

SIL

COMPARATOR

TYPE 112-22

FUNCTION

To compare two signals, and provide an output when one exceeds the other by the set amount.

DESCRIPTION

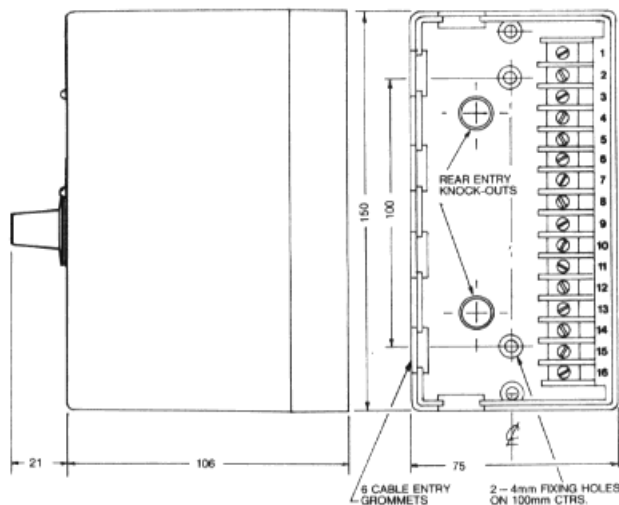
The circuit is configured, such that the two input signals are subtracted, and compared continuously with a reference value. When the magnitude of this difference exceeds the reference value, one of the two output relays will be energised. i.e. Relay A or Relay B.

Relay A will normally be energised when signal A is greater than B. Relay B will normally be energised when signal B is greater than A.

If required, the relays can be set to operate in reverse mode to the above, the relay state being selected by slide switches on the printed circuit.

To reject unwanted noise and prevent the output relays from chattering, a small amount of hysteresis is added to the set point (reference) value. This is internally pre-set on two hysteresis potentiometers.

The reference value is adjusted with the knob and dial on the front panel. When this dial is set to 25%, for example, one of the signals must exceed the other by 25% of their spans, to operate either relay. When the difference between the signals is less than 25%, neither relay will be energised.



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 cover, which can now be lifted away from the base. 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.

SPECIFICATION

INPUTS

0-10 mA into	100 Ω
0-20 mA into	50 Ω
4-20 mA into	62.5 Ω
0-5v into	>200 K Ω
1-5v into	>200 K Ω

OUTPUTS

Relays with single pole change-over contacts and normally open contact rated at:-

- 5A @ 250V AC resistive or
- 2.5A @ 24V DC resistive.

HYSTERESIS

This is set during calibration at $\pm 1\%$ of span as standard. The amount of adjustment on the internal potentiometers give a maximum hysteresis of $\pm 5\%$.

RELAY MODE

This is set by operating the two slide switches on the printed circuit board. (Fitted near the hysteresis setting potentiometers). To gain access to these switches, isolate all supplies to the unit. Unscrew the two cover fixing screws. Pull the front unit away from the terminal base. The thin plastic plate now visible may be removed by pulling the long sides of the cover apart slightly, releasing the interlocking tongue and groove. The switches can now be seen, and set as desired.

SET POINT

Selected by self-locking knob and dial on the front of the module, scaled 0-100. Other scales can be provided as an optional extra. 10 Turn dials and potentiometers can be fitted as an optional extra.

INDICATORS

These are light emitting diodes which are illuminated when the relays are energised.

ISOLATION

The outputs are isolated from the supply and inputs. Input A is not isolated from Input B.

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 AC REJECTION

Sufficient filtering is incorporated such that a $\pm 1\%$ hysteresis setting allows 50/60 Hz series mode signals with ptp amplitude equal to 5x full scale to be rejected.

COMMON MODE REJECTION

<0.2% error is caused in the set point, for 250V RMS, 50/60 Hz, or 400V DC, common mode inputs.

INPUT OVER-RANGE PROTECTION

240 volts RMS or DC (*voltage inputs only*).

TEMPERATURE COEFFICIENTS

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

TEMPERATURE RANGE

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

SUPPLY VOLTAGE REJECTION

Span change <0.01% span / % supply change.

POWER SUPPLY

- AC 110/240V $\pm 10\%$ 50/60 Hz 5VA (standard)
- DC 12V or 24V -10% $+20\%$ 3.5 Watts (option)

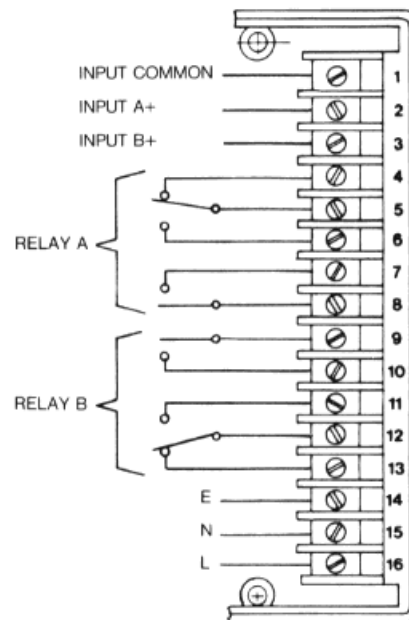
FUSE

- 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

750g.

TERMINAL CONNECTIONS



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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