



# SC-IF Series

*Current to Frequency Signal Conditioner*



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**Description:**

The SC-IF loop powered signal conditioner whose function is to provide a 0 - 10kHz frequency output signal in response to a 4-20 analog input.

The SC-IF appears to the input loop as a series shunt resistor. A small sense resistor is used to measure the input current. The input loop derives its power from the input current loop.

This input current signal is then scaled and converted to a 0 to 10,000 Hz frequency signal by a Current to Frequency Converter. This frequency signal is then transmitted across an opto-isolator to the output stage.

The 10-50 mA range option is provided to enable the unit to perform range conversions as well as signal isolation.

**Specifications:**

**Analog Input**

Available Ranges: 4-20 mA (10-50 mA optional)

Input Type: Two Wire, Loop Powered

Equivalent Input Impedance: 525 Ω on 4-20 mA range  
210 Ω on 10-50 mA range

Operational Range: 3.5-33 mA

Over Current Protection: 2.5 times rated span

Reverse Polarity Protection

Isolation Voltage: 500 V

Input Loop Indicator: LED illuminates when loop is powered by proper polarity

**Pulse Output Option**

Output Type: Open Collector Transistor

Low Cutoff: 1% of full scale

Range: 0 to 10,000 Hz

Duty Cycle: 50/50 Duty Cycle (nominal)

Maximum Off Voltage: 30 VDC

Minimum On Current: 10 mA

Maximum On Voltage: 1 VDC

Temperature Effect: Less than 200 ppm/degree C

Reverse Polarity Protection

**Mounting Styles**

DIN Rail Mount: Plastic enclosure with a snap fastener for fitting to DIN 46 277 and DIN EN 50 022 assembly rails.

NEMA 4: 4.92" x 4.92" NEMA 4 Enclosure for wall mounting.

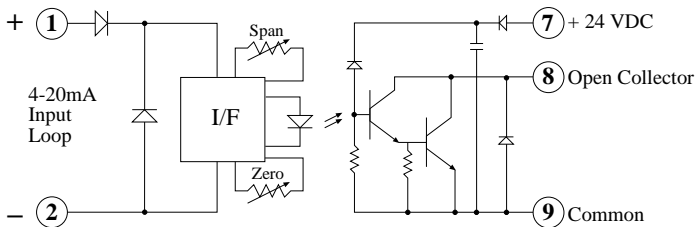
Explosion Proof: Aluminum enclosure for:  
Class I, Division 1, Groups B, C & D  
Class II, Division I, Groups E, F & G.

**Listing:** CE Compliant

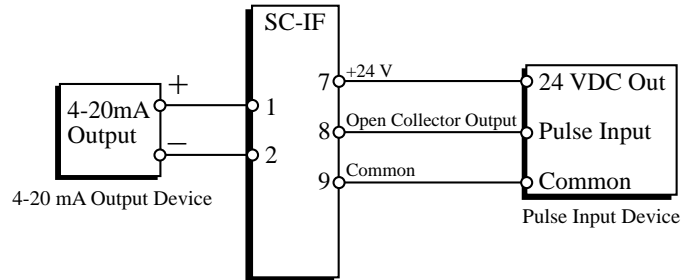
**Terminal Designations:**

- 1• 4-20mA INPUT +
- 2• 4-20mA INPUT -
- 3• N/C
- 4• N/C
- 5• N/C
- 6• N/C
- 7• DC Power (+)
- 8• Pulse Output
- 9• DC Power (-) / Pulse Output (-)

**Simplified Block Diagram**



**Typical Wiring Hookup**



## OUTPUT SETTINGS

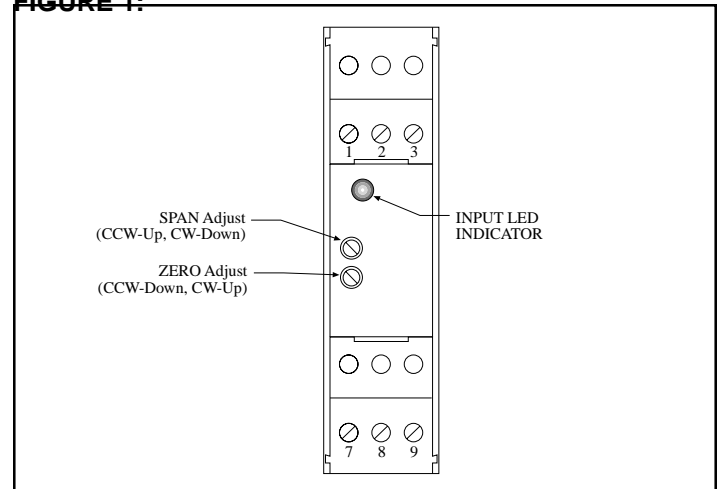
### **LED INDICATOR:**

The SC-IF has an LED indicators. The LED illuminates when at least 4mA is connected to the unit. The sole LED indicates that the unit is loop powered. To calibrate the unit, input 4mA and connect a frequency meter or rate indicator to the output.

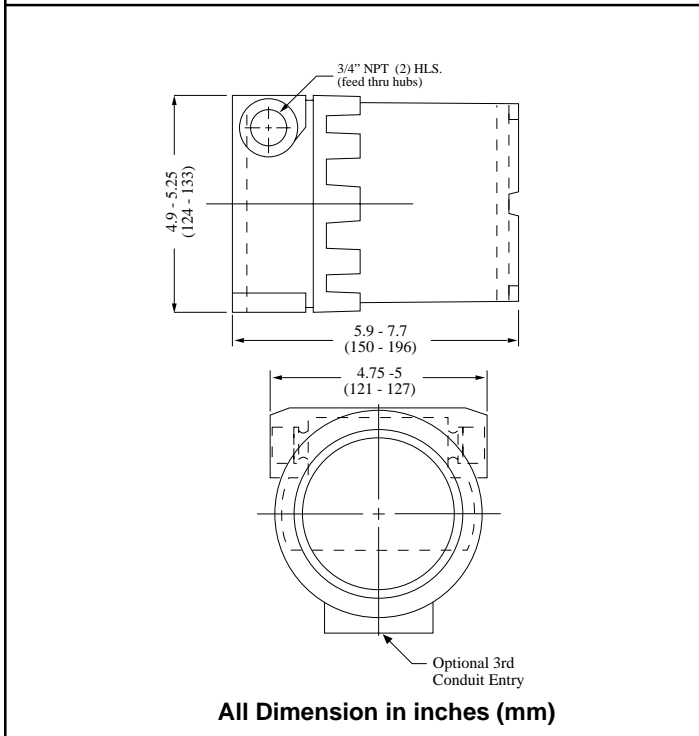
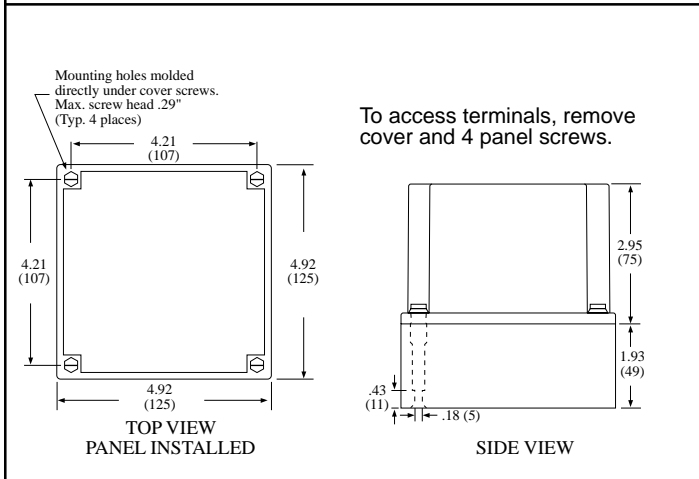
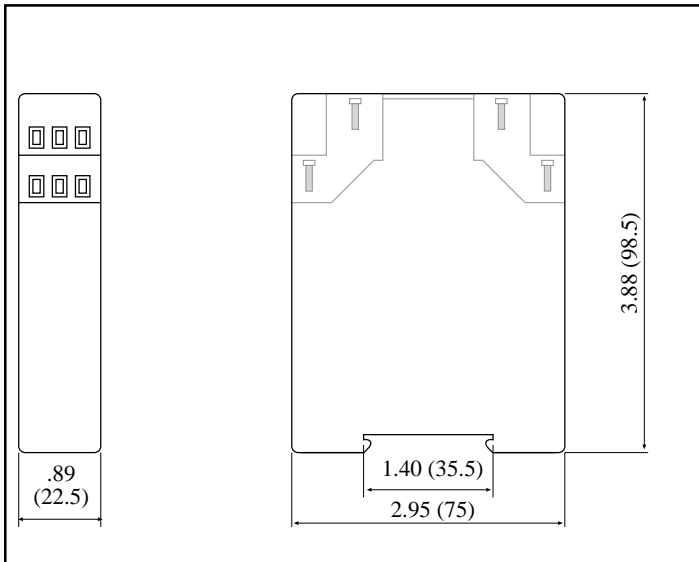
### **OUTPUT ADJUSTMENTS:**

The unit has two potentiometers for adjustment. The lower potentiometer controls the 4mA set point and the upper potentiometer controls the 20mA set point. To adjust the output, connect 4mA and adjust the lower potentiometer to obtain 0Hz. Then connect 20mA and adjust the upper potentiometer to obtain 10kHz.

**FIGURE 1:**



**Dimensions**



**All Dimension in inches (mm)**

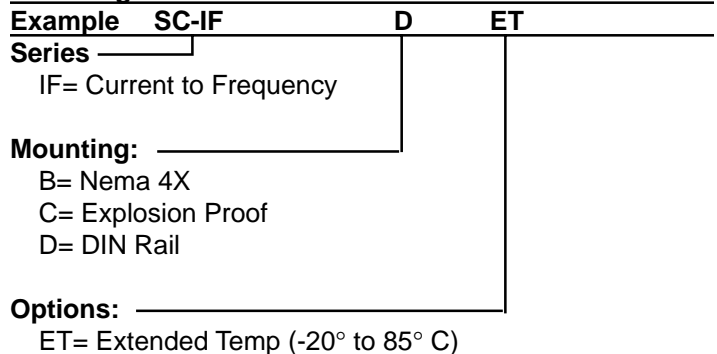
## WARRANTY

This product is warranted against defects in materials and workmanship for a period of two (2) years from the date of shipment to Buyer.

The Warranty is limited to repair or replacement of the defective unit at the option of the manufacturer. This warranty is void if the product has been altered, misused, dismantled, or otherwise abused.

**ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, ARE EXCLUDED, INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.**

**Decoding Part Number**



**Accessories: (add to end of part number)**

DR-4= 4" DIN Rail