



## 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 |

**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

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

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