

## Dual Level Trip Amplifier

**BD120**

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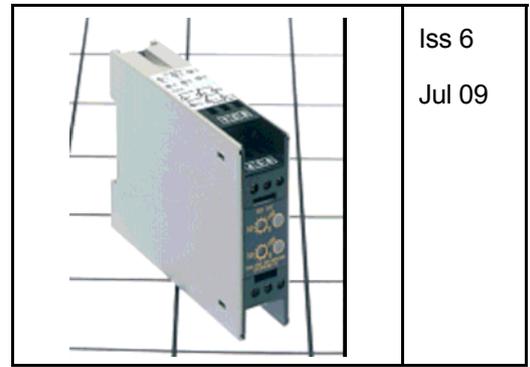
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**IEC61508: Typically, SIL2.** (Please contact Sales Office for details).

Function: Dual Level Trip Amplifier from a single process signal input. The trip action can be arranged so that the Alarm conditions can be above (High Trip) or below (Low Trip) the set points, and that the relays can be either normally energised to de-energise in the Alarm condition (Fail-Safe), or normally de-energised to energise in the Alarm condition (Non Fail-Safe).

Input option for Adder, Subtractor or Averager on mA or Voltage inputs only. The BD120 can only accept two inputs.

Options on 4 to 20mA input versions, Upscale Drive on loss of input signal.



### SPECIFICATIONS

Please note that the following are typical ranges. Other ranges available, please contact sales office.

#### INPUTS:

##### D C Current

Standard Ranges

0 to 10mA into 100 ohms

4 to 20mA into 62 ohms

Optional Ranges

0 to 1mA into 100 ohms

0 to 10mA into 10 ohms

4 to 20mA into 10 ohms

**Option: Upscale drive on loss of 4 to 20mA input signal**

Other current inputs as required

Minimum current 10µA,

Maximum current 100mA

##### D C Voltage

Range: -250 and +250 Volts DC

Minimum voltage span 5mV

Maximum voltage span 500V

Input Impedance: 1MΩ or greater

##### A C Current

0 to 1A

##### A C Voltage

0 to 250 V

#### Resistance (2 wire)

Between 0 and 20K ohms

Minimum span 5 ohms

Maximum span 20K ohms

#### Potentiometers (3 wire)

Between 0 and 10K ohms

Minimum span 10 ohms

Maximum span 10K ohms

#### Resistance Thermometers (RTDs, PT100s)

2 or 3 wire

100 or 130 ohms at 0°C

Measurable range, -200°C to +800°C

Minimum temperature span 10°C

Maximum temperature span 600°C

Input is linearised

#### Thermocouples

Type B, E, J, K, N, R, S & T

Temperature covered:

Type Range MinTemp Change

B 600 to 1800°C 400°C

E -260 to 1000°C 65°C

J -200 to 1200°C 80°C

K -260 to 1370°C 100°C

N 0 to 1300°C 150°C

R 50 to 1760°C 400°C

S 80 to 1760°C 400°C

T -260 to 400°C 100°C

Automatic cold junction compensation

Open circuit thermocouple monitoring

upscale or downscale drive

#### OUTPUTS:

##### Relay - Contacts

One SPCO relay per Trip

##### Response Time

30mS or better

##### Contact Ratings

Max current 2A

Max voltage 220V dc / 250V ac

Maxi load 60W 62.5VA

##### Switching Differential

0.5% of span approx

##### Switching Mode

Relay energises or de-energises on rising or falling signal as required

##### Set Points

270° screw driver potentiometer through front panel

##### Relay State Indication

Bi-colour red/green LED

Green = Stable State

Red = Alarm State

#### SUPPLY:

##### Power Supply Voltage

115 Volt AC ±15% 50/60 Hz

or

230 Volt AC ±15% 50/60 Hz

(To be specified at time of order)

Optional

24 Volt AC ± 15% 50/60 Hz

##### Power Required

3VA Maximum

#### GENERAL:

##### Temperature Coefficient

±0.1% of span/\_ 10°C

(for inputs > 100mV)

+ Cold junction error, for thermocouple inputs

##### Operating / Storage Temperature Range

0 to +45°C / -20 to +60°C

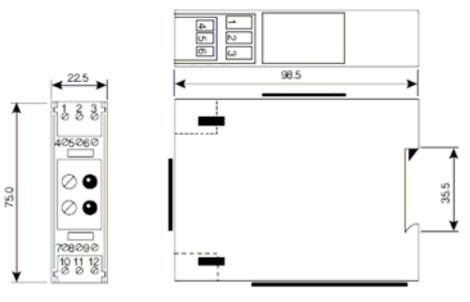
##### Operating / Storage Humidity Range

0 to 95% RH non-condensing

##### Weight

145 gms

### MECHANICAL DETAILS



### TERMINATION DETAILS

Terminal

1 Power Supply Neutral

2 Power Supply Live

3 Power Supply Earth

Inputs	AC Current	AC Volts	DC mA	DC mV/V	T/Cs	2 Wire Slidewire	3 Wire Pot	Resistance Thermometer	Dual Input
4	~	~	-ve	-ve	-ve	0%	0%		B+
5	~	~	+ve	+ve	+ve	100%	Wiper		A+
6						100%			Common

Terminal

7 Relay N/O

8 Common Top Trip

9 Relay N/C

10 Relay N/O

11 Common Lower Trip

12 Relay N/C

### ORDERING DETAILS

a) Give identification code, i.e. BD120

b) Give power supply voltage, i.e. 230 Volt AC 50/60 Hz

c) Give details of input signal, i.e. input type (as listed above) and range.

If thermocouple input please specify upscale or downscale drive for open circuit protection

d) Give details of Options required: For thermocouple input please specify upscale or downscale drive for open circuit protection. For 4 to 20mA input, please specify if upscale drive required on loss of input signal. 24VAC Power Supply

e) Give details of trip action required, i.e.

- HHNF = High High Non Fail Safe - LLFS = Low Low Fail Safe

- HLNf = High Low Non Fail Safe - HLFS = High Low Fail Safe

H = High Trip = Alarm condition above the set point

L = Low Trip = Alarm condition below the set point

FS = Fail Safe = Relay normally energised to de-energise in the alarm condition

NF = Non Fail Safe = Relay normally de-energised to energise in the alarm condition

