

Dual Level Trip Amplifier

BM120

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 BM120 can only accept two inputs.

Options on 4 to 20mA input versions: i) Protected Input and ii) Protected Upscale Drive on loss of input signal.



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

Other current inputs as required
Minimum current 10µA,
Maximum current 100mA

D C Voltage

Between -250 and +250 Volts DC
Minimum voltage span 5mV
Maximum voltage span 500V

Input Impedance

1M ohm or greater

A C Current

0 to 1 Amp

A C Voltage

0 to 250 Volt

Resistance (2 wire)

Between 0 and 20K ohms
Minimum span 5 ohms
Maximum span 20K ohms

Potentiometer (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 Single Pole Change Over contact (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 (see below for more details)

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

8 to 30 Volt DC

Power Required

3VA Maximum

GENERAL:

Temperature Coefficient

±0.1% of span/ Δ10°C
(for inputs > 100mV)
+ Cold junction error, for thermocouple inputs

Operating / Storage Temperature Range

0 to +45°C / -20 to +60°C

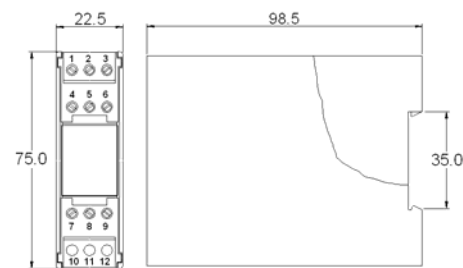
Operating / Storage Humidity Range

0 to 95% RH non-condensing

Weight

145 gms

MECHANICAL DETAILS



TERMINATION DETAILS

Terminal

1	Power Supply -ve
2	Power Supply +ve
3	Power Supply Earth

Terminal

7	Relay N/O
8	Common Higher Trip
9	Relay N/C
10	Relay N/O
11	Common Lower Trip
12	Relay N/C

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

ORDERING DETAILS

- Give identification code, i.e. BM120
- Give power supply voltage, i.e. 8 to 30 Volt DC.
- 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
- 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.
- Give details of trip action required, i.e.

- HHNF = High High Non Fail Safe
- HLNf = High Low Non Fail Safe
- LLNF = Low Low non Fail Safe

- HHFS = High High Fail Safe
- HLFS = High Low Fail Safe
- LLFS = Low 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 energised when the process is in a healthy state to de-energise in the alarm condition
NF = Non Fail Safe = Relay de-energised when the process is in a healthy state to energise in the alarm condition



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