



RATE LIMITER

Types B12-17/0, B12-17/1, B12-17/2

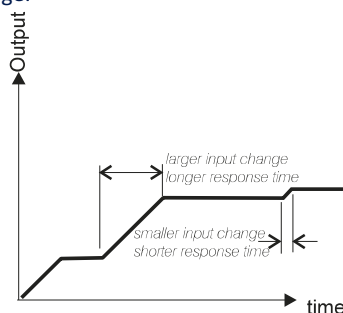
- Provides controlled rate of change
- Wide range of input and output types
- 15 V sensor / loop supply option
- High impedance output drive option
- AC or low voltage (11-32 VDC, 12-24VAC) powered versions
- Wall or DIN rail mounting
- Module unplugs without disturbing wiring or breaking input current loops
- Analogue circuitry used throughout

The B12-17 series provides a range of instruments which can be used to control the rate of change of a process signal. The B12-17 has uses in processes requiring signal damping. This unit will also provide conversion of voltage and current signals. The rate of change is controlled by a ten-turn dial scaled 0-100% of the calibrated maximum time to FSD.

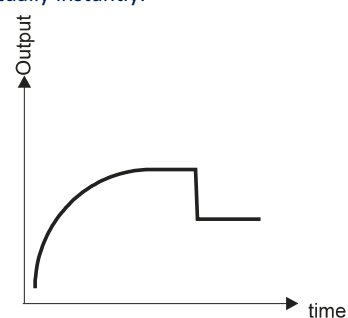


The output characteristics of standard versions of the Rate Limiter are as follows:

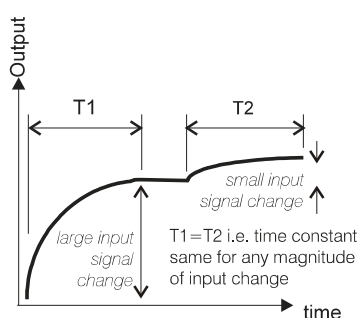
B12-17/1 Rate Limiter: The response curve is a linear ramp with a fixed rate of change. The effect on the output is a response time proportional to the magnitude of input signal change.



B12-17/0 Slow Up/Fast Down Response: For rising input signals the response curve is the same as the B12-17/2. However, with a falling input signal level the output signal follows virtually instantly.



B12-17/2 Slow Up/Slow Down Response: The response curve is exponential and the time constant for the output to reach a steady state value is the same for any magnitude of change in input signal.



Information required when ordering

- Specify type i.e. B12-17/0, B12-17/1 or B12-17/2
- Input signal
- Output signal
- Response time
- Supply voltage and frequency

Options

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

Specifications

Notes:

- 1 Input and output ranges are factory calibrated for one type of signal and not user configurable..

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.

Transmitter Excitation Supply

15VDC @ 20mA maximum

Response Time

Can be manufactured for 0-60 seconds up to 0-120 seconds

Isolation

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

Calibrated Accuracy

Set at 100% to be within $\pm 0.2\%$ FSD.

Linearity Error

$\pm 0.1\%$ FSD

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

Common Mode Rejection

<0.2% error for 250V RMS 50/60 Hz, or 400V DC, common mode signals.

Temperature Coefficients

Zero: $\pm 0.02\%$ span / °C, Span: $\pm 0.02\%$ 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 $\pm 10\%$ 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

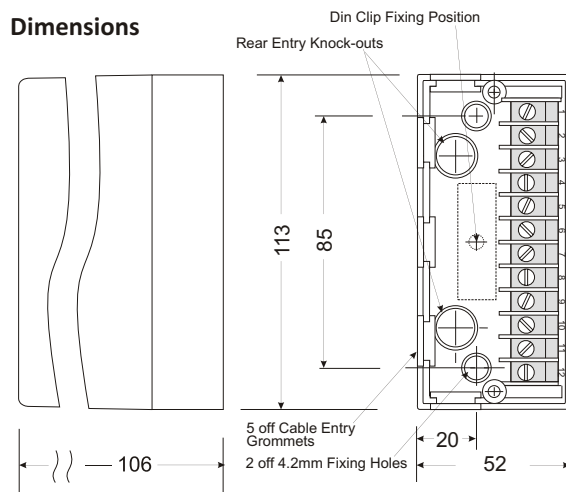
Mechanical

Weight: approx. 0.5kg

Enclosure: Fire retardent materials - PPO base, ABS cover

Screw terminal wire capacity: 2 x 1.5mm²

Dimensions



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 | - internal connection | |
| | 6 | - internal connection | |
| Outputs | 7 | mA Output (+) | Current Sink |
| | 8 | mA Output (-) | 8 (+) |
| | | Voltage Output (+) | 9 (-) |
| | 9 | Voltage Output (-) | |
| Supply | 10 | Earth | AC Earth |
| | 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

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