VE-23 / VE-22 / VE-21-V / VE-21-H Velocity Sensor

Features

- Wide Full Scale Range, ± 1 to ± 100 mm/s
- Bandwidth 4.5 Hz to 315 Hz
- Civil Engineering and general vibration measurement applications
- Built-in Impulse Test Circuit
- Single Bolt Mounted Housing provides up to ± 10° of Levelling Adjustment

Outline

The VE Velocity Sensors are engineered for consistent performance over a long lifetime. Advanced computerised testing, manufacturing techniques and quality control are used in the production process to provide both, the uniform parameters and the rugged qualities necessary in modern velocity sensors.

The sensor module has been proven world-wide for many years in different applications. The symmetrical rotating dual coil construction minimises the force on the spring arms. The use of precious metals ensures optimum electrical contact and a long operating life.

The VE Velocity Sensors operate from a wide range of input voltages and can be used for a variety of civil engineering and general vibration measurement applications. The VE-21-H is uniaxial horizontal, the VE-21-H a uniaxial vertical and the VE-23 is a triaxial velocity sensor.

The VE Velocity Sensors are housed in a very compact 195 x 112 x 96 mm case. The sealed cast aluminium housing contains a MS style connector or a sealed cable inlet. The housing also incorporates a single bolt mount with three levelling screws.
Specifications VE-23 / VE-22 / VE-21-V / VE-21-H Velocity Sensor

**General Characteristics**

Application: Civil engineering, general vibration measurement

**Configurations:**

<table>
<thead>
<tr>
<th>Type</th>
<th>Triaxial</th>
<th>Biaxial</th>
<th>Uniaxial</th>
<th>Axes</th>
<th>Alignment**</th>
</tr>
</thead>
<tbody>
<tr>
<td>VE-22-H:</td>
<td>X (or Y)</td>
<td>X (or Y)</td>
<td>Z</td>
<td>H – V</td>
<td>H</td>
</tr>
<tr>
<td>VE-21-H:</td>
<td>X (or Y)</td>
<td>Z</td>
<td>Z</td>
<td>H</td>
<td>V</td>
</tr>
<tr>
<td>VE-21-V:</td>
<td>X</td>
<td>Z</td>
<td>Z</td>
<td>V</td>
<td></td>
</tr>
</tbody>
</table>

*H: Horizontal, V: Vertical

Full Scale Range: ± 100 mm/s
optional: ± 1, ± 10 mm/s

**Specification**

Instrument Type: Digital grade long travel geo-phones
Dynamic Range: > 96 dB
Linearity: < 0.3 % of full scale
Cross Axis Sensitivity: < 0.1 % of full scale
Frequency Response: 4.5 to 315 Hz
Damping: standard 0.7
Full Scale Output: 0 ± 10 V differential (20 Vpp)
optional: 2.5 ± 2.5 V single-ended (5 Vpp)
0 to 20 mA current loop
Output Impedance: < 50 Ω
Measuring Range: See plot

**Power**

Supply Voltage: 9 to 15 VDC
Consumption: 26 mA typical, 116 mA max. @15 VDC

**Connector Pin Configuration**

Pin 1-2, 3-4, 5-6: Signal output for axis X, Y, Z
Pin 9-10: Test input, Digital test-pulse (0 – 12 V)
Pin 11-12: Sensor Mode
Case: Shielded Ground

**Environment / Housing**

Housing Type: Cast aluminium
Sealed access cover
Housing Size: 195 x 112 x 96 mm
Weight: 2.0 kg
Index of Protection: IP 65
optional: IP 68
Temperature Range: -25 to 85 °C (operating)
-40 to 100 °C (storage)
Humidity: 0 to 100 % (non-condensing)
Mounting: Single bolt, surface mount, adjustable within ± 10°

**Standard VE-2x**

Floor mounted, full scale ± 100 mm/s
2 m cable with sensor mating connector
concrete anchor and user manual on CD

**Options**

Cable Connection: Sealed cable inlet, replaces connector
cable with shielded twisted pairs for any length (including mating sensor connector) with open end
cables for connection to GeoSIG recorder
Connector on user specification mounted at cable end
Housing: Watertight IP68 housing
Stainless steel protective housing
Temperature Output: Temperature sensing at the sensor side
1 Hz Extension: Electrical circuit, which extends the passband down to 1 Hz.
Low Noise Amplifier: Amplification of 1000 using very low noise electronics (model VE-2XHG).

**Ordering Information**

Specify: Type of VE-2x, full scale range, and other applicable options

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