

CDM-50 & CDM-75

CABLE DISTANCE METERS

Operating & Instruction Manual



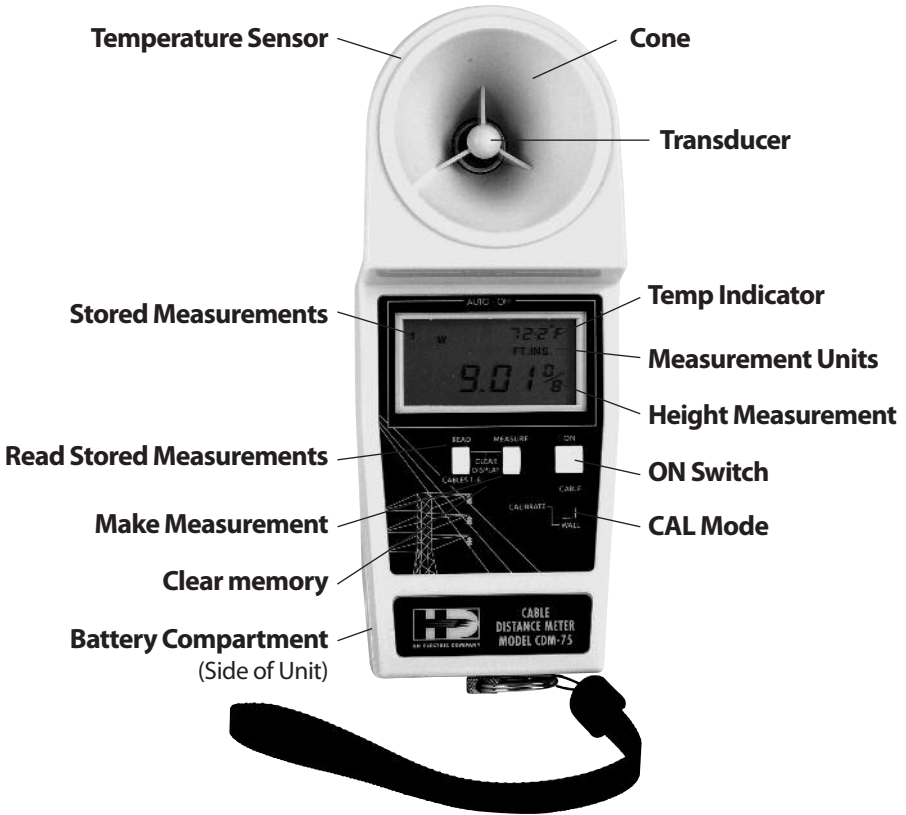
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INTRODUCTION

The Cable Distance Meter is a unique, handheld instrument, primarily used for the measurement of the height of overhead cables. The Cable Distance Meters measure up to 6 cables.

The CDM-50 model measures to a height of up to 50 feet (15m). The CDM-75 model has an increased range of up to 75 feet (23m). The unit operates by transmitting an ultra-sonic signal towards the wires, and measuring the time it takes to pick up the echo from that signal. It automatically compensates for the fact that the speed of sound varies with temperature by monitoring the ambient temperature using the internal temperature sensor. The display continuously shows the ambient temperature reading. Because the temperature sensor reacts relatively slowly to large temperature changes, it is necessary to wait up to 10 minutes for the temperature reading to stabilize after taking the meter suddenly from a warm to a cold environment before taking a measurement, e.g. taking the unit from inside a warm vehicle to outside. Isolate the CDM from any hot surface such as sun warmed pavement using a notebook or several sheets of paper.



TO MAKE A MEASUREMENT

1. Select the required measurement units by setting the switch at the back of the unit to display in feet and inches (I) or meters (M).
2. Set the Calibrate switch to the CABLE position.
3. Press the ON key to power on the unit.
4. Position unit directly under the cable(s) to be measured.
5. Press and hold the MEASURE key to take a measurement. The distance to the first cable is shown in the Height Measurement location in the display. If there is more than one cable present, the difference in height between each cable is stored in memory.
6. Press the READ CABLES 1-6 key to display each of the cable height differences stored in memory (Stored Measurements). The unit will automatically turn off 3 minutes after the last key has been pressed.

All measurements are displayed in the format feet.inches followed by fractions of an inch.



Hints & Guidelines

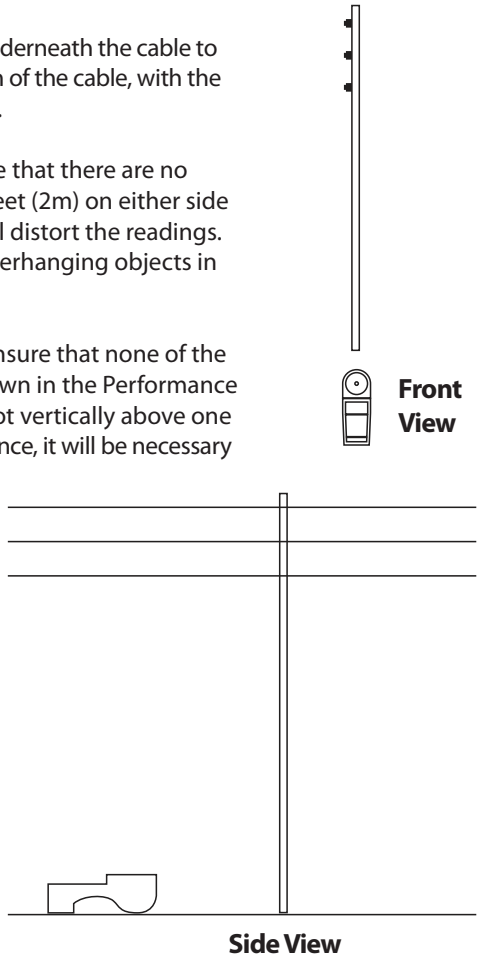
Position the unit on the ground, directly underneath the cable to be measured. Align the unit in the direction of the cable, with the cone pointing towards the cable, as shown.

When taking cable measurements, ensure that there are no walls or buildings within a distance of 7 feet (2m) on either side of the meter, as reflections from these will distort the readings. Also ensure there are no trees or other overhanging objects in the vicinity.

When measuring more than one cable, ensure that none of the cables are outside the sonic beam, as shown in the Performance section of this manual. If the cables are not vertically above one another, this could be the case. In this instance, it will be necessary to take a number of separate readings from different positions.

Water and moisture can cause the Cable Distance Meter to malfunction. Therefore, the meter should not be used in rain or snow. If water does get into the cone, leave it upside down in a dry, warm area.

If the display shows `--- . ---`, this indicates a “poor target” and normally happens when the cables are moving due to wind, etc. Wait until the wind dies down to get an accurate reading.



CALIBRATE MODE

The Calibrate mode switch allows the user to periodically check the unit to ensure that it is still operating within specification. For cable distance measurement, this switch should be in the CABLE position. When the switch is put to the WALL position, horizontal measurements to large objects, e.g. walls, can be taken.

When the unit is first used, a horizontal reading to an object, e.g. wall, from a fixed position should be taken. The reading should be entered, together with the date, into the table below. Whenever the unit is to be checked for accuracy, a reading should be taken from the same point, noting the result and date in the table. If the reading is outside of specification, the unit should be returned to HD Electric for calibration.

Date					
Reading					

TROUBLESHOOTING

The following is a list of actions to be taken if the unit is not working properly:

SCREEN IS BLANK

Check to make sure the battery is inserted correctly. Open battery door on the bottom rear of the unit. The battery is inserted with the terminals on the inside. The + and - symbols on the battery should match the corresponding + and - symbols on the inside of the battery compartment.

UNIT DOES NOT MEASURE ALL WIRES

Ensure that horizontal distances between wires are within the sonic beam, as shown in the Performance section of this manual.

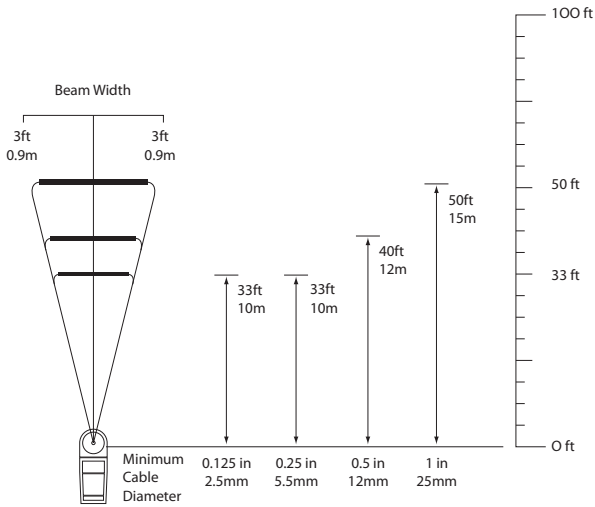
INCORRECT READINGS

Ensure the Calibrate mode switch is in correct position, i.e. CABLE for cable height measurement, and WALL for horizontal distance to object measurement. Ensure no walls or similar obstructions are within 7 feet (2m) of either side of the unit, as reflections from these can interfere with correct operation.

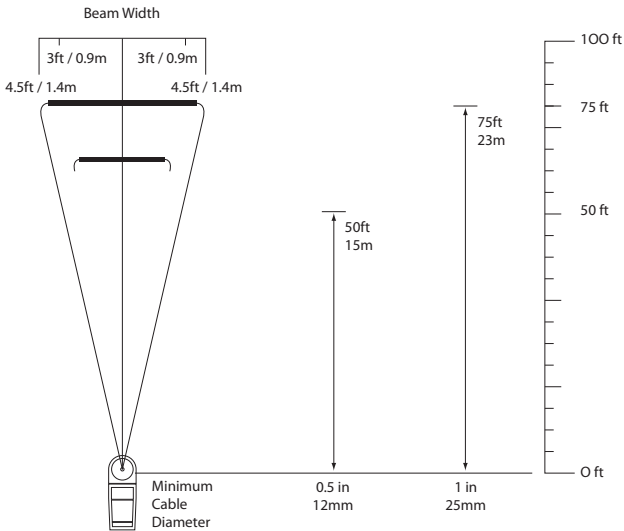
SPECIFICATIONS

	Model CDM-50	Model CDM-75
1 inch (25mm) Cable Diameter	10' - 50' (3m - 15m)	10' - 75' (3m - 23m)
0.5 inch (12mm) Cable Diameter	10' - 50' (3m - 15m)	10' - 50' (3m - 15m)
0.25 inch (5.5mm) Cable Diameter	10' - 40' (3m - 12m)	N/A
0.125 inch (2.5mm) Cable Diameter	10' - 33' (3m - 10m)	N/A
No. of wires measured	6	6
Accuracy	0.5% ± 2 digits	
Resolution (less than 33')	0.25" (5mm)	
Resolution (more than 33')	0.5" (10mm)	
Minimum gap between wires	6" (150mm)	
Operating Temp. Range	14° F to 104° F (-10° C to 40° C)	
Battery Life	50,000 measurements (Long Life Alkaline type)	
Measurement units	Imperial (feet/inches) or metric (meters)	
Auto power off delay	3 minutes	
Dimensions	8.5" x 4" x 3" (205mm x 100mm x 70mm)	
Weight	1.1 lb. (0.5kg)	

PERFORMANCE



CDM-50 Measurement versus Cable Diameter



CDM-75 Measurement versus Cable Diameter

LIMITED WARRANTY AND LIMITATION OF LIABILITY

This warranty applies to all products sold by HD Electric Company (the "Products"); provided, however, that the term Products does not include any third party products purchased through HD Electric Company, for which no warranties are made (the "Third Party Products"). Third Party Products may be subject to a separate manufacturer's warranty; [should you have any question regarding whether a separate warranty applies, please contact HD Electric Company].

NOTICE: READ THIS LIMITATION OF WARRANTY AND LIABILITY BEFORE BUYING OR USING THE PRODUCTS CONTAINED HEREIN.

It is impossible to eliminate all risks associated with the use of the Products. Risks of serious injury or death, including risks associated with electrocution, arcing and thermal burns, are inherent in work in and around energized electrical systems. Such risks arise from the wide variety of electrical systems and equipment to which Products may be applied, the manner of use or application, weather and environmental conditions or other unknown factors, all of which are beyond the control of HD Electric Company.

HD Electric Company does not agree to be an insurer of these risks, and shall have no liability for any claims arising from such risks.

WHEN YOU BUY OR USE THESE PRODUCTS, YOU AGREE TO ACCEPT THESE RISKS.

HD Electric Company warrants to the original purchaser that the Products (excluding any third party products purchased through HD Electric Company, for which no warranties are made) will be free from defects in material and workmanship, under normal use and regular service, and preventative maintenance for a period of one (1) year (ten (10) years for HDE Capacitor Controls) from the date of shipment (the "Warranty Period"). Should any failure to conform with this warranty be found during the Warranty Period, you must notify HD Electric Company of your claim within thirty (30) days of discovery, and within the Warranty Period. Your failure to give notice of claims of breach of warranty within the Warranty Period shall be deemed an absolute and unconditional waiver of claims for such defects. HD Electric Company will have no responsibility to honor claims received after the date the applicable Warranty Period expires.

Upon notice of your claim, HD Electric Company will provide a return authorization number, and further instructions on how to return the product for service. You must follow HD Electric Company's instruction. You are responsible for all Product removal, handling, re-installation, and shipping (both to and from HD Electric Company). Products returned for repair, as well as repaired or replacement Products shall be sent postage / freight prepaid. After receipt of a product which HD Electric Company determines is defective, HD Electric will, at its option, either (1) repair (or authorize the repair of) the Product or (2) replace the Product, subject to the following: The Products are made using parts sourced from a variety of manufacturers. Due to the rapidly changing technology environment, parts may become obsolete / unavailable over time (end of life). In the event that a Product cannot be repaired or replaced due to unavailability of parts, HD Electric Company will use commercially reasonable efforts to obtain substitute parts or conduct work around design, but cannot guarantee its ability to do so.

Items not found defective will be returned at your expense, or failing receipt of instruction from you on return of such items within five (5) business days of our notice to you that the product is not defective, HD Electric may dispose of the product at its discretion and with no liability to you. HD Electric Company's determination of defects is final. Products repaired or replaced during the Warranty Period shall be covered by the foregoing warranties for the remainder of the original Warranty Period or ninety (90) days from the date of delivery of the repaired or replaced Products, whichever is longer.

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This warranty does not cover failure of product or components due to any ACT OF NATURE; lightning, floods, hurricanes, tornadoes or any other such catastrophic events.

HD Electric Company does not warrant any third party products or associated hardware or their performance or suitability for use and application. Such items are provided "as-is".

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HD Electric Company is not required to make replacement or loaner equipment available while Products are being repaired or replaced, or to compensate you for any in/out labor charges or expenses associated with removal, handling or re-installation of the Products.

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