PACSystems™ RSTi-EP I/O

High Density, High Performance Slice I/O

Smarter Architecture

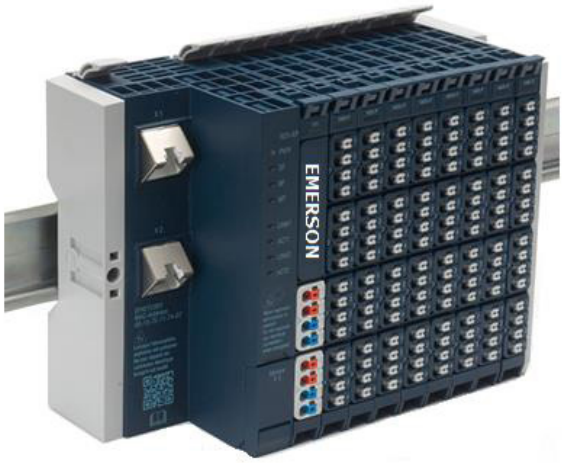
Today's connected machines require innovative, high-performance control systems that minimize unplanned downtime and increase productivity and efficiency. RSTi-EP combines powerful technology and a modular, compact form factor to deliver higher performance and maximized productivity in today's connected automation systems. 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. RSTi-EP I/O is easily expandable, soy ou can adapt and extend coverage as your system evolves.

Higher Performance in Half the Space

The innovative RSTi-EP I/O is a powerful combination of clean layout, high density, and small footprint. It can accommodate up to 64 modules and 1024 I/O points per drop, while its 11.5 mm I/O slices maximize limited cabinet space. By adopting the most compact I/O system on the market, it's possible to incorporate smaller cabinet sizes into user-friendly system designs.You can even eliminate external components by using optional potential distribution modules to provide easy connections to input power, output power, and functional earth.

Remote, Real-time Diagnostics

With the RSTi-EP's integrated web server and advanced diagnostics, failures in the system can be identified remotely, eliminating the need to travel to the machine, saving both time and money. The web server lets the operator view diagnostic faults and upgrade firmware over the web– simplifying start up, increasing availability and productivity without the need for additional tools or software. Additionally, actions can be taken within the application feeding off of the diagnostic information. It is simple to prioritize service trips as critical or routine maintenance without stepping out of the control room.



Plug and Play Installation

Consistent I/O cabling interfaces make installation faster and more reliable. Colorkeyed connectors allow for fewer cabling errors and noticeably shorter installation times. Better still, no tools are required for installation or removal of I/O wiring connectors, saving time and effort. Entire machine modules can be cabled and transferred into production through a streamlined commissioning process. Bulk swing-arm kits are available to enable cable pre-assembly, offloading repetitive tasks for your team during panel assembly. A single row connection level facilitates wiring, installation, and service. Separate power supplies for inputs and outputs reduce the number of power feed modules needed and save space; additionally, specific sections can be activated or deactivated without affecting production thanks to the independence of the input and output power busses.

High Availability

With the PNS101 network adapter, RSTi-EP supports PROFINET System Redundancy (PNSR). This enables synchronized independent controllers to service the I/O and transition from active to back-up controller without interruption. With controllers and processes resilient from physical disruption, you can consider unplanned downtime a thing of the past.

Simple Maintenance

RSTi-EP lays a strong foundation for installation, machine commissioning and service applications with robust and easy-to-use signal connection components. LEDs on the module and each channel help operators to quickly and easily determine I/O health and quickly diagnose any system failures.

Intutive Integration

The RSTI-EP features outstanding performance and response time, with the high-speed system bus reading up to 256 DI/DOs in 20 microseconds. It offers intuitive I/O mapping for quick and easy integration into your control application, as well as maximum power reserves for future applications. RSTi-EP features faster backplane speeds than the original RSTi I/O and perfectly responds to growing complexity in machine and factory automation thanks to powerful flexibility and a consistent user interface.

Feature	Benefit
Wide Range of Communication Options	■ PROFINET, PROFIBUS, Modbus TCP, EtherCAT, and Ethernet/IP
Small Footprint	■ Industry-best I/O density that's still easy to use ■ Maximize or reduce cabinet space ■ Place I/O closer to sensors for reduced wiring costs
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.
Module and Channel Level LEDs	■ 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 Etherent on Ethernet enabled network adapters ■ Move more data with precision and confidence for improved application performance and productivity
High Availability	■ Supports PROFINET System Redundancy (PNSR) and Modbus TCP Dual LAN

Specifications

Interface

- Copper RJ-45 for Ethernet models and DB-9 for serial network adapters

Expansion

- Up to 64 active I/O modules per network adapter Power Supply 20.4V – 28.8V DC

Environmental

Operating temperature	-20°C to +60°C (-4°F to +140°F)
Storage temperature	-40°C to +85°C (-40°F to +185°F)
Air humidity (operation/transport)	5% to 95%, noncondensing as per DIN EN 61131-2

Standard Module Wire Gauge

- Between 0.14 mm² and 1.5 mm² (AWG 26 – 16)

Protection

- IP20

Module Dimensions (Height x Width x Depth)

- Network adapter: 120.0 mm (4.72 in) 52.0 mm (2.05 in) 76.0 mm (2.99 in)
- I/O module: 120.0 mm (4.72 in) 11.5 mm (0.45 in) 76.0 mm (2.99 in)
- End plate: 120.0 mm (4.72 in) 3.5 mm (0.14 in) 76.0 mm (2.99 in)
- End bracket: 120.0 mm (4.72 in) 8.0 mm (0.32 in) mm (1.42 in)

Mounting Format
- DIN Rail

Network Interfaces
- PROFINET
- PROFIBUS DP
- Modbus/TCP
- EtherCAT
- Ethernet/IP

Network Redundancy
- Media Redundancy Protocol (MRP)

System Redundancy
- PROFINET System Redundancy

I/O Redundancy
- Via Application Code

Media Connector
- Media Redundancy Protocol (MRP)

Network Redundancy
- 2x RJ45

Galvanic Isolation
- Yes

Hot Swap
- Yes

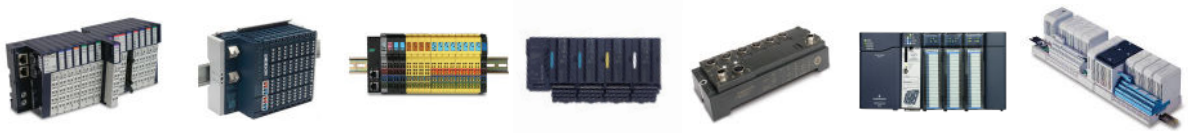
Agency Approvals
- UL
- UL HazLoc Class 1 Division 2
- CE
- ATEX Zone 2
- TUV SIL3

Marine
- DNV GL

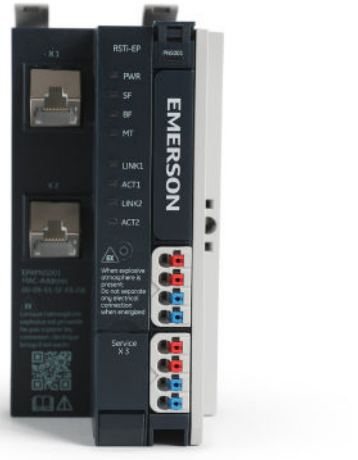
Channel Density
- 4 - 16 points

Max I/O per Drop
- 1024

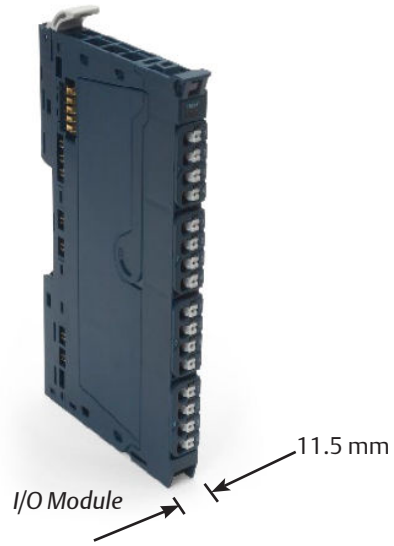
I/O Family Comparison



Product	PACSystems RSTi	PACSystems RSTi-EP	VersaPoint /VersaSafe	VersaMax Modular	VersaMax/IP	PACSystems RX3i	PAC8000
Type	Distributed Slice	Distributed Slice	Distributed Slice	Chassis Based	On-machine Distributed	Chassis Based	Intrinsically Safe
Network Interfaces	PROFINET PROFIBUS DP Modbus/TCP Modbus/RTU DeviceNet	PROFINET PROFIBUS DP Modbus/TCP EtherCAT Ethernet/IP	PROFINET PROFIBUS DP Modbus/TCP DeviceNet	PROFINET PROFIBUS DP Modbus/TCP EGD DeviceNet GENIUS	PROFINET PROFIBUS DP	PROFINET PROFIBUS DP Modbus/TCP EGD CMX	PROFINET Modbus/TCP
System Redundancy	-	PNSR	-	PNSR, EGD or GENIUS		PNSR or EGD	PNSR or Modbus/ TCP
Hot Swap	No	Yes	No	Yes	No	Yes	Yes
Environmentals	IP20 0˚C to 55˚C (UL) 0˚C to 60˚C (non-UL)	IP20 -20˚C to 60˚C	IP20 -20˚C to 55˚C	IP20 0˚C to 60˚C -40˚C to 60˚C (opt.) Conformal Coat (opt.)	IP67 -20˚C to 60˚C	IP20 0˚C to 60˚C -40˚C to 60˚C (opt.) Conformal Coat (opt.)	IP20 -40˚C to 70˚C Conformal Coat
Agency Approvals	UL UL HazLoc C1D2CE ATEX Zone 2	UL UL HazLoc C1D2 CE ATEX Zone 2	UL UL HazLoc C1D2 CE ATEX Zone 2 TUV SIL3	UL UL HazLoc C1D2 CE ATEX Zone 2	UL UL HazLoc C1D2 CE	UL UL HazLoc C1D2 CE ATEX Zone 2	UL UL HazLoc C1D1 CE ATEX Zone 1 Intrinsically Safe
Marine	-	DNV GL	-	ABS, BV, DNV GL, LR (only select models)	-	ABS, BV, DNV GL (only select models)	LR
I/O Module Size (W x H x D)	12 x 99 x 70 mm	11.5 x 120 x 76mm	12 x 120 x 70 mm	66.8 x 163.5 x 70 mm	70 x 178 x 49.3 mm	34 x 145 x 140 mm	42 x 110 x 106 mm
Typical Applications	Basic Machine	Machine Control Light Process Control General Automation	Functional Safety	Machine and Light Process Control General Automation	On-machine Cabinetless I/O	Complex Machine Process Control Motion Control General Automation	Harsh Environment Process Control
Level of Diagnostics	Good	Better	Best	Better	Good	Best	Best



Network Adapter



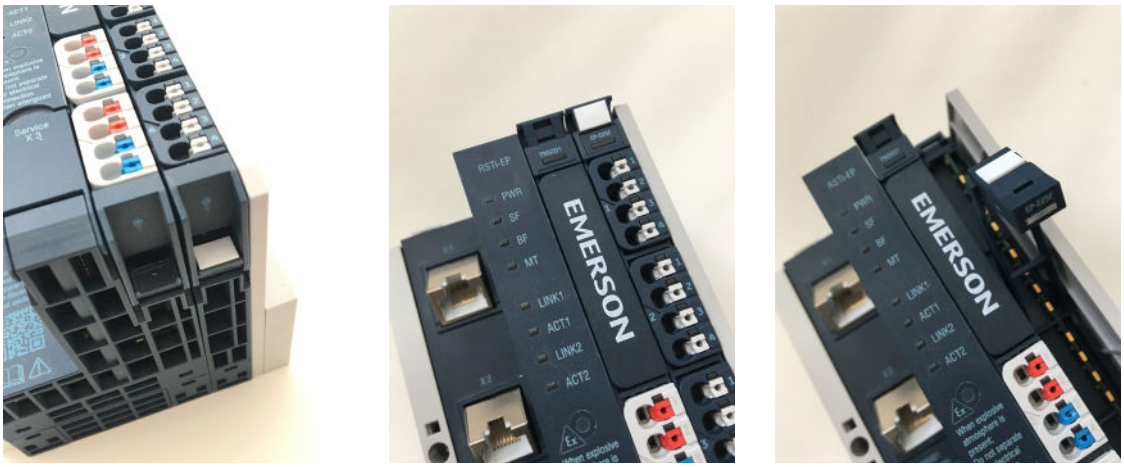
I/O Module

Ordering Information

Part No.	Module Description
Network Adapters	
EPXPNS001	PROFINET IRT Network Adapter, 2 Cu RJ45 Ports, 1024 bytes (Input + Output)
EPXPNS101	PROFINET System Redundancy Network Adapter, 2 Cu RJ45 Ports, 1024 bytes (Input + Output)
EPXEIP001	EtherNet/IP Network Adapter, 2 Cu RJ45 Ports, 1024 bytes (Input + Output)
EPXETC001	EtherCAT Network Adapter, 2 Cu RJ45 Ports, 1024 bytes (Input + Output)
EPXMBE001	Modbus TCP Network Adapter, 2 Cu RJ45 Ports, 2048 bytes (Input + Output)
EPXMBE101	Modbus TCP Network Adapters, 2 Cu RJ45 Ports, 2048 bytes (Input +Output)
EPXPBS001	PROFIBUS DP-V1 Network Adapter
Digital Inputs	
EP-1214	4 Points, Positive Logic 24VDC, 2,3, or 4 Wire
EP-1218	8 Points, Positive Logic, 24VDC 2 Wire
EP-125F	16 Points, Positive Logic, 24VDC, 1 Wire
EP-12F4	4 Points, Positive Logic 24VDC, 2,3, or 4 Wire, Time stamp
EP-1318	8 Points, Positive Logic, 24VDC 3 Wire
EP-153F	16 Points, Negative Logic, 24VDC, 0.5A
EP-1804	4 Points 110/230 VAC (65 – 277 VAC), 2 Wire,
EP-1901	1 Safe Feed-Input, 24 VDC
EP-1902	2 Safe Feed-Inputs, 24 VDC
EP-1922	2 Safe Feed-Inputs, 24 VDC, Programmable Delay

Part No.	Module Description
Digital Outputs	
EP-2214	4 Points, Positive Logic 24VDC, 0.5A, 2,3, or 4 Wire
EP-2218	8 Points, Positive Logic, 24VDC, 0.5A, 2 Wire
EP-225F	16 Points, Positive Logic, 24VDC, 0.5A, 1 Wire
EP-2614	4 Points, Positive Logic 24VDC, 2.0A, 2,3, or 4 Wire
EP-2634	4 Points, Positive/Negative Logic 24VDC, 2.0A, 2,3, or 4 Wire
EP-2714	4 Points, Positive Logic, 24 - 220 VDC/VAC, 6A, 2 Wire
EP-2814	4 Points, Positive Logic, 230 VAC, 1A
EP-291F	16 Points, Negative Logic, 24VDC, 0.5A, 1 Wire
Analog Inputs	
EP-1813	8 Channels, 16 Bytes Input, 16 Bytes Output Power Measurement Module
EP-3124	4 Channels Voltage/Current 12 Bits 2, 3, or 4 Wire
EP-3164	4 Channels Voltage/Current 16 Bits 2, 3, or 4 Wire
EP-3264	4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-3368	8 Channels Current 16 Bits 2, 3, or 4 Wire– requires HD Connectors (EP-8360
EP-3468	8 Channels Current 16 Bits 2, 3, or 4 Wire, Channel Diagnostic– requires HD Connectors (EP-8360
EP-3664	4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-3704	4 Channels RTD 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-3804	4 Channels TC 16 Bits with Diagnostics 2, 3, or 4 Wire
Analog Outputs	
EP-4164	4 Channels Voltage/Current 16 Bits 2, 3, or 4 Wire
EP-4264	4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire
Special Function Modules	
EP-5111	1 Channel High Speed Counter, AB 100 kHz 1 DO 24VDC, 0.5A
EP-5112	2 Channel High Speed Counter, AB 100 kHz
EP-5212	2 Channel Frequency Measurement, 100 kHz
EP-5261	1 Channel Serial Communications, 232, 422, 485
EP-5311	SSI Encoder, BCD or Gray-Code Format, 5/24 VDC
EP-5324	4 Channels IO Link Communication Module, 24VDC, 0.5A
EP-5422	2 Channels PWM Output, Positive Logic, 24VDC, 2.0 A
EP-5442	2 Channels PWM Output, Positive Logic, 24VDC, 0.5 A

Part No.	Module Description
Power Modules	
EP-700F	16 Channels 24VDC Potential Distribution Functional Earth
EP-710F	16 Channels 24VDC Potential Distribution +0VDC from Input Current Path
EP-711F	16 Channels 24VDC Potential Distribution +24 VDC from Input Current Path
EP-750F	16 Channels 24VDC Potential Distribution +0VDC from Output Current Path
EP-751F	16 Channels 24VDC Potential Distribution +24 VDC from Output Current Path
EP-7631	1 Channel 24VDC Input Flow 10A
EP-7641	1 Channel 24VDC Output Flow 10A
Accessories	
EP-8100	Label Marker for I/O Connections (use with EP-8101)
EP-8101	Paper Labels for I/O Connections (use with EP-8100)
EP-8150	Snap-In-Module Marker (Qty 500)
EP-8300	Base connector, I/O Module (Qty 5)
EP-8301	DIN Rail Termination Kit, Replacement
EP-8360	High-Density IO Connector Pack (8 x 4-Signal Connectors)
EP-8310	Empty Slot Filler Module
EP-8400	Swing-Arm Kits, Connector Frame and Connectors (Qty 30)
EP-8631	Base Connector, Power Feed, Input Current path (Qty 5)
EP-8641	Base Connector, Power Feed, Output Current path (Qty 5)



EP-8150 Label Markers

United State Office
Emerson Automation Solutions
Intelligent Platforms, LLC
2500 Austin Dr
Charlottesville, VA

Singapore Office
Emerson Automation Solutions Intelligent
Platforms Asia Pacific Pte. Ltd.
1 Pandan Cres,
Singapore, 128461

Brazil Office
Emerson Automation Solutions
Av. Hollingsworth, 325 – Iporanga
Sorocaba – SP, 18087-105

China Office
Emerson Automation Solutions Intelligent
Platforms (Shanghai) Co., Ltd
No.1277, Xin Jin Qiao Rd, Pudong,
Shanghai, China, 201206

Germany Office
Emerson Automation Solutions
ICC Intelligent Platforms GmbH
Memminger Straße 14
Augsburg, DE 86159

India Offices
Emerson Automation Solutions
Intelligent Platforms Pvt. Ltd.,
Building No.8, Ground Floor
Velankani Tech Park, No.43
Electronics City Phase I, Hosur Rd
Bangalore-560100

Americas Support – Technical and Commercial
Phone: 1-888-565-4155 or 1-434-214-8532 (if toll free 800 option is unavailable)
Email for Technical Support: support.mas@emerson.com
Email for Commercial Support: customercare.mas@emerson.com
Primary language of support: English

Europe, Middle East, & Africa Support – Technical and Commercial
Phone: +800-4-444-8001
or +420-225-379-328 (if toll free 800 option is unavailable or dialing from a mobile telephone)
Email for Technical Support: support.mas.emea@emerson.com
Email for Commercial Support: customercare.emea.mas@emerson.com
Primary languages of support: English, German, Italian, Spanish

Asia Support – Technical and Commercial
Phone: +86-400-842-8599 for Greater China
+65-6955-9413 (All Other Countries)
Email for Technical Support: support.mas.apac@emerson.com
Email for Commercial Support Asia: customercare.cn.mas@emerson.com
Primary languages of support: Chinese, English

Support Website: www.emerson.com/iac-support

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