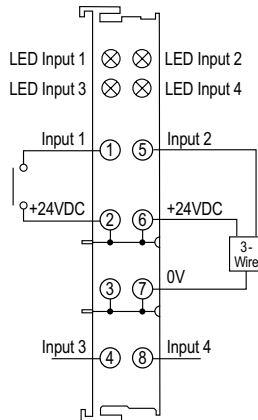


# Discrete Input Terminals

## PX-144 \$48.00

### Four-point, 24VDC Discrete Input Terminal

The PX-144 (type 1) DC Input Terminal provides four electrically isolated 24VDC sinking inputs with LED status. For use with 3-wire and 2-wire sensors.



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

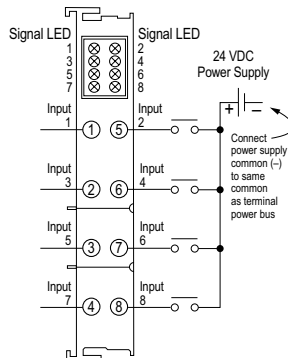
| Terminal Specifications                              |                                       |
|--|---------------------------------------|
| <b>Inputs Per Terminal</b>                           | 4                                     |
| <b>Input Type</b>                                    | Sinking                               |
| <b>Input Data Bytes Used</b>                         | 1/2 byte (4 bits)                     |
| <b>Input Power Source</b>                            | 24VDC provided via terminal power bus |
| <b>Current Consumption (from Terminal Power Bus)</b> | 5mA typical                           |
| <b>Operating Voltage Rating</b>                      | 24VDC (-15%/+20%)                     |
| <b>Peak Voltage Rating</b>                           | 30VDC                                 |
| <b>ON Voltage Level</b>                              | 15 to 30 VDC                          |
| <b>OFF Voltage Level</b>                             | -3 to +5 VDC                          |
| <b>Minimum ON Current</b>                            | 50mA                                  |
| <b>Maximum OFF Current</b>                           | 100mA                                 |
| <b>Current Consumption (from I/O Bus)</b>            | 5mA typical                           |
| <b>Electrical Isolation</b>                          | 500Vms (I/O bus/field potential)      |
| <b>Heat Dissipation</b>                              | 1W max                                |
| <b>OFF to ON Response</b>                            | 3ms                                   |
| <b>ON to OFF Response</b>                            | 3ms                                   |
| <b>Status Indicators</b>                             | 4, indicates input is ON              |

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

## PX-148 \$78.00

### Eight-point, 24VDC Discrete Input Terminal

The PX-148 (type 1) DC Input Terminal provides eight electrically isolated 24VDC sinking inputs with LED status.



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

| Terminal Specifications                              |                                      |
|--|--------------------------------------|
| <b>Inputs Per Terminal</b>                           | 8                                    |
| <b>Input Type</b>                                    | Sinking                              |
| <b>Input Data Bytes Used</b>                         | 1 byte                               |
| <b>Input Power Source</b>                            | Requires external 24VDC power source |
| <b>Current Consumption (from Terminal Power Bus)</b> | 2mA + load, typical                  |
| <b>Operating Voltage Rating</b>                      | 24VDC (-15%/+20%)                    |
| <b>Peak Voltage Rating</b>                           | 30VDC                                |
| <b>ON Voltage Level</b>                              | 15 to 30 VDC                         |
| <b>OFF Voltage Level</b>                             | -3 to +5 VDC                         |
| <b>Minimum ON Current</b>                            | 2mA                                  |
| <b>Maximum OFF Current</b>                           | 1.5 mA                               |
| <b>Current Consumption (from I/O Bus)</b>            | 5mA typical                          |
| <b>Electrical Isolation</b>                          | 500Vms (I/O bus/field potential)     |
| <b>Heat Dissipation</b>                              | 1W max                               |
| <b>OFF to ON Response</b>                            | 3ms                                  |
| <b>ON to OFF Response</b>                            | 3ms                                  |
| <b>Status Indicators</b>                             | 8, indicates input is ON             |

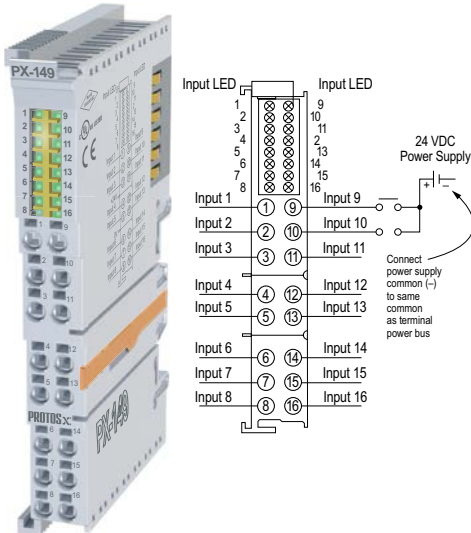
\*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

# Discrete Input Terminals

## PX-149 \$135.00

### Sixteen-point, 24VDC Discrete Input Terminal

The PX-149 (type 1) DC Input Terminal provides sixteen electrically isolated 24VDC sinking inputs with LED status.



| General Specifications  |   |
|---|---|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                     |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)                  |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                     |
| <b>Environment Air</b>  | No corrosive gases permitted                  |
| <b>Mounting/Orientation Restrictions</b>                        | 35mm DIN rail/None                            |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                      |
| <b>Shock</b>  | Conforms to EN 60068-2-27/<br>EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/<br>EN61000-6-4      |
| <b>Protection Class</b>   | IP20  |
| <b>Weight</b>   | 60g (2.1 oz)                                  |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm<br>(0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, DC only                                  |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No  |
| <b>Passes Terminal Bus Power</b>                                | Yes   |
| <b>Passes PE Bus</b>  | No  |
| <b>Agency Approvals*</b>  | UL/cUL File No. E157382, CE                   |

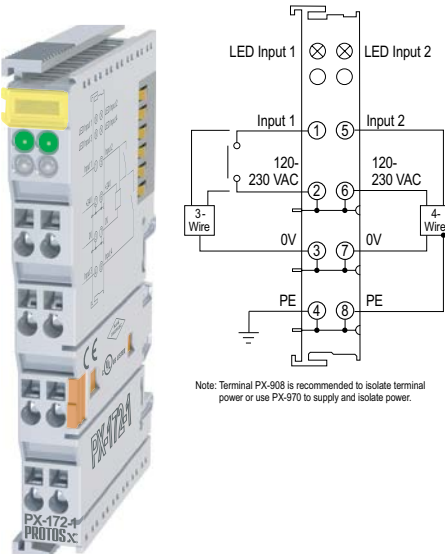
| Terminal Specifications                              |                                      |
|--|--------------------------------------|
| <b>Inputs Per Terminal</b>                           | 16                                   |
| <b>Input Type</b>                                    | Sinking                              |
| <b>Input Data Bytes Used</b>                         | 2 bytes                              |
| <b>Input Power Source</b>                            | Requires external 24VDC power source |
| <b>Current Consumption (from Terminal Power Bus)</b> | NA                                   |
| <b>Operating Voltage Rating</b>                      | 24VDC (-15%/+20%)                    |
| <b>Peak Voltage Rating</b>                           | 30VDC                                |
| <b>ON Voltage Level</b>                              | 11 to 30 VDC                         |
| <b>OFF Voltage Level</b>                             | -3 to +5 VDC                         |
| <b>Minimum ON Current</b>                            | 2mA                                  |
| <b>Maximum OFF Current</b>                           | 40mA                                 |
| <b>Current Consumption (from I/O Bus)</b>            | 20mA typical                         |
| <b>Electrical Isolation</b>                          | 500Vms (I/O bus/field potential)     |
| <b>Heat Dissipation</b>                              | 1W max                               |
| <b>OFF to ON Response</b>                            | 3ms                                  |
| <b>ON to OFF Response</b>                            | 3ms                                  |
| <b>Status Indicators</b>                             | 16, indicates input is ON            |

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

## PX-172-1 \$54.00

### Two-point, 120-230 VAC Discrete Input Terminal

The PX-172-1 (type 2) DC Input Terminal provides two electrically isolated 120-230 VAC inputs with LED status. For use with 4-wire, 3-wire and 2-wire devices.



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

| General Specifications  |   |
|---|---|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                     |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)                  |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                     |
| <b>Environment Air</b>  | No corrosive gases permitted                  |
| <b>Mounting/Orientation Restrictions</b>                        | 35mm DIN rail/None                            |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                      |
| <b>Shock</b>  | Conforms to EN 60068-2-27/<br>EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/<br>EN61000-6-4      |
| <b>Protection Class</b>   | IP20  |
| <b>Weight</b>   | 60g (2.1 oz)                                  |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm<br>(0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, AC only                                  |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No  |
| <b>Passes Terminal Bus Power</b>                                | Yes   |
| <b>Passes PE Bus</b>  | Yes   |
| <b>Agency Approvals*</b>  | UL/cUL File No. E157382, CE                   |

| Terminal Specifications                              |   |
|--|---|
| <b>Inputs Per Terminal</b>                           | 2   |
| <b>Input Type</b>                                    | NA  |
| <b>Input Data Bytes Used</b>                         | 1/4 byte (2 bits)   |
| <b>Input Power Source</b>                            | Requires external 120-230 VAC power source. PX-908 terminal recommended to provide power to the terminal power bus. |
| <b>Current Consumption (from Terminal Power Bus)</b> | 6mA typical   |
| <b>Operating Voltage Rating</b>                      | 120 to 230 VAC  |
| <b>Peak Voltage Rating</b>                           | 260VAC  |
| <b>ON Voltage Level</b>                              | 79 to 260 VAC   |
| <b>OFF Voltage Level</b>                             | 0 to 40 VAC   |
| <b>Minimum ON Current</b>                            | 250mA   |
| <b>Maximum OFF Current</b>                           | 500mA   |
| <b>Current Consumption (from I/O Bus)</b>            | 3mA typical   |
| <b>Electrical Isolation</b>                          | 500Vms (I/O bus/field potential)  |
| <b>Heat Dissipation</b>                              | 1W max  |
| <b>OFF to ON Response</b>                            | 10ms  |
| <b>ON to OFF Response</b>                            | 10ms  |
| <b>Status Indicators</b>                             | 2, indicates input is ON  |

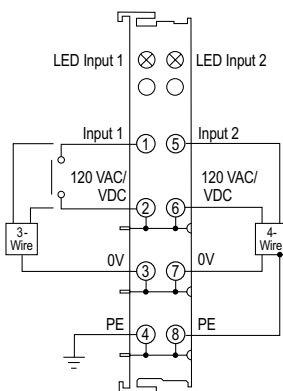
\*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

# Discrete Input Terminals

**PX-172-2 \$54.00**

**Two-point, 120 VAC/VDC Discrete Input Terminal**

The PX-172-2 (type 2) DC Input Terminal provides two electrically isolated 120 VAC/VDC inputs with LED status. For use with 4-wire, 3-wire and 2-wire devices.



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

| General Specifications  |  |
|---|--|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                  |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)               |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                  |
| <b>Environment Air</b>  | No corrosive gases permitted               |
| <b>Mounting/Orientation Restrictions</b>                        | 35mm DIN rail/None                         |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                   |
| <b>Shock</b>  | Conforms to EN 60068-2-27/ EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/ EN61000-6-4      |
| <b>Protection Class</b>   | IP20                                       |
| <b>Weight</b>   | 60g (2.1 oz)                               |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, 120 VAC/VDC only                      |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No   |
| <b>Passes Terminal Bus Power</b>                                | Yes  |
| <b>Passes PE Bus</b>  | Yes  |
| <b>Agency Approvals*</b>  | UL/cUL File No. E157382, CE                |

| Terminal Specifications                              |   |
|--|---|
| <b>Inputs Per Terminal</b>                           | 2   |
| <b>Input Type</b>                                    | NA  |
| <b>Input Data Bytes Used</b>                         | 1/4 byte (2 bits)   |
| <b>Input Power Source</b>                            | Requires external 120 VAC/VDC power source. PX-908 terminal recommended to provide power to the terminal power bus. |
| <b>Current Consumption (from Terminal Power Bus)</b> | 6mA typical   |
| <b>Operating Voltage Rating</b>                      | 120 VAC/VDC   |
| <b>Peak Voltage Rating</b>                           | 140 VAC/VDC   |
| <b>ON Voltage Level</b>                              | 80 to 140 VAC/VDC   |
| <b>OFF Voltage Level</b>                             | 0 to 40 VAC/VDC   |
| <b>Minimum ON Current</b>                            | 250mA   |
| <b>Maximum OFF Current</b>                           | 500mA   |
| <b>Current Consumption (from I/O Bus)</b>            | 3mA typical   |
| <b>Electrical Isolation</b>                          | 500Vms (I/O bus/field potential)  |
| <b>Heat Dissipation</b>                              | 1W max  |
| <b>OFF to ON Response</b>                            | 10ms  |
| <b>ON to OFF Response</b>                            | 10ms  |
| <b>Status Indicators</b>                             | 2, indicates input is ON  |

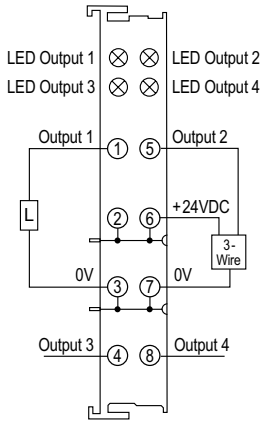
\*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

# Discrete Output Terminals

## PX-244-1 \$72.00

### Four-point, 0.5 A, 24VDC Discrete Output Terminal

The PX-244-1 (type 1) DC Output Terminal provides four 24VDC 0.5 A short-circuit protected sourcing outputs with LED status. For use with 3-wire and 2-wire devices.



| General Specifications  |  |
|---|--|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                  |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)               |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                  |
| <b>Environment Air</b>  | No corrosive gases permitted               |
| <b>Mounting/Orientation Restrictions</b>                        | 35mm DIN rail/None                         |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                   |
| <b>Shock</b>  | Conforms to EN 60068-2-27/ EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/ EN61000-6-4      |
| <b>Protection Class</b>   | IP20                                       |
| <b>Weight</b>   | 60g (2.1 oz)                               |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, DC only                               |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No   |
| <b>Passes Terminal Bus Power</b>                                | Yes  |
| <b>Passes PE Bus</b>  | No   |
| <b>Agency Approvals*</b>  | UL/cUL File No. E157382, CE                |

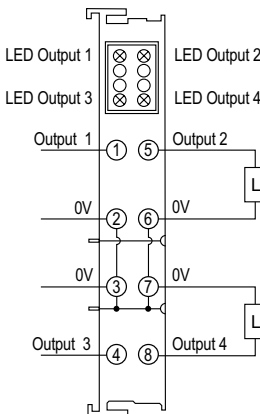
\*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

| Terminal Specifications                        |   |
|--|---|
| <b>Outputs Per Terminal</b>                    | 4   |
| <b>Commons Per Terminal</b>                    | 2   |
| <b>Output Type</b>                             | Sourcing                                    |
| <b>Output Data Bytes Used</b>                  | 1/2 byte (4 bits)                           |
| <b>Output Power Source</b>                     | 24VDC provided via terminal power bus       |
| <b>Current Consumption (from Load Voltage)</b> | 30mA typical                                |
| <b>Operating Voltage</b>                       | 24VDC (-15%/+20%)                           |
| <b>Maximum Load Current</b>                    | 0.5 A per channel (Short-Circuit Protected) |
| <b>On Voltage Drop</b>                         | 0.4 VDC @ 0.5 A                             |
| <b>Maximum Leakage Current</b>                 | 300mA                                       |
| <b>Maximum Inrush Current</b>                  | 1.5 A                                       |
| <b>Maximum Short-Circuit Voltage</b>           | 35V   |
| <b>Load Type</b>                               | Resistive, inductive, lamp                  |
| <b>Current Consumption (from I/O Bus)</b>      | 9mA typical                                 |
| <b>Reverse Voltage Protection</b>              | No  |
| <b>Electrical Isolation</b>                    | 500Vms (I/O bus/field potential)            |
| <b>Heat Dissipation</b>                        | 1W max                                      |
| <b>OFF to ON Response</b>                      | 100ms max                                   |
| <b>ON to OFF Response</b>                      | 20ms max                                    |
| <b>Status Indicators</b>                       | 4, indicates output is ON                   |

## PX-244-2 \$88.00

### Four-point, 2A, 24VDC Discrete Output Terminal

The PX-244-2 (type 1) DC Output Terminal provides four 24VDC 2A short-circuit protected sourcing outputs with LED status.



| General Specifications  |  |
|---|--|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                  |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)               |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                  |
| <b>Environment Air</b>  | No corrosive gases permitted               |
| <b>Mounting/Orientation Restrictions</b>                        | 35mm DIN rail/None                         |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                   |
| <b>Shock</b>  | Conforms to EN 60068-2-27/ EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/ EN61000-6-4      |
| <b>Protection Class</b>   | IP20                                       |
| <b>Weight</b>   | 60g (2.1 oz)                               |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, DC only                               |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No   |
| <b>Passes Terminal Bus Power</b>                                | Yes  |
| <b>Passes PE Bus</b>  | No   |
| <b>Agency Approvals*</b>  | 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.

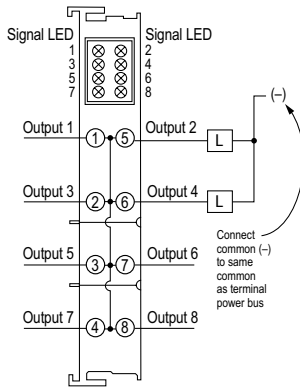
| Terminal Specifications                        |  |
|--|--|
| <b>Outputs Per Terminal</b>                    | 4  |
| <b>Commons Per Terminal</b>                    | 4  |
| <b>Output Type</b>                             | Sourcing                                 |
| <b>Output Data Bytes Used</b>                  | 1/2 byte (4 bits)                        |
| <b>Output Power Source</b>                     | 24VDC provided via terminal power bus    |
| <b>Current Consumption (from Load Voltage)</b> | 30mA typical                             |
| <b>Operating Voltage</b>                       | 24VDC (-15%/+20%)                        |
| <b>Maximum Load Current</b>                    | 2A per channel (Short-Circuit Protected) |
| <b>On Voltage Drop</b>                         | 0.14 VDC @ 2A                            |
| <b>Maximum Leakage Current</b>                 | 60mA                                     |
| <b>Maximum Inrush Current</b>                  | 35A                                      |
| <b>Maximum Short-Circuit Voltage</b>           | 52V                                      |
| <b>Load Type</b>                               | Resistive, inductive, lamp               |
| <b>Current Consumption (from I/O Bus)</b>      | 9mA typical                              |
| <b>Reverse Voltage Protection</b>              | Yes                                      |
| <b>Electrical Isolation</b>                    | 500Vms (I/O bus/field potential)         |
| <b>Heat Dissipation</b>                        | 1W max                                   |
| <b>OFF to ON Response</b>                      | 160ms typ, 300ms max                     |
| <b>ON to OFF Response</b>                      | 10ms min, 80ms max                       |
| <b>Status Indicators</b>                       | 4, indicates output is ON                |

# Discrete Output Terminals

## PX-248 \$91.00

### Eight-point, 0.5 A, 24VDC Discrete Output Terminal

The PX-248 (type 1) DC Output Terminal provides eight 24VDC 0.5 A short-circuit protected sourcing outputs with LED status.



| General Specifications  |  |
|---|--|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                  |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)               |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                  |
| <b>Environment Air</b>  | No corrosive gases permitted               |
| <b>Mounting/Orientation Restrictions</b>                        | 35mm DIN rail/None                         |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                   |
| <b>Shock</b>  | Conforms to EN 60068-2-27/ EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/ EN61000-6-4      |
| <b>Protection Class</b>   | IP20                                       |
| <b>Weight</b>   | 70g (2.4 oz)                               |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, DC only                               |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No   |
| <b>Passes Terminal Bus Power</b>                                | Yes  |
| <b>Passes PE Bus</b>  | No   |
| <b>Agency Approvals*</b>  | UL/cUL File No. E157382, CE                |

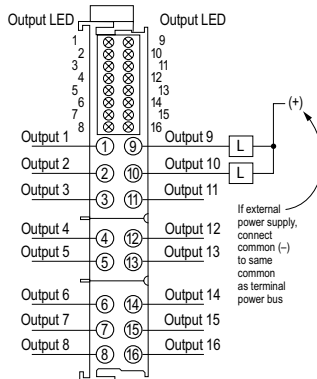
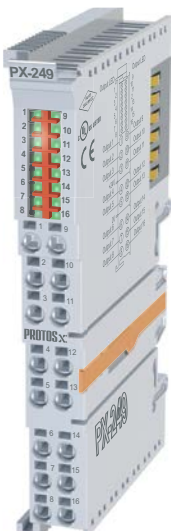
| Terminal Specifications                        |   |
|--|---|
| <b>Outputs Per Terminal</b>                    | 8   |
| <b>Commons Per Terminal</b>                    | Field wired                                 |
| <b>Output Type</b>                             | Sourcing                                    |
| <b>Output Data Bytes Used</b>                  | 1 byte                                      |
| <b>Output Power Source</b>                     | 24VDC provided via terminal power bus       |
| <b>Current Consumption (from Load Voltage)</b> | 60mA + load typical                         |
| <b>Operating Voltage</b>                       | 24VDC (-15%/+20%)                           |
| <b>Maximum Load Current</b>                    | 0.5 A per channel (Short-Circuit Protected) |
| <b>On Voltage Drop</b>                         | 0.4 VDC @ 0.5 A                             |
| <b>Maximum Leakage Current</b>                 | 300mA                                       |
| <b>Maximum Inrush Current</b>                  | 1.5 A                                       |
| <b>Max. Short-Circuit Voltage</b>              | 35V   |
| <b>Load Type</b>                               | Resistive, inductive, lamp                  |
| <b>Current Consumption (from I/O Bus)</b>      | 18mA typical                                |
| <b>Reverse Voltage Protection</b>              | Yes   |
| <b>Electrical Isolation</b>                    | 500Vms (I/O bus/field potential)            |
| <b>Heat Dissipation</b>                        | 1W max                                      |
| <b>OFF to ON Response</b>                      | 100ms max                                   |
| <b>ON to OFF Response</b>                      | 20ms max                                    |
| <b>Status Indicators</b>                       | 8, indicates output is ON                   |

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

## PX-249 \$126.00

### Sixteen-point, 0.5 A, 24VDC Discrete Output Terminal

The PX-249 (type 1) DC Output Terminal provides sixteen 24VDC 0.5 A short-circuit protected sinking outputs with LED status.



| General Specifications  |  |
|---|--|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                  |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)               |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                  |
| <b>Environment Air</b>  | No corrosive gases permitted               |
| <b>Mounting/Orientation Restrictions</b>                        | 35mm DIN rail/None                         |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                   |
| <b>Shock</b>  | Conforms to EN 60068-2-27/ EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/ EN61000-6-4      |
| <b>Protection Class</b>   | IP20                                       |
| <b>Weight</b>   | 70g (2.4 oz)                               |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, DC only                               |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No   |
| <b>Passes Terminal Bus Power</b>                                | Yes  |
| <b>Passes PE Bus</b>  | No   |
| <b>Agency Approvals*</b>  | UL/cUL File No. E157382, CE                |

| Terminal Specifications                        |   |
|--|---|
| <b>Outputs Per Terminal</b>                    | 16  |
| <b>Commons Per Terminal</b>                    | Field wired                                 |
| <b>Output Type</b>                             | Sinking                                     |
| <b>Output Data Bytes Used</b>                  | 2 bytes                                     |
| <b>Output Power Source</b>                     | Requires external 24VDC power source        |
| <b>Current Consumption (from Load Voltage)</b> | 35mA + load typical                         |
| <b>Operating Voltage</b>                       | 24VDC (-15%/+20%)                           |
| <b>Maximum Load Current</b>                    | 0.5 A per channel (Short-Circuit Protected) |
| <b>On Voltage Drop</b>                         | 0.12 VDC @ 0.5 A                            |
| <b>Maximum Leakage Current</b>                 | 75mA  |
| <b>Maximum Inrush Current</b>                  | 3.5 A                                       |
| <b>Max. Short-Circuit Voltage</b>              | 36V   |
| <b>Load Type</b>                               | Resistive, inductive, lamp                  |
| <b>Current Consumption (from I/O Bus)</b>      | 45mA typical                                |
| <b>Reverse Voltage Protection</b>              | Yes   |
| <b>Electrical Isolation</b>                    | 500Vms (I/O bus/field potential)            |
| <b>Heat Dissipation</b>                        | 1W max                                      |
| <b>OFF to ON Response</b>                      | 0.45 ms                                     |
| <b>ON to OFF Response</b>                      | 3.3 ms                                      |
| <b>Status Indicators</b>                       | 16, indicates output is ON                  |

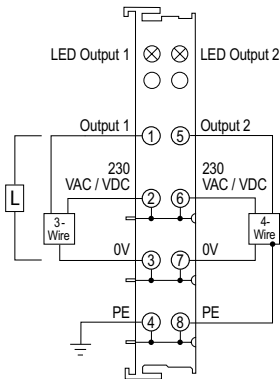
\*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

# 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.



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

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

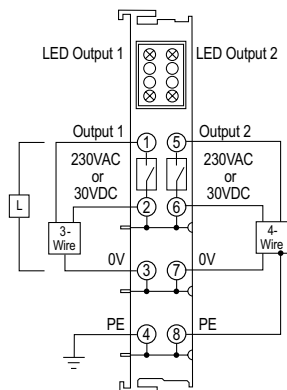
| Terminal Specifications                                      |   |
|--|---|
| <b>Outputs Per Terminal</b>                                  | 2   |
| <b>Commons Per Terminal</b>                                  | 2   |
| <b>Output Type</b>   | Solid State Relay<br>(DC sourcing only)                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

# Discrete Relay Output Terminals

**PX-272-2**     **\$76.00**

## Two-point, 230VAC / 30VDC Discrete Relay Output Terminal

The PX-272-2 (type 2) Relay Output Terminal provides two 230VAC / 30VDC 5A outputs with LED status. For use with 4-wire, 3-wire and 2-wire devices.



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

| General Specifications  |  |
|---|--|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                  |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)               |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                  |
| <b>Environment Air</b>  | No corrosive gases permitted               |
| <b>Mounting/ Orientation Restrictions</b>                       | 35mm DIN rail/None                         |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                   |
| <b>Shock</b>  | Conforms to EN 60068-2-27/ EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/ EN61000-6-4      |
| <b>Protection Class</b>   | IP20                                       |
| <b>Weight</b>   | 85g (3.0 oz)                               |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, 230VAC or 30VDC only                  |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No   |
| <b>Passes Terminal Bus Power</b>                                | Yes  |
| <b>Passes PE Bus</b>  | Yes  |
| <b>Agency Approvals*</b>  | 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  |   |
|--|---|
| <b>Outputs Per Terminal</b>  | 2   |
| <b>Commons Per Terminal</b>  | 2   |
| <b>Output Type</b>   | SPST Relay, normally open contact (DC sourcing only)  |
| <b>Output Data Bytes Used</b>  | 1/4 byte (2 bits)   |
| <b>Output Power Source</b>   | 230VAC/30VDC provided via terminal power bus  |
| <b>Current Consumption (from Terminal Power Bus)</b>                   | (ON resistance typ 2.4 V, max 3.2 V) + load   |
| <b>Operating Voltage</b>   | 230VAC/30VDC  |
| <b>Maximum Load Current</b>  | 5A per point  |
| <b>Maximum Load Current with Resistive Load</b>                        | AC: 5A @230VAC, 1250VA<br>DC: 5A @ 30VDC, 150W  |
| <b>Maximum Load Current with Inductive Load, cosφ = 0.4, L/R = 7ms</b> | AC: 2A @230VAC<br>DC: 2A @ 30VDC  |
| <b>Minimum Load (approximate)</b>                                      | 10mA @ 5VDC (as supplied) 100mA @ 20VDC (after approx. ≥ 100mA has been switched at least once) |
| <b>Load Type</b>   | Resistive, inductive, lamp  |
| <b>Switching Times</b>   | Reaction Time: 10ms max.<br>Release Time: 4ms max.<br>Bounce Time: 5ms max.                     |
| <b>Contact Material</b>  | Silver Cadmium Oxide  |
| <b>Current Consumption (from I/O Bus)</b>                              | 80mA  |
| <b>Electrical Isolation</b>  | 500Vms (I/O bus/field potential) 2500VDC (1 min.)   |
| <b>Heat Dissipation</b>  | 1W max  |
| <b>Switching Frequency at Maximum Contact Load</b>                     | 10/minute   |
| <b>Maximum Contact Resistance</b>                                      | < 30mV  |
| <b>Minimum Insulation Resistance</b>                                   | 100MV @ 500VDC  |
| <b>Mechanical Operating Life</b>                                       | 20,000,000 switching operations   |
| <b>Electrical Operating Life</b>                                       | Minimum 100,000 switching operations with resistive loads                                       |
| <b>Test Voltage Between Open Contacts</b>                              | 750V for 1 minute   |
| <b>Status Indicators</b>   | 2, indicates output is ON   |

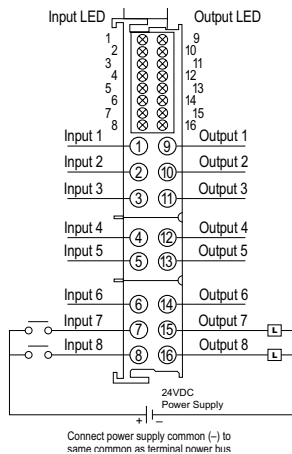
# Discrete Combination Terminal

PX-549

\$138.00

## Eight inputs/Eight outputs, 24VDC Discrete Input/Output Terminal

The PX-549 (type 1) DC Input/Output Terminal provides eight 24VDC inputs and eight 24VDC 0.5 A outputs with reverse polarity protection and LED status.



| General Specifications  |  |
|---|--|
| <b>Operating Temp</b>   | 32 to 131 °F (0 to 55 °C)                  |
| <b>Storage Temp</b>   | -13 to 185 °F (-25 to 85 °C)               |
| <b>Relative Humidity</b>  | 5% to 95%, non-condensing                  |
| <b>Environment Air</b>  | No corrosive gases permitted               |
| <b>Mounting/ Orientation Restrictions</b>                       | 35mm DIN rail/None                         |
| <b>Vibration</b>  | Conforms to EN 60068-2-6                   |
| <b>Shock</b>  | Conforms to EN 60068-2-27/ EN 60068-2-29   |
| <b>Noise Immunity</b>   | Conforms to EN 61000-6-2/ EN61000-6-4      |
| <b>Protection Class</b>   | IP20                                       |
| <b>Weight</b>   | 60g (2.1 oz)                               |
| <b>Dimensions (WxHxD)</b>                                       | 12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in) |
| <b>Adjacent Mounting on Bus Terminals with Power Contact</b>    | Yes, DC only                               |
| <b>Adjacent Mounting on Bus Terminals without Power Contact</b> | No   |
| <b>Passes Terminal Bus Power</b>                                | Yes  |
| <b>Passes PE Bus</b>  | No   |
| <b>Agency Approvals*</b>  | 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                              |                                       |
|--|---------------------------------------|
| <b>Inputs/Outputs Per Terminal</b>                   | 8 sinking inputs / 8 sourcing outputs |
| <b>Data Bytes Used</b>                               | 1 byte (inputs) / 1 byte (outputs)    |
| <b>Input/Output Power Source</b>                     | Requires external 24VDC power source  |
| <b>Operating Voltage Rating</b>                      | 24VDC (-15%/+20%)                     |
| <b>Current Consumption (from I/O Bus)</b>            | 25mA typical                          |
| <b>Current Consumption (from Terminal Power Bus)</b> | 15mA + load typical                   |
| <b>Electrical Isolation</b>                          | 500Vms (I/O bus/field potential)      |
| <b>Heat Dissipation</b>                              | 1W max                                |
| <b>Status Indicators</b>                             | 8 input and 8 output, indicates ON    |
| Input Specifications                                 |                                       |
| <b>Peak Voltage Rating</b>                           | 30VDC                                 |
| <b>ON Voltage Level</b>                              | 15 to 30 VDC                          |
| <b>OFF Voltage Level</b>                             | -3 to +5 VDC                          |
| <b>Minimum ON Current</b>                            | 2mA                                   |
| <b>Minimum OFF Current</b>                           | 40mA                                  |
| <b>Current Consumption (from I/O Bus)</b>            | 3mA typical                           |
| <b>OFF to ON Response</b>                            | 3ms                                   |
| <b>ON to OFF Response</b>                            | 3ms                                   |
| Output Specifications                                |                                       |
| <b>Max. Load Current per Output</b>                  | 0.5 A (Short-Circuit Protected)       |
| <b>On Voltage Drop</b>                               | 0.14 VDC @ 2A                         |
| <b>Maximum Leakage Current</b>                       | 5mA                                   |
| <b>Maximum Inrush Current</b>                        | 2A                                    |
| <b>Maximum Short-Circuit Voltage</b>                 | 45V                                   |
| <b>Load Type</b>                                     | Resistive, inductive, lamp            |
| <b>Reverse Voltage Protection</b>                    | Yes                                   |
| <b>OFF to ON Response</b>                            | 50ms                                  |
| <b>ON to OFF Response</b>                            | 75ms                                  |



# 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.

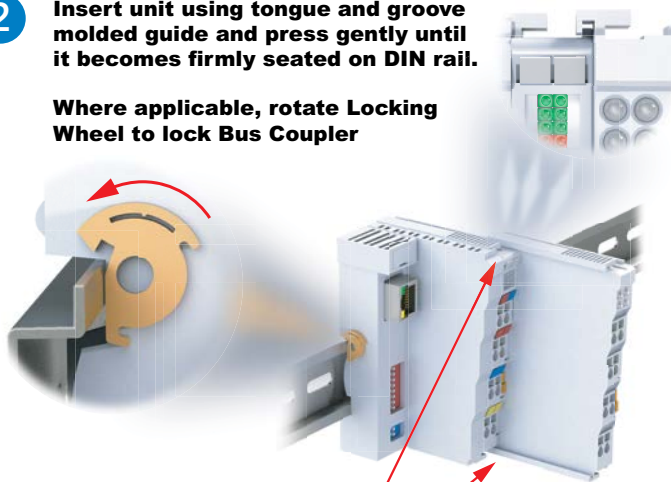
- A proper connection cannot be made by sliding the units together on the DIN rail. When correctly installed, no significant gap can be seen between the attached units. Bus connection is made through the six slide contacts located on the upper right side of the units. Add up to 64 bus terminals per Bus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

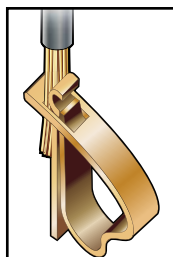
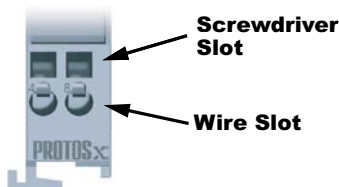
1



**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.



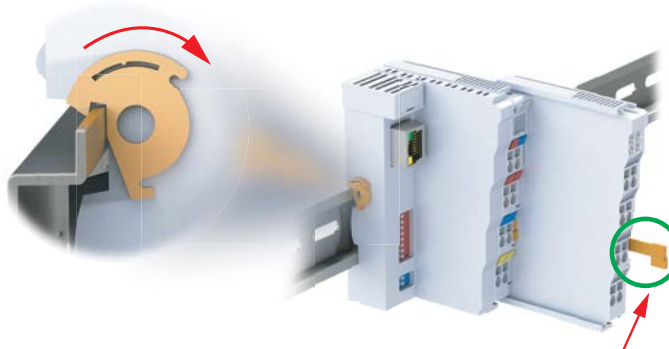
| Wiring Specifications |  |
|-----------------------|--|
| Connection Type       | Spring Clamp Terminals                   |
| Wire Gauge            | 28–14 AWG (0.08–2.5 mm <sup>2</sup> )    |
| Screwdriver Width     | 2.5 mm (0.10 in) such as P/N TW-SD-MSL-2 |
| Wire Stripping Length | 8mm      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

\* 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**



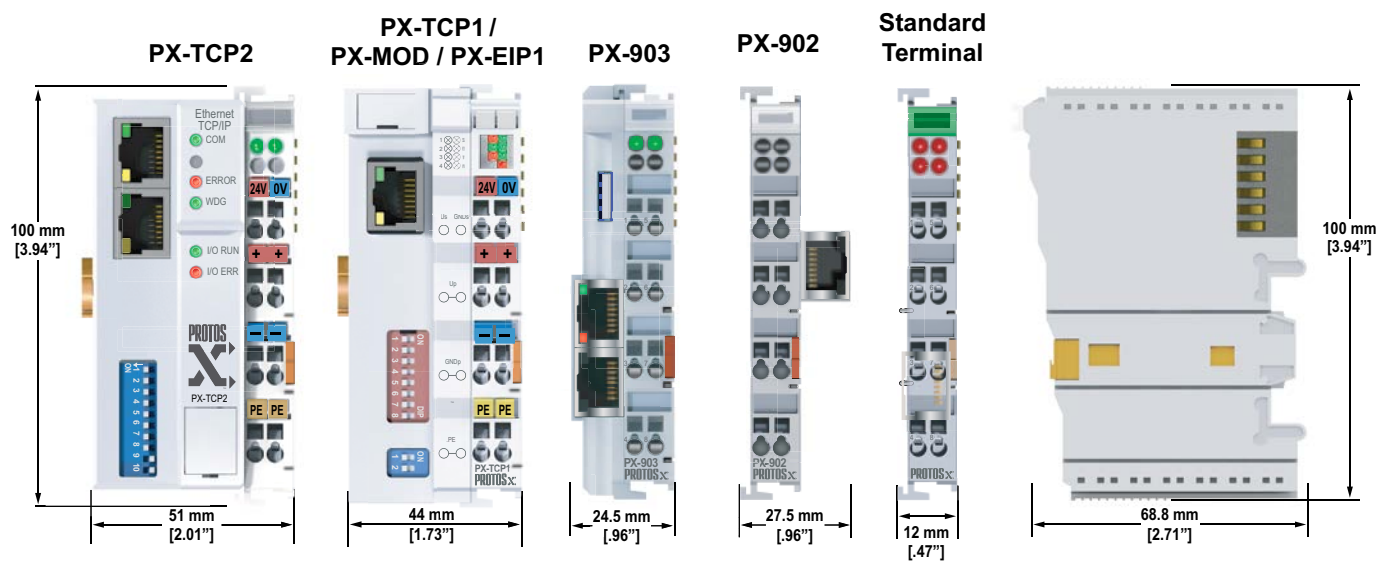
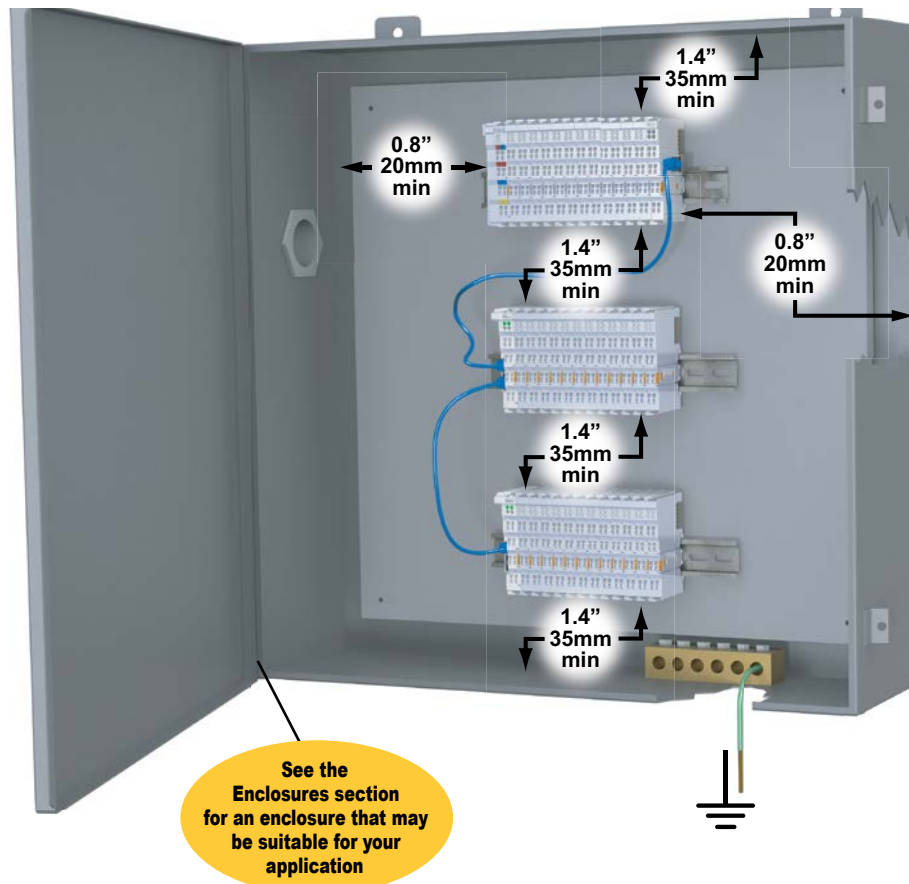
**Firmly pull DIN Rail Release Tab to unlatch unit from rail.**

# Installation Considerations

## Terminal Dimensions and Spacing Requirements

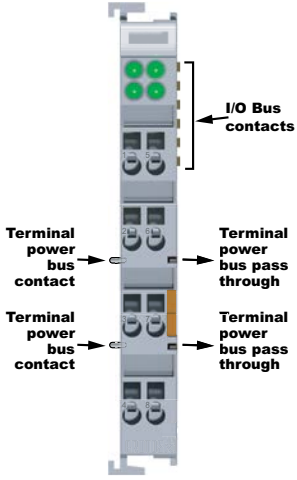
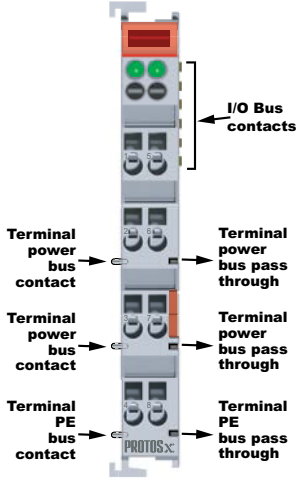
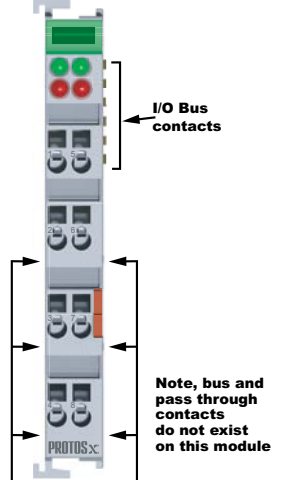
Use the following diagrams to make sure the Protos X system can be installed in your application. Protos X terminals require 35mm DIN rail for mounting; there are no orientation restrictions.

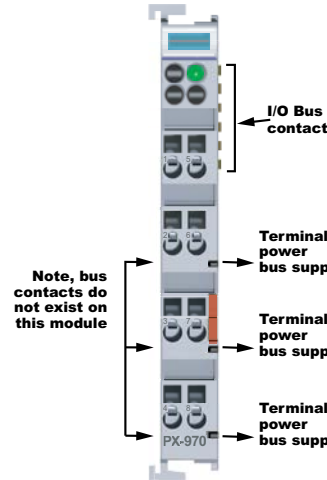
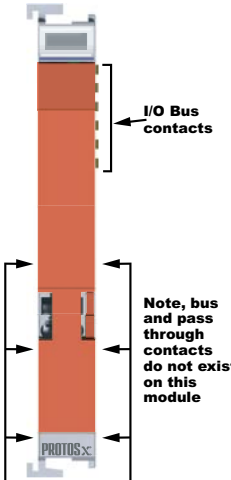
To ensure proper airflow for cooling purposes, units should be spaced, at a minimum, as shown. It is also important to check the Protos X dimensions against the conditions required for your application.



# Installation Considerations

## Terminal Types

| TYPE 1  | TYPE 2   | TYPE 3  |
|---|--|---|
|  <p>I/O Bus contacts</p> <p>Terminal power bus contact</p> <p>Terminal power bus pass through</p> <p>Terminal power bus contact</p> <p>Terminal power bus pass through</p> |  <p>I/O Bus contacts</p> <p>Terminal power bus contact</p> <p>Terminal power bus pass through</p> <p>Terminal power bus contact</p> <p>Terminal power bus pass through</p> <p>Terminal PE bus contact</p> <p>Terminal PE bus pass through</p> <p>PROTOS<sub>x</sub></p> |  <p>I/O Bus contacts</p> <p>Note, bus and pass through contacts do not exist on this module</p> <p>PROTOS<sub>x</sub></p> |
| <p>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.</p>   | <p>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.</p>   | <p>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.</p>                                       |

| TYPE 4  | TYPE 5  |
|---|---|
|  <p>I/O Bus contacts</p> <p>Note, bus contacts do not exist on this module</p> <p>Terminal power bus supply</p> <p>Terminal power bus supply</p> <p>Terminal power bus supply</p> <p>PX-970</p>                          |  <p>I/O Bus contacts</p> <p>Note, bus and pass through contacts do not exist on this module</p> <p>PROTOS<sub>x</sub></p> |
| <p>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.</p> | <p>Type 5: This terminal is used to separate the terminal power bus and PE from other terminals and can be mounted next to any terminal.</p>  |