TITAN POSTHOLE ACCELEROMETER

The Titan Posthole force balance triaxial accelerometer is ideally suited for national networks and research applications requiring reliable and durable instrumentation for strong motion and free-field studies. The accelerometer is housed in a waterproof stainless steel enclosure and can be deployed in a direct burial posthole or cased borehole, which enables co-location with broadband posthole seismometers.

The Titan Posthole features industry leading dynamic range that, when combined with ultra-low self-noise performance, mitigates cultural noise resulting in precise measurements and high quality data.

It is the first accelerometer to incorporate software selectable full scale range and offset zeroing capabilities. Operators will also appreciate the instrument’s low power consumption, making the Titan Posthole the instrument of choice for difficult to access or remote deployments, where site visits should be minimized.

Industry Leading Performance Attributes

- Industry leading 166 dB dynamic range
- Ultra-low self-noise comparable to some broadband seismometers
- Wide operational frequency range: DC to 430 Hz
- Best in class thermal stability and high accuracy provide increased data quality
- Full scale range of ±0.125 g to ±4 g with independent horizontal and vertical range selection.

Ease of Use

- Electronically selectable full scale range facilitates remote sensor control when deployments are distant or difficult to access
- Integrated web server provides efficient instrument management and control

Ask us about our ultra-low temperature options
ACCELEROMETER TECHNOLOGY AND PERFORMANCE

Topology: Triaxial, horizontal-vertical
Feedback: Force balance with capacitive displacement transducer
Centering: Electronic offset zeroing via user interface
Full Scale Range: Electronically selectable range: ±4 g, ±2 g, ±1 g, ±0.5 g, ±0.25 g, and ±0.125 g (nominal)
Bandwidth: DC to 430 Hz
Dynamic Range: (Integrated RMS)
• 166 dB @ 1 Hz over 1 Hz bandwidth
• 155 dB, 3 to 30 Hz
Offset: Electronically zeroed to within ±0.005 g
Non-Linearity: <0.015% total non-linearity
Hysteresis: < 0.005% of full scale
Cross-axis Sensitivity: < 0.5% total

DIGITAL COMMAND AND CONTROL INTERFACE

Commands:
• Gain range selection
• Auto-zero or set to specific offset
• Self-test
• Calibration enable
• State of health request
• Firmware updates
Data Outputs:
• Sampled XYZ outputs (in volts and g)
• Instrument temperature
• Trimmer settings
• Instrument serial number
• Hardware assemblies and firmware revisions

DIGITAL COMMAND AND CONTROL INTERFACE (CONT’D)

Serial Port:
• RS-232 compatible Serial Line Internet Protocol (SLIP)
• Onboard web server standard HTTP

HARDWARE INTERFACE

Connector: 16-pin, marine SubConn MCBH16MSS, top mounted
Acceleration Output: 40 Vpp differential
Output Impedance: 2 x 100 Ω
Calibration Input: Single voltage input, all channels enabled together
Control Input: Single control signal can be configured to initiate auto-zero, initiate self-test, or enable calibration
Status Output: Asserted: Init OK, output signal valid
• Deasserted: Self-test in progress or failed, autozeroing in progress, calibration enabled, or starting up

POWER

Supply Voltage: 9 to 36 V DC isolated input
Power Consumption: 11 W typical quiescent
Protection: Reverse-voltage and over-/under-voltage protected
• Self-resetting over-current protection
Isolation: Supply power is isolated from signal ground

PHYSICAL AND ENVIRONMENTAL

Diameter: 97 mm
Height: 160 mm - body and connector
Weight: 3.2 kg
Operating Temperature: -20°C to +60°C
(Ultra-low temperature option available. Please contact Nanometrics.)
Storage Temperature: -40°C to +70°C
Immersion Rating: 300 m continuous submersion
Weather Resistance: Rated to IP68 for full submersion

TITAN ACCELEROMETER SELF-NOISE

SENSOR PERFORMANCE: FLAT RESPONSE

Contact a product expert   Toll Free: 1 855 792 6776   | sales_mkt@nanometrics.ca