

5T Borehole



BOREHOLE ACCELEROMETER



Applications

- > Vertical arrays
- > Earthquake Early Warning systems
- > Strong motion seismic hazard modelling
- > Studies of ground amplification / attenuation

A low noise, triaxial force feedback borehole instrument.

The Güralp 5T borehole is equivalent to the 5T vault accelerometer, designed for strong-motion borehole studies.

Analogue borehole instruments can be combined with DM24 borehole digitizers and DCM/AM borehole data modules to build a fully networked, authenticating digital instrument inside a single borehole.

If a downhole digitiser is not required the instrument is supplied with a strain relief mechanism to isolate the sensors from motions in the load bearing cable.

Key features

Flat acceleration output from DC to 100 Hz (200 Hz option)

76 mm outer diameter

Optional single-jaw lock for boreholes of 82 - 178 mm diameter

Waterproof and durable with O-ring seals throughout

Suitable for installation with sand backfill to minimise convection

Dual output (high and low gain) and optional high/low pass filters

Optional electronic compass module to determine downhole attitude

Remote DC offset zeroing

We can provide tripods, winches and other equipment designed specifically for borehole installations. We also offer civil works, installation and seismic station operation services

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SPECIFICATIONS

SYSTEM	
Configuration / Topology	Triaxial orthogonal (ZNE)
PERFORMANCE	
Acceleration output band	DC to 100 Hz
Output sensitivity	0.1 - 4 g
Peak / Full scale output	±10 V differential
Sensor Dynamic Range	156 dB 140 dB (20 - 200 s) 127 dB (2 - 30 Hz)
Self-noise below NHNM	> 0.08 Hz (12.5 s)
Cross axis rejection	> 0.001 g/g
Linearity	> 77 dB vertical; > 66 dB horizontal
Lowest spurious resonance	> 400 Hz
Offset zeroing	Via remote control
Transfer function	User manual is available to download from the website. Each sensor is provided with full calibration details including measured sensitivity, measured frequency response and instrument poles and zeros
Calibration controls	Independent signal & enable lines exposed on sensor connector
POWER	
Power consumption (at 12 V DC)	288 mW
Power voltage range	11- 30 V DC
ENVIRONMENTAL	
Operating temperature	-20 to +65 °C (-55 °C option)

PHYSICAL	
Diameter	76 mm
Case height with lifting loop	431 mm
Enclosure/Materials	Hard anodised aluminium case Gold plated contacts O-ring seals throughout
Borehole diameter	82 mm to 120 mm
Borehole install depth	to 250 m (other options available)
Borehole install mechanism	Spring-loaded jaw with passive skids or studs (>60 kg force)

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In the interests of continual improvement with respect to design, reliability, function or otherwise, all product specifications and data are subject to change without prior notice.

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