# PX-332-K – Two-channel Type K Thermocouple Input Terminal

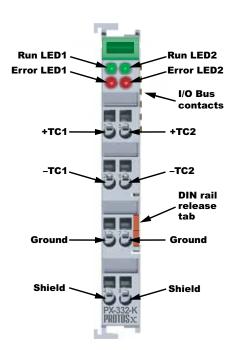


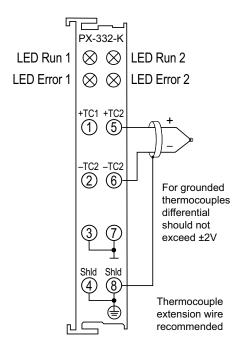


Protos X<sup>™</sup> is a trademark of Automationdirect.com Incorporated

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         PX-MOD: 4-bytes input           PX-TCP1/TCP2: 8-bytes in/8-bytes out (not used)         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         Typ. 5mA           Linearity Error         ± .5% (relative to full scale value)           Current Consumption (from I/O Bus)         65mA           Electrical Isolation         500V <sub>ms</sub> (I/O bus/field potential)           Heat Dissipation         1W max.           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           Status Indicators         4, see LED Status chart	PX-332-K Thermocouple Input Terminal			
Resolution 0.1°C per digit Input Type Type K thermocouple 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 Typ. 5mA  Linearity Error ± .5% (relative to full scale value)  Current Consumption (from I/O Bus) 65mA  Electrical Isolation 500V <sub>ms</sub> (I/O bus/field potential) Heat Dissipation 1W max.  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power No Passes PE Bus No	Number of Channels	2		
Input Type  Type K thermocouple  PX-MOD: 4-bytes input  PX-TCP1/TCP2: 8-bytes in/8-bytes out (not used)  Connection method  Power Supply  Conversion Time  Approx. 250ms  Measuring Current  Typ. 5mA  Linearity Error  Linearity Error  Current Consumption (from I/O Bus)  Electrical Isolation  Heat Dissipation  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  Passes PE Bus  Type K thermocouple  PX-MOD: 4-bytes input  PX-TCP1/TCP2: 8-bytes input  PX-TCP1/TCP2: 8-bytes input  PX-MOD: 4-bytes input  PX-TCP1/TCP2: 8-bytes input  PX-TCP1/TCP2: 8-bytes input  PX-TCP1/TCP2: 8-bytes in/8-  PX-MOD: 4-bytes input  PX-TCP1/TCP2: 8-bytes in/8-  PX-MOD: 4-bytes in/8-  PX-MOD:	Range	-100 to 1370°C		
Data Bytes Consumed  PX-MOD: 4-bytes input PX-TCP1/TCP2: 8-bytes in/8- bytes out (not used)  Connection method  Power Supply  Via I/O Bus  Conversion Time Approx. 250ms  Measuring Current Typ. 5mA  Linearity Error  Current Consumption (from I/O Bus)  Electrical Isolation Heat Dissipation  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  Passes PE Bus  PX-MOD: 4-bytes input PX-TCP1/TCP2: 8-bytes in/8- bytes (Thermocouple extension wire recommended)  Fyes  Pyes  Px-MOD: 4-bytes input PX-MOD: 4-bytes in/8- bytes out (not used)  PX-MOD: 4-bytes input PX-MOD: 4-bytes input PX-MOD: 4-bytes in/8- bytes out (not used)  I Was in I/O Bus Px-MOD: 4-bytes in/8- bytes out (not used)  I Was in I/O Bus Pyes in I/O Bus	Resolution	0.1°C per digit		
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  Typ. 5mA  Linearity Error  ± .5% (relative to full scale value)  Current Consumption (from I/O Bus)  Electrical Isolation  Feat Dissipation  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  Passes PE Bus  No	Input Type	Type K thermocouple		
Connection method  2-wire (Thermocouple extension wire recommended)  Power Supply  Via I/O Bus  Conversion Time  Approx. 250ms  Measuring Current  Typ. 5mA  Linearity Error  £ .5% (relative to full scale value)  Current Consumption (from I/O Bus)  Electrical Isolation  Heat Dissipation  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  Passes PE Bus  No		PX-MOD: 4-bytes input		
Power Supply Via I/O Bus Conversion Time Approx. 250ms Measuring Current Typ. 5mA Linearity Error Linearity Error Current Consumption (from I/O Bus) Electrical Isolation Heat Dissipation Adjacent Mounting on Bus Terminals with Power Contact Adjacent Mounting on Bus Terminals without Power Contact Passes Terminal Bus Power Passes PE Bus  Via I/O Bus Approx. 250ms Fyp. 5mA  Linearity Error Lineari	Data Bytes Consumed			
Conversion Time Approx. 250ms  Measuring Current Typ. 5mA  Linearity Error ± .5% (relative to full scale value)  Current Consumption (from I/O Bus) 65mA  Electrical Isolation 500V <sub>ms</sub> (I/O bus/field potential)  Heat Dissipation 1W max.  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power No  Passes PE Bus No	Connection method			
Measuring Current  Typ. 5mA  Linearity Error  Current Consumption (from I/O Bus)  Electrical Isolation  Heat Dissipation  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  Passes PE Bus  Typ. 5mA  ± .5% (relative to full scale value)  (I/O bus/field potential)  1W max.  Yes  Yes	Power Supply	Via I/O Bus		
Linearity Error  ± .5% (relative to full scale value)  Current Consumption (from I/O Bus)  Electrical Isolation  Heat Dissipation  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  Passes PE Bus  No	Conversion Time	Approx. 250ms		
Current Consumption (from I/O Bus) 65mA  Electrical Isolation 500V <sub>ms</sub> (I/O bus/field potential)  Heat Dissipation 1W max.  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power No  Passes PE Bus No	Measuring Current	Typ. 5mA		
Electrical Isolation 500V <sub>ms</sub> (I/O bus/field potential)  Heat Dissipation 1W max.  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power No  Passes PE Bus No	Linearity Error			
Heat Dissipation 1W max.  Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  No  No  No	Current Consumption (from I/O Bus)	65mA		
Adjacent Mounting on Bus Terminals with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  No  Passes PE Bus  No	Electrical Isolation	500V <sub>ms</sub> (I/O bus/field potential)		
with Power Contact  Adjacent Mounting on Bus Terminals without Power Contact  Passes Terminal Bus Power  No  Passes PE Bus  No	Heat Dissipation	1W max.		
without Power Contact  Passes Terminal Bus Power  Passes PE Bus  No		Yes		
Passes PE Bus No		Yes		
1400012340	Passes Terminal Bus Power	No		
Status Indicators 4, see LED Status chart	Passes PE Bus	No		
	Status Indicators	4, see LED Status chart		

LED Status		On	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		
General Specifications					
Operating Temp	perature	32° to 131°F (0° to	o 55°C)		
Storage Tempe	rature 13° to 185°F (-2		° to 85°C)		
Relative Humid	ity	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			
Dimensions (WxHxD)		12 x 100 x 68.8 mm (0.47 x 3.94 x 2.71 in)			
Agency Approvals		UL/cUL File No. E157382, CE			





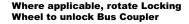
### **MOUNTING**

For system assembly, first attach a bus coupler by snapping onto 35mm DIN rail and securing into position using the DIN rail locking wheel (where applicable) located on the left side of the coupler. 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

### **REMOVAL**

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.





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

## **IMPORTANT**

For complete assembly instructions and compatibility between terminals see the PX-USER-M manual available for free download at www.automationdirect.com.

### **HOT SWAP NOT PERMITTED**

Always remove power from the system before inserting or removing bus terminals or couplers as failure to do so could cause malfunction or damage to the terminals, couplers or other connected devices.

Document Name	Edition/Revision	Date
PX-332-K-DS	1st ED. Rev. B	2/9/2015

Copyright 2015, AutomationDirect.com Incorporated/All Rights Reserved Worldwide.

### www.automationdirect.com

### WARNING

To minimize the risk of potential safety problems, you should follow all applicable local and national codes that regulate the installation and operation of your equipment. These codes vary from area to area and it is your responsibility to determine which codes should be followed, and to verify that the equipment, installation, and operation are in compliance with the latest revision of these codes.

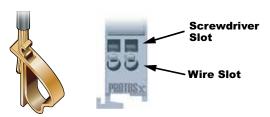
Equipment damage or serious injury to personnel can result from the failure to follow all applicable codes and standards. We do not guarantee the products described in this publication are suitable for your particular application, nor do we assume any responsibility for your product design, installation, or operation.

If you have any questions concerning the installation or operation of this equipment, or if you need additional information, please call Technical Support at 770-844-4200.

This publication is based on information that was available at the time it was printed. At AutomationDirect. com® we constantly strive to improve our products and services, so we reserve the right to make changes to the products and/or publications at any time without notice and without any obligation. This publication may also discuss features that may not be available in certain revisions of the product.

### WIRING CONNECTION

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 / Wire Cross Section	28-14 AWG / 0.08 - 2.5mm <sup>2</sup>
Screwdriver Width	2.5mm (0.10) such as our TW-SD-MSL-2
Wire Stripping Length	8mm