

Vibration Test Instrument with Hand-Arm and Whole-Body Sensors PCE-VM 31-HAWB



The PCE-VM 31-HAWB Vibration Test Instrument or Analyzer is designed for measuring human vibration at the workplace. The Vibration Analyzer can calculate hand-arm vibration measurements according to ISO 5349 and whole-body vibration measurements according to ISO 2631. Each sensor consists of a tri-axial Vibration Analyzer that captures acceleration, velocity, and displacement measurements. In addition to human vibration measurements, the Vibration Analyzer can measure the vibrations of machines. The Vibration Analyzer also supports TEDS, which means that it can detect and identify TEDS-capable sensors automatically. Overall, the device comes with 4 independent measuring channels. The measured data can be displayed as interval, running or maximum RMS (MTVV), as well as estimated vibration dose value (eVDV), vector sum, peak, and maximum peak. The acceleration can also be displayed as FTT with up to 125 lines. The internal flash memory of the Vibration Analyzer can store up to 10,000 measurements or up to 1,000 FTTs, each with date, time, and a comment. The measured data can also be transferred to a PC via the USB 2.0 interface.

- ▶ For tri-axial measurement (X_h, Y_h and Z_h axes) of hand-arm and whole-body human vibration
- ▶ For hand-arm vibration syndrome (HAVS) and carpal tunnel syndrome risk assessment, measuring exposure action values (EAVs) and exposure limited values (ELVs), and regulation compliance
- ▶ Velocity, acceleration, displacement
- ▶ 3 channel FFT
- ▶ TEDS support
- ▶ Flash memory for up to 10,000 readings
- ▶ USB interface
- ▶ Compact design
- ▶ Easy to use- ISO 8041 calibration certificate option available (see accessories)

Specifications

Technical specifications

Measuring range	Sensor with 1 mV/(m/s ²)	Sensor with 10 mV/(m/s ²)
Acceleration	1100 m/s ² / 3609 ft/s ²	110 m/s ² / 361 ft/s ²
Velocity	100 mm/s ... 10,000 mm/s 4.0 in/s ... 394.0 in/s(1 kHz/1 Hz)	10 mm/s ... 1,000 mm/s 0.4 in/s ... 39.4 in/s(1 kHz/1 Hz)
Displacement (Peak)	250 µm ... 15,000 µm 0.01 in ... 0.6 in(5 Hz/250 Hz)	25 µm ... 1,500 µm 0.001 in ... 0.06 in(5 Hz/250 Hz)

Display resolution (1 / 10 mV/(m/s²))

Acceleration	0.01 m/s ² / 0.4 in/s ²
Velocity	0.1 mm/s / 0.004 in/s
Displacement	1 µm / 4 x 10 ⁻⁵ in

Linearity range	> 75 dB for ±6 % error
Noise	< 0.003 m/s ² / 0.12 in/s ²
Inputs	4 Low-Power-IEPE inputs; 0.7 mA / 17 V; TEDSsupport, IEEE1451.4, Template 25
Sensor sensibility	0.8 - 120 mV/(m/s ²)
Display units human vibration (acceleration)	Interval RMS vector sum max. running RMS (MTVV) vibration dose value (VDV)
Display units acceleration, velocity, displacement	running RMS maximum RMS vector sum peakvalue maximum peak value
Filters	Weighting filters: Wb, Wc, Wd, Wh, Wj, Wk, Wm Unweighted: 6.3 - 1259 Hz (H/A) / 0.4 - 100 Hz (G/K) Acceleration: 0.1 - 2000 Hz / 1 - 1000 Hz Velocity: 1 - 100 Hz / 2 - 1000 Hz / 10 - 1000 Hz Displacement: 5 - 250 Hz
Frequency analysis (FFT)	125 lines for X/Y/Z, peak spectrum of acceleration, 3 -240 / 6 - 480 / 12 - 960 / 24 - 1920 Hz
Data memory	Flash, 10,000 measurements, 1,000 FFts, each with date,time and comment
Display	OLED, 128 x 160 pixels, coloured
Interface	USB 2.0, full speed, CDC-mode (virtual COM port),via cable VM2x-USB
Batteries	3 x 1.5 V AAA batteries or accumulators (LR03 or HR03)
Environmental conditions	-20° C ... +60° C / -4° F ... +140° F < 95 % RH
Approx. dimensions	125 mm x 65 mm x 27 mm 4.9 in x 2.6 in x 1.1 in (without connectors)
Approx. weight	140 g / 0.31 lbs

More information

Manual



More product info



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