VE-13 / VE-12 / VE-11-V / VE-11-H Velocity Sensor

Features

- Wide Full Scale Range, ± 1 to ± 100 mm/s
- Bandwidth 1 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 required in modern velocity sensors.

With the new VE-1x, 1 Hz Velocity Sensor now it is possible to measure vibrations in accordance with DIN 45669-1.

The sensor module has proven itself successfully worldwide for many years in different applications. The symmetrical rotating dual coil construction minimises the force on the spring arms. The use of precious metals ensure 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-11-H is uniaxial horizontal, the VE-11-V uniaxial vertical, VE-12 biaxial and the VE-13 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, which offers extended adjusting capability during mounting.
Specifications VE-13 / VE-12 / VE-11-V / VE-11-H Velocity Sensor

General Characteristics
Application: Civil engineering, general vibration measurement

Configurations:
- VE-13:
  - Triaxial: X – Y – Z
  - Biaxial: X – Y (or Y) – Z
  - Uniaxial: Z

- VE-12-H:
  - Triaxial: X – Y – H
  - Biaxial: X – Y (or Y) – H
  - Uniaxial: H

- VE-11-H:
  - Triaxial: X (or Y) – H
  - Biaxial: X (or Y) – H
  - Uniaxial: H

- VE-11-V:
  - Triaxial: X (or Y) – V
  - Biaxial: Z
  - Uniaxial: V

** 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: 1 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
- Self Test: Impulse Test
- Measuring Range: See plot

Power
- Supply Voltage: 9 to 15 VDC
- Consumption: VE-13: 26 mA typical, 31 mA max. @15 VDC

Connector Pin Configuration
- Pin 1-2, 3-4, 5-6: Signal output for axis X, Y, Z
- Pin 7-8: Test input, Digital test-pulse (0 – 12 V)
- Pin 9-10: +12 VDC Power Supply
- 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-1x
- Floor mounted, Full scale ± 100 mm/s
- 2 m cable with sensor mating connector, concrete anchor and user manual on CD

Options
- Cable & connector: 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 Range: -25 to 100 °C (operating)
- Temperature Output: Temperature sensing at the sensor side

Ordering Information
- Specify: Type of VE-1x, full scale range, and other applicable options

Specifications subject to change without notice
Copyright © GeoSIG Ltd, 04.05.2018/ GS_VE-13_Leaflet_V09.docx