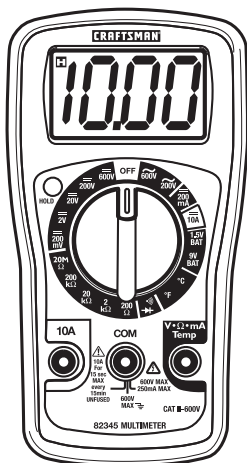


Owner's Manual

CRAFTSMAN

Manual Ranging MultiMeter

Model 82345



CAUTION: Read, understand and follow Safety Rules and Operating Instructions in this manual before using this product.

- Safety
- Operation
- Maintenance
- Español

© Sears, Roebuck and Co., Hoffman Estates, IL 60179 U.S.A.
www.craftsman.com 080806

TABLE OF CONTENTS

	Page
Warranty	3
Safety Instructions	4
Safety Symbols	5
Control and Jacks	6
Symbols and Annunciators	6
Specifications	7
Battery Installation	10
Operating Instructions	11
DC Voltage Measurements	11
AC Voltage Measurements	12
DC Current Measurements	13
Resistance Measurements	14
Temperature Measurements	14
Diode Test	15
Continuity Test	15
Battery Test	16
Data Hold	16
Maintenance	17
Replacing the Battery	18
Replacing the Fuse	18
Troubleshooting	19
Service and Parts	19

ONE YEAR FULL WARRANTY

ONE YEAR FULL WARRANTY ON CRAFTSMAN MULTIMETER

If this CRAFTSMAN Multimeter fails to give complete satisfaction within one year from the date of purchase, RETURN IT TO THE NEAREST SEARS STORE OR OTHER CRAFTSMAN OUTLET IN THE UNITED STATES, and Sears will replace it, free of charge.

This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Sears, Roebuck and Co., Dept. 817WA, Hoffman Estates, IL 60179

For Customer Assistance Call 9am - 5pm (ET)

Monday through Friday 1-888-326-1006

WARNING: USE EXTREME CAUTION IN THE USE OF THIS

DEVICE. Improper use of this device can result in injury or death. Follow all safeguards suggested in this manual in addition to the normal safety precautions used in working with electrical circuits. DO NOT service this device if you are not qualified to do so.

SAFETY INSTRUCTIONS

This meter has been designed for safe use, but must be operated with caution. The rules listed below must be carefully followed for safe operation.

1. **NEVER** apply voltage or current to the meter that exceeds the specified maximum:

Input Protection Limits	
Function	Maximum Input
V DC or V AC	600V AC and DC
mA DC	200mA DC
A DC	10A DC (for 15 seconds max. every 15 minutes)
Resistance, Diode Test, Continuity	500V DC/AC

2. **USE EXTREME CAUTION** when working with high voltages.
3. **DO NOT** measure voltage if the voltage on the "COM" input jack exceeds 600V above earth ground.
4. **NEVER** connect the meter leads across a voltage source while the function switch is in the current, resistance, or diode mode. Doing so can damage the meter.
5. **ALWAYS** discharge filter capacitors in power supplies and disconnect the power when making resistance or diode tests.
6. **ALWAYS** turn off power and disconnect test leads before opening the covers to replace the fuse or battery.
7. **NEVER** operate the meter unless the back cover is in place and fastened securely.
8. If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

SAFETY SYMBOLS



This symbol adjacent to another symbol, terminal or operating device indicates that the operator must refer to an explanation in the Operating Instructions to avoid personal injury or damage to the meter.

WARNING

This **WARNING** symbol indicates a potentially hazardous situation, which if not avoided, could result in death or serious injury.

CAUTION

This **CAUTION** symbol indicates a potentially hazardous situation, which if not avoided, may result damage to the product.



This symbol advises the user that the terminal(s) so marked must not be connected to a circuit point at which the voltage with respect to earth ground exceeds 600V.



This symbol adjacent to one or more terminals identifies them as being associated with ranges that may, in normal use, be subjected to particularly hazardous voltages. For maximum safety, the meter and its test leads should not be handled when these terminals are energized.

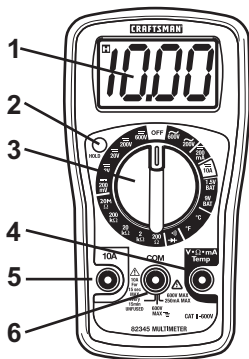


This symbol indicates that a device is protected throughout by double insulation or reinforced insulation.





CONTROLS AND JACKS

1. LCD Display
2. Hold push-button
3. Rotary function dial
4. Test lead jack for voltage, milli-amp, resistance and temperature
5. Test lead jack for amps
6. COM test lead jack

Note: Tilt stand and battery access is on the rear of unit.



SYMBOLS AND ANNUNCIATORS

	AC (voltage)
	DC (direct current or voltage)
	Continuity and Diode test
mV, V	millivolt, volt (voltage)
Ω , k Ω , M Ω	ohm, kilohm, megohm (resistance)
mA, A	milliamp, Amp (current)
$^{\circ}$ F, $^{\circ}$ C	Degrees Fahrenheit, Centigrade (temperature)
	Low battery
H	Display hold

SPECIFICATIONS

Function	Range	Accuracy
DC Voltage (V DC)	200.0mV	±(0.5% reading + 2 digits)
	2.000V	
	20.00V	
	200.0V	
	600V	±(0.8% reading + 2 digits)
AC Voltage (V AC) (40 - 400Hz)	200.0V	±(1.2% reading + 10 digits)
	600V	
DC Current (A DC)	200.0mA	±(1.5% reading + 2 digits)
	10.00A	±(3.0% reading + 5 digits)
Resistance	200.0Ω	±(0.8% reading + 4 digits)
	2.000kΩ	±(0.8% reading + 2 digits)
	20.00kΩ	
	200.0kΩ	
	20.00MΩ	±(3.0% reading + 3 digits)
Temp °F	-4 to 59°F	±(2.5% reading + 19 digits)
	60 to 750°F	±(1.0% reading + 9 digits)
	751 to 1400°F	±(2.5% reading + 19 digits)
Temp °C	-20 to 16°C	±(2.5% reading + 10 digits)
	17 to 400°C	±(1.0% reading + 5 digits)
	400 to 750°C	±(2.5% reading + 10 digits)
	(probe accuracy not included)	


SPECIFICATIONS

NOTES:

Accuracy specifications consist of two elements:

- (% reading) – This is the accuracy of the measurement circuit.
- (+ digits) – This is the accuracy of the analog to digital converter.

Accuracy is stated at 65°F to 83°F (18°C to 28°C) and less than 75% RH.

Diode Test	Test current of 1mA maximum, open circuit voltage 2.8V DC typical
Continuity Check	Audible signal will sound if the resistance is less than approximately $<40\Omega \pm 5\Omega$
Temperature sensor	Requires type K thermocouple
Input Impedance	10M Ω (VDC) and 4.5M Ω (VAC)
Display	1999 count LCD
Overrange	“1 or -1” is displayed
Polarity	Automatic (no indication for positive polarity); Minus (-) sign for negative polarity.
Measurement Rate	3 times per second, nominal
Low Battery	“  ” is displayed if battery voltage drops below operating voltage
Battery	Requires one 9V battery (NEDA 1604 or equivalent)
Fuses	mA range; 250mA/250V fast blow 10A range, no protection

SPECIFICATIONS

Operating Temp	32°F to 104°F (0°C to 40°C)
Storage Temp	-4°F to 140°F (-20°C to 60°C)
Relative Humidity	Maximum relative humidity 80% for temperatures up to 31°C decreasing linearly to 50% relative humidity at 40°C.
Operating Altitude	7000ft (2000 meters) maximum.
Weight	5.4 oz. (153g).
Size	5.43" x 2.83" x 1.5" (138mm x 72mm x 38mm)
Approvals	UL, CE
Safety	This meter is intended for indoor use and protected, against the users, by double insulation per EN61010-1 and IEC61010-1 2nd Edition (2001) to CAT II 600V; Pollution Degree 2. The meter also meets UL 61010-1, Second Edition (2004), CAN/CSA C22.2 No. 61010-1, Second Edition (2004), and UL 61010B-2-031, First Edition (2003)

BATTERY INSTALLATION

WARNING: To avoid electric shock, disconnect the test leads from any source of voltage before removing the battery/fuse cover.

1. Disconnect the test leads from the meter.
2. Remove the rubber holster (if in place).
3. Remove the two screws securing the rear cover using a Phillips head screwdriver.
4. Lift the cover off and replace the battery observing the correct polarity.
5. Insert the new battery into the battery holder.

Replace the rear cover and secure with the screws.

WARNING: To avoid electric shock, do not operate the meter until the battery cover is in place and fastened securely.

NOTE: If your meter does not work properly, check the fuses and battery to make sure that they are still good and that they are properly inserted.

OPERATING INSTRUCTIONS

WARNING: Risk of electrocution. High-voltage circuits, both AC and DC, are very dangerous and should be measured with great care.

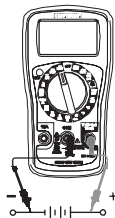
1. ALWAYS turn the function switch to the OFF position when the meter is not in use.
2. Press the HOLD button to freeze a displayed reading

NOTE: On some low AC and DC voltage ranges, with the test leads not connected to a device, the display may show a random, changing reading. This is normal and is caused by the high-input sensitivity. The reading will stabilize and give a proper measurement when connected to a circuit.

DC VOLTAGE MEASUREMENTS

CAUTION: Do not measure DC voltages if a motor on the circuit is being switched ON or OFF. Large voltage surges may occur that can damage the meter.

1. Set the function switch to the highest V DC position.
2. Insert the black test lead banana plug into the negative (COM) jack. Insert the red test lead banana plug into the positive (V) jack.
3. Touch the black test probe tip to the negative side of the circuit.
Touch the red test probe tip to the positive side of the circuit.
4. Read the voltage in the display. Reset the function switch to successively lower V DC positions to obtain a higher resolution reading. The display will indicate the proper decimal point and value. If the polarity is reversed, the display will show (-) minus before the value.



AC VOLTAGE MEASUREMENTS

WARNING: Risk of Electrocution. The probe tips may not be long enough to contact the live parts inside some 240V outlets for appliances because the contacts are recessed deep in the outlets. As a result, the reading may show 0 volts when the outlet actually has voltage on it. Make sure the probe tips are touching the metal contacts inside the outlet before assuming that no voltage is present.

CAUTION: Do not measure AC voltages if a motor on the circuit is being switched ON or OFF. Large voltage surges may occur that can damage the meter.

1. Set the function switch to the highest V AC position.
2. Insert the black test lead banana plug into the negative (COM) jack. Insert red test lead banana plug into the positive (V) jack.
3. Touch the black test probe tip to the negative side of the circuit. Touch the red test probe tip to the positive side of the circuit.
4. Read the voltage in the display. Reset the function switch to successively lower V AC positions to obtain a higher resolution reading. The display will indicate the proper decimal point and value.



DC CURRENT MEASUREMENTS

CAUTION: Do not make current measurements on the 10A scale for longer than 30 seconds. Exceeding 30 seconds may cause damage to the meter and/or the test leads.

1. Insert the black test lead banana plug into the negative (COM) jack.
2. For current measurements up to 200mA DC, set the function switch to the 200mA DC position and insert the red test lead banana plug into the (mA) jack.
3. For current measurements up to 10A DC, set the function switch to the 10A range and insert the red test lead banana plug into the (10A) jack.
4. Remove power from the circuit under test, then open up the circuit at the point where you wish to measure current.
5. Touch the black test probe tip to the negative side of the circuit. Touch the red test probe tip to the positive side of the circuit.
6. Apply power to the circuit.
7. Read the current in the display. The display will indicate the proper decimal point and value.



RESISTANCE MEASUREMENTS

WARNING: To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any resistance measurements. Remove the batteries and unplug the line cords.

1. Set the function switch to the highest Ω position.
2. Insert the black test lead banana plug into the negative (COM) jack
Insert the red test lead banana plug into the positive Ω jack.
3. Touch the test probe tips across the circuit or part under test. It is best to disconnect one side of the part under test so the rest of the circuit will not interfere with the resistance reading.
4. Read the resistance in the display and then set the function switch to the lowest Ω position that is greater than the actual or any anticipated resistance. The display will indicate the proper decimal point and value.



TEMPERATURE MEASUREMENTS

WARNING: To avoid electric shock, disconnect test leads from any source of voltage before making a temperature measurement. Be sure that the thermocouple has been removed before changing to any other measurement function.

1. Insert the type K thermocouple probe into the **V/ Ω /mA Temp** and **COM** jacks.
2. Turn the rotary switch to the $^{\circ}\text{F}$ or $^{\circ}\text{C}$ position.
3. Read the temperature on the display.



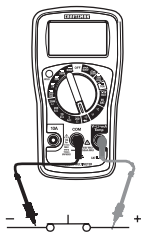
DIODE TEST

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive diode jack.
2. Turn the function switch to the **▶/•)))** position.
3. Touch the test probes to the diode under test. Forward voltage will indicate 0.4V to 0.7V. Reverse voltage will indicate "1". Shorted devices will indicate near 0mV. Shorted devices will indicate near 0mV and an open device will indicate "1" in both polarities.



CONTINUITY TEST

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **V/Ω/mA** jack. Observe polarity.
2. Turn the rotary switch to the **▶/•)))** position.
3. Touch the test probes to the circuit or device under test. If the resistance is less than approximately 40Ω the buzzer will sound.



BATTERY TEST

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the positive **V** jack.
2. Select the **1.5V** or **9V BAT** position using the function switch.
3. Connect the red test lead to the positive side of the 1.5V or 9V battery and the black test lead to the negative side of the 1.5V or 9V battery.
4. Read the voltage in the display.



	Good	Weak	Bad
9V battery:	>8.2V	7.2 to 8.2V	<7.2V
1.5V battery:	>1.35V	1.22 to 1.35V	<1.22V

DATA HOLD

Press the **Hold** button to freeze the reading in the display. "H" will appear in the LCD. Press the key again to release the display.

MAINTENANCE

WARNING: To avoid electric shock, disconnect the test leads from any source of voltage before removing the back cover or the battery or fuse cover.


WARNING: To avoid electric shock, do not operate your meter until the battery and fuse cover are in place and fastened securely.

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

1. **KEEP THE METER DRY.** If it gets wet, wipe it off.
2. **USE AND STORE THE METER IN NORMAL TEMPERATURES.** Temperature extremes can shorten the life of the electronic parts and distort or melt plastic parts.
3. **HANDLE THE METER GENTLY AND CAREFULLY.** Dropping it can 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 RECOMMENDED SIZE AND TYPE.** Remove old or weak batteries so they do not leak and damage the unit.
6. **IF THE METER IS TO BE STORED FOR A LONG PERIOD OF TIME,** the batteries should be removed to prevent damage to the unit.

REPLACING THE BATTERY

WARNING: To avoid electric shock, disconnect the test leads from any source of voltage before removing the battery cover.

1. When the battery become exhausted or drop below the operating voltage, “” will appear in the lower left corner of the LCD display. The battery should be replaced.
2. Follow instructions for installing battery. See the Battery Installation section of this manual.
3. Dispose of the old batteries properly.

WARNING: To avoid electric shock, do not operate your meter until the battery cover is in place and fastened securely.

REPLACING THE FUSE

WARNING: To avoid electric shock, disconnect the test leads from any source of voltage before removing the fuse cover.

1. Disconnect the test leads from the meter and any item under test.
2. Remove the protective rubber holster.
3. Remove the two screws securing the rear cover using a Phillips head screwdriver.
4. Remove the old fuse from its holder by gently pulling it out.
5. Install the new fuse into the holder.
6. Always use a fuse of the proper size and value (250mA/250V) fast blow.
7. Replace the rear cover and secure with the screws.

WARNING: To avoid electric shock, do not operate your meter until the fuse cover is in place and fastened securely.

UL LISTED

The UL mark does not indicate that this product has been evaluated for the accuracy of its readings.

TROUBLESHOOTING

There may be times when your meter does not operate properly. Here are some common problems that you may have and some easy solutions to them.

Meter Does Not Operate:

1. Always read all the instructions in this manual before use.
2. Check to be sure the battery is properly installed.
3. Check to be sure the battery is good.
4. If the battery is good and the meter still does not operate, check to be sure that both ends of the fuse are properly installed.

If You Do Not Understand How the Meter Works:

1. Purchase the instructional book *Multitesters and Their Use for Electrical Testing* (Item No. 82303) at your local Sears store.
2. Call our Customer Service Line **1-888-326-1006**.

SERVICE AND PARTS

Item Number	Description
82374	Fuse kit
93894	9V battery
82378	Set of black and red Test Leads
82345-CS	Rear cover screws
82377	Temperature probe