Vibration Anaalyzer

VM100A

Application

- Condition monitoring of rotating machinery, like motors, pumps, compressors, turbines or gearboxes
- Route-based measurements at machines
- Roller bearing diagnosis
- Balancing
- Measurement of hand-transmitted and whole-body vibration
- Run up/coast down analysis; resonance finding
- Vibrations on passenger and merchant ships
- Vibration measurement at very sensitive equipment (VC/Nano)

Properties

- Large screen with touch operation for clear user guidance
- 9 independent sensor channels, e.g. for three triaxial sensors
- Measurement of vibration acceleration, velocity and displacement
- Amplitude over rotation speed graphs
- Frequency analysis (FFT) with waterfall mode; Envelope analysis
- Weighting filters for hand-arm vibration and whole-body vibration
- RMS (1 s and infinite); vibration dose value (VDV); vector sum; peak; maximum peak
- TEDS sensor detection; Measurement point identification with RFID tags
- Tachometer input for RPM measurement
- Measurements saved on µSD card, PC connection via USB
- 9-channel time history plot of up to 10 hours
- Raw-signal recording as WAV file
- Infrared temperature measurement

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Technical Data

Measurands and Ranges

Vibration measurands	Vibration acceleration	
	Vibration velocity	
	Vibration displacement	
Overall values	True RMS value	
	Maximum transient vibration value MTVV	
	Interval RMS value; unlimited averaging time	
	Vector sum of X, Y, Z	
	Vibration dose value VDV	
	True pak value	
	Maximum peak value	
Measuring range acceleration	0.0000001 to 10000 (sensor dependent)	m/s²
Accuracy	±1 (> 5 % of full scale; mid-band)	%
ADC resolution	24	Bit
Lower frequency limit acceleration	0.4 to 5000 (34 high pass filters)	Hz
Upper frequency limit acceleration	10 to 24000 (38 low pass filters; >4000 only 3 channels)	Hz
Weighting filters	Wb; Wc; Wd; Wh; Wj; Wk; Wm; unweighted	
Frequency analysis	FFT; 1 to 22000 Hz; 3 channels	
	1024 to 65536 points	
	0.1 to 48 Hz resolution	
	Windowing: Rechteck, Hann, Hamming, Flattop	
	Triggering: auto; tacho; level	
	Waterfall mode: 50 spectra; 1 channel	
Third-octave band analysis	1 to 300 Hz; 21 third-octave bands; 3 channels	
Envelope analysis	Frequency markers für fault frequencies; bearing list	
Measuring point identification	NFC reading interface for tags of types A, B, F and V	
Measurement data storage	Micro SD card; removable; FAT file system, via USB	
File types	CSV for measurement data, BMP for screen shots; WAV for raw signals	
Indicators	RGB TFT; 800 x 480 pixels; touch operated	

Connectors

Input signals	IEPE	
Input connector	3 sockets Binder 711; 4 poles	
IEPEconstant current	3.5 to 4.5	mA
TEDS support	IEEE 1451.4; templates 25, 27, 28	
Digital interfaces	USB 3.0 HS; MSC; type C	

Case Data

Dimensions without connectors	215 x 150 x 50 (W x H x D)	mm
Case material	ABS	
Weight	1300	g
Protection grade	IP65	
Operating temperature range	-20 to 60 (95 % rel. humidity without condensation)	°C

Scope of delivery USB cable and charger

Optional accessories
VM100-RPM: License for amplitude-rotation speed measurement
VM100-MAC: License for machine vibration and measurement route management
VM100-ENV: License for envelope analysis for roller bearing diagnosis
VM100-BAL: License for balancing in one or two planes
VM100-VC: License for third-octave analysis; VC and Nano criteria
VM100-HA: License for hand-arm vibration measurement
VM100-WB1: License for whole-body vibration measurement
VM100-WB3: License for whole-body vibration measurement with 3 sensors

Notice The modules VM100-AMP (amplitude-time plotter) and VM100-FFT are included.

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