

5T Borehole



The 5T Borehole (5TB) accelerometer is designed for capturing strong motion and high intensity shaking.

KEY FEATURES

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

In addition to the borehole instrument with single jaw hole-lock, there is a 76 mm diameter option suitable for posthole installation with sand backfill to minimise convection

Waterproof and durable with O-ring seals throughout

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

Optional electronic compass module to determine downhole attitude

Remote DC offset zeroing

Strain relief mechanism fully isolates the sensors from any motions in the load-bearing cable



5TB WITH SINGLE JAW HOLE-LOCK AND LIFTING BAIL

APPLICATIONS

- > Earthquake Early Warning systems
- > Strong motion seismic hazard modelling
- > Studies of ground amplification / attenuation
- > Structural health monitoring

SPECIFICATIONS

SYSTEM	
Configuration / Topology	Triaxial orthogonal (ZNE)
PERFORMANCE	
Acceleration output band	DC to 100 Hz. Options of DC to 200 Hz
Output sensitivity	2 g standard, other solutions available
Peak / Full scale output	Differential: ± 20 V (40 V peak-to-peak)
Sensor Dynamic Range	156 dB
Self-noise	Below NBNM > 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 voltage range	10 - 36 V DC*
Power consumption (at 12 V DC)	0.4 W

*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.

ENVIRONMENTAL	
Operating temperature	-20 to +70 °C
PHYSICAL	
Diameter	76 mm (for installation without hole-lock) 89 mm (for installation with hole-lock)
Inner borehole diameter for installation with hole-locks	99 mm to 203 mm
Case height excl. lifting bail	240 mm without hole-lock 725 mm with hole-lock
Enclosure/Materials	Stainless steel case Gold plated contacts O-ring seals throughout
Borehole install depth	to 250 m (other options available)
Hole-lock install mechanism	Spring-loaded single jaw with passive skids or studs (>60 kg force)
For deployments exceeding 100 metres in depth, we recommend the integrated Downhole Minimus digitiser. For more information see the Borehole brochure or datasheet DAS-MIN-0003	

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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.

DAS-BHO-0005 Issue J