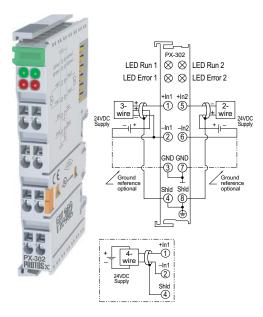
Analog Current Input Terminals

PX-302 \$306.00

Two-channel, 4-20 mA Analog Input Terminal

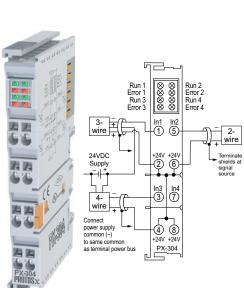
The PX-302 (type 3) Analog Input Terminal provides two electrically isolated 4-20 mA inputs with 12-bit resolution and Run and Error LED status.



PX-304 \$272.00

Four-channel, 4-20 mA Analog Input Terminal

The PX-304 (type 1) Analog Input Terminal provides four electrically isolated 4-20 mA inputs with 12-bit resolution and Run and Error LED status.



| General S | pecifications |
|--|---|
| 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 |
| <i>Mounting/ Orientation</i> <i>Restrictions</i> | 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 | 70g (2.4 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 |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes |
| Passes Terminal Bus Power | No |
| Passes PE Bus | No |
| 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.

| 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 | 75g (2.6 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, DC only |
| Adjacent Mounting on Bus Terminals without Power Contact | No |
| Passes Terminal Bus Power | Yes |
| Passes PE Bus | No |
| Agency Approvals* | UL/cUL File No. E157382, CE |

| Terminal Specifications | |
|--|---|
| Number of Channels | 2 |
| Input Ranges | 4 to 20 mA |
| Resolution | 12 bits |
| Input Type | External ground reference |
| Data Format | Decimal: 0-32767 |
| Data Bytes Consumed | PX-MOD: 4 bytes input |
| | PX-TCP1/TCP2: 8 bytes in/ 8 bytes out (not used) |
| Input Power Source | Loop power external |
| Current Consumption (from Terminal Power Bus) | NA |
| Input Impedance | 50V internal resistor |
| Absolute Max Ratings | 35VDC surge |
| Conversion Time | Approx. 2ms |
| Full Scale Calibration Error | ± 0.3% of full scale |
| Current Consumption (from I/O Bus) | 60mA |
| Electrical Isolation | 500Vms (I/O bus/field potential) |
| Heat Dissipation | 1W max |
| Status Indicators | 4, see LED Status chart |

| LED Status | | |
|----------------|--|--|
| LED LED ON | | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog-timer overflow if no data transmitted within WD set time. |
| Red LED: ERROR | Broken wire or current is > 21.5 mA | Normal Operation |

| Terminal Spec | ifications |
|--|---|
| Number of Channels | 4 |
| Input Ranges | 4 to 20 mA |
| Resolution | 12 bits |
| Input Type | Single-ended |
| Data Format | Decimal: 0-32767 |
| Data Bytes Consumed | PX-MOD: 8 bytes input |
| | PX-TCP1/TCP2: 16 bytes in/ 16 bytes out (not used) |
| Input Power Source | 24VDC provided via terminal power bus |
| Current Consumption (from Terminal Power Bus) | Load |
| Input Impedance | < 85V |
| Absolute Max Ratings | 30VDC surge |
| Conversion Time | Approx. 2ms |
| Full Scale Calibration Error | ± 0.3% of full scale |
| Current Consumption (from I/O Bus) | 85mA |
| Electrical Isolation | 500Vms (I/O bus/field potential) |
| Heat Dissipation | 1W max |
| Status Indicators | 8, see LED Status chart |

| LED Status | | |
|----------------|--|--|
| LED | LED ON | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog-timer overflow if no data transmitted within WD set time. |
| Red LED: ERROR | Broken wire or current is > 20.8 mA | Normal Operation |

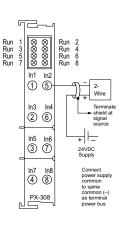
Analog Current Input Terminals \$347.00

PX-308

Eight-channel, 4-20 mA Analog Input Terminal

The PX-308 (type 1) Analog Input Terminal provides eight electrically isolated 4-20 mA inputs with 12-bit resolution and Error LED status.





| General S | pecifications |
|---|---|
| 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 | 75g (2.6 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, DC only |
| Adjacent Mounting on Bus Terminals without Power Contact | No |
| Passes Terminal Bus Power | Yes |
| Passes PE Bus | No |
| Agency Approvals* | UL/cUL File No. E157382, CE |

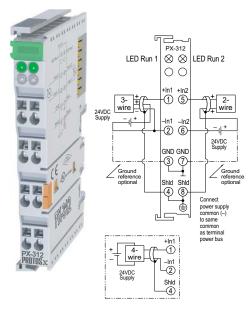
| Terminal Speci | fications |
|---|--|
| | |
| Number of Channels | 8 |
| Input Ranges | 4 to 20 mA |
| Resolution | 12 bits |
| Input Type | Single-ended |
| Data Format | Decimal: 0-32767 |
| | PX-MOD: 16 bytes input |
| Data Bytes Consumed | PX-TCP1/TCP2: 32 bytes in/32 bytes out (not used) |
| Input Power Source | Requires external 24VDC power source |
| Current Consumption (from Terminal Power Bus) | Load |
| Input Impedance | < 85V |
| Absolute Max Ratings | 30VDC surge |
| Conversion Time | Approx. 4ms |
| Full Scale Calibration Error | ± 0.3% of full scale |
| Current Consumption (from I/O Bus) | 105mA |
| Electrical Isolation | 500Vms (I/O bus/field potential) |
| Heat Dissipation | 1W max |
| Status Indicators | 8, Red: Error, broken wire or current is > 20.8 mA |

Analog Voltage Input Terminals

PX-312 \$306.00

Two-channel, -10 to +10 VDC Analog Input Terminal

The PX-312 (type 3) Analog Input Terminal provides two electrically isolated -10 to +10 VDC inputs with 12-bit resolution and LED status.



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 | 70g (2.4 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 |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes |
| Passes Terminal Bus Power | No |
| Passes PE Bus | No |
| Agency Approvals* | UL/cUL File No. E157382, CE |

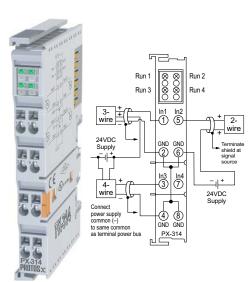
| Terminal Specifications | |
|--|---|
| Number of Channels | 2 |
| Input Ranges | -10 to +10 VDC |
| Resolution | 12 bits (11 bits between 0 to 10 VDC) |
| Input Type | External ground reference |
| Data Format | Decimal: -32767 to +32767 |
| Data Bytes Consumed | PX-MOD: 4 bytes input |
| | PX-TCP1/TCP2: 8 bytes in/ 8 bytes out (not used) |
| Input Power Source | Voltage source external |
| Current Consumption (from Terminal Power Bus) | NA |
| Input Impedance | > 200kV |
| Absolute Max Ratings | 35VDC surge |
| Conversion Time | Approx. 2ms |
| Full Scale Calibration Error | ± 0.3% of full scale |
| Current Consumption (from I/O Bus) | 65mA |
| Electrical Isolation | 500Vms (I/O bus/field potential) |
| Heat Dissipation | 1W max |
| Status Indicators | 2, indicates I/O Bus activity |

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

| PX-314 \$272.00 |
|-----------------|
|-----------------|

Four-channel, -10 to +10 VDC Analog Input Terminal

The PX-314 (type 1) Analog Input Terminal provides four electrically isolated -10 to +10 VDC inputs with 12bit resolution and LED status.



| General S | 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 | 75g (2.6 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, DC only | |
| Adjacent Mounting on Bus Terminals without Power Contact | No | |
| Passes Terminal Bus Power | Yes | |
| Passes PE Bus | No | |
| Agency Approvals* | UL/cUL File No. E157382, CE | |

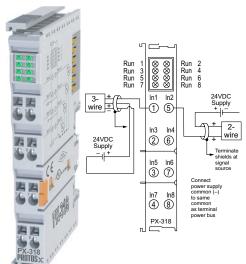
| Terminal Specifications | | |
|--|---|--|
| Number of Channels | 4 | |
| Input Ranges | -10 to +10 VDC | |
| Resolution | 12 bits (11 bits between 0 to 10 VDC) | |
| Input Type | Single-ended | |
| Data Format | Decimal: -32767 to +32767 | |
| Data Bytes Consumed | PX-MOD: 8 bytes input | |
| | PX-TCP1/TCP2: 16 bytes in/ 16 bytes out (not used) | |
| Input Power Source | Voltage source external | |
| Current Consumption (from Terminal Power Bus) | NA | |
| Input Impedance | > 130kV | |
| Absolute Max Ratings | 30VDC surge | |
| Conversion Time | Approx. 2ms | |
| Full Scale Calibration Error | ± 0.3% of full scale | |
| Current Consumption (from I/O Bus) | 100mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 4, indicates I/O Bus activity | |

Analog Voltage Input Terminals

PX-318 \$347.00

Eight-channel, -10 to +10 VDC Analog Input Terminal

The PX-318 (type 1) Analog Input Terminal provides eight electrically isolated -10 to +10 VDC inputs with 12bit resolution and LED status.



| 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 | 75g (2.6 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, DC only | |
| Adjacent Mounting on Bus Terminals without Power Contact | No | |
| Passes Terminal Bus Power | Yes | |
| Passes PE Bus | No | |
| Agency Approvals* | UL/cUL File No. E157382, CE | |

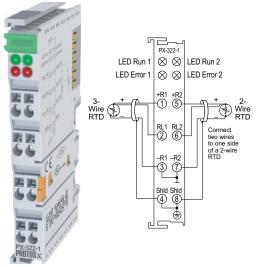
| Terminal Specifications | | |
|---|--|--|
| Number of Channels | 8 | |
| Input Ranges | -10 to +10 VDC | |
| Resolution | 12 bits (11 bits between 0 to 10 VDC) | |
| Input Type | Single-ended | |
| Data Format | Decimal: -32767 to +32767 | |
| | PX-MOD: 16 bytes input | |
| Data Bytes Consumed | PX-TCP1/TCP2: 32 bytes in 32 bytes out (not used) | |
| Input Power Source | Voltage source external | |
| Current Consumption (from Terminal Pwr Bus) | NA | |
| Input Impedance | > 130kV | |
| Absolute Max Ratings | 30VDC surge | |
| Conversion Time | Approx. 4ms | |
| Full Scale Calibration Error | ± 0.3% of full scale | |
| Current Consumption (from I/O Bus) | 140mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 8, indicates I/O Bus activity | |

RTD Input Terminals

PX-322-1 \$335.00

Two-channel RTD Input Terminal

The PX-322-1 (type 3) RTD Input Terminal provides two PT100 RTD inputs with full linearization and LED status.



| General Specifications | | |
|---|---|--|
| Operating Temp | 0 to 55 °C | |
| Storage Temp | -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 | 70g (2.4 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 | |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes | |
| Passes Terminal Bus Power | No | |
| Passes PE Bus | No | |
| Agency Approvals* | UL/cUL File No. E157382, CE | |

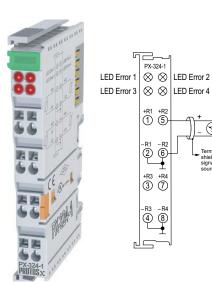
| Terminal Specifications | | |
|---------------------------------------|---|--|
| Number of Channels | 2 | |
| Range | -200 to 850 °C | |
| Resolution | 0.1 °C per digit | |
| Input Type | PT100 | |
| Data Bytes Consumed | PX-MOD: 4 bytes input | |
| | PX-TCP1/TCP2: 8 bytes in/ 8 bytes out (not used) | |
| Connection Method | 2-wire or 3-wire (3-wire default) | |
| Power Supply | Via I/O Bus | |
| Conversion Time | Approx. 250ms | |
| Measuring Current | 5mA typical | |
| Linearity Error | < ± 1°C | |
| Current Consumption (from I/O Bus) | 60mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 4, see LED Status chart | |

| LED Status | | |
|-------------------|-----------------------------------|--|
| LED | LED ON | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog-timer overflow if no data transmitted within WD set time. |
| Red LED: ERROR | Sensor fault, e.g. broken wire | No Error |

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

| PX-324-1 | \$383.00 |
|----------|----------|
|----------|----------|

Four-channel RTD Input Terminal The PX-324-1 (type 3) RTD Input Terminal provides four PT100 RTD inputs with full linearization and LED status.



Wire RTD

| General S | pecifications |
|---|---|
| Operating Temp | 0 to 55 °C |
| Storage Temp | -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 | 70g (2.4 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 |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes |
| Passes Terminal Bus Power | No |
| Passes PE Bus | No |
| Agency Approvals* | UL/cUL File No. E157382, CE |

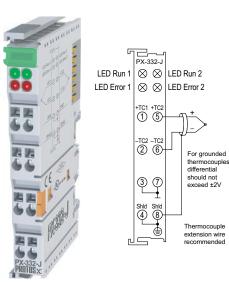
| Terminal Specifications | | |
|---------------------------------------|---|--|
| Number of Channels | 4 | |
| Range | -200 to 850 °C | |
| Resolution | 0.1 °C per digit | |
| Input Type | PT100 | |
| Data Bytes Consumed | PX-MOD: 8 bytes input | |
| | PX-TCP1/TCP2: 16 bytes in/ 16 bytes out (not used) | |
| Connection Method | 2-wire | |
| Power Supply | Via I/O Bus | |
| Conversion Time | Approx. 250ms | |
| Measuring Current | 5mA typical | |
| Linearity Error | < ± 1°C | |
| Current Consumption (from I/O Bus) | 60mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 4, Red: sensor fault | |

Thermocouple Input Terminals

PX-332-J \$342.00

Two-channel Type J Thermocouple Input Terminal

The PX-332-J (type 3) Thermocouple Input Terminal provides two Type J thermocouple inputs with full linearization, cold-junction compensation, and LED status.



| General S | pecifications |
|---|---|
| Operating Temp | 0 to 55 °C |
| Storage Temp | -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 | 70g (2.4 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 |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes |
| Passes Terminal Bus Power | No |
| Passes PE Bus | No |
| 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 | | |
|---------------------------------------|---|--|
| Number of Channels | 2 | |
| Range | -100 to 1200 °C | |
| Resolution | 0.1 °C per digit | |
| Input Type | Type J thermocouple | |
| Data Bytes Consumed | PX-MOD: 4 bytes input | |
| | PX-TCP1/TCP2: 8 bytes in/ 8 bytes out (not used) | |
| Connection Method | 2-wire (Thermocouple extension wire recommended) | |
| Power Supply | Via I/O Bus | |
| Conversion Time | Approx. 250ms | |
| Measuring Current | 5mA typical | |
| Linearity Error | ± 0.5% (relative to full scale value) | |
| Current Consumption (from I/O Bus) | 65mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |

| LED Status | | |
|-------------------|-----------------------------------|--|
| LED | LED ON | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog-timer overflow if no data transmitted within WD set time. |
| Red LED: ERROR | Sensor fault, e.g. broken wire | No Error |

4, see LED Status chart

Status Indicators

PX-334-J \$393.00

Four-channel Type J Thermocouple Input Terminal

The PX-334-J (type 3) Thermocouple Input Terminal provides four Type J thermocouple inputs with full linearization, cold-junction compensation, and LED status.



| G | P | | |
|------------------------|-------------------|-------------------|---|
| D Error 1 D Error 1 | $\otimes \otimes$ | $\otimes \otimes$ | LED Error 2 LED Error 2 |
| | +TC1 | | <u> </u> |
| | -TC2 2 | -TC2 6- | Terminate shield at signal source |
| | +TC3 | +TC4 | For grounded thermocouples differential |
| | | -TC4 | should not exceed ±2V |
| Ŀ | PX-3 | 134-J | Thermocouple extension wire recommended |

| General Specifications | | |
|---|---|--|
| Operating Temp | 0 to 55 °C | |
| Storage Temp | -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 | 70g (2.4 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 | |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes | |
| Passes Terminal Bus Power | No | |
| Passes PE Bus | No | |
| Agency Approvals* | UL/cUL File No. E157382, CE | |

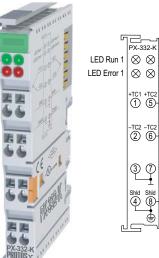
| Terminal Specifications | | |
|---------------------------------------|---|--|
| Number of Channels | 4 | |
| Range | -100 to 1200 °C | |
| Resolution | 0.1 °C per digit | |
| Input Type Type J thermocouple | | |
| | PX-MOD: 8 bytes input | |
| Data Bytes Consumed | PX-TCP1/TCP2: 16 bytes in/ 16 bytes out (not used) | |
| Connection Method | 2-wire (Thermocouple extension wire recommended) | |
| Power Supply | Via I/O Bus | |
| Conversion Time | Approx. 250ms | |
| Measuring Current | 5mA typical | |
| Linearity Error | ± 0.5% (relative to full scale value) | |
| Current Consumption (from I/O Bus) | 75mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 4, Red: sensor fault/broken wire | |

Thermocouple Input Terminals

\$342.00 **PX-332-K**

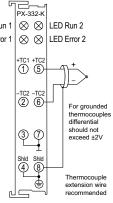
Two-channel Type K Thermocouple Input Terminal

The PX-332-K (type 3) Thermocouple Input Terminal provides two Type K thermocouple inputs with full linearization, cold-junction compensation, and LED status.



Four-channel Type K Thermocouple

The PX-334-K (type 3) Thermocouple Input Terminal provides four Type K thermocouple inputs with full linearization, cold-junction compensation, and LED



\$393.00

| General Specifications | | |
|---|---|--|
| Operating Temp | 0 to 55 °C | |
| Storage Temp | -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 | 70g (2.4 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 | |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes | |
| Passes Terminal Bus Power | No | |
| Passes PE Bus | No | |
| 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.

| General S | pecifications |
|---|---|
| Operating Temp | 0 to 55 °C |
| Storage Temp | -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 | 70g (2.4 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 |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes |
| Passes Terminal Bus Power | No |
| Passes PE Bus | No |
| 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 | | |
|---------------------------------------|---|--|
| Number of Channels | 2 | |
| Range | -100 to 1370 °C | |
| Resolution | 0.1 °C per digit | |
| Input Type | Type K thermocouple | |
| | PX-MOD: 4 bytes input | |
| Data Bytes Consumed | PX-TCP1/TCP2: 8 bytes in/ 8 bytes out (not used) | |
| Connection Method | 2-wire (Thermocouple extension wire recommended) | |
| Power Supply | Via I/O Bus | |
| Conversion Time | Approx. 250ms | |
| Measuring Current | 5mA typical | |
| Linearity Error | ± 0.5% (relative to full scale value) | |
| Current Consumption (from I/O Bus) | 65mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 4, see LED Status chart | |

| LED Status | | | |
|-------------------|-----------------------------------|---|--|
| LED | LED ON | LED OFF | |
| Green LED: RUN | Normal Operation | Watchdog-timer overflow if no data transmitted within WD set time. | |
| Red LED: ERROR | Sensor fault, e.g. broken wire | No Error | |

| Terminal Specifications | | |
|---------------------------------------|---|--|
| Number of Channels 4 | | |
| Range | -100 to 1370 °C | |
| Resolution | 0.1 °C per digit | |
| Input Type | Type K thermocouple | |
| | PX-MOD: 8 bytes input | |
| Data Bytes Consumed | PX-TCP1/TCP2: 16 bytes in/ 16 bytes out (not used) | |
| Connection Method | 2-wire (Thermocouple extension wire recommended) | |
| Power Supply | Via I/O Bus | |
| Conversion Time | Approx. 250ms | |
| Measuring Current | 5mA typical | |
| Linearity Error | ± 0.5% (relative to full scale value) | |
| Current Consumption (from I/O Bus) | 75mA | |
| Electrical Isolation | 500Vms (I/O bus/field potential) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 4, Red: sensor fault/broken wire | |



PX-334-K

Input Terminal

status.

| LED Error 1 | \otimes | \otimes | LED Error 2 |
|-------------|-----------|-----------|---|
| LED Error 1 | \otimes | \otimes | LED Error 2 |
| | +TC1 | +TC2 | \mathbb{I}_{-}^{+} |
| | -TC2 ② | -TC2 | Terminate shield at signal source |
| | +TC3 | | For grounded thermocouples differential |
| | | -TC4 | should not exceed ±2V |
| Ľ | PX-3 | 34-K | Thermocouple extension wire recommended |

Analog Current Output Terminals

Operating Temp

Relative Humidity

Environment Air

Mounting/

Orientation

Restrictions

Noise Immunity

Protection Class

Dimensions (WxHxD)

Adjacent Mounting

Vibration

Shock

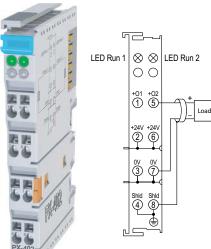
Weight

Storage Temp

PX-402 \$289.00

Two-channel, 4-20 mA Analog Output Terminal

The PX-402 (type 1) Analog Output Terminal provides two electrically isolated, 4-20 mA outputs with 12-bit resolution and Run LED status.

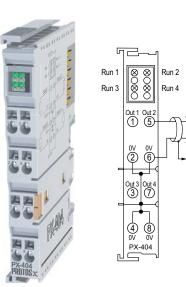


*To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

PX-404 \$272.00

Four-channel, 4-20 mA Analog Output Terminal

The PX-404 (type 1) Analog Output Terminal provides four electrically isolated, 4-20 mA outputs with 12-bit resolution and Run LED status.



Load

signal

| on Bus Terminals with Power Contact | Yes, DC only | |
|--|--|--|
| Adjacent Mounting on Bus Terminals without Power Contact | No | |
| Passes Terminal Bus Power | Yes | |
| Passes PE Bus | No | |
| Agency Approvals* | UL/cUL File No. E157382, CE | |
| | pecifications | |
| 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 Mounting/ Orientation Restrictions | No corrosive gases permitted 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 | 80g (2.8 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, DC only | |
| on Bus Terminals | Yes, DC only No | |
| on Bus Terminals with Power Contact Adjacent Mounting on Bus Terminals without Power | | |
| on Bus Terminals with Power Contact Adjacent Mounting on Bus Terminals without Power Contact Passes Terminal Bus | No | |

General Specifications

32 to 131 °F (0 to 55 °C)

-13 to 185 °F (-25 to 85 °C)

5% to 95%, non-condensing

No corrosive gases permitted

Conforms to EN 60068-2-6

Conforms to EN 60068-2-27/

35mm DIN rail/None

EN 60068-2-29 Conforms to EN 61000-6-2/

EN61000-6-4

80g (2.8 oz)

12 x 100 x 68.8 mm

(0.47 x 3.94 x 2.71 in)

IP20

| Terminal Specifications | | |
|--|--|--|
| Number of Channels | 2 | |
| Output Ranges | 4 to 20 mA | |
| Resolution 12 bit | | |
| Output Type | Single-ended | |
| Data Format | Decimal: 0-32767 | |
| | PX-MOD: 4 bytes output | |
| Data Bytes Consumed | PX-TCP1/TCP2: 8 bytes out/ 8 bytes in (not used) | |
| Output Power Source | 24VDC via terminal power bus | |
| Current Consumption (from Load Voltage) | 50mA + load | |
| Source Load | < 500Ω (short-circuit protected) | |
| Conversion Time | Approx. 1.5 ms | |
| Accuracy | \pm 0.5 LSB linearity error, \pm 0.5 LSB offset error \pm 0.1% of the full scale value | |
| I/O Bus current Consumption (5V) | 60mA | |
| Electrical Isolation | 500Vms (I/O Bus/signal voltage) | |
| Heat Dissipation | 1W max | |
| Status Indicators | 2, see LED Status chart | |

| LED Status | | | |
|-------------------|------------------|--|--|
| LED | LED ON | LED OFF | |
| Green LED: RUN | Normal Operation | Watchdog-timer overflow if no data transmitted within WD set time. | |

| Terminal Specifications | | | |
|--|--|--|--|
| Number of Channels | 4 | | |
| Output Ranges | 4 to 20 mA | | |
| Resolution | 12 bit | | |
| Output Type | Single-ended | | |
| Data Format | Decimal: 0-32767 | | |
| | PX-MOD: 8 bytes output | | |
| Data Bytes Consumed | PX-TCP1/TCP2: 16 bytes out/ 16 bytes in (not used) | | |
| Output Power Source | 24VDC via terminal power bus | | |
| Current Consumption (from Load Voltage) | 60mA + load | | |
| Source Load | < 350Ω (short-circuit protected) | | |
| Conversion Time | Approx. 4ms | | |
| Accuracy | \pm 0.5 LSB linearity error, \pm 0.5 LSB offset error \pm 0.1% of the full scale value | | |
| I/O Bus current Consumption (5V) | 20mA | | |
| Electrical Isolation | 500Vms (I/O Bus/signal voltage) | | |
| Heat Dissipation | 1W max | | |
| Status Indicators | 4, see LED Status chart | | |

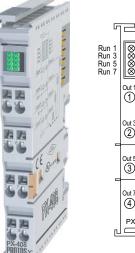
| LED Status | | |
|-------------------|------------------|--|
| LED LED ON | | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog-timer overflow if no data transmitted within WD set time. |

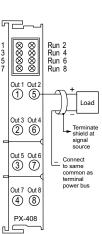
Analog Current Output Terminals

PX-408 \$347.00

Eight-channel, 4-20 mA Analog Output Terminal

The PX-408 (type 1) Analog Output Terminal provides eight electrically isolated, 4-20 mA outputs with 12-bit resolution and Run LED status.





| 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 | 80g (2.8 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, DC only |
| Adjacent Mounting on Bus Terminals without Power Contact | No |
| Passes Terminal Bus Power | Yes |
| Passes PE Bus | No |
| Agency Approvals* | UL/cUL File No. E157382, CE |

| Terminal Specifications | | | |
|--|--|--|--|
| Number of Channels | 8 | | |
| Output Ranges | 4 to 20 mA | | |
| Resolution | 12 bit | | |
| Output Type | Single-ended | | |
| Data Format | Decimal: 0-32767 | | |
| | PX-MOD: 16 bytes output | | |
| Data Bytes Consumed | PX-TCP1/TCP2: 32 bytes out/ 32 bytes in (not used) | | |
| Output Power Source | 24VDC via terminal power bus | | |
| Current Consumption (from Load Voltage) | 50mA + load | | |
| Source Load | < 150Ω (short-circuit protected) | | |
| Conversion Time | Approx. 8ms | | |
| Accuracy | \pm 0.5 LSB linearity error, \pm 0.5 LSB offset error \pm 0.1% of the full scale value | | |
| I/O Bus current Consumption (5V) | 25mA | | |
| Electrical Isolation | 500Vms (I/O Bus/signal voltage) | | |
| Heat Dissipation | 1W max | | |
| Status Indicators | 8, see LED Status chart | | |

| LED Status | | |
|-------------------|------------------|---|
| LED LED ON | | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog error if no data transmitted within WD set time. |

Analog Voltage Output Terminals

Contact

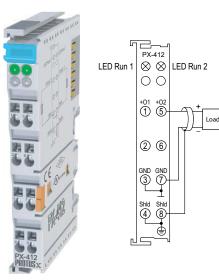
Power Passes PE Bus

Passes Terminal Bus

PX-412 \$289.00

Two-channel, 0 to 10 VDC Analog **Output Terminal**

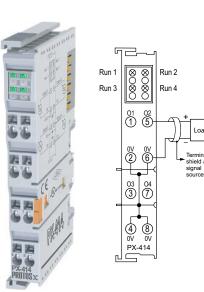
The PX-412 (type 3) Analog Output Terminal provides two electrically isolated, 0 to 10 VDC outputs with 12-bit resolution, common ground potential, and Run LED status.



\$247.00 **PX-414**

Four-channel, 0 to 10 VDC Analog **Output Terminal**

The PX-414 (type 1) Analog Output Terminal provides four electrically isolated, 0 to 10 VDC outputs with 12-bit resolution, common ground potential, and Run LED status.w



Load

hield at

| General S | pecifications |
|---|---|
| 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 | 85g (3.0 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 |
| Adjacent Mounting on Bus Terminals without Power | Yes |

| Agency Approvals* | UL/cUL File No. E157382, CE |
|--|-----------------------------|
| *To obtain the most current see the Agency Approval C specific part number's web | |

No

No

| General S | pecifications |
|---|---|
| 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 | 85g (3.0 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, DC only |
| Adjacent Mounting on Bus Terminals without Power Contact | Yes |
| Passes Terminal Bus Power | No |
| Passes PE Bus | No |
| 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 | | | |
|--|--|--|--|
| Number of Channels | 2 | | |
| Output Ranges | 0 to 10 VDC | | |
| Resolution | 12 bit | | |
| Output Type | Single-ended | | |
| Data Format | Decimal: 0-32767 | | |
| | PX-MOD: 4 bytes output | | |
| Data Bytes Consumed | PX-TCP1/TCP2: 8 bytes out/ 8 bytes in (not used) | | |
| Output Power Source | 24VDC via terminal power bus | | |
| Current Consumption (from Load Voltage) | 50mA + load | | |
| Source Load | > 5kV (short-circuit protected) | | |
| Conversion Time | Approx. 1.5 ms | | |
| Accuracy | \pm 0.5 LSB linearity error, \pm 0.5 LSB offset error \pm 0.1% of the full scale value | | |
| I/O Bus current Consumption (5V) | 75mA | | |
| Electrical Isolation | 500Vms (I/O Bus/signal voltage) | | |
| Heat Dissipation | 1W max | | |
| Status Indicators | 2, see LED Status chart | | |
| LED Status | | | |

| LED Status | | |
|-------------------|------------------|---|
| LED | LED ON | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog error if no data transmitted within WD set time. |

| _ | | | |
|--|---|--|--|
| Te | erminal Sp | ecifi | cations |
| Number of Cha | annels | 4 | |
| Output Ranges | S | 0 to 10 VDC | |
| Resolution | | 12 bit | |
| Output Type | | Single | e-ended |
| Data Format | | Decin | nal: 0-32767 |
| | | PX-M | OD: 8 bytes output |
| Data Bytes Consumed | | PX-TCP1/TCP2: 16 bytes out/ 16 bytes in (not used) | |
| Output Power Source | | 24VD | C via terminal power bus |
| Current Consumption (from Load Voltage) | | 50mA + load | |
| Source Load | | > 5kV (short-circuit protected) | |
| Conversion Time | | Approx. 1.5 ms | |
| Accuracy | | \pm 0.5 LSB linearity error, \pm 0.5 LSB offset error \pm 0.1% of the full scale value | |
| I/O Bus current Consumption (5V) 75mA | | ۱. | |
| Electrical Isola | Electrical Isolation 500Vms (I/O Bus/signal voltage) | | |
| Heat Dissipation 1W max | | nax | |
| Status Indicators | | 2, see LED Status chart | |
| | | | |
| | LED S | tatus | 3 |
| LED | LED ON | | LED OFF |
| Green LED: | Normal Opera | ation | Watchdog error if no data transmitted within WD |

| Universal Field I/O tF | ED-48 |
|------------------------|-------|
|------------------------|-------|

Normal Operation

RUN

transmitted within WD

set time.

Terminal Specifications

8

12 bit

-10 to +10 VDC

Single-ended

Decimal: 0-32767

Number of Channels

Output Ranges

Resolution

Output Type

Data Format

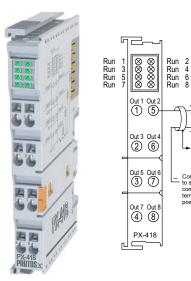
Analog Voltage Output Terminals

Load

PX-418 \$347.00

Eight-channel, -10 to +10 VDC Analog **Output Terminal**

The PX-418 (type 1) Analog Output Terminal provides eight electrically isolated, -10 to +10 VDC outputs with 12-bit resolution, common ground potential, and Run LED status.



| 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 | 85g (3.0 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, DC only |
| Adjacent Mounting on Bus Terminals without Power Contact | No |
| Passes Terminal Bus Power | Yes |
| Passes PE Bus | No |
| Agency | UL/cUL File No. E157382, |

Approvals*

PX-MOD: 16 bytes output PX-TCP1/TCP2: 32 bytes Data Bytes Consumed out/ 32 bytes in (not used) 24VDC via terminal power **Output Power Source** bus **Current Consumption** 20mA (from Load Voltage) > 5kV (short-circuit Source Load protected) **Conversion Time** Approx. 8ms ± 0.5 LSB linearity error, ± 0.5 LSB offset error Accuracy ± 0.1% of the full scale value I/O Bus current 20mA Consumption (5V) 500Vms Electrical Isolation (I/O Bus/signal voltage) Heat Dissipation 1W max 8, see LED Status chart Status Indicators

| LED Status | | |
|-------------------|------------------|---|
| LED | LED ON | LED OFF |
| Green LED: RUN | Normal Operation | Watchdog error if no data transmitted within WD set time. |

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

CE

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:

- 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.

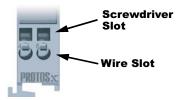
Insert unit using tongue and groove molded guide and press gently until it becomes firmly seated on DIN rail.

Where applicable, rotate Locking Wheel to lock Bus Coupler

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 mm2) | |
| Screwdriver Width | 2.5 mm (0.10 in) such as P/N TW-SD-MSL-2 | |
| Wire Stripping Length | 8mm | |
| 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



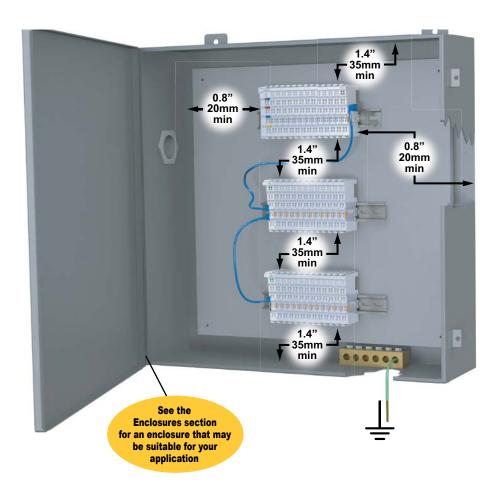
Firmly pull DIN Rail Release Tab to unlatch unit from rail.

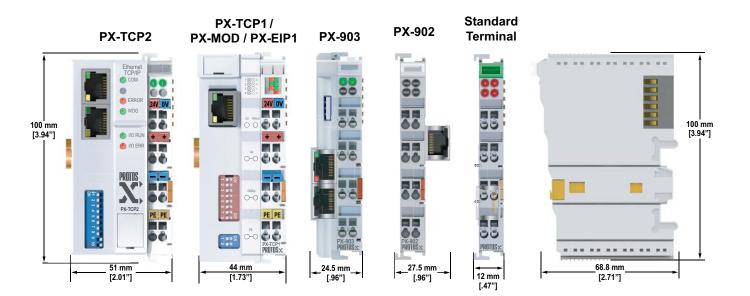
1-800-633-0405 Installation Considerations

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.





1-800-633-0405 Installation Considerations

Terminal Types

