SIMPLE
ECONOMIC
MODULAR

PRÜFTECHNIK

VIBNODE®

The perfect entry-level solution for Online Condition Monitoring

Ideal for blowers, pumps & motors

Simple and smart

What makes Online Condition Monitoring worthwhile?

Increased cost pressure from global competition compels companies to exploit all available savings potentials and to implement measures to increase efficiency. In the maintenance and service sectors, this means ensuring interruption-free production processes, preventing unplanned machine downtimes and making optimum use of the system lifetime.
Online Condition Monitoring systems are indispensable in realizing these aims: defects can be promptly diagnosed, maintenance measures can be planned in an optimized time frame and unexpected downtimes can be prevented.
VIBNODE® is *the* opportunity for economical entry into the Online Condition Monitoring of individual machines and smaller groups of aggregates.

Why do online monitoring systems sometimes overlook machine problems ?

Typical VIBNODE® applications

Motors | Pumps | Blowers | Roller bearings | Simple gearings

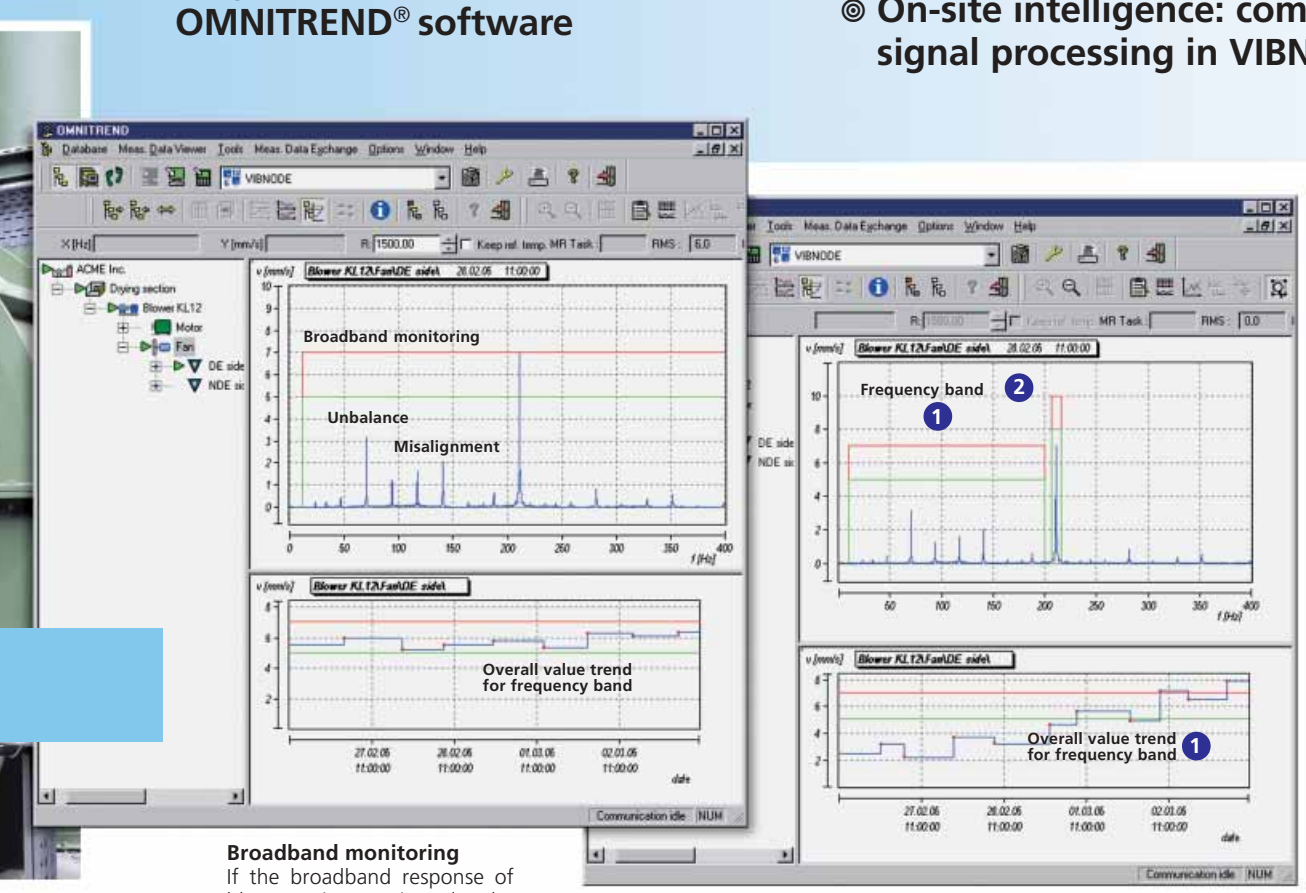
t machine monitoring with VIBNODE®!

Simple

- Economical entry-level solution with 6 or 12 channels
- Simple installation directly on the machine – lower installation costs
- Standard interfaces – connection to Ethernet
- Easy operation with the proven OMNITREND® software

Smart

- Broadband and narrowband monitoring
- Masks out noise signals
- RPM-dependent tracking of frequency bands
- Intelligent data reduction
- Independent alarm generation
- On-site intelligence: complete signal processing in VIBNODE®

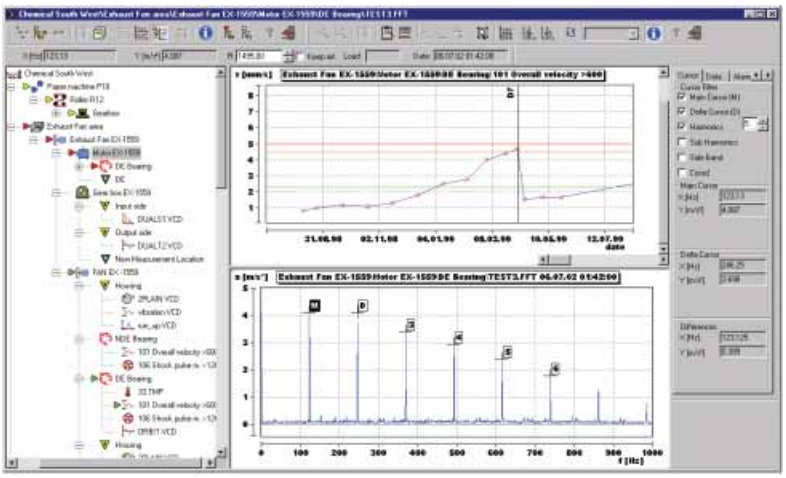


Broadband monitoring
If the broadband response of blowers is monitored, the blade passing frequency is predominant over the smaller signals for unbalance and misalignment in the overall value trend. An increase in either of these signals does not immediately affect the trend curve and, consequently, these defects can be overlooked.

Selective monitoring
The selective monitoring of specific frequency ranges enables the elimination of disruptive noise signals. If the machine signal from the example on the left is monitored in two separate bands, any change in the broad band ① immediately becomes visible as an increase in the trend curve (below).
Up to 12 bands per spectrum can be set with VIBNODE®.

OMNITREND® PC Software

programming – evaluation – archiving



The OMNITREND® PC software provides many options for the display, analysis and ISO-conform documentation and archiving of the measured machine data. Measurement and alarm settings are simple to program with a click of the mouse.

"Simply smart" – at a glance

Economical entry-level solution
Individual machines are particularly cost-effective to monitor with 6 or 12 channels. The number of channels can be increased if required.

Decentralized – directly on-site
VIBNODE® is installed directly on the machine, does not require a PC and is integrated in the company data network (Ethernet, Modbus TCP, OPC).

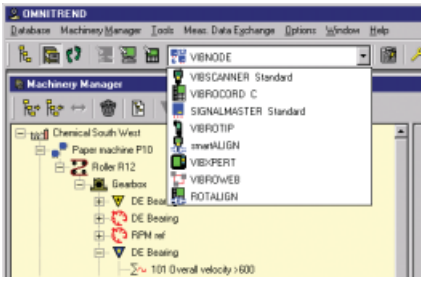
Quick installation
Short cable lengths, robust connection techology and ready-made cables make VIBNODE® quick to install.

Flexible measurement process
The recording of broadband overall values provides information on the overall condition of the machine. On the other hand, the selective monitoring of specific damage frequencies permits reliable fault diagnosis. For variable RPM, the frequency bands are tracked. The effect of interfering signals on the trend curve can be eliminated by skillful selection of the frequency bands.

Spectrum only for alarms
To keep data traffic low, machine signals are only saved for FFT or envelope analysis if an alarm occurs.

Prompt alarming
Maintenance personnel are informed independently of alarms via Ethernet, eMail or SMS when threshold values are exceeded.

Overall strategy



VIBNODE® forms an integral part of the PRÜFTECHNIK Condition Monitoring concept – consisting of portable measuring devices and online monitoring systems. This allows the optimum monitoring solution that meets budgetary and technical requirements to be realized for each machine park.

Technical data

Analog inputs
VIBNODE® 6:
6 single-ended inputs, settable for:
– vibration acceleration
– 0/4-20 mA
– ±5 V AC/DC

VIBNODE® 12:
12 single-ended inputs settable for:
– vibration acceleration
– 0/4-20 mA
– ±5 V AC/DC

Measurement range, analog input
±5 V with amplification steps 1, 10, 100

Dynamic range / resolution
76 dB / 12-bit

Frequency range
400 Hz, 1 kHz, 5 kHz*, 10 kHz $F_{max.}$

Frequency resolution
3200 lines

Envelope
Fixed filter setting: LP = 900 Hz, HP = 2 kHz
F_{max}: 1 kHz

RPM, counter input
Number: 1 (VIBNODE® 6)
Number: 2 (VIBNODE® 12)

Digital inputs
Number: 2 (5 V - 30 V)

Digital outputs
Number: 3 (open collector)

Analog outputs (option)
Number: 2 (4-20 mA); not electrically insulated
Electrical insulation as a further option

Switch output
24 V DC, switchable

Measurement functions
FFT spectrum, envelope, parameters, characteristic values (peak, RMS) via evaluation of narrow/broadband spectral ranges

Memory capacity
Ring buffer for up to 48 FFT spectra
Ring buffer for up to 15000 measurements (trend data)

Ethernet interface
Number: 1, data rate: 10 Mbit

RS 232 interface
Number: 2, data rate: 115 kbit

Power supply
21-30 V DC / 1 A

Permitted ambient temperature
- 25 °C ... +60 °C

*from hardware version 1.2

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Productive maintenance technology