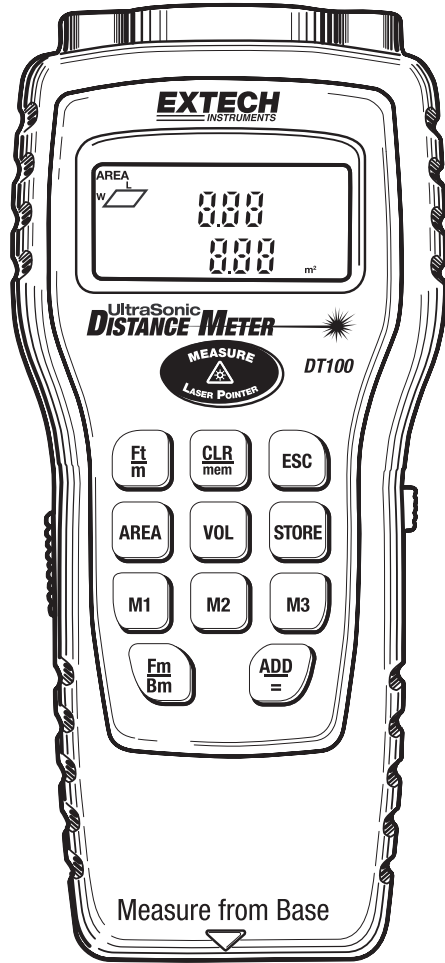


User Guide



Ultrasonic Distance Finder

Extech DT100



Introduction

Congratulations on your purchase of the Extech Model DT100 Ultrasonic Distance Finder. This meter measures distance up to 50 ft (15m), calculates area and volume and has a built-in flashlight. In addition, the DT100 includes a laser pointer for more accurate targeting when taking measurements. This meter is shipped fully tested and calibrated and, with proper use, will provide years of reliable service.

Safety Instructions

This meter has been designed for safe use, but must be operated with caution.

WARNING: Do not directly view or direct the laser pointer at an eye. 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.



Warranty

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for **one year** from date of shipment (a six month limited warranty applies to sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website www.extech.com for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.



Support line (781) 890-7440

Technical support: Extension 200; E-mail: support@extech.com

Repair & Returns: Extension 210; E-mail: repair@extech.com

Product specifications subject to change without notice

For the latest version of this User Guide, Software updates, and other up-to-the-minute product information, visit our website: www.extech.com
Extech Instruments Corporation, 285 Bear Hill Road, Waltham, MA 02451

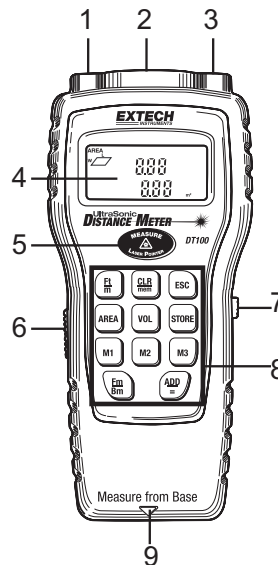
Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

Meter Description

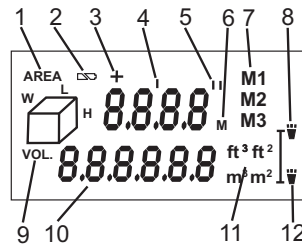
1. Flashlight
2. Ultrasonic tester
3. Laser Pointer
4. LCD display area
5. Measure and Laser Pointer button
6. Flashlight activation button
7. Meter ON/OFF switch
8. Keypad (see separate description)
9. Base reference edge

Note: The battery compartment is located on the rear of the instrument



Display Description

- | | |
|--|--|
| 1. Area in ft ² or m ² | 7. Memory indicators |
| 2. Low battery indicator | 8. Front measurement |
| 3. Addition indicator | 9. Volume in ft ³ or m ³ |
| 4. Distance "feet" indicator | 10. Memory, area/volume |
| 5. Distance "inch" indicator | 11. Area/Volume units |
| 6. Distance "meter" indicator | 12. Base measurement |



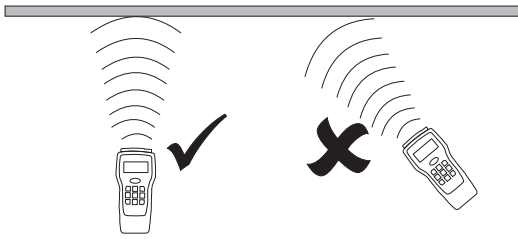
Keypad Description

| | |
|---------------------------------|-------------------|
| Ft / Meters Conversion | Memory 2 |
| Area Computation | Escape |
| Memory 1 | Memory Store |
| Front / Base distance reference | Memory 3 |
| Memory Clear | Distance Addition |
| Volume Computation | |

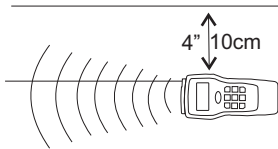
Operating Instructions

Notes and Measurement Considerations

1. For best results, choose a target that is flat, hard and smooth
2. Use a piece of cardboard or similar material if the target size needs to be increased
3. Replace the battery if the battery icon appears in the display
4. The meter will not measure through glass
5. Always measure perpendicular to the target. Do not point at an angle



6. Surfaces parallel to the measurement beam should be at least 4" (10cm) from the side, top or bottom of the meter.



7. When measuring between 40' and 50' (12m and 15m) the relative humidity should be above 50% and the target area at least 10ft x 10ft (3m x 3m)
8. Inaccurate measurements may result from any of the following:
 - a) Low battery
 - b) Measured distance exceeds specified range: 1'5" to 50' (0.5 to 15m)
 - c) Interference from other ultrasonic sources
 - d) Meter is not held perpendicular to the target
 - e) Long narrow corridors
 - f) Irregular objects near the target
9. An error message "Err" will appear in the display when:
 - a) The measured distance or calculation exceeds the specified range
 - b) The instrument is held at a wide angle to the target
 - c) The target surface is not reflective (i.e. soft and irregular surface such as carpet, curtains or irregular wall paper)

Preparation for Measurements

1. Slide the **ON –OFF** switch to the ON position.
2. Press the **FT/m** button to select the displayed units as Feet/Inches or Meters.
3. Press the **Fm/Bm** button to select the Front (top of meter) or Base (bottom of meter) distance reference. In the *Front* mode of operation, the displayed reading will represent the distance from the top of the meter to the target. In the *Back* mode of operation, the displayed reading will represent the distance from the bottom of the meter to the target.

Distance Measurements

1. Point the meter at the target.
2. Press and Hold the **READ** button
3. The meter will continuously display and update the distance in the display.
4. Release the **READ** button and the last reading will remain in the display for 60 seconds.

Adding multiple measurements

A series of measurements can be taken and summed. This feature is useful for distances greater than 50' (15m) which is the instrument's distance limit.

1. Press the **READ** button to take the first measurement.
2. Press the **ADD** button (+ will appear in the display).
3. Press the **READ** button again to take another measurement.
4. The sum of the two measurements will now be indicated on the meter's display.
5. Repeat steps 2 and 3 as needed to a display limit of 99' 11" (99.99m)

Area Calculation

The DT100 allows the user to compute the area of a room.

1. Press the **AREA** button.
2. An '**L**' will flash in the display on the two dimensional box icon to indicate that a Length measurement is to be taken.
3. Press **READ** to take the room length measurement.
4. A '**W**' will now flash to indicate that a Width measurement is to be taken next.
5. Press the **READ** button to measure the room width.
6. The Area will be indicated in the lower portion of the meter's display.
7. To redo the Area measurement, press the **ESC** button and then repeat steps 1 through 6.
8. To enter a new mode of operation press the **ESC** button and proceed to a new task.
9. To store a reading in memory, press the **M1**, **M2**, or **M3** key to select a memory location. A short beep will sound indicating that the memory was stored.
10. Press **ESC** to continue.

Volume Calculation

The DT100 allows the user to compute the volume of a room.

1. Press the **VOL** button.
2. An '**L**' will flash in the display on the three dimensional box icon to indicate that a Length measurement is to be taken.
3. Press **READ** to take the room length measurement.
4. A '**W**' will now flash to indicate that a Width measurement is to be taken next.
5. Press the **READ** button to measure the room width.
6. An '**H**' will now flash to indicate that a Height measurement is to be taken next.
7. Press the **READ** button to measure the room height.
8. The Volume will be indicated in the lower portion of the meter's display.
9. To redo the Volume measurement, press the **ESC** button and then repeat steps 1 through 6.
10. To enter a new mode of operation press the **ESC** button and proceed to a new task.
11. To store a reading in memory, press the **M1**, **M2**, or **M3** key to select a memory location. A short beep will sound indicating that the memory was stored.
12. Press **ESC** to continue.

Storing Readings in Memory Locations M1, M2, and M3

The DT100 allows the user to store up to three (3) readings in memory for later recall.

1. Take a reading as previously described.
2. With the reading displayed, press the **STORE** button. The M1, M2, and M3 indicators will appear in the display.
3. Press the **M1**, **M2**, or **M3** button to select a memory location to save the currently displayed reading. A short beep will sound indicating that the reading was stored.
4. Press the **ESC** button at any time to abort the storage session.
5. If a reading exists in a particular memory location saving it again will overwrite the existing reading.
6. Readings are not saved after the meter is turned off.

Viewing Stored Reading

Simply press the **M1**, **M2**, or **M3** button to view the reading currently stored in that location.

Clearing Stored Readings

1. Press the **M1**, **M2**, or **M3** button to access a memory location and view the reading that is to be erased.
2. Press the **CLR** button to erase the currently selected memory location.

Flashlight

1. Slide the **ON –OFF** switch to the **OFF/LIGHT** position.
2. Press the **LIGHT** button on the side of the meter to turn the flashlight on.

Maintenance

WARNING: Do not operate the meter until the battery compartment cover is in place and fastened securely.

This instrument is designed to provide years of dependable service, if the following care instructions are performed:

1. **Keep the meter dry and free from dust.**
2. **Use and store the meter in nominal temperature conditions.** Temperature extremes can shorten the life of the electronic parts and distort or melt plastic parts.
3. **Handle the meter carefully and avoid shock and vibration.** Dropping the meter may damage the electronic parts or the case.
4. **Keep the meter clean.** Wipe the case occasionally with a damp cloth. DO NOT use chemicals, cleaning solvents, or detergents.
5. **Use only fresh batteries of the correct type.** Remove old or weak batteries so they do not leak and damage the unit.
6. **If the meter is to be stored for long periods,** the batteries should be stored separately to prevent damage to the unit.

Battery Installation/Replacement

When the low battery symbol appears on the display or when the display does not switch ON, replace the 9V battery.

1. Slide the ON-OFF switch to OFF before replacing the battery.
2. Slide down the rear battery compartment cover.
3. Un-snap the old battery and replace with a fresh one.
4. Replace the battery compartment cover.

Auto Power OFF

When the **READ** button is released during a test, the measurement value remains on the LCD for 60 seconds. After 60 seconds the meter automatically shuts OFF; this is to preserve the battery. Slide the ON-OFF switch from OFF to ON in order to start another test after the Auto Power OFF timer turns the instrument OFF.

Specifications

General Specifications

| | |
|----------------------|--|
| Laser diode | Class IIIa (Class 2) red laser; 630 to 670nm |
| Battery | 9V alkaline battery |
| Operating conditions | 39 to 102°F (0 to 39°C) |
| Dimensions | 5.4 x 2.4 x 1.7" (136 x 61.5 x 44mm) |
| Weight | Approximately 4.1 oz. (117g) excluding battery |
| Recommended use | For indoor use only |

Range Specifications

| | |
|----------------|---|
| Distance Range | 1' 8" to 50' (0.5 to 15m) |
| Resolution | 0.1" (0.01m) |
| Accuracy | ± (0.3% +1 least significant display digit) within 20' (6m) |

Displayed Calculation Ranges

| | |
|----------------------|--|
| Length | 99' 11" (99.99m) |
| Area | 999.99 sq. ft. (999.99m ²) |
| Volume | 999.99 cu. ft. (999.99m ³) |
| Calculation rounding | Calculations are rounded up or down 2 least significant digits |

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