

**SIMPLE
ECONOMIC
MODULAR**

db 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 economic entry into the Online Condition Monitoring of individual machines and smaller groups of aggregates.



Why online monitoring systems
sometime overlook machine problems ?

Typical VIBNODE® applications



Motors



Pumps



Blowers



Roller bearings



Simple gears

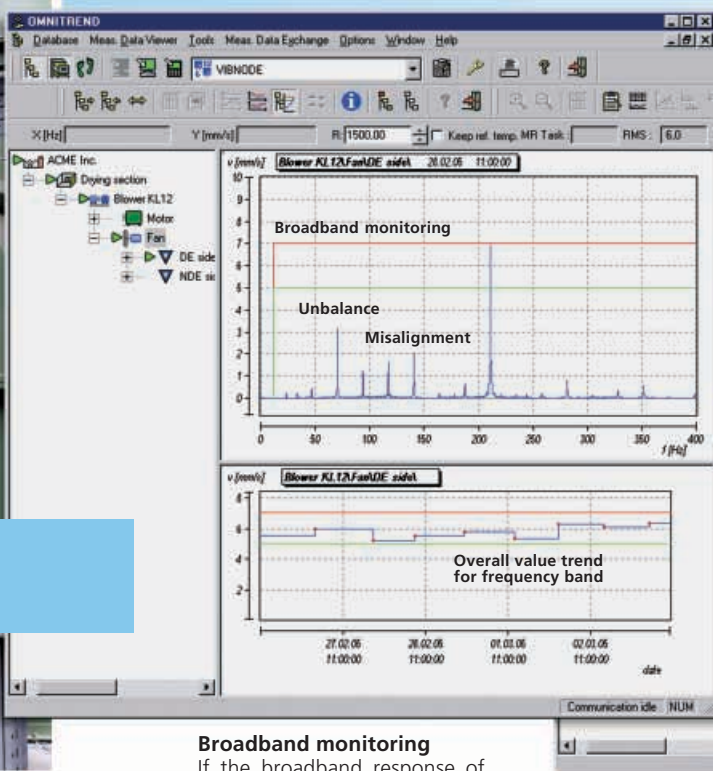
Machine monitoring with VIBNODE®!

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

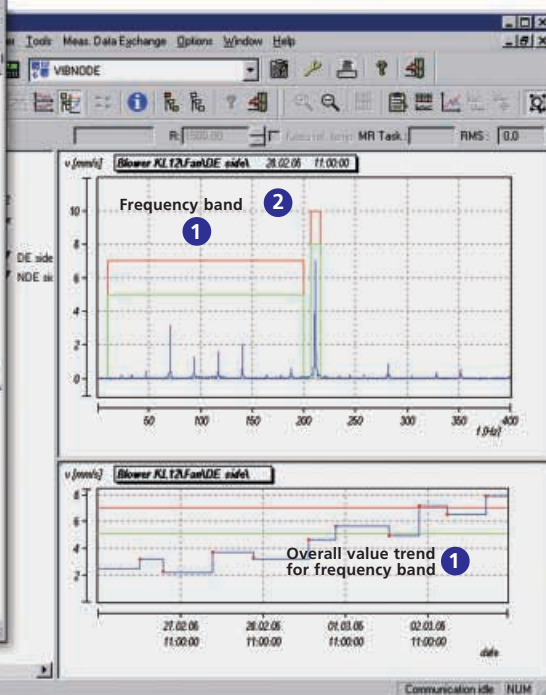
Smart

- ⊙ 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.



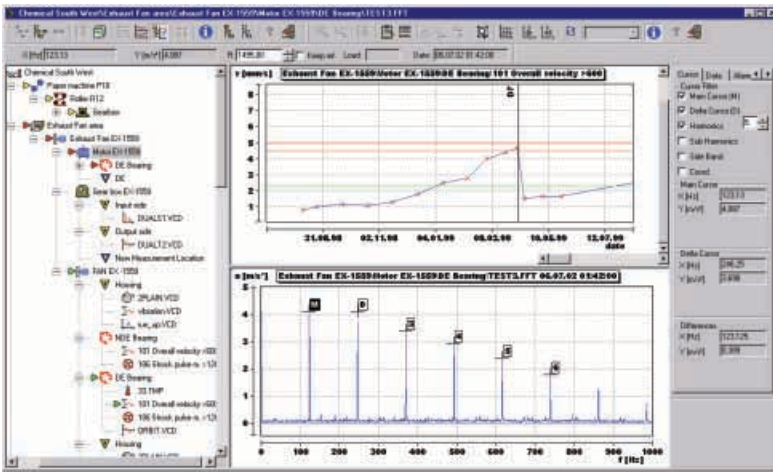
Selective monitoring

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®.

"Simply smart" –
at a glance

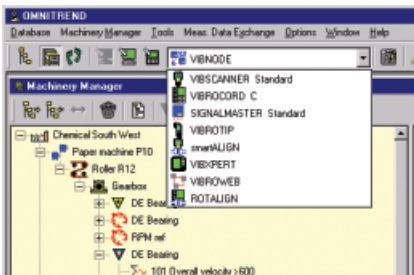
OMNITREND® PC Software

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.

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
– 0/4-20mA
– ±5V AC/DC

VIBNODE® 12:
12 single-ended inputs settable for:
– vibration acceleration
– 0/4-20mA
– ±5V 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, 1kHz, 5kHz*, 10kHz F_{max}

Frequency resolution
3200 lines

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

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

*from hardware version 1.2

Digital inputs

Number: 2 (5V - 30V)

Digital outputs

Number: 3 (Open collector)

Analog outputs (option)

Number: 2 (4-20mA); 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 30000 measurements (trend data)

Ethernet interface

Number: 1, data rate: 10 Mbit

RS 232 interface

Number: 2, data rate: 115 kbit

Power supply

21-30 VDC / 1A

Permitted ambient temperature

- 25°C ... +60°C

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Productive maintenance technology