

Velocity Type Strong Motion Seismometer

TSM-1

General

The TSM-1 Velocity Type Strong-Motion Seismometer incorporates three built-in seismic sensors including two for horizontal direction and one for vertical direction. The TSM-1's wide frequency and dynamic range capability can handle the full spectrum of seismic disturbances, from microtremors to large earthquakes. The Seismometer's highly sensitive, all-purpose enclosed triaxial design provides superior mobility, which makes it easy to set up at temporary observation stations.

Applications

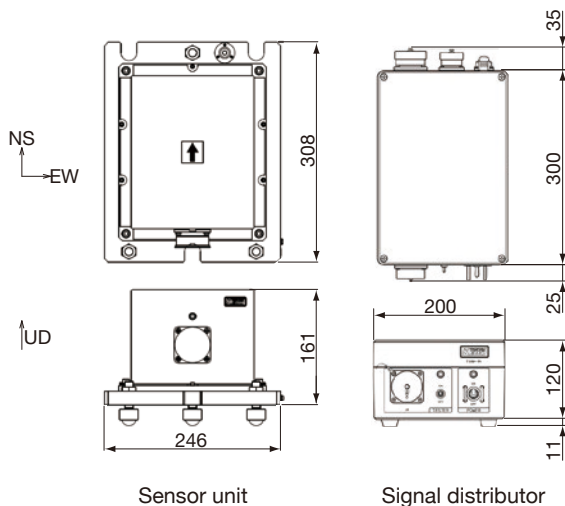
- Strong earthquake and aftershock observation
- Earthquake measurement, monitoring, alarm warnings
- Monitoring of structural sway caused by long-period ground motion
- Volcano observation

Features

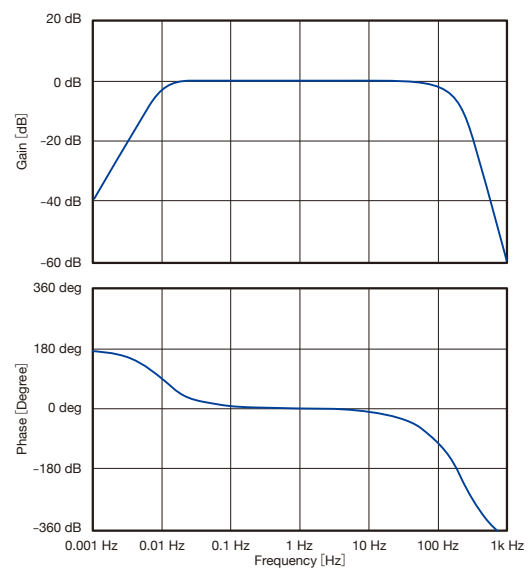
- 1) Triaxial design simplifies installation.
- 2) Force balance torquer arrangement requires no on-site adjustment.
- 3) Capability to cope with long-period, large amplitude motion with room to spare.
- 4) High output voltage simplifies data logging and signal processing.
- 5) Simple construction, high reliability.

External Dimensions

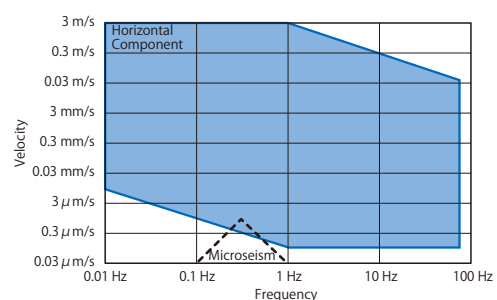
(Unit : mm)



Frequency Response



Measurement Range



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Specification : Guranteed performance value

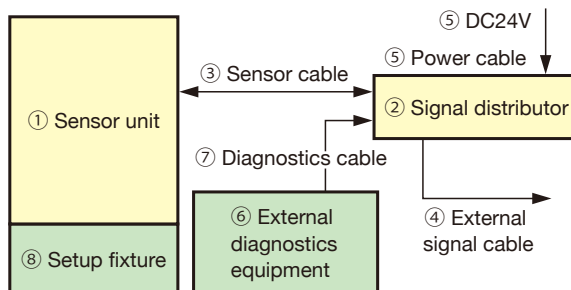
model	TSM-1N
Conposition	Horizontal direction (EW,N,S) and Vertical direction (UD)
Measurement range	±3m/s @ 0.01Hz~1Hz
Dynamic range	min. 140dB @ 1Hz
Frequency response	0.01Hz~72Hz (less than±3dB)
Output signal	6V/(m/s)±5% @ 0.2Hz(differential)
Output Voltage	Max 60Vp-p (differential)
Resolution	less than 0.32μm/s @ 1Hz
Temperature in use	-20~+60°C (except for Level * 1)
Water/dust proof for ref.	IP65 equivalent
Power	DC12±10%
Power consumption	Less than 10W
External dimension	Sensor unit : 308mmx246mmx161mm, Signal distributor : 300mm×200mm×120mm (except protruding parts)
Mass	Sensor unit : less than 10kg, Signal distributor : less than 6.0kg (except cables)

Reference : Design value

Dynamic range	min. 145dB @ 1Hz
Resolution	less than '0.18μm/s @ 1Hz
Output sensitivity temperature coefficient	less than 700ppm/°C
Output sensitivity linearity	less than 0.02%
Bias	less than 1mm/s @ 25°C
Bias temperature coefficient	less than 0.5 mm/s/°C

*1.Temperature for level in use : 0°C~+40°C

Composition



No.	Name	Model No.	Description
①	Sensor unit	TSM-1N-S	
②	Signal distributor	TSM-1N-D	
③	Sensor cable	TSM-1N-W1	Standard 2m
④	External signal cable	TSM-1N-W2	Standard 2m
⑤	Power cable	TSM-1N-W3	Standard 2m

The length of cable can be changed with your request.

Options

No.	Name	Model No.	Description
⑥	External diagnostics equipment	TSM-1N-T	Available options *Test signal generation *Integrated response check *External signal input *Electric power from signal distributor
⑦	Diagnostics equipment cable	TSM-1N-W4	Used for ⑥ Standard length 2m
⑧	Setup fixture	TSM-1N-M*	Used for ① *Nos 1、 2、 3 etc

Design and specifications are subject to change without prior notice, and without any obligation on the part of the manufacturer.

CAUTION Before operating this equipment, you should first thoroughly read the operator's manual.

TOKYO KEIKI

TOKYO KEIKI INC.

www.tokyokeiki.jp/e/products/sensor/

Communication & Control Systems Company Sales Dept.

Head Office

HANEDA INNOVATION CITY Zone B 1-1-4 Haneda Airport, Ohta-ku, Tokyo 144-8551, Japan
Tel. +81-3-3731-2631 Fax. +81-3-3738-8670