



SIGNAL CONDITIONER

RATE OF CHANGE MONITOR Type B12-18

- *Monitors increases and decreases in the rate of change of the process variable*
- *Current or voltage inputs*
- *15 V sensor / loop supply*
- *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 or breaking input current loops*
- *Analogue circuitry used throughout*

The B12-18 provides an output signal with a magnitude proportional to the rate of change of the input signal. The output signal can be configured to indicate decreases as well as increases in the rate of change of the process variable.



Typical application

Chemical processes can be exothermic or endothermic and often need good control of the temperature of the reactants. A temperature controller will normally be used to maintain the reaction at the desired temperature. However, a single control loop may not be adequate, or some means may be required to test or supplement it to ensure thermal stability or safety. Monitoring the *rate of change* of temperature or pressure could be the answer.

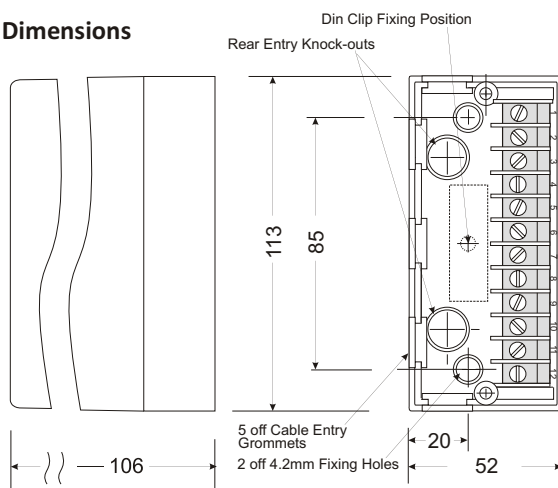
Information required when ordering

- Specify type B12-18
- Input signal
- Output signal
- Supply voltage and frequency

Options

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

Dimensions



Specifications

Notes:

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

Inputs

Current from 0-1mA to 0-30mA and Voltage from 0-1V to 0-250V. Typical inputs: 0-10mA (100R), 0-20mA (50R), 4-20 mA (62R), 0-5V, 1-5V, 0-10V, 2-10V (>200k)
Input impedances shown in brackets.

Input Signal No-break Loop Facility

mA input signal loops are maintained when the unit is unplugged from the base section.

Input Overrange Protection

Voltage Inputs: 250 volts RMS or DC, Current Inputs: 50mA

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.

Rate of Change (for full scale output)

Minimum: 5% of input/minute
Maximum: 500% of input /minute

Error (in rate for full scale output)

5% maximum

Transmitter Excitation Supply

15VDC @ 20mA maximum

Isolation

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

Output Ripple

0.2% RMS of FSD

Load Resistance Effect

0.001% of span / 100 ohm change

Stability

Over 24 hours $\pm 0.1\%$ FSD, Over 1 year $\pm 0.25\%$ FSD

Interference Rejection

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

Temperature Coefficients

Zero: $\pm 0.03\%$ span / °C, Span: $\pm 0.03\%$ 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 $\pm 10\%$ 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

Inputs	1	Transducer supply (+15V)	
	2	Input Signal (+)	
	3	Input (-)	
	4	- reserved	
	5	- no internal connection	
	6	- no internal connection	
Outputs	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

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