

SGS Smart Geophone

The SGS smart geophone is a Precise, Rugged and Versatile Embedded Vibration Meter.

4 Models for a wide range of applications:

- ISEE (2-250Hz, 120mm/s)
- DIN (1-80Hz, 120mm/s)
- HS1 (5-100Hz, 12mm/s)
- HS2 (10-200Hz, 12mm/s)

Professional Measurements:

- 2.7kHz Sampling Rate;
- 0.5 Hz – 400 Hz 1/3 Octave Bands
- Complies to ISEE and DIN 45669-1.

Easy field deployment:

- Automatic Sensor Check;
- Rugged and Compact Form-Factor;
- Digital communication avoiding electrical interferences;
- Up-To 100m cable length.



SGS Smart Geophone

Components

Product Code	
SGS0-00001	SGS smart Geophone, ISEE (2-250Hz, 120mm/s)
SGS0-00002	SGS smart Geophone, DIN (1-80Hz, 120mm/s)
SGS0-00003	SGS smart Geophone, HS1 (5-100Hz, 12mm/s)
SGS0-00004	SGS smart Geophone, HS2 (10-200Hz, 12mm/s)
Recommended Accessories	
PCAB-00006	M12 Cable, 4-Conductor, Female-Male, 10m (can be daisy-chained up to 100m)
PCAB-00112	USB-to-RS485 Adapter
QUIN-00133	3x 73 mm (2 7/8") M10 spikes
QUIN-00141	Solid aluminium wall-mount bracket
CERT-00005	Calibration Certificate for SGS

Technical Specifications

Vibration Meter	
Standards	ISEE (2022), DIN 45669-1 (2010)
Certificate	Embedded Calibration Certificate in Non-Volatile Memory
Sensor Technology	Analogue Geophone
Sampling Frequency	2.756 kHz
Resolution	32-bit floating point
Axis	X (Trans.), Y (Long.), Z (Vert.), Vector-Sum
Measured Metrics	RMS, Peak, Time-Signal and 1/3 Octave spectrum (0.5-400 Hz) DIN 45669 KBFT Weighted Velocity (0.125 s Expo. RMS) (Model DIN only)
Metrics Interval	93 ms
Metrics Buffer Length	10 s
Self-Test	
Method	Electromechanical force injected on sensor
Results	Time signal and Pass/Fail based on factory calibrated values in sensor memory
Communication	
Protocol	RS-485 Half-Duplex, 3Mbps
Cable	M12, 4-Conductor, Female-Male, 10m
Environmental	
Operating Temperature	-40 °C to 50 °C
Storage Temperature	-50 °C to 70 °C
Certified to	IP68
Power	
Power	0.5 W
Operating Voltage	5 V

Technical Specifications (cont.)

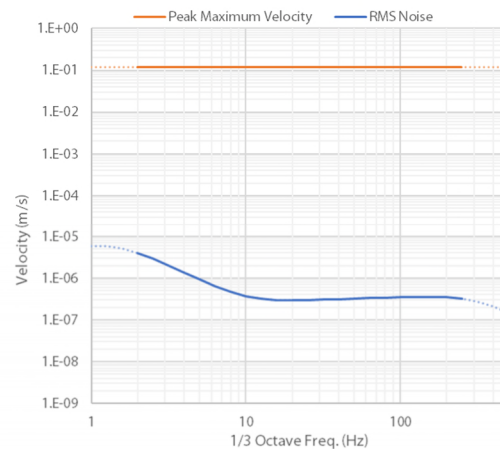
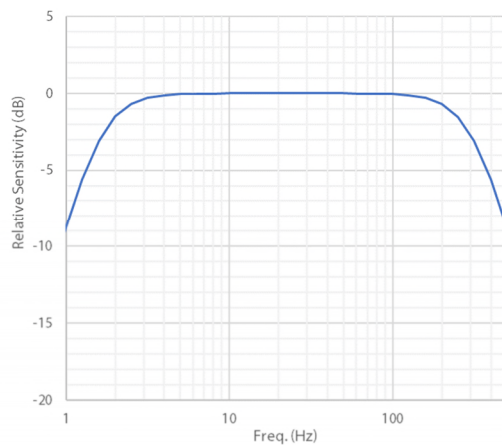
Physical	
Height	47 mm (1 27/32")
Width	125 mm (4 29/32")
Length	125 mm (4 29/32")
Weight	750g (1.65lb)
Density	1525kg/m ³ (95.2 lb/ft ³)
Mounting	1x 10mm Through Hole (Accepts M10 or 3/8" machine screw)

Dynamic Range	ISEE	DIN	HS1	HS2
Lower Frequency Limit, Fu (Hz)	2	1	5	10
Upper Frequency Limit, Fo (Hz)	250	80	100	200
Axis Peak Maximum Velocity (mm/s)*	120	120	12	12
Axis Peak Maximum Displacement (mm)*	0.75	1.5	1.5	0.75
Axis Peak Detection Limit (um/s)*	45	30	1.2	1.2
V-Sum Peak Detection Limit (um/s)*	75	50	2.0	2.0
Axis RMS Velocity Noise (um/s)*	15	10	0.40	0.40
V-Sum RMS Velocity Noise (um/s)*	25	15	0.65	0.65
Available KBft	NO	YES	NO	NO
Standard	ISEE	DIN 45669	DIN 45669 **	DIN 45669**

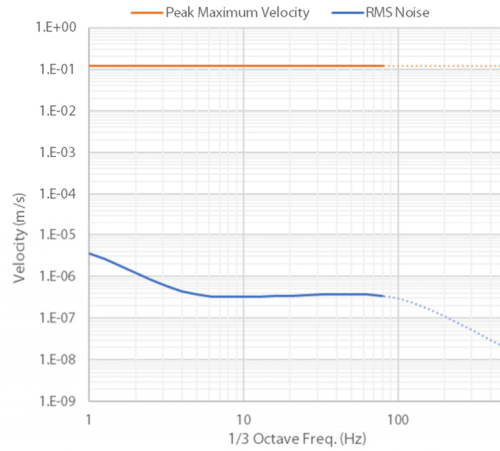
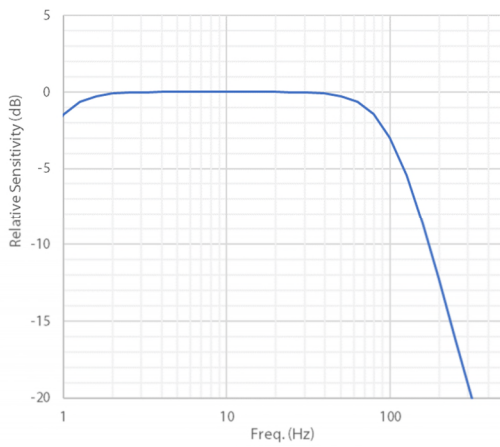
* Values in the above table are minimum specifications. Typical peak maximum velocity is higher and typical vibration noise levels are lower.

** Tested according to DIN 45669 procedure and tolerances but bandwidth differs from the standard 1-80Hz

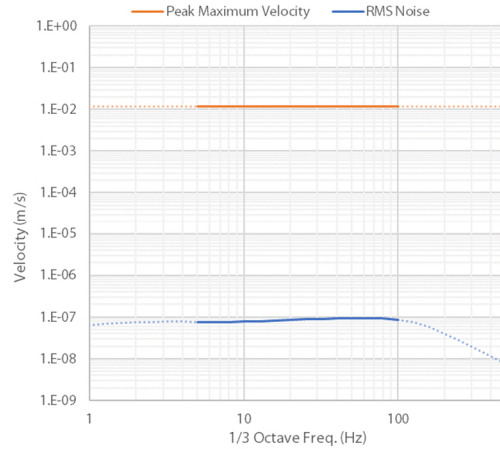
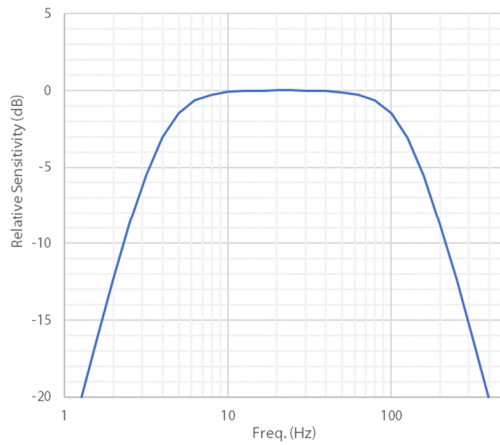
Frequency Response – ISEE



Frequency Response – DIN



Frequency Response – HS1



Frequency Response – HS2

