

The world's best-selling broadband seismometer, **Trillium Compact** is available in several configurations to best suit your deployment



Trillium COMPACT

Small, highly portable seismometers

Benefits

- > Low-noise broadband seismometer performance combined with the handling and installation convenience of a geophone
- > Ultra-low power consumption (180 mW) allows for smaller power systems and higher station reliability.
- > Exceptionally small size significantly reduces the time and effort required for site preparation and installation
- > Quick and easy to deploy with no mass lock, no mass centering and a wide tilt range
- > Integrated web server facilitates instrument management





Trillium

COMPACT

Class-leading performance

Trillium Compact is extremely simple to deploy with no mass lock and no mass centering required. The exceptionally small size significantly reduces the time and effort required for site preparation and installation. Continuous quality data are available within minutes of deployment with no requirement for further intervention.



- ◀ The Trillium Compact 20s features the same force feedback sensor design with a response flat to velocity from 20 seconds to 100Hz. The 20s instrument features an industry-leading tilt tolerance of 10°, making deployments very fast and efficient in various surface conditions. Several base foot options are available for different terrains.



TRILLIUM COMPACT	
Diameter	90 mm (3.54")
Height	100 mm (3.93") – body only
Immersion Rating	IP67

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Versatility: Trillium Compact is available in several variants to facilitate vault, surface or buried downhole deployments.



◀ **Trillium Compact 120s** combines the superior performance of a broadband seismometer with the installation convenience of a rugged geophone. The 120s instrument incorporates a symmetric triaxial force feedback sensor design with a response flat to velocity from 120 seconds to 100Hz.

Available in both 120s and 20s variants, the ▶ **Trillium Compact Posthole** features a stainless steel enclosure and waterproof connector ideally suited for downhole deployments of 300 meters or more.

TRILLIUM COMPACT POSTHOLE	
Diameter	97 mm (3.90")
Height	118 mm (4.65") – body only
Immersion Rating	IP68

◀ **Optional transport case** doubles as thermal insulating cover for surface deployments





Trillium COMPACT

Specifications subject to change without notice.

TECHNOLOGY

Topology	Symmetric triaxial
Feedback	Force balance with capacitive transducer
Mass Centering	Not required

PERFORMANCE

Sensitivity – 120 s	750 V-s/m nominal $\pm 0.5\%$ precision
Bandwidth – 120 s	-3 dB points at 120 s and 100 Hz
Sensitivity – 20 s	750 V-s/m nominal $\pm 0.5\%$ precision
Bandwidth – 20 s	-3 dB points at 20 s and 100 Hz
Off-axis Sensitivity	$\pm 0.5\%$
Transfer Function	Lower corner pole frequency within $\pm 0.5\%$ of nominal provided High-frequency poles within 1 db of nominal up to 45 Hz No peak in response at high frequency
Clip Level	26 mm/s from 0.1 Hz to 10 Hz
Oper. Tilt Range – 120 s	$\pm 2.5^\circ$
Oper. Tilt Range – 20 s	$\pm 10^\circ$
Parasitic Resonances	None below 200 Hz
Dynamic Range	> 152 dB @ 1 Hz

INTERFACE

Connector – Surface	14-pin, shell size 12, MIL-C-26482 Series I, top mounted
Connector – Downhole	16-pin, underwater SubConn MCBH16MSS, top mounted
Velocity Output	± 20 V peak (40 V peak-to-peak differential) Selectable XYZ or UVW mode
Mass Position Output	Single voltage output representing max. mass position 3-channel mass positions available through serial port
Calibration Input	Single voltage input and one active high control signal to enable all 3 channels Remote calibration in XYZ or UVW mode Independent channel selection by serial port

DIGITAL COMMAND & CONTROL INTERFACE

Digital Interface	RS-232 compatible serial IP (SLIP) Onboard web server standard HTTP
Digital Commands	XYZ, UVW mode switching Calibration channel selection (off, enable all, U, V, or W) Short/long period mode Firmware updates State-of-health request
Digital Data Outputs	Independent mass position values Instrument temperature Factory sensitivity User calibration data (poles and zeros) Instrument serial number and firmware revision

PHYSICAL

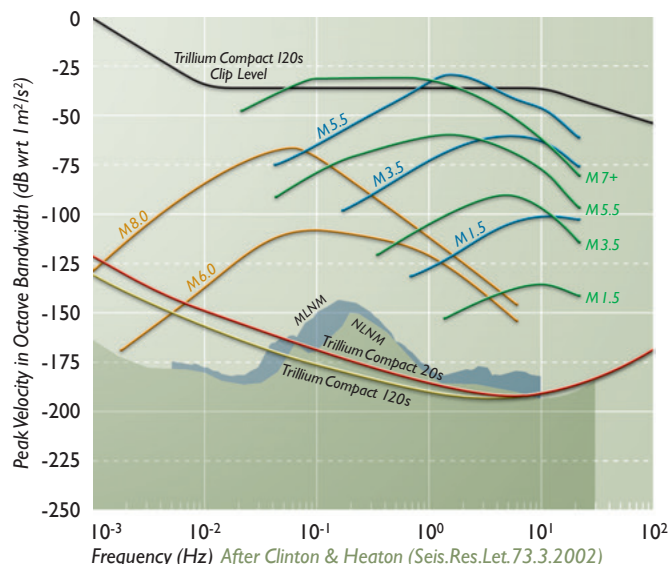
Housing	Surface resistant to corrosion, scratches and chips
Alignment	Vertical scribe marks for N/S Precision N/S-E/W guide in top of cover for straight-edge, line or laser level

POWER

Supply Voltage	9 to 36 V DC isolated inputs
Power Consumption	< 180 mW typical (model TC120-SV1) < 195 mW typical (model TC20-SV1)
Protection	Reverse-voltage and over-voltage protected Self-resetting over-current protection revision

ENVIRONMENTAL

Operating Temp.	-40 to +60°C
Storage Temp.	-65 to +75°C
Shock	100 g half sine, 5 ms without damage, 6 axes No mass lock required for transport
Magnetic	Insensitive to natural variations of the earth's magnetic field



The Earthquake Spectrum

- Local events ~10 km Several seconds to 30 Hz
- Regional ~100 km 30 seconds to 10 Hz
- Teleseismic ~3000 km 3600 seconds to 2 seconds

Note: Sensor noise floors and earth noise models have been converted to equivalent peak amplitudes using a full octave bandwidth assuming Gaussian distribution and 95% probability.