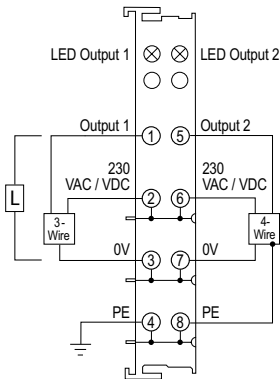# Discrete Relay Output Terminals

## PX-272-1        $97.00

### Two-point, 0-230 VAC/VDC Discrete Solid State Relay Output Terminal

The PX-272-1 (type 2) Solid State Relay Output Terminal provides two 230 VAC/VDC 0.3 A outputs with LED status. For use with 4-wire, 3-wire and 2-wire devices.

LED Output 1    LED Output 2

Output 1    Output 2

230 VAC / VDC    230 VAC / VDC

0V    0V

PE    PE

L

3-Wire    4-Wire

Note: Terminal PX-908 is recommended to isolate terminal power or use PX-970 to supply and isolate power.

| General Specifications | |
|---|---|
| Operating Temp | 32 to 131 °F (0 to 55 °C) |
| Storage Temp | -13 to 185 °F (-25 to 85 °C) |
| Relative Humidity | 5% to 95%, non-condensing |
| Environment Air | No corrosive gases permitted |
| Mounting/Orientation Restrictions | 35mm DIN rail/None |
| Vibration | Conforms to EN 60068-2-6 |
| Shock | Conforms to EN 60068-2-27/EN 60068-2-29 |
| Noise Immunity | Conforms to EN 61000-6-2/EN61000-6-4 |
| Protection Class | IP20 |
| Weight | 55g (1.9 oz) |
| Dimensions (WxHxD) | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| Adjacent Mounting on Bus Terminals with Power Contact | Yes, 230 VAC/VDC only |
| Adjacent Mounting on Bus Terminals without Power Contact | No |
| Passes Terminal Bus Power | Yes |
| Passes PE Bus | Yes |
| Agency Approvals* | UL/cUL File No. E157382, CE |

*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

| Terminal Specifications | |
|---|---|
| Outputs Per Terminal | 2 |
| Commons Per Terminal | 2 |
| Output Type | Solid State Relay (DC sourcing only) |
| Output Data Bytes Used | 1/4 byte (2 bits) |
| Output Power Source | 230 VAC/VDC provided via terminal power bus |
| Current Consumption (from Terminal Power Bus) | (ON resistance max 100mV) + load |
| Operating Voltage | 0 to 230 VAC/VDC (DC 100Hz) |
| Maximum Load Current | 0.3 A per point |
| Maximum Leakage Current | < 1mA (off state) |
| Maximum Inrush Current | 0.5 A for 20s, 1.5 A for 100ms |
| Contact Resistance | 2.1 V, typical 3.2 V, max. |
| Surge Voltage Protection | From 400VAC |
| Load Type | Resistive, inductive |
| Current Consumption (from I/O Bus) | 10mA |
| Electrical Isolation | 500Vms (I/O bus/field potential) 2500VDC (1 min.) |
| Heat Dissipation | 1W max |
| Switch-ON Time | 4 to 6 ms |
| Switch-OFF Time | 0.05 to 0.1 ms |
| Switch-ON Delay | 320ms |
| Switch-OFF Delay | 6.2 ms |
| Status Indicators | 2, indicates output is ON |

# System Installation and Removal

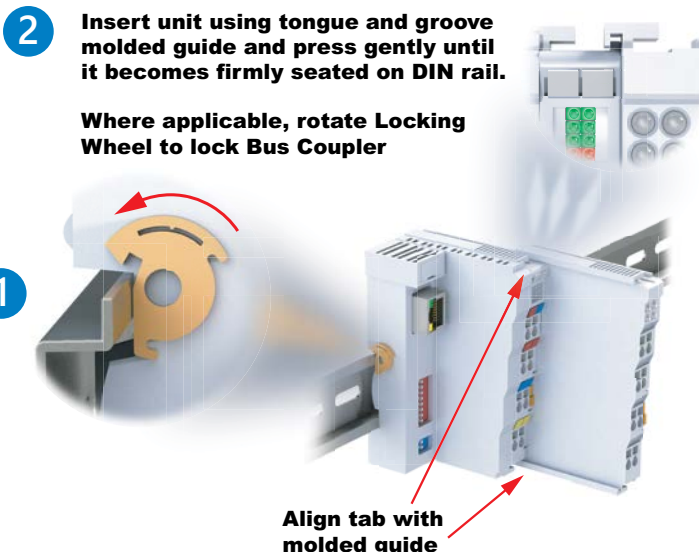## Bus Coupler and Bus Terminal Installation

**Bus Coupler Installation:**

1. Attach a Bus Coupler by snapping it onto 35mm DIN rail and securing it into position using the DIN rail locking wheel (where applicable) located on the left side of the coupler.

**Bus Terminal Installation:**

2. To add a bus terminal, insert unit onto right side of Bus Coupler using the tongue and groove at the top and bottom of the unit, pressing gently until it snaps onto the DIN rail.

- A proper connection cannot be made by sliding the units together on the DIN rail. When correctly installed, no significant gap can be seen between the attached units. Bus connection is made through the six slide contacts located on the upper right side of the units. Add up to 64 bus terminals per Bus Coupler, including a bus end terminal.

**②** **Insert unit using tongue and groove molded guide and press gently until it becomes firmly seated on DIN rail.**

**Where applicable, rotate Locking Wheel to lock Bus Coupler**

**①**

**Align tab with molded guide**

### Wiring Connections

- Wire connection is made through a spring clamp style terminal. This terminal is designed for a single-conductor solid or stranded wire. Wire connection is made by firmly pushing the screwdriver into the screwdriver slot, inserting the wire into the wire slot and removing the screwdriver, locking the wire into position.
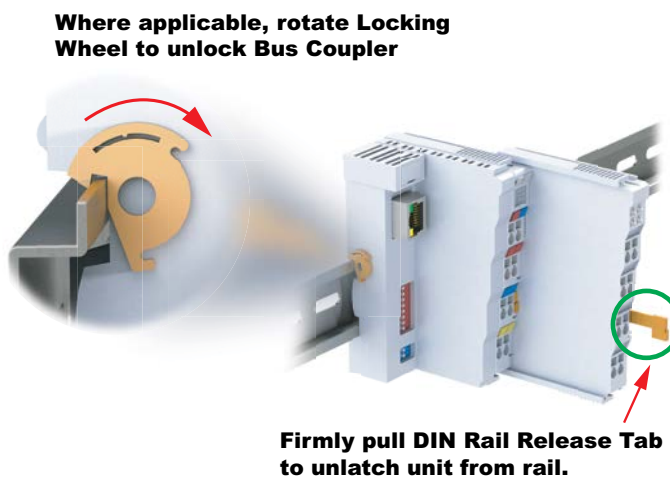
**Screwdriver Slot**

**Wire Slot**
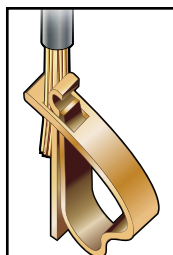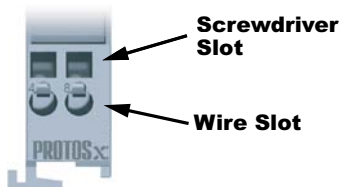
| Wiring Specifications | |
|---|---|
| **Connection Type** | Spring Clamp Terminals |
| **Wire Gauge** | 28–14 AWG (0.08–2.5 mm2) |
| **Screwdriver Width** | 2.5 mm (0.10 in) such as P/N TW-SD-MSL-2 |
| **Wire Stripping Length** | 8mm |

*\* For Thermocouple terminals, thermocouple extension wire is recommended*

## Removing Bus Coupler and Bus Terminals

- A locking mechanism prevents individual units from being pulled off. For bus terminal removal, pull the orange DIN rail release tab firmly to unlatch the unit from the rail. If attached to other terminal units, slide unit forward until released. For Bus Couplers with locking wheels, release the DIN rail locking wheel, then pull firmly on DIN rail release tab.
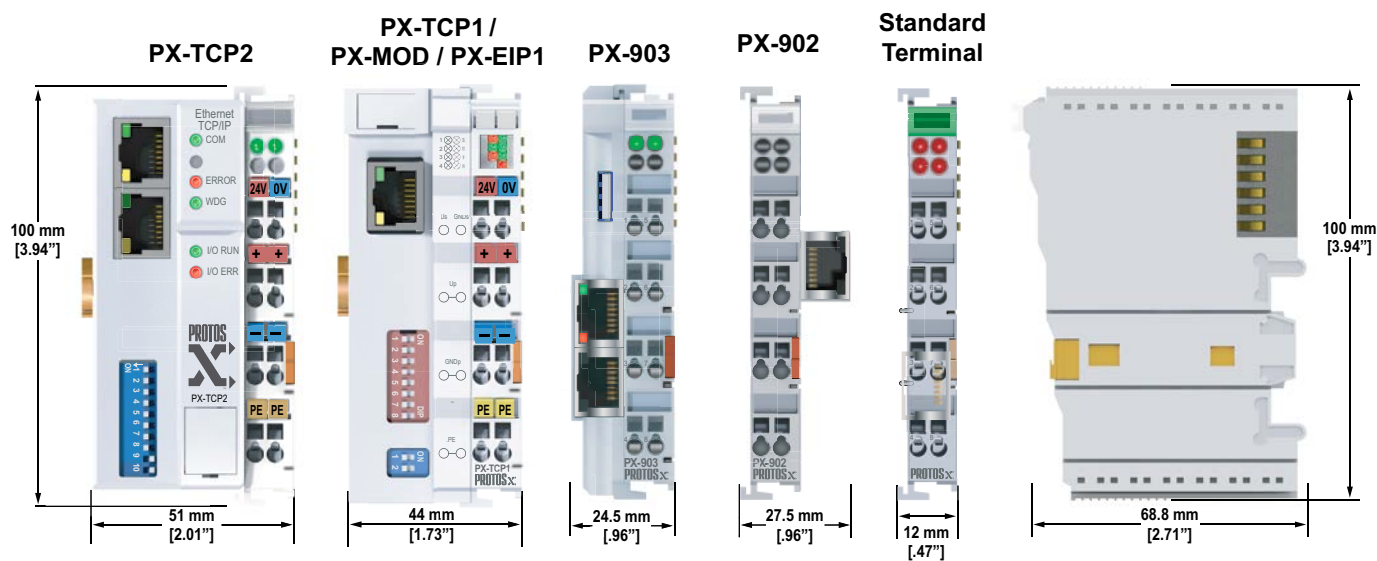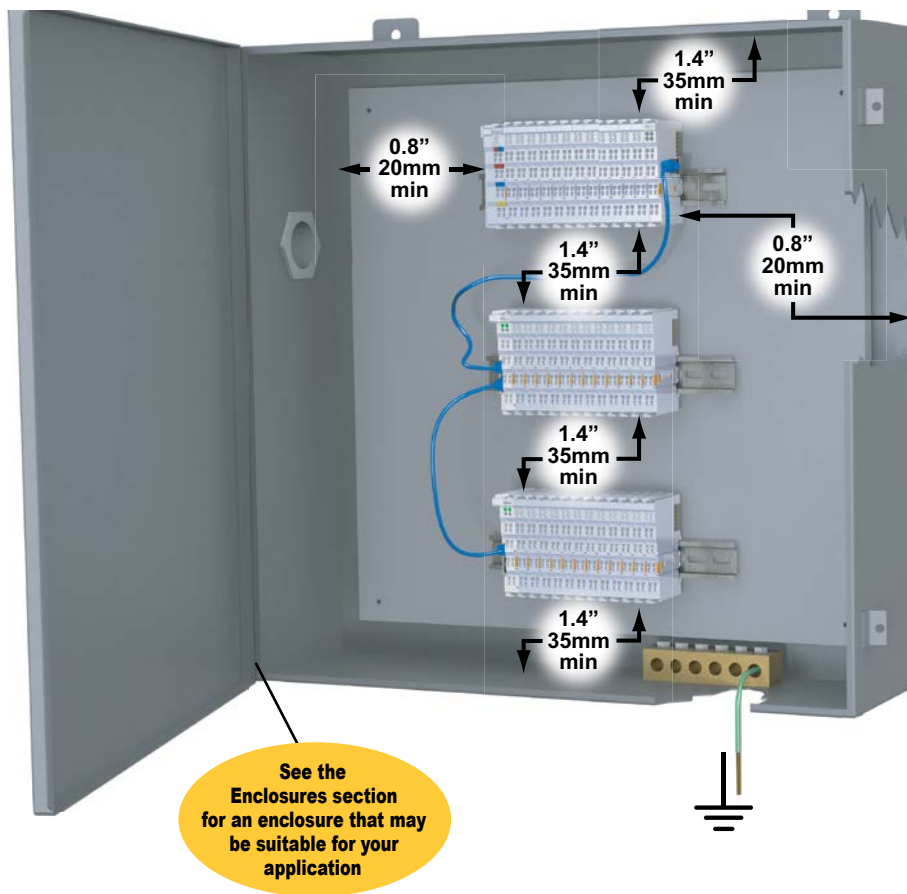
**Where applicable, rotate Locking Wheel to unlock Bus Coupler**

**Firmly pull DIN Rail Release Tab to unlatch unit from rail.**

**Universal Field I/O**

# Installation Considerations

## Terminal Dimensions and Spacing Requirements

Use the following diagrams to make sure the Protos X system can be installed in your application. Protos X terminals require 35mm DIN rail for mounting; there are no orientation restrictions.

To ensure proper airflow for cooling purposes, units should be spaced, at a minimum, as shown. It is also important to check the Protos X dimensions against the conditions required for your application.

1.4"
35mm
min

0.8"
20mm
min

1.4"
35mm
min

0.8"
20mm
min

1.4"
35mm
min

1.4"
35mm
min

See the Enclosures section for an enclosure that may be suitable for your application

**PX-TCP2**

Ethernet TCP/IP
COM
ERROR
WDG
I/O RUN
I/O ERR

24V  0V
+  +

PROTOS X
PX-TCP2

PE  PE

100 mm [3.94"]

51 mm [2.01"]

**PX-TCP1 / PX-MOD / PX-EIP1**

24V  0V
Us  GNus
+  +
Up
GNd
PE  PE
PE
PX-TCP1
PROTOS X

44 mm [1.73"]

**PX-903**

PX-903
PROTOS X

24.5 mm [.96"]

**PX-902**

PX-902
PROTOS X

27.5 mm [.96"]

**Standard Terminal**

PROTOS X

12 mm [.47"]

100 mm [3.94"]

68.8 mm [2.71"]

# Installation Considerations

## Terminal Types

| TYPE 1 | TYPE 2 | TYPE 3 |
|---|---|---|
|  |  |  |
| Type 1: This terminal passes the terminal power bus from the preceding terminal to the next terminal and therefore it must be mounted to a preceding terminal that passes bus power. | Type 2: This terminal passes the terminal power bus and PE from the preceding terminal to the next terminal and therefore it must be preceded by a terminal that passes both terminal power bus and PE. | Type 3: This terminal does not pass the terminal power bus or PE and can be preceded by any terminal, however it will interrupt the terminal power bus and PE. |

| TYPE 4 | TYPE 5 |
|---|---|
|  |  |
| Type 4: This terminal requires external voltage connection and supplies the terminal power bus to terminals located to its right. The terminals to its right must support the same power bus of 120/230 VAC or 24VDC. This terminal will not pass terminal power or PE from any preceding terminals. | Type 5: This terminal is used to separate the terminal power bus and PE from other terminals and can mounted next to any terminal. |