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).

The instrument must be installed in an enclosure that provides adequate protection against electric shock.

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
☐ Do not install near to switch gear, 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.

Fixing
B12 Series Modules are designed to be fitted to a flat dry surface using two 4mm screws. Alternatively, by fitting an optional DIN clip, they may be clipped to a rail conforming to BS5584:1978, EN50 022, DIN46277-3. Grommets are provided on three sides of the base section and there are two rear entry knock outs in the bottom.

To gain access to fixing points:
(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 do not over tighten the module securing screws.

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.

Access to terminals
WARNING: Ensure that power to the instrument is switched off and signal wiring isolated from hazardous voltages.
Loosen the two module securing screws. Gently pull away the top section of the module from its base to expose the fixing points and wiring terminals. To refit the module, align the module edge connectors with the socket in the base and carefully press home. NB do not over tighten the module securing screws.

Notes:
1. Input and output types are set internally - see ‘Configuration’
2. Transducer power supply - (terminal 1) is either 12V (supplied as default), or otherwise as specified when ordered. See connection label on side of unit.
WARNING: The Frequency to Analogue Converter must be isolated from power supply and any potentially hazardous signals before commencing this procedure.

Configuration links
Level Control Sensitivity
Input range > 6 Volts (set by default) Input range ≤ 6 Volts

Input Type
Open collector & Volt-free contact Current e.g. 1-3mA pulse voltage input

Configuration of frequency range and digital filtering
These parameters are user configurable using the optional Programming Kit. Full details are provided in the programming guide on the software CD.

Specifications
Notes:
1. Input and output types, other than those shown are possible - our sales team will be pleased to advise.

Input Types - user selectable
Voltage: ±10mV p.t.p. to ±10V p.t.p. sine, square or triangular waveforms
Open collector: (n), Current input: 1 – 3mA (NAMUR) e.g. from proximity switch, Volt-free contact.

Input Range: See programmable options
Transducer Power Supply
12VDC @ 10mA max (default setting) or customer specified voltage in the range 2.5V to 20V

Outputs - user selectable
0-10mA (2000Ω), 0-20mA (1000Ω), 4-20mA (1000Ω)
Maximum output impedances in ohms shown in brackets: 0-5V, 1-5V, 0-10V, 2-10V (500Ω minimums)
Current sink 4-20mA @ 50 volts max.

Response Time
Varies between 1 sec. and 1 period of input signal.

Isolation
The input and output are isolated from each other and from the power supply. Maximum voltage 250V RMS or 400V DC. Resistance ≥ 50 x 10⁶ ohms measured at 1000V DC.

Programmable Options

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Min.</th>
<th>Max.</th>
<th>Default</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zero scale frequency (Hz)</td>
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<td>5000</td>
<td>0</td>
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<tr>
<td>Full scale frequency (Hz)</td>
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<tr>
<td>Minimum threshold - low level cut off (% of FS)</td>
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<td>Change threshold (% of FS)</td>
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<td>10</td>
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<td>Static state timeout (s)</td>
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<td>2</td>
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<tr>
<td>Averaging count</td>
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<td>20</td>
<td>5</td>
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</tbody>
</table>

Calibrated Accuracy
Error ≤ ±0.2% FSD at 100% when factory calibrated.

Linear Error
≤ ±0.1% FSD (from 1 to 100% FSD)

Load Resistance Effect
≤ 0.001% of span / 10 ohm change

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

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)

Safety & EMC
Safety: EN61010-1, Immunity: EN50082-1, Emissions: EN50081-1, CE certified

Mechanical
Weight: approx. 0.5kg, Dimensions (mm): 106x52x113
Enclosure: Fire retardant materials - PPO base, ABS cover Screw terminal wire capacity: 2 x 1.5mm²