



GURALP SYSTEMS

CMG-5TB

borehole accelerometer

Güralp Systems' CMG-5TB accelerometer is a low-noise triaxial force-feedback instrument, equivalent to the CMG-5T vault accelerometer, designed for strong-motion borehole studies.

Features

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

76mm Outer Diameter

Optional single-jaw hole 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 outputs (high and low gain) and optional high/low pass filters

Optional electronic compass module to determine downhole attitude

Remote DC offset zeroing

Güralp analogue borehole instruments can be combined with CMG-DM24 borehole digitizers and DCM/AM borehole data modules. Using these, you can build a fully networked, authenticating digital instrument inside a single borehole.

If a downhole digitizer is not present, the instrument is supplied with a strain relief mechanism to isolate the sensors from motions in the load-bearing cable.

Güralp Systems 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

Acceleration output bandwidth	DC – 100 Hz
Dynamic range	165 dB
Dynamic range, 20 – 200 s	140 dB
Dynamic range, 3 – 30 Hz	127 dB
Output sensitivity	0.1 – 4 g
Peak output	±10 V differential
Output options	2 g + 0.2 g, 1 g + 0.1 g, 0.5 g + 0.05 g, 0.1 g + 0.01 g
Lowest spurious resonance	> 400 Hz
Linearity, vertical (USGS)	> 77 dB
Linearity, horizontal (USGS)	> 66 dB
Cross-axis rejection	0.001 g / g
Remote control	DC offset zeroing
Operating temperature	–20 to +65 °C (–55 °C optional)
Temperature sensitivity	< 0.6 V per 10 °C
Materials	Hard anodised aluminium case Gold plated contacts O-ring seals throughout
Borehole diameter	82 – 120 mm
Install depth	to 250 m (other options available)
Case height (with lifting hook)	431 mm
Power supply	11 – 30 V DC
Current at 12 V DC	24 mA
Calibration controls	Common signal & enable lines exposed on sensor connector
Hole lock mechanism	Spring-loaded jaw with passive skids or studs (>60 kg force)
Optional low pass corner	50 Hz, 100 Hz or 200 Hz
