



CODEVINTEC

Tecnologie per le Scienze della Terra e del Mare

45° 27' 39.384" N
9° 07' 30.145" E

Meridian compact All-in-one digital posthole seismograph



The combination of two proven technologies in a single instrument maintains a small station footprint.

This next-generation seismograph is a marvel of miniaturization, with no compromise in performance

- > Accurate
- > Deployable
- > Portable
- > Serviceable



Ask us about our ultra-low temperature options



Meridian compact PH

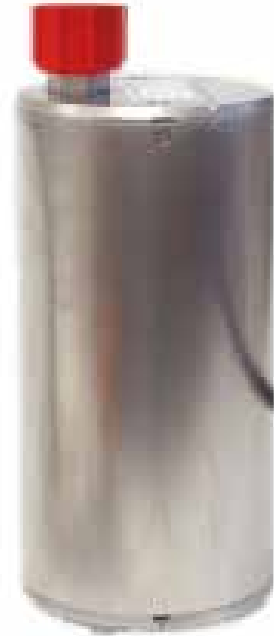
Introduced in 2009, the Trillium Compact's small size and portability revolutionized broadband fieldwork. The Meridian Compact PH takes broadband to an entirely new level, by marrying the sensor to the digitizer and recorder.

As shallow as possible, as deep as necessary

Direct bury installation consistently demonstrates performance gains. And combining technologies in a single unit keeps things simple: the Meridian Compact PH seismograph is extremely easy to deploy, with no-mass lock or mass centering required. Its exceptionally small size and generous operational tilt range significantly reduces the time and effort required for site preparation and installation.

Metadata you can trust

Instrumentation configuration is made easy with an intuitive user interface. Once configured, the Meridian Compact PH builds its own metadata. With the digitizer and sensor housed in a single unit, Dataless SEED or RESP response files are internally built and guaranteed to be correct every time.



Technical specifications Meridian Compact PH

Specifications subject to change without notice

SENSOR: Trillium Compact Seismometer

See the Trillium Compact Seismometer specifications for more details.

Technology

Topology	Symmetric triaxial
Mass centering	None required
Operational tilt range	120s model: $\pm 2.5^\circ$ 20s model: $\pm 10^\circ$

Performance

Bandwidth/120s	-3 dB corners at 120 s and 108 Hz
Bandwidth/20s	-3 dB corners at 20 s and 108 Hz
Clip Level	>26 mm/s up to 10 Hz and 0.17g above 10 Hz

Digital Recorder

Digitizer Performance & Capabilities

Type	24-bit ADC per channel, simultaneous sampling
Dynamic range	142 dB @ 100 sps (full-scale peak to RMS shorted-input noise)
Selectable Gain	1, 2, 4, 10
Sensitivity	300, 600, 1200, 3000 counts/($\mu\text{m/s}$), 1% accuracy
Sample rates	1, 2, 5, 10, 20, 40, 50, 80, 100, 125, 200, 250, 500, 1000, 2000, 5000 sps
Dual Sample Rates	A second sample rate can be selected from the sample rates above

Decimation Filter	Selectable linear phase (non-causal) or minimum phase (causal)
Anti-alias Filters	-140 dB (linear phase) or -120 dB (minimum phase) at Nyquist frequency, 0 dB at 80% Nyquist
Digital Filters	> User-configurable low-pass and high-pass > 1st to 5th order, 0.1mHz to Nyquist > Different filters may be configured for primary and secondary sample rates
Orientation Correction	User configurable onboard 3-D data rotation for correcting azimuth and tilt
Calibration	
Signal Source	16-bit DAC with 30 ksp/s output
Attenuator	Selectable 1, 10, 100 attenuation
Waveforms	Synthesized sine, PRB signals Playback user defined calibration files
Recording (Continuous)	
Formats	MiniSEED
Internal Media	8 GB flash memory (32 or 64 GB options available)
Removable Media	SD Card up to 64 GB
Recording (Events)	
Triggers	Bandpassed STA/LTA, Threshold
Captured Data	MiniSEED, ASCII

**Data Retrieval**

File Transfer	Via Ethernet, Ethernet-connected DSL, VSAT, cellular, radio
Media Exchange	Weather-sealed data cartridge that is field-swappable during continuous recording with no loss of data
Response Metadata	Generate and download full digitizer/sensor response files in RESP or Dataless SEED format

Data Streaming

Continuous	Seismic data and State-of-Health data
Formats	SeedLink, Nanometrics NP
Events	Triggered event data: email, secure file transfer, other options available

Timing - GNSS & Precision Network Timing

Timing System	Internal DCXO clock disciplined to selectable timing source
Timing Source	Select from GNSS, PTP (Precision Timing Protocol), NTP or free-running
Timing Server	Serve PTP or NTP time to other Meridian, Titan SMA/EA or Centaur
Timing Accuracy	- <5 µsec (GNSS Always On) - <100 µsec (GNSS duty cycled, PTP or local NTP)
GNSS Support	Internal 32-channel GNSS receiver
GNSS Power	Selectable: Always on, duty cycled, or off

Communications

Web-based UI	Supports standard PC, tablet and mobile devices
Network interface	10/100 Base-T Ethernet
IP Addressing	Static, dynamic (DHCP) or link-local IP address
Protocols	UDP/IP unicast/multicast, HTTP data streaming

Seismograph Specifications**Power**

Power Input	9-36 VDC isolated input Consumption: 1.0 W (1.3 W with Ethernet) typical
Protection	> Lightning surge protected > Reverse-voltage and over-voltage protected > Self-resetting over-current protection
Battery Manager	User configurable low voltage shutdown and restart thresholds

Environmental

Operating temperature	-20°C to +60°C (Ultra-low temperature option available, including the SIU. Please contact us.)
Storage temperature	-40°C to +70°C
Shock	100 g half sine, 5 ms without damage, 6 axes
Pressure	sensitive to pressure
Weather/water resistance	Rated to IP68 continuous immersion up to 40 m
Humidity	0 to 100%

Physical

Max. cable length	40 m
Housing	Stainless steel
Weight	3.3 kg
Height	238 mm, including connector
Diameter	97 mm
Removable digitizer	Digital recorder can be removed for servicing
Connector	16-pin, Subconn Micro series, top mounted

Surface Interface Unit (SIU)**Features**

Status LEDs	Removable media, Archive, Time, Link, Sensor, System
Connectors	> Power: 3-pin MIL-Circular > Ethernet: 4-pin MIL-Circular > Data cartridge: 8-pin MIL-Circular > GPS antenna: TNC connector with 3.3 V supply for active antenna > Meridian: 14-pin MIL-Circular
Data cartridge	Field-swappable, weather-sealed data cartridge that holds replaceable SD card (41 mm dia. x 67 mm)
Buttons	Media Eject, Shutdown

Physical / Environmental

Housing	Powder coat aluminum with nickel-plated steel base
Weather/water resistance	Rated to IP67
Dimensions	> Length: 180 mm > Width: 83 mm > Height: 43 mm including connectors

Specifications for Meridian Compact PH 120s and Meridian Compact PH 20s
Specifications are the same for both products unless otherwise stated. For more detailed specifications, please go to www.nanometrics.ca.