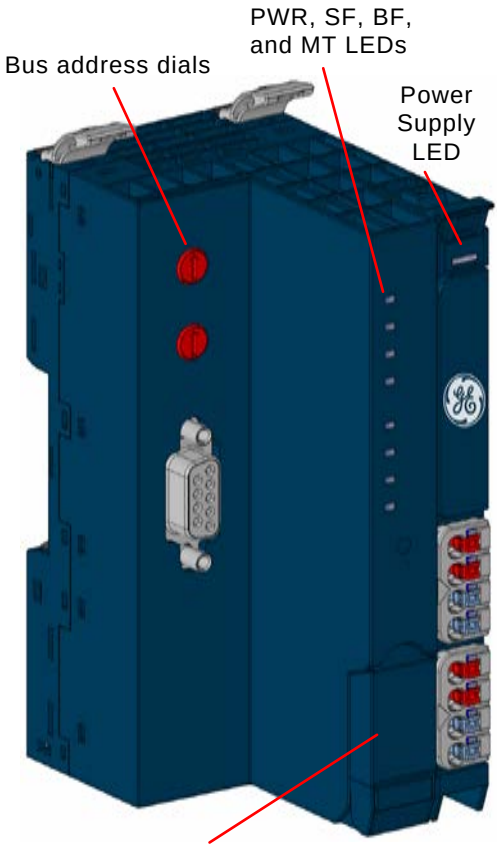
Profibus® Network Adapter Module EPXPBS001

GFK-2964
November 2015



Profibus Network Adapter

The EPXPBS001 network adapter is a PROFIBUS-DP device certified by the PROFIBUS user organization. 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 PROFIBUS-DP network adapter has a Sub-D socket and supports all services in accordance with the DP-V1 specification.

The network adapter can be accessed with a system-independent web server application via the USB service interface. 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 in 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 to be allowed to de-energize for a minimum 10 seconds after power down, prior to 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 PME 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

Ordering Information

Module	Description
EPXPBS001	RSTi-EP Slice I/O Profibus Network Adapter

Specifications

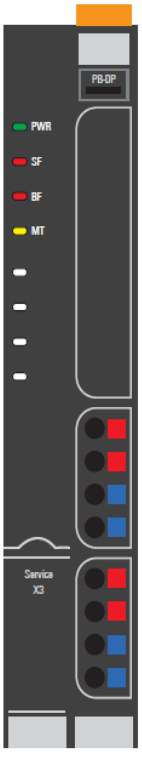
	EPXPBS001	
System data		
Connection	9-pole SUB-D socket	
Fieldbus protocol	PROFIBUS-DP V1	
Process image	Input data width	max. 244 bytes
	Output data width	max. 244 bytes
	Parameter data	max. 244 bytes
	Diagnostic data	max. 244 bytes
Number of modules	max. 64 active	
Configuration interface	Micro USB 2.0	
Transfer rate	Fieldbus	Max. 12 Mbps
	RTSi-EP system bus	Max. 48 Mbps
Supply		
Supply voltage for system and inputs	20.4V – 28.8V	
Supply voltage for outputs	20.4V – 28.8V	
Max. feed-in current for input modules	10 A	
Max. feed-in current for output modules	10 A	
Current consumption from system current path I_{SYS}	100 mA	
Connection data		
Type of connection	*Spring style*	
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)	
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	
Width	52 mm (2.05 in)	
Depth	76 mm (2.99 in)	
Height	120 mm (4.72 in)	
Weight	223 g (7.87 oz)	
Configuration	The GSD file is available on the *Support* website http://support.ge-ip.com for download and import into Proficy Machine Edition. The GSD supporting a firmware release is part of the firmware upgrade kit available on the *Support* website.	

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 report **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 or slave address error or firmware update is running
MT	Maintenance Required	**Yellow:** Error on the system bus or fieldbus

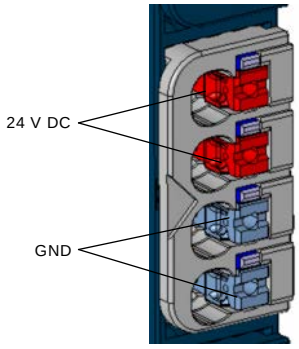
LED Indicators



LED	EPXPBS001
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 guage), 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.



Connector Block

Connector Specifications:

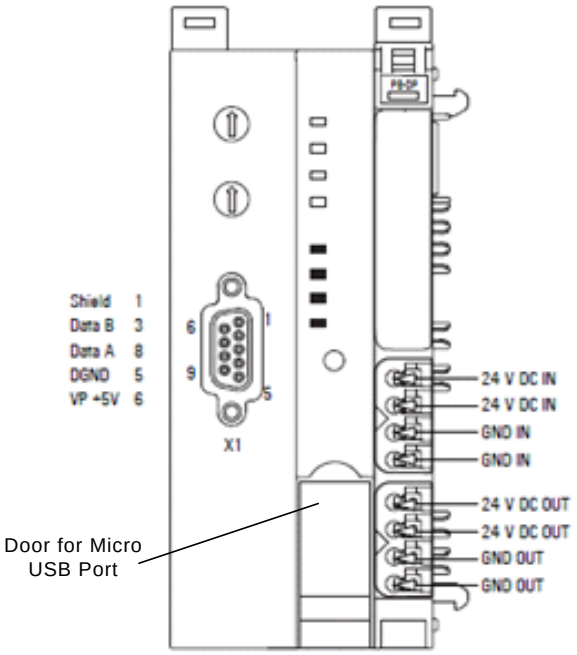
- conductor cross-section 0.14 to 1.5 mm² (26 – 16 guage)
- max. ampacity: 10 A
- 4-pole

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 http://support.ge-ip.com.

Connection Diagrams



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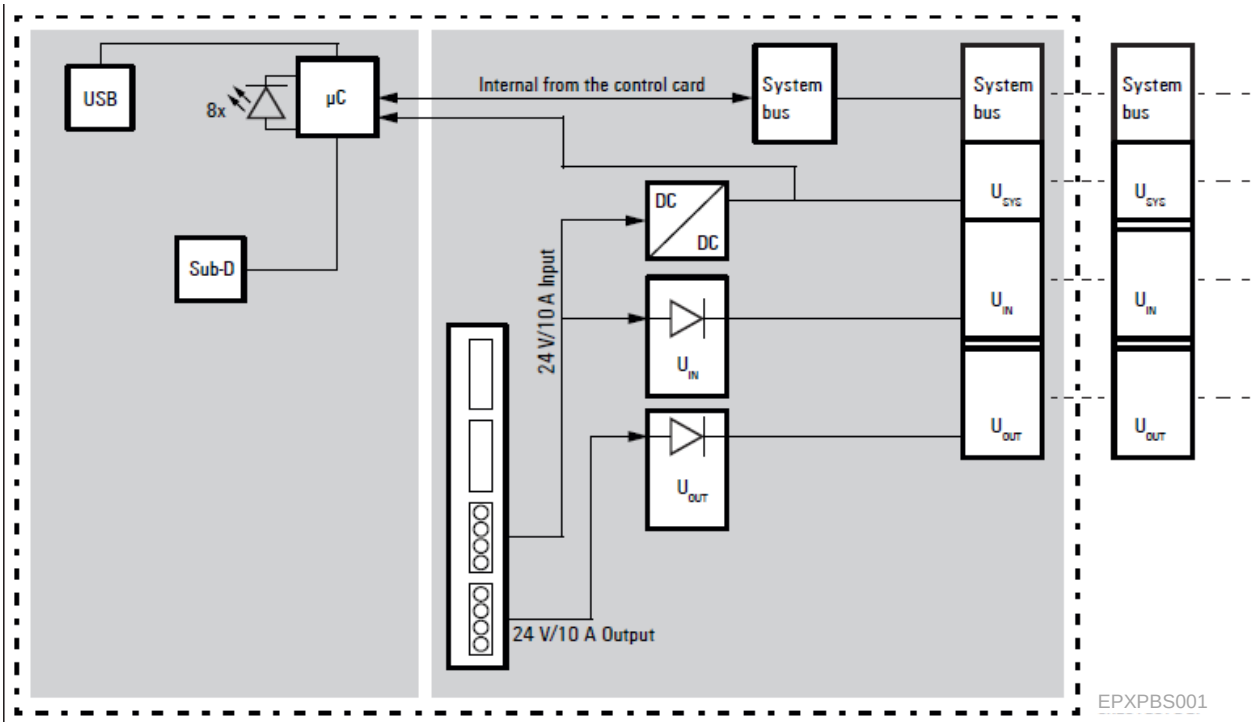
Connection Block Diagrams



EPXPBS001

For public disclosure

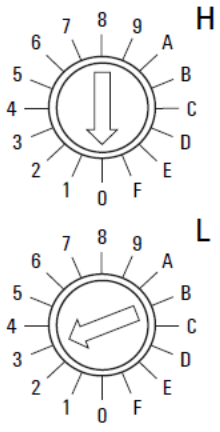
Addressing

The network adapter on the PROFIBUS-DP is addressed via the two rotary switches.

Note: A maximum of 125 addresses (1 to 125) can be assigned. Each address may be assigned only once in the overall bus structure. Addresses 1 and 2 are generally used by the control systems. Bus addresses 000 plus 126 and higher may not be used.

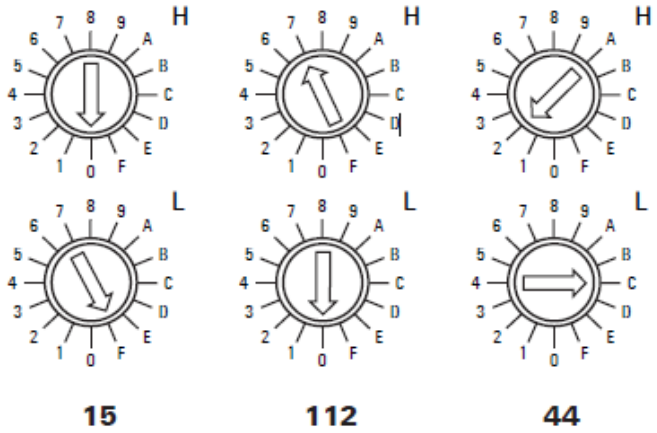
The most significant digit is set with rotary switch **H**, the least significant digit with rotary switch **L** . The switches are labelled in the hexadecimal numbering system (0 to 9, A=10, B=11, C=12, ... F = 15). A hexadecimal to decimal conversion table is provided in the annex.

Coding: Address = (H*16) + L



Default Setting EPXPBS001: Address = 3

Addressing examples:



Examples for Addressing the EPXPBS001

PROFIBUS address **15**: H = 0, L = F

PROFIBUS address **112**: H = 7, L = 0

PROFIBUS address **44**: H = 2, L = C

Installation in Hazardous Areas

- 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

WARNING - EXPLOSION HAZARD - SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2;

WARNING - EXPLOSION HAZARD - WHEN IN HAZARDOUS AREAS, TURN OFF POWER BEFORE REPLACING OR WIRING MODULES; AND

WARNING - 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

	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 Profibus 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-12F4	Digital Input, 4 Points, Positive Logic 24VDC, 2,3, or 4 Wire, Time stamp
	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 Input, 16 Points, Positive 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-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
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-5422	2 Channels PWM Output, Positive Logic, 24VDC, 2.0 A
EP-5442	2 Channels PWM Output, Positive Logic, 24VDC, 0.5 A
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	*Firmware Version*	*Date*	*Comments*
EPXPBS001	01.00	Nov-2015	Initial Release

Important Product Information for this Release

Updates

Initial Release

Funcional Compatibility

Initial Release

Problems Resolved by this Release

None – Initial Release

New Features and Enhancements

None – Initial Release

Known Restrictions and Open Issues

None

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)