



HGS (INDIA) LIMITED



SPECIFICATION SHEET – GEO-S120 (Seismic Sensor)

Low Self Noise – High Sensitivity Sensor

- High resolution digitizer
- 3 component broad-band seismometer
- Force Balance with capacitive transducer
- Surface or shallow bury installations
- 150mm diameter, 125mm height
- Aluminium or Stainless Steel casing
- Bandwidth 120sec - 80Hz or 60sec-105Hz
- Sensitivity 1200V/m/s, other options available (1500V/m/s, 2000V/m/s)
- Low power consumption < 1W
- Automatic mass centering
- Very Low Self Noise
- Dynamic range > 155dB @1Hz
- Bubble level indicator
- Adjustable levelling foot
- Arrow mark for North axis direction

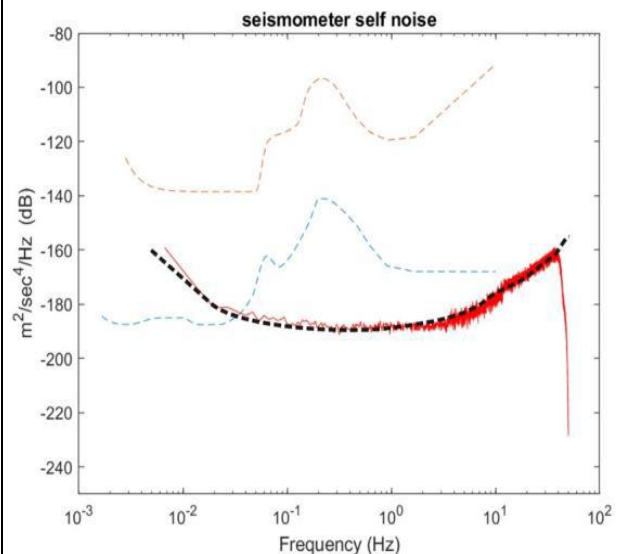


GEO-S120

System Features

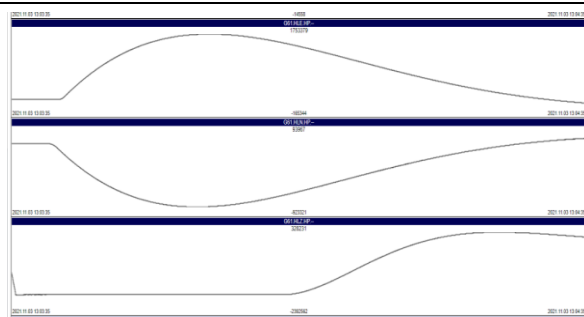
Designed and made in Greece the GEO-S120 broad-band seismometer is a product based in years of experience of designing high precision, low noise, and reliable seismic equipment. It is based on a very sensitive capacitive transducer which monitors the position of the seismic mass and a feedback loop that generates signal output proportional to velocity with default bandwidth 120sec to 80Hz extended to 120Hz. The instrument has low self-noise, so it is ideal for local, regional and tele seismic earthquake recording. No mass lock is required and supports automatic mass centering. The sensor provides calibration input and communication via serial port. The GEO-S120 design is exceptionally versatile, ideal for both direct bury and vault use cases. The seismometer casing is made from hard anodized aluminium or stainless steel.

When combined with our GEOthree or GEOsix datalogger the GEO-S120 provides a true broadband station with low overall power consumption, providing an ideal solution for rapid response applications that require high resolution data. The GEO-S60 version of this seismometer has similar specifications but the out-put velocity response is flat between 60sec to 95Hz but other options are also available for both sensors.



Major Applications:

- Broad-band networks
- Regional seismicity monitoring
- Seismic tomography acquisition
- Induced seismicity monitoring
- Volcano monitoring
- Permanent seismic networks
- Portable seismic networks
- Earthquake early warning systems



The effect of the seismometer centering

GEO-S120 Specifications:

General	S120:120sec-80Hz(*)	S60:60sec-105Hz(*)
Number of channels, orientation	3, Vertical, North-South, East-West	3, Vertical, North-South, East-West
Bandwidth	120sec-80Hz, other options available	60sec-105Hz, other options available
Technology	Force-feedback velocity sensor with capacitive transducer	Force-feedback velocity sensor with capacitive transducer
Power	9-36Vdc isolated, typical < 1W	9-36Vdc isolated, typical < 1W
Mounting	Surface mount or shallow burry	Surface mount or shallow burry
Tilt	+/-2.5 degrees	+/-2.5 degrees
Output		
Output Range	40Vpp	40Vpp
Sensitivity	1200 or 1500 or 2000 V/m/sec	1200 or 1500 or 2000 V/m/sec
Damping Noise	0.7 critical	0.7 critical
Level Clip	Below NLNM 80sec - 16Hz	Below NLNM 80sec - 16Hz
Level	16.6 mm/s	16.6 mm/s
Dynamic Range	>155dB	>155dB
Control		
Calibration Mass	Calibration Input	Calibration Input
Centering	Automatic/manual mass centering	Automatic/manual mass centering
Communication	Serial port, RS232 level	Serial port, RS232 level
Mass Position	Three independent +/-10V outputs	Three independent +/-10V outputs
Physical		
Cable length, Size	4m, 124mm height, 149mm diameter	4m, 124mm height, 149mm diameter
Weight, Casing	2.9Kg, Aluminum or stainless steel	2.9Kg, Aluminum or stainless steel
Finnish	Corrosion and scratches resistant	Corrosion and scratches resistant
Environmental		
Temperature range	-40 to +60°C	-20 to +60°C
Humidity	100%, IP68 enclosure	100%, IP68 enclosure.
Submersible	0.5m,	0.5m
Protection	Reverse and over voltage protected. Signal lines are protected	Reverse and over voltage protected. Signal lines are protected

Ordering Information

Item Description	HGS Part No.
GEO-S120 Sensor	MK001134

Version 1.1



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