Vibration Analyzer VM80



Application

- Vibration measurement in laboratory, field and industry
- 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
- Vibrations on passenger and merchant ships
- Run up/coast down analysis; resonance finding
- Vibration measurement at very sensitive equipment (VC/Nano)

Properties

- Screen with touch operation for clear user guidance
- 3 independent sensor channels
- Measurement of vibration acceleration, velocity and displacement
- Frequency analysis (FFT) with waterfall and spectrogram mode
- Frequency Response Function (FRF) for modal analysis
- Power/Energy Spectral Density (PSD/ESD)
- Envelope analysis
- Amplitude over rotation speed graphs
- TEDS sensor detection; Measurement point identification with RFID tags
- Tachometer input for RPM measurement
- Measurements saved on micro memory card, PC connection via USB
- 4-channel time history plot of up to 10 hours
- Raw-signal recording as WAV file

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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; VPM; main frequency	
Measuring range acceleration	0.0000001 to 10000 (sensor dependent)	m/s²
Rotary speed measurement	Tacho input; 60 – 60000 min-1; output 24 V / 0,1 A	
Accuracy	±1 (> 5 % of full scale; mid-band)	%
Analog-to-digital converter	24 bit sigma-delta for each channel; 48.8 ksamples/s	
Lower frequency limit acceleration	0.4 to 5000 (35 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/PSD/ESD; 1 - 22000 Hz; 3 channels	
	FRF (a/F; F/a; v/F; F/v; x/F; F/x); 2 channels vibration	
	1024 to 65536 points; 0.1 to 48 Hz resolution	
	Windowing: Rectangular, Hann, Hamming, Flattop	
	Triggering: auto; tacho; amplitude; single amplitude	
	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 memory card; removable; FAT file system, via USB	
File types	CSV for measurement data, BMP for screen shots; WAV for raw signals	
Indication	5“ RGB TFT; 800 x 480 pixels; touch operated	

Connectors		
Input signals	IEPE; AC	
Input connector	Sockets Binder 711, 4 pins and 7 pins	
IEPEconstant current	3.8 to 4.2	mA
TEDS support	IEEE 1451.4; templates 25, 27, 28	
Digital interface	USB 3.0 HS; MSC; Typ C	

Power Supply		
Battery	NiMH; 4.8 V; 2 Ah; built-in	
Battery operating time	6 to 8	h
External supply voltage	5 (USB)	VDC
External supply current	<2500	mA
Supply connection	USB-C	

Case Data		
Dimensions without connectors	160 x 100 x 26 (W x H x D)	mm
Weight	900	g
Protection rating	IP65	
Operating temperature range	-20 to 60 (95 % rel. humidity without condensation)	°C

Scope of delivery Carrying case; USB cable; charger; kits with sensors and accessories available

Optional accessories VM80-MAC: License for machine vibration and measurement route management
VM80-BAL: License for balancing in one or two planes
VM80-VC: License for third-octave analysis; VC and Nano criteria
VM80-HUM: License for hand-arm and whole-body vibration measurement
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
Amplitude-time measurement/plotter and FFT/FRF are included.

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