

# VIBNODE®

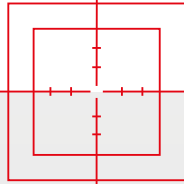
The perfect Online Condition Monitoring solution for beginners and specialists



- Low investment cost
- Simple – economic – modular
- For blowers, pumps, motors
- For low-speed machines

# VIBNODE® – perfect online Condition Monitoring

## Simple and smart machine monitoring



### 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.

### Simple

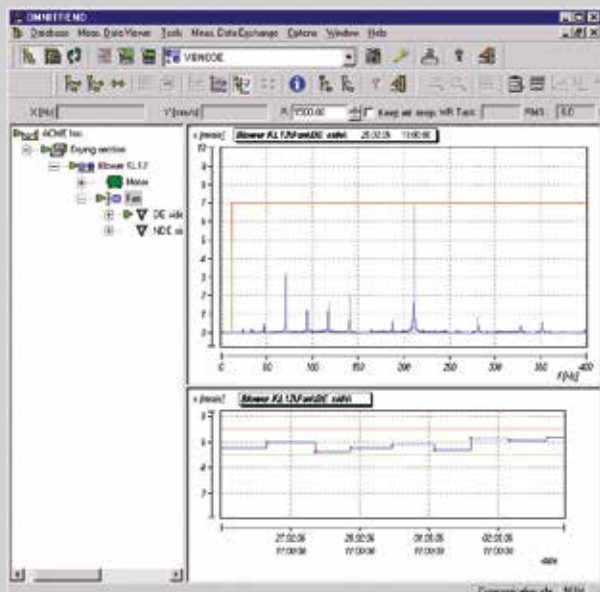
- ▶ Economical solution with 6 or 12 channels
- ▶ Simple installation directly on the machine – lower installation costs
- ▶ Standard interfaces – connection to Ethernet
- ▶ Easy operation with the proven OMNITREND® software

### 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®

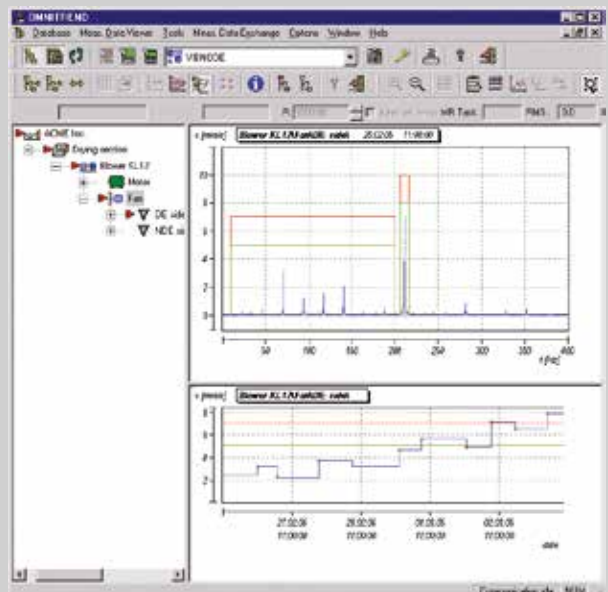
### Broadband monitoring

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 immediately becomes visible as an increase in the trend curve (below). Up to 12 bands per spectrum can be set with VIBNODE®.

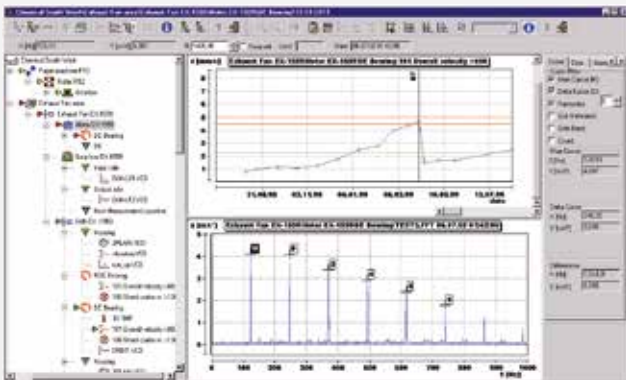


# OMNITREND® PC Software

programming – evaluation – archiving

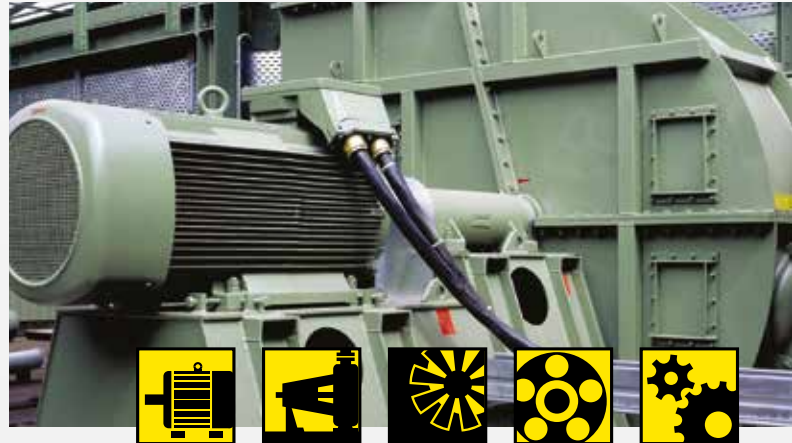
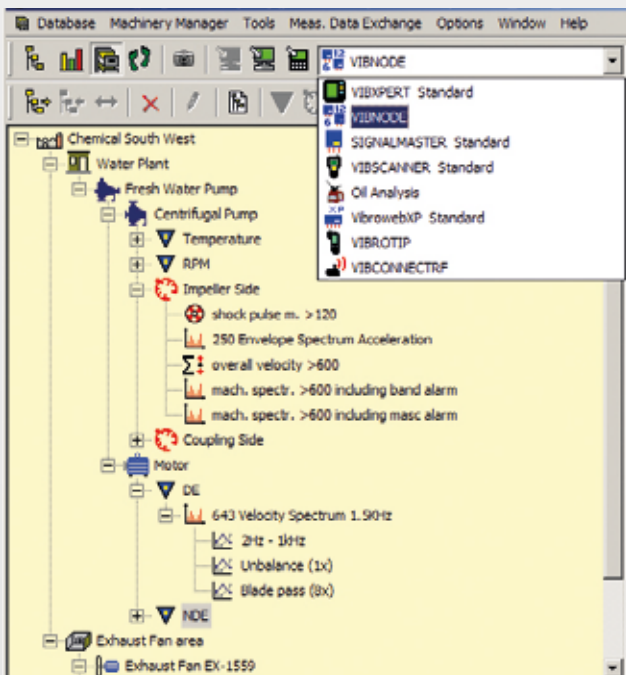
## The OMNITREND® PC software...

... 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.



## 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.



Simply smart – at a glance

## Economical solution

Individual machines are particularly cost-effective to monitor with 6 or 12 channels.

## 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 technology 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.



# VIBNODE® technical data

## Technical data VIBNODE®

Analog inputs	6 or 12 single-ended inputs, settable for <ul style="list-style-type: none"> <li>• Vibration acceleration (CLD / ICP)</li> <li>• 0/4-20 mA</li> <li>• ±5 V AC/DC</li> </ul>
Measurement range, analog input	±5 V, ±500 mV, ±50 mV, ±5 mV
Dynamic range / resolution	96 dB / 16 bit
Frequency range	Fmax. : 400Hz, 1 kHz, 5 kHz, 10 kHz.
Filter (only with 'Low-speed' option)	25Hz LP, switchable for setups w/ Fmax: 400Hz
Frequency resolution	3200 lines
Envelope	2 kHz - 10 kHz / Fmax.: 1kHz 3 kHz - 10 kHz / Fmax. : 4 kHz additional with 'Low speed' option: 100 Hz - 10 kHz / Fmax. : 1 kHz
Time waveform (with 'Low-speed' option)	Signal length: 3.2s, 0.8s, 0.2s, 0.1s
RPM, counter input	One or two (6 or 12 channels)
Digital inputs / outputs	Two (5V - 30V) / Three (open collector)
Analog outputs (option)	Two (4-20 mA); not electrically insulated Electrical insulation as additional option
Switch output	24 V DC, switchable
Measurement functions	FFT spectrum, time waveform (w/ 'Low-speed' option), envelope spectrum, process parameters, overall 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
Environmental protection	IP 66 (EN 60529) / NEMA 4
Total weight	approx. 3.5 kg

## PRÜFTECHNIK consists of the following business areas



Alignment Systems

Laser measurement systems and services for optimum alignment of machines and systems.



Condition Monitoring

Vibration measurement systems for machine condition monitoring – including services such as machinery fault diagnosis.



Nondestructive Testing

Systems and services for quality assurance and process control in production.



Service & Support

We offer professional services anywhere in the world to support our customers with alignment and condition monitoring.



Approval of Air Carrier Security Programs

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