PEGASUS DIGITAL RECORDER
DATA ACQUISITION SYSTEM

The foundation of a new ecosystem for portable broadband and passive node deployments

The Pegasus digital recorder is a highly portable, low-power and mobile integrated seismic acquisition system that delivers an intuitive, efficient workflow with a fast and reliable data delivery system that ensures a complete data set.

The Pegasus digital recorder provides high fidelity data acquisition tailored to the needs of portable monitoring campaigns. The power consumption of <200 mW represents a reduction of 60% for a typical sensor and digitizer station. With the small size, weight and power (SWaP) of Pegasus, you can deploy more stations for a longer period of time with less investment.

From Experiment Design to Publishing

Ultra-low Size, Weight and Power
The exceptionally low power consumption of Pegasus significantly reduces battery requirements, overall station size and weight allowing for the efficient deployment of more stations for a longer period of time.

Modular and versatile
The modular nature opens up broad choices in battery chemistry and sensor technologies, facilitating transport logistics and matching station design to the needs of the science.

Easy-to-Use
Whether you are working with a handful of units or many hundreds, well-designed friendly and intuitive workflows for all scenarios allow even the most inexperienced operator to work with confidence.

Quick to configure, deploy, retrieve data, process and publish
Boot time in less than 10 seconds and intuitive responsive Apps make configuration and deployment fast and fail-safe. Data recovery is via lightning-fast USB 3.0, where one month of data can be seamlessly downloaded ready for processing in under 10 seconds.

Complete ready-to-process data
Ready-to-use data is delivered in MiniSEED format along with StationXML metadata and comprehensive project audit information, such as field notes and photos.

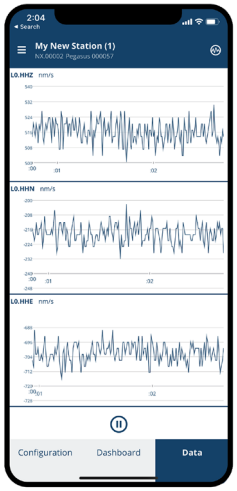
Polar Certified Model available for operating temperatures down to -45°C

Pegasus

Any Sensor, Density or Duration

Flexible and modular, the Pegasus digital recorder supports single, dual or 3-component analog sensors including:

- Broad support for broadband seismometers
- Geophone sensors
- Strong motion accelerometers
- Microbarometers
- Meteorological Sensors



iOS and Android applications connect seamlessly over Bluetooth to provide the primary field interface for the Pegasus digital recorder.

nanometrics

nanometrics.ca

TECHNICAL SPECIFICATIONS PEGASUS DIGITAL RECORDER

Specifications subject to change without notice

DIGITIZER PERFORMANCE & CAPABILITIES

Sampling: Simultaneous on all channels
Resolution: 28 bit for ≤ 10 sps
26 bit for 20 to 50 sps
24 bit for ≥ 100 sps
Accuracy: Nominal gain accurate within ±0.5%
Dynamic Range (typical): 142 dB @ 20 sps, 135 dB @ 100 sps (40 Vpp (1x gain), full-scale peak to RMS shorted-input noise)
Preamp Gain: 1x, 4x, 10x, 40x, 80x
Sensor A and B independently selectable
Sample Rates: 1, 2, 5, 10, 20, 40, 50, 100, 200, 250, 500, 1000 sps
Sensor A and B independently selectable
Decimation Anti-Aliasing Filter
- Selectable linear phase (noncausal) or minimum phase (causal)
- -140 dB (linear phase) at output Nyquist frequency, 0 dB at 80% Nyquist

SENSOR INPUTS

Channels: Available with 3 or 4 input channels
3-channel Sensor A port
1-channel Sensor B (This optional port is available on 4-channel models only)
Input Voltage Range (Peak-to-peak differential):
40 V, 10 V, 4 V, 1 V, 0.5 V
Also compatible with single-ended inputs: Up to 20 V peak-to-peak (±10 V)
Input Impedance: 1.7 MΩ (40 kΩ for 40 Vpp range)

AVAILABLE MODELS

PGS-131: 3 Channels, Internal GNSS Antenna, 32GB
PGS-140: 4 Channels, Internal/External GNSS Antenna, 32GB
PGS-140-XC: 4 Channels, Internal/External GNSS Antenna, 32GB, Polar Environment
PGS-140-128GB-XC: 4 Channels, Internal/External GNSS Antenna, 128GB, Polar Environment
PGS-140-128GB-MC: 4 Channels, Internal/External GNSS Antenna, 128GB, Metal Connectors

SENSOR COMPATIBILITY

Sensor Types: Differential analog sensors such as broadband seismometers, geophones, microbarometers, accelerometers and meteorological sensors
Control Lines: 3 on Sensor A and 1 on Sensor B port — typically used for mass center, and selecting XYZ/UVW or SP/LP modes
Sensor Power:
- Supply power pass-through to sensor channels (9-17 V DC, 1A)
- Over-current protected

Auto Mass Centering:
Configurable thresholds, intervals
Serial Interface: Sensor A supports digital management of Nanometrics sensors

DATA RECORDING & RETRIEVAL

Data sets:
- Waveform data: miniSEED, STEIM2 compressed or export in SEG-Y
- Station metadata including instrument response: StationXML
- State-of-Health: miniSEED
- Instrument logs

Internal Memory: High reliability 32 GB
Data Download: USB3.0 Superspeed (>100MB/s) to application available for Windows, OSX, and Linux
User Interface: Bluetooth connectivity with mobile application (iOS and Android) for configuration and live view of waveforms and state-of-health
Telemetry: Periodic state-of-heath via auxiliary serial interface on Power Telemetry Connector

TIMING - GNSS & PRECISION NETWORK TIMING

Timing System: Internal VCXO clock disciplined to selectable timing source
Timing Source: GNSS (Selectable from GPS, GLONASS, BeiDou, Galileo, QZSS), or free-running
Timing Accuracy: <5 µsec (GNSS Always on)
<100 µsec (GNSS duty cycled)
GNSS Receiver: Internal 33-channel GNSS receiver
GNSS Power: Selectable: Always on, Duty cycled or Off (free running)

POWER

Power Supply: 9-17 V DC non-isolated input
Power-up: <5 seconds
Protection: Electronic resettable fuse design, lightning surge (IEC61000), reverse battery protection
Battery Manager: User-configurable low voltage shutdown and restart thresholds

POWER USAGE (TYPICAL)

3-channel model: <200 mW (Duty-cycled GNSS)
4-channel models: <200 mW plus 40 mW when 4th channel is enabled (Duty-cycled GNSS)

CONNECTORS & LEDS

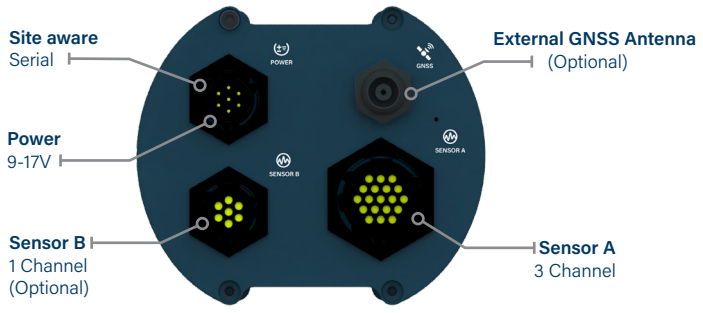
Sensor A (3-channel): 19-pin, shell size 14, female
Sensor B (1-channel): 7-pin, shell size 10, female
Power/Telemetry: 7-pin, shell size 8, male
External Status LEDs: Single multicolor LED for timing, system, and local communications status
USB: USB-C waterproof receptacle (capped)
GNSS Antenna: Internal and/or TNC (female) with 3.3 V supply for units with optional external active antenna

PHYSICAL AND ENVIRONMENTAL

Housing: UV, impact, and chemical resistant plastic
Ingress Protection: Rated to IP68 for prolonged immersion to 1 m when connectors mated or capped
Humidity: 0 to 100%
Operating Temperature:
–20°C to +60°C (standard models)
–45°C to +60°C (Polar Certified model)
Storage Temperature:
–40°C to +70°C (standard models)
–60°C to +70°C (Polar Certified model)
Weight: 650 g
Size: 83.5 mm (L) x 96.5 mm (W) x 164 mm (H) not including connectors/203.5 mm (H) including connectors

CERTIFICATIONS

Regulatory: CE 2014/53/EU (RED), FCC, IC, RoHS



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

nanometrics

Strategic intelligence fueled by science

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