



CODEVINTEC

Tecnologie per le Scienze della Terra e del Mare

45° 27' 39.384" N
9° 07' 30.145" E

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

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 ± 0.25 g to ± 4 g with independent horizontal and vertical range selection.



Titan – Posthole Accelerometer

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.



Polar Certified Model available for operating temperatures down to -45°C

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
- > Installation features that include an integrated bubble level, adjustable leveling screws, single bolt keyhole mount, and a compact footprint ensure that deployments are completed efficiently and quickly

Technical Specifications Titan PH

Specifications subject to change without notice

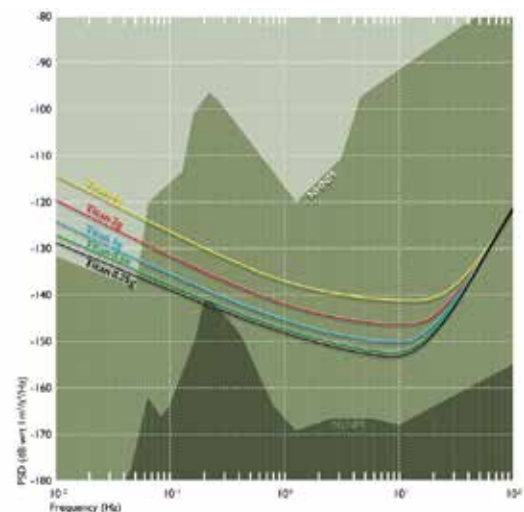
Accelerometer technology and performance

Topology	Triaxial, horizontal-vertical
Feedback	Force balance with capacitive displacement transducer
Centering	Electronic offset zeroing via user interface
Full-scale Range	Electronically selectable range: ±4g, ±2g, ±1g, ±0.5g, and ±0.25g (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 ±0.005g
Non-linearity	< 0.015% total non-linearity
Hysteresis	< 0.005% of full scale
Cross-axis Sensitivity	< 0.5% total
Offset Temperature Coefficient	> Horizontal sensor: 60 µg/°C, typical > Vertical sensor: 320 µg/°C, typical

Digital Command and Control Interface

Serial Port	> RS-232 compatible Serial Line Internet Protocol (SLIP) > Onboard web server standard HTTP
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Titan accelerometer self-noise





Digital Command & Control Interface (CONT'D)

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

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

Supply Voltage	9 to 36 V DC isolated input
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Power Consumption	1.1 W typical quiescent
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Protection	Reverse-voltage and over-/under- voltage protected > Self-resetting over-current protection
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Isolation	Supply power is isolated from signal ground
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Physical and Environmental

Diameter	97 mm
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Height	160 mm - body and connector
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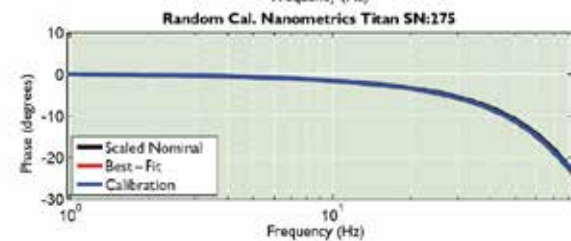
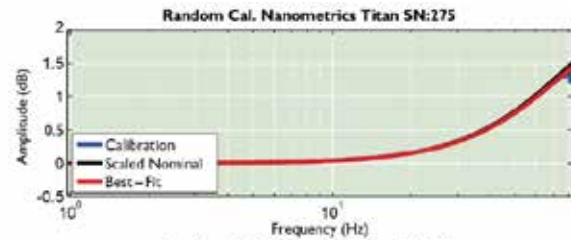
Weight	3.2 kg
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Operating Temperature	-20°C to 60°C (Standard Model) -45°C to 60°C (Polar Certified Model)
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Storage Temperature	-40°C to +70°C
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Ingress protection	Rated to IP68 at 300 m for continuous immersion
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Sensor performance: Flat response



Test results courtesy of USGS