

# SIL

## HIGH SELECTOR TYPE 112-21 LOW SELECTOR TYPE 112-20

### FUNCTION

To provide an output which is equal to the highest value (112-21) or the lowest value (112-20) of the present input signals.

Up to six inputs can be accepted, and will usually be of the same spans. e.g. all 0-10 mA or all 4-20 mA.

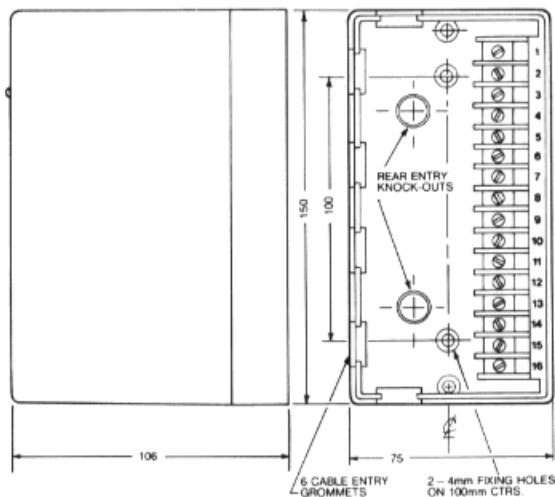
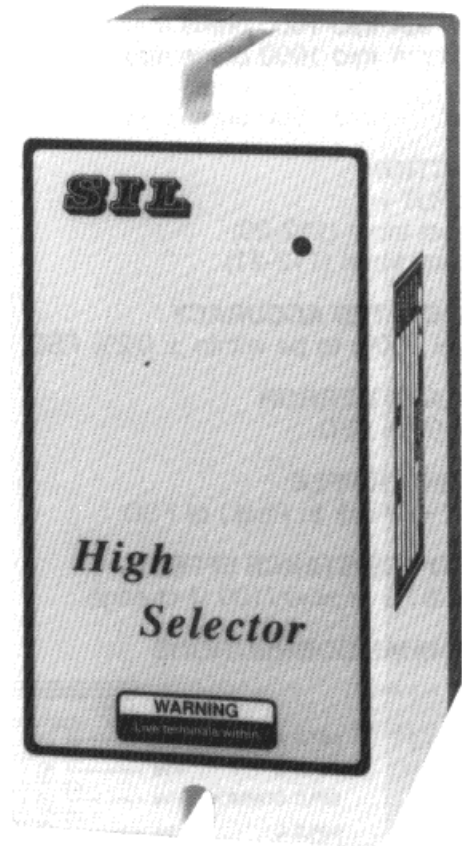
### DESCRIPTION

The circuit consists of six identical input amplifiers, configured as precision diodes, the outputs of which are connected to a common selector bus. The selection of either the highest or lowest level is determined by the polarity of the diodes.

The output from the selector bus drives a transistorised output stage giving a voltage or current output, which is isolated from the input.

All input commons must be able to be connected together. If the application will not permit this an isolator e.g. type 107-3, can be used to isolate the signals.

All inputs should be standardized i.e. of the same current or voltage span (e.g. all 0-10 mA, or all 4-20 mA).



Protection to IP 40

### INSTALLATION

The unit is designed to be fitted on any flat surface using two screws. To mount, undo the two screws on the lid. The light grey top section can now be disconnected from the dark base by pulling it away from the socket in the base section. The base may now be screwed down and wired.

An alternative method of fixing is to use a special clip (optional extra) which enables the unit to fit on a DIN rail.

### ORDERING INFORMATION

| TYPE NUMBERS | Function<br>High-21<br>Low-20 | Number of<br>Inputs<br>(2-6) | Input<br>Signals<br>e.g. all<br>4-20 mA | Output<br>Signal<br>e.g.<br>0-10 mA | Supply<br>Voltage<br>and<br>Frequency |
|--------------|-------------------------------|------------------------------|---|-------------------------------------|---------------------------------------|
| 112          |                               |                              |   |                                     |                                       |

## SPECIFICATION

### INPUTS (other inputs available to order)

0-10 mA into 100  $\Omega$   
0-20 mA into 50  $\Omega$   
4-20 mA into 62.5  $\Omega$   
0-5v into  $>1M \Omega$   
1-5v into  $>1M \Omega$

### OUTPUTS (Others can be provided)

0-10 mA into 2000 ohms max.  
0-20 mA into 1000 ohms max.  
4-20 mA into 1000 ohms max.  
0-5v into 500 ohms min.  
1-5v into 500 ohms min.

### FUNCTION

OUTPUT =

Lowest Input (112-20)

Highest Input (112-21)

### CALIBRATED ACCURACY

Set at 100% to be within  $\pm 0.2\%$  FSD.

### LINEARITY ERROR

$\leq \pm 0.1\%$  FSD.

### OUTPUT RIPPLE

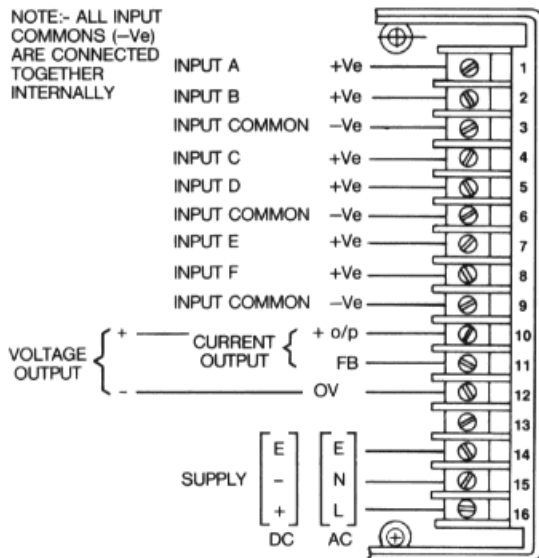
$\leq 0.1\%$  (Peak to Peak) of FSD.

### LOAD RESISTANCE EFFECT

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

### TERMINAL CONNECTIONS

NOTE:- ALL INPUT COMMONS (-Ve) ARE CONNECTED TOGETHER INTERNALLY



### ISOLATION

The inputs are commoned together, but are isolated from the output, and the power input. Maximum voltage 250V RMS or 400V DC.

Resistance between input, output, or power supply  $\geq 1 \times 10^9$  ohms measured at 500V DC.

### STABILITY

Over 24 hrs  $\pm 0.05\%$  FSD.

Over 1 year  $\pm 0.1\%$  FSD.

### INTERFERENCE REJECTION

Filtering is incorporated to reject R.F. and other industrial noise.

### SERIES MODE REJECTION

$\leq 0.2\%$  error for 50 Hz RMS series mode signal equal to half span.

### INPUT PROTECTION

Voltage inputs 250V RMS or DC.

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  $\leq 0.01\%$  span / % supply change.

### POWER SUPPLY

AC 110/240V  $\pm 10\%$  50/60 Hz 5VA (standard).

DC 12V or 24V ( $-10\%$  to  $+20\%$ ), 3.5 Watts (option).

### POWER SUPPLY INDICATOR

A light emitting diode.

### FUSE

Size 20 x 5mm

100 mA Quick blow for 110/240V 50 Hz.

250 mA Anti surge for 24V DC.

500 mA Anti surge for 12V DC.

### WEIGHT

Approximately 600 grams.

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

Continuous development may necessitate changes in these details without notice.

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