

CMG-5T



Strong motion feedback accelerometer

The Guralp CMG-5T is a three-axis strong motion force feedback accelerometer with a large dynamic range, suitable for seismology, hazard mitigation and civil engineering applications.

The standard 5T includes an amplifying filter which provides additional output lines at a nominal gain of $\times 10$. An instrument ordered with 2 g full-scale sensitivity will, therefore, have both 2 g and 0.2 g outputs. As an option, the high-gain outputs can be replaced with high-pass filtered outputs with a corner frequency to your specification.

Key Features:

- Low-noise components for high precision and extended dynamic range
- Full-scale sensitivity from 0.1 to 4.0 g
- Additional high gain outputs or optional high-pass filter
- Low pass corner from 50 to 100 Hz
- Simple installation with a single fixing bolt
- No sensor levelling required
- Isolated power supply for 10 – 36 V operation
- Robust and waterproof



Specifications



CMG-5T



The CMG-5T accelerometer is supplied with a double-ring mounting system incorporating levelling screws, allowing the instrument to be attached with a single bolt to any suitable surface that is within $\pm 5^\circ$ of the horizontal.

The CMG-5T is particularly suited to in situ structural analysis applications. Using CMG-5T sensors connected to a CMG-DM24S12 digitiser system, experiments are easy to set up with minimal disruption to working buildings. For example, signals from CMG-5T instruments distributed throughout a building can be compared in real time with earth movements measured using a buried 5TD sensor.

Standard acceleration output band	<i>DC – 100 Hz</i>
Output sensitivity	<i>4 g, 2 g, 1 g, 0.5 g or 0.1 g</i>
Corresponding high gain outputs	<i>0.4 g, 0.2 g, 0.1 g 0.05 g or 0.01 g</i>
Peak output	<i>± 10 V differential</i>
Nominal output impedance	<i>47 Ω</i>
Lowest spurious resonance	<i>> 450 Hz</i>
Linearity	<i>0.1 % full scale</i>
Cross-axis rejection	<i>0.001 g/g</i>
Dynamic range	<i>> 165 dB > 140 dB for 0.005 – 0.05 Hz; > 127 dB for 3 – 30 Hz (see plot)</i>
Operating temperature	<i>–20 to +70 °C</i>
Materials	<i>Hard anodized aluminium case Mil-spec connectors</i>
Case diameter	<i>176 mm</i>
Case height (with feet / handle)	<i>97 mm</i>
Case height (sensor only)	<i>83 mm</i>
Weight	<i>2.7 kg</i>
Isolating power supply	<i>10 – 36 V DC</i>
Current at 12 V DC	<i>9 mA</i>
Calibration controls	<i>Independent signal & enable lines exposed on sensor connector</i>
Optional output controls	<i>Remote offset zeroing</i>
Optional low pass corner	<i>50, 100 or 200 Hz</i>

