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

Titan

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.

Titan accelerometer connected to and powered by a Centaur digitizer

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: ±4*g*, ±2*g*, ±1*g*, ±0.5*g*, and ±0.25*g* (peak)
Sensitivity accuracy: ±0.5%
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 ±0.005*g*
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 µ*g*/°C, typical
- Vertical sensor: 320 µ*g*/°C, typical

AVAILABLE MODELS

TACCL-N1: Standard Model
TACCL-V1: Vertical Mount Model

DIGITAL COMMAND AND CONTROL INTERFACE

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

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

HARDWARE INTERFACE

Connectors: MIL-C-26482G Series 1, 14-pin, shell size 12
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: 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: 1.1 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)

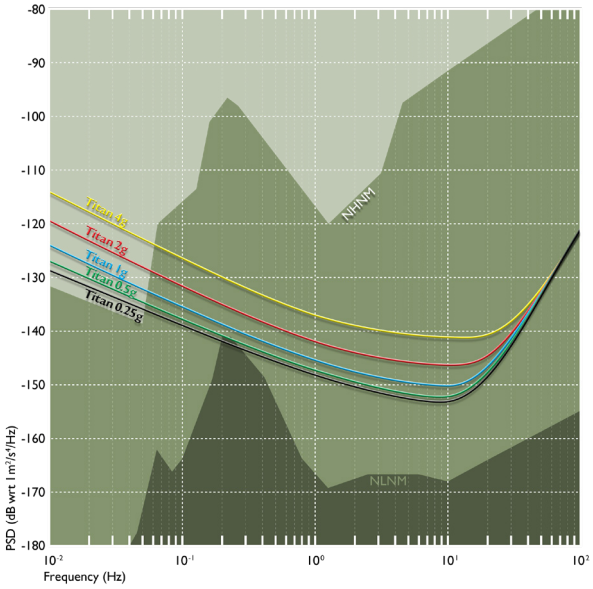
PHYSICAL AND ENVIRONMENTAL

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

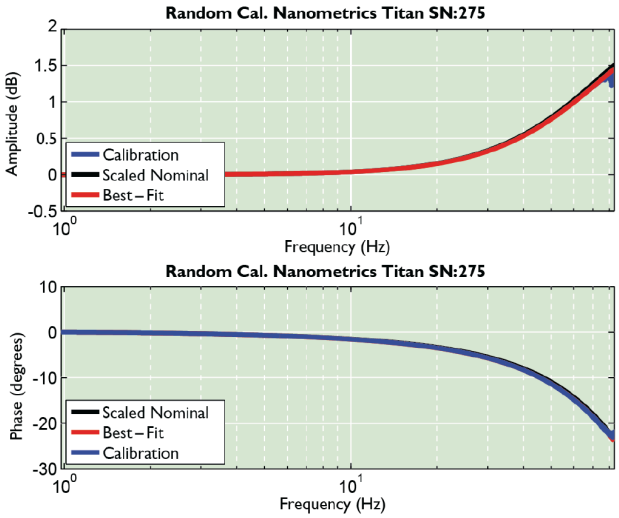
Shock:
- 100 *g* half sine, 5 ms without damage, 6 axes
- No mass lock required for transport

Operating Temperature: -20°C to +70°C (Ultra-low temperature option available. Please contact Nanometrics.)
Storage Temperature: -40°C to +70°C
Humidity: 0 to 100%
Ingress protection: Rated to IP68 at 2 m for 72 hours

TITAN ACCELEROMETER SELF-NOISE



SENSOR PERFORMANCE: FLAT RESPONSE



Test results courtesy of USGS

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

nanometrics
Listening to the Earth

3001 Solandt Road, Kanata, Ontario, Canada K2K 2M8 | Tel: +1 613 592 6776

