

<b>PACSystems RX3i Controller.....</b>	<b>1.3</b>	<b>RSTi-EP I/O.....</b>	<b>1.60</b>
CPUs.....	1.4	Network Adapters.....	1.61
Baseplates.....	1.8	Digital Input Modules.....	1.62
Power Supplies.....	1.9	Analog Input Modules.....	1.63
Discrete Input Modules.....	1.12	Digital Output Modules.....	1.65
Analog Input Modules.....	1.15	Analog Output Modules.....	1.67
Discrete Output Modules.....	1.20	Safe Feed Input Modules.....	1.68
Analog Output Modules.....	1.25	Specialty Modules.....	1.69
Analog Mixed Modules.....	1.29	Power-Feed and Power Distribution Modules.....	1.71
Millivolt I/O Modules.....	1.30	<b>RSTi Slice I/O.....</b>	<b>1.72</b>
RTD I/O Modules.....	1.32	Network Interfaces.....	1.73
Strain Gage I/O Modules.....	1.34	Network Interfaces with Built-in I/O.....	1.75
Temperature Control Modules.....	1.36	Discrete I/O Modules (Input).....	1.86
Thermocouple I/O Modules.....	1.37	Analog I/O Modules (Input).....	1.89
Resistive I/O Modules.....	1.40	Discrete I/O Modules (Output).....	1.92
Network and Distributed I/O Systems.....	1.41	Analog I/O Modules (Output).....	1.96
Co-Processor and Serial Communications Modules.....	1.44	RTD Modules.....	1.99
Motion Control (Servo Control).....	1.45	Thermocouple Modules.....	1.100
Power Measurement Modules.....	1.46	Serial Communications Modules.....	1.101
Pneumatic Module.....	1.47	High Speed Counting.....	1.103
Expansion Module.....	1.48	Motion Control.....	1.105
CEP Carriers.....	1.49	Power Modules.....	1.107
Serial Bus Transmitter Module.....	1.50	Configuration Tools.....	1.110
Accessories; Terminal Blocks; Cables; Kits.....	1.51	Accessories and Cables.....	1.112
Configuration Guidelines; Typical Application.....	1.53	Typical Application.....	1.113
<b>PACSystems RXi Controller.....</b>	<b>1.58</b>		
Controller.....	1.59		

*Continued next page*

<b>VersaMax Control</b> .....	<b>1.114</b>	Motion Modules .....	1.160
CPUs .....	1.115	Motor Starter Modules .....	1.161
Carriers .....	1.116	Serial Communications Modules .....	1.162
I/O Interposing Bases .....	1.119	Accessories and Cables .....	1.163
Power Supplies .....	1.121	Configuration Guidelines; Typical Applications .....	1.164
Discrete Mixed I/O Modules .....	1.123	VersaSafe Machine Safety I/O .....	1.165
Discrete Input Modules .....	1.127	VersaSafe Starter Kit .....	1.166
Discrete Output Modules .....	1.132	<b>VersaMax IP</b> .....	<b>1.167</b>
Analog Input Modules .....	1.136	Stand Alone Input and Output Modules .....	1.168
Analog Output Modules .....	1.138	VersaMax IP Modular .....	1.169
Analog Mixed Modules .....	1.140	Accessories and Cables .....	1.171
RTD and Thermocouple Modules .....	1.141	Configuration Guidelines; Typical Applications .....	1.172
Speciality Modules .....	1.142		
Expansion Modules .....	1.143		
Remote I/O Units .....	1.144		
Network Interface Modules .....	1.146		
Serial Communications .....	1.147		
Accessories, Cables, Kits .....	1.148		
Configuration Guidelines; Typical Applications .....	1.149		
<b>VersaPoint I/O</b> .....	<b>1.151</b>		
Network Interface Modules .....	1.152		
Power Terminals .....	1.153		
Segment Terminals .....	1.154		
Discrete Input Modules .....	1.155		
Discrete Output Modules .....	1.156		
Analog Input Modules .....	1.158		
Analog Output Modules .....	1.159		

## PACSystems RX3i Controllers

PACSystems RX3i is the high performance, modular and scalable control system that supports the PACSystem engine. This rack-based system is built on PCI standards and provides fast, consistent control between the modules. In addition to more than one hundred discrete and process I/O points, the PACSystems RX3i features:

- **PACSystems High Availability** – This scalable, synchronized, highly available control platform helps ensure uninterrupted control of your applications and processes — with total transparency.
- **Proficy Process Systems** – A scalable, fully integrated system for process automation and control.
- **Integrated PROFINET** provides real time control of distributed I/O.
- **Machine Edition** – Develop, configure and maintain all of your control functions including motion, visualization and networking with complete software package.
- **HART Pass-through** – Fully integrated into the PLC system over a monitored communications network, you can simply and securely access HART instruments directly to remotely manage and mitigate operational issues with no additional equipment required.

PACSystems RX3i also offers an outstanding migration path for moving any Series 90 application to the PACSystems architecture.

We work hard to provide easy upgrade paths for our customers so they benefit from new capability without sacrificing their previous work. The PACSystems RX3i is the perfect example of evolving a proven product, the Series 90-30, by adding new technology to help customers conquer new challenges. Changing out 3 components turns a PLC into an advanced analytical control, providing better secure connectivity, greater operational insights, and improved productivity. This upgradability and advanced functionality has propelled the PACSystems RX3i to the top of the PLC/PAC industry.

**Power Supplies** [pages 1.9-1.11](#)

**CPUs** [pages 1.4-1.6](#)



**Discrete Input Modules** [pages 1.12-1.14](#)

**Discrete Output Modules** [pages 1.20-1.24](#)

**Analog Input Modules** [pages 1.15-1.19](#)

**Analog Output Modules** [pages 1.25-1.28](#)

**Pneumatic Module** [page 1.46](#)

**Expansion Modules** [page 1.47](#)

**Baseplates** [page 1.8](#)

**Specialty Modules** [pages 1.29-1.40, 1.44](#)

**Serial Communication Modules** [page 1.44](#)

**Networks and Distributed I/O Systems** [page 1.41-1.43](#)

**RX3i Accessories** [pages 1.48-1.52](#)

**RX3i Configuration Guidelines** [pages 1.53-1.55](#)

### 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



**CPU's**

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.

	IC695CPE330	IC695CPK330	IC695CPE305
<b>Product Name</b>	<b>RX3i CPU (only) with Ethernet port</b>	<b>RX3i CPU (with Energy Pack) with Ethernet port</b>	<b>RX3i CPU with built-in USB Master port, Ethernet port and serial port</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Controller	Controller	Controller
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Boolean Execution Speed (ms/K)</b>			.072
<b>User Logic Memory</b>	64Meg bytes	64Meg bytes	5Meg bytes
<b>Battery Backed Real Time Clock</b>	Yes	Yes	Yes
<b>Dynamic Data Back-up</b>	Battery Backup only	Energy Pack Support (Battery-less Backup)	Energy Pack Support (Battery-less Backup)
<b>I/O Discrete Points</b>	32K	32K	32K
<b>I/O Analog Points</b>	32K	32K	32K
<b>Type of Memory Storage</b>	1CFast (Very high speed Compactflash)	1CFast (Very high speed Compactflash)	SRAM, Flash
<b>Processor Speed (MHz)</b>	1.6GHz Dual Core	1.6GHz Dual Core	1.1GHz
<b>USB -A 2.0 Master Port</b>	Yes. CPU application upload/download to a Thumb Drive or Smart Phone	Yes. CPU application upload/download to a Thumb Drive or Smart Phone	Yes. CPU application upload/download to a Thumb Drive or Smart Phone
<b>Built-in Ethernet Ports</b>	One RJ-45 port, 10/100/1000Mbaud. One 2-port switch 10/100/1000	One RJ-45 port, 10/100/1000Mbaud. One 2-port switch 10/100/1000	One RJ-45 port, 10/100Mbaud. SRTP support for programmer only
<b>Built-in Serial Ports</b>	None. Serial functionality should be moved to the IC695CMM002 or IC695CMM004 when migrating to the CPE330.	None. Serial functionality should be moved to the IC695CMM002 or IC695CMM004 when migrating to the CPK330.	One RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)
<b>Total Number of Local Racks</b>	8	8	8
<b>Communications Options</b>	IEC104, DNP3 outstation, IEC61850 client, HART SNP, SRTP, OPC-UA EGD	IEC104, DNP3 outstation, IEC61850 client, HART SNP, SRTP, OPC-UA EGD	Serial, Genius, CMX (Reflective Memory), Ethernet
<b>Supported IO Protocols</b>	PROFINET, EGD, Modbus TCP, PROFIBUS, Genius, DeviceNet, ModBus RTU, Reflective Memory (CMX)	PROFINET, EGD, Modbus TCP, PROFIBUS, Genius, DeviceNet, ModBus RTU, Reflective Memory (CMX)	PROFINET, EGD, Modbus TCP, PROFIBUS, Genius, DeviceNet, ModBus RTU, Reflective Memory (CMX)
<b>Software Programming Support</b>	Machine Edition Logic Developer PLC 8.60 SIM 8 or above	Machine Edition Logic Developer PLC 8.60 SIM8 or above	Machine Edition Logic Developer Professional edition 7.0 SIM 3 or above
<b>Program Languages Supported</b>	Ladder Logic, Structured Text, C, Function Block Diagram	Ladder Logic, Structured Text, C, Function Block Diagram	Ladder Logic, Structured Text, C, Function Block Diagram
<b>Internal Power Used</b>	+3.3 VDC: 0.0 A +5 VDC: 0.0A (up to 1.5 A if USB is fully loaded with 0.5 A) +24 VDC: 0.625A without Energy Pack, G280.750 A with IC695ACC402 Energy Pack	+3.3 VDC: 0.0 A +5 VDC: 0.0A (up to 1.5 A if USB is fully loaded with 0.5 A) +24 VDC: 0.625A without Energy Pack, G280.750 A with IC695ACC402 Energy Pack	+3.3 VDC: 1.0 A +5 VDC: 1.0 A (up to 1.5 A if USB is fully loaded with 0.5 A) +24 VDC: 0.5A at startup, 0.1 A during run time (Applies only if Energy Pack is connected to the CPE305.)
<b>Number of Slots Module Occupies on Backplane</b>	2	2	1
<b>HART Pass-through</b>	HART Pass-through – Fully integrated into the PLC system over a monitored communications network, you can simply and securely access HART instruments directly to remotely manage and mitigate operational issues with no additional equipment required.		



**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.

	IC695CPE310	IC695CPU320	IC695CPU315
<b>Product Name</b>	<b>RX3i CPU with built-in USB Master port, Ethernet port and 2 serial ports</b>	<b>RX3i CPU with two built-in serial ports</b>	<b>RX3i CPU with two built-in serial ports</b>
<b>Lifecycle Status</b>	Active	Mature w/ replacement	Mature w/ replacement
<b>Module Type</b>	Controller	Controller	Controller
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Boolean Execution Speed (ms/K)</b>	.072	0.047	0.047
<b>User Logic Memory</b>	10Meg bytes	64Mega bytes	20Meg bytes
<b>Battery Backed Real Time Clock</b>	Yes	Yes	Yes
<b>Dynamic Data Back-up</b>	Energy Pack Support (Battery-less Backup)	Battery Backup only	Battery Backup only
<b>I/O Discrete Points</b>	32K	32K	32K
<b>I/O Analog Points</b>	32K	32K	32K
<b>Type of Memory Storage</b>	SRAM, Flash	SRAM, Flash	SRAM, Flash
<b>Processor Speed (MHz)</b>	1.1GHz	1GHz	1GHz
<b>USB -A 2.0 Master Port</b>	Yes. CPU application upload/download to a Thumb Drive or Smart Phone	No	No
<b>Built-in Ethernet Ports</b>	One RJ-45 port, 10/100Mbaud. SRTP support for programmer only		
<b>Built-in Serial Ports</b>	One RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)	One RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)	One RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)
<b>Total Number of Local Racks</b>	8	8	8
<b>Communications Options</b>	Serial, Genius, CMX (Reflective Memory), Ethernet	Serial, Genius, CMX (Reflective Memory), Ethernet	Serial, Genius, CMX (Reflective Memory), Ethernet
<b>Supported IO Protocols</b>	Ethernet (PROFINET, Ethernet Global Data, Channels, Modbus TCP Server and Client), Genius, PROFIBUS DP, DeviceNet	Ethernet (PROFINET, Ethernet Global Data, Channels, Modbus TCP Server and Client), Genius, PROFIBUS DP, DeviceNet	Ethernet (PROFINET, Ethernet Global Data, Channels, Modbus TCP Server and Client), Genius, PROFIBUS DP, DeviceNet
<b>Software Programming Support</b>	Machine Edition Logic Developer Professional edition 7.0 SIM 3 or above	Machine Edition Logic Developer Professional edition 5.6 or above	Machine Edition Logic Developer Professional edition 5.6 or above
<b>Program Languages Supported</b>	Ladder Logic, Structured Text, C, Function Block Diagram	Ladder Logic, Structured Text, C, Function Block Diagram	Ladder Logic, Structured Text, C, Function Block Diagram
<b>Internal Power Used</b>	+3.3 VDC: 1.0 A +5 VDC: 1.0 A (up to 1.5 A if USB is fully loaded with 0.5 A) +24 VDC: 0.5A at startup, 0.1 A during run time (Applies only if Energy Pack is connected to the CPE305.)	1750 mA @ 3.3 VDC; 1200 mA @ 5 VDC	1750 mA @ 3.3VDC; 1200 mA @ 5VDC (Check Data sheet)
<b>Number of Slots Module Occupies on Backplane</b>	2	2	2
<b>HART Pass-through</b>	HART Pass-through – Fully integrated into the PLC system over a monitored communications network, you can simply and securely access HART instruments directly to remotely manage and mitigate operational issues with no additional equipment required.		



### High Availability Redundant Controllers

High Availability CPU Redundancy family allows critical application or process to continue operating if a failure occurs in any single component. A High Availability system uses two or more CPUs; an active unit that actively controls the process, and one or more backup units that are synchronized with the active unit and can take over the process should it becomes necessary.

An RX3i QuadPAC solution utilizes four CRU320QP controllers — one is a master controller and three are synchronized backup controllers. The QuadPAC solution features “Smart Redundancy,” a patent pending algorithm that calculates the relative system availability in real time and identifies the most available controller as master. The I/O racks may be grouped into either single (one I/O rack), redundant (two I/O racks), or triple redundant (three I/O racks) rack configurations.

	IC695CRU320	IC695CRU320QP
<b>Product Name</b>	<b>RX3i Bumpless Redundant High Availability CPU with two built-in serial ports. (Requires IC695RMX128 Data Sync Module)</b>	<b>QuadPAC CPU for RX3i Bumpless Redundant High Availability CPU with two built-in serial ports. (Requires IC695RMX128 Data Sync Module AND Quad Redundancy Solution Code)</b>
<b>Lifecycle Status</b>	Mature w/ replacement	Mature w/ replacement
<b>Module Type</b>	Redundant Controller	Quad System Redundant Controller
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Boolean Execution Speed (ms/K)</b>	0.047	0.047
<b>User Logic Memory</b>	64Meg bytes	64Meg bytes
<b>Battery Backed Real Time Clock</b>	Yes	Yes
<b>I/O Discrete Points</b>	32K	32K
<b>I/O Analog Points</b>	32K	32K
<b>Type of Memory Storage</b>	SRAM, Flash	SRAM, Flash
<b>Dynamic Data Back-up</b>	Battery Backup only	Battery Backup only
<b>Processor Speed</b>	1GHz	1GHz
<b>Built-in Communication Ports</b>	One RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)	One RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master (Application code)
<b>Total Number of Racks</b>	8	8
<b>Communications Options</b>	Serial, Genius, CMX, Ethernet, PROFINET, PROFIBUS, and DeviceNet	Serial, Genius, CMX, Ethernet, PROFINET, PROFIBUS, and DeviceNet
<b>Supported IO Protocols</b>	Ethernet (Ethernet Global Data, Channels, Modbus TCP Server and Client), PROFIBUS DP, DeviceNet	Ethernet (Ethernet Global Data, Channels, Modbus TCP Server and Client), PROFIBUS DP, DeviceNet
<b>Software Programming Support</b>	Machine Edition Logic Developer Professional edition 5.7 or above	Machine Edition Logic Developer Professional edition 7.0 SIM 8 or above
<b>Program Languages Supported</b>	Ladder Logic, Structured Text, C, Function Block Diagram	Ladder Logic, Structured Text, C, Function Block Diagram
<b>Redundancy Maximum amount of data in for Synchronization</b>	Up to 2 Mbytes beginning and end of scan	Up to 2 Mbytes beginning and end of scan
<b>Redundancy Typical Base Sweep Time (Reference Data Transfer List Impact)</b>	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	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
<b>Redundancy Switchover Time</b>	Maximum 1 logic scan, minimum 3.133 msec.	Maximum 1 logic scan, minimum 3.133 msec.
<b>CPU Scan Synchronization</b>	Automatic Each Scan	Automatic Each Scan
<b>Redundant Synch LAN</b>	Yes	Yes
<b>Redundant I/O LAN</b>	Yes	Yes
<b>Internal Power Used</b>	1750 mA @ 3.3 VDC; 1200 mA @ 5 VDC	1750 mA @ 3.3 VDC; 1200 mA @ 5 VDC
<b>Number of Slots Module Occupies on Backplane</b>	2	2
<b>HART Pass-through</b>	HART Pass-through – Fully integrated into the PLC system over a monitored communications network, you can simply and securely access HART instruments directly to remotely manage and mitigate operational issues with no additional equipment required.	



### 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

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

**Baseplates**



RX3i baseplates are available in 7, 12 and 16 slot configurations to 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.

	IC695CHS007	IC695CHS012	IC695CHS016	IC694CHS398	IC693CHS399	IC694CHS392	IC693CHS393
<b>Product Name</b>	PACSystems RX3i 7 slot high speed controller base supports only 5 serial bus slots supported. Not expandable.	PACSystems RX3i 12 slot high speed controller base supports PCI and serial bus	PACSystems RX3i 16 slot high speed controller base supports PCI and serial bus	PACSystems RX3i serial 5-slot Expansion Baseplate (serial bus only)	PACSystems RX3i serial 5-slot Remote Baseplate (serial bus only)	PACSystems RX3i serial 10-slot Expansion Baseplate (serial bus only)	PACSystems RX3i serial 10-slot Remote Baseplate (serial bus only)
<b>Lifecycle Status</b>	Active	Active	Active	Active	Mature	Active	Mature
<b>Module Type</b>	Universal Controller and I/O Base	Universal Controller and I/O Base	Universal Controller and I/O Base	Standard I/O	Standard I/O	Standard I/O	Standard I/O
<b>Backplane Support</b>	Supports both PCI and High Speed Serial	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.
<b>Module Hot Swap Support</b>	Yes	Yes	Yes	No	No	No	No
<b>Baseplate Option</b>	Controller Base and Ethernet Expansion Base. No local base expansion	Controller Base and Ethernet Expansion Base	Controller Base and Ethernet Expansion Base	Expansion	Expansion	Expansion	Expansion
<b>Distance</b>	N/A	N/A	N/A	Up to 50 feet	Up to 700 feet	Up to 50 feet	Up to 700 feet
<b>Number of Slots</b>	7	12	16	5	5	10	10
<b>Dimension (W x H x D) in. (mm)</b>	10.43 x 5.57 x 5.80 (265 x 142 x 147)	18.01 x 5.57 x 5.80 (458 x 142 x 147)	23.7 x 5.57 x 5.80 (602 x 142 x 147)	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)	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)
<b>Internal Power Used</b>	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	600 mA @ 3.3 VDC; 240 mA @ 5 VDC	170 mA @ 5 VDC	480 mA @ 5 VDC	150 mA @ 5 VDC	460 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	IC695ACC402
<b>Product Name</b>	<b>Power Supply, 120/240 VAC, 125 VDC (Can not be on the same backplane with more than one power supply)</b>	<b>Power Supply, 24 VDC (Can not be on the same backplane with more than one power supply)</b>	<b>Multipurpose Power Supply, 120/240 VAC, 125 VDC. Supports multiple multi-purpose power supplies.</b>	<b>Multipurpose Power Supply, 24 VDC. Supports multiple multi-purpose power supplies.</b>	<b>Multipurpose Power Supply, 24 VDC. Supports multiple multi-purpose power supplies.</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Universal Base Power Supply	Universal Base Power Supply	Universal Base Power Supply	Universal Base Power Supply	Universal Base Power Supply
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	2	1	2	1	1
<b>Power Source</b>	100-240 VAC or 125 VDC	24 VDC	100-240 VAC or 125 VDC	24 VDC	24 VDC
<b>Redundant and Added Capacity Support</b>	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	Yes, Up to 4 Multipurpose power supplies supported on a Universal base
<b>Output Source</b>	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.	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.
<b>Number of Redundant Power Supplies Supported</b>	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	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
<b>Product Name</b>	<b>Power Supply, 120/240 VAC, 125 VDC</b>	<b>Power Supply, 120/240 VAC, 125 VDC</b>	<b>Power Supply, 24 VDC</b>	<b>Power Supply, 12 VDC</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Expansion Power Supply	Expansion Power Supply	Expansion Power Supply	Expansion Power Supply
<b>Backplane Support</b>	Remote Bases Only	Remote Bases Only	Remote Bases Only	Remote Bases Only
<b>Power Source</b>	100-240 VAC or 125 VDC	100-240 VAC or 125 VDC	24 VDC	12 VDC
<b>High Capacity</b>	No	Yes	Yes	Yes
<b>Output Source</b>	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
<b>Cable Length to Redundant Power Supply Adapter</b>	N/A	N/A	N/A	N/A
<b>Redundant Power Supply Adapter Rack Compatibility</b>	N/A	N/A	N/A	N/A
<b>24 VDC Output Current Capacity</b>	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

<b>Product Name</b>	<b>Power Supply, 48 VDC</b>
<b>Lifecycle Status</b>	Active
<b>Module Type</b>	Expansion Power Supply
<b>Backplane Support</b>	Remote Bases Only
<b>Power Source</b>	48 VDC
<b>High Capacity</b>	No
<b>Output Source</b>	30 watts total; 15 watts 5 V; 15 watts 24 V relay; 20 watts 24 V isolated
<b>Cable Length to Redundant Power Supply Adapter</b>	N/A
<b>Redundant Power Supply Adapter Rack Compatibility</b>	N/A
<b>24 VDC Output Current Capacity</b>	0.8 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
<b>Product Name</b>	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
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Input Simulator	Discrete Input	Discrete Input	Discrete Input	Discrete Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1	1
<b>Input Voltage Range</b>	N/A	0-132 VAC	0-132 VAC	0-264 VAC	0-132 VAC
<b>Input Current (mA)</b>	N/A	14.5	14.5	15	12
<b>Number of Points</b>	16	8	16	8	16
<b>Response Time (ms)</b>	20 on/30 off	30 on/45 off	30 on/45 off	30 on/45 off	30 on/45 off
<b>Trigger Voltage</b>	N/A	74-132	74-132	148-264	74-132
<b>Points per Common</b>	16	1	1	1	16
<b>Diagnostic Supported</b>	N/A	N/A	N/A	N/A	N/A
<b>Connector Type</b>	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.
<b>Internal Power Used</b>	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
<b>Product Name</b>	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
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Discrete Input	Discrete Input	Discrete Input	Discrete Input	Discrete Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1	1
<b>Input Voltage Range</b>	0-132 VAC	0-30 VDC	0-150 VDC	0-30 VDC	0-30 VDC
<b>Input Current (mA)</b>	12	7	4.5	7	7
<b>Number of Points</b>	32	16	8	8	16
<b>Response Time (ms)</b>	30 on/45 off	12 on/28 off	7 on/7 off	7 on/7 off	7 on/7 off
<b>Trigger Voltage</b>	74-132	11.5-30	90-150	11.5-30	11.5-30
<b>Points per Common</b>	16	16	4	8	16
<b>Diagnostic Supported</b>	N/A	N/A	N/A	N/A	N/A
<b>Connector Type</b>	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.
<b>Internal Power Used</b>	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	IC695MDL664
<b>Product Name</b>	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	PACSystems RX3i DC Voltage Input Module, 24VDC Positive Logic, Advanced Diagnostics, 16 Point Input
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Discrete Input	Discrete Input	Discrete Input	Discrete Input	Discrete Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	Universal PCI Slot Only
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1	1
<b>Input Voltage Range</b>	0-30 VDC	0-15 VDC	0-30 VDC	0-30 VDC	0-30 VDC
<b>Input Current (mA)</b>	7	3.0 @ 5 V, 8.5 @ 12 V	7	7	12.2
<b>Number of Points</b>	16	32	32	32	16
<b>Response Time (ms)</b>	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.	0.5ms, 1.0ms, 2.0ms, 5ms, 10ms, 50ms and 100ms, selectable per module. On and off.
<b>Trigger Voltage</b>	11.5-30	4.2-15	11.5-30	11.5-30	0.5 × VIN VDC
<b>Points per Common</b>	16	8	8	8	8
<b>Diagnostic Supported</b>	N/A	N/A	N/A	N/A	Open Wire, Short to DC Negative Input Pulse Test Short to DC Plus
<b>Connector Type</b>	Terminal Block (20 screws), included with module.	Fujitsu Connector	Fujitsu Connector	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBB032 or IC694TBS032
<b>Internal Power Used</b>	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	225 mA @ 5 VDC; 95 mA @ 3.3 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.

	IC694ALG232	IC694ALG233	IC695ALG600
<b>Product Name</b>	<b>PACSystems RX3i Analog Input, Voltage, High Density (16 Channel) 16 Bit with advanced diagnostics</b>	<b>PACSystemsRX3i Analog Input, Current, High Density (16 Channel) 16 Bit with advanced diagnostics</b>	<b>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 CJs)</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Analog Input	Analog Input	Universal Analog Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1
<b>Range</b>	-10 V to +10 V, 0 to 10 V	0-20 mA, 4-20 mA, 4-20 mA Enhanced	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
<b>HART Support</b>	N/A	N/A	N/A
<b>Channel-to-Channel Isolation</b>	No	No	Two Groups of Four
<b>Number of Channels</b>	16 Single Ended, 8 Differential	16	8
<b>Update Rate</b>	Single Ended: 5 ms for all channels Differential: 3 ms all channels	6 ms all channels	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.
<b>Resolution</b>	16 bit; ±10 V, 0.3125 mV, 1 LSB; 0-10 V, 0.3125 mV, 1 LSB	16 bit; 0-20 mA, 0.625 µA/bit; 4-20 mA, 0.5 µA/bit; 4-20 mA Enhanced, 0.5 µA/bit	11 to 16 bits, depending on configured range and A/D filter frequency
<b>Accuracy</b>	0.25% at 25°C (77°F)	0.25% at 25°C (77°F)	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.
<b>Input Impedance</b>	500K Ohms (single-ended mode) 1 MegaOhms (differential mode)	250 ohms	Current 249 ohms ±1%
<b>Input Filter Response</b>	23 Hz (single-ended mode) 38 Hz (differential mode)	23 Hz	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 1000Hz
<b>Notch Filter</b>	N/A	N/A	Yes
<b>Diagnostics</b>	Under Range/Over Range, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	Under Range/Over Range, Open Wire, 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
<b>Internal Power Used</b>	112 mA (maximum) @ +5 VDC	120 mA @ +5 VDC	400 mA @ 5 V; 350 mA @ 3.3 V
<b>External Power Requirement</b>	110 mA (maximum) +24 VDC supply connected to TB1 on IC695CHSxxx	65 mA @ 24 VDC	N/A
<b>Connector Type</b>	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	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.

	IC695ALG608	IC695ALG616	IC695ALG628
<b>Product Name</b>	<b>PACSystems RX3i Analog Input. Configurable per channel for Current or Voltage. High Density (8 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).</b>	<b>PACSystems RX3i Analog Input. Configurable per channel for Current or Voltage. High Density (16 Channel) Requires High Density Terminal Block (IC694TBB032 or IC694TBS032).</b>	<b>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).</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Analog Input	Analog Input	Analog Input with HART Communications
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1
<b>Range</b>	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
<b>HART Support</b>	N/A	N/A	Get HART Device Information (Function 1) Simplified HART Pass-Thru Command (Function 2) Enterprise HART Pass-Thru Command (Function 3)
<b>Channel-to-Channel Isolation</b>	One Group of Eight	One Group of Sixteen	One Group of Eight
<b>Number of Channels</b>	8	16	8
<b>Update Rate</b>	All 8 Channels at 5 msec @ 500Hz. Performance is dependent on filtering.	All 16 Channels at 9 msec @ 500Hz. Performance is dependent on filtering.	All 8 Channels at 5 msec @ 500Hz. Performance is dependent on filtering and HART enabled channels could add 6 to 8 seconds.
<b>Resolution</b>	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	Selectable per channel
<b>Accuracy</b>	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 µA	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 µA	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 µA
<b>Input Impedance</b>	Current 249 ohms ±1%	Current 249 ohms ±1%	Current 249 ohms ±1%
<b>Input Filter Response</b>	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz
<b>Notch Filter</b>	Yes	Yes	Yes
<b>Diagnostics</b>	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
<b>Internal Power Used</b>	450 mA @ 5 V; 600 mA @ 3.3 V	450 mA @ 5 V; 600 mA @ 3.3 V	450 mA @ 5 V; 600 mA @ 3.3 V
<b>External Power Requirement</b>	N/A	N/A	N/A
<b>Connector Type</b>	IC694TBBx32, IC694TBSx32 or IC694TBC032 Sold Separately.	IC694TBBx32, IC694TBSx32 or IC694TBC032 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.

	IC695ALG626	IC695ALG106	IC695ALG112
<b>Product Name</b>	<b>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).</b>	<b>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).</b>	<b>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).</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Analog Input with HART Communications	Analog Input with Channel to Channel Isolation	Analog Input with Channel to Channel Isolation
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1
<b>Range</b>	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
<b>HART Support</b>	Get HART Device Information (Function 1) Simplified HART Pass-Thru Command (Function 2) Enterprise HART Pass-Thru Command (Function 3)	N/A	N/A
<b>Channel-to-Channel Isolation</b>	One Group of Sixteen	Yes (250 VAC continuous, 1500 VAC for 1 minute per channel)	Yes (250 VAC continuous, 1500 VAC for 1 minute per channel)
<b>Number of Channels</b>	16	6	12
<b>Update Rate</b>	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.	1 ms for all channels
<b>Resolution</b>	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
<b>Accuracy</b>	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 µA	±0.1% of span at 25°C, ±0.25% of span over operating temperature range	±0.1% of span at 25°C, ±0.25% of span over operating temperature range
<b>Input Impedance</b>	Current 249 ohms ±1%	Current = 250 ohms ±1%, Voltage >= 500k Ohms	Current = 250 ohms ±1%, Voltage >= 500k Ohms
<b>Input Filter Response</b>	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 500Hz	Configurable low-pass: 8Hz, 12Hz, 16Hz, 40Hz, 250Hz, and 1000Hz	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 250Hz, and 1000Hz
<b>Notch Filter</b>	Yes	N/A	N/A
<b>Diagnostics</b>	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	Open wire, under range, over range, positive/negative rate of change, High, High-High, Low, Low-Low
<b>Internal Power Used</b>	450 mA @ 5 V; 600 mA @ 3.3 V	400 mA @ 5 V; 600 mA @ 3.3 V	800 mA @ 5 V; 600 mA @ 3.3 V
<b>External Power Requirement</b>	N/A	19.2 V to 30 VDC, Current required: 500 mA	19.2 V to 30 VDC, Current required: 500 mA
<b>Connector Type</b>	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.

	IC694ALG220	IC694ALG221	IC694ALG222	IC694ALG223
	PACSystems RX3i Analog Input, Voltage, 4 Channel	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)
<b>Product Name</b>				
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Analog Input	Analog Input	Analog Input	Analog Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
	-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
<b>Range</b>				
<b>HART Support</b>	N/A	N/A	N/A	N/A
<b>Channel-to-Channel Isolation</b>	N/A	N/A	N/A	N/A
<b>Number of Channels</b>	4	4	1	16
<b>Update Rate</b>	4 ms all channels	2 ms all channels	13 ms all channels	13 ms all Channels
<b>Resolution</b>	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
<b>Accuracy</b>	±10 mV/40µA at 25°C (77°F)	0.1 % full scale	0.25% at 25°C (77°F)	0.25% at 25°C (77°F)
<b>Input Impedance</b>	>9 Megohms	250 ohms	250 ohms	250 ohms
<b>Input Filter Response</b>	17 Hz	325 Hz	200 Hz	200 Hz
<b>Notch Filter</b>	N/A	N/A	N/A	N/A
<b>Diagnostics</b>	N/A	N/A	N/A	N/A
<b>Internal Power Used</b>	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
<b>External Power Requirement</b>	N/A	N/A	N/A	N/A
<b>Connector Type</b>	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.

**Analog I/O Modules (Input)**

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



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

	IC694MDL310	IC694MDL330	IC694MDL340	IC694MDL390
<b>Product Name</b>	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
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Discrete Output	Discrete Output	Discrete Output	Discrete Output
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Output Voltage Range</b>	85-132 VAC	85-264 VAC	85-132 VAC	85-264 VAC
<b>Number of Points</b>	12	8	16	5
<b>Isolation</b>	N/A	N/A	N/A	Yes
<b>Diagnostics</b>	N/A	N/A	N/A	N/A
<b>Load Current per Point</b>	0.5 A	1 A	0.5 A	2 A
<b>Response Time (ms)</b>	1 on 1/2 cy off	1 on 1/2 cy off	1 on 1/2 cy off	1 on 1/2 cy off
<b>Output Type</b>	Triac	Triac	Triac	Triac
<b>Polarity</b>	N/A	N/A	N/A	N/A
<b>Points per Common</b>	6	4	4	1
<b>Connector Type</b>	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.
<b>Internal Power Used</b>	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
<b>Product Name</b>	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
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Discrete Output	Discrete Output	Discrete Output	Discrete Output
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Output Voltage Range</b>	74-264 VAC	12-24 VDC	11-150 VDC	12-24 VDC
<b>Number of Points</b>	16	8	6	16
<b>Isolation</b>	Yes	N/A	N/A	N/A
	N/A	N/A	N/A	N/A
<b>Diagnostics</b>				
<b>Load Current per Point</b>	Per Point 2A max. @ 30°C & 1A max. @ 60°C (Linear derating)	0.5 A	1 A	0.5 A
<b>Response Time (ms)</b>	1 on /2 cy off	2 on/2 off	7 on/5 off	2 on/2 off
<b>Output Type</b>	Triac	Transistor	Transistor	Transistor
<b>Polarity</b>	N/A	Positive	Positive/Negative	Positive
<b>Points per Common</b>	1	8	1	8
<b>Connector Type</b>	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.
<b>Internal Power Used</b>	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
<b>Product Name</b>	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
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Discrete Output	Discrete Output	Discrete Output	Discrete Output
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Output Voltage Range</b>	12-24 VDC	12-24 VDC	5, 12-24 VDC	12-24 VDC
<b>Number of Points</b>	16	16	32	32
<b>Isolation</b>	N/A	N/A	N/A	N/A
<b>Diagnostics</b>	N/A	N/A	N/A	N/A
<b>Load Current per Point</b>	0.5 A	1 A	0.5 A	0.5 A
<b>Response Time (ms)</b>	2 on/2 off	2 on/2 off	0.5 on/0.5 off	0.5 on/0.5 off
<b>Output Type</b>	Transistor	Transistor	Transistor	Transistor
<b>Polarity</b>	Negative	Positive	Negative	Positive
<b>Points per Common</b>	8	8	8	8
<b>Connector Type</b>	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Fujitsu Connector	Fujitsu Connector
<b>Internal Power Used</b>	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.

	IC694MDL758	IC694MDL754	IC695MDL765	IC694MDL930
<b>Product Name</b>	PACSystems RX3i DC Voltage Output Module, 12/24 VDC Positive Logic with ESCP (Self Healing) per group, 0.5 A, 32 Point Output (Two groups of 16)	PACSystems RX3i DC Voltage Output Module, 12/24 VDC Positive Logic with ESCP (Self Healing), 0.75 A, 32 Point Output	RX3i DC Voltage Output Module, 24/125 volt DC 2 A Smart Digital Output module, 16 Point Output	PACSystems RX3i AC/DC Voltage Output Module, Relay, N.O., 4 A Isolated, 8 Point Output
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Discrete Output	Discrete Output	Discrete Output	Discrete Output
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Output Voltage Range</b>	12-24 VDC	12-24 VDC	18 to 30 VDC 105 to 132 VDC	0 to 125 VDC, 5/24/125 VDC nominal 0 to 265 VAC (47 to 63 Hz), 120/240 VAC nominal
<b>Number of Points</b>	32	32	16	8
<b>Isolation</b>	N/A	N/A	N/A	Yes
<b>Diagnostics</b>	Electronic Short Circuit Detection Per 16 points	Short Circuit Detection	Output Pulse Test Over temperature Failed Switch Detection Overload Detection and Shutdown No-load Detection	N/A
<b>Load Current per Point</b>	0.50 A	0.75 A	2 A	2 A
<b>Response Time (ms)</b>	0.5 on/0.5 off	0.5 on/0.5 off	1 msec maximum	15 on/15 off
<b>Output Type</b>	Transistor	Transistor	Transistor	Relay
<b>Polarity</b>	Positive	Positive	Positive	N/A
<b>Points per Common</b>	16	16	16	1
<b>Connector Type</b>	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	IC694TBBx32 or IC694TBSx32. Sold Separately.	Terminal Block (20 screws), included with module.
<b>Internal Power Used</b>	250 mA @ 5 VDC	300 mA @ 5 VDC	540 mA @ 5.1 VDC; 152 mA @ 3.3 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.

	IC694MDL916	IC694MDL931	IC694MDL940	HE693RLY100	HE693RLY110
<b>Product Name</b>	PACSystems RX3i AC/DC Voltage Output Module, Relay, N.O., 4 A Isolated, 16 Point Output	PACSystems RX3i AC/DC Voltage Output Module, Relay, N.C. and Form C, 8 A Isolated, 8 Point Output	PACSystems RX3i AC/DC Voltage Output Module, Relay, N.O., 2 A, 16 Point Output	DC/AC Voltage Relay Output Module High Current	DC/AC Voltage Relay Output Module High Current (fused)
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Discrete Output	Discrete Output	Discrete Output	Discrete Output	Discrete Output
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1	1
<b>Output Voltage Range</b>	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 0 to 265 VAC (47 to 63 Hz), 120/240 VAC nominal	0 to 125 VDC, 5/24/125 VDC nominal 0 to 265 VAC (47 to 63 Hz), 120/240 VAC nominal	12-120 VAC, 12-30 VDC	12-120 VAC, 12-30 VDC
<b>Number of Points</b>	16	8	16	8	8
<b>Isolation</b>	Yes	Yes	N/A	N/A	Yes
	N/A	N/A	N/A	N/A	N/A
<b>Diagnostics</b>					
<b>Load Current per Point</b>	4 A	8 A	2 A	8 A	8 A
<b>Response Time (ms)</b>	10ms maximum (At nominal voltage excluding contact bounce)	15 on/15 off	15 on/15 off	11 on/11 off	11 on/11 off
<b>Output Type</b>	Relay	Relay	Relay	Relay	Relay
<b>Polarity</b>	N/A	N/A	N/A	N/A	N/A
<b>Points per Common</b>	1	1	4	N/A	1
<b>Connector Type</b>	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.
<b>Internal Power Used</b>	300 mA @ 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	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.

	<b>IC694ALG392</b>	<b>IC695ALG704</b>
<b>Product Name</b>	<b>PACSystems RX3i Analog Output, Current/Voltage, 8 Channel</b>	<b>PACSystems RX3i Analog Output, Current/Voltage, 4 Channel</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Analog Output	Analog Output
<b>Backplane Support</b>	No Backplane Restrictions	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1
<b>Diagnostics</b>	N/A	High and Low Alarm, Ramp Rate Control Clamping, Overrange and Underrange
<b>Protection</b>	Reverse polarity and undervoltage on external power supply	N/A
<b>Range</b>	0 V to +10 V, -10 V to +10 V, 0-20 mA, 4-20 mA	Current: 0 to 20 mA, 4 to 20 mA; Voltage: ±10 V, 0 to 10 V
<b>HART Support</b>	N/A	N/A
<b>Number of Channels</b>	8	4
<b>Channel-to-Channel Isolation</b>	N/A	N/A
<b>Update Rate</b>	8 ms all channels	8 ms all channels
<b>Resolution</b>	16 bit; 0.312 mV/bit	±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
<b>Accuracy</b>	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)	Accurate to within 0.15% of full scale at 25°C. Accurate to within 0.30% of full scale at 60°C
<b>Maximum Output Load</b>	5 mA (2 K ohms)	Current -850ohm max @ Vuser = 20 V; Voltage -2k ohm max load (minimum resistance)
<b>Output Load Capacitance</b>	2000 pF, Inductance 1H	Current: 10uH max.; Voltage: 1uF max.
<b>External Power Requirement</b>	N/A	Voltage Range: 19.2 V to 30 V Current required: 160 mA
<b>Connector Type</b>	Terminal Block (20 screws), included with module.	IC694TBB032 or IC694TBS032. Sold Separately.
<b>Internal Power Used</b>	110 mA @ 5 VDC; 315 mA -User Supplied 24 VDC	375 mA @ 3.3 V (internal) 160 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.

	<b>IC695ALG708</b>	<b>IC695ALG728</b>
<b>Product Name</b>	<b>PACSystems RX3i Analog Output, Current/Voltage, 8 Channel</b>	<b>PACSystems RX3i Analog Output with HART Communications, Current/Voltage, 8 Channel</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Analog Output	Analog Output with HART Communications
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1
<b>Diagnostics</b>	High and Low Alarm, Ramp Rate Control Clamping, Overrange and Underrange	High and Low Alarm, Ramp Rate Control, Clamping, Overrange and Underrange
<b>Protection</b>	N/A	N/A
<b>Range</b>	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
<b>HART Support</b>	N/A	-Get HART Device Information (Function 1) Simplified HART Pass-Thru Command (Function 2) -Enterprise HART Pass-Thru Command (Function 3)
<b>Number of Channels</b>	8	8
<b>Channel-to-Channel Isolation</b>	N/A	N/A
<b>Update Rate</b>	8 ms all channels	8 ms all channels and HART enabled channels could add 6 to 8 seconds.
<b>Resolution</b>	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
<b>Accuracy</b>	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
<b>Maximum Output Load</b>	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)
<b>Output Load Capacitance</b>	Current: 10uH max.; Voltage: 1uF max.	Current: 10uH max.; Voltage: 1uF max.
<b>External Power Requirement</b>	Voltage Range: 19.2 V to 30 V Current required: 315 mA	Voltage Range: 19.2 V to 30 V Current required: 315 mA
<b>Connector Type</b>	IC694TBB032 or IC694TBS032. Sold Separately	IC694TBB032 or IC694TBS032. Sold Separately.
<b>Internal Power Used</b>	375 mA @ 3.3 V (internal) 315 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.

	IC695ALG808	IC694ALG390	IC694ALG391
Product Name	PACSystems RX3i Isolated Analog Output, Current/Voltage, 8 Isolated Channels	PACSystems RX3i Analog Output, Voltage, 2 Channel	PACSystems RX3i Analog Output, Current, 2 Channel
Lifecycle Status	Active	Active	Active
Module Type	Analog Output with Channel to Channel Isolation	Analog Output	Analog Output
Backplane Support	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1	1
Diagnostics	High and Low Alarm, Ramp Rate Control, Clamping, Overrange and Underrange	N/A	N/A
Protection	N/A	N/A	N/A
Range	Current: 0 to 20 mA, 4 to 20 mA; Voltage: ±10 V, 0 to 10 V	-10 V to +10 V, 4-20 mA	1-5 V and 0-5 V, 0-20 mA, 4-20 mA
HART Support	N/A	N/A	N/A
Number of Channels	8	2	2
Channel-to-Channel Isolation	Yes (250 VAC continuous, 1500 VAC for 1 minute per channel)	N/A	N/A
Update Rate	8 ms all channels (1 msec per channel)	5 ms all channels	5 ms all channels
Resolution	±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	12 bit; 2.5 mV/bit	12 bit; 0-20 mA, 5µA/bit
Accuracy	Accurate to within ±0.1% of span at 25C, ± 0.25% of span over operating temperature range	±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)
Maximum Output Load	Current: 1350 ohm maximum resistance, 10uH max inductance Voltage: 2k Ohm minimum resistance, 1uF max capacitance	5 mA (2 K ohms)	5 mA (2 K ohms)
Output Load Capacitance	Current: 10uH max.; Voltage: 1uF max.	2000 pF	2000 pF, Inductance 1H
External Power Requirement	500 mA @ 24 VDC	N/A	N/A
Connector Type	IC694TBBx32 or IC694TBSx32 Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
Internal Power Used	450 mA @ 3.3 V Maximum, all channels on	32 mA @ 5 VDC; 120 mA @ 24 VDC Isolated	30 mA @ 5 VDC; 215 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
Lifecycle Status	Active	Active
Module Type	Analog Output	Analog Output
Backplane Support	No Backplane Restrictions	No Backplane Restrictions
Number of Slots Module Occupies on Backplane	1	1
Diagnostics	N/A	N/A
Protection	N/A	N/A
Range	±10 V	4-20 mA or 0-20 mA
HART Support	N/A	N/A
Number of Channels	4	4
Channel-to-Channel Isolation	1500 VAC (RMS), ±2000 VDC	1500 VAC (RMS), ±2000 VDC
Update Rate	N/A	N/A
Resolution	1.2 5 mV	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
External Power Requirement	N/A	2-32 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



### Analog Mixed I/O Modules (Input and Output)

The analog mixed modules (four in and two out) are available with or without advanced diagnostics. The advanced diagnostics includes alarms, open wire, rate of change, over range and under range. Additional features include 16 bit resolution, analog output clamp limits and output ramp mode option.

	IC694ALG542	IC694ALG442
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	<b>Analog Combination 4 In and 2 Out with Advanced Diagnostics, Output Clamp and Ramp Control</b>	<b>Analog Combination 4 In and 2 Out</b>
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1
<b>Range</b>	0 V to +10 V, -10 V to +10 V, 0-20 mA, 4-20 mA per Channel	0 V to +10 V, -10 V to +10 V, 0-20 mA, 4-20 mA per Channel
<b>Channel-to-Channel Isolation</b>	N/A	N/A
<b>Number of Channels</b>	4 in/2 out	4 in/2 out
<b>Update Rate</b>	2ms all channels	2ms all channels
<b>Resolution</b>	(Input)16 bit; 0 V to 10 V, 0.3125 mV/bit; -10 V to +10 V, 0.3125 mV/bit; 0-20 mA, 0.625 $\mu$ A 4-20 mA 0.5 $\mu$ A/bit (Output) 16 bit; 0 to 20 mA: 0.625 $\mu$ A; 4 to 20 mA: 0.5 $\mu$ A; -10 V to +10 V: 0.3125 mV; 0 to +10 V: 0.3125 mV	(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 5 $\mu$ A/bit (Output) 16 bit; 0.312 mV/bit; 4-20 mA 0.5 $\mu$ A/bit; 0-20 mA 0.625 $\mu$ A/bit
<b>Accuracy</b>	Current Input 0 to 20 mA $\pm$ 0.25% of full scale @ 25°C (77°F); $\pm$ 0.5% of full scale over specified operating temperature range Current Input 4 to 20 mA $\pm$ 0.25% of full scale @ 25°C (77°F); $\pm$ 0.5% of full scale over specified operating temperature range 4 to 20 mA Enhanced Mode $\pm$ 0.25% of full scale @ 25°C (77°F); $\pm$ 0.5% of full scale over specified operating temperature range Current Output $\pm$ 0.1% of full scale @ 25°C (77°F), typical $\pm$ 0.25% of full scale @ 25°C (77°F), maximum $\pm$ 0.5% of full scale over operating temperature range (maximum) Voltage Output $\pm$ 0.25% of full scale @ 25°C (77°F), typical $\pm$ 0.5% of full scale @ 25°C (77°F), maximum $\pm$ 1.0% of full scale over operating temperature range (maximum)	(Input) 0.25% at 25°C (77°F) (Output) 0-20 mA, 4-20 mA $\pm$ 0.1% at 25°C (77°F)
<b>Input Impedance</b>	Current mode - 250 ohms Voltage mode - 800 K ohms	Current mode - 250 ohms Voltage mode - 800 K ohms
<b>Input Filter Response</b>	Current mode - 55 Hz Voltage mode - 55 Hz	Current mode - 38 Hz Voltage mode - 38 Hz
<b>Maximum Output Load</b>	Voltage: 5 mA (2 K ohms) Current Inductance:1 H (maximum)	Voltage: 5 mA (2 K ohms) Current Inductance:1 H (maximum)
<b>Output Load Capacitance</b>	Voltage:1 $\mu$ F (maximum) Current: 2000 pF (maximum)	Voltage:1 $\mu$ F (maximum) Current: 2000 pF (maximum)
<b>Diagnostics</b>	Under Range/Over Range, Open Wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	N/A
<b>Internal Power Used</b>	95 mA @ 5 VDC; 150 mA external 24 VDC Isolated	95 mA @ 5 VDC; 150 mA external 24 VDC Isolated
<b>External Power Requirement</b>	24VDC: Current: 5 $\mu$ A/V (typical), 10 $\mu$ A/V (maximum) Voltage: 25 mV/V (typical), 50 mV/V (maximum)	24VDC: Current: 5 $\mu$ A/V (typical), 10 $\mu$ A/V (maximum) Voltage: 25 mV/V (typical), 50 mV/V (maximum)
<b>Connector Type</b>	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.



### 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	Universal Analog and configurable for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires Cold Junction Compensation; are available for Thermocouple configurations (IC695ACC600 contains 2 CJC's)	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.
Lifecycle Status	Active	Active
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, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TBBx32, IC694TBSx32 or IC694TBC032. 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.

	<b>IC695ALG312 Millivolt</b>	<b>HE693ADC409</b>
<b>Product Name</b>	<b>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.</b>	<b>Analog I/O Module, Millivolt Input</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Strain Gage Input	Millivolt Input
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1
<b>Range</b>	±150mV or ±50mV	±25 mV, ±50 mV and ±100 mV
<b>Diagnostics</b>	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low	N/A
<b>Channel-to-Channel Isolation</b>	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second	N/A
<b>Number of Channels</b>	12	4
<b>Notch Filter</b>	From 2.3 Hz to 28 Hz per channel	N/A
<b>Resolution</b>	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format	3 μV, 6μV, 9μV (respectively)
<b>Accuracy</b>	±0.1% of voltage span at 25°C ±0.25% of span over temperature range.	±0.5%
<b>Input Impedance</b>	Voltage: >=500k ohm	>20 Mohms
<b>I/O Required</b>	N/A	4% AI
<b>A/D Conversion Type</b>	Sigma Delta	Integrating
<b>A/D Conversion Time</b>	15 msec @ 28 Hz to 120 msec @ 2.3 Hz	35 Channels/second
<b>Strain Gages Supported</b>	Yes	Bridged (load cells)
<b>Maximum Normal Voltage Input</b>	N/A	100 mV
<b>Maximum Voltage Input</b>	N/A	±35 V
<b>Connector Type</b>	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	Terminal Block (20 screws), included with module.
<b>Internal Power Used</b>	300 mA @ 5 V; 400 mA @ 3.3 V	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
<b>Product Name</b>	<b>Universal Analog and configurable for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires Cold Junction Compensation; are available for Thermocouple configurations (IC695ACC600 contains 2 CJC's)</b>	<b>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.</b>	<b>RTD Input Module, Low Resolution</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	RTD Input	RTD (and Resistive) Input Channel to Channel Isolation	RTD Input
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1
<b>Number of Channels</b>	8	8	6
<b>RTD Types Supported</b>	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)
<b>Diagnostics</b>	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
<b>Channel-to-Channel Isolation</b>	Two Groups of Four	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second	N/A
<b>Notch Filter</b>	Yes	N/A	N/A
<b>Resolution</b>	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	0.5°C or 0.5°F
<b>Accuracy</b>	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%	±0.5°C, typical
<b>Input Impedance</b>	>1M ohm	N/A	>1000 Megohms
<b>I/O Required</b>	N/A	N/A	6 %AI
<b>Fault Protection</b>	N/A	N/A	Zener Diode Clamp
<b>Update Time</b>	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	50 Channels/second
<b>A/D Conversion Type</b>	Sigma Delta	Sigma Delta	18 bit, integrating
<b>Connector Type</b>	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	Terminal Block (20 screws), included with module.
<b>Internal Power Used</b>	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5 V; 300 mA @ 3.3 V	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.

	<b>HE693RTD601</b>	<b>HE693RTD660</b>
	<b>RTD Input Module, High Resolution</b>	<b>RTD Input Module, Isolated</b>
<b>Product Name</b>		
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	RTD Input	RTD Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1
<b>Number of Channels</b>	6	6
<b>RTD Types Supported</b>	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
<b>Diagnostics</b>	N/A	N/A
<b>Channel-to-Channel Isolation</b>	N/A	5 VAC
<b>Notch Filter</b>	N/A	None
<b>Resolution</b>	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
<b>Accuracy</b>	±0.5°C, typical	±0.3°C
<b>Input Impedance</b>	>1000 Megohms	>1000 Megohms
<b>I/O Required</b>	6 %AI	6% AI, 6% AQ, 16% I
<b>Fault Protection</b>	Zener Diode Clamp	Suppression Diode
<b>Update Time</b>	50 Channels/second	50 Channels/second
<b>A/D Conversion Type</b>	18 bit, integrating	18 bit, integrating
<b>Connector Type</b>	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
<b>Internal Power Used</b>	70 mA @ 5 VDC	200 mA @ 5 VDC



### Strain Gauge 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 Gauge	IC695ALG306 Strain Gauge	IC695ALG312 Strain Gauge
<b>Product Name</b>	Universal Analog and configurable for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires Cold Junction Compensation; are available for Thermocouple configurations (IC695ACC600 contains 2 CJs)	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.	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.
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Strain Gauge Input	Strain Gauge Input	Strain Gauge Input
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1
<b>Range</b>	±150mV or ±50mV	±150mV or ±50mV	±150mV or ±50mV
<b>Diagnostics</b>	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
<b>Channel-to-Channel Isolation</b>	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
<b>Number of Channels</b>	8	6	12
<b>Resolution</b>	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
<b>Accuracy</b>	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.
<b>Input Impedance</b>	>1M ohm	Voltage: >=500k ohm	Voltage: >=500k ohm
<b>I/O Required</b>	N/A	N/A	N/A
<b>A/D Conversion Type</b>	Sigma Delta	Sigma Delta	Sigma Delta
<b>A/D Conversion Time</b>	(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
<b>Strain Gages Supported</b>	Yes	Yes	Yes
<b>Maximum Normal Voltage Input</b>	N/A	N/A	N/A
<b>Maximum Voltage Input</b>	±14.5 VDC continuous	N/A	N/A
<b>Connector Type</b>	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.
<b>Internal Power Used</b>	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5 V; 400 mA @ 3.3 V	300 mA @ 5 V; 400 mA @ 3.3 V



### Strain Gauge 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.

	IC695ALG412	HE693STG883	HE693STG884
<b>Product Name</b>	<b>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. Offers a 10 dB improvement in noise rejection compared to ALG312 thermocouple inputs.</b>	<b>Analog I/O Module, Strain Gauge</b>	<b>Analog I/O Module, Strain Gauge</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Strain Gauge Input	Strain Gauge Input	Strain Gauge Input
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1
<b>Range</b>	±50mV	N/A	N/A
<b>Diagnostics</b>	Open wire, Short Circuit, Positive/Negative rate of Change, High, High-High, Low, Low-Low	N/A	N/A
<b>Channel-to-Channel Isolation</b>	Channel to Channel Isolation. 250VAC Continuous; 1500VAC 1 minute; 2550VDC 1 second	N/A	N/A
<b>Number of Channels</b>	12	8	8
<b>Resolution</b>	32-bit IEEE floating point or 16 bit integer (in 32 bit field) input data format	0.6 µV, 0.8 µV, 0.9 µV (respectively)	0.8 µV, 1.6 µV, 3.2 µV (respectively)
<b>Accuracy</b>	± 0.1% of voltage span at 25 °C. ± 0.25% of span over temperature range.	±0.3%	±0.3%
<b>Input Impedance</b>	Voltage: >=500k ohm	>1000 Mohms	>1000 Mohms
<b>I/O Required</b>	N/A	8% AI, 16% I, 8% AQ, 16% Q	8% AI, 16% I, 8% AQ, 16% Q
<b>A/D Conversion Type</b>	Sigma Delta	Integrating	Integrating
<b>A/D Conversion Time</b>	15 msec @ 28 Hz to 120 msec @ 2.3 Hz	35 Channels/second	35 Channels/second
<b>Strain Gages Supported</b>	Yes	Bridged (load cells)	Bridged (load cells)
<b>Maximum Normal Voltage Input</b>		100 mV	100 mV
<b>Maximum Voltage Input</b>		±35 V	±35 V
<b>Connector Type</b>	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
<b>Internal Power Used</b>	425 mA @ 5 V; 400 mA @ 3.3 V	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
<b>Product Name</b>	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
<b>Lifecycle Status</b>	Mature	Mature
<b>Module Type</b>	Temperature Control	Temperature Control
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1
<b>Number of Channels</b>	8 T/C In/ 8 DC Out	8 T/C In/ 8 DC Out
<b>Range</b>	J=0-600°C K=0-1050°C L=0-600°C	J=0-450°C K=0-600°C L=0-450°C
<b>Output Voltage Range</b>	18 to 30 volts DC	18 to 30 volts DC
<b>Load Current per Point</b>	100 mA maximum sourcing	100 mA maximum sourcing
<b>Diagnostics</b>	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
<b>Connector Type</b>	Two 20 pin connectors (screw type)	Two 20 pin connectors (screw type)
<b>Internal Power Used</b>	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	IC695ALG412
<b>Product Name</b>	<b>Universal Analog and configurable for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires Cold Junction Compensation; are available for Thermocouple configurations (IC695ACC600 contains 2 CJs)</b>	<b>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.</b>	<b>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.</b>	<b>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: ±50mV. The ALG412 offers a 10dB improvement in noise rejection compared to the ALG312 thermocouple input module.</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Thermocouple Input	Thermocouple Input	Thermocouple Input	Thermocouple Input
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Range</b>	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	J, K, T, E, R, S, B, N, or C
<b>Diagnostics</b>	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	Open wire, Short Circuit, Positive/Negative Rate of Change, High, High-High, Low, Low-Low
<b>Number of Channels</b>	8	6	12	12
<b>Channel-to-Channel Isolation</b>	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	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second
<b>Common Mode Rejection</b>	120dB minimum @ 50/60 Hz with 8 Hz filter 110dB minimum @ 50/60 Hz with 12 Hz filter	2.3 Hz filter, 50/60Hz: 100 dB 4 Hz filter, 50Hz: 100 dB 4.7 Hz filter, 60Hz: 100 dB	2.3 Hz filter, 50/60Hz: 100 dB 4 Hz filter, 50Hz: 100 dB 4.7 Hz filter, 60Hz: 100 dB	All filters, 50/60 Hz: 110 dB
<b>Channel to Channel Crosstalk</b>		70 dB minimum	70 dB minimum	70 dB minimum
<b>Notch Filter</b>	Yes	From 2.3 Hz to 28 Hz per channel	From 2.3 Hz to 28 Hz per channel	From 2.3 Hz to 28 Hz per channel
<b>Resolution</b>	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	32-bit IEEE floating point or 16-bit integer (in 32-bit field) input data format
<b>Accuracy</b>	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.	±0.1% of voltage span at 25°C ±0.25% of span over temperature range.
<b>Update Rate</b>	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.	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.	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.	Configurable from 15 msec to 120 msec.
<b>I/O Required</b>	N/A	N/A	N/A	N/A
<b>A/D Conversion Type</b>	Sigma Delta	Sigma Delta	Sigma Delta	Sigma Delta
<b>A/D Conversion Time</b>	(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	15 msec @ 28 Hz to 120 msec @ 2.3 Hz
<b>Connector Type</b>	IC694TB3x32, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TB3x32, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TB3x32, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TB3x32, IC694TBSx32 or IC694TBC032. Sold Separately.
<b>Internal Power Used</b>	400 mA @ 5 V; 350 mA @ 3.3 V	225 mA @ 5V; 400 mA @ 3.3V	425mA @ 5V; 400 mA @ 3.3V	425mA @ 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
	Analog I/O Thermocouple Input Module	Analog I/O Thermocouple Input Module	Analog I/O Thermocouple Input Module
<b>Product Name</b>			
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Thermocouple Input	Thermocouple Input	Thermocouple Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1
<b>Range</b>	J, K, N, T, E, R, S, B, C, X	J, K, N, T, E, R, S,	J, K, N, T, E, R, S,
<b>Diagnostics</b>	Yes	No	Yes
<b>Number of Channels</b>	16	4	4
<b>Channel-to-Channel Isolation</b>	N/A	N/A	N/A
<b>Common Mode Rejection</b>	N/A	N/A	N/A
<b>Channel to Channel Crosstalk</b>	N/A	N/A	N/A
<b>Notch Filter</b>	N/A	N/A	N/A
<b>Resolution</b>	0.5°C or 0.5°F	0.5°C or 0.5°F	0.5°C or 0.5°F
<b>Accuracy</b>	±0.5°C, typical (J, K, N, T)	±0.5°C, typical (J, K, N, T)	±0.5°C, typical (J, K, N, T)
<b>Update Rate</b>	N/A	N/A	N/A
<b>I/O Required</b>	16% AI, 16% I	4% AI	4% AI, 16% I
<b>A/D Conversion Type</b>	Integrating	Integrating	Integrating
	40 Channels/second	40 Channels/second	40 Channels/second
<b>A/D Conversion Time</b>			
<b>Connector Type</b>	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.	Terminal Block (20 screws), included with module.
<b>Internal Power Used</b>	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.

	HE693THM809	HE693THM884	HE693THM888	HE693THM889
	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
<b>Product Name</b>				
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Thermocouple Input	Thermocouple Input	Thermocouple Input	Thermocouple Input
<b>Backplane Support</b>	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Range</b>	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
<b>Diagnostics</b>	No	Yes	Yes	Yes
<b>Number of Channels</b>	8	8	8	8
<b>Channel-to-Channel Isolation</b>	N/A	N/A	N/A	N/A
<b>Common Mode Rejection</b>	N/A	N/A	N/A	N/A
<b>Channel to Channel Crosstalk</b>	N/A	N/A	N/A	N/A
<b>Notch Filter</b>	N/A	None	60 Hz	N/A
<b>Resolution</b>	0.5°C or 0.5°F	N/A	N/A	0.5°C or 0.5°F
<b>Accuracy</b>	±0.5°C, typical (J,K,N,T)	N/A	N/A	±0.5°C, typical (J,K,N,T)
<b>Update Rate</b>	N/A	N/A	N/A	N/A
<b>I/O Required</b>	8% AI	8% AI, 8% AQ, 16% I	8% AI, 8% AQ, 16% I	8% AI, 16% I
<b>A/D Conversion Type</b>	Integrating 40 Channels/second	Integrating N/A	Integrating N/A	Integrating 40 Channels/second
<b>A/D Conversion Time</b>				
<b>Connector Type</b>	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.
<b>Internal Power Used</b>	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



### 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

	IC695ALG600 Resistive	IC695ALG508 Resistive
<b>Product Name</b>	<b>Universal Analog and configurable for Current, Voltage, RTD, Thermocouple and Resistive. High Density (8 Channel) Requires Cold Junction Compensation; are available for Thermocouple configurations (IC695ACC600 contains 2 CJs)</b>	<b>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.</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Resistive Input	Resistive (and RTD) Input Channel to Channel Isolation
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1
<b>Range</b>	0 to 250 / 500 / 1000 / 2000 / 3000 / 4000 Ohms	250 / 500 / 1000 / 2000 / 3000 / 4000 Ohms
<b>Diagnostics</b>	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
<b>Number of Channels</b>	8	8
<b>Channel-to-Channel Isolation</b>	Two Groups of Four	250 VAC Continuous 1500 VAC 1 minute 2550 VDC 1 second
<b>Notch Filter</b>	Yes	N/A
<b>Resolution</b>	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
<b>Accuracy</b>	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%
<b>Input Impedance</b>	>1M ohm	N/A
<b>Input Filter Response</b>	Configurable: 8Hz, 12Hz, 16Hz, 40Hz, 200Hz, 1000Hz	Configurable: 2.3Hz, 4Hz, 4.7Hz, 24Hz, 28Hz
<b>A/D Conversion Type</b>	Sigma Delta	Sigma Delta
<b>A/D Conversion Time</b>	(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
<b>Maximum Voltage Input</b>	±14.5 VDC continuous	N/A
<b>Connector Type</b>	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.	IC694TBBx32, IC694TBSx32 or IC694TBC032. Sold Separately.
<b>Internal Power Used</b>	400 mA @ 5 V; 350 mA @ 3.3 V	150 mA @ 5 V; 300 mA @ 3.3 V





### Networks and Distributed I/O Systems

The RX3i features a variety of communications options for distributed control and/or I/O. Choose from PROFINET Controller, Ethernet EGD, PROFIBUS-DP, Genius and DeviceNet. These high-performance communication modules are easy to install, quick to configure, and can be provided as “in rack” solutions to reduce engineering design cycles and system complexity. In addition, communication capabilities up to the SCADA level and down to the device (IED) level improve connectivity, and time stamping capabilities deliver insight into operations to improve productivity and uptime.

	IC695ETM001	IC695PNC001	IC695PNS001	IC695CMX128
<b>Product Name</b>	<b>PACSystems RX3i Ethernet TCP/IP 10/100Mbps, two RJ-45 ports with built-in switch</b>	<b>PROFINET Controller (PNC) module, connects a PACSystems RX3i controller to a high-speed PROFINET local area network. It enables the RX3i controller to communicate with IO-Devices on the LAN.</b>	<b>PACSystems RX3i PROFINET Scanner (PNS) module, connects a remote node of 90-30 or RX3i modules to a PROFINET IO-Controller</b>	<b>RX3i Control Memory Xchange Module for Peer to Peer network. 128Megbytes of user shared memory.</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Ethernet	PROFINET Controller	PROFINET Scanner	Reflective Memory
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Protocol Support</b>	SRT, Ethernet Global Data (EGD), Channels (Client and Server), Modbus TCP (Client and Server)	PROFINET	PROFINET	None Required
<b>Entity Type</b>	Client/Server	Master	I/O Device (Scanner)	Deterministic Peer to Peer. Programmable Interrupt support.
<b>Communication Ports</b>	Two RJ-45 ports one MAC Address	Two RJ-45 and Two SFP Cages (SFPs not included, available separately). 5 MAC addresses.	Two RJ-45 and Two SFP Cages (SFPs not included, available separately). 5 MAC addresses.	
<b>Bus Speed</b>	10/100Mbaud	10/100/1000Mbaud	10/100/1000Mbaud	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)
<b>I/O Device Update Rate</b>	N/A	Configurable: 1 ms to 512 ms	Configurable: 1 ms to 512 ms	
<b>Maximum I/O Memory</b>	N/A	128 Kbytes of combined input/output memory per PROFINET Controller	2880 bytes total: 1440 bytes of input data, 1440 bytes of output data	
<b>System Maximum Limits</b>	N/A	Up to 4 PNC001 per CPU IO 64 IO-Devices per Network 255 IO-Devices across 4 PROFINET controllers per CPU 256 PROFINET Slots per device 2048 Number of PROFINET Submodules per CPU	1 PNS per rack 32 input status bits and 32 output control bits	
<b>Network Distance</b>	Network Dependent	100 meters for copper Up to 70,000 meters with Fiber	100 meters for copper Up to 70,000 meters with Fiber	Multimode Fiber up to 300 meters between nodes. 10Km when HUB is used
<b>Bus Diagnostics</b>	Yes	Yes	Yes	Network error detection.
<b>Number of Drops Supported</b>	Network Dependent	64 Drops 256 Subslots	Supports number of modules allowed per rack Does not support LRE for Series 90-30 expansion racks	256
<b>Message Size</b>	N/A	N/A	N/A	Up to 128 Mbytes reflective memory with parity. Dynamic packet sizes of 4 to 64 bytes, automatically controlled by the CMX module
<b>Connector Type</b>	Two RJ-45	Two RJ-45 and two optional SFP plug connectors for copper or fiber (single or multimode) connections	Two RJ-45 and two optional SFP plug connectors for copper or fiber (single or multimode) connections	Fiber optic LC type, conforms to IEC 61754-20; Zirconium ceramic ferrule; Insertion loss 0.35 dB (maximum); Return loss -30 dB
<b>Internal Power Used</b>	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	3.3 V: 0.5 A with no SFP devices installed 1.2 A maximum (two SFP devices installed, 0.35 A per SFP device) 5 V: 1.5 A maximum	3.3 V: 0.5 A with no SFP devices installed 1.2 A maximum (two SFP devices installed, 0.35 A per SFP device) 5 V: 1.5 A maximum	660 mA @ 3.3 VDC; 253 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 PROFINET Controller, Ethernet EGD, PROFIBUS-DP, Genius and DeviceNet. These high-performance communication modules are easy to install, quick to configure, and can be provided as “in rack” solutions to reduce engineering design cycles and system complexity. In addition, communication capabilities up to the SCADA level and down to the device (IED) level improve connectivity, and time stamping capabilities deliver insight into operations to improve productivity and uptime.

	IC695PBM300	IC695PBS301	IC694BEM331	IC694DNM200
<b>Product Name</b>	<b>PACSystems RX3i PROFIBUS Master Module, Supports DPV1 Class 1 and Class 2.</b>	<b>PACSystems RX3i PROFIBUS Slave Module, Supports DPV1 Class 1 and Class 2.</b>	<b>PACSystems RX3i Genius Bus Controller</b>	<b>PACSystems RX3i DeviceNet Master Module</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	PROFIBUS Master	PROFIBUS Slave	Genius Bus Controller	DeviceNet Master
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions	CPU Rack Only
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Protocol Support</b>	PROFIBUS DPV1	PROFIBUS DPV1	Genius	DeviceNet
<b>Entity Type</b>	Master	Slave	Master	Master
<b>Communication Ports</b>	PROFIBUS DB-9 connector	PROFIBUS DB-9 connector	Screw Terminal	Screw Terminal
<b>Bus Speed</b>	12Mbaud	12Mbaud	153.6Kbaud	500Kbaud
<b>I/O Device Update Rate</b>				
<b>Maximum I/O Memory</b>				
<b>System Maximum Limits</b>				
<b>Network Distance</b>	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.	500Kbaud 100 meters to 125Kbaud 500 meters. Maximum length at each baud rate also depends on cable type.
<b>Bus Diagnostics</b>	Yes, Slave Status Bit Array Table, Network Diagnostic Counters, DP Master Diagnostic Counters, Firmware Module Revision, Slave Diagnostic Address	Yes, Alarms	Yes	Yes
<b>Number of Drops Supported</b>	Up To 125 (Requires repeater every 25 nodes)	N/A	32	64
<b>Message Size</b>	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	128 bytes	127 bytes
<b>Connector Type</b>	PROFIBUS Connector	PROFIBUS Connector	Screw Terminal	Screw Terminal
<b>Internal Power Used</b>	420 mA @ 5 VDC	420 mA @ 5 VDC	300 mA @ 5 VDC	300 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 PROFINET Controller, Ethernet EGD, PROFIBUS-DP, Genius and DeviceNet. These high-performance communication modules are easy to install, quick to configure, and can be provided as “in rack” solutions to reduce engineering design cycles and system complexity. In addition, communication capabilities up to the SCADA level and down to the device (IED) level improve connectivity, and time stamping capabilities deliver insight into operations to improve productivity and uptime.

	IC695EDM001	IC695EDS001	IC695EIC001	IC695EIS001	IC695E61850
<b>Product Name</b>	PACSystems RX3i DNP3 Ethernet Master	PACSystems RX3i DNP3 Ethernet Outstation	PACSystems RX3i IEC60870-5-104 Ethernet Client	PACSystems RX3i IEC60870-5-104 Ethernet Server	PACSystems RX3i IEC61850 Client
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Ethernet	Ethernet	Ethernet	Ethernet	Ethernet
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.	Universal Backplane Only. Uses PCI Bus.
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1	1
<b>Protocol Support</b>	IC695ETM plus DNP3 Master	IC695ETM plus DNP3 Outstation	IC695ETM plus IEC60870-5-104 Client	IC695ETM plus IEC60870-5-104 Server	IEC61850 Client: MMS, GOOSE (under development)
<b>Entity Type</b>	Master	Slave	Master	Slave	Master
<b>Communication Ports</b>	Two RJ-45 ports one MAC Address	Two RJ-45 ports one MAC Address	Two RJ-45 ports one MAC Address	Two RJ-45 ports one MAC Address	Two RJ-45 and Two SFP Cages (SFPs not included, available separately). 5 MAC addresses.
<b>Bus Speed</b>	10/100Mbaud	10/100Mbaud	10/100Mbaud	10/100Mbaud	10/100/1000Mbaud
<b>I/O Device Update Rate</b>	Configurable: 100 ms to 64 sec	Configurable: 10 ms to 3200 ms	Configurable: 100 ms to 64 sec	Configurable: 10 ms to 3200 ms	less than 1 second
<b>Maximum I/O Memory</b>	10,000 points	12,072 points, 20000 events	10,000 points	12,072 points, 20000 events	5000 variables
<b>System Maximum Limits</b>	N/A Network Dependent	N/A Network Dependent	N/A Network Dependent	N/A Network Dependent	Up to 4 per CPU 100 meters for copper Up to 70,000 meters with Fiber
<b>Network Distance</b>	Yes	Yes	Yes	Yes	Yes
<b>Bus Diagnostics</b>					
<b>Number of Drops Supported</b>	Up to 64 DNP3 Outstations	Up to 4 DNP3 Masters	Up to 64 Servers	Up to 4 clients	32 devices
	N/A	N/A	N/A	N/A	N/A
<b>Message Size</b>					
<b>Connector Type</b>	Two RJ-45	Two RJ-45	Two RJ-45	Two RJ-45	Two RJ-45 and two optional SFP plug connectors for copper or fiber (single or multimode) connections
<b>Internal Power Used</b>	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	3.3 V: 0.5 A with no SFP devices installed 1.2 A maximum (two SFP devices installed, 0.35 A per SFP device) 5 V: 1.5 A maximum



### 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	IC695PRS015	HE693ASC900
<b>Product Name</b>	<b>Two Port Serial Module</b>	<b>Four Port Serial Module</b>	<b>Pressure Transducer Module supporting Honeywell LG1237 Smart Sensors</b>	<b>Horner ASCII Basic Module</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Serial Communications 2 Isolated Serial Ports	Serial Communications 4 Isolated Serial Ports	Serial Communications	Serial Communications 4 Isolated Serial Ports ASCII Basic Co-Processor
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus	Universal Backplane Only. Uses PCI Bus	Universal Backplane Only. Uses PCI Bus.	No Backplane Restrictions
<b>Number of Slots Module Occupies on Backplane</b>	1	1	1	1
<b>Protocols Supported</b>	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	Pressure Transducer Honeywell LG1237 Smart Pressure Transducer sensors (Up to 15 sensors)	N/A
<b>Programming Languages</b>	None required. Communications set up in Machine Edition	None required. Communication set up in Machine Edition		BASIC
<b>Program Storage</b>	FLASH	FLASH	FLASH	EEPROM
<b>Communication Ports</b>	(2) Isolated RS-232 or RS-485/422	(4) Isolated RS-232 or RS-485/422	(1) RS-485	RS-232, RS-232/485
<b>Network Data Rate</b>	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	375K baud	N/A
<b>Internal Power Used</b>	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	0.7 Amps maximum @ 3.3 VDC 0.115 Amps maximum @ 5.0 VDC	375 mA @ 5 VDC



### 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
Lifecycle Status	Active	Active
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 Digital Mode 8 - In Analog Mode
Analog Outputs	2	4 - In Digital Mode 0 - In Analog Mode
Internal Power Used	1360 mA @ 5 VDC	1300 mA @ 5 VDC



### Power Measurement Modules

The Power Transducer Module (PTM) and Power Synchronization and Measurement (PSM) module measure and calculate critical data for control of electrical power systems and synchronization of power grids. Both the PTM and PSM connect to user supplied current and potential transformers, which translate power grid signals to proportionate, low-level signals for measurement and analysis. The PTM module is not intended to provide a protective relay function or be used for energy billing purposes. The PSM module provides ANSI protective relay calculations and revenue grade monitoring for a complete genset, paralleling switchgear or infrastructure management solution. Both the PTM and PSM consist of a processing module that plugs into the PLC backplane, an interface module for field wiring connections, and cables to interconnect the two modules. The PTM and PSM can be used with Wye or Delta type three-phase power or with single-phase power systems.

**IC693PTM101**

**IC694PSM001**

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.	Power Synchronization and Measurement Module and Interface Module (a panel mounted terminal block). The interface module translates power grid signals from external, user supplied potential and current transformers (PT's and CT's) to low voltage signals suitable for the processing module. 2.0 meter interface cables connect the processing module to the Interface module.														
Lifecycle Status	Mature	Active														
Module Type	Power Transducer Modules	Power Synch and Measurement Module														
Input Voltage Range	10-120 VAC (nominal)	20-600 VAC (nominal)														
Power Measurement Configurations	<table border="0"> <tr> <td>Grids</td> <td>Circuits</td> </tr> <tr> <td>1</td> <td>0</td> </tr> <tr> <td>0</td> <td>up to 4</td> </tr> </table>	Grids	Circuits	1	0	0	up to 4	<table border="0"> <tr> <td>Grids</td> <td>Circuits</td> </tr> <tr> <td>2</td> <td>0</td> </tr> <tr> <td>1</td> <td>up to 3</td> </tr> <tr> <td>0</td> <td>up to 6</td> </tr> </table>	Grids	Circuits	2	0	1	up to 3	0	up to 6
Grids	Circuits															
1	0															
0	up to 4															
Grids	Circuits															
2	0															
1	up to 3															
0	up to 6															
Current Input Range	0 to 7.5 Amps RMS (5 A RMS nominal)	0 to 7.5 Amps RMS (5 A RMS nominal)														
Frequency Range	35Hz to 70Hz	40Hz to 70Hz														
Output Rating	N/A	150 VAC/VDC, 1 A														
Number of Outputs	0	1 (provided as redundant, isolated, solid-state contacts)														
Data	<ul style="list-style-type: none"> <li>Data availability</li> <li>Data calculation rate: 20ms @ 50Hz, 16.67ms @ 60Hz</li> <li>Data latency: 15ms @ 50Hz, 16.67ms @ 60Hz</li> <li>Measured Data</li> <li>RMS voltage of phase A, B, and C (in Volts x 10)</li> <li>RMS currents of phase A, B, C, and Neutral (in Amperes x 1000) for each grid</li> <li>DC component of measured RMS voltages (in Volts x 10)</li> <li>Frequency of phase A grid 1 (in Hz x 100)</li> <li>Phase angle between phase A grid 1 and phase A grid 2 (in degrees x 10)</li> <li>Power and Energy Data</li> <li>Active and reactive power reported per phase and total in Watts, Volt-Amperes-Reactive (VAR)</li> <li>Active and reactive total energy consumption in Watt-Seconds and Volt-Amperes-Reactive-Seconds (updated once per second), re-settable by the user</li> <li>Total power factor</li> <li>Average real and reactive power consumption (sliding 15 minute window updated once per second)</li> </ul>	<ul style="list-style-type: none"> <li>Data availability</li> <li>Data measurement rate: 20ms @ 50Hz, 16.67ms @ 60Hz.</li> <li>Data latency: 8ms</li> <li>Measured Data</li> <li>RMS voltage of phase A, B, and C (in Volts x 10)</li> <li>RMS currents of phase A, B, C, and Neutral (in Amperes x 1000) for each grid</li> <li>DC component of measured RMS voltages (in Volts x 10)</li> <li>Frequency of phase A grid 1 and phase A grid 2 (in Hz x 100)</li> <li>Phase angle between phase A grid 1 and phase A grid 2 (in degrees x 10)</li> <li>Calculated Data</li> <li>Real and reactive power reported per phase and total in Watts, Volt-Amperes-Reactive (VAR)</li> <li>Real and reactive total energy consumption, integrated over the past 1-second, in Kilo Watt-Hours (kWh) and Kilo Volt-Amperes-Reactive-Hours (kVARh)</li> <li>Total power factor</li> <li>Average real and reactive power consumption (sliding 15 minute window updated once per second)</li> </ul>														
Status and Diagnostics	<ul style="list-style-type: none"> <li>Module Heartbeat (indicates module health)</li> <li>Utility Phase A voltage present</li> <li>Phase polarity valid</li> <li>Voltage measurements valid</li> <li>Current measurements valid</li> </ul>	<ul style="list-style-type: none"> <li>Module Heartbeat (indicates module health)</li> <li>Field connection OK</li> <li>Any grid alarm (single bit indication of power grid health)</li> <li>Grid Voltage fault</li> <li>Grid Current fault</li> <li>Mixed Polarity fault</li> <li>ANSI Protection Relay Calculations</li> <li>Grid Synchronization (ANSI 25)                             <ul style="list-style-type: none"> <li>Phase Shift OK</li> <li>Voltage Difference OK</li> <li>Frequency Difference OK</li> <li>Close Relay OK</li> </ul> </li> <li>Under Voltage alarm (ANSI 27)</li> <li>Reverse Power alarm (ANSI 32)</li> <li>Negative Sequence alarm (ANSI 46)</li> <li>Over Current alarm (ANSI 50)</li> <li>Over Voltage alarm (ANSI 59)</li> <li>VA Imbalance alarm (ANSI 60)</li> <li>Under Frequency alarm (ANSI 81U)</li> <li>Over Frequency alarm (ANSI 81O)</li> </ul>														
Internal Power Used	400 mA @ 5 VDC	190 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

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

	IC695NKT001	IC693NIU004	IC695LRE001
<b>Product Name</b>	<b>PACSystems RX3i Ethernet Remote I/O Expansion Kit. Kit includes a NIU001 with two built-in serial ports and ETM001</b>	<b>PACSystems RX3i Ethernet Remote I/O Expansion (Slave)</b>	<b>PACSystems RX3i Expansion Module</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Ethernet Communications (Supports redundant Ethernet modules)	Ethernet Communications	High Speed Serial Expansion Module
<b>Backplane Support</b>	Universal Backplane Only. Uses PCI Bus.	Compatible with Series 90-30 bases only	Universal Backplane Only
<b>Number of Slots Module Occupies on Backplane</b>	3 (2 for NIU and 1 for Ethernet module)	N/A	No I/O slot used
<b>Built-in Communication Ports</b>	RJ-45 with built-in switch. 1 RS-485 port and one RS-232 port. Supports SNP, Serial I/O, Modbus Slave and Modbus Master	N/A	N/A
<b>I/O Discrete Points</b>	2048 Inputs/2048 Outputs maximum	2048 Inputs/2048 Outputs maximum	N/A
<b>I/O Analog Points</b>	1264 Inputs and 512 Outputs maximum	1264 Inputs and 512 Outputs maximum	N/A
<b>User Logic Memory</b>	5Kbytes of local logic	No local logic	N/A
<b>Network Data Rate</b>	10/100Mbit ports (RJ-45)	10/100Mbit ports (RJ-45)	1 Mbaud
<b>Entity Type</b>	Slave	Slave	Master
<b>Network Distance</b>	Network Dependent	Network Dependent	Up to 700 feet (213 meters)
<b>Bus Diagnostics</b>	Supported	Supported	Yes
<b>Number of Drops Supported</b>	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)	Supports 7 local expansion racks. Discrete I/O: Maximum 320 In, 320 Out, Analog I/O: Maximum 160 In, 80 Out per base
<b>Internal Power Used</b>	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	132 mA @ 5 VDC





### RX3i CEP Carriers

The PACSystems\* RX3i Carrier IC695CEP001 interfaces a remote node, consisting of one RX3i I/O module, to a PROFINET I/O Local Area Network (LAN).

The optional RX3i Expansion Carrier IC694CEE001 attaches to the RX3i CEP001 Carrier and provides the ability to add one additional RX3i IC694 I/O module to the remote node.

The RX3i CEP001 Carrier functions as a PROFINET IO-Device.

	IC695CEP001	IC694CEE001
Product Name	<b>RX3i CEP001 Carrier with RJ-45 Copper Ethernet Interface</b>	<b>RX3i CEE001 Expansion Carrier</b>
Lifecycle Status	Active	Active
PROFINET support	PROFINET Version 2.3 Class A IO-Device	PROFINET Version 2.3 Class A IO-Device
RX3i Controller version required	IC695CPU315/CPU320/CPE305/CPE310/CPE330/CRU320, firmware v8.50 or later	IC695CPU315/CPU320/CPE305/CPE310/CPE330/CRU320, firmware v8.50 or later
RXi Controller version required	IC69PNC001 PROFINET IO-controller with firmware version 2.20 or later	IC69PNC001 PROFINET IO-controller with firmware version 2.20 or later
Proficy Machine Edition version required	RXi Controller, ICRXICTL000, with firmware version 7.80 or later is compatible with CEP001 up to version 2.01, but is not compatible with CEP001 version 2.30.	
Power requirements <sup>1</sup>	Version 8.6 with SIM 3 or later	Version 8.6 with SIM 3 or later
Module dimensions mm(in)	IC695CEP001: 5.25W (0.22 A) at 24 Vdc with or without Expansion Carrier (IC694CEE001)	IC695CEP001: 5.25W (0.22 A) at 24 Vdc with or without Expansion Carrier (IC694CEE001)
Operating temperature	DC power supply input range: 19.2 to 30 Vdc	DC power supply input range: 19.2 to 30 Vdc
Number of Ethernet port connectors	177.2 x 51 x 35 mm (6.98" x 2.01" x 1.38").	177.2 x 51 x 35 mm (6.98" x 2.01" x 1.38").
USB connector (for firmware upgrades)	0°C to 60°C (32°F to 140°F) maximum surrounding air temperature	0°C to 60°C (32°F to 140°F) maximum surrounding air temperature
PNS status and control bits	Two RJ-45 10/100Base-TX receptacles	None
I/O data update on the PROFINET LAN	One Micro-B connector. USB 2.0 compliant running at full-speed (12 MHz) in device mode	None
Number of IP addresses	32 input status bits and 32 output control bits	32 input status bits and 32 output control bits
Number of MAC addresses	Configurable: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms and 512ms	Configurable: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms and 512ms
I/O station maximum limits	One; supports Classless Inter-Domain Routing (CIDR)	One; supports Classless Inter-Domain Routing (CIDR)
Number of I/O modules per station	Three; one per external port and one internal. External MAC addresses are only used for specialized Ethernet protocols such as MRP or LLDP.	Three; one per external port and one internal. External MAC addresses are only used for specialized Ethernet protocols such as MRP or LLDP.
I/O data per station	Configured using Proficy Machine Edition when used with a PACSystems RX3i PROFINET Controller module as part of an RX3i High-speed I/O LAN system.	Configured using Proficy Machine Edition when used with a PACSystems RX3i PROFINET Controller module as part of an RX3i High-speed I/O LAN system.
Configuration	V2.3 GSDML file available for import into 3rd-Party tools.	V2.3 GSDML file available for import into 3rd-Party tools.

<sup>1</sup>Value does not include the power consumption of the installed I/O modules. When calculating the total power requirements, add the power consumption of the I/O modules according to the I/O module datasheet.



### RX3i Serial Bus Transmitter Module

The RX3i Serial Bus Transmitter Module, IC695LRE001, provides communications between a PACSystems RX3i Universal Backplane (IC695-model number), and serial expansion and remote backplanes (IC694- or IC693-model numbers). It translates the signal levels present in the Universal Backplane to the signal levels required by a Serial Expansion Backplane.

#### IC695LRE001

<b>Product Name</b>	<b>Serial Bus Transmitter Module</b>
<b>Lifecycle Status</b>	Active
<b>Current Required from Backplane</b>	5.0V: 132mA
<b>Maximum Total Expansion Cable Length</b>	15 meters (50 feet) – Expansion Backplanes 213 meters (700 feet) – Remote Backplanes
<b>Effective Data Rate</b>	500k Bytes per second if the expansion bus includes Remote backplanes.
<b>Electrical Isolation</b>	Non-isolated differential communications
<b>Serial Port</b>	Station Manager Port: RS-232 DCE, 1200 - 115200 bps.
<b>Cable Specifications:</b>	
<b>Cable Belden 8107 only (no substitutes):</b>	Computer cable, overall braid over foil shield, twisted-pair 30 volt/80°C (176°F), 24 AWG (.22mm <sup>2</sup> ) tinned copper, 7 x 32 stranding Velocity of propagation = 70% , Nominal impedance = 100 Ohms
<b>25 Pin Male Connector</b>	Crimp Plug = Amp 207464-7; Pin = Amp 66506-9 Solder Plug = Amp 5-747912-2
<b>25 Pin Female Connector</b>	Crimp Receptacle = Amp 207463-1; Pin = Amp 66504-9 Solder Receptacle = Amp 5-747913-2
<b>Connector Shell</b>	Kit – Amp 5745833-5: Metal-plated plastic (plastic with nickel over copper), Crimp ring – Amp 745508-1, split ring ferrule

## Accessories

Part Number	Description	Lifecycle Status
IC694TBB032	High Density 32 Point Terminal Block Box Style	Active
IC694TBB132	High Density 32 Point Terminal Block Box Style with Extended Shroud for Large Wiring Bundles	Active
IC694TBS032	High Density 32 Point Terminal Block Spring Style	Active
IC694TBS132	High Density 32 Point Terminal Block Spring Style with Extended Shroud for Large Wiring Bundles	Active
IC694TBC032	High Density 32 Point Terminal Block with a 40 pin Fujitsu connector. Compatible with DC Inputs, Analog Modules only. Not compatible with DC or AC output modules.	Active
IC694ACC310	Filler Module, Blank Slot	Active
IC694ACC311	Terminal blocks, 20 terminals (qty 6) for IC694xxx low density modules	Active
IC695ACC600	RX3i Cold Junction Compensation Kit (Contains 2 CJC) for Universal Analog and Thermocouple Input Modules	Active
IC698ACC701	Lithium Batter pack that installs in CPU for CPU310 and CMU310 only (28 days of continuous battery backup)	Active
IC693ACC302	External High capacity battery pack. (1.3 years of continuous battery backup for CPU310/CMU310 and 1 month for CPU320/CRU320.)	Active
IC690RBK001	Rechargeable battery kit. Includes battery (IC690RBT001) and battery charger (IC690CRG001). The rechargeable battery is compatible with PAC controllers CPU310,CPU315, CPU320 and CRU320 only. Also compatible with Series 90-30 and Series 90-70 CPUs.	Active
IC690CRG001	Battery charger. Compatible with rechargeable battery (IC690RBT001) only. The rechargeable battery is compatible with PAC controllers CPU310,CPU315, CPU320 and CRU320 only. Also compatible with Series 90-30 and Series 90-70 CPUs.	Active
IC690RBT001	Rechargeable battery is compatible with IC690CRG001 battery charger only. The rechargeable battery is compatible with PAC controllers CPU310, CPU315, CPU320 and CRU320 only. Also compatible with Series 90-30 and Series 90-70 CPUs., Series 90-30 and Series 90-70.	Active
IC690ACC001	Real Time Clock Battery for CPE305 and CPE310	Active
IC695ACC400	CPE305 and CPE310 CPU Battery-less Energy Pack for backing up dynamic data	Active
IC695CBL001	Energy Pack Cable	Active
IC690ACC901	Mini-Converter Kit with cable (RS-485/RS-232)	Active
IC690ACC903	RS-485 Port Isolator	Active
IC693CBL316	RS-232 cable for RX3i CPE305 programming port and also the Station Manager Cable for the Ethernet ETM001	Active
IC690CDR002	User Manuals, InfoLink CD-ROM Documentation, single-user license	Active
IC693ACC307	I/O Bus Terminator Plug	Active
IC693ACC311	Series 90-30 style IC693 I/O modules Terminal Blocks, 20 terminals (qty 6)	Active

## External Power Supplies

Part Number	Description	Lifecycle Status
IC690PWR024	24 VDC, 5 Amp Output Power and 120/230 VAC Input Power Power Supply	Active
IC690PWR124	24 VDC, 10 Amp Output Power and 120/230 VAC Input Power Power Supply	Active

## 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

Part Number	Description	Lifecycle Status
IC693ACC334	I/O module face plate adapter for 20 screw type I/O modules. Faceplate provides a 24 pin male Fujitsu connector.	Active

## TBQC Interposing Terminal Block

Part Number	Description	Lifecycle Status
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.	Active
IC693ACC330	Interposing terminal block base for IC694MDL740 and IC694MDL742	Discontinued
IC693ACC331	Interposing terminal block base for IC694MDL741	Discontinued
IC693ACC332	Interposing terminal block base for IC694MDL940	Active
IC693ACC333	Interposing terminal block base for IC694MDL340	Active
IC693ACC337	Interposing terminal block base for IC693MDL654/655/752/753 and IC694MDL654/655/752/753	Active

## TBQC Cables

Part Number	Description	Lifecycle Status
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.	Active
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.	Active
IC693CBL329	Cable, Left Side, One -24 Pin 90 Degree Connector, 1 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.	Active
IC693CBL330	Cable, Right Side, One -24 Pin 90 Degree Connector, 1 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.	Active
IC693CBL331	Cable, Left Side, One -24 Pin 90 Degree Connector, 2 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.	Active
IC693CBL332	Cable, Right Side, One -24 Pin 90 Degree Connector, 2 Meter. from TBQC I/O Face Plate Adapter to TBQC Interposing Terminal Block.	Active
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.	Active
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.	Active

## High Density Terminal Block Quick Connect (32 point I/O terminals)

High Density Terminal Block Quick Connect (TBQC) for selected I/O modules enables the user to easily connect interposing terminal blocks. The HDTBQC consist of a I/O module terminal block with a 40 pin Fujitsu male connector, cable and interposing terminal block. The HDTBQC is compatible with modules that accept IC694TBC032 (24 VDC discrete inputs and analog input and output modules. The HDTBQC is not compatible with discrete output modules).

## HDTBQC I/O Module Face Plate Adapter

Part Number	Description	Lifecycle Status
IC694TBC032	High-density, 36-point, terminal block with cable connector. IC695ALGxxx, IC69xMDL660 and IC694MDL664 modules only. Discrete output modules not supported.	Active

## HDTBQC Interposing Terminal Block

Part Number	Description	Lifecycle Status
IC694RTB032	High-density remote base, 36-point, with shield ground lug and removable terminal blocks. IC695ALGxxx, IC69xMDL660 and IC694MDL664 modules only. Discrete output modules not supported.	Active

## HDTBQC Interface Cables

Part Number	Description	Lifecycle Status
IC694CBL005	Shielded 0.5 meter cable with termination on both ends. IC694TBC032 and IC694RTB032 only.	Active
IC694CBL010	Shielded 1.0 meter cable with termination on both ends. IC694TBC032 and IC694RTB032 only.	Active
IC694CBL030	Shielded 3.0 meter cable with termination on both ends. IC694TBC032 and IC694RTB032 only.	Active
IC694CBL130	Shielded 3.0 meter cable with termination on one end that connects to the IC694TBC032 terminal block. The other end of the cable is non-terminated wires.	Active

### 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.

Part Number	Description	Lifecycle Status
<b>CBL-000-F5-000</b>	.5 feet (0.15 m)	Active
<b>CBL-000-F5-001</b>	1 foot (.31 m)	Active
<b>CBL-000-F5-002</b>	5 feet (1.52 m)	Active
<b>CBL-000-F5-003</b>	10 feet (3.04 m)	Active
<b>CBL-000-F5-004</b>	25 feet (7.62 m)	Active
<b>CBL-000-F5-005</b>	50 feet (15.24 m)	Active
<b>CBL-000-F5-006</b>	80 feet (24.40 m)	Active
<b>CBL-000-F5-007</b>	100 feet (30.49 m)	Active
<b>CBL-000-F5-008</b>	150 feet (45.72 m)	Active
<b>CBL-000-F5-009</b>	200 feet (60.98 m)	Active
<b>CBL-000-F5-010</b>	250 feet (76.20 m)	Active
<b>CBL-000-F5-011</b>	350 feet (106.68 m)	Active
<b>CBL-000-F5-012</b>	500 feet (152.15 m)	Active
<b>CBL-000-F5-014</b>	656 feet (200 m)	Active
<b>CBL-000-F5-015</b>	820 feet (250 m)	Active
<b>CBL-000-F5-016</b>	1,000 feet (304.30 m)	Active

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.

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

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

Part Number	Description	Lifecycle Status
<b>HUB-5595-308</b>	DIN-rail Mount Reflective Memory Hub. 21 -32 VDC Power supply, 1x 10BaseT Ethernet, 1x RS232, 8x Multimode Pluggable transceivers	Active
<b>HUB-5595-380</b>	DIN-rail Mount Reflective Memory Hub. 21 -32 VDC Power supply, 1x 10BaseT Ethernet, 1x RS232, 8x Single mode Pluggable transceivers	Active
<b>ACC-5595-208</b>	Rack Mount or Desktop Reflective Memory Hub. Universal power supply, 1x 10BaseT Ethernet, 1x RS232, 8x multimode pluggable transceivers	Active
<b>ACC-5595-280</b>	Rack Mount or Desktop, 8 Single mode Pluggable Transceivers. And no Multimode Pluggable Transceivers	Active

**IC694 Rack to Rack Expansion Cables**

Part Number	Description	Lifecycle Status
<b>IC693CBL300</b>	Cable, I/O Base Expansion, 1 Meter, Shielded	Active
<b>IC693CBL301</b>	Cable, I/O Base Expansion, 2 Meters, Shielded	Active
<b>IC693CBL302</b>	Cable, I/O Base Expansion, 15 Meter, Shielded with built-in terminator	Active
<b>IC693CBL312</b>	Cable, I/O Base Expansion, 0.15 Meter, Shielded	Active
<b>IC693CBL313</b>	Cable, I/O Base Expansion, 8 Meters, Shielded	Active
<b>IC693CBL314</b>	Cable, I/O Base Expansion, 15 Meters, Shielded with no built-in terminator	Active
<b>IC693ACC307</b>	I/O Bus Terminator Plug	Active

**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**

<b>Configuration for Controller</b>		(Example application requiring (120) 24 VDC inputs and (80) Relay outputs AC power supply)			
<b>Backplane Slots Required</b>	<b>Power Supply Current Required (mA)</b>	<b>Qty</b>	<b>Part Number</b>	<b>Description</b>	
2	1000 mA @ 3.3 VDC; 1000 mA @ 5 VDC	1	IC695CPE330	CPU with three 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	IC695CHS012	12 Slot Universal Base	
4	1200 @ 5 V	2	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)	
5	35 mA @ 5 V; 110 mA @ 24 VDC Relay	2	IC694MDL940	Discrete Output Module, Relay 2.0 A per point Form A, 16 points (Terminal block included).	
		2	IC694TBB032	Terminal Block, Box Style	
		1		PME Professional Development Suite	
13	Total current from power supply required: 2475 mA @ 5 V; 1600 @ 3.3 V; 110 mA @ 24 VDC Relay. Only one power supplied needed.				

<b>Configuration for Controller</b>	(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.			
<b>Backplane Slots Required</b>	<b>Power Supply Current Required (mA)</b>	<b>Qty</b>	<b>Part Number</b>	<b>Description</b>
2 on Universal Base	1000 mA @ 3.3 VDC; 1000 mA @ 5 VDC	1	IC695CPE310	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	220 mA @ 5 VDC 630 mA @ 24 VDC user supply	2	IC694ALG392	Analog Output module, supports voltage and current, 8 channels
1 on Universal Base	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	1	IC695ETM001	Ethernet module 10/100Mbps
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)
		8	IC694TBB032	Terminal Block, Box Style
		1	IC646MPP001	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: 3140 mA @ 5 VDC ; 3140 @ 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	IC755CSW07CDA	QuickPanel+ 7 inch TFT-Color



**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 10/100Mbps
		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	IC646MPP001	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
IC755CSW07CDA	QuickPanel* 7 inch TFT-Color

## PACSystems RXi Controller

The PACSystems RXi family is an advanced, high-performance, small footprint control and computing platform for distributed applications (process or discrete). With a high performance dual core CPU and Gigabit PROFINET (with built-in MRP redundancy) and Ethernet ports, every aspect of the RXi has been designed for performance.

Development, commissioning, and maintenance are performed using Machine Edition – providing a single environment for discrete and process applications.

- **COMExpress CPU Technology** – The RXi features a dual core processor for high performance in rugged applications. This rugged technology with wider temperature ranges, higher shock and vibration designs makes the RXi suitable for industrial applications. The carrier and enclosure designs last across multiple CPU lifespans to provide faster performance enhancements.
- **Integrated Redundant PROFINET I/O Interface** – Provides a Gigabit Ethernet I/O network connection with built-in cable redundancy (MRP) delivering IO cabling redundancy with no external switches.
- **High-speed Interconnect Bus** – Enables truly unique combinations of control and Machine Edition (or other Microsoft® Windows® or Linux applications).
- **Built-in Data Storage** – Internal industrial grade SSD drive provides local long-term data retention.
- **USB and SD Interfaces** – Interfaces enable program loading, serial communications and data storage via standard devices. (future release)

**Controller**

page 157



### Publication Reference Chart

GFK-2816	PACSystems RXi User's Manual
GFK-2815	PACSystems RXi Quick Start Guide

**Controller**



The PACSystems RXi controller features COMExpress CPU technology – a dual core processor for high performance in rugged applications. The integrated redundant PROFINET I/O Interface provides a Gigabit Ethernet I/O network connection with built-in cable redundancy (MRP) delivering IO cabling redundancy with no external switches.

The RXi has a high-speed interconnect bus, built-in data storage for local long-term data retention and USB and SD interfaces for program loading, serial communications and data storage via standard devices.

**ICRXICTL000A**

<b>Product Name</b>	<b>PACSystems RXi Distributed IO Controller Platform</b>
<b>Lifecycle Status</b>	Active
<b>Module Type</b>	Controller
<b>User Logic Memory</b>	10MB User Flash
<b>Storage Memory</b>	10MB User Flash
<b>Battery Backed Real Time Clock</b>	Yes - coin cell battery backup
<b>Data Retention</b>	Energy Pak provides power during power failure while data is written to NV RAM
<b>I/O Discrete Points</b>	32K
<b>I/O Analog Points</b>	32K
<b>Type of Memory Storage</b>	Flash
<b>Processor Speed</b>	Dual Core 1.0GHz
<b>USB Interface</b>	2 USB 2.0 Standard Size
<b>Built-in Ethernet Ports</b>	2 Port (shared MAC) GB PROFINET with MRP; 1 Ethernet (10, 100, 1000 Mbit)
<b>Other Ports</b>	SD Card (on Intelligent Display Cover or Intelligent Faceplate)
<b>Distributed I/O Network</b>	Integrated PROFINET
<b>Software Programming Support</b>	Machine Edition
<b>Program Languages Supported</b>	Ladder Logic, Structured Text, C, Function Block Diagram
<b>Input Power</b>	24 VDC
<b>Mounting</b>	Panel Mount; DIN-rail Mount with Optional DIN Mount Plate

## RSTi-EP I/O

The RSTi-EP remote I/O system is well suited for Industrial Internet enabled applications. It features an extended operating temperature range, enhanced diagnostics, plug-and-play connectivity and high channel density– all designed to simplify machine design and maintenance.

Advanced diagnostics make RSTi-EP ideal for remote applications, especially those where I/O can be difficult to reach. And RSTi-EP I/O is easily expandable, making it easy to adapt and extend coverage as your system evolves.

### Benefits of RSTi-EP

- Wide Range of Communication Options:** RSTi-EP offers network adapter support for PROFINET RT, PROFIBUS, Modbus TCP and EtherCAT.
- Small Footprint:** Accommodates up to 64 modules and 1024 I/O points per drop, yet its 11.5 mm I/O slices are smallest in the industry, helping to maximize limited cabinet space. It's possible to incorporate smaller cabinet sizes into user-friendly system designs, and reduce wiring costs by placing I/O closer to the sensors.
- Improved System Availability:** Designed with hot-swap IO and inputs and outputs that can be switched off independently. These features enable service activities to be performed while the sensor system is active.
- Easier Maintenance & Troubleshooting:** Further shorten production downtimes with unique plain text diagnostics via the integrated web server. In case of an emergency stop it is simpler to identify and prioritize errors faster.
- Easy Error Diagnosis:** Localize errors instantly with an LED directly on the channel and status indicators on every module. An indispensable benefit for secure commissioning and rapid system maintenance.
- Higher Performance:** High speed system bus communicates up to 256 discrete inputs or discrete outputs in 20 microseconds. 100 MBps Ethernet on Ethernet enabled network adapters help move more data with precision and confidence for improved application performance and productivity.





### Network Adapters

RSTi EP offers a wide range of communication options with network adapter support for PROFINET RT, PROFIBUS, Modbus TCP and EtherCAT.

	EPXETC001	EPXMBE001	EPXPBS001	EPXNS001
<b>Product Name</b>	<b>Ethercat Network Adapter</b>	<b>Modbus TCP Network Adapter</b>	<b>PROFIBUS DP-V1 Network Adapter</b>	<b>PROFINET IRT Network Adapter</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Ethercat Network Adapter	Modbus TCP Network Adapter	PROFIBUS DP-V1 Network Adapter	PROFINET IRT Network Adapter
<b>Field Busses/Device Networks</b>	Ethernet	Modbus TCP	PROFIBUS DP-V1	PROFINET IRT
<b>Baud Rate</b>	NA	NA	Max 12MB/S	NA
<b>Transfer Rate</b>	100 MB/S	100 MB/S	100 MB/S	100 MB/S
<b>I/O Data Size</b>	1024 bytes (input & output)	2048 bytes (input & output)		1024 bytes (input & output)
<b>LEDs</b>	Ref Manual	Ref Manual	Ref Manual	Ref Manual
<b>Diagnostic Supported</b>	Yes	Yes	Yes	Yes
<b>Maximum Bus Length</b>	100 meters to 1.2K depending on baud rate	100 meters to 1.2K depending on baud rate	100 meters to 1.2K depending on baud rate	100 meters to 1.2K depending on baud rate
<b>Maximum Number of Nodes Supported</b>	65,535	limited by IP address	125	limited by IP address
<b>Number of Expansion I/O Supported</b>	64	64	64	64
<b>Interface Connector Type</b>	Two copper RJ-45	Two copper RJ-45		Two copper RJ-45
<b>Configuration Tool</b>	EDS file	Auto config	PME or GSD file	PME or GSDML
<b>Field Power Requirement</b>	24 VDC (20.4 - 28.8 VDC)	24 VDC (20.4 - 28.8 VDC)	24 VDC (20.4 - 28.8 VDC)	24 VDC (20.4 - 28.8 VDC)
<b>Dimensions (H x W x D) in mm</b>	120 x 52 x 76	120 x 52 x 76	120 x 52 x 76	120 x 52 x 76



## Digital Input Modules

GE provides a range of RSTi-EP digital input modules with 4, 8 or 16 inputs, which are primarily used to receive binary control signals from sensors, transmitters, switches or proximity switches. Their flexible design allows them to meet your demands with reserve potential.

	EP-1214	EP-1218	EP-1318	EP-125F	EP-12F4
<b>Product Name</b>	Digital Input Module, 24 VDC, Pos Logic, 4 Points, 2, 3 or 4 Wire	Digital Input Module, 24 VDC, Pos Logic, 8 Points, 2 Wire	Digital Input Module, 24 VDC, Pos Logic, 8 Points, 3 Wire	Digital Input Module, 24 VDC, Pos Logic, 16 Points, 1 Wire	Digital Input Module, 24 VDC, Pos Logic, 4 Points, 2, 3 or 4 Wire, Time Stamp
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Digital Input	Digital Input	Digital Input	Digital Input	Digital Input
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps	48 Mbps	48 Mbps	48 Mbps
<b>Channels</b>	4	8	8	16	4
<b>Sensor Types</b>	Type 1 and Type 3 sensors as per IEC 61131-2	Type 1 and Type 3 sensors as per IEC 61131-2	Type 1 and Type 3 sensors as per IEC 61131-2	Type 1 and Type 3 sensors as per IEC 61131-2	Type 1 and Type 3 sensors as per IEC 61131-2
<b>Input Filter</b>	Input delay adjustable from 0 to 40 ms <sup>†</sup>	Input delay adjustable from 0 to 40 ms <sup>†</sup>	Input delay adjustable from 0 to 40 ms <sup>†</sup>	Input delay 3 ms	Input delay adjustable from 0 to 40 ms <sup>†</sup>
<b>Off Voltage</b>	< 5 V	< 5 V	< 5 V	< 5 V	< 5 V
<b>On Voltage</b>	> 11 V	> 11 V	> 11 V	> 11 V	> 11 V
<b>Max. Input Current Per Channel</b>	N/A	N/A	N/A	N/A	3 mA
<b>Sensor Supply</b>	max. 2 A per plug, total max. 8 A	max. 15 mA per channel	max. 2 A per plug, total max. 8 A	No	Yes
<b>Sensor Connection</b>	2-wire, 3-wire, 3-wire + FE	2-wire	2-wire, 3-wire	1-wire	2-wire, 3-wire, 3-wire + FE
<b>Reverse Polarity Protection</b>	Yes	Yes	Yes	Yes	Yes
<b>Module Diagnostics</b>	Yes	Yes	Yes	Yes	Yes
<b>Individual Channel Diagnosis</b>	No	No	No	No	No
<b>Supply Voltage</b>	20.4V – 28.8V	20.4V – 28.8V	20.4V – 28.8V	20.4V – 28.8V	20.4V – 28.8V
<b>Current consumption from system current path I<sub>sys</sub></b>	8 mA	8 mA	8 mA	8 mA	8 mA
<b>Current consumption from input current path I<sub>IN</sub></b>	18 mA	30 mA	30 mA	52 mA	18 mA
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz (g)</b>	3.07 (87)	2.99 (85)	2.93 (83)	3.07 (87)	3.07 (87)

<sup>†</sup>When used with Profibus-DP network adapter, it is limited to 20 ms.



### Analog Input Modules

GE provides a range of RSTi-EP analog input modules with 4 or 8 inputs and up to 16-bit resolution. The measurement range is defined by parameterization with an accuracy of 0.1% FSR with the exception of EP3124, which 0.25% FSR. The parameters for the measurement range can be individually set for each channel.

	EP-3124	EP-3164	EP-3264	EP-3368	EP-3468
<b>Product Name</b>	<b>Analog Input, 4 Channels Voltage/Current 12 Bits 2, 3, or 4 Wire</b>	<b>Analog Input, 4 Channels Voltage/Current 16 Bits 2, 3, or 4 Wire</b>	<b>Analog Input, 4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire</b>	<b>Analog Input, 8 Channels Current 16 Bits 2, 3, or 4 Wire</b>	<b>Analog Input, 8 Channels Current 16 Bits 2, 3, or 4 Wire, Channel Diagnostic</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Analog Input	Analog Input	Analog Input	Analog Input	Analog Input
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps	48 Mbps	48 Mbps	48 Mbps
<b>Potential Isolation</b>	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II
<b>Common Mode Voltage</b>	Against: 0V - ±50V Channel-Channel: ±3V	Against: 0V - ±50V Channel-Channel: ±3V	Against: 0V - ±50V Channel-Channel: ±3V	Against: 0V - ±50V Channel-Channel: ±3V	Against: 0V - ±50V Channel-Channel: ±3V
<b>Number of Inputs</b>	4	4	4	8	8
<b>Input Values</b>	Voltage (0 to 5 V, ±5 V, 0 to 10 V, ±10 V, 1 to 5 V, 2 to 10 V) Current (0 to 20 mA, 4 to 20 mA)	Voltage (0 to 5 V, ±5 V, 0 to 10 V, ±10 V, 1 to 5 V, 2 to 10 V) Current (0 to 20 mA, 4 to 20 mA)	Voltage (0 to 5 V, ±5 V, 0 to 10 V, ±10 V, 1 to 5 V, 2 to 10 V) Current (0 to 20 mA, 4 to 20 mA)	Current input (0 to 20 mA, 4 to 20 mA)	Current input (0 to 20 mA, 4 to 20 mA)
<b>Resolution</b>	12 bits	16 bits	16 bits	16 bits	16 bits
<b>Frequency Suppression</b>	Options: disabled (0) / 50 Hz (1) / 60 Hz (2) / Average over 16 values (3) Default: disabled	Options: disabled (0) / 50 Hz (1) / 60 Hz (2) / Average over 16 values (3) Default: disabled	Options: disabled (0) / 50 Hz (1) / 60 Hz (2) / Average over 16 values (3) Default: disabled	Options: disabled (0) / 50 Hz (1) / 60 Hz (2) / Average over 16 values (3) Default: disabled	Options: disabled (0) / 50 Hz (1) / 60 Hz (2) / Average over 16 values (3) Default: disabled
<b>Accuracy</b>	0.25 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient max. -10 mV/A additional inaccuracy in the voltage mode due to sensor power supply current	0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient max. -10 mV/A additional inaccuracy in the voltage mode due to sensor power supply current	0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient max. -10 mV/A additional inaccuracy in the voltage mode due to sensor power supply current	0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient	0.1 % max. at 25 °C (77 °F) 50 ppm/K max. Temperature coefficient
<b>Sensor Supply</b>	max. 2 A per plug, total max. 8 A	max. 2 A per plug, total max. 8 A	max. 0.5 A per plug	max. 125 mA per channel; channel 0 to 3 and 4 to 7 respectively are fused in combination	max. 125 mA per channel; channel 0 to 3 and 4 to 7 respectively are fused in combination
<b>Sensor Connection</b>	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE
<b>Conversion time</b>	1 ms	1 ms	1 ms	1 ms	1 ms
<b>Reverse Polarity Protection</b>	Yes	Yes	Yes	Yes	Yes
<b>Short-Circuit Proof</b>	Yes	Yes	Yes	Yes	Yes
<b>Response Time of Protective Circuit</b>	< 0.1 s with short-circuit to +24 V	< 50 ms	< 50 ms	< 0.1 s with short-circuit to +24 V	< 0.1 s with short-circuit to +24 V
<b>Reset Time</b>	N/A	N/A	N/A	Temperature-dependent (< 30 s at 20°C)	Temperature-dependent (< 30 s at 20°C)
<b>Module Diagnostics</b>	Yes	Yes	Yes	Yes	Yes
<b>Individual Channel Diagnostics</b>	No	No	Yes	No	Yes
<b>Supply Voltage</b>	20.4V - 28.8V via system bus	20.4V - 28.8V via system bus	20.4V - 28.8V via system bus	20.4V - 28.8V via system bus	20.4V - 28.8V via system bus
<b>Current consumption from system current path I<sub>SVS</sub></b>	8 mA	8 mA	8 mA	8 mA	8 mA
<b>Current consumption from input current path I<sub>IN</sub></b>	25 mA + sensor supply current	25 mA + sensor supply current	25 mA + sensor supply current	20 mA + load	20 mA + load
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz (g)</b>	3.07 (87)	3.14 (89)	3.14 (89)	3.17 (90)	3.17 (90)



## Analog Input Modules

GE provides a range of RSTi-EP analog input modules with 4 or 8 inputs and up to 16-bit resolution. The measurement range is defined by parameterization with an accuracy of 0.1% FSR with the exception of EP3124, which 0.25% FSR. The parameters for the measurement range can be individually set for each channel.

	EP-3704	EP-3804 <sup>†</sup>
<b>Product Name</b>	<b>Analog Input, 4 Channels RTD 16 Bits with Diagnostics 2, 3, or 4 Wire</b>	<b>Analog Input, 4 Channels TC 16 Bits with Diagnostics 2, 3, or 4 Wire</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Analog Input	Analog Input
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps
<b>Potential Isolation</b>	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II	Test voltage: max. 28.8 V within one channel, 500 V DC field/system Pollution severity level: 2 Overvoltage category: II
<b>Common Mode Voltage</b>	Against: 0V - ±50V Channel-Channel: ±3V	Against: 0V - ±50V Channel-Channel: ±3V
<b>Number of Inputs</b>	4	4
<b>Sensor Types</b>	Pt100, Pt200, Pt500, Pt1000, Ni100, Ni120, Ni 200, Ni500, Ni1000, Cu10, and resistors with 40 Ω, 80 Ω, 150 Ω, 300 Ω, 500 Ω, 1 kΩ, 2 kΩ, 4 kΩ	J, K, T, B, N, E, R, S, L, U, C, mV
<b>Resolution</b>	16 bits	16 bits
<b>Accuracy</b>	max. 0.2 % FSR / 0.3 % FSR for Ni sensors / 0.6 % FSR for Cu10	Conversion time ≥ 80 ms: 10 μV + 0.1 % of voltage measurement range (without cold-junction measurement error)
<b>Temperature Coefficient</b>	±50 ppm/K max.	50 ppm
<b>Sensor Connection</b>	2-wire, 3-wire, 4-wire	2-wire
<b>Sensor Current</b>	Depending on the sensor type 0.75 mA (Pt100, Ni100, Ni120, Cu10, 40 Ω, 80 Ω, 150 Ω, 300 Ω) or 0.25 mA (Pt200, Pt500, Pt1000, Ni200, Ni500, Ni1000, 500 Ω, 1 kΩ, 2 kΩ, 4 kΩ)	0.25 mA for the cold-junction compensation with a Pt1000
<b>Cold Junction Compensation</b>	N/A	Internal and external (Pt1000), int. accuracy ≤ 3 K
<b>Max. Wire Resistance / Measurement Range</b>	2.5 Ω / 40 Ω, 5 Ω / 80 Ω, 10 Ω / 150 Ω and Cu10, 25 Ω in all other measuring ranges	N/A
<b>Temperature Range</b>	-200 to +850°C (-328 to 1562 °F)	-200 to +850°C (-328 to 1562 °F)
<b>Conversion Time</b>	36 to 240 ms, adjustable	36 to 240 ms, adjustable
<b>Internal Resistance</b>	N/A	> 1 MΩ
<b>Common Mode Input Voltage Range</b>	Channel to channel: max. ±2 V; Channel to voltage supply: max. ±50 V	Channel to voltage supply: max. ±50 V
<b>Reverse Polarity Protection</b>	Yes	Yes
<b>Module Diagnostics</b>	Yes	Yes
<b>Individual Channel Diagnostics</b>	Yes	Yes
<b>Supply Voltage</b>	20.4V – 28.8V via system bus	20.4V – 28.8V via system bus
<b>Current consumption from system current path I<sub>sys</sub></b>	8 mA	8 mA
<b>Current consumption from input current path I<sub>IN</sub></b>	20 mA	20 mA
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz (g)</b>	3.21 (91)	3.03 (86)

<sup>†</sup> Warm up time for the module to get the required accuracy is 30 minutes.





### Digital Output Modules

GE provides a range of RSTi-EP digital output modules with 4, 8 or 16 outputs, which are primarily used for the incorporation of decentralized actuators.

	EP-2214	EP-2614	EP-2634	EP-2218	EP-225F
<b>Product Name</b>	<b>Digital Output, 4 Points, Positive Logic 24VDC, 0.5A, 2,3, or 4 Wire</b>	<b>Digital Output, 4 Points, Positive Logic 24VDC, 2.0A, 2,3, or 4 Wire</b>	<b>Digital Output, 4 Points, Positive/Negative Logic 24VDC, 2.0A, 2,3, or 4 Wire</b>	<b>Digital Output, 8 Points, Positive Logic, 24VDC, 0.5A, 2 Wire</b>	<b>Digital Output, 16 Points, Positive Logic, 24VDC, 0.5A, 1 Wire</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Digital Output	Digital Output	Digital Output	Digital Output	Digital Output
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps	48 Mbps	48 Mbps	48 Mbps
<b>Number of Outputs</b>	4	4	4	8	16
<b>Type</b>	P-Logic	P-Logic	Switchable P- or N-Logic	P-Logic	P-Logic
<b>Type of Load</b>	ohmic, inductive, lamp load	ohmic, inductive, lamp load	ohmic, inductive, lamp load	ohmic, inductive, lamp load	ohmic, inductive, lamp load
<b>Response Time</b>	low » high max. 100 µs; high » low max. 250 µs	low » high max. 100 µs; high » low max. 250 µs	low » high max. 100 µs; high » low max. 250 µs	low » high max. 100 µs; high » low max. 250 µs	low » high max. 100 µs; high » low max. 250 µs
<b>Max. Output Current per Channel</b>	0.5 A	2 A	2 A	0.5 A	0.5 A
<b>Max. Output Current per Modules</b>	2 A	8 A	8 A	4 A	8 A
<b>Breaking Energy (inductive)</b>	150 mJ per channel	150 mJ per channel	150 mJ per channel	150 mJ per channel	150 mJ per channel
<b>Switching Frequency Resistive load (min. 47 Ω)</b>	1 kHz	1 kHz	1 kHz	1 kHz	1 kHz
<b>Switching Frequency Inductive load (DC 13)</b>	0.2 Hz without free-wheeling diode; 1 kHz with suitable free-wheeling diode	0.2 Hz without free-wheeling diode; 1 kHz with suitable free-wheeling diode	0.2 Hz without free-wheeling diode; 1 kHz with suitable free-wheeling diode	0.2 Hz without free-wheeling diode; 1 kHz with suitable free-wheeling diode	0.2 Hz without free-wheeling diode; 1 kHz with suitable free-wheeling diode
<b>Switching Frequency Lamp load (12 W)</b>	1 kHz	1 kHz	1 kHz	1 kHz	1 kHz
<b>Actuator Connection</b>	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE	2-wire	1-wire
<b>Actuator Supply</b>	max. 2 A per plug, total max. 8 A	max. 2 A per plug, total max. 8 A	max. 2 A per plug, total max. 8 A	N/A	N/A
<b>Short-Circuit-Proof</b>	Yes	Yes	Yes	Yes	Yes
<b>Protective Circuit</b>	Constant current with thermal switch-off and automatic restart	Constant current with thermal switch-off and automatic restart	Constant current with thermal switch-off and automatic restart	Constant current with thermal switch-off and automatic restart	Constant current with thermal switch-off and automatic restart
<b>Response Time of Current Limiting Circuit</b>	< 100 µs	< 100 µs	< 100 µs	< 100 µs	< 100 µs
<b>Module Diagnostics</b>	Yes	Yes	Yes	Yes	Yes
<b>Individual Channel Diagnostics</b>	No	No	No	No	No
<b>Reactionless</b>	Yes	N/A	Yes	Yes	Yes
<b>Can be used with EP-19xx</b>	Yes	Yes	Yes	N/A	N/A
<b>Supply Voltage</b>	20.4V – 28.8V	20.4V – 28.8V	20.4V – 28.8V	20.4V – 28.8V	20.4V – 28.8V
<b>Current consumption from system current path I<sub>sys</sub></b>	8 mA	8 mA	8 mA	8 mA	8 mA
<b>Current consumption from output current path I<sub>out</sub></b>	20 mA + load	25 mA + load	20 mA + load	35 mA + load	25 mA + load
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz. (g)</b>	3.03 (86)	3.03 (86)	3.03 (86)	3.03 (86)	2.93 (83)



## Digital Output Modules

GE provides a range of RSTi-EP digital output modules with 4, 8 or 16 outputs, which are primarily used for the incorporation of decentralized actuators.

	<b>EP-2714</b>	<b>EP-2814</b>
<b>Product Name</b>	<b>Digital Relay Output, 4 Points, Positive Logic, 24 - 220 VDC/VAC, 6A, 2 Wire</b>	<b>Digital Output, 4 Points, Positive Logic, 230 VAC, 1A</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Digital Output	Digital Output
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps
<b>Number of Outputs</b>	4	4
<b>Type</b>	Relay from - C	SSR / triac
<b>Material for Power and Data Contacts</b>	Ni-Au, 3 µm	N/A
<b>Switching Characteristic</b>	N/A	Closing when the voltage crosses zero, Opening when the current crosses zero
<b>Response Time</b>	20 ms	10 ms
<b>Minimum Switching Current</b>	N/A	50 mA per channel
<b>Maximum switching current</b>	N/A	1 A per channel; 4 A per module
<b>Max. Output Current</b>	5 A at 60°C (140 °F) / 6 A at 55°C (131 °F) per channel 20 A at 60°C (140 °F) / 24 A at 55°C (131 °F) per module	N/A
<b>Holding Current</b>	N/A	25 mA
<b>Switching Frequency</b>	max. 5 Hz	up to 20 Hz
<b>Short-Circuit-Proof</b>	No	No
<b>Defined Trip Behavior of the Prescribed External Fuse</b>	N/A	1 A super quick-acting
<b>Protective Circuit</b>	External fusing with 6 A prescribed	N/A
<b>Service Life with AC-15 Load and 1-A switching Current</b>	> 300,000 switching cycles	N/A
<b>Max. Switching Voltage</b>	255 V AC, UL: 277 V AC, DC corresponding to the derating curve	255 V AC, UL: 277 AC
<b>Reactionless</b>	Yes	Yes
<b>Module Diagnosis</b>	Yes	Yes
<b>Individual Channel Diagnostics</b>	No	No
<b>Supply Voltage</b>	20.4V - 28.8V	20.4V - 28.8V
<b>Current consumption from system current path I<sub>sys</sub></b>	8 mA	11 mA
<b>Current consumption from output current path I<sub>out</sub></b>	20 mA	N/A
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz. (g)</b>	2.93 (83)	2.93 (83)



### Analog Output Modules

GE provides RSTi-EP analog output modules with up to 4 analog outputs at +/-10 V, +/-5 V, 0-10 V, 0-5 V, 2-10 V, 1-5 V, 0-20 mA or 4-20 mA. The resolution is 16 bit per channel. An output can be connected to each connector, the internal switching is carried out automatically.

	EP-4164	EP-4264
Product Name	Analog Output, 4 Channels Voltage/ Current 16 Bits 2, 3, or 4-Wire	Analog Output, 4 Channels Voltage/ Current 16 Bits with Diagnostics 2, 3, or 4-Wire
Lifecycle Status	Active	Active
Module Type	Analog Output	Analog Output
System Bus Transfer Rate	48 Mbps	48 Mbps
Potential Isolation	Channel/system bus = yes Channel/channel = no	Channel/system bus = yes Channel/channel = no
Number of Outputs	4	4
Output Levels	Voltage (0 – 5 V, ±5 V, 0 – 10 V, ±10 V, 1 – 5 V, 2 – 10 V); Current (0 – 20 mA, 4 – 20 mA)	Voltage (0 – 5 V, ±5 V, 0 – 10 V, ±10 V, 1 – 5 V, 2 – 10 V); Current (0 – 20 mA, 4 – 20 mA)
Response Time	1 ms for 4 channels	1 ms for 4 channels
Resolution	16 bits	16 bits
Accuracy	0.1 % FSR max., 0.05 % FSR typ.	0.1 % FSR max., 0.05 % FSR typ.
Temperature Coefficient	20 ppm voltage / 31 ppm current measurement / K	20 ppm voltage / 31 ppm current measurement / K
Max. Error Between T <sub>min</sub> and T <sub>max</sub>	±220 ppm FSR	±220 ppm FSR
Monotony	Yes	Yes
Crosstalk Between Channels	±0.001 % FSR max.	±0.001 % FSR max.
Repeat Accuracy	< ±1 mV eff.	< ±1 mV eff.
Output Ripple	max. 0.001 %	max. 0.001 %
Voltage Load Resistance	≥ 1 kΩ (at > 50°C (122 °F) max ambient temperature, total sensor current of 10 mA per channel but 25 mA per module)	≥ 1 kΩ (at > 50°C (122 °F) max ambient temperature, total sensor current of 10 mA per channel but 25 mA per module)
Current Load Resistance	≤ 600 Ω including field cable resistance	≤ 600 Ω including field cable resistance
Actuator Connection	2-wire (current and voltage; automatic detection), 4-wire (voltage)	2-wire (current and voltage; automatic detection), 4-wire (voltage)
Short-Circuit-Proof	Yes	Yes
Module Diagnosis	Yes	Yes
Individual Channel Diagnosis	No	Yes
Substitute Value	Yes	Yes
Can be used with EP-19xx Module	Yes	Yes
Supply Voltage	20.4V – 28.8V	20.4V – 28.8V
Current consumption from system current path I <sub>sys</sub>	8 mA	8 mA
Current consumption from output current path I <sub>out</sub>	85 mA	85 mA
Operating Temperature	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
Storage Temperature	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
Humidity	5% to 95%, noncondensing	5% to 95%, noncondensing
Dimensions (H x W x D) in (mm)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
Weight oz. (g)	2.93 (83)	3.47 (98)



### Safe Feed Input Modules

GE provides 3 variants of RSTi-EP safe feed modules EP 1901: one safe input, EP 1902: two safe inputs and EP 1922: two safe inputs, with delayed disconnection, which are intended for connecting safety-related equipment.

	EP-1901	EP-1902	EP-1922
<b>Product Name</b>	<b>1 Safe Feed-Input, 24 VDC</b>	<b>2 Safe Feed-Inputs, 24 VDC</b>	<b>2 Safe Feed-Inputs, 24 VDC, Programmable Delay</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Safe Feed Input	Safe Feed Input	Safe Feed Input
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps	48 Mbps
<b>Achievable Safety Level</b>	SIL3 (IEC 61508), SIL CL3 (IEC 62061), PLe and Cat. 4 (DIN EN ISO 13849-1), regarding the entire safety chain	SIL3 (IEC 61508), SIL CL3 (IEC 62061), PLe and Cat. 4 (DIN EN ISO 13849-1), regarding the entire safety chain	SIL3 (IEC 61508), SIL CL3 (IEC 62061), PLe and Cat. 4 (DIN EN ISO 13849-1), regarding the entire safety chain
<b>DC (Diagnostic Coverage)</b>	96.64%	96.64%	96.64%
<b>MTTfd (Mean Time To Failure dangerous)</b>	> 100 years	> 100 years	> 100 years
<b>PFH (Probability of Failure per Hour)</b>	$6.27 \times 10^{-9}$ 1/h	$6.27 \times 10^{-9}$ 1/h	$6.27 \times 10^{-9}$ 1/h
<b>SSF (Safe Failure Fraction)</b>	98.58%	98.58%	98.58%
<b>HFT (Hardware Fault Tolerance)</b>	1	1	1
<b>Safety Inputs</b>	1 x 2 channel	2 x 2 channel	2 x 2 channel
<b>Inputs for Start Function</b>	2 (manual start and autostart)	2 (manual start and autostart)	2 (manual start and autostart)
<b>Input Type</b>	Type 3 as per IEC 61131-2	Type 3 as per IEC 61131-2	Type 3 as per IEC 61131-2
<b>Safety Output (OSSD)</b>	1	1	1
<b>Output Current</b>	8 A (not for capacitive load)	8 A (not for capacitive load)	8 A (not for capacitive load)
<b>Overload Protection</b>	Excess temperature proof and overload-proof, short circuit proof with external fuse	Excess temperature proof and overload-proof, short circuit proof with external fuse	Excess temperature proof and overload-proof, short circuit proof with external fuse
<b>Turn-off Time</b>	< 20 ms	< 20 ms	< 20 ms
<b>Turn-on Time</b>	< 2 s	< 2 s	< 2 s
<b>Output SS1</b>	N/A	N/A	1
<b>Output Current</b>	N/A	N/A	0.5 A, overload behavior as per IEC 61131-2
<b>Overload Protection</b>	N/A	N/A	Over-temperature, Overload and Short Circuit protection with external fuse
<b>Auxiliary Outputs</b>	2 x 2	3 x 2	3 x 2
<b>Output Current</b>	max. 10 A (only to support the inputs dedicated inputs)	max. 10 A (only to support the inputs dedicated inputs)	max. 10 A (only to support the inputs dedicated inputs)
<b>Module Diagnosis</b>	Yes	Yes	Yes
<b>Individual Channel Diagnosis</b>	Yes	Yes	Yes
<b>Supply Voltage</b>	20.4V – 28.8V via system bus	20.4V – 28.8V via system bus	20.4V – 28.8V via system bus
<b>External Pre-fusing</b>	mandatory: super fast, max. 8 A	mandatory: super fast, max. 8 A	mandatory: super fast, max. 8 A
<b>Reverse Battery Protection</b>	Yes	Yes	Yes
<b>Current consumption (<math>I_{IN}</math> in the power segment of the fieldbus network adapter), typ.</b>	8 mA	8 mA	8 mA
<b>Current consumption (<math>I_{IN}</math> in the respective power segment)</b>	45 mA	45 mA	45 mA
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz. (g)</b>	2.82 (80)	2.89 (82)	2.96 (84)



### Specialty Modules

GE provides several RSTi-EP specialty modules, which can be used to meet specific needs in your system. Each module has a Module Status LED and each channel has a LED for visual indication of connectivity.

	EP-5111	EP-5112	EP-5212
<b>Product Name</b>	<b>1 Channel High Speed Counter, AB 100 kHz 1 DO 24VDC, 0.5A</b>	<b>2 Channel High Speed Counter, AB 100 kHz</b>	<b>2 Channel Frequency Measurement, 100 kHz</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	High Speed Counter	High Speed Counter	Frequency Measurement
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps	48 Mbps
<b>Galvanic Isolation</b>	N/A	500 V DC between the current paths	500 V DC between the current paths
<b>Number of Counter Inputs</b>	1	2	2
<b>Type</b>	Incremental encoders and other input characteristics for sensor types 1 and 3 are in accordance with EN 61131-2	Incremental encoders and other input characteristics for sensor types 1 and 3 are in accordance with EN 61131-2	N/A
<b>Input Filter</b>	Filter time adjustable from 0.01 to 1 ms	Filter time adjustable from 0.01 to 1 ms	Adjustable between 3 Hz and 187 kHz (333 ms and 5 μs)
<b>Low Input Voltage</b>	< 5 V	< 5 V	< 5 V
<b>High Input Voltage</b>	> 11 V	> 11 V	> 11 V
<b>Max. Input Current per Channel</b>	3.5 mA	3.5 mA	3.5 mA
<b>Sensor Supply</b>	Yes	Yes	Yes
<b>Sensor Connection</b>	2-wire and 3-wire	2-wire and 3-wire	2-wire and 3-wire
<b>Reverse Polarity Protection</b>	Yes	Yes	Yes
<b>Module Diagnostics</b>	Yes	Yes	Yes
<b>Individual Channel Diagnostics</b>	Yes	Yes	No
<b>Counter Width</b>	32 bits	32 bits	32 bits
<b>Maximum Input Frequency</b>	100 kHz	100 kHz	100 kHz
<b>Latch, Gate, Reset Input</b>	Yes	N/A	N/A
<b>Mode of Operation</b>	Pulse and direction / AB mode with 1-, 2-, 4-times sampling	Pulse and direction / AB mode with 1-, 2-, 4-times sampling	Pulse rising edge
<b>Status Indicator</b>	Yes	Yes	Yes
<b>Process Alarm</b>	Yes, parametrizable	Yes, parametrizable	N/A
<b>Diagnostic Alarm</b>	Yes	Yes	N/A
<b>Number of Outputs</b>	1	N/A	N/A
<b>Output Current</b>	0.5 A	N/A	N/A
<b>Reverse Polarity Protection</b>	Yes	N/A	N/A
<b>Module Diagnosis</b>	Yes	N/A	N/A
<b>Individual Channel Diagnosis</b>	Yes	N/A	N/A
<b>Supply Voltage</b>	20.4V – 28.8V	20.4V – 28.8V	20.4V – 28.8V
<b>Current consumption from system current path I<sub>sys</sub></b>	8 mA	8 mA	8 mA
<b>Current consumption from output current path I<sub>IN</sub></b>	35 mA plus output current for the digital output	35 mA	35 mA plus sensor supply current
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz. (g)</b>	2.93 (83)	2.54 (72)	2.93 (83)



## Specialty Modules

GE provides several RSTi-EP specialty modules, which can be used to meet specific needs in your system. Each module has a Module Status LED and each channel has a LED for visual indication of connectivity.

	EP-5422	EP-5442
<b>Product Name</b>	<b>2 Channels PWM Output, Positive Logic, 24VDC, 2.0 A</b>	<b>2 Channels PWM Output, Positive Logic, 24VDC, 0.5 A</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	PWM Output	PWM Output
<b>System Bus Transfer Rate</b>	48 Mbps	48 Mbps
<b>Number of Outputs</b>	2	2
<b>Type</b>	PN output stage	PN output stage
<b>Response Time</b>	< 0.1 $\mu$ s	< 0.1 $\mu$ s
<b>Period Duration</b>	25 $\mu$ s to 175 ms (40 kHz to 6 Hz)	25 $\mu$ s to 175 ms (40 kHz to 6 Hz)
<b>Max. Output Current</b>	per channel	0.5 A
	per module	1 A
<b>Switching Frequency</b>	Resistive load (min. 47 $\Omega$ )	static, 6 Hz to 40 kHz
	Inductive load (DC 13)	static, 6 Hz to 40 kHz
	Lamp load (12 W)	static, 6 Hz to 40 kHz
	Resistive load (min. 12 $\Omega$ )	6 Hz to 40 kHz
Inductive load (DC 13)	6 Hz to 40 kHz	
Lamp load (48 W)	6 Hz to 40 kHz	
<b>Actuator Connection</b>	2-wire, 3-wire, 3-wire + FE	2-wire, 3-wire, 3-wire + FE
<b>Actuator Supply</b>	max. 2 A per plug, total max. 4 A	max. 2 A per plug, total max. 8 A
<b>Pulse/period Ratio</b>	0–100 % PN-switching or P-switching, adjustable	0–100 % PN-switching or P-switching, adjustable
<b>Short-Circuit-Proof</b>	Yes	Yes
<b>Response Time of Protective Circuit</b>	< 100 $\mu$ s	< 100 $\mu$ s
<b>Module Diagnosis</b>	Yes	Yes
<b>Individual Channel Diagnosis</b>	No	No
<b>Reactionless</b>	Yes	Yes
<b>Supply Voltage</b>	20.4V – 28.8V	20.4V – 28.8V
<b>Current consumption from system current path ISYS</b>	8 mA	8 mA
<b>Current consumption from output current path IOU</b>	40 mA + Load	40 mA + Load
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)
<b>Weight oz. (g)</b>	2.72 (77)	2.89 (82)



**Power-Feed and Power Distribution Modules**

GE provides RSTi-EP power-feed modules (EP-7631 and EP-7641), which are used to refresh the current paths and isolate the power supply. The RSTi-EP station's main power supply is always fed in through the network adapter. Each module has a Module Status LED and connector block LEDs for inspection.

	EP-7631	EP-7641	EP-711F	EP-751F	EP-700F	EP-710F	EP-750F
<b>Product Name</b>	Power Module, 1 Channel 24VDC Input Flow 10A	Power Module, 1 Channel 24VDC Output Flow 10A	Power Module, 16 Channels 24VDC Potential Distribution +24 VDC from Input Current Path	Power Module, 16 Channels 24VDC Potential Distribution +24 VDC from Output Current Path	Power Module, 16 Channels 24VDC Potential Distribution Functional Earth	Power Module, 16 Channels 24VDC Potential Distribution +0VDC from Input Current Path	Power Module, 16 Channels 24VDC Potential Distribution +0VDC from Output Current Path
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active	Active	Active
<b>Module Type</b>	Power-Feed	Power-Feed	Power Distribution	Power Distribution	Power Distribution	Power Distribution	Power Distribution
<b>Supply voltage</b>	20.4V – 28.8V	20.4V – 28.8V	None	20.4V – 28.8V	20.4V – 28.8V	0 V (from input current path)	0 V (from input current path)
<b>Maximum feed current for input modules</b>	10A	--					
<b>Current consumption from output input path I<sub>IN</sub></b>	10 mA	--					
<b>Maximum feed current for output modules</b>	--	10A					
<b>Current consumption from output input path I<sub>OUT</sub></b>	--	10 mA					
<b>Operating Temperature</b>	-20°C to +60°C (-4 °F to +140 °F)	-20°C to +60°C (-4 °F to +140 °F)					
<b>Storage Temperature</b>	-40°C to +85°C (-40 °F to +185 °F)	-40°C to +85°C (-40 °F to +185 °F)					
<b>Humidity</b>	5% to 95%, noncondensing	5% to 95%, noncondensing					
<b>Dimensions (H x W x D) in (mm)</b>	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)	4.72 x 0.45 x 2.99 (120 x 11.5 x 76)					
<b>Weight oz. (g)</b>	2.68 (76)	2.68 (76)	2.96 (84)	2.96 (84)	2.96 (84)	2.96 (84)	2.96 (84)

## RSTi Slice I/O

The new RSTi I/O system is PROFINET enabled and ideal for distributed control applications. The compact, granular “build as you go” design of the RSTi enables the user to optimize the design of the system and therefore minimize cost.

The RSTi is also Network Independent with over 10 different bus interfaces available such as PROFIBUS, Modbus (serial and Ethernet), EthernetIP, EtherCAT, CANopen, and CCLink. The RSTi is supported by over 80 discrete, analog, motion and specialty I/O modules to address simple to complex applications.

### Benefits of RSTi

- Network Independence: OEMs and System Integrators can standardize on their I/O layout without worrying about the controller it is connected to.
- Reduced Development Time: Panels can be fabricated in advance, independent of the control system, by simply changing out the network/bus interface without impact to wiring.
- Reduced Installation Cost: Distributed I/O networks reduce installation and wiring cost.
- Lower Cost Per Point: The RSTi can be configured to meet application needs. The granular design reduces panel space and module cost.
- “Build as You Go”: Expansion is simple; just slide in a RSTi I/O module without impacting the wiring back to the main control panel.
- System Simplification: The distributed nature of the RSTi greatly reduces the time to dis-assemble and re-assemble a machine, therefore reducing machine commissioning.

The RSTi is ideal for distributed I/O systems with as a few 4 I/O per location or hundreds of I/O.

**Network Interfaces** [pages 1.xx-1.xx](#)

**Network Interfaces with Built-in I/O** [pages 1.xx-1.xx](#)



**Discrete I/O Modules (Input)** [pages 1.xx-1.xx](#)

**Discrete I/O Modules (Output)** [pages 1.xx-1.xx](#)

**Analog I/O Modules (Input)** [pages 1.xx-1.xx](#)

**Analog I/O Modules (Output)** [pages 1.xx-1.xx](#)

**High Speed Counting** [pages 1.xx-1.xx](#)

**Serial Communications Modules** [pages 1.xx-1.xx](#)

**RTD Modules** [page 1.xx](#)

**Power Modules** [pages 1.xx-1.xx](#)

**Thermocouple Modules** [page 1.xx](#)

**Motion Control** [pages 1.xx-1.xx](#)

**Configuration Tools** [pages 1.xx-1.xx](#)

**Accessories** [page 1.xx](#)

**Typical Application** [page 1.xx](#)

### Publication Reference Chart

GFK-2745	RSTi I/O User Manual
GFK-2746	RSTi Network Adapter Manual





### Network Interfaces

RSTi offers a wide range of network interfaces for Ethernet, Fieldbuses and serial networks. The network independence of the RSTi enables to user to be flexible on system layouts.

	STXPNS001	STXPBS001	STXDNS001	STXCAN001	STXMS001
<b>Product Name</b>	<b>Slave Network Interface</b>	<b>Slave Network Interface</b>	<b>Slave Network Interface</b>	<b>Slave Network Interface</b>	<b>Slave Network Interface</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	PROFINET Ethernet	PROFIBUS V1	DeviceNet	CANopen	Modbus RS-232
<b>Protocol Supported</b>	PROFINET RT	Freeze mode Sync mode Auto baud rate Fail safe mode	I/O Slave Message (Group 2 only slave) Poll command. Bit_strobe command Cyclic command, COS command		RTU and ASCII
<b>Features</b>	Line or Star topology Built-in Ethernet Switch				
<b>Baud Rate</b>	100Mbps	9.6K to 12Mbps	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	10KBps to 1Mbps	1200 to 115.2Kbps
<b>I/O Data Size</b>	Total: Inputs 128bytes/ Outputs 128bytes	Total: Inputs 128bytes/ Outputs 128bytes	Total: Inputs 252bytes/ Outputs 252bytes Max. Discrete I/O: 2016 Inputs/2016 Outputs Max. Analog I/O: 126 Inputs/126 Outputs	Total: Inputs 64 bytes/ Outputs 64 bytes	Total: Inputs 252bytes/ Outputs 252bytes
<b>LEDs</b>	Module Status Network Status I/O Status Port 1 Link Activity Port 2 Link Activity Field Power Status	Module Status Network Status Expansion Module Status Field Power Status	Module Status Network Status Expansion Module Status Field Power Status	Module Status Network Status Expansion Module Status Field Power Status	Module Status Transmit Data Received Data Expansion Module Status Field Power Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes	Yes	Yes
<b>Maximum Bus Length</b>	100 meters between nodes	100 meters to 1.2Km depending on baud rate	Up to 500 meters depending on baud rate		15 meters
<b>Maximum Number of Nodes Supported</b>	Limited by the IP address	100	64	99	1
<b>Number of Expansion I/O Supported</b>	32	32	32	32	32
<b>Interface Connector Type</b>	Two RJ-45 with built-in switch	DB 9 connector (RS-485)	5 pin connector	5 pin connector	DB 9 connector (RS-232)
<b>Configuration Tool</b>	Proficy Machine Edition or GSDML	GSM File	EDS File	EDS File	I/O Guide Pro
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Power Dissipation</b>	115 mA typical @ 24 VDC	60 mA typical @ 24 VDC	300 mA typical	100 mA typical @ 24 VDC	70 mA typical @ 24 VDC
<b>Internal Power Used (5 VDC loading)</b>	1.5 A @ Maximum 5 VDC	1.5 A @ Maximum 5 VDC	1.2 A @ Maximum 5 VDC	1.5 A @ Maximum 5 VDC	1.5 A @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 45 x 70	99 x 45 x 70	99 x 42 x 70	99 x 42 x 70	99 x 45 x 70



## Network Interfaces

RSTi offers a wide range of network interfaces for Ethernet, Fieldbuses and serial networks. The network independence of the RSTi enables user to be flexible on system layouts.

	STXMBS002	STXECT001	STXEIP001	STXMBE001
<b>Product Name</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Lifecycle Status</b>	Active	Target Release July 2013	Target Release July 2013	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	Modbus RS-485	EtherCAT Ethernet	Ethernet/IP Ethernet	Modbus TCP Ethernet
<b>Protocol Supported</b>	RTU and ASCII	EtherCAT	16 IO message connections 64 CIP connections 64 Explicit message connections	8 Modbus/TCP, 4 HTTP, BOOTP, TBD
<b>Features</b>	Built-in Ethernet Switch			
<b>Baud Rate</b>	1200 to 115.2Kbps	100Mbps	10/100Mbps	10/100Mbps
<b>I/O Data Size</b>	Total: Inputs 252bytes/ Outputs 252bytes	Total: Inputs 252bytes/ Outputs 252bytes	Total: Inputs 252bytes/ Outputs 252bytes	Total: Inputs 252bytes/ Outputs 252bytes
<b>LEDs</b>	Module Status Transmit Data Received Data Expansion Module Status Field Power Status	Module Status Network Status Expansion Module Status Field Power Status	Module Status Network Status I/O Status Link Activity Field Power Status	Module Status Network Status I/O Status Link Activity Field Power Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes	Yes
<b>Maximum Bus Length</b>	1200 meters	100 meters between EtherCAT nodes	100 meters between nodes	100 meters between nodes
<b>Maximum Number of Nodes Supported</b>	64	65,535	Limited by the IP address	Limited by the IP address
<b>Number of Expansion I/O Supported</b>	32	32	32	32
<b>Interface Connector Type</b>	DB 9 connector (RS-485)	Two RJ-45 with built-in switch	One RJ-45	One RJ-45
<b>Configuration Tool</b>	I/O Guide Pro	I/O Guide Pro	EDS File	I/O Guide Pro
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (16 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Power Dissipation</b>	70 mA typical @ 24 VDC	100 mA typical @ 24 VDC	60 mA typical @ 24 VDC	60 mA typical @ 24 VDC
<b>Internal Power Used (5 VDC loading)</b>	1.5 A @ Maximum 5 VDC	1.5 A @ Maximum 5 VDC	1.5 A @ Maximum 5 VDC	1.5 A @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 45 x 70	99 x 54.2 x 70	99 x 45 x 70	99 x 45 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXPBS032	STXPBS132	STXPBS232
<b>Product Name</b>	<b>Slave Network Interface with 32 Positive Logic Inputs Built-in</b>	<b>Slave Network Interface with 32 Negative Logic Inputs Built-in</b>	<b>Slave Network Interface with 32 Sink Outputs Built-in</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	PROFIBUS V1	PROFIBUS V1	PROFIBUS V1
<b>Protocol Supported</b>	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode
<b>Features</b>	PROFIBUS DP Network Slave has built-in 32 Positive Logic Inputs with expansion support	PROFIBUS DP Network Slave has built-in 32 Negative Logic Inputs with expansion support	PROFIBUS DP Network Slave has built-in 32 Sink Outputs with expansion support
<b>Baud Rate</b>	9.6K to 12Mbps	9.6K to 12Mbps	9.6K to 12Mbps
<b>I/O Data Size</b>	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate
<b>Maximum Number of Nodes Supported</b>	100	100	100
<b>Number of Expansion I/O Supported</b>	8	8	8
<b>Number of Points</b>	32	32	32
<b>System Power Requirement</b>	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	32 Point 24 VDC Positive Logic	32 Point 24 VDC Negative Logic	
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	
<b>Input Impedance</b>	~5.4K ohms	~5.4K ohms	
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec	
<b>Response Time (ms)</b>			< 0.3msec
<b>Trigger Voltage</b>	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC	
<b>Points per Common</b>	32	32	32
<b>Output Type</b>			32 Point 24 VDC Negative Logic
<b>Output Range</b>			Nominal 0 VDC; 11 to 28.8 VDC
<b>Protection</b>			Short protection, Over Temperature Protection, Over Current Limit
<b>Minimum Output Load</b>			
<b>Load Current per Point</b>			0.5 Amps per point
<b>Output Inrush Current</b>			
<b>Polarity</b>			Sink
<b>Configuration Tool</b>	GSM File	GSM File	GSM File
<b>Interface Connector Type</b>	DB 9 connector (RS-485)	DB 9 connector (RS-485)	DB 9 connector (RS-485)
<b>Power Dissipation</b>	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 83 x 70	99 x 83 x 70	99 x 83 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXPBS332	STXPBS016	STXPBS116
<b>Product Name</b>	<b>Slave Network Interface with 32 Source Outputs Built-in</b>	<b>Slave Network Interface with 16 Relay Outputs</b>	<b>Slave Network Interface with 16 Isolated Relay Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	PROFIBUS V1	PROFIBUS V1	PROFIBUS V1
<b>Protocol Supported</b>	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode
<b>Features</b>	PROFIBUS DP Network Slave has built-in 32 Source Outputs with expansion support	PROFIBUS DP Network Slave has built-in 16 Relay Outputs with expansion support	PROFIBUS DP Network Slave has built-in 16 Isolated Relay Outputs with expansion support
<b>Baud Rate</b>	9.6K to 12Mbps	9.6K to 12Mbps	9.6K to 12Mbps
<b>I/O Data Size</b>	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 32bytes/Outputs 32bytes; Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate
<b>Maximum Number of Nodes Supported</b>	100	100	100
<b>Number of Expansion I/O Supported</b>	8	8	8
<b>Number of Points</b>	32	16	16
<b>System Power Requirement</b>	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>			
<b>Input Voltage Range</b>			
<b>Input Impedance</b>			
<b>Input Signal Delay</b>			
<b>Response Time (ms)</b>	< 0.3msec	10msec	10msec
<b>Trigger Voltage</b>			
<b>Points per Common</b>	32	4	1
<b>Output Type</b>	32 Point 24 VDC Positive Logic	16 Point Relay	16 Isolated Relay
<b>Output Range</b>	Nominal 24 VDC; 11 to 28.8 VDC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC
<b>Protection</b>	Short protection, Over Temperature Protection, Over Current Limit		
<b>Minimum Output Load</b>		100 micro Amps, 100 millivolts VDC per point	100 micro Amps, 100 millivolts VDC per point
<b>Load Current per Point</b>	0.5 Amps per point	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC
<b>Output Inrush Current</b>			
<b>Polarity</b>	Source		
<b>Configuration Tool</b>	GSM File	GSM File	GSM File
<b>Interface Connector Type</b>	DB 9 connector (RS-485)	DB 9 connector (RS-485)	DB 9 connector (RS-485)
<b>Power Dissipation</b>	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 83 x 70	99 x 83 x 70	99 x 83 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXPBS432	STXPBS532	STXPBS824
<b>Product Name</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Source Outputs</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Sink Outputs</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Relay Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	PROFIBUS V1	PROFIBUS V1	PROFIBUS V1
<b>Protocol Supported</b>	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode
<b>Features</b>			
<b>Baud Rate</b>	9.6K to 12Mbps	9.6K to 12Mbps	9.6K to 12Mbps
<b>I/O Data Size</b>	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate
<b>Maximum Number of Nodes Supported</b>	100	100	100
<b>Number of Expansion I/O Supported</b>	8	8	8
<b>Number of Points</b>	16 In/16 Out	16 In/16 Out	16 In/16 Out
<b>System Power Requirement</b>	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic	16 Point 24 VDC Positive Logic
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Impedance</b>	~5.4K ohms	~5.4K ohms	~5.4K ohms
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec	< 0.5msec
<b>Response Time (ms)</b>	< 0.3msec	< 0.3msec	10msec
<b>Trigger Voltage</b>	ON State: 9 VDC OFF State: 5 VDC	ON State: 9 VDC OFF State: 5 VDC	ON State: 9 VDC OFF State: 5 VDC
<b>Points per Common</b>	32	32	16 for Inputs and 4 for Outputs
<b>Output Type</b>	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic	16 Point Relay
<b>Output Range</b>	Nominal 24 VDC; 11 to 28.8 VDC	Nominal 24 VDC; 11 to 28.8 VDC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC
<b>Protection</b>	Short protection, Over Temperature Protection, Over Current Limit	Short protection, Over Temperature Protection, Over Current Limit	
<b>Minimum Output Load</b>			100 micro Amps, 100 millivolts VDC per point
<b>Load Current per Point</b>	0.5 Amps per point	0.5 Amps per point	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC
<b>Output Inrush Current</b>			
<b>Polarity</b>	Source	Sink	
<b>Configuration Tool</b>	GSM File	GSM File	GSM File
<b>Interface Connector Type</b>	DB 9 connector (RS-485)	DB 9 connector (RS-485)	DB 9 connector (RS-485)
<b>Power Dissipation</b>	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 83 x 70	99 x 83 x 70	99 x 83 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXPBS924	STXPBS825	STXPBS925
<b>Product Name</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Relay Outputs</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Isolated Relay Outputs</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Isolated Relay Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	PROFIBUS V1	PROFIBUS V1	PROFIBUS V1
<b>Protocol Supported</b>	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode	Freeze mode, Sync mode, Auto baudrate, Fail safe mode
<b>Features</b>			
<b>Baud Rate</b>	9.6K to 12Mbps	9.6K to 12Mbps	9.6K to 12Mbps
<b>I/O Data Size</b>	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out	Total: Inputs 36 bytes/Outputs 36 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/32 bytes Out for expansion modules); Discrete I/O: Maximum Discrete I/O: 256 inputs/ 256 outputs; Analog I/O: 16 Channels In/ 16 Channels Out
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate	100 meters to 1.2Km depending on baud rate
<b>Maximum Number of Nodes Supported</b>	100	100	100
<b>Number of Expansion I/O Supported</b>	8	8	8
<b>Number of Points</b>	16 In/16 Out	16 In/16 Out	16 In/16 Out
<b>System Power Requirement</b>	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	16 Point 24 VDC Negative Logic	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Impedance</b>	~5.4K ohms	~5.4K ohms	~5.4K ohms
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec	< 0.5msec
<b>Response Time (ms)</b>	10msec	10msec	10msec
<b>Trigger Voltage</b>	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC
<b>Points per Common</b>	16 for Inputs and 1 for Outputs	16 for Inputs and 1 for Outputs	16 for Inputs and 1 for Outputs
<b>Output Type</b>	16 Point Relay	16 Point Isolated Relay	16 Point Isolated Relay
<b>Output Range</b>	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC
<b>Protection</b>			
<b>Minimum Output Load</b>	100 micro Amps, 100 millivolts VDC per point	100 micro Amps, 100 millivolts VDC per point	100 micro Amps, 100 millivolts VDC per point
<b>Load Current per Point</b>	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC
<b>Output Inrush Current</b>			
<b>Polarity</b>			
<b>Configuration Tool</b>	GSM File	GSM File	GSM File
<b>Interface Connector Type</b>	DB 9 connector (RS-485)	DB 9 connector (RS-485)	DB 9 connector (RS-485)
<b>Power Dissipation</b>	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC	50 mA typical @ 24 VDC
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC	400 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 83 x 70	99 x 83 x 70	99 x 83 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXDNS032	STXDNS132	STXDNC032
<b>Product Name</b>	<b>Slave Network Interface with 32 Positive Logic Inputs Built-in</b>	<b>Slave Network Interface with 32 Negative Logic Inputs Built-in</b>	<b>Slave Network Interface with 32 Positive Logic Inputs Built-in</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	DeviceNet	DeviceNet	DeviceNet
<b>Protocol Supported</b>	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command"
<b>Features</b>			
<b>Baud Rate</b>	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)
<b>I/O Data Size</b>	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)	Total: Inputs 4 bytes/Outputs 4 bytes
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate
<b>Maximum Number of Nodes Supported</b>	64	64	64
<b>Number of Expansion I/O Supported</b>	10	10	None Supported
<b>Number of Points</b>	32 In	32 In	32
<b>System Power Requirement</b>	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	32 Point 24 VDC Positive Logic	32 Point 24 VDC Negative Logic	32 Point 24 VDC Positive Logic
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Impedance</b>	~5.4K ohms	~5.4K ohms	~5.4K ohms
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec	< 0.5msec
<b>Response Time (ms)</b>			
<b>Trigger Voltage</b>	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5VDC
<b>Points per Common</b>	16 for Inputs and 1 for Outputs	16 for Inputs and 1 for Outputs	16
<b>Output Type</b>			
<b>Output Range</b>			
<b>Protection</b>			
<b>Minimum Output Load</b>			
<b>Load Current per Point</b>			
<b>Output Inrush Current</b>			
<b>Polarity</b>			
<b>Configuration Tool</b>	EDS File	EDS File	EDS File
<b>Interface Connector Type</b>	5 pin connector	5 pin connector	5 pin connector
<b>Power Dissipation</b>	110 mA typical	110 mA typical	80 mA typical
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Connector Type
<b>Internal Power Used (5 VDC loading)</b>	600 mA @ Maximum 5 VDC	600 mA @ Maximum 5 VDC	Not Applicable
<b>Dimensions (H x W x D) in mm</b>	99 x 83 x 70	99 x 83 x 70	80 x 35 x 55



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXDNC132	STXDNS232	STXDNS332
<b>Product Name</b>	Slave Network Interface with 32 Negative Logic Inputs Built-in	Slave Network Interface with 32 Sink Outputs Built-in	Slave Network Interface with 32 Source Outputs Built-in
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	DeviceNet	DeviceNet	DeviceNet
<b>Protocol Supported</b>	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command
<b>Features</b>			
<b>Baud Rate</b>	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)
<b>I/O Data Size</b>	Total: Inputs 4 bytes/Outputs 4 bytes	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate
<b>Maximum Number of Nodes Supported</b>	64	64	64
<b>Number of Expansion I/O Supported</b>	None Supported	10	10
<b>Number of Points</b>	32	32	32
<b>System Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	32 Point 24 VDC Negative Logic		
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)		
<b>Input Impedance</b>	~5.4K ohms		
<b>Input Signal Delay</b>	< 0.5msec		
<b>Response Time (ms)</b>		< 0.3msec	< 0.3msec
<b>Trigger Voltage</b>	ON State: 9 VDC, OFF State: 5 VDC		
<b>Points per Common</b>	16	32	32
<b>Output Type</b>		32 Point 24 VDC Negative Logic	32 Point 24 VDC Positive Logic
<b>Output Range</b>		Nominal 0 VDC; 11 to 28.8 VDC	Nominal 24 VDC; 11 to 28.8 VDC
<b>Protection</b>		Short protection, Over Temperature Protection, Over Current Limit	Short protection, Over Temperature Protection, Over Current Limit
<b>Minimum Output Load</b>			
<b>Load Current per Point</b>		0.5 Amps per point	0.5 Amps per point
<b>Output Inrush Current</b>			
<b>Polarity</b>		Sink	Source
<b>Configuration Tool</b>	EDS File	EDS File	EDS File
<b>Interface Connector Type</b>	5 pin connector	5 pin connector	5 pin connector
<b>Power Dissipation</b>	80 mA typical	110 mA typical	110 mA typical
<b>Connector Type</b>	Connector Type	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	Not Applicable	600 mA @ Maximum 5 VDC	600 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	80 x 35 x 55	99 x 83 x 70	99 x 83 x 70





### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXDNC232	STXDNC332	STXDNS016
<b>Product Name</b>	<b>Slave Network Interface with 32 Sink Outputs</b>	<b>Slave Network Interface with 32 Source Outputs</b>	<b>Slave Network Interface with 16 Relay Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	DeviceNet	DeviceNet	DeviceNet
<b>Protocol Supported</b>	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command"
<b>Features</b>			
<b>Baud Rate</b>	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection) Total: Inputs 4 bytes/Outputs 4 bytes	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection) Total: Inputs 4 bytes/Outputs 4 bytes	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection) Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)
<b>I/O Data Size</b>			
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate
<b>Maximum Number of Nodes Supported</b>	64	64	64
<b>Number of Expansion I/O Supported</b>	None Supported	None Supported	10
<b>Number of Points</b>	32	32	16
<b>System Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>			
<b>Input Voltage Range</b>			
<b>Input Impedance</b>			
<b>Input Signal Delay</b>			
<b>Response Time (ms)</b>	< 0.3msec	< 0.3msec	10msec
<b>Trigger Voltage</b>			
<b>Points per Common</b>	16	16	
<b>Output Type</b>	32 Point 24 VDC Negative Logic	32 Point 24 VDC Positive Logic	16 Point Relay
<b>Output Range</b>	Nominal 24 VDC; 11 to 28.8 VDC	Nominal 24 VDC; 11 to 28.8 VDC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC
<b>Protection</b>	Short protection, Over Temperature Protection, Over Current Limit	Short protection, Over Temperature Protection, Over Current Limit	
<b>Minimum Output Load</b>			100 micro Amps, 100 millivolts VDC per point
<b>Load Current per Point</b>	0.5 Amps per point	0.5 Amps per point	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC
<b>Output Inrush Current</b>			
<b>Polarity</b>	Sink	Source	
<b>Configuration Tool</b>	EDS File	EDS File	EDS File
<b>Interface Connector Type</b>	5 pin connector	5 pin connector	5 pin connector
<b>Power Dissipation</b>	80 mA typical	80 mA typical	110 mA typical
<b>Connector Type</b>	Connector Type Hirose, HIF3A-40D-2.54R (ribbon cable), HIF2C-40D-2.54C (crimp connector), HIF2C-2226SCFA (crimp pin) or equal	Connector Type Hirose, HIF3A-40D-2.54R (ribbon cable), HIF2C-40D-2.54C (crimp connector), HIF2C-2226SCFA (crimp pin) or equal	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	Not Applicable	Not Applicable	600 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	80 x 35 x 55	80 x 35 x 55	99 x 83 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXDNS116	STXDNS432	STXDNS532
<b>Product Name</b>	<b>Slave Network Interface with 16 Isolated Relay Outputs</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Source Outputs</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Sink Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	DeviceNet	DeviceNet	DeviceNet
<b>Protocol Supported</b>	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command"
<b>Features</b>			
<b>Baud Rate</b>	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)
<b>I/O Data Size</b>	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate
<b>Maximum Number of Nodes Supported</b>	64	64	64
<b>Number of Expansion I/O Supported</b>	10	10	10
<b>Number of Points</b>	16	16 In/ 16 Out	16 In/ 16 Out
<b>System Power Requirement</b>	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>		16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic
<b>Input Voltage Range</b>		24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Impedance</b>		~5.4K ohms	~5.4K ohms
<b>Input Signal Delay</b>		< 0.5msec	< 0.5msec
<b>Response Time (ms)</b>	10msec	< 0.3msec	< 0.3msec
<b>Trigger Voltage</b>		ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC
<b>Points per Common</b>		32	32
<b>Output Type</b>	16 Point Isolated Relay	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic
<b>Output Range</b>	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC	Nominal 24 VDC; 11 to 28.8 VDC	Nominal 24 VDC; 11 to 28.8 VDC
<b>Protection</b>		Short protection, Over Temperature Protection, Over Current Limit	Short protection, Over Temperature Protection, Over Current Limit
<b>Minimum Output Load</b>	100 micro Amps, 100 millivolts VDC per point		
<b>Load Current per Point</b>	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC	0.5 Amps per point	0.5 Amps per point
<b>Output Inrush Current</b>			
<b>Polarity</b>		Source	Sink
<b>Configuration Tool</b>	EDS File	EDS File	EDS File
<b>Interface Connector Type</b>	5 pin connector	5 pin connector	5 pin connector
<b>Power Dissipation</b>	110 mA typical	110 mA typical	110 mA typical
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	600 mA @ Maximum 5 VDC	600 mA @ Maximum 5 VDC	600 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 83 x 70	99 x 83 x 70	99 x 83 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXDNC432	STXDNC532	STXDNC632
<b>Product Name</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Source Outputs</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Sink Outputs</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Sink Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	DeviceNet	DeviceNet	DeviceNet
<b>Protocol Supported</b>	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command
<b>Features</b>			
<b>Baud Rate</b>	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection) Total: Inputs 4 bytes/Outputs 4 bytes	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection) Total: Inputs 4 bytes/Outputs 4 bytes	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection) Total: Inputs 4 bytes/Outputs 4 bytes
<b>I/O Data Size</b>			
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate
<b>Maximum Number of Nodes Supported</b>	64	64	64
<b>Number of Expansion I/O Supported</b>	None Supported	None Supported	None Supported
<b>Number of Points</b>	16 In/ 16 Out	16 In/ 16 Out	16 In/ 16 Out
<b>System Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic	16 Point 24 VDC Positive Logic
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Impedance</b>	~5.4K ohms	~5.4K ohms	~5.4K ohms
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec	< 0.5msec
<b>Response Time (ms)</b>	< 0.3msec	< 0.3msec	< 0.3msec
<b>Trigger Voltage</b>	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC
<b>Points per Common</b>	16	16	16
<b>Output Type</b>	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic	16 Point 24 VDC Positive Logic
<b>Output Range</b>	Nominal 24 VDC; 11 to 28.8 VDC	Nominal 24 VDC; 11 to 28.8 VDC	Nominal 24 VDC; 11 to 28.8 VDC
<b>Protection</b>	Short protection, Over Temperature Protection, Over Current Limit	Short protection, Over Temperature Protection, Over Current Limit	Short protection, Over Temperature Protection, Over Current Limit
<b>Minimum Output Load</b>			
<b>Load Current per Point</b>	0.5 Amps per point	0.5 Amps per point	0.5 Amps per point
<b>Output Inrush Current</b>			
<b>Polarity</b>	Source	Sink	Sink
<b>Configuration Tool</b>	EDS File	EDS File	EDS File
<b>Interface Connector Type</b>	5 pin connector	5 pin connector	5 pin connector
<b>Power Dissipation</b>	80 mA typical	80 mA typical	80 mA typical
<b>Connector Type</b>	Connector Type Hirose, HIF3A-40D-2.54R (ribbon cable), HIF2C-40D-2.54C (crimp connector), HIF2C-2226SCFA (crimp pin) or equal	Connector Type Hirose, HIF3A-40D-2.54R (ribbon cable), HIF2C-40D-2.54C (crimp connector), HIF2C-2226SCFA (crimp pin) or equal	Connector Type Hirose, HIF3A-40D-2.54R (ribbon cable), HIF2C-40D-2.54C (crimp connector), HIF2C-2226SCFA (crimp pin) or equal
<b>Internal Power Used (5 VDC loading)</b>	Not Applicable	Not Applicable	Not Applicable
<b>Dimensions (H x W x D) in mm</b>	80 x 35 x 55	80 x 35 x 55	80 x 35 x 55



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXDNC732	STXDNS824	STXDNS924
<b>Product Name</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Source Outputs</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Relay Outputs</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Relay Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	DeviceNet	DeviceNet	DeviceNet
<b>Protocol Supported</b>	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command
<b>Features</b>			
<b>Baud Rate</b>	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)
<b>I/O Data Size</b>	Total: Inputs 4 bytes/Outputs 4 bytes	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes	Yes
<b>Maximum Bus Length</b>	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate
<b>Maximum Number of Nodes Supported</b>	64	64	64
<b>Number of Expansion I/O Supported</b>	None Supported	10	10
<b>Number of Points</b>	16 In/ 16 Out	16 In/ 16 Out	16 In/ 16 Out
<b>System Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	16 Point 24 VDC Negative Logic	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Impedance</b>	~5.4K ohms	~5.4K ohms	~5.4K ohms
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec	< 0.5msec
<b>Response Time (ms)</b>	< 0.3msec	10msec	10msec
<b>Trigger Voltage</b>	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC
<b>Points per Common</b>	16	16 for Inputs and 4 for Outputs	16 for Inputs and 1 for Outputs
<b>Output Type</b>	16 Point 24 VDC Negative Logic	16 Point Relay	16 Point Relay
<b>Output Range</b>	Nominal 24 VDC; 11 to 28.8 VDC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC
<b>Protection</b>	Short protection, Over Temperature Protection, Over Current Limit		
<b>Minimum Output Load</b>		100 micro Amps, 100 millivolts VDC per point	100 micro Amps, 100 millivolts VDC per point
<b>Load Current per Point</b>	0.5 Amps per point	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC
<b>Output Inrush Current</b>			
<b>Polarity</b>	Source		
<b>Configuration Tool</b>	EDS File	EDS File	EDS File
<b>Interface Connector Type</b>	5 pin connector	5 pin connector	5 pin connector
<b>Power Dissipation</b>	80 mA typical	110 mA typical	110 mA typical
<b>Connector Type</b>	Connector Type Hirose, HIF3A-40D-2.54R (ribbon cable), HIF2C-40D-2.54C (crimp connector), HIF2C-2226SCFA (crimp pin) or equal	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	Not Applicable	600 mA @ Maximum 5 VDC	600 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	80 x 35 x 55	99 x 83 x 70	99 x 83 x 70



### Network Interfaces with Built-in I/O

The PROFIBUS and DeviceNet Network Interfaces are also available with built-in I/O to reduce cost and footprint. The network interfaces can be expanded and support all of the RSTi I/O types.

	STXDNS825	STXDNS925
<b>Product Name</b>	<b>Slave Network Interface with 16 Positive Logic Inputs and 16 Isolated Relay Outputs</b>	<b>Slave Network Interface with 16 Negative Logic Inputs and 16 Isolated Relay Outputs</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Slave Network Interface	Slave Network Interface
<b>Field Busses/Device Networks</b>	DeviceNet	DeviceNet
<b>Protocol Supported</b>	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command	I/O Slave Message (Group 2 only slave), Poll command, Bit_strobe command, Cyclic command, COS command
<b>Features</b>		
<b>Baud Rate</b>	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)	125K bits/s, 250Kbps, 500Kbps (Auto baud rate selection)
<b>I/O Data Size</b>	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)	Total: Inputs 36 bytes/Outputs 34 bytes total (4 bytes In/ 4 bytes Out for base module and 32 bytes In/30 bytes Out for expansion modules)
<b>LEDs</b>	Module Status, Network Status, I/O Status	Module Status, Network Status, I/O Status
<b>Diagnostic Supported</b>	Yes	Yes
<b>Maximum Bus Length</b>	Up to 500 meters depending on baud rate	Up to 500 meters depending on baud rate
<b>Maximum Number of Nodes Supported</b>	64	64
<b>Number of Expansion I/O Supported</b>	10	10
<b>Number of Points</b>	16 In/ 16 Out	16 In/ 16 Out
<b>System Power Requirement</b>	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection	24 VDC (19.2 to 28.8 VDC) with Current Limit, Reverse Polarity Protection
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Type</b>	16 Point 24 VDC Positive Logic	16 Point 24 VDC Negative Logic
<b>Input Voltage Range</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Input Impedance</b>	~5.4K ohms	~5.4K ohms
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec
<b>Response Time (ms)</b>	10msec	10msec
<b>Trigger Voltage</b>	ON State: 9 VDC, OFF State: 5 VDC	ON State: 9 VDC, OFF State: 5 VDC
<b>Points per Common</b>	16 for Inputs and 1 for Outputs	16 for Inputs and 1 for Outputs
<b>Output Type</b>	16 Point Isolated Relay	16 Point Isolated Relay
<b>Output Range</b>	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC	5 to 28.8 VDC, 48 VDC, 110 VDC, 250 VAC
<b>Protection</b>		
<b>Minimum Output Load</b>	100 micro Amps, 100 millivolts VDC per point	100 micro Amps, 100 millivolts VDC per point
<b>Load Current per Point</b>	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC	2 Amps at 5 to 28.8 VDC, 0.8 Amps at 48 VDC, 0.5 Amps at 110 VDC, 2 Amps at 250 VAC
<b>Output Inrush Current</b>		
<b>Polarity</b>		
<b>Configuration Tool</b>	EDS File	EDS File
<b>Interface Connector Type</b>	5 pin connector	5 pin connector
<b>Power Dissipation</b>	110 mA typical	110 mA typical
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	600 mA @ Maximum 5 VDC	600 mA @ Maximum 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 83 x 70	99 x 83 x 70



### Discrete I/O Modules (Input)

RSTi discrete input modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (110 VAC, 220 VAC). The input modules are available in 4, 8 or 16 point density to optimize panel space.

	ST-1124	ST-1114	ST-1214	ST-1224	ST-1314
<b>Product Name</b>	<b>5 VDC Input, 4 points Negative Logic</b>	<b>5 VDC Input, 4 points Positive Logic</b>	<b>12/24 VDC Input, 4 points Positive Logic</b>	<b>12/24 VDC Input, 4 points Negative Logic</b>	<b>48 VDC Input, 4 points Positive Logic</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Discrete Input	Discrete Input	Discrete Input	Discrete Input	Discrete Input
<b>Input Voltage Range</b>	5 VDC (4.5 VDC to 5.5 VDC)	5 VDC (4.5 VDC to 5.5 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (10.2 VDC to 28.8 VDC)	48 VDC (34 VDC to 60 VDC)
<b>Number of Points</b>	4	4	4	4	4
<b>Points per Common</b>	4	4	4	4	4
<b>Input Impedance</b>	~1.3K ohms	~1.3K ohms	~5.1K ohms	~5.1K ohms	~12K ohms
<b>Input Signal Delay</b>	< 0.5msec	< 0.5msec	3.0msec	3.0msec	3.0msec
<b>Filtering Time</b>	Typical 1.5 msec. (software filtering)	Typical 1.5 msec. (software filtering)	Typical 1.5 msec.	Typical 1.5 msec.	
<b>Trigger Voltage</b>	On State: 2.4 VDC to 5.5 VDC OFF State: 0.8 VDC	On State: 2.4 VDC to 5.5 VDC OFF State: 0.8 VDC	ON State: 10.2 to 28.8 VDC OFF State: 5 VDC	ON State: 10.2 to 28.8 VDC OFF State: 5 VDC	ON State: 48 VDC (34 VDC to 60 VDC) OFF State: 10 VDC
<b>Maximum On State Current</b>	4.5 mA per point at 5.5 VDC	4.5 mA per point at 5.5 VDC	6 mA per point at 28.8 VDC	6 mA per point at 28.8 VDC	4 mA per point at 48 VDC
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	35 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Discrete I/O Modules (Input)

RSTi discrete input modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (110 VAC, 220 VAC). The input modules are available in 4, 8 or 16 point density to optimize panel space.

	ST-1324	ST-131F	ST-1218	ST-1228	ST-121F
<b>Product Name</b>	<b>48 VDC Input, 4 points Negative Logic</b>	<b>48 VDC Input, 16 points Positive Logic</b>	<b>12/24 VDC Input, 8 points Positive Logic</b>	<b>12/24 VDC Input, 8 points Negative Logic</b>	<b>12/24 VDC Input, 16 points Positive Logic</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Discrete Input	Discrete Input	Discrete Input	Discrete Input	Discrete Input
<b>Input Voltage Range</b>	48 VDC (34 VDC to 60 VDC)	48 VDC (34 VDC to 60 VDC)	24 VDC (10.2 VDC to 28.8 VDC)	24 VDC (10.2 VDC to 28.8 VDC)	24 VDC (10.2 VDC to 28.8 VDC)
<b>Number of Points</b>	4	16	8	8	16
<b>Points per Common</b>	4	16	8	8	16
<b>Input Impedance</b>	~12K ohms	~12K ohms	~5.1K ohms	~5.1K ohms	~5.1K ohms
<b>Input Signal Delay</b>	3.0msec	3.0msec	3.0msec	3.0msec	3.0msec
<b>Filtering Time</b>		Typical 1.5 msec.	Typical 1.5 msec.	Typical 1.5 msec.	Typical 1.5 msec.
<b>Trigger Voltage</b>	ON State: 48 VDC (34 VDC to 60 VDC) OFF State: 10 VDC	ON State: 48 VDC (34 VDC to 60 VDC) OFF State: 10 VDC	ON State: 10.2 to 28.8 VDC OFF State: 5 VDC	ON State: 10.2 to 28.8 VDC OFF State: 5 VDC	ON State: 10.2 to 28.8 VDC OFF State: 5 VDC
<b>Maximum On State Current</b>	4 mA per point at 48 VDC	2.5 mA per point at 60 VDC	6 mA per point at 28.8 VDC	6 mA per point at 28.8 VDC	6 mA per point at 28.8 VDC
<b>Connector Type</b>	Spring Clamp Terminal Block	Connector Type Hirose, HIF3BA-20D-2.54DSA	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Connector Type Hirose, HIF3BA-20D-2.54DSA
<b>Internal Power Used (5 VDC loading)</b>	35 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Discrete I/O Modules (Input)

RSTi discrete input modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (110 VAC, 220 VAC). The input modules are available in 4, 8 or 16 point density to optimize panel space.

	<b>ST-122F</b>	<b>ST-1804</b>	<b>ST-1904</b>
<b>Product Name</b>	<b>12/24 VDC Input, 16 points Negative Logic</b>	<b>110 VAC Input, 4 points (47 to 63Hz)</b>	<b>240 VAC Input, 4 points (47 to 63Hz)</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Discrete Input	Discrete Input	Discrete Input
<b>Input Voltage Range</b>	24 VDC (10.2 VDC to 28.8 VDC)	120 VAC (85 VAC to 132 VAC)	240 VAC (170 VAC to 264 VAC)
<b>Number of Points</b>	16	4	4
<b>Points per Common</b>	16	4	4
<b>Input Impedance</b>	~5.1K ohms	~11K ohms	~22K ohms
<b>Input Signal Delay</b>	3.0msec	10.0msec	10.0msec
<b>Filtering Time</b>	Typical 1.5 msec.		
<b>Trigger Voltage</b>	ON State: 10.2 to 28.8 VDC OFF State: 5 VDC	ON State: 85 VAC to 132 VAC OFF State: 60 VAC	ON State: 170 VAC to 264 VAC OFF State: 130 VAC
<b>Maximum On State Current</b>	6 mA per point at 28.8 VDC	8 mA per point at 132 VAC	12 mA per point at 264 VAC
<b>Connector Type</b>	Connector Type Hirose, HIF3BA-20D-2.54DSA	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	45 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70





### Analog I/O Modules (Input)

RSTi analog input modules are available in a wide range of voltage and current signals. Analog input modules are available in 12 bit or 14 bit resolution.

	ST-3114	ST-3118	ST-3134	ST-3214	ST-3218
<b>Product Name</b>	Analog 0 to 20 mA, 12bit Input, 4 channels	Analog 0 to 20 mA, 12bit Input, 8 channels	Analog 0 to 20 mA, 14bit Input, 4 channels	Analog 4 to 20 mA, 12bit Input, 4 channels	Analog 4 to 20 mA, 12bit Input, 8 channels
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Analog Input	Analog Input	Analog Input	Analog Input	Analog Input
<b>Range</b>	0 to 20 mA Range	0 to 20 mA Range	0 to 20 mA Range	4 to 20 mA Range	4 to 20 mA Range
<b>Number of Points</b>	4	8	4	4	8
<b>Points per Common</b>	4	8	4	4	8
<b>Diagnostic Supported</b>				Open Wire if < 3 mA	
<b>Update Rate</b>	4msec/All channels	4msec/All channels	4msec/All channels	4msec/All channels	4msec/All channels
<b>Resolution</b>	12 bits: 4.88 microAmp/bit	12 bits: 4.88 microAmp/bit	14 bits: 1.22 microAmp/bit	12 bits: 3.9 microAmp/bit	12 bits: 3.9 microAmp/bit
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C
<b>Input Impedance</b>	120 ohms	120 ohms	120 ohms	120 ohms	120 ohms
<b>Internal Power Used (5 VDC loading)</b>	165 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum	165 mA @ 5.0 VDC Maximum	165 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Analog I/O Modules (Input)

RSTi analog input modules are available in a wide range of voltage and current signals. Analog input modules are available in 12 bit or 14 bit resolution.

	ST-3234	ST-3274	ST-3424	ST-3428	ST-3444
<b>Product Name</b>	Analog 4 to 20 mA, 14bit Input, 4 channels	Analog 4 to 20 mA, 12bit Input, 4 channels (connector type)	Analog 0 to 10 VDC, 12bit Input, 4 channels	Analog 0 to 10 VDC, 12bit Input, 8 channels	Analog 0 to 10 VDC, 14bit Input, 4 channels
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Module Type</b>	Analog Input	Analog Input	Analog Input	Analog Input	Analog Input
<b>Range</b>	4 to 20 mA Range	4 to 20 mA Range	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
<b>Number of Points</b>	4	4	4	8	4
<b>Points per Common</b>	4	4	4	8	4
<b>Diagnostic Supported</b>	Open Wire if < 3 mA	Open Wire if < 3 mA			
<b>Update Rate</b>	4msec/All channels	4msec/All channels	4msec/All channels	4msec/All channels	4msec/All channels
<b>Resolution</b>	14 bits: 0.9 microAmp/bit	12 bits: 3.9 microAmp/bit	12 bits: 2.44 mV/bit	12 bits: 2.44 mV/bit	14 bits: 0.6 mV/bit
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C
<b>Input Impedance</b>	120 ohms	120 ohms	500K ohms	500K ohms	500K ohms
<b>Internal Power Used (5 VDC loading)</b>	165 mA @ 5.0 VDC Maximum	165 mA @ 5.0 VDC Maximum	165 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum	170 mA @ 5.0 VDC Maximum
<b>Connector Type</b>	Spring Clamp Terminal Block	Requires Sensor Connect 3M Mini-Clamp Plug, 37104 Series	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Analog I/O Modules (Input)

RSTi analog input modules are available in a wide range of voltage and current signals. Analog input modules are available in 12 bit or 14 bit resolution.

	ST-3524	ST-3544	ST-3624	ST-3644
<b>Product Name</b>	Analog -10 to 10 VDC, 12bit Input, 4 channels	Analog -10 to 10 VDC, 14bit Input, 4 channels	Analog 0 to 5 VDC, 12bit Input, 4 channels	Analog 0 to 5 VDC, 14bit Input, 4 channels
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Analog Input	Analog Input	Analog Input	Analog Input
<b>Range</b>	-10 to 10 VDC	-10 to 10 VDC	0 to 5 VDC	0 to 5 VDC
<b>Number of Points</b>	4	4	4	4
<b>Points per Common</b>	4	4	4	4
<b>Diagnostic Supported</b>				
<b>Update Rate</b>	4msec/All channels	4msec/All channels	4msec/All channels	4msec/All channels
<b>Resolution</b>	12 bits: 4.8 mV/bit	14 bits: 1.2 mV/bit	12 bits: 1.22 mV/bit	14 bits: 0.3 mV/bit
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C
<b>Input Impedance</b>	500K ohms	500K ohms	500K ohms	500K ohms
<b>Internal Power Used (5 VDC loading)</b>	170 mA @ 5.0 VDC Maximum	170 mA @ 5.0 VDC Maximum	170 mA @ 5.0 VDC Maximum	170 mA @ 5.0 VDC Maximum
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Discrete I/O Modules (Output)

RSTi discrete output modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (12 VAC, 125 VAC). The modules are available in 4, 8 or 16 point density to optimize panel space. Relay output modules are also available. The ST-2792 has an added feature of manual/automatic override.

	ST-2114	ST-2124	ST-2314	ST-2324
<b>Product Name</b>	<b>5 VDC/20 mA TTL Inverting Output, 4 points</b>	<b>5 VDC, 4 Points, TTL Non-Inverting Output (Default: 0V)</b>	<b>4 points, 24 VDC Negative Logic, Output 0.5 Amps</b>	<b>4 points, 24 VDC Positive Logic, Output 0.5 Amps</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Digital Outputs	Digital Outputs	Digital Outputs	Digital Outputs
<b>Output Range</b>	5 VDC nominal, Min. 4.5 VDC to Max. 5.5 VDC	5 VDC nominal, Min. 4.5 VDC to Max. 5.5 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC
<b>Number of Points</b>	4	4	4	4
<b>Points per Common</b>	4	4	4	4
<b>Diagnostic Supported</b>				
<b>Protection</b>	Output Short-Circuit protection Field Power Over Voltage Protection (about 6.7 VDC) Field Power Reverse Voltage Protection	Output Short-Circuit protection Field Power Over Voltage Protection (about 6.7 VDC) Field Power Reverse Voltage Protection	Over Temperature shut down: Min. 150°C Over Current Limit : Min. 3.5A/Max. 7A Per Channel Short Circuit Protection ESD Protection: 16.5Kv	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max.7.5A Per Channel Short Circuit Protection ESD Protection: 5.0Kv
<b>ON Voltage/OFF Voltage</b>	Min. 4.8 VDC @ 5 VDC, 5 mA	Max. 0.3 VDC @ 0 VDC, 5 mA		
<b>Load Current per Point</b>	Max. 20 mA Per Channel Max. 80 mA All Common	Max. 20 mA Per Channel Max. 80 mA All Common	Max. 0.5A Per Channel Max. 2.0A All Common	Max. 0.5A Per Channel Max. 2.0A All Common
<b>Output Inrush Current</b>	40 mA For 10ms, Repeatable Every 1 Sec.	40 mA For 10ms, Repeatable Every 1 Sec.		
<b>Response Time (ms)</b>	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON : Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms
<b>Polarity</b>	TTL Inverting	TTL Non-Inverting	Negative Logic	Positive Logic
<b>Field Power Requirement</b>	5 VDC (4.5 VDC to 5.5 VDC)	5 VDC (4.5 VDC to 5.5 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Power Dissipation</b>			5 mA @ 28.8 VDC Per Channel	5 mA @ 28.8 VDC Per Channel
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	50 mA @ 5.0 VDC Maximum	50 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Discrete I/O Modules (Output)

RSTi discrete output modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (12 VAC, 125 VAC). The modules are available in 4, 8 or 16 point density to optimize panel space. Relay output modules are also available. The ST-2792 has an added feature of manual/automatic override.

	ST-2414	ST-2424	ST-2514	ST-2524
<b>Product Name</b>	<b>4 points, 24 VDC Negative Logic, Output 0.5 Amps with Diagnostics</b>	<b>4 points, 24 VDC Positive Logic, Output 0.5 Amps with Diagnostics</b>	<b>4 points, 24 VDC Negative Logic, Output 2 Amps with Diagnostics</b>	<b>4 points, 24 VDC Positive Logic, Output 2 Amps with Diagnostics</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Digital Outputs	Digital Outputs	Digital Outputs	Digital Outputs
<b>Output Range</b>	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC
<b>Number of Points</b>	4	4	4	4
<b>Points per Common</b>	4	4	4	4
<b>Diagnostic Supported</b>	Point Fault Reported to Network Interface	Point Fault Reported to Network Interface	Point Fault Reported to Network Interface	Point Fault Reported to Network Interface
<b>Protection</b>	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max. 7A Per Channel Short Circuit Protection ESD Protection: 16.5Kv	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max.7.5A Per Channel Short Circuit Protection ESD Protection: 5.0Kv	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max. 7A Per Channel Short Circuit Protection ESD Protection: 16.5Kv	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 6A/Max. 15A Per Channel Short Circuit Protection ESD Protection: 5.0Kv
<b>ON Voltage/OFF Voltage</b>				
<b>Load Current per Point</b>	Max. 0.5A Per Channel Max. 2.0A All Common	Max. 0.5A Per Channel Max. 2.0A All Common	Max. 2A Per Channel Max. 8A All Common	Max. 2A Per Channel Max. 8A All Common
<b>Output Inrush Current</b>				
<b>Response Time (ms)</b>	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON : Max. 0.3ms ON to OFF: Max. 0.3ms
<b>Polarity</b>	Negative Logic	Positive Logic	Negative Logic	Positive Logic
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Power Dissipation</b>	5 mA @ 28.8 VDC Per Channel	5 mA @ 28.8 VDC Per Channel	5 mA @ 28.8 VDC Per Channel	5 mA @ 28.8 VDC Per Channel
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	45 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Discrete I/O Modules (Output)

RSTi discrete output modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (12 VAC, 125 VAC). The modules are available in 4, 8 or 16 point density to optimize panel space. Relay output modules are also available. The ST-2792 has an added feature of manual/automatic override.

	ST-2318	ST-2328	ST-221F	ST-222F
<b>Product Name</b>	<b>8 points, 24 VDC Negative Logic, Output 0.5 Amps</b>	<b>8 points, 24 VDC Positive Logic, Output 0.5 Amps</b>	<b>16 points, 24 VDC Negative Logic, Output 0.5 Amps (Connector Style)</b>	<b>16 points, 24 VDC Positive Logic, Output 0.5 Amps (Connector Style)</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Digital Outputs	Digital Outputs	Digital Outputs	Digital Outputs
<b>Output Range</b>	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC	24 VDC nominal, Min. 11 VDC to Max. 28.8 VDC
<b>Number of Points</b>	8	8	16	16
<b>Points per Common</b>	8	8	16	16
<b>Diagnostic Supported</b>				
<b>Protection</b>	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max. 7A Per Channel Short Circuit Protection ESD Protection: 16.5Kv	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max. 7A Per Channel Short Circuit Protection ESD Protection : 16.5Kv	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max. 7A Per Channel Short Circuit Protection ESD Protection : 16.5Kv	Over Temperature shut down: Min. 150°C Over Current Limit: Min. 3.5A/Max. 7A Per Channel Short Circuit Protection ESD Protection: 16.5Kv
<b>ON Voltage/OFF Voltage</b>				
<b>Load Current per Point</b>	Max. 0.5A Per Channel Max. 2.0A All Common	Max. 0.5A Per Channel Max. 2.0A All Common	Max. 0.5A Per Channel Max. 4.0A All Common	Max. 0.5A Per Channel Max. 4.0A All Common
<b>Output Inrush Current</b>				
<b>Response Time (ms)</b>	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms	OFF to ON: Max. 0.3ms ON to OFF: Max. 0.3ms
<b>Polarity</b>	Negative Logic	Positive Logic	Negative Logic	Positive Logic
<b>Field Power Requirement</b>	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Power Dissipation</b>	5 mA @ 28.8 VDC Per Channel	5 mA @ 28.8 VDC Per Channel	3 mA @ 28.8 VDC Per Channel	3 mA @ 28.8 VDC Per Channel
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Connector Type Hirose, HIF3BA-20D-2.54DSA	Connector Type Hirose, HIF3BA-20D-2.54DSA
<b>Internal Power Used (5 VDC loading)</b>	60 mA @ 5.0 VDC Maximum	45 mA @ 5.0 VDC Maximum	80 mA @ 5.0 VDC Maximum	80 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Discrete I/O Modules (Output)

RSTi discrete output modules are available for a wide range of applications requiring DC voltages (5 VDC, 24 VDC, 48 VDC) and AC voltages (12 VAC, 125 VAC). The modules are available in 4, 8 or 16 point density to optimize panel space. Relay output modules are also available. The ST-2792 has an added feature of manual/automatic override.

	ST-2742	ST-2744	ST-2748	ST-2852
<b>Product Name</b>	<b>2 points, Relay Output, 2 Amps</b>	<b>4 points, Relay Output, 2 Amps</b>	<b>8 points, Relay Output, 2 Amps</b>	<b>2 points, 12 to 125 VAC Output, 0.5 Amps</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Digital Outputs	Digital Outputs	Digital Outputs	Digital Outputs
<b>Output Range</b>	5~28.8 VDC @ 2.0A Resistive 48 VDC @ 0.8A Resistive 110 VDC @ 0.5A Resistive 250 VAC @ 2.0A Resistive	5~28.8 VDC @ 2.0A Resistive 48 VDC @ 0.8A Resistive 110 VDC @ 0.5A Resistive 250 VAC @ 2.0A Resistive	5~28.8 VDC @ 2.0A Resistive 48 VDC @ 0.8A Resistive 110 VDC @ 0.5A Resistive 250 VAC @ 2.0A Resistive	15~132 VAC 47 to 63Hz
<b>Number of Points</b>	2	4	8	2
<b>Points per Common</b>	1	4	8	2
<b>Diagnostic Supported</b>				
<b>Protection</b>				
<b>ON Voltage/OFF Voltage</b>				
<b>Load Current per Point</b>	2A @ 5~28.8 VDC 0.8A @ 48 VDC 0.5A @ 110 VDC 2A @ 250 VAC	2A @ 5~28.8 VDC 0.8A @ 48 VDC 0.5A @ 110 VDC 2A @ 250 VAC	2A @ 5~28.8 VDC 0.8A @ 48 VDC 0.5A @ 110 VDC 2A @ 250 VAC	0.5 Amp
<b>Output Inrush Current</b>				40 Amp for 16 mSec. or 4 Amp for 30 Sec.
<b>Response Time (ms)</b>	OFF to ON : Max. 10ms ON to OFF: Max. 10ms	OFF to ON: Max. 10ms ON to OFF: Max. 10ms	OFF to ON: Max. 10ms ON to OFF: Max. 10ms	OFF to ON: Max. 3ms ON to OFF: Max. 1/2 Cycle plus 3ms
<b>Polarity</b>				
<b>Field Power Requirement</b>	24 VDC, 240 VAC	No Connection with Field Power Field Power passes though to the next module	No Connection with Field Power Field Power passes though to the next module	120 VAC nominal Voltage Range: 12~125 VAC
<b>Power Dissipation</b>				
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	65 mA @ 5.0 VDC Maximum	130 mA @ 5.0 VDC Maximum	150 mA @ 5.0 VDC Maximum	35 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 24 x 70	99 x 12 x 70



### Analog I/O Modules (Output)

RSTi analog output modules are available in a wide range of voltage and current signals. Specialty analog modules are also available for manual over-ride and 0 to 1 Amp analog out.

	ST-4112	ST-4114	ST-4212	ST-4214
<b>Product Name</b>	<b>2 channels Current Output, 0 to 20 mA, 12bit</b>	<b>4 channels Current Output, 0 to 20 mA, 12bit</b>	<b>2 channels Current Output, 4 to 20 mA, 12bit</b>	<b>4 channels Current Output, 4 to 20 mA, 12bit</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Analog Output	Analog Output	Analog Output	Analog Output
<b>Output Range</b>	0 to 20 mA	0 to 20 mA	4 to 20 mA	4 to 20 mA
<b>Number of Points</b>	2	4	2	4
<b>Points per Common</b>	2	4	2	4
<b>Resolution</b>	12 bits : 4.88uA/Bit	12 bits : 4.88uA/Bit	12 bits : 3.9uA/Bit	12 bits : 3.9uA/Bit
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C (100uA~20 mA) ±0.25% Full Scale @ 25°C(0uA~100uA) ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C
<b>Update Rate</b>	2msec for all channels	4msec for all channels	2msec for all channels	4msec for all channels
<b>Maximum Output Load</b>	Max. 500 Ω	Max. 500 Ω	Max. 500 Ω	Max. 500 Ω
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	60 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70





### Analog I/O Modules (Output)

RSTi analog output modules are available in a wide range of voltage and current signals. Specialty analog modules are also available for manual over-ride and 0 to 1 Amp analog out.

	ST-4274	ST-4422	ST-4424	ST-4474
<b>Product Name</b>	<b>4 channels Current Output, 4 to 20 mA, 12bit (Connector Style)</b>	<b>2 channels Voltage Output, 0 to 10 VDC, 12bit</b>	<b>4 channels Voltage Output, 0 to 10 VDC, 12bit</b>	<b>4 channels Current Output, 0 to 10 VDC, 12bit (Connector Style)</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Analog Output	Analog Output	Analog Output	Analog Output
<b>Output Range</b>	4 to 20 mA	0 to 10 VDC	0 to 10 VDC	0 to 10 VDC
<b>Number of Points</b>	4	2	4	4
<b>Points per Common</b>	4	2	4	4
<b>Resolution</b>	12 bits : 3.91uA/Bit	12 bits : 2.44mV/Bit	12 bits : 2.44mV/Bit	12 bits : 2.44mV/Bit
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C
<b>Update Rate</b>	1.2msec for all channels	2msec for all channels	4msec for all channels	1.2msec for all channels
<b>Maximum Output Load</b>	Max. 500 Ω	Min. 5 kΩ	Min. 2 kΩ	Min. 2 kΩ
<b>Connector Type</b>	Requires Sensor Connect 3M Mini-Clamp Plug, 37104 Series AWG#20~22 available	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Requires Sensor Connect 3M Mini-Clamp Plug, 37104 Series AWG#20~22 available
<b>Internal Power Used (5 VDC loading)</b>	40 mA @ 5.0 VDC Maximum	155 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Analog I/O Modules (Output)

RSTi analog output modules are available in a wide range of voltage and current signals. Specialty analog modules are also available for manual over-ride and 0 to 1 Amp analog out.

	ST-4491	ST-4522	ST-4622	ST-4911
<b>Product Name</b>	<b>1 channels Voltage Output, 0 to 10 VDC, 12bit. (Manual Override or Automatic Operation)</b>	<b>2 channels Voltage Output, -10 to +10 VDC, 12bit</b>	<b>2 channels Voltage Output, 0 to 5 VDC, 12bit</b>	<b>1 channels Voltage Output, 0 to 1 Amp, 12bit.</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Analog Output	Analog Output	Analog Output	Analog Output
<b>Output Range</b>	0 to 10 VDC	-10 to +10 VDC	0 to 5 VDC	0 to 1 Amp
<b>Number of Points</b>	1	2	2	1
<b>Points per Common</b>	1	2	2	1
<b>Resolution</b>	12 bits : 2.44mV/Bit	12 bits : 4.88mV/Bit	12 bits : 1.22mV/Bit	12 bits : 2.44 mA/Bit
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C
<b>Update Rate</b>	1.2msec for all channels	2msec for all channels	2msec for all channels	1msec for all channels
<b>Maximum Output Load</b>	Min. 2 kΩ	Min. 5 kΩ	Min. 5 kΩ	13 Ω, ±5%
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	60 mA @ 5.0 VDC Maximum	155 mA @ 5.0 VDC Maximum	155 mA @ 5.0 VDC Maximum	60 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### RTD Modules

RSTi RTD input modules 2 and 3 wire sensors. The modules also support diagnostics.

#### RTD Input Types

- PT100, PT200, PT500, PT1000, PT50
- JPT100, JPT200, JPT500, JPT1000, JPT50
- NI100, NI200, NI500, NI000
- NI120, NI1000LG
- CU10

#### Resistance Input

- 100 mΩ/bit, 10 mΩ/bit, 20 mΩ/bit, 50 mΩ/bit

	ST-3702	ST-3704	ST-3708
<b>Product Name</b>	<b>2 Channels, RTD Input (2 and 3 Wire)</b>	<b>4 Channels, RTD Input (3 Wire) Connector Style</b>	<b>8 Channels, RTD Input (3 Wire) Connector Style</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Temperature Sensing		
<b>Range</b>	PT50, PT100, PT200, PT500, PT1000, JPT100, JPT200, JPT500, JPT1000, NI100, NI200, NI500, NI1000, NI120, CU10, Resistance 100 mΩ/Bit, Resistance 10 mΩ/Bit, Resistance 20 mΩ/Bit	PT100, PT200, PT500, PT1000, PT50 JPT100, JPT200, JPT500, JPT1000, JPT50 NI100, NI200, NI500, NI000 NI120, NI1000LG Resistance Input 100 mΩ/bit, 10 mΩ/bit, 20 mΩ/bit, 50 mΩ/bit	PT100, PT200, PT500, PT1000, PT50 JPT100, JPT200, JPT500, JPT1000, JPT50 NI100, NI200, NI500, NI1000 NI120, NI1000LG Resistance Input 100 mΩ/bit, 10 mΩ/bit, 20 mΩ/bit, 50 mΩ/bit
<b>Number of Points</b>	2	4	8
<b>Points per Common</b>	2	4	8
<b>Diagnostic Supported</b>	Open Channel	Open Channel Over Range	Open Channel Over Range
<b>Resolution</b>	0.1°C / 10 mΩ		
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.3% Full Scale @ 25°C ±0.5% Full Scale @ 0°C, 60°C	±0.3% Full Scale @ 25°C ±0.5% Full Scale @ 0°C, 60°C
<b>Update Rate</b>	200msec for all channels	30msec per channel	30msec per channel
<b>Internal Power Used (5 VDC loading)</b>	70 mA @ 5.0 VDC Maximum	100 mA @ 5.0 VDC Maximum	100 mA @ 5.0 VDC Maximum
<b>Connector Type</b>	Spring Clamp Terminal Block	Requires connector type Hirose, HIF3BA-20D-2.54C	Requires connector type Hirose, HIF3BA-20D-2.54C
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



## Thermocouple Modules

RSTi Thermocouple/mV input modules support a wide range of thermocouple sensors. The modules also support diagnostics and Cold Junction Compensation.

Thermocouple Inputs

- Type K/J/T/B/R/S/E/N/L/U/C/D

mV Input

- 10uV/bit, 1uV/bit, 2uV/bit

	ST-3802	ST-3804	ST-3808
<b>Product Name</b>	<b>2 Channels, Thermocouple Input/mV</b>	<b>4 Channels, Thermocouple Input/mV (External CJC support)</b>	<b>8 Channels, Thermocouple Input/mV (External CJC support)</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Temperature Sensing	Temperature Sensing	Temperature Sensing
<b>Range</b>	Type K/J/T/B/R/S/E/N/L/U/C/D mV Input 10uV/Bit, 1uV/Bit, 2uV/Bit	Type K/J/T/B/R/S/E/N/L/U/C/D mV Input 10uV/bit, 1uV/bit, 2uV/bit	Type K/J/T/B/R/S/E/N/L/U/C/D mV Input 10uV/bit, 1uV/bit, 2uV/bit
<b>Number of Points</b>	2	4	8
<b>Points per Common</b>	2	4	8
<b>Diagnostic Supported</b>	Open Channel	Open Channel Over Range	Open Channel Over Range
<b>Resolution</b>	0.1°C / 10mΩ	0.1°C / °F, 10uV	±0.1°C / F, 1uV
<b>Accuracy</b>	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C	±0.1% Full Scale @ 25°C ±0.3% Full Scale @ 0°C, 60°C
<b>Update Rate</b>	200msec for all channels	30msec per channel	30msec per channel
<b>Internal Power Used (5 VDC loading)</b>	70 mA @ 5.0 VDC Maximum	120 mA @ 5.0 VDC Maximum	140 mA @ 5.0 VDC Maximum
<b>Connector Type</b>	Spring Clamp Terminal Block	Requires connector type Hirose, HIF3BA-20D-2.54C	Requires connector type Hirose, HIF3BA-20D-2.54C
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Serial Communications Modules

RSTi serial communications modules enable serial devices, such as bar code readers, scales and printers, to connect to the network interface.

	<b>ST-5211</b>	<b>ST-5212</b>	<b>ST-5221</b>
<b>Product Name</b>	<b>1 Channel Serial RS-232</b>	<b>2 Channel Serial RS-232</b>	<b>1 Channel Serial RS-422</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Serial Communications	Serial Communications	Serial Communications
<b>Protocol Supported</b>	ASCII, TxD, RxD, Full Duplex	ASCII, TxD, RxD, Full Duplex	ASCII, TxD, RxD, Full Duplex
<b>Interface Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Baud Rate</b>	300 to 115,200 bps	300 to 115,200 bps	300 to 115,200 bps
<b>I/O Data Size</b>	6 Bytes In/6 Bytes Out Buffer: RxD 1024 Bytes; TxD 256 Bytes	12 Bytes In/12 Bytes Out Buffer: RxD 1024 Bytes; TxD 256 Bytes	6 Bytes In/6 Bytes Out Buffer: RxD 1024 Bytes; TxD 256 Bytes
<b>Internal Power Used (5 VDC loading)</b>	95 mA @ 5.0 VDC Maximum	110 mA @ 5.0 VDC Maximum	155 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Serial Communications Modules

RSTi serial communications modules enable serial devices, such as bar code readers, scales and printers, to connect to the network interface.

	ST-5231	ST-5232
<b>Product Name</b>	<b>1 Channel Serial RS-485</b>	<b>2 Channel Serial RS-485</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	Serial Communications	Serial Communications
<b>Protocol Supported</b>	ASCII, TxD, RxD, Full Duplex	ASCII, TxD, RxD, Full Duplex
<b>Interface Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Baud Rate</b>	300 to 115,200 bps	300 to 115,200 bps
<b>I/O Data Size</b>	6 Bytes In/6 Bytes Out Buffer: RxD 1024 Bytes; TxD 256 Bytes	12 Bytes In/12 Bytes Out Buffer: RxD 1024 Bytes; TxD 256 Bytes
<b>Internal Power Used (5 VDC loading)</b>	110 mA @ 5.0 VDC Maximum	155 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70



### High Speed Counting

RSTi High Speed Counter modules interface to encoders and high speed pulse input devices. The RSTi offers a wide range of counting functions and control. SSI interface is also supported by the RSTi.

	ST-5101	ST-5111	ST-5112
<b>Product Name</b>	<b>1 Channel High Speed Counter, 5 VDC Input and 1 Output</b>	<b>1 Channel High Speed Counter, 24 VDC Input and 1 Output</b>	<b>2 Channel High Speed Counter, 24 VDC Inputs and 2 Outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	High Speed Counter	High Speed Counter	High Speed Counter
<b>Counter Operation</b>			1-Input Mode - Up, Down 2-Input Mode - Up/Inhibit, Up/Reset, Down/Inhibit, Down/Reset, Up/Down, Clock/Direction Encoder 1x, Encoder 2x, Encoder 4x
<b>Count Rate</b>	1.5Mhz	1.5Mhz	0~100KHz except Encoder 4x 0~50KHz, Encoder 4x
<b>Counter Range</b>			32 bit wide/channel
<b>Input/Output Type</b>	(1) 5 VDC Input / (1) 24 VDC (5 to 28.8 VDC) Output	(1) 24 VDC Input / (1) 24 VDC (5 to 28.8 VDC) Output	(2) 24 VDC Input / (2) 24 VDC Output 0.5 Amp
<b>Protection</b>			Short Protection
<b>Off State Leakage Current</b>	Max. 0.5 mA	Max. 0.5 mA	
<b>Input Filters (Selectable)</b>	Bypass / 1usec / 5usec / 10usec / 50usec / 100usec / 500usec / 1msec / 5msec / 10msec	Bypass / 1usec / 5usec / 10usec / 50usec / 100usec / 500usec / 1msec / 5msec / 10msec	
<b>Selectable On/Off Output Presets</b>	Force OFF/ON Greater Than Less Than Equal Overflow/Underflow PWM Output	Force OFF/ON Greater Than Less Than Equal Overflow/Underflow PWM Output	
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	80 mA @ 5.0 VDC Maximum	80 mA @ 5.0 VDC Maximum	160 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



## High Speed Counting

RSTi High Speed Counter modules interface to encoders and high speed pulse input devices. The RSTi offers a wide range of counting functions and control. SSI interface is also supported by the RSTi.

	<b>ST-5114</b>	<b>ST-5351</b>
<b>Product Name</b>	<b>4 Channel High Speed Counter, 24 VDC Inputs and 2 Outputs</b>	<b>1 Channel SSI Interface. Gray Code or Natural Binary</b>
<b>Lifecycle Status</b>	Active	Active
<b>Module Type</b>	High Speed Counter	High Speed Counter
<b>Counter Operation</b>	1-Input Mode - Up, Down 2-Input Mode - Up/Inhibit, Up/Reset, Down/Inhibit, Down/Reset, Up/Down, Clock/Direction Encoder 1x, Encoder 2x, Encoder 4x	
<b>Count Rate</b>	0~50KHz except Encoder 4x 0~25KHz, Encoder 4x	62.5K, 100K, 125K, 250K, 500K, 1M, 2Mbps
<b>Counter Range</b>	32 bit wide/channel	Max. 30 bit
<b>Input/Output Type</b>	(4) 24 VDC Input / (2) 24 VDC Output 0.5 Amp	D+, D- RS422 Differential Input C+, C- RS422 Differential Output
<b>Protection</b>	Short Protection	
<b>Off State Leakage Current</b>		
<b>Input Filters (Selectable)</b>		
<b>Selectable On/Off Output Presets</b>		
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5VDC loading)</b>	160 mA @ 5.0 VDC Maximum	150 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70





### Motion Control

RSTi motion options include Pulse Width Modulation and Pulse Train outputs for simple motion applications. A wide range of control amplifiers is supported with the RSTi motion modules.

	ST-5422	ST-5442	ST-5444
<b>Product Name</b>	<b>2 Channels PWM Output, 1.5A/24 VDC, Source</b>	<b>2 Channels PWM Output, 0.5A/24 VDC, Source</b>	<b>4 Channels PWM Output, 0.5A/24 VDC, Source</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Motion Control	Motion Control	Motion Control
<b>Drive Type</b>	PWM	PWM	PWM
<b>Number of Axes</b>	2	2	4
<b>Diagnostic Supported</b>	Short Protection	Short Protection	Short Protection
<b>Encoder Support</b>	No	No	No
<b>Load Current per Point</b>	1.5 Amp/Ch, 3 Amp/All Channel, short protection	0.5 Amp/Ch, 1 Amp/All Channel, short protection	0.5 Amp/Ch, 2 Amp/All Channel, short protection
<b>Output Inrush Current</b>	Max. 2 A, 100ms/Channel	Max. 1.5 A, 100ms/Channel	Max. 1.5 A, 100ms/Channel
<b>Frequency</b>	1~2500Hz±0.5%	1~2500Hz±0.5%	1~2500Hz±0.5%
<b>Duty</b>	0.0~100.0%±1.0(0.1%/1LSB), Ton>5us, Toff>5us	0.0~100.0%±1.0(0.1%/1LSB), Ton>5us, Toff>5us	0.0~100.0%±1.0(0.1%/1LSB), Ton>5us, Toff>5us
<b>Field Power Requirement</b>	24 VDC (18 VDC to 28.8 VDC)	24 VDC (18 VDC to 28.8 VDC)	24 VDC (18 VDC to 28.8 VDC)
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	150 mA @ 5.0 VDC Maximum	150 mA @ 5.0 VDC Maximum	150 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



## Motion Control

RSTi motion options include Pulse Width Modulation and Pulse Train outputs for simple motion applications. A wide range of control amplifiers is supported with the RSTi motion modules.

	ST-5641	ST-5642	ST-5651
<b>Product Name</b>	<b>1 Channel Pulse and Direction Output, 0.5 A/24 VDC, Source</b>	<b>2 Channel Pulse and Direction Output, 0.5 A/24 VDC, Source</b>	<b>1 Channel Pulse and Direction Output, RS-422</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Module Type</b>	Motion Control	Motion Control	Motion Control
<b>Drive Type</b>	Pulse Output	Pulse Output	Pulse Output
<b>Number of Axes</b>	1	2	1
<b>Diagnostic Supported</b>	Short Protection	Short Protection	
<b>Encoder Support</b>	No	No	No
<b>Load Current per Point</b>	0.5 Amp/Ch, 1 Amp/All Channel, short protection	0.5 Amp/Ch, 2 Amp/All Channel, short protection	Max. 10 Amps
<b>Output Inrush Current</b>			
<b>Frequency</b>	1~20,000Hz±0.5% Continuous Pulse Output Max. +1~+32767: Pulse Direction Output OFF Max. -1~-32767: Pulse Direction Output ON.	1~20,000Hz±0.5% Continuous Pulse Output Max. +1~+32767: Pulse Direction Output OFF Max. -1~-32767: Pulse Direction Output ON.	5~20,000Hz±1.0% Continuous Pulse Output Max. +1~+32767: Pulse Direction Output OFF Max. -1~-32767: Pulse Direction Output ON.
<b>Duty</b>	50%±3.0% Fixed, Ton>5us, Toff>5us	50%±3.0% Fixed, Ton>5us, Toff>5us	50%±0.1% Fixed, Ton>10ns, Toff>10ns
<b>Field Power Requirement</b>	24 VDC (18 VDC to 28.8 VDC)	24 VDC (18 VDC to 28.8 VDC)	24 VDC (11 VDC to 28.8 VDC)
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	150 mA @ 5.0 VDC Maximum	150 mA @ 5.0 VDC Maximum	150 mA @ 5.0 VDC Maximum
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Power Modules

The RSTi provides various power modules to reduce wiring and simplify installation. Modules that support Smart Module ID will require one of the addresses on the bus.

The ST-7241 and ST-7641 enable multiple voltages to be supported on the RSTi bus such as 120 VAC. All modules to the right of the module will be based on the supply voltage of the ST-7x41.

The ST-7111 and ST-7511 boost the 5 VDC on the backplane bus when module power requirement is exceeded. The ST-7x11 supplies 1.0 Amps of 5 VDC to the modules to the right of the ST-7x11.

	ST-7008	ST-7408	ST-7108	ST-7508
<b>Product Name</b>	<b>Shield Signal Module, 8 channels</b>	<b>Shield Signal Smart Module, 8 channels</b>	<b>Common for 0 Volts Module, 8 channels</b>	<b>Common for 0 Volts Smart Module, 8 channels</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Power Modules	Power Modules	Power Modules	Power Modules
<b>Smart Module (Uses Module ID)</b>	No	Yes	No	Yes
<b>Load Current per Point</b>	Max. 10 Amps	Max. 10 Amps	Max. 10 Amps	Max. 10 Amps
<b>LEDs</b>	No	1 Green/Red LED, Module Status	No	1 Green/Red LED, Module Status
<b>Diagnostic Supported</b>	No	No	No	No
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	None	Max. 18 mA @ 5 VDC	None	Max. 18 mA @ 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



## Power Modules

The RSTi provides various power modules to reduce wiring and simplify installation. Modules that support Smart Module ID will require one of the addresses on the bus.

The ST-7241 and ST-7641 enable multiple voltages to be supported on the RSTi bus such as 120 VAC. All modules to the right of the module will be based on the supply voltage of the ST-7x41.

The ST-7111 and ST-7511 boost the 5 VDC on the backplane bus when module power requirement is exceeded. The ST-7x11 supplies 1.0 Amps of 5 VDC to the modules to the right of the ST-7x11.

	<b>ST-7118</b>	<b>ST-7518</b>	<b>ST-7188</b>	<b>ST-7588</b>
<b>Product Name</b>	<b>Common for 24 VDC Module, 8 channels</b>	<b>Common for 24 VDC Smart Module, 8 channels</b>	<b>Common for (4) 24 VDC Channels and (4) 0 VDC Channels</b>	<b>Common Smart Module for (4) 24 VDC Channels and (4) 0 VDC Channels</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Power Modules	Power Modules	Power Modules	Power Modules
<b>Smart Module (Uses Module ID)</b>	No	Yes	No	Yes
<b>Load Current per Point</b>	Max. 10 Amps	Max. 10 Amps	Max. 10 Amps	Max. 10 Amps
<b>LEDs</b>	No	1 Green/Red LED, Module Status	No	1 Green/Red LED, Module Status
<b>Diagnostic Supported</b>	No	No	No	No
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	None	Max. 18 mA @ 5 VDC	None	Max. 18 mA @ 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70



### Power Modules

The RSTi provides various power modules to reduce wiring and simplify installation. Modules that support Smart Module ID will require one of the addresses on the bus.

The ST-7241 and ST-7641 enable multiple voltages to be supported on the RSTi bus such as 120 VAC. All modules to the right of the module will be based on the supply voltage of the ST-7x41.

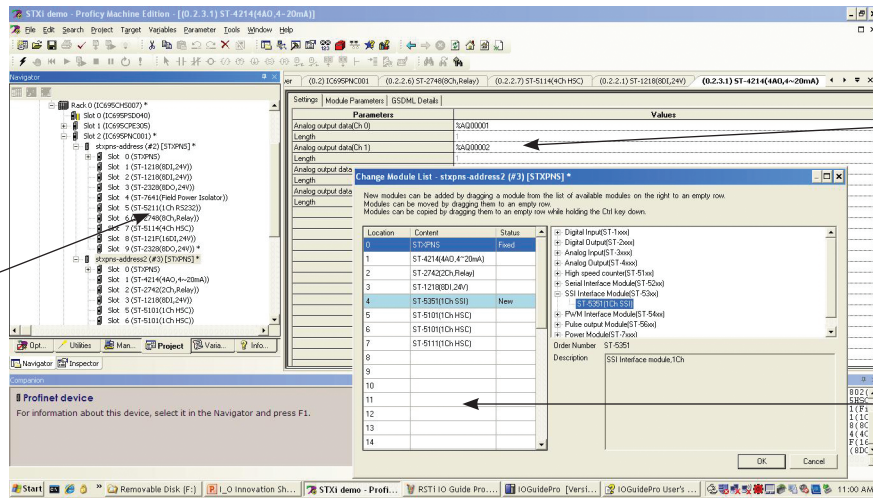
The ST-7111 and ST-7511 boost the 5 VDC on the backplane bus when module power requirement is exceeded. The ST-7x11 supplies 1.0 Amps of 5 VDC to the modules to the right of the ST-7x11.

	ST-7111	ST-7511	ST-7241	ST-7641
<b>Product Name</b>	<b>Bus Expansion Power Supply (Input 24 VDC, Output 1.0 Amp/5 VDC)</b>	<b>Bus Expansion Smart Power Supply (Input 24 VDC, Output 1.0 Amp/5 VDC)</b>	<b>Power Distribution (5 VDC, 24 VDC, 48 VDC, 110 VAC, 220 VAC)</b>	<b>Power Distribution Smart Module (5 VDC, 24 VDC, 48 VDC, 110 VAC, 220 VAC)</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Module Type</b>	Power Modules	Power Modules	Power Modules	Power Modules
<b>Smart Module (Uses Module ID)</b>	No	Yes	No	Yes
<b>Load Current per Point</b>	Max. 10 Amps	Max. 10 Amps	Max. 10 Amps	Max. 10 Amps
<b>LEDs</b>	Yes	1 Green/Red LED, Module Status	No	1 Green/Red LED, Module Status
<b>Diagnostic Supported</b>	No	No	No	No
<b>Connector Type</b>	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block	Spring Clamp Terminal Block
<b>Internal Power Used (5 VDC loading)</b>	1.0 Amp 5 VDC booster	Max. 14 mA @ 24 VDC	None	Max. 18 mA @ 5 VDC
<b>Dimensions (H x W x D) in mm</b>	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70	99 x 12 x 70

### Powerful Configuration Tools

The RSTi is tightly integrated with GE Machine Edition. The user can easily select an I/O module and configure parameters. The configuration is stored in the folder and once download to the controller it is automatically loaded to the RSTi with a single point of connect.

RSTi modules are part of the controller hardware configuration

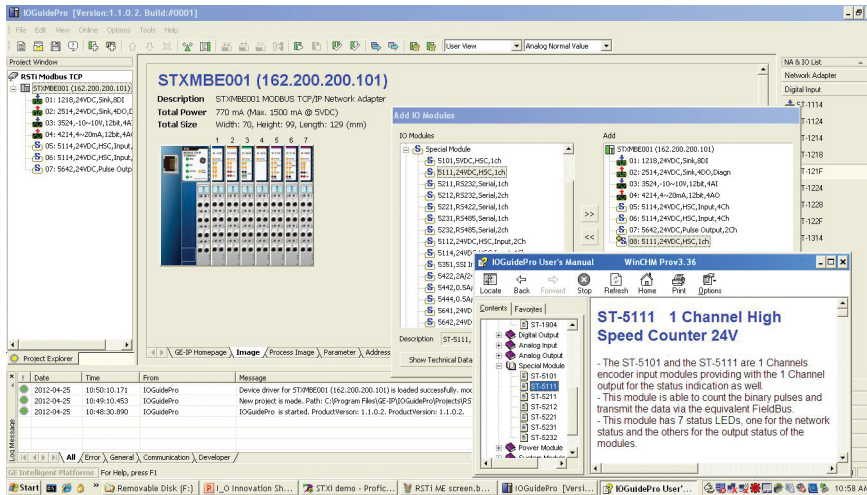


Data is easily mapped to reference memory or symbolic

Module pick list with part number and brief description

## IO Guide Pro - Third Party Configuration Tool

The IO Guide Pro enables integrators network independence. I/O systems can be easily configured using the various RSTi network interfaces. Changing from Ethernet IP to PROFIBUS is as simple as a mouse click without impacting the rest of the I/O configuration. The tool provides technical data, address mapping, product image and bus loading.



Network Interface	Configuration Tool
PROFINET	Integrated into Machine Edition and also a GSDML file is available for other platforms
PROFIBUS DP/V1	IO Guide Pro software tool and GSD file
DeviceNet	IO Guide Pro software tool and EDS file
Modbus TCP	IO Guide Pro software tool
Modbus Serial	IO Guide Pro software tool
EtherCAT	IO Guide Pro software tool
Ethernet IP	IO Guide Pro software tool and EDS file
CANOpen	IO Guide Pro software tool and EDS file
CC-Link	CSP file

## Accessories

Part Number	Description	Lifecycle Status
STXACC004	End Module, 7pcs (included with network interface)	Active
STXRTB009	Removable Terminal Block, 9pcs (included with modules)	Active
STXACC001	MARKER 100pcs (included with modules)	Active
STXACC002	BLANK MARKER 100pcs	Active

## Expansion Cables

Part Number	Description	Lifecycle Status
STXCBL005	0.5 meter expansion cable for ST-5725 and ST-5726	Active
STXCBL010	1.0 meter expansion cable for ST-5725 and ST-5726	Active
STXCBL030	3.0 meter expansion cable for ST-5725 and ST-5726	Active

## Starter Kits

Part Number	Description	Lifecycle Status
STXKITPNS001	PACSystems RSTi PROFINET Starter Kit, PROFINET RT Slave built-in switch, eight 24 VDC positive local inputs module, eight 24 VDC source outputs modules, four 4-20 mA current inputs module, two 4-20 mA current outputs module	Active



## Examples of Typical Application

**PROFINET Network Interface** with (20) 24 VDC Positive Logic inputs, (12) 24 VDC Source outputs 2 Amps and (8) Relay outputs.

5 VDC RSTi Bus required (mA)	Qty	Part Number	Description
1500 mA of Provided	1	STXPNS001	PROFINET RT Network Adapter
35 mA x 3 = 105 mA	3	ST-1228	8 points, Negative Logic, Source Input module 12V/ 24 VDC
45 mA x 3 = 135 mA	3	ST-2624	4 points, Source, 24 VDC/ 2 A
150 mA	1	ST-2748	Isolated Relay Output 8 Points, 230 VAC/ 2 A

**Total:** **5 VDC Current Required from Network Interface: 390 mA**

Total 1500 mA @ 5 VDC available from STXPNS001 PROFINET Network Adapter. Total I/O current requirement is 390 mA @ 5V.  
No 5 VDC booster required.

**PROFINET Network Interface** with (40) 24 VDC inputs, (20) 24 VDC Outputs with ESCP protection, (20) Relay outputs also (6) 4 to 20 mA Analog Inputs, (3) Type J Thermocouple, (4) 4 to 20 mA Analog Outputs, (14) 120 VAC Inputs and (8) 120 VAC Outputs

1500 mA of Provided	1	STXPNS001	PROFINET RT Network Adapter
35 mA x 5 = 175 mA	5	ST-1228	8 points, Negative Logic, Source Input module 12V/ 24 VDC
60 mA x 3 = 180 mA	3	ST-2328	8 points output, Source, 24 VDC/ 0.5 A
150 mA x 3 = 450 mA	3	ST-2748	Isolated Relay Output 8 Points, 230 VAC/ 2 A
60 mA x 1 = 60 mA	1	ST-3218	Analog Input 8 Channels, 4~20 mA, 12 bit
120 mA x 1 = 120 mA	1	ST-3804	4 Channels, Thermocouple Connector Type
60 mA x 1 = 60 mA	1	ST-4214	Analog Out 4 Channels, 4~20 mA, 12 bit
18 mA x 1 = 18 mA	1	ST-7641*	Isolated Field Power Distribution 5, 24, 48, AC , 10 Amp with LED status
35 mA x 4 = 140 mA	4	ST-1804	4 points, 110 VAC (AC 85V ~ 132V) inputs
35 mA x 4 = 140 mA	4	ST-2852	Triac Output 2 points, 12V ~ 125 VAC/ 0.5 A

**Total:** **5 VDC Current Required from Network Interface: 1343 mA**

Modules occupy 23 of the 32 module addresses available

Total 1500 mA @ 5 VDC available from STXPNS001 PROFINET Network Adapter. Total I/O current requirement is 1343 mA @ 5V.  
No 5 VDC booster required.

\*ST-7641 is required for providing AC bus power to the ST-1804 and ST-2852. All bus power to the right of the ST-7641 will be AC.

## VersaMax Control

By choosing GE, customers gain access to a complete line of highly versatile and robust I/O modules that offer seamless integration with the PACSystems control family, for reliable, high performance solutions.

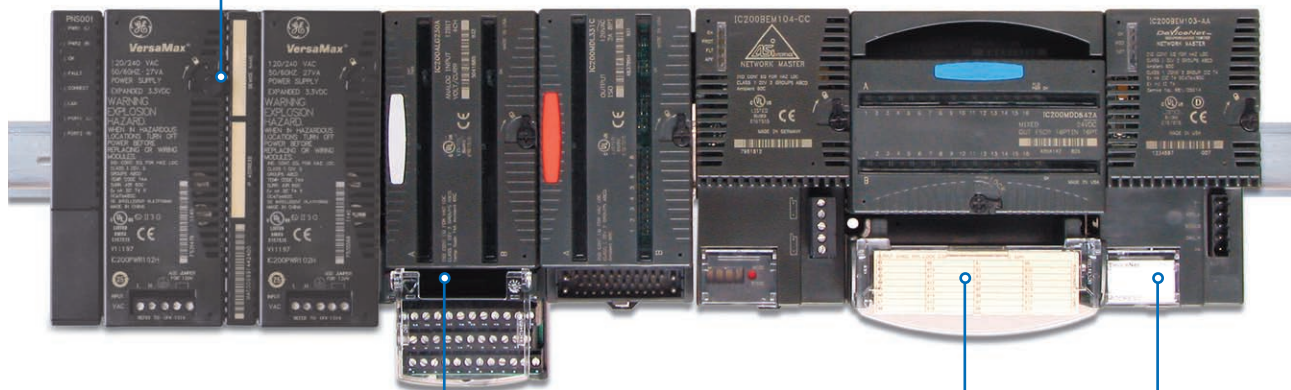
The modular design of VersaMax I/O addresses a wide range of discrete and process applications. Its innovative modular architecture combines power and versatility to help provide performance in a compact control solution.

The VersaMax PROFINET network interface provides integrated I/O to PACSystems controllers in both copper and fiber interface. Ideal for any remote I/O application, the PROFINET interface supports ring topology, which permits a node to go down or break without transmission interruption.

Equipment builders are continuously looking for ways to improve the performance of their equipment while augmenting usability and reducing size

and complexity. These requirements extend to the I/O that they use. GE's I/O solutions provide the high performance control solutions with best-in-class integration of distributed (networked) I/O to meet these demanding applications.

**Power Supplies** pages 1.xx-1.xx



**CPUs** pages 1.xx

**Analog I/O Modules** pages 1.xx-1.xx

**Discrete I/O Modules** pages 1.xx-1.xx

**Network Interface Modules** page 1.xx

**Carriers** pages 1.xx-1.xx

**I/O Interposing Bases** pages 1.xx-1.xx

**Expansion Modules** page 1.xx

**RTD and Thermocouple Modules** page 1.xx

**Specialty Modules** page 1.xx

**Remote I/O Units** pages 1.xx-1.xx

**Serial Communications** page 1.xx

**Accessories** page 1.xx

**Configuration Guidelines** pages 1.xx-1.xx

## 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	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.

	<b>IC200CPU001</b>	<b>IC200CPU002</b>	<b>IC200CPU005</b>	<b>IC200CPU05</b>
<b>Product Name</b>	<b>VersaMax PLC CPU 32K Configurable Memory, 2 Ports RS-232 and RS-485</b>	<b>VersaMax PLC CPU 42K Configurable Memory, 2 Ports RS-232 and RS-485</b>	<b>VersaMax PLC CPU 128K Configurable User Memory, 2 Ports RS-232 and RS-485</b>	<b>VersaMax PLC CPU 128K Configurable User Memory, 2 Ports RS-232 and RS-485, 10 MBIT Ethernet Port. Supports EGD and SRTP.</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>I/O Discrete Points</b>	2048 in, 2048 out	2048 in, 2048 out	2048 in, 2048 out	2048 in, 2048 out
<b>I/O Analog Words</b>	Configurable	Configurable	Configurable	Configurable
<b>Registers</b>	Configurable	Configurable	Configurable	Configurable
<b>Discrete Internal Bits</b>	1024 points	1024 points	1024 points	1024 points
<b>Discrete Temporary Bits</b>	256 points	256 points	256 points	256 points
<b>Global Discrete Bits</b>	1280 points	1280 points	1280 points	1280 points
<b>Program Memory</b>	Configurable	Configurable	Configurable	Configurable
<b>Boolean Execution Speed</b>	1.8 ms/K (typical)	1.8 ms/K (typical)	0.8 ms/K (typical)	0.8 ms/K (typical)
<b>Floating Points</b>	Yes	Yes	Yes	Yes
<b>Override</b>	Yes	Yes	Yes	Yes
<b>Built-in Communications</b>	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
<b>Type of Memory Storage</b>	System flash, battery-backed RAM	System flash, battery-backed RAM	System flash, battery-backed RAM	System flash, battery-backed RAM
<b>Battery-Backed Real-time Clock</b>	Yes	Yes	Yes	Yes
<b>5V Backplane Current Consumption (mA)</b>	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
<b>3.3V Backplane Current Consumption (mA)</b>	100	100	290 (Requires a power supply with 3.3 VDC expanded)	650 (Requires a power supply with 3.3 VDC expanded)
<b>Dimensions (W x H)</b>	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
Lifecycle Status	Active	Active
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.

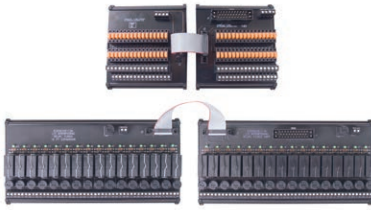
	<b>IC200CHS001</b>	<b>IC200CHS002</b>	<b>IC200CHS005</b>
<b>Product Name</b>	<b>VersaMax I/O Carrier, Local Barrier Style</b>	<b>VersaMax I/O Carrier, Local Box Style</b>	<b>VersaMax I/O Carrier, Local Spring Clamp Connection Style</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Field Termination Type</b>	Integrated	Integrated	Integrated
<b>Wiring Termination Style</b>	Barrier	Box	Spring
<b>Orientation on Module on Base</b>	Horizontal	Horizontal	Horizontal
<b>Dimensions (W x H x D)</b>	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
<b>Cables</b>	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.

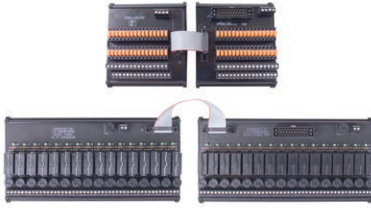
	IC200CHS003	IC200CHS011	IC200CHS012	IC200CHS014	IC200CHS015
<b>Product Name</b>	VersaMax I/O Carrier, VersaMax I/O Carrier, Connector Style. Interposing Barrier A connecting cable Style (Requires IC200CBL1xxx) and IC200CHS003 base interposing base (IC200CHS011, and connecting CHS012, CHS014, CHS015, cable IC200CBL1xxx) 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 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)	VersaMax I/O Carrier, Interposing Spring Clamp (Requires IC200CHS003 base and connecting cable IC200CBL1xxx)
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Field Termination Type</b>	Integrated	Non-Integrated	Non-Integrated	Integrated	Non-Integrated
<b>Wiring Termination Style</b>	Connector	Barrier	Box	Box-Thermocouple Compensation	Spring
<b>Orientation on Module on Base</b>	Vertical	N/A	N/A	N/A	N/A
<b>Dimensions (W x H x D)</b>	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 (2.63 in) x 70 mm (2.75 in), not including the height of DIN-rail
<b>Cables</b>	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
<b>Product Name</b>	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).
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Field Termination Type</b>	Integrated	Non-Integrated	Non-Integrated	Non-Integrated
<b>Wiring Termination Style</b>	Connector	Box	Box	Box
<b>Removable Terminals Connectors</b>	N/A	No	No	No
<b>Input Voltage</b>	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
<b>Output Voltage</b>	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
<b>Load Current per Point</b>	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)
<b>Protection</b>	N/A	N/A	N/A	Replaceable Fuse
<b>Points per Common</b>	N/A	N/A	N/A	Isolated Per Point
<b>Dimensions (W x H x D)</b>	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
<b>Cables</b>	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
<b>Product Name</b>	<b>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.</b>	<b>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).</b>	<b>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.</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Field Termination Type</b>	Non-Integrated	Non-Integrated	Non-Integrated
<b>Connection Style</b>	Box	Box	Box
<b>Removable Terminals Connectors</b>	No	Yes	Yes
<b>Input Voltage</b>	24 VDC from MDL740 and MDL750	24 VDC from MDL740 and MDL750	24 VDC from MDL740 and MDL750
<b>Output Voltage</b>	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
<b>Load Current per Point</b>	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)
<b>Protection</b>	Replaceable Fuse	Replaceable Fuse	Replaceable Fuse
<b>Points per Common</b>	Isolated Per Point	Isolated Per Point	Isolated Per Point
<b>Dimensions (W x H x D)</b>	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
<b>Cables</b>	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.



	<b>IC200PWR001</b>	<b>IC200PWR002</b>	<b>IC200PWR011</b>	<b>IC200PWR012</b>	<b>IC200PWR101</b>
<b>Product Name</b>	<b>24 VDC Power Supply</b>	<b>24 VDC Power Supply with Expanded 3.3 V</b>	<b>24VDC Isolated Power Supply</b>	<b>24VDC Isolated Power Supply with Expanded 3.3 V</b>	<b>120/240 VAC Power Supply</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Input Voltage</b>	24 VDC	24 VDC	24 VDC	24 VDC	120/240 VAC
<b>Output Voltage</b>	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC
<b>Extended Power</b>	No	Yes	No	Yes	No
<b>Input Power</b>	11 W	11 W	11 W	11 W	27 VA
<b>Isolated Power</b>	No	No	Yes	Yes	N/A
<b>Holdup Time</b>	10 ms	10 ms	10 ms	10 ms	20 ms
<b>Inrush Current</b>	20 A @ 24 VDC; 25 A @ 30 VDC	20 A @ 24 VDC; 25 A @ 30 VDC	20 A @ 24 VDC; 25 A @ 30 VDC	20 A @ 24 VDC; 25 A @ 30 VDC	N/A
<b>Protection</b>	Short circuit, overload, reverse polarity	Short circuit, overload, reverse polarity	Short circuit, overload, reverse polarity	Short circuit, overload, reverse polarity	Short circuit, overload
<b>Total Output Current</b>	1.5 A maximum	1.5 A maximum	1.5 A maximum	1.5 A maximum	1.5 A maximum
<b>3.3V Output Current</b>	0.25 A maximum	1.0 A maximum	0.25 A maximum	1.0 A maximum	0.25 A maximum
<b>5V Output Current</b>	1.5 A minus the 3.3 V current used, maximum	1.5 A minus the 3.3 V current used, maximum	1.5 A minus the 3.3 V current used, maximum	1.5 A minus the 3.3 V current used, maximum	1.5 A minus the 3.3 V current used, maximum
<b>Dimensions (W x H x D)</b>	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	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.

	IC200PWR102	IC200PWR201	IC200PWR202	IC200PWB001
<b>Product Name</b>	120/240 VAC Power Supply with Expanded 3.3 VDC	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.
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Input Voltage</b>	120/240 VAC	9.6-15 VDC, 12 VDC nominal	9.6-15 VDC, 12 VDC nominal	N/A
<b>Output Voltage</b>	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	5 VDC, 3.3 VDC	N/A
<b>Extended Power</b>	Yes	No	Yes	N/A
<b>Input Power</b>	27 VA	11 W	11 W	N/A
<b>Isolated Power</b>	N/A	No	No	N/A
<b>Holdup Time</b>	20 ms	10 ms	10 ms	N/A
<b>Inrush Current</b>	N/A	25 A at 12 VDC; 30 A at 15 VDC	25 A at 12 VDC; 30 A at 15 VDC	N/A
<b>Protection</b>	Short circuit, overload	Short circuit, overload, reverse polarity	Short circuit, overload, reverse polarity	N/A
<b>Total Output Current</b>	1.5 A maximum	1.5 A maximum	1.5 A maximum	N/A
<b>3.3V Output Current</b>	1.0 A maximum	0.25 A maximum	1.0 A maximum	N/A
<b>5V Output Current</b>	1.5 A minus the 3.3 V current used, maximum	1.5 A minus the 3.3 V current used, maximum	1.5 A minus the 3.3 V current used, maximum	N/A
<b>Dimensions (W x H x D)</b>	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	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, 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).

	IC200MDD840	IC200MDD842	IC200MDD843
<b>Product Name</b>	<b>VersaMax Discrete Mixed Modules, 24 VDC Pos Logic Input 20 points/ Output Relay 2.0 A, 12 points</b>	<b>VersaMax Discrete Mixed Modules 24 VDC Pos Logic Input 16/Output 24 VDC 0.5 A with ESCP</b>	<b>VersaMax Discrete Mixed Modules 24 VDC Positive Logic Input 10/Output Relay 6</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Voltage</b>	24 VDC	24 VDC	24 VDC
<b>Output Voltage</b>	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
<b>Number of Points</b>	20 in/12 out	16 in/16 out	10 in/6 out
<b>Channel to Channel Isolation</b>	No	No	No
<b>Load Current per Point</b>	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
<b>Input and Output Response Time- On/Off(ms)</b>	0.5 and 10	0.5 and 0.5	0.5 and 10
<b>Protection</b>	No internal fuses or snubbers	Short circuit protection, overcurrent protection, free-wheeling diodes	No internal fuses or snubbers
<b>On State Current</b>	2.0-5.5 mA	2.0-5.5 mA	2.0-5.5 mA
<b>Off State Current</b>	0-0.5 mA	0-0.5 mA	0-0.5 mA
<b>External Power Supply</b>	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
<b>Input Impedance</b>	10 kOhms maximum	10 kOhms maximum	10 kOhms maximum
<b>Load Current</b>	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	10 mA per point minimum, 8.0 A 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)
<b>5V Backplane Current Consumption (mA)</b>	375 maximum	100 maximum	190 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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, 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).

	IC200MDD844	IC200MDD845	IC200MDD846
<b>Product Name</b>	<b>VersaMax Discrete Mixed Modules 24 VDC Positive Logic Input 16/Output 24 VDC 0.5 A 16 points</b>	<b>VersaMax Discrete Mixed Modules 24 VDC Positive Logic Input 16/Output Relay 2.0A Isolated 8 points</b>	<b>VersaMax Discrete Mixed Modules 120 VAC Input 8 points/Outputs Relay 2.0A Isolated 8 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Voltage</b>	24 VDC	24 VDC	120 VAC
<b>Output Voltage</b>	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
<b>Number of Points</b>	16 in/16 out	16 in/8 out	8 in/8 out
<b>Channel to Channel Isolation</b>	No	Yes, outputs	Yes, outputs
<b>Load Current per Point</b>	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
<b>Input and Output Response Time- On/Off(ms)</b>	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
<b>Protection</b>	No internal fuses	No internal fuses or snubbers	No internal fuses or snubbers
<b>On State Current</b>	2.0-5.5 mA	2.0-5.5 mA	5 mA minimum
<b>Off State Current</b>	0-0.5 mA	0-0.5 mA	2.5 mA maximum
<b>External Power Supply</b>	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
<b>Input Impedance</b>	10 kOhms maximum	10 kOhms maximum	8.6 kOhms (reactive) at 60 Hz, typical; 10.32 kOhms (reactive) at 50 Hz, typical
<b>Load Current</b>	0.5 Amp at 30 VDC maximum (resistive) 2.0 Amps maximum for 100ms inrush	10 mA per point minimum 2.0 A for 5 to 265 VAC maximum (resistive) 2.0 A for 5 to 30 VDC maximum (resistive) 0.2 A for 31 to 125 VDC maximum (resistive)	10 mA per point minimum 2.0 A for 5 to 265 VAC maximum (resistive) 2.0 A for 5 to 30 VDC maximum (resistive) 0.2 A for 31 to 125 VDC maximum (resistive)
<b>5V Backplane Current Consumption (mA)</b>	70 maximum	270 maximum	300 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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, 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).

	IC200MDD847	IC200MDD848	IC200MDD849
<b>Product Name</b>	<b>VersaMax Discrete Mixed Modules 240 VAC Input 8 points/Output Relay 2.0A Isolated 8 points</b>	<b>VersaMax Discrete Mixed Modules 120 VAC Input 8 points/Output 120 VAC 0.5A Isolated 8 points</b>	<b>VersaMax Discrete Mixed Modules 120 VAC Input Isolated 8 points/Output Relay 2.0 A Isolated 8 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Voltage</b>	240 VAC	120 VAC	0-132 VAC (47 to 63 Hz), 120 VAC nominal
<b>Output Voltage</b>	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
<b>Number of Points</b>	8 in/8 out	8 in/8 out	8 in/8 out
<b>Channel to Channel Isolation</b>	Yes, outputs	Yes	Yes
<b>Load Current per Point</b>	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
<b>Input and Output Response Time- On/Off(ms)</b>	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
<b>Protection</b>	No internal fuses or snubbers	Snubber and MOVs (each output)	No internal fuses or snubbers
<b>On State Current</b>	4 mA minimum	5 mA minimum	5 mA minimum
<b>Off State Current</b>	1.5 mA maximum	2.5 mA maximum	2.5 mA maximum
<b>External Power Supply</b>	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
<b>Input Impedance</b>	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
<b>Load Current</b>	10 mA 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)
<b>5V Backplane Current Consumption (mA)</b>	300 maximum	125 maximum	300 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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, 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).

	IC200MDD850	IC200MDD851
<b>Product Name</b>	<b>VersaMax Discrete Mixed Modules 240 VAC Input Isolated 4 points/Output Relay 2.0 A Isolated 8 points</b>	<b>VersaMax Discrete Mixed Modules 5/12 VDC Input 16 points/Output 12/24 VDC 16 points</b>
<b>Lifecycle Status</b>	Active	Active
<b>Input Voltage</b>	0-264 VAC (47-63 Hz), 240 VAC nominal	0 to 15 VDC, +5/12 VDC nominal
<b>Output Voltage</b>	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
<b>Number of Points</b>	8 out/4 in	16 out/16 in
<b>Channel to Channel Isolation</b>	Yes	No
<b>Load Current per Point</b>	2.0 A	0.5 Amps at 30 VDC maximum (resistive) 2.0 Amps maximum for 100ms inrush
<b>Input and Output Response Time- On/Off(ms)</b>	1 cycle/2 cycle and 10/10	0.25ms maximum/0.2ms ON and 1.0ms OFF maximum
<b>Protection</b>	No internal fuses or snubbers	No internal fuses or snubbers
<b>On State Current</b>	4 mA minimum	1.45 mA minimum
<b>Off State Current</b>	1.5 mA maximum	0 to 0.7 mA maximum
<b>External Power Supply</b>	N/A	+10.2 to +30 VDC, +12/24 VDC nominal
<b>Input Impedance</b>	38.5 kOhms (reactive) at 60 Hz, typical; 46.3 kOhms (reactive) at 50 Hz, typical	2.4kOhms typical @ 12 VDC
<b>Load Current</b>	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
<b>5V Backplane Current Consumption (mA)</b>	260 maximum	115 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	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
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Voltage</b>	0-132 VAC	0-264 VAC	0-132 VAC
<b>Number of Points</b>	8	8	8
<b>Channel to Channel Isolation</b>	No	No	Yes
<b>Input and Output Response Time- On/Off (ms)</b>	1 cycle/2 cycles	1 cycle/2 cycles	1 cycle/2 cycles
<b>Points per Common</b>	1 group of 8	1 group of 8	8 groups of 1
<b>On State Current</b>	5 mA minimum	7 mA minimum	5 mA minimum
<b>Off State Current</b>	2.5 mA maximum	1.5 mA maximum	2.5 mA maximum
<b>Input Impedance</b>	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
<b>5V Backplane Current Consumption (mA)</b>	55 maximum	55 maximum	50 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Input Module 240 VAC Isolated, 4 points</b>	<b>VersaMax Discrete Input Module, 120 VAC Positive Logic, 16 points</b>	<b>VersaMax Discrete Input Module, 240 VAC Positive Logic, 16 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Voltage</b>	0-264 VAC	0-132 VAC	0-264 VAC
<b>Number of Points</b>	4	16	16
<b>Channel to Channel Isolation</b>	Yes	No	No
<b>Input and Output Response Time- On/Off (ms)</b>	1 cycle/2 cycles	1 cycle/2 cycles	1 cycle/2 cycles
<b>Points per Common</b>	4 groups of 1	2 groups of 8	2 groups of 8
<b>On State Current</b>	7 mA minimum	5 mA minimum	4 mA minimum
<b>Off State Current</b>	3 mA maximum	2.5 mA maximum	1.5 mA maximum
<b>Input Impedance</b>	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
<b>5V Backplane Current Consumption (mA)</b>	30 maximum	110 maximum	110 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Input Module, 120 VAC Isolated, 16 points</b>	<b>VersaMax Discrete Input Module, 240 VAC Isolated, 8 points</b>	<b>VersaMax Discrete Input Module 125 VDC, Pos/Neg Logic, Isolated, 8 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Voltage</b>	0-132 VAC	0-264 VAC	0-150 VDC, 125 VDC nominal
<b>Number of Points</b>	16	8	8 isolated inputs
<b>Channel to Channel Isolation</b>	Yes	Yes	Yes
<b>Input and Output Response Time- On/Off (ms)</b>	1 cycle/2 cycles	1 cycle/2 cycles	0.5 maximum
<b>Points per Common</b>	16 groups of 1	8 groups of 1	8 groups of 1
<b>On State Current</b>	5 mA minimum	7 mA minimum	1.0 mA minimum
<b>Off State Current</b>	2.5 mA maximum	3 mA maximum	0 to 0.1 mA maximum
<b>Input Impedance</b>	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
<b>5V Backplane Current Consumption (mA)</b>	100 maximum	60 maximum	40 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Input Module 125 VDC, Pos/Neg Logic, Isolated, 16 points</b>	<b>VersaMax Discrete Input Module 48 VDC, Pos/Neg Logic (2 Groups of 8), 16 points</b>	<b>VersaMax Discrete Input Module 48 VDC, Pos/Neg Logic (4 Groups of 8), 32 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Voltage</b>	0-150 VDC, 125 VDC nominal	0-60 VDC, 48 VDC nominal	0-60 VDC, 48 VDC nominal
<b>Number of Points</b>	16 isolated inputs	16 inputs (2 groups of 8)	32 (4 groups of 8)
<b>Channel to Channel Isolation</b>	Yes	No	No
<b>Input and Output Response Time- On/Off (ms)</b>	0.5 maximum	0.5 maximum	0.5 maximum
<b>Points per Common</b>	16 groups of 1	2 groups of 8	4 groups of 8
<b>On State Current</b>	1.0 mA minimum	1.0 mA minimum	1.0 mA minimum
<b>Off State Current</b>	0 to 0.1 mA maximum	0 to 0.4 mA maximum	0 to 0.4 mA maximum
<b>Input Impedance</b>	74 K Ohm typical at 125 VDC	28 K Ohm typical	28 K Ohm typical
<b>5V Backplane Current Consumption (mA)</b>	80 maximum	70 maximum	140 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Input Module, 24 VDC Pos/Neg Logic, 16 points</b>	<b>VersaMax Discrete Input Module, 5/12 VDC (TTL) Pos/Neg Logic, 16 points</b>	<b>VersaMax Discrete Input Module, 5/12 VDC (TTL) Pos/Neg Logic, 32 points</b>	<b>VersaMax Discrete Input Module, 24 VDC Positive Logic, 32 points</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Input Voltage</b>	0-30 VDC	0-15 VDC	0-15 VDC	0-30 VDC
<b>Number of Points</b>	16	16	32	32
<b>Channel to Channel Isolation</b>	No	No	No	No
<b>Input and Output Response Time- On/Off (ms)</b>	0.5	0.25	0.25	0.5
<b>Points per Common</b>	2 groups of 8	2 groups of 8	4 groups of 8	2 groups of 8
<b>On State Current</b>	2.0-5.5 mA	1.45 mA minimum	1.45 mA minimum	2.0-5.5 mA
<b>Off State Current</b>	0-0.5 mA	0-0.7 mA maximum	0-0.7 mA maximum	0-0.5 mA
<b>Input Impedance</b>	10 kOhms maximum	2.4 kOhms at 12 VDC, typical	2.4 kOhms at 12 VDC, typical	10 kOhms maximum
<b>5V Backplane Current Consumption (mA)</b>	25 maximum	70 maximum	140 maximum	50 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Output Module, 120 VAC, 0.5A per point Isolated, 8 points</b>	<b>VersaMax Discrete Output Module, 120 VAC 0.5A per point Isolated, 16 points</b>	<b>VersaMax Discrete Output Module, 120 VAC 2.0A per point Isolated, 8 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Output Voltage</b>	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
<b>Number of Points</b>	8	16	8
<b>Channel to Channel Isolation</b>	Yes	Yes	Yes
<b>Load Current per Point</b>	0.5 A per point	0.5 A per point	2.0 A per point
<b>Input and Output Response Time- On/Off (ms)</b>	<1/2 cycle/<1/2 cycle	<1/2 cycle/<1/2 cycle	<1/2 cycle/<1/2 cycle
<b>Protection</b>	Snubber and MOVs (each output)	Snubber and MOVs (each output)	Snubber and MOVs (each output)
<b>Points per Common</b>	8 groups of 1	Isolated points	Isolated points
<b>External Power Supply</b>	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
<b>Load Current</b>	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
<b>5V Backplane Current Consumption (mA)</b>	70 maximum	140 maximum	85 maximum
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Output Module, 24 VDC Positive Logic 2.0A per point w/ESCP, 8 points</b>	<b>VersaMax Discrete Output Module, 24 VDC Positive Logic, 0.5A per point, 16 points</b>	<b>VersaMax Discrete Output Module, 24 VDC Positive Logic, 0.5A per point w/ESCP, 16 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Output Voltage</b>	17.5-30 VDC, 24 VDC nominal	10.2-30 VDC, 12/24 VDC nominal	18-30 VDC, 24 VDC nominal
<b>Number of Points</b>	8	16	16
<b>Channel to Channel Isolation</b>	No	No	No
<b>Load Current per Point</b>	2.0 A per point	0.5 A per point	0.5 A per point
<b>Input and Output Response Time- On/Off (ms)</b>	0.5	0.2/1.0	0.5/0.5
<b>Protection</b>	Short circuit protection, overcurrent protection (each output)	No internal fuses (each output)	Short circuit protection, overcurrent protection, free-wheeling diodes (each output)
<b>Points per Common</b>	1 group of 8	1 group of 16	1 group of 16
<b>External Power Supply</b>	18-30 VDC, 24 VDC nominal	10.2-30 VDC, 12/24 VDC nominal	18-30 VDC, 24 VDC nominal
<b>Load Current</b>	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
<b>5V Backplane Current Consumption (mA)</b>	50 maximum	45 maximum	75 maximum
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Output Module, 24 VDC Positive Logic 0.5A with ESCP, 32 points</b>	<b>VersaMax Discrete Output Module, 5/12/24 VDC Negative Logic, 0.5 A per point (1 group of 16) 16 points</b>	<b>VersaMax Discrete Output Module, 5/12/24 VDC Negative Logic, 0.5 A per point (2 groups of 16) 32 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Output Voltage</b>	18-30 VDC, 24 VDC nominal	5/12/24 VDC	5/12/24 VDC
<b>Number of Points</b>	32	16 (1 group of 16)	32 (2 groups of 16)
<b>Channel to Channel Isolation</b>	No	No	No
<b>Load Current per Point</b>	0.5 A per point	0.5 A per point	0.5 A per point
<b>Input and Output Response Time- On/Off (ms)</b>	0.5/0.5	0.2/1.0	0.2/1.0
<b>Protection</b>	Short circuit protection, overcurrent protection, free-wheeling diodes (each output)	No internal fuse	No internal fuse
<b>Points per Common</b>	2 groups of 16	1 group of 16	2 groups of 16
<b>External Power Supply</b>	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
<b>Load Current</b>	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
<b>5V Backplane Current Consumption (mA)</b>	150 maximum	70 maximum	140 maximum
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Discrete Output Module, 24 VDC Positive Logic, 0.5A per point, 32 points</b>	<b>VersaMax Discrete Output Module, Relay 2.0 A per point Isolated Form A, 8 points</b>	<b>VersaMax Discrete Output Module, Relay 2.0 A per point Isolated Form A, 16 points</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Output Voltage</b>	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
<b>Number of Points</b>	32	8	16
<b>Channel to Channel Isolation</b>	No	Yes	Yes
<b>Load Current per Point</b>	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
<b>Input and Output Response Time- On/Off (ms)</b>	0.2/1.0	10.0/10.0	10.0/10.0
<b>Protection</b>	No internal fuses	No internal fuses or snubbers	No internal fuses or snubbers
<b>Points per Common</b>	2 groups of 16	Isolated points	Isolated points
<b>External Power Supply</b>	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
<b>Load Current</b>	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)
<b>5V Backplane Current Consumption (mA)</b>	90 maximum	245 maximum	490 maximum
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Analog Input Module, 12 Bit Voltage/Current, 4 Channels</b>	<b>VersaMax Analog Input Module, 16 Bit Voltage/Current Isolated, 8 Channel</b>	<b>VersaMax Analog Input Module, 12 Bit Voltage/Current, 8 Channel</b>	<b>VersaMax Analog Input Module, 15 Bit Differential Voltage, 8 Channel</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Input Range</b>	±10 VDC or 0-10 VDC	±10 VDC, 4-20 mA	4-20 mA, ±10 VDC or 0-10 VDC	±10 VDC
<b>Number of Channels</b>	4	8 Channel to channel isolated	8	8
<b>External Power Supply</b>	None	Range: 19.5-30 VDC including ripple; Current consumption: 100 mA maximum plus load currents	None	None
<b>Resolution</b>	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
<b>Update Rate</b>	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
<b>Accuracy at 25°C</b>	±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
<b>Input Impedance</b>	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
<b>Input Filter Response</b>	5.0 ms	N/A	5.0 ms	N/A
<b>5V Backplane Current Consumption (mA)</b>	125 maximum	15 maximum	130 maximum	200 maximum
<b>3.3V Backplane Current Consumption (mA)</b>	N/A	120 maximum	N/A	N/A
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Analog Input Module, 15 Bit Differential Current, 8 Channel</b>	<b>VersaMax Analog Input Module, 15 Bit Voltage, 15 Channel</b>	<b>VersaMax Analog Input Module, 15 Bit Current, 15 Channel</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Range</b>	0 to 20 mA or 4 to 20 mA	±10 VDC	0 to 20 mA or 4 to 20 mA
<b>Number of Channels</b>	8	15	15
<b>External Power Supply</b>	None	None	None
<b>Resolution</b>	4 to 20 mA: 0.5micro Amp= 1 count; 0 to 20 mA: 0.625micro Amp = 1 count	Bipolar mode: 0.3125 mV = 1 count	4 to 20 mA: 0.5micro Amp= 1 count; 0 to 20 mA: 0.625micro Amp = 1 count
<b>Update Rate</b>	7.5 ms	7.5 ms	7.5 ms
<b>Accuracy at 25°C</b>	±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
<b>Input Impedance</b>	Current mode: 100 kOhms maximum	Voltage mode: 100 kOhms maximum	Voltage mode: 100 kOhms maximum, Current mode: 200 Ohms maximum
<b>Input Filter Response</b>	N/A	N/A	24 Hz ±20%
<b>5V Backplane Current Consumption (mA)</b>	200 maximum	150 maximum	100 maximum
<b>3.3V Backplane Current Consumption (mA)</b>	N/A	N/A	N/A
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	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 $\pm 10V$ Voltage, 4 Channel
<b>Lifecycle Status</b>	Active	Active	Active
<b>Output Range</b>	4-20 mA	0-10 VDC	$\pm 10$ VDC
<b>Number of Channels</b>	4	4	4
<b>External Power Supply</b>	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
<b>Resolution</b>	4 $\mu A$ = 8 counts	2.5 mV = 8 counts	5 mV = 16 counts
<b>Update Rate</b>	0.3 ms maximum	0.3 ms maximum	0.3 ms maximum
<b>Accuracy at 25°C</b>	$\pm 0.3\%$ typical of full scale, $\pm 0.5\%$ maximum of full scale	$\pm 0.3\%$ typical of full scale, $\pm 0.5\%$ maximum of full scale	$\pm 0.3\%$ typical of full scale, $\pm 0.5\%$ maximum of full scale
<b>5V Backplane Current Consumption (mA)</b>	50 maximum	50 maximum	50 maximum
<b>3.3V Backplane Current Consumption (mA)</b>	N/A	N/A	N/A
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	VersaMax Analog Output Module, 13 Bit $\pm 10$ VDC or 0 to 10 VDC Voltage, 8 Channel	VersaMax Analog Output Module, 13 Bit Current, 8 Channel	VersaMax Analog Output Module, 13 Bit $\pm 10$ 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
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Output Range</b>	$\pm 10$ VDC or 0 to 10 VDC	4 to 20 mA (default) 0 to 20 mA (configured with jumper)	$\pm 10$ VDC or 0 to 10 VDC	4 to 20 mA (default) 0 to 20 mA (configured with jumper)	$\pm 10$ VDC, 4-20 mA
<b>Number of Channels</b>	8	8	12	12 single ended, one group	4
<b>External Power Supply</b>	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
<b>Resolution</b>	1.25 mV = 4 counts	4-20 mA: 5 counts = 2.5 $\mu$ A (~12.7 bits) 0-20 mA: 4 counts = 2.5 $\mu$ A (13 bits)	1.25 mV = 4 counts	4-20 mA: 5 counts = 2.5 $\mu$ A (~12.7 bits) 0-20 mA: 4 counts = 2.5 $\mu$ A (13 bits)	Current mode: 381 nA nominal Voltage mode: 381 $\mu$ V nominal
<b>Update Rate</b>	15.0 ms maximum	15.0 ms maximum	10.0 ms maximum	15 ms maximum	7 ms maximum
<b>Accuracy at 25°C</b>	$\pm 0.3\%$ typical of full scale, $\pm 0.5\%$ maximum of full scale	$\pm 0.3\%$ of full scale (typical), $\pm 0.5\%$ of full scale (max.) $\pm 1\%$ of full scale (max.)	$\pm 0.3\%$ typical of full scale, $\pm 0.5\%$ maximum of full scale	+/- 0.3% of full scale (typical), +/- 0.5% of full scale (max.) +/- 1% of full scale (max.)	$\pm 0.1\%$ maximum of full scale
<b>5V Backplane Current Consumption (mA)</b>	50 maximum	50 maximum	50 maximum	50 maximum	10 maximum
<b>3.3V Backplane Current Consumption (mA)</b>	N/A	N/A	N/A	N/A	115 maximum
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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
<b>Product Name</b>	<b>VersaMax Analog Mixed Module, 12 Bit Input Current 4 Channel/Output Current 2 Channel</b>	<b>VersaMax Analog Mixed Module, 12 Bit 0-10V Input 4 Channel/Output 0-10V 2 Channel</b>	<b>VersaMax Analog Mixed Module, 12 Bit <math>\pm</math>10V Input 4 Channel/Output <math>\pm</math>10V 2 Channel</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Input Range</b>	4-20 mA	0-10 VDC	-10 to +10 VDC
<b>Output Range</b>	4-20 mA	0-10 VDC	-10 to +10 VDC
<b>External Power Supply</b>	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
<b>Resolution</b>	4 $\mu$ A = 8 counts	2.5 mV = 8 counts	Input: 2.5 mV = 8 counts, Output: 5 mV = 16 counts
<b>Update Rate</b>	0.3 ms maximum	0.3 ms maximum	0.3 ms maximum
<b>Accuracy at 25°C</b>	$\pm$ 0.3% typical of full scale, $\pm$ 0.5% maximum of full scale	$\pm$ 0.3% typical of full scale, $\pm$ 0.5% maximum of full scale	$\pm$ 0.3% typical of full scale, $\pm$ 0.5% maximum of full scale
<b>Input Impedance</b>	200 Ohms maximum	120 kOhms minimum	125 kOhms minimum
<b>Input Filter Response</b>	5.0 ms	5.0 ms	5.0 ms
<b>LED Indicators</b>	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.
<b>Dimensions (W x H x D)</b>	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).



	<b>IC200ALG620</b>	<b>IC200ALG630</b>
<b>Product Name</b>	<b>VersaMax Analog Input Module, 16 Bit RTD, 4 Channel</b>	<b>VersaMax Analog Input Module, 16 Bit Thermocouple, 7 Channel</b>
<b>Lifecycle Status</b>	Active	Active
<b>Input Range</b>	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)
<b>Number of Channels</b>	4	7
<b>Resolution</b>	15 bits plus sign	15 bits plus sign
<b>Update Rate</b>	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
<b>Accuracy at 25°C</b>	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%
<b>5 V Backplane Current Consumption (mA)</b>	125 maximum	125 maximum
<b>3.3 V Backplane Current Consumption (mA)</b>	125 maximum	125 maximum
<b>LED Indicators</b>	OK LED: green indicates backplane power is present. Amber indicates module fault.	OK LED: green indicates backplane power is present. Amber indicates module fault.
<b>Dimensions (W x H x D)</b>	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

<b>IC200MDD841</b>	
<b>Product Name</b>	<b>VersaMax Discrete Mixed Modules 24VDC Pos Logic Input 20/Output 12/HSC, PWM or Pulse Train</b>
<b>Lifecycle Status</b>	Active
<b>Input Voltage</b>	24 VDC
<b>Output Voltage</b>	24 VDC
<b>Number of Points</b>	20 in/12 out/4 configurable
<b>Channel to Channel Isolation</b>	No
<b>Inrush Current</b>	2.0 A maximum for 100 ms
<b>Input and Output Response Time- On/Off (ms)</b>	7 and 0.5
<b>Protection</b>	No internal fuses
<b>On State Current</b>	3.0-8.0 mA
<b>Off State Current</b>	0-0.5 mA
<b>External Power Supply</b>	24 VDC nominal, 18-30 VDC
<b>Input Impedance</b>	9.6 kOhms maximum
<b>Load Current</b>	0.5 A maximum
<b>5V Backplane Current Consumption (mA)</b>	30
<b>LED Indicators</b>	One LED per point shows individual point on/off state (logic side); OK LED indicates backplane power is present
<b>Dimensions (W x H x D)</b>	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.



	<b>IC200ERM001</b>	<b>IC200ERM002</b>	<b>IC200ETM001</b>
<b>Product Name</b>	<b>Expansion Receiver Module, Isolated</b>	<b>Expansion Receiver Module, Non-Isolated</b>	<b>Bus Transmitter Expansion Module</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Expansion Type</b>	Receiver	Receiver	Transmitter
<b>Distance</b>	Up to 2460 feet	Up to 50 feet	N/A
<b>5 V Backplane Current Consumption (mA)</b>	430	70	44
<b>3.3 V Backplane Current Consumption (mA)</b>	20	20	N/A
<b>LED Indicators</b>	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
<b>Dimensions (W x H x D)</b>	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. This makes it easy to include VersaMax I/O in the innovative PROFINET interface, as well as Genius, PROFIBUS-DP, DeviceNet, or other 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.

	IC200PNS001	IC200PNS002	IC200DBI001	IC200EBI001
<b>Product Name</b>	<b>Remote I/O PROFINET Network Interface Unit (Cooper Media) with built-in switch</b>	<b>Bus Transmitter Expansion Module (Fiber Media) with built-in switch</b>	<b>Remote I/O DeviceNet Network Interface Unit (Slave)</b>	<b>Remote I/O Ethernet Network Interface Unit</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Protocol Supported</b>	PROFINET Slave, Version 2.2 Class A IO-Device	PROFINET Slave, Version 2.2 Class A IO-Device	DeviceNet Slave	EGD and Modbus TCP Server
<b>Distance</b>	100 Meters max. drop length 10/100Mbaud	2 – 2,000 (Full-Duplex) 2 – 400 (Half-Duplex)	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
<b>I/O Discrete Points</b>	2880 bytes total 1440 bytes of input data 1440 bytes of output data	2880 bytes total 1440 bytes of input data 1440 bytes of output data	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
<b>I/O Analog Words</b>	2880 bytes total 1440 bytes of input data 1440 bytes of output data	2880 bytes total 1440 bytes of input data 1440 bytes of output data	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
<b>I/O Data</b>	N/A	N/A	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
<b>I/O Data Update Rate</b>	Configurable: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms and 512ms	Configurable: 1ms, 2ms, 4ms, 8ms, 16ms, 32ms, 64ms, 128ms, 256ms and 512ms	N/A	N/A
<b>Network Topology</b>	Daisy-chain/line, star, or ring (redundant media) topology.	Daisy-chain/line, star, or ring (redundant media) topology.	Linear bus (trunkline/dropline); power and signal on the same network cable	Network dependent
<b>Transmission Media</b>	10/100BASE-T	Fiber 100BASE-FX	Shielded, dual twisted pair cable, terminated at both ends	Ethernet twisted pair
<b>Connector</b>	(2) RJ45 with built-in switch	(2) SC or SC-Duplex with built-in switch	5-pin open pluggable connector	RJ-45
<b>User Diagnostic Data</b>	32 input status bits and 32 output control bits	32 input status bits and 32 output control bits	2 bytes of status/control	4
<b>Number of Modules</b>	8 per NIU/station, not expandable	8 per NIU/station, not expandable	8 per NIU/station	8 per NIU/station
<b>Redundancy</b>	No	No	N/A	No
<b>5V Backplane Current Consumption (mA)</b>	3 Watts	5 Watts	160	175
<b>3.3V Backplane Current Consumption (mA)</b>	N/A	N/A	10	425
<b>Dimensions (W x H x D)</b>	134mm (5.28 in) x 132mm (5.2 in)	134mm (5.28 in) x 132mm (5.2 in)	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.

	<b>IC200GBI001</b>	<b>IC200PBI001</b>
	<b>Genius Network Interface Unit</b>	<b>Remote I/O PROFIBUS-DP Network Interface Unit (Slave)</b>
<b>Product Name</b>		
<b>Lifecycle Status</b>	Active	Active
<b>Protocol Supported</b>	Genius	PROFIBUS DP
<b>Distance</b>	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
<b>I/O Discrete Points</b>	1024 Inputs and 1024 Outputs	375 bytes maximum. Up to 244 bytes of inputs or 244 bytes of outputs
<b>I/O Analog Words</b>	64 Analog In and 64 Analog Out	375 bytes maximum. Up to 244 bytes of inputs or 244 bytes of outputs
<b>I/O Data</b>	128 bytes in and 128 out per bus scan	375 bytes maximum. Up to 244 bytes of inputs or 244 bytes of outputs.
<b>I/O Data Update Rate</b>	N/A	N/A
<b>Network Topology</b>	Bus	Linear bus, terminated at both ends. Stubs are possible.
<b>Transmission Media</b>	Shielded, twisted pair, fiber optic (external option)	Shielded, twisted pair cable
<b>Connector</b>	Removable Connector	9-pin D-sub connector
<b>User Diagnostic Data</b>	Yes	2 bytes of status/control, 5 bytes of standard PROFIBUS diagnostics
<b>Number of Modules</b>	8 per NIU/station	8 per NIU/station
<b>Redundancy</b>	Full media and hardware redundancy supported	N/A
<b>5V Backplane Current Consumption (mA)</b>	250	250
<b>3.3V Backplane Current Consumption (mA)</b>	10	10
<b>Dimensions (W x H x D)</b>	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	IC200BEM003	IC200CHS006
<b>Product Name</b>	<b>PLC Network Communications PROFIBUS-DP (Slave). Requires IC200CHS006 Communications Carrier.</b>	<b>PLC Network Communications PROFIBUS-DP (Master). Requires IC200CHS006 Communications Carrier.</b>	<b>VersaMax I/O, Local Communications Carrier (Supports IC200BEMxxx Modules)</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Number of Stations</b>	32 without repeaters; up to 125 with repeaters	125 PROFIBUS DP Slave devices	N/A
<b>I/O Data</b>	384 Bytes maximum; up to 244 bytes of inputs or 244 bytes of outputs	With a VersaMax CPUx05 CPU: A maximum of 3584 bytes of input data and 3584 bytes of output data With a VersaMax PROFINET Network Slave: A maximum of 1440 bytes of input data and 1440 bytes of output data With either CPU or PNS head end, a maximum of 244 bytes of input data and 244 bytes of output data for each slave.	N/A
<b>Network Data Rate</b>	9.6 Kbaud to 12 Mbaud	9.6 Kbaud to 12 Mbaud	N/A
<b>Network Topology</b>	Linear bus, terminated at both ends. Stubs are possible	Linear bus, terminated at both ends. Stubs are possible.	N/A
<b>Transmission Media</b>	Shielded, twisted pair cable	Shielded, twisted pair cable	N/A
<b>Connector</b>	9-pin D-sub connector	9-pin D-sub connector	N/A
<b>Number of Nodes</b>	N/A	N/A	N/A
<b>User Diagnostic Data</b>	N/A	Slave Status Bit Array Table, Firmware Module Revision, Slave Diagnostic Address	N/A
<b>Power Consumption</b>	460 mA maximum from 5 V output, 5 mA from +3.3 V output	450 mA maximum from 5 V output, 5 mA from +3.3 V output	N/A
<b>Dimensions (W x H x D)</b>	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 (4.3in) 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

<b>Product Name</b>	<b>Modbus Master Module, 1 RS-485 port. Requires IC200CHS006 Communications Carrier.</b>
<b>Lifecycle Status</b>	Active
<b>Module Type</b>	Modbus Master
<b>NIU Type Supported</b>	Genius and PROFINET Slave
<b>Number of Serial Communications Modules</b>	Up to 2 per Genius NIU I/O Station
<b>Number of RTU slaves per Serial Communications Module</b>	1 to 247
<b>Serial Port Type</b>	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
<b>Baud Rate Supported</b>	1200, 2400, 4800, 9600, and 19200, and half or full duplex operation
<b>COMMREQ command memory (%AQ) required in the GENERIC_COMM module hardware configuration</b>	Depends on individual COMMREQ content. Minimum: 22 words Maximum: 64 words
<b>RTU Master Commands</b>	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
<b>Power Consumption</b>	460 mA maximum from 5 V output, 5 mA from +3.3 V output
<b>Dimensions (W x H x D)</b>	110mm (4.3in) x 66.8mm (2.63in) x 50mm (1.956 in), not including the height of the carrier or the mating connectors

## Accessories

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

## Cables for Connector Type Carrier

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

## Cables to Connect Rack to Rack Expansion

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

## Starter Kits

Part Number	Description	Lifecycle Status
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.	Active
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.	Active
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.	Active
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.	Active
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.	Active
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.	Active

### 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.

### 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	IC646MPS101	Logic Developer - PLC Standard - w/Programming Cable
<b>Total:</b>			<b>580 @ 5 V and 100 @ 3 V (820 mA remaining). 1500 mA available for 5 V and 3.3 V.</b>

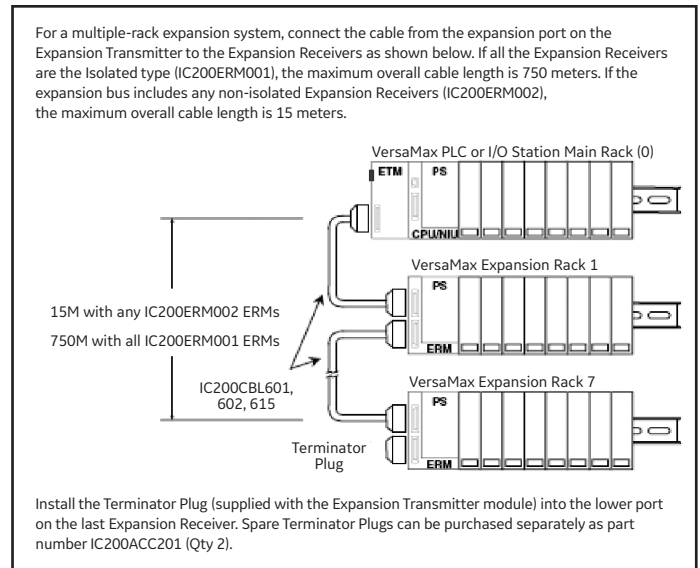
**Options to consider**

	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.
		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	IC646MPS101	Logic Developer - PLC Standard - w/Programming Cable
<b>Total:</b>			<b>2424 @ 5 V and 790 @ 3 V Required. 4500 mA available for 5 V and 3.3 V. Power Supply to meet power requirements.</b>

(continued on next page)



**Options to consider**

	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	IC646MBT001	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
<b>Total:</b>	<b>1650 @ 5 V and 765 @ 3 V. 3000 mA available for 5 V and 3.3 V.</b>		

**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
<b>Total:</b>	<b>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.</b>		

**Options to consider**

	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

## 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.

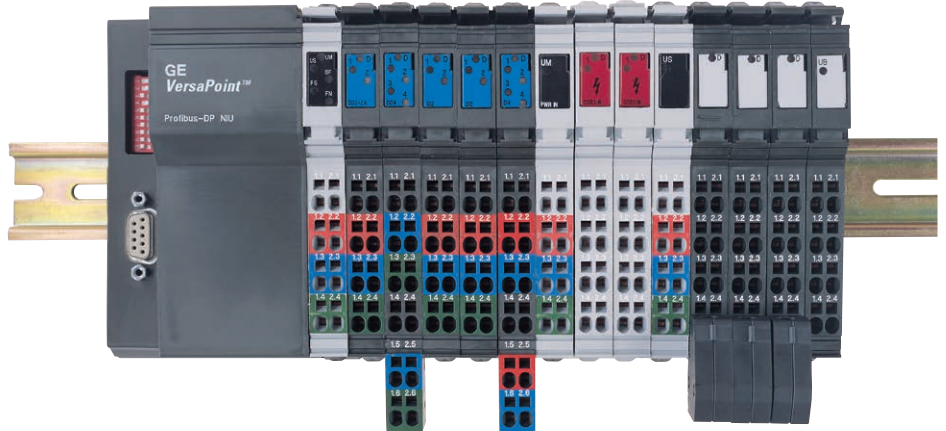
VersaPoint accommodates a series of discrete and analog I/O modules with densities from 1 to 16 points. It also supports a host of specialized modules, from RTD and Thermocouple inputs to positioning and counter modules.

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.

### GE Machine Edition

GE 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.

<b>Network Interface Module</b>	page 1.xxx
<b>Power Terminals</b>	page 1.xxx
<b>Segment Terminals</b>	page 1.xxx
<b>Discrete Input Modules</b>	page 1.xxx
<b>Discrete Output Modules</b>	pages 1.xxx-1.xxx
<b>Analog Input Modules</b>	page 1.xxx
<b>Analog Output Modules</b>	page 1.xxx
<b>Motion Modules</b>	page 1.xxx
<b>Motor Starter Modules</b>	page 1.xxx
<b>Serial Communications Modules</b>	page 1.xxx
<b>Accessories and Cables</b>	page 1.xxx
<b>Configuration Guidelines</b>	page 1.xxx
<b>VersaSafe Machine Safety I/O</b>	page 1.xxx
<b>VersaSafe Starter Kit</b>	page 1.xxx



### 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



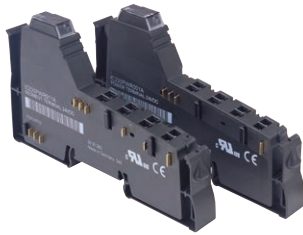
An I/O Network Interface Unit connects VersaPoint I/O modules to a host PLC or computer via a variety of networks, which makes it easy to include VersaPoint I/O in PROFIBUS-DP, Ethernet or DeviceNet installations. Together, the NIU is capable of handling up to 63 modules in one node.

	IC220PNS001	IC220PNS002	IC220EBI001	IC220PBI002	IC220DBI001
<b>Product Name</b>	<b>Profinet Network Interface Unit with 2 Copper Ports</b>	<b>Profinet Network Interface Unit with 2 Fiber Ports</b>	<b>Ethernet TCP/IP Advanced Network Interface Unit - 10/100 Base-T(X) - PCP Support</b>	<b>PROFIBUS-DP Network Interface Unit</b>	<b>DeviceNet Network Interface Unit</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Protocol</b>	PROFINET IO	PROFINET IO	Modbus TCP	PROFIBUS DP (V1)	DeviceNet Slave
<b>Data Rate</b>	100 Mbps	100 Mbps	10/100 Base-T(X)	Up to 12Mbps per second	Up to 500 Kbaud
<b>Serial Communications Support</b>	None	None	Yes	Yes	Yes
<b>Firmware Upgrade</b>	No	No	Yes	No	No
<b>Nominal Power Input Voltage</b>	24 VDC	24 VDC	24 VDC	24 VDC	24 VDC
<b>Power Voltage Range</b>	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC
<b>Current for Local Bus UL</b>	0.8 Amp	0.8 Amp	2 Amp	2 Amp	2 Amp
<b>Current for Local Bus UA (ma)</b>	500 mA	500 mA	500 mA	500 mA	500 mA
<b>Maximum Supported Modules</b>	63 (including on-board IO)	63 (including on-board IO)	63	63	63
<b>Digital Inputs</b>	8 @ 24 VDC	8 @ 24 VDC	-	-	-
<b>Digital Outputs</b>	4 @ 24VDC	4 @ 24VDC	-	-	-
<b>Power In</b>	8 Amp maximum	8 Amp maximum	8 Amp maximum	8 Amp maximum	8 Amp maximum
<b>LED Indicators</b>	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	Bus diagnostics and status indication of voltage
<b>Numeric LCD Display</b>	None	None	Yes	None	None
<b>Web Support</b>	None	None	Web Pages SNMP XML Data Monitoring	None	None
<b>Required Terminal Strip</b>	Included	Included	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK087 (Contains 10 strips)	(1) IC220TBK201 (Contains 10 strips)
<b>Dimensions (W x H x D)</b>	80 mm x 119.8 mm x 71.5 mm (3.149 in. x 4.717 in. x 2.814 in.)	80 mm x 119.8 mm x 71.5 mm (3.149 in. x 4.717 in. x 2.814 in.)	90 mm x 72 mm x 116 mm (3.543 in. x 2.835 in. x 4.567 in.)	91 mm x 120 mm x 71.5 mm (2.874 in. x 4.724 in. x 2.795 in.)	48.8 mm x 120 mm x 71.5 mm (1.92 in. x 4.72 in. x 2.82 in.)



**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).



	<b>IC220PWR001</b>	<b>IC220PWR002</b>	<b>IC220PWR003</b>	<b>IC220PWR101</b>	<b>IC220PWR201</b>
<b>Product Name</b>	<b>Power Terminal 24 VDC</b>	<b>Power Terminal Fused 24 VDC</b>	<b>Power Terminal Fused with Diagnostics 24 VDC</b>	<b>Power Terminal 120 VAC</b>	<b>Power Terminal 230 VAC</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Input Voltage</b>	24 VDC	24 VDC	24 VDC	120 VAC	230 VAC
<b>Input Voltage Range</b>	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC	108 -135 VAC	12 -253 VAC
<b>Maximum Current</b>	8 Amps	8 Amps	6.3 Amps	8 Amps	8 Amps
<b>Overload/Short Circuit in Segment Circuit</b>	No	Fuse	Fuse	No	No
<b>Surge Voltage/Over Voltage</b>	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
<b>Polarity Reversal</b>	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
<b>Current Consumption from Local Bus UL (mA)</b>	N/A	N/A	25 mA, maximum	N/A	N/A
<b>LED Indicators</b>	24 VDC Voltage Present	24 VDC Voltage Present and Blown Fuse	Bus Diagnostics and Blown Fuse	120 VAC supply Present	230 VAC supply Present
<b>Required Terminal Strip</b>	(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
<b>Product Name</b>	<b>Segment Terminal 24 VDC</b>	<b>Segment Terminal Fused 24 VDC</b>	<b>Segment Terminal Fused with Diagnostics 24 VDC</b>	<b>Segment Terminal Electronic Fused 24 VDC</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Input Voltage</b>	24 VDC	24 VDC	24 VDC	24 VDC
<b>Input Voltage Range</b>	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC	19.2 - 30 VDC
<b>Maximum Current</b>	8 Amps	8 Amps	6.3 Amps	8 Amps
<b>Overload/Short Circuit in Main Circuit</b>	No	6.3 Amp slow blow fuse	6.3 Amp slow blow fuse	Electronic Fuse
<b>Surge Voltage/Over Voltage</b>	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal
<b>Polarity Reversal</b>	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal	Protective circuits of the power terminal
<b>Current Consumption from Local Bus UL (mA)</b>	N/A	N/A	25 mA, maximum	30 mA, maximum
<b>LED Indicators</b>	24 VDC Voltage Present	24 VDC Voltage Present and Blown Fuse	Bus Diagnostics and Blown Fuse	Bus Diagnostics and Blown Fuse
<b>Required Terminal Strip</b>	(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
<b>Product Name</b>	<b>Input 24 VDC Positive Logic 2 Points</b>	<b>Input 24 VDC Positive Logic 4 Points</b>	<b>Input 24 VDC Positive Logic 8 Points</b>	<b>Input 24 VDC Positive Logic 16 Points</b>	<b>Input 24 VDC Negative Logic 2 Points</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active
<b>Input Voltage</b>	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC
<b>Number of Points</b>	2	4	8	16	2
<b>Connection Style</b>	2, 3, and 4 wire	2 and 3 wire	2, 3, and 4 wire	2 and 3 wire	2, 3, and 4 wire
<b>Input Response Time</b>	Less than 1 msec.	Less than 1 msec.	Less than 1 msec.	Less than 1 msec.	Less than 1 msec.
<b>On State Current</b>	5 mA	4 mA	5 mA	4 mA	5 mA
<b>Off State Current</b>	0.4 mA	0.4 mA	0.4 mA	0.4 mA	0.4 mA
<b>Current Consumption for Local Bus UL (mA)</b>	35 mA	40 mA	50 mA	60 mA	35 mA, maximum
<b>Nominal Current Consumption of US</b>	0.5 Amp max.	1.0 Amp max.	2.0 Amp max.	4.0 Amp max.	0.5 A (2 x 0.25 A), maximum
<b>LED Indicators</b>	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
<b>Required Terminal Strip</b>	(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
<b>Product Name</b>	<b>Output 24 VDC Positive Logic 0.5 A 2 Points</b>	<b>Output 24 VDC Positive Logic 2.0 A 2 Points</b>	<b>Output 24 VDC Positive Logic 0.5 A 4 Points</b>	<b>Output 24 VDC Positive Logic 0.5 A 8 Points</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Output Voltage</b>	24 VDC	24 VDC	24 VDC	24 VDC
<b>Number of Points</b>	2	2	4	8
<b>Connection Style</b>	2, 3, and 4 wire	2, 3, and 4 wire	2 and 3 wire	2, 3, and 4 wire
<b>Load Current per Point</b>	0.5 A	2.0 A	0.5 A	0.5 A
<b>Protection</b>	Electronic Short Circuit, Overload Protection	Electronic Short Circuit, Overload Protection	Electronic Short Circuit, Overload Protection	Electronic Short Circuit, Overload Protection
<b>Current Consumption from Local Bus UL (mA)</b>	33 mA max.	35 mA max.	44 mA max.	60 mA max.
<b>Nominal Current Consumption of US</b>	1 Amp max.	4 Amp max.	2 Amp max.	4 Amp max.
<b>LED Indicators</b>	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs	Bus Diagnostics Status indication of outputs
	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK082 (Contains 10 strips)	(1) IC220TBK123 (Contains 10 strips)	(4) IC220TBK082 (Contains 10 strips)

### Required Terminal Strip

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



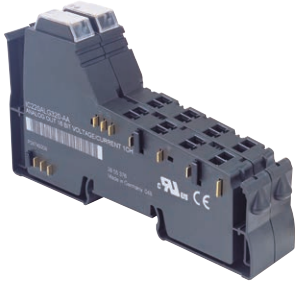
## Analog Input Modules

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

	IC220ALG220	IC220ALG221	IC220ALG620	IC220ALG630
<b>Product Name</b>	<b>Analog In 15 Bit Voltage/Current 2 Channels</b>	<b>Analog In 15 Bit Voltage/Current 8 Channel</b>	<b>Analog In 16 Bit RTD 2 Channels</b>	<b>Analog In 16 Bit Thermocouple 2 Channels</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Input Voltage</b>	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
<b>Number of Points</b>	2	8	2	2
<b>Connection Style</b>	2 wire, shielded sensor cable	2 wire, shielded sensor cable	2, 3, and 4 wire, shielded sensor cable	2 wire, shielded sensor cable
<b>Converter</b>	120 micro seconds	10 micro seconds	120 micro seconds	120 micro seconds
<b>Module Update Rate</b>	Less than 1.5 msec	Less than 0.8 to 1.3 msec	20 to 30 msec (depending on connection method)	30 msec
<b>Input Resistance</b>	Greater than 220 Kohm (voltage) and 50 ohm (current)	Greater than 240 Kohm (voltage) and 25 ohm (current)	N/A	N/A
<b>Limit Frequency of the Input Filter</b>	40 Hz	3.5 Hz	N/A	48 Hz
<b>Current Consumption for Local Bus UL (mA)</b>	45 mA, typical	48 mA, typical	43 mA, typical	43 mA, typical
<b>Nominal Current Consumption of US</b>	N/A	N/A	N/A	N/A
<b>LED Indicators</b>	Bus Diagnostics	Bus Diagnostics	Bus Diagnostics	Bus Diagnostics
<b>Required Terminal Strip</b>	(1) IC220TBK062 (Contains 5 strips)	(4) IC220TBK062 (Contains 5 strips)	(1) IC220TBK062 (Contains 5 strips)	(1) IC220TBK062 (Contains 5 strips)

### Analog Output Modules

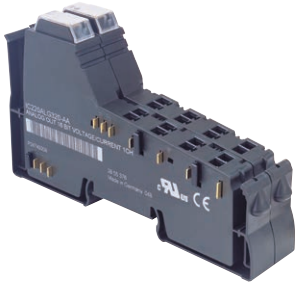
Analog output modules provide voltage or current signals to analog output devices.



	IC220ALG320	IC220ALG321	IC220ALG322
<b>Product Name</b>	Analog Out 16 Bit Voltage/ Current 1 Channel	Analog Out 16 Bit Voltage 1 Channel	Analog Out 13 Bit Voltage 2 Channels
<b>Lifecycle Status</b>	Active	Active	Active
<b>Output Voltage</b>	0 - 20 mA, 4 - 20 mA, 0 - 10 V	0 - 10 V	0 - 10 V, ±10 V
<b>Number of Points</b>	8	1	2
<b>Connection Style</b>	2 wire, shielded sensor cable	2 wire, shielded sensor cable	2 wire, shielded sensor cable single ended
<b>Module Update Rate</b>	Less than 1 msec	Less than 1 msec	Less than 1 msec
<b>Output Load</b>	Voltage: 2 k ohm minimum Current: 500 k ohm maximum	2 k ohm minimum	2 k ohm minimum
<b>Current Consumption for Local Bus UL (mA)</b>	30 mA typical, 40 mA maximum	30 mA typical, 40 mA maximum	33 mA typical, 40 mA maximum
<b>Current Consumption from Analog Bus UANA (mA)</b>	50 mA typical, 65 mA maximum	15 mA typical, 20 mA maximum	25 mA typical, 35 mA maximum
<b>Nominal Current Consumption of US</b>	N/A	N/A	N/A
<b>LED Indicators</b>	Bus Diagnostics, I/O Voltage for analog terminals present	Bus Diagnostics	Bus Diagnostics Default state set
<b>Required Terminal Strip</b>	(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
<b>Product Name</b>	<b>High Speed Counter Input, 1 control input, 1 control output</b>	<b>Absolute Encoder Input, 4 digital inputs and 4 digital outputs</b>	<b>Incremental Encoder Input, 4 digital inputs and 4 digital outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Number of Points</b>	1	One SSI Encoder	One A QUAD B
<b>Input Frequency</b>	100Khz	400Khz	Up to 500Khz
<b>Maximum Resolution</b>	N/A	26 bit	26 bit
<b>Number of Inputs</b>	1	4	4
<b>Input Voltage</b>	24 VDC / 5 VDC	24 VDC	24 VDC
<b>Number of Outputs</b>	1	4	4
<b>Output Voltage</b>	24 VDC, 500 mA	24 VDC, 500 mA	24 VDC, 500 mA
<b>Connection Style</b>	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
<b>Protection</b>	Short Circuit Protection	Short Circuit Protection	Short Circuit Protection
<b>Current Consumption for Local Bus UL (mA)</b>	40 mA typical, 50 mA maximum	60 mA	110 mA
<b>Nominal Current Consumption of US</b>	1.0 Amp maximum	2.0 Amp maximum	2.0 Amp maximum
<b>LED Indicators</b>	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
<b>Required Terminal Strip</b>	(1) IC220TBK203 (Contains 1 strip)	(1) IC220TBK202 (Contains 1 strip)	(1) IC220TBK202 (Contains 1 strip)

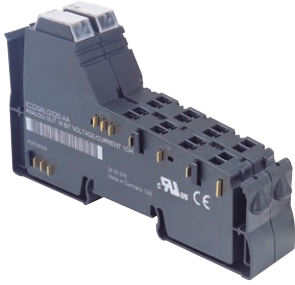




### Motor Starter Modules

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
<b>Product Name</b>	<b>Motor Starter Direct, up to 1.5 kW / 400 VAC (No UL)</b>	<b>Motor Starter Direct, up to 3.7 kW / 480 VAC (UL Approved)</b>	<b>Motor Starter Reversing, up to 1.5 kW / 400 VAC (No UL)</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Number of Points</b>	N/A	N/A	N/A
<b>Connection Style</b>	3 - Phase	3 - Phase	3 - Phase
<b>Output Voltage</b>	400 VAC	480 VAC (±10%)	400 VAC
<b>Power Voltage Range</b>	187 VAC to 440 VAC	187 VAC to 519 VAC	187 VAC to 440 VAC
<b>Frequency</b>	50/60Hz	50/60Hz	50/60Hz
<b>Motor Current Range</b>	0.2 to 3.6 A	0.2 to 8.0 A	0.2 to 3.6 A
<b>Protection</b>	Electronic - Configurable Over Current	Electronic - Configurable Over Current	Electronic - Configurable Over Current
<b>Switching Method</b>	Electronic	Mechanical Contactor	Electronic
<b>Current Consumption from Local Bus UL (mA)</b>	45 mA	50 mA	45 mA
<b>LED Indicators</b>	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)
<b>Required Terminal Strip</b>	(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

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

## Accessories and Cables

Part Number	Description	Lifecycle Status
IC220ACC001	Module Labels Narrow, Qty 10	Active
IC220ACC002	Module Labels Wide, Qty 10	Active
IC220ACC003	Point Labels Numbered 1-100, Qty 10	Active
IC220ACC004	Point Labels Blank, Qty 1000	Active
IC220ACC005	Module Keying Tabs, Qty 100	Active
IC220ACC100	Motor Starter Brake Module DC	Active
IC220ACC101	Motor Starter Brake Module AC/DC	Active
IC220ACC103	Motor Starter Power Connector	Active
IC220ACC104	Motor Starter Power Bridge	Active
IC220ACC105	Motor Circuit Connector, Qty 10	Active
IC220ACC201	Relay Module Isolation Set (Requires 1 IC220TBK206)	Active
IC220BEM002	Transition module to enable connection of VersaMax IP I/O to VersaPoint (requires IC677CBLLBFLY0020 cable)	Active
IC220FOS001	Media converter for converting 10/100Base-T to polymer and HCS fibers	Active
IC677CBLLBFLY0020	IP67 Local Communication Cable, 2M M12 B-code w/LEADS	Active
IC220TBK061	I/O W/Shield, 6 Position Spring Style, Qty 5	Active
IC220TBK062	I/O Terminal Strip W/Dual Shield, 6 Position Spring Style, Qty 5	Active
IC220TBK082	I/O Terminal Strip, 8 Position Spring Style, Qty 10	Active
IC220TBK085	I/O Terminal Strip, 8 Position Spring Style, Relay, Qty 10	Active
IC220TBK087	Power Terminal Strip, 8 Position Spring Style, Qty 10	Active
IC220TBK122	I/O Terminal Strip, 12 Position Spring Style, Input, Qty 10	Active
IC220TBK123	I/O Terminal Strip, 12 Position Spring Style, Output, Qty 10	Active
IC220TBK201	Terminal Strip Set, Spring Style, DEVICENET NIU	Active
IC220TBK202	Terminal Strip Set, Spring Style, Encoder	Active
IC220TBK203	Terminal Strip Set, Spring Style, Analog Out/HSC	Active
IC220TBK204	Terminal Strip Set, Spring Style, AC Power Terminal	Active
IC220TBK206	Terminal Strip Set, Spring Style, Relay Isolation	Active

## 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	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 mA @ 5V	4	IC694MDL660	Discrete Input Module, 24 VDC Positive Logic, 32 points (Requires terminal block)
5	35 mA @ 5V; 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	420 mA @ 5 VDC	1	IC695PBM300	PROFIBUS DP Master Module
		1	BC646MPP001	Logic Developer - PLC Professional
14	Total current from power supply required: 2895 mA @ 5V; 1850 @ 3.3V; 110 mA @ 24 VDC Relay. Only one power supplied needed.			

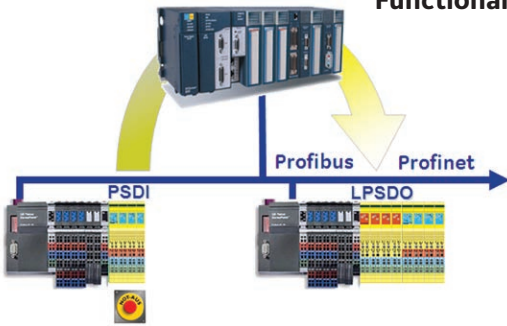
## Remote Cabinets (Qty 5)

	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

	840 mA @ 3.3 VDC; 614 mA @ 5 VDC	1	IC695ETM001	RX3i Ethernet module 10/100 Mb/s 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

**Functional Safety Modules**



VersaSafe is a SIL3 TUV certified safety solution, well integrated in the PACSystems RX3i platform.

VersaSafe technology offers RX3i users, in particular machine OEMs, a scalable and cost efficient SIL 3 safety solution, without need of an additional, complex safety PLC and safety network. Users can add the exact number of safe I/O modules required, with the ability to expand to more than 100 safe I/Os. Even if the application requires a low number of safe I/O, VersaSafe still offers a cost efficient solution.

The safety I/O is distributed via VersaPoint PROFIBUS NIU or PROFINET RT NIU, and can be combined with any standard I/O on the same network.

Well integrated into the RX3i system, VersaSafe is easy to use. Since the RX3i is the single point of connection, both safe and standard I/O can be combined in the same logic program. Integration into the RX3i also enables significant cost reduction because the status of all safe I/Os is directly available in the standard application logic without the need to hard wire. The safety programming tool provides a safe function block library so standard machine safety applications can be realized with configuration instead of complex programming.

	<b>IC220SDL543</b>	<b>IC220SDL544</b>	<b>IC220SDL953</b>	<b>IC220SDL963</b>	<b>IC220SDL753</b>	<b>IC220SDL752</b>	<b>IC220SDL840</b>
<b>Product Name</b>	<b>Safe Input, 24 VDC Positive Logic</b>	<b>Safe Input, 24 VDC Positive Logic</b>	<b>Safety Logic Module (V2), Safe Output, 24 VDC Positive Logic</b>	<b>Enhanced Safety Logic Module (V3), Safe Output, 24 VDC Positive Logic</b>	<b>Safe Output, 24 VDC Positive Logic 2 A</b>	<b>Safe Output, 24 VDC Sink/Source</b>	<b>Safe Output, Relay 4A, 4PT, with 2 contacts each</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active	Active	Active	Active
<b>Voltage</b>	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	0 - 30 VDC	24V and 230V
<b>Applications</b>	Safe Input	Safe Input	Safe Logic Output	Enh. Safe Logic Output	Safe Output	Safe Output	Safe Relay Output
<b>Number of Points SIL2 / CAT3</b>	8	16	8	8	8	4	4
<b>Number of Points SIL3 / CAT4</b>	4	8	4	4	4	2	2
<b>Clock Outputs</b>	2	2	-	-	-	-	2
<b>Diagnostic Inputs</b>	-	-	-	-	-	-	2
<b>Diagnostic Bits</b>	-	-	32 Bits In 32 Bits Out	32 Bits In 32 Bits Out	-	-	-
<b>Max. Safety Level SIL / IEC61508</b>	3	3	3	3	3	3	3
<b>Max. Safety Level SILC / IEC62061</b>	3	3	3	3	3	3	3
<b>Max. Safety Level PL / ISO 13849-1</b>	e	e	e	e	e	e	e
<b>Max. Safety Level Category / CAT</b>	4	4	4	4	4	4	4

**Starter Kits**

---

Part Number	Description	Lifecycle Status
IC220KITPNS001	VersaSafe PROFINET Distributed Safety Evaluation Kit. PROFINET RT Slave built-in switch, eight 24 VDC positive standard inputs module, eight 24 VDC standard outputs modules, eight 24 VDC safe inputs module, eight 24 VDC safe outputs modules	Active

---

## 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 VersaMax IP includes PROFINET/ PROFIBUS I/O blocks, network cordsets, and power cordsets. The I/O blocks provide the following:

- Connection to PROFINET/ 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

## GE Machine Edition

GE 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.



**Stand Alone Input and Output Modules** [page 1.xxx](#)

**VersaMax IP Modular** [pages 1.xxx-1.xxx](#)

**Accessories and Cables** [page 1.xxx](#)

**Configuration Guidelines** [page 1.xxx](#)

## 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
<b>Product Name</b>	<b>8 Point Input Module, PROFIBUS</b>	<b>16 Point Input Module, PROFIBUS</b>	<b>4 Point Input and 4 Point (2 Amp) Output Module, PROFIBUS</b>	<b>8 Point (2 Amp) Output Module, PROFIBUS</b>
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Protocol</b>	PROFIBUS DP	PROFIBUS DP	PROFIBUS DP	PROFIBUS DP
<b>Module Power</b>	24 VDC	24 VDC	24 VDC	24 VDC
<b>Module Power Range</b>	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC
<b>Module Current Consumption UL at 24 VDC</b>	35 mA typical, 100 mA maximum	35 mA typical, 100 mA maximum	40 mA typical, 100 mA maximum	40 mA typical, 100 mA maximum
<b>Module Current Consumption US at 24 VDC</b>	4.5 mA typical plus sensor current 700 mA maximum	8 mA typical plus sensor current 1.2 A maximum	4.5 mA typical plus sensor current 700 mA maximum	3 mA typical plus sensor current 700 mA maximum
<b>Module Current Consumption UAXX at 24 VDC</b>	N/A	N/A	6 mA typical plus actuator current, 4 A maximum	12 mA typical plus actuator current, 4 A maximum
<b>Connection Style (M12)</b>	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
<b>Operating Temperature</b>	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)
<b>Degree of Protection</b>	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
<b>Class of Protection</b>	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
<b>Housing Dimensions (W x H x D)</b>	60 mm x 160 mm x 44.5 mm	60 mm x 160 mm x 44.5 mm	60 mm x 178 mm x 49.3 mm	60 mm x 178 mm x 49.3 mm





**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.

	IC677PNS001	IC677PBI001	IC677DBI008	IC677DBO085
<b>Product Name</b>	VersaMax IP PROFINET Scanner with (8) 24 VDC inputs	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
<b>Lifecycle Status</b>	Active	Active	Active	Active
<b>Protocol</b>	PROFINET	PROFIBUS DP	Local Bus	Local Bus
<b>Number of Points</b>	8	8	8	8
<b>Module Power</b>	24 VDC	24 VDC	24 VDC	24 VDC
<b>Module Power Range</b>	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC
<b>Module Current Consumption UL at 24 VDC</b>	118 mA typical	75 mA typical, 100 mA maximum	35 mA typical (50 mA maximum) @ 500Kbaud; 40 mA typical (50 mA maximum) @ 2Mbaud	40 mA typical (50 mA maximum) @ 500Kbaud; 45 mA typical (50 mA maximum) @ 2Mbaud
<b>Module Current Consumption US at 24 VDC</b>	5 mA typical plus sensor current 600 mA maximum	15 mA typical plus sensor current 600 mA maximum	5 mA typical plus sensor current 600 mA maximum	5 mA typical plus actuator current 600 mA maximum
<b>Module Current Consumption UAXX at 24 VDC</b>	N/A	12 mA typical plus actuator current, 4 A maximum	N/A	N/A
<b>Connection Style (M12)</b>	2-, 3-, and 4-wire (Y connector to support two sensors per connector)	2-, 3-, and 4-wire (Y connector to support two sensors per connector)	2-, 3-, and 4-wire	2-, 3-, and 4-wire
<b>Operating Temperature</b>	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)
<b>Degree of Protection</b>	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
<b>Class of Protection</b>	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
<b>Housing Dimensions (W x H x D)</b>	70 mm x 178 mm x 49.3 mm	70 mm x 178 mm x 49.3 mm	70 mm x 178 mm x 49.3 mm	70 mm x 178 mm x 49.3 mm



### 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.

	<b>IC677DBM442</b>	<b>IC677ABI004</b>	<b>IC677ABO004</b>
<b>Product Name</b>	<b>Expansion VersaMax IP Modular slave with (4) 24 VDC inputs and 4 outputs (2 amp)</b>	<b>Expansion VersaMax IP Modular slave with (4) analog inputs</b>	<b>Expansion VersaMax IP Modular slave with (4) analog outputs</b>
<b>Lifecycle Status</b>	Active	Active	Active
<b>Protocol</b>	Local Bus	Local Bus	Local Bus
<b>Number of Points</b>	4 In/ 4 Out	4	4
<b>Module Power</b>	24 VDC	24 VDC	24 VDC
<b>Module Power Range</b>	18 VDC to 30 VDC	18 VDC to 30 VDC	18 VDC to 30 VDC
<b>Module Current Consumption UL at 24 VDC</b>	40 mA typical (50 mA maximum) @ 500Kbaud; 45 mA typical (50 mA maximum) @ 2Mbaud	70 mA, typical	70 mA, typical
<b>Module Current Consumption US at 24 VDC</b>	5 mA typical plus sensor current 600 mA maximum	500 mA typical plus sensor current 400 mA maximum	5 mA typical plus actuator current 400 mA maximum
<b>Module Current Consumption UAXX at 24 VDC</b>	3 mA typical plus actuator current, 4 A maximum	N/A	N/A
<b>Connection Style (M12)</b>	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)
<b>Operating Temperature</b>	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)
<b>Degree of Protection</b>	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
<b>Class of Protection</b>	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529	IP65 and IP67 according to IEC 60529
<b>Housing Dimensions (W x H x D)</b>	70 mm x 178 mm x 49.3 mm	70 mm x 178 mm x 49.3 mm	70 mm x 178 mm x 49.3 mm

## Accessories and Cables

Part Number	Description	Lifecycle Status
IC676ACC001	VersaMax IP Point Labels - Qty 50	Active
IC676ACC002	Protective Caps -Male (For unused I/O connectors and/or outgoing bus & power connectors) - Qty 5	Active
IC676ACC003	Protective Caps -Female (For unused incoming power connectors) - Qty 5	Active
IC676ACC004	PROFIBUS Network Termination Resistor	Active
IC676ACC005	PROFIBUS Network Tee	Active
IC676CBLPBB003	IP67 PROFIBUS Cordset - 0.3 Meters	Active
IC676CBLPBB005	IP67 PROFIBUS Cordset - 0.5 Meters	Active
IC676CBLPBB010	IP67 PROFIBUS Cordset -1 Meter	Active
IC676CBLPBB020	IP67 PROFIBUS Cordset - 2 Meters	Active
IC676CBLPBB050	IP67 PROFIBUS Cordset - 5 Meters	Active
IC676CBLPBB100	IP67 PROFIBUS Cordset - 10 Meters	Active
IC676CBLPBF020	IP67 PROFIBUS Cordset - 2 Meters - Female Connector w/Leads	Active
IC676CBLPBF050	IP67 PROFIBUS Cordset - 5 Meters - Female Connector w/Leads	Active
IC676CBLPBF100	IP67 PROFIBUS Cordset - 10 Meters -Female Connector w/Leads	Active
IC676CBLPBM020	IP67 PROFIBUS Cordset - 2 Meters, Male Connector w/Leads	Active
IC676CBLPBM050	IP67 PROFIBUS Cordset - 5 Meters, Male Connector w/Leads	Active
IC676CBLPBM100	IP67 PROFIBUS Cordset - 10 Meters -Male Connector w/Leads	Active
IC676CBLPWB003	IP67 Power Cordset - 0.3 Meters	Active
IC676CBLPWB005	IP67 Power Cordset - 0.5 Meters	Active
IC676CBLPWB010	IP67 Power Cordset -1 Meter	Active
IC676CBLPWB020	IP67 Power Cordset - 2 Meters	Active
IC676CBLPWB050	IP67 Power Cordset - 5 Meters	Active
IC676CBLPWB100	IP67 Power Cordset -10 Meters	Active
IC676CBLPWF020	IP67 Power Cordset - 2 Meters - Female Connector w/Leads	Active
IC676CBLPWF050	IP67 Power Cordset - 5 Meters - Female Connector w/Leads	Active
IC676CBLPWF100	IP67 Power Cordset -10 Meters -Female Connector w/Leads	Active
IC676CBLPWM020	IP67 Power Cordset - 2 Meters - Male Connector w/Leads	Active
IC676CBLPWM050	IP67 Power Cordset - 5 Meters - Male Connector w/Leads	Active
IC676CBLPWM100	IP67 Power Cordset -10 Meters - Male Connector w/Leads	Active
IC676CBLPNRJ45010A	IP67 PROFINET Cordset, Straight M12 to RJ45 connector, D-coded - 1 Meters	Active
IC676CBLPNRJ45020A	IP67 PROFINET Cordset, Straight M12 to RJ45 connector, D-coded - 2 Meters	Active
IC676CBLPNRJ45050A	IP67 PROFINET Cordset, Straight M12 to RJ45 connector, D-coded - 5 Meters	Active
IC676CBLPNRJ45100A	IP67 PROFINET Cordset, Straight M12 to RJ45 connector, D-coded - 10 Meters	Active
IC676CBLPNFLY010A	IP67 PROFINET Cordset, Straight M12 to Flying Leads, D-coded - 1 Meters	Active
IC676CBLPNFLY020A	IP67 PROFINET Cordset, Straight M12 to Flying Leads, D-coded - 2 Meters	Active
IC676CBLPNFLY050A	IP67 PROFINET Cordset, Straight M12 to Flying Leads, D-coded - 5 Meters	Active
IC676CBLPNFLY100A	IP67 PROFINET Cordset, Straight M12 to Flying Leads, D-coded - 10 Meters	Active

## VersaMax IP Modular Inter-connection Cables

Part Number	Description	Lifecycle Status
IC677CBLPW0013	IP67 Voltage supply cable for local bus; A-coded, 5 position, unshielded 13.5 cm.	Active
IC677CBLLB0013	IP67 Local communications cable for local bus; B-coded, 5 position, shielded 13.5 cm.	Active

## 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; 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 mA @ 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	420 mA @ 5 VDC	1	IC695PBM300	PROFIBUS DP Master Module
		1	BC646MPP001	Logic Developer -PLC Professional
14	Total current from power supply required: 2895 mA @ 5 V; 1850 @ 3.3 V; 110 mA @ 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	IC677CBLPWB0013	IP67 Local communications cable for local bus; B-coded, 5 position, shielded 13.5 cm.

## Options to Consider

840 mA @ 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