

# **SC-II Series**

***Current to Current Signal Conditioner***

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**KEP**

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**DESCRIPTION:**

The SC-II is a DIN rail mount, loop powered current isolator. The SC-II provides an isolation barrier of 500V from the input to the output. The SC-II standard configuration is: 4-20mA IN and 4-20mA out. The following Configurations are available with solder jumpers.

INPUT	OUTPUT
4/20mA	10/50mA
10/50mA	4/20mA
10/50mA	10/50mA

**APPLICATION:**

Loop powered isolators are used to isolate process signals transmitted between field instruments, KEP Flow Computers, Programmable Logic Controllers, Distributed Control Systems, And Data Acquisition Systems. Field devices such as flow, level, and temperature transmitters, are used to monitor and control a manufacturing process. The isolation provided by the SC-II prevents ground loops and also provides protection against high voltage and current spikes which are detrimental to digital signals.

**OPERATION:**

The SC-II operates as a two-wire transmitter. The input derives its power from 4-20mA current loop. The output is typically powered by a 24VDC power supply, thus allowing 14VDC for other devices connected in the current loop. The output of the SC-II is isolated from the input and is also protected from reverse polarity. Zero and Span pots are provided for calibration.

**SPECIFICATIONS:**

**Operating Temperature**

32° F (0°C) to 158°F (70°C)

**Analog Output**

Accuracy: ± 0.1% Span (@ 20° C)

Output Type: Two Wire, Loop Powered  
 Range: 4-20 mA (10 - 50 mA optional)  
 Compliance Voltage: 10 to 40 VDC  
 Loop Burden: < 10 VDC  
 Trim Controls: Zero & Span, non-interacting  
 Span (20 mA) Trim Range: 50% to 100% of full scale  
 Linearity: < ±0.1% Span  
 Output Voltage Effect: < ± 0.002% Span/Volt  
 Temperature Effect: < 200 PPM/C°  
 Reverse Polarity Protected  
 Noise Content: < 0.2% Span  
 Response Time: 0.1 second (1 sec. jumper selectable)  
 Over-current Limiting: 35 mA

**Mounting Styles**

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

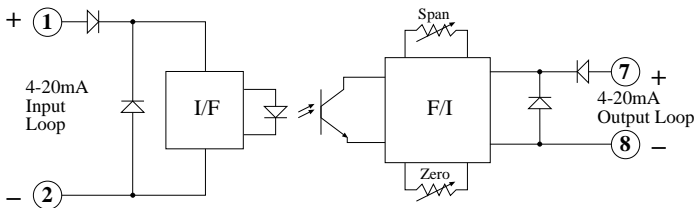
NEMA 4X: 4.92" x 4.92" NEMA 4X Enclosure for wall mounting.

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

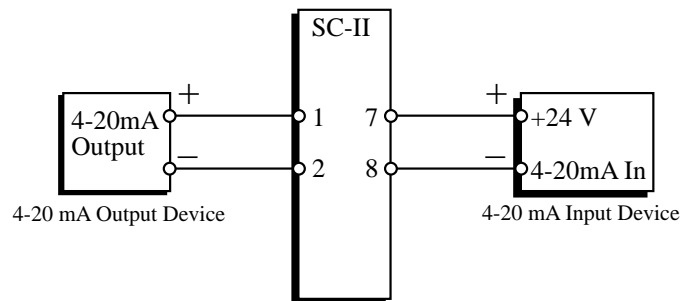
**Terminal Designations**

- 1• 4-20mA INPUT +
- 2• 4-20mA INPUT -
- 3• N/C
- 4• N/C
- 5• N/C
- 6• N/C
- 7• 4-20mA OUTPUT +
- 8• 4-20mA OUTPUT -
- 9• N/C

**Simplified Block Diagram**



**Typical Wiring Hookup**



## INPUT & OUTPUT SETTINGS

### REMOVING THE CASE:

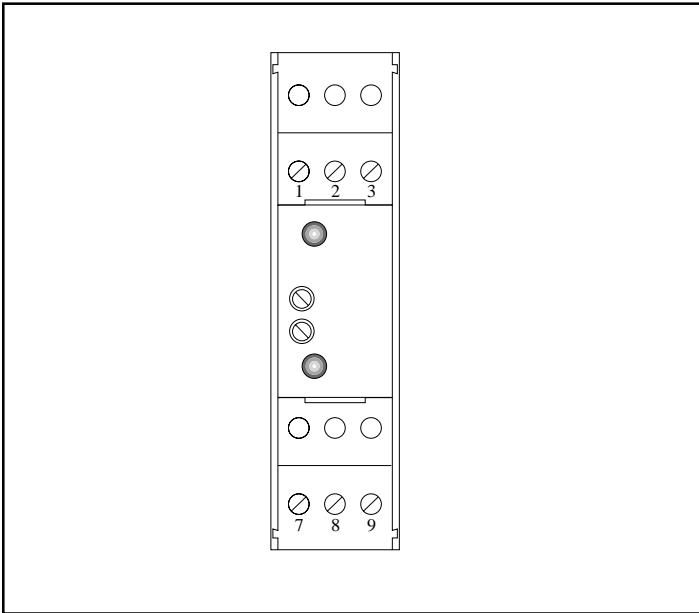
The case must be removed to change switch settings. To remove the case proceed as follows:

Refer to FIGURE 1. Using finger tips, carefully pry the case away from the terminal blocks (as shown with dotted lines).

Pry far enough to release the restraining clips on both sides of the case.

Press up on terminal block with thumbs. The assembly will pop out allowing it to be removed from case.

**FIGURE 1**



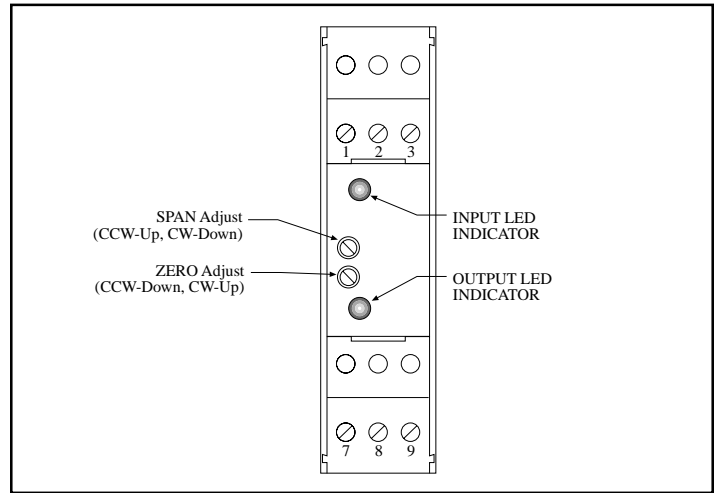
### LED INDICATOR:

The SC-II has two LED indicators. The upper LED illuminates when at least 4mA is connected to the unit. The lower LED illuminates when the output side is powered.

### 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. Then connect 20mA and adjust the upper potentiometer.

**FIGURE 2:**



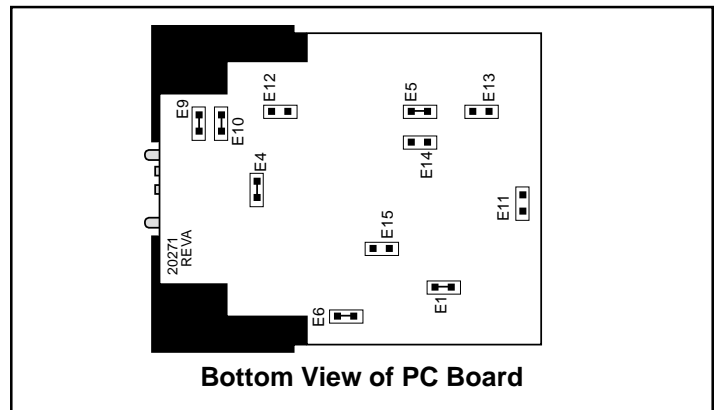
### RESPONSE TIME SETTING:

Jumper J1 controls the output response time.

JUMPER J1	RESPONSE TIME
OFF	0.1 second (DEFAULT)
ON	1 second

Close Jumper J1 to provide damping of the output resulting in a 1 second response time.

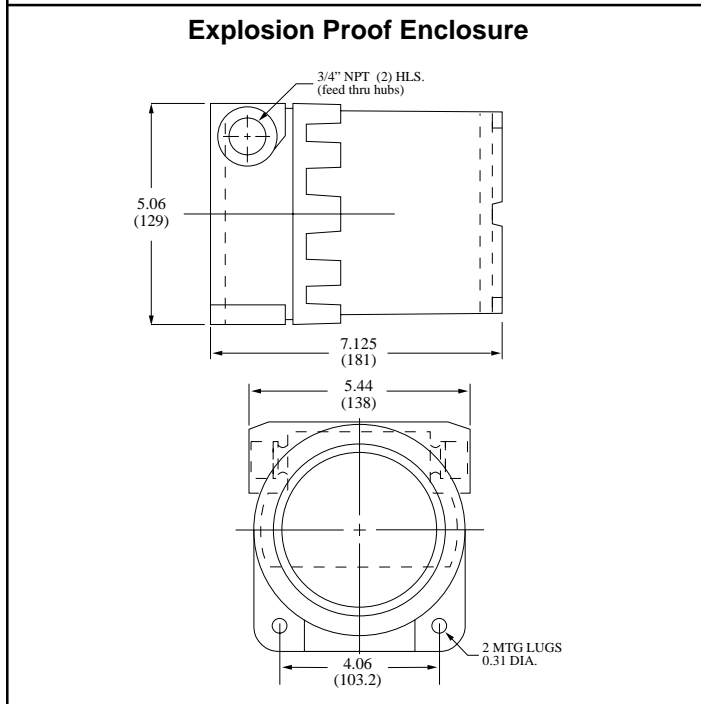
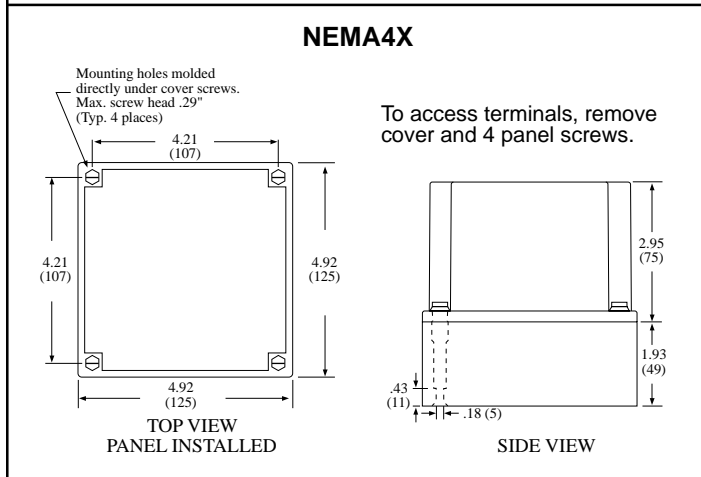
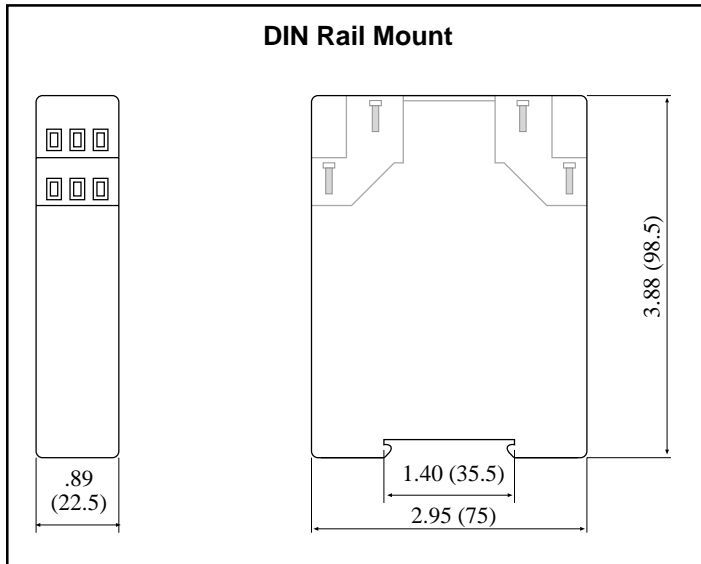
### Input/Output Jumper Settings:



Input-Output	E1	E4	E5	E6	E9	E10	E13	E14	E15
4/20-4/20	X	X	X	X	X	X			
4/20-10/50	X	X	X	X	X	X	X	X	
10/50-4/20	X	X	X	X	X	X			X
10/50-10/50	X	X	X	X	X	X	X	X	X

X = Jumper Closed

**Dimensions**



**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.

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**Decoding Part Number**

<b>Example</b>	<b>SC-II</b>	<b>D</b>	<b>ET</b>
<b>Series</b>	II= Current to Current		
<b>Mounting:</b>	B= Nema 4X C= Explosion Proof D= DIN Rail		
<b>Options:</b>	ET= Extended Temp (-20° to 85° C)		
<b>Accessories:</b> (add to end of part number)	DR-4= 4" DIN Rail		