# TRIP-AMPLIFIERS

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

- ***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***


*Dual version with ten-turn dials*

**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.**

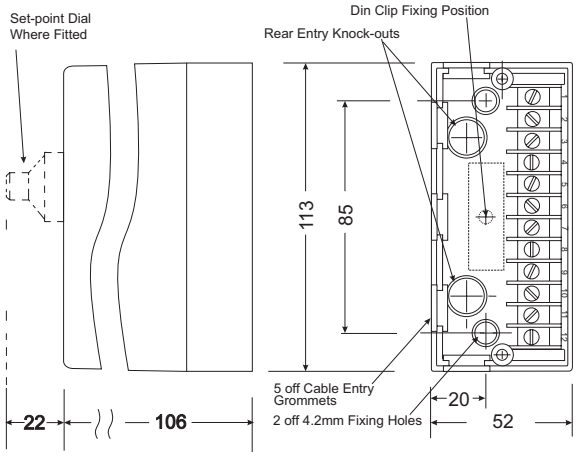
### Trip amplifiers Types B12-ST2, B12-DT2

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

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

### Isolation
The outputs are isolated from the supply and input.

### Repeatability
The switching point will repeat within ±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 2½ 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: ±0.02% span/°C
Span: ±0.02% span/°C

### Temperature range
Operating: -10°C to +60°C
Storage: -20°C to +70°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
5 — Relay A Common
6 — Normally Open
} Trip A Relay

7 — Normally Open
8 — Relay B Common
9 — Normally Closed
} Trip B Relay (Dual Version Only)

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

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