

Vibration Monitoring Terminal Type 3680

Vibration monitoring – simple and effective

When you need to reduce the risk of structural damage to nearby buildings, assess human response to vibration or monitor background vibration levels to ensure sensitive equipment operates correctly, you need a robust device on which you can rely.

Brüel & Kjær's Vibration Monitoring Terminal Type 3680 achieves it all reliably and with the minimum of effort.



Uses and Features

Uses

Construction and mining

- Fast alerting on triaxial PPV measurements
- Alerts trigger SMS, email or local control of external devices to enable prompt response

Road and rail planning

- Continuous monitoring of vibration levels
- Background surveys prior to construction, or routine assessment during operation

Ambient monitoring at hospitals/manufacturing

- Alerts if background levels prevent accurate operation of imaging equipment to ensure undisturbed operation

Features

- Vibration metrics for a wide range of applications
- Continuous uninterrupted measurement
- Immediate and fast data transfer if thresholds exceeded; generating alerts within a second
- Mains powered or 16-hour operation with integrated backup battery.
- Continuous operation on solar power (optional) subject to panel size and local conditions

- A single triaxial geophone for full coverage of vibration levels
- Rugged aluminium enclosure, water- and dust-proof to IP67.
- Self-starting if power is interrupted
- Operate stand-alone or with Noise Sentinel™ for comprehensive, multi-location, vibration compliance monitoring
- Self-contained unit including sensor conditioning, processing, storage, wireless and 3G communication

Easy to operate

- Three status LEDs confirm correct operation or diagnose problems on-site
- Seamless operation with Noise Sentinel: Switch on the unit and it automatically connects and configures itself. The built-in GPS locates the measurement position
- For stand-alone use, a free smartphone app enables set-up, remote display and operation anywhere, as well as data transfer to standard applications like Microsoft® Excel®

Specifications

Sensor

- Triaxial geophone compliant with ISEE (2 to 250 Hz), DIN 45669-1 (1 to 315 Hz) and DIN 45669-1 (1 to 80 Hz)

Measurement

- Dynamic Range: 0.2 up to 300 mm/s
- Accuracy: $\pm 5\%$ or 0.5 mm/s between 1 and 125 Hz
- Resolution: 0.008 mm/s
- Sampling Rate: 24 bit up to 8 kHz
- Peak Particle Velocity: 0.13 to 254 mm/s and zero-crossing frequencies
- Vibration Acceleration Level: V_{rms} dB broadband*

Vibration events

- Triggered from defined vibration level
- Maximum PPV in each axis, zero-crossing frequencies
- Overall VdB and maximum VdB in each axis*
- Vibration waveform in each axis between 1 to 10 seconds with pre-trigger
- Alerts via SMS or email and local auxiliary control

Vibration climate

- Triggered configurable from 1 to 60 minutes
- Maximum PPV in each axis, zero-crossing frequencies
- Overall VdB, maximum VdB in each axis *
- Time of maximum level
- 5 percentiles from L1 to L99

Status reports

- Every hour, including location, battery, sensor check, count of measurements, wireless signal strength

Display

- Battery OK
- Communications OK
- Logging OK

Communications

- Bluetooth
- Wi-Fi®
- 3G wireless with SIM card
- Real-time display
- Data transfer with simultaneous, uninterrupted measurement and storage

Connections

- Geophone
- Auxiliary control, for example, external light or siren
- External cellular antenna
- External GPS antenna
- Mains power

Storage

- 30 days of all vibration measurements, alerts and data
- GPS timing and location
- Diagnostics, battery-life, temperature, wireless signal strength, uptime, unit health

Physical and environmental

- Size: 140 × 200 × 480 mm
- Weight: 9 kg
- Water- and dust-proof to IP67
- Mains Power: 110V – 240V AC
- 16-hour battery backup with full operation with integrated LiFePO4 battery
- Operating Temp.: Subject to operating conditions):
On Battery: -20 C to $+60\text{ C}$
With Power Supply Plugged In: -40 to $+60\text{ C}$ (internal)
- All temperatures indicated in shade
- Humidity: 0 to 100% non-condensing

Other

- Sensor check on demand or after each vibration event
- Companion smartphone app for set-up and data download
- Heartbeat and self-healing operation
- File formats: Proprietary Noise Sentinel streaming protocol or Microsoft Excel
- Compatible with Brüel & Kjær Noise Sentinel monitoring service

Measurement standards

- ISO 4866, DIN 4150, BS-7285, DIN 45669-1

Ordering Information

- VMT Type 3680 complete with Analyzer Type 4450, Geophone Type 8380, ground spikes, connector security cover, GPS antenna & cellular antenna

Local variants

- 3680-A - Europe
- 3680-B - Americas
- 3680-C - AsiaPac

Options

- 8380-CAI Accredited initial calibration of VMT
- 8380-CAF Annual accredited calibration of VMT
- Solar panel
- 7871 Sentinel noise management service

* Stand-alone use only. Available later when used with Noise Sentinel