

INSTRUCTION MANUAL

SM811-EC T/C TRANSMITTER

The SM811-EC two-wire mV/TC transmitter receives signals from thermocouples or other millivolt sources and provides a 4 to 20 mA output signal proportional to the input. Because the SM811-EC is a two-wire device, a single pair of twisted copper wires are all that is required to provide power to the unit as well as to carry the output current.

The SM811-EC is field calibrated for specific ranges. Standard ranges are available for type J, K, E, & T thermocouples. There is also a 0 to 60 mV range and a 0 to 10 volt range. Fine adjustment is provided by multi turn zero and span potentiometers. The SM811-EC is provided with reverse power supply polarity protection, and will operate over a wide range of supply voltages (7 to 35 Volts). It also provides upscale input break indication and when used with thermocouple inputs, accurate cold junction compensation. The SM811-EC provides a 4 to 20 mA output, which is linear with respect to the millivolt input. It does not correct for the non-linearity of the thermocouple wire.

General Specifications

| | |
|-----------------------|--|
| Power Requirements | 7 to 35 VDC at Terminal Block |
| Accuracy | 0.1% of milliVolt Span |
| Working Temperature | - 25 °C To 85 °C |
| Storage Temperature | - 65 °C To 125 °C |
| Thermal Zero Shift | 0.01% /°C (span > 10 mV) 0.02% /°C (span < 10 mV) |
| Common Mode Rejection | 115 dB at 60 Hz |
| 3 dB Frequency | 3 Hz |
| Weight | 2.5 oz. |

Input Specifications

| | |
|------------------------|--|
| Sensor | Thermocouples J, K, T & E |
| Voltage Inputs | Option - V1: 0 to 64 mV Option - V2: 0 to 10 VDC |
| Input Break Indication | Upscale |
| Input Source Current | 4 nA Typical |
| Input Resistance | > $3 \times 10^7 \Omega$ (TC & mV Inputs) 226 K (Option V2) |

Output Specifications

| | |
|----------------------|--------------------------------------|
| Output Range | 4 to 20 milliamps |
| Output Limits | 3 to 28 mA, Typical |
| Max. Load Resistance | = (supply voltage - 7V) / 20 mA |
| Load Effect | <0.01% of Span / 300 Ω Change |
| Power Supply Effect | <0.002% of Span per Volt |

Optional Hardware

Enclosures

| | |
|------------------------|--------------|
| Aluminum Mounting Head | Option - CHA |
| Nylon Mounting Head | Option - CHN |
| Explosion Proof Head | Option - CHX |

Mounting Hardware

| | |
|-------------------------|---------------|
| 3-Inch Snap Track Mount | Option - M31S |
| DIN Rail Mount | Option - M31D |

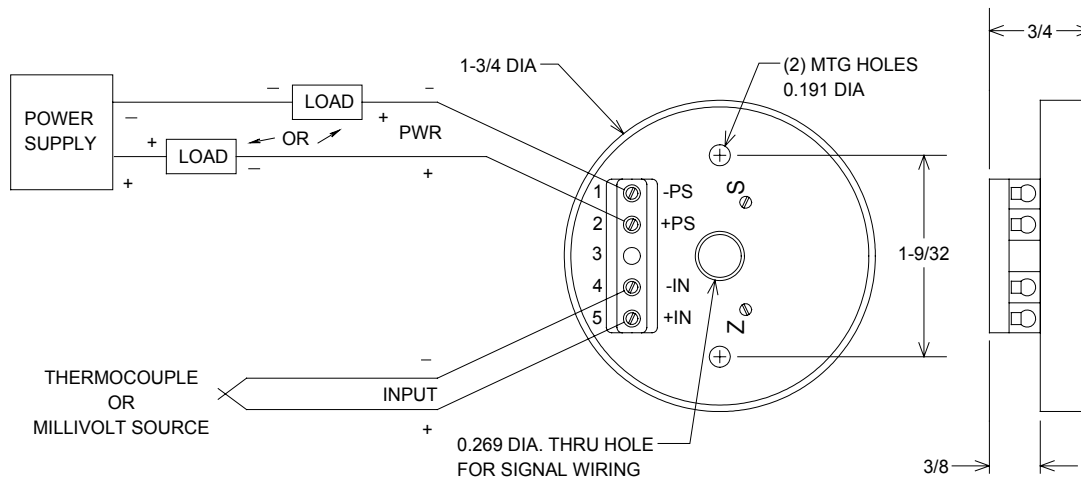


Figure 1 . Field Wiring

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MANUAL NO. 990625 REV. A

| INPUT | RANGE | MODEL | INPUT | RANGE | MODEL |
|-------|------------|-------------|-------|------------|---------------|
| J | -40/120° F | SM811-EC-J1 | E | -40/120° F | SM811-EC-E1 |
| J | 0/200° F | SM811-EC-J2 | E | 0/200° F | SM811-EC-E2 |
| J | 0/300° F | SM811-EC-J3 | E | 0/300° F | SM811-EC-E3 |
| J | 0/500° F | SM811-EC-J4 | E | 0/500° F | SM811-EC-E4 |
| J | 0/750° F | SM811-EC-J5 | E | 0/750° F | SM811-EC-E5 |
| J | 0/1000° F | SM811-EC-J6 | E | 0/1000° F | SM811-EC-E6 |
| J | 0/2000° F | SM811-EC-J9 | J | 0/100° C | SM811-EC-J100 |
| K | 0/200° F | SM811-EC-K2 | J | 0/200° C | SM811-EC-J102 |
| K | 0/300° F | SM811-EC-K3 | J | 0/300° C | SM811-EC-J103 |
| K | 0/500° F | SM811-EC-K4 | J | 0/500° C | SM811-EC-J104 |
| K | 0/750° F | SM811-EC-K5 | J | 0/750° C | SM811-EC-J105 |
| K | 0/1000° F | SM811-EC-K6 | K | 0/100° C | SM811-EC-K100 |
| K | 0/1500° F | SM811-EC-K7 | K | 0/200° C | SM811-EC-K102 |
| T | 0/200° F | SM811-EC-T2 | K | 0/300° C | SM811-EC-K103 |
| T | 0/300° F | SM811-EC-T3 | K | 0/500° C | SM811-EC-K104 |
| T | 0/500° F | SM811-EC-T4 | K | 0/750° C | SM811-EC-K105 |
| T | 0/750° F | SM811-EC-T5 | mV | 0/60 mV | SM811-EC-V1 |
| | | | VDC | 0/10 V | SM811-EC-V2 |

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