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.

Sensor unit

Applications

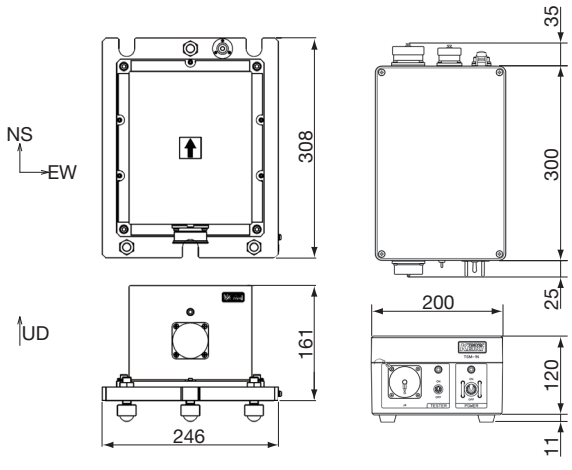
- Strong earthquake and aftershock observation
- Earthquake measurement, monitoring, alarm warnings
- Monitoring of structural sway caused by long-period ground motion
- Volcano observation

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.

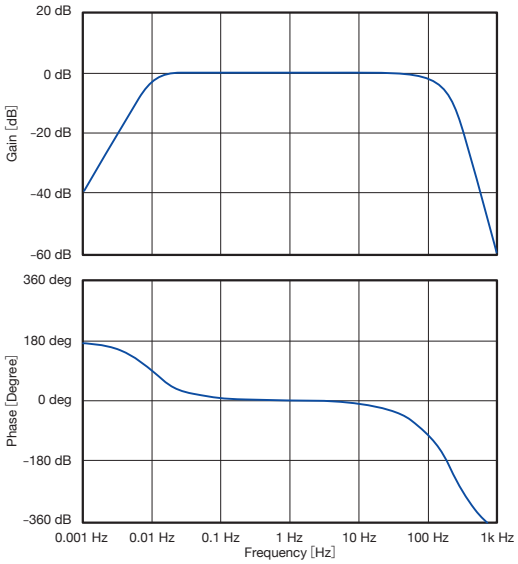
External Dimensions

(Unit : mm)

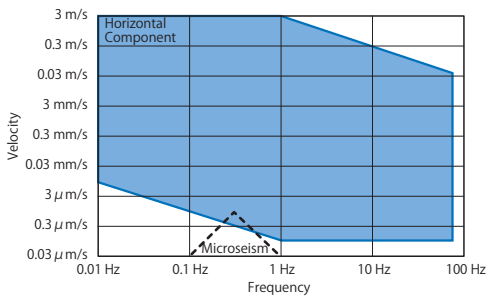


Sensor unit　　Signal distributor

Frequency Response



Measurement Range



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Velocity Type Strong-Motion Seismometer TSM-1

Specification：Guranteed performance value

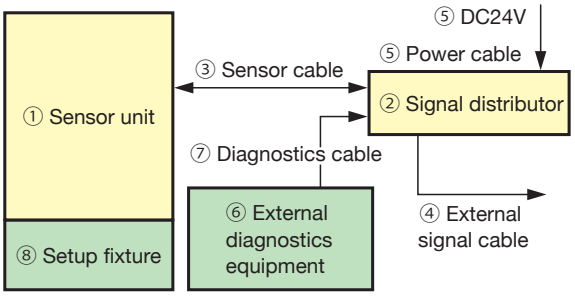
model	TSM-1N
Conposition	Horizontal direction（EW,NS） and Vertical direction（UD）
Measurement range	±3m/s @ 0.01Hz~1Hz
Dynamic range	min. 140dB @ 1Hz
Frequency response	0.01Hz~72Hz (less than±3dB)
Output signal	6V/(m/s)±5% @ 0.2Hz(differential)
Output Voltage	Max 60Vp-p (differential)
Resolution	less than 0.32μm/s @ 1Hz
Temperature in use	-20～+60℃ (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/℃
Output sensitivity linearity	less than 0.02%
Bias	less than 1mm/s @ 25℃
Bias temparerature coefficient	less than 0.5 mm/s/℃

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

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 distributer
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

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

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

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