P/N 994750
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OPERATING INSTRUCTIONS for AMPROBE DIGITAL MULTIMETER Model CDM-1

AMPROBE INSTRUMENT®
DIVISION OF CORE INDUSTRIES INC., LYNBROOK, NEW YORK 11563

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Limited Warranty

Congratulations! You are now the owner of an AMPROBE Instrument. It has been crafted according to quality standards and contains quality components and workmanship. This instrument has been inspected for proper operation of all of its functions. It has been tested by qualified factory technicians according to the long established standards of AMPROBE INSTRUMENT.

Your AMPROBE instrument has a limited warranty against defective materials, and/or workmanship for one year from the date of purchase provided that, in the opinion of the factory, the instrument has not been tampered with or taken apart.

Should your instrument fail due to defective materials and/or workmanship during the one year warranty period, return it along with a copy of your dated bill of sale which must identify instrument by model number and serial number.

For your protection, please use the instrument as soon as possible. If damaged, or should the need arise to return your instrument, it must be securely wrapped (to prevent damage in transit) and sent prepaid via Air Parcel Post insured or U.P.S. where available to:

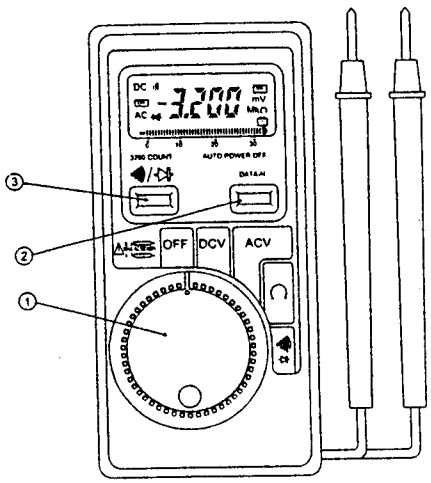
Service Division
AMPROBE INSTRUMENT
630 Merrick Road (For U.P.S.)
P.O. Box 329 (For P.P.)
Lynbrook, NY 11563-0329

Outside the U.S.A. the local Amprobe representative will assist you. Above limited warranty covers repair and replacement of instrument only and no other obligation is stated or implied

PRECAUTIONS FOR PERSONAL AND INSTRUMENT PROTECTION

1) Read these instructions thouroughly and follow them carefully.
2) In many instances, you will be working with dangerous levels of voltage ; therefore, it is important that you avoid direct contact with any uninsulated, current carrying surfaces. Appropriate insulating gloves, clothing and eye protection should be worn.
3) Before connecting or disconnecting the meter to or from the circuit to be tested, turn off all power to the circuit.
4) Before applying test leads to circuit under test, make certain that the selector switches are set to the proper range and function.
5) Before using any electrical instrument or tester for actual testing, the unit should be checked on a known live line to make certain it is operating properly.
6) If the instrument should indicate that voltage is not present in circuit, do not touch circuit until you have checked to see that all instrument switches are in proper position and instrument has been checked on a known live line.
7) Make certain no voltage is present in circuit before connecting ohmmeter to circuit.
8) When not in use, set selector switch to "OFF" position.

IMPORTANT: Failure to follow these instructions and/or observe the above precautions may result in personal injury and/or damage to the instrument and/or accessories.



1. Function switch
2. Data hold switch
3. ·))/⊣ selection switch

INTRODUCTION

This Credit Card Digital Multimeter incorporates the latest technology to provide you with a feature packed instrument.
With it you can measure a wide range of voltage and resistance in the lab, shop, car and home. This product has been designed for the Electrician and Technician.

FEATURES

Auto Power Shut-Off - saves battery life.
Data Hold - allows you to freeze the displayed reading after removing test leads.
Continuity Buzzer - easily check for continuity.
Diode Check - test diodes and other semiconductors for open and short circuits.
Low Battery Indicator - warns you when the batteries require replacing.
Auto-Ranging - automatically sets the optimum measuring range.
Overload Protection - protects the meter from overvoltage and incorrect range selection.
Auto-Polarity - indication on display that polarity is reversed.
Fast Sampling - bar graph display is updated 12 times per second and numerical display is updated 2 times per second.

SPECIAL FUNCTIONS

DATA HOLD: When making measurements you may freeze the display by pressing the DATA HOLD switch. The value continues to display even when you remove the test leads from the circuit. Press the DATA HOLD again to release the data hold. When this feature is used, the DH appears in the display.

BAR GRAPH: This high speed bar graph display allows you to easily see variations while making measurements. The length of the bar graph changes with the measurement.

DC VOLTAGE MEASUREMENT

⚠ **WARNING:** Maximum input is 450V DC.

1. Set the function switch to 'DC V' position.
2. 'DC' appears on the left side of the display.
3. Apply the test leads to the circuit to be measured. Ensure that the black lead is connected to the negative side of the circuit and the red lead to the positive.
4. Read the displayed voltage.
5. If the minus (-) sign appears, the voltage is negative at the point being measured.

AC VOLTAGE MEASUREMENT

⚠ **WARNING:** Maximum input is 450VAC RMS

1. Set the function switch to the 'AC V' position.
2. 'AC' appears on the left side of the display.
3. Apply the test leads to the circuit to be measured. Attention to polarity is not required for AC circuits.
4. Read the displayed voltage.

RESISTANCE MEASUREMENT

⚠ **WARNING:** Remove all power from circuit being tested when checking resistance. Discharge any charged capacitors. Never connect the probes to any voltage while the selector is set to "Ω".

1. Set the function switch to the "Ω" position.
2. "Ω" appears on the right side of the display.
3. Attach the test leads to the circuit.
4. Read the displayed resistance.

NOTE: If you short the test leads together, you will notice a small resistance reading. This is due to the meter and test lead's internal resistance. When measuring a small resistance, subtract this value to obtain a more precise value.

CONTINUITY TEST

⚠ **WARNING:** Remove all power from the circuit being tested when checking continuity. Discharge any charged capacitors. Never connect the probes to any voltage while the selector is set to "•))/⇥".

1. Set the function switch to the "•))/⇥" position.
2. "•))" appears on the left side of the display.
3. Attach the test leads to the circuit.
4. The buzzer will sound when the circuit has less than 20Ω resistance and the measured resistance value will be displayed.

DIODE TEST

⚠ **WARNING:** Remove all power from circuit being tested when using the diode check. Discharge any charged capacitors. Never connect the probes to any voltage while the selector is set to "•))/⇥".

1. Set the function switch to "•))/⇥" position.
2. Press •))/⇥ switch so that "▶|" appears on the left side of the display.
3. Connect the probes to the device you want to test. Note the meter reading.
4. Reverse the probes and note this reading.
5. If both values are over-ranged "OL", the device is open. If both values are very small, the device is shorted. If one reading indicates a small voltage (0.4-0.7V) and the other is over ranged "OL", then the device is good.

BATTERY REPLACEMENT

⚠ **WARNING:** Disconnect both test leads from any equipment before removing back cover. Do not use meter with the case opened.

1. Disconnect both test leads and set the function switch to 'OFF'.
2. Remove the battery cover on the rear cover of the case.
3. Replace the two LR-44 or 357 batteries ensuring correct polarity.
4. Replace the cover.

SPECIFICATIONS

Display:	3 3/4 digit, LCD with 2 times/ second sampling, 3200 counts
Bar Graph Display:	32 Segments with 12 times/second sampling
Ranging:	Auto-ranging
Polarity:	Automatic, minus(-) sign indicates for negative polarity.
Data Hold:	Freezes displayed reading
Overload Protection:	450V DC/AC RMS for 10 Seconds Maximum
Power Source:	2 x LR-44 or 357 Cells
Power Consumption:	5mW (Typical)
Auto Power Off:	Shut off time 10 Minutes
Battery Life:	Over 70 Hours
Operating Temperature:	32° to 104°F (0° to 40°C) @ 80% RH
Storage Temperature:	-4° to 140°F (-20° to 60°C) @ 80% RH
Dimensions:	2.1" (W) x 4.3"(H) x 0.5" (D) 54(W) x 108(H) x 12(D)mm
Weight:	3.5 oz. (100g) (including batteries and case)

RANGES AND ACCURACY

DC Voltage:

320mV ±1.3% of reading and ±2 digits
3.2V ±0.7% of reading and ±2 digits
32-320-450V ±1.3% of reading and ±2 digits
(Maximum measurement = 450V)

AC Voltage:

3.2-32-320-450V ±2.3% of reading and ±5 digits
(Maximum measurement = 450V RMS)

Resistance:

320Ω ±2.0% of reading and ±4 digits
3.2-32-320KΩ ±2.0% of reading and ±2 digits
3.2MΩ ±6.0% of reading and ±2 digits
29MΩ ±10% of reading and ±5 digits

Input Impedance:

10MΩ (DCV/ACV), greater than 1000MΩ on 320mVDC

REPLACEMENT PARTS

Description	Part No.
Batteries (2)	LR-44 or 357

TROUBLESHOOTING

If there appears to be a malfunction during the operation of the meter, the following steps should be performed in order to isolate the cause of the problem.

1. Check the battery.
2. Review operating instructions for possible mistakes in operating procedure.
3. Inspect and test the test probes for a broken or intermittent connection.
4. If the instrument still malfunctions, place it in a sufficiently cushioned shipping carton along with a packing slip with a brief description of the problem. Be sure to indicate the serial number located on the back of the instrument. Amprobe is not responsible for damage in transit. Make certain your name and address also appear on the box as well as the packing slip. Ship prepaid via U.P.S. (where available) or Air Parcel Post insured to:

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Outside the USA, the local Amprobe representative will assist you.

For technical assistance call 1-800-477-8658