

- VOLTAGE OR CURRENT INPUT
- POWERED BY OUTPUT SIGNAL
- COMPACT HEAD, SNAP OR DIN RAIL MOUNTING
- ACCURACY  $\pm 0.1\%$  OF SPAN



### GENERAL DESCRIPTION

The model SM869 is an ultra miniature isolator, designed to provide signal isolation within a control or data acquisition system which supplies power to the loop. The SM869-I accepts a 4 to 20 mA input signal and provides an isolated 4 to 20 mA output. Model SM869-V accepts 0 to 10 VDC and provides a 4 to 20 mA output. Other input values can be provided on a custom basis.

The SM869 Isolator is an output powered two wire device. This means that it is powered from a DC power supply connected in the output current loop. The SM869 derives its power from the output loop, and can be used to extend the load driving capacity of the primary 4 to 20 mA as well as to provide isolation.

Operation: Input wires are connected to the positive and negative input terminals of the SM869. The external load and DC power supply are connected in series with the output terminals. Note that the output current flows out of the positive side of the power supply, to the positive side of the load and positive output terminal of the SM869.

Multiturn span and zero potentiometers are provided for fine adjustment of the SM869. To calibrate, set the input to the bottom of the range and adjust the zero potentiometer for 4 mA out, set the input to the top of the range and adjust the span potentiometer for 20 mA out.

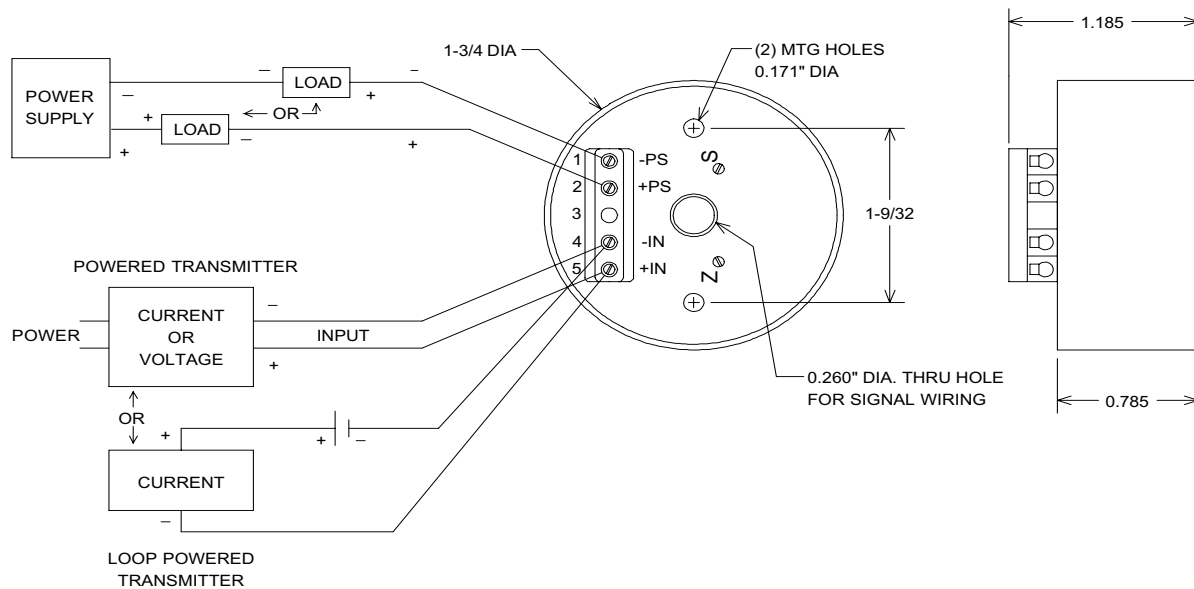
# **SPECIFICATIONS** MODEL SM869

POWER REQUIREMENTS: 8.5 to 35 VDC at power supply terminals  
 ACCURACY: ±0.1% of span, includes effects of hysteresis, repeatability, and linearity  
 WORKING TEMPERATURE: -13°F to +185°F (-25°C to +85°C)  
 STORAGE TEMPERATURE: -85°F to +257°F (-64°C to +125°C)  
 THERMAL ZERO SHIFT: 0.01% of span per °C  
 THERMAL SPAN SHIFT: 0.01% of span per °C  
 COMMON MODE REJECTION: 115db @ 60 Hz  
 3 db FREQUENCY: 3 Hz  
 ISOLATION: 500 V RMS  
 WEIGHT: 1.5 oz.

INPUT:  
 SM869-I 4 to 20 mA  
 SM869-V 0 to 10 Volts DC  
 Input Resistance 12.7 Ohms (4 to 20 mA)  
 200 Kilo-Ohms (0 to 10 VDC)

OUTPUT:  
 Output Range: 4 to 20 mA  
 Output Limits: 3 to 28 mA typical

LOAD RESISTANCE EFFECT: <0.01% of span per 300 Ohm load change  
 POWER SUPPLY EFFECT: <0.002% of span per volt change  
 MAXIMUM LOAD RESISTANCE:  $R_{MAX} = (\text{supply voltage} - 8.5V) \div (20 \text{ mA})$   
 WARRANTY: 2 years



## **DIMENSIONS AND FIELD WIRING**

### **MOUNTING OPTIONS**

- M31S Snap Track Mount
- M31D DIN Rail Mount
- CHN Nylon Connection Head
- CHA Aluminum Connection Head
- CHX Explosion Proof Head

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