

# PACSystems™ RSTi

## MODBUS TCP/IP NETWORK ADAPTER (STXMBE001)



## Warning & Caution Notes as Used in this Publication

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### 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.

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### Caution

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

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

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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: STXMBE001 \*

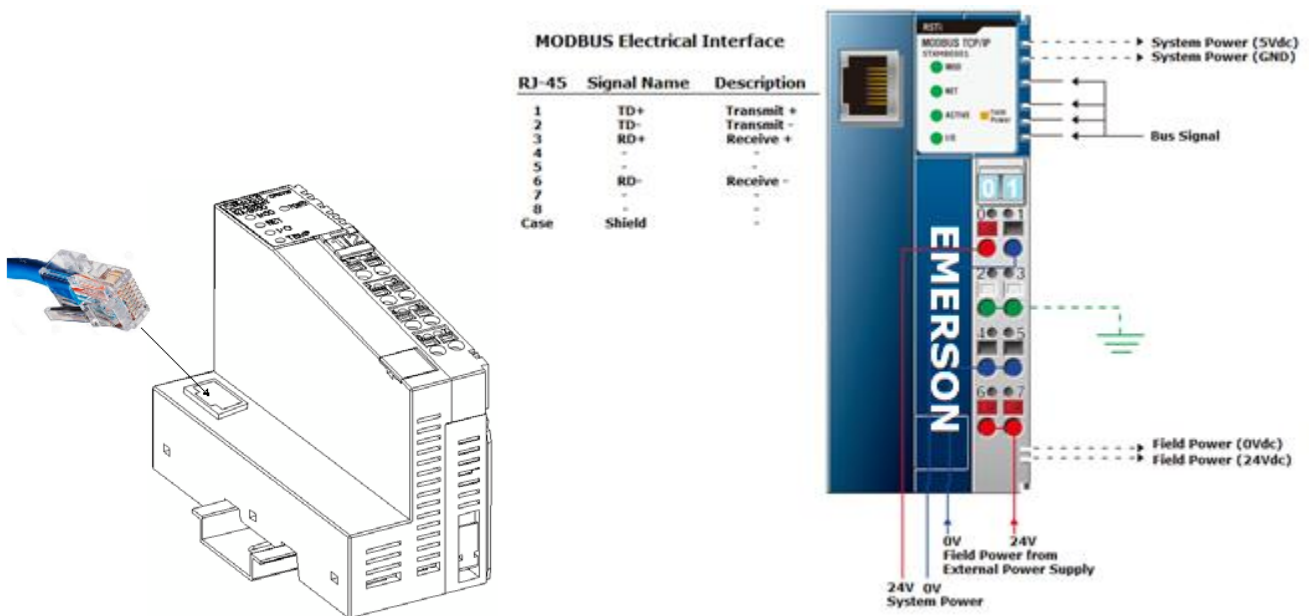
Item	Specification
Surrounding Air Temp. / Ambient Temp.	-20°C to 55°C for UL applications. -20°C to 60°C for Non-UL applications
Relative Humidity	5% ~ 90%, without condensation
Durable-vib./impact	IEC 60068-2-6:1995
Mount Position	First module of RSTi system
Atmosphere	No excessive dust ; No corrosive gases
Field Supp.Volt.	Class II*** 24VDC 24VDC (11VDC ~ 28.8VDC)
Field Supply Current	Max. 10A
FnBus Supply Current	Max. 1.5A@5Vdc
Baud rate set	Auto-negotiation
Size	45mm × 99mm × 70mm
Weight	150g
Certification	cUL <sub>US</sub> Ord and HAZLOC, CE, ATEX

Item	Specification
Torque/signal wire	0.8Nm(7lb-in)/1.0mm <sup>2</sup> - 2.5mm <sup>2</sup> (18-14AWG)
Network Type	Modbus/TCP
Cable	EtherNet Cable(Shield Cable)
Cable Length(m)	Up to 100m from Ethernet Hub
Expansion No.	Max. 32 module
Max. node	Limited by Ethernet Specification
Max. Digital I/O	Input : 2016points/Output:2016points
Max. Analog I/O	Input : 126Ch / Output : 126Ch
Max. Byte size	Input : 252Bytes / Output : 252Bytes
Operationing Mode	8 MODBUS/TCP, 4 HTTP, BOOTP
IP Address setting	Window Command, BOOTP
Power Dissipation	80mA typical @24Vdc
Comm. Sp(Kbps)	10/100Mbps

\* Specifications and designs may change without advance notice.

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

## Communication & Power Cable Wiring



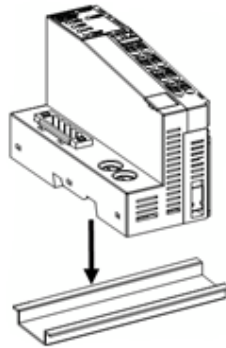
### RJ-45 Pin Number & Signal

RJ-45	Signal Name	Description
1	TD+	Transmit +
2	TD-	Transmit -
3	RD+	Receive +
6	RD-	Receive -
Case	Shield	

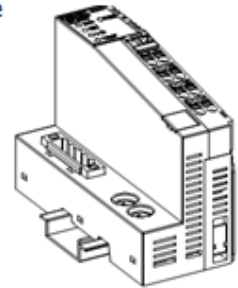
## Module Mounting

### How to mount on Din-Rail

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

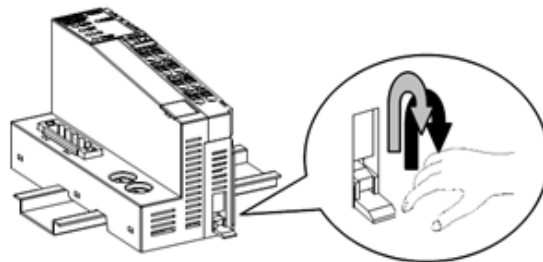


2. Pull-up the module to remove from the Din-Rail

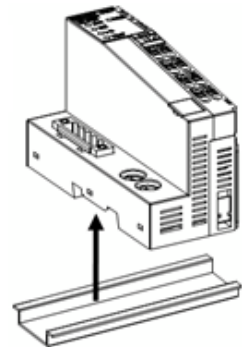


### How to dismount from Din-Rail

1. Pull down the locking mechanism by using (-) screw driver as shown in below picture



2. 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:**

$-20^{\circ}\text{C} \leq T_{\text{amb}} \leq 55^{\circ}\text{C}$

**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 than 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: -20 °C to +55 °C.

## Status LED Display

Item	LED is	State	To Indicate
MOD LED	Off	No Power	No power is supplied to the unit.
	Solid Green	Device Operational	The unit is operating in normal condition.
	Flashing Green	Device in Standby	The device needs commissioning due to configuration missing, incomplete or incorrect.
	Green/Red Toggle	MODBUS Error	MODBUS error such as watchdog error, etc.
	Flashing Red	Minor Fault	Recoverable Fault - EEPROM sum check error.
	Solid Red	Unrecoverable Fault	The device has an unrecoverable fault. - Memory error or CPU watchdog error.
LINK LED	Off	Not Powered	Device is not on-line or may not be powered
	Solid Green	Adapter physical connected	Adapter Ethernet Controller Physically connected
ACTIVE LED	Off	Not Powered	Device is not on-line or may not be powered
	Flashing Green	Adapter exchange data	Adapter (Slave) exchange data/Traffic present. About 10msec flashing.
Field Power LED	Off	Not Supplied Field Power	Not supplied 24V dc field power
	Solid Green	Supplied Field Power	Supplied 24V dc field power
I/O LED	Off	Not Powered No IO Module	Device has no IO module or may not be powered
	Flashing Green	Bus On-line, Do not Exchanging I/O	Bus is normal but does not exchanging I/O data (Passed the IO module configuration).
	Solid Green	Bus Connection, Run Exchanging IO	Exchanging I/O data
	Solid Red	Bus connection fault during exchanging IO	One or more IO module in fault state. - Changed IO module configuration. - Bus communication failure.
	Flashing Red	IO Configuration Failed	Failed to initialize IO module - Detected invalid IO module ID. - Overflowed Input / Output Size - Too many IO module - Initial protocol failure - Vendor code mismatch

## Release Information

Part Number	Hardware Version	Firmware Version	Date	Remarks
STXMBE001-DB	20.02	20.001	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.
STXMBE001-CB	20.02	20.001	Feb 2016	Tantalum capacitor were replaced with MLCC for enhanced endurance to surge.
STXMBE001-BB	20.01	20.001	Nov 2013	
STXMBE001-AA	20.00	20.000	Jul 2012	Initial Release

### Upgrades with this release

None

### Problems Resolved in this Release

None

### New Features and Enhancements in this Release

None. Only documentation update.

### Restrictions and Open Issues

Subject	Description
Slice IO node system power up sequence issue.	<p>If the Network Adapter and ST-7xxx Power modules on the same Slice IO node are power cycled at different times, the Network Adapter may power up in fault mode.</p> <p>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.</p> <p>For example in a node having modules as below: STXMBE001+IO Modules ... +ST-7511+IO Modules ... +ST-7511+IO Modules</p> <p>In the above system power cycle the STXMBE001 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 STXMBE001.</p>

### Operational Notes

If network has a router with active DHCP server and power is cycled for the Modbus TCP/IP network adapter, then the adapter may not retain the IP address configured using ARP or BOOTP Server Software. To retain the IP address configured using ARP or BOOTP Server Software during power cycles, either disable the IP address setup using BOOTP (refer GFK-2799, RSTi Modbus Network Adapter Manual) or in router configure the DHCP server as inactive.

## 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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