



# SIGNAL ISOLATOR

## TYPE 107-3A

- \* **Low-cost 3 port isolation**
- \* **Wide range of inputs & outputs**
- \* **Current sink or source outputs**
- \* **Reversing signals option**  
e.g. 4-20mA in 20-4mA out
- \* **AC or DC powered versions**
- \* **Wall or DIN rail mounting**



**This instrument provides cost-effective signal repeater or signal converter functions. The input, outputs and power supply are electrically isolated from each other making these units ideal for preventing or solving erratic measurements due to earth loops.**

Choice of a wide range of input and output signals is available including bi-directional and other non-standard signals.

For current inputs, when the plug-in module is removed, signal loops are maintained via a base section mounted shunt resistor. This resistor is matched to the unit for optimum accuracy.

A current sink output version is available which functions as a two-wire transmitter and sinks 4-20mA from an external power source.

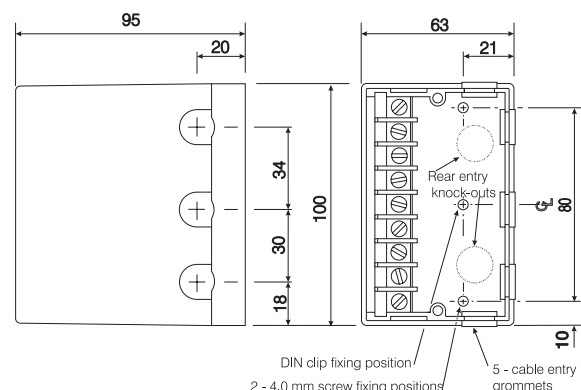
### TYPICAL APPLICATIONS

- Overcoming problems where a common mode voltage exists between the input and output.
- Solving current loop loading problems.
- Isolating and converting dangerous voltages to safe levels.
- Converting voltage signals to current or current signals to voltage.
- Interfacing field sensors, transducers and transmitters with indicators, PLCs, and other process control instrumentation.

### Information Required When Ordering

- Input signal (see specification overleaf)
- Output signal (see specification overleaf)
- Supply voltage and frequency
- Wall or DIN Rail Mounting

### DIMENSIONS



## SPECIFICATION

### INPUTS

0-10 mA into 100 ohms  
0-20 mA into 50 ohms  
4-20 mA into 62.5 ohms  
0-5v into greater than 1 M ohms  
1-5v into greater than 1 M ohms  
(Other inputs available to order)

### OUTPUTS

0-10 mA into 2000 (5000) ohms max.  
0-20 mA into 1000 (2500) ohms max.  
4-20 mA into 1000 (2500) ohms max. } figures in  
0-5v into 500 ohms min. } brackets are  
1-5v into 500 ohms min. } options  
Current Sink 4- 20 mA @ 50 Volts max.  
(Other outputs available to order)

### CALIBRATED ACCURACY

Set at 100% to be within  $\pm 0.1\%$  FSD

### LINEARITY ERROR

$\leq \pm 0.1\%$  FSD.

### SUPPRESSION/ELEVATION ERROR

$\leq \pm 0.1\%$  FSD.

### CURRENT INPUT SHUNT ERROR

For current inputs, the isolator and a shunt resistor (mounted in the base section of the module) are calibrated as a matched pair. An error of  $\leq \pm 0.1\%$  can be expected if the instrument is used with an unmatched input resistor.

### OUTPUT RIPPLE

$\leq 0.2\%$  RMS of FSD.

### LOAD RESISTANCE EFFECT

$\leq 0.001\%$  of span/100 ohms change.

### ISOLATION

The input and output are isolated from each other and the power supply.  
Maximum Voltage 250V RMS or 400V DC  
Resistance between input, output(s) or power supply  $\geq 50 \times 10^6$  ohms measured at 1000V DC.

### STABILITY

Over 24 hours  $\pm 0.1\%$  FSD.  
Over 1 year  $\pm 0.25\%$  FSD.

### INPUT OVER-RANGE CAPABILITY

Voltage inputs 250 volts RMS or DC max.  
Current inputs: 0.5W max.

### TEMPERATURE COEFFICIENTS

Zero:  $\pm 0.02\%$  span/ $^{\circ}$ C  
Span:  $\pm 0.02\%$  span/ $^{\circ}$ C

### TEMPERATURE RANGE

Operating:  $-10^{\circ}$ C to  $+60^{\circ}$ C  
Storage:  $-20^{\circ}$ C to  $+70^{\circ}$ C

### SUPPLY VOLTAGE REJECTION

Output change  $< 0.01\%$  span/% supply change.

### RESPONSE TIME

100ms standard; 5ms if input filter not fitted.

### POWER SUPPLY

A LED indicates when the power supply is connected.  
**Standard AC:** 110, 220 or 240V  $\pm 10\%$  50/60Hz; 5VA  
Fuse (internal) 100mA quick-blow (20 x 5mm)  
**Optional DC:** 12, 24 or 48V  $-10\%$  to  $+20\%$ ; 3.5W  
Fuse (internal) 250mA anti-surge (20 x 5mm)

### ENCLOSURE DETAILS

Base: Phenol (black)  
Cover: Polystyrol (light grey)  
Protection: IP40

### SAFETY & EMC

Safety: EN61010-1 Immunity: EN50082-1  
Emissions: EN50081-1 CE certified

### WEIGHT

Approximately 0.5 kg

### TERMINAL CONNECTIONS

#### Supply

1 — Line	} AC } Mains } Supply	Positive (+) Negative (-) Earth	} DC } Supply } Option
2 — Neutral			
3 — Earth			

#### Output

4 — Output (-)  
5 — Output (+)  
  
6 — reserved

#### Input

7 — Input signal (+)  
8 — Input signal (-)  
  
9 — reserved

**Please Note:** Options are not available unless specified at time of order.



**WARNING! THIS UNIT CAN BE MAINS POWERED, AND ALL INPUTS TO IT MUST BE ISOLATED FROM DANGEROUS VOLTAGES BEFORE THE FRONT COVER IS REMOVED. LIVE TERMINALS WILL BE EXPOSED.**

Continuous development may necessitate changes in these details without notice

# SIL

**STROUD INSTRUMENTS LTD.**  
36-40 Slad Road, Stroud, Glos. GL5 1QW, England  
Telephone: +44 (0)1453 765433 Fax No: +44 (0)1453 764256  
[www.sil.co.uk](http://www.sil.co.uk)