Class 1 and Class 2 Wiring Separation

	CAUTION
	UL Listings require that NEC Class I and Class II wiring be kept separate from each other. Use separate conduit and cable tie bars to separate Class I Digital Output (DO) wires from all other Class II wiring.

Removing the Connector Covers (If required)

NOTE: Do not remove covers from the unused TX-I/O bus connectors at the ends of the self-forming bus.

➢ Remove the connector covers from the hardware being installed.

Installing the DIN Rail

NOTES:
Allow a minimum clearance of 3 inches (7.6 cm) around the field panel ports and connectors for terminating wires.

For longer DIN rails, use one mounting screw per running foot of DIN rail.

Do the following if the DIN rail is not already installed:

1. Align and level the DIN rail on the mounting surface or enclosure backplane.
2. Mark the position of the mounting holes at either end of the DIN rail.
3. Using wall anchors, if necessary, attach the DIN rail to the surface or backplane.

Installing the TC Modular

1. If an Expansion Module is used, plug it into the TC Modular Expansion bus.
2. Install the TC Modular and optional Expansion Module on the DIN rail.
3. Connect one of the following devices to the TX-I/O bus connector on the TC Modular:
   - TX-I/O Power Supply
   - TX-I/O Bus Connection Module

The TC Modular is now able to communicate on the TX-I/O bus.

Connecting the Power and Communication Wires

1. Plug in the 24 Vac power from the Service Box or transformer terminal block.
2. Plug in the TX-I/O communication and power wires.
3. Plug in the FLN connectors (if used).

Completing the Installation

NOTE:
Do not connect the network communication cable until start-up is complete.

1. Ensure that AC power is turned ON at the circuit breaker panel.
2. Turn the power switch ON at the Service Box or transformer enclosure.
3. Verify the LEDs.

For more information, see the TC Modular Series Product Diagram and TX-I/O Module Product Diagram.

The installation is now complete.

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SIEMENS

TC Modular Series

Danger/Warning/Caution Notation

	DANGER
	Electric shock, death, or severe property damage may occur if you do not perform a procedure as specified.
	WARNING
	Personal injury or property damage may occur if you do not follow a procedure as specified.
	CAUTION
	Equipment damage or loss of data may occur if you do not follow a procedure as specified.

TC Modular Series Product Numbers

Product Number	Description
TC1000-E96.T	TC Modular, BACnet/IP or MS/TP FLN, self-forming TX-I/O Island Bus. PXX-485.3 is also required as the connection to the FLN devices.
PXX-485.3	Provides FLN support for the TC Modular. Includes one MS/TP FLN connection; maximum of 96 devices supported.
PXA-DIN16KIT	Accessory kit with four 16-inch (406 mm) DIN rails

For more information, see the *TX-I/O Module Installation Instructions* (553-141) and *TX-I/O Power Supply and Bus Modules Installation Instructions* (553-142).

General Installation Requirements

	CAUTION
	All devices not isolated by an Island Bus Expansion module (TXA1.IBE) must be connected to the same grounding point.
	CAUTION
	TX-I/O components require a system neutral with single point earth ground. Do not connect these components to a floating system neutral.

Service Box Earth Grounding of System Neutral

System Neutral (⊥) must be continuous throughout the TX-I/O bus.

- System Neutral is required to be earth-grounded at a single point only.
- For a PXA Service Box: Connect the green wire to the earth ground stud under the wire cover.
- For a Third-party Transformer connect the transformer secondary neutral to the building-approved earth ground at the terminal block.
- When a separate 24Vac source is installed in any secondary field panel isolate power using a TXA1.IBE communication module in primary and each secondary field panel.

Energy Management Applications

For energy management only (low voltage Class 2), the TC Modular may be mounted on a flat surface.

Applications Requiring a Secure Enclosure

For any application requiring a secure enclosure, mount the TC Modular inside a listed enclosure along with a Service Box and Sidewall Kit, if needed.

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Item No. 553-654(FA)

Modular Series Smoke Control Application Requirements

CAUTION

The 115V or 230V PX Series Service Box is required for UL864 and NFPA92A compliant installations. For more information, see the *PX Series Service Box Assemblies Installation Instructions* (553-131) or the *Service Box Installation Instructions* (586-135). For non-UL864 and non-NFPA92A applications, any 24 Vac Class 2 transformer can be used.

NOTE:
For smoke control applications over Ethernet or BACnet/IP, the TC Modular must be connected to the Automation Level Network (ALN) through an Ethernet switch that is UL Listed for Fire Signaling. ALN and FLN circuits are supervised.

For smoke control applications, mount the TC Modular inside a 19-inch or 34-inch PX Series enclosure (PXA-ENC19 or PXA-ENC34). For more information, see the *19" and 34" PX Series Enclosure Assemblies Installation Instructions* (553-130).

- The controller must be located at the bottom of the enclosure.
- The controller may be oriented either horizontally or vertically.
- For Ethernet communications, a UL Listed surge protector is required for Ethernet or BACnet/IP networks. The surge protector must be located in the same enclosure as the controller.

For modems used with smoke control applications:

Modem Requirements

- The UL864 Listed surge protector is required.
- Devices connected between the USB port and the UL Listed surge protector must be located within the same room.
- A USB-to-RS-232 adaptor may be needed for UL Listed modems or UL Listed printers that are not configured for USB communication.
- The modem may be located inside the PX Series enclosure.

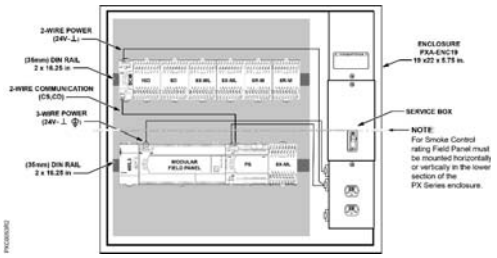


Figure 1: Smoke Control Layout for Modular with TX-I/O Island Bus on Horizontal DIN Rails.

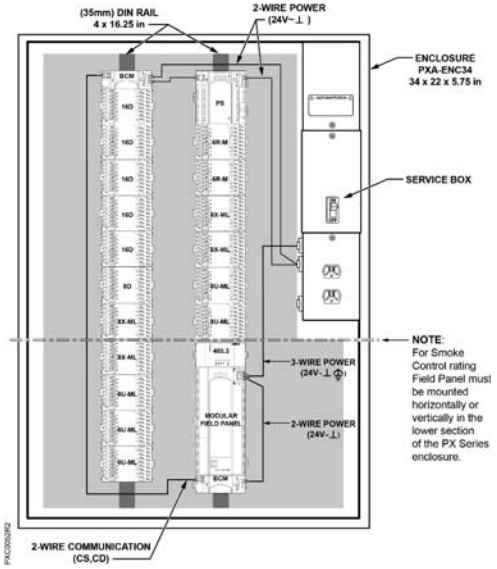


Figure 2: Smoke Control Layout for Modular with TX-I/O Island Bus on Vertical DIN Rails.

Document No. 553-654
Installation Instructions
October 18, 2019

Required Tools and Materials

- Wire stripper/side cutter
- Small flat-blade screwdriver
- Digital multimeter (DMM)
- Phillips screwdriver
- Electric drill and Phillips driver bit
- Level
- Tape measure
- Black marker
- Masonry drill bit (to mount on concrete or masonry)
- Four wall anchors (to mount on concrete or masonry)
- Four No. 8-18 x 3/8" self-tapping Phillips screws

Expected Installation Time

20 minutes

Prerequisites

CAUTION

No power wiring is connected to the TC Modular or other TX-I/O components at this time.

- If mounting in an enclosure:
  - Enclosure is installed, DIN rail included.
  - The power source is installed, as applicable.
  - The power is OFF.
- All necessary wiring is pulled and terminated per the layout drawing.
- Power and communication wiring is terminated to the removable plugs supplied with the devices.
- DIN rail is installed.
- Power requirements are met. See the Power Requirements section.
- Common Ground requirements are met. See the General Installation Requirements section.
- Optional requirements are met. See the appropriate following sections:
  - Smoke Control
  - Energy Management Applications
  - Applications Requiring a Secure Enclosure
- For TX-I/O Modules:
  - Point wiring is terminated on the TX-I/O Terminal Base.
  - TX-I/O Module labels have been printed from System Profile.
  - TX-I/O Modules are either removed from or parked in the terminal bases.

See the TALON *Wiring Guidelines for Field Panels and Equipment Controllers* (588-581) for detailed information on the following:

- Power requirements
- Setting up smoke control applications
- CE compliance wiring requirements
- TX-I/O Module wiring diagrams

Power Requirements

Powering TX-I/O Primary Panels

One of the following power sources is pulled to the enclosure:

- 120 Vac, 60 Hz and terminated at the 115V PX Series Service Box.
- 230 Vac, 50/60 Hz and terminated at the 230V PX Series Service Box.
- 24 Vac, 50/60 Hz Class 1 power limited from a third-party transformer and connected to a terminal block.

Powering TX-I/O Expansion Panels

Power wiring is run from the transformer in the primary panel to the expansion panel, if needed.

Installation

WARNING

Turn OFF AC power at the ON/OFF switch in the Service Box or transformer enclosure.

CAUTION

Do not install the TC Modular on a vibrating surface (for example, an air handler or ductwork).

This device includes electrical and electronic components and must not be disposed of as domestic waste. Product recovery and disposal must comply with all national and local regulations.