

Features

- ❑ Precision calibration of sensor response
- ❑ Flat response from 120 second to 50 Hz
- ❑ Automatic leveling and mass centering; remote mass centering available
- ❑ No mass locking needed
- ❑ Electromagnetic Shielding
- ❑ Corrosion resistant and robust housing
- ❑ Output sensitivity of 1200 V/m/sec

Typical Applications

- ❑ Study of local, regional, and teleseismic events
- ❑ National Seismic networks
- ❑ Earth mode observations
- ❑ Site surveys

**arolla**

Broadband Seismometer

Designed and handmade in Switzerland, **arolla** broadband seismometer is the culmination of years of experience designing high precision, low noise, and reliable seismic equipment.

arolla's versatile, compact, lightweight, and rugged design, make it an ideal choice for many applications and use cases.

From the beginning, the design goals for the **arolla** seismometer were to make the most accurate, most reliable, easy to use/deploy, and consistent quality sensor on the market. Its triaxial design, wide temperature range, low temperature sensitivity, magnetic shielding, precision factory calibration of the sensor response, and robustness help to achieve these goals and beyond.

The introduction of **arolla** marks the launch a new series of seismometers by GeoSIG, which will be complemented with further exciting products.

arolla will also be available in a posthole version

TECHNOLOGY

Feedback	Electromagnetic force balance with capacitive transducer
Topology	Orthogonal triaxial X, Y, Z
Mass centering	Automatic at power-up Automatic or manual during operation; Can be remotely initiated
Mass lock	Not required

PERFORMANCE

Sensitivity	1'200 V/m/s $\pm 0.5\%$ factory trimmed
Self Noise	Below NLNM from 35 sec to 10 Hz and within 3 dB of NLNM at 120 sec See plot
Bandwidth	120 sec (0.00833 Hz) to 50 Hz
Cross axis	$\leq 1\%$ coupling; Including misalignment from axis to case reference
Clip level	17 mm/s up to 1 Hz
Temperature	No re-centering required within ± 45 °C

POWER SUPPLY

Type	Isolated 9 to 36 VDC
Consumption	<1 W typical at 12 VDC
Protection	Over voltage, reverse voltage, ESD, complies with EMC CE

INTERFACE

Connector	Single 24 pin Milspec hermetic, isolated
Output X, Y, Z	Velocity; 40 Vpp differential Mass position; 10 Vpp single ended
Calibration	Single ended with independent calibration coil, can inject sinus signal, via cal_enable and cal_signal; Can be remotely initiated
Serial	RS485

PHYSICAL & ENVIRONMENTAL

Material	Lightweight aluminum and rigid stainless steel construction
Diameter	235 mm
Height	283 mm incl. feet & handle
Weight	< 10 kg (< 9.8 liter)
Ingress	IP68 and NEMA6P; Survives brief periods of submersion to 1m depth
Operating temp	-20 to 60 °C
Humidity	0 to 100% non-condensing
Shock	MIL STD 810G - 516.6 - Shock (air transport)

INSTALLATION

Maximum tilt	$\pm 2^\circ$
Orientation	Floor mount with bubble level, leveling spiked-feet with lock, N-S indicator with groove

