VIBXPERT®

Two-Channel FFT Data Collector and Vibration Analyzer

- ‣ **100,000 line resolution**
- ‣ **Weighs only 1200 grams**
- ‣ **Simple joystick operation**
- ‣ **Two simultaneous channels**
- ‣ **VIBCODE® compatible**
- ‣ **Intrinsic safety (option)** ⟨Ex⟩

db PRÜFTECHNIK

More operational reliability – better process availability

The VIBXPERT® FFT data collector and signal analyzer is used in almost every sector of industrial maintenance for the monitoring and diagnosis of machine conditions.

Two simultaneous channels

VIBXPERT® carries out two measurements at the same time – with or without trigger / RPM, as required.

• Dual channel measurements for diagnosis and correction (orbit, phase (cross-channel), coast-down analysis, 2-plane balancing, etc.).
• Independently selectable dual channel measurement tasks.

Automatic measurement location identification

VIBCODE® identifies the measurement location by its 'fingerprint' – the coded ring!

• No mix up of measurement locations
• Reproducible measurements
• Stable connection
• Defined contact pressure
• Defined measurement direction

Portable!

Lightweight design with carrying strap, ideal for machinery survey.

VIBXPERT® excels in
• Fast data acquisition
• Complete data analysis on site
• Useful knowledge-based setups – intuitive for beginners, powerful for experts
• Connections support almost all sensor types
• Comprehensive range of troubleshooting methods

VIBXPERT® is versatile

Overall values & signals	Visual inspection	Impact test
ISO standards (10816-3)	Process parameters	Acceptance test
Diagnosis	Printing	Balancing (option)
Signal postprocessing	Upgradeable in modules	Troubleshooting

VIBXPERT® at a glance

VIBXPERT® with its comprehensive measurement and analysis functions and intuitive user operation is ideal for routes.

Together with the OMNITREND® PC software, VIBXPERT® makes an important contribution to condition-based maintenance for preventing unforeseen machine breakdowns and costly production losses.

Clear display

The high-contrast backlit display (1/2 VGA) is easy to read – even in broad daylight. To save power, the illumination can be automatically switched off (selectable).

One-hand operation

Instinctive joystick operation with ergonomically arranged keys.

VIBXPERT® lights up

If it's too dark, VIBXPERT® automatically switches on the keyboard illumination. The lighted display allows work night or day.

**Alarm display
to ISO standards**

Four indicator LEDs on the display indicate
'Everything OK' (blue)
'Prewarning' (green)
'Warning' (yellow)
'Alarm' (red).

Memory full

VIBXPERT® saves the measurement data on a CompactFlash card (1GB). If necessary, cards up to 8 GB can be used.
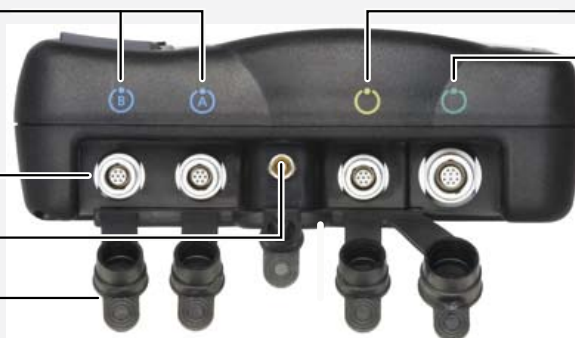
Intrinsic safety (option)
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The best connections

**Measuring channels A & B
Charging jack**

Five robust color-coded connectors on the upper side of the device are stable, cannot be confused and are dustproof.

**Trigger / RPM
Serial, Signal Out**

USB / Ethernet

Temperature

Protective dust caps

Data collection

The attractive external design of VIBXPERT® is also reflected in its internal structure: intuitive, graphical user interface, straightforward user guidance and a constantly available help function allow not only skilled experts, but also an inexperienced novice to quickly achieve usable results.

File Manager with 'Windows' design

Icon driven device settings menu
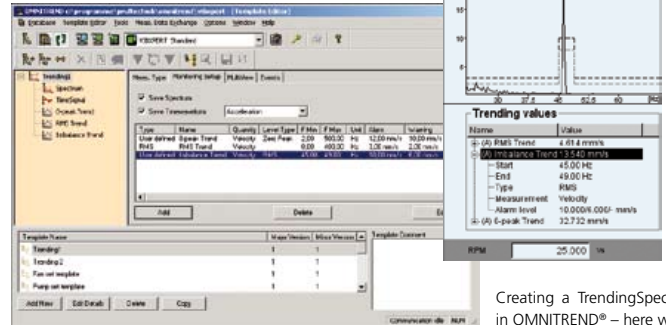

Measurement task selection
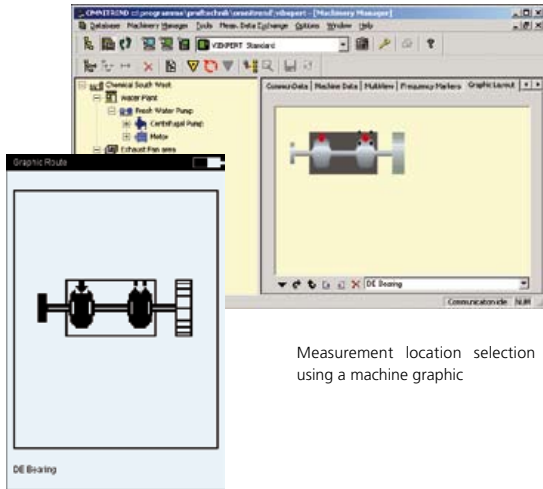
Measurement location selection using a machine graphic

Measure three times as fast!

The TrendingSpectrum measurement task accelerates data collection enormously! One time waveform is all you need to obtain a spectrum along with up to 30 characteristic overall values.


Creating a TrendingSpectrum in OMNITREND® – here with 3 characteristic overall values.

See, click – ready!

Visual route guidance using machine graphics provides a high degree of convenience for the user.
It's even easier with the VIBCODE® sensor system, which recognizes the measurement location automatically. Just click to start the measurement – done!

Multifunctional

### Numerous analysis tools enhance the range of available functions

- Order analysis
- Signal postprocessing
- Structural analysis (ODS, FRF)*
- Dynamic time waveform analysis
- Balancing in one or two planes
- Phase measurement
- Startup / coastdown analysis
- Orbit
- Long-term recording of time waveforms
- Time / RPM-triggered measuring cycle
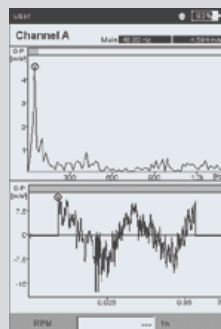
Calculating a spectrum from the time waveform
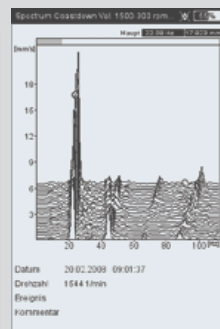
Startup / coastdown analysis: Spectra in a waterfall diagram
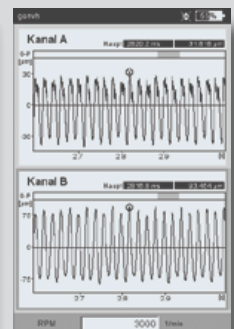
The dynamic time waveform analysis shows rubbing on channel A

*ODS - Operational Deflection Shape
FRF - Frequency Response Function

Data evaluation

Condition monitoring
Regular recording of measurement values provides a clear picture of the machine condition trend.

Alarms & diagnosis
If there is an alarm, narrow band monitoring in the frequency spectrum shows the damaged component. Frequency markers are used to identify characteristic frequencies typical for specific types of damage. Additional functions for diagnosis can be called up via a menu.
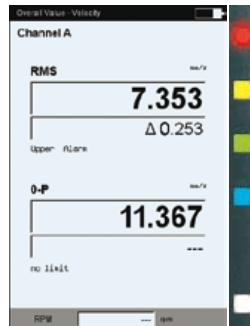
Measurement values and alarm violation (red LED)
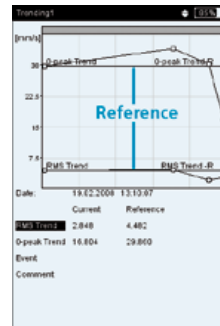
Comparing current measurements with historical data and reference data
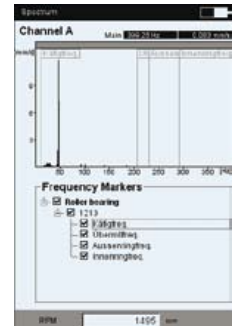
Identification of damage frequencies

OMNITREND® PC software

OMNITREND® manages machine data, programs measurement tasks and routes, and archives the results in a database (MS Access or, optionally, Firebird or MS SQL). A wide range of functions is available for evaluation and documentation; these are more closely described in the OMNITREND® brochure.
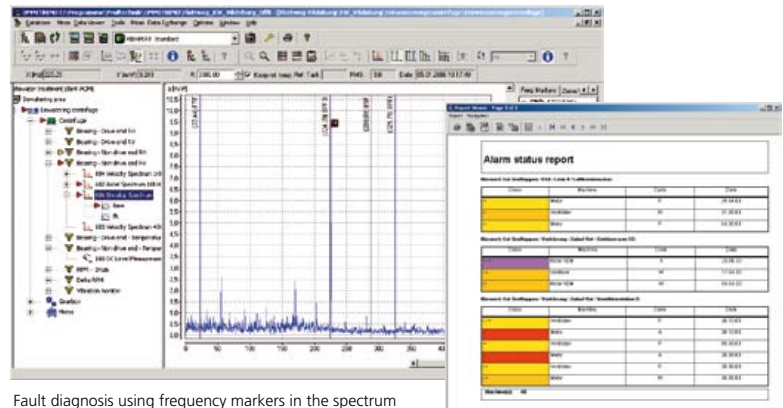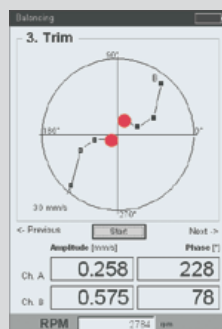
Fault diagnosis using frequency markers in the spectrum
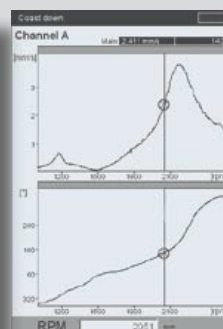
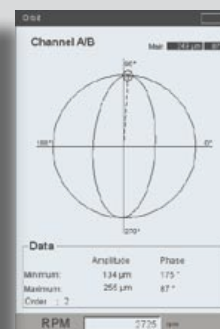The report shows color-coded alarm classes

Upgradeable

VIBXPERT® can be effortlessly equipped with additional measurement functions. No changes to the instrument are required – just enter a password!
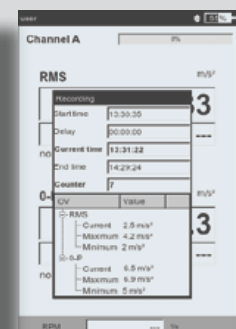
Balancing in one or two planes

Startup / coastdown measurement indicates resonance point

Shaft displacement as orbit

Recording measurement data over an extended period

VIBXPERT® – Technical data

Measurement channels	2 analog channels (A & B), selectable:
	- Voltage (AC/DC, ±30 V max.)
	- Current (AC/DC, ±30 mA max.)
	- ICP® signal (2 mA, 24 V max.)
	- LineDrive signal (10 V, 10 mA max.)
	1 analog channel: - Temperature probe (thermocouple type K)
	1 digital channel: - 1+1 pulse/tacho (RPM, trigger, key phaser) - Pulse & AC signals (± 26 V)
Parameters Analog measurement ch. (A & B)	Frequency range 0.5 Hz to 40 kHz
	Dynamic (measured/total) 96 dB / 136 dB
	Sampling rate < 131 kHz per channel
Outputs	Stroboscope control: TTL
	Signal out: for headphone and signal processing
Measurement range / accuracy	RPM 10...200 000 rpm / ±1‰ / ±1rpm
	Temperature -50...+1000°C (thermocouple type K) / ±1% / ±1°C
	Displacement* 6000 µm (p-p) / ±5%
	Velocity* 6000 mm/s (p-p) / ±1%
	Acceleration* 6000 m/s² (p-p) / ±1%
	* Current LineDrive transducer (1µA/ms⁻²) and sensor with voltage output (100mV/g); reference: 159.15 Hz
FFT	F_{min} 0.5 Hz ... 10 Hz, selectable
	F_{max} 200 Hz ... 51.2 kHz, selectable
	Lines 100 ... 102,400
	Window Rectangular, Hanning, Flattop, Hamming, Blackman, Bartlett, Kaiser

Operating modes	Multimode (non-route)
	- Overall values: vibration (acceleration, velocity, displacement), current, voltage (AC / DC), shock pulse (roller bearing condition), temperature, RPM
	- Signals: spectrum (amplitude, envelope), time waveform, cepstrum, phase & cross-channel phase, orbit, coast down measurement, impact test.
	Data acquisition (route)
	- Guidance via tree, list view or machine graphic
	- Process optimization for quick data acquisition
	Balancing (optional)
	- Dynamic balancing in 1 or 2 planes
Memory	RAM, internal 64 MB
	CompactFlash, exchangeable 1 GB ... 8 GB (intrinsically safe version: 1 GB, permanently installed)
Display	LCD, illuminated, 480x320 pixels (1/2 VGA)
Supply	Lithium-ion battery (7.2V / 4.8Ah)
	Chargeable in device. Charge time < 5h
Temperature range	Storage -20°C .. +60°C
	Operation -10°C .. +60°C
	Operation -10°C .. +50°C (intr. safe device)
Protection class	IP65, dustproof and waterproof
Dimensions	180 x 160 x 50 mm (LxBxH)
	(intr. safe version: 250 x 220 x 37 mm)
Weight	1.2 kg (intr. safe version: 2.36 kg)

Further technical data is provided in the VIBXPERT® Product Catalog, available for download as a PDF on our website.

VIBXPERT® – Intrinsically safe version

The new two channel FFT data collector and signal analyzer for hazardous areas is used for monitoring and diagnosing machine conditions in the chemical industry, in refineries, in the oil and gas industry and in any other potentially explosive environment that requires intrinsically safe measuring systems.

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