



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; Ride comfort evaluation
- 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
- 3 independent sensor channels
- 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
- 3-channel time history plot of up to 10 hours
- Raw-signal recording as WAV file

Technical Data

Measurement functions

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|-------------------------------------|---|
| 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; Binder 711; 7 pins |
| Accuracy | ±1 (> 5 % of full scale; mid-band) % |
| Analog-to-digital converter | 25 bit sigma-delta for each channel; 48.8 ksamples/s |
| Lower frequency limit acceleration | 0.4 to 5000 (34 high pass filters) Hz |
| Upper frequency limit acceleration | 10 to 24000 (38 low pass filters) Hz |
| Weighting filters (human vibration) | Wb; Wc; Wd; Wh; Wj; Wk; Wm; unweighted |
| Frequency analysis | FFT and PSD; 1 to 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: 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 |

Connectors

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|-----------------------|-----------------------------------|
| Input signals | IEPE |
| Input connector | Socket 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

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|-------------------------|-----------------------------|
| 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

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|-------------------------------|--|
| 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 |

Scope of delivery

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

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

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