TITAN ACCELEROMETER

The Titan is a force balance triaxial accelerometer that provides exceptional performance over a wide frequency range from DC to 430 Hz and features industry leading dynamic range and ultra-low self-noise performance that is comparable to that of some broadband seismometers.

As the first accelerometer to incorporate digitally selectable full scale range and offset zeroing capabilities; the Titan's features are ideal for difficult to access or remote deployments, where site visits should be minimized. The triaxial sensor and electronics are housed in a rugged, compact aluminum enclosure featuring a single bolt anchoring slot, adjustable leveling screws and integrated bubble level.

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

Ease of use advantages:

- 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

Combine the Titan with the Centaur digitizer to achieve a complete data acquisition and recording system that is suitable for deployment in both remote and networked locations.
**TECHNICAL SPECIFICATIONS TITAN ACCELEROMETER**

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 or control line

**Full-scale Range:** Electronically selectable range: ±4g, ±2g, ±1g, ±0.5g, and ±0.25g (peak)

**Bandwidth:** DC to 430 Hz (-3 dB point)

**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 & 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

**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

**Digital Interface:** Onboard web server standard HTTP
- RS-232 compatible Serial Line Internet Protocol (SLIP)
- R-232 command-line interface

### HARDWARE INTERFACE

**Connectors:** MIL-C-26482G Series 1, 14-pin, shell size 12
- Acceleration Output: 40 Vpp differential
- 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: Unit OK, output signal valid
- Deasserted: Self-test in progress or failed, autozeroing in progress, calibration enabled, or starting up

**Serial Port:** 9600 Baud RS-232 compatible

### 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

**Grounding:** Predrilled holes (4) for M4 x 5 grounding lug screw

**Voltage Disconnect:** Software configurable (low/high)

### PHYSICAL AND ENVIRONMENTAL

**Housing:** Aluminum, surface resistant to corrosion, scratches, and chips

**Mounting:** Single bolt keyhole mount

**Leveling:** Integrated bubble level

**Adjustable locking leveling screws**

**Size:** Length: 140 mm
- Width: 85 mm
- Height: 58 mm
- Weight 960 g

**Operating Temperature:** -20°C to +60°C
(Ultra-low temperature option available. Please contact Nanometrics.)

**Storage Temperature:** -40°C to +70°C

**Humidity:** 0 to 100%

**Weather Resistance:** Rated to IP67

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

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![TITAN ACCELEROMETER SELF–NOISE](image)

![SENSOR PERFORMANCE: FLAT RESPONSE](image)

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