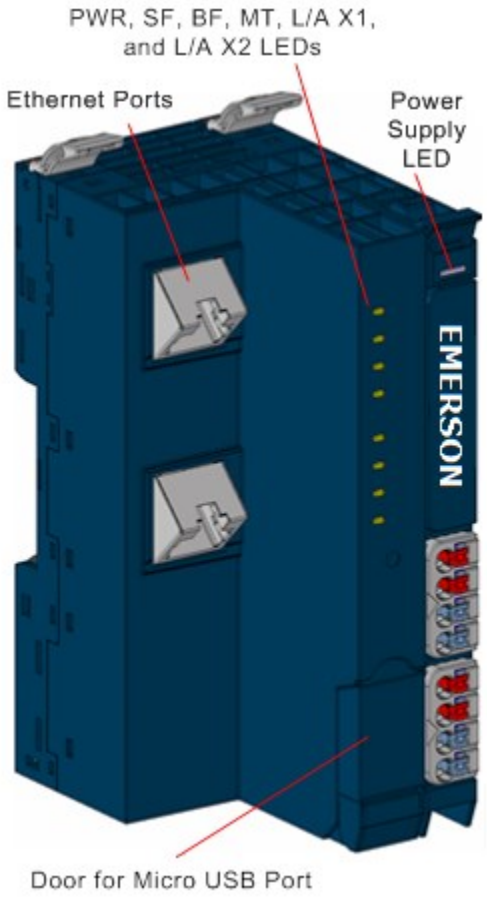
IMPORTANT PRODUCT INFORMATION

GFK-3105B

Jul 2022

PACSystems™ RSTi-EP

EtherNet/IP™ NETWORK ADAPTER MODULE (EPXEIP001)



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Warnings and Caution Notes as Used in this Publication

⚠ WARNING

Warning notices are used in this publication to emphasize that hazardous voltages, currents, temperatures, or other conditions that could cause personal injury exist in this equipment or may be associated with its use.

In situations where inattention could cause either personal injury or damage to equipment, a Warning notice is used.

⚠ CAUTION

Caution notices are used where equipment might be damaged if care is not taken.

Note: Notes merely call attention to information that is especially significant to understanding and operating the equipment.

These instructions do not purport to cover all details or variations in equipment, nor to provide for every possible contingency to be met during installation, operation, and maintenance. The information is supplied for informational purposes only, and Emerson makes no warranty as to the accuracy of the information included herein. Changes, modifications, and/or improvements to equipment and specifications are made periodically and these changes may or may not be reflected herein. It is understood that Emerson may make changes, modifications, or improvements to the equipment referenced herein or to the document itself at any time. This document is intended for trained personnel familiar with the Emerson products referenced herein.

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Product Description

The EPXEIP001 network adapter is a is an EtherNet/IP™ participant developed according to IEC 61158. The network adapter is the head module for the RSTi-EP communication bus, to which up to 64 active RSTi-EP modules can be connected. The EtherNet/IP network adapter has two Ethernet ports and an integrated switch.

The network adapter can be accessed with a system-independent web server application via the USB service interface or the Ethernet. Thus, all information, such as diagnostics, status values, and parameters, can be read and all connected modules can be simulated or forced.

The station's main power supply is integrated with the network adapter. Power is supplied via two 4-pole connectors, separated into the input and output current paths.

Caution, the RSTi-EP station is usually installed on a horizontally positioned DIN rail. Installation on vertically positioned DIN rails is also possible. However, the heat dissipation is reduced such that the derating values change (refer to the section, Thermal Derating.

Modules should be allowed to de-energize for a minimum of 10 seconds after power down, before starting any maintenance activity. The network adapter cannot be hot-swapped.

Refer to the RSTi-EP Slice I/O User Manual (GFK-2958) for additional information.

Refer to the RSTi-EP Power Supply Reference Guide, a software utility available on PAC Machine Edition V9.00, for detailed power-feed requirements.

Module Features

- Supports up to 64 active RSTi-EP modules
- Spring-style technology for ease of wiring
- DIN rail mounted
- Double-click installation for positive indication of correct installation
- Built-in Web Server for diagnostic information and firmware update through Ethernet and micro USB port
- Support for daisy-chain/line, star topologies

Ordering Information

Module	Description
EPXEIP001	EtherNet/IP Network Adapter with 2 Copper Ports

Specifications

Specification	EPXEIP001	
System data		
Connection	2 x RJ-45	
Fieldbus protocol	EtherNet/IP	
Process image	Input data width	max. 2 x 494 byte
	Parameter data	max. 64 x 64 byte
	Diagnostic data	max. 64 x 47 byte
Number of modules	max. 64 active	
Configuration interface	Micro USB 2.0	
Transfer rate	Fieldbus	10 Mbps/100 Mbps
	RTSi-EP system bus	Max. 48 Mbps
Supply		
Supply voltage for system and inputs	24 V DC +20% / -15%	
Supply voltage for outputs	24 V DC +20% / -15%	
Max. feed-in current for input modules	max. 10 A	
Max. feed-in current for output modules	max. 10 A	
Current consumption from system current path I_{SYS}	112 mA	
Temperature Data[1)]		
< HW 02.00.00	Operation (horizontal installation)	-20 °C to +60 °C / - 4 °F ... +140 °F (2 x 8 A power supply) -20 °C to +55 °C / - 4 °F ... +131 °F (2 x 10 A power supply)
	Operation (vertical installation)	-20 °C to +55 °C / - 4 °F ... +131 °F (2 x 6 A power supply) -20 °C to +50 °C / - 4 °F ... +122 °F (2 x 8 A power supply)
Connection data		
Type of connection	‘’PUSH-IN“	
Conductor cross-section	Single-wired, fine-wired	0.14 – 1.5 mm^2 (AWG 26 – 16)
General data		
Operating temperature	-20°C to +60°C (-4 °F to +140 °F)	
Height	120 mm (4.72 in)	
Weight	223 g (7.87 oz)	

[1)] Restrictions for use in the potentially explosive atmosphere: Only horizontal installation and max. 8 A power supply!

LEDs

LED Status Indicators

LED	Indication	LED State/Description
PWR	Power LED	**Green:** Supply voltage connected
SF	System Fault	**Red:** Configuration error, or error in the network adapter, or error in a module, or there is a new diagnostic message **Red flashing:** Station in Force mode
BF	Bus fault	**Red:** No connection to the Fieldbus **Red flashing:** Configuration error, no connection to the control unit, or error in the parameter set
MT	Maintenance Required	**Yellow:** Error on the system bus or Fieldbus
MS	Module Status	**Red:** More than one module does not fit the start-up configuration (V1: or no Fieldbus connection) **Red flashing:** One module does not fit the start-up configuration or there is a diagnosis report on at least one module **Green:** Ready for operation **Green flashing:** Coupler not configured **Red/green flashing:** LED self-test during the start
NS	Network status	**Red:** IP-Adress conflict **Red flashing:** Timeout of the exclusive owner connection **Green:** At least one EtherNet/IP connection is established **Green flashing:** no EtherNet/IP connection is established **Red/green flashing:** LED self-test during the start **Off:** At least one EtherNet/IP connection is established **Yellow:** Address conflict or no IP address configured. **Yellow flashing (1 Hz):** valid IP address but no EtherNet/IP connection established. **Yellow flashing (4 Hz):** Connection timeout on an exclusive owner
L/A X1	Connection/Active	**Green / Yellow†:** Connection established between port 1 of the network adapter and another field device **Green flashing / Yellow flashing†:** Data being exchanged on port 1
L/A X2	Connection/Active	**Green:** Connection established between port 2 of the network adapter and another field device **Green flashing:** Data being exchanged on port 2
†Green: Transfer rate 100 MBit/s Yellow: Transfer rate 10 MBit/s		

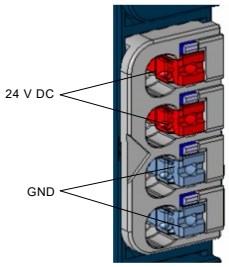
LED Indicators

LED	EPXEIP001
Power Supply	**Green:** Supply voltage > 18 V DC **Red:** At least one current path < 18 V
3.1	**Green:** Input current path supply voltage > 18 V DC
3.2	**Red:** Input current path supply voltage < 18 V DC
3.3	
3.4	**Red:** Internal fuse defective
4.1	**Green:** Output current path supply voltage > 18 V DC
4.2	**Red:** Output current path supply voltage < 18 V DC
4.3	
4.4	**Red:** Internal fuse defective

Field Wiring

The connection frame has one connector, and two 24 V DC wires can be connected to each connector, along with two ground connections. Those four connectors are used as shown in the following figure. The Spring style technology allows either finely stranded or solid wire with crimped wire-end ferrules or ultrasonically welded wires, each with a maximum cross-section of 1.5 mm² (16 gauge), to be inserted easily through the opening in the clamping terminal without having to use tools. To insert fine stranded wires without wire-end ferrules, the pusher must be pressed in with a screwdriver and released to latch the wire.

Figure 1: Connector Block



Connector Specifications

- Conductor cross-section 0.14 to 1.5 mm² (26 – 16 guage)
- Maximum ampacity: 10 A
- 4-pole

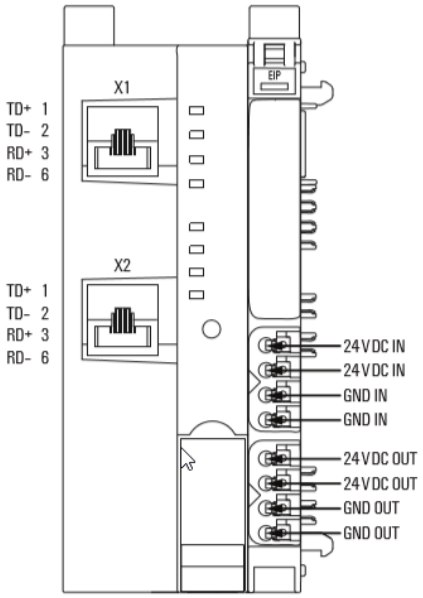
The modules do not have a fused sensor/activator power supply. All cables to the connected sensors/actuators must be fused corresponding to their conductor cross-sections (as per Standard DIN EN 60204-1, section 12).

Refer to the *RSTi-EP Slice I/O User Manual* (GFK-2958) for additional information.

For technical assistance, go to https://www.emerson.com/Industrial-Automation-Controls/support.

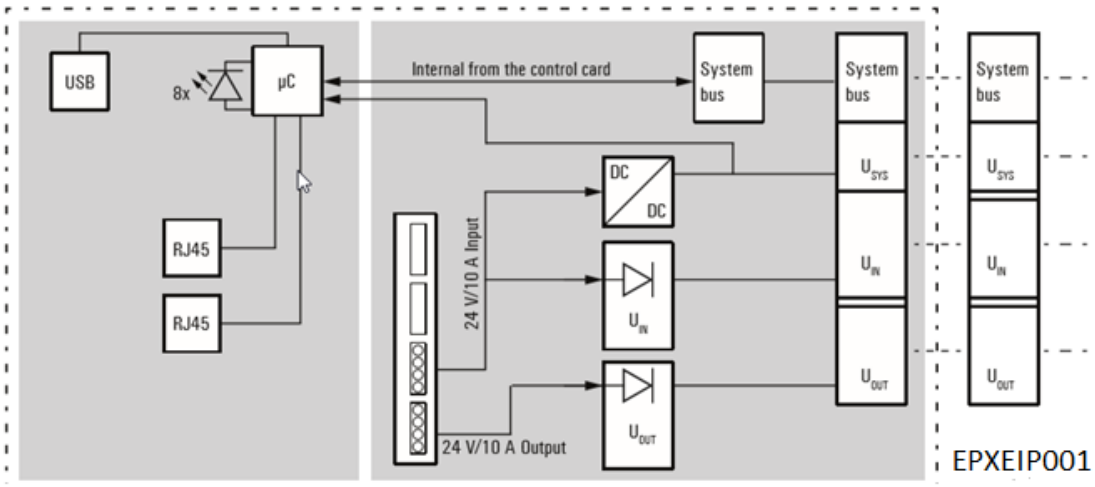
Connection Diagrams

Figure 2: EPXEIP001



Connection Block Diagrams

Figure 3: Connection Block Diagram



Installation in Hazardous Areas

⚠ WARNING

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 HAZARDOUS AREAS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D OR NON-HAZARDOUS AREAS ONLY
- EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;
- EXPLOSION HAZARD – WHEN IN HAZARDOUS AREAS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND
- EXPLOSION HAZARD – DO NOT CONNECT OR DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NONHAZARDOUS.

ATEX Marking

Ⓔx II 3 G Ex Na IIC T4 Gc

Ta: -20°C to +60°C (-4° F to +140 °F)

Thermal Derating

The power supply is restricted according to the temperature. The following values apply for the horizontal and vertical positioning of the RSTi-EP station:

Temperature-dependent Values for the Power Supply

Power Supply	Horizontal	Vertical
Network adapter power supply	60°C (140 °F) : 2 x 8 A 55°C (131 °F) : 2 x 10 A	55°C (131 °F) : 2 x 6 A 50°C (122 °F) : 2 x 8 A
Power-feed module power supply	60°C (140 °F) : 1 x 10 A	55°C (131 °F) : 1 x 8 A

Refer to the RSTi-EP Slice I/O Module User Manual (GFK-2958) for additional information.

Supported Modules and Power Supplies

The following modules can be used with this release of the RSTi-EP Network Adaptor :

Catalog Number	Module Description
Digital Input Modules	
EP-1214	Digital Input, 4 Points, Positive Logic 24VDC, 2,3, or 4 Wire
EP-1218	Digital Input, 8 Points, Positive Logic, 24VDC 2 Wire
EP-1318	Digital Input, 8 Points, Positive Logic, 24VDC 3 Wire
EP-125F	Digital Input, 16 Points, Positive Logic, 24VDC, 1 Wire
EP-153F	Digital Input, 16 Points, Negative Logic, 24VDC, 1 Wire
EP-12F4	Digital Input, 4 Points, Positive Logic 24VDC, 2,3, or 4 Wire, Timestamp
EP-1804	Digital Input, 4 Points 110/230 VAC (65 – 277 VAC), 2 Wire, Isolated
Digital Output Modules	
EP-2214	Digital Output, 4 Points, Positive Logic 24VDC, 0.5A, 2,3, or 4 Wire
EP-2614	Digital Output, 4 Points, Positive Logic 24VDC, 2.0A, 2,3, or 4 Wire
EP-2634	Digital Output, 4 Points, Positive/Negative Logic 24VDC, 2.0A, 2,3, or 4 Wire
EP-2218	Digital Output, 8 Points, Positive Logic, 24VDC, 0.5A, 2 Wire
EP-225F	Digital Output, 16 Points, Positive Logic, 24VDC, 0.5A, 1 Wire
EP-291F	Digital Output, 16 Points, Negative Logic, 24VDC, 0.5A, 1 Wire
Digital Relay Output Modules	
EP-2714	Digital Relay Output, 4 Points, Positive Logic, 24 – 220 VDC/VAC, 6A, 2 Wire
EP-2814	Solid-state Relay Output Module
Analog Input Modules	
EP-3164	Analog Input, 4 Channels Voltage/Current 16 Bits 2, 3, or 4 Wire
EP-3264	Analog Input, 4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-3124	Analog Input, 4 Channels Voltage/Current 12 Bits 2, 3, or 4 Wire
EP-3368	Analog Input, 8 Channels Current 16 Bits 2, 3, or 4 Wire
EP-3468	Analog Input, 8 Channels Current 16 Bits 2, 3, or 4 Wire, Channel Diagnostic
EP-3664	Analog Input, 4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire, Differential Input

Catalog Number	Module Description
EP-3704	Analog Input, 4 Channels RTD 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-3804	Analog Input, 4 Channels TC 16 Bits with Diagnostics 2, 3, or 4 Wire
EP-1813	Power Measurement Module, 8 Channels
Analog Output Modules	
EP-4164	Analog Output, 4 Channels Voltage/Current 16 Bits 2, 3, or 4 Wire
EP-4264	Analog Output, 4 Channels Voltage/Current 16 Bits with Diagnostics 2, 3, or 4 Wire
Speciality 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	1 Channel SSI Encoder, BCD or Gray-Code Format, 5/24 VDC
EP-5422	2 Channels PWM Output, Positive Logic, 24VDC, 2.0 A
EP-5442	2 Channels PWM Output, Positive Logic, 24VDC, 0.5 A
EP-5324	IO-Link Communication Module, 4 Channels
Power Feed Modules for Input Current Path	
EP-7631	Power Module, 1 Channel 24VDC Input Flow 10A
Power Feed Modules for Output Current Path	
EP-7641	Power Module, 1 Channel 24VDC Output Flow 10A
Safe Feed-input Modules	
EP-1901	1 Safe Feed-Input, 24 VDC
EP-1902	2 Safe Feed-Inputs, 24 VDC, Programmable Delay
EP-1922	2 Safe Feed-Inputs, 24 VDC
Potential Distribution Modules	
EP-711F	Power Module, 16 Channels 24VDC Potential Distribution +24 VDC from Input Current Path
EP-751F	Power Module, 16 Channels 24VDC Potential Distribution +24 VDC from Output Current Path
EP-700F	Power Module, 16 Channels 24VDC Potential Distribution Functional Earth
EP-710F	Power Module, 16 Channels 24VDC Potential Distribution +0VDC from Input Current Path
EP-750F	Power Module, 16 Channels 24VDC Potential Distribution +0VDC from Output Current Path

Release History

Catalog Number	Hardware Version	Firmware Version	Date	Comments
EPXEIP001-AAAB	01.00.00	02.04.00	May 22	Firmware release 02.04.00
EPXEIP001-AAAA	01.00.00	02.03.01	Nov-19	Initial Release

Important Product Information for this Release

Updates

EPXEIP001-AAAB default factory image will be 02.04.00

Note: The product may be upgraded in the field using the Web firmware upgrade kit, which can be downloaded from https://www.emerson.com/Industrial-Automation-Controls/support

Modules	Firmware Version	Upgrade Kit
EPXEIP001-AAAB	02.04.00	EPXEIP001-0007675-02_04_00-1.zip which consists of 1) EPXEIP001-0007675-02_04_00-1.bsc 2) ethip-v1.2-IntelligentPlatforms-EPXEIP001.eds 3) FW_upgrade_procedure 4) IPI-GFK-3105B

Functional Compatibility

HW Index [Ver]	FW Index [Ver]	
	AA [02.03.01]	AB [02.04.00]
AA [01.00.00]	OK	OK

Problems Resolved by this Release

Maintenance release

New Features and Enhancements

None

Known Restrictions and Open Issues

Subject	Description
SF LED stays ON after firmware is deployed on the Ethernet/IP adapter only on the webserver interface.	When one or more counter modules are assembled with Ethernet/IP coupler module and after a successful firmware download, it happens that SF LED on the Ethernet/IP adapter stays ON and the module status LED turns red on the EP-5111/5112 module. The error affects only the module status and has no impact on the functionality of the station. This occurs when the power supply of the coupler and the power supply of the input power feed module(EP-7631) are switched on one after the other.

Operational Notes

None

Product Documentation

RSTi-EP Slice I/O Module User Manual (GFK-2958)

RSTi-EP Slice I/O Functional Safety Module User Manual (GFK-2956)

General Contact Information

Home link: http://www.emerson.com/industrial-automation-controls

Knowledge Base: https://www.emerson.com/industrial-automation-controls/support

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1-434-214-8532 (If toll-free option is unavailable)

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Any escalation request should be sent to: mas.sfdcescalation@emerson.com

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