PRÜFTECHNIK

VIBXPERT® II
VIBXPERT® EX

Vibration analysis
Machine diagnostics
Data collection
Field balancing

Catalog

PRÜFTECHNIK
Condition Monitoring
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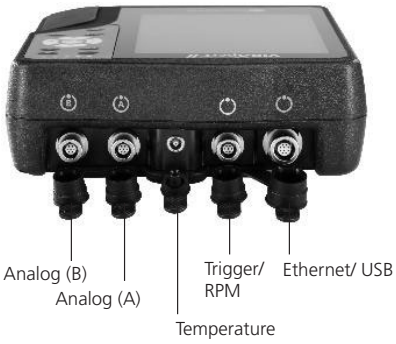
Chapter 1
VIBXPERT II

VIBXPERT II - Dual channel FFT data collector and signal analyzer



VIBXPERT II (VIB 5.310) is a high performance, full-featured FFT data collector and signal analyzer which allows easy condition monitoring of equipment found in many industries such as power generation, petrochemical, pulp and paper. VIBXPERT II collects field data including vibration information, bearing condition, inspection and process data. Extensive analysis functions facilitate data analysis and condition diagnostics on site. For in-depth analysis, archiving and documentation VIBXPERT II passes the collected information to the OMNITREND maintenance software.

Key features

- **Intuitive** to operate on its graphical user interface and effective use of color.
- **Fast** thanks to optimized measuring workflow and advanced processor technology.
- **Ergonomic** with a handy design and brilliant color display.
- **Powerful** due to many practical analysis functions and measuring templates.
- **Long-lived** with a long battery life and a large data memory.

Application

- Route-based data collection
- Vibration diagnosis
- One- or two-plane field balancing
- Acceptance measurement with machine templates
- Troubleshooting
- Multimeter
- Data logging
- Visual inspection

Analysis functions

- Overall values and process parameters
- Time waveform
- Amplitude/envelope spectrum
- Cepstrum
- Phase, cross-channel phase
- Orbit
- Static shaft position
- Runout analysis (shaft vibration)
- Bump test
- Coast-down/run-up test
- Order analysis
- Modal analysis
- Operating Deflection Shape Analysis (ODS)
- Transient capture
- Long-term recording
- Characteristic frequency markers
- Signal post-processing
- ISO standards for evaluation

Valuable additional features

- Printing of measurement reports
- Rugged hard case
- Extensive accessories
- Optional measuring functions that can be enabled by entering a password

Hardware

- Two true synchronous channel capabilities for diagnosis of complex machinery faults
- Replaceable compact flash cards
- Dust and splash proof (IP65) - ideal for use in demanding environments
- Analog connectors are compatible to VIBSCANNER
- Connector for type K thermocouples
- Signal output: headphones and strobe light

Ergonomics

- Large backlit VGA color display for easy reading, comprehensive data presentation and interpretation
- LED traffic light display: results evaluation according to ISO standards or user-defined alarm thresholds
- Daylight sensor controls keyboard illumination
- Easy-to-use navigation key pad
- Icon based user interface
- Color-coded cable connectors
- Online context sensitive HELP.

Power supply

- Powered by the latest Lithium-Ion battery technology for at least 8 hours operation
- Smart internal battery charging
- Power management (display illumination)

Communication

- Fully networkable
- PC connection via USB, Ethernet, RS232.

Technical data

PARAMETER		VIB 5.310
Input Channels	Analog, 2x	Voltage (AC/DC, ±30 V max.) Current (AC/DC, ±30 mA max.) ICP-type accelerometer (2 mA, 24 V max.) Current Linedrive (CLD) accelerometer (10 V, 10 mA max.)
	Frequency range	DC ... 51.2 kHz (Acceleration from 0.5 Hz)
	Dynamic range	96 dB (measurement) / 136 dB (total)
	Sampling frequency	up to 131 kHz per channel
	Impedance	90 kOhm, w/ cable VIB 5.433
	Analog, 1x	Thermocouple (type K)
	Digital (1+1 Pulse/ Tacho), 1x	RPM, Trigger, Keyphaser with pulse and AC signals: 0 V ... +26 V or -26 V ... 0 V
	Max. input voltage	± 26 V
	Switching threshold for 0 V ...+26 V signal	max. 2.5 V rising, min. 0.6 V falling
	Switching threshold for -26 V ...0 V signal	min. -8 V rising, max. -10 V falling
	Pulse width	< 0.1 ms
Output Channels	Stroboscope control	TTL output
	Frequency range	0 ... 500 Hz
	Resolution	0.05 Hz
	Signal-Out	Connection for headphones to listen to the analog input signal; signal processing (oscilloscope)
	Frequency range	0.5 Hz ... 40 kHz
	Output impedance	100 Ohm
Meas. range / Accuracy	Vibration acceleration	depends on the transducer connected
	Shock pulse	-10 ...80 dBsv / ± 3dBsv
	RPM	10 ... 200 000 min^{-1} / ±0.1‰ or ± 1 min^{-1} (the lower accuracy is applicable)
	Temperature type K	-50 ... +1000°C / 1% or ±1°C (the lower accuracy is applicable)
	Standards fulfilled	Frequency response according to ISO 2954
Display	Type	TFT-LCD, backlit
	Pixel area	116 x 87 mm
	Resolution	VGA (640 x 480 pixel) with 140 ppi
	Color depth	18 bit (262144 colors)
Power supply	Battery type	Li Ion rechargeable battery pack (7.2V / 4.8Ah - 34 Wh)
	Charging time	< 5 hours in the device or external with optional charging station
	Charger, input	110-240 V / 50-60 Hz
	Charging temperature	0°C ... +50°C
Computer	Processor	Marvell PXA320 806 MHz
	Keyboard	1 navigation pad and 7 keys (Zoom, Escape, Function, Help, Menu, On/Off); Keyboard illumination controlled by ambient light.
	Memory	Internal: 128 MB DDR RAM; Compact Flash: 2 GB ... 8 GB
	Serial interface	RS 232, <115 kBaud
	USB interface	USB host for printing; USB slave for data exchange with OMNITREND
	Ethernet interface	100 Mbit (100Base T), 10 Mbit (10Base T)
	Printing	Direct printing of measurement reports via the USB port Compatible printer types: HP, Epson and other printers with USB connection
Environment / General	Connectors	Analog / Digital channels: MiniSnap socket Thermocouple (type K): QLA socket; all compatible to VIBSCANNER
	Housing	ABS plastics
	Dimensions	186 x 162 x 52 mm (LxWxH)
	Weight	approx. 1.1 kg
	IP rating	IP65, dust and splash-proofed
	Temperature range	-10°C ... +60°C (Operation) -20°C ... +60°C (Storage)

VIBXPERT II firmware structure

The functionality of the modular VIBXPERT II firmware can be expanded as required by a password. The standard firmware can be upgraded with the following firmware modules:

- Recording (VIB 5.315-REC)
- Balancing (VIB 5.316-BAL)
- ODS / Modal analysis (VIB 5.319-ODS)

The VIBXPERT II Advanced packages contain the standard firmware for the 1-channel or the 2-channel instrument respectively.

1-channel data collector

In addition to the 'Advanced' version, VIBXPERT II is available as a pure 1-channel data collector in one of the two 'Data collector' packages (VIB 5.310-1E or VIB 5.314-1E respectively). The appropriate firmware, 'E-Registration' (VIB 5.318-E) has a limited functionality and provides

- Route-base data collection
- Vibration analysis using spectra
- Vibration analysis using time waveforms

An upgrade to the 'Advanced' version is possible with the appropriate upgrade package (see next page).

Features of the standard firmware

PARAMETER		VIB 5.311 / VIB 5.311-CH2
Operating modes	Multimode, Characteristic Overall Values	• Vibration (Acceleration, Velocity, Displacement) • Current, Voltage (AC / DC) • Shock pulse (bearing condition) • Temperature • Rotational speed
	Multimode, Signals	• Amplitude spectrum for accel., velocity, displacement, current, voltage • Envelope spectrum for acceleration, velocity, shock pulse, current, voltage • Time waveform for acceleration, velocity, displacement, current, voltage • Phase measurement (polar diagram) • Impact test w/o recording of the exciting force • Run-up/ Coast-down analysis for acceptance checks and for the evaluation of resonances; phase over RPM (Bode or Nyquist diagram); overall value over RPM (RMS and either 0-p, p-p or crest factor) with 2-channel firmware only (VIB 5.311-CH2): • 2-channel measurements with trigger • Orbit (filtered / unfiltered) • Cepstrum • Cross channel phase measurement • Impact test for natural frequency analysis on a shutdown or running machine* • ODS - Operation deflecting shape analysis* * requires optional firmware module VIB 5.319-ODS
	Machine templates	Machine-specific templates for repetitive measurement tasks used for acceptance tests or service measurements.
	Route	• Set of measurement tasks for machine condition monitoring and diagnosis • Route guidance via tree / list view or machine graphics • Optimizer levels, TrendingSpectrum, 'Near location' mode for rapid data collection
Analysis functions	Cursor	single, delta, harmonics, sub harmonics, sideband cursor
	Frequency markers	Fixed and RPM-variable characteristic frequencies for machines, roller bearings and gearboxes can be displayed in 'Template' and 'Route' mode
	Alarm bands	Narrow band monitoring of damage frequencies (route mode only)
	Max 10 values	List of the 10 highest amplitudes in the spectrum
	Results display	• Linear scaling, Logarithmic scaling (Y axis) • Trend, Cascade diagram (waterfall), Polar plot • Order scaling for amplitude / envelope spectrum • Sound spectrum (octave / third octave bars)
Measurement functions	Multi Meas. tasks	Combination of several measurements in one task.
	Averaging	• none (not for temperature), • linear (not for time waveform), • peak hold (not for time waveform and temperature), • exponential (not for time waveform & temperature), • time-synchronous (time waveform, spectrum, balancing)
	Trigger modes	Free running, external (time-synchronous), internal Amplitude, Edge, Pre and post triggered.
	FFT	F_{min}: between 0.5 Hz and 10 Hz programmable F_{max}: between 200 Hz and 51.2 kHz programmable Lines: 400, 800, 1600, 3200, 6400, 12800, 25600, 51200, 102400 Window: Rectangular, Hanning, Hamming, Blackman, Bartlett, Flattop, Kaiser

Features of the optional firmware modules

RECORDING		VIB 5.315-REC
Features	Short-term recording	• Characteristic overall values, phase, spectrum and time waveform • Pre- and post history
	Start / stop triggering	time, rpm, threshold, manual
	Recording duration	approx. 10 minutes for time waveform with 512 Hz sampling rate
	Time waveform recorder	Continuous long-term signal recording
	Recording duration	approx. 132 hours with 512 Hz sampling rate and 2 GB CF card

Use of the time waveform recorder requires registration of either the
- VIB 5.318-E, E-Registration module or the
- VIB 5.311, 1-channel measurements module.

Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

BALANCING		VIB 5.316-BAL
Features	Meas. quantities	Vibration velocity, acceleration, displacement
	Balancing modes	One-plane balancing with vibration minimization in the second plane Balancing in two planes under operating conditions
	Correction type	Fixed location, Fixed mass, Tape measure, Free correction
	Operation	Graphical user interface with machine icons and on-screen instructions
	Additional measurement tasks	Diagnosis measurements for detecting an imbalance (characteristic overall value, spectrum, time waveform, phase)
	Add. averaging type	Unlimited averaging if the imbalance pointer is unstable

Additional measurement equipment required for balancing is available in a separate package:
- VIB 5.387-HW: 1-channel instrument
- VIB 5.386-HW: 2-channels instrument

ODS /MODALANALYSIS		VIB 5.319-ODS
Features	Bump test with modal hammer	Analysis of operation-critical mode shapes, Visualization of the dynamic behavior of a structure
	Results display	Transmission function, Coherence function
	Add. averaging type	Negative averaging for measurements on a running machine
	ODS	Structure analysis on running machine

Use of this module requires registration of the modules:
- VIB 5.311, 1-channel measurements, and
- VIB 5.311-CH2, 2-channel measurements.

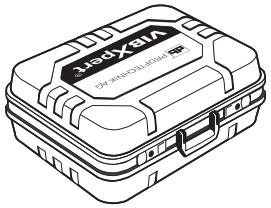
Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

VIBXPERT II Upgrade Matrix

		ex OMNITREND		with OMNITREND		
		Advanced packg. 1-channel instr. **VIB 5.310-1**	Advanced packg. 2-channel instr. **VIB 5.310-2**	Data collector packg. 1-channel instr. **VIB 5.314-1E**	Advanced package 1-channel instr. **VIB 5.314-1**	Advanced package 2-channel instr. **VIB 5.314-2**
ex OMNITREND	Data collector packg. 1-channel instrument **VIB 5.310-1E**	**VIB 5.311-1UG**	**VIB 5.311-2UG**	**VIB 5.311-UOM**	**VIB 5.311-1UG** **VIB 5.311-UOM** **VIB 8.115**	**VIB 5.311-2UG** **VIB 5.311-UOM** **VIB 8.115**
ex OMNITREND	Advanced package 1-channel instrument **VIB 5.310-1**	N/A	**VIB 5.311-CH2** **VIB 6.142RSET**	N/A	**VIB 5.311-UOM** **VIB 8.115**	**VIB 5.311-CH2** **VIB 6.142RSET** **VIB 5.311-UOM** **VIB 8.115**
ex OMNITREND	Advanced package 2-channel instrument **VIB 5.310-2**	N/A	N/A	N/A	N/A	**VIB 5.311-UOM** **VIB 8.115**
with /	Data collector packg. 1-channel instrument **VIB 5.314-1E**	N/A	N/A	N/A	**VIB 5.311-1UG** **VIB 8.115**	**VIB 5.311-2UG** **VIB 8.115**
with /	Advanced package 1-channel instrument **VIB 5.314-1**	N/A	N/A	N/A	N/A	**VIB 5.311-CH2** **VIB 6.142RSET**

VIB 8.115 = OMNITREND Web Certificate, single user

VIB 5.310-1E: VIBXPERT II Data Collector package for 1-channel instrument



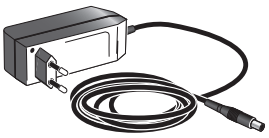
VIB 5.328

VIB 8.970

LIT 01.800

VIB 5.310

VIB 5.356



VIB 5.320-INT

VIB 6.142 R

VIB 3.420

LIT 53.201
LIT 53.202
LIT 53.102

VIB 5.330 SUSB

VIB 5.436

VIB 5.318-E

Description

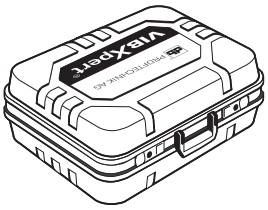
The Data Collector packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument features the firmware 'E-Registration' and provides one measurement channel.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.310	VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
VIB 5.318-E	E-registration firmware certificate
VIB 5.320-INT	VIBXPERT II charger
VIB 5.328	VIBXPERT II case
VIB 5.330SUSB	USB cable, PC communication
VIB 5.356	VIBXPERT II carrying bag
VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 R	Accelerometer for standard machines
VIB 3.420	Magnetic holder for curved mounting surfaces
LIT 53.201.EN	VIBXPERT II manual
LIT 53.102.EN	VIBXPERT II short instructions
LIT 53.202.EN	VIBXPERT II balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.970	CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

VIB 5.314-1E: VIBXPERT II Data Collector package for 1-ch. instrument incl. OMNITREND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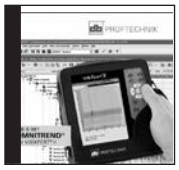
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LIT 01.800

VIB 5.310

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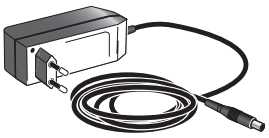
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VIB 6.142 R


VIB 3.420

CE


VIB 9.631
LIT 53.201
LIT 53.202
LIT 53.102


VIB 5.330 SUSB


VIB 5.436

VIB 5.318-E
VIB 5.312-P

Description

The Data Collector packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument features the firmware 'E-Registration' and provides one measurement channel.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.310	VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
VIB 5.312-P	PC licence for VIBXPERT II
VIB 5.318-E	E-registration firmware certificate
VIB 5.320-INT	VIBXPERT II charger
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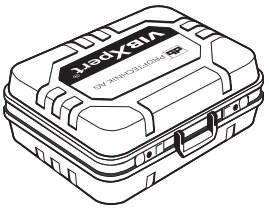
LIT 53.102.EN	VIBXPERT II short instructions
LIT 53.202.EN	VIBXPERT II balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.981	OMNITREND for VIBXPERT, PC software
VIB 9.631.G	OMNITREND getting started manual

VIB 5.310-1: VIBXPERT II Advanced package for 1-channel instrument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LIT 01.800

VIB 5.310

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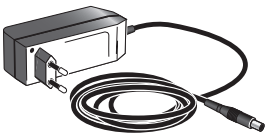
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VIB 6.142 R


VIB 3.420


LIT 53.201
LIT 53.202
LIT 53.102


VIB 5.330 SUSB


VIB 5.436

VIB 5.311

Description

The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.310	VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
VIB 5.311	1-channel standard firmware certificate
VIB 5.320-INT	VIBXPERT II charger
VIB 5.328	VIBXPERT II case
VIB 5.330SUSB	USB cable, PC communication
VIB 5.356	VIBXPERT II carrying bag
VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 R	Accelerometer for standard machines
VIB 3.420	Magnetic holder for curved mounting surfaces
LIT 53.201.EN	VIBXPERT II manual
LIT 53.102.EN	VIBXPERT II short instructions
LIT 53.202.EN	VIBXPERT II balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.970	CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

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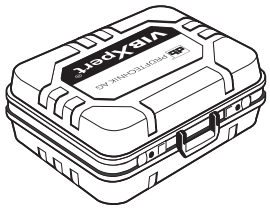
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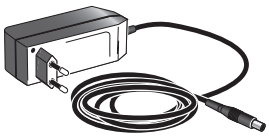
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VIB 3.420


VIB 9.631
LIT 53.201
LIT 53.202
LIT 53.102


VIB 5.330 SUSB


VIB 5.436

VIB 5.311
VIB 5.312-P
VIB 8.115

Description

The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

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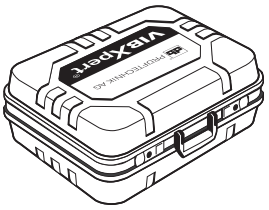
VIB 8.981	OMNITREND for VIBXPERT, PC software
VIB 9.631.G	OMNITREND getting started manual
VIB 8.115	OMNITREND web, single user certificate

VIB 5.310-2: VIBXPERT II Advanced package for 2-channel instrument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VIB 8.970


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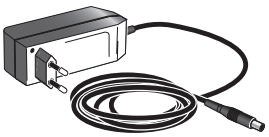
VIB 5.310

VIB 5.356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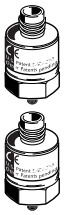
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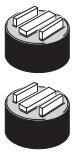
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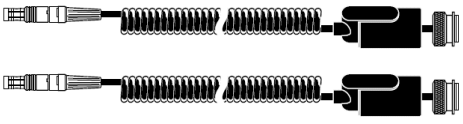
LIT 53.202
LIT 53.102


VIB 5.436


VIB 5.330 SUSB

VIB 5.311
VIB 5.311-CH2

Description

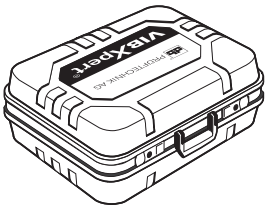
The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.310	VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
VIB 5.311	1-channel standard firmware certificate
VIB 5.311-CH2	2-channel standard firmware certificate
VIB 5.320-INT	VIBXPERT II charger
VIB 5.328	VIBXPERT II case
VIB 5.330SUSB	USB cable, PC communication
VIB 5.356	VIBXPERT II carrying bag
VIB 5.436	Spiral cable for Current line-drive transducers, 2x
VIB 6.142 R	Accelerometer for standard machines, 2x
VIB 3.420	Magnetic holder for curved mounting surfaces, 2x
LIT 53.201.EN	VIBXPERT II manual
LIT 53.102.EN	VIBXPERT II short instructions
LIT 53.202.EN	VIBXPERT II balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.970	CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

VIB 5.314-2: VIBXPERT II Advanced package for 2-channel instrument incl. OMNITREND

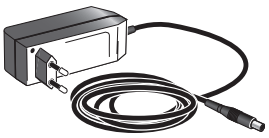


VIB 5.328

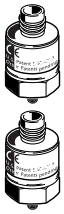
VIB 8.981

LIT 01.800

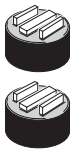
VIB 5.310 VIB 5.356



VIB 5.320-INT



VIB 6.142 R



VIB 3.420

VIB 9.631
LIT 53.201
LIT 53.202
LIT 53.102

VIB 5.436

VIB 5.330 SUSB

VIB 5.311
VIB 5.311-CH2
VIB 5.312-P
VIB 8.115

Description

The Advanced packages include the basic equipment for data collection and machine diagnostics with VIBXPERT II. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.310	VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
VIB 5.311	1-channel standard firmware certificate
VIB 5.311-CH2	2-channel standard firmware certificate
VIB 5.312-P	PC licence for VIBXPERT II
VIB 5.320-INT	VIBXPERT II charger
VIB 5.328	VIBXPERT II case
VIB 5.330SUSB	USB cable, PC communication
VIB 5.356	VIBXPERT II carrying bag
VIB 5.436	Spiral cable for Current line-drive transducers, 2x
VIB 6.142 R	Accelerometer for standard machines, 2x
VIB 3.420	Magnetic holder for curved mounting surfaces, 2x
LIT 53.201.EN	VIBXPERT II manual
LIT 53.102.EN	VIBXPERT II short instructions
LIT 53.202.EN	VIBXPERT II balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.981	OMNITREND for VIBXPERT, PC software
VIB 9.631.G	OMNITREND getting started manual
VIB 8.115	OMNITREND web, single user certificate

VIBXPERT II upgrades

VIB 5.311-1UG :	Upgrade package ‚Data collector' to ‚Advanced / 1-channel'
VIB 5.311-2UG :	Upgrade package ‚Data collector' to ‚Advanced / 2-channels'
VIB 5.311-UOM:	Upgrade package ‚OMNITREND'


VIB 6.142 R


VIB 3.420

VIB 5.436


VIB 8.981


VIB 9.631

VIB 5.311
VIB 5.311-CH2
VIB 5.312-P

The upgrade packages extend the functionality and options of the instrument. The matrix below shows the possible upgrade options.

Content **VIB 5.311-1UG:**
VIB 5.311 1-channel standard firmware certificate

Content **VIB 5.311-2UG:**
VIB 5.311 1-channel standard firmware certificate
VIB 5.311-CH2 2-channel standard firmware certificate
VIB 5.436 Spiral cable for Current line-drive transducers
VIB 6.142 R Accelerometer for standard machines
VIB 3.420 Magnetic holder for curved mounting surfaces

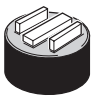
Content **VIB 5.311-UOM:**
VIB 8.981 OMNITREND for VIBXPERT, PC software
VIB 9.631.G OMNITREND getting started manual
VIB 5.312-P PC licence for VIBXPERT II

VIBXPERT II Upgrade Matrix

		ex OMNITREND		**with OMNITREND**		
		Advanced packg. 1-channel instr. **VIB 5.310-1**	Advanced packg. 2-channel instr. **VIB 5.310-2**	Data collector packg. 1-channel instr. **VIB 5.314-1E**	Advanced package 1-channel instr. **VIB 5.314-1**	Advanced package 2-channel instr. **VIB 5.314-2**
ex OMNITREND	Data collector packg. 1-channel instrument **VIB 5.310-1E**	**VIB 5.311-1UG**	**VIB 5.311-2UG**	**VIB 5.311-UOM**	**VIB 5.311-1UG VIB 5.311-UOM VIB 8.115**	**VIB 5.311-2UG VIB 5.311-UOM VIB 8.115**
	Advanced package 1-channel instrument **VIB 5.310-1**	N/A	**VIB 5.311-CH2 VIB 6.142RSET**	N/A	**VIB 5.311-UOM VIB 8.115**	**VIB 5.311-CH2 VIB 6.142RSET VIB 5.311-UOM VIB 8.115**
	Advanced package 2-channel instrument **VIB 5.310-2**	N/A	N/A	N/A	N/A	**VIB 5.311-UOM VIB 8.115**
with /	Data collector packg. 1-channel instrument **VIB 5.314-1E**	N/A	N/A	N/A	**VIB 5.311-1UG VIB 8.115**	**VIB 5.311-2UG VIB 8.115**
	Advanced package 1-channel instrument **VIB 5.314-1**	N/A	N/A	N/A	N/A	**VIB 5.311-CH2 VIB 6.142RSET**

VIB 6.142 RSET: Transducer set for vibration measurements

VIB 6.142 R



VIB 3.420

VIB 5.436

Description

This package contains the hardware components for vibration measurements with VIBXPERT II.

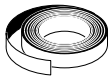
Scope of supply

VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 R	Accelerometer for standard machines
VIB 3.420	Magnetic holder for curved mounting surfaces

VIB 5.387-HW: VIBXPERT II transducer set for balancing with 1-channel instrument

VIB 6.147

VIB 3.420



VIB 3.306

VIB 6.631

VIB 6.632

MiniSnap VIB 5.437-2,9 TNC

MiniSnap VIB 5.432-2,9 BINDER

Description

This package extends the functionality of any VIBXPERT II instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

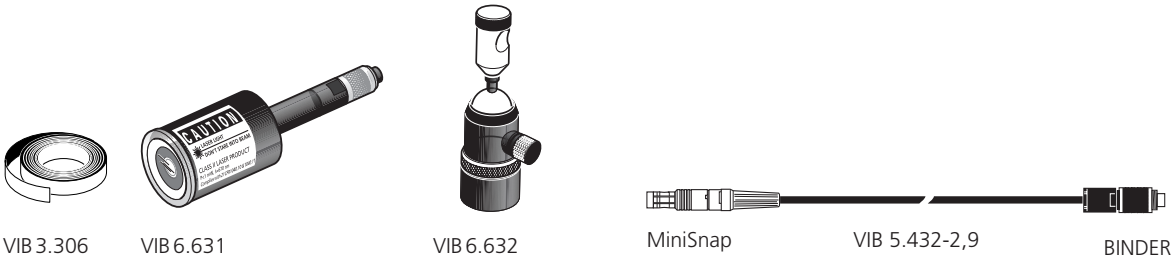
Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 5.437-2,9	Cable for Current line-drive transducer, 2.9 m
VIB 6.147	Accelerometer for low-speed machines
VIB 6.631	Laser Trigger Sensor
VIB 6.632	Trigger stand

Note

The VIBXPERT II balancing firmware module (VIB 5.316-BAL) is not included in the transducer set.

VIB 5.386-HW: VIBXPERT II transducer set for balancing with 2-channel instrument



VIB 3.306 VIB 6.631 VIB 6.632 MiniSnap VIB 5.432-2,9 BINDER

Description

This package extends the functionality of any VIBXPERT II instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

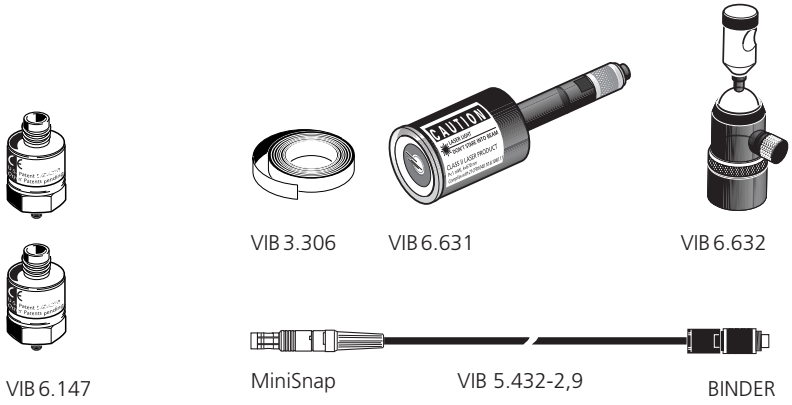
Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.631	Laser Trigger Sensor
VIB 6.632	Trigger stand

Note

The VIBXPERT II balancing firmware module (VIB 5.316-BAL) is not included in the transducer set.

VIB 5.388-HW: VIBXPERT II transducer set for balancing with 2-channel instrument on low-speed machinery



Description

This package extends the functionality of any VIBXPERT II instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

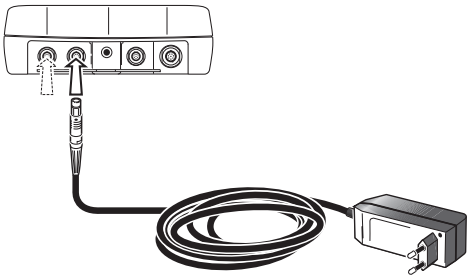
Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.147	Accelerometer for low-speed machines,2x
VIB 6.631	Laser Trigger Sensor
VIB 6.632	Trigger stand

Note

The VIBXPERT II balancing firmware module (VIB 5.316-BAL) is not included in the transducer set.

VIB 5.320-INT: VIBXPERT II charger

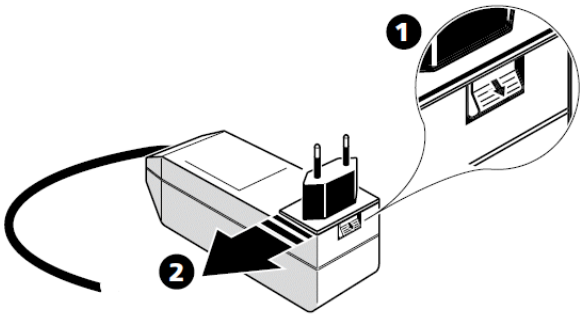


Description

The VIBXPERT II Charger VIB 5.320-INT has several interchangeable AC plugs for the most international plug types.

To charge the rechargeable battery, connect the charger to one of the two measurement channels (A, B). After charging, the charger switches automatically to trickle-mode in order to protect the rechargeable battery.

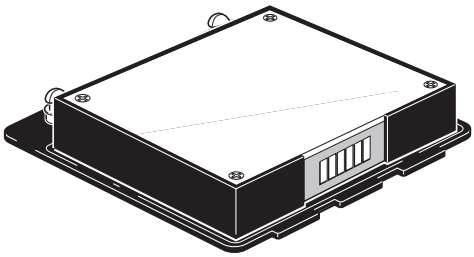
How to change the plug

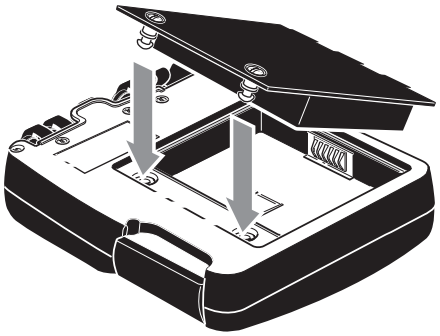


Technical data

PARAMETER		VIB 5.320-INT
Electrical	Primary voltage	110 - 240 VAC; 50 - 60 Hz
	Secondary voltage	12 VDC / 2A
	Charging duration	< 5 hours, depends on battery charge condition
General	Environmental protection	IP 20
	Temperature range, operation	-5°C ... +40°C
	Temperature range, storage	-20°C ...+70°C
	Dimensions (WxHxL)	40 x 45 x 110 mm
	Cable length	approx. 1.5 m

VIB 5.325: VIBXPERT II rechargeable battery





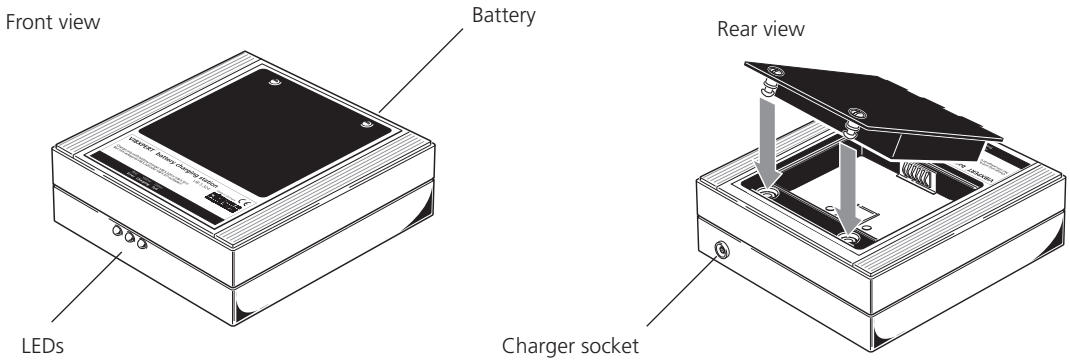
Description

VIBXPERT II is supplied from a Li Ion rechargeable battery (VIB 5.325). The battery can be recharged in the device or in the external charging station (VIB 5.324) with the charger (VIB 5.320-INT).

Technical data

PARAMETER		VIB 5.425
Electrical	Battery type	Lithium ion
	Nominal voltage	7.2 V
	Nominal capacitance	4.8 Ah
	Nominal power	34.5 Wh
	Charging temperature	0°C ... +50°C

VIB 5.324-SET: VIBXPERT II charging station set



Description

The VIBXPERT II battery can be removed from the instrument to be charged externally using the charging station. Thus, work can continue without major interruption using a second charged battery while the empty battery is being charged in the office.

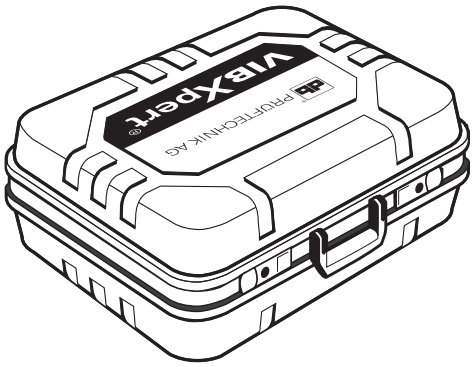
The charging station set consists of the VIBXPERT charging station (VIB 5.324) and an additional VIBXPERT rechargeable battery (VIB 5.325).

Three LEDs indicate the charging status:

GREEN:	Battery is fully charged
YELLOW:	Battery is charging
RED:	Fault during charging

Charging temperature: 0°C ... +50°C

VIB 5.328: VIBXPERT II case



Description

This black case of rugged ABS plastic with contoured foam insert protects all components of the VIBXPERT system during transport (contents not included).

It also offers plenty of space for accessories. The case is key lockable and drop-tested from 2m (6' 6").

Technical data

PARAMETER		VIB 5.328
General	Material	ABS plastic
	Dimensions (W x D x H)	470 x 400 x 195 mm
	Empty weight	3 kg

VIBXPERT II carrying bag and accessories

VIB 5.356 :	VIBXPERT II carrying bag
VIB 5.354-CL :	VIBXPERT II sensor clip
VIB 5.354-GT :	VIBXPERT II carrying strap
VIB 5.354-HS :	VIBXPERT II hand strap

Description

The carrying bag, made of nylon-synthetic blend, provides a convenient aid in carrying the VIBXPERT II instrument around. Its side pocket allows safe storage of connection cables, sensors and tools.

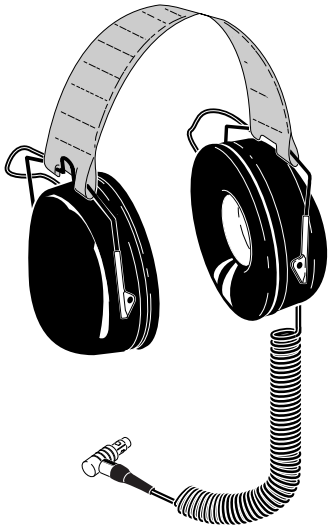
The continuously adjustable carrying strap can be adjusted to fit nearly any body size. The VIBXPERT II instrument can be held securely in one hand using the handstrap. The size of the hand strap can be adjusted with the Velcro fastener.

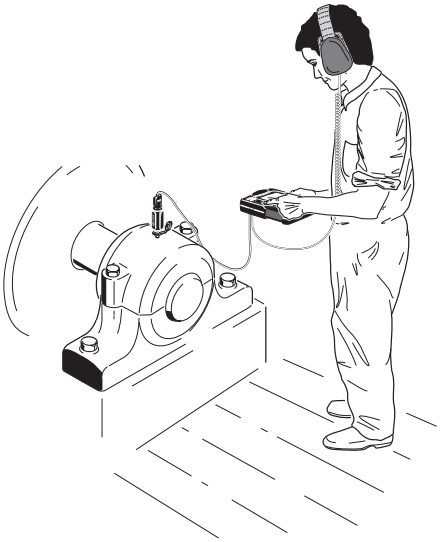
If necessary, the carrying belt and hand strap can be ordered separately later.

The sensor clip is a convenient holder for sensors with magnetic adapter*. The clip can be attached directly to the carrying strap and continuously adjusted.

*e.g. VIB 6.172 + VIB 3.423 or comb. vibration and temperature sensor VIB 6.162.

VIB 6.670 : Headphones





Description

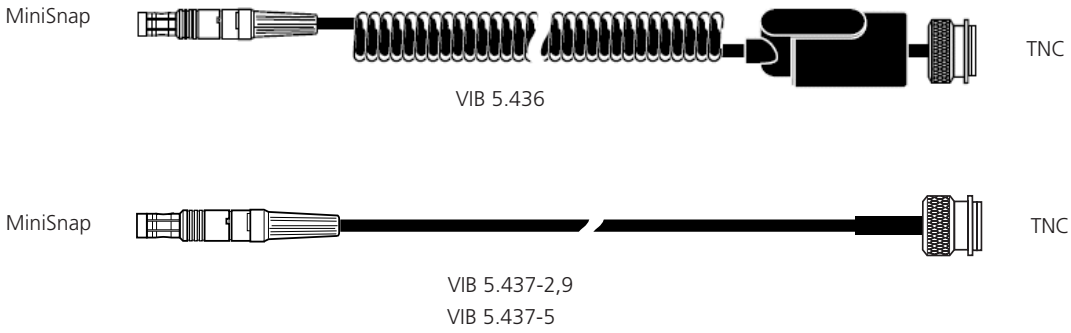
The headphones can be used to listen to the machines and, in particular, roller bearings for the characteristic noises that indicate damage. The buffered transducer signal is picked up with the headphones at the analog output (yellow socket).

Technical data

PARAMETER		VIB 6.670
Electrical	Impedance	450 Ohm
	Frequency range	125 - 8000 Hz
	Volume limit (0.5 V / 1 kHz)	81 dB (A)
General	Connection	1 spiral cable for VIBSCANNER (MiniSnap)
	Weight	approx. 360 g

Connection cables for current line-drive accelerometers

VIB 5.436 :	Spiral connection cable for current line-drive accelerometer
VIB 5.437-2,9 :	Straight connection cable for current line-drive accelerometer, 2.9 meters
VIB 5.437-5 :	Straight connection cable for current line-drive accelerometer, 5 meters



Application

These cables are used to connect mobile industrial accelerometers with current line-drive output to the following PRÜFTECHNIK data collectors:

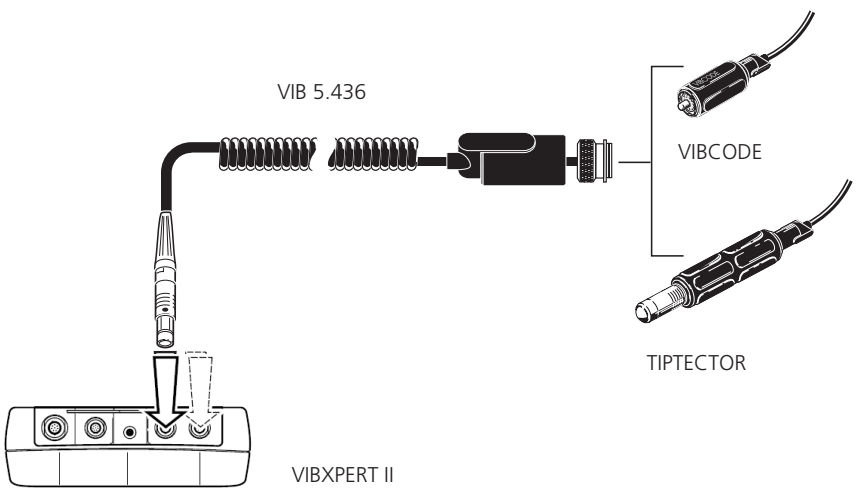
- VIBXPERT II
- VIBXPERT I
- VIBXPERT EX
- VIBSCANNER
- VIBSCANNER EX

Cable lengths

VIB 5.436	0.7 ... 1.8 m
VIB 5.437-2,9	2.9 m
VIB 5.437-5	5 m

Connection example

VIBCODE / TIPTECTOR connected to VIBXPERT II



VIB 5.444-5 : Universal cable extension for analog measurement channel, 5 meters

Application

With this cable, the analog signal path can be extended by up to five meters.

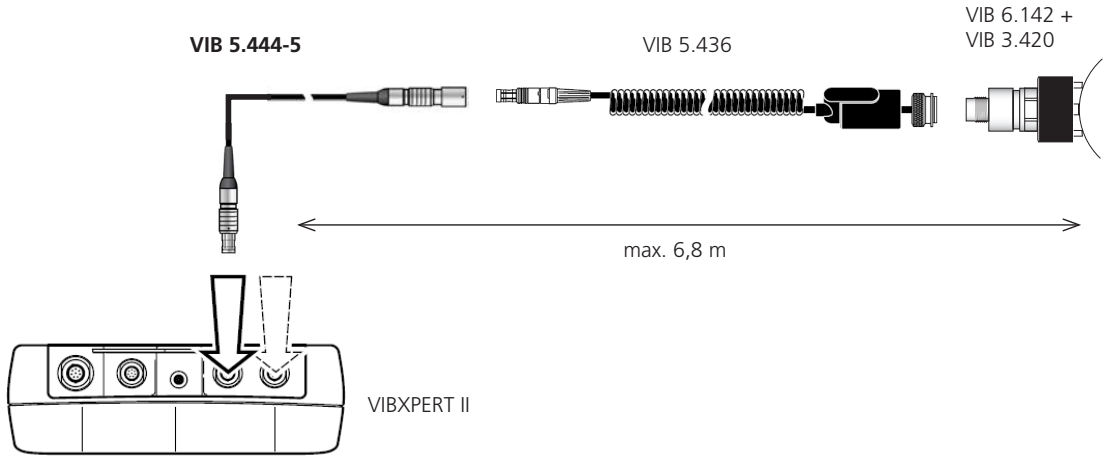
Extendable sensor cables:

VIB 5.436	LineDrive spiral cable
VIB 5.437-2,9	LineDrive cable, straight, 2.9 m
VIB 5.437-5	LineDrive cable, straight, 5 m
VIB 5.438-0,5	ICP cable, BNC connector
VIB 5.422	ICP cable, MIL connector
VIB 5.440	VIBREX cable (mV)
VIB 5.433	Cable for extra-low voltage
VIB 5.433 X	Cable for extra-low voltage, VIBXPERT EX
VIB 5.434	Cable for extra-low current
VIB 5.342	Cable for VST 24V adapter

Note for all cables, except LineDrive

For cable lengths greater than 2.9 meters, the EMC immunity of the signal path can be adversely affected.

Connection example



VIB 5.339: Cable extension for Current Linedrive accelerometer, 8 meters

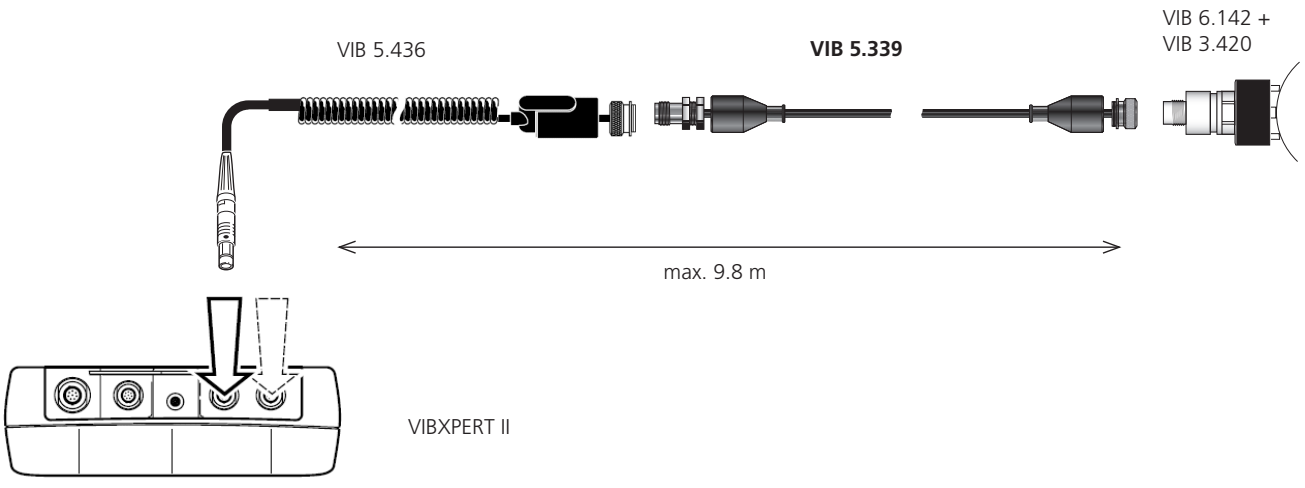
Application

With this cable, the Current LineDrive sensor cables can be extended by up to eight meters.

Extendable sensor cables:

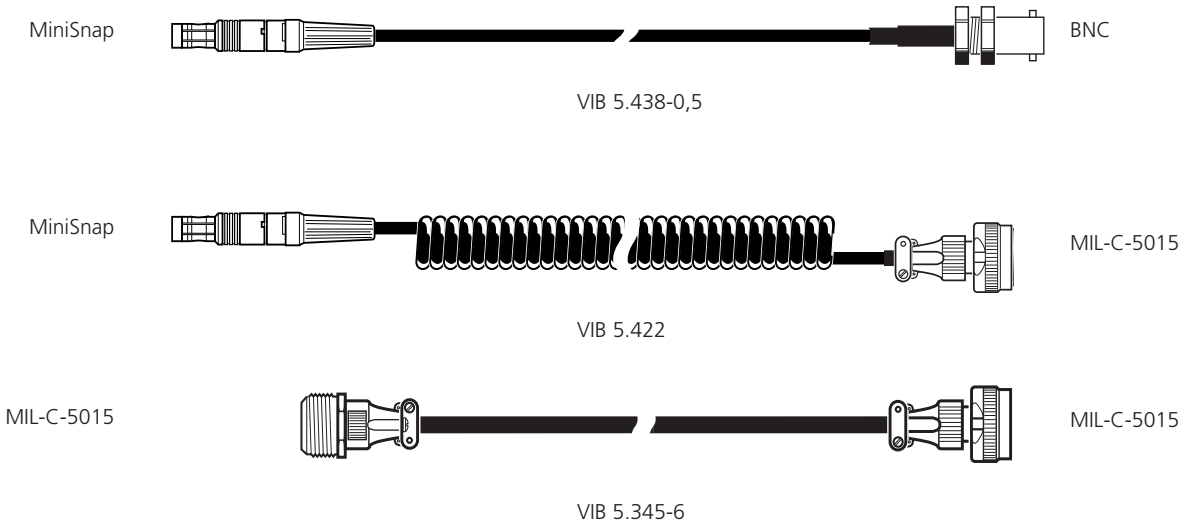
VIB 5.436 LineDrive spiral cable
VIB 5.437-2,9 LineDrive cable, straight, 2.9m
VIB 5.437-5 LineDrive cable, straight, 5m

Connection example



Connection cables for ICP-type accelerometers

VIB 5.438-0,5 :	Straight connection cable for ICP-type accelerometer, 0.5 meters, BNC-connector
VIB 5.422 :	Spiral connection cable for ICP-type accelerometer, MIL-connector
VIB 5.345-6 :	Cable extension for VIB 5.422, 6 meters, MIL-connector

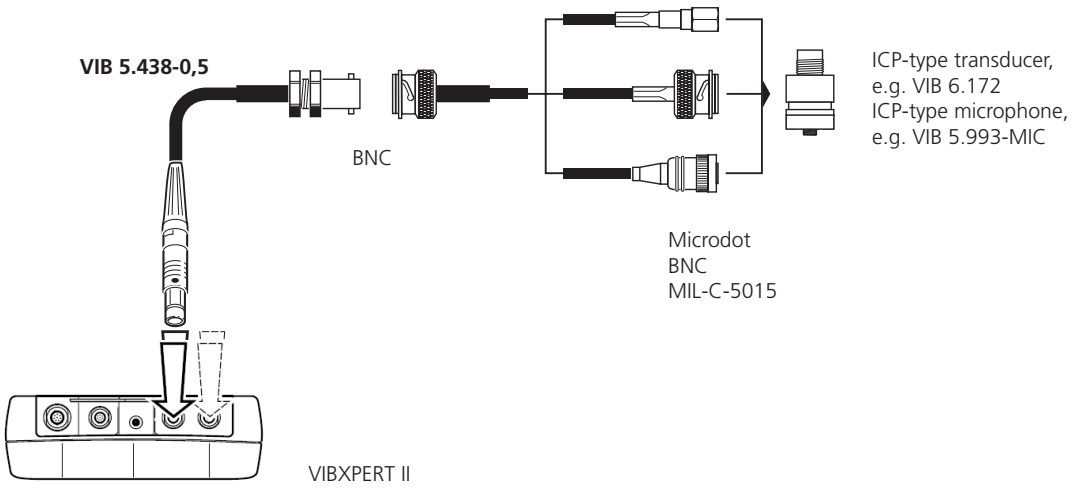


Application
Standard sensor cables for connecting an ICP-type accelerometer or a microphone to VIBXPERT II.

Cable lengths
VIB 5.438-0,5 0.5 m
VIB 5.422 0.7 ... 1.8 m
VIB 5.345-6 6 m

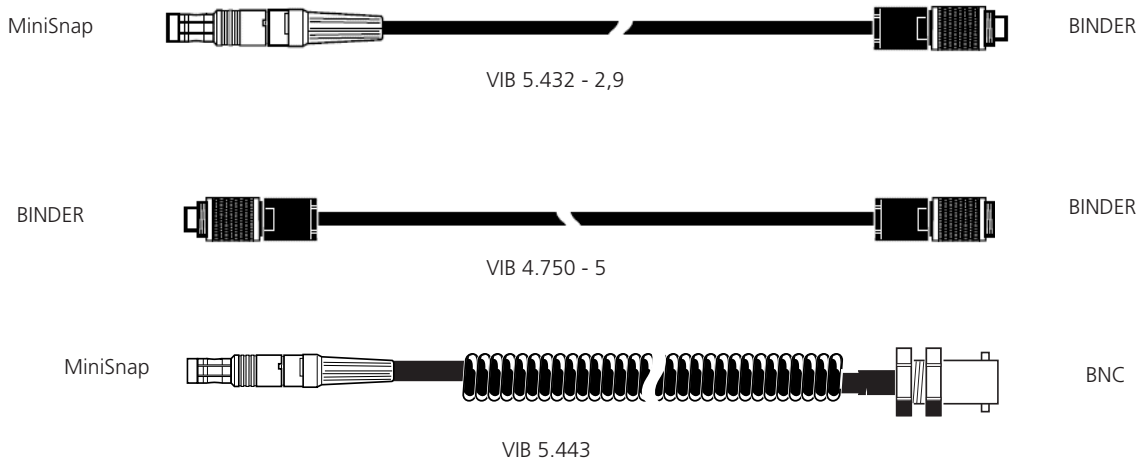
Notes
Applies to cable VIB 5.438-0,5: Depending on which type of connector the accelerometer has (e.g. Microdot, BNC, MIL-C-5015,...), a suitable cable must have at least one BNC connector.

Connection example
ICP to VIBXPERT II



Connection cables for RPM sensors and trigger sensors

VIB 5.432-2,9 :	Connection cable for RPM sensors
VIB 4.750-5 :	Cable extension for VIB 5.432-2,9
VIB 5.443 :	Connection cable for TTL trigger sensors



Application

The VIB 5.432-2,9 cable is used to connect the PRÜFTECHNIK RPM sensors VIB 6.631 or VIB 6.631 EX to the following data collectors:

- VIBXPERT II
- VIBXPERT I
- VIBXPERT EX
- VIBSCANNER
- VIBSCANNER EX

The VIB 5.443 cable is used to connect a trigger sensor from other manufacturers.

Cable lengths

VIB 5.432-2,9	2.5 m
VIB 4.750-5	5.0 m
VIB 5.443	0.45 - 1.6 m

Application example

VIB 5.431 : Cable for analog signal output

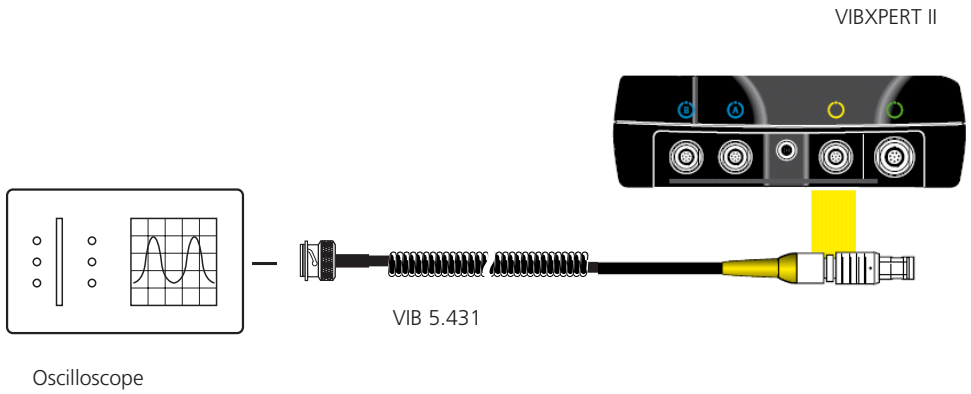
Application

In order to analyze the measured analog signal, a headset (> 450 Ohm) or an analytical instrument (e.g. oscilloscope) can be connected with this cable to the following data collectors:

- VIBXPERT II
- VIBXPERT I
- VIBXPERT EX
- VIBSCANNER
- VIBSCANNER EX

Cable length: 0.7 to 1.8 meters

Application example



Cable adapters for the measurement of signal-low voltage / current with VIBXPERT II

VIB 5.433 : Cable adapter for the measurement of signal-low voltage with VIBXPERT II

VIB 5.434 : Cable adapter for the measurement of signal-low current with VIBXPERT II

VIB 5.433

VIB 5.434

Application

These cable adapters are used to measure signal-low voltage (AC: 0-30V) or signal levels (DC: 0-30V; 0-30 mA) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument.

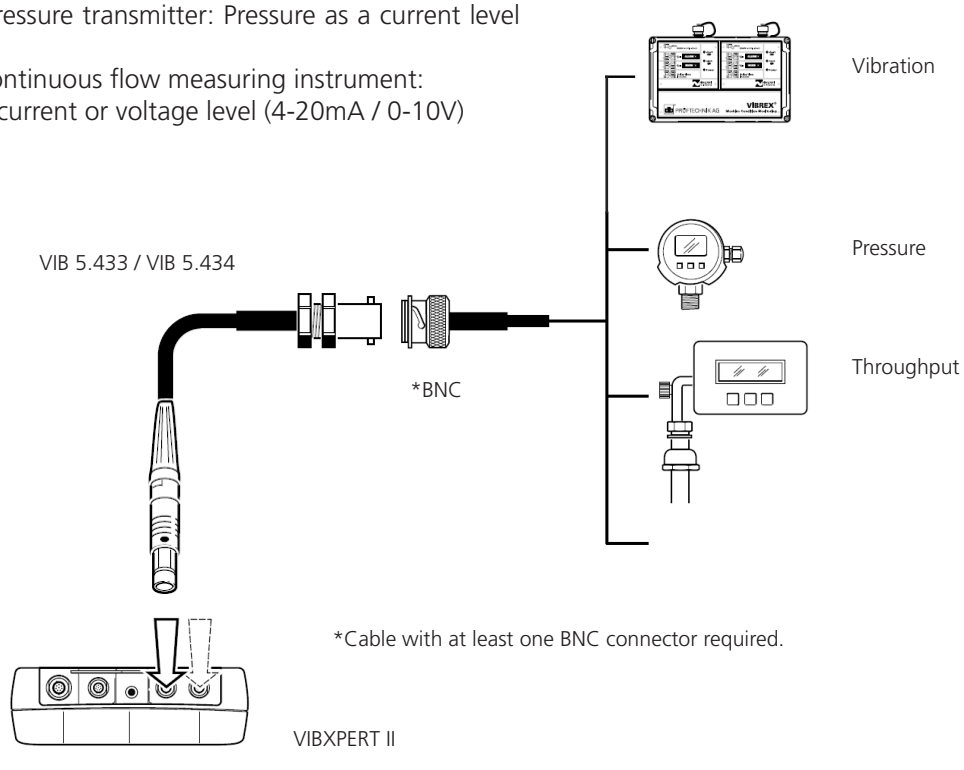
Safety note

All electric circuits in VIBXPERT II are galvanically connected. If more than one electric circuit is connected, a difference in potential may result in malfunctions.

The length of the spiral cable is 0.7 to 1.8 meters.

Application examples

- Connection to VIBREX: Vibration as a current level (4-20mA)
- Connection to pressure transmitter: Pressure as a current level (4-20mA)
- Connection to continuous flow measuring instrument: Throughput as a current or voltage level (4-20mA / 0-10V)



VIB 5.332 : Keyphaser adapter for machine protection systems

Application

This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. This makes it possible to connect keyphaser, such as from the Bently Nevada, with measuring devices from PRÜFTECHNIK:

- VIBXPERT II
- VIBXPERT I

Connection

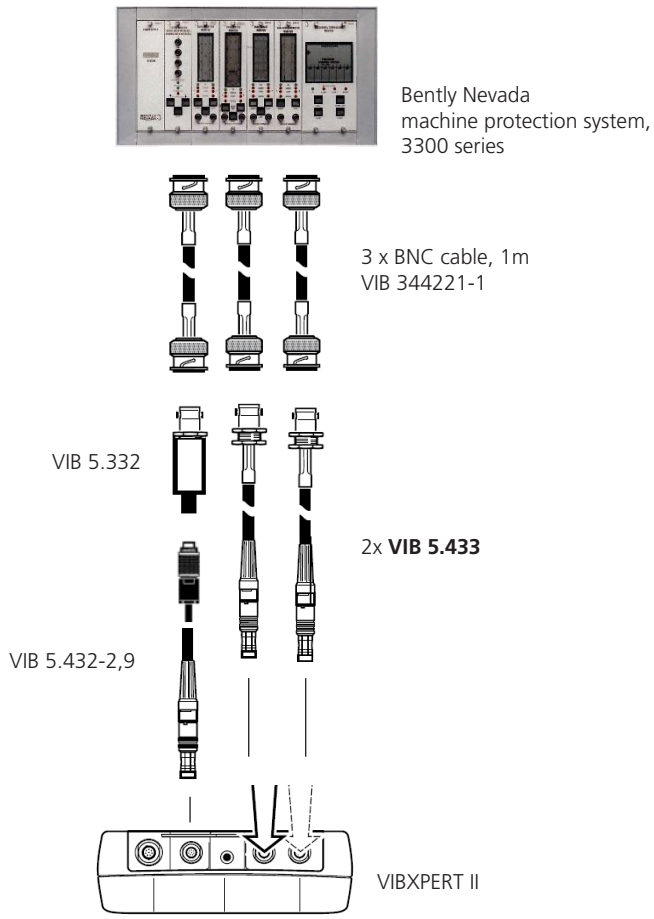
On the device side, the adapter is equipped with an 8-pin binder socket that is connected to trigger cable VIB 5.432-2,9. The signal input side provides a BNC socket.

Technical data

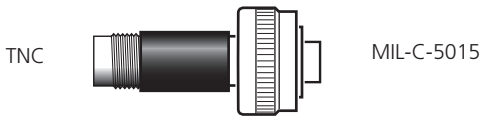
PARAMETER		VIB 5.332
Electrical	Operating voltage	5.4 V ± 10%
	Power consumption	0.5 mA
	Input signal, Pulse width	> 100 µs
	-, Pulse level	> 500 mV_{pp}
	-, DC fraction	+8 V to -30 V
	Output signal	5 V, rectangular signal
	Input resistance	200 kOhm
	Output resistance	1 kOhm
Mechanical	Housing material	Stainless steel, VA 1.4301
	Length, incl. connectors	130 mm
	Diameter	15 mm
	Weight	30 g
	Env. protection class	IP 65
	Temperature range	0°C ... +60°C
Interfaces	Input signal	Binder connector, 8 pin, 712 series
	-, Pin allocation	2 / 5V, 4 / rectangular signal, 7 / GND
	Output signal	BNC connector
	-, Pin allocation	internal contact / signal, external contact / GND

Application example

VIBXPERT II connected to Bently Nevada 3300 series



VIB 5.449 : Cable adapter for the VIB 6.195 accelerometer



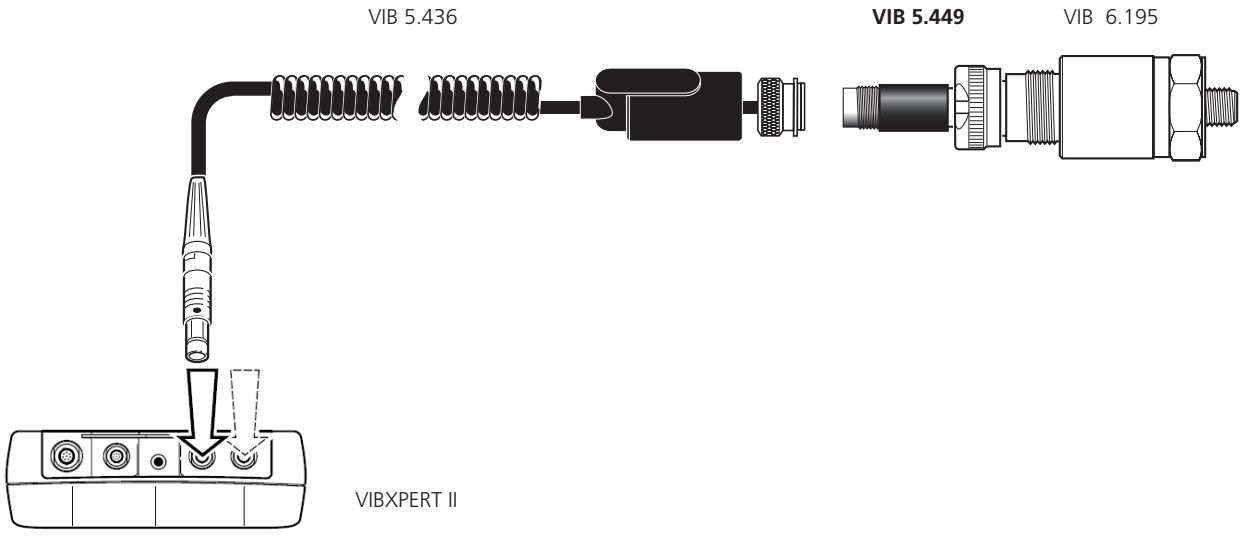
Application

This adapter is used to connect the VIB 6.195 accelerometer to the VIBXPERT II instrument.

Connector: TNC / MIL-C-5015
Length: 6 cm

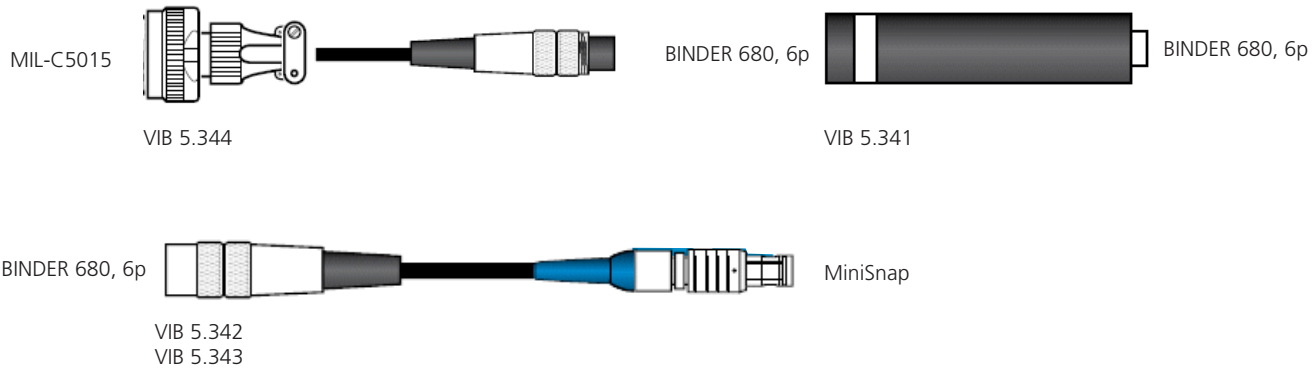
Application example

VIB 6.195 connected to VIBXPERT II



Adapters and cables for voltage-supplied sensors and VIBROTECTOR

VIB 5.341 :	VST 24V adapter for VIBXPERT II
VIB 5.342 :	Analog cable for VST 24V adapter
VIB 5.343 :	Digital cable for VST 24V adapter
VIB 5.344 :	VIBROTECTOR cable for VST 24V adapter



Application

The VST 24V adapter is used for connecting any sensors with a power supply (-24 VDC) to the VIBXPERT II instrument.

Examples of sensors:

- AS-022: accelerometer
- IN 085: non-contacting displacement sensor from Brüel & Kjaer Vibro / Schenck Vibro.
- VIBROTECTOR: vibration transmitter from PRÜFTECHNIK Condition Monitoring

To measure RPM, sensors with a power supply (-24 VDC) or rpm reference sensors with an external supply can be connected. The minimum required trigger level is 2 volts.

Safety note

Do not operate VIBXPERT II with the charger unit when the adapter is connected.

Cleaning notes

- Clean with a moist cloth.
- Use a mild detergent or alcohol.

Connection

The VST 24V adapter is connected to the sensor and instrument using the cables provided:

Analog cable - VIB 5.342:
Connection cable between adapter and VIBXPERT II for measurement of vibration acceleration, velocity and displacement.

Digital cable - VIB 5.343:
Connection cable between adapter and VIBXPERT II for RPM measurement.

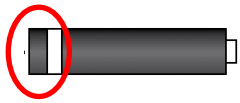
VIBROTECTOR cable - VIB 5.344:
Connection cable between adapter and VIBROTECTOR vibration transmitter. The adapter is connected to VIBXPERT II with the analog cable (VIB 5.342).

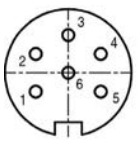
Cable length: 2.9 meters

Technical data

PARAMETER		VIB 5.341
Electrical	Output voltage U_{out}	-24V, unregulated (dep. on VIBXPERT)
	Frequency range, Signal IN - Analog Out Signal IN - Trigger Out	0.1 Hz ... 100 kHz
Mechanical	Case material	stainless steel + heat shrink tubing
	Plug	DIN 41524, BINDER 680, 6 pole, m / f
	Dimensions L x D	120 x 27 mm
	Weight	105 g
	Protection class	IP 40
	Temperature range	-10°C ... +60°C

Plug pin allocation,
sensor side

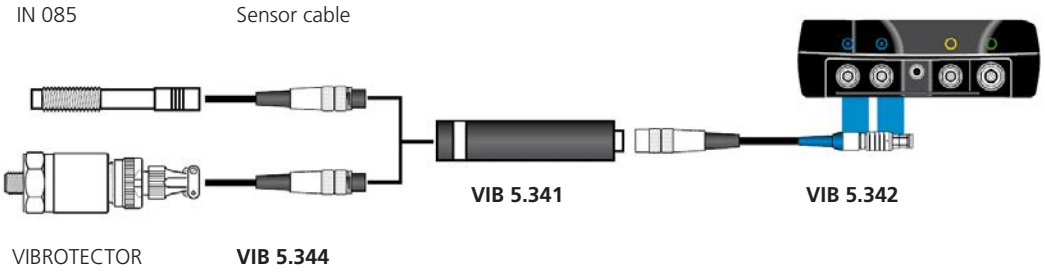




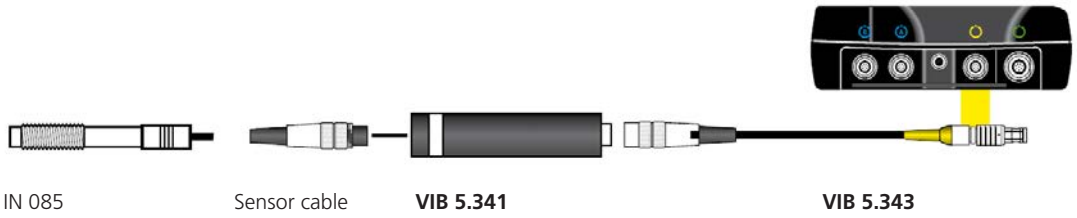
1: -24 VDC
2: Analog signal (Sensor)
3: Trigger signal (5V TTL)
4: GND
5: Shield
6: 5 VDC (Voltage from VIBXPERT)

Connection examples

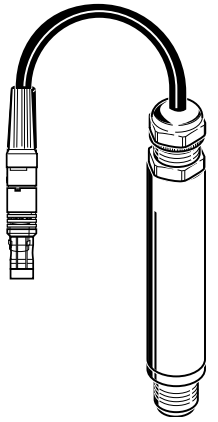
- Displacement measurement with IN 085 sensor
- Vibration measurement with VIBROTECTOR



- RPM measurement with IN 085 sensor



VIB 8.746-VS: SPM adapter for VIBXPERT II



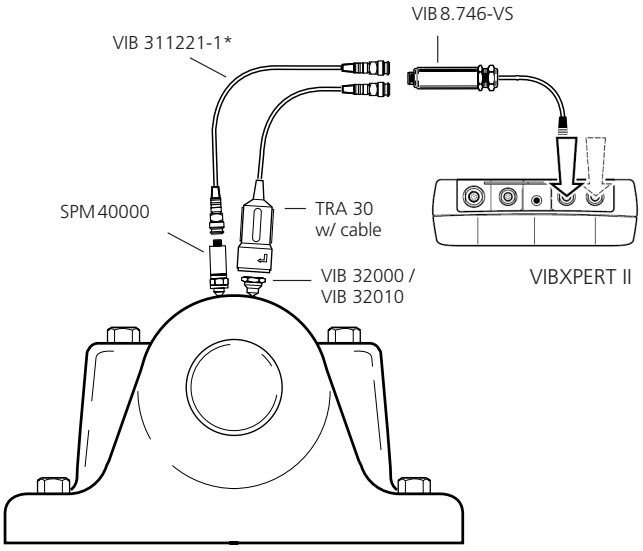
Application

The SPM adapter is used to connect the VIBXPERT II data collector to existing SPM 40000 or TRA 30 measurement sensors by converting the voltage signal to a current signal.

Technical data

PARAMETER		VIB 8.746-VS
General	Input	MiniSnap
	Output	TNC
	Length	approx. 240 mm
	Diameter	16 mm

Application example



* This cable is not included in the scope of delivery

VIB 5.333 : Cable adapter for TTL / strobe output

Application

The VIB 5.333 cable adapter is used to connect a stroboscope to VIBXPERT. The flash rate is controlled by the cursor on the spectrum.

Connection

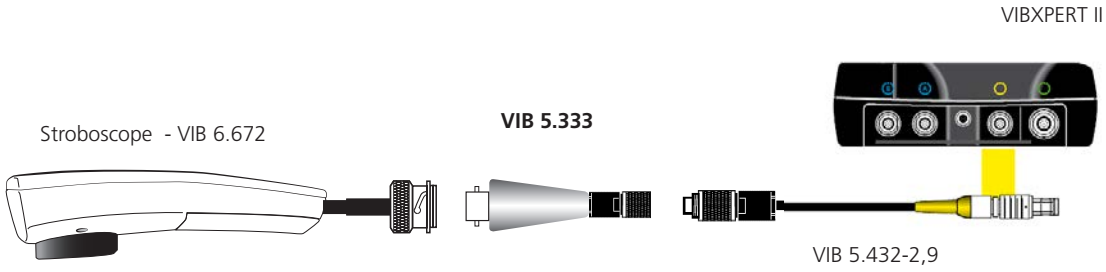
BNC: Stroboscope trigger input with BNC cable.
Binder: VIBXPERT digital input with cable VIB 5.432-2,9.

Technical data

PARAMETER		VIB 5.333
Mechanical	Housing material	Aluminium
	Length, incl. connectors	62 mm
	Diameter	15 mm
	Weight	20 g

Application example

VIBXPERT II connected to stroboscope



VIB 5.336 : Cable adapter for triaxial accelerometer

Application

The cable adapter VIB 5.336 is used to connect the triaxial accelerometer VIB 6.655 to the VIBXPERT II instrument. It is not permissible to connect the triaxial accelerometer to VIBXPERT EX.

Connectors

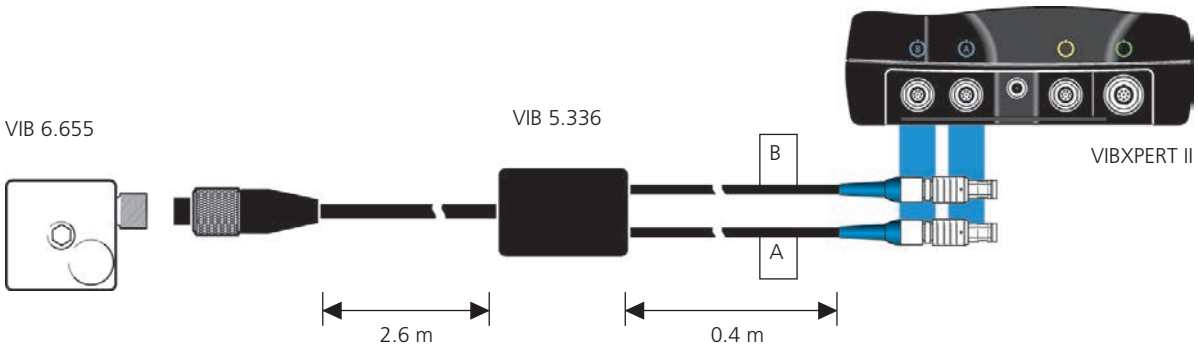
MiniSnap: Analog inputs A & B
MiniMIL: Triaxial sensor VIB 6.655

Technical data

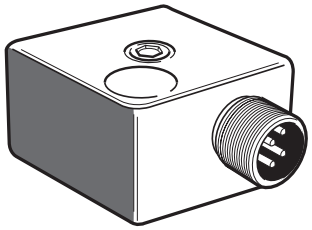
PARAMETER		VIB 5.336
Mechanical	Cable length, instrument side	approx. 0.4 m
	-, sensor side	approx. 2.6 m
	Weight	approx. 310 g

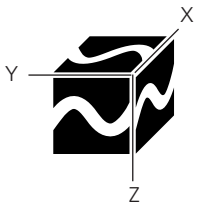
Application example

VIBXPERT II connected to triaxial accelerometer VIB 6.655



VIB 6.655 : Triaxial accelerometer for VIBXPERT II





Application

The triaxial accelerometer VIB 6.655 is used to measure machine and component vibrations up to 10 kHz in the horizontal, vertical and axial directions at a single measurement location. The triaxial accelerometer achieves shorter measuring times with a data collector and is easier to install since only one sensor needs to be mounted.

Connection

The cable adapter VIB 5.336 is used to connect the triaxial accelerometer VIB 6.655 to the VIBXPERT II instrument. It is not permissible to connect the sensor to VIBXPERT EX.

Mounting

The triaxial accelerometer is attached to the machine using the magnetic holder (VIB 3.420).

Accessories

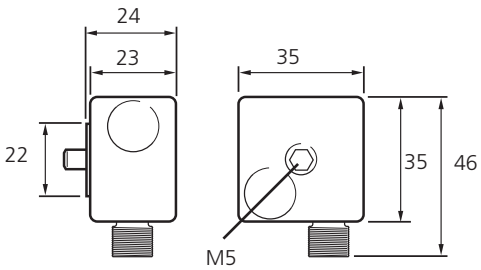
VIB 5.336	Cable adapter for triaxial accelerometer
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 3.422	Magnetic holder for flat mounting surfaces

Technical data

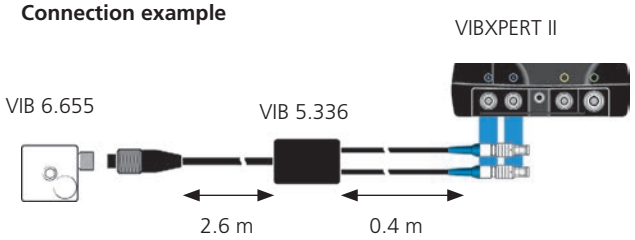
PARAMETER			VIB 6.655
Dynamic	Signaling system		ICP
	Measurement range (peak.)		± 50 g
	Transmission factor	± 5%	100 mV/g
	Frequency range	± 3dB	0.6 Hz ...10 kHz
		w/ magnetic holder ± 3dB	0.6 Hz ...2 kHz
		± 10%	1 Hz ...6.5 kHz
	Temperature range		-54°C ... +121 °C
Electrical	Settling time		< 2.5 s
	Power requirements		2-10 mA / 18-30 VDC
	Spectral noise, @ 10 / 100 / 1000 Hz		27 / 6.5 / 2.5 µg / (Hz)^{½}
	Output impedance		< 100 Ohm
	Case isolation		> 10^8 Ohm
	Bias output voltage		11-13 VDC
Mechanical	Case material		E316L (stainless steel)
	Mounting		M5x1 captive bolt
	Mounting torque		1.4 ... 2.7 Nm
	Connector type		Cable connector, 4-pole (Mini-MIL)
	Weight		200 g

Dimensions

in mm



Connection example



Connection cable and adapter for VIBRONET field multiplexer

VIB 5.346:	Connection cable, VIBXPERT II to VIBRONET field multiplexer
VIB 5.346-MUX :	BNC connection adapter for cable VIB 5.436

VIB 5.346

VIB 5.346-MUX

Application

These cables are used to connect the VIBXPERT II data collector to a VIBRONET field multiplexer (VIB 8.306) for automatic data acquisition at many measurement locations of the same type or hard-to-access measurement locations.

The measurement locations are combined on one string line and are measured consecutively.

Notes

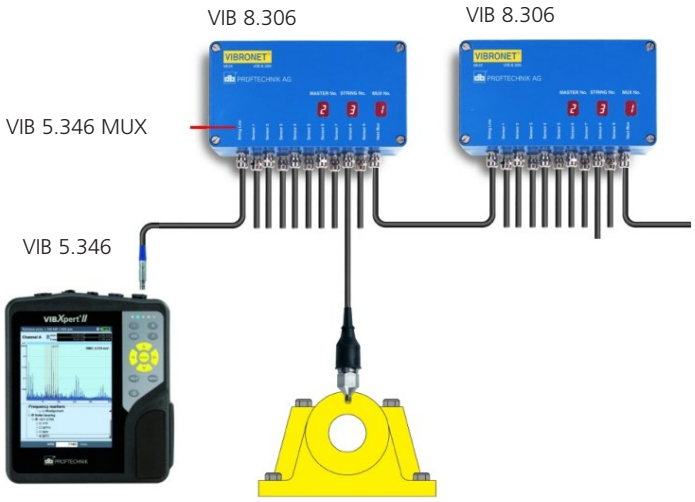
Only vibration measurements with Current Linedrive accelerometers are possible.

Up to 6 multiplexers with a maximum of 54 measurement locations are possible on one string line.

It is not permissible to connect these cables to VIBXPERT EX!

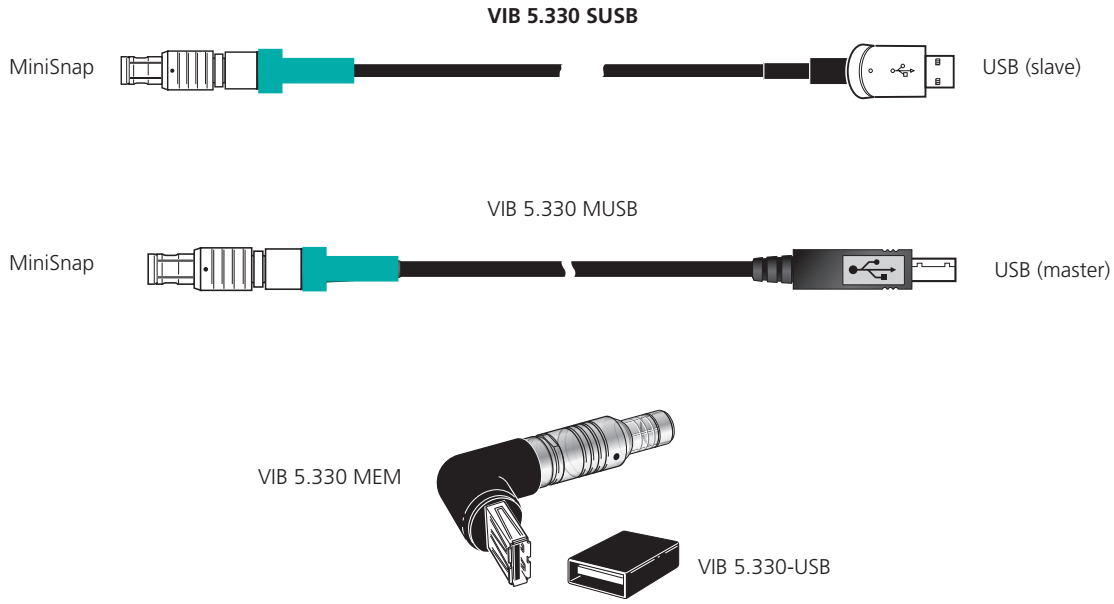
Cable lengths
VIB 5.346 1.5 meters
VIB 5.346-MUX 0.16 meters

Application example



VIBXPERT II USB cables and adapters

VIB 5.330 MUSB: VIBXPERT II USB cable for peripheral devices (Master)
VIB 5.330 SUSB : VIBXPERT II USB cable for communication (Slave)
VIB 5.330 MEM : VIBXPERT II adapter for USB pen drive
VIB 5.330-USB : VIBXPERT II USB pen drive



Application

VIBXPERT II has a USB interface which can be used for communication and data transfer with a computer as well as for printing reports on a printer.

The cable for peripheral devices VIB 5.330 MUSB is used for connecting the printer. The connection to the PC is made with the cable VIB 5.330 SUSB. The adapter VIB 5.330-MEM is used to store reports in PDF format on the VIBXPERT II USB pen drive VIB 5.330-USB.

Cable lengths: 2 meters

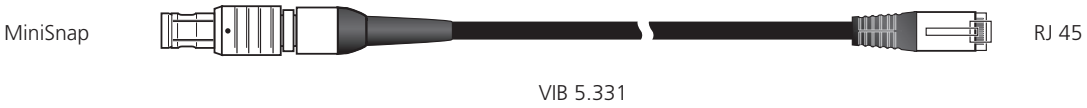
Note

These cables and the adapter may not be used with VIBXPERT EX!

Application examples

Data transfer via USB

VIB 5.331: VIBXPERT II Ethernet cable



Application

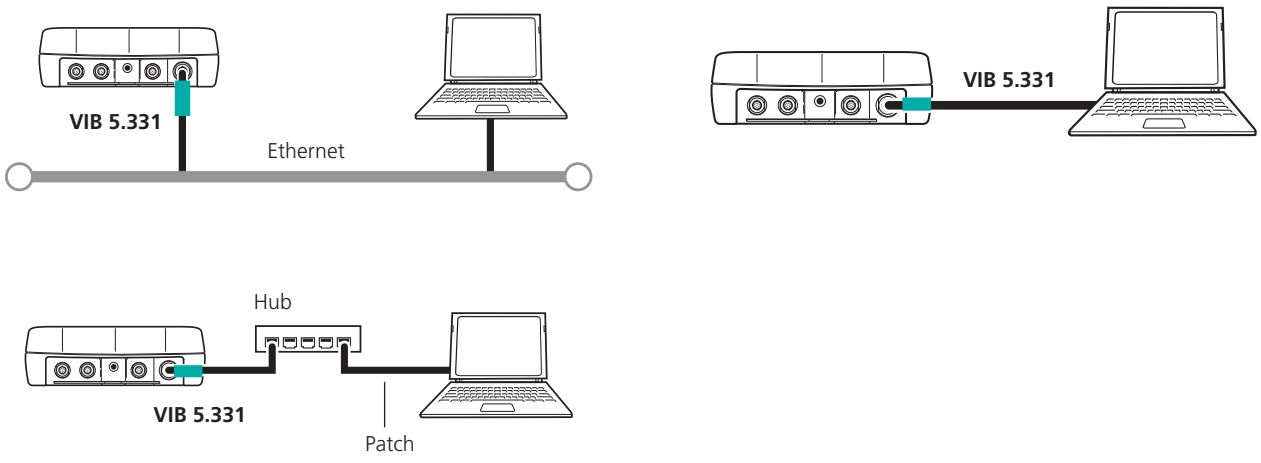
The VIBXPERT II is connected with the cable VIB 5.331 to an ethernet network to a hub or to a PC for data transmission.
Cable length: 2 meters

Note

This cable may not be used with VIBXPERT EX!

Application examples

Data transfer via Ethernet



VIB 5.430-2: Serial PC cable

VIB 5.430-2

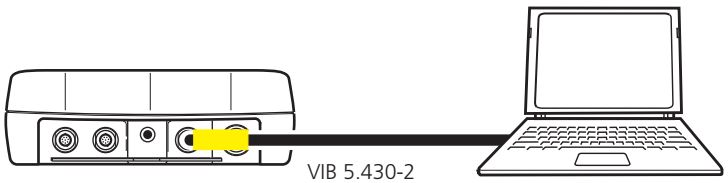
Application

This cable is used for data transmission via the serial interface.

Cable length: approx. 2 m

Application example

VIBXPERT II connected to computer (RS 232)



OMNITREND for VIBXPERT

VIB 8.981 :	OMNITREND for VIBXPERT, Software package
VIB 8.981-DR :	VIBXPERT device driver for OMNITREND
VIB 5.312-P :	PC licence for VIBXPERT II
VIB 8.982 :	OMNITREND ‚View' for VIBXPERT, Software package

Description

The OMNITREND software package **VIB 8.981** contains the CD ROM and the following items:

VIB 5.312-P PC licence
(Communication password for one VIBXPERT II instrument)
VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
VIB 9.631.G OMNITREND, Getting started

With the OMNITREND View software package **VIB 8.982** only multimode measurement can be imported in the database (no route data). The VIB 8.982 package contains the CD ROM and the following items:

VIB 5.312-P PC licence
(Communication password for one VIBXPERT II instrument)
VIB 8.982-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 8.981-DR** is required to operate the OMNITREND software already available with the VIBXPERT II . VIB 8.981-DR contains:

VIB 5.312-P PC licence
(Communication password for one VIBXPERT II instrument)
VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
VIB 9.631.G OMNITREND, Getting started

Each further VIBXPERT II is registered with a separate **VIB 5.312-P** PC license.

Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

VIB 8.986: VIBXPERT utility - Excel report module

Description

The optional Excel report module for VIBXPERT utility is used for exporting the following measurement data in Excel format:

- Overall vibration value,
- FFT spectrum,
- Balancing result,
- Time waveform,
- Coast-down measurement (amplitude phase and overall value),
- Dual-channel measurements

Compatible instrument types:

- VIBXPERT II FFT data collector and signal analyzer,
- VIBXPERT II Balancer

Compatible Excel version: Excel 2003, Excel 2007

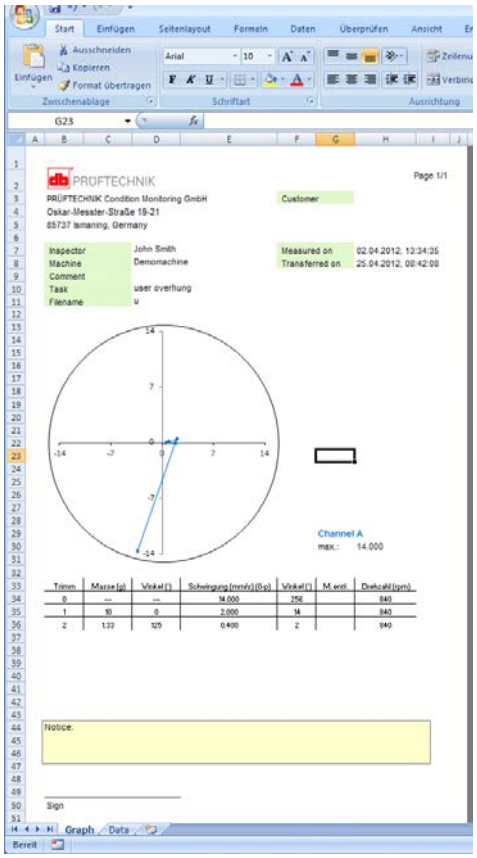
Note

The generated Excel files are based on templates, which can be adapted as necessary by a user with the corresponding skills.

* VIBXPERT utility is a free service tool for VIBXPERT instruments. The program can be downloaded from the PRÜFTECHNIK homepage and be upgraded with optional modules as needed.

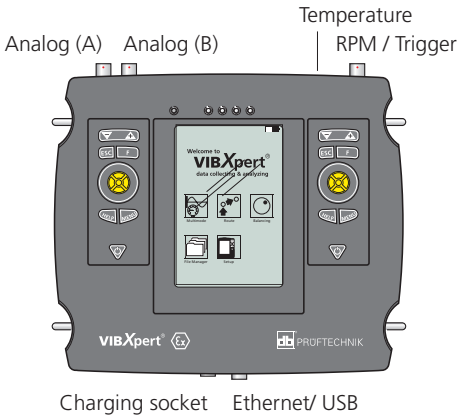
Example

Balancing report in Excel 2007



Chapter 2
VIBXPERT EX

VIBXPERT EX – Intrisically safe solution for mobile Condition Monitoring



CE 0044

VIBXPERT EX (VIB 5.300 EX) is a high performance, full-featured FFT data collector and signal analyzer which allows easy condition monitoring of equipment in hazardous areas such as in refineries, in the oil and gas industry or in the chemical industry. VIBXPERT Ex collects field data including vibration information, bearing condition, inspection and process data. Extensive analysis functions facilitate data analysis and condition diagnostics on site. For in-depth analysis, archiving and documentation VIBXPERT Ex passes the collected information to the OMNITREND maintenance software.

Key features - intrinsically safe version

- **Intrinsic safety** allows use in hazardous areas.
- **Intuitive** to operate on its graphical user interface.
- **Powerful** due to many practical analysis functions and measuring templates.
- **Long-lived** with a long battery life and a large data memory.

Application

- Route-based data collection
- Vibration diagnosis
- One- or two-plane field balancing
- Acceptance measurement with machine templates
- Troubleshooting
- Multimeter
- Data logging
- Visual inspection

Analysis functions

- Overall values and process parameters
- Time waveform
- Amplitude/envelope spectrum
- Cepstrum
- Phase, cross-channel phase
- Orbit
- Static shaft position
- Runout analysis (shaft vibration)
- Bump test
- Coast-down/run-up test
- Order analysis
- Modal analysis
- Operating Deflection Shape Analysis (ODS)
- Transient capture
- Long-term recording
- Characteristic frequency markers
- Signal post-processing
- ISO standards for evaluation

Valuable additional features

- Printing of measurement reports
- Rugged hard case
- Extensive accessories
- Optional measuring functions that can be enabled by entering a password

Hardware

- Two true synchronous channel capabilities for diagnosis of complex machinery faults
- Robust, industrial-proofed metal housing
- Dust and splash proof (IP65) - ideal for use in demanding environments
- Analog input connectors are compatible to VIBSCANNER
- Connector for type K thermocouples
- Signal output: headphones and strobe light

Ergonomics

- Large backlit display
- Easy-to-use joystick operation (left or right-hand)
- LED traffic light display for results evaluation according to ISO standards or user-defined alarm thresholds
- Daylight sensor controls keyboard illumination
- Icon based user interface
- Online context sensitive HELP.

Power supply

- Lithium-Ion battery for at least 8 hours operation
- Smart internal battery charging
- Power management (display illumination)

Communication

- Fully networkable
- PC connection via USB, Ethernet, RS232.

Technical data

PARAMETER		VIB 5.300 EX
Input Channels	Analog, 2x	Voltage (AC/DC, ±30 V max.) Current (AC/DC, ±30 mA max.) ICP-type accelerometer (2 mA, 24 V max.) Current Linedrive (CLD) accelerometer (10 V, 10 mA max.)
	Frequency range	DC ... 51.2 kHz (Acceleration from 0.5 Hz)
	Dynamic range	96 dB (measurement) / 136 dB (total)
	Sampling frequency	up to 131 kHz per channel
	Analog, 1x	Thermocouple (type K)
	Digital (1+1 Pulse/ Tacho), 1x	RPM, Trigger, Keyphaser with pulse and AC signals: 0 V ... +26 V or -26 V ... 0 V
	Max. input voltage	± 26 V
	Switching threshold for 0 V ...+26 V signal	max. 2.5 V rising, min. 0.6 V falling
	Switching threshold for -26 V ...0 V signal	min. -8 V rising, max. -10 V falling
	Pulse width	< 0.1 ms
Output Channels	Stroboscope control	TTL output
	Frequency range	0 ... 500 Hz
	Resolution	0.05 Hz
	Signal-Out	Connection for headphones to listen to the analog input signal; signal processing (oscilloscope)
	Frequency range	0.5 Hz ... 40 kHz
	Output impedance	100 Ohm
Meas. range / Accuracy	Vibration acceleration	depends on the transducer connected
	Shock pulse	-10 ...80 dBsv / ± 3dBsv
	RPM	10 ... 200 000 min^{-1} / ±0.1‰ or ± 1 min^{-1} (the lower accuracy is applicable)
	Temperature type K	-50 ... +1000°C / 1% or ±1°C (the lower accuracy is applicable)
	Standards fulfilled	Frequency response according to ISO 2954
Display	Type	LCD, backlit
	Pixel area	115 x 78 mm
	Resolution	1/2 VGA (480 x 320 pixel)
	Color depth	16 grey scales
Power supply	Battery type	Li Ion rechargeable battery pack (7.2V / 4.8Ah - 34 Wh)
	Charging time	< 5 hours in the device or external with optional charging station
	Charger, input	110-240 V / 50-60 Hz
	Charging temperature	0°C ... +50°C
Computer	Processor	Intel Strong ARM 206 MHz
	Keyboard	2 joysticks and 12 keys for right-hand or left-hand operation. Keyboard illumination controlled by ambient light.
	Memory	Internal: 64 MB RAM; Compact Flash: 1 GB or 4 GB
	Serial interface	RS 232, <115 kBaud
	USB interface	USB host for printing; USB slave for data exchange with OMNITREND
	Ethernet interface	10 Mbit (10Base T)
	Printing	Direct printing of measurement reports via the USB port Compatible printer types: HP, Epson and other printers with USB connection
Environment / General	Connectors	Analog / Digital channels: MiniSnap socket Thermocouple (type K): QLA socket; all compatible to VIBSCANNER
	Housing	Aluminium
	Dimensions	250 x 220 x 37 mm (LxWxH)
	Weight	approx. 2.3 kg
	IP rating	IP65, dust and splash-proofed
	Temperature range	-10°C ... +50°C (Operation) -20°C ... +60°C (Storage)
	Intrinsic safety	Ⓔx II 2 G Ex ib IIC T4

VIBXPERT EX firmware structure

The functionality of the modular VIBXPERT EX firmware can be expanded as required by a password. The standard firmware can be upgraded with the following firmware modules:

- Recording (VIB 5.385-FM)
- Balancing (VIB 5.386-FM)
- ODS / Modal analysis (VIB 5.389-FM)

The VIBXPERT EX Diagnosis and Trending packages contain the standard firmware for the 1-channel or the 2-channel instrument respectively.

1-channel data collector

In addition to the standard version, VIBXPERT EX is available as a pure 1-channel data collector in the 'Basic' packages. The appropriate basic firmware (VIB 5.360-B) and additionally included firmware modules provide

- Route-base data collection
- Vibration analysis using spectra
- Vibration analysis using time waveforms

Features of the standard firmware

PARAMETER		VIB 5.380 / VIB 5.382
Operating modes	Multimode, Characteristic Overall Values	• Vibration (Acceleration, Velocity, Displacement) • Current, Voltage (AC / DC) • Shock pulse (bearing condition) • Temperature • Rotational speed
	Multimode, Signals	• Amplitude spectrum for accel., velocity, displacement, current, voltage • Envelope spectrum for acceleration, velocity, shock pulse, current, voltage • Time waveform for acceleration, velocity, displacement, current, voltage • Phase measurement (polar diagram) • Impact test w/o recording of the exciting force • Runup/ Coast down analysis as phase / overall value/ spectrum over RPM (display as Bode or Nyquist diagram (phase - RPM)) with 2-channel firmware only (VIB 5.382): • 2-channel measurements with trigger • Orbit (filtered / unfiltered) • Cepstrum • Cross channel phase measurement • Impact test for natural frequency analysis on a shutdown or running machine* • ODS - Operation deflecting shape analysis* * requires optional firmware module VIB 5.389-FM
	Machine templates	Machine-specific templates for repetitive measurement tasks used for acceptance tests or service measurements.
	Route	• Set of measurement tasks for machine condition monitoring and diagnosis • Route guidance via tree / list view or machine graphics • Optimizer levels, TrendingSpectrum, 'Near location' mode for rapid data collection
Analysis functions	Cursor	single, delta, harmonics, sub harmonics, sideband cursor
	Frequency markers	Fixed and RPM-variable characteristic frequencies for machines, roller bearings and gearboxes can be displayed in 'Multimode' and 'Route' mode
	Alarm bands	Narrow band monitoring of damage frequencies (route mode only)
	Max 10 values	List of the 10 highest amplitudes in the spectrum
	Results display	• Linear scaling, Logarithmic scaling (Y axis) • Trend, Cascade diagram (waterfall), Polar plot • Order scaling for amplitude / envelope spectrum
Measurement functions	Multi Meas. tasks	Combination of several measurements in one task.
	Averaging	• none (not for temperature), • linear (not for time waveform), • peak hold (not for time waveform and temperature), • exponential (not for time waveform & temperature), • time-synchronous (time waveform, spectrum, balancing)
	Trigger modes	Free running, external (time-synchronous), internal Amplitude, Edge, Pre and post triggered.
	FFT	F_{min}: between 0.5 Hz and 10 Hz programmable F_{max}: between 200 Hz and 51.2 kHz programmable Lines: 400, 800, 1600, 3200, 6400, 12800, 25600, 51200, 102400 Window: Rectangular, Hanning, Hamming, Blackman, Bartlett, Flattop, Kaiser

Features of the optional firmware modules

RECORDING		VIB 5.315-FM
Features	Short-term recording	• Characteristic overall values, phase, spectrum and time waveform • Pre- and post history
	Start / stop triggering	time, rpm, threshold, manual
	Recording duration	approx. 10 minutes for time waveform with 512 Hz sampling rate
	Time waveform recorder	Continuous long-term signal recording
	Recording duration	approx. 132 hours with 512 Hz sampling rate and 2 GB CF card

Use of the time waveform recorder requires registration of the 'Time waveform' module (VIB 5.387-FM*).
Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

BALANCING		VIB 5.386-FM
Features	Meas. quantities	Vibration velocity, acceleration, displacement
	Balancing modes	One-plane balancing with vibration minimization in the second plane Balancing in two planes under operating conditions
	Correction type	Fixed location, Fixed mass, Tape measure, Free correction
	Operation	Graphical user interface with machine icons and on-screen instructions
	Additional measurement tasks	Diagnosis measurements for detecting an imbalance (characteristic overall value, spectrum, time waveform, phase)
	Add. averaging type	Unlimited averaging if the imbalance pointer is unstable

Additional measurement equipment required for balancing is available in a separate package:
- VIB 5.387-HW: 1-channel instrument
- VIB 5.386-HW: 2-channel instrument

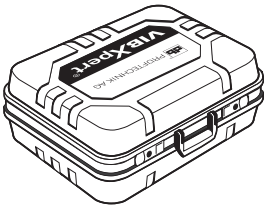
ODS /MODALANALYSIS		VIB 5.389-FM
Features	Bump test with modal hammer	Analysis of operation-critical mode shapes, Visualization of the dynamic behavior of a structure
	Results display	Transmission function, Coherence function
	Add. averaging type	Negative averaging for measurements on a running machine
	ODS	Structure analysis on running machine

Use of this module requires registration of the following firmware modules:
- VIB 5.381: 2-channel measurements, and
- VIB 5.391-FM*: Special analyses

Also, the 'Advanced file export' software module VIB 8.984 is required to export data.

* is included in the standard firmware VIB 5.380

VIB 5.360-1EEX: VIBXPERT EX Basic package for 1-channel instrument

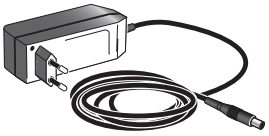

VIB 5.329 X


VIB 8.970


LIT 01.800


VIB 5.354-LD

VIB 5.300 EX


VIB 5.322

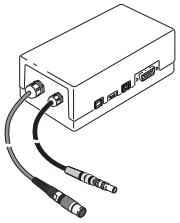

VIB 6.142 DEX


VIB 3.420


VIB 9.805
VIB 9.806
LIT 53.101


VIB 5.338


VIB 5.436


VIB 5.330-UNV


VIB 5.382-FFT
VIB 5.383-RTE
VIB 5.387-TW

Description

The Basic packages include the basic equipment for data collection and machine diagnostics with VIBXPERT EX. The instrument is available only as 1-channel version featuring the Basic firmware plus the following modules:

- FFT analysis (VIB 5.382-FFT)
- Route-based data collection (VIB 5.383-RTE)
- Time waveform analysis (VIB 5.387-TW)

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPERT EX. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.300 EX	VIBXPERT EX instrument
VIB 5.322	VIBXPERT EX charger
VIB 5.329-X	VIBXPERT EX case
VIB 5.330-UNV	Universal communication adapter
VIB 5.338	USB cable for VIBXPERT EX, 2x
VIB 5.354-LD	VIBXPERT EX leather carrying strap
VIB 5.382-FFT	FFT analysis, firmware certificate
VIB 5.383-RTE	Route data collector, firmware certificate
VIB 5.387-TW	Time waveform, Firmware certificate
VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 DEX	Accelerometer for standard machines, intrinsically safe
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 9.805.G	VIBXPERT manual
LIT 53.101.EN	VIBXPERT EX short instructions
VIB 9.806.G	VIBXPERT balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.970	CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

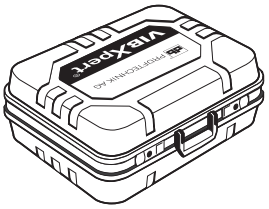
Not shown:

0 0594 0219	EC-type Examination Certificate - ATEX - VIBXPERT EX
0 0594 0221	Technical data sheet, UNV communication adapter

Applies to the U.S. market:

Package contains VIBXPERT EX charger VIB 5.323.

VIB 5.364-1EEX: VIBXPERT EX Basic Trending package for 1-channel instrument

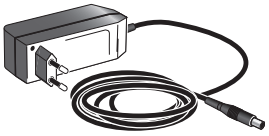

VIB 5.329 X


VIB 8.981


LIT 01.800


VIB 5.354-LD

VIB 5.300 EX


VIB 5.322

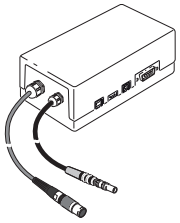

VIB 6.142 DEX


VIB 3.420


VIB 9.631
VIB 9.805
VIB 9.806
LIT 53.101


VIB 5.338


VIB 5.436


VIB 5.330-UNV


VIB 5.382-FFT
VIB 5.383-RTE
VIB 5.387-TW
VIB 8.981-P

Description

The Basic packages include the basic equipment for data collection and machine diagnostics with VIBXPERT EX. The instrument is available only as 1-channel version featuring the Basic firmware plus the following modules:

- FFT analysis (VIB 5.382-FFT)
- Route-based data collection (VIB 5.383-RTE)
- Time waveform analysis (VIB 5.387-TW)

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

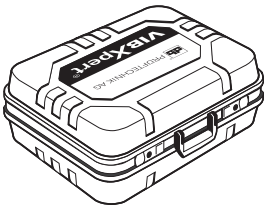
VIB 5.300 EX	VIBXPERT EX instrument
VIB 5.322	VIBXPERT EX charger
VIB 5.329-X	VIBXPERT EX case
VIB 5.330-UNV	Universal communication adapter
VIB 5.338	USB cable for VIBXPERT EX, 2x
VIB 5.354-LD	VIBXPERT EX leather carrying strap
VIB 5.382-FFT	FFT analysis, firmware certificate
VIB 5.383-RTE	Route data collector, firmware certificate
VIB 5.387-TW	Time waveform, Firmware certificate
VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 DEX	Accelerometer for standard machines, intrinsically safe
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 9.805.G	VIBXPERT manual
LIT 53.101.EN	VIBXPERT EX short instructions
VIB 9.806.G	VIBXPERT balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.981	CD ROM, OMNITREND for VIBXPERT, PC software
VIB 9.631.G	OMNITREND getting started
VIB 8.981-P	PC licence for VIBXPERT EX

Not shown:

0 0594 0219	EC-type Examination Certificate - ATEX - VIBXPERT EX
0 0594 0221	Technical data sheet, UNV communication adapter

Applies to the U.S. market:
Package contains VIBXPERT EX charger VIB 5.323.

VIB 5.360-1EX: VIBXPERT EX Diagnosis package for 1-channel instrument

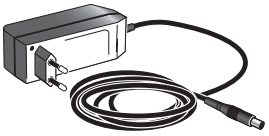

VIB 5.329 X


VIB 8.970


LIT 01.800


VIB 5.354-LD

VIB 5.300 EX


VIB 5.322

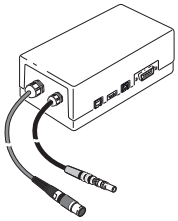

VIB 6.142 DEX


VIB 3.420


VIB 9.805
VIB 9.806
LIT 53.101


VIB 5.338


VIB 5.436


VIB 5.330-UNV

VIB 5.380-L

Description

The Diagnosis packages include the basic equipment for data collection and machine diagnostics with VIBXPERT EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPERT EX. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.300 EX	VIBXPERT EX instrument
VIB 5.322	VIBXPERT EX charger
VIB 5.329-X	VIBXPERT EX case
VIB 5.330-UNV	Universal communication adapter
VIB 5.338	USB cable for VIBXPERT EX, 2x
VIB 5.354-LD	VIBXPERT EX leather carrying strap
VIB 5.380-L	1-channel standard firmware certificate
VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 DEX	Accelerometer for standard machines, intrinsically safe
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 9.805.G	VIBXPERT manual
LIT 53.101.EN	VIBXPERT EX short instructions
VIB 9.806.G	VIBXPERT balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.970	CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

Not shown:

0 0594 0219	EC-type Examination Certificate - ATEX - VIBXPERT EX
0 0594 0221	Technical data sheet, UNV communication adapter

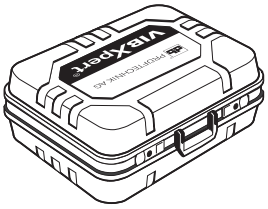
Upgrade

VIB 5.381	Firmware upgrade to 2-channel version

Applies to the U.S. market:

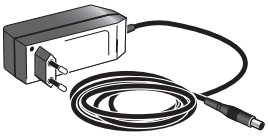
Package contains VIBXPERT EX charger VIB 5.323.

VIB 5.360-2EX: VIBXPERT EX Diagnosis package for 2-channel instrument


VIB 5.329 X


VIB 8.970


LIT 01.800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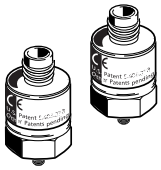
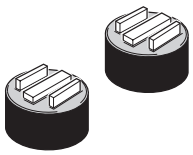

VIB 6.142 DEX

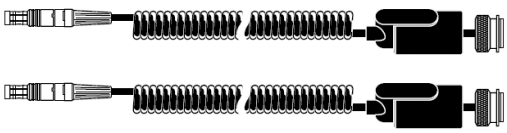

VIB 3.420

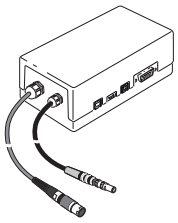
VIB 5.354-LD


VIB 5.300 EX


VIB 9.805
VIB 9.806
LIT 53.101


VIB 5.338


VIB 5.436


VIB 5.330-UNV

VIB 5.380-L
VIB 5.382-L

Description

The Diagnosis packages include the basic equipment for data collection and machine diagnostics with VIBXPERT EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.970) contains a demo version of the OMNITREND PC software as well as tools and firmware for VIBXPERT EX. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

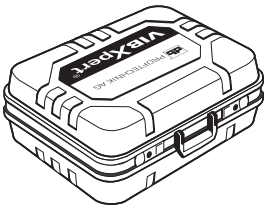
VIB 5.300 EX	VIBXPERT EX instrument
VIB 5.322	VIBXPERT EX charger
VIB 5.329-X	VIBXPERT EX case
VIB 5.330-UNV	Universal communication adapter
VIB 5.338	USB cable for VIBXPERT EX, 2x
VIB 5.354-LD	VIBXPERT EX leather carrying strap
VIB 5.380-L	1-channel standard firmware certificate
VIB 5.382-L	2-channel standard firmware certificate
VIB 5.436	Spiral cable for Current line-drive transducers, 2x
VIB 6.142 DEX	Accelerometer for standard machines, intrinsically safe, 2x
VIB 3.420	Magnetic holder for curved mounting surfaces, 2x
VIB 9.805.G	VIBXPERT manual
LIT 53.101.EN	VIBXPERT EX short instructions
VIB 9.806.G	VIBXPERT balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.970	CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

Not shown:

0 0594 0219	EC-type Examination Certificate - ATEX - VIBXPERT EX
0 0594 0221	Technical data sheet, UNV communication adapter

Applies to the U.S. market:
Package contains VIBXPERT EX charger VIB 5.323.

VIB 5.364-1EX: VIBXPERT EX Trending package for 1-channel instrument

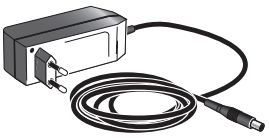

VIB 5.329 X


VIB 8.981


LIT 01.800


VIB 5.354-LD

VIB 5.300 EX


VIB 5.322

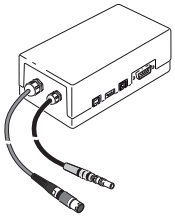

VIB 6.142 DEX


VIB 3.420


VIB 9.631
VIB 9.805
VIB 9.806
LIT 53.101


VIB 5.338


VIB 5.436


VIB 5.330-UNV

VIB 5.380-L
VIB 8.115
VIB 8.981-P

Description

The Trending packages include the basic equipment for data collection and machine diagnostics with VIBXPERT EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

VIB 5.300 EX	VIBXPERT EX instrument
VIB 5.322	VIBXPERT EX charger
VIB 5.329-X	VIBXPERT EX case
VIB 5.330-UNV	Universal communication adapter
VIB 5.338	USB cable for VIBXPERT EX, 2x
VIB 5.354-LD	VIBXPERT EX leather carrying strap
VIB 5.380-L	1-channel standard firmware certificate
VIB 5.436	Spiral cable for Current line-drive transducers
VIB 6.142 DEX	Accelerometer for standard machines, intrinsically safe
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 9.805.G	VIBXPERT manual
LIT 53.101.EN	VIBXPERT EX short instructions
VIB 9.806.G	VIBXPERT balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.981	CD ROM, OMNITREND for VIBXPERT, PC software
VIB 9.631.G	OMNITREND getting started
VIB 8.115	OMNITREND web, single user certificate
VIB 8.981-P	PC licence for VIBXPERT EX

Not shown:

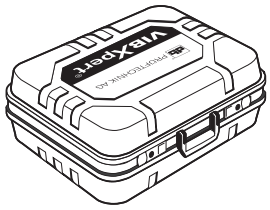
0 0594 0219	EC-type Examination Certificate - ATEX - VIBXPERT EX
0 0594 0221	Technical data sheet, UNV communication adapter

Upgrade

VIB 5.381	Firmware upgrade to 2-channel version

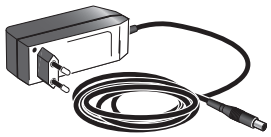
Applies to the U.S. market:
Package contains VIBXPERT EX charger VIB 5.323.

VIB 5.364-2EX: VIBXPERT EX Trending package for 2-channel instrument


VIB 5.329 X


VIB 8.981


LIT 01.800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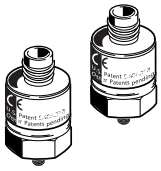
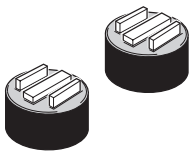

VIB 6.142 DEX

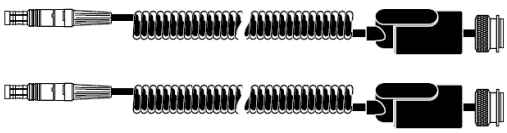

VIB 3.420

VIB 5.354-LD


VIB 5.300 EX


VIB 9.631
VIB 9.805
VIB 9.806
LIT 53.101


VIB 5.338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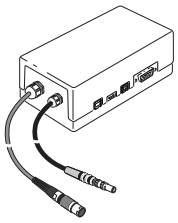

VIB 5.330-UNV

VIB 5.380-L
VIB 5.382-L
VIB 8.115
VIB 8.981-P

Description

The Trending packages include the basic equipment for data collection and machine diagnostics with VIBXPERT EX. The instrument is available as 1-channel or 2-channel version featuring the Standard firmware.

The Software CD (VIB 8.981) contains the full version of the OMNITREND PC software as well as tools and firmware for VIBXPERT II. The Documentation CD (LIT 01.800) provides latest catalogs, brochures and manuals in PDF format.

Scope of supply

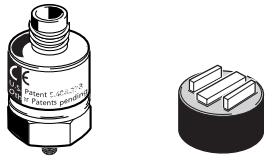
VIB 5.300 EX	VIBXPERT EX instrument
VIB 5.322	VIBXPERT EX charger
VIB 5.329-X	VIBXPERT EX case
VIB 5.330-UNV	Universal communication adapter
VIB 5.338	USB cable for VIBXPERT EX, 2x
VIB 5.354-LD	VIBXPERT EX leather carrying strap
VIB 5.380-L	1-channel standard firmware certificate
VIB 5.382-L	2-channel standard firmware certificate
VIB 5.436	Spiral cable for line-drive transducers, 2x
VIB 6.142 DEX	Accelerometer for standard machines, intrinsically safe, 2x
VIB 3.420	Magnetic holder for curved mounting surfaces, 2x
VIB 9.805.G	VIBXPERT manual
LIT 53.101.EN	VIBXPERT EX short instructions
VIB 9.806.G	VIBXPERT balancing manual
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.981	CD ROM, OMNITREND for VIBXPERT, PC software
VIB 9.631.G	OMNITREND getting started
VIB 8.115	OMNITREND web, single user certificate
VIB 8.981-P	PC licence for VIBXPERT EX

Not shown:

0 0594 0219	EC-type Examination Certificate - ATEX - VIBXPERT EX
0 0594 0221	Technical data sheet, UNV communication adapter

Applies to the U.S. market:
Package contains VIBXPERT EX charger VIB 5.323.

VIB 5.387-XHW: VIBXPERT EX transducer set for balancing with 1-channel instrument



VIB 6.147 DEX VIB 3.420

VIB 3.306 VIB 6.631 EX VIB 6.632

MiniSnap VIB 5.437-2,9 TNC

MiniSnap VIB 5.432-2,9 BINDER

Description

This package extends the functionality of any VIBXPERT EX instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 3.420	Magnetic holder for curved mounting surfaces
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 5.437-2,9	Cable for Current line-drive transducer, 2.9 m
VIB 6.147 DEX	Accelerometer for low-speed machines, intrinsically safe
VIB 6.631 EX	Laser Trigger Sensor, intrinsically safe
VIB 6.632	Trigger stand

Note

The VIBXPERT balancing firmware module (VIB 5.386-FM) is not included in the transducer set.

VIB 5.386-XHW: VIBXPERT EX transducer set for balancing with 2-channel instrument

VIB 3.306

VIB 6.631 EX

VIB 6.632

MiniSnap VIB 5.432-2,9 BINDER

Description

This package extends the functionality of any VIBXPERT EX instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

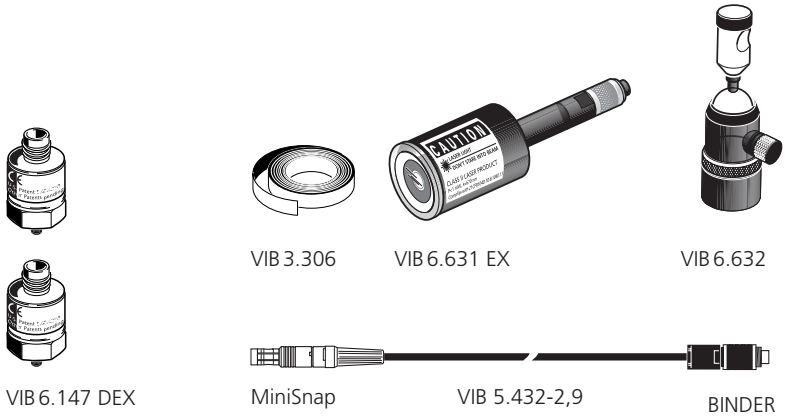
Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.631 EX	Laser Trigger Sensor, intrinsically safe
VIB 6.632	Trigger stand

Note

The VIBXPERT balancing firmware module (VIB 5.386-FM) is not included in the transducer set.

VIB 5.388-XHW: VIBXPERT EX transducer set for balancing with 2-channel instrument on low-speed machinery



VIB 6.147 DEX
VIB 3.306
VIB 6.631 EX
VIB 6.632
MiniSnap
VIB 5.432-2,9
BINDER

Description

This package extends the functionality of any VIBXPERT EX instrument to include rotor balancing, with on-screen user guidance through the streamlined procedure.

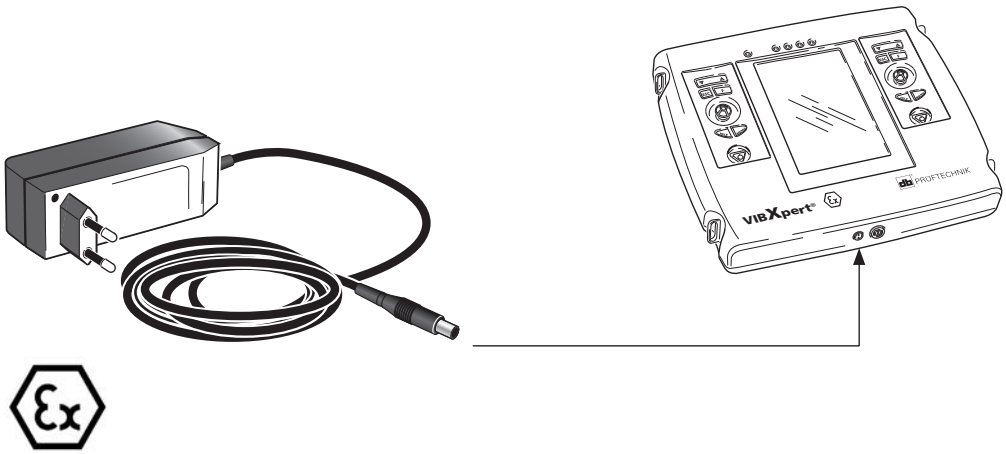
Scope of supply

VIB 3.306	Reflective tape, 10 mm
VIB 5.432-2,9	Trigger cable, 2.9 m
VIB 6.147 DEX	Accelerometer for low-speed machines, intrinsically safe, 2x
VIB 6.631 EX	Laser Trigger Sensor, intrinsically safe
VIB 6.632	Trigger stand

Note

The VIBXPERT balancing firmware module (VIB 5.386-FM) is not included in the transducer set.

VIB 5.322: VIBXPERT EX charger



Description

The rechargeable battery in VIBXPERT EX is permanently installed in the housing. To charge the battery, connect the charger to the charging socket. After charging, the charger switches automatically to trickle-mode in order to protect the battery.

VIBXPERT EX can be operated during charging. However, measurements should not be performed.

Safety note

Do not charge the battery in hazardous areas!

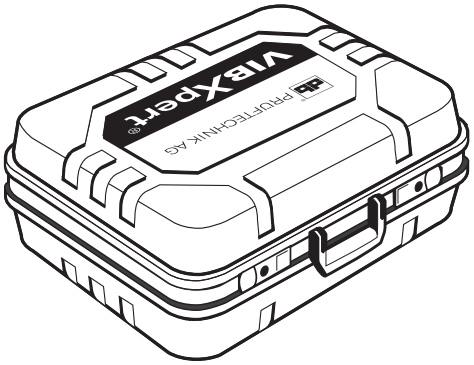
Applies to the U.S. market:

The VIB 5.323 charger has a U.S. plug.

Technical data

PARAMETER		VIB 5.322
Electrical	Primary voltage	110 - 240 VAC; 50 - 60 Hz
	Secondary voltage	12 VDC / 2A
	Charging duration	< 5 hours, depends on battery charge condition
General	Environmental protection	IP 20
	Temperature range, operation	-5°C ... +40°C
	Temperature range, storage	-20°C ...+70°C
	Dimensions (WxHxL)	40 x 45 x 110 mm
	Cable length	approx. 1.5 m

VIB 5.329-X: VIBXPERT EX case



Description

This black case of rugged ABS plastic with contoured foam insert protects all components of the VIBXPERT EX system during transport (contents not included).

It also offers plenty of space for accessories. The case is key lockable and drop-tested from 2 meters (6’ 6”).

ATTENTION!
The case is not allowed in hazardous areas!

Technical data

PARAMETER		VIB 5.329-X
General	Material	ABS plastic
	Dimensions (W x D x H)	470 x 400 x 195 mm
	Empty weight	3 kg

VIBXPERT EX Leather bag and accessories

VIB 5.355 :	VIBXPERT EX leather bag
VIB 5.354-LD :	VIBXPERT EX leather carrying strap

VIB 5.354-LD

VIB 5.355

Description

The leather bag (VIB 5.355) provides a convenient aid in carrying the VIBXPERT EX instrument around.

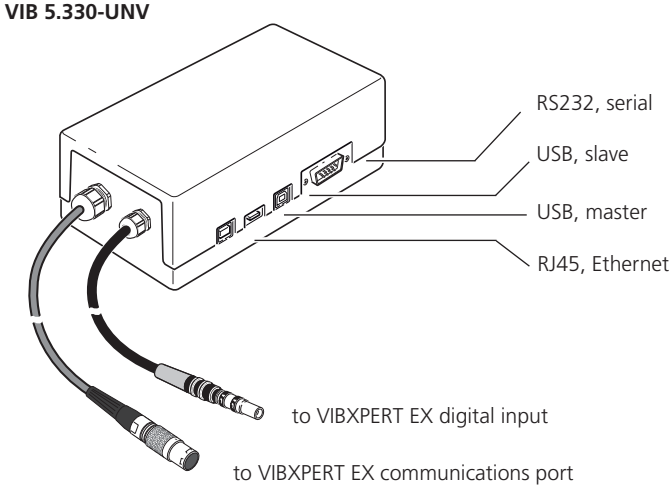
The continuously adjustable carrying strap (VIB 5.354-LD) can be adjusted to fit nearly any body size.

Communication adapter and USB cable for VIBXPERT EX

VIB 5.330-UNV : Universal communication adapter for VIBXPERT EX

VIB 5.338 : USB cable for VIBXPERT EX

VIB 5.330-UNV



VIB 5.338

Application

The VIB 5.330-UNV adapter is a communication and printer interface for VIBXPERT EX. The adapter protects the instrument against damage due to over voltages that may arise from connecting non-certified peripheral equipment.

Connection

The adapter is connected to VIBXPERT EX using the integrated cables. The connectors are color-coded to match the instrument sockets.
The adapter is connected to the PC via the serial or USB (slave) interface. An RJ45 socket is provided for the network connection. To print out reports from VIBXPERT EX, the adapter must be connected to a suitable printer via USB (master) and to a running PC via USB (slave) in order to operate the printer.

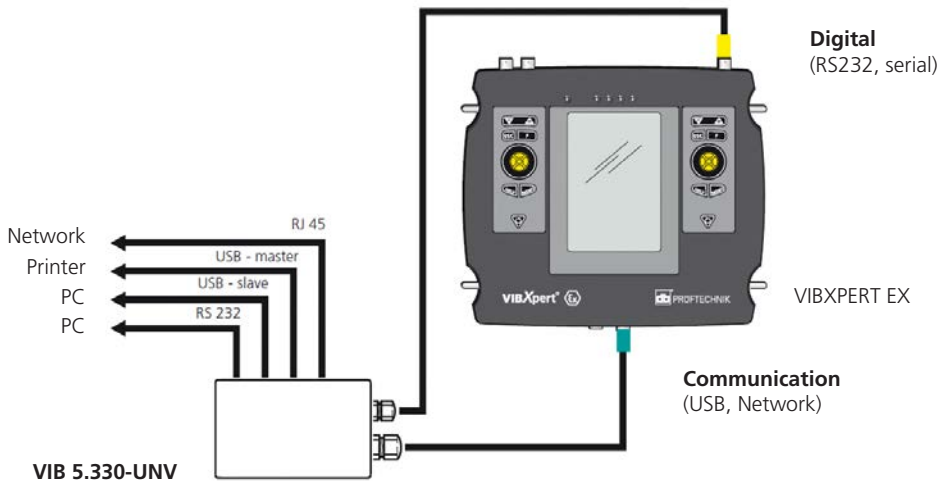
Note

The adapter may not be used in hazardous environments!
The adapter can also be operated with standard VIBXPERT (non-EX version).

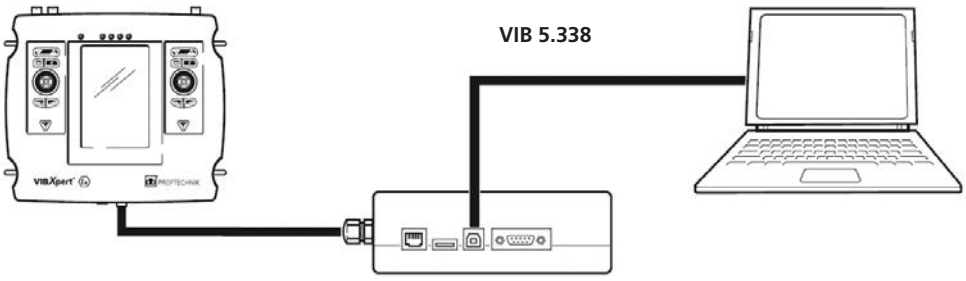
Technical data

PARAMETER		VIB 5.330-UNV
Interfaces	VIBXPERT side	Two integrated connecting cables for digital and communications port
	PC	RS 232 and USB (slave)
	Printer	USB (master)
	Network	RJ 45
General	Case material	Plastic - Polystyrol
	Dimensions, L x B x H	170 x 80 x 55 mm
	Weight	approx. 350 g

Application example
VIB 5.330-UNV connected to VIBXPERT EX



Application example
PC connected to VIBXPERT EX



VIB 5.332-X : Keyphaser adapter for machine protection systems (VIBXPERT EX)

Application

This adapter converts a pulse signal (including the DC level) to a 5V rectangular signal. This makes it possible to connect keyphaser, such as from the Bently Nevada, with measuring devices from PRÜFTECHNIK:

- VIBXPERT EX
- VIBSCANNER EX

Connection

On the device side, the adapter is equipped with an 8-pin binder socket that is connected to trigger cable VIB 5.432-2,9. The signal input side provides a BNC socket.

Safety notes

The cable adapter may not be used in hazardous areas!

The cable adapter protects the digital port of the VIBXPERT EX against surges. The adapter must be connected with VIBXPERT EX only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed 265 $V_{rms.}$ when a malfunction occurs.

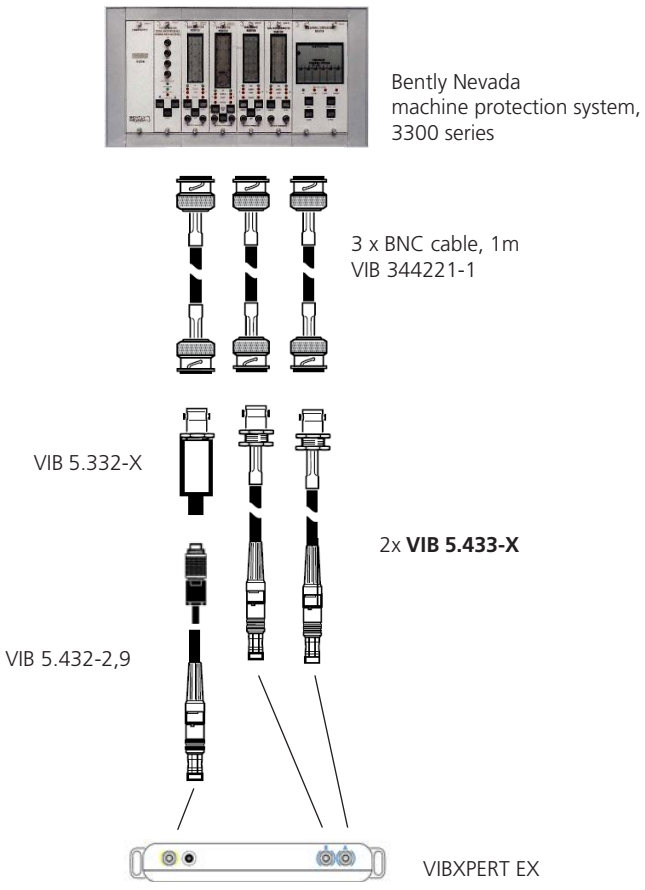
Ambient temperature: 0°C to + 40°C.

Technical data

	PARAMETER	VIB 5.332-X
Electrical	Operating voltage	5.4 V ± 10%
	Power consumption	0.5 mA
	Input signal, Pulse width	> 100 µs
	-, Pulse level	> 500 mV_{pp}
	-, DC fraction	+8 V to -30 V
	Output signal	5 V, rectangular signal
	Input resistance	200 kOhm
	Output resistance	1 kOhm
Mechanical	Housing material	Stainless steel, VA 1.4301
	Length, incl. connectors	130 mm
	Diameter	15 mm
	Weight	30 g
	Env. protection class	IP 65
	Temperature range	0°C ... +40°C
Interfaces	Input signal	Binder connector, 8 pin, 712 series
	-, Pin allocation	2 / 5V, 4 / rectangular signal, 7 / GND
	Output signal	BNC connector
	-, Pin allocation	internal contact / signal, external contact / GND

Application example

VIBXPERT EX connected to Bently Nevada 3300 series



VIB 5.433-X : Cable adapter for the measurement of signal-low voltage with VIBXPERT EX

Application

This cable adapter is used to measure signal-low voltage (AC/DC: 0-30V) provided by other measuring instruments.

An additional cable with at least one BNC plug is required to connect the adapter cable to the signal-measuring instrument.

Safety notes

The cable adapter may not be used in hazardous areas!

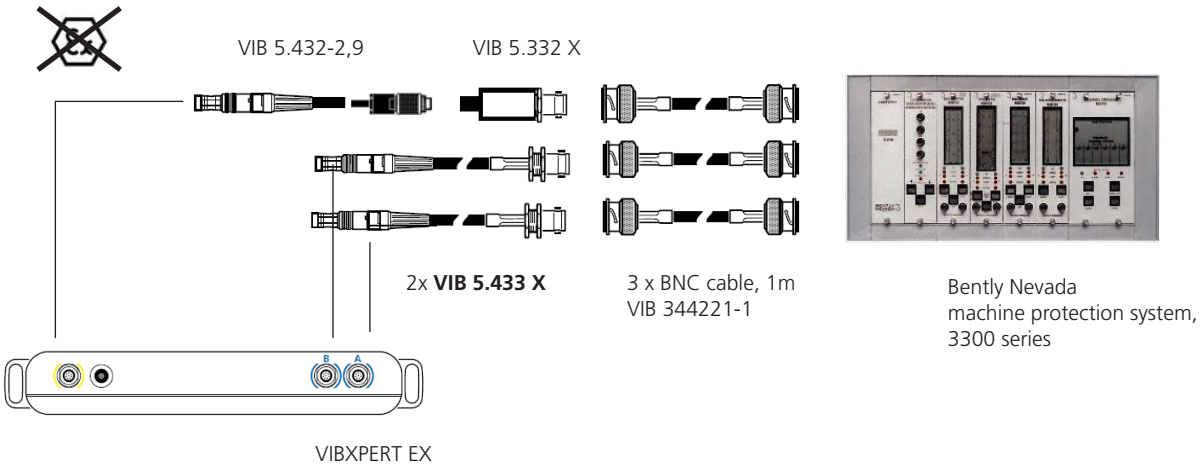
The cable adapter protects the analog port of the data collector (VIBXPERT EX) against surges. The adapter must be connected with the data collector only outside the hazardous area to an electrical circuit, whose maximum voltage does not exceed 265 $V_{rms.}$ when a malfunction occurs.

Technical data

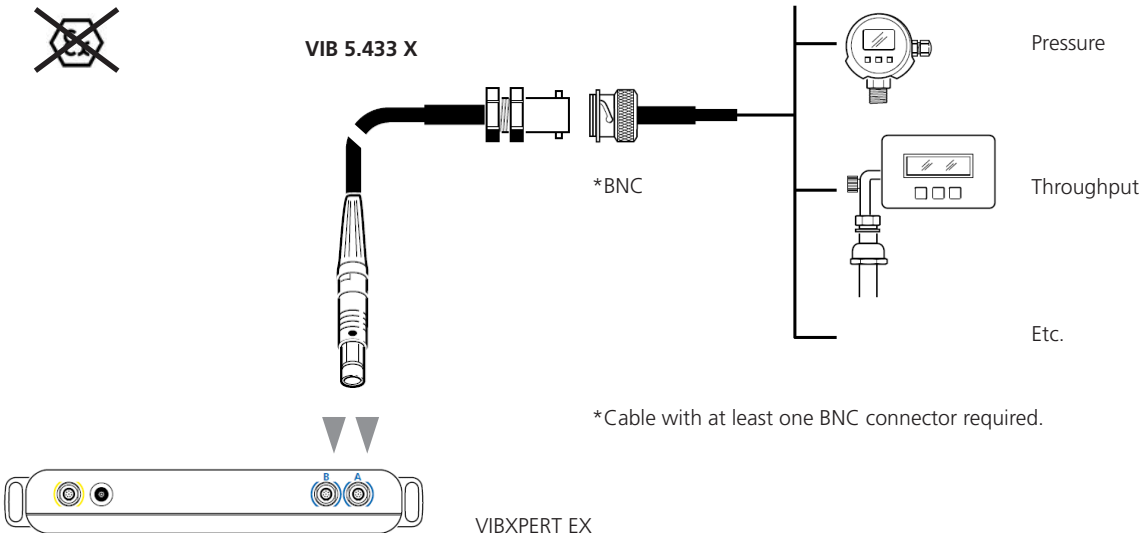
PARAMETER		VIB 5.433-X
General	Cable length	0.7 ... 1.8 m
	Temperature range	0°C ... + 40°C
	Maximum measurement error	-2,0% / +2,7%
	Upper frequency for AC measurements	5 kHz

Application example

Measuring shaft vibration via machine protection system (e.g. Bently Nevada 3300) as voltage signal



Application example
Pressure / Throughput as a voltage level (0-10V)



Common cables for VIBXPERT EX and VIBXPERT II

VIB 5.339:	Cable extension for Current Linedrive accelerometer, 8 meters	see page 29
VIB 5.422:	Cable for ICP-type accelerometer (VIBXPERT EX only w/ VIB 6.172 XICP)	see page 30
VIB 5.431 :	Cable for analog signal output	see page 32
VIB 5.432-2,9 :	Connection cable for RPM sensors	see page 31
VIB 4.750-5 :	Cable extension for VIB 5.432-2,9	see page 31
VIB 5.443 :	Connection cable for TTL trigger sensors	see page 31
VIB 5.436 :	Spiral connection cable for current line-drive transducer	see page 27
VIB 5.437-2,9 :	Straight connection cable for current line-drive transducer, 2.9 meters	see page 27
VIB 5.437-5 :	Straight connection cable for current line-drive transducer, 5 meters	see page 27
VIB 5.444-5 :	Universal cable extension for analog measurement channel, 5 meters	see page 28

Note
The above cables can be operated with VIBXPERT EX and VIBXPERT II. Further information on the individual cables can be found on the pages indicated in Chapter 1.

OMNITREND for VIBXPERT

VIB 8.981 :	OMNITREND for VIBXPERT, Software package
VIB 8.981-DR :	VIBXPERT device driver for OMNITREND
VIB 5.312-P :	PC licence for VIBXPERT II
VIB 8.982 :	OMNITREND ‚View' for VIBXPERT, Software package

Description

The OMNITREND software package **VIB 8.981** contains the CD ROM and the following items:

VIB 5.312-P PC licence
(Communication password for one VIBXPERT EX instrument)
VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
VIB 9.631.G OMNITREND, Getting started

With the OMNITREND View software package **VIB 8.982** only multimode measurement can be imported in the database (no route data). The VIB 8.982 package contains the CD ROM and the following items:

VIB 5.312-P PC licence
(Communication password for one VIBXPERT EX instrument)
VIB 8.982-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
VIB 9.631.G OMNITREND, Getting started

The device driver **VIB 8.981-DR** is required to operate the OMNITREND software already available with the VIBXPERT II . VIB 8.981-DR contains:

VIB 5.312-P PC licence
(Communication password for one VIBXPERT EX instrument)
VIB 8.981-OMT Password certificate
(Registration of the OMNITREND full version; will only be sent out after the request for the registration password ('Return fax') has been received.
VIB 9.631.G OMNITREND, Getting started

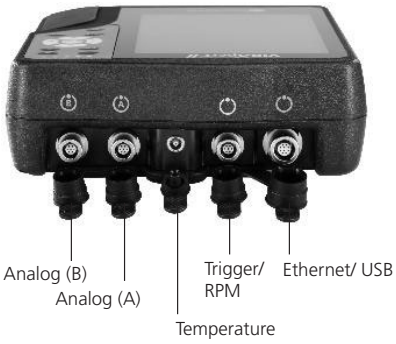
Each further VIBXPERT EX is registered with a separate **VIB 5.312-P** PC license.

Order information

To simplify the order processing, please fax any existing registration certificates when ordering.

Chapter 3
VIBXPERT II Balancer

VIBXPERT II Balancer - Field balancing in one plane or two planes



VIBXPERT II Balancer is a high performance, full-featured portable dual channel measurement device for field balancing of rotating machinery in one plane or two planes. In addition to the balancing procedure, the device provides extensive vibration analyses, resonance tests and phase measurements for fault diagnosis and acceptance of equipment. VIBXPERT II balancer can be upgraded by password to VIBXPERT II FFT data collector and signal analyzer (see Chapter 1).

Key features

- **Intuitive** to operate on its graphical user interface and effective use of color.
- **Fast** thanks to optimized measuring workflow and advanced processor technology.
- **Ergonomic** with a handy design and brilliant color display.
- **Powerful** due to many practical analysis functions and measuring templates.
- **Long-lived** with a long battery life and a large data memory.

Application

- One- or two-plane field balancing
- Vibration analysis
- Resonance analysis

Analysis functions

- Overall values and process parameters
- Time waveform
- Amplitude spectrum
- Envelope acceleration spectrum
- Phase incl. recording
- Bump test, 1-channel
- Coast-down/run-up test
- Signal post-processing for time waveform (overalls)
- ISO standards for evaluation

Valuable additional features

- Balancing reports can be stored on a USB memory stick and printed out
- Rugged hard case
- Extensive accessories
- Upgrade firmware modules available

Hardware

- Two true synchronous channels
- Replaceable compact flash card
- Dust and splash proof (IP65) - ideal for use in demanding environments
- Connector for type K thermocouples
- Signal output for strobe light

Ergonomics

- Large backlit VGA color display for easy reading, comprehensive data presentation and interpretation
- LED traffic light display: results evaluation according to ISO standards or user-defined alarm thresholds
- Daylight sensor controls keyboard illumination
- Easy-to-use navigation key pad
- Icon based user interface
- Color-coded cable connectors
- Online context-sensitive HELP.

Power supply

- Powered by the latest Lithium-Ion battery technology for at least 8 hours operation
- Smart internal battery charging
- Power management (display illumination)

Communication

- Fully networkable
- PC connection via USB, Ethernet, RS232.

VIBXPERT II Balancer firmware

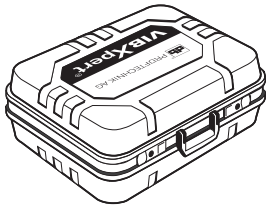
The VIBXPERT II Balancer firmware (VIB 5.317 B) provides all measurement function required to diagnose and correct an imbalance on rotating machinery.

The ‚Balancer' firmware can be upgraded to ‚Advanced' firmware at any time by registering the required VIBXPERT II firmware module (see Chapter 1).

Balancer firmware feature

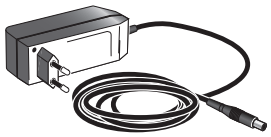
PARAMETER		VIB 5.317-B
Operating modes	Multimode, Analysis	• Overall value of acceleration, velocity, displacement • Amplitude spectrum w/ fixed parameters for accel., velocity, displacement • Run-up/ Coast-down analysis for acceptance checks and for the evaluation of resonances; phase over RPM (Bode or Nyquist diagram); overall value over RPM (RMS and either 0-p, p-p or crest factor) • Vibration pointer (phase - speed) with recording function for the evaluation and documentation of the time response, the speed dependency of vibrations and for the quick evaluation of the phase reference of measurement points.
	Multimode, Signals	• Time waveform for acceleration, velocity, displacement
	Multimode, Advanced	• Envelope spectrum of acceleration (f_{max}: 800 Hz / HP: 10kHz) for bearing analysis and analysis of shock-excited vibrations. • Phase measurement w/ recording • Temperature • Impact test w/o recording of the exciting force, 1 channel • Overall value for user-defined quantity (AC) • Amplitude spectrum w/ fixed parameters for user-defined quantity (AC) • Time waveform for user-defined quantity (AC)
	Balancing	• One-plane balancing; optional: vibration minimization in the second plane • Balancing in two planes under operating conditions • Correction type: Fixed location, Fixed mass, Tape measure, Free correction • Calculation of balancing grade and residual centrifugal force • Balancing speed: 30-199,000 1/min • Balancing report with selectable options
Analysis funct.	Cursor	• Single, delta, harmonics, sub harmonics, sideband cursor
	Max 10 values	• List of the 10 highest amplitudes in the spectrum
	Result display	• Linear scaling, Logarithmic scaling (Y axis) • Trend, Cascade diagram (waterfall), Polar plot • Order scaling for amplitude / envelope spectrum
Measurement functions	Averaging	• none (not for temperature), • linear (not for time waveform), • peak hold (not for time waveform and temperature), • exponential (not for time waveform & temperature), • time-synchronous (time waveform, balancing) • Unlimited averaging if the imbalance pointer is unstable (balancing)
	Trigger modes	• Free running, external (time-synchronous), internal • Amplitude, Edge, Pre and post triggered.
	FFT	• F_{min}: 1 / 2 / 10 Hz, selectable acc. to meas. quantity • F_{max}: 0,2 / 0,4 / 0,8 / 1,6 / 12,8 kHz, selectable acc. to meas. quantity • Lines: 800 / 1600 / 3200 / 6400, selectable acc. to meas. quantity • Window: Hanning

VIB 5.310 B: VIBXPERT II Balancer package

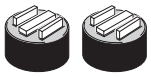

VIB 5.328


VIB 8.970


LIT 01.800

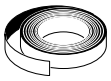

VIB 5.320-INT


VIB 6.147


VIB 3.420

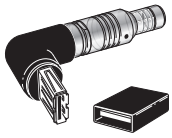

VIB 6.631


VIB 6.632


VIB 3.306


LIT 53.203
LIT 53.103


VIB 5.317-B


VIB 5.330 MEM
VIB 5.330-USB


VIB 5.310

VIB 5.356


VIB 5.330 SUSB


VIB 5.436


VIB 5.437-2,9


VIB 5.339


VIB 5.432-2,9


VIB 4.750 - 5

Description

The Balancer package includes the equipment for single / dual plane balancing and machine diagnostics with VIBXPERT II. The instrument features the 'Balancer' firmware.

Scope of supply

VIB 5.310	VIBXPERT II instrument, incl. rechargeable battery VIB 5.325
VIB 5.317-B	Balancer firmware certificate
VIB 5.320-INT	VIBXPERT II charger
VIB 5.328	VIBXPERT II case
VIB 5.330MEM	Adapter for USB pen drive
VIB 5.330-USB	USB pen drive
VIB 5.330SUSB	USB cable, PC communication
VIB 5.356	VIBXPERT II carrying bag
VIB 3.306	Reflective tape
VIB 3.420	Magnetic holder for curved mounting surfaces, 2x
VIB 4.750-5	Cable extension for trigger cable, 5 m
VIB 5.339	Cable extension for CLD-type accelerometers, 8 m
VIB 5.432-2,9	Trigger cable
VIB 5.436	Spiral cable, CLD-type accelerometers
VIB 5.437-2,9	Straight cable, CLD-type accelerometers
VIB 6.147	CLD-type accelerometer for low-speed machinery, 2x
VIB 6.631	Laser trigger / Laser RPM sensor
VIB 6.632	Trigger stand
LIT 53.203.EN	VIBXPERT II Balancer manual
LIT 53.103.EN	VIBXPERT II Balancer short instructions
LIT 01.800	CD ROM, Condition Monitoring catalogs, brochures, magazines
VIB 8.970	CD ROM, Condition Monitoring software & firmware (incl. OMNITREND demo ver.)

Upgrade to ‚Advanced 2-channel' with **VIB 5.310-UGB:**

VIB 5.311	Firmware certificate, 1-channel
VIB 5.311-CH2	Firmware certificate, 2-channel
VIB 5.316-BAL	Firmware certificate, Balancing
LIT 53.201.EN	VIBXPERT II operating instructions
LIT 53.202.EN	VIBXPERT II balancing instructions

Index by order number

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PRÜFTECHNIK

Productive maintenance technology