



# VIBRATION ANALYZER

## VM100A



Noise & Vibration Registration  
Instruments and Software

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## 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  $\mu$ SD 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

Measurement functions		
Measurands	Vibration acceleration, velocity, displacement Force, pressure, sound pressure	
Overall values	RMS (1s/∞); Peak (1s/max.); Crest; VDV; main frequency	
Measuring range acceleration	0.0000001 to 10000 (sensor dependent )	m/s <sup>2</sup>
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 (human vibration)	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; spectrogram	
Third-octave band analysis	1 to 160 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	
Indication	RGB TFT; 800 x 480 pixels; touch operated	

Connectors		
Input signals	IEPE; AC	
Input connector	3 sockets Binder 711; 4 poles	
IEPE constant 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	

Power Supply		
Battery	NiMH; 4.8 V; 9 Ah; built-in	
Battery operating time	10 to 14	h
External supply voltage	5	VDC
External supply current	<2500	mA
Supply connection	USB-C	

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

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### Scope of Delivery

- Carrying case; USB cable; 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 034-B711-BNCf: sensor adapter cable with 3 BNC female plugs; 0.5 m VM100-LS: Photoelectric reflex switch with 5 m cable and magnetic stand

### Notice

The licenses VM100-AMP (amplitude-time/plotter) and VM100-FFT are included.



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