



# LOOP ISOLATOR

## TYPE 140-3

### FUNCTION

This unit is designed to be used as a 4 - 20mA signal repeater where there may be a common mode voltage between the input and output. The unit is self-powered, taking its power from the input circuit. The output is galvanically isolated, by transformers, from the input.

### APPLICATION

In process control systems, where a variety of signals all have to be related to a common earth or zero voltage reference, problems often arise when two or more signals are earthed at different points in the system. The use of a 140-3 isolator in such signal lines will allow common mode voltages to exist while still permitting the transfer of signals from input to output. Typical uses include the isolation of process control signals to PLC's, computers and telemetry outstations etc.

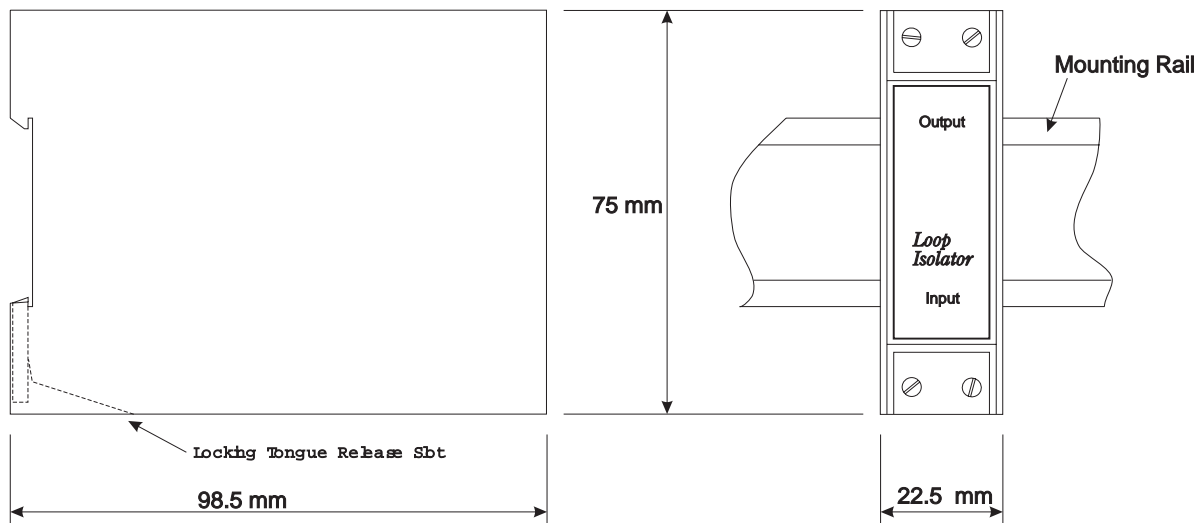
### INSTALLATION

The unit is designed to be clipped to a mounting rail ( to BS5584:1978, DIN46277-3, EN50 022 ). Screw terminals for the input and output connections are provided on the front of the unit. The unit may be removed from the rail by inserting



- \* **Self Powered**
- \* **Low Input Potential Drop - Low Loop Losses**
- \* **Quick and Easy Installation**
- \* **Low Cost**

a small bladed screw driver into the release slot under the unit. Applying gentle upward pressure to the handle of the screwdriver will release the locking tongue and enable the unit to be pushed up and away from the mounting rail.



## **SPECIFICATION**

### **INPUT**

4 - 20 mA. Maximum input = 14 Volts

### **INPUT PROTECTION**

The input voltage is limited to 18 Volts when the output is open circuit. The maximum current which can be accepted is 30mA.

### **OUTPUT**

4 - 20 mA into 0 - 500 ohms

### **ERROR**

≤ 0.2% of Full Scale with output load of 250 ohms.

### **LOAD RESISTANCE EFFECT**

≤ ± 0.2% Full Scale for 10 ohms to 250 ohms  
≤ ± 0.1% Full Scale per 100 ohms for 250 ohms to 500 ohms.

### **STABILITY**

Over 24 hours ± 0.1% Full Scale.

### **RESPONSE TIME**

100 ms.

### **INPUT POWER LOSS**

Voltage drop ≤ 2 Volts +  $V_o$ , where  $V_o$  is the voltage drop across the output terminals.

eg Voltage drop across input terminals ≤ 2V at 20mA with an output load of zero, or 12V maximum at 20mA with an output

### **ISOLATION**

(measured at 1000 Vdc)  
≥ 50 x 10<sup>6</sup> ohms in parallel with 4700pF.

### **TEMPERATURE RANGE**

Operating: - 10°C to + 60°C  
Storage: - 20°C to + 70°C

### **TEMPERATURE COEFFICIENTS**

Zero: ± 0.02% span / °C  
Span: ± 0.02% span / °C

### **WEIGHT**

Approximately 107g

### **ENCLOSURE**

Protection: Enclosure - IP40

Terminals - IP20

Material: Enclosure - Polycarbonate (30% GFR),  
RAL 7032, UL94 V-1

Colour - light grey

Terminal Housing Polycarbonate

UL94 V-2

Colour - Black

Terminals: To suit wire with cross section  
2.5mm<sup>2</sup> max.

Continous development may necessitate changes to these details without notice.

The logo for Stroud Instruments Ltd. (SIL) features the letters 'SIL' in a large, bold, white, stylized font with a blue outline, set against a blue background.

**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)