SolGeo

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GUARDIAN BB SEISMOGRAPH AND ACCELEROGRAPH

The broadband seismograph/accelerograph Guardian BB is compact, flexible and reliable, equipped with recording software with a web user interface.

Guardian BB is ideal for structural monitoring of buildings with threshold-exceeding alerts. Guardian BB is a compact, Class 1 triaxial seismograph and a low-noise MEMS accelerometer for dynamic measurements on structures in compliance with the reference standards DIN 4150-3, DIN 45669-1, and UNI 9916.
It includes an 1Hz electronically linearized geophone triad plus a MEMS accelerometer with noise level of 0.7 µg/√Hz. A special system on the bottom plate allows it to be fixed to the floor/wall with a single bolt, and three adjustment screws ensure leveling. It uses flash memory to store velocity and acceleration data and offers various Internet connectivity methods. It can function as an FTP/SFTP client and SFTP server and use standard transmission protocols, such as SeedLink for real-time data transmission to popular software applications such as SeisComP, Sworm, etc.
The device is managed via Seismic Web Configurator (SWC), an intuitive and highly usable web interface that allows complete device configuration and provides real-time operating status, data management, and waveform display. The operating status is indicated by LED indicators. Threshold exceedance notification is provided via email and/or a dedicated digital output.

APPLICATIONS

- HVSR Measurement
- Civil Monitoring
- Seismic Networks
- Modal analysis (OMA)

GUARDIAN BB SEISMOGRAPH AND ACCELEROGRAPH

SEISMOGRAPH TECHNICAL CHARACTERISTICS

Sensor type	Electronically equalized geophone
Number of axes	3, orthogonally oriented
Measure range	± 12,5, ± 25, ± 50, ± 100mm/s
Sensitivity	40, 80, 160, 320 V/m/s
Frequency response	1Hz ÷ 80HZ @200Sps, 1Hz ÷ 125Hz @500/1000sps
Dynamic range	>130 dB
Noise floor	3,5 nm/s (RMS 16 Hz - 125Hz), 55 nm/s (RMS 1Hz - 125Hz)
Linearity	± 0,4 dB (class 1 - DIN 45699-1)
Phase	According to class 1 – DIN 45699-1

ACCELEROGRAPH TECHNICAL CHARACTERISTICS

Sensor type	MEMS accelerometer
Number of axes	3, orthogonally oriented
Measure range	± 3g
Frequency response	0Hz ÷ 80Hz @200Sps, 0Hz ÷ 125Hz @500/1000sps
Dynamic range	120 dB @25Sps; 108.5dB @250Sps>130 dB
Noise density	0,7µg/√Hz typ.
Non-linearity	<0.3%
Offset drift	±0,3mg/°C
Full scale drift	120 ppm/°C
Samples rate	10, 25, 50, 100, 200, 250, 500, 1000sps
Resolution	32 bit
Timing	Internal 0,5ppm drift free run RTC, NTP, internal GNSS optional

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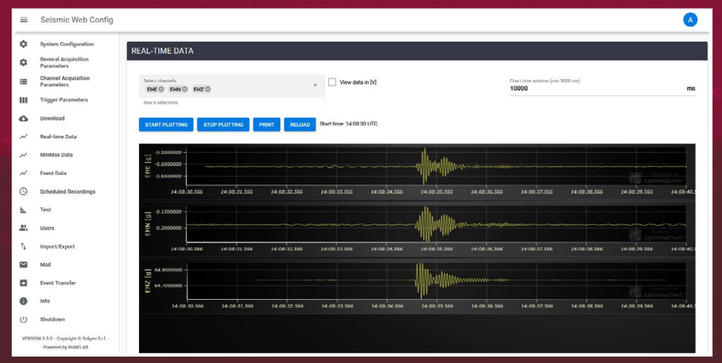

OPTIONAL CONFIGURATIONS:

- Power over Ethernet (PoE)
- Internal battery (up to 10 working hours)

GUARDIAN BB SEISMOGRAPH AND ACCELEROGRAPH

ACQUISITION UNIT CHARACTERISTICS

Resolution	32 bit
Samples rate	10, 25, 50, 100, 200, 250, 500, 1000sps
Timing	internal GNSS receiver, NTP, 0,5ppm drift free run RTC
Recording Mode	Continuous recording with SeedLink Protocol. Configurable event recording when thresholds are exceeded with selectable pre-/post-trigger length. Recording of signal statistics (min, max, average, RMS) with selectable intervals from 10 to 100s.
Data Storage	32 GB internal microSD
File formats	Solgeo EVE, MiniSEED, Ascii, CSV
Communication	Ethernet 10-100 / WiFi (Client and Access Point)
Triggering mode	STA/LTA, threshold level, scheduled
Support software	Integrated Seismic Web Configurator (SWC),Optional SeisComP
Power supply	8 ÷ 32VDC
Power Consumption	3,3W typ, @ 12V, with WiFi connection

ENVIRONMENTAL CHARACTERISTICS

Operating Temperature	-20 ÷ +70 °C without internal battery -20 ÷ +50 °C with internal battery*
Storage Temperature	-40 ÷ +90 °C without internal battery -20 ÷ +50 °C with internal battery
Humidity	0-100%

PHYSICAL CHARACTERISTICS

Weigh	4 Kg
Dimensions (LxWxH)	160x160x130 mm
Enclosure	Aluminium cabinet, painted
IP grade rating	IP67

* during battery charge, the recommended temperature range is less extensive