

Parameter	Technical data VIBXPert II instrument (VIB 5.310)
Impedance	90 kOhm, with cable VIB 5.433
Analog, Temperature, 1x	Thermocouple (type K)
Digital, 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	
Stroboscope control	TTL-Ausgangsspiegel
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
MEASUREMENT RANGE / ACCURACY	
Vibration acceleration	depends on the sensor 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 acc 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 instrument
Charger, input	110-240 V / 50-60 Hz
Charging temperature	0°C ... +50°C [32 °F ... 122°F]
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 to 8 GB (interchangeable)
Serial interface	RS 232, <115 kBaud
USB interface	USB 2.0

Parameter	Technical data VIBXPRT II instrument (VIB 5.310)
Ethernet interface	100 Mbit (100Base T), 10 Mbit (10Base T)
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), [7 5/16" x 6 3/8" x 2 1/16"]
Weight	approx. 1.1 kg [39 oz]
Environmental protection	IP65, dust and splash-proofed
Temperature range	-10°C ... +60°C (Operation), [14 °F ... 140°F] -20°C ... +60°C (Storage), [-4 °F ... 140°F]

Firmware features

Parameter	Standard firmware 1 channel/ 2 channels (VIB 5.311 / VIB 5.311-CH2)	Balancer firmware (VIB 5.317-B)
OPERATING MODES		
Multimode, Characteristic Overall Values	<ul style="list-style-type: none"> • Vibration (Acceleration, Velocity, Displacement) • Current, Voltage (AC / DC) • Shock pulse (bearing condition) • Temperature • Rotational speed 	<ul style="list-style-type: none"> • Vibration (Acceleration, Velocity, Displacement) • Temperature • Overall value for user-defined quantity (AC)

Parameter	Standard firmware 1 channel/ 2 channels (VIB 5.311 / VIB 5.311-CH2)	Balancer firmware (VIB 5.317-B)
Multimode, Signals	<ul style="list-style-type: none"> • 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). <p>with 2-channel firmware only (VIB 5.311-CH2):</p> <ul style="list-style-type: none"> • 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* <p>* requires optional firmware module VIB 5.319-ODS</p>	<ul style="list-style-type: none"> • 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. • Time waveform for acceleration, velocity, displacement • Time waveform for user-defined quantity (AC) • Phase measurement w/ recording • Impact test w/o recording of the exciting force, 1 channel • Amplitude spectrum w/ fixed parameters for user-defined quantity (AC) • Envelope spectrum of acceleration (fmax.: 800 Hz / HP: 10kHz) for bearing analysis and analysis of shock-excited vibrations.
Balancing	---	<ul style="list-style-type: none"> • 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
Machine templates	Machine-specific templates for repetitive measurement tasks used for acceptance tests or service measurements.	---
Route	<ul style="list-style-type: none"> • 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	

Parameter	Standard firmware 1 channel/ 2 channels (VIB 5.311 / VIB 5.311-CH2)	Balancer firmware (VIB 5.317-B)
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	<ul style="list-style-type: none"> • Linear scaling, Logarithmic scaling (Y axis) • Trend, Cascade diagram (waterfall), Polar plot • Order scaling for amplitude / envelope spectrum • Sound spectrum (octave / third octave bars), not for balancing 	
MEASUREMENT FUNCTIONS		
Multi Meas. tasks	Combination of several measurements in one task.	---
Averaging	<ul style="list-style-type: none"> • 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) • Unlimited averaging if the imbalance pointer is unstable (balancing) 	
Trigger modes	<ul style="list-style-type: none"> • Free running, external (time-synchronous), internal • Amplitude, Edge, Pre and post triggered. 	
FFT	<ul style="list-style-type: none"> • Fmin: between 0.5 Hz and 10 Hz programmable • Fmax: 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 	<ul style="list-style-type: none"> • Fmin: 1 / 2 / 10 Hz, selectable acc. to meas. quantity • Fmax: 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

Parameter	Optional firmware modules
RECORDING - VIB 5.315-REC	
Short-term recording	<ul style="list-style-type: none"> • 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
Requirements	Use of the time waveform recorder requires registration of either the "E-Registration" firmware (VIB 5.318-E) or the 1-channel firmware (VIB 5.311). The software module "VIBXPRT utility - Advanced file export - VIB 8.984" is required for data export.
BALANCING - VIB 5.316-BAL	

Parameter	Optional firmware modules
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
RPM range	30 to 199.000 min ⁻¹
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
ODS / MODALANALYSIS - VIB 5.319-ODS	
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
Requirements	Standard firmware "1-channel" and "2 channels " must be registered; The software module "VIBXPERT utility - Advanced file export - VIB 8.984" is required for data export.