EXTECH®

USER MANUAL

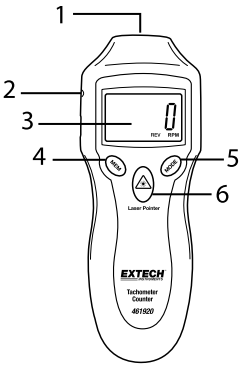
Extech Mini Laser Photo Tachometer / Counter — Model 461920

1 Introduction

Congratulations on your purchase of the Extech Mini Laser Photo Tachometer / Counter, Model 461920. This instrument provides non-contact RPM (rotations per minute) and Count (revolutions) measurements. The laser pointer allows for accurate measurement targeting. This instrument is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

Additional User Manual Translations available at www.extech.com

2 Description



1. Sensor and laser source
2. Optional AC adapter connector
3. LCD
4. Memory *MEM* button
5. Mode button
6. Measure / Laser pointer button

The battery compartment is located on the back of the meter.

3 Safety

CAUTION

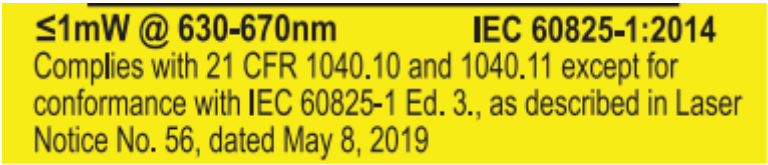
Rotating objects can be dangerous. Use extreme care.

WARNING

Do not directly view the laser beam or point it toward the eyes.

Low power visible lasers do not normally present a hazard but may present some potential for hazard if viewed directly for extended periods of time.

See laser safety information below and on meter label.



4 Meter Operation

4.1 RPM Mode (Rotations per Minute)

1. To set the meter to measure RPM, press and release the *Measure* ⚠ button and then use the *MODE* button to select **RPM** on the display.
2. Apply an appropriately sized square piece of reflective tape (typically 0.5 in. [12 mm]) to the surface of the object under test.
3. Point the meter toward the device under test at a 2 to 20 in. (50 to 500 mm) distance.
4. Press and hold the *Measure* ⚠ button and aim the laser at the reflective tape.
5. Verify that the monitor indicator (**()**) appears on the display when the reflective tape passes through the light beam.
6. When the *Measure* button is released, the last reading will remain on the display for approximately 5 seconds, and then the meter will switch off.
7. With the meter OFF, use the *MEM* (memory) button to recall the **MAX**, **MIN**, and **LAST** RPM readings.

4.2 COUNTER Mode (Revolutions)

1. To set the meter to measure Counts, short press the *Measure* ⚠ button and then use the *MODE* button to select **REV** on the display.
2. Point the meter toward the device under test at a 2 to 20 in. (50 to 500 mm) distance.
3. Press the *Measure* ⚠ button and aim the laser at the object under test.
4. Verify that the monitor indicator (**()**) appears on the LCD when the object passes through the light beam.
5. When the *Measure* button is released, the last reading will remain on the display for approximately 5 seconds, and then the meter will switch off.
6. With the meter OFF, press the *MEM* button to recall the final count value.

4.3 Measurement Notes

- Bright ambient light can interfere with measurement accuracy. Hold the meter close to the target, or shade the target area, if necessary.
- The nonreflective area must be larger than the reflective area on the object under test.
- If the shaft or rotating object is inherently reflective, cover it with black tape or paint before applying the reflective tape.
- To improve repeatability of low RPM measurements, apply additional squares of reflective tape. Divide the reading shown on the display by the number of pieces of tape to calculate the actual RPM.

5 Battery Replacement

The low battery indicator appears on the display when the battery needs replacing. To replace the battery, open the rear battery compartment by removing the two Phillips head screws. Replace the 9 V battery observing correct polarity. Secure the battery compartment cover before using the meter.


Do not dispose of used batteries or rechargeable batteries in household waste.

6 Specifications

6.1 General Specifications

Time base	Quartz crystal
Display type	5 digit (99999) LCD
Laser type	Class 2 laser ≤1 mW power @ 630 to 670 nm
Detection distance	2 to 20 in. (50 to 500 mm)
Sampling time	0.5 seconds (> 120 RPM)
Reflective tape	Replacement part no. 461937
Memory	Recall the MIN, MAX, and LAST readings for RPM measurements Recall the final count value for REV measurements
Operating conditions	32 to 122°F (0 to 50°C); RH 80%, maximum
Power supply	9 V battery or optional AC Adaptor (part no. UA100-240)
Power consumption	45 mA DC; typical
Weight	5.3 oz. (151 g)
Dimensions	6.2 x 2.3 x 1.6 in. (160 x 60 x 42 mm)

6.2 Measurement Specifications

	Range	**Resolution**	**Accuracy**
Tachometer	2 to 99, 999 RPM	0.1 RPM (< 1000 RPM) 1 RPM (> 1000 RPM)	± (0.05% of reading + 1 digit)
Counter	1 to 99,999 REV	1 count	± 1 count

7 Two-year Warranty

FLIR Systems, Inc. warrants this Extech brand instrument *to be free of defects in parts and workmanship for* ***two years*** *from date of shipment (a six-month limited warranty applies to sensors and cables). To view the full warranty text please visit: http://www.extech.com/support/warranties.*

7.1 Calibration and Repair Services

FLIR Systems, Inc. offers calibration and repair services for the Extech brand products we sell. We offer NIST traceable calibration for most of our products. Contact us for information on calibration and repair availability, refer to the contact information below. Annual calibrations should be performed to verify meter performance and accuracy. Product specifications are subject to change without notice. Please visit our website for the most up-to-date product information: www.extech.com.

7.2 Contact Customer Support

Customer Support Telephone List: https://support.flir.com/contact

Calibration, Repair, and Returns e-mail: repair@extech.com

Technical Support: https://support.flir.com

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Website
http://www.flir.com

Customer support
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