Root Extractor

Type B12-7

Installation Guide

Document Ref: UDB12-7.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.

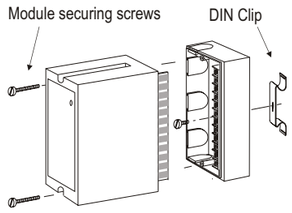
Safety and EMC information

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.

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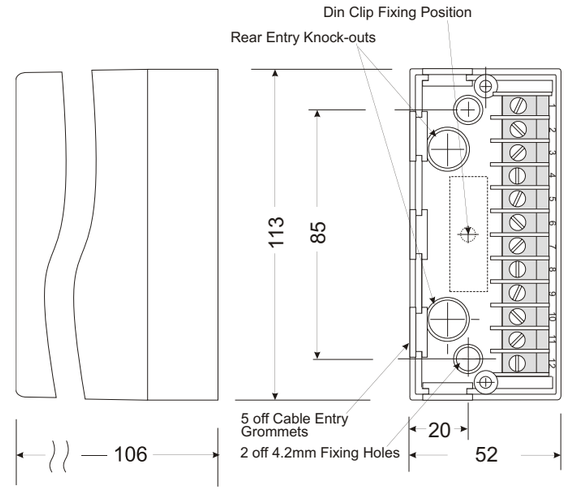
Dimensions and fixing positions

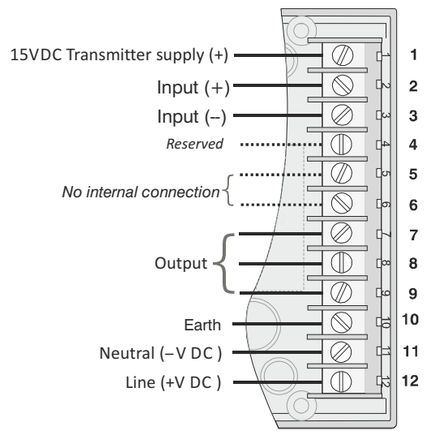


Wiring and connections

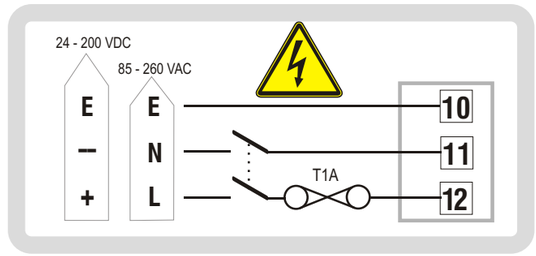
- ☐ Segregate power supply and signal wiring.
- ☐ Use screened cable for all signal wiring with the screen earthed at one end only.
- ☐ All connections should be made using ferrules to avoid short-circuits between adjacent terminals.
- ☐ This instrument is equipped with a universal power supply and may 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.

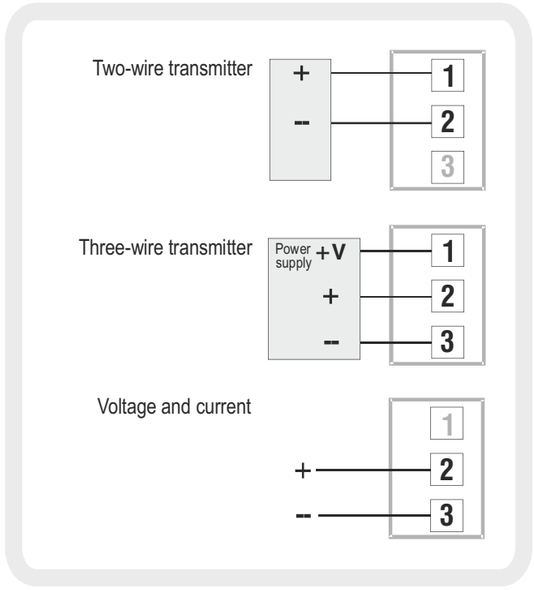


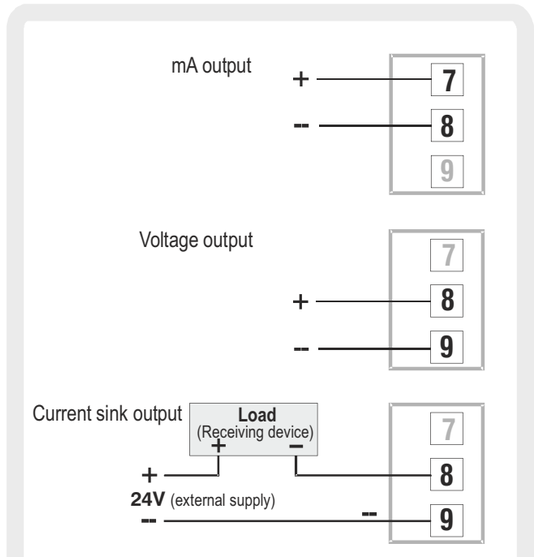
Supply



NB Inputs are factory configured for the type shown on the data label. The input type is not user configurable.
A transducer supply of 15VDC @20mA max. is fitted as standard to all versions.

Input





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.

Specification

Notes:

1. Inputs and outputs, other than those shown - 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.

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 Cut-off *(square root only)*
Input signals below 0.9% of span are automatically cut-off to zero.

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
1 sec as standard.

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

Calibrated Accuracy
Error ± 0.1% of span (2-100% input).

Linearity Error
± 0.1% FSD

Suppression / Elevation Error
± 0.1% FSD

Output Ripple
0.2% RMS of FSD

Load Resistance Effect
0.001% of span / 100 ohm change

Stability
Over 24 hours ± 0.1% FSD,
Over 1 year ± 0.25% FSD

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

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

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
85 - 260 VAC 50/60Hz; 24 - 200 VDC (3W nominal)

Supply Voltage Rejection
Span change: <0.02% span / % supply change.

Mechanical
Weight: approx. 0.5kg
Enclosure: Fire retardent material
PPO base, ABS cover
Screw terminal wire capacity: 2 x 1.5mm^2