

R7010

REED **INSTRUMENTS**

Vibration Meter



Instruction Manual

REED Instruments

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Table of Contents

Introduction	3
Product Quality.....	3
Safety	3
Features.....	4
Included.....	4
Specifications.....	5-6
Instrument Description	7
Display Description	7
Operating Instructions.....	8-10
<i>Selecting the Appropriate Probe</i>	<i>8</i>
<i>Power ON/OFF</i>	<i>9</i>
<i>Measurement Mode Selection.....</i>	<i>9</i>
<i>Measurement Method Selection.....</i>	<i>10</i>
<i>Continuous Measurement Mode</i>	<i>10</i>
Auto Power Off.....	10-11
<i>Turning the LED Flashlight ON/OFF.....</i>	<i>10</i>
<i>Lock/Unlock the Rotating Screen.....</i>	<i>11</i>
Charging the Battery	12
Applications.....	12
Accessories and Replacement Parts	12
Product Care	12
Appendix A.....	13
<i>ISO 10816 Standards.....</i>	<i>13</i>
Product Warranty	14
Product Disposal and Recycling	14
Product Support.....	14

Introduction

Thank you for purchasing your REED R7010 Vibration Meter. Please read the following instructions carefully before using your instrument. By following the steps outlined in this manual your meter will provide years of reliable service.

Product Quality

This product has been manufactured in an ISO9001 facility and has been calibrated during the manufacturing process to meet stated product specifications. If a certificate of calibration is required, please contact the nearest authorized REED distributor or authorized Service Center. Please note an additional fee for this service will apply.

Safety

Never attempt to repair or modify your instrument. Dismantling your product, other than for the purpose of replacing batteries, may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized service center.

Features

- Measures velocity, acceleration and displacement to determine vibration level
- 360° screen rotation allows users to view measured readings from any angle
- Easy-to-read color LCD display
- Built-in LED flashlight
- Rechargeable li-ion battery
- Interchangeable short and long probes to meet application requirements
- Low battery indication and auto shut off

Included

- Vibration Meter
- Long Probe
- Short Probe
- USB Cable
- Carrying Case

Specifications

Acceleration

Measuring Range:	0.1 to 199.9 m/s ²
Resolution:	0.1m/s ²
Accuracy:	±(5% rdg. + 2 dgt)
Frequency Range:	LO: 10Hz - 1kHz HI: 1kHz - 15kHz

Velocity

Measuring Range:	0.1 to 199.9 mm/s
Resolution:	0.1 mm/s
Accuracy:	±(5% rdg. + 2 dgt)
Frequency Range:	10Hz - 1.5kHz

Displacement

Measuring Range:	0.001 to 1.999mm
Resolution:	0.001mm
Accuracy:	±(10% rdg. + 2 dgt)
Frequency Range:	10Hz - 1kHz

General Specifications

Response Time:	1 sec
Display:	2.4" TFT Color LCD
Backlit Display:	Yes
Rotatable Screen:	Yes
Data Hold:	Yes
Auto Shut-off:	Yes (after 5 mins)
Low Battery Indicator:	Yes
Power Supply:	1350mAh/3.7V rechargeable Li-ion battery
Battery Life:	Approx. 12 hours
Charging System:	Internal

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Charge Time:	Approx. 3 hours
Product Certifications:	CE, UKCA, ROHS
Operating Temperature:	14 to 122°F (-10 to 50°C)
Storage Temperature:	-4 to 140°F (-20 to 60°C)
Operating Humidity Range:	10-90%
Dimensions:	7.1 x 2.5 x 1.1" (180 x 64 x 28 mm)
Weight:	6.7oz (191g)

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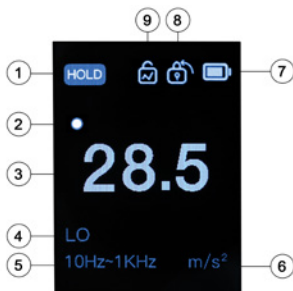
Instrument Description

1. Vibration Tip
2. Vibration Sensor
3. LCD Display
4. Power ON/Measure Button
5. Power OFF/Mode Button
6. Flashlight/Lock Screen Button
7. USB Charging Port
8. Flashlight



Display Description

1. Data Hold Indicator
2. Measurement Status Indicator
3. Measurement Value
4. High/Low Acceleration Indicator
5. High/Low Acceleration Frequency Range Indicator
6. Unit of Measure Indicator
7. Battery Status Indicator
8. Unlock/Lock Rotatable Screen Indicator
9. Continuous Measurement Mode Indicator



Operating Instructions

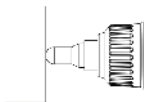
Selecting the Appropriate Probe

Short and long probes are provided. Choose the one that best fits your application requirements. (To remove a probe, turn it counter clockwise—do not turn the sensor itself.)

Short Probe:

This probe is pre-installed on the meter.

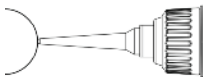
It is ideal for measuring a wide range of vibrations and provides accurate response values. For general use, the short probe is recommended, as shown in the diagram below.



Long (L) Probe:

This probe is included as an accessory.

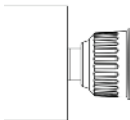
It is designed for measurements in narrow spaces or on special objects, as shown in the diagram below.





WARNING: The long probe should only be used for low-frequency measurements. For measurements involving high-frequency acceleration above 1kHz, the short probe should always be used.

No Probe:


This method is suitable for measuring flat surfaces, providing stable data, as shown in the diagram below.



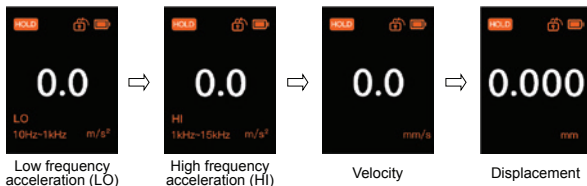
Power ON/OFF

Press and hold the  button for 2 seconds to turn the meter ON. To turn the meter OFF, press and hold the  button for 2 seconds.

Measurement Mode Selection

When the meter is powered ON, press the  button to cycle through the measurement modes and units. Choose the appropriate mode based on your measurement needs:


1. Low-Frequency Acceleration (LO): 10Hz to 1kHz, measured in m/s^2
2. High-Frequency Acceleration (HI): 1kHz to 15kHz, measured in m/s^2
3. Velocity: Measured in mm/s
4. Displacement: Measured in mm




Measurement Method Selection



The R7010 offers two measurement methods:

1. Press and Hold Measurement
2. Continuous Measurement

By default, the meter uses the Press and Hold measurement method when powered on. To begin measuring, press and hold the  button. The Data Hold icon will disappear, and the Measurement Status icon will flash, indicating active measurement.

Release the  button to stop measuring. The Data Hold icon will reappear, and the meter will stop measuring.


Continuous Measurement Mode

Press the  button twice to activate continuous measurement mode. The continuous measurement mode icon will appear on the screen, and the Measurement Status icon will flash, indicating the meter is measuring. Press the  button again to exit continuous measurement mode. The Data Hold icon will reappear, and the meter will stop measuring. After selecting a measurement method, hold the vibration tester firmly, pressing the probe vertically against the object's surface with a force of approximately 500g to 1kg. Follow the chosen method as described above, and the measured vibration value will appear on the screen.


Auto Power Off

To preserve battery life, the meter is programmed to turn off after approximately 5 minutes of inactivity.

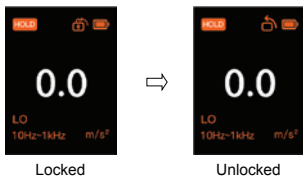
Turning the LED Flashlight ON/OFF

Press and hold the  button to turn the flashlight on and off.

Lock/Unlock the Rotating Screen

To lock or unlock the screen's automatic rotation, press the  button. When the screen is locked, a lock icon appears on the LCD, preventing the screen from rotating.

When unlocked, a rotation icon appears on the LCD, and the screen will automatically rotate based on the device's orientation.



Charging the Battery

1. Connect the R7010 via the included cable to a USB port on your PC or into a wall outlet using a USB Power Adapter (not included) to charge the Li-ion battery.
2. The indicator light will be red while charging and will turn green once fully charged.

Applications

- Evaluation of rotational industrial equipment (fans, pumps, turbines, compressors, conveyors, motors and bearings)
- Equipment shock and pulsation checks
- Preventative maintenance programs
- Power hand tools and transportation equipment

Accessories and Replacement Parts

- **R7010-RTIP** Replacement Vibration Probes
- **CA-52A** Soft Carrying Case
- **R9940** Hard Shell Carrying Case

Don't see your part listed here? For a complete list of all accessories and replacement parts visit your product page on www.REEDInstruments.com.

Product Care

To keep your instrument in good working order we recommend the following:

- Store your product in a clean, dry place.
- Charge the battery as needed.
- If your instrument isn't being used for a period of one month or longer please remove the battery.
- Clean your product and accessories with biodegradable cleaner. Do not spray the cleaner directly on the instrument. Use on external parts only.

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Appendix A

ISO 10816 Standards

This standard is used to evaluate the severity of overall vibration levels with the help of the vibration chart below.

ISO 10816-3 separates the working conditions into four zones:

- Zone A (Green): Vibration values from machines just put into operation (Good Condition)
- Zone B (Yellow): Continuous operation without any restrictions (Satisfactory Condition)
- Zone C (Orange): Condition is acceptable only for a limited period of time (Unsatisfactory Condition)
- Zone D (Red): Dangerous vibration values. Damage could occur at any time (Unacceptable Condition)

Machine			Class I Small Machines	Class II Medium Machines	Class III Large Rigid Foundation	Class IV Large Soft Foundation
in/s						
Vibration Velocity V_{rms}	0.01	0.28				
	0.02	0.45				
	0.03	0.71				
	0.04	1.12		Good		
	0.07	1.80				
	0.11	2.80		Satisfactory		
	0.18	4.50				
	0.28	7.10		Unsatisfactory		
	0.44	11.2				
	0.70	18.0		Unacceptable		
	0.71	28.0				
	1.10	45.0				

Class I: Small machines/production electrical motors up to 15kW.

Class II: Medium-sized machines/electrical motors with a maximum 75Kw output without special foundations.

Class III: Large machines on heavy foundations that are relatively stiff in the direction of the vibration measurements.

Class IV: Large prime-movers and other large machines with rotating masses mounted on foundations that are relatively soft in the direction of vibration measurements (for example, turbo generator sets and gas turbines with outputs greater than 10MW).

Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of one (1) year from date of shipment. During the warranty period, REED Instruments will repair or replace, at no charge, products or parts of a product that proves to be defective because of improper material or workmanship, under normal use and maintenance. REED Instruments total liability is limited to repair or replacement of the product. REED Instruments shall not be liable for damages to goods, property, or persons due to improper use or through attempts to utilize the instrument under conditions which exceed the designed capabilities. In order to begin the warranty service process, please contact us by phone at 1-877-849-2127 or by email at info@reedinstruments.com to discuss the claim and determine the appropriate steps to process the warranty.

Product Disposal and Recycling



Please follow local laws and regulations when disposing or recycling your instrument. Your product contains electronic components and must be disposed of separately from standard waste products.

Product Support

If you have any questions on your product, please contact your authorized REED distributor or REED Instruments Customer Service by phone at 1-877-849-2127 or by email at info@reedinstruments.com.

Please visit www.REEDInstruments.com for the most up-to-date manuals, datasheets, product guides and software.

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