

- \* THERMO-HEAD  
INSTALLATION
- \* 0.1% ACCURACY
- \* 2-WIRE OPERATION
- \* LOW 7.0 VDC DROP



### DESCRIPTION

The SM811-EC two wire mV/TC transmitter receives signals from thermocouples or other millivolt sources and provides a proportional 4 to 20 mA output signal. 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 factory calibrated for specific ranges. Standard ranges are available for type J, K, E, R, S, and T thermocouples. There is also a 0 to 6 mV range and a 0 to 10 volt range. Fine adjustment is provided by multiturn 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 nonlinearity of the thermocouple.

#### General Specifications

Power Requirements	7 to 35 VDC At Term. 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, R & S
Voltage Inputs	Option - MV : 0 to 64 mV Option - VDC : 0 to 10 VDC

Input Break Indication	Upscale
Input Offset Adjustment	± 25 % of mV Span
Input Source Current	4 nA Typical
Input Resistance	> 3 X 10 <sup>7</sup> Ω ( TC & mV Inputs) 226 K ( Options V1, V2 & V3 )

#### Output Specifications

Output Range	4 to 20 Milliamps
Output Limits	3 to 28 mA, Typical
Max. Load Resistance	= (supply voltage - 8.5V) / 20 mA
Load Effect	<.01% of Span / 300 Ω Change
Power Supply Effect	<.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

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

### STANDARD RANGES

