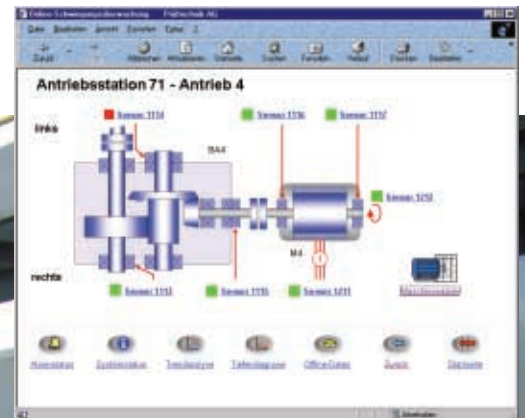
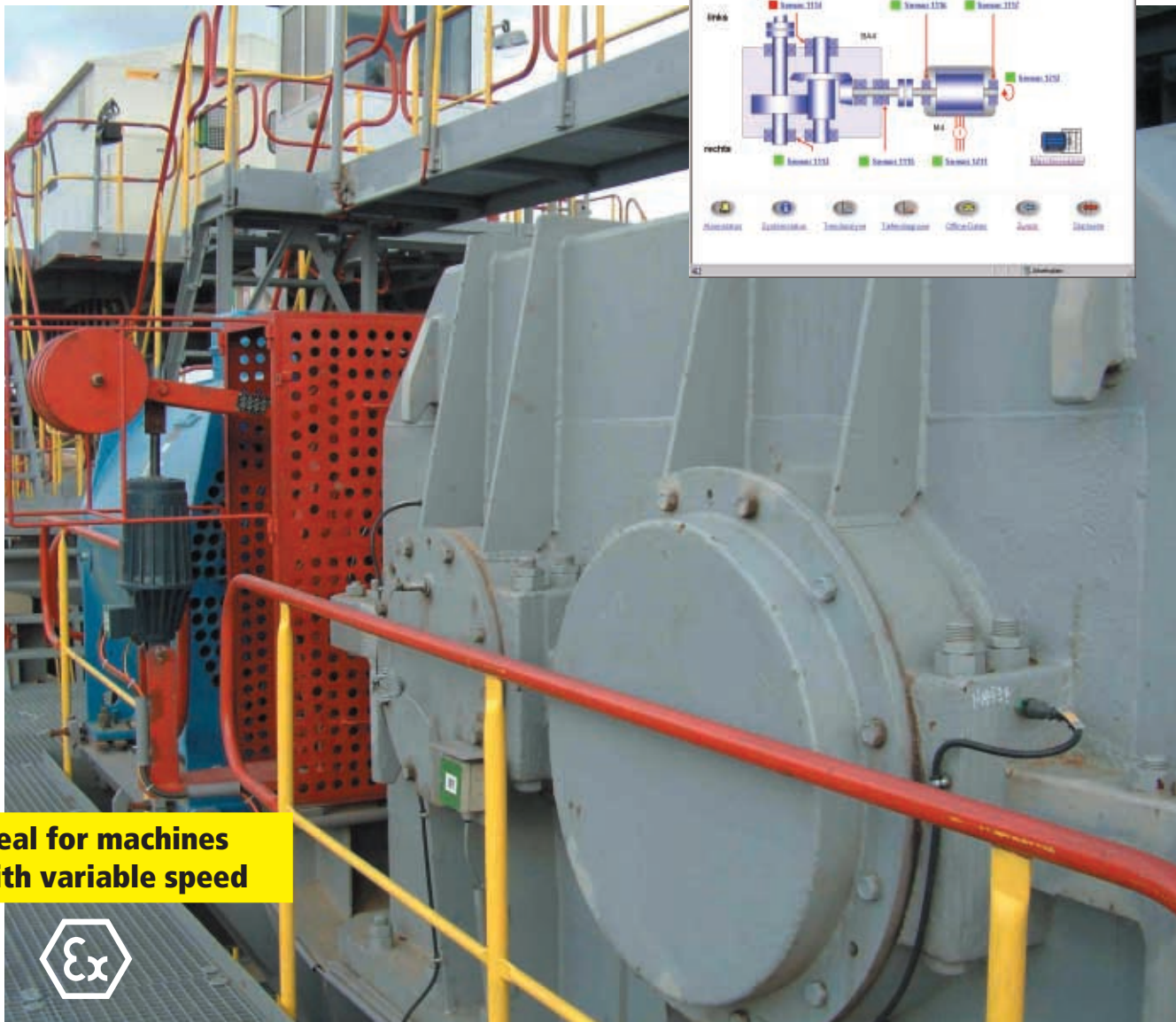


**USING
INTERNET
TECHNOLOGY**

db® PRÜFTECHNIK

VIBROWEB®

Online Monitoring – smart & flexible



**Ideal for machines
with variable speed**



VIBROWEB® – Reliable online monitoring of critical equipment

Remote access to current data – e.g. from company headquarters – via the Internet.

Overview of VIBROWEB® architecture

- Machinery with variable load or speed
- Pumps and motors
- Fans
- Compressors
- Gears
- Mills

Access via the company network (LAN/Ethernet)

Fault reports direct to a mobile phone per SMS



- Paper machines
- Centrifuges
- Extruder
- Presses

Connection box saves cabling and installation costs



ETHERNET

- Field monitoring
- Process monitoring
- Strip mining
- Pipeline pump stations

Radio connection (WLAN)



What is VIBROWEB®?

VIBROWEB® is an intelligent machine monitoring system which can perform measurements, evaluation, saving and alarm warnings independently – even without a PC connection. VIBROWEB® was specially developed for production-critical or process-critical machines which require optimized monitoring routines and diagnostic procedures.

VIBROWEB® in use

Gear damage in the gearbox of a conveyor system

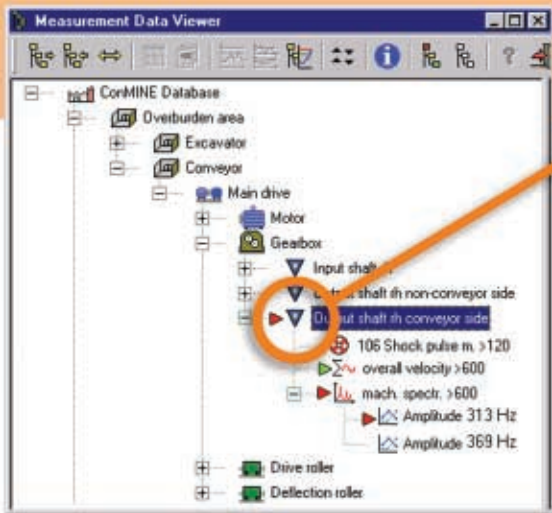
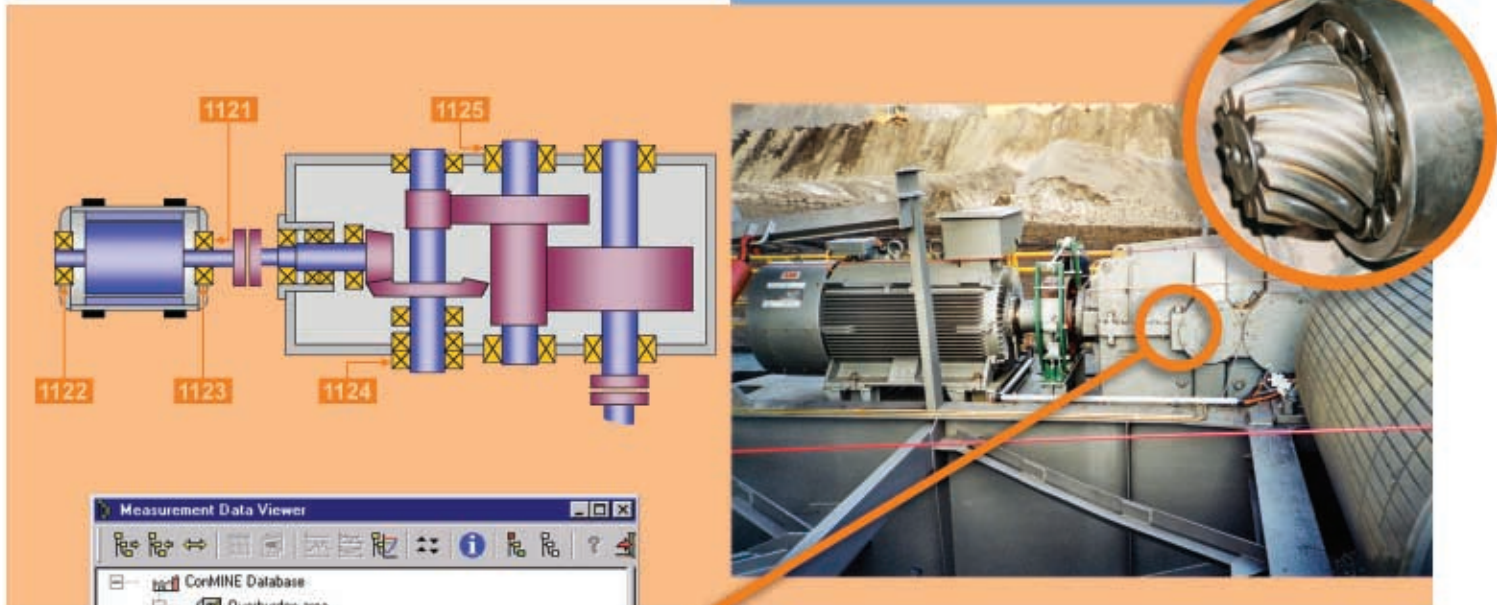


Fig. 2: ... although the status indicator in the database view warns of an alarm condition ('red').

Only the frequency specific band alarm monitoring of the gear stage enables accurate diagnosis of the damage: The damaged gear can be replaced in time!

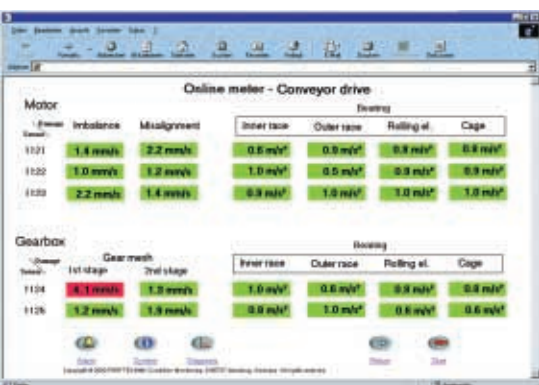


Fig. 5: Customer-specific view in the browser (optional): the color-coded overview always indicates current machine problems

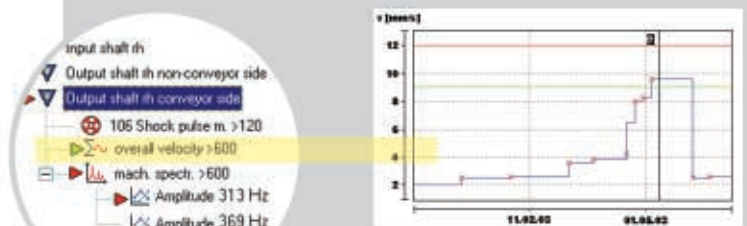


Fig. 1: The broad band characteristic values trend is in the 'green' range ...

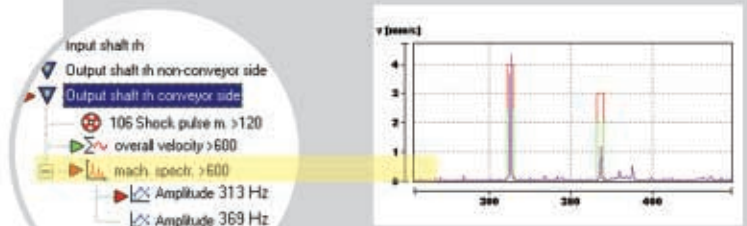


Fig. 3: The cause for the alarm is a characteristic frequency which exceeds the specified band alarm in the spectrum. This indicates a defective meshing in the bevel gear stage.

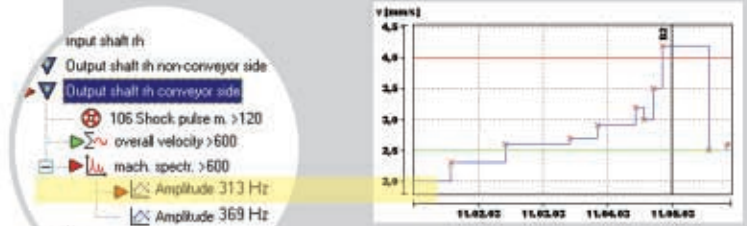


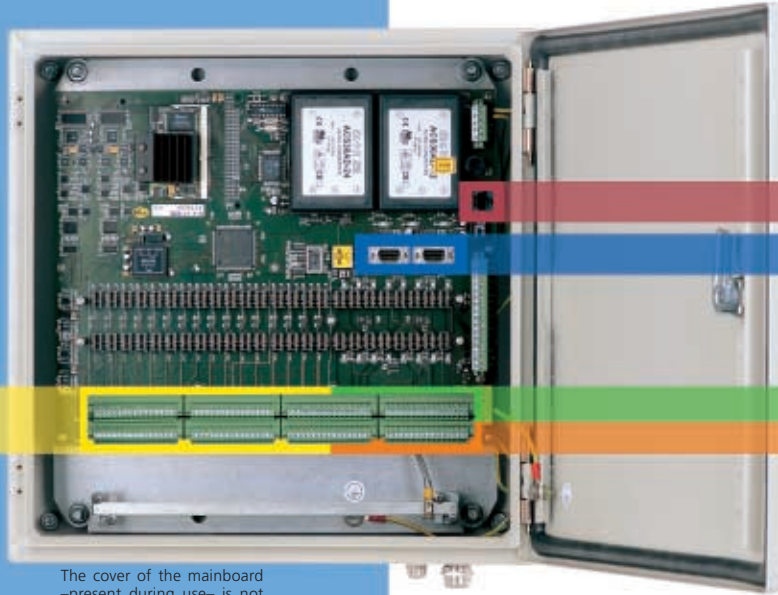
Fig. 4: The corresponding band alarm amplitude trend shows the prominent increase within the last few days.

Sensor connection in VIBROWEB®

Any transducer can be used!

① 32 Sensor inputs

VIBROWEB® has 32 analog measurement channels, where two inputs can be measured simultaneously. Continuous sensor power provides fast switchover times.



The cover of the mainboard –present during use– is not shown here.



A great combination - sensor and plug-in card

Almost any sensor type (ICP, Pt100, strain gauge, Current Line Drive, ...) can be installed in VIBROWEB®. For each measurement channel there is a matching plug-in card for signal conditioning which is simply plugged into the motherboard. Thus, VIBROWEB® is very flexible to adapt to every on-site application. Costs are kept low because only the components which are really required are installed.

For easy cable installation, the green connecting strip can be simply removed from the motherboard.

② LAN

VIBROWEB® data is normally transferred via a network connection (TCP/IP, Ethernet).

③ RS232

The two serial interfaces are intended for:

- Laptop (PPP) for on-site data analysis
- Modem (analog/ISDN) for data transmission via telephone line (Internet)
- Intelligent sensors (option), e.g. PERMALIGN® permanent alignment monitor
- Connection to a field bus, e.g. Modbus (option)

④ Digital IN / OUT

Each group of four digital inputs and outputs can be used for control tasks (PLC, actuators, relays,...) or as a trigger.

⑤ Tacho/ pulse inputs

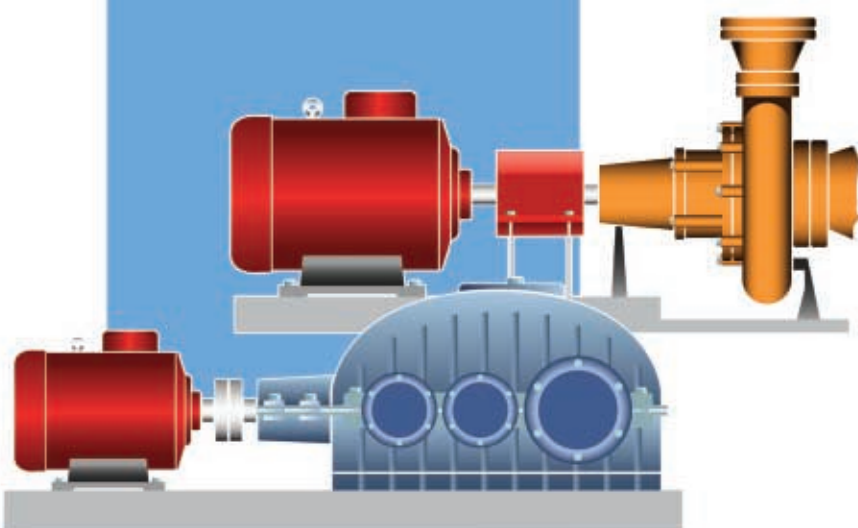
The 8 digital measurement channels are used for triggered measurement, for time-synchronous averaging (noise suppression) and for order analysis.

Global communication

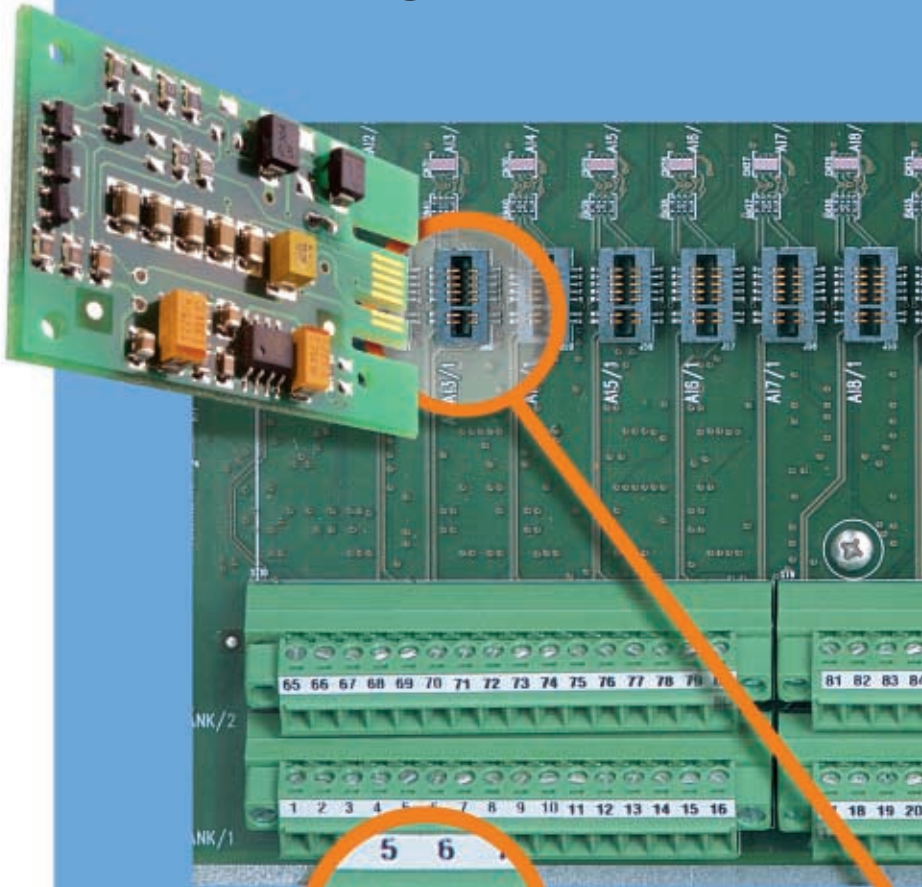
VIBROWEB® communicates via TCP/IP and Ethernet so that it can be directly integrated in any existing Ethernet network. VIBROWEB® can establish an Internet connection (PPP) by telephone modem, ISDN, GSM or HSCSD adapter and also send eMails with data attachments. On site, data exchange is possible over one of the two serial connections (RS232).

Further communication options are:

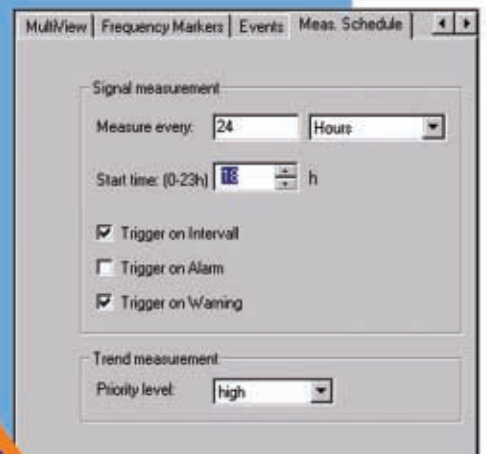
- WLAN
- Radio modem (GSM/ HSCSD)
- Satellite (Immarsat M/ A)
- Field bus connection (option)



Sensor configuration in OMNITREND®

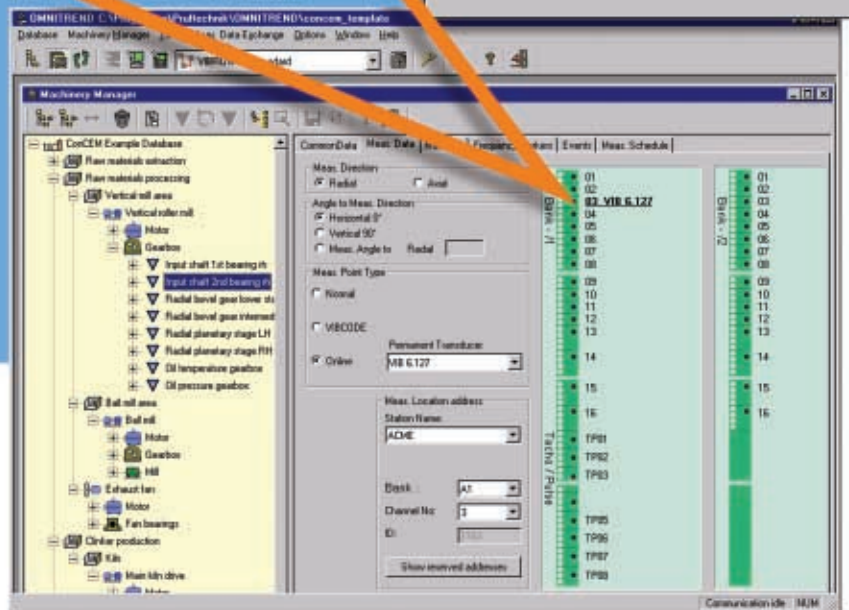


Easy programming of measurement schedule
 The time and number of measurements should be performed is determined in a sub menu.



Graphical connection overview

The green connecting strips in the VIBROWEB® control cabinet are graphically displayed in the OMNITREND® PC software for the clear assignment of sensors and measurement locations. This allows quick recognition of which sensor is installed on which channel and how the measurement parameters are set up. All sensor and measurement parameter settings are programmed with the OMNITREND® PC software.



VIBROWEB® is ...

intelligent – signal analysis and alarming take place automatically

autonomous – measurement, evaluation, storing, alarming without PC connection

universal – suitable for nearly all sensors

configurable – plug-in cards for signal conditioning for every sensor type

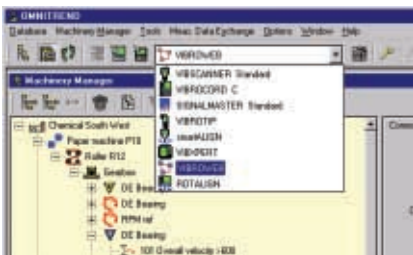
compatible – simple integration in existing installation

fast – ideal for dynamic processes, and changing loads and RPMs

communicative – data transfer via Ethernet, RS232, PPP, radio, fieldbus, ...

user-friendly – data evaluation and measurement settings in OMNITREND

VIBROWEB® is part of an overall strategy



VIBROWEB® is part of the PRÜFTECHNIK overall strategy for monitoring critical and less critical aggregates – consisting of an economical mix of offline and online systems: For some machines, it makes sense to perform the monitoring 'by hand' with manual mea-

surement systems; for other machines, permanent monitoring is required. Together with many other machine data, the two types of monitoring are united in the mutual OMNITREND® software platform.

VIBROWEB® technical data - VIB 7.500

Analog inputs

2x16 differential inputs (2 of them synchronous)

Measurement range, analog input

±10 V, ±1 V, ±100 mV, ±10 mV

Dynamic Range / Resolution

96 dB / 16 bit

Accuracy, analog input

0,05% of full scale

Signal coupling

AC/DC for each channel

Sampling rate, analog inputs

153,6 / 76,8 / 38,4 / 19,2 / 9,6 kHz

Frequency range

48 kHz to 48 Hz sub-divided into 11 areas

Antialiasing

Dynamic adaptation

Frequency resolution

400, 800, 1600, 3200, 6400, 12800 lines

Envelope

Digital input filter, selectable

Tacho / counter inputs

8

Digital inputs / Digital outputs

4 / 4

FET switch output

12 V DC, 1A, switchable

Measurement functions

Time signal, spectrum, integration of the spectrum, envelope, order spectrum, shock pulse, acceleration (RMS), vibration velocity (peak, RMS)

RAM memory capacity

32 MB

Flash memory capacity

32 MB

Ethernet interface

1, data rate: 10 Mbit

RS 232 interface

2, data rate: 38,4 kBit

Power supply

90-260 VAC / 50-60 Hz

Dimensions (LxWxH)

Approx. 38 x 38 x 22 cm

Total weight

Approx. 10.0 kg



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Productive maintenance technology