

**Bridge Amplifier
or
Millivolt Amplifier**
Type B12-1B

Installation Guide



Document Ref: UDB12-1B.vp Rev 1



WARNING!

It is important that this guide is read and fully understood before attempting installation or commissioning of the instrument. Instructions appearing in this document, and current safety legislation, must be observed to ensure personal safety and to prevent damage to the instrument or equipment connected to it.

The instrument should be installed, commissioned and operated only by suitably qualified and authorised personnel.

- The specifications for the instrument must not be exceeded. If the instrument is used in a manner not specified, the protection provided by the instrument may be compromised.
- The instrument must be installed in an enclosure that provides adequate protection against electric shock.
- Ensure that power to the instrument is switched off and signal wiring isolated from hazardous voltages before carrying out installation or maintenance.
- The instrument is designed for installation in a clean, dry environment (Pollution degree 1).
- Stroud Instruments Ltd strongly recommends that repairs and re-calibration work are done on a return to factory basis in order that our quality standards, product specifications and safety precautions are not compromised.

The instrument is double insulated

Note: Clean only with a dry soft cloth.

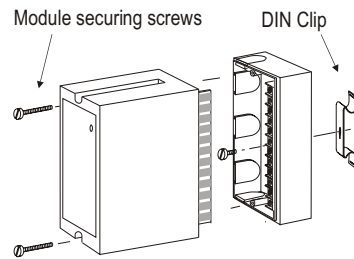
Safety and EMC information

Safety: EN61010 -1
Immunity: EN50082-1
Emissions: EN50081-1
CE certified

Installation

Location

- The instrument is designed for installation in a clean, dry environment, fixed to a flat surface using two 4mm screws., or clipped to a TS35 / TS35D DIN rail using the clip supplied.
- Do not install near to switchgear, motor controllers or other sources of strong magnetic fields.
- Avoid exposure to direct sunlight and ensure the ambient temperature inside the enclosure that the unit is mounted in will not exceed our specification.



Access to fixing points and terminals

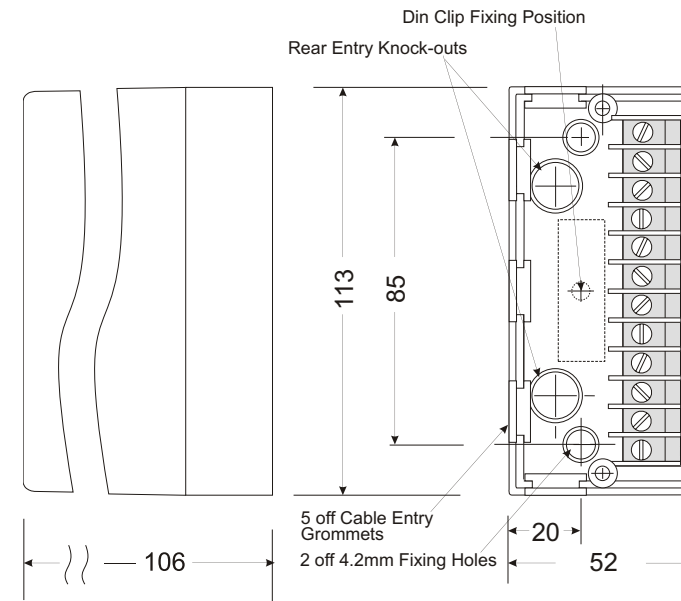
Removal / refitting of plug-in module

To gain access to fixing points, terminals and User adjustments:

- (i) Remove the plug-in module securing screws.
- (ii) Gently pull away the plug-in module from the base section.
- (iii) To refit the module, align the module edge connectors with the socket in the base and carefully press home.

NB To avoid damage to the plug-in module, do not overtighten the securing screws.

Dimensions and fixing positions

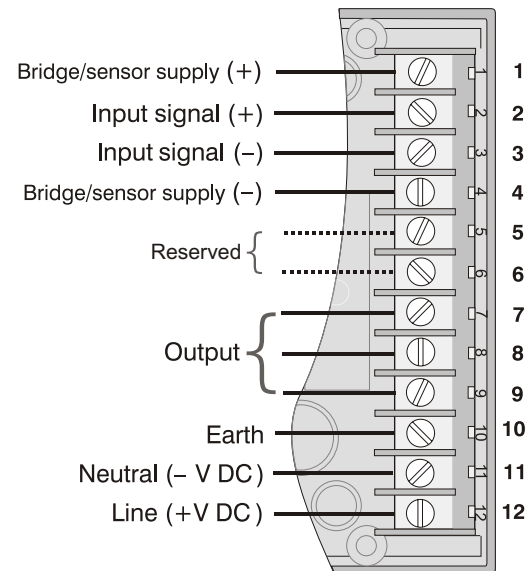


Wiring and connections

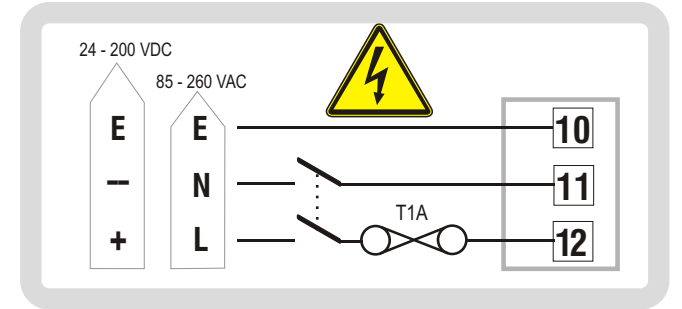
- Segregate power supply and signal wiring.
- Use screened cable for all signal wiring with the screen earthed at one end only.
- All connections should be made using ferrules to avoid short-circuits between adjacent terminals.
- This instrument is equipped with a universal power supply and may be operated from either of the following supply ranges:
DC supplies: 24 VDC to 200 VDC or AC supplies: 85 VAC to 260VAC
- Power supply wiring to the instrument should be protected by a 1A time-delay fuse fuse and double pole switch - *see below*. The switch should be clearly marked as the isolating switch for the instrument.

Terminal assignments

For further details see the following connection details.



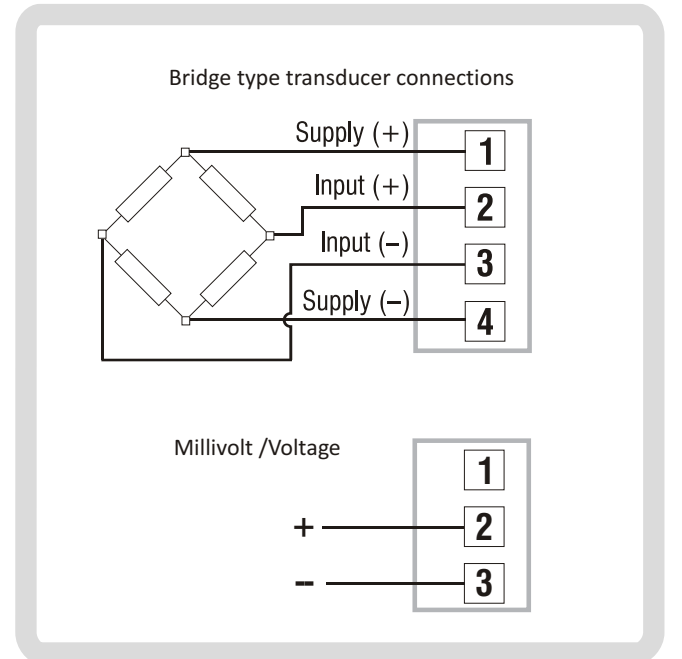
Supply



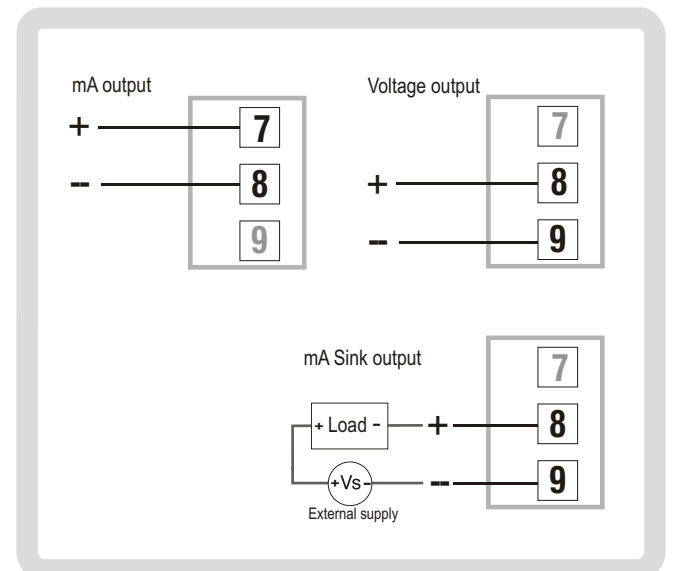
! NB

Input and Outputs are factory configured for one type of signal only and are not user configurable (*see data label on the enclosure for details of the type fitted*).

Input



Output



Input range configuration

Suitable measuring equipment is required to set the unit to its specified accuracy or to the requirements of the application e.g. a 4½ digit DVM, 100 ohm laboratory standard resistor (*for current outputs*) and a signal source to simulate the input transducer.

The fine-trim span (*upper*) and zero (*lower*) controls are accessed through the front panel. The range setting switches are mounted internally and may be accessed as follows:

Access to internal settings

WARNING: Switch off all supplies and isolate signal and other wiring from dangerous voltages before proceeding.

- (i) Remove plug-in module as described in Access to Terminals in the Installation section.
- (ii) The plate with the terminal connections label can now be removed by easing apart the longer sides of the module to release the interlocking tongue and groove.
- (iii) Note the location of the printed circuit board which must be replaced in the same position. Slide out the board.

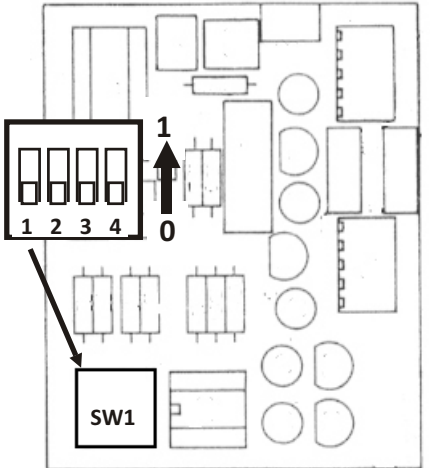
Calibration procedure

- (i) Set the range switches (SW1) as required (*see Fig 1 and Table 1*).
- (ii) Reassemble and plug the module into the base section. (*see 'Replacing the Module cover'*).
- (iii) **Set output Zero:** with input signal at its zero setting monitor the output signal with a suitable instrument and adjust the zero control (*lower hole*).
- (iv) **Set Span:** with input at full scale, adjust the span control (*upper hole*).
- (v) Repeat steps (iii) and (iv) readjusting if necessary.

Table 1 Range switch settings

SW1 Positions				Nominal Input (mV)	
1	2	3	4	Min	Max
0	0	0	0	7.5	9
1	0	0	0	8	10
0	1	0	0	9	11
1	1	0	0	10	12
0	0	1	0	11	13
1	0	1	0	11	14
0	1	1	0	12	15
1	1	1	0	13	17
0	0	0	1	17	22
1	0	0	1	20	25
0	1	0	1	22	30
1	1	0	1	26	33
0	0	1	1	33	45
1	0	1	1	40	54
0	1	1	1	54	75
1	1	1	1	72	100

Fig 1 Bridge Amp Sub-board



Replacing module cover

- (i) Replace the printed circuit board ensuring correct location in the module cover slots.
- (ii) Replace the plastic plate by locating the side with the two tongues around the protruding printed circuit board and engaging into the mating grooves.
- (iii) Press the plate home to engage the single tongue.