

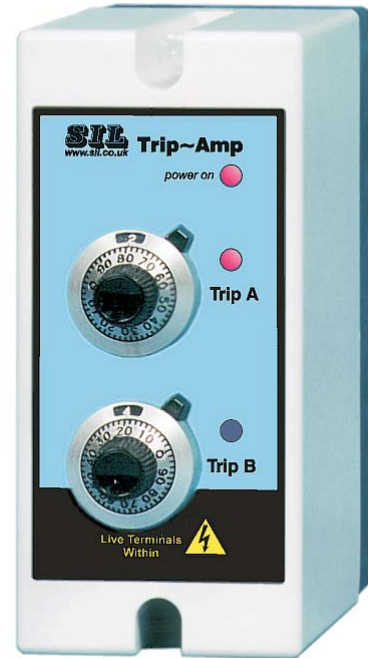
TRIP-AMPLIFIERS

Single Point Types B12-ST2, B12-ST2/K
Dual Point Types B12-DT2, B12-DT2/K

- 24VDC Loop Supply
- Wide Range of Input Signals
- Universal AC/DC Powered (85 - 260 VAC, 24 - 200 VDC)
- Single and Dual Versions
- User Selectable High / Low and Interlock Functions
- Optional 10 Turn Dial Versions
- Wall or DIN rail mounting

The B12 Single and Dual Trip Amplifiers provide voltage free contacts that change state when the input signal passes the adjustable set-point.

These trip amplifiers can be applied to numerous applications including detection of high/low alarm conditions and duty-standby pump control.



Dual version with ten-turn dials

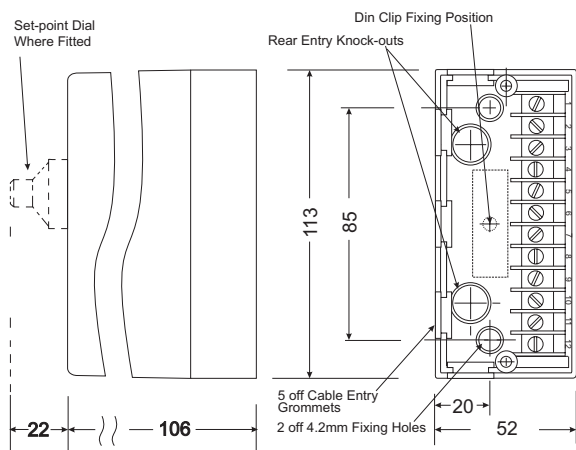
Trip amplifiers Types B12-ST2, B12-DT2

These are low-cost versions where the set-point is set by a multi-turn trim pot accessed through the front panel.

Trip amplifiers Types B12-ST2/K, B12-DT2/K

These versions provide a front panel mounted ten-turn precision control knob(s) scaled 0 - 100% of the input signal. Locking mechanisms are provided to prevent accidental movement of the knob setting.

Dimensions



Typical applications

- Detection of high or low alarm conditions.
- With an input from a level sensor; provide pump control to maintain a level between the high and low set points (dual version with interlock).
- With an input from a flow sensor and cycling on-off timer, control the position of a penstock or motorised valve to maintain a fixed flow rate.
- With an input from a temperature or pressure transducer; start a process at one set point, with shut down if the high point is reached (dual trip version).
- With an input signal from a pH monitor; provide control of a dosing pump.
- Replacement for vane type switches.

Information required when ordering

- Input Signal
- Trip Type i.e.
B12-ST2 Single Trip (*blind set-point*)
B12-ST2/K Single Trip with Ten-turn Dial
B12-DT2 Dual Trip (*blind set-points*)
B12-DT2/K Dual Trip with Ten-turn Dials
- Whether Interlock is Required (Dual version)
- Whether High or Low Type

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 200 k ohms
1-5v into greater than 200 k ohms
0-10V into greater than 200 k ohms
The precision set-point dials on the B12-ST2/K and B12-DT2/K types are calibrated to the specified input range

Output

Relay with single pole change-over contact
Contact rating: 5A @ 250V AC resistive
2.5A @ 24V DC resistive

Transmitter Power Supply

24VDC 25mA

Hysteresis

Approximately $\pm 1\%$ of span.

High / low selection

Set by internal programming links. One link for each trip point.

Interlock operation (Dual version only)

Enabled by internal programming link.
Interlock modes are set by the High / Low programming links and initiated by the input signal reaching one of two conditions:-
(i) High set-point - released by the Low set-point
(ii) Low set-point - released by the High set-point

Set points

B12-ST2 Single Trip	}	Set by multi-turn trim pots through the front panel
B12-DT2 Dual Trip		
B12-ST2/K Single Trip	}	Set by ten-turn precision dial(s) scaled 0 - 100%
B12-DT2/K Dual Trip		

Isolation

The outputs are isolated from the supply and input.

Repeatability

The switching point will repeat within $\pm 0.1\%$ of span.

Interference Rejection

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

Series mode ac rejection

<0.2% error is caused in the set point for 50/60 Hz series mode signals of peak to peak amplitude equal to $2\frac{1}{2}$ times full scale.

Common mode rejection

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

Input overrange protection

Voltage Inputs: 240 volts RMS or DC
Current Inputs: 50mA

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 $+70^{\circ}\text{C}$

Power supply

85 - 260 VAC 50/60Hz, 24-200VDC (3W nominal)

Indicators

A 'power on' indicator is provided and also an indicator for each trip point which illuminate when the associated output relay is energised.

Enclosure details

Material

Base - ABS (glass fibre reinforced), Colour: black

Cover - Polystyrene, Colour: light grey

Protection

The module offers protection to IP 40

Weight

Approx. 0.5kg

Electrical connections



WARNING: these details are provided for pre-sales information only. Installation must be carried out in accordance with the User Guide.

Inputs

- 1 — 24V Transducer supply
- 2 — Input Signal (+)
- 3 — Input Signal (-)

Relays

- | | |
|---------------------|------------------------------------|
| 4 — Normally Closed | } Trip A Relay |
| 5 — Relay A Common | |
| 6 — Normally Open | |
| 7 — Normally Open | } Trip B Relay (Dual Version Only) |
| 8 — Relay B Common | |
| 9 — Normally Closed | |

Supply

- 10 — Earth
- 11 — Neutral / — DC
- 12 — Line / + DC



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

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