

## ***XZ12 Series DIN Two-Wire Transmitter***



mTech's DIN-Style Model XZ12 two-wire transmitter accepts all standard process inputs from field transmitters and transducers. Model XZ12 offers the following state-of-the-art two-wire transmitter signal conditioning features and options.

- **Easy-Access Zero and Span Settings.**  
Potentiometer settings are located on the front panel to allow for easy set up, calibration and adjustment.
- **Input/Output Power Isolation and RFI/EMI Protection.**  
Optional RFI / EMI protection and built-in input / output isolation maintain a high level of accuracy in noisy environments.
- **Input Linearization Option.**  
Linearized 100 Platinum RTDs.

### **Model XZ12 Input Options**

Model XZ12 two-wire transmitters can accept the following input types:

- **Thermocouple**
- **DC Current/Voltage**
- **AC Current/Voltage**
- **RTD**
- **Resistance**

**Model XZ12-T Transmitter Specifications**
**Inputs**

Thermocouple types:	All Thermocouple Types
Span:	5 mV to 80 mV ( $\pm 10\%$ adjustable, factory configured)
Zero:	-20 mV to +20 mV ( $\pm 10\%$ adjustable, factory configured)
Linearization:	Midpoint adjustable (factory configured)

**Output**

Standard:	4 – 20 mA
Optional:	10 – 50 mA

**Load Resistance**

$$R_L = \frac{V_{\text{supply}} - 12 \text{ V}}{20 \text{ mA (or 50 mA)}}$$

**Performance**

Accuracy:	$\pm 0.1\%$ of span
Temperature Effect: (-40 to 85°C)	0.01%/°C of span + $1\mu\text{V}/^\circ\text{C}$
Cold Junction Error:	$\pm 0.1^\circ\text{C}$ @ 23°C, drift $\pm 0.03^\circ\text{C}/^\circ\text{C}$
Operating Temperature:	-40 to 85°C
Storage Temperature:	-40 to 100°C
Response Time:	0.5 seconds for 98% change
CMRR:	Better than 120 dB (60Hz)
Ripple:	Less than 0.05% Vrms of span
RFI Protection (option):	Input and Output connections AC de-coupled to ground

**T/C Burnout Detection**

Direction:	Upscale (standard) Downscale (optional, field changeable)
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**Power Supply**

Power Supply:	12 – 60 Vdc
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**Isolation**

Isolation:	Input/output isolated to 500 Vrms (tested to 1.2K Vrms)
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**Classification**

Classification:	General Purpose CSA approval pending
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**Dimensions**

Size:	WxHxL = 0.89"W x 3.15"H x 5.41"L (22.55mm x 80mm x 137.5mm)
Weight:	6.5 ounces (184.3 grams)

**Model XZ12-D Transmitter Specifications**
**Inputs**

Span:	5 mV minimum – 150 V maximum or 1.0 mA minimum – 5 A maximum ( $\pm 10\%$ adjustable, factory configured)
Zero:	-10 V minimum – 150 V maximum or 0 A minimum – 5 A maximum ( $\pm 10\%$ adjustable, factory configured)
Burden Voltage: (current input)	150 mV maximum
Input Impedance: (voltage input)	1M minimum

**Output**

Standard:	4 – 20 mA
Optional:	10 – 50 mA

**Model XZ12-D Transmitter Specifications**

(continued)

**Load Resistance**

$$R_L = \frac{V_{\text{supply}} - 12 \text{ V}}{20 \text{ mA (or 50 mA)}}$$

**Performance**

Accuracy:	$\pm 0.1\%$ of span $\pm 0.25\%$ of span for span < 5 mV
Temperature Effect: (-40 to 85°C)	0.01%/°C of span
Operating Temperature:	-40 to 85°C
Storage Temperature:	-40 to 100°C
Response Time:	0.5 seconds for 98% change
CMRR:	Better than 120 dB (60Hz)
Ripple:	Less than 0.05% Vrms of span
RFI Protection (option):	Input and Output connections AC de-coupled to ground

**Power Supply**

Power Supply:	12 – 60 Vdc
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**Isolation**

Isolation:	Input/output isolated to 500 Vrms (tested to 1.2K Vrms)
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**Classification**

Classification:	General Purpose CSA approval pending
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**Dimensions**

Size:	WxHxL = 0.89"W x 3.15"H x 5.41"L (22.55mm x 80mm x 137.5mm)
Weight:	6.5 ounces (184.3 grams)

**Model XZ12-A Transmitter Specifications**
**Inputs**

Frequency Range:	50 – 400 Hz
Span:	100 mVrms minimum – 300 Vrms maximum or 20 mA minimum – 5 Arms maximum ( $\pm 10\%$ adjustable, factory configured)
Zero:	5 mVrms minimum – 300 Vrms maximum or 0 Arms minimum – 5 Arms maximum ( $\pm 10\%$ adjustable, factory configured)
Burden Voltage: (current input)	150 mVrms maximum
Input Impedance: (voltage input)	1M minimum

**Output**

Standard:	4 – 20 mA
Optional:	10 – 50 mA

**Load Resistance**

$$R_L = \frac{V_{\text{supply}} - 12 \text{ V}}{20 \text{ mA (or 50 mA)}}$$

**Performance**

Accuracy:	$\pm 0.25\%$ of span
Temperature Effect: (-40 to 85°C)	0.02%/°C of span

**Model XZ12-A Transmitter Specifications**

(continued)

**Performance** (continued)

Operating Temperature:	-40 to 85°C
Storage Temperature:	-40 to 100°C
Response Time:	0.5 seconds for 98% change
CMRR:	Better than 120 dB (60Hz)
Ripple:	Less than 0.05% Vrms of span
RFI Protection (option):	Input and Output connections AC de-coupled to ground

**Power Supply**

Power Supply: 12 – 60 Vdc

**Isolation**

Isolation: Input/output isolated to 500 Vrms (tested to 1.2K Vrms)

**Classification**

Classification: General Purpose CSA approval pending

**Dimensions**

 Size: WxHxL = 0.89"W x 3.15"H x 5.41"L  
(22.55mm x 80mm x 137.5mm)

Weight: 6.5 ounces (184.3 grams)

**Model XZ12-V Transmitter Specifications**
**Inputs**

RTD:	3-Wire Resistance Bulb Sensor <i>Pt100, Ni120, Cu10</i>
Span and Zero:	10 - 500 (adjustable to ±10%, factory configured) Minimum span (10 ) <i>Pt100 – 26°C</i> <i>Ni120 – 18°C</i> <i>Cu10 – 260°C</i>
Excitation Current:	Constant current of 0.3 – 0.45 mA maximum
Leadwire Resistance Effect:	Negligible up to 20% of nominal resistance
Linearization (ZL option):	<i>Pt100</i> only ±0.2% of span (factory configured)

**Output**

 Standard: 4 – 20 mA  
Optional: 10 – 50 mA

**Load Resistance**

$$R_L = \frac{V_{\text{supply}} - 12 \text{ V}}{20 \text{ mA (or 50 mA)}}$$

**Performance**

Accuracy:	±0.1% of span
Temperature Effect: (-40 to 85°C)	0.01%/°C of span + 1M /°C
Operating Temperature:	-40 to 85°C
Storage Temperature:	-40 to 100°C
Response Time:	0.5 seconds for 98% change
CMRR:	Better than 120 dB (60Hz)
Ripple:	Less than 0.05% Vrms of span
RFI Protection (option):	Input and Output connections AC de-coupled to ground

**Model XZ12-V Transmitter Specifications**

(continued)

**Power Supply**

Power Supply: 12 – 60 Vdc

**Isolation**

 Isolation: Input/output isolated to 500 Vrms  
(tested to 1.2K Vrms)

**Classification**

Classification: General Purpose CSA approval pending

**Dimensions**

 Size: WxHxL = 0.89"W x 3.15"H x 5.41"L  
(22.55mm x 80mm x 137.5mm)

Weight: 6.5 ounces (184.3 grams)

**Model XZ12-R Transmitter Specifications**
**Inputs**

Resistance:	3-Wire Resistance Potentiometer or Slidewire 0-100 through 0-10K
Span:	100 minimum – 10K maximum (±10% adjustable, factory configured)
Zero:	0 minimum – 10K maximum (±10% adjustable, factory configured)
Excitation Voltage:	80 – 500 mV
Bias Current:	60 µA – 800 µA

**Output**

 Standard: 4 – 20 mA  
Optional: 10 – 50 mA

**Load Resistance**

$$R_L = \frac{V_{\text{supply}} - 12 \text{ V}}{20 \text{ mA (or 50 mA)}}$$

**Performance**

Accuracy:	±0.1% of span
Temperature Effect: (-40 to 85°C)	0.01%/°C of span
Operating Temperature:	-40 to 85°C
Storage Temperature:	-40 to 100°C
Response Time:	0.5 seconds for 98% change
CMRR:	Better than 120 dB (60Hz)
Ripple:	Less than 0.05% Vrms of span
RFI Protection (option):	Input and Output connections AC de-coupled to ground

**Power Supply**

Power Supply: 12 – 60 Vdc

**Isolation**

 Isolation: Input/output isolated to 500 Vrms  
(tested to 1.2K Vrms)

**Classification**

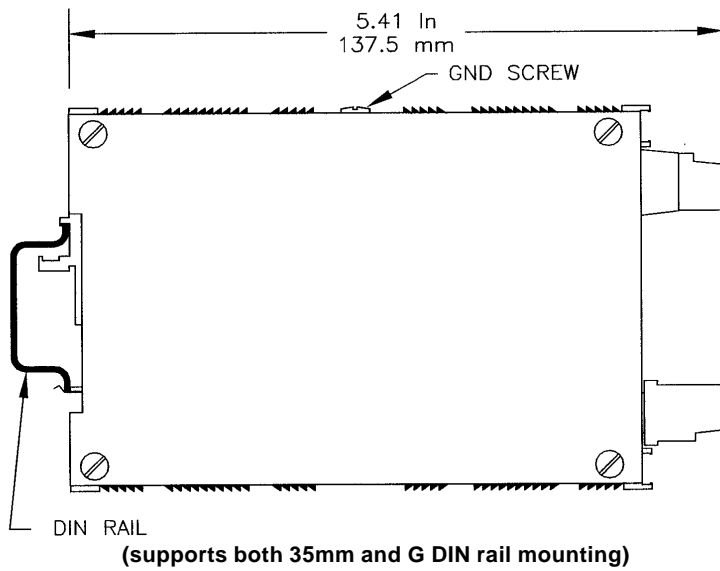
Classification: General Purpose CSA approval pending

**Dimensions**

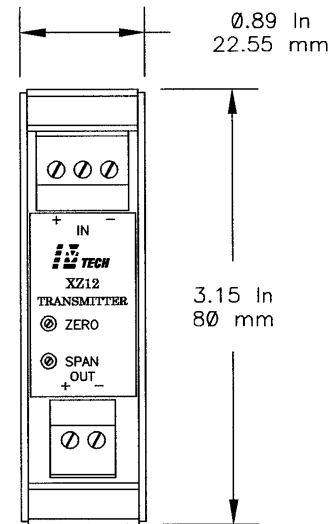
 Size: WxHxL = 0.89"W x 3.15"H x 5.41"L  
(22.55mm x 80mm x 137.5mm)

Weight: 6.5 ounces (184.3 grams)

## Side View



## Front View



## Ordering Information

When ordering, specify the following:

**XZ12-** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_  
input      output      option 1      option 2      option 3

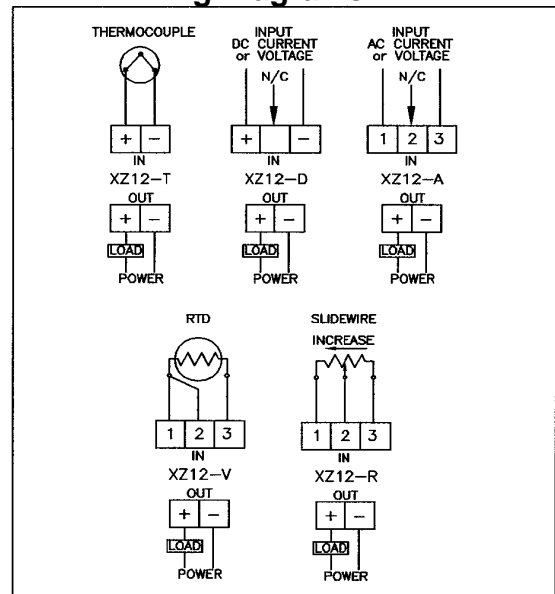
Input: T = Thermocouple, (specify type: B, J, K, E, R, S, T or N and Range in F or C)  
D = DC current or voltage  
(specify zero and span)  
A = AC current or voltage  
(specify zero and span)  
V = RTD (specify type: Pt100, Ni120, or Cu10)  
R = Resistance (specify span and zero, 0 through 10K )

Output: 4 – 20 mA or 10 – 50 mA

Options:

RFI Protection:            -ZR  
Pt100 linearization:    -ZL (XZ12-V only)  
Downscale burnout:    -ZB (XZ12-T only)  
Reverse Output:         -ZJ

## Wiring Diagrams



## Represented By:



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