



# 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

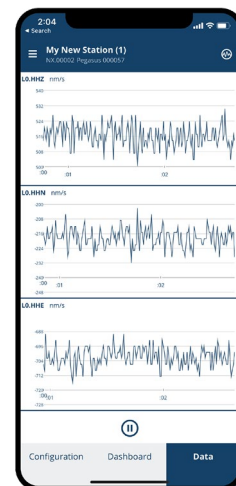
Ready-to-use data is delivered in MiniSEED format along with StationXML metadata and comprehensive project audit information, such as field notes and photos.



## 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.*



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

# TECHNICAL SPECIFICATIONS PEGASUS DIGITAL RECORDER

Specifications subject to change without notice

## DIGITIZER PERFORMANCE & CAPABILITIES

- Sampling:** Simultaneous on all channels  
**Resolution:** 28 bit for  $\leq 10$  sps  
26 bit for 20 to 50 sps  
24 bit for  $\geq 100$  sps  
**Accuracy:** Nominal gain accurate within  $\pm 0.5\%$   
**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**
- Linear phase (also known as non-causal or acausal)
  - -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  
**Input Impedance:** 1.7 M $\Omega$  (40 k $\Omega$  for 40 Vpp range)

## AVAILABLE MODELS

- PGS-131:** 3 channels, internal GNSS antenna  
**PGS-140:** 4 channels, internal/external GNSS antenna  
**PGS-140-XC:** 4 channels, internal/external GNSS antenna, Polar Certified

## CERTIFICATIONS

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

## 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
  - 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-health 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  $\mu$ sec (GNSS Always on)  
<100  $\mu$ sec (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:** <10 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)

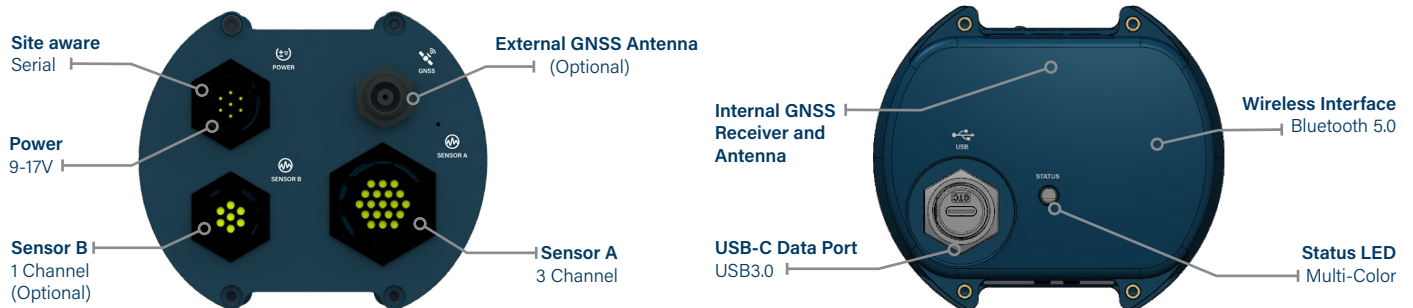
- 3-channel model:** <200 mW (Duty-cycled GNSS)  
**4-channel models:** <200 mW plus 40 mW when 4th channel is enabled (Duty-cycled GNSS)

## 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



Contact a product expert Toll Free: 1 855 792 6776 | [sales\\_mkt@nanometrics.ca](mailto:sales_mkt@nanometrics.ca)