

VIBRA-series

Continuous and Online Vibration Monitoring



With a Profound *VIBRA* system, vibrations that are caused by traffic, pile driving, demolition work or blasting can be monitored continually and accurately. By recording the vibrations you can assess the risk of damage to buildings and sensitive equipment as well as the nuisance to people in an objective manner in accordance with the applicable guidelines.

Advanced

During each time interval the *VIBRA* measures, directly displays and records both the maximum vibration levels and the vibration frequencies in x-, y- and z-direction. In addition every hour a full measuring signal of the highest peak value(s) is recorded. The *VIBRA*'s digital signal processing guarantees measurements of a high quality and accuracy.

The Profound *VIBRA*-series comprises the *VIBRA* and the *VIBRA*⁺. The top of the line *VIBRA*⁺ has several special features, including integrated GPRS/internet options, PC Trace Recorder, displacement measurements and automatic level- and calibration checks. The various characteristics are summarized in the technical specifications.

Monitoring according to standards

Depending on the chosen model, the system meets national and international standards, such as DIN 4150-2 and -3, BS 5228-2, BS 7385-2, SBR, SS 460 48 66/61, AS 2187.2 and is according to DIN 45669-1:2010.

With Profound's *VIBRA* or *VIBRA*⁺ vibrations are measured reliably in accordance with these guidelines. The *VIBRA*⁺ also determines the dominant frequency in accordance with the advanced FFT-method. The measuring values for vibrations in buildings as well as for the effects on persons are shown simultaneously on the display.

Compact system for long-term monitoring

The *VIBRA*'s robust aluminum casing, equipped with plastic top and bottom housing the antenna and batteries respectively, is IP65 watertight.

The system is easily portable and battery-operated which allows for up to 4 weeks of unmanned and continuous operation.

DIN geophone
mounting plate



Efficient operation

Performing a measurement is straightforward: attach the 3-dimensional geophone to the structure to be monitored, program the system and start measuring. While measuring, all relevant information appears on the *VIBRA*'s display, such as time, time interval and the vibration peak values including frequency in all 3 directions. You can also immediately check the overall maximum values.

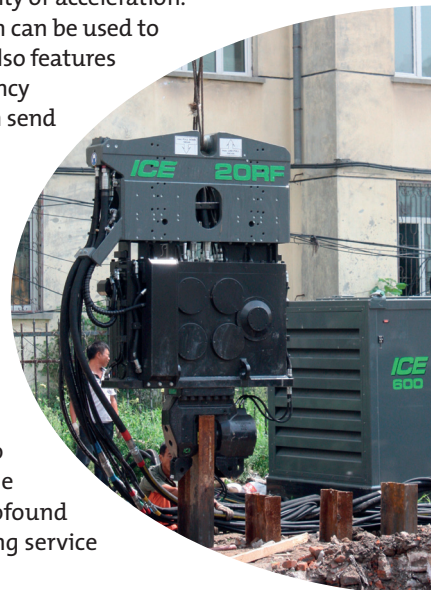
An alarm level can be set for velocity or acceleration. An external wireless alarm beacon can be used to warn on-site. The *VIBRA*⁺ model also features a displacement or a smart frequency dependent velocity alarm and can send alerts via SMS or e-mail.

Real-time monitoring and analysis

The *VIBRA*⁺ can be set up for wireless automatic data transfer via the integrated 3G modem to your PC. Data can also be continuously uploaded to any FTP server for real-time online monitoring. As an alternative Profound offers a turnkey online monitoring service via www.vibramonitoring.eu.

The *VIBRA* can be connected to your PC via USB for data retrieval, even while measuring. With the PC software supplied together with the system, data are directly presented in graphs for detailed reporting or export to *.csv. You can also use the PC Remote Control software to log in remotely to your *VIBRA* system.

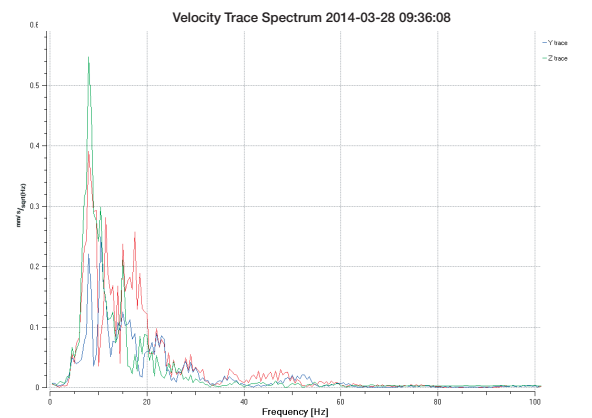
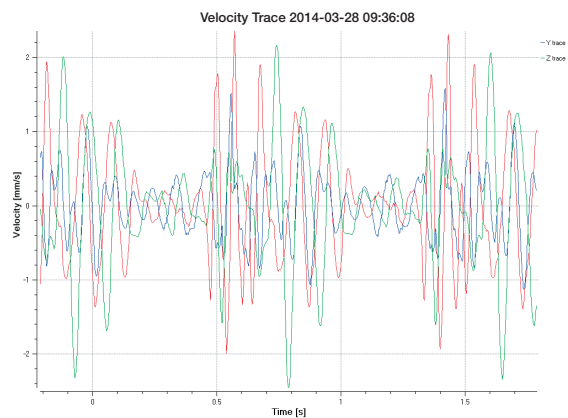
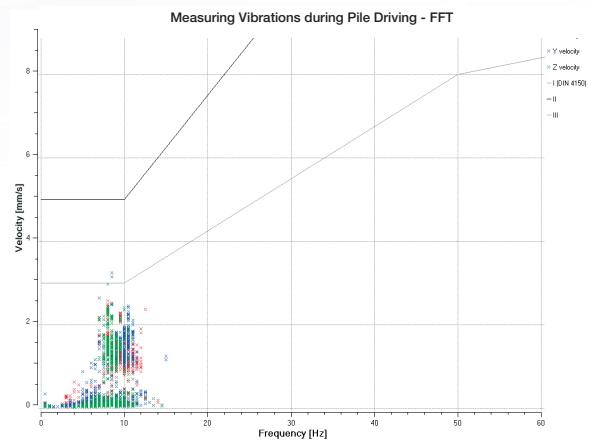
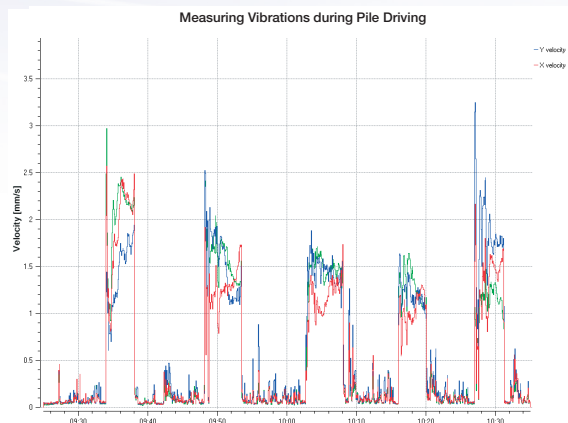
Over 25 years Profound has been the leading supplier of vibration measurement equipment. With a Profound *VIBRA* system you have a unique and reliable instrument to measure vibration continuously and accurately.



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Specifications VIBRA, VIBRA+

Velocity (PPV), frequency and acceleration (PPA)	: In x-, y- and z-direction per time interval
Displacement (VIBRA+ only)	: In x-, y- and z-direction per time interval
Frequency accuracy	: According to DIN 45669-1:2010-09
Frequency characteristic	: Lower limit: 1 Hz Upper limit I: 80 Hz Upper limit II: 315 Hz (VIBRA+ only)
Dominant frequency determination	: FFT (VIBRA+ only) and Zero Crossing Method
Velocity range	: 0 – 100 mm/s (depending on geophone model)
Data measurement and processing	: According to DIN 4150-2 (VIBRA+ only) According to DIN 4150-3
KB _{FT} and KB _{Fmax} (VIBRA+ only)	: In x-, y-, z-direction according to DIN 4150-2
Extensive technical specifications available at our website	



Measuring vibrations with the VIBRA+ during pile driving

With the VIBRA PC software the measurement data are shown directly in accordance with DIN guidelines. The above graphs show the measured peak values against time, the peak values against frequency (in accordance with FFT method) and the continuous measurement signal (trace) with the accompanying spectrum.

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