



TRIP-AMPLIFIERS

Single Point • Dual Point

112-2S-1 Single Trip, 112-2S-2 Dual Trip

- **Universal AC/DC powered (85-260VAC, 24-200VDC)**
- **Wide range of input signals**
- **Single and dual versions**
- **Transducer supply on dual trip**
- **10 turn precision set-point dials**
- **Wall or DIN rail mounting**

The 112 Single and Dual Trip Amplifiers provide voltage free contacts that change state when the input signal passes an adjustable reference set-point. These trip amplifiers can be applied to numerous applications including detection of high/low alarm conditions and duty-standby pump control.

A front panel mounted ten-turn precision control is provided for each set-point. Control dials are scaled 0 - 100% of the input signal. Locking mechanisms are provided to prevent accidental movement of the knob setting.

Each channel alarm may be set to trigger either when the input signal is higher than the reference set-point ('High' type) or to energise when the input signal is lower than the set-point ('Low' type).

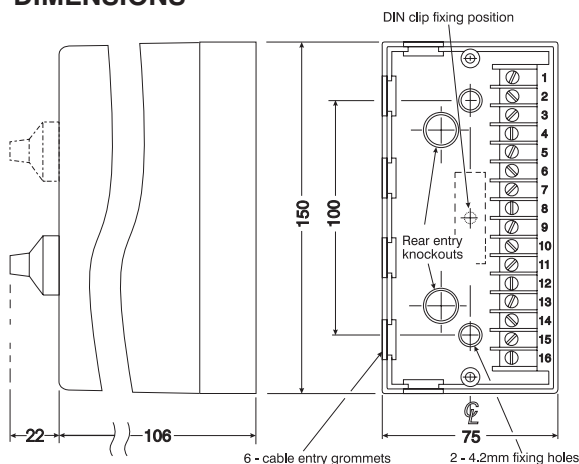
The dual version provides two set-points to monitor a single input signal. An 'interlock' function is provided on the dual trip version. When selected, Channel 'B' relay is energised and latched on when the input signal reaches one set point and will not switch off until the other set point is reached.



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 temperature or pressure transducer; start a process at one set point, with shut down if the high point is reached (dual version).
- With an input signal from a pH monitor; provide control of a dosing pump.
- Replacement for vane type switches.

DIMENSIONS



Information required when ordering

- Input Signal
- Trip Type i.e.
112-2S-1 Single Trip
112-2S-2 Dual Trip
- Whether interlock is required (dual version)
- Whether 'High' or 'Low' type
- Supply voltage and frequency
- Whether DIN rail mounting clip is required

INPUTS

others available to order

0 - 10 mA into 100 ohms; 0 - 20 mA into 50 ohms
4 - 20 mA into 62.5 ohms;
0 - 5 V into >200k ohms
1 - 5 V into >200k ohms; 0-10 V into >200k ohms

OUTPUTS

Single trip type 112-2S-1

Two single pole change-over contacts and two single pole contacts.

Dual trip type 112-2S-2

Each trip channel is provided with a relay with a single pole change-over contact plus a single pole contact
Contact rating: 5A @ 250V AC resistive; 2.5A @ 24V DC resistive

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

10 turn potentiometer with precision dial scaled 0-100

INDICATORS

Output relay energised - one for each each trip

HYSTERESIS

Set during calibration at $\pm 1\%$ of span as standard. Adjustment on the internal controls will give a maximum hysteresis of $\pm 5\%$.

INTERFERENCE REJECTION

Filtering is incorporated to reject RF and other industrial noise.

SUPPLY VOLTAGE REJECTION

Span change $< 0.01\%$ span /% supply change

SERIES MODE AC REJECTION

A hysteresis setting of $\pm 1\%$ will reject 50/60Hz series mode signals with peak to peak amplitude equal to 5 x full scale.

COMMON MODE AC REJECTION

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

REPEATABILITY

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

INPUT OVER-RANGE PROTECTION

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

ISOLATION

The output contacts are isolated from the supply and the inputs.

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, 24-200 VDC (3.5W nominal)

TRANSDUCER SUPPLY

24 VDC @ 20mA max.

WEIGHT

Approximately 750g

SAFETY & EMC

Safety: EN61010-1 Immunity: EN50082-1
Emissions: EN50081-1 CE certified

TERMINAL CONNECTIONS

Inputs

112-2S-1 Single

- 1 Transducer supply (+)
- 2 Input Signal 'B' (+)
- 3 Input Signal (-)

Outputs

Relay 1*

- 4 SPCO Normally Closed
- 5 SPCO Common
- 6 SPCO Normally Open
- 7 SP Common
- 8 SP Normally Open

Relay 2*

- 9 SP Normally Open
- 10 SP Common
- 11 SPCO Normally Open
- 12 SPCO Common
- 13 SPCO Normally Closed

* **NOTE** with the 112-2-1, relays 1 & 2 operate as one relay

Supply

- 14 Earth
- 15 Neutral / -DC
- 16 Line / +DC

112-2S-2 Dual

- 1 Transducer supply (+)
- 2 Input Signal (+)
- 3 Input Common (-)

Outputs

Channel A

- 4 SPCO Normally Closed
- 5 SPCO Common
- 6 SPCO Normally Open
- 7 SP Common
- 8 SP Normally Open

Channel B

- 9 SP Normally Open
- 10 SP Common
- 11 SPCO Normally Open
- 12 SPCO Common
- 13 SPCO Normally Closed



WARNING: 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

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