD Compare to visually inspect the differences between the Ladder Diagram Logic in the Controller and in your Project, on a rung-by-rung basis.



Commission: Complete set of on-line development tools for monitoring and adjusting the application without stopping the process



Maintain: Diagnostic tools such as On-Line Fault Tables for pinpointing and diagnosing issues with your system

Maintain

Logic Developer-PLC provides a complete set of tools to aid in maintaining your PLC applications. Diagnostic tools such as On-line Fault Tables and Forced Variables Report provide you with the ability to diagnose issues and problems that may have occurred with your system.

Product Selection Guide

Product Suites

Notes on Part Numbers and GlobalCare

- BC Prefix part numbers include 15 months of GlobalCare support
- For the GlobalCare renewal part numbers, change the BC646 or BC647 prefix to GC646
- Licenses without GlobalCare change BC prefix to IC

Machine Edition Product Suites

Bundles of commonly used Machine Edition components. Advantages include lower cost, easier to authorize, and easier to maintain as one serial number covers the whole suite.

	Supported Platforms/Features												Key			
	VersaMax Nano/Micro	VersaMax and Series 90-30	Series 90-70/PACSystems RX3i/RX7i	QuickPanel	QuickPanel View (Basic/Intermediate)	QuickPanel View (Loaded)	ViewStation	QuickPanel Control	ControlStation	View Development 2000, XP	8000 Point R/T for View 2000, XP, NT	Motion Developer	Software Authorization	Hardware Key	Single License	Unlimited Seat Site License
Machine Edition Lite Development Suite	•			•	•								•		IC646MBL001	IC646MBLS99
Machine Edition Lite Development Suite with hardware key	•			•	•									•	IC647MBL001	-
Machine Edition Traditional Development Suite	•	•		•	•								•		IC646MBT001	IC646MBTS99
Machine Edition Traditional Development Suite with hardware key	•	•		•	•									•	IC647MBT001	-
Machine Edition Standard Development Suite	•	•		•	•	•	•	•	•			•	•		IC646MBS001	IC646MBSS99
Machine Edition Standard Development Suite with hardware key	•	•		•	•	•	•	•	•			•		•	IC647MBS001	-
Machine Edition Professional Development Suite	•	•	•	•	•	•	•	•	•	•		•	•		IC646MBP001	IC646MBPS99
Machine Edition Professional Development Suite with hardware key	•	•	•	•	•	•	•	•	•	•		•		•	IC647MBP001	-
Machine Edition Professional Development Suite with Runtimes	•	•	•	•	•	•	•	•	•	•	•	•	•		IC646MBW001	-

Control Products

PLC-Based Control

Development licenses work on a hierarchical basis.

	Supported PLC Platforms						Key			
	Remote I/O Config. Tools	VersaMax Nano/Micro	VersaMax	Series 90-30	Series 90-70	PACSystems RX3i/RX7i	Software Authorization	Hardware Key	Single License	Unlimited Seat Site License
Logic Developer PLC Configuration	•						•		IC646MPC001	-
Logic Developer PLC Nano/Micro	•	•					•		IC646MPM001	-
Logic Developer PLC Nano/Micro with hardware key	•	•						•	IC647MPM001	-
Logic Developer PLC Standard	•	•	•	•			•		IC646MPS001	IC646MPSS99
Logic Developer PLC Standard with hardware key	•	•	•	•				•	IC647MPS001	-
Logic Developer PLC Professional	•	•	•	•	•	•	•		IC646MPP001	IC646MPPS99
Logic Developer PLC Professional with hardware key	•	•	•	•	•	•		•	IC647MPP001	-
Logic Developer State Professional†	•	•	•	•	•	•	•		IC646MSP001	-

†State Logic licenses also provide basic configuration and programming capability for the indicated PLC platforms. Note that State Logic can only be mixed with other types of Logic (Ladder and C) for the Series 90-70. Note that State Logic only runs on the Series 90-30 and Series 90-70 controller.

To bundle Logic Developer PLC software with corresponding programming cable, change the "001" suffix to "101". For example, change BC646MPP001 to BC646MPP101 to include the cable.

PLC-Based Control Programming Cables:
IC690ACC901 Series 90 serial cable
IC200CBL002 NIU Configuration cable
IC200CBL500 VersaMax Nano/Micro Programming Cable (RS-232 9 PIN TO RJ-45)

Motion Developer

Programming/Configuration software for GE S2K motion controllers.	Key		
	Software Authorization	Hardware Key	Single License
Motion Developer	•		IC646MODEV
Motion Developer with hardware		•	IC647MODEV

Product Selection Guide

OI/HMI Products

Notes on Part Numbers and GlobalCare

- BC Prefix part numbers include 15 months of GlobalCare support
- For the GlobalCare renewal part numbers, change the BC646 or BC647 prefix to GC646
- Licenses without GlobalCare change BC prefix to IC

QuickPanel View & Control Platforms

Development software for QuickPanel, QuickPanel View & QuickPanel Control solutions. Runtime licenses are included in the hardware purchase.

	Supported Platforms/Features							Key			
	QuickPanel	QuickPanel View (Basic/Intermediate)	QuickPanel View (Loaded)	ViewStation CE	QuickPanel Control	ControlStation	Remote I/O Config Tools	Software Authorization	Hardware Key	Single License	Unlimited Seat Site License
Proficy View for QuickPanel	•	•						•		IC646MQP001	IC646MQPS99
Proficy View for QuickPanel with hardware key	•	•							•	IC647MQP001	-
Proficy View (CE) Standard Edition	•	•	•	•				•		IC646VSCEMK	IC646MVSS99
Proficy View (CE) Standard Edition with hardware key	•	•	•	•					•	IC647VSCEMK	-
QuickPanel Control (CE) Development Software	•	•	•	•	•	•	•	•		IC646CSCEMK	IC646MOSS99
QuickPanel Control (CE) Development Software with hardware key	•	•	•	•	•	•	•		•	IC647CSCEMK	-

Proficy View & Control PC-Based Platforms

Proficy packages available as View runtime only, View development and runtime, View & Logic Developer PC runtime only, View & Logic Developer PC development.

	Supported Platforms/Features										Key						
	QuickPanel	QuickPanel View (Basic/Intermediate)	QuickPanel View (Loaded)	ViewStation CE	QuickPanel Control	ControlStation	Remote I/O Config Tools	Windows 2000, XP, NT	Development	Runtime	Software Authorization	Hardware Key	75 Point	150 Point	300 Point	700 Point	1500 Point	8000 Point
Proficy View Runtime								•		•	•		IC646MRA075	IC646MRA150	IC646MRA300	IC646MRA700	IC646MRA159	IC646MRA000
Proficy View Runtime with hardware key								•		•		•	IC647MRA075	IC647MRA150	IC647MRA300	IC647MRA700	IC647MRA159	IC647MRA000
Proficy View Development & Runtime	•	•	•	•				•	•	•	•		IC646MDA075	IC646MDA150	IC646MDA300	IC646MDA700	IC646MDA159	IC646MDA000
Proficy View Development & Runtime w/hardware key	•	•	•	•				•	•	•		•	IC647MDA075	IC647MDA150	IC647MDA300	IC647MDA700	IC647MDA159	IC647MDA000
Proficy View & Logic Developer PC Runtime							•	•		•	•		IC646MRC075	-	-	-	-	IC646MRC000
Proficy View & Logic Developer PC Runtime w/hardware key							•	•		•		•	IC647MRC075	-	-	-	-	IC647MRC000
Proficy View & Logic Developer PC Development (no-runtime)	•	•	•	•	•	•	•	•	•		•		-	-	-	-	-	IC646MOP001
Proficy View & Logic Developer PC Development (no-runtime) w/hardware key	•	•	•	•	•	•	•	•	•			•	-	-	-	-	-	IC647MOP001
Proficy View OPC Driver License with software key								•		•	•		-	-	-	-	-	IC646MVD000
Proficy View OPC Driver License with hardware key								•		•		•	-	-	-	-	-	IC647MVD000

Demo Products

Proficy Machine Edition Demo Software

Demo Disks in cardboard mailer - 10 Pack	IC646MED010
Machine Edition Installation and Supplemental CD Pack - Single Set	IC646MCD001

PACSystems RX7i Controllers

Built on a standard embedded open architecture, the PACSystems RX7i is the first member of the groundbreaking PACSystems family of programmable controllers (PACs). The RX7i features a single control engine and universal programming environment to provide application portability across multiple hardware platforms. Designed to address mid- to high-end applications for OEMs, integrators, and end users, the RX7i is ideally suited for integrated solutions that require open architecture, large memory, distributed I/O and high performance.

The RX7i Features

- Pentium® CPUs for your every need, from Celeron 300mHz to M Class 1.8 Ghz
- A VME64 Backplane providing up to four times the bandwidth of existing Series 90-70 systems
- 10/100 Ethernet built into the CPU, with easy cabling RJ-45 dual ports connected through an auto-sensing switch, so there is no need for additional switches or hubs rack to rack
- Up to 64 MB memory for fast execution, storage of the complete program with all documentation—all in one CPU
- Supports existing Series 90-70 modules and expansion racks, VME modules and GENIUS networks—protecting your hardware investment

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

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Racks page 14
Power Supplies page 15
Communications Modules page 24

I/O Interface Modules page 23
Specialty Modules page 25
Discrete I/O Modules (input) pgs 16-18
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Analog I/O Modules (input) page 19
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Expansion Power Supplies page 26
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Accessories page 28

Publication Reference Chart

GFK-2222	PACSystems CPU Reference Manual
GFK-2223	PACSystems RX7i Installation Manual
GFK-2224	TCP/IP Ethernet Communications for PACSystems
GFK-2225	PACSystems Station Manager User's Manual
GFK-2235	PACSystems RX7i User's Guide to Integration of VME Modules
GFK-2259	C Programmer's Toolkit for PACSystems User's Manual
GFK-2300	PACSystems RX7i Memory Xchange Modules User's Manual
GFK-2308	PACSystems Hot Standby CPU Redundancy User's Guide

CPUs

PACSystems RX7i CPUs feature Intel Celeron and Pentium III processors and offer fast execution, larger memory capacity and upgradability to track future technology growth. RX7i CPUs are available with various memory sizes, performance capabilities and advanced functionalities, such as software configuration of data and program memory. PACSystems CPUs also provide 10K of user RAM along with 10K of non-volatile user flash memory for added protection of your data and programs.

	IC698CPE010	IC698CPE020†	IC698CRE020†
Product Name	**Central Processing Unit, 300 MHz, Floating Point**	**Central Processing Unit, 700 MHz, Floating Point**	**Redundancy Central Processing Unit, 700 MHz, Floating Point**
PACSystems Processor Speed	300 MHz	700 MHz	700 MHz
PACSystems CPU Memory	10 Mbytes of User Logic RAM	10 Mbytes of User Logic RAM	10 Mbytes of User Logic RAM
PACSystems User Flash Memory	Yes (10 Mbytes)	Yes (10 Mbytes)	Yes (10 Mbytes)
Floating Point Math	Yes	Yes	Yes
PACSystems I/O Discrete Points Available	32 Kbits	32 Kbits	32 Kbits
Other Memory Allocations	%W: Configurable up to 4 Mbytes, Symbolic: Configurable up to 10 Mbytes	%W: Configurable up to 4 Mbytes, Symbolic: Configurable up to 10 Mbytes	%W: Configurable up to the maximum available user RAM, Symbolic: Configurable up to 10 Mbytes
Embedded Communications	Serial, Ethernet	Serial, Ethernet	Serial, Ethernet
Protocols Supported	Modbus RTU Slave, SNP, Serial I/O	Modbus RTU Slave, SNP, Serial I/O	Modbus RTU Slave, SNP, Serial I/O
Built-in Ports	2 Serial (RS-232, RS-485) 1 Ethernet (Auto 10/100, RJ45)	2 Serial (RS-232, RS-485) 1 Ethernet (Auto 10/100, RJ45)	2 Serial (RS-232, RS-485) 1 Ethernet (Auto 10/100, RJ45)
Current Required from 5V Bus	3.6 Amps	4.0 Amps	4.0 Amps

†Requires fan kit.

CPUs

PACSystems RX7i CPUs feature Intel Celeron and Pentium III processors and offer fast execution, larger memory capacity and upgradability to track future technology growth. RX7i CPUs are available with various memory sizes, performance capabilities and advanced functionalities, such as software configuration of data and program memory. PACSystems CPUs also provide 10K of user RAM along with 10K of non-volatile user flash memory for added protection of your data and programs.

	IC698CPE030	IC698CPE040†	IC698CRE030	IC698CRE040†
Product Name	**Pentium M Central Processing Unit, 600 MHz**	**Pentium M Central Processing Unit, 1.8 GHz**	**Pentium M Redundancy Central Processing Unit, 600 MHz**	**Pentium M Redundancy Central Processing Unit, 1.8 GHz**
PACSystems Processor Speed	600 MHz	1.8 GHz	600 MHz	1.8 GHz
PACSystems CPU Memory	64 Mbytes	64 Mbytes	64 Mbytes	64 Mbytes
PACSystems User Flash Memory	64 Mbytes	64 Mbytes	64 Mbytes	64 Mbytes
Floating Point Math	Yes	Yes	Yes	Yes
PACSystems I/O Discrete Points Available	32 Kbits	32 Kbits	32 Kbits	32 Kbits
Other Memory Allocations	%W: Configurable up to the maximum available user RAM Symbolic: Configurable up to the maximum available user RAM	%W: Configurable up to the maximum available user RAM Symbolic: Configurable up to the maximum available user RAM	%W: Configurable up to the maximum available user RAM Symbolic: Configurable up to the maximum available user RAM	%W: Configurable up to the maximum available user RAM Symbolic: Configurable up to the maximum available user RAM
Embedded Communications	Serial, Ethernet	Serial, Ethernet	Serial, Ethernet	Serial, Ethernet
Protocols Supported	Modbus RTU Slave, SNP, Serial I/O	Modbus RTU Slave, SNP, Serial I/O	Modbus RTU Slave, SNP, Serial I/O	Modbus RTU Slave, SNP, Serial I/O
Built-in Ports	2 Serial (RS-232, RS-485) 1 Ethernet (Auto 10/100, RJ45)	2 Serial (RS-232, RS-485) 1 Ethernet (Auto 10/100, RJ45)	2 Serial (RS-232, RS-485) 1 Ethernet (Auto 10/100, RJ45)	2 Serial (RS-232, RS-485) 1 Ethernet (Auto 10/100, RJ45)
Current Required from 5V Bus	3.2 A	6.8 A	3.2 A	6.8 A
Web Based Data Monitoring	up to 16 web server and FTP connections (combined)	up to 16 web server and FTP connections (combined)	up to 16 web server and FTP connections (combined)	up to 16 web server and FTP connections (combined)

†Requires fan kit.

Racks

PACSystems RX7i Racks set the pace for the latest PLC technology. They are built to support the high-power PACSystems power supplies along with the latest technology in the PACSystems CPUs. The VME64 backplane provides up to four times the bandwidth of existing VME based systems for faster I/O throughput. The VME64 base supports all standard VME modules including Series 90-70 I/O and VMIC modules.

	IC698CHS009	IC698CHS017	IC698CHS109	IC698CHS117	IC698CHS217
Product Name	**Standard PACSystems 9-slot Wall (Rear) Mount**	**Standard PACSystems 18-slot Wall (Rear) Mount**	**Standard PACSystems 9-slot Wall (Panel) Mount**	**Standard PACSystems 18-slot Wall (Panel) Mount**	**PACSystems 17-slot Wall (Rear) Mount, Rear I/O Access**
Number of Slots	9 Single Width, 5 Double Width (plus one for power supply)	15 Single Width, 8 Double Width (plus one for power supply)	9 Single Width, 5 Double Width (plus one for power supply)	15 Single Width, 8 Double Width (plus one for power supply)	17 Single Width, 8 Double Width (plus one for power supply)
Mounting Location	Rear (Panel)	Rear (Panel)	Front (Rack)	Front (Rack)	Rear (Panel)
Rack Configurations	RX7i CPU and I/O, Series 90-70 I/O, VME modules	RX7i CPU and I/O, Series 90-70 I/O, VME modules	RX7i CPU and I/O, Series 90-70 I/O, VME modules	RX7i CPU and I/O, Series 90-70 I/O, VME modules	RX7i CPU and I/O, Series 90-70 I/O, VME modules (with or without rear access connections)
Rack Slot Size	0.8 inch	0.8 inch	0.8 inch	0.8 inch	0.8 inch
Compatible Power Supplies	RX7i Power Supply (IC698)	RX7i Power Supply (IC698)	RX7i Power Supply (IC698)	RX7i Power Supply (IC698)	RX7i Power Supply (IC698)
Dimensions	11.15"H x 12.6"W x 7.25"D (283 x 320 x 184mm)	11.15" x 19.00" x 7.5"	11.15"H x 12.6"W x 7.25"D (283 x 320 x 184mm)	11.15" x 19.00" x 7.5"	11.15"H x 19"W x 8.875"D (8.97"D with rear I/O cover) (283 x 483 x 225mm) (228mm D with rear I/O cover)

Power Supplies

PACSystems RX7i Power Supply modules simply slide into the PLC rack just like I/O, and they work with any PACSystems CPU. The low capacity power supply delivers up to 100W total output without forced air cooling. The high capacity power supply accommodates applications requiring more power, providing up to 350W total output, and requires forced air cooling, provided by a fan tray mounted on the bottom of the rack. PACSystems power supplies also have built-in protection for autoranging power factor corrections as well as overcurrent, overvoltage, and overtemperature fault conditions.

	IC698PSA100	IC698PSA350	IC698PSD300
Product Name	**PACSystems Power Supply, 100 W**	**PACSystems Power Supply, 350 W**	**PACSystems Power Supply, 300 W**
Power Source	85-264 VAC or 125 VDC	85-264 VAC or 125 VDC	18-30 VDC
Output Source	100 Watts; 5 VDC @ 20 Amps, +12 VDC @ 2 Amps, -12 VDC @ 1 Amp	350 Watts; 5 VDC @ 60 Amps, +12 VDC @ 12 Amps, -12 VDC @ 4 Amps	300 Watts; 5 VDC @ 50 Amps, +12 VDC @ 10 Amps, -12 VDC @ 4 Amps

Discrete I/O Modules (Input)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL252	IC697MDL253	IC697MDL254	IC697MDL250	IC697MDL240	IC697MDL251
Product Name	**Input 12 VAC**	**Input 24 VAC**	**Input 48 VAC**	**Input 120 VAC**	**Input 120 VAC (Isolated)**	**Input 120 VAC (non-isolated)**
Module Type	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Module Function	Input	Input	Input	Input	Input	Input
Discrete Input Rated Voltage	12 VAC, 47 to 63 Hz Sinusoidal	24 VAC, 47 to 63 Hz Sinusoidal	48 VAC, 47 to 63 Hz Sinusoidal	120 VAC, 47 to 63 Hz Sinusoidal	120 VAC, 60 Hz Sinusoidal	120 VAC, 47 to 63 Hz Sinusoidal
Inputs per Discrete Module	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	16 Individually Isolated Points	16 (four isolated groups of four inputs each)
Discrete Input Current	10 mA (typical) at rated voltage	10 mA (typical) at rated voltage	4.7 mA (typical) at rated voltage	10 mA (typical) at rated voltage (reactive)	10 mA (typical) at rated voltage (reactive)	10 mA (typical) at rated voltage (reactive)
Discrete Input Voltage Range (Vs)	N/A	N/A	N/A	N/A	N/A	N/A
On-State Voltage	7.5 to 15 Volts RMS, 47 to 63 Hz Sinusoidal	13.5 to 30 Volts RMS, 47 to 63 Hz Sinusoidal	33 to 56 Volts RMS, 47 to 63 Hz Sinusoidal	75 to 132 VAC, 47 to 63 Hz Sinusoidal	75 to 132 VAC, 60 Hz Sinusoidal	75 to 132 VAC, 47 to 63 Hz Sinusoidal
Off-State Voltage	0 to 2.5 Volts RMS, 47 to 63 Hz Sinusoidal	0 to 5 Volts RMS, 47 to 63 Hz Sinusoidal	0 to 10 Volts RMS, 47 to 63 Hz Sinusoidal	0 to 25 VAC, 47 to 63 Hz Sinusoidal	0 to 20 VAC, 60 Hz Sinusoidal	0 to 25 VAC, 47 to 63 Hz Sinusoidal
On-State Current	6 mA to 15 mA	6 mA to 15 mA	3 mA to 7 mA	6 mA to 15 mA	8 mA to 15 mA	6 mA to 15 mA
Off-State Current	0 to 2.5 mA (2 mA minimum at 2.5 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 3 mA (2.2 mA minimum at 25 V input)	0 to 4 mA (2.2 mA minimum at 25 V input)	0 to 3 mA (2.2 mA minimum at 25 V input)
Isolation (any input to backplane)	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS
Isolation (between inputs)	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS
Impedance	1.12 Kohms typical	2.6 Kohms typical	10.3 Kohms typical	N/A	N/A	N/A
Filter Delay Time	20 ms typical	20 ms typical	20 ms typical	20 ms typical	20 ms typical	20 ms typical
Proximity Switch Compatible	Yes	Yes	Yes	Yes	Yes	Yes
Current Required from 5V Bus	0.3 Amp	0.3 Amp	0.3 Amp	0.35 Amp	0.25 Amp	0.35 Amp

Discrete I/O Modules (Input)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL241	IC697MDL653	IC697MDL652	IC697MDL654	IC697MDL640	IC697MDL651
Product Name	**Input 240 VAC (Isolated)**	**Input 24 VDC Positive/Negative Logic**	**Input 12 VDC Positive/Negative Logic**	**Input 48 VDC Positive/Negative Logic**	**Input 125 VDC Positive/Negative Logic**	**Input TTL**
Module Type	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Module Function	Input	Input	Input	Input	Input	Input
Discrete Input Rated Voltage	240 VAC, 60 Hz Sinusoidal	24 VDC, Positive/ Negative Logic	12 VDC, Positive/ Negative Logic	48 VDC, Positive/ Negative Logic	125 VDC, Positive/ Negative Logic	5 VDC (No user power required)
Inputs per Discrete Module	16 Individually Isolated Points	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	16 (four isolated groups of four inputs each)	32 TTL Compatible Inputs
Discrete Input Current	20 mA (typical) at rated voltage (reactive)	10 mA (typical) at rated voltage	4.7 mA (typical) at rated voltage	4.7 mA (typical) at rated voltage	5 mA (typical) at rated voltage	N/A
Discrete Input Voltage Range (Vs)	N/A	(-3 to +30 VDC)	(-2.5 to +15 VDC)	(-3 to +56 VDC)	(-35 to +145 VDC)	(-3 to +7 VDC)
On-State Voltage	160 to 264 VAC, 60 Hz Sinusoidal	13.5 to 30 Volts	7.5 to 15 Volts	33 to 56 Volts	Positive (+90 to +145 Volts), Negative (-20 to -90 Volts)	(-3 to +0.5 Volts)
Off-State Voltage	0 to 40 VAC, 60 Hz Sinusoidal	0 to 5 Volts	0 to 2.5 Volts	0 to 10 Volts	Positive (-35 to +35 Volts), Negative (-35 to 56 Volts)	2 to 7 Volts
On-State Current	10 mA to 15 mA	6 mA to 15 mA	6 mA to 15 mA	3 mA to 7 mA	3 mA to 7 mA	1.7 mA (typical) at rated voltage
Off-State Current	0 to 5 mA (2.2 mA minimum at 40 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 2.5 mA (2 mA minimum at 2.5 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 2 mA (2 mA minimum at 125 V input)	1.1 mA (maximum)
Isolation (any input to backplane)	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS
Isolation (between inputs)	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	N/A
Impedance	N/A	2.6 Kohms typical	1.12 Kohms typical	10.3 Kohms typical	24.5 Kohms typical	5.9 Kohms, +5%
Filter Delay Time	20 ms typical	1 ms or 10 ms configurable	1 ms or 10 ms configurable	1 ms or 10 ms configurable	1 ms or 10 ms configurable	1 ms or 10 ms configurable
Proximity Switch Compatible	Yes	Yes	Yes	Yes	Yes	No
Current Required from 5V Bus	0.25 Amp	0.3 Amp	0.3 Amp	0.3 Amp	0.3 Amp	0.53 Amp

Discrete I/O Modules (Input)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL671	IC697VDD100
Product Name	**Interrupt Input (14 Interrupt Points, 2 Configurable Points)**	**64-Channel Isolated Digital Input Board with Multifunctional Intelligent Controller**
Module Type	Discrete	Discrete
Module Function	Input	Input
Discrete Input Rated Voltage	24 VDC, Positive/ Negative Logic	5 to 250 VDC
Inputs per Discrete Module	14 interrupts (total of 16 inputs with four groups of four inputs each)	64 Individually Isolated Channels
Discrete Input Current	10 mA (typical) at rated voltage	0.7 mA to 1.0 mA at various Input Voltages
Discrete Input Voltage Range (Vs)	(-3 to +30 VDC)	(+5 to +250 VDC)
On-State Voltage	Positive State (+13.5 to +30 Volts), Negative State (-3 to -13.5 Volts)	Various according to Input Voltage (See Data Sheet GFK-2107)
Off-State Voltage	Positive (-3 to +5 Volts), Negative (-5 to +30 Volts)	Various according to Input Voltage (See Data Sheet GFK-2107)
On-State Current	6 mA to 15 mA	N/A
Off-State Current	0 to 2 mA (2 mA minimum at 5 V input)	N/A
Isolation (any input to backplane)	1500 Volts RMS	1100 Volts RMS
Isolation (between inputs)	500 Volts RMS	1100 Volts RMS
Impedance	2.6 Kohms typical	N/A
Filter Delay Time	1 ms or 10 ms configurable	N/A
Minimum Pulse Width	With 1 ms Filter Select: 1 ms on and off; With 10 ms Filter Select: 11 ms on and off	N/A
Minimum Interrupt Burst (1 ms Filter Selection)	With CPM915: 500 Hz; With CPU731: 290 Hz	N/A
Proximity Switch Compatible	Yes	N/A
Current Required from 5 V Bus	0.3 Amp	2.0 Amps typical

Analog I/O Modules (Input)

GE offers easy-to-use analog modules for PACSystems and Series 90-70, supporting a wide array of control processes. These modules come in various input and output voltages and currents suitable for many different applications including flow and pressure control.

	IC697ALG230	IC697ALG440	IC697ALG441
Product Name	**Analog Input, High Level**	**Analog Expander, Current**	**Analog Expander, Voltage**
Module Type	Analog	Analog	Analog
Module Function	Input	Input	Input
Analog Input Type	Current or Voltage	Current Expander	Voltage Expander
Inputs per Analog Module	8 (individually configurable for voltage or current)	16	16
Analog Input Current	4 to 20 mA	4 to 20 mA	N/A
Analog Input Voltage Range (Vs)	(-10 to +10 Volts)	N/A	(-10 to +10 Volts)
Response Time-On	5.0% 30 ms 1.0% 42 ms 0.5% 51 ms 0.1% 67 ms	5.0% 30 ms 1.0% 42 ms 0.5% 51 ms 0.1% 67 ms	5.0% 30 ms 1.0% 42 ms 0.5% 51 ms 0.1% 67 ms
Impedance	Greater than 10 Mohms at DC, 20 Kohms in series with 0.47 mfd capacitor at AC	Greater than 10 Mohms at DC, 20 Kohms in series with 0.47 mfd capacitor at AC	Greater than 10 Mohms at DC, 20 Kohms in series with 0.47 mfd capacitor at AC
Resolution (Voltage)	312.5 microvolts per LSB step	N/A	312.5 microvolts per LSB step
Resolution (Current)	0.5 microamps per LSB step on 4 to 20 mA	0.5 microamps per LSB step on 4 to 20 mA	N/A
Accuracy of Base Converter (Voltage) 10 Volts	(±0.01% of full scale, ±0.02% of value)	N/A	N/A
Accuracy of Base Converter (Current)	(+0.05% of full scale, +0.1% of value)	N/A	N/A
Accuracy of Expander (Voltage)	N/A	N/A	(+0.03% of full scale, +0.02% of value)
Accuracy of Expander (Current)	N/A	(+0.07% of full scale, +0.1% of value)	N/A
Current Required from 5V Bus	0.8 Amp	0.4 Amp	0.4 Amp

Discrete I/O Modules (Output)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL350	IC697MDL340	IC697MDL341	IC697MDL753	IC697MDL752	IC697MDL750
Product Name	**Output 120 VAC 0.5A**	**Output 120 VAC 2A**	**Output 120/240 VAC 2A (Isolated)**	**Output 5/48 VDC 0.5A Negative Logic**	**Output 24/48 VDC 2A**	**Output 24/48 VDC 0.5A**
Module Type	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Module Function	Output	Output	Output	Output	Output	Output
Discrete Output Type	Point	Point	Point	Point	Point	Point
Discrete Output Rated Voltage	120 VAC	120 VAC	120 / 240 VAC	5 / 48 VDC	12 VDC	24 / 48 VDC
Discrete Outputs per Module	32 (four isolated groups of eight outputs each)	16 (four isolated groups of four outputs each)	12 Individually Isolated Points	32 (two isolated groups of 16 outputs each)	32 (four isolated groups of eight outputs each)	32 (four isolated groups of eight outputs each)
Discrete Output Voltage Range	85 to 132 Volts, 47 to 63Hz	85 to 132 Volts, 47 to 63Hz	85 to 264 Volts, 47 to 63 Hz	5 Volts or 10 to 60 Volts	10 to 15 Volts	20 to 60 Volts
Discrete Output Current	0.5 Amps maximum per point, 2 Amps maximum per group	2 Amps maximum per point, 4 Amps maximum per group	2 Amps maximum per point, 16 Amps maximum per module	16 mA maximum per point @ 5 VDC; 0.5 Amps maximum per point, 4 Amps maximum per group @ 10 to 60 VDC	0.5 Amps maximum per point, 2 Amps maximum per group	0.5 Amps maximum per point, 2 Amps maximum per group
Response Time-On	1 ms maximum	1 ms maximum	1 ms maximum	1 ms typical	1 ms typical	1 ms maximum
Response Time-Off	1/2 cycle	1/2 cycle	1/2 cycle	1 ms typical	1 ms typical	1 ms maximum
Output Leakage	1.5 mA maximum	1.5 mA maximum	3 mA maximum at 120 VAC; 6 mA maximum at 240 VAC	250 uA maximum @ 5 VDC; 1 mA maximum @ 10 to 60 VDC	1 mA maximum	1 mA maximum
Isolation (any output to backplane)	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS
Isolation (between outputs)	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS
Inrush Current	10 Amps maximum per point for one cycle (20 ms)	20 Amps maximum per point for one cycle (20 ms)	20 Amps maximum per point for one cycle (20 ms)	5 Amps maximum for 20 ms	10 Amps maximum per point for one cycle (20 ms)	10 Amps maximum per point for one cycle (20 ms)
Output Voltage Drop	3 Volts maximum	3 Volts maximum	1.5 Volts maximum	5 VDC: 0.5 Volts Maximum (16 mA); 10 to 60 VDC: 1 Volt (2 Ohms) maximum	1 Volt (2 ohms) maximum	1 Volt (2 ohms) maximum
Current Required from 5V Bus	0.5 Amp	0.25 Amp	0.25 Amp	0.25 Amp	0.25 Amp	0.25 Amp

Discrete I/O Modules (Output)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL740	IC697MDL940
Product Name	**Output 12 VDC 0.5A**	**Output Relay**
Module Type	Discrete	Discrete
Module Function	Output	Output
Discrete Output Type	Point	Relay
Discrete Output Rated Voltage	24/48 VDC	120/240 VAC or 5/24/125 VDC (No user power required)
Discrete Outputs per Module	16 (four isolated groups of four outputs each)	16 (Form C: 8 individually isolated points; Form A: 2 groups with 4 points per group)
Discrete Output Voltage Range	20 to 60 Volts	N/A
Discrete Output Current	2 Amps maximum per point, 4 Amps maximum per group	4 Amps per group (Form A), 16 Amps Load Current per module
Response Time-On	2 ms maximum	10 ms maximum
Response Time-Off	2 ms maximum	10 ms maximum
Output Leakage	1 mA maximum	1 mA maximum at 120 VAC
Maximum Power	N/A	480 Volts (AC loads) or 60 Watts (DC loads)
Maximum Load Current (Resistive)	N/A	2.0 Amps from 5 to 265 VAC (47 to 63 Hz) or 5 to 30 VDC; 0.2 Amps from 31 to 125 VDC (31 to 150 VDC for Form A only)
Isolation (any output to backplane)	1500 Volts RMS	1500 Volts RMS
Isolation (between outputs)	500 Volts RMS	500 Volts RMS
Inrush Current	20 Amps maximum per point for one cycle (20 ms)	N/A
Output Voltage Drop	0.8 Volt (0.4 ohm) maximum	N/A
Minimum Load Current	N/A	10 mA
Switching Frequency	N/A	20 cycles/minute (inductive load)
Contact Type	N/A	Silver Alloy
Contact Resistance	N/A	0.2 ohm (maximum)
Protection (Each Output)	N/A	3 Amp fuse, Snubber (R=47 ohms, C=0.015 ufd)
Current Required from 5V Bus	0.15 Amp	0.075 Amp

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for PACSystems and Series 90-70, supporting a wide array of control processes. These modules come in various input and output voltages and currents suitable for many different applications including flow and pressure control.

	IC697ALG320
Product Name	**Analog Output, Voltage/Current**
Module Type	Analog
Module Function	Output
Analog Output Type	Current or Voltage
Analog Outputs per Module	4 (individually configurable for voltage or current)
Analog Output Voltage Range	(-10 Volts to +10 Volts)
Analog Output Current	0.0 mA to 22.5 mA (4 to 20 mA default)
Response Time-On	Voltage: 5.0% 0.5 ms, 0.1% 2.0 ms; Current: 5.0% 1.0 ms, 0.1% 5.0 ms
Isolation (any output to backplane)	N/A
Isolation (between outputs)	N/A
Impedance	N/A
Resolution (Voltage)	312.5 microvolts per LSB step
Current Required from 5V Bus	1.66 Amps)

I/O Interface Modules

PACSystems and Series 90-70 feature a variety of communications options for distributed control and/or I/O, supporting a wide range of communication protocols and configurations. These communication modules are easy to install and quick to configure. Some distributed I/O communications modules allow for numerous remote drops or additional racks, while others provide an interface for GE products up to 7500 feet away from the controller.

	IC697BEM731	IC687BEM731	IC697BEM713	IC697BEM711	IC697BEM733
Product Name	**Genius Bus Controller**	**VME Single Slot Bus Controller**	**Bus Transmitter Module**	**Bus Receiver Module**	**Remote I/O Scanner**
Module Type	Bus Controller	Bus Controller	Bus Transmitter	Bus Receiver Scanner	Remote I/O
Supports Redundancy	Yes	Yes	No	No	Yes
Discrete Points Available	N/A	N/A	N/A	N/A	128 Bytes Per Drop
Programmer Effective Data Rate	N/A	N/A	500 Kbytes/sec	N/A	N/A
Time to Store 16 Kbyte Program	N/A	N/A	20 - 30 Seconds	N/A	N/A
Effective Data Rate	N/A	N/A	500 Kbytes/sec	500 Kbytes/sec	38.4 Kbaud
Total Allowed Distance of Interconnecting Cable	N/A	N/A	50 feet (15 meters)	50 feet (15 meters)	N/A
Maximum Distance from Controller	N/A	N/A	N/A	N/A	7500 feet (2275 meters)
Electrical Isolation	N/A	N/A	Non-isolated differential communication	Non-isolated differential communication	N/A
Built-in Serial Ports	1 (Hand Held Monitor Port)	1 (Hand Held Monitor Port)	2 (Programmer Port, Expansion Port Out)	2 (Expansion Port In, Expansion Port Out)	2 (RS-422 Compatible Serial Port, Hand Held Monitor Port)
Current Required from 5V Bus	1.3 Amps	1.3 Amps	1.4 Amps	0.8 Amp	0.8 Amp

Communications Modules

PACSystems and Series 90-70 feature a variety of communications options for distributed control and/or I/O, supporting a wide range of communication protocols and configurations. These communication modules are easy to install and quick to configure. Some distributed I/O communications modules allow for numerous remote drops or additional racks, while others provide an interface for GE products up to 7500 feet away from the controller.

	IC698RMX016	IC698CMX016	IC697CMM711	IC698ETM001
Product Name	**Redundancy Memory Xchange Module**	**Control Memory Xchange Module**	**Communications Coprocessor**	**RX7i Standalone Ethernet Module 10/100**
Module Type	Redundancy Communications (High Availability)	Control Memory Xchange	Communications Coprocessor	Ethernet Controller
Supports Redundancy	Yes	No	No	No
Protocols Supported	N/A	N/A	SNP/SNPX (master, slave), CCM (master, slave, peer), RTU Modbus (slave only)	N/A
Effective Data Rate	2.12 gigabaud	2.12 gigabaud	N/A	N/A
Electrical Isolation	Non-isolated differential communication	Non-isolated differential communication	N/A	N/A
Communications Processor Speed	N/A	N/A	12 MHz (80C186)	N/A
Simultaneous Communication Speed	N/A	N/A	9.6 Kbps	N/A
Individual Communication Speed	N/A	N/A	19.2 Kbps	N/A
Reflective Memory Available	16 Mbytes	16 Mbytes	N/A	N/A
Distance Between Nodes	Up to 300 meters	Up to 300 meters	N/A	N/A
Access Time	400 ns (worst-case), 200 ns (best-case)	400 ns (worst-case), 200 ns (best-case)	N/A	N/A
Transfer Rate	6.2 Mbyte/s without redundant transfer, 3.2 Mbyte/s with redundant transfer	6.2 Mbyte/s without redundant transfer, 3.2 Mbyte/s with redundant transfer	N/A	N/A
Cable Requirements	Connector (LC type, conforms to IEC61754-20) Cable (ST Type Fiber-Optic Multimode; 62.5 Micron core)	Connector (LC type, conforms to IEC61754-20) Cable (ST Type Fiber-Optic Multimode; 62.5 Micron core)	N/A	N/A
Built-in Serial Ports	None	None	2 (Serial RS-422/RS485 or RS-232)	2 Twisted pair 10 Base T/100 Base TX RJ-45
Current Required from 5V Bus	1.2 Amps	1.2 Amps	0.7 Amp	N/A

Specialty Modules

PACSystems and Series 90-70 feature a wide range of Specialty Modules to meet all of your application needs. From High-Speed Counters, Programmable Coprocessor Modules and Alphanumeric Display Coprocessors to Hard Disk Drives and Single Board Computers, these Specialty Modules are designed to fill your requirement for versatile industrial solutions.

	IC697PCM711	IC697HSC700
Product Name	**Programmable Coprocessor Module**	**High Speed Counter**
Module Type	Programmable Coprocessor Module	High Speed Counter
Processor Speed	12 MHz (80C186)	N/A
Clock	Real Time Calendar synchronized to PLC	N/A
Protocols Supported	CCM2	N/A
Simultaneous Communication Speed	9.6 Kbaud	N/A
Individual Communication Speed	19.2 Kbaud	N/A
Processor	N/A	N/A
Memory Available	96 Kbytes of User Logic RAM and 512 Kbytes of Expansion Memory	N/A
Flash Memory Available	N/A	N/A
HSC Available Output Voltages	N/A	4 (Positive Logic) with LED Indicators and +5 VDC
Programmed By	IC647, IC640, or IBM-compatible Personal Computer	N/A
Counter Types	N/A	5 Selectable Counter Types
Input Thresholds	N/A	TTL, Non-TTL, and Magnetic Pickup
Output Signal	N/A	Up To 200 KHz
Hard Drive Size	N/A	N/A
Hard Disk Size	N/A	N/A
Built-in Serial Ports	2 (RS-422/RS-485 or RS-232 Serial Ports)	N/A
Current Required from 5V Bus	1.0 Amp	N/A

Expansion Power Supplies

VME Power Supply Expansion modules simply slide into the PLC rack just like I/O, and they work with any VME Expansion Rack. Available with a variety of power ratings and Input Voltage Ranges for powering up systems of different sizes, VME Expansion Rack Power Supplies also have built-in protection for autoranging power factor corrections as well as overcurrent and overvoltage fault conditions. Depending on your application, it is possible to use one power supply for operation of two racks.

	IC697PWR710	IC697PWR711	IC697PWR724	IC697PWR748
Product Name	**Expansion Rack Power Supply, 120/240 VAC or 125 VDC, 55W**	**Expansion Rack Power Supply, 120/240 VAC or 125 VDC, 100W**	**Expansion Rack Power Supply, 24 VDC, 90W**	**Expansion Rack Power Supply, 48 VDC, 90W**
Module Function	Expansion Rack Power Supply	Expansion Rack Power Supply	Expansion Rack Power Supply	Expansion Rack Power Supply
Power Source	120/240 VAC or 125 VDC	120/240 VAC or 125 VDC	24 VDC	48 VDC
Output Source	55 Watts; 5 VDC @ 11 Amps	100 Watts; 5 VDC @ 20 Amps, +12 VDC @ 2 Amps, -12 VDC @ 1 Amp	90 Watts; 5 VDC @ 18 Amps, +12 VDC @ 1.5 Amps, -12 VDC @ 1 Amp	90 Watts; 5 VDC @ 18 Amps, +12 VDC @ 1.5 Amps, -12 VDC @ 1 Amp

Expansion Racks

VME Expansion Racks are available in a variety of configurations to meet the needs of your application. The choices vary from 5- and 9-slot Standard Racks to 17-slot VME Integrator Racks, each giving you the option of Front (Rack) Mount or Rear (Panel) Mount. These racks can be used for CPU, local and remote I/O and accept all plug-in IC697 Power Supplies. With available accessories, two racks can be run off a single Power Supply. GE offers standard-length cables for easy installation and provides wiring information for custom applications.

	IC697CHS750	IC697CHS790	IC697CHS791	IC697CHS782	IC697CHS783
Product Name	**Standard Series 90-70 Expansion Rack, 5-slot, Rear (Panel) Mount**	**Standard Series 90-70 Expansion Rack, 9-slot, Rear (Panel) Mount**	**Standard Series 90-70 Expansion Rack, 9-slot, Front (Rack) Mount**	**VME Integrator Expansion Rack, 17-slot, Rear (Panel) Mount**	**VME Integrator Expansion Rack, 17-slot, Front (Rack) Mount**
Rack Type	Standard 90-70	Standard 90-70	Standard 90-70	VME Integrator	VME Integrator
Number of Slots	5 Double Width (plus one for power supply)	9 Double Width (plus one for power supply)	9 Double Width (plus one for power supply)	17 Single Width, 8 Double Width (plus one for power supply)	17 Single Width, 8 Double Width (plus one for power supply)
Mounting Location	Rear (Panel)	Rear (Panel)	Front (Rack)	Rear (Panel)	Front (Rack)
Rack Configurations	All IC697 PLC module types	All IC697 PLC module types	All IC697 PLC module types	All IC697 PLC module types, 3rd party VME modules with 0.8" spacing	All IC697 PLC module types, 3rd party VME modules with 0.8" spacing
Rack Slot Size	1.6 inch	1.6 inch	1.6 inch	0.8 inch	0.8 inch
Compatible Power Supplies	Plug-in AC or DC IC697	Plug-in AC or DC IC697	Plug-in AC or DC IC697	Plug-in AC/DC and DC IC697, or external power supply	Plug-in AC/DC and DC IC697, or external power supply
Dimensions	11.15" x 12.6" x 7.5"	11.15" x 19.00" x 7.5"	11.15" x 19.00" x 7.5"	11.15" x 19.00" x 7.5"	11.15" x 19.00" x 7.5"

Accessories

IC690CDR002	User Manuals, InfoLink CD-ROM Documentation, Single-user License
IC697ACC621	Short Rack Fan Assembly, 120 VAC
IC697ACC624	Short Rack Fan Assembly, 240 VAC
IC697ACC644	Short Rack Fan Assembly, 24 VDC
IC697ACC721	Rack Fan Assembly, 120 VAC
IC697ACC724	Rack Fan Assembly, 240 VAC
IC697ACC736	Cable Shield Clamping Assembly
IC697ACC744	Rack Fan Assembly, 24 VDC
IC698ACC701	Replacement Battery
IC698ACC720	Gasketed Filler Faceplate, Double-width
IC698ACC735	Gasketed Filler Faceplate, Single-width

Cables

IC200CBL001	Station Manager Cable for Ethernet Interface
IC600WD002C	I/O Expansion Cable, 2 feet (0.6 meters)
IC600WD005C	I/O Expansion Cable, 5 feet (1.5 meters)
IC600WD010C	I/O Expansion Cable, 10 feet (3.0 meters)
IC600WD025C	I/O Expansion Cable, 25 feet (7.5 meters)
IC600WD050C	I/O Expansion Cable, 50 feet (15 meters)

PACSystems RX3i Controllers

The PACSystems RX3i controller is an amazingly versatile programmable automation controller in the PACSystems family. Like the rest of the family, the PACSystems RX3i features a single control engine and universal programming environment to provide application portability across multiple hardware platforms and deliver a true convergence of control choices.

The RX3i features

- A high performance controller with multiple CPU offerings meeting various performance criteria up to and including an Intel® 1 GHz CPU and 64 Mbytes memory for advanced programming and performance.
- A universal backplane with a high-speed PCI bus running at 27 MHz for fast data throughput for complex I/O and a serial bus for simple I/O that optimizes performance and your investment. The universal backplane also supports HOT SWAP to minimize downtime.
- A wide range of I/O modules (over 40 types available) for simple to complex applications; various network modules are also available.

The PACSystems portable control engine provides high performance on several different platforms, allowing OEMs and end users with application variability to choose the exact control system hardware that best suits there needs - all in a single, compact and highly integrated package.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

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Discrete Input Modules pages 37-39

Discrete Output Modules pages 45-49

Analog Input Modules pages 40-44

Analog Output Modules pages 50-53

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Networks and Distributed I/O Systems pages 67-68

RX3i Accessories pages 79-82

RX3i Configuration Guidelines pages 83-85

α and βi Series Servo Amplifiers page 86

VersaMotion pages 87-95

Publication Reference Chart

GFK-2222	PACSystems CPU Reference Manual
GFK-2224	TCP/IP Ethernet Communications for PACSystems
GFK-2225	PACSystems Station Manager User's Manual
GFK-2259	C Programmer's Toolkit for PACSystems User's Manual
GFK-2308	PACSystems Hot Standby CPU Redundancy User's Manual
GFK-2314	PACSystems RX3i Hardware and Installation Manual

CPUs

The high-performance CPU is based on the latest technology processor with fast computation and high throughput. The controller can manage up to 32K of I/O in a number of standard languages. The powerful CPU enables complex applications to be easily solved with the high performance processor and up to 64 Mbytes of user memory. The RX3i supports multiple IEC languages and C programming to give you program flexibility. The RX3i increases machine cycle times, reduces downtime with its extensive diagnostics and hot swap capability, and enables you to store large amounts of data to reduce external hardware cost.

	IC695CPU310	IC695CPU320
Product Name	**PACSystems RX3i CPU with two built-in serial ports**	**PACSystems RX3i CPU with two built-in serial ports**
Module Type	Controller	Controller
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Boolean Execution Speed (ms/K)	0.23	0.047
User Logic Memory	10Mega bytes	64Mega bytes
Real Time Clock	Yes	Yes
I/O Discrete Points	32K	32K
I/O Analog Points	32K	32K
Type of Memory Storage	SRAM, Flash	SRAM, Flash
Processor Speed	300MHz	1GHz
Built-in Communication Ports	1 RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)	1 RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)
Total Number of Racks	8	8
Communications Options	Serial, Genius, CMX, Ethernet, Profibus, and DeviceNet	Serial, Genius, CMX, Ethernet, Profibus, and DeviceNet
Field Busses/Device Networks	Ethernet (Ethernet Global Data, Channels, Modbus TCP Server and Client), Genius, Profibus DP, DeviceNet	Ethernet (Ethernet Global Data, Channels, Modbus TCP Server and Client), Genius, Profibus DP, DeviceNet
Software Programming Support	Proficy Machine Edition Logic Developer Professional Edition 5.0 or above	Proficy Machine Edition Logic Developer Professional edition 5.6 or above
Program Languages Supported	Ladder Logic, Structured Text, C, Function Block Diagram	Ladder Logic, Structured Text, C, Function Block Diagram ,
Redundancy Maximum amount of data in for Syncronization	N/A	N/A
Redundancy Typical Base Sweep Time (Reference Data Transfer List Impact)	N/A	N/A
Redundancy Switchover Time	N/A	N/A
CPU Scan Syncronization	N/A	N/A
Redundant Synch LAN	N/A	N/A
Redundant I/O LAN	N/A	N/A
Internal Power Used	1250 mA @ 3.3 VDC; 1000 mA @ 5 VDC	1750 mA @ 3.3 VDC; 1200 mA @ 5 VDC
Number of Slots Module Occupies on Backplane	2	2

CPUs

The CRU320 High Availability CPU Redundancy allows a critical application or process to continue operating if a failure occurs in any single component. A High Availability system uses two CPUs; an active unit that actively controls the process, and a backup unit that is synchronized with the active unit and can take over the process should it becomes necessary. The two units are synchronized when both are in Run Mode, the backup unit has received the latest status and synchronization information from the active unit via a redundancy link, and both are running their logic solution in parallel.

The system runs synchronously with a transfer of all control data that defines machine status and any internal data needed to keep the two CPUs operating in sync. The transfer of data from the active unit to the backup unit occurs twice per sweep. These CPU-to-CPU transfers are checked for data integrity.

The CMU310 is a Hot Standby redundant CPU that is configured using the MaxON application software. The CMU310 has the same functionality as the CPU310. Synchronization of the CPM310s is via an Ethernet link.

	IC695CMU310	IC695CRU320
Product Name	**PACSystems RX3i Redundant Hot Standby CPU with two built-in serial ports**	**PACSystems RX3i Bumpless Redundant High Availability CPU with two built-in serial ports. (Requires IC695RMX128 Data Sync Module)**
Module Type	Redundant Controller	Redundant Controller
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Boolean Execution Speed (ms/K)	0.23	0.047
User Logic Memory	10Meg bytes	64Meg bytes
Real Time Clock	Yes	Yes
I/O Discrete Points	32K	32K
I/O Analog Points	32K	32K
Type of Memory Storage	SRAM, Flash	SRAM, Flash
Processor Speed	300MHz	1GHz
Built-in Communication Ports	1 RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)	1 RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)
Total Number of Racks	8	8
Communications Options	Serial, Genius, CMX, Ethernet, Profibus, and DeviceNet	Serial, CMX, Ethernet, Profibus, and DeviceNet
Field Busses/Device Networks	Ethernet (Ethernet Global Data, Channels, Modbus TCP Server and Client), Genius, Profibus DP, DeviceNet	Ethernet (Ethernet Global Data, Channels, Modbus TCP Server and Client), Profibus DP, DeviceNet
Software Programming Support	Proficy Machine Edition Logic Developer Professional edition 5.0 or above	Proficy Machine Edition Logic Developer Professional edition 5.7 or above
Program Languages Supported	Ladder Logic, Structured Text, C, Function Block Diagram	Ladder Logic, Structured Text, C, Function Block Diagram
Redundancy Maximum amount of data in for Syncronization	8K words once per scan	Up to 2 Mbytes beginning and end of scan
Redundancy Typical Base Sweep Time (Reference Data Transfer List Impact)	200msec.: 8K words	3.66 msec: 1K Discrete I/O, 125 Analog I/O and 1K Registers 3.87 msec: 2K Discrete I/O, 250 Analog I/O and 2K Registers 4.30 msec: 4K Discrete I/O, 500 Analog I/O and 4K Registers 5.16 msec: 8K Discrete I/O, 1K Analog I/O and 8K Registers
Redundancy Switchover Time	30 msec controlled 600 msec worst case	Maximum 1 logic scan, minimum 3.133 msec.
CPU Scan Syncronization	Not Available	Automatic Each Scan
Redundant Synch LAN	Yes	Yes
Redundant I/O LAN	Yes	Yes
Internal Power Used	1250 mA @ 3.3 VDC; 1000 mA @ 5 VDC	1750 mA @ 3.3 VDC; 1200 mA @ 5 VDC
Number of Slots Module Occupies on Backplane	2	2

High Availability Data Synch

The Redundancy Memory Xchange (RMX) module operates as a dedicated link between CPUs in an RX3i Hot Standby CPU (IC695CRU320) Redundancy system. The RMX modules provide a path for transferring data between the two redundancy CPUs in the redundant system. A complete communications path consists of one RMX in the primary unit, one RMX in the secondary unit, and two high-speed fiber optic cables connecting them to each other. One or two redundancy links are supported per high availability CPU.

	IC695RMX128
Product Name	**RX3i Control Memory Xchange Module for Peer to Peer network. 128Megbytes of user shared memory.**
Module Type	High Availability Data Syncronization Link
Backplane Support	Universal Backplane Only. Uses PCI Bus.
Sync Link Speed	2.1 Gbits/s
Communications Data Rate	2.12Gbaud
Synchronzed Link Transfer Rate	43 Mbyte/s (4 byte packets) to 174 Mbyte/s (64 byte packets)
Maximum Data Syncronization	Up to 2 megabytes. Twice per Scan.
Bus Diagnostics	Network error detection.
Redundant RMX Support	Yes
Maximum Distance Between Redundant Controllers	300 meters
Connector Type	- Fiber optic LC type, conforms to IEC 61754-20 - Zirconium ceramic ferrule - Insertion loss: 0.35 dB (maximum) - Return loss: -30dB
Internal Power Used	660 mA @ +3.3 VDC 253 mA @ +5 VDC
Number of Slots Module Occupies on Backplane	1

Baseplates

RX3i baseplates are available in 12 and 16 slot configurations to the meet the needs of your application. The RX3i Universal baseplates support hot swap capability to reduce downtime. Expansion bases are available in 5 and 10 slot versions to maximize flexibility.

	IC695CHS016	IC695CHS012	IC694CHS392	IC693CHS393	IC694CHS398	IC693CHS399
Product Name	**PACSystems RX3i 16 slot high speed controller base supports PCI and serial bus**	**PACSystems RX3i 12 slot high speed controller base supports PCI and serial bus**	**PACSystems RX3i serial 10-slot Expansion Baseplate (serial bus only)**	**PACSystems RX3i serial 10-slot Remote Baseplate (serial bus only)**	**PACSystems RX3i serial 5-slot Expansion Baseplate (serial bus only)**	**PACSystems RX3i serial 5-slot Remote Baseplate (serial bus only)**
Module Type	Universal Controller and I/O Base	Universal Controller and I/O Base	Standard I/O	Standard I/O	Standard I/O	Standard I/O
Backplane Support	Supports both PCI and High Speed Serial.	Supports both PCI and High Speed Serial.	Supports High Speed Serial Only. No PCI support.	Supports High Speed Serial Only. No PCI support.	Supports High Speed Serial Only. No PCI support.	Supports High Speed Serial Only. No PCI support.
Module Hot Swap Support	Yes	Yes	No	No	No	No
Baseplate Option	Controller Base and Ethernet Expansion Base	Controller Base and Ethernet Expansion Base	Expansion	Expansion	Expansion	Expansion
Distance	N/A	N/A	Up to 50 feet	Up to 700 feet	Up to 50 feet	Up to 700 feet
Number of Slots	16	12	10	10	5	5
Dimension (WxHxD) in. (mm)	23.7 x 5.57 x 5.80 (601.98 x 141.5 x 147.32)	18.01 x 5.57 x 5.80 (457.5 x 141.5 x 147.32)	17.44 x 5.12 x 5.59 (443 x 130 x 142)	17.44 x 5.12 x 5.59 (443 x 130 x 142)	10.43 x 5.12 x 5.59 (245 x 130 x 142)	10.43 x 5.12 x 5.59 (245 x 130 x 142)
Internal Power Used	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	150 mA @ 5 VDC	460 mA @ 5 VDC	170 mA @ 5 VDC	480 mA @ 5 VDC

Universal Bases Power Supplies

The RX3i power supply modules simply snap in just like I/O, and they work with any model CPU. Each version provides auto-ranging so there is no need to set jumpers for different incoming power levels, and they are current limiting so a direct short will shut the power supply down to avoid damage to the hardware. Advanced diagnostics and built-in smart switch fusing are among the other performance and safety features. The multipurpose power supplies can be configured for incremental capacity or redundancy.

	IC695PSA040	IC695PSD040	IC695PSA140	IC695PSD140
Product Name	**Power Supply, 120/240 VAC, 125 VDC (Can not be on the same backplane with more than one power supply)**	**Power Supply, 24 VDC (Can not be on the same backplane with more than one power supply)**	**Multipurpose Power Supply, 120/240 VAC, 125 VDC. Supports multiple multipurpose power supplies.**	**Multipurpose Power Supply, 24 VDC. Supports multiple multipurpose power supplies.**
Module Type	Universal Base Power Supply	Universal Base Power Supply	Universal Base Power Supply	Universal Base Power Supply
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	2	1	2	1
Power Source	100-240 VAC or 125 VDC	24 VDC	100-240 VAC or 125 VDC	24 VDC
Redundant and Added Capacity Support	No	No	Yes, Up to 4 Multipurpose power supplies supported on a Universal base	Yes, Up to 4 Multipurpose power supplies supported on a Universal base
Output Source	40 watts total. 30 watts max at 3.3 VDC; 30 watts max at 5 VDC; 40 watts at 24 VDC Relay, no 24 VDC isolated available.	40 watts total. 30 watts max at 3.3 VDC; 30 watts max at 5 VDC; 40 watts at 24 VDC Relay, no 24 VDC isolated available	40 watts total. 30 watts max at 3.3 VDC; 30 watts max at 5 VDC; 40 watts at 24 VDC Relay, no 24 VDC isolated available	40 watts total. 30 watts max at 3.3 VDC; 30 watts max at 5 VDC; 40 watts at 24 VDC Relay, no 24 VDC isolated available.
Number of Redundant Power Supplies Supported	N/A	N/A	Two Multipurpose Power Supplies are supported on the Universal Base configured for redundancy	Two Multipurpose Power Supplies are supported on the Universal Base configured for redundancy

Remote Base Power Supplies

The RX3i power supply modules simply snap in just like I/O, and they work with any model CPU. Each version provides auto-ranging so there is no need to set jumpers for different incoming power levels, and they are current limiting so a direct short will shut the power supply down to avoid damage to the hardware. RX3i power supplies are tied into the performance of the CPU for simplex, fail-safe, and fault tolerance. Advanced diagnostics and built-in smart switch fusing are among the other performance and safety features.

	IC694PWR321	IC694PWR330	IC694PWR331	IC693PWR332
Product Name	**Power Supply, 120/240 VAC, 125 VDC**	**Power Supply, 120/240 VAC, 125 VDC**	**Power Supply, 24 VDC**	**Power Supply, 12 VDC**
Module Type	Expansion Power Supply	Expansion Power Supply	Expansion Power Supply	Expansion Power Supply
Backplane Support	Remote Bases Only	Remote Bases Only	Remote Bases Only	Remote Bases Only
Power Source	100-240 VAC or 125 VDC	100-240 VAC or 125 VDC	24 VDC	12 VDC
High Capacity	No	Yes	Yes	Yes
Output Source	30 watts total; 15 watts 5 VDC; 15 watts 24 VDC relay; 20 watts 24 VDC isolated	30 watts total; 30 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated	30 watts total; 30 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated	30 watts total; 30 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated
Cable Length to Redundant Power Supply Adapter	N/A	N/A	N/A	N/A
Redundant Power Supply Adapter Rack Compatibility	N/A	N/A	N/A	N/A
24 VDC Output Current Capacity	0.8 A	0.8 A	0.8 A	0.8 A

Remote Base Power Supplies

The RX3i power supply modules simply snap in just like I/O, and they work with any model CPU. Each version provides auto-ranging so there is no need to set jumpers for different incoming power levels, and they are current limiting so a direct short will shut the power supply down to avoid damage to the hardware. RX3i power supplies are tied into the performance of the CPU for simplex, fail-safe, and fault tolerance. Advanced diagnostics and built-in smart switch fusing are among the other performance and safety features.

	IC693PWR328	IC693ACC341	IC693ACC350
Product Name	**Power Supply, 48 VDC**	**Power Supply, Redundant Base. Supports two power supplies with 0.5 meter cable (For expansion bases only)**	**Power Supply, Redundant Adapter for Expansion Base. (For expansion bases only)**
Module Type	Expansion Power Supply	Redundant Power Supply Base	Redundant Power Supply Adapter
Backplane Support	Remote Bases Only	Remote Bases Only	Remote Bases Only
Power Source	48 VDC	N/A	N/A
High Capacity	No	N/A	N/A
Output Source	30 watts total; 15 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated	N/A	N/A
Cable Length to Redundant Power Supply Adapter	N/A	0.5 meter	N/A
Redundant Power Supply Adapter Rack Compatibility	N/A	N/A	Compatible with all RX3i 5, 10 slot serial expansion racks
24 VDC Output Current Capacity	0.8 A	N/A	N/A

Discrete I/O Modules (Input)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC694ACC300	IC694MDL230	IC694MDL250	IC694MDL231	IC694MDL240
Product Name	**PACSystems RX3i DC Voltage Input Simulator, 8/16 Points**	**PACSystems RX3i AC Voltage Input Module, 120 VAC Isolated, 8 Point Input**	**PACSystems RX3i AC Voltage Input Module, 120 VAC Isolated, 16 Point Input**	**PACSystems RX3i AC Voltage Input Module, 240 VAC Isolated, 8 Point Input**	**PACSystems RX3i AC Voltage Input Module, 120 VAC, 16 Point Input**
Module Type	Input Simulator	Discrete Input	Discrete Input	Discrete Input	Discrete Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1	1
Input Voltage Range	N/A	0-132 VAC	0-132 VAC	0-264 VAC	0-132 VAC
Input Current (mA)	N/A	14.5	14.5	15	12
Number of Points	16	8	16	8	16
Response Time (ms)	20 on/30 off	30 on/45 off	30 on/45 off	30 on/45 off	30 on/45 off
Trigger Voltage	N/A	74-132	74-132	148-264	74-132
Points per Common	16	1	1	1	16
Connector Type	Switches	Terminal Block (20 screws), included with module.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	120 mA @ 5 VDC	60 mA @ 5 VDC	60 mA @ 5 VDC	60 mA @ 5 VDC	90 mA @ 5 VDC

Discrete I/O Modules (Input)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC694MDL260	IC694MDL241	IC694MDL632	IC694MDL634	IC694MDL645
Product Name	**PACSystems RX3i AC Voltage Input Module, 120 VAC, 32 Point Input**	**AC/DC Voltage Input Module, 24 VAC/VDC**	**PACSystems RX3i DC Voltage Input Module, 125 VDC Pos/Neg Logic, 8 Point Input**	**PACSystems RX3i DC Voltage Input Module, 24 VDC Pos/Neg Logic, 8 Point Input**	**PACSystems RX3i DC Voltage Input Module, 24 VDC Pos/Neg Logic, 16 Point Input**
Module Type	Discrete Input	Discrete Input	Discrete Input	Discrete Input	Discrete Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1	1
Input Voltage Range	0-132 VAC	0-30 VDC	0-150 VDC	0-30 VDC	0-30 VDC
Input Current (mA)	12	7	4.5	7	7
Number of Points	32	16	8	8	16
Response Time (ms)	30 on/45 off	12 on/28 off	7 on/7 off	7 on/7 off	7 on/7 off
Trigger Voltage	74-132	11.5-30	90-150	11.5-30	11.5-30
Points per Common	16	16	4	8	16
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	90 mA @ 5 VDC	80 mA @ 5 VDC; 125 mA @ 24 VDC	40 mA @ 5 VDC	45 mA @ 5 VDC; 62 mA @ 24 VDC Isolated Isolated	80 mA @ 5 VDC; 125 mA @ 24 VDC Isolated

Discrete I/O Modules (Input)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs

	IC694MDL646	IC694MDL654	IC694MDL655	IC694MDL660
Product Name	**PACSystems RX3i DC Voltage Input Module, 24 VDC Pos/Neg Logic, FAST, 16 Point Input**	**PACSystems RX3i DC Voltage Input Module, 5/12 VDC (TTL) Pos/Neg Logic, 32 Point Input**	**PACSystems RX3i DC Voltage Input Module, 24 VDC Pos/Neg Logic, 32 Point Input**	**PACSystems RX3i DC Voltage Input Module, 24 VDC Pos/Neg Logic, 32 Point Input and Requires High Density Terminal Block (IC694TBB032 or IC694TBS032)**
Module Type	Discrete Input	Discrete Input	Discrete Input	Discrete Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Input Voltage Range	0-30 VDC	0-15 VDC	0-30 VDC	0-30 VDC
Input Current (mA)	7	3.0 @ 5 V, 8.5 @ 12 V	7	7
Number of Points	16	32	32	32
Response Time (ms)	1 on/1 off	1 on/1 off	2 on/2 off	0.5ms, 1.0ms, 2.0ms, 5ms, 10ms, 50ms and 100ms, selectable per module. On and off.
Trigger Voltage	11.5-30	4.2-15	11.5-30	11.5-30
Points per Common	16	8	8	8
Connector Type	Terminal Block (20 screws), included with module.	Fujitsu Connector	Fujitsu Connector	IC694TBBx32 or IC694TBSx32. Sold Separately.
Internal Power Used	80 mA @ 5 VDC; 125 mA @ 24 VDC Isolated	5 VDC - 195 mA @ 5 VDC; 12 VDC - 440 mA @ 5 VDC	195 mA @ 5 VDC	300 mA @ 5 VDC

Analog I/O Modules (Input)

GE offers easy-to-use analog modules and HART analog modules for control processes such as flow, temperature and pressure.

	IC695ALG600	IC695ALG608	IC695ALG616
Product Name	**PACSystems RX3i Analog Input. Configurable per channel for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032). Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**PACSystems RX3i Analog Input. Configurable per channel for Current or Voltage. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).**	**PACSystems RX3i Analog Input. Configurable per channel for Current or Voltage. High Density (16 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).**
Module Type	Universal Analog Input	Analog Input	Analog Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1	1
Range	Voltage: +50 mV, +150 mV, 0–5 V, 1–5 V, 0–10 V, +10 V; Current: 0–20 mA, 4–20 mA, +20 mA; Thermocouple Inputs: B, C, E, J, K, N, R, S, T; RTD Inputs: PT 385 / 3916, N 618 / 672, NiFe 518, CU 426: Resistance Inputs: 0 to 250 / 500 / 1000 / 2000 / 3000 / 4000 Ohms	Current: 0 to 20 mA, 4 to 20 mA, ±20 mA; Voltage: ±10 V, 0 to 10 V, ±5 V, 0 to 5 V, 1 to 5 V	Current: 0 to 20 mA, 4 to 20 mA, ±20 mA; Voltage: ±10 V, 0 to 10 V, ±5 V, 0 to 5 V, 1 to 5 V
HART Support	N/A	N/A	N/A
Channel-to-Channel Isolation	Two Groups of Four	One Group of Eight	One Group of Sixteen
Number of Channels	8	8	16
Update Rate	10ms per Channel; 4 Channels = 40ms (1KHz filter) 127ms per Channel 4 Channels = 508ms (8Hz filter) Channels that are disabled are not scanned, shortening scan time.	All 8 Channels at 5 msec @ 500Hz. Performance is dependent on filtering.	All 16 Channels at 9 msec @ 500Hz. Performance is dependent on filtering.
Resolution	11 to 16 bits, depending on configured range and A/D filter frequency	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format
Accuracy	Calibrated Accuracy at 25°C. Better than 0.1% of range (except 10 ohm CU RTD) Accuracy depends on A/D filter, data format, input noise, and ambient temperature.	Calibrated Accuracy @ 13°C – 33°C with 8 Hz, 12 Hz and 16 Hz filter; 0 to 10 V, ±10 V input types: 10 mV0 to 5 V, 1 to 5 V, ±5 V input types: 5 mV0 to 20 mA, 4 to 20 mA, ±20 mA input types: 20 uA	Calibrated Accuracy @ 13°C – 33°C with 8 Hz, 12 Hz and 16 Hz filter; 0 to 10 V, ±10 V input types: 10 mV0 to 5 V, 1 to 5 V, ±5 V input types: 5 mV0 to 20 mA, 4 to 20 mA, ±20 mA input types: 20 uA
Input Impedance	Current 249 ohms ±1%	Current 249 ohms ±1%	Current 249 ohms ±1%
Input Filter Response	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 1000Hz	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz
Notch Filter	Yes	Yes	Yes
Diagnostics	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low
Internal Power Used	400 mA @ 5 V; 350 mA @ 3.3 V	450 mA @ 5 V; 600 mA @ 3.3 V	450 mA @ 5 V; 600 mA @ 3.3 V
External Power Requirement	N/A	N/A	N/A
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.

Analog I/O Modules (Input)

GE offers easy-to-use analog modules and HART analog modules for control processes such as flow, temperature and pressure.

	IC695ALG628	IC695ALG626	IC695ALG106
Product Name	**PACSystems RX3i Analog Input with HART Communications. Configurable per channel for Current or Voltage. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).**	**PACSystems RX3i Analog Input with HART Communications. Configurable per channel for Current or Voltage. High Density (16 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).**	**PACSystems RX3i Isolated Analog Input Configurable per channel for Current or Voltage. High Density (6 Isolated Channels) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).**
Module Type	Analog Input with HART Communications	Analog Input with HART Communications	Analog Input with Channel to Channel Isolation
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1	1
Range	Current: 0 to 20 mA, 4 to 20 mA, ±20 mA; Voltage: ±10 V, 0 to 10 V, ±5 V, 0 to 5 V, 1 to 5 V	Current: 0 to 20 mA, 4 to 20 mA, ±20 mA; Voltage: ±10 V, 0 to 10 V, ±5 V, 0 to 5 V, 1 to 5 V	Current: 0 to 20 mA, 4 to 20 mA, +/- 20 mA; Voltage: +/- 10 V, 0 to 10 V, +/- 5 V, 0 to 5 V, 1 to 5 V
HART Support	Get HART Device Information (Function 1) Simplified HART Pass-Thru Command (Function 2) Enterprise HART Pass-Thru Command (Function 3)	Get HART Device Information (Function 1) Simplified HART Pass-Thru Command (Function 2) Enterprise HART Pass-Thru Command (Function 3)	N/A
Channel-to-Channel Isolation	One Group of Eight	One Group of Sixteen	Yes (250 VAC continuous, 1500 VAC for 1 minute per channel)
Number of Channels	8	16	6
Update Rate	All 8 Channels at 5 msec @ 500Hz. Performance is dependent on filtering and HART enabled channels could add 6 to 8 seconds.	All 16 Channels at 9 msec @ 500Hz. Performance is dependent on filtering and HART enabled channels could add 6 to 8 seconds.	1 ms for all channels.
Resolution	Selectable per channel	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format
Accuracy	Calibrated Accuracy @ 13°C – 33°C with 8 Hz, 12 Hz and 16 Hz filter; 0 to 10 V, ±10 V input types: 10 mV0 to 5 V, 1 to 5 V, ±5 V input types: 5 mV0 to 20 mA, 4 to 20 mA, ±20 mA input types: 20 uA	Calibrated Accuracy @ 13°C – 33°C with 8 Hz, 12 Hz and 16 Hz filter; 0 to 10 V, ±10 V input : types 10 mV0 to 5 V, 1 to 5 V, ±5 V input types: 5 mV0 to 20 mA, 4 to 20 mA, ±20 mA input types: 20 uA	+/-0.1% of span at 25°C, +/- 0.25% of span over operating temperature range
Input Impedance	Current 249 ohms ±1%	Current 249 ohms ±1%	Current = 250 ohms +/-1%, Voltage >= 500k Ohms
Input Filter Response	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz	Configurable low-pass: 8Hz, 12Hz, 16Hz, 40Hz, 250Hz, and 1000Hz
Notch Filter	Yes	Yes	N/A
Diagnostics	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, under range, over range, positive/negative rate of change, High, High-High, Low, Low-Low
Internal Power Used	450 mA @ 5 V; 600 mA @ 3.3 V	450 mA @ 5 V; 600 mA @ 3.3 V	400 mA @ 5 V; 600 mA @ 3.3 V
External Power Requirement	N/A	N/A	19.2 V to 30 VDC, Current required: 500 mA
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.

Analog I/O Modules (Input)

GE offers easy-to-use analog modules and HART analog modules for control processes such as flow, temperature and pressure.

	IC695ALG112	IC694ALG220
Product Name	**PACSystems RX3i Isolated Analog Input. Configurable per channel for Current or Voltage. High Density (12 Isolated Channels) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).**	**PACSystems RX3i Analog Input, Voltage, 4 Channel**
Module Type	Analog Input with Channel to Channel Isolation	Analog Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1
Range	Current: 0 to 20 mA, 4 to 20 mA, +/- 20 mA; Voltage: +/- 10 V, 0 to 10 V, +/- 5 V, 0 to 5 V, 1 to 5 V	-10 V to +10 V
Channel-to-Channel Isolation	Yes (250 VAC continuous, 1500 VAC for 1 minute per channel)	N/A
Number of Channels	12	4
Update Rate	1 ms for all channels	4 ms all channels
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	12 bit; 5 mV/20 µA/bit
Accuracy	+/-0.1% of span at 25°C, +/- 0.25% of span over operating temperature range	±10 mV/40 µA at 25°C (77°F)
Input Impedance	Current = 250 ohms +/-1%, Voltage >= 500k Ohms	>9 Megohms
Input Filter Response	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 250Hz, and 1000Hz	17 Hz
Diagnostics	Open wire, under range, over range, positive/negative rate of change, High, High-High, Low, Low-Low	N/A
Internal Power Used	800 mA @ 5 V; 600 mA @ 3.3 V	27 mA @ 5 VDC; 98 mA @ 24 VDC Isolated
External Power Requirement	19.2 V to 30 VDC, Current required: 500 mA	N/A
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.

Analog I/O Modules (Input)

GE offers easy-to-use analog modules and HART analog modules for control processes such as flow, temperature and pressure.

	IC694ALG221	IC694ALG222	IC694ALG223
Product Name	**PACSystems RX3i Analog Input, Current, 4 Channel**	**PACSystems RX3i Analog Input,Voltage, High Density (16 Channel)**	**PACSystems RX3i Analog Input, Input, Current, High Density (16 Channel)**
Module Type	Analog Input	Analog Input	Analog Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Range	4-20 mA, 0-20 mA	-10 V to +10 V, 0 to 10 V	0-20 mA, 4-20 mA
Channel-to-Channel Isolation	N/A	N/A	N/A
Number of Channels	4	1	16
Update Rate	2 ms all channels	13 ms all channels	13 ms all Channels
Resolution	12 bit; 0-20 mA, 5 µA/bit; 4-20 mA, 4 µA/bit	12 bit; ±10 V, 5 mV/20 µA/bit; 0-10 V, 5 mV/20 µA/bit	12 bit; 0-20 mA, 5 µA/bit; 4-20 mA, 4 µA/bit; 4-20 mA Enhanced, 5µA/bit
Accuracy	0.1 % full scale	0.25% at 25°C (77°F)	0.25% at 25°C (77°F)
Input Impedance	250 ohms	250 ohms	250 ohms
Input Filter Response	325 Hz	200 Hz	200 Hz
Diagnositics	N/A	N/A	N/A
Internal Power Used	25 mA @ 5 VDC; 100 mA @ 24 VDC Isolated	112 mA @ 5 VDC; 4150 mA - User Supplied 24 VDC	120 mA @ 5 VDC; 65 mA- User Supplied 24 VDC
External Power Requirement	N/A	N/A	N/A
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.

Analog I/O Modules (Input)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	HE693ADC405	HE693ADC410	HE693ADC415	HE693ADC420	HE693ADC816
Product Name	**Isolated Analog Input Module, Voltage, 500 VAC, Isolation**	**Isolated Analog Input Module, Voltage, 1500 VAC, Isolation**	**Isolated Analog Input Module, Current, 500 VAC, Isolation**	**Isolated Analog Input Module, Current, 1500 VAC, Isolation**	**Analog Input Module, Voltage**
Module Type	Analog Input	Analog Input	Analog Input	Analog Input	Analog Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1	1
Range	±10 V	±10 V	4-20 mA, ±20 mA	4-20 mA, ±20 mA	±10
Number of Channels	4	4	4	4	8
Channel-to-Channel Isolation	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC	N/A
Input Impedance	1 Megohm	1 Megohm	100 ohms	100 ohms	1 Megohm
A/D Type, Resolution	Integrating, 18 bits	Integrating, 18 bits	Integrating, 18 bits	Integrating, 18 bits	Successive, Approx. 16 bits
Useable Resolution	13 bits plus sign	13 bits plus sign	13 bits plus sign	13 bits plus sign	16 bits
I/O Required	4 %AI, 4 %AQ, 16 %I	4 %AI, 4 %AQ, 16 %I	4 %AI, 4 %AQ, 16 %I	8 %AI, 8 %AQ, 16 %I	4 %AI, 4 %AQ, 16 %I
Sample Rate	45 channels/second	45 channels/second	45 channels/second	45 channels/second	3000 channels
Analog Filtering	1 KHz, 3 pole Bessel	1 KHz, 3 pole Bessel	1 KHz, 3 pole Bessel	1 KHz, 3 pole Bessel	1.6 KHz low pass
Digital Filtering	1-128 samples/update	1-128 samples/update	1-128 samples/update	1-128 samples/update	1-128 samples/update
Maximum Error	.05% full scale	.05% full scale	.05% full scale	.05% full scale	.03% full scale
Common Mode Range	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC	500 VDC
Common Mode Rejection	>100 dB	>100 dB	>100 dB	>100 dB	>100 dB
Power Consumption at Steady State, Maximum	.4 W @ 5 V, 2.16 W @ 24 V	.7 W @ 5 V, 1.2 W @ 24 V	.4 W @ 5 V, 2.16 W @ 24 V	.7 W @ 5 V, 1.2 W @ 24 V	230 mA @ 5 VDC (440 mA inrush)
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
External Power Requirement	N/A	N/A	N/A	N/A	N/A
Internal Power Used	80 mA @ 5 VDC; 90 mA @ 24 VDC Relay	140 mA @ 5 VDC; 50 mA @ 24 VDC Relay	80 mA @ 5 VDC; 90 mA @ 24 VDC Relay	140 mA @ 5 VDC; 50 mA @ 24 VDC Relay	230 mA @ 5 VDC

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC694MDL310	IC694MDL330	IC694MDL340	IC694MDL390
Product Name	**PACSystems RX3i AC Voltage Output Module, 120 VAC, 0.5A, 12 Point Output**	**PACSystems RX3i AC Voltage Output Module, 120/240 VAC, 1A, 8 Point Output**	**PACSystems RX3i AC Voltage Output Module, 120 VAC, 0.5A, 16 Point Output**	**PACSystems RX3i AC Voltage Output Module, 120/240 VAC Isolated, 2A, 5 Point Output**
Module Type	Discrete Output	Discrete Output	Discrete Output	Discrete Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Output Voltage Range	85-132 VAC	85-264 VAC	85-132 VAC	85-264 VAC
Number of Points	12	8	16	5
Isolation	N/A	N/A	N/A	Yes
Load Current per Point	0.5 A	1 A	0.5 A	2 A
Response Time (ms)	1 on 1/2 cy off	1 on 1/2 cy off	1 on 1/2 cy off	1 on 1/2 cy off
Output Type	Triac	Triac	Triac	Triac
Polarity	N/A	N/A	N/A	N/A
Points per Common	6	4	4	1
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	210 mA @ 5 VDC	160 mA @ 5 VDC	315 mA @ 5 VDC	110 mA @ 5 VDC

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC694MDL350	IC694MDL732	IC694MDL734	IC694MDL740
Product Name	**PACSystems RX3i AC Voltage Output Module, 120/240 VAC Isolated, 2A, 16 Point Output**	**PACSystems RX3i DC Voltage Output Module, 12/24 VDC Positive Logic, 0.5A, 8 Point Output**	**PACSystems RX3i DC Voltage Output Module, 125 VDC Pos/Neg Logic, 6 Point Output**	**PACSystems RX3i DC Voltage Output Module, 12/24 VDC Positive Logic, 0.5A, 16 Point Output**
Module Type	Discrete Output	Discrete Output	Discrete Output	Discrete Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Output Voltage Range	74-264 VAC	12-24 VDC	11-150 VDC	12-24 VDC
Number of Points	16	8	6	16
Isolation	Yes	N/A	N/A	N/A
Load Current per Point	Per Point 2A max. @ 30°C & 1A max. @ 60°C (Linear derating)	0.5 A	1 A	0.5 A
Response Time (ms)	1 on 1/2 cy off	2 on/2 off	7 on/5 off	2 on/2 off
Output Type	Triac	Transistor	Transistor	Transistor
Polarity	N/A	Positive	Positive/Negative	Positive
Points per Common	1	8	1	8
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	110 mA @ 5 VDC	50 mA @ 5 VDC	90 mA @ 5 VDC	110 mA @ 5 VDC

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC694MDL741	IC694MDL742	IC694MDL752	IC694MDL753
Product Name	**PACSystems RX3i DC Voltage Output Module, 12/24 VDC Negative Logic, 0.5A, 16 Point Output**	**PACSystems RX3i DC Voltage Output Module, 12/24 VDC Positive Logic ESCP, 1A, 16 Point Output**	**PACSystems RX3i DC Voltage Output Module, 5/24 VDC (TTL) Negative Logic, 0.5A, 32 Point Output**	**PACSystems RX3i DC Voltage Output Module, 12/24 VDC Positive Logic, 0.5A, 32 Point Output**
Module Type	Discrete Output	Discrete Output	Discrete Output	Discrete Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Output Voltage Range	12-24 VDC	12-24 VDC	5, 12-24 VDC	12-24 VDC
Number of Points	16	16	32	32
Isolation	N/A	N/A	N/A	N/A
Load Current per Point	0.5 A	1 A	0.5 A	0.5 A
Response Time (ms)	2 on/2 off	2 on/2 off	0.5 on/0.5 off	0.5 on/0.5 off
Output Type	Transistor	Transistor	Transistor	Transistor
Polarity	Negative	Positive	Negative	Positive
Points per Common	8	8	8	8
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Fujitsu Connector	Fujitsu Connector
Internal Power Used	110 mA @ 5 VDC	130 mA @ 5 VDC	260 mA @ 5 VDC	260 mA @ 5 VDC

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC694MDL754	IC694MDL930	IC694MDL916	IC694MDL931
Product Name	**PACSystems RX3i DC Voltage Output Module, 12/24 VDC Positive Logic with ESCP (Self Healing), 0.75A, 32 Point Output and Requires High Density Terminal Block (IC694TBB032 or IC694TBS032). Point Level Diagnostics Sent to the Controller.**	**PACSystems RX3i AC/DC Voltage Output Module, Relay, N.O., 4A Isolated, 8 Point Output**	**PACSystems RX3i AC/DC Voltage Output Module, Relay, N.O., 4A Isolated, 16 Point Output**	**PACSystems RX3i AC/DC Voltage Output Module, Relay, N.C. and Form C, 8A Isolated, 8 Point Output**
Module Type	Discrete Output	Discrete Output	Discrete Output	Discrete Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Output Voltage Range	12-24 VDC	0 to 125 VDC, 5/24/125 VDC nominal 0 to 265 VAC (47 to 63 Hz), 120/240 VAC nominal	5 to 125 VDC 5/24/125 VDC nominal 5 to 250 VAC (47 to 63 Hz), 120/240 VAC nominal	0 to 125 VDC, 5/24/125 VDC nominal
Number of Points	32	8	16	8
Isolation	N/A	Yes	Yes	Yes
Load Current per Point	0.75 A	4 A	4 A	8 A
Response Time (ms)	0.5 on/0.5 off	15 on/15 off	10ms maximum (At nominal voltage excluding contact bounce)	15 on/15 off
Output Type	Transistor	Relay	Relay	Relay
Polarity	Positive	N/A	N/A	N/A
Points per Common	16	1	1	1
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.
Internal Power Used	300 mA @ 5 VDC	6 mA @ 5 VDC; 70 mA @ 24 VDC Relay	300 mA @ 5 VDC from backplane maximum (all outputs ON)	6 mA @ 5 VDC; 110 mA @ 24 VDC Relay

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC694MDL940	HE693RLY100	HE693RLY110
Product Name	**PACSystems RX3i AC/DC Voltage Output Module, Relay, N.O., 2A, 16 Point Output**	**DC/AC Voltage Relay Output Module High Current**	**DC/AC Voltage Relay Output Module High Current (fused)**
Module Type	Discrete Output	Discrete Output	Discrete Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Output Voltage Range	0 to 125 VDC, 5/24/125 VDC nominal	12-120 VAC, 12-30 VDC	12-120 VAC, 12-30 VDC
Number of Points	16	N/A	8
Isolation	N/A	N/A	Yes
Load Current per Point	2 A	8 A	8 A
Response Time (ms)	15 on/15 off	11 on/11 off	11 on/11 off
Output Type	Relay	Relay	Relay
Polarity	N/A	N/A	N/A
Points per Common	4	N/A	1
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	7 mA @ 5 VDC; 135 mA @ 24 VDC Relay	180 mA @ 5 VDC; 200 mA @ 24 VDC Relay	180 mA @ 5 VDC; 200 mA @ 24 VDC Relay

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	IC695ALG704	IC695ALG708
Product Name	**PACSystems RX3i Analog Output, Current/Voltage, 4 Channel**	**PACSystems RX3i Analog Output, Current/Voltage, 8 Channel**
Module Type	Analog Output	Analog Output
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1
Diagnostics	High and Low Alarm, Ramp Rate Control Clamping, Overrange and Underrange	High and Low Alarm, Ramp Rate Control Clamping, Overrange and Underrange
Protection	N/A	N/A
Range	Current: 0 to 20 mA, 4 to 20 mA; Voltage: ±10 V, 0 to 10 V	Current: 0 to 20 mA, 4 to 20 mA; Voltage: ±10 V, 0 to 10 V
HART Support	N/A	N/A
Number of Channels	4	8
Channel-to-Channel Isolation	N/A	N/A
Update Rate	8 ms all channels	8 ms all channels
Resolution	±10 V: 15.9 bits; 0 to 10 V: 14.9 bits; 0 to 20 mA: 15.9 bits; 4 to 20 mA: 15.6 bits	10 V: 15.9 bits; 0 to 10 V: 14.9 bits; 0 to 20 mA: 15.9 bits; 4 to 20 mA: 15.6 bits
Accuracy	Accurate to within 0.15% of full scale at 25°C. Accurate to within 0.30% of full scale at 60°C	Accurate to within 0.15% of full scale at 25°C. Accurate to within 0.30% of full scale at 60°C
Maximum Output Load	Current - 850ohm max @ Vuser = 20 V; Voltage - 2k ohm max load (minimum resistance)	Current - 850ohm max @ Vuser = 20 V; Voltage - 2k ohm max load (minimum resistance)
Output Load Capacitance	Current: 10uH max.; Voltage: 1uF max.	Current: 10uH max.; Voltage: 1uF max.
External Power Requirement	Voltage Range: 19.2 V to 30 V Current required: 160 mA	Voltage Range: 19.2 V to 30 V Current required: 315 mA
Connector Type	IC694TBB032 or IC694TBS032. Sold Separately.	IC694TBB032 or IC694TBS032. Sold Separately
Internal Power Used	375 mA @3.3 V (internal) 160 mA @24 V (external)	375 mA @3.3 V (internal) 315 mA @24 V (external)

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	IC695ALG728	IC695ALG808
Product Name	**PACSystems RX3i Analog Output with HART Communications, Current/Voltage, 8 Channel**	**PACSystems RX3i Isolated Analog Output, Current/Voltage, 8 Isolated Channels**
Module Type	Analog Output with HART Communications	Analog Output with Channel to Channel Isolation
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1
Diagnostics	High and Low Alarm, Ramp Rate Control, Clamping, Overrange and Underrange	High and Low Alarm, Ramp Rate Control, Clamping, Overrange and Underrange
Protection	N/A	N/A
Range	Current: 0 to 20 mA, 4 to 20 mA; Voltage: ±10 V, 0 to 10 V	Current: 0 to 20 mA, 4 to 20 mA; Voltage: ±10 V, 0 to 10 V
HART Support	- Get HART Device Information (Function 1) Simplified HART Pass-Thru Command (Function 2) - Enterprise HART Pass-Thru Command (Function 3)	N/A
Number of Channels	8	8
Channel-to-Channel Isolation	N/A	Yes (250 VAC continuous, 1500 VAC for 1 minute per channel)
Update Rate	8 ms all channels and HART enabled channels could add 6 to 8 seconds.	8 ms all channels (1 msec per channel)
Resolution	±10 V: 15.9 bits; 0 to 10 V: 14.9 bits; 0 to 20 mA: 15.9 bits; 4 to 20 mA: 15.6 bits	±10 V @ 15.9 bits minimum 0 to 10 V @ 14.9 bits minimum 0 to 20 mA @ 15.9 bits minimum 4 to 20 mA @ 15.6 bits minimum
Accuracy	Accurate to within 0.15% of full scale at 25°C. Accurate to within 0.30% of full scale at 60°C	Accurate to within ±0.1% of span at 25C, ± 0.25% of span over operating temperature range
Maximum Output Load	Current - 850ohm max @ Vuser = 20 V; Voltage - 2k ohm max load (minimum resistance)	Current: 1350 ohm maximum resistance, 10uH max inductance Voltage: 2k Ohm minimum resistance, 1uF max capacitance
Output Load Capacitance	Current: 10uH max.; Voltage: 1uF max.	Current: 10uH max.; Voltage: 1uF max.
External Power Requirement	Voltage Range: 19.2 V to 30 V Current required: 315 mA	500 mA @ 24 VDC
Connector Type	IC694TBB032 or IC694TBS032. Sold Separately.	IC694TBBx32 or IC694TBSx32 Sold Separately.
Internal Power Used	375 mA @3.3 V (internal) 315 mA@24 V (external)	450 mA @ 3.3 V Maximum, all channels on

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	IC694ALG390	IC694ALG391	IC694ALG392
Product Name	**PACSystems RX3i Analog Output, Voltage, 2 Channel**	**PACSystems RX3i Analog Output, Current, 2 Channel**	**PACSystems RX3i Analog Output, Current/Voltage, 8 Channel**
Module Type	Analog Output	Analog Output	Analog Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Diagnostics	N/A	N/A	N/A
Protection	N/A	N/A	Reverse polarity and undervoltage on external power supply
Range	-10 V to +10 V, 4-20 mA	1-5 V and 0-5 V, 0-20 mA, 4-20 mA	0 V to +10 V, -10 V to +10 V, 0-20 mA, 4-20 mA
HART Support	N/A	N/A	N/A
Number of Channels	2	2	8
Channel-to-Channel Isolation	N/A	N/A	N/A
Update Rate	5 ms all channels	5 ms all channels	8 ms all channels
Resolution	12 bit; 2.5 mV/bit	12 bit;0-20 mA, 5µA/bit	16 bit; 0.312 mV/bit
Accuracy	±5 mV at 25ºC (77ºF)	0-20 mA, ±8 µA at 25ºC (77ºF); 0-20 mA, 4-20 mA ±0.1% at 25ºC (77ºF)	0-20 mA, 4-20 mA ±0.1% at 25ºC (77ºF); 0-10 V, -10F + 10 V ±0.25 at 25ºC (77ºF)
Maximum Output Load	5 mA (2 K ohms)	5 mA (2 K ohms)	5 mA (2 K ohms)
Output Load Capacitance	2000 pF	2000 pF, Inductance 1H	2000 pF, Inductance 1H
External Power Requirement	N/A	N/A	N/A
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	32 mA @ 5 VDC; 120 mA @ 24 VDC Isolated	30 mA @ 5 VDC; 215 mA 24 VDC Isolated	110 mA @ 5 VDC; 315 mA - User Supplied 24 VDC

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	IC694ALG442	HE693DAC410	HE693DAC420
Product Name	**PACSystems RX3i Analog Current/Voltage Combination 4 Channel In/2 Channel Out**	**Isolated Analog Output Module, Voltage**	**Isolated Analog Output Module, Current**
Module Type	Analog Combination 4 In and 2 Out	Analog Output	Analog Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Diagnostics	N/A	N/A	N/A
Protection	N/A	N/A	N/A
Range	0 V to +10 V, -10 V to +10 V, 0-20 mA, 4-20 mA	±10 V	4-20 mA or 0-20 mA
HART Support	N/A	N/A	N/A
Number of Channels	4 in/2 out	4	4
Channel-to-Channel Isolation	N/A	1500 VAC (RMS), ±2000 VDC	1500 VAC (RMS), ±2000 VDC
Update Rate	8 ms all channels/4 ms all channels	N/A	N/A
Resolution	(Input) 12 bit; 0 V to 10 V, 2.5 mV/bit; -10 V to +10 V, 5 mV/bit; 0-20 mA, 4-20 mA 5µA/bit (Output) 16 bit; 0.312 mV/bit; 4-20 mA 0.5 µA/bit; 0-20 mA 0.625 µA/bit	1.2 5 mV	2.0 µA (4-20 mA); 2.5 µA (±20 mA)
Accuracy	(Input) 0.25 % at 25ºC (77ºF) (Output) 0-20 mA, 4-20 mA ±0.1% at 25ºC (77ºF)	N/A	N/A
Maximum Output Load	5 mA (2 K ohms); 850 ohms	N/A	N/A
Output Load Capacitance	2000 pF, Inductance 1H	N/A	N/A
External Power Requirement	N/A	N/A	2-32 VDC
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	95 mA @ 5 VDC; 129 mA 24 VDC Isolated	500 mA @ 5 VDC; 150 mA @ 24 VDC Relay	150 mA @ 5 VDC; 110 mA @ 24 VDC Relay

Millivolt I/O Modules

The Millivolt Input Modules allow Millivolt level signals, such as bridged strain gages (load cells) to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.) All analog and digital processing of the signal is performed on the module.

	IC695ALG600 Millivolt	IC695ALG306 Millivolt
Product Name	**PACSystems RX3i Analog Input. Configurable per channel for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032). Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Isolated Thermocouple Input module provides six isolated differential thermocouple input channels. Each channel can be individually configured for inputs from: Thermocouple types: J, K, T, E, R, S, B, N, or C and Voltage: ±150mV or ±50mV. Requires high capacity terminal block IC694TBBx32 or IC694TBSx32. Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**
Module Type	Millivolt Input	Strain Gage Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1
Range	±150mV or ±50mV	±150mV or ±50mV
Diagnostics	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low
Channel-to-Channel Isolation	Two Groups of Four	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second
Number of Channels	8	6
Notch Filter	Yes	From 2.3 Hz to 28 Hz per channel
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format)	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format)
Accuracy	Calibrated Accuracy at 25°C. Better than 0.1% of range. Accuracy depends on A/D filter, data format, input noise, and ambient temperature.	±0.1% of voltage span at 25°C. ±0.25% of span over temperature range.
Input Impedance	>1M ohm	Voltage: >=500k ohm
I/O Required	N/A	N/A
A/D Conversion Type	Sigma Delta	Sigma Delta
A/D Conversion Time	(Assumes 2 ADC's running in parallel, no CJC or lead resistance) 10ms per Channel 4 Channels = 40ms (1KHz filter) 127ms per Channel 4 Channels = 508ms (8Hz filter) Channels that are disabled are not scanned, shortening scan time.	15 msec @ 28 Hz to 120 msec @ 2.3 Hz
Strain Gages Supported	Yes	Yes
Maximum Normal Voltage Input	N/A	N/A
Maximum Voltage Input	±14.5 VDC continuous	N/A
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.
Internal Power Used	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5V; 400 mA @ 3.3V

Millivolt I/O Modules

The Millivolt Input Modules allow Millivolt level signals, such as bridged strain gages (load cells) to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.) All analog and digital processing of the signal is performed on the module.

	IC695ALG312 Millivolt	HE693ADC409
Product Name	**Isolated Thermocouple Input module provides twelve isolated differential thermocouple input channels. Each channel can be individually configured for inputs from: Thermocouple types: J, K, T, E, R, S, B, N, or C and Voltage: ±150mV or ±50mV. Requires high capacity terminal block IC694TBBx32 or IC694TBSx32. Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Analog I/O Module, Millivolt Input**
Module Type	Strain Gage Input	Millivolt Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1
Range	±150mV or ±50mV	±25 mV, ±50 mV and ±100 mV
Diagnostics	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	N/A
Channel-to-Channel Isolation	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second	N/A
Number of Channels	12	4
Notch Filter	From 2.3 Hz to 28 Hz per channel	N/A
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	3 µV, 6µV, 9µV (respectively)
Accuracy	±0.1% of voltage span at 25°C ±0.25% of span over temperature range.	±0.5%
Input Impedance	Voltage: >=500k ohm	>20 Mohms
I/O Required	N/A	4% AI
A/D Conversion Type	Sigma Delta	Integrating
A/D Conversion Time	15 msec @ 28 Hz to 120 msec @ 2.3 Hz	35 Channels/second
Strain Gages Supported	Yes	Bridged (load cells)
Maximum Normal Voltage Input	N/A	100 mV
Maximum Voltage Input	N/A	±35 V
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.
Internal Power Used	300 mA @ 5V; 400 mA @ 3.3V	100 mA @ 5 VDC

RTD I/O Modules

The RTD Input Modules provide RTD inputs that allow the direct connection of 2 and 3-wire RTD temperature sensors without using external signal processing (transducers, transmitters, etc.). All analog and digital processing of the RTD signal is performed on the module.

	IC695ALG600 RTD	IC695ALG508 RTD	HE693RTD600
Product Name	**Configurable per channel for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032). Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Isolated RTD Input module (also supports Resistive) provides eight isolated differential Resistive or RTD input channels. Each channel can be individually configured for 2, 3, 4 wire RTD or Resistance. Requires high capacity terminal block IC694TBB032 or IC694TBS032**	**RTD Input Module, Low Resolution**
Module Type	RTD Input	RTD (and Resistive) Input Channel to Channel Isolation	RTD Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Number of Channels	8	8	6
RTD Types Supported	2 and 3 wire PT 385 / 3916, N 618 / 672, NiFe 518, CU 426	2, 3 and 4 wire 50, 100, 200, 500, and 1000 ohm Pt 385; 50, 100, 200, 500, and 1000 ohm Pt 391.6; 100, 200, 500, and 1000 ohm Ni 618; 120 ohm Ni 672; 604 ohm NiFe 518; 10, 50 and 100 ohm Cu 426	3-wire, Pt-100E, Pt-100C, Pt-100Z, Pt-1000, Cu-10, Cu-50, PT-100, Cu-53, Cu-100, Ni-120, TD5R, TD5R, Pt-90 (MIL-7990)
Diagnostics	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	N/A
Channel-to-Channel Isolation	Two Groups of Four	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second	N/A
Notch Filter	Yes	N/A	N/A
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	0.5ºC or 0.5ºF
Accuracy	Calibrated Accuracy at 25°C. Better than 0.1% of range. Accuracy depends on A/D filter, data format, input noise, and ambient temperature.	Calibrated Accuracy at 25°C. Typical is ±0.5%	±0.5ºC, typical
Input Impedance	>1M ohm	N/A	>1000 Megohms
I/O Required	N/A	N/A	6 %AI
Fault Protection	N/A	N/A	Zener Diode Clamp
Update Time	N/A	15 msec @ 28 Hz to 120 msec @ 2.3 Hz	50 Channels/second
A/D Conversion Type	Sigma Delta	Sigma Delta	18 bit, integrating
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.
Internal Power Used	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5V; 300 mA @ 3.3V	70 mA @ 5 VDC

RTD I/O Modules

The RTD Input Modules provide RTD inputs that allow the direct connection of 2 and 3-wire RTD temperature sensors without using external signal processing (transducers, transmitters, etc.). All analog and digital processing of the RTD signal is performed on the module.

	HE693RTD601	HE693RTD660	HE693RTD665
Product Name	**RTD Input Module, High Resolution**	**RTD Input Module, Isolated**	**RTD Input Module, Isolated**
Module Type	RTD Input	RTD Input	RTD Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Number of Channels	6	6	6
RTD Types Supported	3-wire, Pt-100E, Pt-100C, Pt-100Z, Pt-1000, Cu-10, Cu-50, PT-100, Cu-53, Cu-100, Ni-120, TD5R, TD5R, Pt-90 (MIL-7990)	3 wire, Pt-100E, Pt-100C, Ni-120, Cu-10, Pt-1000,TD5R Si	3 wire, Pt-100E, Pt-100C, Ni-120, Cu-10, Pt-1000,TD5R Si
Diagnostics	N/A	N/A	N/A
Channel-to-Channel Isolation	N/A	5 VAC	5 VAC
Notch Filter	N/A	None	50 Hz
Resolution	0.125ºC , 0.1ºC, or 0.1ºF	0.05ºC, 0.05ºF, 0.1ºC, 0.1ºF, 0.5ºC or 0.5ºF	0.05ºC, 0.05ºF, 0.1ºC, 0.1ºF, 0.5ºC or 0.5ºF
Accuracy	±0.5ºC, typical	±0.3ºC	±0.3ºC
Input Impedance	>1000 Megohms	>1000 Megohms	>1000 Megohms
I/O Required	6 %AI	6% AI, 6% AQ, 16% I	6% AI, 6% AQ, 16 %I
Fault Protection	Zener Diode Clamp	Suppression Diode	Suppression Diode
Update Time	50 Channels/second	50 Channels/second	50 Channels/second
A/D Conversion Type	18 bit, integrating	18 bit, integrating	18 bit, integrating
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	70 mA @ 5 VDC	200 mA @ 5 VDC	200 mA @ 5 VDC

RTD I/O Modules

The RTD Input Modules provide RTD inputs that allow the direct connection of 2 and 3-wire RTD temperature sensors without using external signal processing (transducers, transmitters, etc.). All analog and digital processing of the RTD signal is performed on the module.

	HE693RTD666
Product Name	**RTD Input Module, Isolated**
Module Type	RTD Input
Backplane Support	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1
Number of Channels	6
RTD Types Supported	3 wire, Pt-100E, Pt-100C, Ni-120 Cu-10, Pt-1000,TD5R Si
Diagnostics	N/A
Channel-to-Channel Isolation	5 VAC
Notch Filter	60 Hz
Resolution	0.05ºC, 0.05ºF, 0.1ºC, 0.1ºF, 0.5ºC or 0.5ºF
Accuracy	±0.3ºC
Input Impedance	>1000 Megohms
I/O Required	6% AI, 6% AQ, 16% I
Fault Protection	Suppression Diode
Update Time	50 Channels/second
A/D Conversion Type	18 bit, integrating
Connector Type	Terminal Block (20 screws), included with module.
Internal Power Used	200 mA @ 5 VDC

Strain Gage I/O Modules

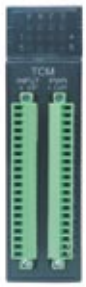
The Millivolt Input Modules allow Millivolt level signals, such as bridged strain gages (load cells) to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.) All analog and digital processing of the signal is performed on the module.

	IC695ALG600 Strain Gage	IC695ALG306 Strain Gage	IC695ALG312 Strain Gage
Product Name	**PACSystems RX3i Analog Input. Configurable per channel for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032). Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Isolated Thermocouple Input module provides six isolated differential thermocouple input channels. Each channel can be individually configured for inputs from: Thermocouple types: J, K, T, E, R, S, B, N, or C and Voltage: ±150mV or ±50mV. Requires high capacity terminal block IC694TBBx32 or IC694TBSx32. Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Isolated Thermocouple Input module provides twelve isolated differential thermocouple input channels. Each channel can be individually configured for inputs from: Thermocouple types: J, K, T, E, R, S, B, N, or C and Voltage: ±150mV or ±50mV. Requires high capacity terminal block IC694TBBx32 or IC694TBSx32. Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**
Module Type	Strain Gage Input	Strain Gage Input	Strain Gage Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1	1
Range	±150mV or ±50mV	±150mV or ±50mV	±150mV or ±50mV
Diagnostics	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low
Channel-to-Channel Isolation	Two Groups of Four	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second
Number of Channels	8	6	12
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format
Accuracy	Calibrated Accuracy at 25°C. Better than 0.1% ofrange. Accuracy depends on A/D filter, data format, input noise, and ambient temperature.	±0.1% of voltage span at 25°C. ±0.25% of span over temperature range.	±0.1% of voltage span at 25°C. ±0.25% of span over temperature range.
Input Impedance	>1M ohm	Voltage: >=500k ohm	Voltage: >=500k ohm
I/O Required	N/A	N/A	N/A
A/D Conversion Type	Sigma Delta	Sigma Delta	Sigma Delta
A/D Conversion Time	(Assumes 2 ADC's running in parallel, no CJC or lead resistance) 10ms per Channel 4 Channels = 40ms (1KHz filter) 127ms per Channel 4 Channels = 508ms (8Hz filter) Channels that are disabled are not scanned, shortening scan time.	15 msec @ 28 Hz to 120 msec @ 2.3 Hz	15 msec @ 28 Hz to 120 msec @ 2.3 Hz
Strain Gages Supported	Yes	Yes	Yes
Maximum Normal Voltage Input	N/A	N/A	N/A
Maximum Voltage Input	±14.5 VDC continuous	N/A	N/A
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.
Internal Power Used	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5V; 400 mA @ 3.3V	300 mA @ 5V; 400 mA @ 3.3V

Strain Gage I/O Modules

The Millivolt Input Modules allow Millivolt level signals, such as bridged strain gages (load cells) to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.) All analog and digital processing of the signal is performed on the module.

	HE693STG883	HE693STG884
Product Name	**Analog I/O Module, Strain Gage**	**Analog I/O Module, Strain Gage**
Module Type	Strain Gage Input	Strain Gage Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1
Range	N/A	N/A
Diagnostics	N/A	N/A
Channel-to-Channel Isolation	N/A	N/A
Number of Channels	8	8
Resolution	0.6 µV, 0.8 µV, 0.9 µV (respectively)	0.8 µV, 1.6 µV, 3.2 µV (respectively)
Accuracy	±0.3%	±0.3%
Input Impedance	>1000 Mohms	>1000 Mohms
I/O Required	8% AI, 16% I, 8% AQ, 16% Q	8% AI, 16% I, 8% AQ, 16% Q
A/D Conversion Type	Integrating	Integrating
A/D Conversion Time	35 Channels/second	35 Channels/second
Strain Gages Supported	Bridged (load cells)	Bridged (load cells)
Maximum Normal Voltage Input	100 mV	100 mV
Maximum Voltage Input	±35 V	±35 V
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	60 mA @ 5 VDC; 30 mA @ 24 VDC Relay	60 mA @ 5 VDC; 30 mA @ 24 VDC Relay



Temperature Control Modules

The Temperature Control Module (TCM), is a high performance control module providing eight channels of thermocouple input and eight channels of control output in a single RX3i module. Each channel can operate in closed or open loop mode relieving the PLC of providing the temperature control functions. The module also supports Autotuning.

	IC693TCM302	IC693TCM303
Product Name	**PACSystems RX3i Temperature Control Module, (8) T/C, (1) RTD and (8) 24 VDC Output**	**PACSystems RX3i Temperature Control Module, Extended Range, (8) T/C, (1) RTD and (8) 24 VDC Output**
Module Type	Temperature Control	Temperature Control
Backplane Support	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1
Number of Channels	8 T/C In/ 8 DC Out	8 T/C In/ 8 DC Out
Range	J=0-600°C K=0-1050°C L=0-600°C	J=0-450°C K=0-600°C L=0-450°C
Output Voltage Range	18 to 30 volts DC	18 to 30 volts DC
Load Current per Point	100 mA maximum sourcing	100 mA maximum sourcing
Diagnostics	Open thermocouple and reverse connection detection capability Detection and indication of out-of-tolerance temperature readings	Open thermocouple and reverse connection detection capability Detection and indication of out-of-tolerance temperature readings
Connector Type	Two 20 pin connectors (screw type)	Two 20 pin connectors (screw type)
Internal Power Used	150 mA @ 5 VDC	150 mA @ 5 VDC

Thermocouple I/O Modules

The Thermocouple Input Modules allow thermocouple temperature sensors to be directly connected to the PLC with external signal processing (transducers, transmitters, etc.). The module performs all analog and digital processing of the thermocouple signal. The enhanced thermocouple input modules add isolation or high-resolution. On these modules, each channel can be configured for a specific type of sensor wire. An autodetect external AD592 cold junction compensation feature is also available.

	IC695ALG600 Thermocouple	IC695ALG306	IC695ALG312
Product Name	**RX3i Analog Input. Configurable per channel for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032). Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Isolated Thermocouple Input module provides six isolated differential thermocouple input channels. Each channel can be individually configured for inputs from: Thermocouple types: J, K, T, E, R, S, B, N, or C and Voltage: ±150mV or ±50mV. Requires high capacity terminal block IC694TBBx32 or IC694TBSx32. Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Isolated Thermocouple Input module provides twelve isolated differential thermocouple input channels. Each channel can be individually configured for inputs from: Thermocouple types: J, K, T, E, R, S, B, N, or C and Voltage: ±150mV or ±50mV. Requires high capacity terminal block IC694TBBx32 or IC694TBSx32. Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**
Module Type	Thermocouple Input	Thermocouple Input	Thermocouple Input
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1	1
Range	B, C, E, J, K, N, R, S, T	J, K, T, E, R, S, B, N, or C	J, K, T, E, R, S, B, N, or C
Diagnostics	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low
Number of Channels	8	6	12
Channel-to-Channel Isolation	Two Groups of Four	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second
Notch Filter	Yes	From 2.3 Hz to 28 Hz per channel	From 2.3 Hz to 28 Hz per channel
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format
Accuracy	Calibrated Accuracy at 25°C. Better than 0.1% of range. Accuracy depends on A/D filter, data format, input noise, and ambient temperature.	±0.1% of voltage span at 25°C. ±0.25% of span over temperature range.	±0.1% of voltage span at 25°C ±0.25% of span over temperature range.
I/O Required	N/A	N/A	N/A
A/D Conversion Type	Sigma Delta	Sigma Delta	Sigma Delta
A/D Conversion Time(	(Assumes 2 ADC's running in parallel, no CJC or lead resistance) 10ms per Channel 4 Channels = 40ms (1KHz filter) 127ms per Channel 4 Channels = 508ms (8Hz filter) Channels that are disabled are not scanned, shortening scan time.	15 msec @ 28 Hz to 120 msec @ 2.3 Hz	15 msec @ 28 Hz to 120 msec @ 2.3 Hz
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	N/A	N/A
Internal Power Used	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5V; 400 mA @ 3.3V	300 mA @ 5V; 400 mA @ 3.3V

Thermocouple I/O Modules

The Thermocouple Input Modules allow thermocouple temperature sensors to be directly connected to the PLC with external signal processing (transducers, transmitters, etc.). The module performs all analog and digital processing of the thermocouple signal. The enhanced thermocouple input modules add isolation or high-resolution. On these modules, each channel can be configured for a specific type of sensor wire. An autodetect external AD592 cold junction compensation feature is also available.

	HE693THM166	HE693THM409	HE693THM449
Product Name	**Analog I/O Thermocouple Input Module**	**Analog I/O Thermocouple Input Module**	**Analog I/O Thermocouple Input Module**
Module Type	Thermocouple Input	Thermocouple Input	Thermocouple Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Range	J, K, N, T, E, R, S, B, C, X	J, K, N, T, E, R, S,	J, K, N, T, E, R, S,
Diagnostics	Yes	No	Yes
Number of Channels	16	4	4
Channel-to-Channel Isolation	N/A	N/A	N/A
Notch Filter	N/A	N/A	N/A
Resolution	0.5°C or 0.5°F	0.5°C or 0.5°F	0.5°C or 0.5°F
Accuracy	±0.5°C, typical (J,K,N,T)	±0.5°C, typical (J,K,N,T)	±0.5°C, typical (J,K,N,T)
I/O Required	16 %AI, 16 %I	4 %AI	4 %AI, 16 %I
A/D Conversion Type	Integrating	Integrating	Integrating
A/D Conversion Time	40 Channels/second	40 Channels/second	40 Channels/second
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	80 mA @ 5 VDC; 30 mA @ 24 VDC Relay	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay

Thermocouple I/O Modules

The Thermocouple Input Modules allow thermocouple temperature sensors to be directly connected to the PLC with external signal processing (transducers, transmitters, etc.). The module performs all analog and digital processing of the thermocouple signal. The enhanced thermocouple input modules add isolation or high-resolution. On these modules, each channel can be configured for a specific type of sensor wire. An autodetect external AD592 cold junction compensation feature is also available.

	HE693THM665	HE693THM666	HE693THM668	HE693THM809
Product Name	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module**
Module Type	Thermocouple Input	Thermocouple Input	Thermocouple Input	Thermocouple Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Range	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S
Diagnostics	Yes	Yes	Yes	No
Number of Channels	6	6	6	8
Channel-to-Channel Isolation	±250 VAC	±250 VAC	±250 VAC	N/A
Notch Filter	50 Hz	60 Hz	None	N/A
Resolution	0.5°C,0.5°F,0.1°C,0.1°F	0.5°C,0.5°F,0.1°C,0.1°F	0.5°C,0.5°F,0.1°C,0.1°F	0.5°C or 0.5°F
Accuracy	±1.0°C (J,K,N,T); ±2.0°C (S,E,B,R); ±4.0°C (C)	±1.0°C (J,K,N,T); ±2.0°C (S,E,B,R); ±4.0°C (C)	N/A	±0.5°C, typical (J,K,N,T)
I/O Required	6 %AI, 6 %AQ, 16 %I	6 %AI, 6 %AQ, 16 %I	6 %AI, 6 %AQ, 16 %I	8 %AI
A/D Conversion Type	Integrating	Integrating	Integrating	Integrating
A/D Conversion Time	N/A	N/A	N/A	40 Channels/second
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	200 mA @ 5 VDC	200 mA @ 5 VDC	200 mA @ 5 VDC	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay

Thermocouple I/O Modules

The Thermocouple Input Modules allow thermocouple temperature sensors to be directly connected to the PLC with external signal processing (transducers, transmitters, etc.). The module performs all analog and digital processing of the thermocouple signal. The enhanced thermocouple input modules add isolation or high-resolution. On these modules, each channel can be configured for a specific type of sensor wire. An autodetect external AD592 cold junction compensation feature is also available.

	HE693THM884	HE693THM888	HE693THM889
Product Name	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module**
Module Type	Thermocouple Input	Thermocouple Input	Thermocouple Input
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Range	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S
Diagnostics	Yes	Yes	Yes
Number of Channels	8	8	8
Channel-to-Channel Isolation	N/A	N/A	N/A
Notch Filter	None	60 Hz	N/A
Resolution	N/A	N/A	0.5°C or 0.5°F
Accuracy	N/A	N/A	±0.5°C, typical (J,K,N,T)
I/O Required	8 %AI, 8 %AQ, 16 %I	8 %AI, 8 %AQ, 16 %I	8 %AI, 16 %I
A/D Conversion Type	Integrating	Integrating	Integrating
A/D Conversion Time	N/A	N/A	40 Channels/second
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	100 mA @ 5 VDC; 60 mA @ 24 VDC Relay	100 mA @ 5 VDC; 60 mA @ 24 VDC Relay	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay

Resistive I/O Module

The Resistive module allows the user to easily connect to resistive loads without the need of external devices.

	IC695ALG600 Resistive	IC695ALG508 Resistive
Product Name	**PACSystems RX3i Analog Input. Configurable per channel for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032). Cold Junction Compensation are available for Thermocouple configurations (IC695ACC600 contains 2 CJCs)**	**Isolated Resistive Input module (also supports RTD) provides eight isolated differential Resistive or RTD input channels. Each channel can be individually configured for 2, 3, 4 wire RTD or Resistance. Requires high capacity terminal block IC694TBB032 or IC694TBS032**
Module Type	Resistive Input	Resistive (and RTD) Input Channel to Channel Isolation
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1
Range	0 to 250 / 500 / 1000 / 2000 / 3000 / 4000 Ohms	250 / 500 / 1000 / 2000 / 3000 / 4000 Ohms
Diagnostics	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low	Open wire, short circuit, positive/negative rate of change, High, High-High, Low, Low-Low
Number of Channels	8	8
Channel-to-Channel Isolation	Two Groups of Four	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second
Notch Filter	Yes	N/A
Resolution	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format
Accuracy	Calibrated Accuracy at 25ºC. Better than 0.1% of range. Accuracy depends on A/D filter, data format, input noise, and ambient temperature.	Calibrated Accuracy at 25ºC. Typical is ± 0.5%
Input Impedance	>1M ohm	N/A
Input Filter Response	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 1000Hz	Configurable: 2.3Hz, 4Hz, 4.7Hz, 24Hz, 28Hz
A/D Conversion Type	Sigma Delta	Sigma Delta
A/D Conversion Time	(Assumes 2 ADC's running in parallel, no CJC or lead resistance) 10ms per Channel 4 Channels = 40ms (1KHz filter) 127ms per Channel 4 Channels = 508ms (8Hz filter) Channels that are disabled are not scanned, shortening scan time.	15 msec @ 28 Hz to 120 msec @ 2.3 Hz
Maximum Voltage Input	±14.5 VDC continuous	N/A
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.
Internal Power Used	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5V; 300 mA @ 3.3V

Networks and Distributed I/O Systems

The RX3i features a variety of communications options for distributed control and/or I/O. Choose from Ethernet EGD, Profibus-DP, Genius and DeviceNet. These communication modules are easy to install and quick to configure.

	IC695CMX128	IC695ETM001	IC695PBM300
Product Name	**RX3i Control Memory Xchange Module for Peer to Peer network. 128Megbytes of user shared memory.**	**PACSystems RX3i Ethernet TCP/IP 10/100Mbits, two RJ-45 ports with built-in switch**	**PACSystems RX3i Profibus Master Module, Supports DPV1 Class 1 and Class 2.**
Module Type	Reflective Memory	Ethernet	Profibus Master
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1	1	1
Protocol Support	None Required	SRT, Ethernet Global Data (EGD), Channels (Client and Server), Modbus TCP (Client and Server)	Profibus DPV1
Entity Type	Deterministic Peer to Peer. Programmable Interrupt support.	Client/Server	Master
Bus Speed	Network link speed of 2.1 Gigabits/sec. Network transfer rate of 43 Mbyte/s (4 byte packets) to 174 Mbyte/s (64 byte packets)	10/100Mbaud	12Mbaud
Network Distance	Multimode Fiber up to 300 meters between nodes. 10Km when HUB is used	Network Dependent	Baud Rate Dependent. Supports all standard data rates (9.6 kBit/s, 19.2 kBit/s, 93.75 kBit/s, 187.5 kBit/s, 500 kBit/s, 1.5 MBit/s, 3 MBit/s, 6 MBit/s and 12 MBit/s)
Bus Diagnostics	Network error detection.	Yes	Yes, Slave Status Bit Array Table, Network Diagnostic Counters, DP Master Diagnostic Counters, Firmware Module Revision, Slave Diagnostic Address
Number of Drops Supported	256	Network Dependent	Up To 125 (Requires repeater every 25 nodes)
Message Size	Up to 128 Mbytes reflective memory with parity. Dynamic packet sizes of 4 to 64 bytes, automatically controlled by the CMX module	N/A	244 bytes of input and 244 bytes of output for each slave. Not to exceed 3584 bytes input and 3584 bytes outputs total for the system.
Internal Power Used	660 mA @ +3.3 VDC 253 mA @ +5 VDC	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	420 mA @ 5 VDC

Networks and Distributed I/O Systems

The RX3i features a variety of communications options for distributed control and/or I/O. Choose from Ethernet EGD, Profibus-DP, Genius and DeviceNet. These communication modules are easy to install and quick to configure.

	IC695PBS301	IC694BEM331	IC694DNM200
Product Name	**PACSystems RX3i Profibus Slave Module, Supports DPV1 Class 1 and Class 2.**	**PACSystems RX3i Genius Bus Controller**	**PACSystems RX3i DeviceNet Master Module**
Module Type	Profibus Slave	Genius Bus Controller	DeviceNet Master
Backplane Support	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions	CPU Rack Only
Number of Slots Module Occupies on Backplane	1	1	1
Protocol Support	Profibus DPV1	Genius	DeviceNet
Entity Type	Slave	Master	Master
Bus Speed	12Mbaud	153.6Kbaud	500Kbaud
Network Distance	Baud Rate Dependent. Supports all standard data rates (9.6 kBit/s, 19.2 kBit/s, 93.75 kBit/s, 187.5 kBit/s, 500 kBit/s, 1.5 MBit/s, 3 MBit/s, 6 MBit/s and 12 MBit/s)	7500 feet (2286 meters) at 38.4 Kbaud; 4500 feet (1371 meters) at 76.8 Kbaud; 3500 feet (1066 meters). at 153.6 Kbaud extended; 2000 feet (609 meters) at 153.6 Kbaud standard. Maximum length at each baud rate also depends on cable type.	500Kbaud 100 meters to 125Kbaud 500 meters. Maximum length at each baud rate also depends on cable type.
Bus Diagnostics	Yes, Alarms	Yes	Yes
Number of Drops Supported	Not Applicable	32	64
Message Size	244 bytes of input and 244 bytes of output	128 bytes	127 bytes
Internal Power Used	420 mA @ 5 VDC	300 mA @ 5 VDC	300 mA @ 5 VDC

Co-Processor and Serial Communications Modules

RX3i features a wide range of Specialty Modules to meet all of your application needs. From temperature controls, high-speed counters, I/O processors, coprocessors, to PID auto-tuning modules, these Specialty Modules are designed to meet the demand for versatile industrial solutions.

	IC695CMM002	IC695CMM004	HE693ASC900	HE693ASC940
Product Name	**Two Port Serial Module**	**Four Port Serial Module**	**Horner ASCII Basic Module**	**Horner ASCII Basic Module**
Module Type	Serial Communications 2 Isolated Serial Ports	Serial Communications 4 Isolated Serial Ports	ASCII Basic Co-Processor	ASCII Basic Co-Processor
Backplane Support	Universal Backplane Only Uses PCI Bus	Universal Backplane Only Uses PCI Bus	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Protocols Supported	Serial Read/Write Modbus Master/Slave DNP 3.0 Master/Slave CCM Slave and Custom Protocols	Serial Read/Write Modbus Master/Slave DNP 3.0 Master/Slave CCM Slave and Custom Protocols	N/A	N/A
Programming Languages	None required. Communications set up in Proficy Machine Edition	None required. Communication set up in Proficy Machine Edition	BASIC	BASIC
Program Storage	FLASH	FLASH	EEPROM	EEPROM
Communication Ports	(2) Isolated RS-232 or RS-485/422	(4) Isolated RS-232 or RS-485/422	RS-232, RS-232/485	RS-232, RS-232/485, modem
Network Data Rate	Selectable Baud Rates: 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K	Selectable Baud Rates: 1200, 2400, 4800, 9600, 19.2K, 38.4K, 57.6K, 115.2K	N/A	N/A
Internal Power Used	0.7 Amps maximum @ 3.3 VDC 0.115 Amps maximum @ 5 VDC	0.7 Amps maximum @ 3.3 VDC 0.150 Amps maximum @ 5 VDC	375 mA @ 5 VDC	250 mA @ 5 VDC

Motion Control (High Speed Counting)

The High Speed Counters can be used for a wide range of applications. The following types are supported.
Type A - Up or Down-Independent Pulse-4 counters

Type B - Both Directions-A QUAD B Encoder Inputs-2 Counters

Type C - Difference Between 2 changing values-A QUAD B Encoder Inputs -1 Counter

Type D - provides homing capability with count inputs and a Home Marker input. In A quad B mode, the counter detects quadrature errors

Type E - Pre-defined Counter Type that occupies two of the module's internal counters, primarily a down counter, but can handle up counts to account for A quad B jitter

Type E counter counts down to zero, it uses a second counter block to turn on a dedicated output for a configurable time. Type E can be set up for sequenced strobing, which links all four strobes on so that they are all triggered by strobe input 1

Type Z - Two regular Clock inputs, a software controlled Preload and a special Clock Input Z. The Z input triggers a store of the Accumulator value to the Strobe 1 register. After the store, the counter can optionally reset the Accumulator to 0. It can then either restart immediately or after wait until the Clock Input Z is no longer set User-Defined Counter Type - Create a customized counter type by selecting High-Speed Counter features that are suited to the application. This counter type provides a Clear input that can be used to immediately reset the Accumulator to the starting value.

	IC695HSC304	IC695HSC308	IC694APU300	IC693APU305
Product Name	**PACSystems RX3i High Speed Counter**	**PACSystems RX3i High Speed Counter**	**PACSystems RX3i High Speed Counter**	**PACSystems RX3i I/O Processor Module**
Module Type	**High Speed I/O Processing (4 counters) Module supports High Speed Counting, PLS (Programmable Limit Switch), Camming, Input Interrupts and Pulse Width Timing**	**High Speed I/O Processing (8 counters) Module supports High Speed Counting, PLS (Programmable Limit Switch), Camming, Input Interrupts and Pulse Width Timing**	**High Speed Counter**	**I/O Processor Module**
Backplane Support	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Input/Output Type	Positive Logic	Positive Logic	Positive Logic	N/A
Off State Leakage Current	200 µA	200 µA	10 µA per point	10 µA per point
Output Protection	1.5 A maximum per channel, 10.5 A maximum per module	1.5 A maximum per channel, 10.5 A maximum per module	3 Amp Fuse for all points	5 A Fuse for all points
Counter Operation	Type A, Type B, Type C, Type D, Type E, Type Z and User-Defined Counter	Type A, Type B, Type C, Type D, Type E, Type Z and User-Defined Counter	Type A, Type B, and Type C	Gray Code Encoder or A Quad B Encoder every 500 microseconds
CPU Interrupt Support	Yes	Yes	No	N/A
PLS and Camming Support	Yes	Yes	No	N/A
Input Filters (Selectable)	30 Hz, 5 KHz, 50 KHz, 500 KHz, 5 MHz	30 Hz, 5 KHz, 50 KHz, 500 KHz, 5 MHz	High Frequency Filter - 2.5µ; Low Frequency Filter - 12.5 ms	N/A
Count Rate	High Frequency 1.5 MHz (internal 2 MHz oscillator)	High Frequency 1.5 MHz (internal 2 MHz oscillator)	High Frequency -80 kHz; Low Frequency - 20 Hz	30 kHz (Absolute Encoder) 200 kHz (A Quad B Encoder)
Counter Range	-2,147,483,648 to 2,147,483,648	-2,147,483,648 to 2,147,483,648	-65,535 to 65,535	N/A
Selectable On/Off Output Presets	Each Counter has 4 present points, On and Off	Each Counter has 4 present points, On and Off	Each Counter has 2 present points, On and Off	N/A
Counters per Timebase	A Timebase from 100 nanoseconds to 429,496 milliseconds can be selected for each counter.	A Timebase from 100 nanoseconds to 429,496 milliseconds can be selected for each counter.	Each counter stores the number of counts that have occurred in a specified time. A timebase value measurement from 1 ms to 65535 ms is configurable.	N/A
Strobe Register	Each counter has one or more strobe registers that capture the current accumulator value when a strobe input transition in the direction selected during the last configuration of the module.	Each counter has one or more strobe registers that capture the current accumulator value when a strobe input transition in the direction selected during the last configuration of the module.	Each counter has one or more strobe registers that capture the current accumulator value when a strobe input transition in the direction selected during the last configuration of the module.	N/A
Local Fast Inputs	(8 inputs) 5 VDC nominal: 4.7 VDC to 5.5 VDC 12 to 24 VDC nominal: 10 VDC to 26.4 VDC Inputs are mapped to any counter or to the controller as interrupts.	(16 inputs) 5 VDC nominal: 4.7 VDC to 5.5 VDC 12 to 24 VDC nominal: 10 VDC to 26.4 VDC Inputs are mapped to any counter or to the controller as interrupts.	(12) 5 VDC or 10 to 30 VDC	(12) 8.0 VDC (non–TTL), 1.5 VDC (TTL
Local Fast Outputs	(7 outputs) 4.7 to 40 VDC 1.5 A maximum per channel, 10.5 A maximum per module Outputs can be used by the counters or as standard outputs from the controller.	(14 outputs) 4.7 to 40 VDC 1.5 A maximum per channel, 10.5 A maximum per module Outputs can be used by the counters or as standard outputs from the controller.	(4) 10 to 30 VDC @ 500 mA maximum 4.75 to 6 VDC @ 20 mA maximum	Continuous Output Current (10–30 VDC supply) 1.0 A (each output 1–4) 0.5 A (each output 5–8)
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	64 mA maximum @ 5 V; 457 mA maximum @ 3.3 V	94 mA maximum @ 5 V; 561 mA maximum @ 3.3 V	250 mA @ 5 VDC	360 mA @ 5 VDC

PACMotion Servo Control

The PACMotion controller is a versatile servo motion controller that combines the benefits of a highly integrated motion and machine logic solution with the performance, flexibility and scalability required for advanced machine automation. PACMotion is designed to deliver unsurpassed machine productivity required for today's high-speed machines and lean manufacturing environments. The 4-axis servo motion controller is built on a high performance hardware platform, with a new enhanced motion engine, operating system, and open standard integrated programming paradigm. Add to that world-class reliability of FANUC servos and you have a motion system designed to give you the best productivity and accuracy possible. Please see GE Intelligent Platforms Motion Solutions Catalog GFA-483 for more information about motion offerings.

	IC695PMM335
Product Name	**PACMotion Module**
Module Type	Servo Motion
Backplane Support	Universal Backplane Only. Uses PCI Bus.
Number of Slots Module Occupies on Backplane	1
Motion Path Planning	1 ms, Consistent update regardless of the number of axes in the system
Position Loop Update Rate	500 µs, All axes in the RX3i rack are updated simultaneously
Velocity Loop Update Rate	125 µs, All axes in the RX3i rack are updated simultaneously
Torque Loop Update Rate	62.5 µs, All axes in the RX3i rack are updated simultaneously
Controlled Axes/Module	4 βi, βHV*i* or αHV*i* series servos are supported via a fiber optic interface
Master Axes/Module	1, Can be a virtual time-based or incremental encoder master
Servo Command Interface	Fiber Optic 50 Mb/s FANUC Serial Servo Bus (FSSB)
Fiber Terminal Block Cable Length	Max. 100 meters between nodes 400 meters maximum for a 4 axis system
Maximum Axes per RX3i	DC Power Supplies: 40 + 10 master axes (Requires 16 slot backplane, CPU and 4 DC power supplies) AC Power Supplies: 32 + 8 master axes (Requires 16 slot backplane, CPU and 3 AC power supplies)
Position Resolution	αHV*i* Series 1,048,576 counts/rev, β*i* and βHV*i* Series 65,536 or 131,072 counts/rev. β2*i* and larger motors support the higher resolution.
Feedback Type	Incremental/Absolute Serial Encoder. Optional battery backup required for absolute feedback mode.
Faceplate I/O	24V General Purpose Inputs: 4 optically isolated; source/sink 24V High-Speed Inputs: 2 optically isolated; source/sink Open circuit detection; can be used to connect a quadrature master encoder (500 kHz max) 24V General Purpose Inputs/Outputs: 2 optically isolated; source/sink 125 mA maximum output current each "Connector" Plug-on Screw Terminal
Floating Point Support	Yes, Double precision IEEE 754.
Module Hot Insertion/Removal	Yes
Cam Profiles per Module	256 at one time. Up to 2048 profiles can be stored in the RX3i file system for use by any module.
Synch/Delayed Start	Up to 8 axes Axes can be on any module and are synchronized over the backplane.
High Speed Position Capture	±2 Inputs per axis: ±1 count = 10 µs jitter
Connector Type	Plug-on Screw Terminal and Fiber
Internal Power Used	5 VDC 0.45A @ 5 VDC; 1.1A & 3.3 VDC

PACMotion I/O Fiber Terminal Block

The optional Fiber Terminal Block enables PACMotion controller to connect remote I/O over a fiber cable. The Fiber Terminal Block is DIN rail mounted and can be up to 100 meters away from the PACMotion module. The module is configurable per point for 5 VDC, 24 VDC and analog I/O. The Fiber Terminal Block provides a unique ID that prevents connection to wrong PACMotion modules. The module supports up to 5 incremental encoders without marker or 4 encoders with marker pulse.

	IC695FTB001
Product Name	**PACMotion I/O Fiber Terminal Block**
Module Type	I/O Terminal Block for PACMotion
Mounting/Dimensions	35 mm DIN Rail (5.56 W x 4.94 H x 2.46 D inches; 141.2 W x 125.5 H x 62.5 D mm)
Interface to PACMotion Module	Fiber Optic Cable. Maximum cable length is 100 meters; Interface uses a unique ID for each PMM/FTB pair to prevent cross-connection.
Power Requirements	19.2 VDC —28.8 VDC; 0.45 Amps @ 24 V
24 V Outputs (differential)	Eight optically isolated; source; open load & short detection. 2 groups of 4; 0.5 A max. per point; 4 A max. per group
24 V General Purpose Inputs	Sixteen optically isolated; source/sink 4 groups of 4
5 V Outputs (differential)	Four RS422 Line Driver with short circuit protection; 48 mA max.
5 V Inputs (differential/single-ended)	Six RS422 / RS485 Line Receiver with fault detection
5 V Inputs (differential)	Six RS422 / RS485 Line Receiver with fault detection
Analog Inputs	Two, ±10V differential 14 bit resolution
Analog Outputs	Two, ±10V differential 14 bit resolution
24 V Power Output	Reverse polarity protected by replaceable fuse
5 V Power Output	0.5 amp max. electronic overload protected
Quad Encoder Open Circuit Detection	Yes
I/O Function Assignment	Configurable I/O functions are assigned during module hardware configuration
Terminal Header Options	IC694TBxx32

Motion Control (Servo Control)

Motion control integrated into the RX3i fosters high performance point-to-point applications. GE Motion Control modules can be flexibly applied to a variety of digital, analog, and stepper motion applications.

	IC694DSM324	IC694DSM314
Product Name	**PACSystems RX3i Digital Servo Module, 4-Axis (Fiber Optic Interface to Amplifiers)**	**PACSystems RX3i Digital Servo Module, 4-Axis**
Module Type	Servo Motion	Servo Motion
Backplane Support	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1
Drive	Beta i Series Digital Servos	Alpha and Beta Series Digital and Analog Servos
Drive Interface	Fiber Optic, Up to 100 meters between amplifiers with total length of 400 meters.	Digital for Alpha and Beta Series; ±10 V velocity or torque command for analog
Axes	4 Digital	2 Digital and 1 Analog or 4 Analog
Master Encoder Support	Incremental Master (1Mhz)	Incremental Master (1Mhz)
Electronic Cam	Yes	Yes
Velocity Feed-Forward	Yes	Yes
Encoder Feedback (Serial)	Yes	Yes
Temposonic Feedback	Yes	Yes
Number of Programs	15 Kbytes (10 + 40 Subroutines)	15 Kbytes (10 + 40 Subroutines)
User Memory (Number of Programs)	15 KBytes	15 KBytes
Feedback Inputs	3	3
Encoder Input Type/Maximum Rate	TTL Diff/Single, 175kHz	TTL Diff/Single, 175kHz
Analog Inputs	2	4 - In Digial Mode 8 - In Analog Mode
Analog Outputs	2	4 - In Digial Mode 0 - In Analog Mode
Internal Power Used	1360 mA @ 5 VDC	1300 mA @ 5 VDC

Motion Control (Stepper Control)

Motion control integrated into the RX3i fosters high performance point-to-point applications. GE Motion Control modules can be flexibly applied to a variety of digital, analog, and stepper motion applications.

	HE693STP100	HE693STP101	HE693STP110	HE693STP111
Product Name	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**
Module Type	Single Axis Stepper	Single Axis Stepper	Single Axis Stepper	Single Axis Stepper
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1
Drive	Stepper	Stepper	Stepper	Stepper
Axes	1	1	1	1
Encoder Support	No	No	Yes	Yes
Switch Signal Level (DC)	5 V	12-24 V	5 V	12-24 V
Maximum Step/Direction Output (5 V)	300 mA	300 mA	300 mA	300 mA
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	500 mA @ 5 VDC	750 mA @ 5 VDC	500 mA @ 5 VDC	750 mA @ 5 VDC

Motion Control (Stepper Control)

Motion control integrated into the RX3i fosters high performance point-to-point applications. GE Motion Control modules can be flexibly applied to a variety of digital, analog, and stepper motion applications.

	HE693STP113	HE693STP300	HE693STP301	HE693STP310	HE693STP311
Product Name	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**
Module Type	Single Axis Stepper	Three Axis Stepper	Three Axis Stepper	Three Axis Stepper	Three Axis Stepper
Backplane Support	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1	1	1
Drive	Stepper	Stepper	Stepper	Stepper	Stepper
Axes	1	3	3	3	3
Encoder Support	Yes	No	No	Yes	Yes
Switch Signal Level (DC)	12-24 V	5 V	12-24 V	5 V	12-24 V
Maximum Step/Direction Output (5 V)	300 mA	300 mA	300 mA	300 mA	300 mA
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	750 mA @ 5 VDC	500 mA @ 5 VDC	750 mA @ 5 VDC	500 mA @ 5 VDC	750 mA @ 5 VDC

Power Transducer Modules

Power Transducer (PTM) is an intelligent system for measuring electrical power consumption or for monitoring voltages between an electrical generator and the electrical power grid. The PTM module is not intended to provide a protective relay function or be used for energy billing purposes. The PTM connects to user supplied current and potential transformers, which furnish the input signals the PTM uses to calculate its data. The Processing module, which mounts in a RX3i, transfers the data it gathers to the PLC where it can be used for a wide variety of purposes. The PTM can be used with a wye or delta type three-phase power system or with a single-phase power system.

	IC693PTM101
Product Name	**Power Transducer Module Processing Module interface board (a panel mounted circuit board. This board interfaces between the Power Transducer module and the input transformers (current and potential), 1.0 meter Interface cable that connects the module to the Interface board.**
Module Type	Power Transducer Modules
Input Voltage Range	Three single phases (120/240) One 3-wire single phase (120/240)
Number of Points	1
Current Input Range	0 to 7.5 Amps rms (5A rms nominal)
Frequency Range	35Hz to 70Hz
Power Source	Three single phases of 120/240 VAC or one 120/240 VAC 3-wire single phase
Diagnostics	• Data calculation rate: 20ms @ 50hz, 16.67 ms @ 60Hz. • Data latency of less than 5ms plus 1/2 of line frequency period • RMS voltage of phase A grid (in volts x 10) • RMS voltage of phase A, B, and C generator (in volts x 10) • Phase angle between phase A grid and phase A generator (in degrees x 10) • Frequency of phase A grid and phase A generator (in Hz x 100) Power Monitoring Functions • Data calculation rate for monitoring functions: 20ms @ 50hz, 16.67 ms @ 60Hz • RMS voltages of phase A, B, and C (in volts x 10) • DC component of measured RMS voltages (in volts x 10) • RMS currents of phase A, B, C, and Neutral (in Amperes x 1000) • Real and reactive power reported per phase and total in Watts, Volt-Amperes-Reactive • Real and reactive total energy consumption in Watt-Seconds and Volt-Amperes-Reactive- Seconds (updated once per second), re-settable by the user • Total power factor • Average real and reactive power consumption (sliding 15 minute window updated once per second) • Line frequency (in Hz x 100)
Internal Power Used	400 mA @ 5 VDC

RX3i Pneumatic Module

This IC693MDL760 output module provides eleven pneumatic outputs and five 24 VDC sourcing outputs. For each pneumatic output, the module contains an internal 3-way solenoid-actuated valve and an associated output fitting, which is located on the front panel. When an output is turned ON, its internal valve connects a user supplied pressure source (100 psi maximum) to the output fitting. The pressure source is connected to the fitting on the bottom of the module. When the output is turned OFF, the valve's output port is vented to atmosphere inside the module. Solenoid power is supplied from an external 24 VDC source to the "DC Outputs" connector on the front panel.

	IC693MDL760
Product Name	**RX3i Solenoid Module**
Number of Points	(11) Pneumatic Outputs (5) 24 VDC Outputs
Pneumatic Outputs	11
Supply Pressure	100 PSI
Pressure Drop	25 psi max.@ 0.25scfm
External Solenoid Power	21.6-26.4 VDC, 24 VDC nominal
ON Response Time/Off Response Time	12ms max. ON 12ms max. OFF
Solenoid Inrush Current	33 mA/valve @ 24 VDC
Solenoid Holding Current	13 mA/valve @ 24 VDC
Output Fitting	Threaded for 10-32 adapter, 1/16" hose barb provided
Supply Fitting	Threaded for 10-32 adapter, 1/8" hose barb provided
Load Current per Point	0.5A @ 30 VDC per point, 2.0A total for all five points
Response Time (ms)	0.5 on/0.5 off
Output Type	Transistor
Polarity	Positive
Internal Power Used	75 mA from 5 VDC bus (solenoid LEDs are powered from external power source)

Expansion Modules for Local and Remote I/O

The RX3i supports various expansion options for local and remote I/O to optimize configurations. The RX3i can be expanded up to 8 expansion bases using local remote expansion module. The RX3i also supports Ethernet remote I/O using the RX3i Ethernet Network Interface module (IC695NKT001) Series 90-30 Ethernet Network Interface module (IC693NIU004) for more distributed I/O.

	IC695LRE001	IC695NKT001	IC693NIU004
Product Name	**PACSystems RX3i Expansion Module**	**PACSystems RX3i Ethernet Remote I/O Expansion Kit. Kit includes a NIU001 with two built-in serial ports and ETM001**	**PACSystems RX3i Ethernet Remote I/O Expansion (Slave)**
Module Type	High Speed Serial Expansion Module	Ethernet Communications (Supports redundant Ethernet modules)	Ethernet Communications
Backplane Support	Universal Backplane Only	Universal Backplane Only. Uses PCI Bus.	Supports High Speed Serial Only. No PCI support
Number of Slots Module Occupies on Backplane	No I/O slot used	3 (2 for NIU and 1 for Ethernet module)	N/A
Built-in Communication Ports	N/A	1 RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master	N/A
I/O Discrete Points	N/A	2048 Inputs/2048 Outputs maximum	2048 Inputs/2048 Outputs maximum
I/O Analog Points	N/A	1264 Inputs and 512 Outputs maximum	1264 Inputs and 512 Outputs maximum
User Logic Memory	N/A	5Kbytes of local logic	No local logic
Network Data Rate	1 Mbaud	10/100Mbit ports (RJ-45)	10/100Mbit ports (RJ-45)
Entity Type	Master	Slave	Slave
Network Distance	Up to 700 feet (213 meters)	Network Dependent	Network Dependent
Bus Diagnostics	Yes	Supported	Supported
Number of Drops Supported	Supports 7 local expansion racks. Discrete I/O: Maximum 320 In, 320 Out, Analog I/O: Maximum 160 In, 80 Out per base	Network Dependent Each Ethernet NIU can also support up to 7 additional local I/O racks (IC694CHSxxx)	Network Dependent Each Ethernet NIU can also support up to 7 additional local I/O racks (IC694CHSxxx)
Internal Power Used	132 mA @ 5 VDC	1250 mA @ 3.3 VDC; 1000 mA @ 5 VDC for NIU controller and 840 mA @ 3.3 VDC; 614 mA @ 5 VDC for each Ethernet module	1.4 Amps @ 5 VDC

Accessories

IC694TBB032	High Density 32 Point Terminal Block Box Style
IC694TBB132	High Density 32 Point Terminal Block Box Style with Extended Shroud for Large Wiring Bundles
IC694TBS032	High Density 32 Point Terminal Block Spring Style
IC694TBS132	High Density 32 Point Terminal Block Spring Style with Extended Shroud for Large Wiring Bundles
IC694ACC310	Filler Module, Blank Slot
IC695ACC600	RX3i Cold Junction Compensation Kit (Contains 2 CJCs) for Universal Analog Input Module
IC698ACC701	Lithium Battery pack that installs in CPU (CPU ships with a IC698ACC701)
IC693ACC302	External High capacity battery pack. (1.3 years of continuous battery backup for CPU310/CMU310 and 1 month for CPU320/CRU320.)
IC690ACC901	Mini-Converter Kit with cable (RS-485/RS-232)
IC690ACC903	RS-485 Port Isolator
IC690CDR002	User Manuals, InfoLink CD-ROM Documentation, single-user license
IC693ACC307	I/O Bus Terminator Plug
IC693ACC311	Series 90-30 style IC693 I/O modules Terminal Blocks, 20 terminals (qty 6)
IC694ACC311	RX3i style IC694 I/O modules Terminal Blocks, 20 terminals (qty 6)

External Power Supplies

IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
IC690PWR124	24 VDC, 10 Amp Output Power and 120/230 VAC Input Power Power Supply

Terminal Block Quick Connect

Terminal Block Quick Connect (TBQC) for selected I/O modules enables the user to easily connect interposing terminal blocks. The TBQC consists of an I/O faceplate adapter that includes a 24 pin Fujitsu male connector (the faceplate replaces the 20 screw terminal connector on front of I/O module, not compatible with the high density 36 screw terminals), cable and interposing terminal block.

TBQC I/O Module Face Plate Adapter

IC693ACC334	I/O module face plate adapter for 20 screw type I/O modules. Faceplate provides a 24 pin male Fujitsu connector.

TBQC Interposing Terminal Block

IC693ACC329	Interposing terminal block base for IC694MDL645, IC694MDL646, and IC694MDL240. The base can also be used with any 20 point terminal discrete or analog modules not listed.
IC693ACC330	Interposing terminal block base for IC694MDL740 and IC694MDL742
IC693ACC331	Interposing terminal block base for IC694MDL741
IC693ACC332	Interposing terminal block base for IC694MDL940
IC693ACC333	Interposing terminal block base for IC694MDL340
IC693ACC337	Interposing terminal block base for IC693MDL654/655/752/753 and IC694MDL654/655/752/753

TBQC Cables

IC693CBL327	Cable, Left Side, One - 24 Pin 90 Degree Connector, 3 Meter. Cable has a connector on only one end and open on the other. Cable used with TBQC I/O Face Plate Adapter or Fujitsu style I/O modules.
IC693CBL328	Cable, Right Side, One - 24 Pin 90 Degree Connector, 3 Meter. Cable has a connector on only one end and open on the other. Cable used with TBQC I/O Face Plate Adapter or Fujitsu style I/O modules.
IC693CBL329	Cable, Left Side, One - 24 Pin 90 Degree Connector, 1 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL330	Cable, Right Side, One - 24 Pin 90 Degree Connector, 1 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL331	Cable, Left Side, One - 24 Pin 90 Degree Connector, 2 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL332	Cable, Right Side, One - 24 Pin 90 Degree Connector, 2 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL333	Cable, Left Side, One - 24 Pin 90 Degree Connector, 0.5 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL334	Cable, Right Side, One - 24 Pin 90 Degree Connector, 0.5 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.

RMX and CMX Reflective Memory Fiber Optic Cables

Simplex LC to LC connector, Fiber-Optic Cable – Multimode 62.5 Micron core.
Simplex (single) cabling is used for daisy chaining Tx to Rx to/from another node until final device circles back to beginning node.
Each CMX module requires two Simplex cables per module.

VMICBL-000-F5-000	.5 feet (0.15 m)
VMICBL-000-F5-001	1 foot (.31 m)
VMICBL-000-F5-002	5 feet (1.52 m)
VMICBL-000-F5-003	10 feet (3.04 m)
VMICBL-000-F5-004	25 feet (7.62 m)
VMICBL-000-F5-005	50 feet (15.24 m)
VMICBL-000-F5-006	80 feet (24.40 m)
VMICBL-000-F5-007	100 feet (30.49 m)
VMICBL-000-F5-008	150 feet (45.72 m)
VMICBL-000-F5-009	200 feet (60.98 m)
VMICBL-000-F5-010	250 feet (76.20 m)
VMICBL-000-F5-011	350 feet (106.68 m)
VMICBL-000-F5-012	500 feet (152.15 m)
VMICBL-000-F5-013	574 feet (175 m)
VMICBL-000-F5-014	656 feet (200 m)
VMICBL-000-F5-015	820 feet (250 m)
VMICBL-000-F5-016	1,000 feet (304.30 m)
VMICBL-000-F5-017	1,148 feet (350 m)
VMICBL-000-F5-018	1,312 feet (400 m)
VMICBL-000-F5-019	1,500 feet (456.45 m)
VMICBL-000-F5-020	1,640 feet (500 m)

RMX and CMX Reflective Memory Fiber Optic Cables (continued)

Duplex LC to LC connector, Fiber-Optic Cable - Multimode 62.5 Micron core.
Duplex cabling is generally used with RMX system and is also good for CMX module to HUB connections. Duplex has a pair of cables connected together. Each CMX module requires one Duplex cable per module to a hub

VMICBL-000-F6-000	3 feet (0.9144 m)
VMICBL-000-F6-001	6 feet (1.8288 m)
VMICBL-000-F6-002	10 feet (3.048 m)
VMICBL-000-F6-003	16 feet (4.8768 m)
VMICBL-000-F6-004	32 feet (9.7536 m)
VMICBL-000-F6-005	66 feet (20.1168 m)
VMICBL-000-F6-006	98 feet (29.8704 m)
VMICBL-000-F6-007	164 feet (49.9872 m)
VMICBL-000-F6-008	230 feet (70.104 m)
VMICBL-000-F6-009	328 feet (99.9744 m)
VMICBL-000-F6-010	393 feet (119.7864 m)
VMICBL-000-F6-011	426 feet (129.8448 m)
VMICBL-000-F6-012	492 feet (149.9616 m)
VMICBL-000-F6-013	557 feet (169.7736 m)
VMICBL-000-F6-014	656 feet (199.9488 m)
VMICBL-000-F6-015	721 feet (219.7608 m)
VMICBL-000-F6-016	754 feet (229.8192 m)
VMICBL-000-F6-017	820 feet (249.936 m)
VMICBL-000-F6-018	885 feet (269.748 m)
VMICBL-000-F6-019	984 feet (299.9232 m)
VMICBL-000-F6-020	1 foot (0.3048 m)

Reflective Memory Interface Modules for PCs

PMC 5565 Reflective Memory PMC Module	
PMC-5565PIORC-110000	PMC, 2 GIGA Baud RM w/FO Options, 128 Mbyte Memory, 4K FIFOs, Multimode Transmission
PMC-5565PIORC-111000	PMC, 2 GIGA Baud RM w/FO Options, 128 Mbyte Memory, 4 K FIFOs, Single Mode Transmission
PMC-5565PIORC-210000	PMC, 2 GIGA Baud RM w/FO Options, 256 Mbyte Memory, 4K FIFOs, Multimode Transmission
PMC-5565PIORC-211000	PMC, 2 GIGA Baud RM w/FO Options, 256 Mbyte Memory, 4 K FIFOs, Single Mode Transmission
PCI 5565 Reflective Memory PCI Module	
PCI-5565PIORC-110000	PCI, 2 GIGA Baud RM w/FO Options, 128 Mbyte Memory, 4K FIFOs, Multimode Transmission
PCI-5565PIORC-111000	PCI, 2 GIGA Baud RM w/FO Options, 128 Mbyte Memory, 4K FIFOs, Single Mode Transmission
PCI-5565PIORC-210000	PCI, 2 GIGA Baud RM w/FO Options, 256 Mbyte Memory, 4K FIFOs, Multimode Transmission
PCI-5565PIORC-211000	PCI, 2 GIGA Baud RM w/FO Options, 256 Mbyte Memory, 4K FIFOs, Single Mode Transmission
PCI Express 5565 Reflective Memory PCIE Module	
PCIE-5565RC-100000	PCI Express, 2 GIGA Baud RM w/FO Options, 128 Mbyte Memory, 4K FIFOs, Multimode Transmission
PCIE-5565RC-101000	PCI Express, 2 GIGA Baud RM w/FO Options, 128 Mbyte Memory, 4K FIFOs, Single Mode Transmission
PCIE-5565RC-200000	PCI Express, 2 GIGA Baud RM w/FO Options, 256 Mbyte Memory, 4K FIFOs, Multimode Transmission
PCIE-5565RC-201000	PCI Express, 2 GIGA Baud RM w/FO Options, 256 Mbyte Memory, 4K FIFOs, Single Mode Transmission

CMX and RMX Reflective Memory HUB (Contact GE for additional HUB configurations)

VMIACC-5595-208	Rack Mount or Desktop, No Single-Mode Pluggable Transceivers, 8 Multimode Pluggable Transceivers **Notes:** The 5595-208 will be used in a majority of the applications. It will enable 8 PAC and Embedded devices to be connected in a star configuration in a multimode configuration.
VMIACC-5595-217	Rack Mount or Desktop, 1 Single-Mode Pluggable Transceiver, 7 Multimode Pluggable Transceivers **Notes:** The 5595-217 supports Hub to Hub (single mode) networking with 7 PAC and Embedded devices connected in a star configuration in a multimode configuration.

Starter Kits

IC695STK003	RX3i, The Complete PACkage with Control, Motion and View. Power PACkage 3 Starter Kit includes RX3i, motion module (Servo and Amplifier sold separately) and QuickPanel View 6" STD with software. (includes one each IC695CPU310, IC695CHS012, IC695LRE001, IC695PSA040, IC695ETM001, IC694DSM314, IC694ACC300, IC694MDL940, IC754VSI06STD, BC646MQP001, IC646MPP001 and DC power supply for QuickPanel) Limited one RX3i starter kit per customer site.
IC695STK002	RX3i with Control and View. Power PACkage 2 Starter Kit includes RX3i and QuickPanel View 6" STD with software. (includes one each IC695CPU310, IC695CHS012, IC695LRE001, IC695PSA040, IC695ETM001, IC694ACC300, IC694MDL940, IC754VSI06STD, BC646MQP001, IC646MPP001 and DC power supply for QuickPanel) Limited one RX3i starter kit per customer site.
IC695STK001	RX3i Controller PACkage 1 Starter Kit includes RX3i with software. (includes one each IC695CPU310, IC695CHS012, IC695LRE001, IC695PSA040, IC695ETM001, IC694ACC300, IC694MDL940 and IC646MPP001.) Limited one RX3i starter kit per customer site.
IC695STK004	RX3i Power PACkage 4 Starter Kit includes (one each IC695CPU310, IC695CHS012, IC695PSA040, IC695ETM001, IC646MPP101)
IC695STK005	RX3i Power PACkage 5 Starter Kit includes (one each IC695CPU310, IC695CHS012, IC695PSA040, IC646MPP101)
IC695STK006	RX3i Power PACkage 6 Starter Kit includes (one each IC695CPU310, IC695CHS012, IC695PSD040, IC695ETM001, IC646MPP101)
IC695STK007	RX3i Power PACkage 7 Starter Kit includes (one each IC695CPU310, IC695CHS012, IC695PSD040, IC646MPP101)

Demo Cases

IC695DEM001	RX3i Power PACkage 1 Demo Case that includes CPU, P/S, discrete I/O and analog I/O, high speed counter, Ethernet and analog simulator. Proficy Machine Edition Professional Edition included.
IC695DEM002	RX3i Power PACkage 2 Demo Case that includes RX3i and QP Control/View. Includes CPU, P/S, discrete I/O and analog I/O, Ethernet, analog simulator, 6" TFT QuickPanel View/Control. Proficy Machine Edition Professional Edition included.
IC695DEM004	Beta i Series 1-Axis Motion Demo Case. Demo case is a self contained table top demo that includes a DSM324i module, Beta i motor and amplifier prewired for connection to a DSM324i motion module. The cables (1 meter) for connection to the DSM324i 5 V I/O and FSSB fiber optic command interface are included. Demo includes an E-stop push button and toggle switches for 5 DSM324i I/O points.

IC694 Rack to Rack Expansion Cables

IC693CBL300	Cable, I/O Base Expansion, 1 Meter, Shielded
IC693CBL301	Cable, I/O Base Expansion, 2 Meters, Shielded
IC693CBL302	Cable, I/O Base Expansion, 15 Meter, Shielded with built-in terminator
IC693CBL312	Cable, I/O Base Expansion, 0.15 Meter, Shielded
IC693CBL313	Cable, I/OBase Expansion, 8 Meters, Shielded
IC693CBL314	Cable, I/O Base Expansion, 15 Meters, Shielded with no built-in terminator
IC693ACC307	I/O Bus Terminator Plug

Configuration Guidelines

When configuring a RX3i the following guidelines should be considered:

1. IC695 part numbers can only be installed in a Universal Rack (IC695CHSxxx).
2. CPU, NIU and AC Power Supply require 2 slots each on the base plate.
3. IC695 I/O modules and high density IC694 I/O modules require a terminal block assembly. IC694TBSxxx (spring clamp termination) or IC694TBBxxx (box style termination) are required.
4. If the CPU is powered down frequently a high capacity battery should be considered. (IC693ACC302)

Examples of Typical Application

Configuration for Controller (Example application requiring (120) 24 VDC inputs and (80) Relay outputs AC power supply)

Backplane Slots Required	Power Supply Current Required (mA)	Qty	Part Number	Description
2	1250 mA@ 3.3 VDC; 1000 mA@ 5 VDC	1	IC695CPU310	CPU with two built-in serial ports
2		1	IC695PSA040	120/240 VAC, 125 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
	600 mA@ 3.3 VDC; 240 mA@ 5 VDC	1	IC695CHS016	16 Slot Universal Base
4	1200 @ 5 V	4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
5	35 mA @ 5 V; 110 mA @ 24 VDC Relay	5	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
		4	IC694TBB032	Terminal Block, Box Style
		1	BC646MPP001	Logic Developer - PLC Professional
13	Total current from power supply required: 2475 mA @ 5 V; 1850 @ 3.3 V; 110 mA @ 24 VDC Relay. Only one power supplied needed.			

Options to consider

	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	1	IC695ETM001	Ethernet module 10/100Mbits
		1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
		1	IC693ACC302	Long term battery for CPU
		1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

Configuration for Controller (100) 24 VDC inputs, (50) 24 VDC Outputs with ESCP protection, (20) Relay outputs also (2) 4 to 20 mA Analog Inputs, (3) Type J Thermocouple, (1) RTD, (5) Strain Gage, (12) 4 to 20 mA Analog Outputs and 24 VDC power supply. Also requires Profibus Master and Ethernet communications.

Backplane Slots Required	Power Supply Current Required (mA)	Qty	Part Number	Description
2 on Universal Base	1250 mA@ 3.3 VDC; 1000 mA@ 5 VDC	1	IC695CPU310	CPU with two built-in serial ports
1 on Universal Base		1	IC695PSD040	24 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
	600 mA@ 3.3 VDC; 240 mA@ 5 VDC	1	IC695CHS016	16 Slot Universal Base
4 expansion base slots	1200 @ 5 VDC	4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
2 expansion base slots	600 mA @ 5 VDC	2	IC694MDL754	Discrete Output Module, 24 VDC Output with ESCP, 32 points (Requires terminal block)
2 expansion base slots	35 mA @ 5 VDC; 110 mA @ 24 VDC Relay	2	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
2 on Universal Base	700 mA @ 3.3 VDC; 800 mA @ 5 VDC	2	IC695ALG600	Universal Analog Input module, supports Thermocouple, RTD, Voltage, Current and Strain Gage, 8 channels (Requires terminal block)
2 on Universal Base	750 mA @3.3 VDC	2	IC695ALG708	Analog Output module, supports voltage and current, 8 channels (Requires terminal block)
1 on Universal Base	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	1	IC695ETM001	Ethernet module 10/100Mbits
1 on Universal Base	420 mA @ 5 VDC	1	IC695PBM300	Profibus Master module, supports V1
	150 mA @ 5 VDC	1	IC694CHS392	High Speed Serial 10 slot expansion rack (Only IC694xxx modules can go in rack)
		1	IC694PWR331	24 VDC Power Supply for High Speed Serial base,
		1	IC693CBL312	Rack Expansion Cable, 0.15 meters
		1	IC693ACC307	I/O Bus Terminator Plug
	132 mA @ 5 VDC	1	IC695LRE001	Universal Base High Speed Serial expansion module (Module does not occupy a I/O slot)
		10	IC694TBB032	Terminal Block, Box Style
		1	BC646MPP001	Logic Developer - PLC Professional
9 slots on Universal base and 8 slots of standard base	In the above configuration, all of the modules can not go into one base. Therefore the I/O modules are divided into two bases. The IC695xxx part numbers will be used on the Universal base and the IC694 part numbers will use the standard high speed serial bus base. The Universal base can accept both IC695xxx and IC694xxx modules but the standard base will only accept IC694xxx and IC693xxx modules. Total current from Universal base power supply: 3074 mA @ 5 VDC; 4140 @ 3.3 VDC. Only one power supplied needed. Total current from Standard base power supply: 1985 mA @ 5 VDC; 110 mA @ 24 VDC			

Options to consider

	2	IC695PSD140	Multipurpose 24 VDC power supply. By adding two IC665PSD140 the system would have redundant power supplies for maximum availability.
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
	1	IC693ACC302	Long term battery for CPU
	1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

Redundant Controller Configuration requiring (100) 24 VDC inputs, (50) 24 VDC Outputs with ESCP protection, (20) Relay outputs also (2) 4 to 20 mA Analog Inputs, (3) Type J Thermocouple, (1) RTD, (5) Strain Gage, (12) 4 to 20 mA Analog Outputs and 24 VDC power supply. Also requires Profibus Master in I/O rack to talk to (3) Variable Frequency Drives. Ethernet communications is also required to connect to HMIs.

Redundant Controllers Configuration

Backplane Slots Required	Power Supply Current Required (mA)	Qty	Part Number	Description
2 slots per Universal Base	1250 mA @ 3.3 VDC; 1000 mA @ 5 VDC	2	IC695CMU310	Redundant Controller, CPU with two built-in serial ports
1 slot per Universal Base		2	IC695PSD040	24 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	2	IC695CHS012	12 Slot Universal Base
2 slots per Universal Base	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	4	IC695ETM001	Ethernet module 10/100Mbits
		1	IC646MXN001	Redundant Controller configuration software. Max-ON Extended Software for PACSystems Rx3i Hot Standby Redundancy

Note: The above configuration has two separate racks. Each rack has its own power supply, redundant CPU, Ethernet communications to remote I/O and another Ethernet module for LAN connections to HMIs. GE highly recommends that the Ethernet I/O be separated from the enterprise network to minimize data traffic issues.

I/O for Redundant Controllers

3 on Universal Base (2 for the NIU and 1 for the Ethernet Module)	1250 mA @ 3.3 VDC; 1000 mA @ 5 VDC	1	IC695NKT001	Ethernet Remote I/O Expansion Kit. Kit includes a IC695NIU001 and a IC695ETM001
1 on Universal Base		1	IC695PSD040	24 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	1	IC695CHS016	16 Slot Universal Base
4 expansion base slots	1200 @ 5 VDC	4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
2 expansion base slots	600 mA @ 5 VDC	2	IC694MDL754	Discrete Output Module, 24 VDC Output with ESCP, 32 points (Requires terminal block)
2 expansion base slots	35 mA @ 5 VDC; 110 mA @ 24 VDC Relay	2	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
2 on Universal Base	700 mA @ 3.3 VDC; 800 mA @ 5 VDC	2	IC695ALG600	Universal Analog Input module, supports Thermocouple, RTD, Voltage, Current and Strain Gage, 8 channels (Requires terminal block)
2 on Universal Base	750 mA @ 3.3 VDC	2	IC695ALG708	Analog Output module, supports voltage and current, 8 channels (Requires terminal block)
1 on Universal Base	420 mA @ 5 VDC	1	IC695PBM300	Profibus Master module, supports V1
	150 mA @ 5 VDC	1	IC694CHS392	High Speed Serial 10 slot expansion rack (Only IC694xxx modules can go in rack)
		1	IC694PWR331	24 VDC Power Supply for High Speed Serial base,
		1	IC693CBL312	Rack Expansion Cable, 0.15 meters
		1	IC693ACC307	I/O Bus Terminator Plug
	132 mA @ 5 VDC	1	IC695LRE001	Universal Base High Speed Serial expansion module (Module does not occupy an I/O slot)
		10	IC694TBB032	Terminal Block, Box Style
		1	BC646MPP001	Logic Developer - PLC Professional
9 slots on Universal base and 8 slots of standard base	In the above configuration, all of the modules can not go into one base. Therefore the I/O modules are divided into two bases. The IC695xxx part numbers will be used on the Universal base and the IC694 part numbers will use the standard high speed serial bus base. The Universal base can accept both IC695xxx and IC694xxx modules but the standard base will only accept IC694xxx and IC693xxx modules. Total current from Universal base power supply: 2460 mA @ 5 VDC; 3300 @ 3.3 VDC. Only one power supplied needed. Total current from Standard base power supply: 1985 mA @ 5 VDC; 110 mA @ 24 VDC			

Options to Consider

IC695PSD140	Multipurpose 24 VDC power supply. By adding two IC665PSD140 the system would have redundant power supplies for maximum availability on the Un.
IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
IC693ACC302	Long term battery for CPU
IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

α and β*i* Series Servo Amplifiers

All Digital Servo Systems Offer High Performance and Reliability. FANUC HV*i*s and β*i* Series Servo Drives, based on over five million axes installed worldwide, offer superior reliability and performance for unprecedented mean time between failure. The HV*i*s and β*i* Series Servos are available in a wide range of ratings for use with the PACMotion motion controller.

High-Performance Serial Encoders

Standard serial encoders built into the motors provide exceptional feedback resolution of 64K or 128K counts per revolution for *i*s Series motors and one million counts per revolution for HV*i*s Series motors. Serial encoders support higher resolutions at high motor velocities than standard quadrature encoders and are more immune to noise. An optional battery connection provides absolute position feedback, eliminating the need to home the system after a power shutdown.

Reduced Tuning and Setup

There is no need for potentiometer tuning or personality modules; little tuning is required for properly sized drives. All drive parameters are stored in the controller in a standard motor database. Configuration settings are not stored in the drive, making it possible to replace drives with little set-up time. Stored drive and machine parameters are quickly transferred to repeat production machines.

All-Digital System

All control loops—current, velocity, and position—are closed in the GE PACMotion controller. High-speed microprocessors and/or digital signal processors (DSPs) in the controller provide loop update times of 250 µs. The high response servo system can compensate for machine design limitations, yielding faster acceleration/deceleration rates and better responses to load changes.

Series	Motor Series	Controllers	Command Interface	Continuous Torque Range		Power Supply
				In-lb	Nm	
α*i*HV	α*i*HV, α*i*HV*i*s	PMM335	Fiber Optic	195-664	22-75	Separate PSM
β*i*	β*i*s	PMM335	Fiber Optic	3.5-177	0.4-20	Built-in
β*i*HV	β*i*HVs	PMM335	Fiber Optic	17.7-177	2-20	Built-in

All-Digital Servo Command Signals

The PMM335 PACMotion Controller and β*i* or α*i* Series amplifiers use a high speed fiber optic command interface. This digital interface improves efficiency by varying the on-time of the transistor switches that control motor voltage and current. With its superior noise immunity, both of these FANUC digital command interfaces allows for an increased signal to noise ratio for improved accuracy and performance.

Agency Approvals

UL, IEC rating and CE mark compliant

INFO

For application, installation, and tuning information, consult the Services website at www.ge-ip.com.

VersaMotion

VersaMotion is a family of servo motors and amplifiers that can easily be connected to the RX3i DSM 314. The VersaMotion amplifier supports high speed pulse and direction commands from the controllers. The VersaMotion servo drive is simple to use and maintain with the added diagnostics and removable terminal strips. Amplifier setup can be accomplished using the VersaMotion software included with Proficy Machine Edition or using the convenient front panel keypad.

Key Features:

- Versatile analog or pulse command interface
- Position/Speed/Torque modes
- Dual control modes
- Internal single-axis position control
- Electronic gearing
- External JOG function
- Speed/Torque limit operation
- Built-in keypad/display for setup and diagnostics
- Motor settling time below 1 ms
- Low speed stability and performance: less than 0.5% error at 1 RPM
- 10msec acceleration time from running without load -/+ 3000 RPM
- High speed inertia corrections (16 levels of system stiffness and responsiveness)

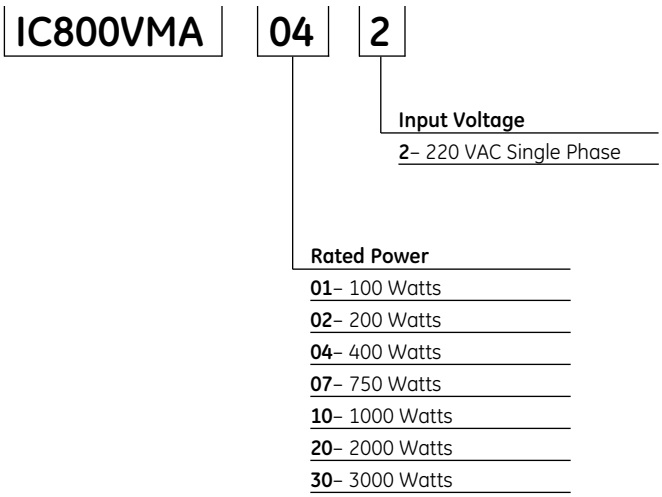
Built-in Functions:

- Point-to-Point single axis position control
- Simple stand-alone positioning function with 8 internal stored position settings
- Move to Home function
- Position Teaching capability
- Incremental encoder feedback (2500 ppr)
- User-definable Acceleration/Deceleration with jerk limiting (s-curve)
- Feed step control function
- Modbus Slave serial port (RS-485/RS-422) for reading and writing parameters from Machine Edition

Machine Edition VersaMotion Set-up Features:

- Configuration Parameter Editor (clear, read, write functions) and initial configuration wizard
- Calculation tools to determine proper conversion from encoder counts to desired user programming units
- Three channel digital oscilloscope to display and record drive status on-line
- Alarm history and status monitor diagnostic screens
- Digital I/O set-up and monitoring

Servo Amplifier Part Number Sequence



Example: IC800VMA042 is a 400 watt 220 VAC servo amplifier

Amplifiers Technical Data

Permissible Frequency Fluctuation	50 / 60 Hz +/-5%
Resolution/Quadrature Feedback Counts	2500 ppr /10000 cpr
Control Modes	Position/Velocity/Torque
Dynamic Brake	Built-in
Position Control Mode:	
Maximum Input Pulse Frequency	500KPPS (Line Driver) / Maximum 200KPPS (Open Collector)
Pulse Type	Pulse/Direction; CW/CCW; A/B Phase
Command Source	External pulse train/ Internal parameters
Torque Limit Operation	Yes
Feed Forward Compensation	Yes
Analog Commands: Voltage Range	0 to +/-10 VDC
Torque and Velocity Control Mode: Command Source	External analog signal / Internal parameters
Speed Control Range	1:5000
Speed Control Frequency Response	Maximum 450 Hz
Torque Control Mode Permissible Time for Overload	8 seconds under 200% rated output
Communications Interface	RS-232 / RS-485 /RS-422
Environmental Altitude	Altitude 1000 meters above sea level or lower
Environmental Operating Temperature	0 to 55°C (Forced cooling for operation above 55°C)
Environmental Storage Temperature	-20°C to 65°C
Environmental Humidity	0 to 90% (Non condensing)
Vibration	<20 Hz: 9.8 m/sec/sec (1G); 20 to 50 Hz: 5.88 m/sec/sec (0.6 G)
Standards	IEC/EN 61800-5-1, UL 508C, TUV, C-tick

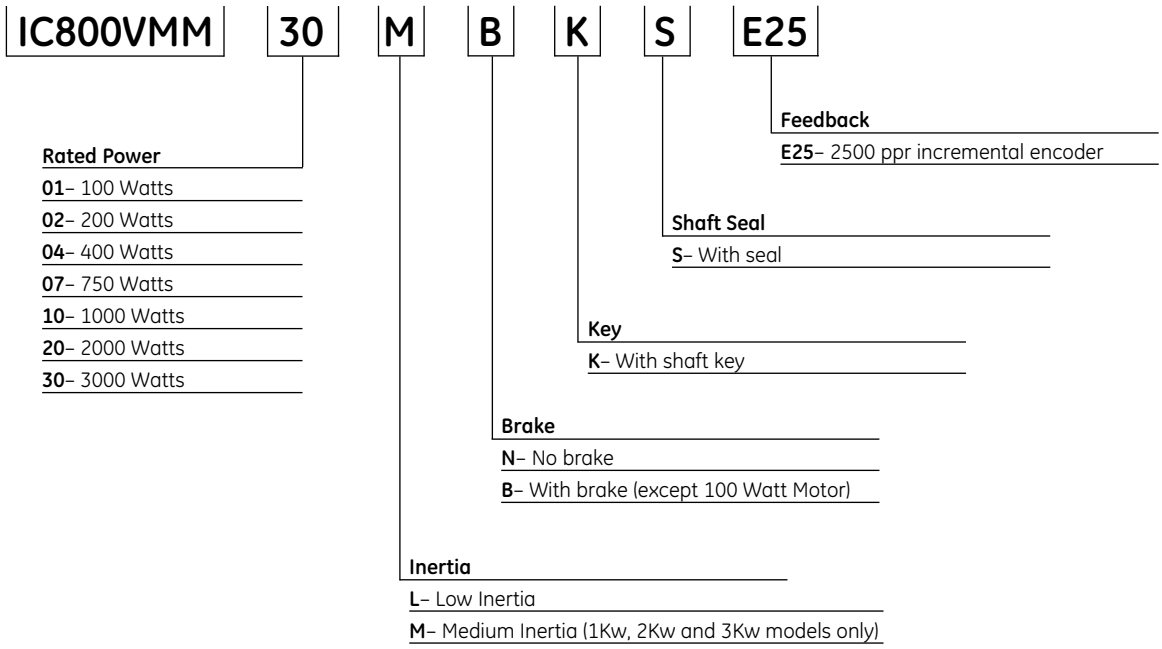
Amplifiers

The VersaMotion family of servo amplifiers offers a cost effective solution for a broad range of motion applications. These versatile amplifiers support simple stand-alone positioning capability using up to 8 stored motion profiles or can be connected to any motion controller using an analog or pulse command interface. A built-in touchpad and display provides convenient access to configuration parameters and system information. The serial interface supports multi-drop system configurations and Modbus communication protocol.

	IC800VMA012	IC800VMA022	IC800VMA042	IC800VMA072
Product Name	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**
Rated Output Power	100W	200W	400W	750W
Voltage/Frequency	Three-phase or Single-phase 220 VAC 50/60 Hz	Three-phase or Single-phase 220 VAC 50/60 Hz	Three-phase or Single-phase 220 VAC 50/60 Hz	Three-phase or Single-phase 220 VAC 50/60 Hz
Permissible Voltage Fluctuation	Three-phase: 170 ~ 255 VAC Single-phase: 200 ~ 255 VAC	Three-phase: 170 ~ 255 VAC Single-phase: 200 ~ 255 VAC	Three-phase: 170 ~ 255 VAC Single-phase: 200 ~ 255 VAC	Three-phase: 170 ~ 255 VAC Single-phase: 200 ~ 255 VAC
Cooling System	Convection	Convection	Convection	Fan Cooling
Electronic Gear Ratio	Gear Ratio = N/M where N 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)

	IC800VMA102	IC800VMA202	IC800VMA302
Product Name	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**
Rated Output Power	1KW	2KW	3KW
Voltage/Frequency	Three-phase or Single-phase 220 VAC 50/60 Hz	Three-phase 220 VAC 50/60 Hz	Three-phase 220 VAC 50/60 Hz
Permissible Voltage Fluctuation	Three-phase: 170 ~ 255 VAC Single-phase: 200 ~ 255 VAC	Three-phase: 170 ~ 255 VAC 50/60 Hz	Three-phase: 170 ~ 255 VAC 50/60 Hz
Cooling System	Fan Cooling	Fan Cooling	Fan Cooling
Electronic Gear Ratio	Gear Ratio = N/M where N 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Electronic gear N/M multiple N: 1~32767, M: 1:32767 (1/50<N/M<200)

Servo Motor Part Number Sequence



Example: IC800VMM30MBKSE25 is a 3000 watt medium Inertia motor with 2500 ppr encoder, brake, keyway and shaft seal.

Motors Technical Data

Insulation Class	Class B
Insulation Resistance	>100M ohm, 500 VDC
Insulation Strength	1500 VAC, 50Hz, 60 seconds
Vibration Grade (um)	15
Brake Power (VDC)	24
Operating Temperature (C)	0°~40°
Storage Temperature (C)	-10°~80°
Humidity	20~90%RH (non condensing)
Vibration	2.5G
IP Rating	IP65 (except shaft and connector)

Motors

The VersaMotion family of servo motors offers high servo performance in a compact package. The motors range from 100 W to 3 kW with continuous torque ratings from 0.3 Nm to 14.3 Nm. All motors have metric mounting configurations and include a shaft key and oil seal. For vertical axes or applications that need to hold position during power loss motors with 24 VDC holding brakes are available. Motors are matched with the VersaMotion amplifiers.

	IC800VMM01L	IC800VMM02L	IC800VMM04L	IC800VMM07L
Product Name	**VersaMotion 100 Watt**	**VersaMotion 200 Watt**	**VersaMotion 400 Watt**	**VersaMotion 750 Watt**
Rated Output (kW)	0.1	0.2	0.4	0.75
Rated Torque (Nm)	0.32	0.64	1.27	2.39
Maximum Torque (Nm)	0.96	1.92	3.82	7.16
Rated Speed (RPM)	3000	3000	3000	3000
Maximum Speed (RPM)	5000	5000	5000	5000
Rated Current (Amps)	0.9	1.55	2.6	5.1
Maximum Current (Amps)	2.7	4.65	7.8	15.3
Rotor Moment of Inertia ($Kg.m^2 \times 10^{-4}$)	0.037	0.177	0.277	1.13
Mechanical Time Constant (msec)	0.75	0.8	0.53	0.63
Torque Constant - KT (Nm)	0.36	0.41	0.49	0.47
Voltage Constant - KE (mV/rmp)	13.6	16	17.4	17.2
Armature Resistance (Ohm)	9.3	2.79	1.55	0.42
Armature Inductance (mH)	24	10.84	6.84	3.53
Electrical Time Constant (msec)	2.58	3.89	4.43	8.37
Maximum Radial Shaft Load (Newton)	78.4	196	196	245
Maximum Thrust Shaft Load (Newton)	39.2	68	68	98

Motors

The VersaMotion family of servo motors offers high servo performance in a compact package. The motors range from 100 W to 3 kW with continuous torque ratings from 0.3 Nm to 14.3 Nm. All motors have metric mounting configurations and include a shaft key and oil seal. For vertical axes or applications that need to hold position during power loss motors with 24 VDC holding brakes are available. Motors are matched with the VersaMotion amplifiers.

	IC800VMM10L	IC800VMM10M	IC800VMM20L	IC800VMM20M	IC800VMM30M
Product Name	**VersaMotion 1000 Watt**	**VersaMotion 1000 Watt**	**VersaMotion 2000 Watt**	**VersaMotion 2000 Watt**	**VersaMotion 3000 Watt**
Rated Output (kW)	1.0	1.0	2.0	2.0	3.0
Rated Torque (Nm)	3.18	4.77	6.37	9.55	14.32
Maximum Torque (Nm)	9.54	14.32	19.11	28.66	42.96
Rated Speed (RPM)	3000	2000	3000	2000	2000
Maximum Speed (RPM)	5000	3000	5000	3000	3000
Rated Current (Amps)	7.3	5.6	11.3	11.0	16.1
Maximum Current (Amps)	21.9	24.9	33.9	33.0	48.3
Rotor Moment of Inertia ($Kg.m^2 \times 10^{-4}$)	2.65	9.14	4.45	15.88	55
Mechanical Time Constant (msec)	0.74	1.64	0.66	1.05	1.06
Torque Constant - KT (Nm/A)	0.44	0.85	0.53	0.87	0.89
Voltage Constant - KE (mV/rpm)	16.8	31.9	19.2	31.8	32
Armature Resistance (Ohm)	0.20	0.465	0.14	0.174	0.052
Armature Inductance (mH)	2.0	5.99	1.53	2.76	1.38
Electrical Time Constant (msec)	10.26	12.88	10.63	15.86	26.39
Maximum Radial Shaft Load (Newton)	490	490	490	490	1470
Maximum Thrust Shaft Load (Newton)	98	98	98	98	490
Amplifier Model	IC800VMA102	IC800VMA102	IC800VMA202	IC800VMA202	IC800VMA302

VersaMotion Accessories

Amplifier Connectors

IC800VMACONCN1	CN1 I/O Connector
IC800VMACONCN2	CN2 Encoder Connector
IC800VMACONCN3	CN3 Communication Connector
IC800VMACONACP	AC Power Connector (100W to 1kW models only)
IC800VMACONMTRP	Motor Power Connector (100W to 1kW models only)
IC800VMADBR001	External Braking Resistor Connector (100W to 1kW models only)

Motor Connectors

IC800VMMCONP001	Motor Power Connector for 100 Watt to 750 Watt motors without brake
IC800VMMCONP002	Motor Power Connector for 100 Watt to 750 Watt motors with brake
IC800VMMCONP003	Motor Power Connector for 1000 Watt or 2000 Watt motors with or without brake
IC800VMMCONP004	Motor Power Connector for 3000 Watt motors with or without brake
IC800VMMCONE001	Encoder Connector for 100 Watt to 750 Watt motors
IC800VMMCONE002	Encoder Connector for 1000 Watt and larger motors

Motor Power Cables

IC800VMCP030	Power Cable for 100 Watt to 750 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP050	Power Cable for 100 Watt to 750 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP100	Power Cable for 100 Watt to 750 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP200	Power Cable for 100 Watt to 750 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP1030	Power Cable for 1000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP1050	Power Cable for 1000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP1100	Power Cable for 1000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP1200	Power Cable for 1000 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP2030	Power Cable for 2000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP2050	Power Cable for 2000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP2100	Power Cable for 2000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP2200	Power Cable for 2000 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP3030	Power Cable for 3000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP3050	Power Cable for 3000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP3100	Power Cable for 3000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP3200	Power Cable for 3000 Watt servo motor without brake, 20 m (65.7 feet)

Brake and Motor Power Cables

IC800VMCB030	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB050	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB100	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB200	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB1030	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB1050	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB1100	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB1200	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB2030	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB2050	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB2100	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB2200	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB3030	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB3050	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB3100	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB3200	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 20 m (65.7 feet)

Encoder Cables

IC800VMCE030	Encoder Cable for 100 to 750 Watt, 3 m (9.8 feet)
IC800VMCE050	Encoder Cable for 100 to 750 Watt, 5 m (16.4 feet)
IC800VMCE100	Encoder Cable for 100 to 750 Watt, 10 m (32.8 feet)
IC800VMCE200	Encoder Cable for 100 to 750 Watt, 20 m (65.7 feet)
IC800VMCE1030	Encoder Cable for 1000 Watt and greater, 3 m (9.8 feet)
IC800VMCE1050	Encoder Cable for 1000 watt and greater, 5 m (16.4 feet)
IC800VMCE1100	Encoder Cable for 1000 watt and greater, 10 m (32.8 feet)
IC800VMCE1200	Encoder Cable for 1000 watt and greater, 20 m (65.7 feet)

I/O Terminal Block

IC800VMTBC005	I/O Terminal Block Breakout Board and 0.5 m (1.6 feet) Cable

External Braking Resistors

IC800VMBR040	40 Ohm, 400 Watt External Braking (Regeneration) Resistor
IC800VMBR020	20 Ohm, 1000 Watt External Braking (Regeneration) Resistor

Communications and I/O Interface Cables

IC800VMCS030	Communications Cable from servo amplifier to PC, 3 m (9.8 feet)
IC800VMCI010	Flying lead I/O interface cable, 1 meter
IC800VMCI030	Flying lead I/O interface cable, 3 meter

Software Configuration Tool

IC646MPM101	Proficy Logic Developer - PLC Nano/Micro and VersaMotion, Programming Cable (No Upgrades included)
BC646MPM101	Proficy Logic Developer - PLC Nano/Micro and VersaMotion, Programming Cable (Includes 15 months of upgrades)

Examples of Typical Application using a PACSystems RX3i

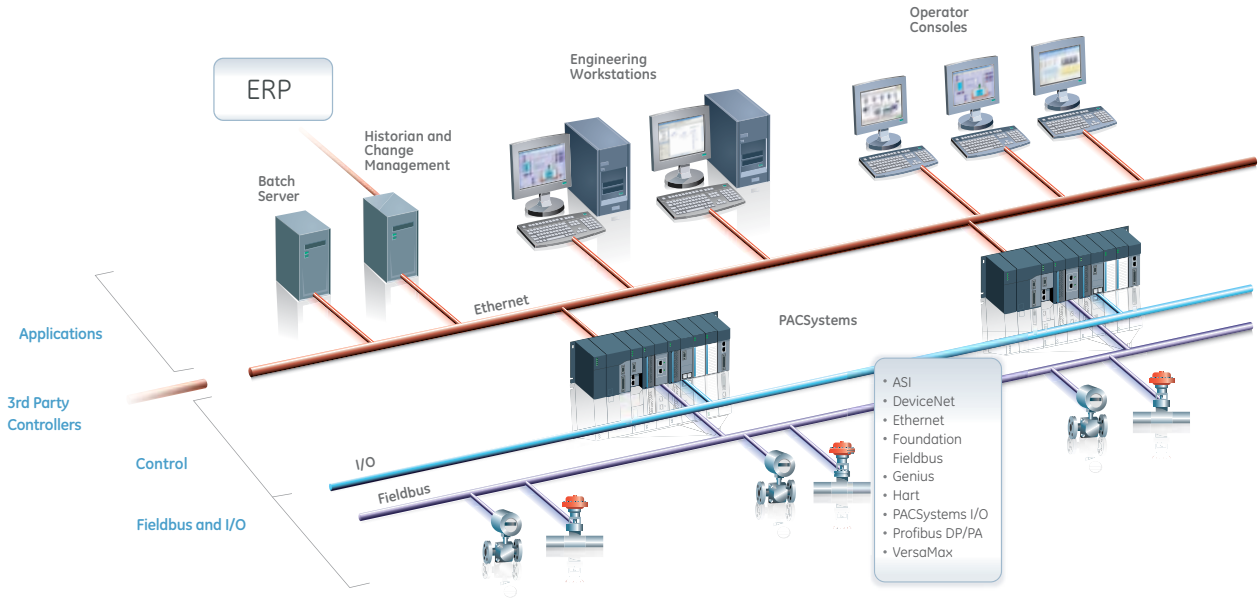
Application: 1000 Watt Low Inertia Motor with Brake. Configuration for Controller (Example application requiring (120) 24 VDC inputs and (80) Relay outputs AC power supply)

Qty	Part Number	Description
		Controller, I/O and Display
1	IC695CPU310	CPU with two built-in serial ports
1	IC695PSA040	120/240 VAC, 125 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
1	IC695CHS016	16 Slot Universal Base
4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
5	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included)
4	IC694TBB032	Terminal Block, Box Style
1	IC693DSM314	Servo Motion Module, 4 analog axes supported per module
1	IC693ACC336	DSM Analog Servo Interface Terminal Board
1	IC693CBL324	DSM Analog TB Interface Cable, 1 m (3.28 feet)
1	IC800VMCI010	VersaMotion flying lead I/O interface cable, 1 m (3.28 feet)
		Servo Amplifier and Motor
1	IC800VMM10LBKSE25	VersaMotion 1000 Watt Low Inertia Servo Motor with brake. Motor has keyway and oil seal
1	IC800VMA102	Servo Amplifier, 1000 Watts, 220 VAC
1	IC800VMCB1030	Brake and Power Cable for 1000 Watt servo motor with brake, 3 m (9.8 feet)
1	IC800VMCE1030	Encoder Cable for 1000 Watt and greater, 3 m (9.8 feet)
1	IC800VMTBC005	I/O Terminal Block and Cable (0.5 meters)
1	IC800VMCS030	Communications Cable from Servo Driver to PC, 3 m (9.8 feet)
		Programming Software for Control, Display and Motion
1	BC646MPP001	Machine Edition Professional Development Suite with Proficy GlobalCare Complete. Includes VersaMotion configuration tool, View Development for QuickPanel and PLC Standard with programming cable. Proficy GlobalCare with 15 months of free upgrades which is renewable on an annual basis.

Notes

Proficy Process Systems Overview

Proficy Process Systems is a state-of-the-art, scalable, fully-integrated system for process automation and control. It provides the hardware and software needed for a complete process control system. Whether your business has continuous or batch oriented process control needs, Proficy Process Systems will deliver results. Based on contemporary, yet well proven technologies, Proficy Process Systems combines the power of traditional DCS systems with the flexibility, freedom and affordability of a PLC-based approach.



Architecture Overview

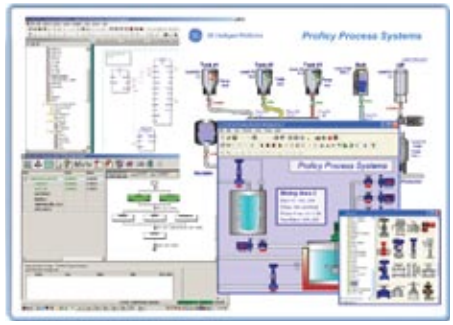
The Proficy Process Systems architecture is designed to provide a modular and expandable system to meet your most demanding process control needs. Proficy Process Systems can uniquely range from a small, one-machine architecture to a large, multi-machine architecture. This approach means you can start small and expand your system over time, at your pace. The system consists of several layers.

Applications Layer

The Applications Layer contains the software that powers the information capabilities of Proficy Process Systems, featuring:

Engineering Workstation

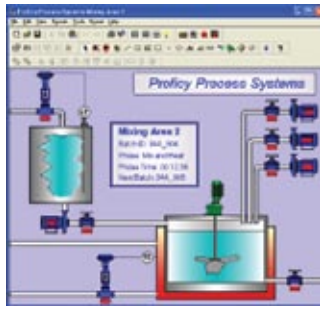
This is where you design, create, and maintain your system's configuration. With an advanced Logic Developer, you can create your control strategies in Function Blocks, Ladder Logic, or Structured Text for the PACSystems controllers.



Engineering Workstation

Operator Console

This is where your operators monitor and control the process. Choose between our two industry leading HMI/SCADA visualization technologies for your system – CIMPLICITY* or iFIX*. The consoles communicate with the PACSystems controllers through our Global Namespace.



Operator Console

Historian

The Historian is designed specifically for handling process data. It provides high performance storage and retrieval with sub-second collection and millisecond time-stamping.

Change Management

Change Management provides version control for your process control strategies, including audit trail capabilities.

Batch Execution

Batch Execution is the perfect option for batch-oriented processes. With advanced batch management, formulation management, batch direct, and tight linkage with our Batch Analysis option, you can optimize campaigns and batch runs.

ERP Connectivity

GE Intelligent Platforms have closed the gap between automation and information with our Proficy Production Management software products and ERP connector. Now you can link your control system to your business systems to truly drive operational excellence in your business.

Controllers

The PACSystems RX7i and RX3i give Proficy Process Systems its flexibility, featuring a common engine which allows you to take programs that are created in one controller and easily move them to another.

Proficy Process Systems also features Control Memory Exchange, a breakthrough technology incorporated from GE's Embedded Systems Business. Through high-speed fiber optics, Control Memory Exchange allows data in one controller to be exchanged and shared with another controller at over a 2 giga baud rate. This allows you to synchronize controllers for distributed control, or reflect the memory state of one controller to another for redundant operations.

PACSystems RX7i

PACSystems RX3i

Fieldbus and I/O

GE has always taken an open approach with our products and technologies. We provide our customers with the best possible technology and give them the freedom to work with the devices and instruments of their choice.

Proficy Process Systems continues with that tradition. We understand that when it comes to process control, there are several choices for Fieldbuses. That's why we chose an Open Fieldbus approach to our system which supports the major Fieldbuses including:

- Foundation Fieldbus
- Profibus™
- Hart
- AS-I Interface
- Ethernet

We also provide you with a comprehensive portfolio of I/O, allowing you to choose the right strategy to meet your needs. Through OPC, native drivers, and by teaming with companies that specialize in Fieldbus and I/O connectivity, we can satisfy your connectivity needs – putting you in control of your Fieldbus strategy.

Product Selection Guide

Notes on Part Numbers and GlobalCare

- Support must be quoted on all new Proficy Process Systems
- Change IC prefix to GC for 15 months of GlobalCare Support

Notes on Licensing

- All Process Systems Licenses are based on Hardware Keys
- System architecture (number of nodes and types) is required at time of order to ensure correct license key manufacture

Proficy Process Systems Products

Proficy Process Systems

		Includes			
	Part Number	Engineering Workstation	Operator Console	Historian	Change Management
Proficy Process Systems with iFIX and GlobalCare					
Proficy Process Systems - iFIX - 500 I/O	BC647PSF050	1	1	500 Tag	1
Proficy Process Systems - iFIX - 1000 I/O	BC647PSF100	1	1	1000 Tag	1
Proficy Process Systems - iFIX - 2000 I/O	BC647PSF200	1	1	2000 Tag	1
Proficy Process Systems - iFIX - 3000 I/O	BC647PSF300	1	1	3000 Tag	1
Proficy Process Systems - iFIX - 5000 I/O	BC647PSF500	1	1	5000 Tag	1
Proficy Process Systems - iFIX - 5000+ I/O	BC647PSF000	1	1	5000+ Tag	1
Proficy Process Systems with CIMPLICITY and Global Care					
Proficy Process Systems - CIMPLICITY - 500 I/O	BC647PSC050	1	1	500 Tag	1
Proficy Process Systems - CIMPLICITY - 1000 I/O	BC647PSC100	1	1	1000 Tag	1
Proficy Process Systems - CIMPLICITY - 2000 I/O	BC647PSC200	1	1	2000 Tag	1
Proficy Process Systems - CIMPLICITY - 3000 I/O	BC647PSC300	1	1	3000 Tag	1
Proficy Process Systems - CIMPLICITY - 5000 I/O	BC647PSC500	1	1	5000 Tag	1
Proficy Process Systems - CIMPLICITY - 5000+ I/O	BC647PSC000	1	1	5000+ Tag	1

Product Options

Used to add additional users to your system beyond those included with the base packages above

	Part Number
Additional Engineering Workstation - iFIX	BC647PPSEWF
Additional Engineering Workstation - CIMPLICITY	BC647PPSEWC
Additional Operator Console - iFIX	BC647PPSOCF
Additional Operator Console - CIMPLICITY	BC647PPSOCC
Proficy Process Systems EGD OPC Server	BC647PPSOPC

Complementary Products

These products can be used to expand the capabilities of your Process Systems

Change Management

	Part Number
Change Management 1 user	IC646PCM001
Change Management 5 users	IC646PCM005
Change Management 10 users	IC646PCM010
Change Management 25 users	IC646PCM025
Change Management Scheduler	IC646PCMSCH

Batch

	Part Number
Batch Server Small	IC647BSS000
Batch Server Medium	IC647BSM000
Batch Server Large	IC647BSL000
Batch Developer	IC647BSD000
Batch Client	IC647BSC999

Series 90-70 PLCs

GE Intelligent Platforms' Series 90-70 PLC provides a comprehensive solution that is equal to the most demanding applications. With our CPX family of CPUs, the Series 90-70 offers more for your automation dollar–more computing power, more memory for your applications, and more communications and redundancy capabilities. And with a wide range of isolated and high-density VME analog I/O modules, the Series 90-70 provides even more flexibility for a variety of applications.

The Series 90-70 Features

- Open architecture based on the VME-bus standard
- Redundancy for critical applications when combined with Genius I/O – Genius Modular Redundancy (GMR) systems and Hot Standby systems
- A wide variety of communications options including Ethernet TCP/IP, reflective memory, Genius LAN and serial communications modules

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

CPUs pages 102-103
Power Supplies page 106
I/O Interface Modules page 114
Specialty Modules page 116
Accessories page 117
Racks pages 104-105
Communications Modules page 115
Discrete I/O Modules (input) pages 107-109
Discrete I/O Modules (output) pages 111-112
Analog I/O Modules (input) page 110
Analog I/O Modules (output) page 113

Publication Reference Chart

GFK-0262	Series 90-70 Programmable Controller Installation Manual
GFK-0265	Series 90-70 PLC Reference Manual
GFK-0448	Series 90-70 Programmable Controller User's Guide to the Integration of 3rd Party VME Modules
GFK-0582	Series 90 PLC Serial Communications User's Manual
GFK-0600	Series 90-70 Programmable Controller Datasheets Manual
GFK-0646	C Programmer's Toolkit for Series 90-70 PLCs User's Manual
GFK-0868	Series 90 Ethernet Communications User's Manual
GFK-1527	Series 90-70 Enhanced Hot Standby CPU Redundancy User's Guide
GFK-1541	TCP/IP Ethernet Communications for the Series 90 PLC User's Manual
GFK-2017	Series 90-70 Genius Bus Controller

CPUs

Series 90-70 CPUs feature various memory sizes, performance capabilities and advanced functionalities, such as software configuration of data and program memory. The highest performance CPUs are based on the latest 486DX4 microprocessor, which supports redundant operations. Series 90-70 CPUs can handle up to 12K of I/O, while providing as much as 6 Mbytes of battery-backed memory in the same slot. In addition, some modules contain 256K of non-volatile user flash memory for added protection of your data and programs.

	IC697CPX772	IC697CPX782	IC697CPX928	IC697CPX935
Product Name	**Central Processing Unit, 96 MHz, 32-Bit, Floating Point, 512 Kbytes On-Board User Memory; 256K of Built-In Flash Memory**	**Central Processing Unit, 96 MHz, 32-Bit, Floating Point, 1 Mbyte On-Board User Memory; 256K of Built-In Flash Memory**	**Central Processing Unit, 96 MHz, 32-Bit, Floating Point, 6 Mbytes On-Board User Memory (requires 70 CFM forced air cooling); 256K of Built-In Flash Memory**	**Central Processing Unit, 96 MHz, 32-Bit, Floating Point, 1 Mbyte On-Board User Memory (requires 70 CFM forced air cooling); 256K of Built-In Flash Memory**
CPU Type	Standard	Standard	Standard	Standard
CPU Memory	512 Kbytes of User Logic RAM	1 Mbyte of Slow Memory User Logic RAM	6 Mbytes of Medium Memory User Logic RAM	1 Mbyte of Fast Memory User Logic RAM
Non-Volatile User Flash Memory	Yes (256 Kbytes)	Yes (256 Kbytes)	Yes (256 Kbytes)	Yes (256 Kbytes)
Floating Point Math	Yes	Yes	Yes	Yes
Processor Speed	96 MHz (80486DX4)	96 MHz (80486DX4)	96 MHz (80486DX4)	96 MHz (80486DX4)
I/O Discrete Points	2048	12288	12288	12288
Boolean Execution Speed (us/boolean function)	0.4	0.4	0.4	0.4
Analog I/O	8 Kbytes	8 Kbytes	8 Kbytes	8 Kbytes
Embedded Communications	Serial	Serial	Serial	Serial
Protocols Supported	SNP Serial	SNP Serial	SNP Serial	SNP Serial
Built-in Serial Ports	3 (RS-232, 2 RS-485 optocoupler isolated/non isolated)	3 (RS-232, 2 RS-485 optocoupler isolated/non isolated)	3 (RS-232, 2 RS-485 optocoupler isolated/non isolated)	3 (RS-232, 2 RS-485 optocoupler isolated/non isolated)
Redundancy Featured Scan Extension	N/A	N/A	N/A	N/A
Current Required from 5V Bus	3.1 Amps	3.1 Amps	3.1 Amps	3.1 Amps

CPUs

Series 90-70 CPUs feature various memory sizes, performance capabilities and advanced functionalities, such as software configuration of data and program memory. The highest performance CPUs are based on the latest 486DX4 microprocessor, which supports redundant operations. Series 90-70 CPUs can handle up to 12K of I/O, while providing as much as 6 Mbytes of battery-backed memory in the same slot. In addition, some modules contain 256K of non-volatile user flash memory for added protection of your data and programs.

	IC697CGR772	IC697CGR935	IC697CPM790
Product Name	**Central Processing Unit for CPU Redundancy Applications, 96 MHz, 32-Bit, Floating Point, 512 Kbytes On-Board User Memory**	**Central Processing Unit for CPU Redundancy Applications, 96 MHz, 32-Bit, Floating Point, 1 Mbyte On-Board User Memory**	**Central Processing Unit, 64 MHz, 32-Bit, Floating Point, 1 Mbyte On-Board User Memory, (requires 70 CFM forced air cooling)**
CPU Type	Redundant (CPU Hot Standby)	Redundant (CPU Hot Standby)	Redundant (Genius Triple Modular)
CPU Memory	512 Kbytes of User Logic RAM	1 Mbyte of User Logic RAM	1 Mbyte of User Logic RAM
Non-Volatile User Flash Memory	No	No	No
Floating Point Math	Yes	Yes	Yes
Processor Speed	96 MHz (80486DX4)	96 MHz (80486DX4)	64 MHz (80486DX2)
I/O Discrete Points	2048	12288	12288
Boolean Execution Speed (us/boolean function)	0.4	0.4	0.4
Analog I/O	8 Kbytes	8 Kbytes	8 Kbytes Input, 8 Kbytes Output
Embedded Communications	Serial	Serial	Serial
Protocols Supported	SNP Serial	SNP Serial	SNP Serial
Built-in Serial Ports	3 (RS-232, 2 RS-485 optocoupler isolated/non isolated)	3 (RS-232, 2 RS-485 optocoupler isolated/non isolated)	1 (RS-422/485 compatible serial attachment)
Redundancy Featured Scan Extension	5.9 ms	4.7 ms	N/A
Current Required from 5V Bus	3.1 Amps	3.1 Amps	1.6 Amps

Racks

Series 90-70 PLC Racks are available in a variety of configurations to the meet the needs of your application. The choices vary from 5- and 9-slot Standard Racks, to 9-slot Redundant Racks and 17-slot VME Integrator Racks, each giving you the option of Front (Rack) Mount or Rear (Panel) Mount. These racks can be used for CPU, local and remote I/O and accept all plug-in IC697 Power Supplies. With available accessories, any of these racks can function as an Expansion Rack, and two racks can be run off a single Power Supply. GE offers standard-length cables for easy installation and provides wiring information for custom applications.

	IC697CHS750	IC697CHS770	IC697CHS771	IC697CHS790
Product Name	**Standard Series 90-70 Rack, 5-slot, Rear (Panel) Mount**	**Redundant Series 90-70 Rack, 9-Slot, Rear (Panel) Mount**	**Redundant Series 90-70 Rack, 9-Slot, Front (Rack) Mount**	**Standard Series 90-70 Rack, 9-slot, Rear (Panel) Mount**
Rack Type	Standard 90-70	Redundant 90-70	Redundant 90-70	Standard 90-70
Number of Slots	5 Double Width (plus one for power supply)	6 Double Width (plus one for power supply)	6 Double Width (plus one for power supply)	9 Double Width (plus one for power supply)
Mounting Location	Rear (Panel)	Rear (Panel)	Front (Rack)	Rear (Panel)
Rack Configurations	All IC697 PLC module types	All IC697 PLC module types, IC687 (VME) I/O and Communications module types	All IC697 PLC module types, IC687 (VME) I/O and Communications module types	All IC697 PLC module types
Rack Slot Size	1.6 inch	1.6 inch	1.6 inch	1.6 inch
Compatible Power Supplies	Plug-in AC or DC IC697	Plug-in AC/DC and DC IC697, or external power supply	Plug-in AC/DC and DC IC697, or external power supply	Plug-in AC or DC IC697
Dimensions	11.15" x 12.6" x 7.5"	11.15" x 19.00" x 7.5"	11.15" x 19.00" x 7.5"	11.15" x 19.00" x 7.5"

Racks

Series 90-70 PLC Racks are available in a variety of configurations to the meet the needs of your application. The choices vary from 5- and 9-slot Standard Racks, to 9-slot Redundant Racks and 17-slot VME Integrator Racks, each giving you the option of Front (Rack) Mount or Rear (Panel) Mount. These racks can be used for CPU, local and remote I/O and accept all plug-in IC697 Power Supplies. With available accessories, any of these racks can function as an Expansion Rack, and two racks can be run off a single Power Supply. GE offers standard-length cables for easy installation and provides wiring information for custom applications.

	IC697CHS791	IC697CHS782	IC697CHS783
Product Name	**Standard Series 90-70 Rack, 9-slot, Front (Rack) Mount**	**VME Integrator Rack, 17-slot, Rear (Panel) Mount**	**VME Integrator Rack, 17-slot, Front (Rack) Mount**
Rack Type	Standard 90-70	VME Integrator	VME Integrator
Number of Slots	9 Double Width (plus one for power supply)	17 Single Width, 8 DoubleWidth (plus one for power supply)	17 Single Width, 8 Double Width (plus one for power supply)
Mounting Location	Front (Rack)	Rear (Panel)	Front (Rack)
Rack Configurations	All IC697 PLC module types	All IC697 PLC module types, 3rd party VME modules with 0.8" spacing	All IC697 PLC module types, 3rd party VME modules with 0.8" spacing
Rack Slot Size	1.6 inch	0.8 inch	0.8 inch
Compatible Power Supplies	Plug-in AC or DC IC697	Plug-in AC/DC and DC IC697, or external power supply	Plug-in AC/DC and DC IC697, or external power supply
Dimensions	11.15" x 19.00" x 7.5"	11.15" x 19.00" x 7.5"	11.15" x 19.00" x 7.5"

Power Supplies

Series 90-70 Power Supply modules simply slide into the PLC rack just like I/O, and they work with any Series 90-70 CPU. Available with a variety of power ratings and Input Voltage Ranges for powering up systems of different sizes, Series 90-70 power supplies also have built-in protection for autoranging power factor corrections as well as overcurrent and overvoltage fault conditions. Depending on your application, it is possible to use one power supply for operation of two racks.

	IC697PWR710	IC697PWR711	IC697PWR724	IC697PWR748
Product Name	**Power Supply, 120/240 VAC or 125 VDC, 55W**	**Power Supply, 120/240 VAC or 125 VDC, 100W**	**Power Supply, 24 VDC, 90W**	**Power Supply, 48 VDC, 90W**
Module Function	Power Supply	Power Supply	Power Supply	Power Supply
Power Source	120/240 VAC or 125 VDC	120/240 VAC or 125 VDC	24 VDC	48 VDC
Output Source	55 Watts; 5 VDC @ 11 Amps	100 Watts; 5 VDC @ 20 Amps, +12 VDC @ 2 Amps, -12 VDC @ 1 Amp	90 Watts; 5 VDC @ 18 Amps, +12 VDC @ 1.5 Amps, -12 VDC @ 1 Amp	90 Watts; 5 VDC @ 18 Amps, +12 VDC @ 1.5 Amps, -12 VDC @ 1 Amp

Discrete I/O Modules (Input)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL252	IC697MDL253	IC697MDL254	IC697MDL250	IC697MDL240	IC697MDL251
Product Name	**Input 12 VAC**	**Input 24 VAC**	**Input 48 VAC**	**Input 120 VAC**	**Input 120 VAC (Isolated)**	**Input 120 VAC (non-isolated)**
Module Type	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Module Function	Input	Input	Input	Input	Input	Input
Discrete Input Rated Voltage	12 VAC, 47 to 63 Hz Sinusoidal	24 VAC, 47 to 63 Hz Sinusoidal	48 VAC, 47 to 63 Hz Sinusoidal	120 VAC, 47 to 63 Hz Sinusoidal	120 VAC, 60 Hz Sinusoidal	120 VAC, 47 to 63 Hz Sinusoidal
Inputs per Discrete Module	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	32 (four isolated groups of eight inputs each)	16 Individually Isolated Points	16 (four isolated groups of four inputs each)
Discrete Input Current	10 mA (typical) at rated voltage	10 mA (typical) at rated voltage	4.7 mA (typical) at rated voltage	10 mA (typical) at rated voltage (reactive)	10 mA (typical) at rated voltage (reactive)	10 mA (typical) at rated voltage (reactive)
Discrete Input Voltage Range (Vs)	N/A	N/A	N/A	N/A	N/A	N/A
On-State Voltage	7.5 to 15 Volts RMS, 47 to 63 Hz Sinusoidal	13.5 to 30 Volts RMS, 47 to 63 Hz Sinusoidal	33 to 56 Volts RMS, 47 to 63 Hz Sinusoidal	75 to 132 VAC, 47 to 63 Hz Sinusoidal	75 to 132 VAC, 60 Hz Sinusoidal	75 to 132 VAC, 47 to 63 Hz Sinusoidal
Off-State Voltage	0 to 2.5 Volts RMS, 47 to 63 Hz Sinusoidal	0 to 5 Volts RMS, 47 to 63 Hz Sinusoidal	0 to 10 Volts RMS, 47 to 63 Hz Sinusoidal	0 to 25 VAC, 47 to 63 Hz Sinusoidal	0 to 20 VAC, 60 Hz Sinusoidal	0 to 25 VAC, 47 to 63 Hz Sinusoidal
On-State Current	6 mA to 15 mA	6 mA to 15 mA	3 mA to 7 mA	6 mA to 15 mA	8 mA to 15 mA	6 mA to 15 mA
Off-State Current	0 to 2.5 mA (2 mA minimum at 2.5 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 3 mA (2.2 mA minimum at 25 V input)	0 to 4 mA (2.2 mA minimum at 25 V input)	0 to 3 mA (2.2 mA minimum at 25 V input)
Isolation (any input to backplane)	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS
Isolation (between inputs)	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS
Impedance	1.12 Kohms typical	2.6 Kohms typical	10.3 Kohms typical	N/A	N/A	N/A
Filter Delay Time	20 ms typical	20 ms typical	20 ms typical	20 ms typical	20 ms typical	20 ms typical
Proximity Switch Compatible	Yes	Yes	Yes	Yes	Yes	Yes
Current Required from 5V Bus	0.3 Amp	0.3 Amp	0.3 Amp	0.35 Amp	0.25 Amp	0.35 Amp

Discrete I/O Modules (Input)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL241	IC697MDL653	IC697MDL652	IC697MDL654	IC697MDL640	IC697MDL651
Product Name	**Input 240 VAC (Isolated)**	**Input 24 VDC Positive/Negative Logic**	**Input 12 VDC Positive/Negative Logic**	**Input 48 VDC Positive/Negative Logic**	**Input 125 VDC Positive/Negative Logic**	**Input TTL**
Module Type	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Module Function	Input	Input	Input	Input	Input	Input
Discrete Input Rated Voltage	240 VAC, 60 Hz Sinusoidal	24 VDC, Positive/ Negative Logic	12 VDC, Positive/ Negative Logic	48 VDC, Positive/ Negative Logic	125 VDC, Positive/ Negative Logic	5 VDC (No user power required)
Inputs per Discrete Module	16 Individually Isolated Points	32 (four isolated groups of eight inputs each)	32 (four (four isolated groups of eight inputs each)	32 (four (four isolated groups of eight inputs each)	16 (four (four isolated groups of four inputs each)	32 TTL Compatible Inputs
Discrete Input Current	20 mA (typical) at rated voltage (reactive)	10 mA (typical) at rated voltage	4.7 mA (typical) at rated voltage	4.7 mA (typical) at rated voltage	5 mA (typical) at rated voltage	N/A
Discrete Input Voltage Range (Vs)	N/A	(-3 to +30 VDC)	(-2.5 to +15 VDC)	(-3 to +56 VDC)	(-35 to +145 VDC)	(-3 to +7 VDC)
On-State Voltage	160 to 264 VAC, 60 Hz Sinusoidal	13.5 to 30 Volts	7.5 to 15 Volts	33 to 56 Volts	Positive (+90 to +145 Volts), Negative (-20 to -90 Volts)	(-3 to +0.5 Volts)
Off-State Voltage	0 to 40 VAC, 60 Hz Sinusoidal	0 to 5 Volts	0 to 2.5 Volts	0 to 10 Volts	Positive (-35 to +35 Volts), Negative (-35 to 56 Volts)	2 to 7 Volts
On-State Current	10 mA to 15 mA	6 mA to 15 mA	6 mA to 15 mA	3 mA to 7 mA	3 mA to 7 mA	1.7 mA (typical) at rated voltage
Off-State Current	0 to 5 mA (2.2 minimum at 40 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 2.5 mA (2 mA minimum at 2.5 V input)	0 to 2 mA (2 mA minimum at 5 V input)	0 to 2 mA (2 mA minimum at 125 V input)	1.1 mA (maximum)
Isolation (any input to backplane)	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS
Isolation (between inputs)	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	N/A
Impedance	N/A	2.6 Kohms typical	1.12 Kohms typical	10.3 Kohms typical	24.5 Kohms typical	5.9 Kohms, +5%
Filter Delay Time	20 ms typical	1 ms or 10 ms configurable	1 ms or 10 ms configurable	1 ms or 10 ms configurable	1 ms or 10 ms configurable	1 ms or 10 ms configurable
Proximity Switch Compatible	Yes	Yes	Yes	Yes	Yes	No
Current Required from 5V Bus	0.25 Amp	0.3 Amp	0.3 Amp	0.3 Amp	0.3 Amp	0.53 Amp

Discrete I/O Modules (Input)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL671
Product Name	**Interrupt Input (14 Interrupt Points, 2 Configurable Points)**
Module Type	Discrete
Module Function	Input
Discrete Input Rated Voltage	24 VDC, Positive/ Negative Logic
Inputs per Discrete Module	14 interrupts (total of 16 inputs with four groups of four inputs each)
Discrete Input Current	10 mA (typical) at rated voltage
Discrete Input Voltage Range (Vs)	(-3 to +30 VDC)
On-State Voltage	Positive State (+13.5 to +30 Volts), Negative State (-3 to -13.5 Volts)
Off-State Voltage	Positive (-3 to +5 Volts), Negative (-5 to +30 Volts)
On-State Current	6 mA to 15 mA
Off-State Current	0 to 2 mA (2 mA minimum at 5 V input)
Isolation (any input to backplane)	1500 Volts RMS
Isolation (between inputs)	500 Volts RMS
Impedance	2.6 Kohms typical
Filter Delay Time	1 ms or 10 ms configurable
Minimum Pulse Width	With 1 ms Filter Select: 1 ms on and off; With 10 ms Filter Select: 11 ms on and off
Minimum Interrupt Burst (1 ms Filter Selection)	With CPM915: 500 Hz; With CPU731: 290 Hz
Proximity Switch Compatible	Yes
Current Required from 5 V Bus	0.3 Amp

Analog I/O Modules (Input)

GE offers easy-to-use analog modules for PACSystems and Series 90-70, supporting a wide array of control processes. These modules come in various input and output voltages and currents suitable for many different applications including flow and pressure control.

	IC697ALG230	IC697ALG440	IC697ALG441
Product Name	**Analog Input, High Level**	**Analog Expander, Current**	**Analog Expander, Voltage**
Module Type	Analog	Analog	Analog
Module Function	Input	Input	Input
Analog Input Type	Current or Voltage	Current Expander	Voltage Expander
Inputs per Analog Module	8 (individually configurable for voltage or current)	16	16
Analog Input Current	4 to 20 mA	4 to 20 mA	N/A
Analog Input Voltage Range (Vs)	(-10 to +10 Volts)	N/A	(-10 to +10 Volts)
Response Time-On	5.0% 30 ms, 1.0% 42 ms, 0.5% 51 ms, 0.1% 67 ms	5.0% 30 ms, 1.0% 42 ms, 0.5% 51 ms, 0.1% 67 ms	5.0% 30 ms, 1.0% 42 ms, 0.5% 51 ms, 0.1% 67 ms
Impedance	Greater than 10 Mohms at DC, 20 Kohms in series with 0.47 mfd capacitor at AC	Greater than 10 Mohms at DC, 20 Kohms in series with 0.47 mfd capacitor at AC	Greater than 10 Mohms at DC, 20 Kohms in series with 0.47 mfd capacitor at AC
Resolution (Voltage)	312.5 microvolts per LSB step	N/A	312.5 microvolts per LSB step
Resolution (Current)	0.5 microamps per LSB step on 4 to 20 mA	0.5 microamps per LSB step on 4 to 20 mA	N/A
Accuracy of Base Converter (Voltage) 10 Volts	(±0.01% of full scale, ±0.02% of value)	N/A	N/A
Accuracy of Base Converter (Current)	(+0.05% of full scale, +0.1% of value)	N/A	N/A
Accuracy of Expander (Voltage)	N/A	N/A	(+0.03% of full scale, +0.02% of value)
Accuracy of Expander (Current)	N/A	(+0.07% of full scale, +0.1% of value)	N/A
Current Required from 5V Bus	0.8 Amp	0.4 Amp	0.4 Amp

Discrete I/O Modules (Output)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL350	IC697MDL340	IC697MDL341	IC697MDL753	IC697MDL752	IC697MDL750
Product Name	**Output 120 VAC 0.5A**	**Output 120 VAC 2A**	**Output 120/240 VAC 2A (Isolated)**	**Output 5/48 VDC 0.5A Negative Logic**	**Output 24/48 VDC 2A**	**Output 24/48 VDC 0.5A**
Module Type	Discrete	Discrete	Discrete	Discrete	Discrete	Discrete
Module Function	Output	Output	Output	Output	Output	Output
Discrete Output Type	Point	Point	Point	Point	Point	Point
Discrete Output Rated Voltage	120 VAC	120 VAC	120 / 240 VAC	5 / 48 VDC	12 VDC	24 / 48 VDC
Discrete Outputs per Module	32 (four isolated groups of eight outputs each)	16 (four isolated groups of four outputs each)	12 Individually Isolated Points	32 (two isolated groups of 16 outputs each)	32 (four isolated groups of eight outputs each)	32 (four isolated groups of eight outputs each)
Discrete Output Voltage Range	85 to 132 Volts, 47 to 63Hz	85 to 132 Volts, 47 to 63Hz	85 to 264 Volts, 47 to 63 Hz	5 Volts or 10 to 60 Volts	10 to 15 Volts	20 to 60 Volts
Discrete Output Current	0.5 Amps maximum per point, 2 Amps maximum per group	2 Amps maximum per point, 4 Amps maximum per group	2 Amps maximum per point, 16 Amps maximum per module	16 mA maximum per point @ 5 VDC; 0.5 Amps maximum per point, 4 Amps maximum per group @ 10 to 60 VDC	0.5 Amps maximum per point, 2 Amps maximum per group	0.5 Amps maximum per point, 2 Amps maximum per group
Response Time-On	1 ms maximum	1 ms maximum	1 ms maximum	1 ms typical	1 ms typical	1 ms maximum
Response Time-Off	1/2 cycle	1/2 cycle	1/2 cycle	1 ms typical	1 ms typical	1 ms maximum
Output Leakage	1.5 mA maximum	1.5 mA maximum	3 mA maximum at 120 VAC; 6 mA maximum at 240 VAC	250 uA maximum @ 5 VDC; 1 mA maximum @ 10 to 60 VDC	1 mA maximum	1 mA maximum
Isolation (any output to backplane)	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS	1500 Volts RMS
Isolation (between outputs)	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS	500 Volts RMS
Inrush Current	10 Amps maximum per point for one cycle (20 ms)	20 Amps maximum per point for one cycle (20 ms)	20 Amps maximum per point for one cycle (20 ms)	5 Amps maximum for 20 ms	10 Amps maximum per point for one cycle (20 ms)	10 Amps maximum per point for one cycle (20 ms)
Output Voltage Drop	3 Volts maximum	3 Volts maximum	1.5 Volts maximum	5 VDC: 0.5 Volts Maximum (16 mA); 10 to 60 VDC: 1 Volt (2 Ohms) maximum	1 Volt (2 ohms) maximum	1 Volt (2 ohms) maximum
Current Required from 5 V Bus	0.5 Amp	0.25 Amp	0.25 Amp	0.25 Amp	0.25 Amp	0.25 Amp

Discrete I/O Modules (Output)

PACSystems and Series 90-70 input modules provide the interface between the controller and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the controller and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC697MDL740	IC697MDL940
Product Name	**Output 12 VDC 0.5A**	**Output Relay**
Module Type	Discrete	Discrete
Module Function	Output	Output
Discrete Output Type	Point	Relay
Discrete Output Rated Voltage	24/48 VDC	120/240 VAC or 5/24/125 VDC (No user power required)
Discrete Outputs per Module	16 (four isolated groups of four outputs each)	16 (Form C: 8 individually isolated points; Form A: 2 groups with 4 points per group)
Discrete Output Voltage Range	20 to 60 Volts	N/A
Discrete Output Current	2 Amps maximum per point, 4 Amps maximum per group	4 Amps per group (Form A), 16 Amps Load Current per module
Response Time-On	2 ms maximum	10 ms maximum
Response Time-Off	2 ms maximum	10 ms maximum
Output Leakage	1 mA maximum	1 mA maximum at 120 VAC
Maximum Power	N/A	480 Volts (AC loads) or 60 Watts (DC loads)
Maximum Load Current (Resistive)	N/A	2.0 Amps from 5 to 265 VAC (47 to 63 Hz) or 5 to 30 VDC; 0.2 Amps from 31 to 125 VDC (31 to 150 VDC for Form A only)
Isolation (any output to backplane)	1500 Volts RMS	1500 Volts RMS
Isolation (between outputs)	500 Volts RMS	500 Volts RMS
Inrush Current	20 Amps maximum per point for one cycle (20 ms)	N/A
Output Voltage Drop	0.8 Volt (0.4 ohm) maximum	N/A
Minimum Load Current	N/A	10 mA
Switching Frequency	N/A	20 cycles/minute (inductive load)
Contact Type	N/A	Silver Alloy
Contact Resistance	N/A	0.2 ohm (maximum)
Protection (Each Output)	N/A	3 Amp fuse, Snubber (R=47 ohms, C=0.015 ufd)
Current Required from 5V Bus	0.15 Amp	0.075 Amp

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for PACSystems and Series 90-70, supporting a wide array of control processes. These modules come in various input and output voltages and currents suitable for many different applications including flow and pressure control.

	IC697ALG320
Product Name	**Analog Output, Voltage/Current**
Module Type	Analog
Module Function	Output
Analog Output Type	Current or Voltage
Analog Outputs per Module	4 (individually configurable for voltage or current)
Analog Output Voltage Range	Bipolar (-10 Volts to +10 Volts)
Analog Output Current	0.0 mA to 22.5 mA (4 to 20 mA default)
Response Time-On	Voltage: 5.0% 0.5 ms, 0.1% 2.0 ms; Current: 5.0% 1.0 ms, 0.1% 5.0 ms
Resolution (Voltage)	312.5 microvolts per LSB step
Current Required from 5V Bus	1.66 Amps

I/O Interface Modules

PACSystems and Series 90-70 feature a variety of communications options for distributed control and/or I/O, supporting a wide range of communication protocols and configurations. These communication modules are easy to install and quick to configure. Some distributed I/O communications modules allow for numerous remote drops or additional racks, while others provide an interface for GE products up to 7500 feet away from the controller.

	IC697BEM731	IC697BEM713	IC697BEM711	IC697BEM733
Product Name	**Genius Bus Controller**	**Bus Transmitter Module**	**Bus Receiver Module**	**Remote I/O Scanner**
Module Type	Bus Controller	Bus Transmitter	Bus Receiver	Remote I/O Scanner
Supports Redundancy	Yes	No	No	Yes
Discrete Points Available	N/A	N/A	N/A	128 Bytes Per Drop
Programmer Effective Data Rate	N/A	500 Kbytes/sec	N/A	N/A
Time to Store 16 Kbyte Program	N/A	20 - 30 Seconds	N/A	N/A
Effective Data Rate	N/A	500 Kbytes/sec	500 Kbytes/sec	38.4 Kbaud
Total Allowed Distance of Interconnecting Cable	N/A	50 feet (15 meters)	50 feet (15 meters)	N/A
Maximum Distance from Controller	N/A	N/A	N/A	7500 feet (2275 meters)
Electrical Isolation	N/A	Non-isolated differential communication	Non-isolated differential communication	N/A
Built-in Serial Ports	1 (Hand Held Monitor Port)	2 (Programmer Port, Expansion Port Out)	2 (Expansion Port In, Expansion Port Out)	2 (RS-422 Compatible Serial Port, Hand Held Monitor Port)
Current Required from 5V Bus	1.3 Amps	1.4 Amps	0.8 Amp	0.8 Amp

Communications Modules

PACSystems and Series 90-70 feature a variety of communications options for distributed control and/or I/O, supporting a wide range of communication protocols and configurations. These communication modules are easy to install and quick to configure. Some distributed I/O communications modules allow for numerous remote drops or additional racks, while others provide an interface for GE products up to 7500 feet away from the controller.

	IC697CMM742	IC697CMM711	IC697RCM711
Product Name	**Ethernet Interface (Type 2) Module**	**Communications Coprocessor**	**Redundancy Communications Module**
Module Type	Ethernet Interface	Communications Coprocessor	Redundancy Communications (Hot Standby)
Supports Redundancy	No	No	Yes
Protocols Supported	SRTP Channels and EGD	SNP/SNPX (master, slave), CCM (master, slave,peer), RTU Modbus (slave only)	N/A
Effective Data Rate	19200 bps Serial, 10 Mbps IEEE	N/A	500 Kbytes/sec
Electrical Isolation	N/A	N/A	Non-isolated differential communication
Communications Processor Speed	N/A	12 MHz (80C186)	N/A
Simultaneous Communication Speed	N/A	9.6 Kbps	N/A
Individual Communication Speed	N/A	19.2 Kbps	N/A
RCM Maximum Cable Length	N/A	N/A	50 feet (15 meters)
Built-in Serial Ports	5 (RS-232, RS-485, 10BaseT, AUP, 10Base2)	2 (Serial RS-422 / RS485 or RS-232)	2 (BTM or BRM, bottom connector is UNUSED)
Current Required from 5V Bus	2.0 Amps	0.7 Amp	1.2 Amps

Specialty Modules

PACSystems and Series 90-70 feature a wide range of Specialty Modules to meet all of your application needs. From High-Speed Counters, Programmable Coprocessor Modules and Alphanumeric Display Coprocessors to Hard Disk Drives and Single Board Computers, these Specialty Modules are designed to fill your requirement for versatile industrial solutions.

	IC697PCM711	IC697HSC700
Product Name	**Programmable Coprocessor Module**	**High Speed Counter**
Module Type	Programmable Coprocessor Module	High Speed Counter
Floating Point Math	N/A	N/A
Processor Speed	12 MHz (80C186)	N/A
Clock	Real Time Calendar synchronized to PLC	N/A
Protocols Supported	CCM2	N/A
Simultaneous Communication Speed	9.6 Kbaud	N/A
Individual Communication Speed	19.2 Kbaud	N/A
Memory Available	96 Kbytes of User Logic RAM and 512 Kbytes of Expansion Memory	N/A
HSC Available Output Voltages	N/A	4 (Positive Logic) with LED Indicators and +5 VDC
Programmed By	IC647, IC640, or IBM-compatible Personal Computer	N/A
Counter Types	N/A	5 Selectable Counter Types
Input Thresholds	N/A	TTL, Non-TTL, and Magnetic Pickup
Output Signal	N/A	Up To 200 KHz
Current Required from 5V Bus	1.0 Amp	N/A

Accessories

IC690ACC901	Miniconverter Kit with cable (RS-232 to RS-485)
IC690CDR002	User Manuals, InfoLink CD-ROM Documentation, Single-user License
IC697ACC700	Terminal Block, 40 Contacts (qty 6)
IC697ACC701	Replacement Battery for CPU and PCM (qty 2)
IC697ACC702	I/O Bus Terminator Plug
IC697ACC715	VME Option Kit, J2 Backplane Mounting
IC697ACC720	Blank Slot Filler (qty 6)
IC697ACC721	Rack Fan Assembly, 120VAC
IC697ACC722	VME Backplane Connector, Interrupt Jumper (qty 6)
IC697ACC723	Clear Plastic Doors (qty 6)
IC697ACC724	Rack Fan Assembly, 240VAC
IC697ACC725	CPU-style Painted Door, Blank (qty 6)
IC697ACC726	Top PWA Cover, CPU-style (qty 6)
IC697ACC727	Top and Bottom PWA Cover, GBC (qty 2)
IC697ACC728	Top and Bottom PWA Cover, BTM/BTR (qty 2)
IC697ACC729	Top and Bottom PWA Cover, I/O Link (qty 2)
IC697ACC730	Spare Slot Terminal Strip Retainer
IC697ACC732	Top PWA Cover, CPU77x and CPU78x (qty 2)
IC697ACC736	Cable Shield Clamping Assembly
IC697ACC744	Rack Fan Assembly, 24VDC
IC697ACC902	Miniconverter Kit with Cable for NEC9800 (RS-232 to RS-485)
IC697ACC903	RS-485 Port Isolator
IC697MLX000	Series 90-70 Labels Kit

I/O Cables

IC600WD002C	I/O Expansion Cable, 2 feet (0.6 meters)
IC600WD005C	I/O Expansion Cable, 5 feet (1.5 meters)
IC600WD010C	I/O Expansion Cable, 10 feet (3.0 meters)
IC600WD025C	I/O Expansion Cable, 25 feet (7.5 meters)
IC600WD050C	I/O Expansion Cable, 50 feet (15 meters)
IC690CBL700	Cable Kit, Power Supply Expansion (used for two-rack power supply function)
IC690CBL701	Cables - PCM to IC640 or PC-XT Computer, 10 feet (3 meters)
IC690CBL702	Cables - PCM to PC-AT Computer, 10 feet (3 meters)
IC690CBL705	Cables - PCM to IC642 or PS/2 Computer, 10 feet (3 meters)
IC697CBL709	Cable, MAP Controller to Broadband Modem
IC697CBL811	Cable, RCM Communications (10 feet) I/O Expansion Cable
IC697CBL826	Cable, RCM Communications (25 feet) I/O Expansion Cable
IC697CBL713	Cable - Power Supply Extension (used for two-rack power supply function)

Notes

Series 90-30 PLCs

The Series 90-30 PLCs are a family of controllers, I/O systems and specialty modules designed to meet the demand for versatile industrial solutions. With a single overall control architecture and modular design, the Series 90-30 is trusted worldwide in such applications as high speed packaging, material handling, complex motion control, water treatment, continuous emissions monitoring, mining, food processing, elevator control, injection molding, and many more.

One reason for the versatility of the Series 90-30 is the large variety of discrete and analog I/O modules (over 100 modules), as well as specialty modules, that are available. In addition, GE Intelligent Platforms offer a wide range of high-level communication options, from a simple serial connection to a high-speed Ethernet interface and a number of bus modules.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

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Power Supplies pages 124-125

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Power Transducer Modules page 149

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Motion Modules pages 152-155

Expansion Modules page 156

Portable Program Download Device (PPDD) pages 157-158

α and βi Series Servo Amplifiers page 162

VersaMotion pages 163-171

Publication Reference Chart

GFK-0255	Series 90 Programmable Coprocessor Module & Support Software User's Manual
GFK-0293	Series 90-30 High Speed Counter User's Manual
GFK-0356	Series 90-30 PLC Installation and Hardware Manual
GFK-0412	Series 90-30 Genius Communications Module User's Manual
GFK-0467	Series 90-30/20/Micro PLC CPU Instruction Set Reference Manual
GFK-0529	Series 90 PLC SNP Communications User's Manual
GFK-0582	Series 90 PLC Serial Communications Driver User's Manual
GFK-0585	Series 90 PLC SNP Communications Driver User's Manual
GFK-0631	Series 90-30 I/O Link Slave Interface User's Manual
GFK-0664	Series 90-30 Axis Positioning Module (Power Mate-APM) Programmer's Manual
GFK-0695	Series 90-30 Enhanced Genius Communications Module User's Manual
GFK-0712	Series 90 Digital Event Recorder User's Manual
GFK-0726	State Logic Processor for Series 90-30 PLC User's Guide
GFK-0771	C Programmer's Toolkit for Series 90 PCMs User's Manual
GFK-0772	PCM C Function Library Reference Manual
GFK-0781	Power Mate APM for Series 90-30 PLC Follower Mode User's Manual
GFK-0814	C Programmer's Toolkit for Series 90 PCM Quick Reference Guide
GFK-0823	Series 90-30 I/O Link Master Module User's Manual
GFK-0828	Series 90-30 Diagnostic System User's Guide
GFK-0840	Power Mate APM for Series 90-30 PLC Standard Mode User's Manual
GFK-0854	Series 90 Sequential Function Chart Programming Language User's Manual
GFK-0898	Series 90-30 PLC I/O Module Specifications Manual
GFK-1028	Series 90-30 I/O Processor Module User's Manual
GFK-1034	Series 90-30 Genius Bus Controller User's Manual
GFK-1037	Series 90-30 FIP Remote I/O Scanner User's Manual
GFK-1056	Series 90-30 State Logic Control System User's Manual
GFK-1084	TCP/IP Ethernet Communications for the Series 90-30 PLC User's Manual
GFK-1179	Installation Requirements for Conformance to Standards
GFK-1186	TCP/IP Ethernet Communications for the Series 90 PLC Station Manager Manual
GFK-1213	Series 90-30 FIP Bus Controller User's Manual
GFK-1256	Power Mate for Series 90-30 User's Manual
GFK-1322	Series 90-30 PLC LonWorks Bus Interface Module User's Manual
GFK-1411	Series 90-30 System Manual for Windows® Users
GFK-1464	Motion Mate DSM302 for Series 90-30 PLCs User's Manual
GFK-1466	Temperature Control Module for the Series 90-30 PLC User's Manual
GFK-1541	TCP/IP Ethernet Communications for the Series 90 PLC User's Manual
GFK-1734	Power Transducer for the Series 90-30 PLC User's Manual
GFK-1868	Proficy Machine Edition Getting Started Guide
GFK-2121	Series 90-30 Profibus Modules User's Manual
GFS-062	Series 90-30 Quick Reference Guide for Maintenance
GFZ-0085	Series 90-30 Troubleshooting Pocket Guide
IC690CDU002	InfoLink for PLC CD-ROM

CPUs

For entry-level applications with low I/O counts, the CPU is embedded into the backplane, making all slots available for I/O. These modules are compatible with advanced modules such as Ethernet, various bus modules, and control. Mid-range CPU models are modular and come in various memory sizes, performance capability and increased functionality such as overrides, battery-backed clock and Programmable Coprocessor module support. The high-performance CPUs are based on the latest 386EX processor for fast computation and high throughput. They can handle up to 4,096 I/O and start at 32K of memory and are programmable in a number of standard languages.

	IC693CPU311	IC693CPU313	IC693CPU323	IC693CPU350	IC693CPU360
Product Name	**5-slot Baseplate (Model 311)**	**5-slot Baseplate (Model 313)**	**10-slot Baseplate (Model 323)**	**CPU (Model 350)**	**CPU (Model 360)**
Module Type	I/O Base with built-in CPU	I/O Base with built-in CPU	I/O Base with built-in CPU	CPU Module	CPU Module
Boolean Execution Speed (ms/K)	18	0.6	0.6	0.22	0.22
User Logic Memory (K bytes)	6	12	12	74	240
Real Time Clock	No	No	No	Yes	Yes
I/O Discrete Points	160	160	320	4096	4096
I/O Analog Points	64 In/ 32 Out	64 In/ 32 Out	64 In/ 32 Out	2048 In/ 512 Out	2048 In/ 512 Out
Type of Memory Storage	RAM, EPROM, EEPROM	RAM, EPROM, EEPROM	RAM, EPROM, EEPROM	RAM, Flash	RAM, Flash
Processor Speed (MHz)	N/A	N/A	N/A	N/A	N/A
Built-in Communication Ports	One RS-485 port on power supply. Supports SNP	One RS-485 port on power supply. Supports SNP	One RS-485 port on power supply. Supports SNP	One RS-485 port on power supply. Supports SNP	One RS-485 port on power supply. Supports SNP
Total Number of Racks	1 (CPU built in)	1 (CPU built in)	1 (CPU built in)	8	8
Communications Option Modules	Serial-SNP and RTU, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP	Serial-SNP and RTU, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP	Serial-SNP and RTU, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP
Field Busses/Device Networks	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN
Software Programming Support	Logicmaster (DOS), VersaPro (Windows), Proficy Logic Developer - Machine Edition	Logicmaster (DOS), VersaPro (Windows), Proficy Logic Developer - Machine Edition	Logicmaster (DOS), VersaPro (Windows), Proficy Logic Developer - Machine Edition	Logicmaster (DOS), VersaPro (Windows), Proficy Logic Developer - Machine Edition	Logicmaster (DOS), VersaPro (Windows), Proficy Logic Developer - Machine Edition
Internal Power Used	410 mA @ 5 VDC	430 mA @ 5 VDC	430 mA @ 5 VDC	670 mA @ 5 VDC	670 mA @ 5 VDC

CPUs

For entry-level applications with low I/O counts, the CPU is embedded into the backplane, making all slots available for I/O. These modules are compatible with advanced modules such as Ethernet, various bus modules, and control. Mid-range CPU models are modular and come in various memory sizes, performance capability and increased functionality such as overrides, battery-backed clock and Programmable Coprocessor module support. The high-performance CPUs are based on the latest 386EX processor for fast computation and high throughput. They can handle up to 4,096 I/O and start at 32K of memory and are programmable in a number of standard languages.

	IC693CPU363	IC693CPU366	IC693CPU367
Product Name	**CPU (Model 363)**	**CPU (Model 366 with built-in Profibus Master)**	**CPU (Model 367 with built-in Profibus Slave)**
Module Type	CPU Module	CPU Module	CPU Module
Boolean Execution Speed (ms/K)	0.22	0.22	0.22
User Logic Memory (K bytes)	240	240	240
Real Time Clock	Yes	Yes	Yes
I/O Discrete Points	4096	4096	4096
I/O Analog Points	2048 In/ 512 Out	2048 In/ 512 Out	2048 In/ 512 Out
Type of Memory Storage	RAM, Flash	RAM, Flash	RAM, Flash
Processor Speed (MHz)	N/A	N/A	N/A
Built-in Communication Ports	Three total. One RS-485 port on power supply, one RS-232 and one RS-485 port on CPU. Supports SNP, RTU Master and Slave, Serial Read and Write	One Profibus DP Slave port and RS-485 port on power supply. Supports SNP.	One Profibus DP Master, Class 1 V0 port and RS-485 port on power supply. Supports SNP.
Total Number of Racks	8	8	8
Communications Option Modules	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP
Field Busses/Device Networks	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN
Software Programming Support	Logicmaster (DOS), VersaPro (Windows), Proficy Logic Developer - Machine Edition	Proficy Logic Developer - Machine Edition	Proficy Logic Developer - Machine Edition
Internal Power Used	890 mA @ 5 VDC	940 mA @ 5 VDC	940 mA @ 5 VDC

CPUs

For entry-level applications with low I/O counts, the CPU is embedded into the backplane, making all slots available for I/O. These modules are compatible with advanced modules such as Ethernet, various bus modules, and control. Mid-range CPU models are modular and come in various memory sizes, performance capability and increased functionality such as overrides, battery-backed clock and Programmable Coprocessor module support. The high-performance CPUs are based on the latest 386EX processor for fast computation and high throughput. They can handle up to 4,096 I/O and start at 32K of memory and are programmable in a number of standard languages.

	IC693CPU370	IC693CPU372	IC693CPU374 PLUS
Product Name	**CPU (Model 370). Requires High Capacity Power Supply**	**CPU (Model 372 with built-in 10/100 Mbps Ethernet and WEB Enabled). Requires High Capacity Power Supply**	**CPU (Model 374 PLUS with built-in 10/100 Mbps Ethernet and Web Enabled). Requires High Capacity Power Supply**
Module Type	CPU Module	CPU Module	CPU Module
Boolean Execution Speed (ms/K)	0.15	0.15	0.15
User Logic Memory (K bytes)	240	120	240
Real Time Clock	Yes	Yes	Yes
I/O Discrete Points	4096	4096	4096
I/O Analog Points	2048 In/ 512 Out	2048 In/ 512 Out	2048 In/ 512 Out
Type of Memory Storage	RAM, Flash	RAM, Flash	RAM, Flash
Processor Speed (MHz)	133Mhz	133Mhz	133Mhz
Built-in Communication Ports	One RS-485 port on power supply. Supports SNP	One RS-485 port on power supply. Supports SNP and two Ethernet ports; (one IP address) on CPU, 10/100 Mbps built-in switch, SRTP - channels (Producer and Consumer); EGD, Modbus TCP Client/Server and Web Diagnostics Support	One RS-485 port on power supply. Supports SNP and two Ethernet ports; (one IP address) on CPU, 10/100 Mbps built-in switch, SRTP - channels (Producer and Consumer); EGD, Modbus TCP Client/Server and Web Diagnostics Support
Total Number of Racks	8	8	8
Communications Option Modules	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP Client/Server	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP Client/Server	Serial-SNP, SNPX, RTU and CCM, LAN-Genius, Ethernet SRTP and Ethernet Modbus TCP Client/Server
Field Busses/Device Networks	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN	Ethernet, Genius, Profibus-DP, DeviceNet, Interbus-S, CsCAN
Software Programming Support	Proficy Logic Developer - Machine Edition	Proficy Logic Developer - Machine Edition	Proficy Logic Developer - Machine Edition
Internal Power Used	1.4 Amps @ 5 VDC	1.4 Amps @ 5 VDC	1.4 Amps @ 5 VDC

Baseplates

Series 90-30 baseplates are available in 5- and 10-slot configurations to the meet the needs of your application. You can choose expansion or remote baseplates for multi-rack systems, covering distances of up to 700 feet from the CPU. GE offers standard length cables for easy installation and provides wiring information for custom applications.

	IC693CHS391	IC693CHS392	IC693CHS393	IC693CHS397	IC693CHS398	IC693CHS399
Product Name	**10-slot CPU Baseplate (Model 331 and above)**	**10-slot Expansion Baseplate (Model 331 and above)**	**10-slot Remote Baseplate (Model 331 and above)**	**5-slot CPU Baseplate (Model 331 and above)**	**5-slot Expansion Baseplate (Model 331 and above)**	**5-slot Remote Baseplate (Model 331 and above)**
Module Type	CPU I/O Base	Expansion I/O Base	Expansion I/O Base	CPU I/O Base	Expansion I/O Base	Expansion I/O Base
Baseplate Option	Main (With CPU Slot)	Expansion	Expansion	Main (With CPU Slot)	Expansion	Expansion
Distance	N/A	Up to 50 feet	Up to 700 feet	N/A	Up to 50 feet	Up to 700 feet
Number of Slots	10	10	10	5	5	5
Dimension (WxHxD) in. (mm)	17.44x5.12x5.59 (443x130x142)	17.44x5.12x5.59 (443x130x142)	17.44x5.12x5.59 (443x130x142)	10.43x5.12x5.59 (245x130x142)	10.43x5.12x5.59 (245x130x142)	10.43x5.12x5.59 (245x130x142)
Internal Power Used	420 mA @ 5 VDC	150 mA @ 5 VDC	460 mA @ 5 VDC	270 mA @ 5 VDC	170 mA @ 5 VDC	480 mA @ 5 VDC

Power Supplies

The Series 90-30 power supply modules simply snap in just like I/O, and they work with any model CPU. Each version provides auto-ranging so there is no need to set jumpers for different incoming power levels, and they are current limiting so a direct short will shut the power supply down to avoid damage to the hardware. Series 90-30 power supplies are tied into the performance of the CPU for simplex, fail-safe, and fault tolerance. Advanced diagnostics and built-in smart switch fusing are among the other performance and safety features.

	IC693PWR321	IC693PWR330	IC693PWR331	IC693PWR332
Product Name	**Power Supply, 120/240 VAC, 125 VDC**	**Power Supply, 120/240 VAC, 125 VDC**	**Power Supply, 24 VDC**	**Power Supply, 12 VDC**
Module Type	Power Supply	Power Supply	Power Supply	Power Supply
Power Source	100-240 VAC or 125 VDC	100-240 VAC or 125 VDC	24 VDC	12 VDC
High Capacity	No	Yes	Yes	Yes
Output Source	30 watts total; 15 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated	30 watts total; 30 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated	30 watts total; 30 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated	30 watts total; 30 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated
Number of Redundant Power Supplies Supported	N/A	N/A	N/A	N/A
Cable Length to Redundant Power Supply Adapter	N/A	N/A	N/A	N/A
Redundant Power Supply Adapter Rack Compatibility	N/A	N/A	N/A	N/A
24 VDC Output Current Capacity	0.8 A	0.8 A	0.8 A	0.8 A

Power Supplies

The Series 90-30 power supply modules simply snap in just like I/O, and they work with any model CPU. Each version provides auto-ranging so there is no need to set jumpers for different incoming power levels, and they are current limiting so a direct short will shut the power supply down to avoid damage to the hardware. Series 90-30 power supplies are tied into the performance of the CPU for simplex, fail-safe, and fault tolerance. Advanced diagnostics and built-in smart switch fusing are among the other performance and safety features.

	IC693PWR328	IC693ACC341	IC693ACC350
Product Name	**Power Supply, 48 VDC**	**Power Supply, Redundant Base. Supports two power supplies with 0.5 meter cable**	**Power Supply, Redundant Adapter for CPU and Expansion base.**
Module Type	Power Supply	Redundant Power Supply Base	Redundant Power Supply Adapter
Power Source	48 VDC	N/A	N/A
High Capacity	No	N/A	N/A
Output Source	30 watts total; 15 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated	N/A	N/A
Number of Redundant Power Supplies Supported	N/A	Two supplies. Power Supplies can be AC or DC	N/A
Cable Length to Redundant Power Supply Adapter	N/A	0.5 meter	N/A
Redundant Power Supply Adapter Rack Compatibility	N/A	N/A	Compatible with all Series 90-30 5, 10 slot CPU racks and expansion racks
24 VDC Output Current Capacity	0.8 A	N/A	N/A

Discrete I/O Modules (Input)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC693ACC300	IC693MDL230	IC693MDL250	IC693MDL231	IC693MDL240
Product Name	**DC Voltage Input Simulator, 8/16 Points**	**AC Voltage Input Module, 120 VAC Isolated, 8 Point Input**	**AC Voltage Input Module, 120 VAC Isolated, 16 Point Input**	**AC Voltage Input Module, 240 VAC Isolated, 8 Point Input**	**AC Voltage Input Module, 120 VAC, 16 Point Input**
Module Type	Input Simulator	Discrete Input	Discrete Input	Discrete Input	Discrete Input
Power Type	DC	AC	AC	AC	AC
Input Voltage Range	N/A	0-132 VAC	0-132 VAC	0-264 VAC	0-132 VAC
Input Current (mA)	N/A	14.5	14.5	15	12
Number of points	16	8	16	8	16
Response Time (ms)	20 on/30 off	30 on/45 off	30 on/45 off	30 on/45 off	30 on/45 off
Trigger Voltage	N/A	74-132	74-132	148-264	74-132
Points per Common	16	1	1	1	16
Connector Type	Toggle Switches	Terminal Block (20 screws), included with module.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	120 mA @ 5 VDC	60 mA @ 5 VDC	60 mA @ 5 VDC	60 mA @ 5 VDC	90 mA @ 5 VDC

Discrete I/O Modules (Input)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC693MDL260	IC693MDL241	IC693MDL632	IC693MDL634	IC693MDL645
Product Name	**AC Voltage Input Module, 120 VAC, 32 Point Input**	**AC/DC Voltage Input Module, 24 VAC/VDC**	**DC Voltage Input Module, 125 VDC Pos/Neg Logic, 8 Point Input**	**DC Voltage Input Module, 24 VDC Pos/Neg Logic, 8 Point Input**	**DC Voltage Input Module, 24 VDC Pos/Neg Logic, 16 Point Input**
Module Type	Discrete Input	Discrete Input	Discrete Input	Discrete Input	Discrete Input
Power Type	AC	Mixed	DC	DC	DC
Input Voltage Range	0-132 VAC	0-30 VDC	0-150 VDC	0-30 VDC	0-30 VDC
Input Current (mA)	12	7	4.5	7	7
Number of points	32	16	8	8	16
Response Time (ms)	30 on/45 off	12 on/28 off	7 on/7 off	7 on/7 off	7 on/7 off
Trigger Voltage	74-132	11.5-30	90-150	11.5-30	11.5-30
Points per Common	32	16	4	8	16
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	90 mA @ 5 VDC	80 mA @ 5 VDC; 125 mA @ 24 VDC Isolated	40 mA @ 5 VDC	45 mA @ 5 VDC; 62 mA @ 24 VDC Isolated	80 mA @ 5 VDC; 125 mA @ 24 VDC Isolated

Discrete I/O Modules (Input)

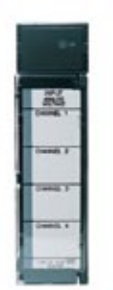
Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC693MDL646	IC693MDL648	IC693MDL654	IC693MDL655	IC693MDL660
Product Name	**DC Voltage Input Module, 24 VDC Pos/Neg Logic, FAST, 16 Point Input**	**DC Voltage Input Module, 48 VDC Pos/Neg Logic, FAST, 16 Point Input**	**DC Voltage Input Module, 5/12 VDC (TTL) Pos/Neg Logic, 32 Point Input**	**DC Voltage Input Module, 24 VDC Pos/Neg Logic, 32 Point Input**	**DC Voltage Input Module, 24 VDC Pos/Neg Logic, 32 Point Input**
Module Type	Discrete Input	Discrete Input	Discrete Input	Discrete Input	Discrete Input
Power Type	DC	DC	DC	DC	DC
Input Voltage Range	0-30 VDC	0-60 VDC	0-15 VDC	0-30 VDC	0-30 VDC
Input Current (mA)	7	4.2	3.0@5 V, 8.5@12 V	7	7
Number of points	16	16	32	32	32
Response Time (ms)	1 on/1 off	1 on/1 off	1 on/1 off	2 on/2 off	0.5ms, 1.0ms, 2.0ms, 5ms, 10ms, 50ms and 100ms, selectable per module. On and off.
Trigger Voltage	11.5-30	34 - 60	4.2-15	11.5-30	11.5-30
Points per Common	16	16	8	8	8
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Fujitsu Connector	Fujitsu Connector	IC694TBBx32 or IC694TBSx32. Sold Separately.
Internal Power Used	80 mA @ 5 VDC; 125 mA @ 24 VDC Isolated	80 mA @ 5 VDC; 125 mA @ 24 VDC Isolated	5 VDC - 195 mA @ 5 VDC; 12 VDC - 440 mA @ 5 VDC	195 mA @ 5 VDC	300 mA @ 5 VDC

Analog I/O Modules (Input)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	IC693ALG220	IC693ALG221	IC693ALG222	IC693ALG223
Product Name	**Analog Input, Voltage, 4 Channel**	**Analog Input, Current, 4 Channel**	**Analog Input, Voltage, High Density (16 Channel)**	**Analog Input, Current, High Density (16 Channel)**
Module Type	Analog Input	Analog Input	Analog Input	Analog Input
Isolation	1500 volts RMS field to logic side	1500 volts RMS field to logic side	1500 volts RMS field to logic side	1500 volts RMS field to logic side
Range	-10 V to +10 V	4-20 mA, 0-20 mA	-10 V to +10 V, 0 to 10 V	0-20 mA, 4-20 mA
Number of Channels	4	4	16	16
Update Rate	4 ms all channels	2 ms all channels	13 ms all channels	13 ms all channels
Resolution	12 bit; 5 mV/20 µA/bit	12 bit; 0-20 mA, 5 µA/bit; 4-20 mA, 4 µA/bit	12 bit; ±10 V, 5 mV/20 µA/bit; 0-10 V, 5 mV/20 µA/bit	12 bit; 0-20 mA, 5 µA/bit; 4-20 mA, 4 µA/bit; 4-20 mA Enhanced, 5µA/bit
Accuracy	±10 mV/40 µA at 25°C (77°F)	0.1 % full scale	0.25% at 25°C (77°F)	0.25% at 25°C (77°F)
Input Impedance	>9 Megohms	250 ohms	250 ohms	250 ohms
Input Filter Response	17 Hz	325 Hz	200 Hz	200 Hz
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	27 mA @ 5 VDC; 98 mA 24 VDC Isolated	25 mA @ 5 VDC; 100 mA @ 24 VDC Isolated	112 mA @ 5 VDC; 4150 mA -User Supplied 24 VDC	120 mA @ 5 VDC; 65 mA-User Supplied 24 VDC



Analog I/O Modules (Input)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	HE693ADC405	HE693ADC410	HE693ADC415	HE693ADC420
Product Name	**Isolated Analog Input Module, Voltage, 500 VAC, Isolation**	**Isolated Analog Input Module, Voltage, 1500 VAC, Isolation**	**Isolated Analog Input Module, Current, 500 VAC, Isolation**	**Isolated Analog Input Module, Current, 1500 VAC, Isolation**
Module Type	Analog Input	Analog Input	Analog Input	Analog Input
Range	±10 V	±10 V	4-20 mA, ±20 mA	4-20 mA, ±20 mA
Number of Channels	4	4	4	4
Channel-to-Channel Isolation	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC
Input Impedance	1 Megohm	1 Megohm	100 ohms	100 ohms
A/D Type, Resolution	Integrating, 18 bits	Integrating, 18 bits	Integrating, 18 bits	Integrating, 18 bits
Useable Resolution	13 bits plus sign	13 bits plus sign	13 bits plus sign	13 bits plus sign
I/O Required	4 %AI, 4 %AQ, 16 %I	4 %AI, 4 %AQ, 16 %I	4 %AI, 4 %AQ, 16 %I	8 %AI, 8 %AQ, 16 %I
Sample Rate	45 channels/second	45 channels/second	45 channels/second	45 channels/second
Analog Filtering	1 KHz, 3 pole Bessel	1 KHz, 3 pole Bessel	1 KHz, 3 pole Bessel	1 KHz, 3 pole Bessel
Digital Filtering	1-128 samples/update	1-128 samples/update	1-128 samples/update	1-128 samples/update
Maximum Error	.05% full scale	.05% full scale	.05% full scale	.05% full scale
Common Mode Range	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC	500 VAC (RMS), ±700 VDC	1500 VAC (RMS), ±2000 VDC
Common Mode Rejection	>100 dB	>100 dB	>100 dB	>100 dB
Power Consumption at Steady State, Maximum	0.4 W @ 5 V, 2.16 W @ 24 V	0.7 W @ 5 V, 1.2 W @ 24 V	0.4 W @ 5 V, 2.16 W @ 24 V	0.7 W @ 5 V, 1.2 W @ 24 V
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	80 mA @ 5 VDC; 90 mA @ 24 VDC Relay	140 mA @ 5 VDC ; 50 mA @ 24 VDC Relay	80 mA @ 5 VDC; 90 mA @ 24 VDC Relay	140 mA @ 5 VDC; 50 mA @ 24 VDC Relay

Analog I/O Modules (Input)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	HE693ADC816
Product Name	**Analog Input Module, Voltage**
Module Type	Analog Input
Range	±10 V
Number of Channels	8
Channel-to-Channel Isolation	None
Input Impedance	1 Megohm
A/D Type, Resolution	Successive, Approx. 16 bits
Useable Resolution	16 bits
I/O Required	4 %AI, 4 %AQ, 16 %I
Sample Rate	3000 channels/sec
Analog Filtering	1.6 KHz low pass
Digital Filtering	1-128 samples/update
Maximum Error	.03% full scale
Common Mode Range	500 VDC
Common Mode Rejection	>100 dB
Power Consumption at Steady State, Maximum	230 mA @ 5 VDC (440 mA inrush)
Connector Type	Terminal Block (20 screws), included with module.
Internal Power Used	230 mA @ 5 VDC

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC693MDL310	IC693MDL330	IC693MDL340	IC693MDL390	IC693MDL350	IC693MDL730
Product Name	**AC Voltage Output Module, 120 VAC, 0.5A, 12 Point Output**	**AC Voltage Output Module, 120/240 VAC, 1A, 8 Point Output**	**AC Voltage Output Module, 120 VAC, 0.5A, 16 Point Output**	**AC Voltage Output Module, 120/240 VAC Isolated, 2A, 5 Point Output**	**AC Voltage Output Module, 120 VAC Isolated, 2A, 16 Point Output**	**DC Voltage Output Module, 12/24 VDC Positive Logic, 2A, 8 Point Output**
Power Type	AC	AC	AC	AC	AC	DC
Output Voltage Range	85-132 VAC	85-264 VAC	85-132 VAC	85-264 VAC	74-264 VAC	12-24 VDC
Number of Points	12	8	16	5	16	8
Isolation	N/A	N/A	N/A	Yes	Yes	N/A
Load Current per Point	0.5 A	1.0 A	0.5 A	2.0 A	Per Point 2A max. @ 30°C & 1A max. @ 60°C (Linear derating)	2.0 A
Response Time (ms)	1 on 1/2 cy off	1 on 1/2 cy off	1 on 1/2 cy off	1 on 1/2 cy off	1 on 1/2 cy off	2 on/2 off
Output Type	Triac	Triac	Triac	Triac	Triac	Transistor
Polarity	N/A	N/A	N/A	N/A	N/A	Positive
Points per Common	6	4	4	1	1	8
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.
Internal Power Used	210 mA @ 5 VDC	160 mA @ 5 VDC	315 mA @ 5 VDC	110 mA @ 5 VDC	110 mA @ 5 VDC	55 mA @ 5 VDC

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC693MDL731	IC693MDL732	IC693MDL733	IC693MDL734	IC693MDL740	IC693MDL741
Product Name	**DC Voltage Output Module, 12/24 VDC Negative Logic, 2A, 8 Point Output**	**DC Voltage Output Module, 12/24 VDC Positive Logic, 0.5A, 8 Point Output**	**DC Voltage Output Module, 12/24 VDC Negative Logic, 0.5A, 8 Point Output**	**DC Voltage Output Module, 125 VDC Pos/Neg Logic, 6 Point Output**	**DC Voltage Output Module, 12/24 VDC Positive Logic, 0.5A, 16 Point Output**	**DC Voltage Output Module, 12/24 VDC Negative Logic, 0.5A, 16 Point Output**
Power Type	DC	DC	DC	DC	DC	DC
Output Voltage Range	12-24 VDC	12-24 VDC	12-24 VDC	11-150 VDC	12-24 VDC	12-24 VDC
Number of Points	8	8	8	6	16	16
Isolation	N/A	N/A	N/A	N/A	N/A	N/A
Load Current per Point	2.0 A	0.5 A	0.5 A	1.0 A	0.5 A	0.5 A
Response Time (ms)	2 on/2 off	2 on/2 off	2 on/2 off	7 on/5 off	2 on/2 off	2 on/2 off
Output Type	Transistor	Transistor	Transistor	Transistor	Transistor	Transistor
Polarity	Negative	Positive	Negative	Positive/Negative	Positive	Negative
Points per Common	8	8	8	1	8	8
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	55 mA @ 5 VDC	50 mA @ 5 VDC	55 mA @ 5 VDC	90 mA @ 5 VDC	110 mA @ 5 VDC	110 mA @ 5 VDC

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC693MDL742	IC693MDL748	IC693MDL752	IC693MDL753	IC693MDL754	IC693MDL930
Product Name	**DC Voltage Output Module, 12/24 VDC Positive Logic ESCP, 1A, 16 Point Output**	**DC Voltage Output Module, 48/24 VDC Positive Logic, 0.5A, 8 Point Output**	**DC Voltage Output Module, 5/24 VDC (TTL) Negative Logic, 0.5A, 32 Point Output**	**DC Voltage Output Module, 12/24 VDC Positive Logic, 0.5A, 32 Point Output**	**DC Voltage Output Module, 12/24 VDC Positive Logic, 0.75A, with ESCP protection, 32 Point Output**	**AC/DC Voltage Output Module, Relay, N.O., 4A Isolated, 8 Point Output**
Power Type	DC	DC	DC	DC	DC	Mixed
Output Voltage Range	12-24 VDC	24-48 VDC	5, 12-24 VDC	12-24 VDC	12-24 VDC	0 to 125 VDC, 5/24/125 VDC nominal 0 to 265 VAC (47 to 63Hz), 120/240 VAC nominal
Number of points	16	8	32	32	32	8
Isolation	N/A	N/A	N/A	N/A	N/A	Yes
Load Current per point	1.0 A	0.5 A	0.5 A	0.5 A	0.75 A with ESCP protection	4.0 A
Response Time (ms)	2 on/2 off	2 on/2 off	0.5 on/0.5 off	0.5 on/0.5 off	0.5 on/0.5 off	15 on/15 off
Output Type	Transistor	Transistor	Transistor	Transistor	Transistor	Relay
Polarity	Positive	Positive	Negative	Positive	Positive	N/A
Points per Common	8	8	8	8	16	1
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Fujitsu Connector	Fujitsu Connector	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.
Internal Power Used	130 mA @ 5 VDC	110 mA @ 5 VDC	260 mA @ 5 VDC	260 mA @ 5 VDC	300 mA @ 5 VDC	6 mA @ 5 VDC; 70 mA @ 24 VDC Relay

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	IC693MDL916	IC693MDL931	IC693MDL940	IC693MAR590	IC693MDR390
Product Name	**AC/DC Voltage Output Module, Relay, N.O., 4A Isolated, 16 Point Output**	**AC/DC Voltage Output Module, Relay, N.C. and Form C, 8A Isolated, 8 Point Out**	**AC/DC Voltage Output Module, Relay, N.O., 2A, 16 Point Output**	**AC/DC Voltage I/O Module, AC In/Relay Out N.O.**	**AC/DC Voltage Output Module, 24 VDC Input, Relay Output, 8 In/8 Out**
Power Type	Mixed	Mixed	Mixed	Mixed	Mixed
Output Voltage Range	5 – 125 VDC, 5/24/125 VDC nominal 5 – 250 VAC (47 to 63 Hz), 120-240 VAC nominal	0 to 125 VDC, 5/24/125 VDC nominal 0 to 265 VAC (47 to 63Hz), 120/240 VAC nominal	0 to 125 VDC, 5/24/125 VDC nominal 0 to 265 VAC (47 to 63Hz), 120/240 VAC nominal	5-250 VAC/5-30 VDC	0 to 125 VDC, 5/24/125 VDC nominal 0 to 265 VAC (47 to 63Hz), 120/240 VAC nominal
Number of points	16	8	16	8	8
Isolation	Yes	Yes	N/A	N/A	N/A
Load Current per point	4.0 A	8.0 A	2.0 A	2.0 A	2.0 A
Response Time (ms)	10ms maximum (At nominal voltage excluding contact bounce)	15 on/15 off	15 on/15 off	30 on/45 off	1 on/1 off
Output Type	Relay	Relay	Relay	Relay	Relay
Polarity	N/A	N/A	N/A	N/A	N/A
Points per Common	1	1	4	8	8
Connector Type	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	300mA @ 5 VDC from backplane maximum (all outputs ON)	6 mA @ 5 VDC; 110 mA @ 24 VDC Relay	7 mA @ 5 VDC; 135 mA @ 24 VDC Relay	80 mA @ 5 VDC; 70 mA @ 24 VDC Relay	80 mA @ 5 VDC; 70 mA @ 24 VDC Relay

Discrete I/O Modules (Output)

Input modules provide the interface between the PLC and external input devices such as proximity sensors, push buttons, switches, and BCD thumbwheels. Output modules provide the interface between the PLC and external output devices such as contactors, interposing relays, BCD displays and indicator lamps. GE offers a variety of modules that support different voltage ranges and types, current capacity, isolation and response time to meet your application needs.

	HE693RLY100	HE693RLY110
Product Name	**DC Voltage Output Module, AC In/Relay Out (isolated)**	**DC Voltage Output Module, AC In/Relay Out (fused)**
Power Type	Mixed	Mixed
Output Voltage Range	12-120 VAC, 12-30 VDC	12-120 VAC, 12-30 VDC
Number of points	8	8
Isolation	Yes	No
Load Current per point	8.0 A	8.0 A
Response Time (ms)	11 on/11 off	11 on/11 off
Output Type	Relay	Relay
Polarity	N/A	N/A
Points per Common	1	1
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	180 mA @ 5 VDC; 200 mA @ 24 VDC Relay	180 mA @ 5 VDC; 200 mA @ 24 VDC Relay

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	IC693ALG390	IC693ALG391	IC693ALG392	IC693ALG442
Product Name	**Analog Output, Voltage, 2 Channel**	**Analog Output, Current/Voltage, 2 Channel**	**Analog Current/Voltage Output, 8 Channel**	**Analog Current/Voltage Combination 4 Channel In/2 Channel Out**
Module Type	Analog Output	Analog Output	Analog Output	Analog Input/Output
Isolation	1500 volts RMS field to logic side	1500 volts RMS field to logic side	1500 volts RMS field to logic side	1500 volts RMS field to logic side
Range	-10 V to +10 V, 4-20 mA	1-5 V and 0-5 V, 0-20 mA, 4-20 mA	0 V to +10 V, -10 V to +10 V, 0-20 mA, 4-20 mA	0 V to +10 V, -10 V to +10 V, 0-20 mA, 4-20 mA
Number of Channels	2	2	8	4 in/2 out
Channel-to-Channel Isolation	N/A	N/A	N/A	N/A
Diagnostics	N/A	N/A	Open Wire	N/A
Update Rate	5 ms all channels	5 ms all channels	8 ms all channels	8 ms all channels In / 4 ms all channels Out
Resolution	12 bit; 2.5 mV/bit	12 bit; 0-20 mA, 5µA/bit	16 bit; 0.312 mV/bit	(Input)12 bit; 0 V to 10 V, 2.5 mV/bit; -10 V to +10 V, 5 mV/bit; 0-20 mA, 4-20 mA 5µA/bit (Output) 16 bit; 0.312 mV/bit; 4-20 mA 0.5 µA/bit; 0-20 mA 0.625 µA/bit
Accuracy	±5 mV at 25°C (77°F)	0-20 mA, ±8 µA at 25°C (77°F); 0-20 mA, 4-20 mA ±0.1% at 25°C (77°F)	0-20 mA, 4-20 mA ±0.1% at 25°C (77°F); 0-10 V, -10F + 10 V ±0.25 at 25°C (77°F)	(Input) 0.25 % at 25°C (77°F) (Output) 0-20 mA, 4-20 mA ±0.1% at 25°C (77°F)
Maximum Output Load	5 mA (2 K ohms)	5 mA (2 K ohms)	5 mA (2 K ohms)	5 mA (2 K ohms); 850 ohms
Output Load Capacitance	2000 pF	2000 pF, Inductance 1H	2000 pF, Inductance 1H	2000 pF, Inductance 1H
Power Consumption at Steady State, Maximum	N/A	N/A	N/A	N/A
User Supplied Loop Voltage	N/A	N/A	N/A	N/A
Maximum Load (ohms)	N/A	N/A	N/A	N/A
Maximum Linearity Error	N/A	N/A	N/A	N/A
Common Mode Isolation	N/A	N/A	N/A	N/A
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	32 mA @ 5 VDC; 120 mA @ 24 VDC Isolated	30 mA @ 5 VDC; 215 mA 24 VDC Isolated	110 mA @ 5 VDC; 315 mA - User Supplied 24 VDC	95 mA @ 5 VDC; 129 mA 24 VDC Isolated

Analog I/O Modules (Output)

GE offers easy-to-use analog modules for control processes such as flow, temperature and pressure.

	HE693DAC410	HE693DAC420
Product Name	**Isolated Analog Output Module, Voltage**	**Isolated Analog Output Module, Current**
Module Type	Analog Output	Analog Output
Isolation	N/A	N/A
Range	±10 V	4-20 mA or 0-20 mA
Number of Channels	4	4
Channel-to-Channel Isolation	1500 VAC (RMS), ±2000 VDC	1500 VAC (RMS), ±2000 VDC
Diagnostics	N/A	N/A
Update Rate	N/A	N/A
Resolution	13 bits plus sign, 1.2 5mV	13 bits plus sign, 2.0 µA (4-20 mA); 2.5 µA (±20 mA)
Accuracy	N/A	N/A
Maximum Output Load	N/A	N/A
Output Load Capacitance	N/A	N/A
Power Consumption at Steady State, Maximum	0.75 W @ 5 V; 3.6 W @ 24 V	0.75 W @ 5 V; 3.6 W @ 24 V
User Supplied Loop Voltage	N/A	2-32 VDC
Maximum Load (ohms)	>/= 2 Kohms	</= 1.1 Kohms @ 24 V loop voltage
Maximum Linearity Error	0.02% full scale	0.02% full scale
Common Mode Isolation	1500 VAC (RMS), ±2000 VDC	1500 VAC (RMS), ±2000 VDC
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	500 mA @ 5 VDC; 150 mA @ 24 VDC Relay	150 mA @ 5 VDC; 110 mA @ 24 VDC Relay

Millivolt I/O Modules

The Millivolt Input Modules allow millivolt level signals, such as bridged strain gages (load cells) to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.) All analog and digital processing of the signal is performed on the module.

	HE693ADC409
Product Name	**Analog I/O Module, Millivolt Input**
Module Type	Millivolt Input
Input Voltage Range	±25 mV, ±50 mV and ±100 mV
Number of Channels	4
Resolution	3 µV, 6µV, 9µV (respectively)
Accuracy	±0.5%
Input Impedance	>20 Mohms
A/D Conversion Type	Integrating
A/D Conversion Time	35 Channels/second
Strain Gages Supported	Bridged (load cells)
Maximum Normal Voltage Input	100 mV
Maximum Voltage Input	±35 V
Connector Type	Terminal Block (20 screws), included with module.
Internal Power Used	100 mA @ 5 VDC

RTD I/O Modules

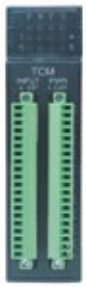
The RTD Input Modules provide six RTD inputs that allow the direct connection of 3-wire RTD temperature sensors without using external signal processing (transducers, transmitters, etc.). All analog and digital processing of the RTD signal is performed on the module.

	HE693RTD600	HE693RTD601	HE693RTD660	HE693RTD665	HE693RTD666
Product Name	**RTD Input Module, Low Resolution**	**RTD Input Module, High Resolution**	**RTD Input Module, Isolated**	**RTD Input Module, Isolated**	**RTD Input Module, Isolated**
Module Type	RTD Input	RTD Input	RTD Input	RTD Input	RTD Input
Number of Channels	6	6	6	6	6
RTD Types Supported	3-wire, Pt-100E, Pt-100C, Pt-100Z, Pt-1000, Cu-10, Cu-50, PT-100, Cu-53, Cu-100, Ni-120, TD5R, TD5R, Pt-90 (MIL-7990)	3-wire, Pt-100E, Pt-100C, Pt-100Z, Pt-1000, Cu-10, Cu-50, PT-100, Cu-53, Cu-100, Ni-120, TD5R, TD5R, Pt-90 (MIL-7990)	3 wire, Pt-100E, Pt-100C, Ni-120, Cu-10, Pt-1000, TD5R Si	3 wire, Pt-100E, Pt-100C, Ni-120, Cu-10, Pt-1000, TD5R Si	3 wire, Pt-100E, Pt-100C, Ni-120, Cu-10, Pt-1000, TD5R Si
Channel-to-Channel Isolation	N/A	N/A	5 VAC	5 VAC	5 VAC
Notch Filter	N/A	N/A	None	50 Hz	60 Hz
Resolution	0.5°C or 0.5°F	0.125°C , 0.1°C, or 0.1°F	0.05°C, 0.05°F, 0.1°C, 0.1°F, 0.5°C or 0.5°F	0.05°C, 0.05°F, 0.1°C, 0.1°F, 0.5°C or 0.5°F	0.05°C, 0.05°F, 0.1°C, 0.1°F, 0.5°C or 0.5°F
Accuracy	±0.5°C, typical	±0.5°C, typical	±0.3°C	±0.3°C	±0.3°C
Input Impedance	>1000 Megohms	>1000 Megohms	>1000 Megohms	>1000 Megohms	>1000 Megohms
Fault Protection	Zener Diode Clamp	Zener Diode Clamp	Suppression Diode	Suppression Diode	Suppression Diode
Update Time	50 Channels/second	50 Channels/second	50 Channels/second	50 Channels/second	50 Channels/second
A/D Conversion Type	18 bit, integrating	18 bit, integrating	18 bit, integrating	18 bit, integrating	18 bit, integrating
Average RTD Current, Pt-100	330 microamps	330 microamps	330 microamps	330 microamps	330 microamps
Channel-to-Channel Tracking	0.1°C	0.1°C	0.1°C	0.1°C	0.1°C
Channel-to-Bus Isolation	N/A	N/A	1500 VAC	1500 VAC	1500 VAC
RTD Short	N/A	N/A	Indefinite without damage	Indefinite without damage	Indefinite without damage
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	70 mA @ 5 VDC	70 mA @ 5 VDC	200 mA @ 5 VDC	200 mA @ 5 VDC	200 mA @ 5 VDC

Strain Gage I/O Modules

The Millivolt Input Modules allow millivolt level signals, such as bridged strain gages (load cells) to be directly connected to the PLC without external signal processing (transducers, transmitters, etc.) All analog and digital processing of the signal is performed on the module.

	HE693STG883	HE693STG884
Product Name	**Analog I/O Module, Strain Gage**	**Analog I/O Module, Strain Gage**
Module Type	Strain Gage Input	Strain Gage Input
Input Voltage Range	±20 mV, ±25 mV and ±30mV	±25 mV, ±50 mV and ±100mV
Number of Channels	8	8
Resolution	0.6 µV, 0.8 µV, 0.9 µV (respectively)	0.8 µV, 1.6 µV, 3.2 µV (respectively)
Accuracy	±0.3%	±0.3 %
Input Impedance	>1000 Mohms	>1000 Mohms
A/D Conversion Type	Integrating	Integrating
A/D Conversion Time	35 Channels/second	35 Channels/second
Strain Gages Supported	Bridged (load cells)	Bridged (load cells)
Maximum Normal Voltage Input	100 mV	100 mV
Maximum Voltage Input	±35 V	±35 V
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	60 mA @ 5 VDC; 30 mA @ 24 VDC Relay	60 mA @ 5 VDC; 30 mA @ 24 VDC Relay



Temperature Control Modules

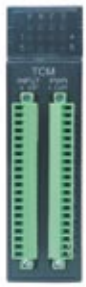
The Temperature Control Module (TCM), is a high performance control module providing eight channels of thermocouple input and eight channels of control output in a single Series 90-30 module. Each channel can operate in closed or open loop mode relieving the PLC of providing the temperature control functions. The module also supports Autotuning.

	IC693TCM302	IC693TCM303
Product Name	**Temperature Control Module, (8) T/C, (1) RTD and (8) 24 VDC Output**	**Temperature Control Module, Extended Range, 8 T/C, 1RTD and 8 24 VDC Output**
Module Type	Thermocouple Input	Thermocouple Input
Thermocouples	8 channels (Type J, K or L); J=0-450°C; K=0 -600°C; L=0-450°C; 1 internal/external compensation channel, 12-bits or 0.2°C resolution, 100 ms/ channel update, ±1°C accuracy with automatic calibration	8 channels (Type J, K or L); J=0-600°C; K=0 -1050°C; L=0-600°C; 1 internal/external compensation channel, 12-bits or 0.2°C resolution, 100 ms/ channel update, ±1°C accuracy with automatic calibration
RTD Input	1 channel with Open/Short Circuit Detection; Type: Pt-100 (μ=0.00392) for temperature compensation	1 channel with Open/Short Circuit Detection; Type: Pt-100 (μ=0.00392) for temperature compensation
Temperature Range	J=0-600°C, K=0-1050°C, L=0-600°C	J=0-450°C, K=0-600°C, L=0-450°C
Output Voltage Range	18 to 30 volts DC	18 to 30 volts DC
Load Current per point	100mA maximum sourcing	100mA maximum sourcing
Number of Channels	8 T/C In/8 DC Out	8 T/C In/8 DC Out
Diagnostics	Open thermocouple and reverse connection detection capability; Detection and indication of out-of-tolerance temperature readings	Open thermocouple and reverse connection detection capability; Detection and indication of out-of-tolerance temperature readings
Connector Type	Two 20 pin connectors (screw type)	Two 20 pin connectors (screw type)
Internal Power Used	150 mA @ 5 VDC	150 mA @ 5 VDC

Thermocouple I/O Modules

The Thermocouple Input Modules allow thermocouple temperature sensors to be directly connected to the PLC with external signal processing (transducers, transmitters, etc.). The module performs all analog and digital processing of the thermocouple signal. The enhanced thermocouple input modules add isolation or high-resolution. On these modules, each channel can be configured for a specific type of sensor wire. An autodetect external AD592 cold junction compensation feature is also available.

	HE693THM166	HE693THM409	HE693THM449	HE693THM665	HE693THM666
Product Name	**Analog I/O Thermocouple Input Module**	**Analog I/O Thermocouple Input Module**	**Analog I/O Thermocouple Input Module**	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module (Enhanced)**
Module Type	Thermocouple Input	Thermocouple Input	Thermocouple Input	Thermocouple Input	Thermocouple Input
Range	J, K, N, T, E, R, S, B, C, X	J, K, N, T, E, R, S	J, K, N, T, E, R, S	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S, B, C
Number of Channels	16	4	4	6	6
Channel-to-Channel Isolation	N/A	N/A	N/A	±250 VAC	±250 VAC
Notch Filter	N/A	N/A	N/A	50 Hz	60 Hz
Open Circuit Alarm	Yes	No	Yes	Yes	Yes
Resolution	0.5°C or 0.5°F	0.5°C or 0.5°F	0.5°C or 0.5°F	0.5°C,0.5°F, 0.1°C,0.1°F	0.5°C,0.5°F, 0.1°C,0.1°F
Accuracy	±0.5°C, typical (J,K,N,T)	±0.5°C, typical (J,K,N,T)	±0.5°C, typical (J,K,N,T)	±1.0°C(J,K,N,T); ±2.0°C(S,E,B,R); ±4.0°C(C)	±1.0°C(J,K,N,T); ±2.0°C(S,E,B,R); ±4.0°C(C)
A/D Conversion Type	Integrating	Integrating	Integrating	N/A	N/A
A/D Conversion Time	40 Channels/second	40 Channels/second	40 Channels/second	N/A	N/A
Open Circuit Detection	Yes	Yes	Yes	Yes	Yes
Setpoint Alarm	N/A	N/A	N/A	Yes	Yes
Diagnostics	Open Circuit Detection	Open Circuit Detection	Open Circuit Detection	Open Circuit Detection and Alarms	Open Circuit Detection and Alarms
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	80 mA @ 5 VDC; 30 mA @ 24 VDC Relay	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay	200 mA @ 5 VDC	200 mA @ 5 VDC



Thermocouple I/O Modules

The Thermocouple Input Modules allow thermocouple temperature sensors to be directly connected to the PLC with external signal processing (transducers, transmitters, etc.). The module performs all analog and digital processing of the thermocouple signal. The enhanced thermocouple input modules add isolation or high-resolution. On these modules, each channel can be configured for a specific type of sensor wire. An autodetect external AD592 cold junction compensation feature is also available.

	HE693THM668	HE693THM809	HE693THM884	HE693THM888	HE693THM889
Product Name	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module**	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module (Enhanced)**	**Analog I/O Thermocouple Input Module**
Module Type	Thermocouple Input	Thermocouple Input	Thermocouple Input	Thermocouple Input	Thermocouple Input
Range	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S, B, C	J, K, N, T, E, R, S
Number of Channels	6	8	8	8	8
Channel-to-Channel Isolation	±250 VAC	N/A	N/A	N/A	N/A
Notch Filter	None	N/A	None	60 Hz	N/A
Open Circuit Alarm	Yes	No	Yes	Yes	Yes
Resolution	0.5°C,0.5°F, 0.1°C,0.1°F	0.5°C or 0.5°F	N/A	N/A	0.5°C or 0.5°F
Accuracy	N/A	±0.5°C, typical (J,K,N,T)	N/A	N/A	±0.5°C, typical (J,K,N,T)
A/D Conversion Type	N/A	Integrating	N/A	N/A	Integrating
A/D Conversion Time	N/A	40 Channels/second	N/A	N/A	40 Channels/second
Open Circuit Detection	Yes	Yes	Yes	Yes	Yes
Setpoint Alarm	Yes	N/A	Yes	Yes	N/A
Diagnostics	Open Circuit Detection and Alarms	Open Circuit Detection	Open Circuit Detection and Alarms	Open Circuit Detection and Alarms	Open Circuit Detection
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	200 mA @ 5 VDC	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay	100 mA @ 5 VDC; 60 mA @ 24 VDC Relay	100 mA @ 5 VDC; 60 mA @ 24 VDC Relay	80 mA @ 5 VDC; 60 mA @ 24 VDC Relay

Networks and Distributed I/O Systems

The Series 90-30 features a variety of communications options for distributed control and/or I/O. Choose from Ethernet EGD, Profibus-DP, Genius, DeviceNet, Interbus-S, Series 90 Protocol (SNP) and RTU modules. These communication modules are easy to install and quick to configure.

	IC693CMM321	IC693PBM200	IC693PBS201	IC693BEM331
Product Name	**Series 90-30 PLC Ethernet TCP/IP Module**	**Communications Module, Profibus-DP Module (Master)**	**Communications Module, Profibus-DP Module (Slave)**	**Series 90-30 I/O Bus Module, Genius Bus Controller**
Module Type	Ethernet Communications	Profibus-DP Master	Profibus-DP Slave	Genius Bus Controller
Protocol Support	SRTP Modbus TCP (Client/Server)	Profibus DP	Profibus DP	Genius
Entity Type	N/A	Master	Slave	Master
Bus Speed	10 Mbits	12Mbaud	12Mbaud	153.6Kbaud
Network Distance	N/A	Baud Rate Dependent. Supports all standard data rates (9.6 kBit/s, 19.2 kBit/s, 93.75 kBit/s, 187.5 kBit/s, 500 kBit/s, 1.5 MBit/s, 3 MBit/s, 6 MBit/s and 12 MBit/s)	Baud Rate Dependent. Supports all standard data rates (9.6 kBit/s, 19.2 kBit/s, 93.75 kBit/s, 187.5 kBit/s, 500 kBit/s, 1.5 MBit/s, 3 MBit/s, 6 MBit/s and 12 MBit/s)	7500 feet (2286 meters) at 38.4 Kbaud; 4500 feet (1371 meters) at 76.8 Kbaud; 3500 feet (1066 meters) at 153.6 Kbaud extended; 2000 feet (609 meters) at 153.6 Kbaud standard. Maximum length at each baud rate also depends on cable type.
Bus Diagnostics	N/A	Supported	Supported	Supported
Number of Drops Supported	N/A	125 Slaves	One	32
Message Size	N/A	244 bytes of input and 244 bytes of output for each slave. Not to exceed 3584 bytes input and 3584 bytes outputs total for the system.	244 bytes of input and 244 bytes of output	255 bytes
Internal Power Used	750 mA @ 5 VDC	450 @ 5 VDC	450 @ 5 VDC	300 mA @ 5 VDC

Networks and Distributed I/O Systems

The Series 90-30 features a variety of communications options for distributed control and/or I/O. Choose from Ethernet EGD, Profibus-DP, Genius, DeviceNet, Interbus-S, Series 90 Protocol (SNP) and RTU modules. These communication modules are easy to install and quick to configure

	IC693DNM200	IC693DNS201	IC693CMM302
Product Name	**Series 90-30 Communications Module, DeviceNet, Master**	**Series 90-30 Communications Module, DeviceNet, Slave**	**Series 90-30 Enhanced Genius Communications Module**
Module Type	DeviceNet Master	DeviceNet Slave	Genius Peer to Peer
Protocol Support	DeviceNet	DeviceNet	N/A
Entity Type	Master	Slave	Peer-to-Peer
Bus Speed	500Kbaud	500Kbaud	153.6Kbaud
Network Distance	500Kbaud 100 meters to 125Kbaud 500 meters. Maximum length at each baud rate also depends on cable type.	500Kbaud 100 meters to 125Kbaud 500 meters. Maximum length at each baud rate also depends on cable type.	7500 feet (2286 meters) at 38.4 Kbaud; 4500 feet (1371 meters) at 76.8 Kbaud; 3500 feet (1066 meters) at 153.6 Kbaud extended; 2000 feet (609 meters) at 153.6 Kbaud standard. Maximum length at each baud rate also depends on cable type.
Bus Diagnostics	Supported	Supported	N/A
Number of Drops Supported	64	N/A	N/A
Message Size	3972 bytes Input and 3972 bytes Output	255 bytes In and 255 bytes Out	N/A
Internal Power Used	450 @ 5 VDC	450 @ 5 VDC	300 mA @ 5 VDC

Networks and Distributed I/O Systems

The Series 90-30 features a variety of communications options for distributed control and/or I/O. Choose from Ethernet EGD, Profibus-DP, Genius, DeviceNet, Interbus-S, Series 90 Protocol (SNP) and RTU modules. These communication modules are easy to install and quick to configure

	IC693BEM320	IC693BEM321	HE693IBS100	HE693IBS313	HE693IBS323
Product Name	**Series 90-30 Communication, I/O Link Interface Module (Slave)**	**Series 90-30 Communication, I/O Link Interface Module (Master)**	**I/O Bus Module, Interbus-S Slave Module from Horner Electric**	**I/O Bus Module, Interbus-S Slave 5 Slot Rack from Horner Electric**	**I/O Bus Module, Interbus-S Slave 10 Slot Rack from Horner Electric**
Module Type	I/O Link	I/O Link	Interbus-S Slave Module	Interbus-S Slave Base	Interbus-S Slave Base
Protocol Support	N/A	N/A	Interbus S	Interbus S	Interbus S
Entity Type	Slave	Master	Slave	Slave	Slave
Bus Speed	1.5 mHz	1.5 mHz	N/A	N/A	N/A
Network Distance	10 meters (33 feet) RS-485; 200 meters (660 feet)	10 meters (33 feet) RS-485; 200 meters (660 feet)	500 Kbits @ 400 meters	500 Kbits @ 400 meters	500 Kbits @ 400 meters
Bus Diagnostics	N/A	N/A	Supported	Supported	Supported
Number of Drops Supported	N/A	N/A	256 Drops	256 Drops	256 Drops
Message Size	N/A	N/A	N/A	N/A	N/A
Internal Power Used	205 mA @ 5 VDC	415 mA @ 5 VDC	N/A	N/A	N/A

Serial Communications Modules

The Series 90-30 features a variety of communications options for distributed control and/or I/O. Choose from Ethernet EGD, Profibus-DP, Genius, DeviceNet, Interbus-S, Series 90 Protocol (SNP) and RTU modules. These communication modules are easy to install and quick to configure.

	IC693CMM311	HE693SNP900	HE693SNP940	HE693RTM705	HE693RTU900	HE693RTU940
Product Name	**Series 90-30 Communications Control Module**	**Communications Module, SNP Slave Module from Horner Electric**	**Communications Module, SNP Slave Module with modem from Horner Electric**	**Communications Module, Modbus RTU Master from Horner Electric**	**Communications Module, Modbus RTU Slave from Horner Electric**	**Communications Module, Modbus RTU Slave from Horner Electric**
Module Type	Serial Communications	SNP Module	SNP Module	Modbus RTU Master	Modbus RTU	Modbus RTU
Protocol Support	SNP/SNPX; CCM; Modbus RTU Slave	SNP Slave	SNP Slave	Modbus Master support Report by Exception	Modbus Slave	Modbus Slave support Report by Exception
Communication Ports	1 RS-232, 1 RS-485	RS-232, RS-232/485	RS-232, RS-232/485, modem	RS-232, RS-232/485, modem	RS-232, RS-232/485	RS-232, RS-232/485, modem
Backplane Compatibility	N/A	No Restrictions	No Restrictions	Restricted to IC693CHS391 and IC693CHS397	Restricted to IC693CHS391 and IC693CHS397	Restricted to IC693CHS391 and IC693CHS397
Internal Power Used	400 mA @ 5 VDC	250 mA @ 5 VDC	375 mA @ 5 VDC	375 mA @ 5 VDC	250 mA @ 5 VDC	375 mA @ 5 VDC

Power Transducer Modules

Power Transducer (PTM) is an intelligent system for measuring electrical power consumption or for monitoring voltages between an electrical generator and the electrical power grid. The PTM module is not intended to provide a protective relay function or be used for energy billing purposes. The PTM connects to user supplied current and potential transformers, which furnish the input signals the PTM uses to calculate its data. The Processing module, which mounts in a Series 9030 PLC, transfers the data it gathers to the PLC where it can be used for a wide variety of purposes. The PTM can be used with a wye or delta type three-phase power system or with a single-phase power system.

	IC693PTM100	IC693PTM101
Product Name	**Series 90-30 Power Transducer Module**	**Series 90-30 Power Transducer Module**
Module Type	Power Transducer Module	Power Transducer Module
Input Voltage Range	Three single phases (120/240), One 3-wire single phase (120/240)	Three single phases (120/240), One 3-wire single phase (120/240)
Number of Points	1	1
Current Input Range	0 to 7.5 Amps rms (5A rms nominal)	0 to 7.5 Amps rms (5A rms nominal)
Frequency Range	35Hz to 70Hz	35Hz to 70Hz
Power Source	Three single phases of 120/240 VAC or one 120/240 VAC 3-wire single phase	Three single phases of 120/240 VAC or one 120/240 VAC 3-wire single phase
Diagnostics	• Data calculation rate: 20ms @ 50hz, 16.67 ms @ 60Hz. • Data latency of less than 5ms plus 1/2 of line frequency period • RMS voltage of phase A grid (in volts x 10) • RMS voltage of phase A, B, and C generator (in volts x 10) • Phase angle between phase A grid and phase A generator (in degrees x 10) • Frequency of phase A grid and phase A generator (in Hz x 100) Power Monitoring Functions • Data calculation rate for monitoring functions: 20ms @ 50hz, 16.67 ms @ 60Hz • RMS voltages of phase A, B, and C (in volts x 10) • DC component of measured RMS voltages (in volts x 10) • RMS currents of phase A, B, C, and Neutral (in Amperes x 1000) • Real and reactive power reported per phase and total in Watts, Volt-Amperes-Reactive • Real and reactive total energy consumption in Watt-Seconds and Volt-Amperes-Reactive- Seconds (updated once per second), re-settable by the user • Total power factor • Average real and reactive power consumption (sliding 15 minute window updated once per second) • Line frequency (in Hz x 100)	• Data calculation rate: 20ms @ 50hz, 16.67 ms @ 60Hz. • Data latency of less than 5ms plus 1/2 of line frequency period • RMS voltage of phase A grid (in volts x 10) • RMS voltage of phase A, B, and C generator (in volts x 10) • Phase angle between phase A grid and phase A generator (in degrees x 10) • Frequency of phase A grid and phase A generator (in Hz x 100) Power Monitoring Functions • Data calculation rate for monitoring functions: 20ms @ 50hz, 16.67 ms @ 60Hz • RMS voltages of phase A, B, and C (in volts x 10) • DC component of measured RMS voltages (in volts x 10) • RMS currents of phase A, B, C, and Neutral (in Amperes x 1000) • Real and reactive power reported per phase and total in Watts, Volt-Amperes-Reactive • Real and reactive total energy consumption in Watt-Seconds and Volt-Amperes-Reactive- Seconds (updated once per second), re-settable by the user • Total power factor • Average real and reactive power consumption (sliding 15 minute window updated once per second) • Line frequency (in Hz x 100)
Internal Power Used	400 mA @ 5 VDC	400 mA @ 5 VDC

Pneumatic Module

This IC693MDL760 output module provides eleven pneumatic outputs and five 24 VDC sourcing outputs. For each pneumatic output, the module contains an internal 3-way solenoid-actuated valve and an associated output fitting, which is located on the front panel. When an output is turned ON, its internal valve connects a user supplied pressure source (100 psi maximum) to the output fitting. The pressure source is connected to the fitting on the bottom of the module. When the output is turned OFF, the valve's output port is vented to atmosphere inside the module. Solenoid power is supplied from an external 24 VDC source to the "DC Outputs" connector on the front panel.

	IC693MDL760
Product Name	**Series 90-30 Solenoid Module**
Number of Points	(11) Pneumatic Outputs (5) 24 VDC Outputs
Pneumatic Outputs	11
Supply Pressure	100 PSI
Pressure Drop	25 psi max.@ 0.25 scfm
External Solenoid Power	21.6-26.4 VDC, 24 VDC nominal
ON Response Time/Off Response Time	12 ms max. ON 12 ms max. OFF
Solenoid Inrush Current	33 mA/valve @ 24 VDC
Solenoid Holding Current	13 mA/valve @ 24 VDC
Output Fitting	Threaded for 10-32 adapter, 1/16" hose barb provided
Supply Fitting	Threaded for 10-32 adapter, 1/8" hose barb provided
Load Current per Point	0.5 A @ 30 VDC per point, 2.0 A total for all five points
Response Time (ms)	0.5 on/0.5 off
Output Type	Transistor
Polarity	Positive
Internal Power Used	75 mA from 5 VDC bus (solenoid LEDs are powered from external power source)

Programmable Coprocessor Modules

GE Series 90-30's feature a wide range of Specialty Modules to meet all of your application needs. From temperature controls, high-speed counters, I/O processors, coprocessors, to PID auto-tuning modules, these Specialty Modules are designed to meet the demand for versatile industrial solutions.

	IC693PCM311	IC693PCM301	HE693ASC900	HE693ASC940
Product Name	**Series 90-30, Programmable Coprocessor Module, 640 KB (190 KB Basic Prgm)**	**Series 90-30, Programmable Coprocessor Module, 192 KB (47 KB Basic Prgm)**	**Horner ASCII Basic Module**	**Horner ASCII Basic Module**
Module Type	Programmable Coprocessor Module	Programmable Coprocessor Module	Co-Processor ASCII Basic Module	Co-Processor ASCII Basic Module
Programming Languages	BASIC or C	BASIC or C	BASIC	BASIC
Program Storage	640K of Battery Backed RAM	192K of Battery Backed RAM or EPROM option	64K EEPROM	32K EEPROM
Communication Ports	(2) One RS-232 and one RS-232/RS-485	(2) One RS-232 and one RS-232/RS-485	RS-232, RS-232/485	RS-232, RS-232/485, modem
Backplane Compatibility	Restricted to IC693CHS391 and IC693CHS397	Restricted to IC693CHS391 and IC693CHS397	No Restrictions	No Restrictions
Internal Power Used	400 mA @ 5 VDC	425 mA @ 5 VDC	375 mA @ 5 VDC	250 mA @ 5 VDC

Motion Modules (High Speed Counting)

Motion control integrated into the Series 90-30 fosters high performance point-to-point applications. GE Motion Control modules can be flexibly applied to a variety of digital, analog, and stepper motion applications.

	IC693APU300	IC693APU305
Product Name	**Series 90-30 High Speed Counter**	**Series 90-30 I/O Processor Module**
Module Type	High Speed Counter	I/O Processor Module
Count Rate	High Frequency - 80 kHz; Low Frequency - 20 Hz	30 khz (Absolute Encoder) 200 khz (A Quad B Encoder)
Input/Output Type	Positive Logic	N/A
Off State Leakage Current	10 µA per point	10 µA per point
Output Protection	3 Amp Fuse for all points	5 A Fuse for all points
Counter Operation	Type A - Up or Down-Independent Pulse-4 counters; Type B - Both Directions-A QUAD B Encoder Inputs-2 Counters; Type C - Difference Between 2 changing values-A QUAD B Encoder Inputs -1 Counter	N/A
Input Filters (Selectable)	High Frequency Filter - 2.5 µS; Low Frequency Filter - 12.5 ms	N/A
Selectable On/Off Output Presets	Each Counter has 2 present points, On and Off	N/A
Counters per Timebase	Each counter stores the number of counts that have occurred in a specified time. A timebase value measurement from 1 ms to 65535 ms is configurable.	N/A
Strobe Register	Each counter has one or more strobe registers that capture the current accumulator value when a strobe input transition in the direction selected during the last configuration of the module.	N/A
Local Fast Inputs	(12) 5 VDC or 10 to 30 VDC	(12) 8.0 VDC (non–TTL), 1.5 VDC (TTL)
Local Fast Outputs	(4) 10 to 30 VDC @ 500 mA maximum 4.75 to 6 VDC @ 20 mA maximum	Continuous Output Current (10–30 VDC supply) 1.0 A (each output 1–4) 0.5 A (each output 5–8)
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	250 mA @ 5 VDC	360 mA @ 5 VDC

Motion Modules (Servo Control)

Motion control integrated into the Series 90-30 fosters high performance point-to-point applications. GE Motion Control modules can be flexibly applied to a variety of digital, analog, and stepper motion applications.

	IC693DSM324	IC693DSM314
Product Name	**Series 90-30 Digital Servo Module, 4-Axis**	**Series 90-30 Digital Servo Module, 4-Axis (Fiber Optic Interface to Amplifiers)**
Module Type	Servo Module	Servo Module
Drive	Beta i Series Digital Servos	Beta i Series Digital and Analog Servos
Drive Interface	Fiber Optic, Up to 100 meters between Amplifiers with total length of 400 meters.	Digital for Alpha and Beta Series. ±10V velocity or torque command for analog
Axes	4 Digital	2 Digital and 1 analog or 4 analog
Encoder Support	Incremental Master (1Mhz)	Incremental Master (1Mhz)
Axis Configuration	Parallel or Cascade	Parallel or Cascade
User Memory	15 KBytes	15 KBytes
Analog Inputs	2	4 - In Digital Mode 8 - In Analog Mode
Analog Outputs	2	4 - In Digital Mode 0 - In Analog Mode
Local Fast Inputs	12 (24 V), 8 (5 V)	12 (24 V), 8 (5 V)
Local Fast Outputs	4 SSR Outputs (24 VDC, 125 mA)	4 SSR Outputs (24 VDC, 125 mA)
Connector Type	(1) 36 pin (5 VDC) (1) 24 pin (24 VDC)	(4) 36 pin
Internal Power Used	1360 mA @ 5 VDC	1300 mA @ 5 VDC

Motion Modules (Stepper Control)

Motion control integrated into the Series 90-30 fosters high performance point-to-point applications. GE Motion Control modules can be flexibly applied to a variety of digital, analog, and stepper motion applications.

	HE693STP100	HE693STP101	HE693STP110	HE693STP111
Product Name	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**
Module Type	Single Axis Stepper	Single Axis Stepper	Single Axis Stepper	Single Axis Stepper
Drive	Stepper	Stepper	Stepper	Stepper
Axes	1	1	1	1
Encoder Support	No	No	Yes	Yes
Switch Signal Level (DC)	5 V	12-24 V	5 V	12-24 V
Maximum Step/Direction Output (5V)	300 mA	300 mA	300 mA	300 mA
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	500 mA @ 5 VDC	750 mA @ 5 VDC	500 mA @ 5 VDC	750 mA @ 5 VDC

Motion Modules (Stepper Control)

Motion control integrated into the Series 90-30 fosters high performance point-to-point applications. GE Motion Control modules can be flexibly applied to a variety of digital, analog, and stepper motion applications.

	HE693STP113	HE693STP300	HE693STP301	HE693STP310	HE693STP311
Product Name	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**	**Motion Control Stepper Index Module**
Module Type	Single Axis Stepper	Three Axis Stepper	Three Axis Stepper	Three Axis Stepper	Three Axis Stepper
Drive	Stepper	Stepper	Stepper	Stepper	Stepper
Axes	1	3	3	3	3
Encoder Support	Yes	No	No	Yes	Yes
Switch Signal Level (DC)	12-24 V	5 V	12-24 V	5 V	12-24 V
Maximum Step/Direction Output (5V)	300 mA	300 mA	300 mA	300 mA	300 mA
Connector Type	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	750 mA @ 5 VDC	500 mA @ 5 VDC	750 mA @ 5 VDC	500 mA @ 5 VDC	750 mA @ 5 VDC

Remote Expansion Modules

The Ethernet distributed I/O interface (Ethernet Interface Unit), is a high performance Ethernet network interface module. The ENIU enables users to connect Series 90-30 I/O remotely over Ethernet to a master controller. The ENIU provides the power of Single Point of Connect. You can connect anywhere on the I/O network and monitor, configure, and troubleshoot any ENIU. The master controller is also accessible over the same network to program, troubleshoot and configure. The ENIU features a built-in Ethernet switch with two 10/100Mbit ports (RJ-45) allowing the user to daisy chain to the next ENIU. The ENIU automatically senses the cable type, eliminating the need for a crossover cable. The ENIU supports one IP address. Redundancy is provided as a standard feature with the ENIU.

	IC693NIU004
Product Name	**Ethernet Remote I/O Expansion (Slave)**
Module Type	Ethernet Remote I/O Interface Module
I/O Discrete Points	2048 Inputs/2048 Outputs maximum
I/O Analog Points	1264 Inputs and 512 Outputs maximum
User Logic Memory	N/A
Network Data Rate	10/100Mbit ports (RJ-45)
Entity Type	Slave
Network Distance	Media Dependent
Bus Diagnostics	Supported
Number of Drops Supported	Network Dependent. Each Ethernet NIU can also support up to 7 additional local I/O racks (IC693CHSxxx)
Internal Power Used	N/A

Portable Program Download Device (PPDD)

The Portable Program Download Device enables the user to easily upload and download Series 90-30 configuration and logic from/to a USB Memory Stick. Portable Program Download Device (PPDD) will support commercial memory stick devices using USB connection. The purpose of the PPDD is to allow users to store and download their logic applications and configuration to GE Series 90-30 PLCs without the need of a PC. The PPDD plugs into the 15 pin RS-485 port on the Series 90-30 CPU base power supply. The RS-485 port provides the power for the PPDD. Series 90-30 logic and configuration files can be zipped and easily emailed to remote locations for Series 90-30 downloads.

There are many advantages of the PPDD such as:

- No PC required to backup applications or download applications
- No expensive travel to perform field upgrades, just email the file to the remote location
- Compatible with commercial off the shelf USB Memory Sticks
- The PPDD can be panel mounted, DIN rail mounted or hand held
- Supports diagnostics to ensure that the CPU is compatible with the application
- OEM Password Protection supported
- Simple to operate, LEDs to show activity, error and status. Push button to start download and selector switch for direction of download, to the PLC or to the memory stick.
- Designed for the industrial environment UL and CE (not Class 1 Div 2 approved)

PPDD features:

- Slide switch for direction of data storage
- Status and Diagnostic LEDs

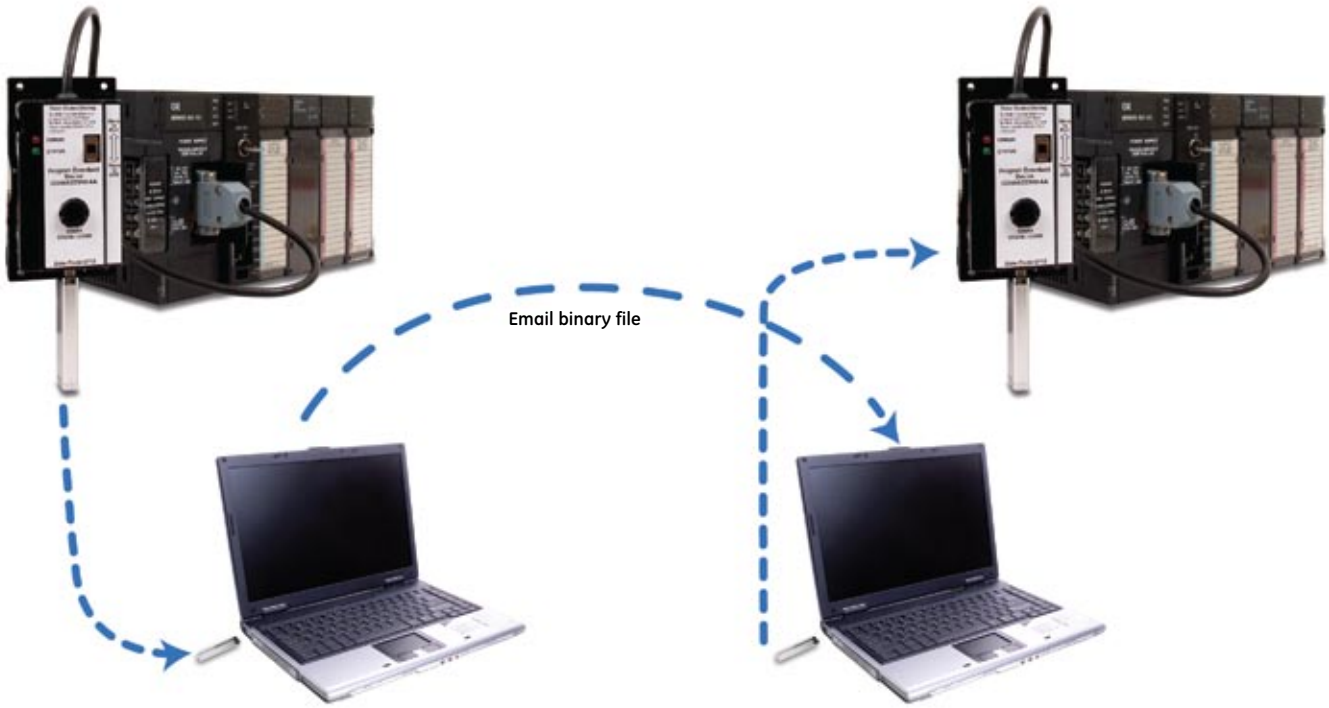
LEDs Status

	Error (Red)	Status (Green)
LED On Steady	On when there isn't a Memory Stick attached	On after button has been pushed and name in PLC matches and when download is complete
LED Flashing Fast Flash (500msec on 500msec off) Slow Flash (1 sec on 1 sec off)	Flashing when CPU doesn't match or Memory Stick doesn't have the proper file Flashing if Verify fails	Slow Flash During Download Fast Flash when CPU type matches but name in PLC doesn't match
LED Off	Off during normal conditions with no errors	Off prior to button being pushed for download

The Portable Program Download Device is simple to use. The example below demonstrates the four easy steps of downloading an application and emailing it to a remote location for application upgrade.

Step 1.
Slide PPDD selector toward USB memory stick. Press PPDD download button. The PPDD will store/verify the Series 90-30 application and configuration onto the USB memory stick.

Step 4.
Place the USB memory stick in the PPDD, slide selector toward controller. Press PPDD download button. The PPDD will stop the CPU and download/verify file. The CPU can be placed in the Run mode via the key switch or cycling power.



Step 2.
Remove the memory stick from the PPDD and connect it to your PC. Copy the binary file from the memory stick to your PC and email to remote location.

Step 3.
Remote location takes the binary file that is in the email and stores it on a USB memory stick.

Portable Program Download Device

IC690ACC990	Portable Program Download Device. Supports standard USB memory devices to store and load Series 90-30 PLC applications without the need of a PC.

Accessories

IC694TBB032	High Density 32 Point Terminal Block Box Style
IC694TBB132	High Density 32 Point Terminal Block Box Style with Extended Shroud for Large Wiring Bundles
IC694TBS032	High Density 32 Point Terminal Block Spring Style
IC694TBS132	High Density 32 Point Terminal Block Spring Style with Extended Shroud for Large Wiring Bundles
IC690ACC901	Mini-Converter Kit with cable (RS-485/RS-232)
IC690ACC903	RS-485 Port Isolator
IC690CDR002	User Manuals, InfoLink CD-ROM Documentation, single-user license
IC693ACC301	Replacement Battery, CPU & PCM (qty 2)
IC693ACC302	High capacity battery pack. The new Auxiliary Battery Pack (IC693ACC302) will enable Series 90-30 (except CPU374) to go up to 75 months (shelf life of 10 years) of RAM memory backup w/no power & the CPU374 backup for 15 months
IC693ACC307	I/O Bus Terminator Plug
IC693ACC308	Rack Adaptor Bracket, Series 90-30 10 Slot to 19" (Front Mount)
IC693ACC310	Filler Module, Blank Slot
IC693ACC311	Twenty Point Terminal Blocks (qty 6)
IC200ACC003	EZ Store Device, CPU374 program download without the need of a PC.
IC693ACC319	Spare Plastic Cases Parts Kit (I/O, CPU, PCM)
IC693MLX000	Spare Series 90-30 I/O Modules Label Kit (various quantities)

Terminal Block Quick Connect

Terminal Block Quick Connect (TBQC) for selected I/O modules enables the user to easily connect interposing terminal blocks. The TBQC consists of an I/O faceplate adapter that includes a 24 pin Fujitsu male connector (the faceplate replaces the 20 screw terminal connector on front of I/O module, not compatible with the high density 36 screw terminals), cable and interposing terminal block.

TBQC I/O Module Face Plate Adapter

IC693ACC334	I/O module face plate adapter for 20 screw type I/O modules. Faceplate provides a 24 pin male Fujitsu connector.

TBQC Interposing Terminal Block

IC693ACC329	Interposing terminal block base for IC693MDL645, IC693MDL646, and IC693MDL240. The base can also be used with any 20 point terminal discrete or analog modules not listed.
IC693ACC330	Interposing terminal block base for IC693MDL740 and IC693MDL742
IC693ACC331	Interposing terminal block base for IC693MDL741
IC693ACC332	Interposing terminal block base for IC693MDL940
IC693ACC333	Interposing terminal block base for IC693MDL340
IC693ACC337	Interposing terminal block base for IC693MDL654/655/752/753

TBQC Cables

IC693CBL327	Cable, Left Side, One - 24 Pin 90 Degree Connector, 3 Meter. Cable has a connector on only one end and open on the other. Cable used with TBQC I/O Face Plate Adapter or Fujitsu style I/O modules.
IC693CBL328	Cable, Right Side, One - 24 Pin 90 Degree Connector, 3 Meter. Cable has a connector on only one end and open on the other. Cable used with TBQC I/O Face Plate Adapter or Fujitsu style I/O modules.
IC693CBL329	Cable, Left Side, One - 24 Pin 90 Degree Connector, 1 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL330	Cable, Right Side, One - 24 Pin 90 Degree Connector, 1 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL331	Cable, Left Side, One - 24 Pin 90 Degree Connector, 2 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL332	Cable, Right Side, One - 24 Pin 90 Degree Connector, 2 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL333	Cable, Left Side, One - 24 Pin 90 Degree Connector, 0.5 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.
IC693CBL334	Cable, Right Side, One - 24 Pin 90 Degree Connector, 0.5 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.

External Power Supplies

IC690PWR024	Field Power Supply 24 VDC 5 Amps
IC690PWR124	Field Power Supply 24 VDC 10 Amps

Rack to Rack Expansion Cables

IC693CBL300	Cable, I/O Base Expansion, 1 Meter, Shielded
IC693CBL301	Cable, I/O Base Expansion, 2 Meters, Shielded
IC693CBL302	Cable, I/O Base Expansion, 15 Meters, Shielded with built-in terminator
IC693CBL312	Cable, I/O Base Expansion, 0.15 Meter, Shielded
IC693CBL313	Cable, I/O Base Expansion, 8 Meters, Shielded
IC693CBL314	Cable, I/O Base Expansion, 15 Meters, Shielded with no built-in terminator
IC693ACC307	I/O Bus Terminator Plug

Configuration Guidelines

When configuring a Series 90-30 the following guidelines should be considered

1. High density IC693 I/O modules require a terminal block assembly. IC694TBSxxx (spring clamp termination) or IC694TBBxxx (box style termination) are required.
2. If the CPU is powered down frequently a high capacity battery should be considered. (IC693ACC302)
3. Add up the power consumption to ensure enough power supply capacity.

Examples of Typical Application

Configuration for Controller (Example application requiring (120) 24 VDC inputs and (80) Relay outputs AC power supply)

Power Supply Current Required (mA)	Qty	Part Number	Description
670 mA @ 5 VDC	1	IC693CPU350	CPU with 32K of memory
	1	IC693PWR321	120/240 VAC, 125 VDC Power Supply, 3 Amps @ 5 VDC; 0.625 @ 24 VDC relay and 0.833 @ 24 VDC isolated
420 mA @ 5 VDC	1	IC693CHS391	10 Slot CPU Base
1200 mA @ 5 V	4	IC693MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
35 mA @ 5 V; 110 mA @ 24 VDC Relay	5	IC693MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
	4	IC694TBB032	Terminal Block, Box Style
	1	BC646MPS001	Logic Developer - PLC Standard - w/Programming Cable
Total current from power supply required:	**2325 mA @ 5 V; 110 mA @24 VDC Relay.**		
Options to consider			
1.4 Amps @ 5 VDC	1	IC693CPU374	CPU with built-in Ethernet 10/100Mbits and Web support
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
	1	IC693ACC302	Long term battery for CPU
	1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

Configuration for Controller (100) 24 VDC inputs, (50) 24 VDC Outputs with ESCP protection, (20) Relay outputs, (12) 4 to 20 mA Analog Inputs, (12) 4 to 20 mA Analog Outputs and 24 VDC power supply. Also requires Profibus Master and Ethernet communications.

Power Supply Current Required (mA)	Qty	Part Number	Description
1.4 Amps @ 5 VDC	1	IC693CPU374	CPU with built-in Ethernet 10/100 Mbits and Web support
	2	IC693PWR331	24 VDC Power Supply, current available 6 Amps @ 5 VDC; 0.625 Amps @ 24 VDC relay; 0.833 @ 24 VDC isolated
420 mA @ 5 VDC	1	IC693CHS391	10 Slot CPU Base
1200 mA @ 5 VDC	4	IC693MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
600 mA @ 5 VDC	2	IC693MDL754	Discrete Output Module, 24 VDC Output with ESCP, 32 points (Requires terminal block)
35 mA @ 5 VDC; 110 mA @ 24 VDC Relay	2	IC693MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
120 mA @ 5 VDC; 65 mA-User Supplied 24 VDC	1	IC693ALG223	Analog Input, 16 channels, current. (Terminal block included).
220 mA @ 5 VDC; 630 mA-User Supplied 24 VDC	2	IC693ALG392	Analog Output module, supports voltage and current, 8 channels (Terminal block included).
450 mA @ 5 VDC	1	IC693PBM200	Profibus Master module, supports V0
150 mA @ 5VDC	1	IC693CHS392	10 slot I/O expansion rack
	1	IC693CBL312	Rack Expansion Cable, 0.15 meters
	1	IC693ACC307	I/O Bus Terminator Plug
	6	IC694TBB032	Terminal Block, Box Style
	1	BC646MPS001	Logic Developer - PLC Standard - w/Programming Cable

In the above configuration, all of the modules cannot go into one base. Therefore the I/O modules are divided into two bases.

Options to consider			
	1	IC200ACC003	EZ Store Device, CPU374 program download without the need of a PC.
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
	1	IC693ACC302	Long term battery for CPU
	1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

α and β*i* Series Servo Amplifiers

All Digital Servo Systems Offer High Performance and Reliability. FANUC HV*i*s and β*i* Series Servo Drives, based on over five million axes installed worldwide, offer superior reliability and performance for unprecedented mean time between failure. The HV*i*s and β*i* Series Servos are available in a wide range of ratings for use with the PACMotion motion controller.

High-Performance Serial Encoders

Standard serial encoders built into the motors provide exceptional feedback resolution of 64K or 128K counts per revolution for *i*s Series motors and one million counts per revolution for HV*i*s Series motors. Serial encoders support higher resolutions at high motor velocities than standard quadrature encoders and are more immune to noise. An optional battery connection provides absolute position feedback, eliminating the need to home the system after a power shutdown.

Reduced Tuning and Setup

There is no need for potentiometer tuning or personality modules; little tuning is required for properly sized drives. All drive parameters are stored in the controller in a standard motor database. Configuration settings are not stored in the drive, making it possible to replace drives with little set-up time. Stored drive and machine parameters are quickly transferred to repeat production machines.

All-Digital System

All control loops—current, velocity, and position—are closed in the GE PACMotion controller. High-speed microprocessors and/or digital signal processors (DSPs) in the controller provide loop update times of 250 µs. The high response servo system can compensate for machine design limitations, yielding faster acceleration/deceleration rates and better responses to load changes.

Series	Motor Series	Controllers	Command Interface	Continuous Torque Range		Power Supply
				In-lb	Nm	
α*Hi*	α*Hi*, α*HiS*	PMM335	Fiber Optic	195-664	22-75	Separate PSM
β*i*	β*is*	PMM335	Fiber Optic	3.5-177	0.4-20	Built-in
β*Hi*	β*HiS*	PMM335	Fiber Optic	17.7-177	2-20	Built-in

All-Digital Servo Command Signals

The PMM335 PACMotion Controller and β*i* or α*i* Series amplifiers use a high speed fiber optic command interface. This digital interface improves efficiency by varying the on-time of the transistor switches that control motor voltage and current. With its superior noise immunity, both of these FANUC digital command interfaces allows for an increased signal to noise ratio for improved accuracy and performance.

Agency Approvals

UL, IEC rating and CE mark compliant

INFO

For application, installation, and tuning information, consult the Services website at www.ge-ip.com.

VersaMotion

VersaMotion is a family of servo motors and amplifiers that can be easily connected to the Series 90-30 DSM314. The VersaMotion amplifier supports high speed pulse and direction commands from the controllers. The VersaMotion servo drive is simple to use and maintain with the added diagnostics and removable terminal strips. Amplifier setup can be accomplished using the VersaMotion software included with Proficy Machine Edition or using the convenient front panel keypad.

Key Features:

- Versatile analog or pulse command interface
- Position/Speed/Torque modes
- Dual control modes
- Internal single-axis position control
- Electronic gearing
- External JOG function
- Speed/Torque limit operation
- Built-in keypad/display for setup and diagnostics
- Motor settling time below 1 ms
- Low speed stability and performance: less than 0.5% error at 1 RPM
- 10msec acceleration time from running without load -/+ 3000 RPM
- High speed inertia corrections (16 levels of system stiffness and responsiveness)

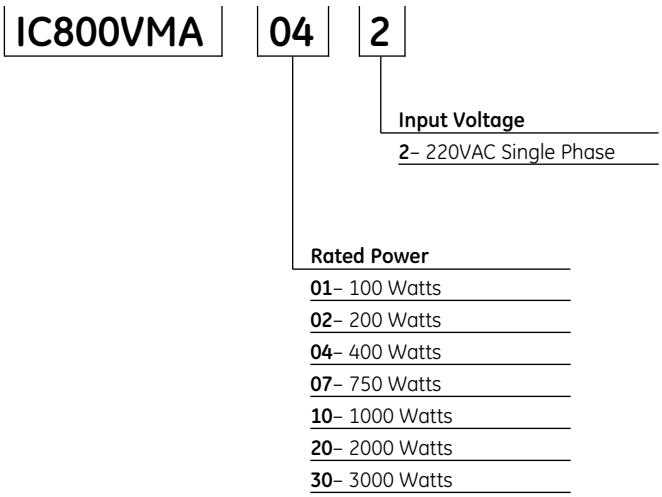
Built-in Functions:

- Point-to-Point single axis position control
- Simple stand-alone positioning function with 8 internal stored position settings
- Move to Home function
- Position Teaching capability
- Incremental encoder feedback (2500 ppr)
- User-definable Acceleration/ Deceleration with jerk limiting (s-curve)
- Feed step control function
- Modbus Slave serial port (RS-485/ RS-422) for reading and writing parameters from Machine Edition

Machine Edition VersaMotion Set-up Features:

- Configuration Parameter Editor (clear, read, write functions) and initial configuration wizard
- Calculation tools to determine proper conversion from encoder counts to desired user programming units
- Three channel digital oscilloscope to display and record drive status on-line
- Alarm history and status monitor diagnostic screens
- Digital I/O set-up and monitoring

Servo Amplifier Part Number Sequence



Example: IC800VMA042 is a 400 watt 220VAC servo amplifier

Amplifiers Technical Data

Permissible Frequency Fluctuation	50 / 60 Hz +/-5%
Resolution/Quadrature Feedback Counts	2500 ppr /10000 cpr
Control Modes	Position/Velocity/Torque
Dynamic Brake	Built-in
Position Control Mode:	
Maximum Input Pulse Frequency	500KPPS (Line Driver) / Maximum 200KPPS (Open Collector)
Pulse Type	Pulse/Direction; CW/CCW; A/B Phase
Command Source	External pulse train/ Internal parameters
Torque Limit Operation	Yes
Feed Forward Compensation	Yes
Analog Commands: Voltage Range	0 to +/-10VDC
Torque and Velocity Control Mode: Command Source	External analog signal / Internal parameters
Speed Control Range	1:5000
Speed Control Frequency Response	Maximum 450 Hz
Torque Control Mode Permissible Time for Overload	8 seconds under 200% rated output
Communications Interface	RS-232 / RS-485 /RS-422
Environmental Altitude	Altitude 1000 meters above sea level or lower
Environmental Operating Temperature	0 to 55°C (Forced cooling for operation above 55°C)
Environmental Storage Temperature	-20°C to 65°C
Environmental Humidity	0 to 90% (Non condensing)
Vibration	<20 Hz: 9.8 m/sec/sec (1G); 20 to 50 Hz: 5.88 m/sec/sec (0.6 G)
Standards	IEC/EN 61800-5-1, UL 508C, TUV, C-tick

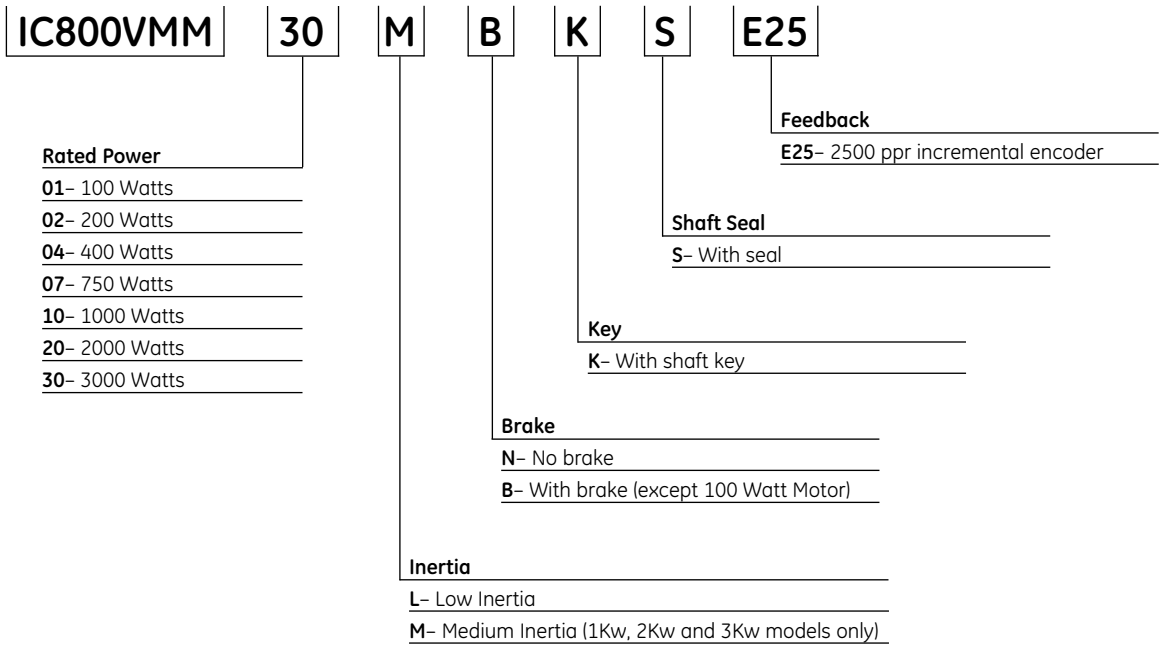
Amplifiers

The VersaMotion family of servo amplifiers offers a cost effective solution for a broad range of motion applications. These versatile amplifiers support simple stand-alone positioning capability using up to 8 stored motion profiles or can be connected to any motion controller using an analog or pulse command interface. A built-in touchpad and display provides convenient access to configuration parameters and system information. The serial interface supports multi-drop system configurations and Modbus communication protocol.

	IC800VMA012	IC800VMA022	IC800VMA042	IC800VMA072
Product Name	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**
Rated Output Power	100W	200W	400W	750W
Voltage/Frequency	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase or Single-phase 220VAC 50/60 Hz
Permissible Voltage Fluctuation	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC
Cooling System	Convection	Convection	Convection	Fan Cooling
Electronic Gear Ratio	Gear Ratio = N/M where N 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)

	IC800VMA102	IC800VMA202	IC800VMA302
Product Name	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**
Rated Output Power	1KW	2KW	3KW
Voltage/Frequency	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase 220VAC 50/60 Hz	Three-phase 220VAC 50/60 Hz
Permissible Voltage Fluctuation	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC	Three-phase: 170 ~ 255VAC
Cooling System	Fan Cooling	Fan Cooling	Fan Cooling
Electronic Gear Ratio	Gear Ratio = N/M where N 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Electronic gear N/M multiple N: 1~32767, M: 1:32767 (1/50<N/M<200)

Servo Motor Part Number Sequence



Example: IC800VMM30MBKSE25 is a 3000 watt medium Inertia motor with 2500 ppr encoder, brake, keyway and shaft seal.

Motors Technical Data

Insulation Class	Class B
Insulation Resistance	>100M ohm, 500 VDC
Insulation Strength	1500 VAC, 50Hz, 60 seconds
Vibration Grade (um)	15
Brake Power (VDC)	24
Operating Temperature (C)	0°~40°
Storage Temperature (C)	-10°~80°
Humidity	20~90%RH (non condensing)
Vibration	2.5G
IP Rating	IP65 (except shaft and connector)

Motors

The VersaMotion family of servo motors offers high servo performance in a compact package. The motors range from 100 W to 3 kW with continuous torque ratings from 0.3 Nm to 14.3 Nm. All motors have metric mounting configurations and include a shaft key and oil seal. For vertical axes or applications that need to hold position during power loss motors with 24 VDC holding brakes are available. Motors are matched with the VersaMotion amplifiers.

	IC800VMM01L	IC800VMM02L	IC800VMM04L	IC800VMM07L
Product Name	**VersaMotion 100 Watt**	**VersaMotion 200 Watt**	**VersaMotion 400 Watt**	**VersaMotion 750 Watt**
Rated Output (kW)	0.1	0.2	0.4	0.75
Rated Torque (Nm)	0.32	0.64	1.27	2.39
Maximum Torque (Nm)	0.96	1.92	3.82	7.16
Rated Speed (RPM)	3000	3000	3000	3000
Maximum Speed (RPM)	5000	5000	5000	5000
Rated Current (Amps)	0.9	1.55	2.6	5.1
Maximum Current (Amps)	2.7	4.65	7.8	15.3
Rotor Moment of Inertia ($Kg.m^2 \times 10^{-4}$)	0.037	0.177	0.277	1.13
Mechanical Time Constant (msec)	0.75	0.8	0.53	0.63
Torque Constant - KT (Nm)	0.36	0.41	0.49	0.47
Voltage Constant - KE (mV/rmp)	13.6	16	17.4	17.2
Armature Resistance (Ohm)	9.3	2.79	1.55	0.42
Armature Inductance (mH)	24	10.84	6.84	3.53
Electrical Time Constant (msec)	2.58	3.89	4.43	8.37
Maximum Radial Shaft Load (Newton)	78.4	196	196	245
Maximum Thrust Shaft Load (Newton)	39.2	68	68	98

Motors

The VersaMotion family of servo motors offers high servo performance in a compact package. The motors range from 100 W to 3 kW with continuous torque ratings from 0.3 Nm to 14.3 Nm. All motors have metric mounting configurations and include a shaft key and oil seal. For vertical axes or applications that need to hold position during power loss motors with 24 VDC holding brakes are available. Motors are matched with the VersaMotion amplifiers.

	IC800VMM10L	IC800VMM10M	IC800VMM20L	IC800VMM20M	IC800VMM30M
Product Name	**VersaMotion 1000 Watt**	**VersaMotion 1000 Watt**	**VersaMotion 2000 Watt**	**VersaMotion 2000 Watt**	**VersaMotion 3000 Watt**
Rated Output (kW)	1.0	1.0	2.0	2.0	3.0
Rated Torque (Nm)	3.18	4.77	6.37	9.55	14.32
Maximum Torque (Nm)	9.54	14.32	19.11	28.66	42.96
Rated Speed (RPM)	3000	2000	3000	2000	2000
Maximum Speed (RPM)	5000	3000	5000	3000	3000
Rated Current (Amps)	7.3	5.6	11.3	11.0	16.1
Maximum Current (Amps)	21.9	24.9	33.9	33.0	48.3
Rotor Moment of Inertia ($Kg.m^2 \times 10^{-4}$)	2.65	9.14	4.45	15.88	55
Mechanical Time Constant (msec)	0.74	1.64	0.66	1.05	1.06
Torque Constant - KT (Nm/A)	0.44	0.85	0.53	0.87	0.89
Voltage Constant - KE (mV/rpm)	16.8	31.9	19.2	31.8	32
Armature Resistance (Ohm)	0.20	0.465	0.14	0.174	0.052
Armature Inductance (mH)	2.0	5.99	1.53	2.76	1.38
Electrical Time Constant (msec)	10.26	12.88	10.63	15.86	26.39
Maximum Radial Shaft Load (Newton)	490	490	490	490	1470
Maximum Thrust Shaft Load (Newton)	98	98	98	98	490
Amplifier Model	IC800VMA102	IC800VMA102	IC800VMA202	IC800VMA202	IC800VMA302

VersaMotion Accessories

Amplifier Connectors

IC800VMACONCN1	CN1 I/O Connector
IC800VMACONCN2	CN2 Encoder Connector
IC800VMACONCN3	CN3 Communication Connector
IC800VMACONACP	AC Power Connector (100W to 1kW models only)
IC800VMACONMTRP	Motor Power Connector (100W to 1kW models only)
IC800VMADBR001	External Braking Resistor Connector (100W to 1kW models only)

Motor Connectors

IC800VMMCONP001	Motor Power Connector for 100 Watt to 750 Watt motors without brake
IC800VMMCONP002	Motor Power Connector for 100 Watt to 750 Watt motors with brake
IC800VMMCONP003	Motor Power Connector for 1000 Watt or 2000 Watt motors with or without brake
IC800VMMCONP004	Motor Power Connector for 3000 Watt motors with or without brake
IC800VMMCONE001	Encoder Connector for 100 Watt to 750 Watt motors
IC800VMMCONE002	Encoder Connector for 1000 Watt and larger motors

Motor Power Cables

IC800VMCP030	Power Cable for 100 Watt to 750 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP050	Power Cable for 100 Watt to 750 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP100	Power Cable for 100 Watt to 750 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP200	Power Cable for 100 Watt to 750 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP1030	Power Cable for 1000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP1050	Power Cable for 1000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP1100	Power Cable for 1000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP1200	Power Cable for 1000 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP2030	Power Cable for 2000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP2050	Power Cable for 2000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP2100	Power Cable for 2000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP2200	Power Cable for 2000 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP3030	Power Cable for 3000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP3050	Power Cable for 3000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP3100	Power Cable for 3000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP3200	Power Cable for 3000 Watt servo motor without brake, 20 m (65.7 feet)

Brake and Motor Power Cables

IC800VMCB030	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB050	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB100	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB200	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB1030	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB1050	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB1100	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB1200	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB2030	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB2050	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB2100	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB2200	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB3030	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB3050	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB3100	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB3200	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 20 m (65.7 feet)

Encoder Cables

IC800VMCE030	Encoder Cable for 100 to 750 Watt, 3 m (9.8 feet)
IC800VMCE050	Encoder Cable for 100 to 750 Watt, 5 m (16.4 feet)
IC800VMCE100	Encoder Cable for 100 to 750 Watt, 10 m (32.8 feet)
IC800VMCE200	Encoder Cable for 100 to 750 Watt, 20 m (65.7 feet)
IC800VMCE1030	Encoder Cable for 1000 Watt and greater, 3 m (9.8 feet)
IC800VMCE1050	Encoder Cable for 1000 watt and greater, 5 m (16.4 feet)
IC800VMCE1100	Encoder Cable for 1000 watt and greater, 10 m (32.8 feet)
IC800VMCE1200	Encoder Cable for 1000 watt and greater, 20 m (65.7 feet)

I/O Terminal Block

IC800VMTBC005	I/O Terminal Block Breakout Board and 0.5 m (1.6 feet) Cable

External Braking Resistors

IC800VMBR040	40 Ohm, 400 Watt External Braking (Regeneration) Resistor
IC800VMBR020	20 Ohm, 1000 Watt External Braking (Regeneration) Resistor

Communications and I/O Interface Cables

IC800VMCS030	Communications Cable from servo amplifier to PC, 3 m (9.8 feet)
IC800VMCI010	Flying lead I/O interface cable, 1 meter
IC800VMCI030	Flying lead I/O interface cable, 3 meter

Software Configuration Tool

IC646MPM101	Proficy Logic Developer - PLC Nano/Micro and VersaMotion, Programming Cable (No Upgrades included)
BC646MPM101	Proficy Logic Developer - PLC Nano/Micro and VersaMotion, Programming Cable (Includes 15 months of upgrades)

Examples of Typical Application using a Series 90-30

Application: 1000 Watt Low Inertia Motor with Brake. Configuration for Controller (100) 24VDC inputs, (50) 24VDC Outputs with ESCP protection, (20) Relay outputs, (12) 4 to 20mA Analog Inputs, (12) 4 to 20mA Analog Outputs and 24VDC power supply. Also requires Profibus Master and Ethernet communications.

Qty	Part Number	Description
		Controller, I/O and Display
1	IC693CPU374	CPU with built-in Ethernet 10/100Mbits and Web support
2	IC693PWR331	24VDC Power Supply, current available 6 Amps @ 5VDC; 0.625 Amps @ 24VDC relay; 0.833 @ 24VDC isolated
1	IC693CHS391	10 Slot CPU Base
1	IC693DSM314	Servo Motion Module, 2 digital and 1 analog axis supported
1	IC693ACC336	DSM Analog Servo Interface Terminal Board
1	IC693CBL324	DSM Analog TB Interface Cable, 1 m (3.28 feet)
1	IC800VMCI010	VersaMotion Flying Lead I/O Interface Cable, 1 m (3.28 feet)
4	IC693MDL660	Discrete Input Module, 24VDC Positive Logic, 32 points (Requires terminal block)
2	IC693MDL754	Discrete Output Module, 24VDC Output with ESCP, 32 points (Requires terminal block)
2	IC693MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included)
1	IC693ALG223	Analog Input Module, 16 channels, current. (Terminal block included)
2	IC693ALG392	Analog Output Module, supports voltage and current, 8 channels (Terminal block included)
1	IC693PBM200	Profibus Master Module, supports V0
1	IC693CHS392	10 slot I/O Expansion Rack
1	IC693CBL312	Rack Expansion Cable, 0.15 meter
1	IC693ACC307	I/O Bus Terminator Plug
6	IC694TBB032	Terminal Block, Box Style
1	BC646MPS001	Logic Developer - PLC Standard - w/Programming Cable
		Servo and Motor
1	IC800VMM10LBKSE25	VersaMotion 1000 Watt Low Inertia Servo Motor with Brake. Motor has keyway and oil seal
1	IC800VMA102	Servo Amplifier, 1000 Watts, 220VAC
1	IC800VMCB1030	Brake and Power Cable for 1000 Watt Servo Motor with Brake, 3 m (9.8 feet)
1	IC800VMCE1030	Encoder Cable for 1000 Watt and greater, 3 m (9.8 feet)
1	IC800VMTBC005	I/O Terminal Block and Cable (0.5 meter)
1	IC800VMCS030	Communications Cable from Servo Driver to PC, 3 m (9.8 feet)
		Programming Software for Control, Display and Motion
1	BC646MPS001	Machine Edition Standard Development Suite with Proficy GlobalCare Complete. Includes VersaMotion configuration tool, View Development for QuickPanel and PLC Standard with programming cable. Proficy GlobalCare with 15 months of free upgrades which is renewable on an annual basis.

Notes

VersaMax I/O and Control

With its innovative modular architecture, VersaMax combines power and versatility to help provide performance in a compact and affordable control solution.

The VersaMax product family can be used as I/O, as a PLC, and as distributed control for up to 4096 I/O points. With its modular architecture, intuitive features, and unparalleled ease of use, it helps save machine builders and end users time and money.

VersaMax is the first GE Intelligent Platforms control product created using the unique Six Sigma design process. Six Sigma combines global research and development techniques, extensive customer needs analysis, and rigorous quality control standards.

The VersaMax I/O and Control product family features a broad selection of I/O modules, terminations, power supplies, and network interface options to enhance your control capability.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

Power Supplies pages 180-181

Analog I/O Modules pages 195-199

Discrete I/O Modules pages 182-194

Network Interface Modules page 205

CPUs page 174
Carriers pages 175-177
I/O Interposing Bases pages 178-179

Expansion Modules page 202
RTD and Thermocouple Modules page 200
Specialty Modules page 201
Remote I/O Units pages 203-204
Serial Communications page 206

Accessories page 207
Configuration Guidelines pages 208-209

Publication Reference Chart

GFK-1179	Installation Requirements for Conformance to Standards
GFK-1503	VersaMax PLC User's Manual
GFK-1504	VersaMax Modules, Power Supplies, and Carriers User's Manual
GFK-1533	VersaMax System DeviceNet Communications Modules User's Manual
GFK-1534	VersaMax System Profibus Network Modules User's Manual
GFK-1535	VersaMax System Genius Network Interface Unit User's Manual
GFK-1563	VersaMax I/O and Industrial Networking Application Guide
GFK-1697	VersaMax System AS-i Network Master Module User's Manual
GFK-1847	Remote I/O Manager User's Manual
GFK-1852	VersaMax Serial to Ethernet Adapter User's Manual
GFK-1860	VersaMax System Ethernet Network Interface Unit User's Manual
GFK-1868	Proficy Machine Edition Getting Started Guide
GFK-1876	VersaMax Ethernet Station Manager Manual
IC690CDU002	InfoLink for PLC CD-ROM

CPUs

VersaMax CPUs supply a number of features usually found only in PLCs with larger footprints, including up to 128K of memory for application programs, floating point math, and real-time clock. With a modular and scalable architecture, the VersaMax CPU is ideal for standalone control applications with up to 256 local I/O or expanded systems of up to 4,096 I/O points.

	IC200CPU001	IC200CPU002	IC200CPU005	IC200CPUE05
Product Name	**VersaMax PLC CPU 32K Configurable Memory, 2 Ports RS-232 and RS-485**	**VersaMax PLC CPU 42K Configurable Memory, 2 Ports RS-232 and RS-485**	**VersaMax PLC CPU 128K Configurable User Memory, 2 Ports RS-232 and RS-485**	**VersaMax PLC CPU 128K Configurable User Memory, 2 Ports RS-232 and RS-485, 10 MBIT Ethernet Port. Supports EGD and SRTP.**
I/O Discrete Points	2048 in, 2048 out	2048 in, 2048 out	2048 in, 2048 out	2048 in, 2048 out
I/O Analog Words	Configurable	Configurable	Configurable	Configurable
Registers	Configurable	Configurable	Configurable	Configurable
Discrete Internal Bits	1024 points	1024 points	1024 points	1024 points
Discrete Temporary Bits	256 points	256 points	256 points	256 points
Global Discrete Bits	1280 points	1280 points	1280 points	1280 points
Program Memory	Configurable	Configurable	Configurable	Configurable
Boolean Execution Speed	1.8 ms/K (typical)	1.8 ms/K (typical)	0.8 ms/K (typical)	0.8 ms/K (typical)
Floating Points	Yes	Yes	Yes	Yes
Override	Yes	Yes	Yes	Yes
Built-in Communications	SNP Slave, RTU Master and Slave, Serial I/O	SNP Slave, RTU Master and Slave, Serial I/O	SNP Slave, RTU Master and Slave, Serial I/O	10 MBIT Ethernet Port, Slave, RTU Master and Slave, Serial I/O
Type of Memory Storage	System flash, battery-backed RAM	System flash, battery-backed RAM	System flash, battery-backed RAM	System flash, battery-backed RAM
Battery-Backed Real-time Clock	Yes	Yes	Yes	Yes
5V Backplane Current Consumption (mA)	40 with no EZ Store attached; 140 when EZ Store attached	40 with no EZ Store attached; 140 when EZ Store attached	80 with no EZ Store attached; 180 when EZ Store attached	160 with no EZ Store attached; 260 when EZ Store attached
3.3V Backplane Current Consumption (mA)	100	100	290 (Requires a power supply with 3.3 VDC expanded)	650 (Requires a power supply with 3.3 VDC expanded)
Dimensions (W x H)	2.63" (66.8 mm) x 5.04" (128 mm)	2.63" (66.8 mm) x 5.04" (128 mm)	4.20" (106.7 mm) x 5.04" (128 mm)	4.95" (126 mm) x 5.04" (128 mm)

Carriers

VersaMax provides several types of snap-together I/O carriers and interposing terminals to provide maximum wiring flexibility, as well as module hot insertion and removal. VersaMax carriers support IEC box-style, spring-style, and barrier-style terminals and are also available as snap-on auxiliary terminal strips and interposing terminals that can be mounted separately and connected to a connector-style carrier by an I/O cable.

	IC200CHS022	IC200CHS025
Product Name	**VersaMax Compact I/O Carrier, Local Box Clamp Connection Style**	**VersaMax Compact I/O Carrier, Local Spring Clamp Connection Style**
Field Termination Type	Integrated	Integrated
Wiring Termination Style	Local Box	Local Spring
Orientation on Module on Base	Vertical	Vertical
Dimensions (W x H x D)	66.8 mm (2.63 in) x 163.5 mm (6.45 in) x 70 mm (2.75 in), not including the height of DIN Rail	66.8 mm (2.63 in) x 163.5 mm (6.45 in) x 70 mm (2.75 in), not including the height of DIN Rail
Cables	N/A	N/A

Carriers

VersaMax provides several types of snap-together I/O carriers and interposing terminals to provide maximum wiring flexibility, as well as module hot insertion and removal. VersaMax carriers support IEC box-style, spring-style, and barrier-style terminals and are also available as snap-on auxiliary terminal strips and interposing terminals that can be mounted separately and connected to a connector-style carrier by an I/O cable.

	IC200CHS001	IC200CHS002	IC200CHS005
Product Name	**VersaMax I/O Carrier, Local Barrier Style**	**VersaMax I/O Carrier, Local Box Style**	**VersaMax I/O Carrier, Local Spring Clamp Connection Style**
Field Termination Type	Integrated	Integrated	Integrated
Wiring Termination Style	Barrier	Box	Spring
Orientation on Module on Base	Horizontal	Horizontal	Horizontal
Dimensions (W x H x D)	110.5 mm (4.35 in) x 139.7 mm (5.5 in) x 70 mm (2.75 in), not including the height of DIN Rail	110.5 mm (4.35 in) x 139.7 mm (5.5 in) x 70 mm (2.75 in), not including the height of DIN Rail	110.5 mm (4.35 in) x 139.7 mm (5.5 in) x 70 mm (2.75 in), not including the height of DIN Rail
Cables	N/A	N/A	N/A

Carriers

VersaMax provides several types of snap-together I/O carriers and interposing terminals to provide maximum wiring flexibility, as well as module hot insertion and removal. VersaMax carriers support IEC box-style, spring-style, and barrier-style terminals and are also available as snap-on auxiliary terminal strips and interposing terminals that can be mounted separately and connected to a connector-style carrier by an I/O cable.

	IC200CHS003	IC200CHS011	IC200CHS012	IC200CHS014	IC200CHS015
Product Name	**VersaMax I/O Carrier, Connector Style. A connecting cable (IC200CBL1xxx) and interposing base (IC200CHS011, CHS012, CHS014, CHS015, IC200CHS1xx or IC200CHS2xx) are required. This carrier can be used with all VersaMax I/O modules EXCEPT the following, due to their high isolation requirements: IC200MDL144 Input 240 VAC 4 Point Isolated Module; IC200MDL244 Input 240 VAC 8 Point Isolated Module; IC200MDD850 Mixed 240 VAC Isolated 4 Point / Output Relay 2.0A Isolated 8 Point Module**	**VersaMax I/O Carrier, Interposing Barrier Style (Requires IC200CHS003 base and connecting cable IC200CBL1xxx)**	**VersaMax I/O Carrier, Interposing Box Style (Requires IC200CHS003 base and connecting cable IC200CBL1xxx)**	**VersaMax I/O Carrier, Interposing Box Thermocouple Compensation (Requires IC200CHS003 base and connecting cable IC200CBL1xxx)**	**VersaMax I/O Carrier, Interposing Spring Clamp (Requires IC200CHS003 base and connecting cable IC200CBL1xxx)**
Field Termination Type	Integrated	Non-Integrated	Non-Integrated	Integrated	Non-Integrated
Wiring Termination Style	Connector	Barrier	Box	Box-Thermocouple Compensation	Spring
Orientation on Module on Base	Vertical	N/A	N/A	N/A	N/A
Dimensions (W x H x D)	66.8 mm (2.63 in) x 133.4 mm (5.25 in) x 70 mm (2.75 in), not including the height of DIN Rail	110.5 mm (4.35 in) x 105.4 mm (2.63 in) x 70 mm (2.75 in), not including the height of DIN Rail	110.5 mm (4.35 in) x 105.4 mm (2.63 in) x 70 mm (2.75 in), not including the height of DIN Rail	110.5 mm (4.35 in) x 105.4 mm (2.63 in) x 70 mm (2.75 in), not including the height of DIN Rail	110.5 mm (4.35 in) x 105.4 mm (2.63in) x 70 mm (2.75 in), not including the height of DIN Rail
Cables	Requires a IC200CBL1xxx cable	Requires a IC200CBL1xxx cable	Requires a IC200CBL1xxx cable	Requires a IC200CBL1xxx cable	Requires a IC200CBL1xxx cable

I/O Interposing Bases

VersaMax I/O interposing disconnect bases enable the IC200CHS003 to connect to a wide range of termination bases. The Relay bases provide additional protection and higher amperage outputs. The Disconnect bases enables the user to easily disconnect signals, on a per point bases, from the I/O module.

	IC200CHS003	IC200CHS101	IC200CHS102	IC200CHS111
Product Name	VersaMax I/O Carrier, Connector Style. A connecting cable (IC200CBL1xxx) and interposing base (IC200CHS011, CHS012, CHS014, CHS015, IC200CHS1xx or IC200CHS2xx) are required. This carrier can be used with all VersaMax I/O modules EXCEPT the following, due to their high isolation requirements: IC200MDL144 Input 240 VAC 4 Point Isolated Module; IC200MDL244 Input 240 VAC 8 Point Isolated Module; IC200MDD850 Mixed 240 VAC Isolated 4 Point / Output Relay 2.0A Isolated 8 Point Module	Input or Output Interposing Disconnect Style 16 Points. The base has an individual knife-switch disconnect for each signal and common terminal and its corresponding pin on the VersaMax cable connector. Requires IC200CHS003 and a connecting cable IC200CBL1xxx.	Expansion Input or Output Interposing Disconnect Style 16 Points. The base has an individual knife-switch disconnect for each signal and common terminal and its corresponding pin on the VersaMax cable connector. Requires a IC200CHS101 main base, can not be directly connected to IC200CHS003.	I/O Interposing Relay Base (replaceable relays), fused (8 amps, replaceable), 16 points. The relays on these interposing terminals are intended to be controlled with standard 24 VDC 0.5A VersaMax output modules (IC200MDL740 and IC200MDL750 using IC200CHS003 base and connected by IC200CBL1xxx).
Field Termination Type	Integrated	Non-Integrated	Non-Integrated	Non-Integrated
Wiring Termination Style	Connector	Box	Box	Box
Removable Terminals Connectors	N/A	No	No	No
Input Voltage	N/A	All discrete modules supported except MDL144, 244, 331, 730 and MDD840, 843, 850.	All discrete modules supported except MDL144, 244, 331, 730 and MDD840, 843, 850.	24 VDC from MDL740 and MDL750
Output Voltage	N/A	All discrete modules supported except MDL144, 244, 331, 730 and MDD840, 843, 850.	All discrete modules supported except MDL144, 244, 331, 730 and MDD840, 843, 850.	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Load Current per Point	N/A	N/A	N/A	8.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC (Replaceable Fuse)
Protection	N/A	N/A	N/A	Replaceable Fuse
Points per Common	N/A	N/A	N/A	Isolated Per Point
Dimensions (W x H x D)	66.8 mm (2.63 in) x 133.4 mm (5.25 in) x 70 mm (2.75 in), not including the height of the DIN Rail	115 mm (4.5 in) x 126 mm (4.95 in) x 65 mm (2.6 in), not including the height of the DIN Rail	115 mm (4.5 in) x 126 mm (4.95 in) x 65 mm (2.6 in), not including the height of the DIN Rail	253.7 mm (9.9 in) x 126 mm (4.95 in) x 73 mm (2.8 in), not including the height of the DIN Rail
Cables	Requires a IC200CBL1xxx cable	Requires a IC200CBL1xxx cable	N/A	Requires a IC200CBL1xxx cable

I/O Interposing Bases

VersaMax I/O interposing disconnect bases enable the IC200CHS003 to connect to a wide range of termination bases. The Relay bases provide additional protection and higher amperage outputs. The Disconnect bases enables the user to easily disconnect signals, on a per point bases, from the I/O module.

	IC200CHS112	IC200CHS211	IC200CHS212
Product Name	**I/O Interposing Relay Base (replaceable relays), fused (8 amps, replaceable), 16 points. The relays on these interposing terminals are intended to be controlled with standard 24 VDC 0.5A VersaMax output modules (IC200MDL740 and IC200MDL750 using IC200CHS003 base and connected by IC200CBL1xxx). Expansion base.**	**I/O Interposing Relay Base (replaceable relays), fused (8 amps, replaceable), 16 points. Field terminals are removable. The relays on these interposing terminals are intended to be controlled with standard 24 VDC 0.5A VersaMax output modules (IC200MDL740 and IC200MDL750 using IC200CHS003 base and connected by IC200CBL1xxx).**	**I/O Interposing Relay Base (replaceable relays), fused (8 amps, replaceable), 16 points. Field terminals are removable. The relays on these interposing terminals are intended to be controlled with standard 24 VDC 0.5A VersaMax output modules (IC200MDL740 and IC200MDL750 using IC200CHS003 base and connected by IC200CBL1xxx). Expansion base.**
Field Termination Type	Non-Integrated	Non-Integrated	Non-Integrated
Connection Style	Box	Box	Box
Removable Terminals Connectors	No	Yes	Yes
Input Voltage	24 VDC from MDL740 and MDL750	24 VDC from MDL740 and MDL750	24 VDC from MDL740 and MDL750
Output Voltage	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Load Current per Point	8.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC (Replaceable Fuse)	8.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC (Replaceable Fuse)	8.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC (Replaceable Fuse)
Protection	Replaceable Fuse	Replaceable Fuse	Replaceable Fuse
Points per Common	Isolated Per Point	Isolated Per Point	Isolated Per Point
Dimensions (W x H x D)	253.7 mm (9.9 in) x 126 mm (4.95 in) x 73 mm (2.8 in), not including the height of the DIN Rail	253.7 mm (9.9 in) x 126 mm (4.95 in) x 73 mm (2.8 in), not including the height of the DIN Rail	253.7 mm (9.9 in) x 126 mm (4.95 in) x 73 mm (2.8 in), not including the height of the DIN Rail
Cables	N/A	Requires a IC200CBL1xxx cable	N/A

Power Supplies

VersaMax Power Supply modules snap onto any VersaMax CPU or Network Interface Unit or onto a power supply booster carrier. Each power supply can be used as the main power source for modules in the I/O station, or as a source of supplemental power for larger I/O applications.

	IC200PWR001	IC200PWR002	IC200PWR101	IC200PWR102
Product Name	**24 VDC Power Supply**	**24 VDC Power Supply with Expanded 3.3 V**	**120/240 VAC Power Supply**	**120/240 VAC Power Supply with Expanded 3.3 VDC**
Input Voltage	24 VDC	24 VDC	120/240 VAC	120/240 VAC
Output Voltage	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC
Extended Power	No	Yes	No	Yes
Input Power	11 W	11 W	27 VA	27 VA
Holdup Time	10 ms	10 ms	20 ms	20 ms
Inrush Current	20 A @ 24 VDC; 25 A @ 30 VDC	20 A @ 24 VDC; 25 A @ 30 VDC	N/A	N/A
Protection	Short circuit, overload, reverse polarity	Short circuit, overload, reverse polarity	Short circuit, overload	Short circuit, overload
Total Output Current	1.5 A maximum	1.5 A maximum	1.5 A maximum	1.5 A maximum
3.3V Output Current	0.25 A maximum	1.0 A maximum	0.25 A maximum	1.0 A maximum
5V Output Current	1.5 A minus the 3.3V current used, maximum	1.5 A minus the 3.3V current used, maximum	1.5 A minus the 3.3V current used, maximum	1.5 A minus the 3.3V current used, maximum
Dimensions (W x H x D)	49 mm (1.93 in) x 133.4 mm (5.25 in) x 39 mm (1.54 in), not including the height of the carrier or the DIN Rail	49 mm (1.93 in) x 133.4 mm (5.25 in) x 39 mm (1.54 in), not including the height of the carrier or the DIN Rail	49 mm (1.93 in) x 133.4 mm (5.25 in) x 39 mm (1.54 in), not including the height of the carrier or the DIN Rail	49 mm (1.93 in) x 133.4 mm (5.25 in) x 39 mm (1.54 in), not including the height of the carrier or the DIN Rail

Power Supplies

VersaMax Power Supply modules snap onto any VersaMax CPU or Network Interface Unit or onto a power supply booster carrier. Each power supply can be used as the main power source for modules in the I/O station, or as a source of supplemental power for larger I/O applications.

	IC200PWR201	IC200PWR202	IC200PWB001
Product Name	**12 VDC Power Supply**	**12 VDC Power Supply with Expanded 3.3 VDC**	**VersaMax Power Supply Booster Carrier. Supplies power to all modules to the right of booster. Requires power supply.**
Input Voltage	9.6-15 VDC, 12 VDC nominal	9.6-15 VDC, 12 VDC nominal	N/A
Output Voltage	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	N/A
Extended Power	No	Yes	N/A
Input Power	11 W	11 W	N/A
Holdup Time	10 ms	10 ms	N/A
Inrush Current	25 A at 12 VDC; 30 A at 15 VDC	25 A at 12 VDC; 30 A at 15 VDC	N/A
Protection	Short circuit, overload, reverse polarity	Short circuit, overload, reverse polarity	N/A
Total Output Current	1.5 A maximum	1.5 A maximum	N/A
3.3 V Output Current	0.25 A maximum	1.0 A maximum	N/A
5V Output Current	1.5 A minus the 3.3 V current used, maximum	1.5 A minus the 3.3 V current used, maximum	N/A
Dimensions (W x H x D)	49 mm (1.93 in) x 133.4 mm (5.25 in) x 39 mm (1.54 in), not including the height of the carrier or the DIN Rail	49 mm (1.93 in) x 133.4 mm (5.25 in) x 39 mm (1.54 in), not including the height of the carrier or the DIN Rail	66.8 mm (2.63 in) x 133.4 mm (5.25 in) x 70 mm (2.75 in), not including the height of DIN Rail

Discrete Mixed I/O Modules

Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Discrete input modules receive signals from input devices such as sensors, push-buttons, and switches that can have two states: on or off, open or closed. Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Modules require a carrier base (IC200CHSxxx).

	IC200MDD840	IC200MDD842	IC200MDD843
Product Name	**VersaMax Discrete Mixed Modules, 24 VDC Pos Logic Input 20 points/Output Relay 2.0 A, 12 points**	**VersaMax Discrete Mixed Modules 24 VDC Pos Logic Input 16/Output 24 VDC 0.5 A with ESCP**	**VersaMax Discrete Mixed Modules 24 VDC Positive Logic Input 10/Output Relay 6**
Input Voltage	24 VDC	24 VDC	24 VDC
Output Voltage	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	24 VDC	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Number of Points	20 in/12 out	16 in/16 out	10 in/6 out
Channel to Channel Isolation	No	No	No
Load Current per Point	2.0 A for 5-265 VAC, 2.0 A for 5-30 VDC	0.5 A for 30 VDC	2.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC
Input and Output Response Time- On/Off(ms)	0.5 and 10	0.5 and 0.5	0.5 and 10
Protection	No internal fuses or snubbers	Short circuit protection, overcurrent protection, free-wheeling diodes	No internal fuses or snubbers
On State Current	2.0-5.5 mA	2.0-5.5 mA	2.0-5.5 mA
Off State Current	0-0.5 mA	0-0.5 mA	0-0.5 mA
External Power Supply	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	18-30 VDC, 24 VDC nominal	0-125 VDC, 5/24/125 VDC nominal, 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Input Impedance	10 kOhms maximum	10 kOhms maximum	10 kOhms maximum
Load Current	2.0 A for 5-265 VAC or 5-30 VDC, 0.2 A for 31-125 VDC	0.5 Amp at 30 VDC maximum (resistive); 2.0 Amps maximum for 100ms inrush	10mA per point minimum, 8.0A maximum per module; 2.0 Amps for 5 to 265 VAC maximum (resistive); 2.0 Amps for 5 to 30 VDC maximum (resistive); 0.2 Amp for 31 to 125 VDC maximum (resistive)
5V Backplane Current Consumption (mA)	375 maximum	100 maximum	190 maximum
LED Indicators	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Mixed I/O Modules

Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Discrete input modules receive signals from input devices such as sensors, push-buttons, and switches that can have two states: on or off, open or closed. Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Modules require a carrier base (IC200CHSxxx).

	IC200MDD844	IC200MDD845	IC200MDD846
Product Name	**VersaMax Discrete Mixed Modules 24 VDC Positive Logic Input 16/Output 24 VDC 0.5 A 16 points**	**VersaMax Discrete Mixed Modules 24 VDC Positive Logic Input 16/Output Relay 2.0A Isolated 8 points**	**VersaMax Discrete Mixed Modules 120 VAC Input 8 points/Outpoints Relay 2.0A Isolated 8 points**
Input Voltage	24 VDC	24 VDC	120 VAC
Output Voltage	24 VDC	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Number of Points	16 in/16 out	16 in/8 out	8 in/8 out
Channel to Channel Isolation	No	Yes, outputs	Yes, outputs
Load Current per Point	0.5 A for 30 VDC	2.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC	2.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC
Input and Output Response Time- On/Off(ms)	0.5 and 0.2 ON / 1.0 OFF	0.5 and 10	1 AC cycle minimum and 2 AC cycle (Hz dependent) maximum and 10.0 OFF
Protection	No internal fuses	No internal fuses or snubbers	No internal fuses or snubbers
On State Current	2.0-5.5 mA	2.0-5.5 mA	5 mA minimum
Off State Current	0-0.5 mA	0-0.5 mA	2.5 mA maximum
External Power Supply	18-30 VDC, 24 VDC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Input Impedance	10 kOhms maximum	10 kOhms maximum	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical
Load Current	0.5 Amp at 30 VDC maximum (resistive) 2.0 Amps maximum for 100ms inrush	10mA per point minimum 2.0A for 5 to 265 VAC maximum (resistive) 2.0A for 5 to 30 VDC maximum (resistive) 0.2A for 31 to 125 VDC maximum (resistive)	10mA per point minimum 2.0A for 5 to 265 VAC maximum (resistive) 2.0A for 5 to 30 VDC maximum (resistive) 0.2A for 31 to 125 VDC maximum (resistive)
5V Backplane Current Consumption (mA)	70 maximum	270 maximum	300 maximum
LED Indicators	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Mixed I/O Modules

Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Discrete input modules receive signals from input devices such as sensors, push-buttons, and switches that can have two states: on or off, open or closed. Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Modules require a carrier base (IC200CHSxxx).

	IC200MDD847	IC200MDD848	IC200MDD849
Product Name	**VersaMax Discrete Mixed Modules 240 VAC Input 8 points/Output Relay 2.0A Isolated 8 points**	**VersaMax Discrete Mixed Modules 120 VAC Input 8 points/Output 120 VAC 0.5A Isolated 8 points**	**VersaMax Discrete Mixed Modules 120 VAC Input Isolated 8 points/Output Relay 2.0 A Isolated 8 points**
Input Voltage	240 VAC	120 VAC	0-132 VAC (47 to 63 Hz), 120 VAC nominal
Output Voltage	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	120 VAC	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Number of Points	8 in/8 out	8 in/8 out	8 in/8 out
Channel to Channel Isolation	Yes, outputs	Yes	Yes
Load Current per Point	2.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC	10 mA min, 0.5 A max, 5 A for 1 cycle (20 ms) max inrush	2.0 A
Input and Output Response Time- On/Off(ms)	1 AC cycle minimum and 2 AC cycle (Hz dependent) maximum and 10.0 OFF	1 cycle/2 cycle and <1/2 cycle/<1/2 cycle	1 cycle/2 cycle and 10/10
Protection	No internal fuses or snubbers	Snubber and MOVs (each output)	No internal fuses or snubbers
On State Current	4 mA minimum	5 mA minimum	5 mA minimum
Off State Current	1.5 mA maximum	2.5 mA maximum	2.5 mA maximum
External Power Supply	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	N/A
Input Impedance	38.5 kOhms (reactive) at 60 Hz, typical; 46.3 kOhms (reactive) at 50 Hz, typical	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical
Load Current	10mA per point minimum 2.0 Amps for 5 to 265 VAC maximum (resistive) 2.0 Amps for 5 to 30 VDC maximum (resistive) 0.2 Amp for 31 to 125 VDC maximum (resistive)	10 mA minimum per point, 0.5 A maximum per point, 5.0 A for one cycle (20 ms) maximum inrush	10 mA per point minimum; 2.0 A for 5-265 VAC maximum (resistive); 2.0 A for 5-30 VDC maximum (resistive); 0.2 A for 31-125 VDC maximum (resistive)
5V Backplane Current Consumption (mA)	300 maximum	125 maximum	300 maximum
LED Indicators	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm 1.956 in), not including the height of (the carrier or the mating connectors

Discrete Mixed I/O Modules

Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Discrete input modules receive signals from input devices such as sensors, push-buttons, and switches that can have two states: on or off, open or closed. Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Modules require a carrier base (IC200CHSxxx).

	IC200MDD850	IC200MDD851
Product Name	**VersaMax Discrete Mixed Modules 240 VAC Input Isolated 4 points/Output Relay 2.0 A Isolated 8 points**	**VersaMax Discrete Mixed Modules 5/12 VDC Input 16 points/Output 12/24 VDC 16 points**
Input Voltage	0-264 VAC (47-63 Hz), 240 VAC nominal	0 to 15 VDC, +5/12 VDC nominal
Output Voltage	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	+10.2 to +30 VDC, +12/24 VDC nominal
Number of Points	8 out/4 in	16 out/16 in
Channel to Channel Isolation	Yes	No
Load Current per Point	2.0 A	0.5 Amps at 30 VDC maximum (resistive) 2.0 Amps maximum for 100ms inrush
Input and Output Response Time- On/Off(ms)	1 cycle/2 cycle and 10/10	0.25ms maximum/0.2ms ON and 1.0ms OFF maximum
Protection	No internal fuses or snubbers	No internal fuses or snubbers
On State Current	4 mA minimum	1.45mA minimum
Off State Current	1.5 mA maximum	0 to 0.7 mA maximum
External Power Supply	N/A	+10.2 to +30 VDC, +12/24 VDC nominal
Input Impedance	38.5 kOhms (reactive) at 60 Hz, typical; 46.3 kOhms (reactive) at 50 Hz, typical	2.4kOhms typical @ 12 VDC
Load Current	10 mA per point minimum; 2.0 A for 5-265 VAC maximum (resistive); 2.0 A for 5-30 VDC maximum (resistive); 0.2 A for 31-125 VDC maximum (resistive)	0.5 Amps at 30 VDC maximum (resistive); 2.0 Amps maximum for 100ms inrush
5V Backplane Current Consumption (mA)	260 maximum	115 maximum
LED Indicators	One LED per point shows individual point on/off state logic side); OK LED indicates backplane power is present	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Input Modules

Discrete input modules receive signals from input devices such as sensors, pushbuttons, and switches that can have two states: on or off, open or closed. Modules require a carrier base (IC200CHSxxx).

	IC200MDL140	IC200MDL141	IC200MDL143
Product Name	**VersaMax Discrete Input Module 120 VAC, 8 points**	**VersaMax Discrete Input Module 240 VAC, 8 points**	**VersaMax Discrete Input Module 120 VAC Isolated, 8 points**
Input Voltage	0-132 VAC	0-264 VAC	0-132 VAC
Number of Points	8	8	8
Channel to Channel Isolation	No	No	Yes
Input and Output Response Time- On/Off (ms)	1 cycle/2 cycles	1 cycle/2 cycles	1 cycle/2 cycles
Points per Common	1 group of 8	1 group of 8	8 groups of 1
On State Current	5 mA minimum	7 mA minimum	5 mA minimum
Off State Current	2.5 mA maximum	1.5 mA maximum	2.5 mA maximum
Input Impedance	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical	38.5 kOhms (reactive) at 60 Hz, typical; 46.3 kOhms (reactive) at 50 Hz, typical	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical
5V Backplane Current Consumption (mA)	55 maximum	55 maximum	50 maximum
LED Indicators	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Input Modules

Discrete input modules receive signals from input devices such as sensors, pushbuttons, and switches that can have two states: on or off, open or closed. Modules require a carrier base (IC200CHSxxx).

	IC200MDL144	IC200MDL240	IC200MDL241
Product Name	**VersaMax Discrete Input Module 240 VAC Isolated, 4 points**	**VersaMax Discrete Input Module, 120 VAC Positive Logic, 16 points**	**VersaMax Discrete Input Module, 240 VAC Positive Logic, 16 points**
Input Voltage	0-264 VAC	0-132 VAC	0-264 VAC
Number of Points	4	16	16
Channel to Channel Isolation	Yes	No	No
Input and Output Response Time- On/Off (ms)	1 cycle/2 cycles	1 cycle/2 cycles	1 cycle/2 cycles
Points per Common	4 groups of 1	2 groups of 8	2 groups of 8
On State Current	7 mA minimum	5 mA minimum	4 mA minimum
Off State Current	3 mA maximum	2.5 mA maximum	1.5 mA maximum
Input Impedance	38.5 kOhms (reactive) at 60 Hz, typical; 46.3 kOhms (reactive) at 50 Hz, typical	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical	38.5 kOhms (reactive) at 60 Hz, typical; 46.3 kOhms (reactive) at 50 Hz, typical
5V Backplane Current Consumption (mA)	30 maximum	110 maximum	110 maximum
LED Indicators	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Input Modules

Discrete input modules receive signals from input devices such as sensors, pushbuttons, and switches that can have two states: on or off, open or closed. Modules require a carrier base (IC200CHSxxx).

	IC200MDL243	IC200MDL244	IC200MDL631
Product Name	**VersaMax Discrete Input Module, 120 VAC Isolated, 16 points**	**VersaMax Discrete Input Module, 240 VAC Isolated, 8 points**	**VersaMax Discrete Input Module 125 VDC, Pos/Neg Logic, Isolated, 8 points**
Input Voltage	0-132 VAC	0-264 VAC	0-150 VDC, 125 VDC nominal
Number of Points	16	8	8 isolated inputs
Channel to Channel Isolation	Yes	Yes	Yes
Input and Output Response Time- On/Off (ms)	1 cycle/2 cycles	1 cycle/2 cycles	0.5 maximum
Points per Common	16 groups of 1	8 groups of 1	8 groups of 1
On State Current	5 mA minimum	7 mA minimum	1.0 mA minimum
Off State Current	2.5 mA maximum	3 mA maximum	0 to 0.1 mA maximum
Input Impedance	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical	38.5 kOhms (reactive) at 60 Hz, typical; 46.3 kOhms (reactive) at 50 Hz, typical	74 K Ohm typical at 125 VDC
5V Backplane Current Consumption (mA)	100 maximum	60 maximum	40 maximum
LED Indicators	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Input Modules

Discrete input modules receive signals from input devices such as sensors, pushbuttons, and switches that can have two states: on or off, open or closed. Modules require a carrier base (IC200CHSxxx).

	IC200MDL632	IC200MDL635	IC200MDL636
Product Name	**VersaMax Discrete Input Module 125 VDC, Pos/Neg Logic, Isolated, 16 points**	**VersaMax Discrete Input Module 48 VDC, Pos/Neg Logic (2 Groups of 8), 16 points**	**VersaMax Discrete Input Module 48 VDC, Pos/Neg Logic (4 Groups of 8), 32 points**
Input Voltage	0-150 VDC, 125 VDC nominal	0-60 VDC, 48 VDC nominal	0-60 VDC, 48 VDC nominal
Number of Points	16 isolated inputs	16 inputs (2 groups of 8)	32 (4 groups of 8)
Channel to Channel Isolation	Yes	No	No
Input and Output Response Time- On/Off (ms)	0.5 maximum	0.5 maximum	0.5 maximum
Points per Common	16 groups of 1	2 groups of 8	4 groups of 8
On State Current	1.0 mA minimum	1.0 mA minimum	1.0 mA minimum
Off State Current	0 to 0.1 mA maximum	0 to 0.4 mA maximum	0 to 0.4 mA maximum
Input Impedance	74 K Ohm typical at 125 VDC	28 K Ohm typical	28 K Ohm typical
5V Backplane Current Consumption (mA)	80 maximum	70 maximum	140 maximum
LED Indicators	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Input Modules

Discrete input modules receive signals from input devices such as sensors, pushbuttons, and switches that can have two states: on or off, open or closed. Modules require a carrier base (IC200CHSxxx).

	IC200MDL640	IC200MDL643	IC200MDL644	IC200MDL650
Product Name	**VersaMax Discrete Input Module, 24 VDC Pos/Neg Logic, 16 points**	**VersaMax Discrete Input Module, 5/12 VDC (TTL) Pos/Neg Logic, 16 points**	**VersaMax Discrete Input Module, 5/12 VDC (TTL) Pos/Neg Logic, 32 points**	**VersaMax Discrete Input Module, 24 VDC Positive Logic, 32 points**
Input Voltage	0-30 VDC	0-15 VDC	0-15 VDC	0-30 VDC
Number of Points	16	16	32	32
Channel to Channel Isolation	No	No	No	No
Input and Output Response Time- On/Off (ms)	0.5	0.25	0.25	0.5
Points per Common	2 groups of 8	2 groups of 8	4 groups of 8	2 groups of 8
On State Current	2.0-5.5 mA	1.45 mA minimum	1.45 mA minimum	2.0-5.5 mA
Off State Current	0-0.5 mA	0-0.7 mA maximum	0-0.7 mA maximum	0-0.5 mA
Input Impedance	10 kOhms maximum	2.4 kOhms at 12 VDC, typical	2.4 kOhms at 12 VDC, typical	10 kOhms maximum
5V Backplane Current Consumption (mA)	25 maximum	70 maximum	140 maximum	50 maximum
LED Indicators	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status. OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Output Modules

Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Modules require a carrier base (IC200CHSxxx).

	IC200MDL329	IC200MDL330	IC200MDL331
Product Name	**VersaMax Discrete Output Module, 120 VAC, 0.5A per point Isolated, 8 points**	**VersaMax Discrete Output Module, 120 VAC 0.5A per point Isolated, 16 points**	**VersaMax Discrete Output Module, 120 VAC 2.0A per point Isolated, 8 points**
Output Voltage	85-132 VAC (47-63 Hz), 120 VAC nominal	85-132 VAC (47-63 Hz), 120 VAC nominal	85-132 VAC (47-63 Hz), 120 VAC nominal
Number of Points	8	16	8
Channel to Channel Isolation	Yes	Yes	Yes
Load Current per Point	0.5 A per point	0.5 A per point	2.0 A per point
Input and Output Response Time- On/Off (ms)	<1/2 cycle/<1/2 cycle	<1/2 cycle/<1/2 cycle	<1/2 cycle/<1/2 cycle
Protection	Snubber and MOVs (each output)	Snubber and MOVs (each output)	Snubber and MOVs (each output)
Points per Common	8 groups of 1	Isolated points	Isolated points
External Power Supply	85-132 VAC (47-63 Hz), 120 VAC nominal	85-132 VAC (47-63 Hz), 120 VAC nominal	85-132 VAC (47-63 Hz), 120 VAC nominal
Load Current	10 mA minimum per point, 0.5 A maximum per point, 5.0 A for one cycle (20 ms) maximum inrush	10 mA minimum per point, 0.5 A maximum per point, 5.0 A for one cycle (20 ms) maximum inrush	10 mA minimum per point, 2.0 A maximum per point, 20 A for one cycle (20 ms) maximum inrush
5V Backplane Current Consumption (mA)	70 maximum	140 maximum	85 maximum
LED Indicators	One LED per point shows individual point ON/OFF status (logic side). OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status (logic side). OK LED indicates backplane power is present	One LED per point shows individual point ON/OFF status (logic side). OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Output Modules

Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Modules require a carrier base (IC200CHSxxx).

	IC200MDL730	IC200MDL740	IC200MDL741
Product Name	**VersaMax Discrete Output Module, 24 VDC Positive Logic 2.0A per point w/ESCP, 8 points**	**VersaMax Discrete Output Module, 24 VDC Positive Logic, 0.5A per point, 16 points**	**VersaMax Discrete Output Module, 24 VDC Positive Logic, 0.5A per point w/ESCP, 16 points**
Output Voltage	17.5-30 VDC, 24 VDC nominal	10.2-30 VDC, 12/24 VDC nominal	18-30 VDC, 24 VDC nominal
Number of Points	8	16	16
Channel to Channel Isolation	No	No	No
Load Current per Point	2.0 A per point	0.5 A per point	0.5 A per point
Input and Output Response Time- On/Off (ms)	0.5	0.2/1.0	0.5/0.5
Protection	Short circuit protection, overcurrent protection (each output)	No internal fuses (each output)	Short circuit protection, overcurrent protection, free-wheeling diodes (each output)
Points per Common	1 group of 8	1 group of 16	1 group of 16
External Power Supply	18-30 VDC, 24 VDC nominal	10.2-30 VDC, 12/24 VDC nominal	18-30 VDC, 24 VDC nominal
Load Current	2.0 A at 30 VDC maximum (resistive) per point, 8.0 A max per module	0.5 A at 30 VDC maximum (resistive); 2.0 A inrush maximum for 100 ms	0.5 A at 30 VDC maximum (resistive); 2.0 A inrush maximum for 100 ms
5V Backplane Current Consumption (mA)	50 maximum	45 maximum	75 maximum
LED Indicators	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Output Modules

Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Modules require a carrier base (IC200CHSxxx).

	IC200MDL742	IC200MDL743	IC200MDL744
Product Name	**VersaMax Discrete Output Module, 24 VDC Positive Logic 0.5A with ESCP, 32 points**	**VersaMax Discrete Output Module, 5/12/24 VDC Negative Logic, 0.5 A per point (1 group of 16) 16 points**	**VersaMax Discrete Output Module, 5/12/24 VDC Negative Logic, 0.5 A per point (2 groups of 16) 32 points**
Output Voltage	18-30 VDC, 24 VDC nominal	5/12/24 VDC	5/12/24 VDC
Number of Points	32	16 (1 group of 16)	32 (2 groups of 16)
Channel to Channel Isolation	No	No	No
Load Current per Point	0.5 A per point	0.5 A per point	0.5 A per point
Input and Output Response Time- On/Off (ms)	0.5/0.5	0.2/1.0	0.2/1.0
Protection	Short circuit protection, overcurrent protection, free-wheeling diodes (each output)	No internal fuse	No internal fuse
Points per Common	2 groups of 16	1 group of 16	2 groups of 16
External Power Supply	18-30 VDC, 24 VDC nominal	4.75 to 5.25 VDC, 5 VDC nominal for 5 VDC-TTL mode; 10.2 to 30 VDC, 12/24 VDC nominal for 12/24 VDC mode	4.75 to 5.25 VDC, 5 VDC nominal for 5 VDC-TTL mode; 10.2 to 30 VDC, 12/24 VDC nominal for 12/24 VDC mode
Load Current	0.5 A at 30 VDC maximum (resistive); 2.0 A inrush maximum for 100 ms	25 mA maximum for 5 VDC-TTL mode, 0.5 A at 30 VDC maximum, 2.0 A inrush maximum for 100 ms for 12/24 VDC mode	25 mA maximum for 5 VDC-TTL mode, 0.5 A at 30 VDC maximum, 2.0 A inrush maximum for 100 ms for 12/24 VDC mode
5V Backplane Current Consumption (mA)	150 maximum	70 maximum	140 maximum
LED Indicators	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Discrete Output Modules

Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Modules require a carrier base (IC200CHSxxx).

	IC200MDL750	IC200MDL930	IC200MDL940
Product Name	**VersaMax Discrete Output Module, 24 VDC Positive Logic, 0.5A per point, 32 points**	**VersaMax Discrete Output Module, Relay 2.0 A per point Isolated Form A, 8 points**	**VersaMax Discrete Output Module, Relay 2.0 A per point Isolated Form A, 16 points**
Output Voltage	10.2-30 VDC, 12/24 VDC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Number of Points	32	8	16
Channel to Channel Isolation	No	Yes	Yes
Load Current per Point	0.5 A per point	2.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC	2.0 A for 5-265 VAC, 2.0 A for 5-30 VDC, 0.2 A for 31-125 VDC
Input and Output Response Time- On/Off (ms)	0.2/1.0	10.0/10.0	10.0/10.0
Protection	No internal fuses	No internal fuses or snubbers	No internal fuses or snubbers
Points per Common	2 groups of 16	Isolated points	Isolated points
External Power Supply	10.2-30 VDC, 12/24 VDC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal	0-125 VDC, 5/24/125 VDC nominal; 0-265 VAC (47-63 Hz), 120/240 VAC nominal
Load Current	0.5 A at 30 VDC maximum (resistive); 2.0 A inrush maximum for 100 ms	10 mA per point minimum; 2.0 A for 5-265 VAC maximum (resistive); 2.0 A for 5-30 VDC maximum (resistive); 0.2 A for 31-125 VDC maximum (resistive)	10 mA per point minimum; 2.0 A for 5-265 VAC maximum (resistive); 2.0 A for 5-30 VDC maximum (resistive); 0.2 A for 31-125 VDC maximum (resistive)
5V Backplane Current Consumption (mA)	90 maximum	245 maximum	490 maximum
LED Indicators	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	One LED per point shows individual point ON/OFF state (logic side). FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Analog Input Modules

Analog input modules receive signals from current and voltage input devices. Modules require a carrier base (IC200CHSxxx).

	IC200ALG230	IC200ALG240	IC200ALG260	IC200ALG261
Product Name	**VersaMax Analog Input Module, 12 Bit Voltage/Current, 4 Channels**	**VersaMax Analog Input Module, 16 Bit Voltage/Current Isolated, 8 Channel**	**VersaMax Analog Input Module, 12 Bit Voltage/Current, 8 Channel**	**VersaMax Analog Input Module, 15 Bit Differential Voltage, 8 Channel**
Input Range	±10 VDC or 0-10 VDC	±10 VDC, 4-20 mA	4-20mA, ±10 VDC or 0-10 VDC	±10 VDC
Number of Channels	4	8 Channel to channel isolated	8	8
External Power Supply	None	Range: 19.5-30 VDC including ripple; Current consumption: 100 mA maximum plus load currents	None	None
Resolution	Bipolar mode: 2.5 mV = 8 counts, Unipolar mode: 2.5 mV = 8 counts	Current mode: 381 nA nominal Voltage mode: 381 µV nominal	Current mode: 4 µA = 8 counts, Bipolar mode: 2.5 mV = 8 counts, Unipolar mode: 2.5 mV = 8 counts	Bipolar mode: 0.3125 mV = 1 counts
Update Rate	0.4 ms	Approximately 20 mS max. @ 50 Hz filter frequency Approximately 16.7 mS max. @ 60 Hz filter frequency	0.4 ms	7.5 ms
Accuracy at 25°C	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.1% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale
Input Impedance	Voltage mode: 126 kOhms maximum, Current mode: 200 Ohms maximum	N/A	Voltage mode: 126 kOhms maximum, Current mode: 200 Ohms maximum	Voltage mode: 100 kOhms maximum
Input Filter Response	5.0 ms	N/A	5.0 ms	N/A
5V Backplane Current Consumption (mA)	125 maximum	15 maximum	130 maximum	200 maximum
3.3V Backplane Current Consumption (mA)	N/A	120 maximum	N/A	N/A
LED Indicators	INT PWR LED indicates internally-generated field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates the presence of both logic power and user power. OK LED indicates module status.	INT PWR LED indicates internally-generated field power is present. OK LED indicates backplane power is present.	INT PWR LED indicates internally-generated field power is present. OK LED indicates backplane power is present.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Analog Input Modules

Analog input modules receive signals from current and voltage input devices. Modules require a carrier base (IC200CHSxxx).

	IC200ALG262	IC200ALG263	IC200ALG264
Product Name	**VersaMax Analog Input Module, 15 Bit Differential Current, 8 Channel**	**VersaMax Analog Input Module, 15 Bit Voltage, 15 Channel**	**VersaMax Analog Input Module, 15 Bit Current, 15 Channel**
Input Range	0 to 20mA or 4 to 20mA	±10 VDC	0 to 20mA or 4 to 20mA
Number of Channels	8	15	15
External Power Supply	None	None	None
Resolution	4 to 20mA: 0.5micro Amp= 1 count; 0 to 20mA: 0.625micro Amp = 1 count	Bipolar mode: 0.3125 mV = 1 count	4 to 20mA: 0.5micro Amp= 1 count; 0 to 20mA: 0.625micro Amp = 1 count
Update Rate	7.5 ms	7.5 ms	7.5 ms
Accuracy at 25°C	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale
Input Impedance	Current mode: 100 kOhms maximum	Voltage mode: 100 kOhms maximum	Voltage mode: 100 kOhms maximum, Current mode: 200 Ohms maximum
Input Filter Response	N/A	N/A	24 Hz ±20%
5V Backplane Current Consumption (mA)	200 maximum	150 maximum	100 maximum
3.3V Backplane Current Consumption (mA)	N/A	N/A	N/A
LED Indicators	INT PWR LED indicates internally-generated field power is present. OK LED indicates backplane power is present.	INT PWR LED indicates internally-generated field power is present. OK LED indicates backplane power is present.	INT PWR LED indicates internally-generated field power is present. OK LED indicates backplane power is present.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in) , not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in) , not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in) , not including the height of the carrier or the mating connectors

Analog Output Modules

Analog output modules provide voltage or current signals to analog output devices. Modules require a carrier base (IC200CHSxxx).

	IC200ALG320	IC200ALG321	IC200ALG322
Product Name	**VersaMax Analog Output Module, 12 Bit Current, 4 Channel**	**VersaMax Analog Output Module, 12 Bit 0-10V Voltage, 4 Channel**	**VersaMax Analog Output Module, 12 Bit ±10V Voltage, 4 Channel**
Output Range	4-20 mA	0-10 VDC	±10 VDC
Number of Channels	4	4	4
External Power Supply	Range: 18-30 VDC including ripple; Current consumption: 160 mA maximum including load current	Range: 18-30 VDC including ripple; Current consumption: 125 mA maximum	Range: 18-30 VDC including ripple; Current consumption: 125 mA maximum
Resolution	4 uA = 8 counts	2.5 mV = 8 counts	5 mV = 16 counts
Update Rate	0.3 ms maximum	0.3 ms maximum	0.3 ms maximum
Accuracy at 25°C	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale
5V Backplane Current Consumption (mA)	50 maximum	50 maximum	50 maximum
3.3V Backplane Current Consumption (mA)	N/A	N/A	N/A
LED Indicators	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Analog Output Modules

Analog output modules provide voltage or current signals to analog output devices. Modules require a carrier base (IC200CHSxxx).

	IC200ALG325	IC200ALG326	IC200ALG327	IC200ALG328	IC200ALG331
Product Name	**VersaMax Analog Output Module, 13 Bit ±10 VDC or 0 to 10 VDC Voltage, 8 Channel**	**VersaMax Analog Output Module, 13 Bit Current, 8 Channel**	**VersaMax Analog Output Module, 13 Bit ±10 VDC or 0 to 10 VDC Voltage, 12 Channel**	**VersaMax Analog Output Module, 13 Bit, 0 - 20 mA, 4-20 mA Current, 12 Channel**	**VersaMax Analog Output Module, 14 Bit Voltage/ Current 1500 VAC Isolation, 4 Channel**
Output Range	±10 VDC or 0 to 10 VDC	4 to 20 mA	±10 VDC or 0 to 10 VDC	4 to 20 mA (default) 0 to 20 mA (configured with jumper)	±10 VDC, 4-20 mA
Number of Channels	8	8	12	12 single ended, one group	4
External Power Supply	Range: 18-30 VDC including ripple; Current consumption: 102 mA maximum	Range: 18-30 VDC including ripple; 2A inrush maximum, 100 mA maximum (no load), 185 mA maximum (all 8 outputs at full scale)	Range: 18-30 VDC including ripple; Current consumption: 112 mA maximum	Range: 18-30 VDC including ripple; Current consumption: 2A inrush maximum 100 mA maximum (no load) 270 mA maximum (all 12 outputs at full scale)	Range: 19.5-30 VDC including ripple; Current consumption: 100 mA maximum plus load currents
Resolution	1.25 mV = 4 counts	4-20 mA: 5 counts = 2.5 uA (~12.7 bits) 0-20 mA: 4 counts = 2.5 uA (13 bits)	1.25 mV = 4 counts	4-20 mA: 5 counts = 2.5 uA (~12.7 bits) 0-20 mA: 4 counts = 2.5 uA (13 bits)	Current mode: 381 nA nominal Voltage mode: 381 µV nominal
Update Rate	15.0 ms maximum	15.0 ms maximum	10.0 ms maximum	15 ms maximum	7 ms maximum
Accuracy at 25°C	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% of full scale (typical), ±0.5% of full scale (max) ±1% of full scale (max)	±0.3% typical of full scale, ±0.5% maximum of full scale	+/- 0.3% of full scale (typical), +/- 0.5% of full scale (max.) +/-1% of full scale (max.)	±0.1% maximum of full scale
5V Backplane Current Consumption (mA)	50 maximum	50 maximum	50 maximum	50 maximum	10 maximum
3.3V Backplane Current Consumption (mA)	N/A	N/A	N/A	N/A	115 maximum
LED Indicators	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates the presence of both logic power and user power. OK LED indicates module status.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Analog Mixed Modules

Analog mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Modules require a carrier base (IC200CHSxxx).

	IC200ALG430	IC200ALG431	IC200ALG432
Product Name	**VersaMax Analog Mixed Module, 12 Bit Input Current 4 Channel/Output Current 2 Channel**	**VersaMax Analog Mixed Module, 12 Bit 0-10V Input 4 Channel/Output 0-10V 2 Channel**	**VersaMax Analog Mixed Module, 12 Bit ±10V Input 4 Channel/Output ±10V 2 Channel**
Input Range	4-20 mA	0-10 VDC	-10 to +10 VDC
Output Range	4-20 mA	0-10 VDC	-10 to +10 VDC
External Power Supply	Range: 18-30 VDC including ripple; Current consumption: 125 mA maximum	Range: 18-30 VDC including ripple; Current consumption: 125 mA maximum	Range: 18-30 VDC including ripple; Current consumption: 125 mA maximum
Resolution	4 uA = 8 counts	2.5 mV = 8 counts	Input: 2.5 mV = 8 counts, Output: 5 mV = 16 counts
Update Rate	0.3 ms maximum	0.3 ms maximum	0.3 ms maximum
Accuracy at 25°C	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale	±0.3% typical of full scale, ±0.5% maximum of full scale
Input Impedance	200 Ohms maximum	120 kOhms minimum	125 kOhms minimum
Input Filter Response	5.0 ms	5.0 ms	5.0 ms
LED Indicators	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.	FLD PWR LED indicates field power is present. OK LED indicates backplane power is present.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

RTD and Thermocouple Modules

Specialty modules are available for RTD and Thermocouple inputs. Modules require a carrier base (IC200CHSxxx).).

	IC200ALG620	IC200ALG630
Product Name	**VersaMax Analog Input Module, 16 Bit RTD, 4 Channel**	**VersaMax Analog Input Module, 16 Bit Thermocouple, 7 Channel**
Input Range	RTD types: 25, 100, and 1000 ohm platinum 10, 50, and 100 ohm copper 100 and 120 ohm nickel 604 ohms nickel/iron	Thermocouple types: J, K, T, S, R, none (used for mV inputs)
Number of Channels	4	7
Resolution	15 bits plus sign	15 bits plus sign
Update Rate	60 Hz: approximately 210 milliseconds per channel 50 Hz: approximately 230 milliseconds per channel	60 Hz: approximately 60 milliseconds per channel 50 Hz: approximately 70 milliseconds per channel
Accuracy at 25°C	on voltage measurement: ±0.15% on resistance measurement on temperature measurement: ±0.15% on RTD (temperature) measurement	on voltage measurement: ±0.2% on temperature measurement:±0.15%
5 V Backplane Current Consumption (mA)	125 maximum	125 maximum
3.3 V Backplane Current Consumption (mA)	125 maximum	125 maximum
LED Indicators	OK LED: green indicates backplane power is present. Amber indicates module fault.	OK LED: green indicates backplane power is present. Amber indicates module fault.
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Specialty Modules

Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Discrete input modules receive signals from input devices such as sensors, pushbuttons, and switches that can have two states: on or off, open or closed. Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states. Discrete mixed modules provide maximum flexibility by combining inputs and outputs in a single, compact module. Modules require a carrier base (IC200CHSxxx).

	IC200MDD841
Product Name	**VersaMax Discrete Mixed Modules 24VDC Pos Logic Input 20/Output 12/HSC, PWM or Pulse Train**
Input Voltage	24 VDC
Output Voltage	24 VDC
Number of Points	20 in/12 out/4 configurable
Channel to Channel Isolation	No
Inrush Current	2.0 A maximum for 100 ms
Input and Output Response Time- On/Off (ms)	7 and 0.5
Protection	No internal fuses
On State Current	3.0-8.0 mA
Off State Current	0-0.5 mA
External Power Supply	24 VDC nominal, 18-30 VDC
Input Impedance	9.6 kOhms maximum
Load Current	0.5 A maximum
5V Backplane Current Consumption (mA)	30
LED Indicators	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Expansion Modules

Expansion Modules can be used to extend a VersaMax PLC or I/O station to include up to seven additional groups of up to eight modules each, providing the architectural flexibility to accommodate larger applications.

	IC200ERM001	IC200ERM002	IC200ETM001
Product Name	**Expansion Receiver Module, Isolated**	**Expansion Receiver Module, Non-Isolated**	**Bus Transmitter Expansion Module**
Expansion Type	Receiver	Receiver	Transmitter
Distance	Up to 2460 feet	Up to 50 feet	N/A
5 V Backplane Current Consumption (mA)	430	70	44
3.3 V Backplane Current Consumption (mA)	20	20	N/A
LED Indicators	PWR LED indicates 5 VDC power status; EXP RX LED indicates status of the expansion bus; SCAN indicates whether CPU/NIU is scanning I/O in expansion racks	PWR LED indicates 5 VDC power status; EXP RX LED indicates expansion bus communications status; SCAN indicates whether CPU/NIU is scanning I/O in expansion racks	PWR LED indicates 5 VDC power status; EXP TX LED indicates expansion bus communication status
Dimensions (W x H x D)	2.63 (66.8 mm) x 5.04 (128 mm) not including the height of power supply	2.63 (66.8 mm) x 5.04 (128 mm) not including the height of power supply	37 mm (1.45 in) x 5.04 (128 mm)

Remote I/O Units

A Remote I/O Unit connects VersaMax I/O modules to a host PLC or computer via a variety of networks, which makes it easy to include VersaMax I/O in Genius, Profibus-DP, DeviceNet, or Ethernet installations. Together, the Remote I/O Unit and its modules form an I/O station capable of providing up to 256 points of I/O.

	IC200DBI001	IC200EBI001
Product Name	**Remote I/O DeviceNet Network Interface Unit (Slave)**	**Remote I/O Ethernet Network Interface Unit**
Protocol Supported	DeviceNet Slave	EGD and Modbus TCP Server
Distance	500Kbps 100m bus length and branches totaling < 39m 250Kbps 250m bus length and branches totaling < 78m 125Kbps 500m bus length and branches totaling < 156m	100 Meters max drop length 10/100Mbaud
I/O Discrete Points	Includes both discrete and analog. Up to 128 bytes of inputs + 2-byte status word Up to 128 bytes of outputs + 2-byte control word.	1024 bytes maximum both discrete and analog. %I: 2048 points %Q: 2048 points
I/O Analog Words	Includes both discrete and analog. Up to 128 bytes of inputs + 2-byte status word Up to 128 bytes of outputs + 2-byte control word.	1024 bytes maximum both discrete and analog. %AI: 128 channels %AQ: 128 channels
I/O Data	Up to 128 bytes of inputs + 2-byte status word Up to 128 bytes of outputs + 2-byte control word.	256 Bytes of input, output, Analog input and Analog output
Network Topology	Linear bus (trunkline/dropline); power and signal on the same network cable	Network dependent
Transmission Media	Shielded, dual twisted pair cable, terminated at both ends	Ethernet twisted pair
Connector	5-pin open pluggable connector	RJ-45
User Diagnostic Data	2 bytes of status/control	4
Number of Modules	8 per NIU/station	8 per NIU/station
Redundancy	N/A	No
5V Backplane Current Consumption (mA)	160	175
3.3V Backplane Current Consumption (mA)	10	425
Dimensions (W x H x D)	133.4 mm (5.25 in) x 85.9 mm (3.38 in) not including the height of power supply	133.4 mm (5.25 in) x 85.9 mm (3.38 in) not including the height of power supply

Remote I/O Units

A Remote I/O Unit connects VersaMax I/O modules to a host PLC or computer via a variety of networks, which makes it easy to include VersaMax I/O in Genius, Profibus-DP, DeviceNet, or Ethernet installations. Together, the Remote I/O Unit and its modules form an I/O station capable of providing up to 256 points of I/O.

	IC200GBI001	IC200PBI001
Product Name	**Genius Network Interface Unit**	**Remote I/O Profibus-DP Network Interface Unit (Slave)**
Protocol Supported	Genius	Profibus DP
Distance	1372 to 2286 meters - 38.4 Kbaud supports a maximum of 16 devices. 1067 to 1372 meters 76.8 Kbaud supports a maximum of 32 devices. 609 to 1067 meters - 153. 6 Kbaud extended supports a maximum of 32 devices. Less than 609 meters 153.6 Kbaud standard or 153.6 Kbaud extended supports a maximum of 32 devices.	9.6Kbits - 1,200 meters 19.2Kbits - 1,200 meters 93.75Kbits - 1,200 meters 187.5Kbits - 600 meters 500Kbits - 400 meters 1.5Mbits - 200 meters 3Mbits; 6Mbits; 12Mbits - 100 meters
I/O Discrete Points	1024 Inputs and 1024 Outputs	375 bytes maximum. Up to 244 bytes of inputs or 244 bytes of outputs
I/O Analog Words	64 Analog In and 64 Analog Out	375 bytes maximum. Up to 244 bytes of inputs or 244 bytes of outputs
I/O Data	128 bytes in and 128 out per bus scan	375 bytes maximum. Up to 244 bytes of inputs or 244 bytes of outputs.
Network Topology	Bus	Linear bus, terminated at both ends. Stubs are possible.
Transmission Media	Shielded, twisted pair, fiber optic (external option)	Shielded, twisted pair cable
Connector	Removable Connector	9-pin D-sub connector
User Diagnostic Data	Yes	2 bytes of status/control, 5 bytes of standard Profibus diagnostics
Number of Modules	8 per NIU/station	8 per NIU/station
Redundancy	Full media and hardware redundancy supported	N/A
5V Backplane Current Consumption (mA)	250	250
3.3V Backplane Current Consumption (mA)	10	10
Dimensions (W x H x D)	133.4 mm (5.25 in) x 85.9 mm (3.38 in) not including the height of power supply	133.4 mm (5.25 in) x 85.9 mm (3.38 in) not including the height of power supply

Network Interface Modules

Network Interface Modules allow a VersaMax PLC to operate as a master or slave on a network. Modules currently available support DeviceNet master or slave communications and Profibus-DP slave communications. An AS-i master communications is also available.

	IC200BEM002	IC200BEM103	IC200BEM104	IC200CHS006
Product Name	**PLC Network Communications Profibus-DP (Slave). Requires IC200CHS006 Communications Carrier.**	**PLC Network Communications DeviceNet (Master). Requires IC200CHS006 Communications Carrier.**	**PLC Network Communications AS-i (Master). Requires IC200CHS006 Communications Carrier.**	**VersaMax I/O , Local Communications Carrier (Supports IC200BEMxxx Modules**
Number of Stations	32 without repeaters; up to 125 with repeaters	N/A	N/A	N/A
I/O Data	384 Bytes maximum; up to 244 bytes of inputs or 244 bytes of outputs	Up to 128 bytes of inputs and 128 bytes of outputs	4 input bits and 4 output bits per slave	N/A
Network Data Rate	9.6 Kbaud to 12 Mbaud	125 Kbaud, 250 Kbaud, 500 Kbaud	166.6Kbits/second	N/A
Network Topology	Linear bus, terminated at both ends. Stubs are possible	Linear bus (trunkline/ dropline); power and signal on the same network cable	Tree Structure	N/A
Transmission Media	Shielded, twisted pair cable	Shielded, dual twisted pair cable	Rubber coated two wire cable	N/A
Connector	9-pin D-sub connector	5-pin open pluggable connector	Box Style	N/A
Number of Nodes	N/A	Supports up to 40 slave devices	Supports up to 31 slave devices	N/A
User Diagnostic Data	N/A	One presence bit per slave device	Display data	N/A
Power Consumption	460 mA maximum from 5 V output, 5 mA from +3.3 V output	490 mA maximum from 5 V output, 2 mA from +3.3 V output	350 mA maximum from 5 V output	N/A
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors	66.8 mm (2.63 in) x 133.4 mm (5.25 in) x 70 mm (2.75 in), not including the height of DIN Rail

Serial Communications

The serial communications expansion module provides a Modbus Master port for a Genius NIU remote I/O drop. The serial port can be used to interface with a wide range of Modbus slave devices such as controllers, VFDs, bar code readers, marques and much more. The data is transferred to and from the NIU over the Genius LAN and is compatible with any controller that supports Genius Global Data.

	IC200CMM020
Product Name	**Serial Communications Expansion Module**
Module Type	Modbus Master
NIU Type Supported	Genius
Number of Serial Communications Modules	Up to 2 per Genius NIU I/O Station
Number of RTU slaves per Serial Communications Module	1 to 247
Serial Port Type	RS-485. 15-pin subminiature 'D' connector. For RS-232 communications, an RS-485 to RS-232 adapter such as IC690ACC901 can be used. Adapter IC690ACC901 can be installed with its right-angle cable hanging down. RS-485 supports both 2-wire and 4-wire electrical interfaces
Baud Rate Supported	1200, 2400, 4800, 9600, and 19200, and half or full duplex operation
COMMREQ command memory (%AQ) required in the GENERIC_COMM module hardware configuration	Depends on individual COMMREQ content. Minimum: 22 words Maximum: 64 words
RTU Master Commands	65520, Initialize RTU Master Port 8000, Clear RTU Master Diag. Status 8001, Read RTU Master Diag. Status 8002, Send RTU Read/Force/Preset Query 8003, Send RTU Diagnostic Query
Power Consumption	460 mA maximum from 5 V output, 5 mA from +3.3 V output
Dimensions (W x H x D)	110 mm (4.3 in) x 66.8 mm (2.63 in) x 50 mm (1.956 in), not including the height of the carrier or the mating connectors

Accessories

IC200ACC001	Replacement Battery for VersaMax CPUs
IC200ACC003	EZ Program Store, CPU RS-485 Port Update Device
IC200ACC201	Expansion Terminator QTY 1
IC200ACC202	Expansion Terminator QTY 2
IC690ACC905	Encapsulated Thermistor Kit QTY 2
IC200ACC301	I/O Filler Module
IC200ACC302	I/O Input Simulator
IC200ACC303	I/O Shorting Bar QTY 2
IC200ACC304	Cable Connector Kit, QTY 2, for connector base (IC200CHS003) I/O Base (IC200CHS011, CHS012, CHS014, CHS015 and CHS1xx bases)
IC200ACC313	DIN rail clips (Qty 2) to secure modules on DIN rail
IC200TBM001	I/O Auxiliary Terminal Strip, 18 Internally Bussed, Barrier Style
IC200TBM002	I/O Auxiliary Terminal Strip, 18 Internally Bussed, Box Style
IC200TBM005	I/O Auxiliary Terminal Strip, 18 Internally Bussed, Spring Clamp Style

Cables for Connector Type Carrier

IC200CBL105	Cable, I/O Non-Shielded, 2 Connectors. 0.5M used with IC200CHS003 and IC200CHS011, 012, 015.
IC200CBL110	Cable, I/O Non-Shielded, 2 Connectors, 1.0M used with IC200CHS003 and IC200CHS011, 012, 015.
IC200CBL120	Cable, I/O Non-Shielded, 2 Connectors, 2.0M used with IC200CHS003 and IC200CHS011, 012, 015.
IC200CBL230	Cable, I/O Non-Shielded, 1 Connector, 3.0M used with IC200CHS003 and IC200CHS011, 012, 015.

Cables to Connect Rack to Rack Expansion

IC200CBL600	Rack Expansion Cable, Shielded, Single Ended, 1M to One Expansion Receiver Module (IC200ERM00x)
IC200CBL601	Rack Expansion Cable, Shielded, 2 Connectors, 1M. Supports Multidrop to Multiple Expansion Receiver Modules (IC200ERM00x)
IC200CBL602	Rack Expansion Cable, Shielded, 2 Connectors, 2M. Supports Multidrop to Multiple Expansion Receiver Modules (IC200ERM00x)
IC200ACC304	Cable Connector Kit, QTY 2, for connector base (IC200CHS003) I/O Base (IC200CHS011, CHS012, CHS014, CHS015 and CHS1xx bases)

Starter Kits

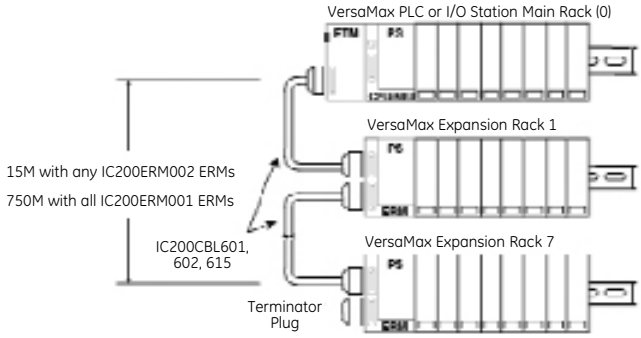
IC200PKG001	PLC Starter Kit CPU001	Contains CPU001, PWR101, MDD845, CHS002, ACC302, CBL001, GFK-1503, GFK-1504, 641VPS300 (Infolink included), coffee mug, and plastic carry case. Does not include 24 VDC power supply for inputs.
IC200PKG010	PLC Starter Kit CPUE05	Contains CPUE05, PWR101, MDD845, CHS002, ACC302, CBL001, GFK-1503, GFK-1504, Machine Edition (Infolink included), coffee mug, and plastic carry case. Does not include 24 VDC power supply for inputs.
IC200PKG101	I/O Starter Kit GENIUS	Contains GBI001, PWR101, MDD845, CHS002, ACC302, CBL001, GFK-1535, GFK-1504, 690CDR002 (Infolink), coffee mug, and plastic carry case. Does not include 24 VDC power supply for inputs.
IC200PKG102	I/O Starter Kit Profibus-DP	Contains PBI001, PWR101, MDD845, CHS002, ACC302, CBL001, GFK-1534, GFK-1504, 690CDR002 (Infolink), coffee mug, and plastic carry case. Does not include 24 VDC power supply for inputs.
IC200PKG103	I/O Starter Kit DeviceNet	Contains DBI001, PWR101, MDD845, CHS002, ACC302, CBL001, GFK-1533, GFK-1504, 690CDR002 (Infolink), coffee mug, and plastic carry case. Does not include 24 VDC power supply for inputs.
IC200PKG104	I/O Starter Kit Ethernet	Contains EBI001, PWR101, MDD845, CHS002, ACC302, CBL001, GFK-1534, GFK-1504, Machine Edition(Infolink), coffee mug, and plastic carry case. Does not include 24 VDC power supply for inputs.

Configuration Guidelines

When configuring a VersaMax Modular the following guidelines should be considered:

1. All I/O modules require an I/O Carrier (IC200CHS001, 002, 003, 005, 022 or 025).
2. When an I/O Connector Carrier (IC200CHS003) is selected, a cable (IC200CBL6xx) and interposing remote base (IC200CHS011, 012, 014 or 015) are required.
3. When configuring a system, the power consumptions should be tracked to determine what power supply and how many power supplies may be required.
4. DIN rail clips should be used to secure the VersaMax modules (IC200ACC313).
5. A maximum of 8 carriers, any combination of I/O or communications, can be connected directly to either an NIU or CPU. (Power Supply Booster base is not counted as a carrier). CPUs and NIUs can be expanded beyond the 8 carriers using the Bus Transmitter Expansion (IC200ETM001) and up to 7 Expansion Receiver Modules (IC200ERM00x) for a total of 64 carrier modules.

For a multiple-rack expansion system, connect the cable from the expansion port on the Expansion Transmitter to the Expansion Receivers as shown below. If all the Expansion Receivers are the Isolated type (IC200ERM001), the maximum overall cable length is 750 meters. If the expansion bus includes any non-isolated Expansion Receivers (IC200ERM002), the maximum overall cable length is 15 meters.



Install the Terminator Plug (supplied with the Expansion Transmitter module) into the lower port on the last Expansion Receiver. Spare Terminator Plugs can be purchased separately as part number IC200ACC201 (Qty 2).

Examples of Typical Application

Configuration for Controller (Example application requiring (30) 24 VDC inputs and (10) Relay outputs AC power supply)

Power Supply Current Required (mA)	Qty	Part Number	Description
40@ 5 V and 100@ 3 V	1	IC200CPU001	VersaMax PLC CPU 32K Configurable Memory, 2 Ports RS-232 and RS-485
	1	IC200PWR101	VersaMax 120/240 VAC Power Supply (1.5 amps 5 V and 0.25 amps 3.3 V)
50 @ 5 V	1	IC200MDL650	VersaMax Discrete Input Module, 24 VDC Positive Logic, 32 points
490 @ 5 V	1	IC200MDL940	VersaMax Discrete Output Module, Relay 2.0 A per point Isolated Form A, 16 points
	2	IC200CHS022	VersaMax Compact I/O Carrier, Local Box Clamp Connection Style
	1	IC200ACC313	DIN rail clips (Qty 2) to secure modules on DIN rail
	1	BC646MPS101	Logic Developer - PLC Standard - w/Programming Cable
Total:	**580 @ 5 V and 100 @ 3 V (820 mA remaining). 1500 mA available for 5 V and 3.3 V.**		
Options to consider			
	1	IC646MPH101	Logic Developer PDA Single License with Adapters. With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
100 @ 5 V	1	IC200ACC003	EZ Program Store, CPU RS485 Port Update Device

Configuration for Controller (Application requiring 20K of Registers, (60) 24 VDC inputs, (15) AC Inputs, (12) AC Outputs and (20) Relay outputs also (16) Analog Inputs, (12) Isolated Analog Outputs and 24 VDC power supply. Also requires Profibus Slave connection)

Power Supply Current Required	Qty	Part Number	Description
80 @ 5 V and 650 @ 3 V	1	IC200CPU005	VersaMax PLC CPU 128K Configurable User Memory, 2 Ports RS-232 and RS-485
	3	IC200PWR002	24 VDC Power Supply with Expanded 3.3 V (Logic side supply of 1.5 amps maximum. Up to 1.0 amp can be allocated for 3.3 V usage.)
100 @ 5 V	2	IC200MDL650	VersaMax Discrete Input Module, 24 VDC Positive Logic, 32 points
110 @ 5 V	1	IC200MDL240	VersaMax Discrete Input Module, 120 VAC Positive Logic, 16 points
170 @ 5 V	2	IC200MDL331	VersaMax Discrete Output Module, 120 VAC 2.0 A per point Isolated, 8 points
980 @ 5 V	2	IC200MDL940	VersaMax Discrete Output Module, Relay 2.0 A per point Isolated Form A, 16 points
400 @ 5 V	2	IC200ALG262	VersaMax Analog Input Module, 15 Bit Differential Current, 8 Channel
10 @ 5 V and 115 @ 3 V	2	IC200ALG331	VersaMax Analog Output Module, 14 Bit Voltage/Current 1500 VAC Isolation, 8 Channel
	11	IC200CHS022	VersaMax Compact I/O Carrier, Local Box Clamp Connection Style
460 @ 5 V and 5 @ 3 V	1	IC200BEM002	PLC Network Communications Profibus-DP (Slave)
	1	IC200PWB001	VersaMax Power Supply Booster Carrier. Supplies power to all modules to the right of booster. Requires power supply.
	1	IC200CHS006	VersaMax I/O, Local Communications Carrier
44 @ 5 V	1	IC200ETM001	Bus Transmitter Expansion Module
70 @ 5 V and 20 @ 3 V	1	IC200ERM002	Expansion Receiver Module, Non-Isolated
	1	IC200CBL600	Cable Expansion Shielded Single Ended 1M
	1	IC200ACC313	DIN rail clips (Qty 2) to secure modules on DIN rail
	1	BC646MPS101	Logic Developer - PLC Standard - w/Programming Cable
Total:	**2424 @ 5 V and 790 @ 3 V Required. 4500 mA available for 5 V and 3.3 V. Power Supply Booster required with extra Power Supply to meet power requirements.**		

(continued on next page)

Options to consider			
	1	IC646MPH101	Logic Developer PDA Single License with Adapters . With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
	1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch DC
100 @ 5 V	1	IC200ACC003	EZ Program Store, CPU RS485 Port Update Device

Configuration for Controller Ethernet connectivity, (60) 24 VDC inputs, (20) Relay outputs, (16) Analog Inputs, (12) Thermocouples on a remote Ethernet drop, (12) Isolated Analog Outputs and 24 VDC power supply. Also requires Color TFT Operator Interface with Touch Screen.

Power Supply Current Required	Qty	Part Number	Description
160 @ 5 V and 650 @ 3 V	1	IC200CPUE05	VersaMax PLC CPU 128K Configurable User Memory, 2 Ports RS-232 and RS-485, 10 MBIT Ethernet Port. Supports SRTP and EGD.
	2	IC200PWR002	24 VDC Power Supply with Expanded 3.3 V (Logic side supply of 1.5 amps maximum. Up to 1.0 amp can be allocated for 3.3 V usage.)
	1	IC200PWB001	VersaMax Power Supply Booster Carrier. Supplies power to all modules to the right of booster. Requires power supply.
100 @ 5 V	2	IC200MDL650	VersaMax Discrete Input Module, 24 VDC Positive Logic, 32 points
980 @ 5 V	2	IC200MDL940	VersaMax Discrete Output Module, Relay 2.0 A per point Isolated Form A, 16 points
400 @ 5 V	2	IC200ALG262	VersaMax Analog Input Module, 15 Bit Differential Current, 8 Channel
10 @ 5 V and 115 @ 3 V	2	IC200ALG331	VersaMax Analog Output Module, 14 Bit Voltage/Current 1500 VAC Isolation, 8 Channel
	8	IC200CHS022	VersaMax Compact I/O Carrier, Local Box Clamp Connection Style
	2	IC200ACC313	DIN rail clips (Qty 2) to secure modules on DIN rail
	1	BC646MBT001	Logic Developer PLC Standard Edition and View for QuickPanel with 15 mos. of Proficy GlobalCare which is renewable on an annual basis.
	1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch DC
Total:	**1650 @ 5 V and 765 @ 3 V. 3000 mA available for 5 V and 3.3 V.**		

Ethernet Remote Drop			
175 @ 5 V and 425 @ 3 V	1	IC200ETM001	Bus Transmitter Expansion Module
	1	IC200PWR002	24 VDC Power Supply with Expanded 3.3 V (Logic side supply of 1.5 amps maximum. Up to 1.0 amp can be allocated for 3.3 V usage.)
250 @ 5 V and 250 @ 3 V	2	IC200ALG630	VersaMax Analog Input Module, 16 Bit Thermocouple, 7 Channel
	1	IC690ACC905	Encapsulated Thermistor Kit Qty 2
	2	IC200CHS022	VersaMax Compact I/O Carrier, Local Box Clamp Connection Style
	1	IC200ACC313	DIN rail clips (Qty 2) to secure modules on DIN rail
Total:	**2424 @ 5 V and 790 @ 3 V Required. 4500 mA available for 5 V and 3.3 V. Power Supply Booster required with extra Power Supply to meet power requirements.**		

Options to consider			
	1	IC646MPH101	Logic Developer PDA Single License with Adapters. With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
	1	IC690PWR124	24 VDC, 10 Amp Output Power and 120/230 VAC Input Power Power Supply
100 @ 5 V	1	IC200ACC003	EZ Program Store, CPU RS485 Port Update Device

Notes

VersaMax Nano and Micro Controllers

Don't let size fool you. Although they are easy on valuable panel space, the VersaMax Nano and Micro PLCs are big on features. For high-volume applications where cost and fast processor speeds are an issue, the VersaMax Nano is the PLC of choice. For additional functionality, the modular VersaMax Micro offers the features and the flexibility to match application needs in such industries as food processing, chemicals, packaging, water and wastewater, construction equipment and plastics.

For tight spaces, the VersaMax Nano PLC is the perfect solution. Thanks to its all-in-one construction, installation is a breeze. All you have to do is snap it onto a DIN rail or screw it into a panel. With the VersaMax Nano, you save on initial as well as life cycle costs.

The small-footprint VersaMax Micro PLC offers the flexibility of modular design and a variety of built-in features, including up to 64 I/O points (expandable to 170 I/O points), fast cycle times, a robust instruction set and extensive memory that multiplies your programming options.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

Publication Reference Chart

GFK-1645	VersaMax Micro PLCs and Nano PLCs User's Manual
IC690CDU002	InfoLink for PLC CD-ROM

Nano PLCs, page 213

Micro PLCs, pages 214-221

Expansion Units, pages 223-233

Accessories, pages 239-240

Configuration Guidelines, pages 241-242

DataPanels Operator Interfaces, page 234

Communications Options, pages 235-236

Portable Program Download Device (PPDD), pages 237-238

VersaMotion Servo Motors and Amplifiers, pages 243-250

VersaMax Nano and Micro Selection Guide

Features	Nano 10	Micro 14	Micro 23	Micro 28	Micro 20	Micro 40	Micro 64
Built-in Discrete I/O	6 in/ 4out	8 in/ 6 out	13 in/10 out	16 in/12 out	12 in/8 out	24 in/16 out	40 in/24 out
Built-in Analog I/O	1 on some models	none	2 in/ 1 out	none	none	none	none
I/O Expansion Units	none	Up to 4 units	Up to 4 units	Up to 4 units	Up to 4 units	Up to 4 units	Up to 4 units
Logic Memory (Words)	2K	9K	9K	9K	24K	24K	24K
Data Storage (Words)	256	256	2K	2K	32K	32K	32K
Scan Time (msec/K)	1.3 msec	1.1 msec	1.1 msec	1.1 msec	1.1 msec	1.1 msec	1.1 msec
Battery Backed RAM	Super Cap only	Super Cap only	Yes and Super Cap	Yes and Super Cap	Yes and Super Cap	Yes and Super Cap	Yes and Super Cap
Real Time Clock	none	none	Yes, Included	Yes, Included	Yes, Included	Yes, Included	Yes, Included
Ports Available	1 RS-232	1 RS-232	1 RS-232 and 1 RS-485	1 RS-232 and 1 RS-485	1 RS-232 and second port optional RS-232, RS-485, USB or Ethernet	1 RS-232 and second port optional RS-232, RS-485, USB or Ethernet	1 RS-232 and second port optional RS-232, RS-485, USB or Ethernet
Ethernet Option	Yes, VersaMax SE	Yes, VersaMax SE	Yes, VersaMax SE	Yes, VersaMax SE	Yes on second port	Yes on second port	Yes on second port
High Speed Counter	Up to 4 at 10Khz (16 bit)	Up to 4 at 10Khz (16 bit)	Up to 4 at 10Khz (16 bit)	Up to 4 at 10Khz (16 bit)	Up to 4 at 100Khz (32 bit)	Up to 4 at 100Khz (32 bit)	Up to 4 at 100Khz (32 bit)
Pulse Train/PWM	Up to 4 at 5Khz (16 bit)	Up to 4 at 5Khz (16 bit)	Up to 4 at 5Khz (16 bit)	Up to 4 at 5Khz (16 bit)	Up to 4 at 65Khz (32 bit)	Up to 4 at 65Khz (32 bit)	Up to 4 at 65Khz (32 bit)
Motion Commands	N/A	N/A	N/A	N/A	Find Home, Go Home, Jog, Ramp, Blended Move (4 Consecutive Moves)	Find Home, Go Home, Jog, Ramp, Blended Move (4 Consecutive Moves)	Find Home, Go Home, Jog, Ramp, Blended Move (4 Consecutive Moves)
Write Register Values to Internal Flash	No	Yes	Yes	Yes	Yes	Yes	Yes
On Line Program Support	No	No	No	No	Yes with Firmware 3.9 & Hardware revision B	Yes with Firmware 3.9	Yes with Firmware 3.9

Powerful Instruction Set

Bit Operation Functions

- Logic AND, Logic OR
- Exclusive OR, Logical Invert
- Shift Right/Left
- Rotate Right/Left
- Bit Test/Set/Clear
- Masked Compare
- Bit Position
- Bit Sequencer

Control Functions

- Do I/O
- Call
- End
- Subroutines
- Comments
- Master Control Relay
- Service Request
- PID

Table Functions

- Array Move
- Search

Data Move Functions

- Move
- Block Move
- Block Clear
- Shift Register
- Communications Request
  - Motion Moves
  - High Speed Counter
  - Serial Read/Write
  - Modbus Master

Conversion Functions

- BCD- 4
- Signed Integer
- Double Precision Signed Integer
- Real
- Real to Word
- Truncate Real Number

Math and Numerical Functions

- +, -, x, /
- Modulo division
- Scaling
- Square Root
- Trigonometric Functions
- Logarithmic/Exponential
- Convert Radians

Relation Functions

- Equal
- Not Equal
- Greater Than
- Less Than
- Greater or Equal
- Less or Equal
- Range

Relay Functions

- Contacts, Coils
- Fault and No Fault Contacts
- Alarm Contacts

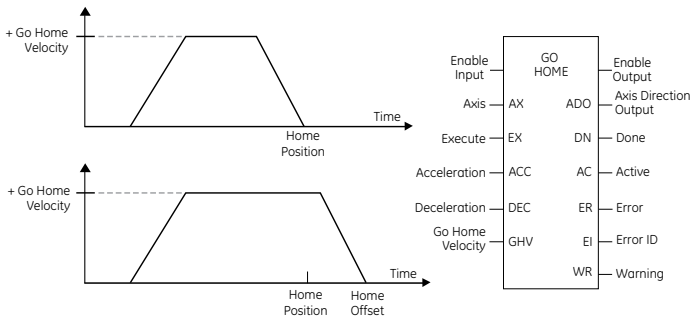
Timer and Counters

- Time-tick Contacts
- On-delay Stopwatch timer
- On-delay timer
- Off-delay timer
- Up Counter
- Down Counter

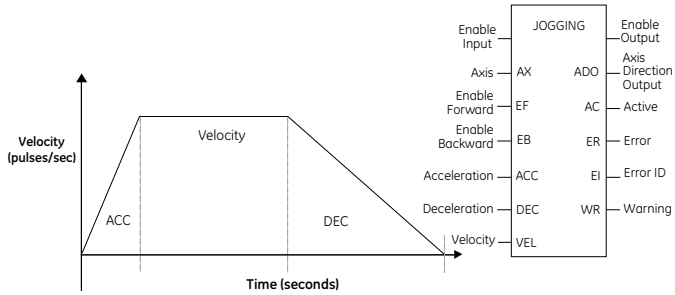
Motion Functions

- Find Home/Go Home
- Ramp
- Jog
- Blended Move
- Stop Move
- Windowing
- Follower Mode

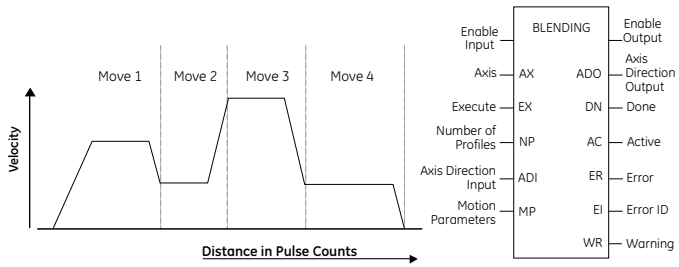
New Powerful Motion Functions



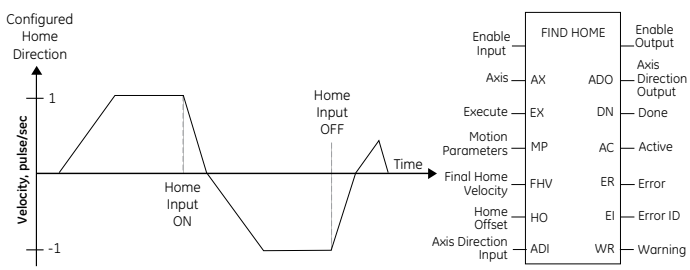
Go Home (With or without offset)



Jog



Blended Move (Up to 4 Moves)



Find Home

Nano 10 PLCs

The palm-sized VersaMax Nano PLC is highly compact, with an all-in-one construction that saves panel space. Installation is a breeze: simply snap it onto a DIN-rail or mount it on a panel. Because it gives you more capabilities in a smaller, less expensive package, the Nano PLC is ideal for high-volume applications that require low cost, compact size, and fast processor speeds. The Nano decreases your life-cycle costs as well, with easy installation and long-term reliability.

	IC200NAL110	IC200NAL211	IC200NDD010	IC200NDD101	IC200NDR001	IC200NDR010
Product Name	**10 point (6) 12 VDC In, (1) Analog Voltage In, (4) Relay Out, 12 VDC Powered**	**10 point (6) 24 VDC In, (1) Analog Voltage In, (4) Relay Out, 24 VDC Powered**	**10 point (6) 12 VDC In, (4) 12 VDC Out, 12 VDC Powered**	**10 point (6) 24 VDC In, (4) 24 VDC Out, 24 VDC Powered**	**10 point (6) 24 VDC In, (4) Relay Out, 24 VDC Powered**	**10 point (6) 12 VDC In, (4) Relay Out, 12 VDC Powered**
Number of Discrete Inputs/Outputs	6 In / 4 Out (Non Expandable)	6 In / 4 Out (Non Expandable)	6 In / 4 Out (Non Expandable)	6 In / 4 Out (Non Expandable)	6 In / 4 Out (Non Expandable)	6 In / 4 Out (Non Expandable)
Number of Analog Inputs/Outputs	1 In	1 In	N/A	N/A	N/A	N/A
Physical I/O Maximum	10	10	10	10	10	10
User Program Logic Memory (Words)	2 K	2 K	2 K	2 K	2 K	2 K
Registers (Words)	256	256	256	256	256	256
Analog Pots for Data Adjustment	Yes, 2	Yes, 2	Yes, 2	Yes, 2	Yes, 2	Yes, 2
Serial Port Connector Type	RJ-45 (RS-232)	RJ-45 (RS-232)	RJ-45 (RS-232)	RJ-45 (RS-232)	RJ-45 (RS-232)	RJ-45 (RS-232)
Protocols	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write
Power Voltage	12 VDC	24 VDC	12 VDC	24 VDC	24 VDC	12 VDC
Input Power Supply Rating	3 watts internal	3 watts internal	3 watts internal	3 watts internal	3 watts internal	3 watts internal
Input Device Voltage	12 VDC	24 VDC	12 VDC	24 VDC	24 VDC	12 VDC
Maximum Type A and B Counters	2 Type A and 1 Type B @ 10Khz (16 bit)	2 Type A and 1 Type B @ 10Khz (16 bit)	2 Type A and 1 Type B @ 10Khz (16 bit)	2 Type A and 1 Type B @ 10Khz (16 bit)	2 Type A and 1 Type B @ 10Khz (16 bit)	2 Type A and 1 Type B @ 10Khz (16 bit)
Analog Input Ranges	0 to 10 VDC (8 bit)	0 to 10 VDC (8 bit)	N/A	N/A	N/A	N/A
Output Control Voltage	Relay Out	Relay Out	12 VDC	24 VDC	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	2 Amps at 5 VDC and 240 VAC	2 Amps at 5 VDC and 240 VAC	N/A	N/A	2 Amps at 5 VDC and 240 VAC	2 Amps at 5 VDC and 240 VAC
Maximum Number of PWM/Pulse Outputs	0	0	3 @ 5Khz (16 bit)	3 @ 5Khz (16 bit)	0	0
Dimensions (WxHxD) mm	75x80x47	75x80x47	75x80x47	75x80x47	75x80x47	75x80x47
Operating Temperature	0°C to +55°C	0°C to +55°C	0°C to +55°C	0°C to +55°C	0°C to +55°C	0°C to +55°C
Programming Software	VersaPro 2.0 or greater, Proficy Machine Edition Logic Developer	VersaPro 2.0 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer
Portable Memory Module Support	No	No	No	No	No	No

Micro 14 PLCs

The Micro 14 PLC is big on features; from up to 14 I/O built-in (expandable to 126 I/O) points to fast cycle times, robust instruction set, and generous memory to allow more flexible programming. And it's all packaged in a sturdy modular design for easy access and long-term durability. This all-in-one PLC gives you everything you need to control a wide variety of applications.

	IC200UAA003	IC200UAR014	IC200UDD104	IC200UDD112
Product Name	**14 point (8) 120 VAC In, (6) 120 VAC Out, 120/240 VAC Powered**	**14 point, (8) 120 VAC In, (6) Relay Out, 120/240 VAC Powered**	**14 point (8) 24 VDC In, (6) 12/24 VDC Out, (2) @ 1.0 A, (4) @ 0.5 A, 24 VDC Powered**	**14 point (8) 12 VDC In, (6) 12 VDC Out, 0.7 A, 12 VDC Powered**
Number of Discrete Inputs/Outputs	8 In / 6 Out (Supports 4 Expansion Units)	8 In / 6 Out (Supports 4 Expansion Units)	8 In / 6 Out (Supports 4 Expansion Units)	8 In / 6 Out (Supports 4 Expansion Units)
Number of Analog Inputs/Outputs	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	126	126	126	126
User Program Logic Memory (Words)	9 K	9 K	9 K	9 K
Registers (Words)	256	256	256	256
Analog Pots for Data Adjustment	Yes, 2	Yes, 2	Yes, 2	Yes, 2
Serial Port Connector Type	RJ-45 (RS-232)	RJ-45 (RS-232)	RJ-45 (RS-232)	RJ-45 (RS-232)
Protocols	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write
Power Voltage	120/240 VAC	120/240 VAC	24 VDC	12 VDC
Input Power Supply Rating	11 VA	11 VA	4 Watts	3 Watts
24 VDC User Power for Sensors	N/A	200 mA	200 mA	200 mA
Input Device Voltage	120 VAC	120 VAC	24 VDC	12 VDC
Maximum Type A and B Counters	N/A	N/A	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)
Output Control Voltage	120 VAC	N/A	24 VDC	12 VDC
Relay Maximum Resistive Load Rating	N/A	6 @ 2 Amps at 24 VDC and 240 VAC; 2 @10 Amps at 24 VDC and 240 VAC	N/A	N/A
Maximum Number of PWM/Pulse Outputs	N/A	N/A	4 @ 5Khz (16 bit)	4 @ 5Khz (16 bit)
Dimensions (WxHxD) mm	95x90x76	95x90x76	95x90x76	95x90x76
Programming Software	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer
Portable Memory Module Support	No	No	No	No

Micro 14 PLCs

The Micro 14 PLC is big on features; from up to 14 I/O built-in (expandable to 126 I/O) points to fast cycle times, robust instruction set, and generous memory to allow more flexible programming. And it's all packaged in a sturdy modular design for easy access and long-term durability. This all-in-one PLC gives you everything you need to control a wide variety of applications.

	IC200UDR001	IC200UDR002	IC200UDR003
Product Name	**14 point (8) 24 VDC In, (6) Relay Out, 120/240 VAC Powered**	**14 point (8) 24 VDC In, (6) Relay Out, 24 VDC Powered**	**14 point (8) 12 VDC In, (6) Relay Out, 12 VDC Powered**
Number of Discrete Inputs/Outputs	8 In / 6 Out (Supports 4 Expansion Units)	8 In / 6 Out (Supports 4 Expansion Units)	8 In / 6 Out (Supports 4 Expansion Units)
Number of Analog Inputs/Outputs	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	126	126	126
User Program Logic Memory (Words)	9 K	9 K	9 K
Registers (Words)	256	256	256
Analog Pots for Data Adjustment	Yes, 2	Yes, 2	Yes, 2
Serial Port Connector Type	RJ-45 (RS-232)	RJ-45 (RS-232)	RJ-45 (RS-232)
Protocols	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write	SNP, SNP X (Breakless) RTU Slave (2 and 4 wire RTU Slave). Serial Read and Write
Power Voltage	120/240 VAC	24 VDC	12 VDC
Input Power Supply Rating	13 VA	4 Watts	3 Watts
24 VDC User Power for Sensors	200 mA	200 mA	200 mA
Input Device Voltage	24 VDC	24 VDC	12 VDC
Maximum Type A and B Counters	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)
Output Control Voltage	Relay Out	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC
Maximum Number of PWM/Pulse Outputs	0	0	0
Dimensions (WxHxD) mm	95x90x76	95x90x76	95x90x76
Programming Software	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer
Portable Memory Module Support	No	No	No

Micro 23 PLCs

The Micro 23 PLC is big on features with 23 discrete I/O and two analog inputs and one analog output built-in (expandable to 135 I/O) points. The Micro 23 executes fast cycle times, robust instruction set, and generous memory to allow more flexible programming. And it's all packaged in a sturdy modular design for easy access and long-term durability.

	IC200UAL004	IC200UAL005	IC200UAL006
Product Name	**23 point; (13) 12 VDC In, (10) Relay Out, (2) Analog In and (1) Analog Out, 12 VDC Powered.**	**23 point; (13) 24 VDC In, (9) Relay Out, (1) 24 VDC Out, (2) Analog In and (1) Analog Out, 24 VDC Powered.**	**23 point; (13) 24 VDC In, (9) Relay Out, (1) 24 VDC Out, (2) Analog In and (1) Analog Out, 120/240 VAC Powered.**
Number of Discrete Inputs/Outputs	13 In / 10 Out (Supports 4 Expansion Units)	13 In / 10 Out (Supports 4 Expansion Units)	13 In / 10 Out (Supports 4 Expansion Units)
Number of Analog Inputs/Outputs	2 analog in / 1 analog out built-in and supports up to 4 analog expansion units (16 analog in/ 8 analog out)	2 analog in / 1 analog out built-in and supports up to 4 analog expansion units (16 analog in/ 8 analog out)	2 analog in / 1 analog out built-in and supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	135	135	135
User Program Logic Memory (Words)	9 K	9 K	9 K
Registers (Words)	2 K	2 K	2 K
Analog Pots for Data Adjustment	Yes, 2	Yes, 2	Yes, 2
Serial Port Connector Type	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)
Protocols	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write
Power Voltage	12 VDC	24 VDC	120/240 VAC
Input Power Supply Rating	8 Watts	8 Watts	34 VA
24 VDC User Power for Sensors	200 mA	200 mA	200 mA
Input Device Voltage	12 VDC	24 VDC	24 VDC
Maximum Type A and B Counters	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)
Analog Input Ranges	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit Resolution	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit Resolution	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit Resolution
Output Control Voltage	Relay Out	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC
Maximum Number of PWM/Pulse Outputs	N/A	1 @ 5Khz (16 bit)	1 @ 5Khz (16 bit)
Analog Output Ranges	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit Resolution	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit Resolution	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit Resolution
Dimensions (WxHxD) mm	150x90x76	150x90x76	150x90x76
Programming Software	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer
Portable Memory Module Support	No	No	No

Micro 28 PLC

The Micro 28 PLC is big on features with the built-in 28 I/O (expandable to 140 I/O) points to fast cycle times, two built-in serial ports, robust instruction set, and generous memory to allow more flexible programming. And it's all packaged in a sturdy modular design for easy access and long-term durability. This all-in-one PLC gives you everything you need to control a wide variety of applications.

	IC200UAA007	IC200UAR028	IC200UDD110	IC200UDD120
Product Name	**28 point; (16) 120 VAC In, (12) 120 VAC Out, 120/240 VAC Powered.**	**28 point, (16) 120 VAC In, (12) Relay Out, 120/240 VAC Powered.**	**28 point; (16) 24 VDC In, (12) 24 VDC Out (6) @ 1.0 A, (6) @ 0.5 A, 24 VDC Powered.**	**28 point; (16) 24 VDC In, (12) 24 VDC Out (6) @ 1.0 A, (6) @ 0.5 A, 24 VDC Powered.**
Number of Discrete Inputs/Outputs	16 In / 12 Out (Supports 4 Expansion Units)	16 In / 12 Out (Supports 4 Expansion Units)	16 In / 12 Out (Supports 4 Expansion Units)	16 In / 12 Out (Supports 4 Expansion Units)
Number of Analog Inputs/Outputs	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	140	140	140	140
User Program Logic Memory (Words)	9 K	9 K	9 K	9 K
Registers (Words)	2 K	2 K	2 K	2 K
Analog Pots for Data Adjustment	Yes, 2	Yes, 2	Yes, 2	Yes, 2
Serial Port Connector Type	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)
Protocols	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write
Power Voltage	120/240 VAC	120/240 VAC	24 VDC	24 VDC
Input Power Supply Rating	16 VA	16 VA	5 Watts	5 Watts
24 VDC User Power for Sensors	N/A	200 mA	200 mA	200 mA
Input Device Voltage	120 VAC	120 VAC	24 VDC	24 VDC
Maximum Type A and B Counters	N/A	N/A	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)
Output Control Voltage	120 VAC	Relay Out	24 VDC	24 VDC ESCP, Self Healing, No External Fusing Required
Relay Maximum Resistive Load Rating	N/A	10 @ 2 Amps at 24 VDC and 240 VAC; 2 @ 10 Amps at 24 VDC and 240 VAC	N/A	N/A
Maximum Number of PWM/Pulse Outputs	N/A	N/A	4 @ 5Khz (16 bit)	4 @ 5Khz (16 bit)
Dimensions (WxHxD) mm	150x90x76	150x90x76	150x90x76	150x90x76
Programming Software	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer
Portable Memory Module Support	No	No	No	No

Micro 28 PLC

The Micro 28 PLC is big on features with the built-in 28 I/O (expandable to 140 I/O) points to fast cycle times, two built-in serial ports, robust instruction set, and generous memory to allow more flexible programming. And it's all packaged in a sturdy modular design for easy access and long-term durability. This all-in-one PLC gives you everything you need to control a wide variety of applications.

	IC200UDD212	IC200UDR005	IC200UDR006	IC200UDR228	IC200UDR010
Product Name	**28 point (16) 12 VDC In, (12) 12 VDC Out, 0.7A, 12 VDC Powered**	**28 point; (16) 24 VDC In, (11) Relay Out, (1) 24 VDC Out, 120/240 VAC . Powered**	**28 point (16) 12 VDC In, (12) Relay Out, 12 VDC Powered**	**28 point; (16) 24 VDC In, (11) Relay Out, (1) 24 VDC Out, 12/24 VDC Powered**	**28 point; (16) 24 VDC In, (11) Relay Out, (1) 24 VDC Out, 24 VDC Powered**
Number of Discrete Inputs/Outputs	16 In / 12 Out (Supports 4 Expansion Units)	16 In / 12 Out (Supports 4 Expansion Units	16 In / 12 Out (Supports 4 Expansion Units	16 In / 12 Out (Supports 4 Expansion Units	16 In / 12 Out (Supports 4 Expansion Units
Number of Analog Inputs/Outputs	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units 16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	140	140	140	140	140
User Program Logic Memory (Words)	9 K	9 K	9 K	9 K	9 K
Registers (Words)	2 K	2 K	2 K	2 K	2 K
Analog Pots for Data Adjustment	Yes, 2	Yes, 2	Yes, 2	Yes, 2	Yes, 2
Serial Port Connector Type	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)	RJ-45 (RS-232) port 1 and DB-15 (RS-485 on port 2)
Protocols	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write	Port 1, SNP, SNP X (Breakless); Port 2, SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write
Power Voltage	12 VDC	120/240 VAC	12 VDC	12/24 VDC	24 VDC
Input Power Supply Rating	8 Watts	26 VA	8 Watts	8 Watts	8 Watts
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	140 mA	200 mA
Input Device Voltage	12 VDC	24 VDC	12 VDC	24 VDC	24 VDC
Maximum Type A and B Counters	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)	4 Type A and 1 Type B @ 10Khz (16 bit)
Output Control Voltage	12 VDC	Relay Out	Relay Out	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	N/A	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC
Maximum Number of PWM/Pulse Outputs	4 @ 5Khz (32 bit)	1 @ 5Khz (16 bit)	1 @ 5Khz (16 bit)	1 @ 5Khz (16 bit)	1 @ 5Khz (16 bit)
Dimensions (WxHxD) mm	150x90x76	150x90x76	150x90x76	150x90x76	150x90x76
Programming Software	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	VersaPro 1.1 or greater, Proficy Machine Edition Logic Developer
Portable Memory Module Support	No	No	No	No	

Micro 20 PLC

The Micro 20 PLC is big on features, expandable to 132 I/O points to fast cycle times, robust instruction set, and generous memory to allow more flexible programming. The optional second port provides you with the option of an additional RS-232 port, RS-485, USB, or Ethernet. The serial expansion ports come with two analog input channels. A user-friendly memory module is available to easily download changes to the controller without the need of a PC. And it's all packaged in a sturdy modular design for easy access and long-term durability. This all-in-one PLC gives you everything you need to control a wide variety of applications.

	IC200UDD020	IC200UDD220	IC200UDR120	IC200UDR020
Product Name	**Micro 20; (12) 24 VDC In, (8) 24 VDC Source Out 0.7 amps with ESCP protection, 24 VDC Powered**	**Micro 20; (12) 24 VDC In, (8) 24 VDC Sink Out, 24 VDC Powered**	**Micro 20; (12) 24 VDC In, 8) Relay Out 2.0 amps, 120/240VAC Powered**	**Micro 20; (12) 24 VDC In, (8) Relay Out 2.0 amps, 24VDC Powered**
Number of Discrete Inputs/Outputs	12 In / 8 Out (Supports 4 Expansion Units)	12 In / 8 Out (Supports 4 Expansion Units)	12 In / 8 Out (Supports 4 Expansion Units)	12 In / 8 Out (Supports 4 Expansion Units)
Number of Analog Inputs/Outputs	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analo) expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	132	132	132	132
User Program Logic Memory (Words)	24 K	24 K	24 K	24 K
Registers (Words)	32 K	32 K	32 K	32 K
Analog Pots for Data Adjustment	No	No	No	No
Serial Port Connector Type	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)
Protocols	Both Ports: SNP, SNP X (Breakless),RTU Master and Slave 2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless),RTU Master and Slave 2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless),RTU Master and Slave 2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless),RTU Master and Slave 2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling
Power Voltage	24 VDC	24 VDC	120/240 VAC	24 VDC
Input Power Supply Rating	10 Watts	10 Watts	35 VA	10 Watts
24 VDC User Power for Sensors	435 mA	435 mA	435 mA	435 mA
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Maximum Type A and B Counters	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)
Output Control Voltage	24 VDC ESCP; Self Healing; No External Fusing Required	24 VDC Sink	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	N/A	N/A	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC
Maximum Number of PWM/Pulse Outputs	4 @ 65Khz (32 bit)	4 @ 65Khz (32 bit)	N/A	N/A
Dimensions (WxHxD) mm	150x90x76	150x90x76	150x90x76	150x90x76
Programming Software	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix
Portable Memory Module Support	Yes	Yes	Yes	Yes

Micro 40 PLC

The Micro 40 PLC is big on features, expandable to 152 I/O points to fast cycle times, robust instruction set, and generous memory to allow more flexible programming. The optional second port provides you with the option of an additional RS-232 port, RS-485, USB, or Ethernet. The serial expansion ports come with two analog input channels. A user-friendly memory module is available to easily download changes to the controller without the need of a PC. And it's all packaged in a sturdy modular design for easy access and long-term durability. This all-in-one PLC gives you everything you need to control a wide variety of applications.

	IC200UDD040	IC200UDD240	IC200UDR140	IC200UDR040	IC200UDR440
Product Name	**Micro 40; (24) 24 VDC In, (16) 24 VDC Source Out, 0.7 amps with ESCP protection, 24 VDC Powered**	**Micro 40; (24) 24 VDC In, (16) 24 VDC Sink Out, 24 VDC Powered**	**Micro 40; (24) 24 VDC In, (16) Relay Out 2.0 amps, 120/240 VAC Powered**	**Micro 40; (24) 24 VDC In, (16) Relay Out 2.0 amps, 24 VDC Powered**	**Micro 40; (24) 24 VDC In, (16) Relay Out 2.0 amps 12/24 VDC Powered**
Number of Discrete Inputs/Outputs	24 In / 16 Out (Supports 4 Expansion Units)	24 In / 16 Out (Supports 4 Expansion Units)	24 In / 16 Out (Supports 4 Expansion Units)	24 In / 16 Out (Supports 4 Expansion Units)	24 In / 16 Out (Supports 4 Expansion Units)
Number of Analog Inputs/Outputs	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	152	152	152	152	152
User Program Logic Memory (Words)	24 K	24 K	24 K	24 K	24 K
Registers (Words)	32 K	32 K	32 K	32 K	32 K
Analog Pots for Data Adjustment	No	No	No	No	No
Serial Port Connector Type	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100Mbit)
Protocols	Both Ports: SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling
Power Voltage	24 VDC	24 VDC	120/240 VAC	24 VDC	12/24 VDC
Input Power Supply Rating	10 Watts	10 Watts	35 VA	10 Watts	10 Watts
24 VDC User Power for Sensors	435 mA	435 mA	435 mA	435 mA	120 mA
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
Maximum Type A and B Counters	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)
Output Control Voltage	24 VDC ESCP; Self Healing; No External Fusing Required	24 VDC Sink	Relay Out	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	N/A	N/A	2 Amps at 24 VDC and 240 VA	2 Amps at 24 VDC and 240 VA	2 Amps at 24 VDC and 240 VA
Maximum Number of PWM/Pulse Outputs	4 @ 65Khz (32 bit)	4 @ 65Khz (32 bit)	N/A	N/A	N/A
Dimensions (WxHxD) mm	150x90x76	150x90x76	150x90x76	150x90x76	150x90x76
Programming Software	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix
Portable Memory Module Support	Yes	Yes	Yes	Yes	Yes

Micro 64 PLC

The Micro 64 PLC is big on features, expandable to 176 I/O points to fast cycle times, robust instruction set, and generous memory to allow more flexible programming. The optional second port provides you with the option of an additional RS-232 port, RS-485, USB, or Ethernet. The serial expansion ports come with two analog input channels. A user-friendly memory module is available to easily download changes to the controller without the need of a PC. And it's all packaged in a sturdy modular design for easy access and long-term durability. This all-in-one PLC gives you everything you need to control a wide variety of applications.

	IC200UDD064	IC200UDD164	IC200UDR164	IC200UDR064
Product Name	**Micro 64; (40) 24 VDC In, (24) 24 VDC Source Out 0.7 amps with ESCP protection, 24 VDC Powered.**	**Micro 64; (40) 24 VDC In, (24) 24 VDC Sink Out 0.7 amps, 24 VDC Powered.**	**Micro 64; (40) 24 VDC In, (24) Relay Out 2.0 amps, 120/240 VAC Powered.**	**Micro 64; (40) 24 VDC In, (24) Relay Out 2.0 amps, 24 VDC Powered.**
Number of Discrete Inputs/Outputs	40 In / 24 Out (Supports 4 Expansion Units)	40 In / 24 Out (Supports 4 Expansion Units)	40 In / 24 Out (Supports 4 Expansion Units)	40 In / 24 Out (Supports 4 Expansion Units)
Number of Analog Inputs/Outputs	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)	Supports up to 4 analog expansion units (16 analog in/ 8 analog out)
Physical I/O Maximum	176	176	176	176
User Program Logic Memory (Words)	24K	24K	24 K	24 K
Registers (Words)	32 K	32 K	32 K	32 K
Analog Pots for Data Adjustment	No	No	No	No
Serial Port Connector Type	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100 Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100 Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100 Mbit)	RJ-45 (RS-232) port 1 and optional port 2 DB-15 (RS-485) or RJ-45 (RS-232) or USB or RJ-45 (Ethernet 10/100 Mbit)
Protocols	Both Ports: SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless), RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless),RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling	Both Ports: SNP, SNP X (Breakless),RTU Master and Slave (2 and 4 wire RTU Slave), SNP Master, Serial Read and Write; Ethernet SRTP, Modbus TCP (server) and Tunneling
Power Voltage	24 VDC	24 VDC	120/240 VAC	24 VDC
Input Power Supply Rating	10 Watts	10 Watts	35 VA	10 Watts
24 VDC User Power for Sensors	435 mA	435 mA	435 mA	435 mA
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Maximum Type A and B Counters	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)	4 Type A and 1 Type B @ 100Khz (32 bit)
Output Control Voltage	24 VDC ESCP, Self Healing, No External Fusing Required	24 VDC Sink	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	N/A	N/A	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC
Maximum Number of PWM/Pulse Outputs	4 @ 65Khz (32 bit)	4 @ 65Khz (32 bit)	N/A	N/A
Dimensions (WxHxD) mm	190x90x76	190x90x76	190x90x76	190x90x76
Programming Software	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix
Portable Memory Module Support	Yes	Yes	Yes	Yes

Discrete Expansion Selection Guide

Model	Module Input Power	12 VDC Inputs	12 VDC Outputs	24 VDC Inputs	120 VAC Input	24 VDC Outputs Source	24 VDC Outputs with ESCP	24 VDC Sink Outputs	120 VAC Output	Relay Outputs, 2 Amps	Relay Outputs 10 Amps
IC200UEI08	24 VDC			8 Inputs							
IC200UEI016	24 VDC			16 Inputs							
IC200UEO008	24 VDC						8 Outputs				
IC200UEO016	24 VDC						16 Outputs				
IC200UEO108	24 VDC							8 Outputs			
IC200UEO116	24 VDC							16 Outputs			
IC200UER008	24 VDC									8 Outputs	
IC200UER016	24 VDC									16 Outputs	
IC200UEC008	24 VDC			4 Inputs/ 4 Source Outputs			4 Inputs/ 4 Source Outputs				
IC200UEC108	24 VDC			4 Inputs/ 4 Sink Outputs				4 Inputs/ 4 Sink Outputs			
IC200UEC208	24 VDC			4 Inputs/ 4 Relay Outputs						4 Inputs/ 4 Relay Outputs	
IC200UEX015	12 VDC	8 Inputs/ 6 12 VDC Outputs	8 Inputs/ 6 12 VDC Outputs								
IC200UEX013	12 VDC	8 Inputs/ 6 Relay Outputs								8 Inputs/ 6 Relay Outputs	
IC200UEX014	24 VDC			8 Inputs/ 6 24 VDC Outputs		8 Inputs/ 6 24 VDC Outputs					
IC200UEX122	24 VDC			8 Inputs/ 6 24 VDC Outputs with ESCP			8 Inputs/ 6 24 VDC Outputs with ESCP				
IC200UEX012	24 VDC			8 Inputs/ 6 Relay Outputs						8 Inputs/ 6 Relay Outputs	
IC200UEX011	120/240 VAC			8 Inputs/ 6 Relay Outputs						8 Inputs/ 6 Relay Outputs	
IC200UEX009	120/240 VAC				8 Inputs/ 6 Relay Outputs (4 @ 2 amps and 2 @ 10 amps)					8 Inputs/ 6 Relay Outputs (4 @ 2 amps and 2 @ 10 amps)	8 Inputs/ 6 Relay Outputs (4 @ 2 amps and 2 @ 10 amps)
IC200UEX010	120/240 VAC				8 Inputs/ 6 AC Outputs				8 Inputs/ 6 AC Outputs		
IC200UEX215	12 VDC	16 Inputs/ 12 12 VDC Outputs	16 Inputs/ 12 12 VDC Outputs								
IC200UEX213	12 VDC	16 Inputs/ 12 Relay Outputs								8 Inputs/ 6 Relay Outputs	
IC200UEX214	24 VDC			16 Inputs/ 12 24 VDC Outputs		16 Inputs/ 12 24 VDC Outputs					
IC200UEX222	24 VDC			16 Inputs/ 12 24 VDC Outputs with ESCP			16 Inputs/ 12 24 VDC Outputs with ESCP				
IC200UEX212	24 VDC			16 Inputs/ 12 Relay Outputs						16 Inputs/ 12 Relay Outputs	
IC200UEX211	120/240 VAC			16 Inputs/ 12 Relay Outputs						16 Inputs/ 12 Relay Outputs	
IC200UEX209	120/240 VAC				16 Inputs/ 12 Relay Outputs (10 @ 2 amps and 2 @ 10 amps)					16 Inputs/ 12 Relay Outputs (10 @ 2 amps and 2 @ 10 amps)	16 Inputs/ 12 Relay Outputs (10 @ 2 amps and 2 @ 10 amps)
IC200UEX210	120/240 VAC				16 Inputs/ 12 AC Outputs				16 Inputs/ 12 AC Outputs		
IC200UEX264*	24 VDC			40 Inputs/ 24 24 VDC Outputs			40 Inputs/ 24 24 VDC Outputs				
IC200UEX364*	24 VDC			40 Inputs/ 24 24 VDC Outputs		40 Inputs/ 24 24 VDC Outputs					
IC200UEX064*	24 VDC			40 Inputs/ 24 Relay Outputs						40 Inputs/ 24 Relay Outputs	
IC200UEX164*	120/240 VAC			40 Inputs/ 24 Relay Outputs						40 Inputs/ 24 Relay Outputs	

* Micro 20, 40 and 64 support only.

Discrete Expansion Units

The VersaMax Micro's modular design provides you with remarkable flexibility in a compact control. The versatile Micro PLC can support up to four Expansion Units of any mix of discrete or analog.

	IC200UEI08	IC200UEI016	IC200UEO008	IC200UEO016	IC200UEO108	IC200UEO116
Product Name	**8 point (8) 24 VDC In, 24 VDC Powered**	**16 point (16) 24 VDC In, 24 VDC Powered**	**8 point (8) 24 VDC Output with ESCP Protection, 24 VDC Powered**	**16 point (16) 24 VDC Output with ESCP Protection, 24 VDC Powered**	**8 point (8) 24 VDC Sink Output, 24 VDC Powered**	**16 point (16) 24 VDC Sink Output, 24 VDC Powered**
Micro Type Restrictions	N/A	N/A	N/A	N/A	N/A	N/A
Number of Discrete Inputs/Outputs	8 In	16 In	8 Out	16 Out	8 Out	16 Out
Power Voltage	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
Input Power Supply Rating	4 Watts	4 Watts	4 Watts	4 Watts	4 Watts	4 Watts
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	200 mA	200 mA	200 mA
Input Device Voltage	24 VDC	24 VDC	N/A	N/A	N/A	N/A
Output Control Voltage	N/A	N/A	24 VDC ESCP, Self Healing, No External Fusing Required	24 VDC ESCP, Self Healing, No External Fusing Required	24 VDC Sink	24 VDC Sink
Relay Maximum Resistive Load Rating	N/A	N/A	N/A	N/A	N/A	N/A
Dimensions (WxHxD) mm	95x90x76	95x90x76	95x90x76	95x90x76	95x90x76	95x90x76

Discrete Expansion Units

The VersaMax Micro's modular design provides you with remarkable flexibility in a compact control. The versatile Micro PLC can support up to four Expansion Units of any mix of discrete or analog.

	IC200UER008	IC200UER016	IC200UEC008	IC200UEC108	IC200UEC208
Product Name	**8 point (8) Relay Out, 24 VDC Powered**	**16 point (16) Relay Out, 24 VDC Powered**	**8 point (4) 24 VDC In, (4) 24 VDC Out with ESCP Protection, 24 VDC Powered**	**8 point (4) 24 VDC In, (4) 24 VDC Sink Out, 24 VDC Powered**	**8 point (4) 24 VDC In, (4) Relay Out, 24 VDC Powered**
Micro Type Restrictions	N/A	N/A	N/A	N/A	N/A
Number of Discrete Inputs/Outputs	8 Out	16 Out	4 In / 4 Out	4 In / 4 Out	4 In / 4 Out
Power Voltage	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
Input Power Supply Rating	4 Watts	4 Watts	4 Watts	4 Watts	4 Watts
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	200 mA	200 mA
Input Device Voltage	N/A	N/A	24 VDC	24 VDC	24 VDC
Output Control Voltage	Relay Out	Relay Out	24 VDC ESCP, Self Healing, No External Fusing Required	24 VDC Sink	Relay Out
Relay Maximum Resistive Load Rating	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC	N/A	N/A	2 Amps at 24 VDC and 240 VAC
Dimensions (WxHxD) mm	95x90x76	95x90x76	95x90x76	95x90x76	95x90x76

Discrete Expansion Units

The VersaMax Micro's modular design provides you with remarkable flexibility in a compact control. The versatile Micro PLC can support up to four Expansion Units of any mix of discrete or analog.

	IC200UEX015	IC200UEX013	IC200UEX014	IC200UEX122	IC200UEX012	IC200UEX011
Product Name	**14 point (8) 12 VDC In, (6) 12 VDC Out, 12 VDC Powered**	**14 point (8) 12 VDC In, (6) Relay Out, 12 VDC Powered**	**14 point (8) 24 VDC In, (6) 24 VDC Out, 24 VDC Powered**	**14 point (8) 24 VDC In, (6) 24 VDC Out with ESCP, 24 VDC Powered**	**14 point (8) 24 VDC In, (6) Relay Out, 24 VDC Powered**	**14 point (8) 24 VDC In, (6) Relay Out, 120/240 VAC Powered**
Micro Type Restrictions	N/A	N/A	N/A	N/A	N/A	N/A
Number of Discrete Inputs/Outputs	8 In / 6 Out	8 In / 6 Out	8 In / 6 Out	8 In / 6 Out	8 In / 6 Out	8 In / 6 Out
Power Voltage	12 VDC	12 VDC	24 VDC	24 VDC	24 VDC	120/240 VAC
Input Power Supply Rating	4 Watts	4 Watts	4 Watts	4 Watts	4 Watts	13 VA
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	200 mA	200 mA	200 mA
Input Device Voltage	12 VDC	12 VDC	24 VDC	24 VDC	24 VDC	24 VDC
Output Control Voltage	12 VDC	Relay Out	24 VDC	24 VDC ESCP, Self Healing, No External Fusing Required	Relay Out	Relay Out
Relay Maximum Resistive Load Rating	N/A	2 Amps at 24 VDC and 240 VAC	N/A	N/A	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC
Dimensions (WxHxD) mm	95x90x76	95x90x76	95x90x76	95x90x76	95x90x76	95x90x76

Discrete Expansion Units

The VersaMax Micro's modular design provides you with remarkable flexibility in a compact control. The versatile Micro PLC can support up to four Expansion Units of any mix of discrete or analog.

	IC200UEX009	IC200UEX010	IC200UEX215	IC200UEX213	IC200UEX214
Product Name	**14 point (8) 120 VAC In, (6) Relay Out (2 outputs at 10 amp and 4 outputs at 2 amp), 120/240 VAC Powered**	**14 point (8) 120 VAC In, (6) 120 VAC Out, 120/240 VAC Powered**	**28 point (16) 12 VDC In, (12) 12 VDC Out, 12 VDC Powered**	**28 point (16) 12 VDC In, (12) Relay Out, 12 VDC Powered**	**28 point (16) 24 VDC In, (12) 24 VDC Out, 24 VDC Powered**
Micro Type Restrictions	N/A	N/A	N/A	N/A	N/A
Number of Discrete Inputs/Outputs	8 In / 6 Out	8 In / 6 Out	16 In / 12 Out	16 In / 12 Out	16 In / 12 Out
Power Voltage	120/240 VAC	120/240 VAC	12 VDC	12 VDC	24 VDC
Input Power Supply Rating	11 VA	11 VA	8 Watts	8 Watts	5 Watts
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	200 mA	200 mA
Input Device Voltage	120 VAC	120 VAC	12 VDC	12 VDC	24 VDC
Output Control Voltage	Relay Out (2 at 10 Amps and 4 at 2 Amps)	120 VAC	12 VDC	Relay Out	24 VDC
Relay Maximum Resistive Load Rating	2 Amps at 24 VDC and 240 VAC; 10 Amp at 24 VDC and 240 VAC	N/A	N/A	2 Amps at 24 VDC and 240 VAC	N/A
Dimensions (WxHxD) mm	95x90x76	95x90x76	150x90x76	150x90x76	150x90x76

Discrete Expansion Units

The VersaMax Micro's modular design provides you with remarkable flexibility in a compact control. The versatile Micro PLC can support up to four Expansion Units of any mix of discrete or analog.

	IC200UEX222	IC200UEX212	IC200UEX211	IC200UEX209	IC200UEX210
Product Name	**28 point (16) 24 VDC In, (12) 24 VDC Out with ESCP, 24 VDC Powered**	**28 point (16) 24 VDC In, (12) Relay Out, 24 VDC Powered**	**28 point (16) 24 VDC In, (12) Relay Out, 120/240 VAC Powered**	**28 point (16) 120 VAC In, (12) Relay Out (2 outputs at 10 amp and 10 outputs at 2 amp), 120/240 VAC Powered**	**28 point (16) 24 VDC In, (12) 120 VAC Out, 120/240 VAC Powered**
Micro Type Restrictions	N/A	N/A	N/A	N/A	N/A
Number of Discrete Inputs/Outputs	16 In / 12 Out	16 In / 12 Out	16 In / 12 Out	16 In / 12 Out	16 In / 12 Out
Power Voltage	24 VDC	24 VDC	120/240 VAC	120/240 VAC	120/240 VAC
Input Power Supply Rating	5 Watts	8 Watts	26 VA	16 VA	16 VA
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	200 mA	200 mA
Input Device Voltage	24 VDC	24 VDC	24 VDC	120 VAC	120 VAC
Output Control Voltage	24 VDC ESCP, Self Healing, No External Fusing Required	Relay Out	Relay Out	Relay Out (2 at 10 Amps and 10 at 2 Amps)	120 VAC
Relay Maximum Resistive Load Rating	N/A	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC; 10 Amps at 24 VDC and 240 VAC	N/A
Dimensions (WxHxD) mm	150x90x76	150x90x76	150x90x76	150x90x76	150x90x76

Discrete Expansion Units

The VersaMax Micro's modular design provides you with remarkable flexibility in a compact control. The versatile Micro PLC can support up to four Expansion Units of any mix of discrete or analog.

	IC200UEX064	IC200UEX164	IC200UEX264	IC200UEX364
Product Name	**64 point (40) 24 VDC In, (24) Relay Out, 24 VDC Powered**	**64 point (40) 24 VDC In, (24) Relay Out, 120/240 VAC Powered**	**64 point (40) 24 VDC In, (24) 24 VDC Source Out, 24 VDC Powered**	**64 point (40) 24 VDC In, (24) 24 VDC Sink Out, 24 VDC Powered**
Micro Type Restrictions	Micro 20, 40, 64 Support Only	Micro 20, 40, 64 Support Only	Micro 20, 40, 64 Support Only	Micro 20, 40, 64 Support Only
Number of Discrete Inputs/Outputs	40 In / 24 Out	40 In / 24 Out	40 In / 24 Out	40 In / 24 Out
Power Voltage	24 VDC	120/240 VAC	24 VDC	24 VDC
Input Power Supply Rating	10 Watts	35 VA	10 Watts	10 Watts
24 VDC User Power for Sensors	435 mA	435 mA	435 mA	435 mA
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Output Control Voltage	Relay Out	Relay Out	24 VDC Sourced	24 VDC Sink
Relay Maximum Resistive Load Rating	2 Amps at 24 VDC and 240 VAC	2 Amps at 24 VDC and 240 VAC	N/A	N/A
Dimensions (WxHxD) mm	190x90x76	190x90x76	190x90x76	190x90x76

Analog Expansion Selection Guide

Model	Module Input Power	Input Range 0 to 10V -10V to +10V 0 to 20mA 4 to 20mA	Input Range RTD Pt 100	Input Range Thermocouple Type K, J, E, S, T, B, N	Input Range millivolt ±50mV ±100mV	Output Range 0-10 VDC 0-20 mA
IC200UEX616	12 VDC	4 in / 2 out				4 in / 2 out
IC200UEX624	24 VDC	4 in				
IC200UEX626	24 VDC	4 in / 2 out				4 in / 2 out
IC200UEX636	120/240 VAC	4 in / 2 out				4 in / 2 out
IC200UEX724	24 VDC		4 in			
IC200UEX726	24 VDC		4 in / 2 out			4 in / 2 out
IC200UEX734	120/240 VAC		4 in			
IC200UEX736	120/240 VAC		4 in / 2 out			4 in / 2 out
IC200UEX824	24 VDC			4 in	4 in	
IC200UEX826	24 VDC			4 in / 2 out	4 in / 2 out	4 in / 2 out

Analog Expansion Units

The VersaMax Micro analog I/O is versatile and the Micro PLC can support up to four Analog Expansion Units, allowing you to expand up to 16 inputs and 8 outputs.

	IC200UEX624	IC200UEX616	IC200UEX626	IC200UEX636
Product Name	**4 Analog I/O Channels 0 to 10VDC, 4 to 20mA, 24 VDC Powered**	**6 Analog I/O Channels (4) 0 to 10 VDC, ±10 VDC, 4 to 20 mA, 0 to 20 mA In, (2) 0 to 10 VDC, 4 to 20 mA, 0 to 20 mA Out, 12 VDC Powered**	**6 Analog I/O Channels (4) 0 to 10 VDC, ±10 VDC, 4 to 20 mA, 0 to 20 mA In, (2) 0 to 10 VDC, 4 to 20 mA, 0 to 20 mA Out, 24 VDC Powered**	**6 Analog I/O Channels (4) 0 to 10 VDC, ±10 VDC, 4 to 20 mA, 0 to 20 mA In, (2) 0 to 10 VDC, 4 to 20 mA, 0 to 20 mA Out, 120/240 VAC Powered**
Micro Type Restrictions	N/A	N/A	N/A	N/A
Number of Analog Inputs/Outputs	4 Channels In, Voltage or Current	4 Channels In/2 Channels Out, Voltage or Current	4 Channels In/2 Channels Out, Voltage or Current	4 Channels In/2 Channels Out, Voltage or Current
Power Voltage	24 VDC	12 VDC	24 VDC	120/240 VAC
Input Power Supply Rating	3 Watts	2.25 Watts	3 Watts	15 VA
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	200 mA
Analog Input Ranges	0-10V (10.23V Max); 0-±10V (±10.23V Max); 0-20 mA (20.47 mA Max); 4-20 mA; 12 bit resolution.	0-10V (10.23V Max); 0-±10V (±10.23V Max); 0-20 mA (20.47 mA Max); 4-20 mA; 12 bit resolution.	0-10V (10.23V Max); 0-±10V (±10.23V Max); 0-20 mA (20.47 mA Max); 4-20 mA; 12 bit resolution.	0-10V (10.23V Max); 0-±10V (±10.23V Max); 0-20 mA (20.47 mA Max); 4-20 mA; 12 bit resolution.
Analog Output Ranges	N/A	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit resolution.	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit resolution.	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit resolution.
Dimensions (WxHxD) mm	95x90x76	95x90x76	95x90x76	95x90x76

Analog Expansion Units

The VersaMax Micro analog I/O is versatile and the Micro PLC can support up to four Analog Expansion Units, allowing you to expand up to 16 inputs and 8 outputs.

	IC200UEX724	IC200UEX734	IC200UEX726	IC200UEX736
Product Name	**4 RTD PT 100 Channels IN, 120/240 VAC Powered**	**4 RTD PT 100 Channels IN, 24 VDC Powered**	**4 RTD PT 100 Channels IN, 2 Analog Channels OUT 0 to 10 VDC, 4 to 20 mA, 0 to 20 mA Out, 24 VDC Powered**	**4 RTD PT 100 Channels IN, 2 Analog Channels OUT 0 to 10 VDC, 4 to 20 mA, 0 to 20 mA Out, 120/240 VAC Powered**
Micro Type Restrictions	16 bit supported on Mircro 20, 40, 64 only	16 bit supported on Mircro 20, 40, 64 only	16 bit supported on Mircro 20, 40, 64 only	16 bit supported on Mircro 20, 40, 64 only
Number of Analog Inputs/Outputs	4 Channels RTD In	4 Channels RTD In	4 Channels RTD In / 2 Channels Out, Voltage or Current	4 Channels RTD In / 2 Channels Out, Voltage or Current
Power Voltage	24 VDC	120/240 VAC	24 VDC	120/240 VAC
Input Power Supply Rating	3 Watts	15 VA	3 Watts	15 VA
24 VDC User Power for Sensors	200 mA	200 mA	200 mA	200 mA
Analog Input Ranges	2- and 3-wire types, PT 100; 16 bit	2- and 3-wire types, PT 100; 16 bit	2- and 3-wire types, PT 100; 16 bit	2- and 3-wire types, PT 100; 16 bit
Analog Output Ranges	N/A	N/A	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit resolution.	0 to 10 VDC (10.24V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit resolution.
Dimensions (WxHxD) mm	95x90x76	95x90x76	95x90x76	95x90x76

Analog Expansion Units

The VersaMax Micro analog I/O is versatile and the Micro PLC can support up to four Analog Expansion Units, allowing you to expand up to 16 inputs and 8 outputs.

	IC200UEX824	IC200UEX826
Product Name	**4 Thermocouple or mV Input Channels, 24 VDC Powered**	**4 Thermocouple or mV Input Channels and 2 Analog Output Channels, 24 VDC Powered**
Micro Type Restrictions	16 bit supported on Micro 20, 40, 64 only	16 bit supported on Micro 20, 40, 64 only
Number of Analog Inputs/Outputs	4 Channels Thermocouple In or ±50mV or ±100mV, 24 VDC Power Supply	4 Channels Thermocouple In or ±50mV or ±100mV and 2 channel analog outputs, 24 VDC Power Supply
Power Voltage	24 VDC	24 VDC
Input Power Supply Rating	3 Watts	3 Watts
24 VDC User Power for Sensors	200 mA	200 mA
Analog Input Ranges	Type K, J, E, S, T, B, N, ±50mV, ±100mV; 12 bit (16 bit 4th QTR 2009)	Type K, J, E, S, T, B, N, ±50mV, ±100mV; 12 bit (16 bit 4th QTR 2009)
Analog Output Ranges	N/A	0 to 10 VDC (10.24 V max.) 0 to 20 mA (20.5 mA max.) 4 to 20 mA (20.5 mA max.); 12 bit resolution.
Dimensions (WxHxD) mm	95x90x76	95x90x76

Micro Motion Expansion Unit

The Micro Motion expansion module is ideal for either Micro integrated motion control or standalone motion control over serial or Ethernet networking. The Micro Motion expansion module is loaded with features and supports a wide range of stepper and servo control. The module supports a powerful function set, with up to 256 move profiles stored on the module. Micro Motion module supports the Portable Memory device (removable Flash device) for easy program storage of the motion moves.

	IC200UMM002	IC200UMM102
Product Name	**VersaMax Micro 2 Axis Motion Module**	**VersaMax Micro 2 Axis Motion Module**
Micro Type Restrictions	Micro 20, 40, 64 Support Only	Micro 20, 40, 64 Support Only
Number of Axis	2	2
Follower Mode	Axis A can follow B or Axis B can follow A within the module only.	Axis A can follow B or Axis B can follow A within the module only.
Motion Control Method	Motion commands can be controlled by Micro 20, 40, 64 or by Modbus Slave interface (RS-232 IC200USB001 or RS-485 IC200USB002) or Ethernet (IC200UEM001)	Motion commands can be controlled by Micro 20, 40, 64 or by Modbus Slave interface (RS-232 IC200USB001 or RS-485 IC200USB002) or Ethernet (IC200UEM001)
Power Voltage	24 VDC	120/240VAC
Input Voltages	line driver (5V) 24 DC	line driver (5V) 24 DC
Output Voltages	5VDC and 24VDC	5VDC and 24VDC
Max Speed	500k Pulse/s	500k Pulse/s
Number of Moves Stored on Unit	256 (non-volatile)	256 (non-volatile)
Move Types	(1) Absolute + Increment method (2) Increment method	(1) Absolute + Increment method (2) Increment method
Position Rollover	Linear, rotation	Linear, rotation
Positioning Command Unit	Pulse, µm, inch, degree, Free-form	Pulse, µm, inch, degree, Free-form
Speed Command Range	6.25 to 500k Pulse/second	6.25 to 500k Pulse/second
Acceleration and Deceleration	Liner Acc/Dec, S-shaped Acc/Dec	Liner Acc/Dec, S-shaped Acc/Dec
Dwell Time	0 to 65535 ms (1 ms unit)	0 to 65535 ms (1 ms unit)
Acc/Dec Rate	1 to 50,000,000 (pulse/s2, µm/s2, inch/s2, degree/s2)	1 to 50,000,000 (pulse/s2, µm/s2, inch/s2, degree/s2)
Backlash Correction	0 to 65,535 (pulses, µm, inch, degree, Free-form)	0 to 65,535 (pulses, µm, inch, degree, degree, Free-form)
Range	Range +2,147,463,647 to –2,147,463,648 pulses	Range +2,147,463,647 to –2,147,463,648 pulses
Pulse Output Type	(1) Pulse column [CW / CCW] (2) Clock + direction signal [CK/direction]	(1) Pulse column [CW / CCW] (2) Clock + direction signal [CK/direction]
Pulse Output Method	Line Driver Output	Line Driver Output
Operating Mode	Auto operation and manual operation	Auto operation and manual operation
Home Function	Free homing Low-speed homing High-speed homing 1 (OFF edge) High-speed homing 2 (marker stop)	Free homing Low-speed homing High-speed homing 1 (OFF edge) High-speed homing 2 (marker stop)
Manual (JOG) operation	Manual input signal or pulse output by command	Manual input signal or pulse output by command
Feedrate Override Function	1 to 100% (Speed scale rate)	1 to 100% (Speed scale rate)
High Speed Input Registration	Differential Input. Supports Windowing	Differential Input. Supports Windowing
Motion Module I/O Assignment	Inputs: A-Channel position data from encoder. (differential) B-Channel position data from encoder. (differential) Z-Channel position data from encoder. (differential) Positioning finish signal from servo driver (COIN) Home limit switch input Common for Digital Inputs Jog Forward Jog Reverse Feedrate Override Estop Drive OK/Ready Outputs: Clockwise Pulse (Pulse) (differential) Counter Clockwise Pulse (Direction) (differential)	Inputs: A-Channel position data from encoder. (differential) B-Channel position data from encoder. (differential) Z-Channel position data from encoder. (differential) Positioning finish signal from servo driver (COIN) Home limit switch input Common for Digital Inputs Jog Forward Jog Reverse Feedrate Override Estop Drive OK/Ready Outputs: Clockwise Pulse (Pulse) (differential) Counter Clockwise Pulse (Direction) (differential)
Portable Memory Module Support	Yes	Yes
I/O Bus Data Assignement	Module requires 8 words in and 8 words out. The module appears as two expansion units. A maximum of two motion modules allowed per controller. If one motion module is in system, 2 additional discrete or analog expansions can be used.	Module requires 8 words in and 8 words out. The module appears as two expansion units. A maximum of two motion modules allowed per controller. If one motion module is in system, 2 additional discrete or analog expansions can be used.
Dimensions (WxHxD) mm	150x90x76	150x90x76

IC200DTX200

IC200DTX450

IC200DTX850

IC200DTX650

DataPanels Operator Interfaces

GE VersaMax DataPanels are ideal for a broad range of applications ranging from simple timer/counter/register access to full text message display with numeric keypad. All VersaMax DataPanels are preprogrammed to connect quickly to a VersaMax Micro or Nano PLC without user configuration.

	IC200DTX200	IC200DTX450	IC200DTX650	IC200DTX850
Product Name	**Operator Interface for changing timer/counter/ register values. 2x16 character LCD backlight display and 6 operation keys. No stored messaging, PLC stores messages. Requires IC200CBL550 cable or equivalent. Operates on 5 VDC @ 100 mA from Micro or Nano.**	**Operator Interface with up to 200 stored messages. 2x16 character LCD backlight display and 6 function keys. Requires IC200CBL555 or equivalent. Operates on external 24 VDC @ 40 mA.**	**Operator Interface with up to 200 stored messages. 4x16 character LCD backlight display and 8 function keys. Requires IC200CBL555 cable or equivalent. Operates on external 24 VDC @ 80 mA.**	**Operator Interface with up to 200 stored messages. 4x20 character LCD backlight display, 8 function keys and numeric keypad. Requires IC200CBL555 cable or equivalent. Operates on external 24 VDC @ 50 mA.**
Characters Per Line	16	16	16	20
Function Keys	0	6	8	8
Numeric Keypad	0	0	0	Yes
Memory Size (Number of Messages)	Messages stored in PLC	200 stored in operator interface	200 stored in operator interface	200 stored in operator interface
DataPanel Dimensions (WxHxD) mm	108x60x27	108x60x45	96x96x44	182x101x37
Number of Lines	2	2	4	4
Display Type	LCD Display with Backlight	LCD Display with Backlight	LCD Display with Backlight	LCD Display with Backlight
Operating Temperature	0°C to +50°C	0°C to +50°C	0°C to +50°C	0°C to +50°C
NEMA Rating	NEMA 4	NEMA 4	NEMA 4	NEMA 4
Programming Software	None required	DataDesigner (IC752DDZ000)	DataDesigner (IC752DDZ000)	DataDesigner (IC752DDZ000)

Micro 20, Micro 40 and Micro 64 Port 2 Communication Options

The VersaMax Micro 20, Micro 40 and Micro 64 Port 2 is modular by design and enables the user to select a wide range of communications options. The user can select RS-232, RS-485, Ethernet or USB. The RS-232 and RS-485 also come with two analog input channels (0 to 10 VDC, 10 bit). Port 2 also supports Memory Module Board that enables the user to download logic and settings without a PC.

	IC200UEM001	IC200USB001	IC200USB002	IC200UUB001
Product Name	**Ethernet module**	**RS-232 option board with (2) 0 -10 VDC analog in**	**RS-485 option board with (2) 0 -10 VDC analog in**	**USB option board (no analog option)**
Micro Type Restrictions	Micro 20, 40, 64 Support Only	Micro 20, 40, 64 Support Only	Micro 20, 40, 64 Support Only	Micro 20, 40, 64 Support Only
Connection Type	10/100Mbits port supporting RJ45 connection	RS-232 (RJ-45)	RS-485 (RJ-45)	USB (Slave Only) version 2.0, Straight B type
Protocol Supported	SRTP and Modbus TCP (server)	SNP, SNP Master, SNP X, Modbus Master, Modbus Slave, Serial Read and Write	SNP, SNP Master, SNP X, Modbus Master, Modbus Slave, Serial Read and Write	SNP, SNP X, Modbus Slave, Serial Read
Analog Support on Communications Module	No Analog Support	Two Analog Inputs. 0 to 10 VDC (10 bits)	Two Analog Inputs. 0 to 10 VDC (10 bits)	No Analog Support
Memory Module Board Support	Yes	Yes	Yes	Yes
Programming Support	Yes, SRTP only	Yes	Yes	Yes
Programming Software	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix	Proficy Machine Edition Logic Developer 5.0, Service Pack 3, Hotfix

Ethernet Communication Option

The VersaMax SE enables the VersaMax Micro and Nano to easily be connected to an Ethernet LAN via the VersaMax SE. The user can easily down load, upload and monitor VersaMax Micro and Nano controllers.

	IC200SET001
Product Name	**Ethernet to Serial Network Module**
Ethernet Port	10/100Mbits port supporting RJ45 connection
Serial Port	One RS-232 and one RS-485 port (up to 16 devices supported)
Communications Configurations	Communication configurations include Ethernet SRTP to SNP or Modbus TCP to Modbus Slave
Power Voltage	12/24 VDC
Dimensions (WxHxD) mm	36x90x60
Programming Software	VersaPro 2.0 or greater, Proficy Machine Edition Logic Developer
Mounting	35 mm DIN-Rail or Panel Mount
Power Supply Voltage Range	12/24 VDC

Portable Program Download Device (PPDD)

The Portable Program Download Device enables the user to easily upload and download VersaMax Micro 23/28 configuration and logic from/to a USB Memory Stick. Portable Program Download Device (PPDD) will support commercial memory stick devices using USB connection. The purpose of the PPDD is to allow users to store and download their logic applications and configuration to GE VersaMax Micro 23/28 PLCs without the need of a PC. The PPDD plugs into the 15 pin RS-485 port on the VersaMax Micro 23/28 CPU base power supply. The RS-485 port provides the power for the PPDD. VersaMax Micro 23/28 logic and configuration files can be zipped and easily emailed to remote locations for VersaMax Micro 23/28 downloads.

There are many advantages of the PPDD such as:

- No PC required to backup applications or download applications
- No expensive travel to perform field upgrades, just email the file to the remote location
- Compatible with commercial off the shelf USB Memory Sticks
- The PPDD can be panel mounted, DIN rail mounted or hand held
- Supports diagnostics to ensure that the CPU is compatible with the application
- OEM Password Protection supported
- Simple to operate, LEDs to show activity, error and status. Push button to start download and selector switch for direction of download, to the PLC or to the memory stick.
- Designed for the industrial environment UL and CE (not Class 1 Div 2 approved)

PPDD features:

- Slide switch for direction of data storage
- Status and Diagnostic LEDs

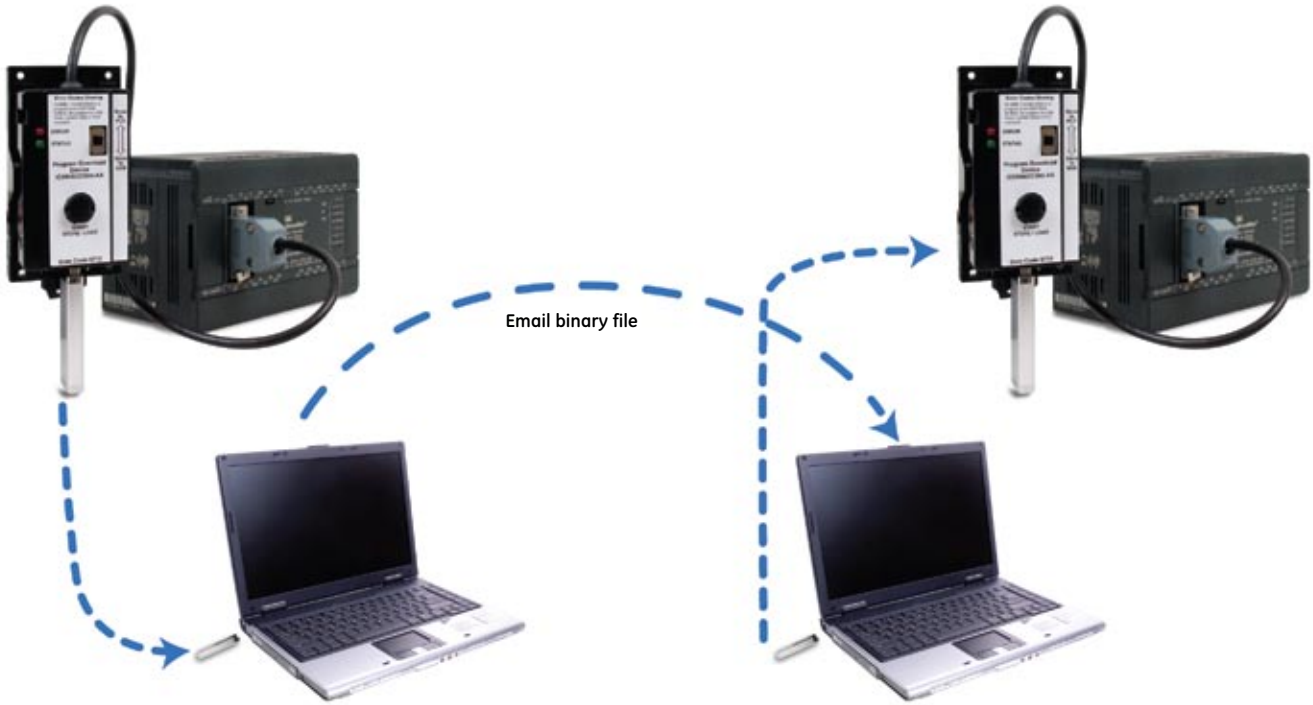
LEDs Status

	Error (Red)	Status (Green)
LED On Steady	On when there isn't a Memory Stick attached	On after button has been pushed and name in PLC matches and when download is complete
LED Flashing Fast Flash (500msec on 500msec off) Slow Flash (1 sec on 1 sec off)	Flashing when CPU doesn't match or Memory Stick doesn't have the proper file Flashing if Verify fails	Slow Flash During Download Fast Flash when CPU type matches but name in PLC doesn't match
LED Off	Off during normal conditions with no errors	Off prior to button being pushed for download

The Portable Program Download Device is simple to use. The example below demonstrates the four easy steps of downloading an application and emailing it to a remote location for application upgrade.

Step 1.
Slide PPDD selector toward USB memory stick. Press PPDD download button. The PPDD will store/verify the VersaMax Micro application and configuration onto the USB memory stick.

Step 4.
Place the USB memory stick in the PPDD, slide selector toward controller. Press PPDD download button. The PPDD will stop the CPU and download/verify file. The CPU can be placed in the Run mode via the key switch or cycling power.



Step 2.
Remove the memory stick from the PPDD and connect it to your PC. Copy the binary file from the memory stick to your PC and email to remote location.

Step 3.
Remote location takes the binary file that is in the email and stores it on a USB memory stick.

Portable Program Download Device

IC690ACC990	Portable Program Download Device. Supports standard USB memory devices to store and load VersaMax Micro 23/28 PLC applications without the need of a PC.

Accessories

IC200ACC402	Spare Removable Terminal Strips, 10 per pack. (Micro 14, Micro 23 and Micro 28 and all expansion units)
IC200ACC403	Battery for Micro 23 and Micro 28 for data retention (5.2 months minimum @ 70°C and 32.4 months minimum @ 20°C)
IC200ACC404	Spare parts kit. Two terminal strips and four plastic doors and four covers for Micro 14, Micro 23 and Micro 28.
IC200ACC414	Long Term Battery for Micro 23, Micro 28 and Micro 64 (19 months minimum @ 70°C and 121 months minimum @ 20°C)
IC200ACC415	RS-232 to RS-485 Converter requires IC200CBL500 or equivalent.
IC200ACC450	Simulator for VersaMax Nano 10. (6 Inputs)
IC200ACC451	Simulator for VersaMax Micro 14, Micro 23 and Micro 28. (8 Inputs)
IC200UMB001	Flash Memory Board for program download and compatible with Micro 64 (128Kbytes)

External Power Supplies

IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
IC690PWR124	24 VDC, 10 Amp Output Power and 120/230 VAC Input Power Power Supply

Stepper Controller, Motors and Cables

(More Information in Motion Solutions Catalog GFA-483)

IC800PCUB00300	Stepping Motor Power Amplifier, 12-48 VDC, 4 Amp
IC800CUBDB15ADP	Motor Cube or Power Cube DB15 to screw terminal connector adaptor
IC800PCUBDINMTG	Power Cube DIN Rail Mounting Adaptor.
MTR-1216-N-D-E-0	Stepping Motor Nema23, Series Wdg. Holding Torque 61 oz-in/0.43 Nano meters
MTR-1220-N-D-E-0	Stepping Motor Nema23, Series Wdg. Holding Torque 116 oz-in/0.82 Nano meters
MTR-1221-N-D-E-0	Stepping Motor Nema23, Series Wdg. Holding Torque 124 oz-in/0.87 Nano meters
MTR-1231-N-D-E-0	Stepping Motor Nema23, Series Wdg. Holding Torque 236 oz-in/1.68 Nano meters
MTR-1235-N-D-E-0	Stepping Motor Nema23, Series Wdg. Holding Torque 185 oz-in/1.31 Nano meters
MTR-1331-J-N-D-E-0	Stepping Motor Nema34, Series Wdg. Holding Torque 327 oz-in/2.31 Nano meters
MTR-1N31-I-N-D-S-0	Stepping Motor Nema34, Series Wdg. Holding Torque 605 oz-in/4.27 Nano meters
CBL-12-MP-10	Power Cable, MTR-1216, 1221, or 1231 Stepping Motor, 10 Ft.
CBL-12-MP-20	Power Cable, MTR-1216, 1221, or 1231 Stepping Motor, 20 Ft.
CBL-12-MP-30	Power Cable, MTR-1216, 1221, or 1231 Stepping Motor, 30 Ft.
CBL-13-MP-10	Power Cable, MTR-1220, MTR-1235, MTR-13xx, MTR-14xx & MTR-1Nxx Series Stepping Motors, 10 Ft.
CBL-13-MP-20	Power Cable, MTR-1220, MTR-1235, MTR-13xx, MTR-14xx & MTR-1Nxx Series Stepping Motors, 20 Ft.
CBL-13-MP-30	Power Cable, MTR-1220, MTR-1235, MTR-13xx, MTR-14xx & MTR-1Nxx Series Stepping Motors, 30 Ft.
IC800PCUBC02S030	Power Cube Flying Lead I/O Interface Cable, 200 Steps/Rev & Power Save Enabled, 3 Meters
IC800PCUBC02S050	Power Cube Flying Lead Interface I/O Cable, 200 Steps/Rev & Power Save Enabled, 5 Meters
IC800PCUBC04S030	Power Cube Flying Lead Interface I/O Cable, 400 Steps/Rev & Power Save Enabled, 3 Meters
IC800PCUBC04S050	Power Cube Flying Lead Interface I/O Cable, 400 Steps/Rev & Power Save Enabled, 5 Meters
IC800PCUBC10S030	Power Cube Flying Lead Interface I/O Cable, 1000 Steps/Rev & Power Save Enabled, 3 Meters
IC800PCUBC10S050	Power Cube Flying Lead Interface I/O Cable, 1000 Steps/Rev & Power Save Enabled, 5 Meters

Programming and Trouble Shooting Tools

IC646MPM101	Proficy Logic Developer - PLC Nano/Micro, Programming Cable (No Upgrades included)
BC646MPM101	Proficy Logic Developer - PLC Nano/Micro, Programming Cable included and Proficy GlobalCare Complete (Upgrades included for 15 months of upgrades)
IC646MPH101	Logic Developer PDA Single License with Adapters . With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
IC752DDZ000	VersaMax DP Operator Interface DataDesigner editor

Cables

(0.1 meter cable, IC200CBL501, is included in every expansion base package)

IC200CBL500	Programming cable (RJ-45 to DB-9 pin) RS-232. 3 Meters.
IC200CBL501	I/O Expansion cable, 0.1 meter long (Qty 5)
IC200CBL505	I/O Expansion cable, 0.5 meter long
IC200CBL510	I/O Expansion cable, 1 meter long

Starter Kits

IC200TBX010	Tool box, Nano 10 and software. Includes (IC200NDR001) 24 VDC In/Relay Out, 24 VDC powered (requires an external 24 VDC Supply) with software, manuals and cables (IC646MPH101)
IC200TBX110	Tool box, Nano 10, operator interface and software. Includes (IC200NDR001) 24 VDC In/Relay Out, 24 VDC powered (requires an external 24 VDC Supply), VersaMax DataPanel DP45 with programming software and cables, (IC640VPS00, IC752DDZ000, IC200CBL555)
IC200TBX210	Tool box, Nano 10, Ethernet interface and software. Includes (IC200NDR001) 24 VDC In/Relay Out, 24 VDC powered (requires an external 24 VDC Supply), VersaMax SE (IC200SET001) with all software, cables (IC646MPH101) and manuals.
IC200TBX014	Tool box, Micro 14 and software. Includes (IC200UDR001) 24 VDC In/Relay Out, AC Power Supply with software, manuals and cables (IC646MPH101)
IC200TBX114	Tool box, Micro 14, operator interface and software. Includes (IC200UDR001) 24 VDC In/Relay Out, AC Power Supply, VersaMax DataPanel DP45 with programming software and cables, (IC640VPS00, IC752DDZ000, IC200CBL555)
IC200TBX214	Tool box, Micro 14, Ethernet interface and software. Includes (IC200UDR001) 24 VDC In/Relay Out, requires 120 VAC power, VersaMax SE (IC200SET001) with all software, cables (IC646MPH101) and manuals.
IC200TBX023	Tool box, Micro 23 and software. Includes (IC200UAL006) DC In/Relay Out, 2 analog In, 1 analog out, AC Power Supply with software, manuals and cables (IC646MPH101)
IC200TBX123	Tool box, Micro 23, operator interface and software. Includes (IC200UAL006) 24 VDC In/Relay Out, 2 Analog In/1 Analog out, AC P/S, VersaMax DataPanel DP45 with programming software and cables, (IC640VPS00, IC752DDZ000, IC200CBL555)
IC200TBX223	Tool box, Micro 23, Ethernet interface and software. Includes (IC200UAL006) 24 VDC In/Relay Out, requires 120 VAC Power, VersaMax SE (IC200SET001) with all software, cables (IC646MPH101) and manuals.
IC200TBX028	Tool box, Micro 28 and software. Includes (IC200UDR005) 24 VDC In/Relay Out, AC Power Supply with software, manuals and cables (IC646MPH101)
IC200TBX128	Tool box, Micro 28, operator interface and software. Includes (IC200UDR005) 24 VDC In/Relay Out, AC P/S, VersaMax DataPanel DP45 with programming software and cables, (IC640VPS00, IC752DDZ000, IC200CBL555)
IC200TBX228	Tool box, Micro 28, Ethernet interface and software. Includes (IC200UDR005) 24 VDC In/Relay Out, requires 120 VAC Power, VersaMax SE (IC200SET001) with all software, cables (IC646MPH101) and manuals.
IC200TBX020	Tool box, Micro 20 and software. Includes (IC200UDD020) 24VDC In/24VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with(2) 0 -10VDC analog in with Proficy software, manuals and cables (IC646MPM101)
IC200TBX120	Tool box, Micro 20 and software. Includes (IC200UDR120) 24VDC In/Relay Out, AC Power Supply, (IC200USB001) RS-232 option board with (2)0 -10VDC analog in with Proficy software, manuals and cables (IC646MPM101)
IC200TBX220	Tool box, Micro 20, operator interface and software. Includes (IC200UDD020) 24VDC In/24VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10VDC analog in with VersaMax DataPanel DP45 with Proficy programming software and cables, (IC646MPM101,IC752DDZ000, IC200CBL555)
IC200TBX320	Tool box, Micro 20, operator interface and software. Includes (IC200UDR120) 24VDC In/Relay Out, AC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10VDC analog in with VersaMax DataPanel DP45 with Proficy Logic Developer programming software and cables, (IC646MPM101, IC752DDZ000, IC200CBL555)
IC200TBX420	Tool box, Micro 20, stepper motor, Power Cube amplifier and software. Includes (IC200UDD064) 24VDC In/24VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10VDC analog in, stepping motor amplifier (IC800PCUB00300), stepping motor (MTR-1216-N-D-E-0), stepper cable (CBL-12-MP-10), Power Cube Flying Lead interface cable (IC800PCUBC02S030) with Proficy software, manuals and cables (IC646MPM101)
IC200TBX520	Tool box, Micro 20, QuickPanel color touch screen and software. Includes (IC200UDR164) 24VDC In/Relay Out, AC Power Supply, (IC200UEM001) Ethernet option board, QuickPanel Display (IC754VSI06STD) with Proficy software, manuals and cables (BC646MBL001)
IC200TBX040	Tool box, Micro 40 and software. Includes (IC200UDD040) 24VDC In/24VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10VDC analog in with Proficy software, manuals and cables (IC646MPM101)
IC200TBX140	Tool box, Micro 40 and software. Includes (IC200UDR140) 24VDC In/Relay Out, AC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10VDC analog in with Proficy software, manuals and cables (IC646MPM101)
IC200TBX240	Tool box, Micro 40, operator interface and software. Includes (IC200UDD040) 24VDC In/24VDC Out, DC Power Supply, (IC200USB001) RS-232option board with (2) 0 -10VDC analog in with VersaMax DataPanel DP45 with Proficy programming software and cables, (IC646MPM101,IC752DDZ000, IC200CBL555)
IC200TBX340	Tool box, Micro 40, operator interface and software. Includes (IC200UDR140) 24VDC In/Relay Out, AC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10VDC analog in with VersaMax DataPanel DP45 with Proficy Logic Developer programming software and cables,(IC646MPM101, IC752DDZ000, IC200CBL555)
IC200TBX440	Tool box, Micro 40, stepper motor, Power Cube amplifier and software. Includes (IC200UDD040) 24VDC In/24VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10VDC analog in, stepping motor amplifier (IC800PCUB00300), stepping motor (MTR-1216-N-D-E-0), stepper cable (CBL-12-MP-10), Power Cube Flying Lead interface cable (IC800PCUBC02S030) with Proficy software, manuals and cables (IC646MPM101)
IC200TBX540	Tool box, Micro 40, QuickPanel color touch screen and software. Includes (IC200UDR140) 24VDC In/Relay Out, AC Power Supply, (IC200UEM001) Ethernet option board, QuickPanel Display (IC754VSI06STD) with Proficy software, manuals and cables (BC646MBL001)
IC200TBX064	Tool box, Micro 64 and software. Includes (IC200UDD064) 24 VDC In/24 VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10 VDC analog in with Proficy software, manuals and cables (IC646MPM101)
IC200TBX164	Tool box, Micro 64 and software. Includes (IC200UDR164) 24 VDC In/Relay Out, AC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10 VDC analog in with Proficy software, manuals and cables (IC646MPM101)
IC200TBX264	Tool box, Micro 64, operator interface and software. Includes (IC200UDD064) 24 VDC In/24 VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10 VDC analog in with VersaMax DataPanel DP45 with Proficy programming software and cables, (IC646MPM101, IC752DDZ000, IC200CBL555)
IC200TBX364	Tool box, Micro 64, operator interface and software. Includes (IC200UDR164) 24 VDC In/Relay Out, AC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10 VDC analog in with VersaMax DataPanel DP45 with Proficy Logic Developer programming software and cables, (IC646MPM101, IC752DDZ000, IC200CBL555)
IC200TBX464	Tool box, Micro 64, stepper motor, Power Cube amplifier and software. Includes (IC200UDD064) 24 VDC In/24 VDC Out, DC Power Supply, (IC200USB001) RS-232 option board with (2) 0 -10 VDC analog in, stepping motor amplifier (IC800PCUB00300), stepping motor (MTR-1216-N-D-E-0), stepper cable (CBL-12-MP-10), Power Cube Flying Lead interface cable (IC800PCUBC02S030) with Proficy software, manuals and cables (IC646MPM101)
IC200TBX564	Tool box, Micro 64, QuickPanel color touch screen and software. Includes (IC200UDR164) 24 VDC In/Relay Out, AC Power Supply, (IC200UEM001) Ethernet option board, QuickPanel Display (IC754VSI06STD) with Proficy software, manuals and cables (BC646MBL001)

Configuration Guidelines

Examples of Typical Application

Configuration for Nano 10 (Applications needing less than 6 (24 VDC) inputs and 4 relay outputs)

	Qty	Part Number	Description
	1	IC200NDR001	10 point (6) 24 VDC In, (4) Relay Out, 24 VDC Powered
	1	BC646MPM101	Proficy Logic Developer - PLC Nano/Micro, Programming Cable included and Proficy GlobalCare Complete (Upgrades included for 15 months of upgrades)
Options to consider			
	1	IC646MPH101	Logic Developer PDA Single License with Adapters. With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
	1	IC200ACC450	Simulator for VersaMax Nano 10. (6 Inputs)
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply

Configuration for Micro 14 (Example Application needing 12 (24 VDC) discrete inputs, 6 relay outputs and 3 Analog inputs with 24 VDC power)

	Qty	Part Number	Description
	1	IC200UDR002	14 point (8) 24 VDC In, (6) Relay Out, 24 VDC Powered
	1	IC200UEI008	8 point 24 VDC In, 24 VDC Powered
	1	IC200UEX626	6 Analog I/O Channels (4) 0 to 10 VDC, ±10 VDC, 4 to 20 mA, 0 to 20 mA In, (2) 0 to 10 VDC, 4 to 20 mA, 0 to 20 mA Out, 24 VDC Powered
	1	BC646MPM101	Proficy Logic Developer - PLC Nano/Micro, Programming Cable included and Proficy GlobalCare Complete (Upgrades included for 15 months of upgrades)
Options to consider			
	1	IC200UDR010	28 point (16) 24 VDC In, (12) Relay Out, 24 VDC Powered - advantage is two serial ports, Real Time clock and more data memory.
	1	IC646MPH101	Logic Developer PDA Single License with Adapters. With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
	1	IC200ACC451	Simulator for VersaMax Micro 14, Micro 23 and Micro 28. (8 Inputs)
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
	1	IC200DTX650	Operator Interface with up to 200 stored messages. 4x16 character LCD backlight display and 8 function keys. Requires IC200CBL550 cable or equivalent. Operates on external 24 VDC @ 80 mA.

Configuration for Micro 28 (Example Application needing 22 (24 VDC) discrete inputs, 16 outputs [Ten Relay and Six 24 VDC], 2 RTD inputs, 1 Analog output using AC power. Also requires Display with keypad)

	Qty	Part Number	Description
	1	IC200UDR005	28 point; (16) 24 VDC In, (11) Relay Out, (1) 24 VDC Out, 120/240 VAC Powered.
	1	IC200ACC403	Battery for Micro 23 and Micro 28 for data retention
	1	IC200UEX014	14 point (8) 24 VDC In, (6) 24 VDC Out, 24 VDC Powered
	1	IC200UEX736	4 RTD PT 100 Channels IN, 2 Analog Channels OUT 0 to 10 VDC, 4 to 20 mA, 0 to 20 mA Out, 120/240 VAC Powered
	1	BC646MPM101	Proficy Logic Developer - PLC Nano/Micro, Programming Cable included and Proficy GlobalCare Complete (Upgrades included for 15 months of upgrades)
	1	IC200DTX850	Operator Interface with up to 200 stored messages. 4x20 character LCD backlight display, 8 function keys and numeric keypad. Requires IC200CBL550 cable or equivalent. Operates on external 24 VDC @ 50 mA.
	1	IC752DDZ000	VersaMax DP Operator Interface DataDesigner editor
Options to consider			
	1	IC646MPH101	Logic Developer PDA Single License with Adapters. With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
	1	IC200ACC451	Simulator for VersaMax Micro 14, Micro 23 and Micro 28. (8 Inputs)
	1	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply

Configuration for Micro 64 (Example Application needing 45 (24 VDC) discrete inputs, 32 outputs (Twelve Relay and Twenty 24 VDC), 3 Stepper motors (Nema 23, Holding Torque 124 oz-in/0.87 Nano meters) 2 100Khz Encoders. Application also requires Color Touch Graphic Display)

	Qty	Part Number	Description
	1	IC200UDD064	Micro 64; (40) 24 VDC In, (24) 24 VDC Source Out 0.7 amps with ESCP protection, 24 VDC Powered.
	1	IC200ACC414	Long Term Battery for Micro 23, Micro 28 and Micro 64
	1	IC200UEX211	28 point (16) 24 VDC In, (12) Relay Out, 120/240 VAC Powered
	1	IC200USB001	RS-232 option board with (2) 0 -10 VDC analog in
	3	IC800PCUB00300	Stepping Motor Power Amplifier, 12-48 VDC, 4 Amp
	3	IC800CUBDB15ADP	Motor Cube or Power Cube DB15 to screw terminal connector adaptor
	3	MTR-1221-N-D-E-0	Stepping Motor Nema23, Series Wdg. Holding Torque 124 oz-in/0.87 Nano meters
	3	CBL-12-MP-10	Power Cable, MTR-1216, 1221, or 1231 Stepping Motor, 10 Ft.
	3	IC800PCUBC10S050	Power Cube Flying Lead I/O Interface Cable, 1000 Steps/Rev & Power Save Enabled, 5 Meters
	1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch DC
	1	BC646MBL001	Machine Edition Lite Development Suite with Proficy GlobalCare Complete. Includes View Development for QuickPanel and LD-PLC Nano/Micro with 15 mos. of Proficy GlobalCare which is renewable on an annual basis.
	1	IC200CBL500	Programming cable (RJ-45 to DB-9 pin) RS-232. 3 Meters.
Options to consider			
	1	IC646MPH101	Logic Developer PDA Single License with Adapters . With Logic Developer PDA, you can monitor/change data, view diagnostics, force ON/OFF, and configure machine setup — saving you time and increasing productivity.
	1	IC200UMB001	Flash Memory Board for program download and compatible with Micro 64 (128Kbytes)
	1	IC690PWR124	24 VDC, 10 Amp Output Power and 120/230 VAC Input Power Power Supply

VersaMotion

VersaMotion is a family of servo motors and amplifiers. The VersaMotion amplifier supports high speed pulse and direction commands from the controllers. The VersaMotion servo drive is simple to use and maintain with the added diagnostics and removable terminal strips. Amplifier setup can be accomplished using the VersaMotion software included with Proficy Machine Edition or using the convenient front panel keypad.

Key Features:

- Versatile analog or pulse command interface
- Position/Speed/Torque modes
- Dual control modes
- Internal single-axis position control
- Electronic gearing
- External JOG function
- Speed/Torque limit operation
- Built-in keypad/display for setup and diagnostics
- Motor settling time below 1 ms
- Low speed stability and performance: less than 0.5% error at 1 RPM
- 10msec acceleration time from running without load -/+ 3000 RPM
- High speed inertia corrections (16 levels of system stiffness and responsiveness)

Built-in Functions:

- Point-to-Point single axis position control
- Simple stand-alone positioning function with 8 internal stored position settings
- Move to Home function
- Position Teaching capability
- Incremental encoder feedback (2500 ppr)
- User-definable Acceleration/Deceleration with jerk limiting (s-curve)
- Feed step control function
- Modbus Slave serial port (RS-485/ RS-422) for reading and writing parameters from Machine Edition

Machine Edition VersaMotion Set-up Features:

- Configuration Parameter Editor (clear, read, write functions) and initial configuration wizard
- Calculation tools to determine proper conversion from encoder counts to desired user programming units
- Three channel digital oscilloscope to display and record drive status on-line
- Alarm history and status monitor diagnostic screens
- Digital I/O set-up and monitoring

Servo Amplifier Part Number Sequence

IC800VMA | **04** | **2**

Input Voltage
2– 220VAC Single Phase

Rated Power
01– 100 Watts
02– 200 Watts
04– 400 Watts
07– 750 Watts
10– 1000 Watts
20– 2000 Watts
30– 3000 Watts

Example: IC800VMA042 is a 400 watt 220VAC servo amplifier

Amplifiers Technical Data

Permissible Frequency Fluctuation	50 / 60 Hz +/-5%
Resolution/Quadrature Feedback Counts	2500 ppr /10000 cpr
Control Modes	Position/Velocity/Torque
Dynamic Brake	Built-in
Position Control Mode:	
Maximum Input Pulse Frequency	500KPPS (Line Driver) / Maximum 200KPPS (Open Collector)
Pulse Type	Pulse/Direction; CW/CCW; A/B Phase
Command Source	External pulse train/ Internal parameters
Torque Limit Operation	Yes
Feed Forward Compensation	Yes
Analog Commands: Voltage Range	0 to +/-10VDC
Torque and Velocity Control Mode: Command Source	External analog signal / Internal parameters
Speed Control Range	1:5000
Speed Control Frequency Response	Maximum 450 Hz
Torque Control Mode Permissible Time for Overload	8 seconds under 200% rated output
Communications Interface	RS-232 / RS-485 /RS-422
Environmental Altitude	Altitude 1000 meters above sea level or lower
Environmental Operating Temperature	0 to 55°C (Forced cooling for operation above 55°C)
Environmental Storage Temperature	-20°C to 65°C
Environmental Humidity	0 to 90% (Non condensing)
Vibration	<20 Hz: 9.8 m/sec/sec (1G); 20 to 50 Hz: 5.88 m/sec/sec (0.6 G)
Standards	IEC/EN 61800-5-1, UL 508C, TUV, C-tick

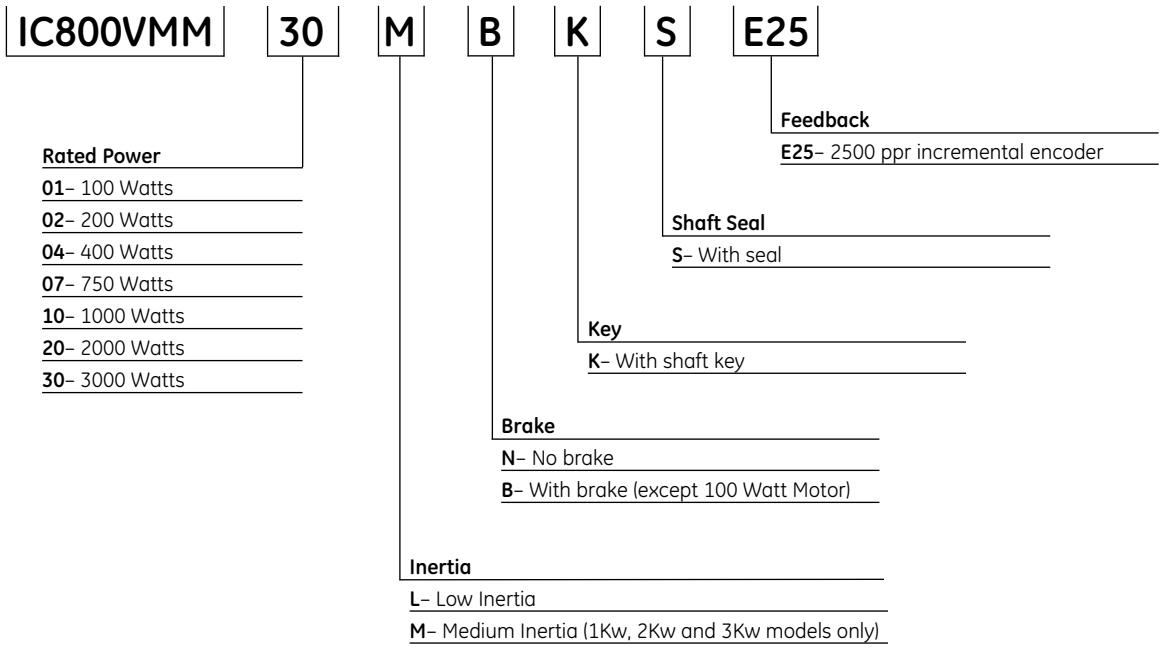
Amplifiers

The VersaMotion family of servo amplifiers offers a cost effective solution for a broad range of motion applications. These versatile amplifiers support simple stand-alone positioning capability using up to 8 stored motion profiles or can be connected to any motion controller using an analog or pulse command interface. A built-in touchpad and display provides convenient access to configuration parameters and system information. The serial interface supports multi-drop system configurations and Modbus communication protocol.

	IC800VMA012	IC800VMA022	IC800VMA042	IC800VMA072
Product Name	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**
Rated Output Power	100W	200W	400W	750W
Voltage/Frequency	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase or Single-phase 220VAC 50/60 Hz
Permissible Voltage Fluctuation	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC
Cooling System	Convection	Convection	Convection	Fan Cooling
Electronic Gear Ratio	Gear Ratio = N/M where N 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)

	IC800VMA102	IC800VMA202	IC800VMA302
Product Name	**VersaMotion Amplifier**	**VersaMotion Amplifier**	**VersaMotion Amplifier**
Rated Output Power	1KW	2KW	3KW
Voltage/Frequency	Three-phase or Single-phase 220VAC 50/60 Hz	Three-phase 220VAC 50/60 Hz	Three-phase 220VAC 50/60 Hz
Permissible Voltage Fluctuation	Three-phase: 170 ~ 255VAC Single-phase: 200 ~ 255VAC	Three-phase: 170 ~ 255VAC	Three-phase: 170 ~ 255VAC
Cooling System	Fan Cooling	Fan Cooling	Fan Cooling
Electronic Gear Ratio	Gear Ratio = N/M where N 1~32767, M: 1:32767 (1/50<N/M<200)	Gear Ratio = N/M where N: 1~32767, M: 1:32767 (1/50<N/M<200)	Electronic gear N/M multiple N: 1~32767, M: 1:32767 (1/50<N/M<200)

Servo Motor Part Number Sequence



Example: IC800VMM30MBKSE25 is a 3000 watt medium Inertia motor with 2500 ppr encoder, brake, keyway and shaft seal.

Motors Technical Data

Insulation Class	Class B
Insulation Resistance	>100M ohm, 500 VDC
Insulation Strength	1500 VAC, 50Hz, 60 seconds
Vibration Grade (um)	15
Brake Power (VDC)	24
Operating Temperature (C)	0°~40°
Storage Temperature (C)	-10°~80°
Humidity	20~90%RH (non condensing)
Vibration	2.5G
IP Rating	IP65 (except shaft and connector)

Motors

The VersaMotion family of servo motors offers high servo performance in a compact package. The motors range from 100 W to 3 kW with continuous torque ratings from 0.3 Nm to 14.3 Nm. All motors have metric mounting configurations and include a shaft key and oil seal. For vertical axes or applications that need to hold position during power loss motors with 24 VDC holding brakes are available. Motors are matched with the VersaMotion amplifiers.

	IC800VMM01L	IC800VMM02L	IC800VMM04L	IC800VMM07L
Product Name	**VersaMotion 100 Watt**	**VersaMotion 200 Watt**	**VersaMotion 400 Watt**	**VersaMotion 750 Watt**
Rated Output (kW)	0.1	0.2	0.4	0.75
Rated Torque (Nm)	0.32	0.64	1.27	2.39
Maximum Torque (Nm)	0.96	1.92	3.82	7.16
Rated Speed (RPM)	3000	3000	3000	3000
Maximum Speed (RPM)	5000	5000	5000	5000
Rated Current (Amps)	0.9	1.55	2.6	5.1
Maximum Current (Amps)	2.7	4.65	7.8	15.3
Rotor Moment of Inertia ($Kg.m^2 \times 10^{-4}$)	0.037	0.177	0.277	1.13
Mechanical Time Constant (msec)	0.75	0.8	0.53	0.63
Torque Constant - KT (Nm)	0.36	0.41	0.49	0.47
Voltage Constant - KE (mV/rmp)	13.6	16	17.4	17.2
Armature Resistance (Ohm)	9.3	2.79	1.55	0.42
Armature Inductance (mH)	24	10.84	6.84	3.53
Electrical Time Constant (msec)	2.58	3.89	4.43	8.37
Maximum Radial Shaft Load (Newton)	78.4	196	196	245
Maximum Thrust Shaft Load (Newton)	39.2	68	68	98

Motors

The VersaMotion family of servo motors offers high servo performance in a compact package. The motors range from 100 W to 3 kW with continuous torque ratings from 0.3 Nm to 14.3 Nm. All motors have metric mounting configurations and include a shaft key and oil seal. For vertical axes or applications that need to hold position during power loss motors with 24 VDC holding brakes are available. Motors are matched with the VersaMotion amplifiers.

	IC800VMM10L	IC800VMM10M	IC800VMM20L	IC800VMM20M	IC800VMM30M
Product Name	**VersaMotion 1000 Watt**	**VersaMotion 1000 Watt**	**VersaMotion 2000 Watt**	**VersaMotion 2000 Watt**	**VersaMotion 3000 Watt**
Rated Output (kW)	1.0	1.0	2.0	2.0	3.0
Rated Torque (Nm)	3.18	4.77	6.37	9.55	14.32
Maximum Torque (Nm)	9.54	14.32	19.11	28.66	42.96
Rated Speed (RPM)	3000	2000	3000	2000	2000
Maximum Speed (RPM)	5000	3000	5000	3000	3000
Rated Current (Amps)	7.3	5.6	11.3	11.0	16.1
Maximum Current (Amps)	21.9	24.9	33.9	33.0	48.3
Rotor Moment of Inertia ($Kg.m^2 \times 10^{-4}$)	2.65	9.14	4.45	15.88	55
Mechanical Time Constant (msec)	0.74	1.64	0.66	1.05	1.06
Torque Constant - KT (Nm/A)	0.44	0.85	0.53	0.87	0.89
Voltage Constant - KE (mV/rpm)	16.8	31.9	19.2	31.8	32
Armature Resistance (Ohm)	0.20	0.465	0.14	0.174	0.052
Armature Inductance (mH)	2.0	5.99	1.53	2.76	1.38
Electrical Time Constant (msec)	10.26	12.88	10.63	15.86	26.39
Maximum Radial Shaft Load (Newton)	490	490	490	490	1470
Maximum Thrust Shaft Load (Newton)	98	98	98	98	490
Amplifier Model	IC800VMA102	IC800VMA102	IC800VMA202	IC800VMA202	IC800VMA302

VersaMotion Accessories

Amplifier Connectors

IC800VMACONCN1	CN1 I/O Connector
IC800VMACONCN2	CN2 Encoder Connector
IC800VMACONCN3	CN3 Communication Connector
IC800VMACONACP	AC Power Connector (100W to 1kW models only)
IC800VMACONMTRP	Motor Power Connector (100W to 1kW models only)
IC800VMADBR001	External Braking Resistor Connector (100W to 1kW models only)

Motor Connectors

IC800VMMCONP001	Motor Power Connector for 100 Watt to 750 Watt motors without brake
IC800VMMCONP002	Motor Power Connector for 100 Watt to 750 Watt motors with brake
IC800VMMCONP003	Motor Power Connector for 1000 Watt or 2000 Watt motors with or without brake
IC800VMMCONP004	Motor Power Connector for 3000 Watt motors with or without brake
IC800VMMCONE001	Encoder Connector for 100 Watt to 750 Watt motors
IC800VMMCONE002	Encoder Connector for 1000 Watt and larger motors

Motor Power Cables

IC800VMCP030	Power Cable for 100 Watt to 750 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP050	Power Cable for 100 Watt to 750 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP100	Power Cable for 100 Watt to 750 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP200	Power Cable for 100 Watt to 750 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP1030	Power Cable for 1000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP1050	Power Cable for 1000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP1100	Power Cable for 1000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP1200	Power Cable for 1000 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP2030	Power Cable for 2000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP2050	Power Cable for 2000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP2100	Power Cable for 2000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP2200	Power Cable for 2000 Watt servo motor without brake, 20 m (65.7 feet)
IC800VMCP3030	Power Cable for 3000 Watt servo motor without brake, 3 m (9.8 feet)
IC800VMCP3050	Power Cable for 3000 Watt servo motor without brake, 5 m (16.4 feet)
IC800VMCP3100	Power Cable for 3000 Watt servo motor without brake, 10 m (32.8 feet)
IC800VMCP3200	Power Cable for 3000 Watt servo motor without brake, 20 m (65.7 feet)

Brake and Motor Power Cables

IC800VMCB030	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB050	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB100	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB200	Brake and Motor Power Cable for 200 Watt to 750 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB1030	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB1050	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB1100	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB1200	Brake and Motor Power Cable for 1000 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB2030	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB2050	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB2100	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB2200	Brake and Motor Power Cable for 2000 Watt servo motor with brake, 20 m (65.7 feet)
IC800VMCB3030	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 3 m (9.8 feet)
IC800VMCB3050	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 5 m (16.4 feet)
IC800VMCB3100	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 10 m (32.8 feet)
IC800VMCB3200	Brake and Motor Power Cable for 3000 Watt servo motor with brake, 20 m (65.7 feet)

Encoder Cables

IC800VMCE030	Encoder Cable for 100 to 750 Watt, 3 m (9.8 feet)
IC800VMCE050	Encoder Cable for 100 to 750 Watt, 5 m (16.4 feet)
IC800VMCE100	Encoder Cable for 100 to 750 Watt, 10 m (32.8 feet)
IC800VMCE200	Encoder Cable for 100 to 750 Watt, 20 m (65.7 feet)
IC800VMCE1030	Encoder Cable for 1000 Watt and greater, 3 m (9.8 feet)
IC800VMCE1050	Encoder Cable for 1000 watt and greater, 5 m (16.4 feet)
IC800VMCE1100	Encoder Cable for 1000 watt and greater, 10 m (32.8 feet)
IC800VMCE1200	Encoder Cable for 1000 watt and greater, 20 m (65.7 feet)

I/O Terminal Block

IC800VMTBC005	I/O Terminal Block Breakout Board and 0.5 m (1.6 feet) Cable

External Braking Resistors

IC800VMBR040	40 Ohm, 400 Watt External Braking (Regeneration) Resistor
IC800VMBR020	20 Ohm, 1000 Watt External Braking (Regeneration) Resistor

Communications and I/O Interface Cables

IC800VMCS030	Communications Cable from servo amplifier to PC, 3 m (9.8 feet)
IC800VMCI010	Flying lead I/O interface cable, 1 meter
IC800VMCI030	Flying lead I/O interface cable, 3 meter

Software Configuration Tool

IC646MPM101	Proficy Logic Developer - PLC Nano/Micro and VersaMotion, Programming Cable (No Upgrades included)
BC646MPM101	Proficy Logic Developer - PLC Nano/Micro and VersaMotion, Programming Cable (Includes 15 months of upgrades)

Examples of Typical Application using a VersaMax Micro

Application: 1000 Watt Low Inertia Motor with Brake and micro controller (14) 24VDC inputs and (10) Relay outputs (AC power supply). In addition the application needs Ethernet LAN to 6 inch color STN touch display.

Qty	Part Number	Description
		Controller, I/O and Display
1	IC200UDR120	VersaMax Micro 20 point PLC, (12) 24VDC In, (8) Relay Out, 120/240VAC Power Supply
1	IC200UEC208	VersaMax 8 point expansion unit, (4) 24VDC inputs, (4) Relay Outputs and 24VDC Power Supply (The VersaMax Micro 20 controller 24VDC user power supply can support the expansion module)
1	IC200UMM102	VersaMax Micro Motion 2 Axis Servo Module, 120/240VAC Supply
1	IC200UEM001	VersaMax Micro 10/100Mbits Ethernet Module
1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch
		Servo Amplifier and Motor
1	IC800VMM10LBKSE25	VersaMotion 1000 Watt Low Inertia Servo Motor with brake. Motor has keyway and oil seal
1	IC800VMA102	Servo Amplifier, 1000 Watts, 220VAC
1	IC800VMCB1030	Brake and Power Cable for 1000 Watt Servo Motor with brake, 3 m (9.8 feet)
1	IC800VMCE1030	Encoder Cable for 1000 Watt and greater, 3 m (9.8 feet)
1	IC800VMTBC005	I/O terminal block and cable (0.5 meter)
1	IC800VMCS030	Communications cable from servo driver to PC, 3 m (9.8 feet)
		Programming Software for Control, Display and Motion
1	BC646MBL001	Machine Edition Lite Development Suite with Proficy GlobalCare Complete. Includes VersaMotion configuration tool, View Development for QuickPanel and LD-PLC Nano/Micro. Proficy GlobalCare with 15 months of free upgrades which is renewable on an annual basis.

Durus Controllers

The Durus Controllers are loaded with features such as easy to use built-in display/keypad, high current outputs, multiple communication options, and are very affordable. The Durus Controllers can be programmed using both the built-in display and keypad or with the Durus Controllers programming software. The Durus Controllers are ideal for applications that require some logic, a few timers/counters and real-time clock control. The Durus Controllers are designed for simple control applications such as light control, gate control, HVAC, pump control and much more.

Key Features:

- 8 Amp Relay Outputs, isolated
- Support for Modbus Slave, Profibus Slave and DeviceNet Slave
- Durus Controllers programming software enables the user to fully simulate the application without the hardware
- The Memory Module enables easy upgrades
- Software is free for downloading from the Web (www.ge-ip.com)
- LCD Backlit display for easy viewing in all environments

AC Models pages 252-253

DC Models pages 254-257

Discrete Expansion Units page 258

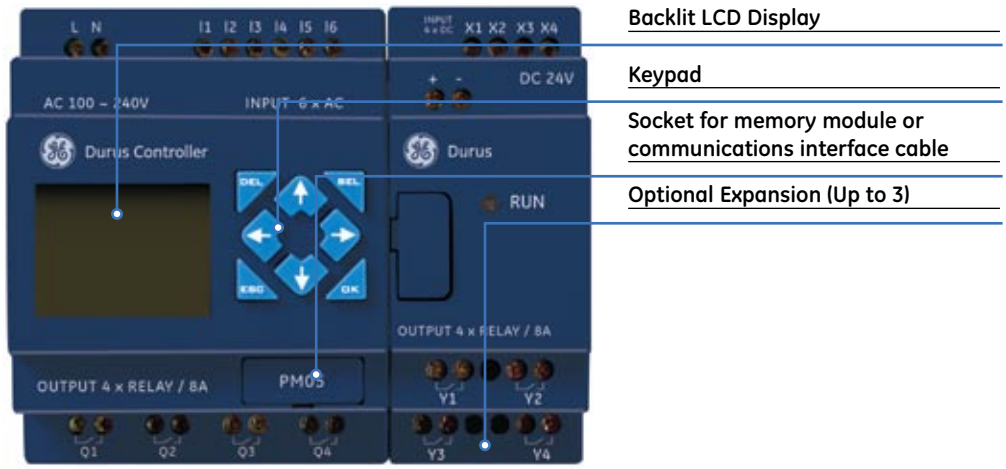
Analog Expansion Unit page 259

Communications Options page 260

Software page 261

Accessories page 262

Configuration Guidelines page 263



Durus Controllers Selection Guide

Features	Durus -10 and -12	Durus -20
Built-in Discrete I/O	6 in/ 4 out	12 in/ 8 out (AC powered models) 8 in/ 8 out (DC powered models)
Maximum Discrete I/O	18 in/ 16 out	24 in/ 20 out
Built-in Analog I/O	2 on DC powered models	4 on DC powered models
I/O Expansion Units	Up to 3 discrete and 1 analog expansion units supported	
Logic Memory	200 Lines (4 cells wide per rung) or 99 Function Blocks	
Programming Language	Ladder or Function Block Diagram	
Execution Speed	10ms/cycle	
LCD Display	4 line, 12 character LCD backlit display	
Maximum Text Displays	15	
Display Languages	English, French, German, Spanish, Portuguese, Chinese, Italian	
Real Time Clock	Up to 15 uses	
Number of Timers	Up to 15; 0.01 seconds to 9999 minutes	
Number of Counters	Up to 15; 0 to 999999 counts	
Comparator Instruction	Up to 15; Supports Less Than Equal To or Greater Than Equal To for Timers, Counters or Analog	
High Speed Input Frequency	1kHz	
PWM Output Frequency	0.5kHz (1msec On, 1msec Off)	
Modbus Slave Support Built-in	No	No; Yes on selective models
Modbus Slave Support	Yes (built-in on certain models and available for all controllers that support expansion [Modbus Slave expansion module])	
Profibus Slave Support	Yes	
DeviceNet Slave Support	Yes	
Agency Approvals	CE, C-UL, UL	
Temperature Range	0 to 55°C	

AC Models

The AC versions of the Durus Controllers come with 10 points (6 discrete inputs and 4 discrete outputs) or 20 points (12 discrete inputs and 8 discrete outputs). The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DAR012	IC210DAR010	IC210BAR010	IC210NAR010
Product Name	**10 point (8) 24 VAC Inputs, (4) Isolated Relay Out (8 Amps), 24 VAC input power, supports expansion and display/keypad**	**10 point (6) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power, supports expansion and display/keypad**	**10 point (6) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power, supports expansion and no display/keypad**	**10 point (6) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power, no expansion, no plastic case and no display/keypad**
Number of Discrete Inputs/Outputs	8 In/ 4 Out	6 In/ 4 Out	6 In/ 4 Out	6 In/ 4 Out
Number of Analog Inputs	None built in, 4 with Analog Expansion	None built in, 4 with Analog Expansion	None built in, 4 with Analog Expansion	None
Physical I/O Maximum	34 I/O	34 I/O	34 I/O	34 I/O
Support Expansion	Yes	Yes	Yes	No
LCD Display and Keypad	Yes (4 lines x 12 characters)	Yes (4 lines x 12 characters)	No	No
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None
Input Power Voltage	24 VAC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VAC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
Dimensions (W x H x D) mm	72mm x 90mm x 58mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm

AC Models

The AC versions of the Durus Controllers come with 10 points (6 discrete inputs and 4 discrete outputs) or 20 points (12 discrete inputs and 8 discrete outputs). The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DAR020	IC210BAR020	IC210NAR020
Product Name	**20 point (12) AC Inputs, (8) Isolated Relay Out (8 Amps), AC input power, supports expansion and display/keypad**	**20 point (12) AC Inputs, (8) Isolated Relay Out (8 Amps), AC input power, supports expansion and no display/keypad**	**20 point (12) AC Inputs, (8) Isolated Relay Out (8 Amps), AC input power, no expansion and no display/keypad**
Number of Discrete Inputs/Outputs	12 In/ 8 Out	12 In/ 8 Out	12 In/ 8 Out
Number of Analog Inputs	None built in, 4 with Analog Expansion	None built in, 4 with Analog Expansion	None
Physical I/O Maximum	44 I/O	44 I/O	44 I/O
Support Expansion	Yes	Yes	No
LCD Display and Keypad	Yes (4 lines x 12 characters)	No	No
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None
Input Power Voltage	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC
Power Supply Power Consumption	150 mAmps	150 mAmps	150 mAmps
Input Device Voltage	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC	85 to 240 VAC; 85 to 240 VDC
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
Dimensions (W x H x D) mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

DC Models

The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DDR112	IC210DDR012	IC210BDR012	IC210NDR012
Product Name	**10 point (6) 12 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 12 VDC input power, supports expansion and display/keypad**	**10 point (6) 24 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion and display/keypad**	**10 point (6) 24 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion, no display/keypad**	**10 point (6) 24 VDC Inputs, (2) analog inputs*, (4) Isolated Relay Out (8 Amps), 24 VDC input power, no expansion, no plastic case and no display/keypad**
Number of Discrete Inputs/Outputs	6* In/ 4 Out	6* In/ 4 Out	6* In/ 4 Out	6* In/ 4 Out
Number of Analog Inputs	2 built in, 4 additional with Analog Expansion	2 built in, 4 additional with Analog Expansion	2 built in, 4 additional with Analog Expansion	2 built in
Physical I/O Maximum	36 I/O	36 I/O	36 I/O	36 I/O
Support Expansion	Yes	Yes	Yes	No
LCD Display and Keypad	Yes (4 lines x 12 characters)	Yes (4 lines x 12 characters)	No	No
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None
Input Power Voltage	12 VDC	24 VDC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	12 VDC	24 VDC	24 VDC	24 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
PWM Maximum Output Frequency	N/A	N/A	N/A	N/A
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72mm x 90mm x 58mm

* Analog inputs can be configured as DC input points.

DC Models

The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DDD012	IC210BDD012	IC210NDD012	IC210MDR124
Product Name	**10 point (6) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), (2) analog inputs*, 24 VDC input power, supports expansion and display/keypad**	**10 point (6) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), (2) analog inputs*, 24 VDC input power, supports expansion, no display/keypad**	**10 point (6) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), (2) analog inputs*, 24 VDC input power, no expansion, no plastic case and no display/keypad**	**20 point with Modbus Slave communications built-in (8) 12 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 12 VDC input power, supports expansion and display/keypad**
Number of Discrete Inputs/Outputs	6* In/ 4 Out	6* In/ 4 Out	6* In/ 4 Out	8* In/ 8 Out
Number of Analog Inputs	2 built in, 4 additional with Analog Expansion	2 built in, 4 additional with Analog Expansion	2 built in	4 built in, 4 with Analog Expansion
Physical I/O Maximum	36 I/O	36 I/O	36 I/O	44 I/O
Support Expansion	Yes	Yes	No	Yes
LCD Display and Keypad	Yes (4 lines x 12 characters)	No	No	Yes (4 lines x 12 characters)
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None	Modbus Slave built in, and Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules
Input Power Voltage	24 VDC	24 VDC	24 VDC	12 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VDC	24 VDC	24 VDC	12 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	24 VDC Transistors	24 VDC Transistors	24 VDC Transistors	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)
PWM Maximum Output Frequency	0.5K (1ms ON/ 1ms OFF)	100Hz	100Hz	N/A
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	72 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

* Analog inputs can be configured as DC input points.

DC Models

The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210DDR024	IC210BDR024	IC210NDR024	IC210DDD024
Product Name	**20 point (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion and display/keypad**	**20 point (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion, no display/keypad**	**20 point (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, no expansion, no plastic case and no display/keypad**	**20 point (4) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, supports expansion and display/keypad**
Number of Discrete Inputs/Outputs	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out
Number of Analog Inputs	4 built in, 4 with Analog Expansion	4 built in, 4 with Analog Expansion	4 built in	4 built in, 4 with Analog Expansion
Physical I/O Maximum	44 I/O	44 I/O	44 I/O	44 I/O
Support Expansion	Yes	Yes	No	Yes
LCD Display and Keypad	Yes (4 lines x 12 characters)	No	No	Yes (4 lines x 12 characters)
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules
Input Power Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	24 VDC Transistors
PWM Maximum Output Frequency	N/A	N/A	N/A	100Hz
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

* Analog inputs can be configured as DC input points.

DC Models

The DC versions of the Durus Controllers come in either 12 point (6 discrete inputs, 2 analog and 4 discrete outputs) or 20 point (12 discrete inputs [analog inputs can be configured as either discrete inputs or analog inputs], 4 analog inputs and 8 discrete outputs). The units also support high speed inputs and PWM outputs. The units are available with or without display and keypad and with or without expansion. Up to 3 discrete and 1 analog expansion units can be added for either additional I/O. One communication module can be added.

	IC210BDD024	IC210NDD024	IC210MDR024	IC210MDD024
Product Name	**20 point (8) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, supports expansion, no display/keypad**	**20 point (8) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, no expansion, no plastic case and no display/keypad**	**20 point with Modbus Slave communications built-in (8) 24 VDC Inputs, (4) analog inputs*, (8) Isolated Relay Out (8 Amps), 24 VDC input power, supports expansion and display/keypad**	**20 point Modbus Slave communications built-in (8) 24 VDC Inputs, (8) 24 VDC Out (Transistor 0.5 Amp), (4) analog inputs*, 24 VDC input power, supports expansion and display/keypad**
Number of Discrete Inputs/Outputs	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out	8* In/ 8 Out
Number of Analog Inputs	4 built in, 4 with Analog Expansion	4 built in	4 built in, 4 with Analog Expansion	4 built in, 4 with Analog Expansion
Physical I/O Maximum	44 I/O	44 I/O	44 I/O	44 I/O
Support Expansion	Yes	No	Yes	Yes
LCD Display and Keypad	No	No	Yes (4 lines x 12 characters)	Yes (4 lines x 12 characters)
User Program Logic Memory	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks	200 Rungs and 99 Blocks
Protocols Supported	Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	None	Modbus Slave built in, and Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules	Modbus Slave built in, and Modbus Slave, DeviceNet Slave, Profibus Slave expansion modules
Input Power Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	24 VDC	24 VDC	24 VDC	24 VDC
High Speed Frequency	1KHz	1KHz	1KHz	1KHz
Output Control Voltage	24 VDC Transistors	24 VDC Transistors	250 VAC / 30 VDC Relay Outputs, 8A Resistive Load (Isolated)	24 VDC Transistors
PWM Maximum Output Frequency	100Hz	100Hz	N/A	100Hz
Analog Resolution	10 bits	10 bits	10 bits	10 bits
Analog Input Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
Analog Input Used as Digital Input	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC	Input Current: 0.63 mA @ 24 VDC Input ON Current: 0.161 mA @ 9.8 VDC Input OFF Current: 0.085 mA @ 5 VDC
Dimensions (W x H x D) mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm	126 mm x 90 mm x 58 mm

* Analog inputs can be configured as DC input points.

Discrete Expansion Units

The Durus Controllers support up to 3 discrete and 1 analog expansion units. The discrete expansion units have 4 inputs and 4 outputs.

	IC210EAR008	IC210EAR208	IC210EDR008	IC210EDD008
Product Name	**8 point discrete expansion (4) AC Inputs, (4) Isolated Relay Out (8 Amps), AC input power**	**8 point discrete expansion (4) 24 VAC Inputs, (4) Isolated Relay Out (8 Amps), AC input power**	**8 point discrete expansion (4) 24 VDC Inputs, (4) Isolated Relay Output (8 Amps), 24 VDC input power**	**8 point discrete expansion (4) 24 VDC Inputs, (4) 24 VDC Out (Transistor 0.5 Amp), 24 VDC input power**
Number of Discrete Inputs/Outputs	4 In/ 4 Out	4 In/ 4 Out	4 In/ 4 Out	4 In/ 4 Out
Input Power Voltage	85 to 240 VAC; 85 to 240 VDC	24 VAC	24 VDC	24 VDC
Power Supply Power Consumption	90 mAmps	90 mAmps	90 mAmps	90 mAmps
Input Device Voltage	85 to 240 VAC; 85 to 240 VDC	24 VAC	24 VDC	24 VDC
Dimensions (W x H x D) mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm

Analog Expansion Unit

The Durus Controllers support up to 3 discrete and 1 analog expansion units. The analog input module supports four 0 to 10 VDC or 0 to 20 mA inputs.

	IC210EAI004
Product Name	**4 point analog expansion (4) analog inputs (voltage and current, 12 bit), 12/24 VDC input power Only one analog expansion supported on the Durus Controller**
Number of Analog Inputs	4
Analog Input Range	0 to 10 VDC; 0 to 20 mA
Analog Resolution	12 bits
Dimensions (W x H x D) mm	38 mm x 90 mm x 58 mm

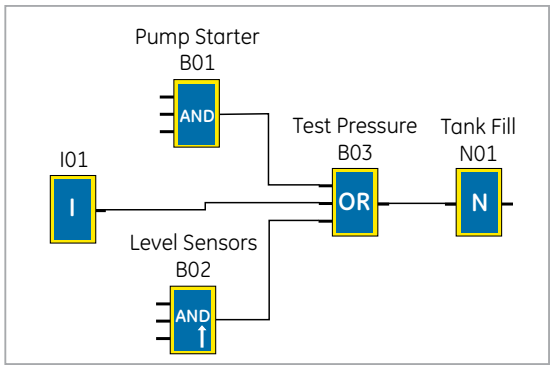
Communications Options

The Durus Controllers support one communication expansion unit. There are three communication options available—Modbus Slave, Profibus Slave and DeviceNet Slave.

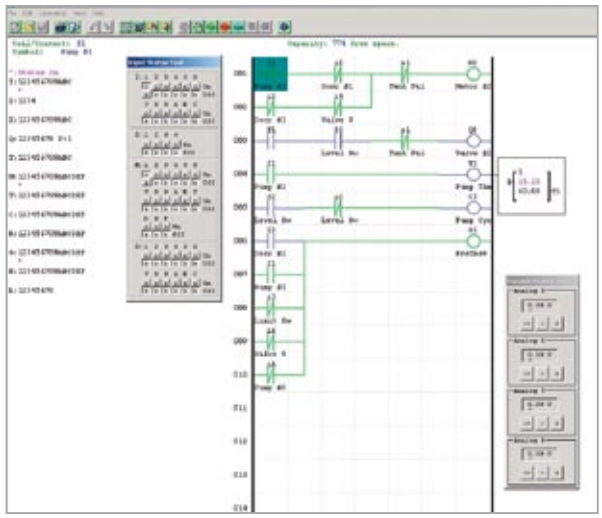
	IC210EMS001	IC210EPS001	IC210EDS001
Product Name	**Modbus RTU slave communications expansion module, 24 VDC power source**	**Profibus-DP slave communications expansion module, 24 VDC power source**	**DeviceNet slave communications expansion module, 24 VDC power source**
Protocol Supported	Modbus Slave	Profibus-DP Slave V0	DeviceNet Group 2 Only Slave Device
Network Data Rate	4800, 9600, 19200, 38400, 57600	9.6K to 12 Meg	125K, 250K, 500 K
Dimensions (W x H x D) mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm	38 mm x 90 mm x 58 mm

Software

Full featured Durus Software (IC646DUR001), enables you to develop your application in ladder logic or Function Block Diagram programming. The Durus Software also comes with a powerful simulation tool that enables you to easily simulate your application and mimic the keystrokes on the built-in operator keypad.

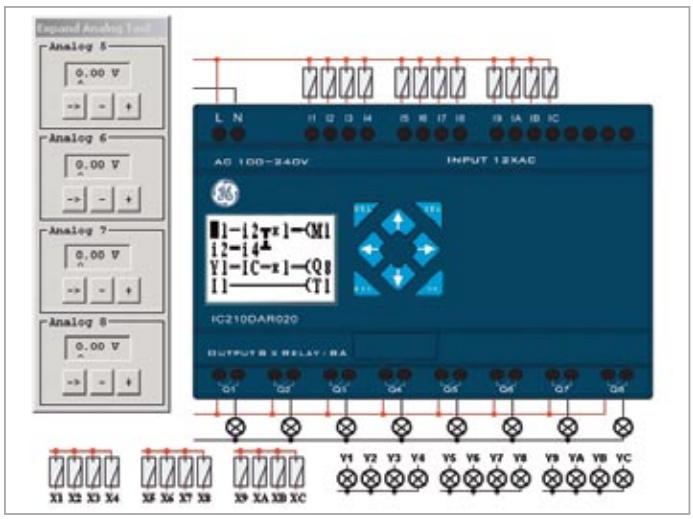


Function Block Diagram



Ladder Logic

Operator Interface Configuration



Easy-to-Use Application Development Simulation on the PC.

User can simulate your entire application without powering up a Durus Controller.

Accessories and Cables

IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controller
IC210CBL001	Durus Controller to PC RS-232 Serial Cable
IC210CBL002	Durus Controller to PDA Transfer Cable

Programming and Trouble Shooting Tools

IC646DUR001	Durus Controllers Program and Simulation Software
IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)

Starter Kits

IC210TBX010	IC210DAR010 10 point Durus controller. AC Power Source, 6 AC in/4out (Relay 8 Amp), Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX012	IC210DDR012 12 point Durus controller. 24 VDC Power Source, (6) 24 VDC in /(4) out (Relay 8 Amp), (2) analog inputs, Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX020	IC210DAR020 20 point Durus controller. AC Power Source, (12) AC in/8 out (Relay, 8 Amp), Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX024	IC210DDR024 20 point Durus-20 controller. 24 point 24 VDC Power Source, (8) 24 VDC in/8 out (Relay, 8 Amp), (4) analog inputs, Expandable, with LCD/Keypad. Kit includes programming software and cable. (IC646DUR101)
IC210TBX124	IC210MDR024 20 point Durus-20 controller. 24 VDC Power Source, (8) 24 VDC in/8 out (Relay, 8 Amp), (4) analog inputs, Expandable, with LCD/Keypad. Support Modbus Slave on port. Kit includes programming software and cable. (IC646DUR101)

Examples of Typical Application

Configuration for Durus Controller 10 (Applications needing less than 6 (120/240 VAC) inputs and 4 relay outputs)

Qty	Part Number	Description
1	IC210DAR010	AC Power Source, 6 AC in/4 out (Relay 8 Amp), Expandable, with LCD/Keypad

Options to consider

1	IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)
1	IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controllers
1	IC210EMS001	Modbus RTU slave communications expansion module, 24 VDC power source
1	IC200DTX450	Operator Interface with up to 200 stored messages. 2 x 16 character LCD backlight display and 6 function keys. (Requires 24 VDC power supply)

Configuration for Durus 20 (Example Application needing 16 (24 VDC) discrete inputs, 12 relay outputs and 8 Analog inputs with 24 VDC power and Modbus communications. Modbus communications will connect to Operator Interface that requires 4 x 20 line display and numeric keypad)

Qty	Part Number	Description
1	IC210MDR024	24 VDC Power Source, (12) 24 VDC in/8 out (Relay, 8 Amp), (4) analog inputs, Expandable, with LCD/Keypad. Support Modbus Slave on port.
2	IC210EDR008	24 VDC Power Source, (4) 24 VDC in/(4) out (Relay, 8 Amp)
1	IC210EAI004	24 VDC power source, 10 bit, 4 Analog input
1	IC200DTX850	Operator Interface with up to 200 stored messages. 4 x 20 character LCD backlight display, 8 function keys and numeric keypad.

Options to consider

1	IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)
1	IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controllers

Application requiring six 24 VDC inputs, eight AC inputs, thirteen relay outputs, no display required and Profibus networking.

Qty	Part Number	Description
1	IC210BAR020	AC Power Source, (12) AC in/8 out (Relay, 8 Amp), Expandable, with without LCD/Keypad
2	IC210EDR008	24 VDC Power Source, (4) 24 VDC in/(4) out (Relay, 8 Amp)
1	IC210EPS001	Profibus-DP slave communications expansion module, 24 VDC power source

Options to consider

1	IC646DUR101	Durus Controllers Program and Simulation Software and PC to Controller RS-232 Cable (IC646DUR001 and IC210CBL001)
1	IC210TMP001	Durus Controllers FLASH Memory Pack that enables user to download application and upload application to Durus Controllers

Notes

QuickPanel Control

GE Intelligent Platforms markets and sells QuickPanel Control products that are designed to meet the market needs of companies in the Americas and Asia Pacific.

QuickPanel Control is designed to meet your converging control and visualization application needs with a combination of bright color TFT, or monochrome touch screens, multiple communication options and Proficy Logic Developer—Machine Edition and Proficy View—Machine Edition software.

Features include:

- Display sizes from 6” to 15”
- Microsoft Windows® CE operating system
- Expandable memory and communication expansion cards
- CompactFlash
- Functions from data collection and trending to system security and alarming
- Built-in web server for access to data and panels via the Internet or your Intranet using any standard browser
- Communication to I/O using GE Series 90-30 I/O Interface, VersaMax I/O Interface, VersaMax Micro I/O Interface, Genius I/O Interface, Open Fieldbus and Ethernet Connectivity
- Multi-language support selectable by the operator when the system is online
- Common database for increased productivity – greatly reduces development time by eliminating the need to re-enter tag names
- Extensive library of pre-configured animation objects
- UL Class 1 Div 2 (A, B, C, D), ATEX Class 1 Zone 2, and CE Mark

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

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Communications Cards page 267

Starter Kits page 268

Accessories page 269

Publication Reference Chart

GFK-2243	6 Inch QuickPanel View & Control Hardware Reference Guide
GFK-2284	12 Inch QuickPanel View & Control Hardware Reference Guide
GFK-2402	15 inch QuickPanel View & Control Hardware Reference Guide
GFK-2245	GE Series 90-30 I/O Interface
GFK-2297	GE Genius I/O Interface
GFK-2299	GE VersaMax Expansion I/O Card
GFK-2270	DeviceNet Master Communication Card
GFK-2271	PROFIBUS Master Communication Card
GFK-2276	Expanded User Memory Installation Guide
GFK-2368	PCMCIA Adaptor

Controllers

QuickPanel Control combines control and visualization into one platform for maximum productivity and cost efficiency. By integrating the QuickPanel View family of touch screens with Proficy Machine Edition software, QuickPanel Control delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy Logic Developer - Machine Edition Control and Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of Ethernet and Fieldbus interfaces.

	IC754CSL06CTD	IC754CSL06MTD	IC754CSL12CTD	IC754CSF15CTD
Product Name	**QuickPanel Control Display, 6" TFT-Color Loaded**	**QuickPanel Control Display, 6" Monochrome Loaded**	**QuickPanel Control Display, 12" TFT-Color Loaded**	**QuickPanel Control Display, 15" TFT-Color Loaded**
Display Size	5.7 inch (Diagonal)	5.7 inch (Diagonal)	12.1 inch (Diagonal)	15.1 inch (Diagonal)
Display Type	TFT	Monochrome	TFT	TFT
Resolution	320 x 240 pixels	320 x 240 pixels	800 x 600 pixels	1024 x 768 pixels
Memory: DRAM	32 MB	32 MB	32 MB	64 MB
Memory: Expandable	to 64 MB or 96 MB	to 64 MB or 96 MB	to 64 MB or 96 MB	to 96 MB or 128 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	RS232	RS232	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	10 Mbps	10/100 Mbps
Communication Expansion	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master
Compact Flash	One, Type 2	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (WxHxD)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	14.93" x 12.03" x 2.78" (379mm x 305mm x 71mm)
Front of panel and Depth (WxHxD)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	15.70" x 12.73" x 0.40" (399mm x 323mm x 10mm)
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power	Less than 24 W	Less than 24 W	Less than 48 W	Less than 60 W
Operating Temperature	0 to 60°C (32 to 140°F)	-10 to 60°C (14 to 140°F)	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 60°C (-4 to 140°F)
Operating Humidity	5 - 95% non-condensing	10 - 85% non-condensing	10 - 90% non-condensing	10 - 90% non-condensing
Indicators - LEDs	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector

Communications Cards

GE 90-30 I/O Interface Card allows the QuickPanel Control unit to interface directly to 90-30 expansion racks using an expansion cable. GE VersaMax Expansion I/O Interface Card allows the QuickPanel Control unit to interface directly to VersaMax I/O interfacing to a VersaMax ERM. GE Genius Interface Card allows the QuickPanel Control unit to interface to devices on a Genius network and act as a controller. DeviceNet - Master Interface Card allows the QuickPanel Control unit to interface to devices on a DeviceNet Network acting as the master. PROFIBUS - Master Interface Card allows the QuickPanel Control unit to interface to devices on a PROFIBUS Network acting as the master.

	IC754PIF001	IC754TAN001	IC754UEX001	IC754GEN001	IC754DVNM01	IC754PBSM01
Product Name	**GE Series 90-30 Expansion I/O Interface for QuickPanel Control**	**GE VersaMax Expansion I/O Interface for QuickPanel Control**	**GE VersaMax Micro Expansion I/O Interface for QuickPanel Control**	**GE Genius Communication Card for QuickPanel Control**	**DeviceNet - Master Interface Card for QuickPanel Control**	**PROFIBUS - Master Interface Card for QuickPanel Control**
Fieldbus Type	90-30 I/O Expansion	VersaMax Expansion I/O	VersaMax Micro Expansion I/O	Genius Interface	DeviceNet Master	PROFIBUS Master
Agency Approvals	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D)	UL/cUL-Class 1 Div 2 (A, B C, D)
Operating Temperature	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)

Starter Kits

Starter Kits are an ideal package for first time users. The kits include a QuickPanel Control unit, Proficy Machine Edition software, 24 VDC power supply and Ethernet cable. QuickPanel Control combines control and visualization into one platform for maximum productivity and cost efficiency. By integrating the QuickPanel family of touch screens with Proficy Machine Edition software, QuickPanel Control delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy Machine Edition software helps reduce application development time, and connectivity is made easy with a family of Ethernet and Fieldbus interfaces.

	IC754CKL06CTD	IC754CKL06MTD	IC754CKL12CTD	IC754CKF15CTD
Product Name	**QuickPanel Control Starter Kit, includes Display, 6" TFT**	**QuickPanel Control Starter Kit, includes Display, 6" Monochrome**	**QuickPanel Control Starter Kit, includes Display, 12" TFT**	**QuickPanel Control Starter Kit, includes Display, 15" TFT**
Display Size	5.7 inch (Diagonal)	5.7 inch (Diagonal)	12.1 inch (Diagonal)	15.1 inch (Diagonal)
Display Type	TFT	Monochrome	TFT	TFT
Resolution	320 x 240 pixels	320 x 240 pixels	800 x 600 pixels	1024x768 pixels
Memory: DRAM	32 MB	32 MB	32 MB	64 MB
Memory: Expandable	to 64 MB or 96 MB	to 64 MB or 96 MB	to 64 MB or 96 MB	to 96 MB or 128 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	RS232	RS232	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	10 Mbps	10/100 Mbps
Communication Expansion	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master
Compact Flash	One, Type 2	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark
Environmental Rating	NEMA 4/12/4X IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (WxHxD)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	14.93" x 12.03" x 2.78" (379mm x 305mm x 71mm)
Front of panel and Depth (WxHxD)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	15.70" x 12.73" x 0.40" (399mm x 323mm x 10mm)
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power	Less than 24 W	Less than 24 W	Less than 48 W	Less than 60 W
Operating Temperature	0 to 60°C (32 to 140°F)	-10 to 60°C (14 to 140°F)	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 60°C (-4 to 140°F)
Operating Humidity	5 - 95% non-condensing	10 - 85% non-condensing	10 - 90% non-condensing	10 - 90% non-condensing
Indicators - LEDs	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector

Accessories

IC754PCMCIA001	PCMCIA Adaptor for QuickPanel Control
IC754ACC32MEM	Expansion Memory 32 MBytes
IC754ACC64MEM	Expansion Memory 64 MBytes
IC754ACC06GAS	Gasket for 6 Inch QuickPanel Control
IC754ACC12GAS	Gasket for 12 Inch QuickPanel Control
IC754ACC15GAS	Gasket for 15 Inch QuickPanel Control
IC754ACC06MNT	Mounting Clips & Power Connector for 6 Inch QuickPanel Control
IC754ACC12MNT	Mounting Clips & Power Connector for 12 Inch QuickPanel Control
IC754ACC15MNT	Mounting Clips & Power Connector for 15 Inch QuickPanel Control
IC754ACC06BEZ01	Stainless Steel Bezel for 6 Inch Mono & TFT-Color QuickPanel Control
IC754ACC12BEZ01	Stainless Steel Bezel for 12 Inch TFT-Color QuickPanel Control
IC754ACC12ADP	Adaptor Kit for 12 Inch QuickPanel Control into CEIIx Cut-out
IC754BEZ06GAS	Replacement Gasket for 6 Inch Stainless Steel Bezel
IC754BEZ12GAS	Replacement Gasket for 12 Inch Stainless Steel Bezel

Notes

QuickPanel Control-Europe, Middle East and Africa

GE Intelligent Platforms markets and sells QuickPanel Control products that are designed to meet the market needs of companies in Europe, the Middle East and Africa.

QuickPanel Control is designed to meet your converging control and visualization application needs with a combination of bright color TFT, or monochrome touch screens, multiple communication options and Proficy Logic Developer—Machine Edition and Proficy View—Machine Edition software.

Features include:

- Display sizes from 6" to 15"
- Microsoft Windows® CE operating system
- Expandable memory and communication expansion cards
- CompactFlash
- Functions from data collection and trending to system security and alarming
- Built-in web server for access to data and panels via the Internet or your Intranet using any standard browser
- Communication to I/O using GE Series 90-30 I/O Interface, VersaMax I/O Interface, VersaMax Micro I/O Interface, Genius I/O Interface, Open Fieldbus and Ethernet Connectivity
- Multi-language support selectable by the operator when the system is online
- Common database for increased productivity – greatly reduces development time by eliminating the need to re-enter tag names
- Extensive library of pre-configured animation objects
- UL Class 1 Div 2 (A, B, C, D), ATEX Class 1 Zone 2, and CE Mark

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

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Communications Cards page 273

Accessories page 274

Publication Reference Chart

GFK-2305	6 Inch QuickPanel Control (Euro-Loaded) Hardware Reference Guide
GFK-2284	12 Inch QuickPanel View & Control Hardware Reference Guide
GFK-2402	15 inch QuickPanel View & Control Hardware Reference Guide
GFK-2245	GE Series 90-30 I/O Interface
GFK-2297	GE Genius I/O Interface
GFK-2299	GE VersaMax Expansion I/O Card
GFK-2270	DeviceNet Master Communication Card
GFK-2271	PROFIBUS Master Communication Card
GFK-2276	Expanded User Memory Installation Guide
GFK-2368	PCMCIA Adaptor

Controllers

QuickPanel Control combines control and visualization into one platform for maximum productivity and cost efficiency. By integrating the QuickPanel View family of touch screens with Proficy Machine Edition software, QuickPanel Control delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy Logic Developer - Machine Edition Control and Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of Ethernet and Fieldbus interfaces.

	IC754CGL06CTD	IC754CGL06MTD	IC754CGL12CTD	IC754CGL15CTD
Product Name	**QuickPanel Control Display, 6" TFT-Color Loaded**	**QuickPanel Control Display, 6" Monochrome Loaded**	**QuickPanel Control Display, 12" TFT-Color Loaded**	**QuickPanel Control Display, 15" TFT-Color Loaded**
Display Size	5.7 Inch (Diagonal)	5.7 Inch (Diagonal)	12.1 Inch (Diagonal)	15.1 Inch (Diagonal)
Display Type	TFT	Monochrome	TFT	TFT
Resolution	320 x 240 pixels	320 x 240 pixels	800 x 600 pixels	1024 x 768 pixels
Memory: DRAM	32 MB	32 MB	32 MB	64 MB
Memory: Expandable	to 96 MB	to 96 MB	to 96 MB	to 128 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	RS232	RS232	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	10 Mbps	10/100 Mbps
Communication Expansion	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master	GE Series 90-30 I/O, VersaMax Expansion I/O, VersaMax Micro Expansion I/O, Genius I/O, DeviceNet Master, and PROFIBUS Master
Compact Flash	One, Type 2	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (WxHxD)	158mm x 126mm x 70mm (6.14" x 4.86" x 2.76") or 200mm x 155mm x 85mm (7.95" x 6.12" x 3.33")	158mm x 126mm x 70mm (6.14" x 4.86" x 2.76") or 200mm x 155mm x 85mm (7.95" x 6.12" x 3.33")	302mm x 228mm x 60mm (11.88" x 8.96" x 2.37")	379mm x 305mm x 71mm (14.93" x 12.03" x 2.78")
Bezel Dimensions and Depth (WxHxD)	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")	337mm x 263mm x 10mm (13.26" x 10.34" x 0.38")	399mm x 323mm x 10mm (15.70" x 12.73" x 0.40")
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	12 VDC @ +/-20% or 24 VDC @ +/-20%	12 VDC @ +/-20% or 24 VDC @ +/-20%
Power	Less than 24 W	Less than 24 W	Less than 48 W	Less than 60 W
Operating Temperature	0 to 60°C (32 to 140°F)	-10 to 60°C (14 to 140°F)	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 60°C (-4 to 140°F)
Operating Humidity	5% - 95% non-condensing	10% - 85% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector	2 Bi-color, 2 on Ethernet Connector

Communications Cards

GE 90-30 I/O Interface Card allows the QuickPanel Control unit to interface directly to 90-30 expansion racks using an expansion cable. GE VersaMax Expansion I/O Interface Card allows the QuickPanel Control unit to interface directly to VersaMax I/O interfacing to a VersaMax ERM. GE Genius Interface Card allows the QuickPanel Control unit to interface to devices on a Genius network and act as a controller. DeviceNet - Master Interface Card allows the QuickPanel Control unit to interface to devices on a DeviceNet Network acting as the master. PROFIBUS - Master Interface Card allows the QuickPanel Control unit to interface to devices on a PROFIBUS Network acting as the master.

	IC754PIF001	IC754TAN001	IC754UEX001	IC754GEN001	IC754DVNM01	IC754PBSM01
Product Name	**GE 90-30 I/O Interface Card for QuickPanel Control**	**GE VersaMax Expansion I/O Interface Card for QuickPanel Control**	**GE VersaMax Micro Expansion I/O Interface for QuickPanel Control**	**GE Genius Interface Card for QuickPanel Control**	**DeviceNet - Master Interface Card for QuickPanel Control**	**PROFIBUS - Master Interface Card for QuickPanel Control**
Fieldbus Type	90-30 I/O Interface	VersaMax Expansion I/O	VersaMax Micro Expansion I/O	Genius Interface	DeviceNet Master	PROFIBUS Master
Agency Approvals	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D); ATEX-Class 1 Zone 2; CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D)	UL/cUL-Class 1 Div 2 (A, B C, D)
Operating Temperature	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)

Accessories

IC754PCMCIA001	PCMCIA Adaptor for QuickPanel Control
IC754ACC32MEM	Expansion Memory 32 MBytes
IC754ACC64MEM	Expansion Memory 64 MBytes
IC754ACC06GASE	Gasket for 6 Inch QuickPanel Control
IC754ACC12GAS	Gasket for 12 Inch QuickPanel Control
IC754ACC15GAS	Gasket for 15 Inch QuickPanel Control
IC754ACC06MNTE	Mounting Clips & Power Connector for 6 Inch QuickPanel Control
IC754ACC12MNT	Mounting Clips & Power Connector for 12 Inch QuickPanel Control
IC754ACC15MNT	Mounting Clips & Power Connector for 15 Inch QuickPanel Control
IC754ACC06BEZ01	Stainless Steel Bezel for 6 Inch Mono & TFT-Color QuickPanel Control
IC754ACC12BEZ01	Stainless Steel Bezel for 12 Inch TFT-Color QuickPanel Control
IC754ACC12ADP	Adaptor Kit for 12 Inch QuickPanel Control into CEIIx Cut-out

Genius Distributed I/O

By providing distributed control on the factory floor, Genius I/O systems offer fewer terminations to document, dramatically shorter wiring runs, and simpler, more effective troubleshooting. Genius I/O blocks automatically provide diagnostic information on field wiring, power conditions and loads, as well as the state of the communication network, blocks and circuits. Genius diagnostics sharply reduce the time needed for initial control and debugging.

Genius blocks provide predictable system operation in the event of a CPU, bus interface or network cable failure. When connected in a redundant configuration with two or more CPUs running simultaneously, the Genius blocks will shift automatically to a backup CPU if the main controller fails to communicate.

Genius blocks communicate with the system CPU over the Genius LAN, greatly simplifying system installation, and with network tools such as the hand-held monitor, troubleshooting is a snap. In addition to Genius I/O blocks, VersaMax I/O may also be integrated into a single Genius LAN.

AC Discrete I/O Modules page 276

DC Discrete I/O Modules pages 277-278

Analog Input Modules page 279

Analog Output Modules page 280

Analog Mixed Modules page 281

RTD and Thermocouple Modules page 282

High Speed Counter page 283

PowerTRAC Monitoring Module page 284

Genius PC Interface Modules page 285

Accessories page 286

Configuration Guidelines pages 287-288

Publication Reference Chart

GEK-90486D	I/O Discrete and Analog Blocks
GEK-90486F-1	I/O System and Communications
GFK-0074A	Genius I/O PCIM User's Manual
GFK-0415E	High Speed Counter
GFK-0450D	PowerTRAC
GFK-0881	Single Slot Personal Computer Interface Module (PCIM)
GFK-1179J	Installation Requirements for Conformance to Standards

AC Discrete I/O Modules

Control power for the block is tapped off the input/output device voltages wired to the terminals. No separate block power supply is needed. Configurable features include; Output Pulse Test capability, Selectable Input Filter Time from 10mS to 100mS, Output powerup defaults, Output Hold Last State or default, each circuit has electronic fusing.

	IC660BBD110	IC660BBD101	IC660BBS102	IC660BBS103	IC660BBR100	IC660BBR101
Product Name	**Genius Discrete Input Block, 115 VAC Grouped, 16 Point**	**Genius Discrete I/O Block, 115 VAC Grouped, 8 Point**	**Genius Discrete I/O Block, 115 VAC/125 VDC Isolated, 8 Point**	**Genius Discrete I/O Block, 115 VAC/125 VDC Isolated, 8 Point, w/o Failed Switch Diagnostic**	**Genius Relay Output Block, Grouped, 16 Points, Normally Closed**	**Genius Relay Output Block, Grouped, 16 Points, Normally Open**
Network Support	Genius Bus	Genius Bus	Genius Bus	Genius Bus	Genius Bus	Genius Bus
Input Range	93-132 VAC	93-132 VAC	115 VAC / 125 VDC	115 VAC / 125 VDC	N/A	N/A
Output Range	N/A	93-132 VAC	115 VAC / 125 VDC	115 VAC / 125 VDC	5V to 250 VAC or 5V to 220 VDC; Relay Normally–Closed Relays	5V to 250 VAC or 5V to 220 VDC; Relay Normally–Open Relays
Number of Points	16	8	8	8	16	16
Input and Output Response Time - ON/OFF (msec.)	Input 1 msec plus configurable filter 10 to 100mS in 10mS increments	Input 2msec plus configurable filter 10 to 100mS in 10mS increments; Outputs Zero crossing	Input 2msec plus configurable filter 10 to 100mS in 10mS increments; Outputs Zero crossing	Input 2msec plus configurable filter 10 to 100mS in 10mS increments; Outputs Zero crossing	5.0 msec.	5.0 msec.
Input Impedance	11.6K ohms	13K ohms	13K ohms	13K ohms	N/A	N/A
Load Current Per Point	N/A	2 Amp	2.0 Amp	2.0 Amp	2 Amp	2 Amp
Points Per Common	Two groups of 8	One groups of 8	Four groups of 2	Four groups of 2	Four groups of 4	Four groups of 4
Protection	N/A	Internal electronic short circuit trip. 100ms long time trip	Internal electronic short circuit trip. 100ms (AC), 10ms (DC) long time trip	Internal electronic short circuit trip. 100ms (AC), 10ms (DC) long time trip	N/A	N/A
Diagnostics	Input Diagnostics: Open Wire, Short Circuit	Input Diagnostics: Open Wire, Overtemperature, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Failed Switch, Overtemperature, Pulse Test	Input Diagnostics: Open Wire, Overtemperature, Loss of I/O Power, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Overtemp., Loss of I/O Power, Failed Switch, Pulse Test	Input Diagnostics: Open Wire, Overtemperature, Loss of I/O Power, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Overtemp., Loss of I/O Power, Failed Switch, Pulse Test	None	None
Operating Voltage	93-132 VAC	93-132 VAC	93-132 VAC / 105-132 VDC	93-132 VAC / 105-132 VDC	93-132 VAC / 185-265 VAC	93-132 VAC / 185-265 VAC
Dimensions (H x W x D)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

DC Discrete I/O Modules

Genius DC Discrete I/O blocks interface to a wide range of input devices, including both 2–wire and 3–wire electronic proximity switches. Outputs may be low–power control and indicating devices such as relays, contactors, and lamps. These blocks have identical discrete I/O circuits, each easily configured to be an input or an output. Output circuits can be directly connected to input circuits without the use of other components or inversion of logic states. This flexibility provides maximum design and application efficiency. Each circuit contains built–in protection when used as an output, protecting the driver while allowing short–time surges. It also protects against shorted loads caused by wiring errors.

	IC660BBD020	IC660BBD021	IC660BBD022	IC660BBD023	IC660BBD024
Product Name	**Genius Discrete I/O Block, 24/48 VDC Grouped, 16 Point, Source**	**Genius Discrete I/O Block, 24/48 VDC Grouped, 16 Point, Sink**	**Genius Discrete I/O Block, 24 VDC Grouped, 16 Point, Source**	**Genius Discrete I/O Block, 24 VDC Grouped, 16 Point, Sink**	**Genius Discrete I/O Block, 12/24 VDC Grouped, 32 Point, Source**
Network Support	Genius Bus	Genius Bus	Genius Bus	Genius Bus	Genius Bus
Input Range	18-56 VDC (24/48 V)	18-56 VDC (24/48 V)	18-30 VDC (24 V)	18-30 VDC (24 V)	18-30 VDC (24 V)
Sink/Source	Source	Sink	Source	Sink	Source
Output Range	18-56 VDC (24/48 V)	18-56 VDC (24/48 V)	18-30 VDC (24 V)	18-30 VDC (24 V)	18-30 VDC (24 V)
Number of Points	16	16	16	16	32
Input and Output Response Time - ON/OFF (msec.)	Input 1.7 msec plus configurable filter: 5 to 100mS for input; Output 1.0 msec	Input 1.7 msec plus configurable filter: 5 to 100mS for input; Output 1.0 msec	Input 1.7 msec plus configurable filter: 5 to 100mS for input; Output 1.0 msec	Input 1.7 msec plus configurable filter: 5 to 100mS for input; Output 1.0 msec	Input 1.4 msec plus configurable filter: 1 to 100mS for input; Output 0.5 msec
Input Impedance	5.6K ohms (24/48V), 1.8K ohms (24V)	5.6K ohms (24/48V), 1.8K ohms (24V)	5.6K ohms (24/48V), 1.8K ohms (24V)	5.6K ohms (24/48V), 1.8K ohms (24V)	3.3 K ohms
Load Current Per Point	2 Amp	2 Amp	2 Amp	2 Amp	0.5 Amp
Points Per Common	One group of 16	One group of 16	One group of 16	One group of 16	One group of 32
Protection	Short circuit level sensor at the switching device	Short circuit level sensor at the switching device	Short circuit level sensor at the switching device	Short circuit level sensor at the switching device	Short circuit level sensor at the switching device
Diagnostics	Input Diagnostics: Open wire, Overtemperature, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Failed Switch, Overtemperature, Pulse Test	Input Diagnostics: Open wire, Overtemperature, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Failed Switch, Overtemperature, Pulse Test	Input Diagnostics: Open wire, Overtemperature, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Failed Switch, Overtemperature, Pulse Test	Input Diagnostics: Open wire, Overtemperature, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Failed Switch, Overtemperature, Pulse Test	Output Diagnostics: Short Circuit, Overload, Failed Switch, Pulse Test
Operating Voltage	18-56 VDC (24/48 V)	18-56 VDC (24/48 V)	18-30 VDC (24 V)	18-30 VDC (24 V)	10-30 VDC
Dimensions (H x W x D)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

DC Discrete I/O Modules

Genius DC Discrete I/O blocks interface to a wide range of input devices, including both 2–wire and 3–wire electronic proximity switches. Outputs may be low–power control and indicating devices such as relays, contactors, and lamps. These blocks have identical discrete I/O circuits, each easily configured to be an input or an output. Output circuits can be directly connected to input circuits without the use of other components or inversion of logic states. This flexibility provides maximum design and application efficiency. Each circuit contains built–in protection when used as an output, protecting the driver while allowing short–time surges. It also protects against shorted loads caused by wiring errors.

	IC660BBD025	IC660BBS102	IC660BBS103	IC660BBR100	IC660BBR101
Product Name	**Genius Discrete I/O Block, 5/12/24 VDC Grouped, 32 Point, Sink**	**Genius Discrete I/O Block, 115 VAC/125 VDC Isolated, 8 Point**	**Genius Discrete I/O Block, 115 VAC/125 VDC Isolated, 8 Point, w/o Failed Switch Diagnostic**	**Genius Relay Output Block, Grouped, 16 Points, Normally Closed**	**Genius Relay Output Block, Grouped, 16 Points, Normally Open**
Network Support	Genius Bus	Genius Bus	Genius Bus	Genius Bus	Genius Bus
Input Range	10-30 VDC (12/24 V), 4.9-5.3 VDC (5 V)	115 VAC / 125 VDC	115 VAC / 125 VDC	N/A	N/A
Sink/Source	Sink	N/A	N/A	N/A	N/A
Output Range	10-30 VDC (12/24 V), 4.9-5.3 VDC (5 V)	115 VAC / 125 VDC	115 VAC / 125 VDC	5V to 250 VAC or 5V to 220 VDC; Relay Normally –Closed Relays	5V to 250 VAC or 5V to 220V DC; Relay Normally–Open Relays
Number of Points	32	8	8	16	16
Input and Output Response Time - ON/OFF (msec.)	Input 1.4 msec plus configurable filter: 1 to 100mS for input; Output 0.5 msec	Input 2msec plus configurable filter 10 to 100mS in 10mS increments; Outputs Zero crossing	Input 2msec plus configurable filter 10 to 100mS in 10mS increments; Outputs Zero crossing	5.0 msec.	5.0 msec.
Input Impedance	3.3 K ohms	13K ohms	13K ohms	N/A	N/A
Load Current Per Point	0.5 Amp	2.0 Amp	2.0 Amp	2 Amp	2 Amp
Points Per Common	One group of 32	Four groups of 2	Four groups of 2	Four groups of 4	Four groups of 4
Protection	Short circuit level sensor at the switching device	Internal electronic short circuit trip. 100ms (AC), 10ms (DC) long time trip	Internal electronic short circuit trip. 100ms (AC), 10ms (DC) long time trip	N/A	N/A
Diagnostics	Output Diagnostics: Short Circuit, Overload, Failed Switch, Pulse Test	Input Diagnostics: Open Wire, Overtemperature Loss of I/O Power, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Overtemp., Loss of I/O Power, Failed Switch, Pulse Test	Input Diagnostics: Open Wire, Overtemperature, Loss of I/O Power, Failed Switch Output Diagnostics: Short Circuit, Overload, No Load, Overtemp., Loss of I/O Power, Failed Switch, Pulse Test	None	None
Operating Voltage	10-30 VDC (12/24 V), 4.9-5.3 VDC (5 V)	93-132 VAC / 105-132 VDC	93-132 VAC / 105-132 VDC	93-132 VAC / 185-265 VAC	93-132 VAC / 185-265 VAC
Dimensions (H x W x D)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

Analog Input Modules

Genius Analog Input blocks provide 6 channels of current inputs with powerful diagnostics.

	IC660BBA026	IC660BBA106
Product Name	**Genius Analog Input Block, Current-source, 6 Channels, 24/48 VDC Powered**	**Genius Analog Input Block, Current-source, 6 Channels, 115 VAC/125 VDC Powered**
Network Support	Genius Bus	Genius Bus
Input Range	4mA to 20mA 0mA to 25mA	4mA to 20mA 0mA to 25mA
Number of Points	6	6
Points Per Common	Channel to Channel Isolation. 6 isolated points	Channel to Channel Isolation. 6 isolated points
Resolution	1 micro Amp	1 micro Amp
Update Rate	16.6mS to 400mS (user selectable)	16.6mS to 400mS (user selectable)
Accuracy	0.1% of full scale reading	0.1% of full scale reading
Diagnostics	Underrange, Overrange, High Alarm, Low Alarm, Open Wire	Underrange, Overrange, High Alarm, Low Alarm, Open Wire
Operating Voltage	18-56 VDC	93-132 VAC / 105-145 VDC
Dimensions (WxHxD)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

Analog Output Modules

Genius Analog Output blocks provide 6 channels of current and voltage outputs with powerful diagnostics.

	IC660BBA025	IC660BBA105
Product Name	**Genius Analog Output Block, Current-source, 6 Channels, 24/48 VDC Powered**	**Genius Analog Output Block, Current-source, 6 Channels, 115 VAC/125 VDC Powered**
Network Support	Genius Bus	Genius Bus
Output Range	4mA to 20mA 0mA to 24mA	4mA to 20mA 0mA to 24mA
Number of Points	6 Outputs	6 Outputs
Points Per Common	One group of 6	One group of 6
Operating Voltage	18-56 VDC	93-132 VAC / 105-145 VDC
Resolution	6 micro Amp	6 micro Amp
Update Rate	25mS	25mS
Accuracy	0.15% of full-scale reading	0.15% of full-scale reading
Dimensions (WxHxD)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

Analog Mixed Modules

Genius Analog Mixed blocks provide 4 channels of inputs and 2 channels of outputs. The channels can be configured for current or voltage with powerful diagnostics.

	IC660BBA020	IC660BBA100	IC660BBA024	IC660BBA104
Product Name	**Genius Analog I/O Block, Voltage/Current, 4 Inputs/ 2 Outputs, 24/48 VDC Powered**	**Genius Analog I/O Block, Voltage/Current, 4 Inputs/ 2 Outputs, 115 VAC Powered**	**Genius Analog I/O Block, Current-source, 4 Inputs/ 2 Outputs, 24/48 VDC Powered**	**Genius Analog I/O Block, Current-source, 4 Inputs/ 2 Outputs, 115 VAC/ 125 VDC Powered**
Network Support	Genius Bus	Genius Bus	Genius Bus	Genius Bus
Number of Points	4 In/ 2 Out	4 In/ 2 Out	4 In/ 2 Out	4 In/ 2 Out
Points Per Common	One group of 4 Inputs and one group of 2 Outputs	One group of 4 Inputs and one group of 2 Outputs	One group of 4 Inputs and one group of 2 Outputs	One group of 4 Inputs and one group of 2 Outputs
Input Range	0–10 VDC, 10 VDC, 5 VDC, 0–5 VDC, 4–20 mA (or 1–5 VDC)	0–10 VDC, 10 VDC, 5 VDC, 0–5 VDC, 4–20 mA (or 1–5 VDC)	4mA to 20mA	4mA to 20mA
Output Range	0–10 VDC, 10 VDC, 5 VDC, 0–5 VDC, 4–20 mA (or 1–5 VDC)	0–10 VDC, 10 VDC, 5 VDC, 0–5 VDC, 4–20 mA (or 1–5 VDC)	4mA to 20mA	4mA to 20mA
Operating Voltage	18-56 VDC	98-132 VAC	18-56 VDC	93-132 VAC / 105-145 VDC
Resolution	12 bit + sign	12 bit + sign	Input: 1 micro Amp Output: 6 micro Amp	Output: 6mA
Update Rate	Once every 4mS	Once every 4mS	Input: 16.6mS to 400mS (user selectable) Output: 6mS to 8mS typical	Input: 16.6mS to 400mS (user selectable) Output: 6mS to 8mS typical
Accuracy	Typical: 0.2% of full scale; Maximum: 0.5% of full scale: within 50mV on the 10 volt range, 25mV on the 5 volt range, and 100mA on the 4 to 20 mA range.	Typical: 0.2% of full scale; Maximum: 0.5% of full scale: within 50mV on the 10 volt range, 25mV on the 5 volt range, and 100mA on the 4 to 20 mA range.	Input: 0.1% of full scale reading Output: 0.15% of full scale reading	Input: 0.1% of full scale reading Output: 0.15% of full scale reading
Input Filter Response	none, 8, 16, 32, 64, 128, 256, 512, 1024mS	none, 8, 16, 32, 64, 128, 256, 512, 1024mS	16.6mS to 400mS (user selectable)	16.6mS to 400mS (user selectable)
Diagnostics	Input: Underrange, Overrange, High Alarm, Low Alarm, Open Wire Output: Underrange, Overrange	Input: Underrange, Overrange, High Alarm, Low Alarm, Open Wire Output: Underrange, Overrange	Input: Underrange, Overrange, High Alarm, Low Alarm, Open Wire Output: Underrange, Overrange, Feedback error	Input: Underrange, Overrange, High Alarm, Low Alarm, Open Wire, Output: Underrange, Overrange, Feedback error
Dimensions (WxHxD)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

RTD and Thermocouple Modules

Genius Temperature Sensor blocks support a wide range of temperature sensors. The blocks support powerful diagnostics.

	IC660BBA021	IC660BBA101	IC660BBA023	IC660BBA103
Product Name	**Genius Analog Input Block, RTD, 6 Channel, 24/48 VDC Powered**	**Genius Analog Input Block, RTD, 6 Channel, 115 VAC/125 VDC Powered**	**Genius Analog Input Block, Thermocouple, 6 Channel, 24/48 VDC Powered**	**Genius Analog Input Block, Thermocouple, 6 Channel, 115 VAC/125 VDC Powered**
Network Support	Genius Bus	Genius Bus	Genius Bus	Genius Bus
Number of Points	6	6	6	6
Points Per Common	3 groups of 2	3 groups of 2	3 groups of 2	3 groups of 2
Input Range	2 and 3 wire Platinum (DIN 43760), Nickel (DIN 43760), Copper, Linear	2 and 3 wire Platinum (DIN 43760), Nickel (DIN 43760), Copper, Linear	J, K, T, E, B, R, S, and N (#14 AWG Nicrosil vs. Nisil) thermocouples	J, K, T, E, B, R, S, and N (#14 AWG Nicrosil vs. Nisil) thermocouples.
Operating Voltage	18-56 VDC	93-132 VAC / 105-145 VDC	18-56 VDC	93-132 VAC / 105-145 VDC
Resolution	0.1°C	0.1°C	Less than 0mV error typ, 20mV max.	Less than 0mV error typ, 20mV max.
Update Rate	Once every 400 ms, 800 ms, or 1600 ms	Once every 400 ms, 800 ms, or 1600 ms	2.0 sec (typ), 3.0 sec (max)	2.0 sec (typ), 3.0 sec (max)
Accuracy	At 25°C - Platinum or Nickel: 0.5°C typical, 1.0°C maximum 10W Copper: 5°C typical, 10°C maximum	At 25°C - Platinum or Nickel: 0.5°C typical, 1.0°C maximum 10W Copper: 5°C typical, 10°C maximum	8 Hz at 25°C	8 Hz at 25°C
Diagnostics	Input shorted, Internal fault, Wiring error, Open wire, Overrange, Underrange, High Alarm, Low Alarm	Input shorted, Internal fault, Wiring error, Open wire, Overrange, Underrange, High Alarm, Low Alarm	Open Wire, Overrange, Underrange, High Alarm, Low Alarm, Internal Fault	Open Wire, Overrange, Underrange, High Alarm, Low Alarm, Internal Fault
Dimensions (WxHxD)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

High Speed Counter

The Genius I/O High-speed Counter block is a self-contained, configurable I/O module which provides direct processing of rapid pulse signals up to 200kHz.

	IC660BBD120
Product Name	**Genius High Speed Counter Block**
Network Support	Genius Bus
Input Range	5V DC to 30V DC
Count Rate	high-frequency filter selected 200 kHz maximum low-frequency filter selected 40 Hz maximum
Output Range	4.75 VDC to 5.25 VDC
Number of Points	4 Type A or 2 Type B or 1 Type C (12 inputs and 4 outputs)
Input and Output Response Time - ON/OFF (msec.)	high-frequency filter selected 2.5mS minimum low-frequency filter selected 12.5mS minimum
Input Filter Response	High (2.5mS) or low (12.5mS) frequency
Input Impedance	4.0K ohms
Accuracy	0.50% reading + 0.50% full scale
Load Current Per Point	200mA
Operating Voltage	93-132 VAC / 10-30 VDC
Diagnostics	Outputs: Pulse Test, Failed Switch
Dimensions (WxHxD)	8.83" (22.44cm) x 3.50" (8.89cm) x 3.94" (10.00cm)

PowerTRAC Monitoring Module

The Genius PowerTRAC block is used in many types of power monitoring and industrial applications. The PowerTRAC block monitors current and voltage inputs and stores digitized waveform values for each input. From these values, the block calculates RMS voltage, current, active power, reactive power, KWH, and power factor. The block automatically sends this calculated data to a host PLC or computer approximately twice per second. The same data can be displayed on a Genius Hand-held Monitor, either locally or from any connection point on the bus.

A PowerTRAC block can be used with a wye- or delta-configured three-phase power system or with a single-phase power system. It accepts voltage inputs from one to three potential transformers, and current inputs from up to three line current transformers, plus a neutral current transformer.

	IC660BPM100
Product Name	**Genius I/O PowerTrac Monitoring Block, Accurately measures RMS voltage, current, power, VARs, power factor, watt-hours, and line frequency, even with distorted waveforms.115 VAC/125 VDC Powered**
Network Support	Genius Bus
Input Range	0 to 120 VAC RMS at 47 to 63 Hz
Number of Points	(1) Three Phase
Calculated Data	Voltage phase A to B Voltage phase B to C Voltage phase C to A Voltage phase A to N (for line-to-neutral potential transformers only) Voltage phase B to N (for line-to-neutral potential transformers only) Voltage phase C to N (for line-to-neutral potential transformers only) Current phase A Current phase B Current phase C Auxiliary CT current Active power phase A Active power phase B Active power phase C Reactive power phase A Reactive power phase B Reactive power phase C Total power factor Total watt-hours/KWH/MWH Fundamental VARS phase A Fundamental VARS phase B Fundamental VARs phase C Fundamental Power Factor Harmonic VARS as % of Volt-Amps phase A Harmonic VARs as % of Volt-Amps phase B Harmonic VARs as % of Volt-Amps phase C Total Harmonic VARs as % of Volt-Amps Line Frequency Temperature Alarm Extended Watt-hours (high) Extended Watt-hours (low)
Accuracy	0.25% reading +0.25% full scale
Operating Voltage	115 VAC/230 VAC (90-265 VAC), 47-63Hz or 125 VDC (100-150 VDC), 35 VA max.
Dimensions (WxHxD)	11.00" (27.94cm) x 5.21" (13.23cm) x 8.06" (20.47)

Genius PC Interface Modules

The Genius PC Interface Modules (PCIM) provide a low cost 'tap' on the GENIUS I/O bus, allowing a host system to control remote I/O utilizing the extensive diagnostics, high reliability and noise immunity of the GENIUS I/O System.

	IC660ELB931	IC660ELB921	IC660ELB922
Product Name	**Genius Dual-channel PCI PCIM**	**Genius Single-channel ISA PCIM**	**Genius Dual-channel ISA PCIM**
Network Support	Genius Bus	Genius Bus	Genius Bus
I/O Data Transfer	128 bytes per device (32 total devices supported)	128 bytes per device (32 total devices supported)	128 bytes per device (32 total devices supported)
Distance	7500 feet (2286 meters) at 38.4 Kbaud; 4500 feet (1371 meters) at 76.8 Kbaud; 3500 feet (1066 meters) at 153.6 Kbaud extended; 2000 feet (609 meters) at 153.6 Kbaud standard. Maximum length at each baud rate also depends on cable type.	7500 feet (2286 meters) at 38.4 Kbaud; 4500 feet (1371 meters) at 76.8 Kbaud; 3500 feet (1066 meters) at 153.6 Kbaud extended; 2000 feet (609 meters) at 153.6 Kbaud standard. Maximum length at each baud rate also depends on cable type.	7500 feet (2286 meters) at 38.4 Kbaud; 4500 feet (1371 meters) at 76.8 Kbaud; 3500 feet (1066 meters) at 153.6 Kbaud extended; 2000 feet (609 meters) at 153.6 Kbaud standard. Maximum length at each baud rate also depends on cable type.
PC Power Requirement	5 VDC, 600mA	5 VDC, 400mA	5 VDC, 400mA
Mechanical	PCI Slot, dimensions of board are 6.875" x 4.2" (Standard PCI short Card).	Single Slot AT full Length	Single Slot AT full Length
Backplane Requirements	The PCI Genius (PCGEN) card is compatible with PC Compatible computers having a PCI slot which is compliant with the Peripheral Component Interconnect Bus Specification v2.2, and also works with PCI v2.1	Motherboard - 4 bytes Each channel - 16Kbytes shared RAM Memory Configurable Interrupts	Motherboard - 4 bytes Each channel - 16Kbytes shared RAM Memory Configurable Interrupts

Accessories and Cables

IC660BSM021	Genius Bus Switching Module, 24/48 VDC
IC660BSM120	Genius Bus Switching Module, 115 VAC/125 VDC
IC660BLC001	Genius bus Cable w/Connectors Alpha 9823 15 In (Qty 3)
IC660BLC003	Genius bus Cable w/Connectors Alpha 9823 3 Ft
IC660BLM506	Bus Terminator 150 Ohm (Qty 4)
IC660BLM508	Bus Terminator 75 Ohm (Qty 4)
IC660BLM507	Genius Block Puller

Hand Held Monitor

IC660HHM501	Hand-Held Monitor can be used to configure and trouble shoot Genius blocks. Kit includes Cable and Battery Charger
IC660BCM501	Hand-Held Monitor Battery Charger
IC660BPM500	Hand-Held Monitor Battery Pack

Configuration Guidelines

When configuring a Genius network the following guidelines should be considered

1. Genius LAN is limited to 32 devices. Remember that the Genius Bus Controller reserves one address and if a Hand-Held configurator is used, it also reserves an address.
2. If the application requires redundant networks, a Bus Switching Module is required (IC660BSMxxx).
3. Termination is required at the end of each network (IC660BLM50x)
4. For long distances, beyond 4,500 feet, the number of devices is limited to 16.

Cable Selection

Cable # & Make	Outer Diameter	Terminating Resistor* -10% to +20% 1/2 Watt	Number of Conductors/ AWG	Dielectric Voltage Rating	Ambient Temp Rating	Maximum Length Cable Run, feet/meters at baudrate			
						153.6s	153.6e	76.8	38.4*
(A)9823 (B)9182 (C)4596 (M)M39240	.350 in 8.89mm	150 ohms	2/#22	30V	60°C	2000ft 606m	3500ft 1061m	4500ft 1364m	7500ft 2283m
(B)89182	.322in 8.18mm	150 ohms	2/#22	150V	200°C	2000ft 606m	3500ft 1061m	4500ft 1364m	7500ft 2283m
(B)9841 (M)M3993	.270in 6.86mm	*120 ohms	2/#24	30V	80°C	1000ft 303m	1500ft 455m	2500ft 758m	3500ft 1061m
(A)9818C (B)9207 (M)M4270	.330in 8.38mm	100 ohms	2/#20	300V	80°C	1500ft 455m	2500ft 758m	3500ft 1061m	6000ft 1818m
(A)9109 (B)89207 (C)4798 (M)M44270	.282in 7.16mm	100 ohms	2/#20	150V	200°C	1500ft 455m	2500ft 758m	3500ft 1061m	6000ft 1818m
(A)9818D (B)9815	.330in 8.38mm	100 ohms	2/#20			1500ft 455m	2500ft 758m	3500ft 1061m	6000ft 1818m
(A)9818 (B)9855 (M)M4230	.315in 8.00mm	100 ohms	4 (two pair) #22	150V	60°C	1200ft 364m	1700ft 516m	3000ft 909m	4500ft 1364m
(A)9110 (B)89696 (B)89855 (M)M64230	.274in 6.96mm	100 ohms	4 (two pair) #22	150V	200°C	1200ft 364m	1700ft 516m	3000ft 909m	4500ft 1364m
(A)9814C (B)9463 (M)M4154	.243 6.17mm	75 ohms	2/#20	150V	60°C	800ft 242m	1500ft 455m	2500ft 758m	3500ft 1061m
(A)5902C (B)9302 (M)M17002	.244in 6.20mm	75 ohms	4 (two pair) #22	300V	80°C	200ft 60m	500ft 152m	1200ft 333m	2500ft 758m

Notes: A=Alpha, B=Belden, C=Consolidated, M=Manhattan, * = Limited to 16 taps at 38.4 Kbaud

Examples of Typical Application

Configuration for Controller (Example application requiring (120) 24 VDC inputs and (80) Relay outputs AC power supply) for local control. System also has five remote cabinets, with each cabinet requiring (64) 24 VDC Inputs, (21) 24 VDC 0.5 Amp, Source Outputs and (2) current inputs and (2) current outputs (24 VDC power source). Maximum distance from control cabinet to the last remote cabinet is 3,500 feet.

Control Cabinet

Backplane Slots Required	Power Supply Current Required (mA)	Qty	Part Number	Description
2	1250mA @ 3.3 VDC; 1000mA @ 5 VDC	1	IC695CPU310	CPU with two built-in serial ports
2		1	IC695PSA040	120/240 VAC, 125 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
	600mA @ 3.3 VDC; 240 mA @ 5 VDC	1	IC695CHS016	16 Slot Universal Base
4	1200mA @ 5V	4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
5	35mA @ 5V; 110mA @ 24 VDC Relay	5	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
		4	IC694TBB032	Terminal Block, Box Style
1	300 mA @ 5 VDC	1	IC694BEM331	Genius Bus Controller (GBC), supports up to 32 devices on a Genius Bus to control remote I/O, Global Data and Datagrams
		1	BC646MPP001	Logic Developer - PLC Professional
14	Total current from power supply required: 2775mA @ 5V; 1850 @ 3.3V; 110mA @ 24 VDC Relay. Only one power supplied needed.			

Remote Cabinets (Qty 5)

		15	IC660BBD024	Block 12/24 VDC Source I/O 32 Circuits
		5	IC660BBA020	Block 24/48 VDC Analog 4 Inputs / 2 Outputs
		1	IC660BLM506	Bus Terminator 150 Ohm (Qty 4)

Options to consider

		1	IC660HHM501	Hand-Held Monitor can be used to configure and troubleshoot Genius blocks. Kit includes Cable and Battery Charger
		5	IC660BLM507	Genius Block Puller
	840mA @ 3.3 VDC; 614 mA @ 5 VDC	1	IC695ETM001	RX3i Ethernet module 10/100 Mbits 2 RJ45 connections one IP address occupies one slot on system base
		6	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
		1	IC693ACC302	RX3i Long term battery for CPU
		1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

VersaPoint I/O

The VersaPoint Distributed I/O system provides compact flexibility and allows users to install just the right amount of I/O needed for each application. Adhering to open communications standards including Ethernet, Profibus-DP and DeviceNet™, VersaPoint connects easily to a wide variety of PLCs, DCSs and PC-based control systems. It is ideal for packaging and materials handling applications as well as for supervisory control and data acquisition.

VersaPoint accommodates a series of discrete and analog I/O modules with densities from 1 to 16 points. It also supports a host of specialized modules, from RTD and Thermocouple inputs to positioning and counter modules.

Its compact design results in space savings up to 50 percent compared to conventional systems. The modules snap quickly and securely onto a DIN-rail, and the integrated I/O terminals and internal power bus help reduce wiring by as much as 80 percent.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.

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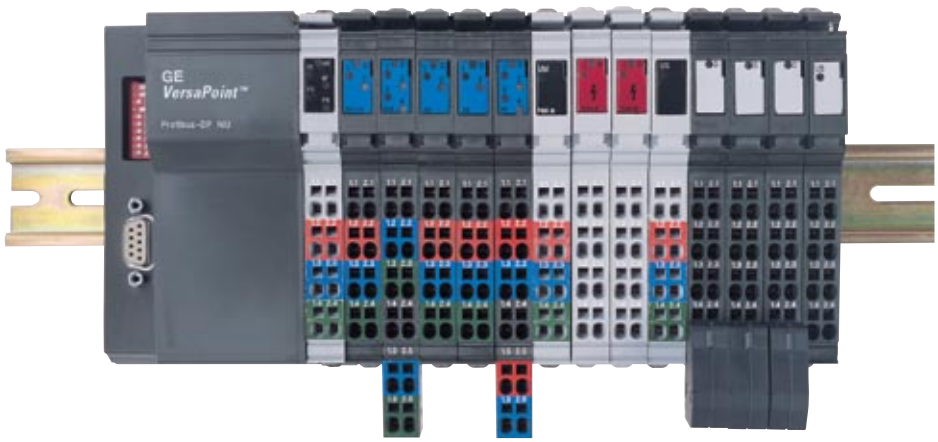


Publication Reference Chart

GFK-2134	VersaPoint Motor Starters Manual
GFK-2125	VersaPoint Positioning Modules Manual
GFK-1911	VersaPoint I/O System Profibus-DP NIU
GFK-1912	VersaPoint I/O System DeviceNet NIU User's Manual
GFK-2087	VersaPoint Ethernet NIU (IC220EBI001 and IC220EBI002)

Network Interface Modules

An I/O Network Interface Unit connects VersaPoint I/O modules to a host PLC or computer via a variety of networks, which makes it easy to include VersaPoint I/O in Profibus-DP, Ethernet or DeviceNet installations. Together, the NIU is capable of handling up to 63 modules in one node.

	IC220EBI001	IC220EBI002	IC220PBI002	IC220DBI001
Product Name	**Ethernet TCP/IP Advanced Network Interface Unit - 10/100 Base-T(X) - PCP Support**	**Ethernet TCP/IP Standard Network Interface Unit - 10/100 Base-T(X)**	**Profibus-DP Network Interface Unit**	**DeviceNet Network Interface Unit**
Protocol	Modbus TCP	Modbus TCP	Profibus DP (V1)	DeviceNet Slave
Data Rate	10/100 Base-T(X)	10/100 Base-T(X)	Up to 12Mbits per second	Up to 500 Kbaud
Serial Communications Support	Yes	No	Yes	Yes
Firmware Upgrade	Yes	No	No	No
Nominal Power Input Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Power Voltage Range	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC
Current for Local Bus UL	2 Amp	2 Amp	2 Amp	2 Amp
Current for Local Bus UA (ma)	500 mA	500 mA	500 mA	500 mA
Maximum Supported Modules	63	63	63	63
Power In	8 Amp maximum	8 Amp maximum	8 Amp maximum	8 Amp maximum
LED Indicators	Bus diagnostics and status indication of voltage	Bus diagnostics and status indication of voltage	Bus diagnostics and status indication of voltage	Bus diagnostics and status indication of voltage
Numeric LCD Display	Yes	None	None	None
Web Support	Web Pages SNMP XML Data Monitoring	Web Pages SNMP XML Data Monitoring	None	None
Required Terminal Strip	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK201 (Contains 10 strips)
Dimensions (W x H x D)	90mm x 72mm x 116mm (3.543in. x 2.835in. x 4.567in.)	90mm x 72mm x 116mm (3.543in. x 2.835in. x 4.567in.)	91mm x 120mm x 71.5mm (2.874in. x 4.724in. x 2.795in.)	48.8mm x 120mm x 71.5mm (1.92 x 4.72 x 2.82in.)

Power Terminals

Power Terminal modules supply power to the main circuit (UM). In addition, this module can be used to supply power for a segment circuit (Us).

	IC220PWR001	IC220PWR002	IC220PWR003	IC220PWR101	IC220PWR102
Product Name	**Power Terminal 24 VDC**	**Power Terminal Fused 24 VDC**	**Power Terminal Fused with Diagnostics 24 VDC**	**Power Terminal 120 VAC**	**Power Terminal 230 VAC**
Input Voltage	24 VDC	24 VDC	24 VDC	120 VAC	230 VAC
Input Voltage Range	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC	108 -135 VAC	12 -253 VAC
Maximum Current	8 Amps	8 Amps	6.3 Amps	8 Amps	8 Amps
Overload/Short Circuit in Segment Circuit	No	Fuse	Fuse	No	No
Surge Voltage/Over Voltage	Yes, suppressor diode for voltage limitation	Yes, suppressor diode for voltage limitation	Yes, suppressor diode for voltage limitation	Yes, VAR 275 VAC	Yes, VAR 275 VAC
Polarity Reversal	Yes, diode connected in parallel as protection against polarity reversal	Yes, diode connected in parallel as protection against polarity reversal	Yes, diode connected in parallel as protection against polarity reversal	N/A	N/A
Current Consumption from Local Bus UL (mA)	N/A	N/A	25mA, maximum	N/A	N/A
LED Indicators	24 VDC Voltage Present	24 VDC Voltage Present and Blown Fuse	Bus Diagnostics and Blown Fuse	120 VAC supply Present	230 VAC supply Present
Required Terminal Strip	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK204	(1) IC220TBK204

Segment Terminals

Segment Terminals are used to create a partial circuit (segment circuit) within a main 24 VDC circuit.

	IC220PWR011	IC220PWR012	IC220PWR013	IC220PWR014
Product Name	**Segment Terminal 24 VDC**	**Segment Terminal Fused 24 VDC**	**Segment Terminal Fused with Diagnostics 24 VDC**	**Segment Terminal Electronic Fused 24 VDC**
Input Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Input Voltage Range	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC
Maximum Current	8 Amps	8 Amps	6.3 Amps	8 Amps
Overload/Short Circuit in Main Circuit	No	6.3 amp slow blow fuse	6.3 amp slow blow fuse	Electronic Fuse
Surge Voltage/Over Voltage	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal
Polarity Reversal	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal
Current Consumption from Local Bus UL (mA)	N/A	N/A	25 mA, maximum	30 mA, maximum
LED Indicators	24 VDC Voltage Present	24 VDC Voltage Present and Blown Fuse	Bus Diagnostics and Blown Fuse	Bus Diagnostics and Blown Fuse
Required Terminal Strip	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK087 (Contains 10 strips)

Discrete Input Modules

Discrete input modules receive signals from input devices such as sensors, pushbuttons, and switches that can have two states: on or off, open or closed.

	IC220MDL641	IC220MDL642	IC220MDL643	IC220MDL644	IC220MDL661
Product Name	**Input 24 VDC Positive Logic 2 Points**	**Input 24 VDC Positive Logic 4 Points**	**Input 24 VDC Positive Logic 8 Points**	**Input 24 VDC Positive Logic 16 Points**	**Input 24 VDC Negative Logic 2 Points**
Input Voltage	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC
Number of Points	2	4	8	16	2
Connection Style	2, 3, and 4 wire	2 and 3 wire	2, 3, and 4 wire	2 and 3 wire	2, 3, and 4 wire
Input Response Time	Less than 1 msec.	Less than 1 msec.	Less than 1 msec.	Less than 1 msec.	Less than 1 msec.
On State Current	5 mA	4 mA	5 mA	4 mA	5 mA
Off State Current	0.4 mA	0.4 mA	0.4 mA	0.4 mA	0.4 mA
Current Consumption for Local Bus UL (mA)	35 mA	40 mA	50 mA	60 mA	35mA, maximum
Nominal Current Consumption of US	0.5 amp max	1.0 amp max	2.0 amp max	4.0 amp max	0.5A (2 x 0.25A), maximum
LED Indicators	Bus Diagnostics Status indication of inputs	Bus Diagnostics Status indication of inputs	Bus Diagnostics Status indication of inputs	Bus Diagnostics Status indication of inputs	Bus Diagnostics Status indication of inputs
Required Terminal Strip	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK122 (Contains 10 strips)	(4) IC220TBK082 (Contains 10 strips)	(4) IC220TBK122 (Contains 10 strips)	(1) IC220TBK082 (Contains 10 strips)

Discrete Output Modules

Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states.

	IC220MDL751	IC220MDL721	IC220MDL752	IC220MDL753
Product Name	**Output 24 VDC Positive Logic 0.5 A 2 Points**	**Output 24 VDC Positive Logic 2.0 A 2 Points**	**Output 24 VDC Positive Logic 0.5 A 4 Points**	**Output 24 VDC Positive Logic 0.5 A 8 Points**
Output Voltage	24 VDC	24 VDC	24 VDC	24 VDC
Number of Points	2	2	4	8
Connection Style	2, 3, and 4 wire	2, 3, and 4 wire	2 and 3 wire	2, 3, and 4 wire
Load Current per Point	0.5 A	2.0 A	0.5 A	0.5 A
Protection	Electronic Short Circuit, Overload Protection	Electronic Short Circuit, Overload Protection	Electronic Short Circuit, Overload Protection	Electronic Short Circuit, Overload Protection
Current Consumption from Local Bus UL (mA)	33 mA max.	35 mA max.	44 mA max.	60 mA max.
Nominal Current Consumption of US	1 Amp max	4 Amp max	2 Amp max	4 Amp max
LED Indicators	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs
Required Terminal Strip	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK123 (Contains 10 strips)	(4) IC220TBK082 (Contains 10 strips)

Discrete Output Modules

Discrete output modules send control signals to devices such as contactors, indicator lamps, and interposing relays that can also have two states.

	IC220MDL754	IC220MDL761	IC220MDL930	IC220MDL940
Product Name	**Output 24 VDC Positive Logic 0.5 A 16 Points**	**Output 24 VDC Negative Logic 0.5 A 2 Points**	**Output Relay 3.0 A 1 Point**	**Output Relay 3.0 A 1 Point**
Output Voltage	24 VDC	24 VDC	5 - 253 VAC	5 - 253 VAC
Number of Points	16	2	1	4
Connection Style	2 and 3 wire	2, 3, and 4 wire	2 and 3 wire	2 and 3 wire
Load Current per Point	0.5 A	0.5 A	3.0 A	3.0 A
Protection	Electronic Short Circuit, Overload Protection	Electronic Short Circuit, Overload Protection	N/A	N/A
Current Consumption from Local Bus UL (mA)	90 mA max.	32 mA max.	60 mA max.	187 mA max.
Nominal Current Consumption of US	8 Amp max	1 Amp (2 x 0.5A), maximum	N/A	N/A
LED Indicators	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs
Required Terminal Strip	(4) IC220TBK123 (Contains 10 strips)	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK085 (Contains 10 strips) Requires Relay Isolation Set (IC220ACC201 and IC220TBK206) if switching voltages are not available in the segment.	(1) IC220TBK085 (Contains 10 strips) Requires Relay Isolation Set (IC220ACC201 and IC220TBK206) if switching voltages are not available in the segment.

Analog Input Modules

Analog input modules receive signals from current and voltage input devices. Specialty modules are available for RTD and Thermocouple inputs.

	IC220ALG220	IC220ALG221	IC220ALG620	IC220ALG630
Product Name	**Analog In 15 Bit Voltage/ Current 2 Channels**	**Analog In 15 Bit Voltage/ Current 8 Channel**	**Analog In 16 Bit RTD 2 Channels**	**Analog In 16 Bit Thermocouple 2 Channels**
Input Voltage	0 - 20 mA, 4 - 20 mA, ±20 mA, 0 - 10 V, ±10 V	0 - 20 mA, 4 - 20 mA, ±20 mA, 0 - 10 V, ±10 V	RTD PT, Ni, Cu, KTY	Thermocouple B, C, E, J, K, L, N, R, S, T, U, W, HK
Number of Points	2	8	2	2
Connection Style	2 wire, shielded sensor cable	2 wire, shielded sensor cable	2, 3, and 4 wire, shielded sensor cable	2 wire, shielded sensor cable
Converter	120 micro seconds	10 micro seconds	120 micro seconds	120 micro seconds
Module Update Rate	Less than 1.5 msec	Less than 0.8 to 1.3 msec	20 to 30 msec (depending on connection method)	30 msec
Input Resistance	Greater than 220 Kohm (voltage) and 50 ohm (current)	Greater than 240 Kohm (voltage) and 25 ohm (current)	N/A	N/A
Limit Frequency of the Input Filter	40 Hz	3.5 Hz	N/A	48 Hz
Current Consumption for Local Bus UL (mA)	45 mA, typical	48 mA, typical	43 mA, typical	43 mA, typical
Nominal Current Consumption of US	N/A	N/A	N/A	N/A
LED Indicators	Bus Diagnostics	Bus Diagnostics	Bus Diagnostics	Bus Diagnostics
Required Terminal Strip	(1) IC220TBK062 (Contains 5 strips)	(4) IC220TBK062 (Contains 5 strips)	(1) IC220TBK062 (Contains 5 strips)	(1) IC220TBK062 (Contains 5 strips)

Analog Output Modules

Analog output modules provide voltage or current signals to analog output devices.

	IC220ALG320	IC220ALG321	IC220ALG322
Product Name	**Analog Out 16 Bit Voltage/ Current 1 Channel**	**Analog Out 16 Bit Voltage 1 Channel**	**Analog Out 13 Bit Voltage 2 Channels**
Output Voltage	0 - 20 mA, 4 - 20 mA, 0 - 10 V	0 - 10 V	0 - 10 V, ±10 V
Number of Points	8	1	2
Connection Style	2 wire, shielded sensor cable	2 wire, shielded sensor cable	2 wire, shielded sensor cable single ended
Module Update Rate	Less than 1 msec	Less than 1 msec	Less than 1 msec
Output Load	Voltage: 2 k ohm minimum Current: 500 k ohm maximum	2 k ohm minimum	2 k ohm minimum
Current Consumption for Local Bus UL (mA)	30 mA typical, 40 mA maximum	30 mA typical, 40 mA maximum	33 mA typical, 40 mA maximum
Current Consumption from Analog Bus UANA (mA)	50 mA typical, 65 mA maximum	15 mA typical, 20 mA maximum	25 mA typical, 35 mA maximum
Nominal Current Consumption of US	N/A	N/A	N/A
LED Indicators	Bus Diagnostics, I/O Voltage for analog terminals present	Bus Diagnostics	Bus Diagnostics Default state set
Required Terminal Strip	(1) IC220TBK203 (Contains 1 strip)	(1) IC220TBK061 (Contains 5 strips)	(1) IC220TBK062 (Contains 5 strips)

Motion Modules

Motion modules enable the user to easily connect to high speed input devices.

	IC220MDD840	IC220MDD841	IC220MDD842
Product Name	**High Speed Counter input, 1 control input, 1 control output**	**Absolute Encoder input, 4 digital inputs and 4 digital outputs**	**Incremental Encoder input, 4 digital inputs and 4 digital outputs**
Number of Points	1	One SSI Encoder	One A QUAD B
Input Frequency	100Khz	400Khz	Up to 500Khz
Maximum Resolution	N/A	26 bit	26 bit
Number of Inputs	1	4	4
Input Voltage	24 VDC/ 5 VDC	24 VDC	24 VDC
Number of Outputs	1	4	4
Output Voltage	24 VDC, 500mA	24 VDC, 500mA	24 VDC, 500mA
Connection Style	Input: 2 and 3 wire Output: 2 wire	Input: 2 and 3 wire Output: 2 and 3 wire	Input: 2 and 3 wire Output: 2 and 3 wire
Protection	Short Circuit Protection	Short Circuit Protection	Short Circuit Protection
Current Consumption for Local Bus UL (mA)	40 mA typical, 50 mA maximum	60 mA	110 mA
Nominal Current Consumption of US	1.0 Amp maximum	2.0 Amp maximum	2.0 Amp maximum
LED Indicators	Bus Diagnostics, Sensor supply short circuit, Counter input status, Control input status, Output status	Bus Diagnostics, Sensor supply short circuit, Counter input status, Control input status, Output status	Bus Diagnostics, Sensor supply short circuit, Counter input status, Control input status, Output status
Required Terminal Strip	(1) IC220TBK203 (Contains 1 strip)	(1) IC220TBK202 (Contains 1 strip)	(1) IC220TBK202 (Contains 1 strip)

Motor Starter Modules

VersaPoint motor starter modules enable the user to easily connect directly to three phase motors. The starter control (ON/OFF) and diagnostics is via the VersaPoint bus and no additional I/O modules required. The motor starter modules reduce wiring and installation.

	IC220STR001	IC220STR002	IC220STR003
Product Name	**Motor Starter Direct, up to 1.5 kW/ 400 VAC (No UL)**	**Motor Starter Direct, up to 3.7 kW/ 480 VAC (UL Approved)**	**Motor Starter Reversing, up to 1.5 kW/ 400 VAC (No UL)**
Number of Points	N/A	N/A	N/A
Connection Style	3 - Phase	3 - Phase	3 - Phase
Output Voltage	400 VAC	480 VAC (±10%)	400 VAC
Power Voltage Range	187 VAC to 440 VAC	187 VAC to 519 VAC	187 VAC to 440 VAC
Frequency	50/60Hz	50/60Hz	50/60Hz
Motor Current Range	0.2 to 3.6 A	0.2 to 8.0 A	0.2 to 3.6 A
Protection	Electronic - Configurable Over Current	Electronic - Configurable Over Current	Electronic - Configurable Over Current
Switching Method	Electronic	Mechanical Contactor	Electronic
Current Consumption from Local Bus UL (mA)	45 mA	50 mA	45 mA
LED Indicators	Bus Diagnostics, Motor Protection (group error message), Motor (on/off), Manual Mode (on/off)	Bus Diagnostics, Motor Protection (group error message), Motor (on/off), Manual Mode (on/off)	Bus Diagnostics, Motor Protection (group error message), Motor (on/off), Manual Mode (on/off)
Required Terminal Strip	(1) IC220ACC105 (Contains 10 strips) and (1) IC220ACC103 or IC220ACC104	(1) IC220ACC105 (Contains 10 strips) and (1) IC220ACC103 or IC220ACC104	(1) IC220ACC105 (Contains 10 strips) and (1) IC220ACC103 or IC220ACC104

Serial Communications Modules

The serial interface modules enable the VersaPoint to connect to serial devices via RS-232 or RS-485/422. The modules support the following features:

- Serial I/O channel
- Supports various protocols
- Adjustable number of data bits, stop bits, and parity
- 4 kbyte receive buffer, 1 kbyte transmit buffer
- Supports DTR/CTS handshake
- Baud rate adjustable up to 38400 baud
- Configuration and data exchange using PCP communications services.
- LED diagnostic and status indicators

	IC220BEM232	IC220BEM485
Product Name	**RS-232 Communications Module interfaces serial I/O devices to a VersaPoint I/O Station.**	**RS-485/422 Communications Module interfaces serial I/O devices to a VersaPoint I/O Station.**
Number of Points	1	1
Connection Style	RS-232	RS-485 half duplex/422 full duplex
Protocol	Transparent, End-to-end, Dual buffer, 3964R, XON/XOFF	Transparent, End-to-end, Dual buffer, 3964R, XON/XOFF, Modbus RTU, Modbus ASCII
Data Rate	110, 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400	110, 300, 600, 1200, 1800, 2400, 4800, 9600, 19200, 38400
Data Buffer	4-kbyte receive buffer and 1-kbyte transmit buffer	4-kbyte receive buffer and 1-kbyte transmit buffer
Current Consumption for Local Bus UL (mA)	155 mA typical, 225 mA maximum	170 mA typical, 260 mA maximum
LED Indicators	Bus Diagnostics, Transmit and Receive	Bus Diagnostics, Transmit and Receive
Required Terminal Strip	IC220TBK203	IC220TBK203

Accessories

IC220ACC001	Module Labels Narrow, Qty 10
IC220ACC002	Module Labels Wide, Qty 10
IC220ACC003	Point Labels Numbered 1-100, Qty 10
IC220ACC004	Point Labels Blank, Qty 1000
IC220ACC005	Module Keying Tabs, Qty 100
IC220ACC100	Motor Starter Brake Module DC
IC220ACC101	Motor Starter Brake Module AC/DC
IC220ACC103	Motor Starter Power Connector
IC220ACC104	Motor Starter Power Bridge
IC220ACC105	Motor Circuit Connector, Qty 10
IC220ACC201	Relay Module Isolation Set (Requires 1 IC220TBK206)
IC220DEM001	VersaPoint Demo Case, DEVICENET NIU
IC220DEM002	VersaPoint Demo Case, PROFIBUS NIU
IC220DEM011	VersaPoint Static Demo, DEVICENET NIU
IC220DEM012	VersaPoint Static Demo, PROFIBUS NIU
IC220TBK061	I/O W/Shield, 6 Position Spring Style, Qty 5
IC220TBK062	I/O Terminal Strip W/Dual Shield, 6 Position Spring Style, Qty 5
IC220TBK082	I/O Terminal Strip, 8 Position Spring Style, Qty 10
IC220TBK083	I/O Terminal Strip, 8 Position Spring Style, AC Input, Qty 10
IC220TBK084	I/O Terminal Strip, 8 Position Spring Style, AC Output, Qty 10
IC220TBK085	I/O Terminal Strip, 8 Position Spring Style, Relay, Qty 10
IC220TBK087	Power Terminal Strip, 8 Position Spring Style, Qty 10
IC220TBK122	I/O Terminal Strip, 12 Position Spring Style, Input, Qty 10
IC220TBK123	I/O Terminal Strip, 12 Position Spring Style, Output, Qty 10
IC220TBK201	Terminal Strip Set, Spring Style, DEVICENET NIU
IC220TBK202	Terminal Strip Set, Spring Style, Encoder
IC220TBK203	Terminal Strip Set, Spring Style, Analog Out/HSC
IC220TBK204	Terminal Strip Set, Spring Style, AC Power Terminal
IC220TBK206	Terminal Strip Set, Spring Style, Relay Isolation

Configuration Guidelines

When configuring a VersaPoint the following guidelines should be considered:

1. VersaPoint is limited to 63 modules per Network Interface Unit.
2. Each module requires a terminal strip.
3. Each voltage requires a Power Terminal to separate voltages.
4. Segment Terminals can be used to easily group points within a voltage segment.
5. Internal power/current rating of connectors is 2 amps. A power terminal is required if this rating is exceeded.

Cable Selection
Examples of Typical Application

Configuration for Controller (Example application requiring (120) 24 VDC inputs and (80) Relay outputs AC power supply) for local control. System also has five remote cabinets, with each cabinet requiring (8) 24 VDC Inputs, (4) 24 VDC 0.5 Amp, Source Outputs and (2) current inputs and (2) current outputs (24 VDC power source) over Profibus DP.

Control Cabinet

Backplane Slots Required	Power Supply Current Required (mA)	Qty	Part Number	Description
2	1250mA@ 3.3 VDC; 1000mA@ 5 VDC	1	IC695CPU310	CPU with two built-in serial ports
2		1	IC695PSA040	120/240 VAC, 125 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
	600mA@ 3.3 VDC; 240 mA@ 5 VDC	1	IC695CHS016	16 Slot Universal Base
4	1200mA @ 5V	4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
5	35mA @ 5V; 110mA @ 24 VDC Relay	5	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
		4	IC694TBB032	Terminal Block, Box Style
1	420 mA @ 5 VDC	1	IC695PBM300	Profibus DP Master Module
		1	BC646MPP001	Logic Developer - PLC Professional
14	Total current from power supply required: 2895mA @ 5V; 1850 @ 3.3V; 110mA @ 24 VDC Relay . Only one power supplied needed.			

Remote Cabinets (Qty 5)

		5	IC220PBI001	PROFIBUS-DP Network Interface Unit (Requires 1 IC220TBK087)
		5	IC220MDL643	Input, 24 VDC Positive Logic, 8pt (Requires 4 IC220TBK082)
		5	IC220MDL752	Output, 24 VDC Positive Logic 0.5A, 4pt (Requires 1 IC220TBK123)
		5	IC220ALG220	Analog In, 15 Bit, Voltage/Current, 2ch (Requires 1 IC220TBK061)
		10	IC220ALG320	Analog Out, 16 Bit, Voltage/Current, 1ch (Requires 1 IC220TBK203)
		5	IC220PWR003	Power Terminal, Fused with diag 24 VDC Requires 1 IC220TBK087)
		1	IC220TBK087	Power Terminal Strip, 8 Position Spring Style, Qty 10
		2	IC220TBK082	I/O Terminal Strip, 8 Position Spring Style, Qty 10
		1	IC220TBK123	I/O Terminal Strip, 12 Position Spring Style, Output, Qty 10
		1	IC220TBK061	I/O Terminal Strip with Shield, 6 Position Spring Style, Qty 5
		1	IC220TBK203	Terminal Strip Set, Spring Style, Analog Out/HSC

Options to Consider

	840mA @ 3.3 VDC; 614 mA @ 5 VDC	1	IC695ETM001	RX3i Ethernet module 10/100 Mbits 2 RJ45 connections one IP address occupies one slot on system base
		6	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
		1	IC693ACC302	RX3i Long term battery for CPU
		1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

VersaMax IP

VersaMax IP is designed to offer the ruggedness and reliability of a standard I/O system installed in a NEMA 4 cabinet, without the cost and effort to build the cabinet. VersaMax IP is IP67 rated so it can be bolted right to the equipment it controls without the need for an enclosure. I/O, communications, and power connections are made to the blocks with off-the-shelf cordsets – reducing design and installation time and possible wiring errors.

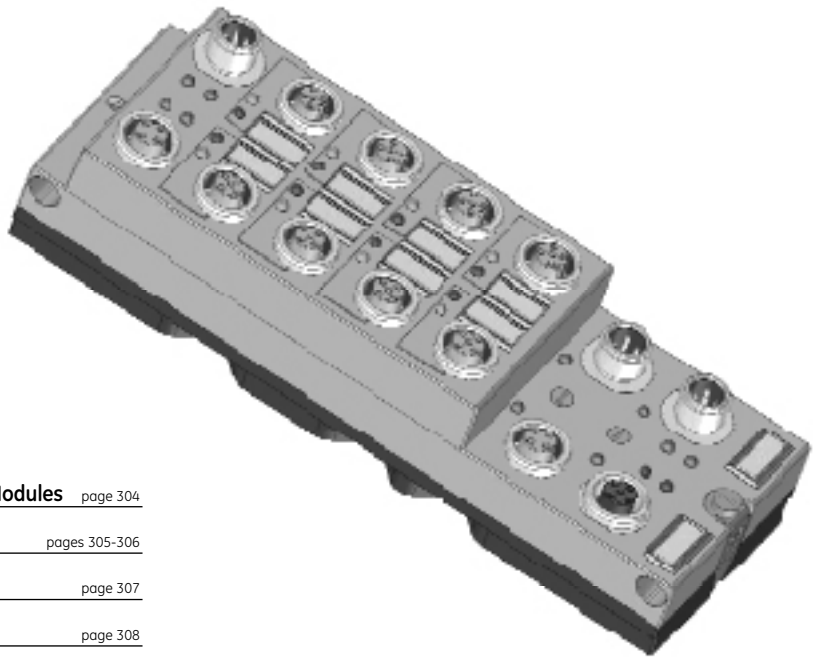
Once installed, VersaMax IP's diagnostics make troubleshooting a snap. In the event of a failure, the connector-style wiring interface comes into play once again, greatly reducing replacement time and the possibility of wiring errors.

The initial release of VersaMax IP includes Profibus I/O blocks, Profibus Cordsets, and Power Cordsets. The Profibus I/O blocks provide the following:

- Connection to Profibus-DP using M12 connectors
- Baud rates up to 12 MB – autoselect
- Connections to digital sensors using M12 connectors (Input Blocks)
- Connection to digital actuators using M12 connectors, each with load capacity up to 2A (Output Blocks)
- Flexible voltage supply
- Diagnostics and Status indicators
- Short Circuit and Overload protection of Sensor Supply and/or outputs
- IP65 and IP67 Protection
- Operating Temperature: -25°C to 60°C

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control, and execution logic are developed with a single programmer.



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Accessories page 307

Configuration Guidelines page 308

Publication Reference Chart

GFK-2307	VersaMax IP Installation Manual

Stand Alone Input and Output Modules

VersaMax IP modules are designed for distributed automation tasks in harsh environmental conditions. Modules meet the requirements for both IP65/IP67 protection. They enable the direct connection of sensors and actuators in an environment close to the station. Every VersaMax IP device is connected directly to the bus system.

	IC676PBI008	IC676PBI016	IC676PBM442	IC676PBO082
Product Name	**8 Point Input Module, Profibus**	**16 Point Input Module, Profibus**	**4 Point Input and 4 Point (2 Amp) Output Module, Profibus**	**8 Point (2 Amp) Output Module, Profibus**
Protocol	Profibus DP	Profibus DP	Profibus DP	Profibus DP
Module Power	24 VDC	24 VDC	24 VDC	24 VDC
Module Power Range	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC
Module Current Consumption UL at 24VDC	35mA typical, 100mA maximum	35mA typical, 100mA maximum	40mA typical, 100mA maximum	40mA typical, 100mA maximum
Module Current Consumption US at 24 VDC	4.5mA typical plus sensor current 700mA maximum	8mA typical plus sensor current 1.2A maximum	4.5mA typical plus sensor current 700mA maximum	3mA typical plus sensor current 700mA maximum
Module Current Consumption UAXX at 24VDC	N/A	N/A	6mA typical plus actuator current, 4A maximum	12mA typical plus actuator current, 4A maximum
Connection Style (M12)	2-, 3-, and 4-wire	2-, 3-, and 4-wire (Y connector to support two sensors per connector)	2- or 3-wire	2- or 3-wire
Operating Temperature	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)
Degree of Protection	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods
Class of Protection	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529
Housing Dimensions (WxHxD)	60mm x 160mm x 44.5mm	60mm x 160mm x 44.5mm	60mm x 178mm x 49.3mm	60mm x 178mm x 49.3mm

VersaMax IP Modular

VersaMax IP Modular modules are designed for distributed automation tasks in harsh environmental conditions. Modules meet the requirements for both IP65/IP67 protection. They enable the direct connection of sensors and actuators in an environment close to the station. Every VersaMax IP device is connected directly to the bus system. Up to 16 expansion modules can be connected to one Profibus VersaMax IP Modular local bus master, supporting up to 136 digital or 64 analog signals or a combination of the two.

	IC677PBI001	IC677DBI008	IC677DBO085
Product Name	**Profibus VersaMax IP Modular local bus master with (8) 24 VDC inputs**	**Expansion VersaMax IP Modular slave with (8) 24 VDC inputs**	**Expansion VersaMax IP Modular slave with (8) 24 VDC outputs**
Protocol	Profibus DP	Profibus DP	Profibus DP
Number of Points	8	8	8
Module Power	24 VDC	24 VDC	24 VDC
Module Power Range	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC
Module Current Consumption UL at 24 VDC	75mA typical, 100mA maximum	35mA typical (50mA maximum) @ 500Kbaud; 40mA typical (50mA maximum) @ 2Mbaud	40mA typical (50mA maximum) @ 500Kbaud; 45mA typical (50mA maximum) @ 2Mbaud
Module Current Consumption US at 24 VDC	15mA typical plus sensor current 600mA maximum	5mA typical plus sensor current 600mA maximum	5mA typical plus actuator current, 600mA maximum
Module Current Consumption UAXX at 24 VDC	12mA typical plus actuator current, 4A maximum	N/A	N/A
Connection Style (M12)	2-, 3-, and 4-wire (Y connector to support two sensors per connector)	2-, 3-, and 4-wire	2-, 3-, and 4-wire
Operating Temperature	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)
Degree of Protection	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods
Class of Protection	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529
Housing Dimensions (WxHxD)	70mm x 178mm x 49.3mm	70mm x 178mm x 49.3mm	70mm x 178mm x 49.3mm

VersaMax IP Modular

VersaMax IP Modular modules are designed for distributed automation tasks in harsh environmental conditions. Modules meet the requirements for both IP65/IP67 protection. They enable the direct connection of sensors and actuators in an environment close to the station. Every VersaMax IP device is connected directly to the bus system. Up to 16 expansion modules can be connected to one Profibus VersaMax IP Modular local bus master, supporting up to 136 digital or 64 analog signals or a combination of the two.

	IC677DBM442	IC677ABI004	IC677ABO004
Product Name	**Expansion VersaMax IP Modular slave with (4) 24VDC inputs and 4 outputs (2 amp)**	**Expansion VersaMax IP Modular slave with (4) analog inputs**	**Expansion VersaMax IP Modular slave with (4) analog outputs**
Protocol	Profibus DP	Profibus DP	Profibus DP
Number of Points	4 In/ 4 Out	4	4
Module Power	24 VDC	24 VDC	24 VDC
Module Power Range	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC
Module Current Consumption UL at 24 VDC	40mA typical (50mA maximum) @ 500Kbaud; 45mA typical (50mA maximum) @ 2Mbaud	70 mA, typical	70 mA, typical
Module Current Consumption US at 24 VDC	5mA typical plus sensor current 600mA maximum	500mA typical plus sensor current 400mA maximum	5mA typical plus actuator current 400mA maximum
Module Current Consumption UAXX at 24 VDC	3mA typical plus actuator current, 4A maximum	N/A	N/A
Connection Style (M12)	2-, 3-, and 4-wire for sensor; 2 or 3-wire actuator control	2 or 4 wire technology (shielded)	2 or 4 wire technology (shielded)
Operating Temperature	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)	Range: -25°C to +60°C (-13°F to +131°F)
Degree of Protection	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods	95%. Slight condensation is permitted occasionally on the outer housing, for short periods
Class of Protection	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529
Housing Dimensions (WxHxD)	70mm x 178mm x 49.3mm	70mm x 178mm x 49.3mm	70mm x 178mm x 49.3mm

Accessories and Cables

IC676ACC001	VersaMax IP Point Labels - Qty 50
IC676ACC002	Protective Caps - Male (For unused I/O connectors and/or outgoing bus & power connectors) - Qty 5
IC676ACC003	Protective Caps - Female (For unused incoming power connectors) - Qty 5
IC676ACC004	Profibus Network Termination Resistor
IC676ACC005	Profibus Network Tee
IC676CBLPBB003	IP67 Profibus Cordset - 0.3 Meters
IC676CBLPBB005	IP67 Profibus Cordset - 0.5 Meters
IC676CBLPBB010	IP67 Profibus Cordset - 1 Meter
IC676CBLPBB020	IP67 Profibus Cordset - 2 Meters
IC676CBLPBB050	IP67 Profibus Cordset - 5 Meters
IC676CBLPBB100	IP67 Profibus Cordset - 10 Meters
IC676CBLPBF020	IP67 Profibus Cordset - 2 Meters - Female Connector w/Leads
IC676CBLPBF050	IP67 Profibus Cordset - 5 Meters - Female Connector w/Leads
IC676CBLPBF100	IP67 Profibus Cordset - 10 Meters - Female Connector w/Leads
IC676CBLPBM020	IP67 Profibus Cordset - 2 Meters, Male Connector w/Leads
IC676CBLPBM050	IP67 Profibus Cordset - 5 Meters, Male Connector w/Leads
IC676CBLPBM100	IP67 Profibus Cordset - 10 Meters - Male Connector w/Leads
IC676CBLPWB003	IP67 Power Cordset - 0.3 Meters
IC676CBLPWB005	IP67 Power Cordset - 0.5 Meters
IC676CBLPWB010	IP67 Power Cordset - 1 Meter
IC676CBLPWB020	IP67 Power Cordset - 2 Meters
IC676CBLPWB050	IP67 Power Cordset - 5 Meters
IC676CBLPWB100	IP67 Power Cordset - 10 Meters
IC676CBLPWF020	IP67 Power Cordset - 2 Meters - Female Connector w/Leads
IC676CBLPWF050	IP67 Power Cordset - 5 Meters - Female Connector w/Leads
IC676CBLPWF100	IP67 Power Cordset - 10 Meters - Female Connector w/Leads
IC676CBLPWM020	IP67 Power Cordset - 2 Meters - Male Connector w/Leads
IC676CBLPWM050	IP67 Power Cordset - 5 Meters - Male Connector w/Leads
IC676CBLPWM100	IP67 Power Cordset - 10 Meters - Male Connector w/Leads

VersaMax IP Modular Inter-connection Cables

IC677CBLPWB0013	IP67 Voltage supply cable for local bus; A-coded, 5 position, unshielded 13.5 cm.
IC677CBLLBB0013	IP67 Local communications cable for local bus; B-coded, 5 position, shielded 13.5 cm.

Configuration Guidelines

When configuring a VersaMax IP the following guidelines should be considered

1. Remember to select the proper cord set and termination resistor
2. VersaMax IP Modular can support up to 16 Modular expansions with a total expansion length of 20 meters

Examples of Typical Application

Configuration for Controller (Example application requiring (120) 24VDC inputs and (80) Relay outputs AC power supply) for local control. System also has five remote drops that will be mounted external to the machine. Each remote drop requires (8) 24VDC Inputs, (4) 24VDC 0.5 Amp, Source Outputs and (2) current inputs and (2) current outputs (24VDC power source) over Profibus DP.

Control Cabinet

Backplane Slots Required	Power Supply Current Required (mA)	Qty	Part Number	Description
2	1250 mA @ 3.3 VDC; 1000mA @ 5 VDC	1	IC695CPU310	CPU with two built-in serial ports
2		1	IC695PSA040	120/240 VAC, 125 VDC Power Supply, current available 9 Amps @ 3.3 VDC; 6 Amps @ 5 VDC; 1.6 Amps @ 24 VDC maximum
	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	1	IC695CHS016	16 Slot Universal Base
4	1200 mA @ 5V	4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
5	35 mA @ 5V; 110mA @ 24 VDC Relay	5	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).
		4	IC694TBB032	Terminal Block, Box Style
1	420 mA @ 5 VDC	1	IC695PBM300	Profibus DP Master Module
		1	BC646MPP001	Logic Developer - PLC Professional
14	Total current from power supply required: 2895mA @ 5V; 1850 @ 3.3V; 110mA @ 24 VDC Relay. Only one power supplied needed.			

Remote Cabinets (Qty 5)

		5	IC677PBI001	Profibus VersaMax IP Modular local bus master with (8) 24 VDC inputs
		5	IC677DBO085	Expansion VersaMax IP Modular slave with (8) 24 VDC outputs
		5	IC677ABI004	Expansion VersaMax IP Modular slave with (4) analog inputs
		5	IC677ABO004	Expansion VersaMax IP Modular slave with (4) analog outputs
		5	IC676CBLPBB100	IP67 Profibus Cordset - 10 Meters
		5	IC676CBLPWB100	IP67 Power Cordset - 10 Meters
		15	IC677CBLPWB0013	IP67 Voltage supply cable for local bus; A-coded, 5 position, unshielded 13.5 cm.
		15	IC677CBLLBB0013	IP67 Local communications cable for local bus; B-coded, 5 position, shielded 13.5 cm.

Options to Consider

	840mA @ 3.3 VDC; 614 mA @ 5 VDC	1	IC695ETM001	RX3i Ethernet module 10/100 Mbits 2 RJ45 connections one IP address occupies one slot on system base
		6	IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply
		1	IC693ACC302	RX3i Long term battery for CPU
		1	IC754VSI06STD	QuickPanel View Intermediate 6 inch STN Touch Operator Interface

QuickPanel View

GE Intelligent Platforms markets and sells QuickPanel View products that are designed to meet the market needs of companies in the Americas and Asia Pacific.

QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the QuickPanel family of touch screens with Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View – Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

Features include:

- Display sizes from 6" to 15"
- Choice of Monochrome, Color-STN, or Color-TFT display
- Microsoft Windows® CE operating system
- Expandable memory and Fieldbus cards†
- CompactFlash†
- Functions from data collection and trending to system security and alarming
- Built-in web server for access to data, and panels using any standard browser†
- Communication over serial, Ethernet, and communication expansion cards†
- Multi-language support selectable by the operator when the system is online
- Shared tags for increased productivity – applications developed for QuickPanel View can share tags with other Proficy Machine Edition applications, eliminating the need to enter the data more than once
- Migration of applications developed with QuickDesigner
- Extensive library of pre-configured animation objects
- UL Class 1 Div 2 (A, B, C, D), ATEX Class 1, Zone 2, CE Mark
- Web publishing

†Available on select models. See following pages for availability.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control and execution logic are developed with a single programmer.

Operator Interfaces pages 310-313

Starter Kits pages 314-316

Communication Hardware and Accessories page 317

Publication Reference Chart

GFK-2327	6 Inch QuickPanel View (Basic) Hardware Reference Guide
GFK-2325	6 Inch QuickPanel View (Intermediate) Hardware Reference Guide
GFK-2243	6 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2306	12 Inch QuickPanel View (Intermediate) Hardware Reference Guide
GFK-2284	12 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2402	15 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2297	Genius I/O Communication Card Hardware Reference Guide
GFK-2270	DeviceNet Master & Slave Communication Card Hardware Reference Guide
GFK-2291	PROFIBUS Slave Communication Card Hardware Reference Guide
GFK-2276	Expanded User Memory Installation Guide
GFK-2368	PCMCIA Adaptor Hardware Reference Guide

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

	IC754VSB06MTD	IC754VSB06CTD	IC754VSI06MTD	IC754VSI06STD
Product Name	**QuickPanel View Display, 6" Monochrome Basic**	**QuickPanel View Display, 6" TFT Basic**	**QuickPanel View Display, 6" Monochrome Intermediate**	**QuickPanel View Display, 6" STN-Color Intermediate**
Display Size	5.7" (Diagonal)	5.7" (Diagonal)	5.7" (Diagonal)	5.7" (Diagonal)
Display Type	6" Mono	6" TFT	6" Mono	6" Color-STN
Resolution	320 x 240 pixels	320 x 240 pixels	320 x 240 pixels	320 x 240 pixels
Memory: DRAM	16 MB	32 MB	32 MB	32 MB
Memory: Expandable	No	To 96 MB	To 96 MB	To 96 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	None	None	None	None
Ethernet: LAN #1	Download Only	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	None	None
Communication Expansion	None	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	None	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (W x H x D)	6.14" x 4.86" x 2.03" (158mm x 126mm x 52mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)
Front of Panel & Depth (W x H x D)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	10.8 to 30.0 VDC	10.8 to 30.0 VDC
Power Consumption	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC
Operating Temperature	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	0 to 60°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 85% non-condensing	10% to 85% non-condensing	10% to 85% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

	IC754VSI06SKD	IC754VSI08CTD	IC754VSI12MTD	IC754VSI12CTD
Product Name	**QuickPanel View Display, 6" STN-Color Intermediate with Keypad**	**QuickPanel View Display, 8" TFT-Color Intermediate**	**QuickPanel View Display, 12" Monochrome Intermediate**	**QuickPanel View Display, 12" TFT-Color Intermediate**
Display Size	5.7" (Diagonal)	8.5" (Diagonal)	12.1" (Diagonal)	12.1" (Diagonal)
Display Type	6" Color-STN	8" Color-TFT	12" Mono	12" Color-TFT
Resolution	320 x 240 pixels	800 x 600 pixels	800 x 600 pixels	800 x 600 pixels
Memory: DRAM	32 MB	32 MB	32 MB	32 MB
Memory: Expandable	To 96 MB	To 64 MB or 96 MB	To 96 MB	To 96 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	None	None	None	None
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	None	None
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (W x H x D)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	8.97" x 7.34" x 3.03" (228mm x 186mm x 77mm)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)
Front of Panel & Depth (W x H x D)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	9.8" x 8.18" x 0.196" (249mm x 208mm x 5mm)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)
Input Voltage	12 VDC @ ±20% or 24 VDC @ ±20%	10.8 to 30.0 VDC	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power Consumption	Less than 24W @ 24 VDC	24W	Less than 48W @ 24 VDC	Less than 48W @ 24 VDC
Operating Temperature	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces. Full-featured QuickPanel View modules take Operator Interface products to an entirely new level of openness. A built-in web server provides access to data and graphics using any standard browser.

	IC754VSL06MTD	IC754VSL06CTD	IC754VSF08CTD
Product Name	**QuickPanel View Display, 6" Mono Loaded**	**QuickPanel View Display, 6" TFT-Color Loaded**	**QuickPanel View Display, 8" TFT-Color Loaded**
Display Size	5.7" (Diagonal)	5.7" (Diagonal)	8.5" (Diagonal)
Display Type	6" Mono	6" Color-TFT	8" Color-TFT
Resolution	320 x 240 pixels	320 x 240 pixels	800 x 600 pixels
Memory: DRAM	32 MB	32 MB	64 MB
Memory: Expandable	To 96 MB	To 96 MB	To 96 MB or 128 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	RS232	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	None
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (W x H x D)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	8.97" x 7.34" x 3.03" (228mm x 186mm x 77mm)
Front of Panel & Depth (W x H x D)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	9.8" x 8.18" x 0.196" (249mm x 208mm x 5mm)
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	10.8 to 30.0 VDC
Power Consumption	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	24W
Operating Temperature	-10 to 60°C (14 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces. Full-featured QuickPanel View modules take Operator Interface products to an entirely new level of openness. A built-in web server provides access to data and graphics using any standard browser.

	IC754VSL12CTD	IC754VSF15CTD
Product Name	**QuickPanel View Display, 12" TFT-Color Loaded**	**QuickPanel View Display, 15" TFT-Color Loaded**
Display Size	12.1" (Diagonal)	15.1" (Diagonal)
Display Type	12" Color-TFT	15" Color-TFT
Resolution	800 x 600 pixels	1024 x 768 pixels
Memory: DRAM	32 MB	64 MB
Memory: Expandable	To 96 MB	128 MB
Serial: Com #1	RS232/RS485	RS232/RS485
Serial: Com #2	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	10 Mbps	10/100 Mbps
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2
Agency Approvals	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (W x H x D)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	14.93" x 12.03" x 2.78" (379mm x 305mm x 71mm)
Front of Panel & Depth (W x H x D)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	15.70" x 12.73" x 0.40" (399mm x 323mm x 10mm)
Input Voltage	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power Consumption	Less than 48W @ 24 VDC	Less than 60W @ 24 VDC
Operating Temperature	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 60°C (-4 to 140°F)
Operating Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Starter Kits

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

	IC754VKB06MTD	IC754VKI06MTD	IC754VKI06STD
Product Name	**QuickPanel View Starter Kit, includes 6" Monochrome Basic Display, Proficy ME Development Software, Ethernet Cable and Power Supply**	**QuickPanel View Starter Kit, includes 6" Monochrome Intermediate Display, Proficy ME Development Software, Ethernet Cable and Power Supply**	**QuickPanel View Starter Kit, includes 6" STN-Color Intermediate Display, Proficy ME Development Software, Ethernet Cable and Power Supply**
Display Size	5.7" (Diagonal)	5.7" (Diagonal)	5.7" (Diagonal)
Display Type	6" Mono	6" Mono	6" Color-STN
Resolution	320 x 240 pixels	320 x 240 pixels	320 x 240 pixels
Memory: DRAM	16 MB	32 MB	32 MB
Memory: Expandable	No	To 96 MB	To 96 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	None	None	None
Ethernet: LAN #1	Download Only	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	None
Communication Expansion	None	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	None	One, Type 2	One, Type 2
Agency Approvals	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (W x H x D)	6.14" x 4.86" x 2.03" (158mm x 126mm x 52mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)
Front of Panel & Depth (W x H x D)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	10.8 to 30.0 VDC
Power Consumption	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC
Operating Temperature	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	0 to 60°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 85% non-condensing	10% to 85% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Starter Kits

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

	IC754VKI06SKD	IC754VKI12MTD	IC754VKI12CTD
Product Name	**QuickPanel View Starter Kit, includes 6" STN-Color Intermediate Display with Keypad**	**QuickPanel View Starter Kit, includes 12" Monochrome Intermediate Display, Proficy ME Development Software, Ethernet Cable and Power Supply**	**QuickPanel View Starter Kit, includes 12" TFT-Color Intermediate Display, Proficy ME Development Software, Ethernet Cable and Power Supply**
Display Size	5.7" (Diagonal)	12.1" (Diagonal)	12.1" (Diagonal)
Display Type	6" Color-STN	12" Mono	12" Color-TFT
Resolution	320 x 240 pixels	800 x 600 pixels	800 x 600 pixels
Memory: DRAM	32 MB	32 MB	32 MB
Memory: Expandable	To 96 MB	To 96 MB	To 96 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	None	None	None
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	None
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D), ATEX - Class 1 Zone 2, CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (W x H x D)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)
Front of Panel & Depth (W x H x D)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)
Input Voltage	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power Consumption	Less than 24W @ 24 VDC	Less than 48W @ 24 VDC	Less than 48W @ 24 VDC
Operating Temperature	0 to 60°C (32 to 140°F)	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Starter Kits

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces. Full-featured QuickPanel View modules take Operator Interface products to an entirely new level of openness. A built-in web server provides access to data and graphics using any standard browser.

	IC754VKL06MTD	IC754VKL06CTD	IC754VKL12CTD	IC754VKF15CTD
Product Name	**QuickPanel View Starter Kit, includes 6" Mono Loaded Display, Proficy ME Development Software, Ethernet Cable and Power Supply**	**QuickPanel View Starter Kit, includes 6" TFT-Color Loaded Display, Proficy ME Development Software, Ethernet Cable and Power Supply**	**QuickPanel View Starter Kit, includes 12" TFT-Color Loaded Display, Proficy ME Development Software, Ethernet Cable and Power Supply**	**QuickPanel View Starter Kit, includes 15" TFT-Color Loaded Display, Proficy ME Development Software, Ethernet Cable and Power Supply**
Display Size	5.7" (Diagonal)	5.7" (Diagonal)	12.1" (Diagonal)	15.1" (Diagonal)
Display Type	6" Mono	6" Color-TFT	12" Color-TFT	15" Color-TFT
Resolution	320 x 240 pixels	320 x 240 pixels	800 x 600 pixels	1024 x 768 pixels
Memory: DRAM	32 MB	32 MB	32 MB	64 MB
Memory: Expandable	To 96 MB	To 96 MB	To 96 MB	128 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com #2	RS232	RS232	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	None	None	10 Mbps	10/100 Mbps
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL-Class 1 Div 2 (A, B, C, D), ATEX - Class 1 Zone 2, CE Mark	UL-Class 1 Div 2 (A, B, C, D), ATEX - Class 1 Zone 2, CE Mark	UL-Class 1 Div 2 (A, B, C, D), ATEX - Class 1 Zone 2, CE Mark	UL-Class 1 Div 2 (A, B, C, D), ATEX - Class 1 Zone 2, CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut-Out (W x H x D)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	6.14" x 4.86" x 2.76" (158mm x 126mm x 70mm)	11.88" x 8.96" x 2.37" (302mm x 228mm x 60mm)	14.93" x 12.03" x 2.78" (379mm x 305mm x 71mm)
Front of Panel & Depth (W x H x D)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	8.00" x 6.17" x 0.85" (203mm x 157mm x 22mm)	13.26" x 10.34" x 0.38" (337mm x 263mm x 10mm)	15.70" x 12.73" x 0.40" (399mm x 323mm x 10mm)
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power Consumption	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	Less than 48W @ 24 VDC	Less than 60W @ 24 VDC
Operating Temperature	-10 to 60°C (14 to 140°F)	0 to 60°C (32 to 140°F)	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 60°C (-4 to 140°F)
Operating Humidity	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

QuickPanel View Communication Hardware

PLC Manufacturer	PLC Type	Part Number	Description
Allen Bradley	SLC500, 5/01, 5/02, 5/03	**HMI-CAB-C83**	DH-485 Program Port, 8-pin RJ-45Male, RS-422, No simultaneous connection to program port
		HMI-CAB-C84	DH-485 Program Port, 8-pin RJ-45 Male, RS-422, with simultaneous connection to program port
	SLC5/03, 5/04, ControlLogix	**HMI-CAB-C52**	Channel 0, 9-pin Female, RS-232
	PLC-5	**HMI-CAB-C51**	KF2 Module, 25-pin Female, RS-232
		HMI-CAB-C53	Channel 0, 25-pin Male, RS-232
		HMI-CAB-C55	KE Module, 15-pin Male, RS-232
		HMI-CAB-C107	DF1, 25-pin Male, RS-422
	MicroLogix	**HMI-CAB-C106**	DF1, 8-pin Circular DIN, RS-232
	Data Highway Plus	**IC754ABD001**	Data Highway Plus communication card for QuickPanel View†
Automation Direct	DL205 & DL305	**HMI-CAB-C86**	Programming Port, 6-pin Modular Male, RS-232
	DL305 & DL405	**HMI-CAB-C103**	Programming Port, 4-pin Modular Male, RS-232
	DL305 & DL405 w/ 25-pin comm. port	**HMI-CAB-C53**	Programming Port, 25-pin Male, RS-232
Fieldbus	DeviceNet	**IC754DVNS01**	DeviceNet Slave Communication Card for QuickPanel View
	PROFIBUS	**IC754PBSS01**	PROFIBUS Slave Communication Card for QuickPanel View
GE	Series 90 CMM Module	**HMI-CAB-C53**	25-pin Male, RS-232
		HMI-CAB-C93	25-pin Male, RS-422
	Series 90-30 & 90-70	**HMI-CAB-C82**	Programming Port, 15-pin Male, RS-422
	Series 90-30 CPU351, 352, 363	**HMI-CAB-C120**	Program Port, 6-pin Male RJ-11, RS-232
	VersaMax CPU001, 002, 005	**HMI-CAB-C111**	Program Port, 9-pin Male, RS-232
	VersaMax Nano/Micro	**HMI-CAB-C119**	Program Port, 8-pin Male RJ-45, RS-232
	Genius	**IC754GEN001**	Genius Communication Card for QuickPanel View & Control
Mitsubishi	Series A	**HMI-CAB-C53**	25-pin Male, RS-232
		HMI-CAB-C88	9-pin Male, RS-232
	Series FX	**HMI-CAB-C91**	25-pin Male, RS-422
Modicon	984 A, B, X	**HMI-CAB-C53**	25-pin Male, RS-232
	984 Slot and Compact	**HMI-CAB-C58**	9-pin Male, RS-232
	984 Micro	**HMI-CAB-C102**	Program Port, 8-pin Male RJ-45, RS-232
Omron	C200H	**HMI-CAB-C53**	25-pin Male, RS-232
		HMI-CAB-C108	9-pin Male, RS-422
	C20H, CQM1	**HMI-CAB-C67**	9-pin Male, RS-232
Siemens	500 Series	**HMI-CAB-C53**	Programming Port, 25-pin Male, RS-232
		HMI-CAB-C101	Programming Port, 9-pin Female, RS-232
		HMI-CAB-C92	9-pin Male, RS-422
	TI545-1102	**HMI-CAB-C100**	Programming Port, 9-pin Female, RS-422
	305 & 405	**HMI-CAB-C53**	Programming Port, 25-pin Male, RS-232
	S7-200 PPI	**HMI-CAB-C110**	9-pin Male, RS-422
Square D SY/MAX	SY/MAX Model 100 & greater	**HMI-CAB-C94**	9-pin Male, RS-422
	SY/MAX Model 50 via link adaptor	**HMI-CAB-C53**	25-pin Male, RS-232

Accessories

Part Number	Description
IC754PCMCIA001	PCMCIA Adaptor for QuickPanel View
IC754ACC32MEM	Expansion Memory 32 Mbytes
IC754ACC64MEM	Expansion Memory 64 Mbytes
IC754ACC06GAS	Gasket for 6 Inch QuickPanel View
IC754ACC12GAS	Gasket for 12 Inch QuickPanel View
IC754ACC15GAS	Gasket for 15 Inch QuickPanel View
IC754ACC06MNT	Mounting Clips & Power Connector for 6 Inch QuickPanel View
IC754ACC12MNT	Mounting Clips & Power Connector for 12 Inch QuickPanel View
IC754ACC15MNT	Mounting Clips & Power Connector for 15 Inch QuickPanel View
IC754ACC06BEZ01	Stainless Steel Bezel for 6 Inch Mono & TFT-Color QuickPanel View
IC754ACC06BEZ02	Stainless Steel Bezel for 6 Inch STN-Color QuickPanel View
IC754ACC12BEZ01	Stainless Steel Bezel for 12 Inch TFT-Color QuickPanel View
IC754BEZ06GAS	Replacement Gasket for 6 Inch Stainless Steel Bezel
IC754BEZ12GAS	Replacement Gasket for 12 Inch Stainless Steel Bezel
IC754ACC12ADP	Adaptor Kit for 12 Inch QuickPanel View into CEIIx Cut-out
IC754ACC08ADP	Adaptor Kit for 8 Inch QuickPanel View into 9" panel

†Consult factory for availability.

Notes

QuickPanel View-Europe, Middle East and Africa

GE Intelligent Platforms markets and sells QuickPanel View products that are designed to meet the market needs of companies in Europe, the Middle East and Africa.

QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the QuickPanel family of touch screens with Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View – Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

Features include:

- Display sizes from 6" to 15"
- Choice of Monochrome, Color-STN, or Color-TFT display
- Microsoft Windows® CE operating system
- Expandable memory and Fieldbus cards†
- CompactFlash†
- Functions from data collection and trending to system security and alarming
- Built-in web server for access to data, and panels using any standard browser†
- Communication over serial, Ethernet, and communication expansion cards†
- Multi-language support selectable by the operator when the system is online
- Shared tags for increased productivity – applications developed for QuickPanel View can share tags with other Proficy Machine Edition applications, eliminating the need to enter the data more than once
- Migration of applications developed with QuickDesigner
- Extensive library of pre-configured animation objects
- UL Class 1 Div 2 (A, B, C, D), ATEX Class 1, Zone 2, CE Mark, DNV†

†Available on select models. See following pages for availability.

Proficy Machine Edition

Proficy Machine Edition is an advanced software environment for the development and maintenance of machine level automation. Visualization, motion control and execution logic are developed with a single programmer.

Operator Interfaces pages 320-323

Communication Hardware and Accessories page 324

Publication Reference Chart

GFK-2328	6 Inch QuickPanel View (Euro-Basic) Hardware Reference Guide
GFK-2326	6 Inch QuickPanel View (Euro-Intermediate) Hardware Reference Guide
GFK-2305	6 Inch QuickPanel View (Euro-Loaded) Hardware Reference Guide
GFK-2306	12 Inch QuickPanel View (Intermediate) Hardware Reference Guide
GFK-2284	12 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2402	15 Inch QuickPanel View (Loaded) Hardware Reference Guide
GFK-2297	Genius I/O Communication Card Hardware Reference Guide
GFK-2270	DeviceNet Master & Slave Communication Card Hardware Reference Guide
GFK-2291	PROFIBUS Slave Communication Card Hardware Reference Guide
GFK-2276	Expanded User Memory Installation Guide
GFK-2368	PCMCIA Adaptor Hardware Reference Guide

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

	IC754VGB06MTD	IC754VGB06CTD	IC754VGI06MTD	IC754VGI06STD
Product Name	**QuickPanel View Display, 6" Monochrome Basic**	**QuickPanel View Display, 6" TFT Basic**	**QuickPanel View Display, 6" Monochrome Intermediate**	**QuickPanel View Display, 6" STN-Color Intermediate**
Display Size	5.7 Inch (Diagonal)	5.7 Inch (Diagonal)	5.7 Inch (Diagonal)	5.7 Inch (Diagonal)
Display Type	Monochrome	6" TFT	Monochrome	STN
Resolution	320 x 240 pixels	320 x 240 pixels	320 x 240 pixels	320 x 240 pixels
Memory: DRAM	16 MB	16 MB	32 MB	32 MB
Memory: Expandable	N/A	N/A	To 96 MB	To 96 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com # 2	N/A	N/A	N/A	N/A
Ethernet: LAN #1	Download only	Download only	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	N/A	N/A	N/A	N/A
Communication Expansion	N/A	N/A	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	N/A	N/A	One, Type 2	One, Type 2
Agency Approval	UL/cUL-Class 1 Div 2 (A, B, C, D) ATEX-Class 1 Zone 2 CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D) ATEX-Class 1 Zone 2 CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D) ATEX-Class 1 Zone 2 CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D) ATEX-Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut Out (WxHxD)	158mm x 126mm x 52mm (6.14" x 4.86" x 2.03") or 200mm x 155mm x 66mm (7.95" x 6.12" x 2.60")	158mm x 126mm x 52mm (6.14" x 4.86" x 2.03") or 200mm x 155mm x 66mm (7.95" x 6.12" x 2.60")	158mm x 126mm x 70mm (6.14" x 4.86" x 2.76") or 200mm x 155mm x 85mm (7.95" x 6.12" x 3.33")	158mm x 126mm x 70mm (6.14" x 4.86" x 2.76") or 200mm x 155mm x 85mm (7.95" x 6.12" x 3.33")
Bezel Dimensions and Depth (WxHxD)	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	10.8 to 30.0 VDC	10.8 to 30.0 VDC
Power Consumption	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC
Operating Temperature	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	-10 to 60°C (14 to 140°F)	0 to 60°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 85% non-condensing	10% to 85% non-condensing	10% to 85% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces.

	IC754VGI06SKTD	IC754VGI08CTD	IC754VGI12MTD	IC754VGI12CTD
Product Name	**QuickPanel View Display, 6" STN-Color Intermediate with Keypad**	**QuickPanel View Display, 8" TFT-Color Intermediate**	**QuickPanel View Display, 12" Monochrome Intermediate**	**QuickPanel View Display, 12" TFT-Color Intermediate**
Display Size	5.7 Inch (Diagonal)	8.5" (Diagonal)	12.1 Inch (Diagonal)	12.1 Inch (Diagonal)
Display Type	STN	TFT	Monochrome	TFT
Resolution	320 x 240 pixels	800 x 600 pixels	800 x 600 pixels	800 x 600 pixels
Memory: DRAM	32 MB	32 MB	32 MB	32 MB
Memory: Expandable	To 96 MB	To 64 MB or 96 MB	To 96 MB	To 96 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com # 2	N/A	N/A	N/A	N/A
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	N/A	N/A	N/A	N/A
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2	One, Type 2	One, Type 2
Agency Approval	UL/cUL-Class 1 Div 2 (A, B, C, D) ATEX-Class 1 Zone 2 CE Mark	UL-Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D) ATEX-Class 1 Zone 2 CE Mark	UL/cUL-Class 1 Div 2 (A, B, C, D) ATEX-Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut Out (WxHxD)	302mm x 228mm x 60mm (11.88" x 8.96" x 2.37")	228mm x 186mm x 77mm (8.97" x 7.34" x 3.03")	302mm x 228mm x 60mm (11.88" x 8.96" x 2.37")	302mm x 228mm x 60mm (11.88" x 8.96" x 2.37")
Bezel Dimensions and Depth (WxHxD)	337mm x 263mm x 10mm (13.26" x 10.34" x 0.38")	249mm x 208mm x 5mm (9.8" x 8.18" x 0.196")	337mm x 263mm x 10mm (13.26" x 10.34" x 0.38")	337mm x 263mm x 10mm (13.26" x 10.34" x 0.38")
Input Voltage	12 VDC @ ±20% or 24 VDC @ ±20%	10.8 to 30.0 VDC	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power Consumption	Less than 24W @ 24 VDC	24W	Less than 48W @ 24 VDC	Less than 48W @ 24 VDC
Operating Temperature	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces. Full-featured QuickPanel View modules take Operator Interface products to an entirely new level of openness. A built-in web server provides access to data and graphics using any standard browser.

	IC754VGL06MTD	IC754VGL06CTD	IC754VGF08CTD
Product Name	**QuickPanel View Display, 6" Mono Loaded**	**QuickPanel View Display, 6" TFT-Color Loaded**	**QuickPanel View Display, 8" TFT-Color Loaded**
Display Size	5.7 Inch (Diagonal)	5.7 Inch (Diagonal)	8.5" (Diagonal)
Display Type	Monochrome	TFT	TFT
Resolution	320x240	320 x 240 pixels	800 x 600 pixels
Memory: DRAM	32 MB	32 MB	64 MB
Memory: Expandable	N/A	To 96 MB	To 96 MB or 128 MB
Serial: Com #1	RS232/RS485	RS232/RS485	RS232/RS485
Serial: Com # 2	RS232	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	N/A	N/A	N/A
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2	One, Type 2
Agency Approvals	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut Out (WxHxD)	158mm x 126mm x 70mm (6.14" x 4.86" x 2.76") or 200mm x 155mm x 85mm (7.95" x 6.12" x 3.33")	158mm x 126mm x 70mm (6.14" x 4.86" x 2.76") or 200mm x 155mm x 85mm (7.95" x 6.12" x 3.33")	228mm x 186mm x 77mm (8.97" x 7.34" x 3.03")
Bezel Dimensions and Depth (WxHxD)	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")	216mm x 170mm x 22mm (8.50" x 6.68" x 0.85") or 216mm x 170mm x 7mm (8.50" x 6.68" x 0.28")	249mm x 208mm x 5mm (9.8" x 8.18" x 0.196")
Input Voltage	10.8 to 30.0 VDC	10.8 to 30.0 VDC	10.8 to 30.0 VDC
Power Consumption	Less than 24W @ 24 VDC	Less than 24W @ 24 VDC	24W
Operating Temperature	-10 to 60°C (14 to 140°F)	0 to 60°C (32 to 140°F)	0 to 60°C (32 to 140°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)	-20 to 70°C (-4 to 158°F)
Operating Humidity	10% to 85% non-condensing	5% - 95% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

Operator Interfaces

Available in a variety of display sizes, the QuickPanel View bundled visualization solution provides the tools required for today's application needs. By integrating the best-selling QuickPanel family of touch screens with award-winning Proficy Machine Edition software, QuickPanel View delivers flexible, scalable performance on a rugged hardware platform. The intuitive environment of Proficy View - Machine Edition software helps reduce application development time, and connectivity is made easy with a family of serial, Ethernet and Fieldbus interfaces. Full-featured QuickPanel View modules take Operator Interface products to an entirely new level of openness. A built-in web server provides access to data and graphics using any standard browser.

	IC754VGL12CTD	IC754VGF15CTD
Product Name	**QuickPanel View Display, 12" TFT-Color Loaded**	**QuickPanel View Display, 15" TFT-Color Loaded**
Display Size	12.1 Inch (Diagonal)	15.1 Inch (Diagonal)
Display Type	TFT	TFT
Resolution	800 x 600 pixels	1024 x 768 pixels
Memory: DRAM	32 MB	64 MB
Memory: Expandable	To 96 MB	128 MB
Serial: Com #1	RS232/RS485	RS232/RS485
Serial: Com # 2	RS232	RS232
Ethernet: LAN #1	10/100 Mbps	10/100 Mbps
Ethernet: LAN #2	10 Mbps	10/100 Mbps
Communication Expansion	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave	GE Genius, Data Highway Plus†, DeviceNet Slave, & PROFIBUS Slave
Compact Flash	One, Type 2	One, Type 2
Agency Approvals	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark	UL - Class 1 Div 2 (A, B, C, D) ATEX - Class 1 Zone 2 CE Mark
Environmental Rating	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure	NEMA 4/12/4X, IP65 when properly mounted in an IP65 rated enclosure
Panel Cut Out (WxHxD)	302mm x 228mm x 60mm (11.88" x 8.96" x 2.37")	379mm x 305mm x 71mm (14.93" x 12.03" x 2.78")
Bezel Dimensions and Depth (WxHxD)	337mm x 263mm x 10mm (13.26" x 10.34" x 0.38")	399mm x 323mm x 10mm (15.70" x 12.73" x 0.40")
Input Voltage	12 VDC @ ±20% or 24 VDC @ ±20%	12 VDC @ ±20% or 24 VDC @ ±20%
Power Consumption	Less than 48W @ 24 VDC	Less than 60W @ 24 VDC
Operating Temperature	0 to 50°C (32 to 122°F)	0 to 50°C (32 to 122°F)
Storage Temperature	-20 to 70°C (-4 to 158°F)	-20 to 60°C (-4 to 140°F)
Operating Humidity	10% to 90% non-condensing	10% to 90% non-condensing
Indicators - LEDs	bi-color (pwr), tri-color (user)	bi-color (pwr), tri-color (user)

†Consult factory for availability.

QuickPanel View Communication Hardware

PLC Manufacturer	PLC Type	Part Number	Description
Allen Bradley	SLC500, 5/01, 5/02, 5/03	**HMI-CAB-C83**	DH-485 Program Port, 8-pin RJ-45Male, RS-422, No simultaneous connection to program port
		HMI-CAB-C84	DH-485 Program Port, 8-pin RJ-45 Male, RS-422, with simultaneous connection to program port
	SLC5/03, 5/04, ControlLogix	**HMI-CAB-C52**	Channel 0, 9-pin Female, RS-232
	PLC-5	**HMI-CAB-C51**	KF2 Module, 25-pin Female, RS-232
		HMI-CAB-C53	Channel 0, 25-pin Male, RS-232
		HMI-CAB-C55	KE Module, 15-pin Male, RS-232
		HMI-CAB-C107	DF1, 25-pin Male, RS-422
	MicroLogix	**HMI-CAB-C106**	DF1, 8-pin Circular DIN, RS-232
	Data Highway Plus	**IC754ABD001**	Data Highway Plus communication card for QuickPanel View†
Automation Direct	DL205 & DL305	**HMI-CAB-C86**	Programming Port, 6-pin Modular Male, RS-232
	DL305 & DL405	**HMI-CAB-C103**	Programming Port, 4-pin Modular Male, RS-232
	DL305 & DL405 w/ 25-pin comm. port	**HMI-CAB-C53**	Programming Port, 25-pin Male, RS-232
Fieldbus	DeviceNet	**IC754DVNS01**	DeviceNet Slave Communication Card for QuickPanel View
	PROFIBUS	**IC754PBSS01**	PROFIBUS Slave Communication Card for QuickPanel View
GE	Series 90 CMM Module	**HMI-CAB-C53**	25-pin Male, RS-232
		HMI-CAB-C93	25-pin Male, RS-422
	Series 90-30 & 90-70	**HMI-CAB-C82**	Programming Port, 15-pin Male, RS-422
	Series 90-30 CPU351, 352, 363	**HMI-CAB-C120**	Program Port, 6-pin Male RJ-11, RS-232
	VersaMax CPU001, 002, 005	**HMI-CAB-C111**	Program Port, 9-pin Male, RS-232
	VersaMax Nano/Micro	**HMI-CAB-C119**	Program Port, 8-pin Male RJ-45, RS-232
	Genius	**IC754GEN001**	Genius Communication Card for QuickPanel View & Control
Mitsubishi	Series A	**HMI-CAB-C53**	25-pin Male, RS-232
		HMI-CAB-C88	9-pin Male, RS-232
	Series FX	**HMI-CAB-C91**	25-pin Male, RS-422
Modicon	984 A, B, X	**HMI-CAB-C53**	25-pin Male, RS-232
	984 Slot and Compact	**HMI-CAB-C58**	9-pin Male, RS-232
	984 Micro	**HMI-CAB-C102**	Program Port, 8-pin Male RJ-45, RS-232
Omron	C200H	**HMI-CAB-C53**	25-pin Male, RS-232
		HMI-CAB-C108	9-pin Male, RS-422
	C20H, CQM1	**HMI-CAB-C67**	9-pin Male, RS-232
Siemens	500 Series	**HMI-CAB-C53**	Programming Port, 25-pin Male, RS-232
		HMI-CAB-C101	Programming Port, 9-pin Female, RS-232
		HMI-CAB-C92	9-pin Male, RS-422
	TI545-1102	**HMI-CAB-C100**	Programming Port, 9-pin Female, RS-422
	305 & 405	**HMI-CAB-C53**	Programming Port, 25-pin Male, RS-232
	S7-200 PPI	**HMI-CAB-C110**	9-pin Male, RS-422
Square D SY/MAX	SY/MAX Model 100 & greater	**HMI-CAB-C94**	9-pin Male, RS-422
	SY/MAX Model 50 via link adaptor	**HMI-CAB-C53**	25-pin Male, RS-232

Accessories

Part Number	Description
IC754PCMCIA001	PCMCIA Adaptor for QuickPanel View
IC754ACC32MEM	Expansion Memory 32 Mbytes
IC754ACC64MEM	Expansion Memory 64 Mbytes
IC754ACC06GASE	Gasket for 6 Inch QuickPanel View
IC754ACC12GAS	Gasket for 12 Inch QuickPanel View
IC754ACC15GAS	Gasket for 15 Inch QuickPanel View
IC754ACC06MNTE	Mounting Clips & Power Connector for 6 Inch QuickPanel View
IC754ACC12MNT	Mounting Clips & Power Connector for 12 Inch QuickPanel View
IC754ACC15MNT	Mounting Clips & Power Connector for 15 Inch QuickPanel View
IC754ACC06BEZ01	Stainless Steel Bezel for 6 Inch Mono & TFT-Color QuickPanel View
IC754ACC06BEZ02	Stainless Steel Bezel for 6 Inch STN-Color QuickPanel View
IC754ACC12BEZ01	Stainless Steel Bezel for 12 Inch TFT-Color QuickPanel View
IC754BEZ06GAS	Replacement Gasket for 6 Inch Stainless Steel Bezel
IC754BEZ12GAS	Replacement Gasket for 12 Inch Stainless Steel Bezel
IC754ACC12ADP	Adaptor Kit for 12 Inch QuickPanel View into CEIIx Cutout
IC754ACC08ADP	Adaptor Kit for 8 Inch QuickPanel View into 9" panel

†Consult factory for availability.

GE Intelligent Platforms Services Overview

To succeed, businesses today must be able to rely on more than just a product solution. From superior technical support, to proper implementation of your technology and training where and when you need it most, the services you receive are every bit as important as the products you put into your facility. GE Intelligent Platforms offer a complete array of support services to help you attain the highest value possible from your technology investments.

Technical Support and Maintenance

Comprehensive offerings to support the full range of your hardware and software. Our unique support solutions provide the tools, resources and experience you need to be successful.

Project and Engineering Services

Advanced engineering solutions that combine proven project application skills, industry expertise and extensive product knowledge with best-in-class partner resources.

Training Services

A flexible family of services that provides hands-on training in the location, format and style that suits you best.

Field Services

A fast, reliable on-site engineering support system designed to get your business up and running as quickly and efficiently as possible.

Spare Parts / Warranty / Factory Repair

Repair and replacement part offerings designed to protect your hardware investment.

Basic Support

In order to ensure your hardware investment is fully protected, GE provides you with basic support for your PLC, I/O and Motion products, as well as the programming software sold with these products. Basic support includes callback telephone support consultation, online case management and access to the GlobalCare* support site. Customers can search and download hardware product manuals, articles, Frequently Asked Questions (FAQs), data sheets (functional specs), CAD drawings, service packs, firmware and IPIs from the support site, and can participate in an active online forum. Additional services in support of your complete product hardware and software investment are available by enrolling in the GlobalCare Complete Support program.

Optimizing Your Investment

Through GlobalCare Support Services, we continue to provide our customers with a comprehensive support offering that helps you realize the highest possible value from our products. And we stand behind our commitment 24 hours a day to support your enterprise.

Just as a GE solution can optimize your business, a GlobalCare Support contract can optimize your investment in our software. Contact us today to learn what we can do for you.

Note: An Extended Hardware Warranty is available upon request. Contact your GE Sales Representative for more information.

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GlobalCare Complete Support

Optimizing Your Investment

GlobalCare Complete Support is the best and most comprehensive way to optimize your investment in a GE software solution. With GlobalCare Complete, you can be sure that your software is always up to date, and that you have access to the tools, applications and support to be successful.

A Network of Support Professionals

Whether it comes directly from GE or from our global network of Certified Support Professionals around the world, you'll receive the same high levels of service throughout a support scenario from first-level response to advanced troubleshooting. Our support team meets our strict criteria for product knowledge and experience. And all of our support features are focused on providing you with the tools, resources and assistance to be successful.

24 x 7 Emergency Support

Around the clock emergency support is available for critical cases, through a comprehensive infrastructure of phone and web-based support. To maximize effectiveness, our support professionals are organized into specialized product teams to ensure a high level of expertise in your particular case area.

Product Maintenance

GlobalCare Complete Product Maintenance ensures that you continue to have access to the latest product improvements, enhancements, tools and features that can optimize your investment in our software. In addition, you can go to globalcare.ge-ip.com to download the latest Hot Fixes and Service Packs for products and drivers.

Online Knowledge Center

Our Online Knowledge Center is accessible world-wide, with 24-hour access to a broad range of information and data sources – including top support links, articles and white papers, sample codes, user forums, developer downloads, driver fact sheets and more. The Downloads section of the Support Site provides a comprehensive storage facility for proven tools and resources that can cut development time. And a secure online forum allows you to see and benefit from how customers around the globe are using our products in real-world environments.

Online Case Management

We offer a sophisticated online case management system that allows you to monitor, update and even escalate your case 24 hours a day. When you log a case online, our interface guides you through the process and prompts you to provide our support professionals with relevant information about your case and system. From there, the most qualified professional is automatically assigned to your case and has a working knowledge of your situation. Cases logged outside of North America are delivered directly to local representatives for immediate support.

Knowledge Base CD

We publish the Knowledge Base CD three times a year as an additional resource for GlobalCare customers. It contains an entire library of valuable articles, white papers, remote diagnostic tools and other global and regional materials to help solve your issue when you are not connected to the Internet.

Electronic Newsletter – At Your Service

GlobalCare Complete customers receive our electronic newsletter, which is filled with important updates and helpful tips about using our products and services to your greatest advantage.

For all your support needs contact:

Americas: 1 800 433 2682 or 434 978 5100

Asia Pacific: 86 21 3222 4555

Europe, Middle East and Africa:
800 1 433 2682 or 1 780 401 7717

Europe, Middle East and Africa (CNC): 352 727979 1

www.ge-ip.com/support

Training Services

GE performance-based training combines practical lectures with hands-on lab exercises to ensure that you get the value-added skills you need. From product courses to custom classes to application specific training, we can help you get the most from your automation products by providing expert training for your work force. Courses range from comprehensive introductory level offerings to in-depth advanced level offerings. Let GE Training Services be your one-stop shop for technical training!

Technical training helps your employees set up, configure and troubleshoot more efficiently, decreasing downtime and increasing throughput. It also helps your employees stay current with new technology as well as find new ways to apply your technology, helping make your organization more productive. Industry studies have shown that technical training can lower production costs because of the subsequent increases in employee efficiency and reductions in downtime. Employee skill development and enhancement are invaluable company assets, the benefits of which can be realized in a very short time.

Open Enrollment Training

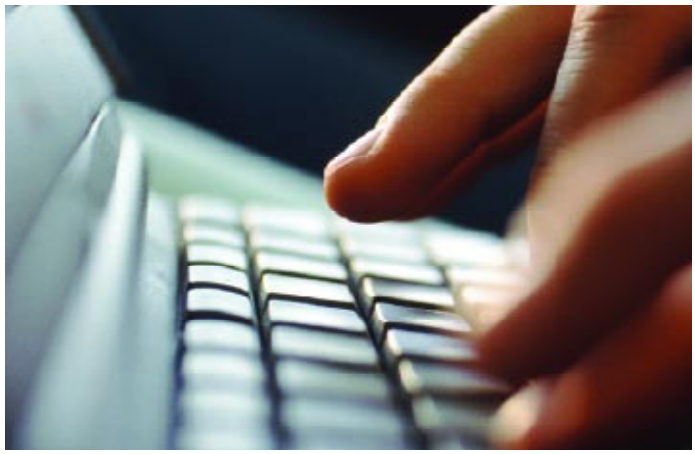
GE has an international network of regional training centers offering world-class technical training for maintenance, operations, and engineering personnel. Open Enrollment Training allows students to interact and network with fellow product users. GE ensures that class sizes enhance student/instructor ratios. All classes are taught by GE factory-certified instructors using GE authorized training materials.

GE continually exceeds customer satisfaction ratings in both course content and in instructor experience, professionalism and knowledge.

Course descriptions and schedule information are available at **www.ge-ip.com/ttc**.

On-Site Training

In today's fast moving, cost conscious world, on-site training is an extremely effective tool to reduce your travel expenses and ensure your key personnel remain accessible in the event of a plant emergency. Depending on the class and your location, on-site training can be quite cost effective when you take into consideration how much you'll save on T&L expenses—even for as few as four students. Add to this the benefits of maintaining rapid access to your key teams (not to mention the ability to customize and focus the training in order to shorten the learning experience) and it's easy to see how on-site training can be a powerful option.



Online Training

The GE Online Institute offers visually engaging, interactive courses to meet customer-training needs in today's challenging business climate. With the same content as instructor-led courses and available online with 24 x 7 access, the Online Institute has all the training with none of the travel expense. Each course is geared toward performance objectives and provides users with both guided and independent practice of concepts as well as interactive assessments with immediate feedback. You can now meet your time and cost budgets as well as your technical training requirements. Visit the Online Institute today at **http://onlineinstitute.ge-ip.com.**

Needs Assessment

We will perform a training needs assessment for your organization to help us design customized courses and curriculums to support the specific skill requirements of your operation.

Simulators

Train your personnel, test components and debug programs without taking systems out of production. Our classroom simulators are available to meet your training, development and maintenance requirements. We also develop custom simulators that match the equipment configuration in your operation to maximize your benefits.

For all your technical training needs contact:

Americas: 1 800 433 2682 or 434 978 5100

Asia Pacific: 86 21 3222 4555

Europe, Middle East and Africa:
800 1 433 2682 or 1 780 401 7717

Europe, Middle East and Africa (CNC): 352 727979 1

Email: training@ge-ip.com

www.ge-ip.com/ttc

GE Service on Demand

Hardware/Software Services When and Where You Need Them

When your equipment is down, so is your business. And whether your facility is impacted for a few hours or a few weeks is largely dependent upon the quality and responsiveness of your support provider. At GE, we understand your need for fast, reliable service for your hardware and software investments. And we've responded to that need with GE Service on Demand – a service offering designed to get you back up and running as quickly and efficiently as possible.

Superior Responsiveness

When your plant is down, time is money – literally. With over 50 support locations spread throughout the world, our expert engineers can typically be at your facility within 12 hours to begin handling your case. And whether we are working independently or in tandem with your in-house maintenance staff, one call to GE puts you on the short road to being back online.

Have access to:

- Our extensive base of GE field engineers
- Primary and backup personnel
- Factory Authorized Service Providers
- 24 x 7 On-Site Emergency Support

Hardware and Software Expertise

Our engineers are experts in the design, specification and implementation of your GE machines, software and control products. That specialized expertise enables us to troubleshoot your situation quickly, dependably, and accurately.

In addition to our expertise in GE's products and protocols, our worldwide network offers a range of pre and post deployment engineering services to provide the right solution to your business, regardless of what products you decide to implement.

GE Service on Demand is available for a wide range of products, including:

- Automation & Production Software
- Controllers & I/O
- Servo Drives & Motors
- Motion Control
- Visualization (OI) & PC Solutions

Additional Services

Whether you require 24 x 7 on-site emergency services or a long-term maintenance contract, GE can provide you with the training, service and support you need to maximize your automation technology investment. Our on-site training enables your personnel to become experts in problem-solving and general automation. In addition, our service agreements are available on an hourly or yearly basis, providing the help you need for the life of your operation.

GE offers a comprehensive array of services to fully support your investment in our products, including:

- Technical Support & Maintenance (Including Proficy GlobalCare)
- On-Site Emergency Services
- Legacy & Competitor System Conversions
- Startup Assistance
- Troubleshooting & Diagnostics
- Inspections & Reviews
- Training Services
- Spare Parts/Warranty/Repair
- Product Upgrade Services

Dispatching

Please contact GE for more information about our services, capabilities, rates and products handled by our Service on Demand team, or to schedule an appointment with one of our engineers.

Products

Service On Demand is available for the following GE products. If you don't see the product you're looking for. Please call GE for a complete listing of the hardware and software we support

Software

Custom Interface Drivers
Custom Scripting
DataViews*
FIX®
I/O Drivers
iClientTS™
LAN / WAN
Microsoft® Open Process*
Open I/O Protocols
OpenProcess*
PLC Programming Software
Proficy Batch Execution
Proficy Change Management
Proficy Enterprise Asset Management
Proficy Historian
Proficy HMI/SCADA – CIMPLICITY*
Proficy HMI/SCADA – iFIX*
Proficy Plant Applications
Proficy Real-Time Information Portal
Proficy Shop Floor SPC
Proficy Tracker
QuickDesigner & GP Pro
SQL / Access DB
Waltz & Process Window
WorkInstruction™

Hardware

Critical Control & Redundancy
Field Control
Genius I/O
HMI / OI Devices
Industrial PC/Workstations
Legacy PLC Series 1, 3, 5 & 6
Open I/O Architectures
PACSystems RX7i, RX3i
PC Based Control
PLC Based Motion Control
Proficy Logic Developer - Machine Edition
Redundancy & GMR
Series 1, 3, 5 & 6*
Series 90-20
Series 90-30 / 90-70
Series 90 I/O
VersaMax Nano & Micro
VersaPoint
Waltz*

Operator Interface

DataPanel
FIX®
Intelligence Industrial PCs
Process Window®
Proficy HMI/SCADA – CIMPLICITY
Proficy Machine Edition
Proficy HMI/SCADA – iFIX
Proficy View - Machine Edition
QuickPanel
QuickPanel Control
QuickPanel View
Smartscreen®

For all your Service on Demand needs contact:

Americas:
1 800 433 2682 or 434 978 5100

Asia Pacific: 86 21 3222 4555

Europe, Middle East and Africa:
800 1 433 2682 or
1 780 401 7717

Europe, Middle East and Africa (CNC):
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www.ge-ip.com

Warranty Policy

GE warrants that the GE Programmable Logic Controller and Operator Interface products are free from defects in material, workmanship and title, and will conform with applicable technical descriptions and specifications which are set out in GE technical product data sheets. This warranty shall apply only to defects or non-conformance. Refer to your standard GE warranty policy for details for your individual product. Your distributor can assist you with any issues experienced during your warranty period.

Programs are available to extend your product warranty coverage to up to 5 years from initial shipment. Check with your local distributor for details on how to purchase.

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Appendix

Agency Approvals and Certifications

	Agency Approvals					Marine Certifications		
	UL (UL508)	C-UL (Class I, DIV II, A, B, C, D)	CE Mark	ATEX	TUV	American Bureau of Shipping	Lloyds	DNV
RX7i	•	•	•	•		•†	•†	•†
RX3i	•	•†	•	•		•†	•†	•†
Series 90-30	•	•†	•	•		•†	•†	
Series 90-70	•	•†	•	•	•†	•†	•†	
VersaMax Modular	•	•	•	•		•†	•†	
VersaMax Micro and Nano	•	•	•					
Genius I/O	•	•	•	•	•†	•†		
VersaPoint I/O	•		•					
VersaMax IP and VersaMax IP Modular	•		•					
Durus Controllers	•		•					

†Selected modules meet these approvals and certificates. Check www.ge-ip.com for more information

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BC647PPSEWF	Additional Engineering Workstation - iFIX	100
BC647PPSOCC	Additional Operator Console - CIMPLICITY	100
BC647PPSOCF	Additional Operator Console - iFIX	100
BC647PPSOPC	Proficy Process Systems EGD OPC Server	100
BC647PSC000	Proficy Process Systems - CIMPLICITY - 5000+ I/O	100
BC647PSC050	Proficy Process Systems - CIMPLICITY - 500 I/O	100
BC647PSC100	Proficy Process Systems - CIMPLICITY - 1000 I/O	100
BC647PSC200	Proficy Process Systems - CIMPLICITY - 2000 I/O	100
BC647PSC300	Proficy Process Systems - CIMPLICITY - 3000 I/O	100
BC647PSC500	Proficy Process Systems - CIMPLICITY - 5000 I/O	100
BC647PSF000	Proficy Process Systems - iFIX - 5000+ I/O	100
BC647PSF050	Proficy Process Systems - iFIX - 500 I/O	100
BC647PSF100	Proficy Process Systems - iFIX - 1000 I/O	100
BC647PSF200	Proficy Process Systems - iFIX - 2000 I/O	100
BC647PSF300	Proficy Process Systems - iFIX - 3000 I/O	100
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GE Intelligent Platforms Information Centers

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