

PACSystems™ RSTi

PROFINET NETWORK ADAPTER (STXPNS001)



Caution & Warning 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.

Notes: 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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Before using the units:

To use the units safely and effectively, please read this document and refer to GFK-2745 & GFK-2746 user manuals for further details. The most recent user documents are available on the Support website <https://www.emerson.com/Industrial-Automation-Controls/support>. Also refer “Installation in Hazardous Areas” for instructions on safe usage in hazardous locations.

WARNING

- Installing or removing modules or wiring with power applied to the system or field wiring can cause an electrical arc. This can result in unexpected and potentially dangerous action by field devices. Arcing is an explosion risk in hazardous locations. Be sure that the area is non-hazardous or remove power appropriately before installing or removing modules or wiring.
- Potentially dangerous voltages are present on a module’s terminals, even when system power is turned off. Field power must be turned off when installing or removing a Terminal Block assembly.
- Personnel who install, operate and maintain automation systems that contain these products must be trained and qualified to perform those functions.
- Overloading power modules or Network adapter can result into electric arc & damage to modules.

CAUTION

- Check the rated voltage and terminal array before wiring.
- Ensure that specified environmental conditions are not exceeded. Avoid placing the module in direct sunlight.
- Review module specifications carefully, and ensure that input and output connections are made in accordance with the specifications.
- Use specified cables for wiring.
- Field Power Isolators must be used according to the requirements of the 5VDC/24VDC/48VDC or AC Voltage modules used in the system.
- If system power consumption exceeds the power limits, use system power expansion modules.
- System power and field power must be supplied from separate sources.
- Use Product under pollution degree 2 environment.
- These Devices are open type devices which have to be installed in an enclosure with door or cover which is tool accessible only.

Specifications: STXPNS001 *

Item	Specification
Surrounding Air Temp. / Ambient Temp.	Temp./ Ambient Temp. 0°C to 55°C for UL applications. Storage -40°C to 85°C
Relative Humidity	5% ~ 90%, without condensation
Durable-vib./impact	IEC 60068-2-6:1995
Mount Position	First module of RSTi system
Atmosphere	No excessive dust ; No corrosive gases
Field Supp.Volt.	Class II*** 24VDC, 24VDC (11VDC ~ 28.8VDC)
Field Supply Current	Max. 10A
I/O bus 5Vdc current	Max. 1.5A @ 5VDC
Mount	DIN-Rail
Size	45mm x 99mm x 70mm
Weight	150g
Certification	cULus Ord and HAZLOC, CE, ATEX,PROFINET

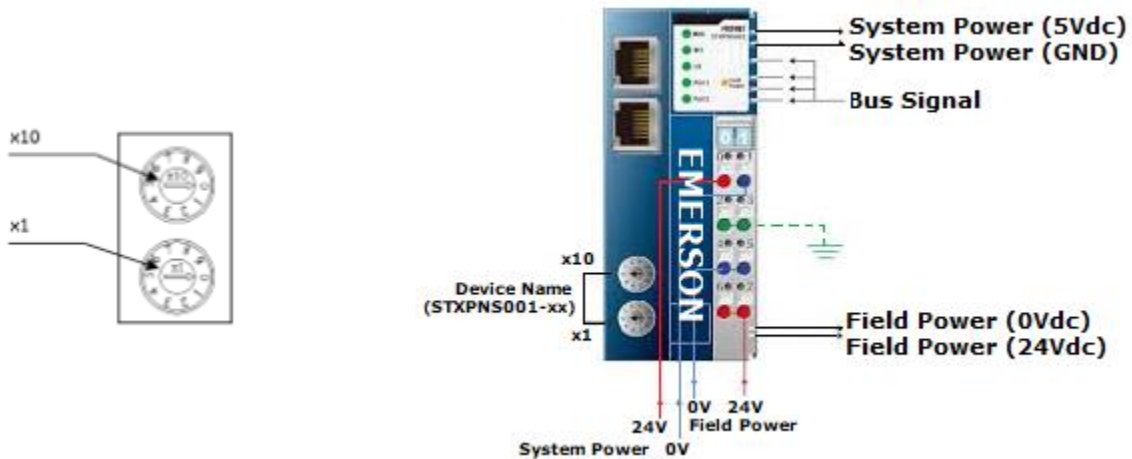
Item	Specification
Torque/signal wire	0.8Nm(7lb-in)/1.0mm ² - 2.5mm ² (18-14 AWG)
Network Type	PROFINET I/O RT
Network Cable	Ethernet Cable
Cable Length	Upto 100m from Ethernet Hub
Comm. Speed	10**/100Mbps
Max. Station No.	101 Station(Include Master Scanner)
Station Type	PROFIBUS-DP Slave
IO Modules	Max. 32 Module
Max. node	Limited by the IP address
Max. Digital I/O	Input : 2016point / Output : 2016point
Max. Analog I/O	Input : 126Ch / Output : 126Ch
Max. Byte Size	Input: 252 Bytes / Output: 252 Bytes
Topology	Line or Star topology
Power Dissipation	115mA typical @24Vdc

* Specifications and designs may change without advance notice.

** 10Mbps for FTP connections.

***Class II, adjacent to voltage rating (30Vmax.)

Communication & Power Cable Wiring

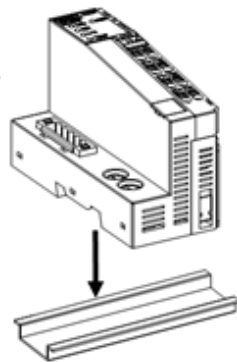


Value	Description	Factory Setting
0	Device Name of station will be read from flash memory. (User can assign his own device name e.g. Device1) IP address will be read from flash memory.	- Name of station : STXPNS001 - IP address : 192.168.0.254 - Subnet mask : 255.255.255.0 - Gateway : 192.168.0.1
01~99	Device Name of station will be STXPNS001-xx. (xx is the value of Rotary Switch) IP address will be read from flash memory.	

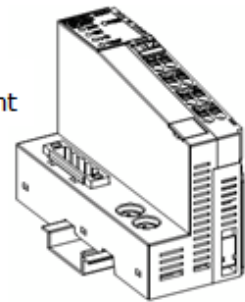
Module Mounting

How to Mount on Din-Rail

Press down the module lightly on the Din-Rail until clicks.

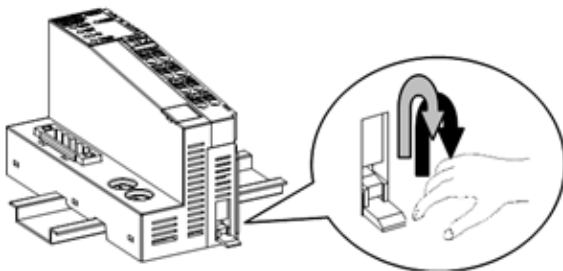


Press down till you hear click for complicated mount

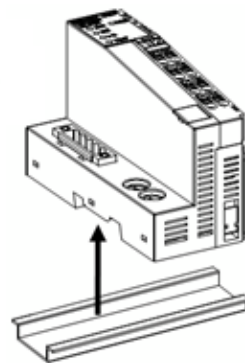


How to dismount from Din-Rail

Pull down the locking mechanism by using (-) screw driver as the following pictures



Pull up the module to remove from the Din rail.



Installation in Hazardous Area

UL Class 1 Division 2 & ATEX Zone 2 Hazardous Area Warnings

- EQUIPMENT LABELED WITH REFERENCE TO CLASS I, GROUPS A, B, C & D, DIV. 2 OR ZONE 2 HAZARDOUS LOCATIONS IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D, ZONE 2 OR NON-HAZARDOUS LOCATIONS ONLY.

⚠ WARNING

- EXPLOSION HAZARD—SUBSTITUTION OF COMPONENTS MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2 & ATEX ZONE2.
- EXPLOSION HAZARD – TURN OFF POWER BEFORE REPLACING OR WIRING MODULES. DO NOT CONNECT OR DISCONNECT EQUIPMENT UNLESS POWER HAS BEEN SWITCHED OFF OR THE AREA IS KNOWN TO BE NON-HAZARDOUS.

ATEX Information



Ambient Range:

$0^{\circ}\text{C} \leq T_{\text{amb}} \leq 55^{\circ}\text{C}$

Certification string:

Ex nA IIC T4 Gc (Modules without Relay) & Ex nA nC IIC T4 Gc (Modules with Relay)

Standards Covered:

EN 60079-0:2012, EN 60079-15:2010

Special Conditions for Safe Usage:

- The device shall be mounted in an ATEX certified enclosure with a minimum ingress protection rating of at least IP54 as defined in IEC/EN 60529 and used in an area of not more that pollution degree 2 as defined by IEC60664-1. Enclosure must utilize a tool removable cover or door.

- Provisions shall be made to prevent the rated voltage being exceeded by the transient disturbances of more than 140%.
- Earthing is accomplished through mounting of modules in rail.
- Subject devices are for operation in Ambient Temperature Range: 0 °C to +55 °C.

LED Status Display

Item	LED is	State	To Indicate
Module Status LED (MOD)	OFF	Power off H/W Fault	No Power is supplied to the unit
	Solid Red	Invalid boot image header (Flash), ROM Boot loader	The unit has occurred unrecoverable fault in self-testing. - Firmware fault
	Flashing Red (0.5 Sec)	Invalid RAM Image	Invalid RAM Image
	Flashing Red (0.1 Sec)	OS Fatal error is occurred	OS Fatal error is occurred
	Flashing Green (0.1 Sec)	OS Handle Unexpected Exceptions	OS Handle Unexpected Exceptions
	Solid Green	Normal Operation	The unit is operating in normal condition.
NET LED	Off	Power off No Connection has Been established with IO-controller.	Device is not on-line or may not be powered
	Flashing Red (0.1 Sec)	Invalid Configuration	Invalid Configuration
	Flashing Green (0.1 Sec)	Wait parameters	PROFINET I/O connection has been established. Wait parameters
	Solid Red		PROFINET I/O connection is aborted after a data exchange has taken place.
	Flashing Red (0.5 Sec)		PROFINET I/O connection is aborted before a data exchange has taken place
	Flashing Green (0.5 Sec)		PROFINET I/O Data Exchange stop
	Solid Green		PROFINET I/O Data Exchange Run
I/O LED	Off	Not Powered No I/O Module	Device has no I/O module or may not be powered
	Flashing Green	Bus On-line, Do not Exchanging I/O	Bus operation is normal but does not exchanging I/O data (Passed the I/O module configuration).
	Solid Green	Bus Connection, Run Exchanging IO	Exchanging I/O data
	Solid Red	Bus connection fault during exchanging IO	One or more I/O module occurred in fault state. Changed IO module configuration. Bus communication failure.
I/O LED	Flashing Red	I/O Configuration Failed	Failed to initialize I/O module - Detected invalid IO module ID. - Overflowed Input / Output Size - Too many I/O module - Initial protocol failure
Port1 Port2 LED	Solid Green		Link is up (Physical connection is established)
	Flashing Green		Active is present
	Off		Link isdown
Field Power LED	Off	Not Supplied Field Power	Not Supplied 24Vdc field Power
	Solid Green	Supplied Field Power	Supplied 24Vdc field power

Release Information

Part Number	Hardware Version	Firmware Version	Date	Remarks
STXPNS001-DE	20.02	20.220	Sep 2019	Following Emerson's acquisition of this product, changes have been made to apply appropriate branding and registration of the product with required certification agencies. No changes to material, process, form, fit or functionality.
STXPNS001-CE	20.02	20.220	May 2019	Firmware updates. No change in form-fit-functionality.
STXPNS001-CD	20.02	20.210	Apr 2019	Firmware updates. No change in form-fit-functionality.
STXPNS001-CC	20.02	20.100	Feb 2016	Firmware updates. No change in form-fit-functionality.
STXPNS001-BC	20.01	20.100	Nov 2013	Atex & Hazloc certification documentation updates. No change in form-fit-functionality.
STXPNS001-AC	20.00	20.100	Mar 2013	Firmware updates to fix the bugs. No change in form-fit-functionality.
STXPNS001-AB	20.00	20.010	Apr 2012	Firmware updates. No change in form-fit-functionality.
STXPNS001-AA	20.00	20.000	Mar 2012	Initial Release

Problems Resolved in this Release

None

New Features and Enhancements in this Release

None. Only documentation update.

Restrictions and Open Issues

Subject	Description
Clearing the RX3i controller memory when a configuration mismatch fault for a Slice I/O node exists causes PACSystems Machine Edition (PME) software to disconnect and the RX3i PNC001 to auto reset.	This fault can occur when an RX3i PNC module is connected to a Slice I/O node that has a STXPNS001 Profinet Network Adapter and I/O modules. If there is a configuration mismatch of the Slice IO node, a loss of device fault is logged in the I/O fault table. In this situation, if you try to clear the RX3i CPU user memory, PME disconnects from the RX3i controller. After the PME connection is lost, if you try to reconnect to the RX3i CPU, the RX3i PNC performs an auto reset. To recover from this fault, wait for the PNC to auto reset and the OK LED to glow solid green, then clear the RX3i CPU user memory or power cycle the RX3i controller without battery. Storing a valid configuration restores system operation without faults.
Slice I/O node system power up sequence issue.	If the Network Adapter and ST-7xxx Power modules on the same Slice I/O node are power cycled at different times, the Network Adapter may power up in fault mode. To recover from the fault, power cycle the node such that Network Adapter and Power modules are power cycled together or the node is powered up following the sequence such that the power module farthest from the Network Adapter is powered up first. For example in a node having modules as below: STXPNS001+I/O Modules ...+ST-7511+I/O Modules ... +ST-7511+I/O Modules In the above system power cycle the STXPNS001 and the two ST-7511 modules together or power OFF the entire node and then power ON the second ST-7511 and then the first ST-7511 and then the STXPNS001.

Upgrades with this release

None

Configuration

Download latest GSDML file from <https://www.emerson.com/Industrial-Automation-Controls/support>.

Operational Notes

Subject	Description
Loss of device fault occurs when STXPNS001 Profinet Network Adaptor is used without I/O module.	When the Slice I/O Profinet Network Adapter module does not have an I/O module attached, it will not communicate with the RX3i PNC. The Network Adapter NET LED blinks RED, indicating invalid configuration and a Loss of device fault is logged in RX3i I/O Fault table. At least one I/O module has to be present for the NetworkAdapterto establishthe communication withRX3i PNC.

Technical Support & Contact Information:

Home link: <http://www.Emerson.com/Industrial-Automation-Controls>

Knowledge Base: <https://www.emerson.com/Industrial-Automation-Controls/support>

Note: If the product is purchased through an Authorized Channel Partner, please contact the seller directly for any support.

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