

# Güralp 6T



## MEDIUM-MOTION SEISMOMETER



### An ultra lightweight, three component, broadband seismometer.

The Güralp 6T is ideally suited to rapid installations in medium noise sites.

The 6T's high-gain feedback loop eliminates mechanical non-linearity and minimises resonances in the spring system.

The design has carefully avoided low-frequency vibration, the lowest spurious vibration is a barely measurable 440 Hz.

### Applications

- > Monitoring volcanic unrest
- > Induced seismicity monitoring e.g. hydraulic fracturing
- > Rapid deployments e.g. aftershock monitoring

### Key features

- True broadband force-feedback instrument
- Standard response of 30 s to 100 Hz
- Direct velocity outputs
- Lightweight, waterproof and self-contained
- Quick and easy, one-person installation
- Easy access to electrical connections
- No mass clamping required - plug in and go
- High sensitivity and dynamic range
- Ultra-low-power consumption of just 0.48 W
- Orthogonal instrument with high cross axis rejection (>65 dB)
- The overall measured linearity exceeds 90 dB
- The active 6T sensor is also available as a 6TD ([www.guralp.com/documents/DAS-T60-0002.pdf](http://www.guralp.com/documents/DAS-T60-0002.pdf)) which incorporates an integrated digitiser.

## SPECIFICATIONS

SYSTEM		PHYSICAL/ENVIRONMENTAL	
Technology	Force feedback (force-balance) velocity sensor	Operating temperature	-40 to +75 °C
Configuration / Topology	Triaxial orthogonal (ZNE)	Enclosure ingress protection	IP68 - protection against effects of prolonged immersion at 3 m depth for 72 hours
PERFORMANCE		SUPPORTING DOCUMENTATION	
Velocity output band (flat response within -3 dB crossing points)	30 s (0.03 Hz) to 100 Hz standard  Other options available such as 1 s to 80 Hz, or 1 s to 100 Hz.  Contact Güralp to discuss other frequency response options	Enclosure/Materials	Hard anodised aluminium case Gold plated contacts O-ring seals throughout
Output sensitivity	2400 V/ms <sup>-1</sup> (2*1200 V/ms <sup>-1</sup> ) differential output  Contact Güralp to discuss alternative high sensitivity (high gain) options	Diameter	153 mm
Peak / Full scale output	Differential: ±20 V (40 V peak-to-peak)  Single-ended (e.g. mass positions): ±10 V (20 V peak-to-peak)	Height without feet and handle	143 mm
Sensor dynamic range (at standard output sensitivity)	137 dB @ 5 Hz	Height without handle	169 mm
Cross axis rejection	> 65 dB	Height with feet and handle	210 mm
Linearity	> 90 dB	Weight	2.49 kg
Lowest spurious resonance	> 450 Hz	Communication / Connectors	Military specification bayonet  Posthole option: 100 bar/10 MPa waterproof connector
Offset zeroing	Adjustable through case. Optional remote control with DC motors	Calibration values	Measured sensor sensitivity, frequency response, instrument poles and zeros enclosed
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	Full user's guide	Available online at: <a href="https://www.guralp.com/documents/MAN-T60-0001.pdf">https://www.guralp.com/documents/MAN-T60-0001.pdf</a>
Calibration controls	Independent signal & enable lines exposed on sensor connector		
MASS / MONITORING CONTROL			
Sensor Mass positions	Three independent sensor mass position outputs (single ended)		
Mass centring/locking	Auto-centre, no mass locking required		
POWER			
Power consumption (at 12 V DC)	0.48 W		
Power voltage range	10– 30 V DC* Optional low power sensor: 5 V DC supply (output ± 4.5 V)		

\*Power voltage for operation of this unit only. Connection to additional instrumentation or use of longer cables may result in a higher input voltage requirement.