

Nanometrics brought you the Trillium Compact in 2009 and the evolution continues



# Meridian <sup>COMPACT</sup> PH

**NEW**

## All-in-one Digital Seismometer

**Accurate  
Portable  
Deployable  
Serviceable**

### The Trillium Compact speaks for itself

Its small size and portability has changed the way we do broadband fieldwork and now the Meridian Compact Posthole (MC120-PH1 and MC20-PH1) takes broadband to an entirely new level. Marrying the sensor to the digitizer, this second generation seismograph is the latest development in downhole installations. The Meridian Compact PH is a marvel of miniaturization with no compromise on performance.

### As shallow as possible, as deep as necessary

Going underground with a standardized installation methodology consistently demonstrates performance gains of a direct burial deployment. The Meridian Compact PH seismograph is extremely simple to deploy with no mass lock and no mass centering required. The exceptionally small size and self-correcting leveling system significantly reduces the time and effort required for site preparation and installation.

### Meta data you can trust

Instrumentation configuration is made easy with the intuitive user interface. Once configured, the Meridian Compact PH builds its own meta data. With the digitizer and sensor housed in a single unit, data-less seed volume is internally built and guaranteed to be correct every time.

### Less to forget, less to integrate

Combining proven technologies into a single package keeps it simple.

Meridian Compact PH ships with a Surface Interface Unit which provides intuitive diagnostic LEDs enabling installations without the need for a smart device.

 **Nanometrics**

## 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](http://www.nanometrics.ca). Specifications subject to change without notice.



SPECIFICATIONS

# Meridian COMPACT PH

### SENSOR: Trillium Compact Seismometer

See the Trillium Compact Seismometer specifications for more details.

#### TECHNOLOGY

Topology	Symmetric triaxial
Mass centering	None required
Operational tilt range	Self-levelling (120 s): $\pm 2.5^\circ$ Self-levelling (20 s): $\pm 10^\circ$

#### PERFORMANCE

Sensitivity	750 V-s/m nominal $\pm 0.5\%$ precision
Bandwidth / 120 s	-3 dB points at 120 s and 108 Hz
Bandwidth / 20 s	-3 dB points at 20 s and 108 Hz
Clip Level	26 mm/s from 0.1 Hz to 10 Hz

#### DIGITIZER

##### PERFORMANCE

Type	24-bit ADC per channel
Dynamic range	142 dB @ 100 sps, measuring full-scale sine wave amplitude to RMS shorted-input noise
Sample rates	1, 2, 5, 10, 20, 40, 50, 80, 100, 200, 250, 500, 1000, 2000, 5000 sps, plus dual sample rates
Selectable Gain	1x, 2x, 4x, 10x

##### CALIBRATION

Signal Source	16-bit DAC with 30 ksps output
Attenuator	Selectable 1x, 10x, 100x, 1000x attenuation
Waveforms	Playback standard .wav files (step & sine wave provided) Custom waveforms may be used

##### RECORDING (CONTINUOUS)

Formats	MiniSEED, Nanometrics NP
Internal Media	8 GB flash memory (other capacities available upon request)
Removable Media	SD Card up to 64 GB

##### RECORDING (EVENTS)

Triggers	Bandpassed STA/LTA, Threshold
Captured Data	MiniSEED, ASCII (COSMOS, SMC, generic)

##### DATA RETRIEVAL

File Transfer	Via Ethernet, WiFi or Ethernet-connected DSL, VSAT, cellular, radio
Media Exchange	SD card field-swappable during continuous recording with no loss of data

##### REAL-TIME DATA COMMUNICATIONS

Continuous	Seismic data and State-of-Health data streaming
Formats	SEEDLink (optional), Nanometrics NP (standard)
Events	Triggered event data: email, secure file transfer, other options available

##### TIMING

Timing System	Internal DCXO clock disciplined to GPS (standard) or external PTP timing source (optional)
Timing Accuracy	<100 $\mu$ sec (GPS duty cycled) <5 $\mu$ sec (GPS Always On)
GPS Receiver	Internal 14-channel receiver
GPS Power	Selectable: Always On, or Duty Cycled
PTP (optional)	High precision network timing via Nanometrics PTP Master on same LAN (IEEE 1588-2002)

#### COMMUNICATIONS

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

#### POWER, ENVIRONMENTAL, PHYSICAL

##### POWER

Supply voltage	9-36 V DC isolated input
Consumption	<1.0W (1.3W with Ethernet)
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	-40 to +65°C
Storage temperature	-55 to +75°C
Shock	100 g half sine, 5 ms without damage, 6 axes
Pressure	Insensitive to pressure
Weather/water resistance	Rated to IP-68 continuous immersion up to 40 m
Humidity	0 to 100%

##### PHYSICAL

Max. cable length	40 m
Housing	Stainless steel
Weight	3.0 kg (6.6 lb.)
Height	233 mm (9.18 in.), including connector
Diameter	97 mm (3.80 in.)
Removable digitizer	Digitizer can be removed for self-servicing

#### SURFACE INTERFACE UNIT (SIU) BREAKOUT BOX

##### EXTERNAL FEATURES

Status LEDs	System status, Link, Time, Media, Sensor
Connectors	Power: 3-pin MIL-Circular Ethernet: Watertight RJ-45 connector GPS antenna: TNC connector with 3.3V supply for active antenna Meridian: 14-pin MIL-Circular

##### INTERNAL FEATURES BEHIND WATERTIGHT DOOR

LED	Media Eject
Media slot	Removable SD card
Buttons	Media Eject, Shutdown

##### PHYSICAL/ENVIRONMENTAL

Housing	Hard anodized aluminum
Weather/water resistance	Rated to IP-67
Dimensions	Length: 187 mm (7.36 in.) Width: 70 mm (2.76 in.) Height: 49 mm (1.93 in.)