Single Level Trip Amplifier   BM100

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

Function: Single 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 relay 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 BM100 can only accept two inputs.

Options on the BM100 include Double Pole Change Over relays, and, 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
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 SPCO relay contact
Option: Additional relay, converting output into DPCO.

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 Point
270° screw driver operated 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
1.5W Maximum

GENERAL:

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

Operating / Storage Temperature Range
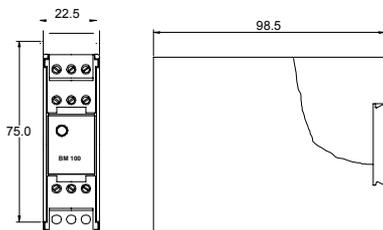0 to +45°C / -20 to +60°C

Operating / Storage Humidity Range
0 to 95% RH non-condensing

Weight
135 gms

MECHANICAL DETAILS

22.5

98.5

75.0

BM 100

TERMINATION DETAILS
Terminal
1   Power Supply –ve
2   Power Supply +ve
3   Power Supply Earth

Terminal
7   Relay N/O
8   Common   Normal Trip
9   Relay N/C
10 Relay N/O
11 Common   DPCO Option
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 Input
4	~	~	-ve	-ve	-ve	0%	0%		B+
5	~	~	+ve	+ve	+ve	100%	Wiper		A+
6							100%		Common

ORDERING DETAILS
a) Give identification code, i.e. BM100
b) Give power supply voltage, i.e. 8 to 30 Volt DC.
c) Give details of input signal, i.e. input type (as listed above) and range.
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. Finally specify if DPCO relay required.
e) Give details of trip action required, i.e.

- HNF = High Non Fail Safe   - LFS = Low Fail Safe
- LNF = Low Non Fail Safe   - HFS = High 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

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