

Vibration Meter

840063

Instruction Manual

Vibration Meter - 840063

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INTRODUCTION

The level of vibration is a useful guide to the balance, alignment and general condition of pumps, motors, and other machinery. Poor balance, misalignment and looseness results in higher levels of vibration and indicates maintenance is required for operational as well as safety reasons.

Measures velocity and acceleration. The large display indicates RMS, Peak, min-max, hold, low battery, and auto power off. Comes ready to use in a foam-lined, hard-shell carrying case, with a detachable strongly magnetic probe, 9V battery and instructions.

PANEL DESCRIPTION

1. BNC Socket & Plug
2. Display
3. Power Button
4. Hold Button
5. RMS/Peak Selector
6. ACC/VEL Selector
7. Recall Button
8. Record Button
9. Mini Plug*
10. Input Socket*
11. Magnetic Base*
12. Battery Cover (on back)

**These parts come screwed together, but can be unscrewed if desired.*



OPERATING INSTRUCTIONS

General Measurement

1. Attached the **BNC PLUG** to the **BNC SOCKET**.
2. Attached the **MINI PLUG** to the **INPUT SOCKET**.
3. a. Acceleration (ACC) Measurement:
Switch the **ACC/VEL SELECTOR** to the “ACC” position.
- b. Velocity (VEL) Measurement:
Used for general industrial vibration. Switch the **ACC/VEL SELECTOR** to the “VEL” position.
4. Switch the **RMS/PEAK SELECTOR** to the “RMS” position.
5. Press the **POWER BUTTON** once to turn on the meter.
- 6 If the surface material of the object you are testing is a **non-magnetic material**, hold the **VIBRATION SENSOR** and touch the tip to the object.

If the surface material is **magnetic**, connect the **VIBRATION SENSOR** to the **MAGNETIC BASE** and touch it to the object’s surface.

Peak Value

Switch the **RMS/PEAK SELECTOR** to the “PEAK” position.
Peak value = 1.414 RMS value.

Data Hold

1. Press the **HOLD BUTTON** during measurement to freeze the displayed value. “D.H” is shown on the LCD.
2. Press the **HOLD BUTTON** a second time to resume measurement.

Data Record

(Displays the Maximum and Minimum readings.)

1. To start the Data Record function, press the **RECORD BUTTON** once. The LCD display will indicate "REC."
2. Press the **RECALL BUTTON** and the "Max" symbol (along with the maximum value) will appear on the LCD display.
3. Press the **RECALL BUTTON** again and the "Min" symbol (along with the minimum value) will appear on the display.
4. To exit the memory record function, press and hold the **RECORD BUTTON** for approximately 2 seconds. The display will revert back to the current reading.

Automatic Shut Off

This unit has a built-in automatic shut off function to prolong battery life. The meter will shut off automatically if no buttons are pressed within 10 minutes. To deactivate this feature, select the memory record function during measurement, by pressing the **RECORD BUTTON**.

BATTERY REPLACEMENT

When the top left corner of LCD display indicates “LBT,” it is time to replace the battery. Accurate readings may be taken for several hours after the low battery indicator appears. Open the battery cover, install a fresh 9V battery and replace the cover.

CLASSIFICATION RANGES

There are 4 different machine groups with 4 classification ranges and limits for ISO 2372 and VDI 2056, machinery.

GROUP K:	Small machines, especially production electrical motors of up to 15 KW.
Good	0 to 0.71 mm/s
Acceptable	0.72 to 1.80 mm/s
Still permissible	1.81 to 4.5 mm/s
Dangerous	> 4.5 mm/s
GROUP M:	Medium sized machines, especially electrical motors with 15 to 75 KW output, without special foundations.
Good	0 to 1.12 mm/s
Acceptable	1.13 to 2.80 mm/s
Still permissible	2.81 to 7.1 mm/s
Dangerous	> 7.1 mm/s
GROUP G:	Large machines on heavy foundations.
Good	0 to 1.80 mm/s
Acceptable	1.81 to 4.50 mm/s
Still permissible	4.51 to 11.2 mm/s
Dangerous	> 11.2 mm/s
GROUP T:	Largest machines and turbo machines with special foundations.
Good	0 to 2.80 mm/s
Acceptable	2.81 to 7.10 mm/s
Still permissible	7.11 to 18.0 mm/s
Dangerous	> 18 mm/s

ISO 2954 SENSITIVITY RELATIVE TABLE

Frequency Hz	Relative sensitivity		
	Normal Value	Minimum Value	Maximum Value
10	1.0	0.8	1.1
20	1.0	0.9	1.1
40	1.0	0.9	1.1
80	1.0	1.0	1.0
160	1.0	0.9	1.1
500	1.0	0.9	1.1
1000	1.0	0.8	1.1

SPECIFICATIONS

	Range	Resolution	Accuracy
Acceleration	0.5 to 199.9 m/s ²	0.1 m/s ²	+/- (5% +2d) rdg, 160 Hz, 80 Hz. @ 23 +/- 5°C
Velocity	0.5 to 199.9 mm/s	0.1 mm/s	

Frequency	10 Hz to 1 KHz, sensitivity relative during the frequency range meets ISO 2954 (see pg 6).
Calibration Point	Velocity: 50 mm/s (160 Hz) Acceleration: 50 m/s ² (160 Hz)
Sampling Time	Approximately 1 second.
Operating Conditions	Temperature: 0 to 50°C (32 to 122°F) Humidity: Less than 80% R.H.
Power Supply	Alkaline or heavy duty type DC 9V battery.
Power Consumption	Approx. DC 6 mA.
Circuit	Exclusive microcomputer circuit.
Dimensions	7" × 3" × 1½" (180 × 75 × 35 mm), probe cord: 49" (125 cm)
Weight	8 oz (220 g), Probe 6 oz (170 g)

WARRANTY

Sper Scientific warrants this product against defects in materials and workmanship for a period of **one (1) year** from the date of purchase, and agrees to repair or replace any defective unit without charge. If your model has since been discontinued, an equivalent Sper Scientific product will be substituted if available. This warranty does not cover probes, batteries, battery leakage, or damage resulting from accident, tampering, misuse, or abuse of the product. Opening the meter to expose its electronics will break the waterproof seal and void the warranty.

To obtain warranty service, ship the unit postage prepaid to:

SPER SCIENTIFIC LTD.
8281 East Evans Road, Suite #103
Scottsdale, AZ 85260

The defective unit must be accompanied by a description of the problem and your return address. Register your product online at www.sperwarranty.com within 10 days of purchase.