



SIGNAL CONDITIONER

for Resistance or RTD inputs
Type B12-1

- Accepts 2/3 wire resistance or RTD inputs
- V, mA sink or source outputs
- High impedance output drive option
- AC or low voltage (11-32 VDC, 12-24VAC) powered versions
- Wall or DIN rail mounting
- Module unplugs without disturbing wiring
- Analogue circuitry used throughout



The B12-1 is a signal conditioner for converting signals from resistance type transducers and RTD temperature sensors into standard process signals. Input types available are two wire variable resistors, three-wire resistance transducers / potentiometers and resistance temperature detectors (RTD's).

For RTD inputs, a three-wire system compensates for errors due to input transducer connection lead resistance. A constant current source provides power for the resistance inputs.

For 2-wire variable resistor and 3-wire potentiometer inputs, output zero and span controls, accessible from the front of the unit, are provided for trimming potentiometer/resistor positioning offsets.

The output signal is factory configured to order; the ranges available cover most of the common process signal types including current sink. A high impedance mA output drive option is also available at no extra cost.

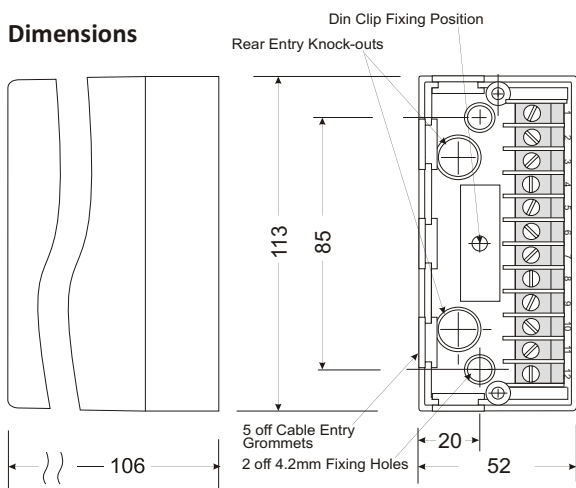
Information required when ordering

- Specify type 'B12-1'
- Input signal (*see specification on page two*)
- Output signal (*see specification on page two*)
- Supply voltage and frequency

Options

- High output drive required (mA outputs) ?
- DIN rail mounting clip required ?

Dimensions



Specifications

Notes:

1. Outputs, other than those shown are possible - our sales team will be pleased to advise.
2. Input and output ranges are factory calibrated for one type of signal and not user configurable.

Resistance inputs

Minimum change 50 ohms, Maximum change 10k ohms

Resistance thermometer inputs

PT100 or PT130 (100 or 130 ohms at 0°C)
Minimum span 40°C, Maximum span 500°C

Sensor Excitation Supply

Constant current, typically 5mA, set during manufacture to suit input resistance change

Outputs

0-10mA (2000R), 0-20 mA (1000R), 4-20 mA (1000R)
High impedance output drive options: 0-10mA (5000R), 0-20 mA (2500R), 4-20 mA (2500R)
Maximum output impedances in ohms shown in brackets.
0-5v, 1-5V, 0-10V, 2-10V (500R minimum)
Current sink 4-20mA @ 50 volts max.

Response Time

1 sec as standard.

Isolation

The input and output are not isolated from each other but are isolated from the power supply.

Calibrated Accuracy

± 0.1% FSD at 100%

Linearity Error

± 0.1% FSD

Output Ripple

0.2% RMS of FSD

Load Resistance Effect

0.001% of span / 100 ohm change

Interference Rejection

Filtering is incorporated to attenuate R.F. and other industrial noise.

Temperature Coefficients

Zero: ± 0.02% span / °C, Span: ± 0.02% span / °C

Environmental

Temperature: operating -10 to +60°C, storage -20 to +70°C
Humidity: 0 – 95% RH non-condensing

Power Supply

AC Supply: 110, 220 or 230V ±10% 50/60Hz 5VA

Fuse: 100mA quick-blow (internal)

Low voltage: 11-32VDC 4 W / 12-24VAC

Fuse: 250mA anti-surge (internal)

Supply Voltage Rejection

Span change: <0.02% span / % supply change.

Safety & EMC

Safety: EN61010-1, Immunity: EN50082-1,

Emissions: EN50081-1, CE certified

Mechanical

Weight: approx. 0.5kg

Enclosure: Fire retardant materials - PPO base, ABS cover

Screw terminal wire capacity: 2 x 1.5mm²

Electrical Connections



WARNING: these details are provided for pre-sales information only. Installation must be carried out in accordance with the User Guide

Input	1	Constant current output (+)	
	2	Input Signal (+)	
	3	Input Signal (-)	
	4	- reserved	
	5	no internal connection	
Outputs	6	no internal connection	
	7	mA Output (+)	Current Sink
	8	mA Output (-)	8 (+)
		Voltage Output (+)	9 (-)
Supply	9	Voltage Output (-)	
	10	Earth AC	Earth DC
	11	Neutral Mains	Negative (-) Supply
	12	Line Supply	Positive (+) Option



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

STROUD INSTRUMENTS LTD.
36-40 Slad Road, Stroud, Glos. GL5 1QW, England
Telephone: +44 (0)1453 765433 Fax No: +44 (0)1453 764256
www.sil.co.uk