

### 3 Port Isolating Signal Converter

**BM303**

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

Function: Isolating signal converter, which will convert a range of process signals into standard active and passive transmission current or voltage signals. The BM303 first conditions the signal before feeding it through an opto-isolating circuit. Both the input and the output stages of the instrument are powered from separate secondaries of the inverter maintaining 3 port isolation. Options on the BM303 include a Variable Gain, a Signal Inverter, a Subtractor and an Adder or Averager. In these cases the inputs are restricted to mA or Voltage and the BM303 can only accept two inputs for the Adder/Averager/Subtractor option. Option on 4 to 20mA input version: 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:

##### DC 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

##### DC Voltage

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

##### Input Impedance

1M ohm or greater

##### AC Current (True RMS)

0 to 1 Amp

##### AC Voltage (True RMS)

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  
Minimum temperature span 10°C  
Measurable range, -200°C to +800°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:

##### DC Current

0 to 10mA into 10 to 2000 ohms  
4 to 20mA into 10 to 1000 ohms  
Other ranges as required  
Minimum span 1mA  
Maximum span 20mA

##### DC Voltage

The voltage output is derived from passing a mA signal through an internal resistor

0 to 1 Volt DC thru 51 ohms  
0 to 10 Volt DC thru 510 ohms  
1 to 5 Volt DC thru 240 ohms  
Other ranges as required  
Minimum span 1 Volt DC  
Maximum span 10 Volt DC

##### Input/Output/Supply Isolation

600 Volts > 20M ohms

##### Variable Gain Option

Using a front panel mounted potentiometer the output signal can be varied from 50% to 150% of "normal" unit gain

#### SUPPLY:

##### Power Supply Voltage

8 to 30 Volt DC, with converter to maintain signal to power supply isolation

##### Power Required

1.5 Watts Maximum

##### Pilot Light

Red LED shows Power ON

#### GENERAL:

##### Linearity Error

Proportional to input ±0.1% of span

##### Response Time

<50µS - Step 0 to 65%  
-3dB at 4.5KHz

##### Temperature Coefficient

±0.1% of span/ Δ 10°C

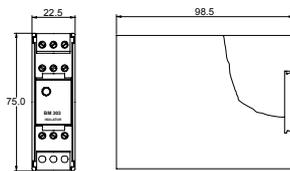
##### Operating / Storage Temperature Range

0 to +45°C / -20 to +60°C

##### Weight

106 gms

### MECHANICAL DETAILS



### TERMINATION DETAILS

Terminal

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

Terminal

- 7 Output Active -ve / Passive I +ve
- 8 Output Active +ve
- 9 Output Passive I -ve
- 10 Unused
- 11 Unused
- 12 Unused

Inputs	AC	AC	DC	DC	T/Cs	2 Wire	3 Wire	Resistance	Dual
	Current	Volts	mA	mV/V		Slidewire	Pot	Thermometer	
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. BM303
- b) Give power supply voltage, i.e. 24 Volt DC
- 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. For 4 to 20mA input, please specify if upscale drive required on loss of input signal.
- d) Give details of output required, both type and range, i.e. 4 to 20mA

