

**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 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 gears

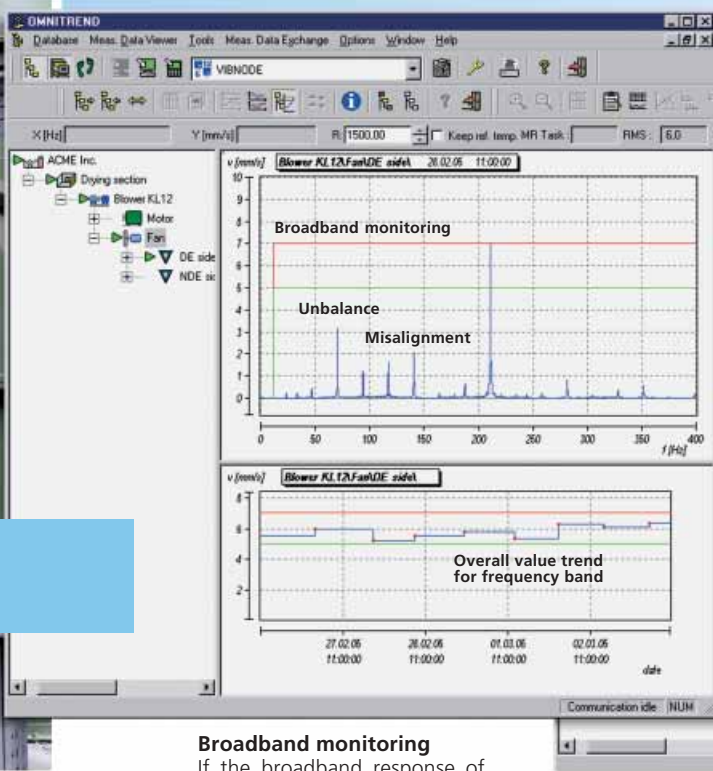
# Machine monitoring with VIBNODE®!

## 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

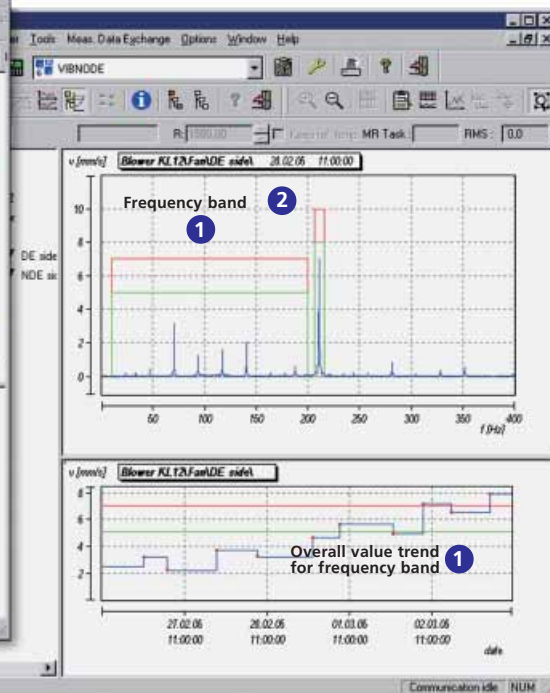
## Smart

- ⊙ 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

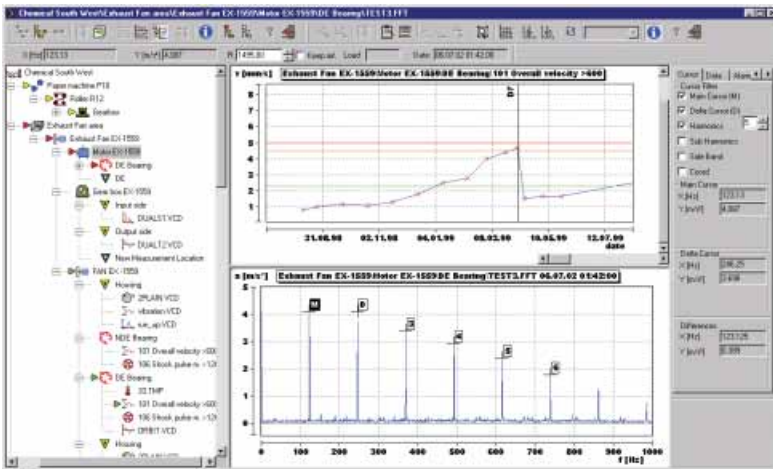
The selective monitoring of specific frequency ranges enables the elimination of disruptive noise signals. If the machine signal from the example on the left is monitored in two separate bands, any change in the broad band ① immediately becomes visible as an increase in the trend curve (below). Up to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

6 or 12 single-ended inputs (VIBNODE® 6 or VIBNODE® 12), settable for:

- vibration acceleration
- 0/4-20 mA
- $\pm 5$  V AC/DC

#### Measurement range, analog input

$\pm 5$  V with amplification steps 1, 10, 100, 1000

#### Dynamic range / resolution

96 dB / 16 bit

#### Frequency range

$F_{max}$  : 400 Hz, 1 kHz, 5 kHz, 10 kHz

#### Filter (only with 'Low-speed' option)

25Hz LP, switchable for setups w/  $F_{max}$  : 400Hz

#### Frequency resolution

3200 lines

#### Envelope

2 kHz - 10 kHz /  $F_{max}$  : 1kHz  
 3 kHz - 10 kHz /  $F_{max}$  : 4 kHz  
*additional with 'Low speed' option:*  
 100 Hz - 10 kHz /  $F_{max}$  : 1 kHz

#### RPM, counter input

One or two (VIBNODE® 6 or VIBNODE® 12)

#### Digital inputs

Two (5V - 30V)

#### Digital outputs

Three (open collector)

#### Analog outputs (option)

Two (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 16.000 measurements (trend data)

#### Ethernet interface

One, data rate: 10 Mbit

#### RS 232 interface

Two, data rate: 115 kbit

#### Power supply

21-30 V DC / 0.8 A

#### Permitted ambient temperature

- 25 °C ... +60 °C

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PRÜFTECHNIK  
 Condition Monitoring  
 D-85737 Ismaning, Germany  
[www.pruftechnik.com](http://www.pruftechnik.com)  
 Phone: +49 89 996160  
 Fax: +49 89 99616300  
 eMail: [info@pruftechnik.com](mailto:info@pruftechnik.com)

Productive maintenance technology