

R7110

**REED**  
**INSTRUMENTS**

# Combination Contact / Laser Photo Tachometer



## Instruction Manual

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# Introduction

Thank you for purchasing your REED R7110 Combination Contact / Laser Photo Tachometer. 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 ISO 9001 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 to replace batteries, may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized service center.
- Use extreme caution when the laser beam is turned on.
- Do not let the beam enter your eye, another person's eye or the eye of an animal.
- Be careful not to point the beam off a reflective surface and strike your eye.
- Do not allow the laser light beam to impinge on any gas which can explode.

Complies with 21 CFR 1040.10 and 1040.11 except for conformance with IEC 60825-1 Ed.3., as described in Laser Notice No.56, dated May 8,2019



Laser Radiation.  
Do not stare into  
beam. Class 2  
Consumer Laser Product

EN 50689:2021  
IEC 60825-1:2014  
 $\lambda=630\text{nm}-670\text{nm}, <1\text{mW}$

## Features

- Dual function unit with both contact and non-contact capabilities
- Provides fast and accurate RPM (revolutions per min) measurements of rotating objects and surface speed measurements with included contact adapters
- Laser provides improved accuracy at a greater distance
- Internal memory recalls maximum, minimum, average values and last 10 data points
- Backlit and rotatable LCD Display
- Low battery indication and auto shut off

## Included

- Photo/Contact Tachometer
- Contact Adapter
- Large and Small Wheel Adapters
- Funnel Adapter
- Cone Adapter
- Reflective Tape
- Batteries
- Carrying Case

## Specifications

### *Non-Contact Range*

Rotational Velocity Range (RPM) 1 to 99,999

Frequency Range (Hz) 1-1666

Count Range (REV) 1-99,999

### *Contact Range*

Rotational Velocity Range (RPM) 1 to 19,999

Frequency Range (Hz) 1-333

*continued...*

Surface Speed Range	0.1m Wheel: 0.1 to 1,999 m/min 0.4 to 6,550 ft/min 4-78,700 in/min
Length Range	6" Wheel: 0.15 to 1,524 m/min 0.5 to 5,000 ft/min 0-60,000 in/min 0-99,999 m/in/ft

### ***Resolution***

Rotational Velocity (RPM)	1 to 99.99: 0.01 100 to 999.9: 0.1 1,000 to 99,999: 1
Frequency (Hz)	0.1
Surface Speed	1 to 99.99: 0.01 100 to 999.9: 0.1 1,000 to 99,999: 1
Length (m)	0.1m / 6" Wheel: 1 to 99.99: 0.01 100 to 999.9: 0.1 1,000 to 99,999: 1
Length (in)	0.1m Wheel: 1 to 99.99: 0.32 100 to 999.9: 0.3 1,000 to 99,999: 1" 6" Wheel: 1 to 99.99: 0.5 100 to 999.9: 0.5 1,000 to 99,999: 1

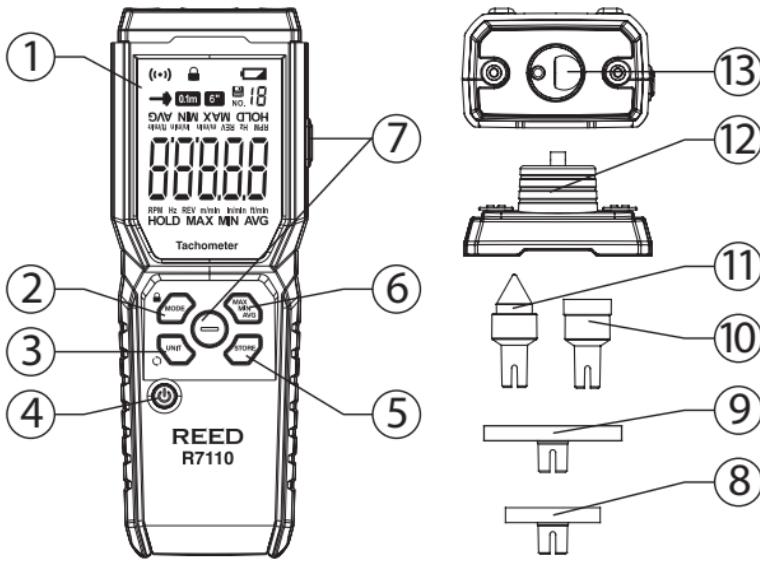
*continued...*

Length (ft)	0.1m Wheel: 1 to 99.99: 0.02 100 to 999.9: 0.1 1,000 to 99,999: 1
	6" Wheel: 1 to 99.99: 0.4 100 to 999.9: 0.1 1,000 to 99,999: 1

## ***General Specifications***

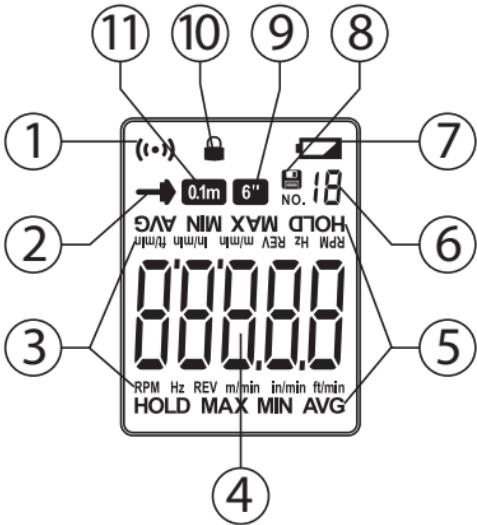
Accuracy	±(0.02% rdg. + 1 dgt.)
Display	5-Digit LCD Display
Backlit Display	Yes
Rotatable Screen	Yes
Auto shut-off	Yes
Internal Memory	10 Datapoints, Max, Min, Average and Last Reading
Tripod Mount	Yes
Laser Class	Class II
Low Battery Indicator	Yes
Power Supply	3 x AAA Batteries
Battery Life	Approx. 20 hours
Product Certifications	CE, UKCA, ROHS
Operating Temperature	32 to 122°F (0 to 50°C)
Storage Temperature	-4 to 140°F (-20 to 60°C)
Operating Humidity Range	10-80%
Dimensions	6.9 x 2.5 x 1.5" (176 x 63 x 38 mm)
Weight	6.4oz (181g)

# Instrument Description



- 1. LCD Display
- 2. MODE/Lock Button
- 3. UNIT/Screen Rotation Button
- 4. Power Button
- 5. STORE Button
- 6. MAX/MIN/AVG/  
Last Reading Button
- 7. Measurement Buttons
- 8. 0.1m Contact Wheel
- 9. 6" Contact Wheel
- 10. Funnel Adapter
- 11. Cone Adapter
- 12. Contact Adapter
- 13. Laser Aperture

## Display Description



1. Measurement Status Indicator
2. Contact Measurement Indicator
3. Units of Measure
4. Measured Value
5. Measurement Functions Indicator
6. Storage Number Indicator
7. Low Battery Indicator
8. Storage Indicator
9. 6" Contact Measurement Indicator
10. Locked Measurement Indicator
11. 0.1m Contact Measurement Indicator

# Operating Instructions

## Power ON/OFF

Press and hold the Power button for 2 seconds to turn the meter ON or OFF.

## Applying Reflective Marking Tape

1. Cut and peel the provided adhesive tape into approximately 0.5" (12mm) squares.
2. Apply one square to each rotation shaft.
3. The non-reflective area must always be greater than the reflective area.
4. If the shaft is normally reflective, it must be covered with black tape or black paint before attaching reflective tape.
5. The shaft surface must be clean and smooth before applying the reflective tape.

## Non-Contact Measurements (RPM/Hz)

1. Apply a small piece of reflective tape to the object being measured (see "Applying Reflective Marking Tape" section for details).
2. Turn the meter on.
3. Press the **MODE** button to select the non-contact measurement mode, as indicated by the absence of any mode icon on the display.
4. Press the **UNIT** button to select between RPM or Hz.
5. Point the meter towards the target under test at a distance of 2 to 20" (50 to 500mm).

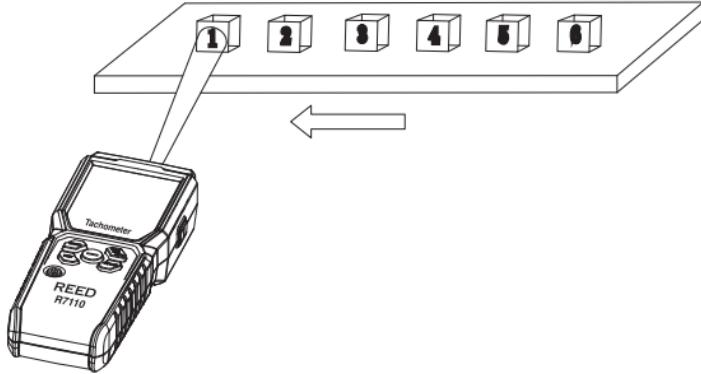


6. Press and hold the  $\ominus$  button and align the laser light beam to the applied reflective tape.
7. Verify that the measurement indicator appears on the LCD when the reflective tape passes through the light beam as indicated by  $(\bullet\bullet)$ .
8. When the measurement button is released the last reading will HOLD on the display until a new measurement is taken.

**Note:** For accurate measurement of very low RPM values, it is advisable to apply additional reflective tape and take multiple readings. To obtain the average RPM, sum the readings and divide the total by the number of measurements.

### ***Non-Contact Measurements (REV)***

1. Apply a small piece of reflective tape to the object being measured (see "Applying Reflective Marking Tape" section for details).
2. Turn the meter on.
3. Press the **MODE** button to select the non-contact measurement mode, as indicated by the absence of any mode icon on the display.
4. Press the **UNIT** button to select between REV.
5. Point the meter towards the target under test at a distance of 2 to 20" (50 to 500mm).



6. Press and hold the  $\ominus$  button and align the laser light beam to the applied reflective tape.

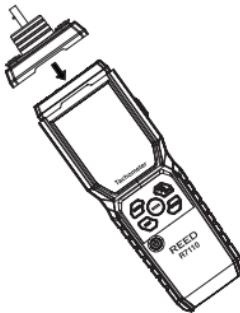
*continued...*

7. Once the laser scans the object, the tachometer will increment the count and display the updated total.
8. When the measurement button is released the last reading will HOLD on the display until a new measurement is taken.

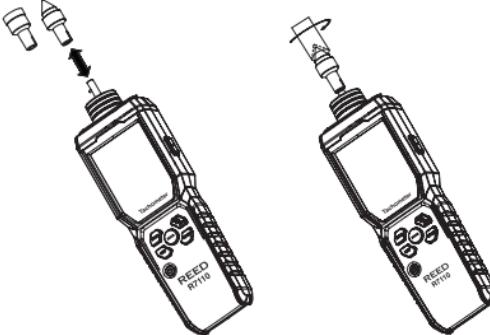
**Note:** Only reflective objects will be counted; non-reflective objects may be excluded.

### **Contact Measurement Mode (RPM/Hz)**

1. Before taking contact measurements, ensure that the mechanical adapter is securely installed on the tachometer and the quick-release screws are tightened using the REED R1300 Precision Screwdriver.



2. Prevent the test object from rotating.
3. Install the shaft contact (cone or internal cone) onto the mechanical adapter's shaft.



*continued...*

4. Turn on the tachometer.
5. Press the **MODE** button to select the contact measurement mode, as indicated by  on the display.
6. Press the **UNIT** button to choose between RPM or Hz.
7. Ensure the shaft contact is firmly pressed against the object to be measured.
8. Press and hold the  button to begin measuring.
9. Start the object under test.
10. The measured value will appear on the LCD display.
11. When the measurement button is released the last reading will HOLD on the display until a new measurement is taken.

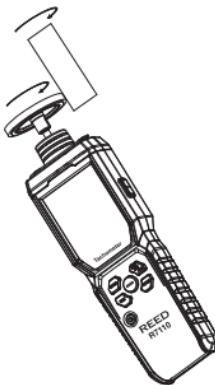
### **Contact Measurement Mode (Surface Velocity/Length Measurement)**

1. Prevent the test object from rotating.
2. Install the contact wheel (0.1m/6") on the shaft of the mechanical adapter.



3. Turn on the tachometer.
4. Press the **MODE** button to select between the contact measurement modes 0.1m and 6".
5. Press the **UNIT** button to select the required surface velocity unit of measure (m/min, in/min, ft/min).
6. Ensure the shaft contact is firmly pressed against the object to be measured.

*continued...*



7. Press and hold the  $\ominus$  button to begin measuring.
8. Start the object under test.
9. The measured value will appear on the LCD display.
10. When the measurement button is released the last reading will HOLD on the display until a new measurement is taken.

**Note:** To ensure accurate measurements, the product must remain stationary and stable.

#### ***Continuous Contact/Non-Contact Measurement (Trigger Lock)***

The instrument allows for a continuous contact/non-contact measurement.

**Note:** This function is applicable for processes that require regular monitoring of.

1. While in contact/non-contact measurement, press and hold the **MODE** button to enter continuous measurement mode as indicated by  on the LCD display.
2. Once the lock function is enabled, press the  $\ominus$  button to start the continuous measurement mode.
3. Both the unit of measure and the  icon will remain on the screen along with the measured values.

*continued...*

4. When done, press the  $\ominus$  button to stop measuring.
5. The HOLD icon will appear confirming that the continuous measurement mode has been stopped.
6. Press and hold the **MODE** button to exit continuous measurement mode.

### ***Maximum, Minimum and Average Functions***

Press the **MAX/MIN/AVG** button to toggle between the MAX/MIN/AVG values of the previous test.

### ***Saving Measurement Values***

**Notes:** Once data is stored, the units cannot be changed. You can store up to 10 data points.

1. To store the current measurement value, press and hold the **STORE** button to initiate data storage mode. The storage number will flash on the screen.
2. Press the **STORE** button to select a storage number
3. Press and hold the **STORE** button to save the current data to the selected number.
4. Press the  $\ominus$  button to exit storage mode and resume normal operation.

### ***Viewing Stored Measurement Values***

1. While in the main interface screen, press the **STORE** button to view the stored measurement values.
2. Continuously press the **STORE** button to scroll through the stored measurement values.
3. Press the  $\ominus$  button to exit storage mode and resume normal operation.

## Battery Replacement

When the low battery icon  appears on the LCD, the batteries must be replaced.

1. Remove the screw with a Precision screwdriver and open the battery cover.
2. Replace the 3 x "AAA" batteries.
3. Secure the battery cover back and tighten the screw.

## Accessories and Replacement Parts

- RT100 Reflective Tape for Tachometers
- CA-05A Soft Carrying Case

## Applications

- Identify issues with rotational equipment such as: Conveyors, Turbines, Compressors, Fans and Blowers.
- Automated Assembly and Production Lines.

## Product Care

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

- Store your product in a clean, dry place.
- Change 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.

## 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](mailto: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](mailto:info@reedinstruments.com).

Please visit [www.REEDInstruments.com](http://www.REEDInstruments.com) for the most up-to-date manuals, datasheets, product guides and software.

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