

Force Balance Servo Velocity Seismometer VSE-15A

※custom made order

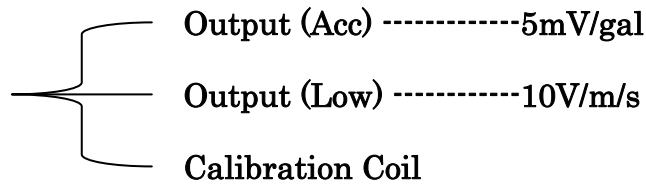
Tokyo Sokushin Co., Ltd.

Small size, Light weight (270gr)

Low frequency range (0.1 ~ 100Hz)

High resolution 10^{-6}m/s^2 (10^{-4}gal)

Servo Velocity Sensor

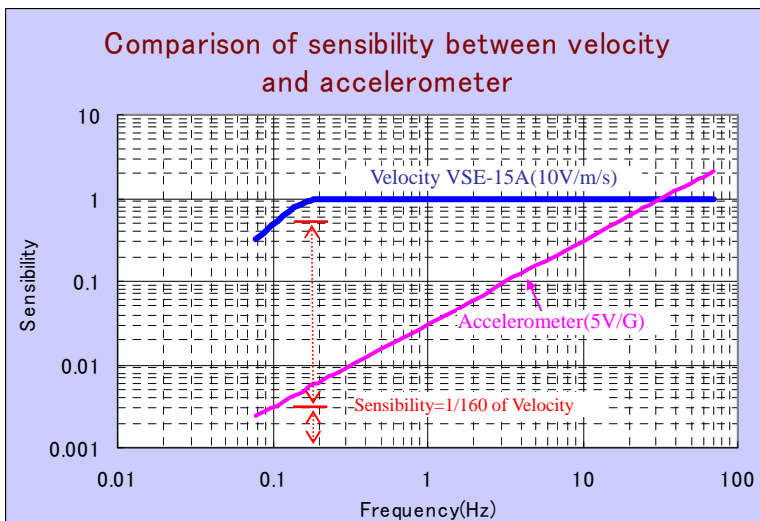


Useful for

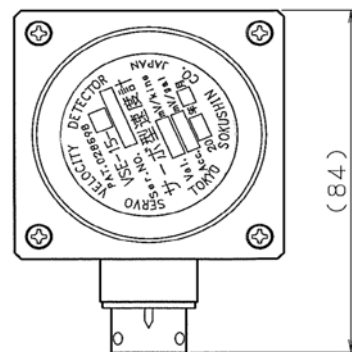
- Survey of an underground structure.
- Earthquake monitoring
- After shock
- Micro-tremor
- Any of vibration Experiment

Feature

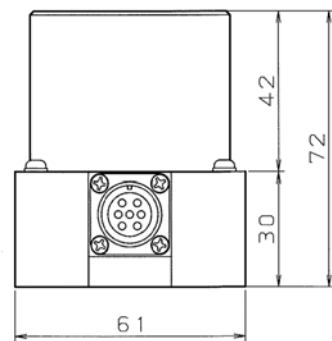
Sensibility is higher than accelerometer



Dimension



Plane



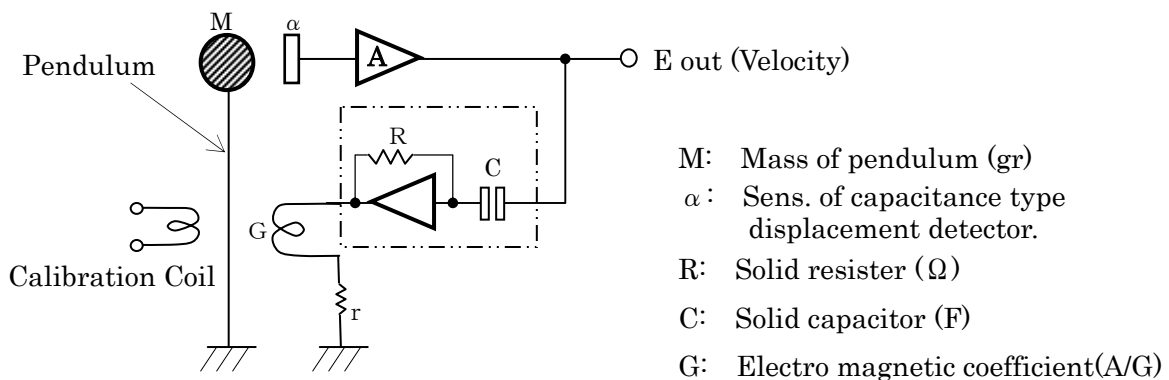
Side

SPECIFICATION

Model	VSE-15A (custom made order)
Frequency range	0.1~100Hz
Mode of operation	Horizontal, Vertical
Max. measuring range	±1m/s (±100kine)
Output	Velocity : 10cm/s/v, Acc:5mV/gal
Output resistance	Less than 50 Ohm
Max. Output voltage	±10V
Linearity	0.03% of Full scale
Resolution	10 ⁻⁴ gal(Less 200μkine)
Dynamic range	Approximately 140dB
Damping ration	h = about 10000%
Calibration coil	<ul style="list-style-type: none"> • Sensitivity : 350 μ A m/s² (3.5μA/gal) • Coil resistance : 550Ω (±20%)
Power requirements	±15VDC
Current consumption	Approximately 15mA
Cross axis sensitivity	0.03G/G
Sensitivity of temperature coefficient	0.01%/°C
Temperature coefficient of zero-shift	0.05%/°C
Temperature range	-10°C ~70°C
Waterproof	IP65
Connect cable	Shielded 4 pair twist cable
Allowable shock	30G (less than 0.1Sec)
Dimension	61×61×72(H)

PRINCIPLE

The sensing mechanism is similar to force balanced servo accelerometers except the time differential part is adapted in feed back circuit.



The related expression to particle velocity [m/s] and sensing output [E out] is shown as

$$E \text{ out} = \frac{M \cdot r}{G \cdot C \cdot R} \quad [\text{V/m/s}]$$

The output [Eout] means very stable and high accuracy because unstable and nonlinear elements for sensing are not included in this expression. The M, r, G, C, R are all stable solid parts, this is important for guarantee the accuracy.