

REED

Model R5020

AC Clamp Meter

Instruction Manual



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REED Instruments

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Safety

- Do not exceed the maximum allowable input range of any function
- Do not apply voltage to the meter when resistance function is selected
- Set the function switch OFF when the meter is not in use

Warning

- Set the function switch to the appropriate position before measuring
- When measuring volts do not switch to current/resistance modes
- When changing ranges using the selector switch always disconnect the test leads from the circuit under test
- Do not exceed the maximum rated input limits

Caution

- Improper use of this meter can cause damage, shock, injury or death
- Read and understand this user manual before operating the meter
- Always remove the test leads before replacing the battery
- Inspect the condition of the test leads and the meter itself for any damage before operating
- Repair or replace any damage before use
- Use great care when taking measurements if the voltages are greater than 25VAC RMS or 35VDC as they are considered a shock hazard
- Remove the battery if the meter is to be stored for long periods
- Always discharge capacitors and remove power from the device under test before performing diode, resistance, or continuity tests
- Voltage checks on electrical outlets can be difficult and misleading because of the uncertainty of connection to the recessed electrical contacts
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired

Features

- Measures AC current, AC and DC voltage, resistance, capacitance, and temperature with the included Type K thermocouple probe
- Diode test and continuity check
- Data hold, Zero Function, and Auto Power Off
- 4000-count LCD displays low battery and over-range indications
- Cat. III 600V safety rating & UL approved

Specifications

AC Current Range:	40.00, 400.0A
AC Current Accuracy:	$\pm(2.5\% \text{ rdg.} + 8 \text{ dgt.})$
DC Voltage Range:	400.0mV, 4.000, 40.00, 400.0, 600.0V
DC Voltage Accuracy:	$\pm(1.5\% \text{ rdg.} + 2 \text{ dgt.})$
AC Voltage Range:	4.000, 40.00, 400.0, 600.0V
AC Voltage Accuracy:	$\pm(1.8\% \text{ rdg.} + 8 \text{ dgt.})$
Resistance Range:	400.0 Ω , 4.000, 40.00, 400.0k Ω , 4.000, 40.00M Ω
Resistance Accuracy:	$\pm(1.5\% \text{ rdg.} + 2 \text{ dgt.})$
Capacitance Range:	40.00, 400.0nF, 4.000, 40.00, 100.0 μ F
Capacitance Accuracy:	$\pm(3\% \text{ rdg.} + 5 \text{ dgt.})$
Temperature Range:	-20.0 to 760.0°C (-4.0 to 1400.0°F)
Temperature Accuracy:	$\pm(3\% \text{ rdg.} + 5^\circ\text{C}/9^\circ\text{F})$
Diode Test:	Test current of 0.3mA typical; Open circuit voltage 1.5V DC typical
Continuity Check:	Threshold <150 Ω ; Test current <0.5mA
Jaw Opening:	1.2" (30mm) maximum
Power Supply:	2 x 1.5V "AAA" batteries
Dimensions:	200 x 66 x 37mm
Weight:	205g

Includes:

One set of test leads, one temperature probe, batteries, and a soft carrying case

Instrument Description

1. Current clamp
2. Non-contact AC voltage indicator light
3. Clamp trigger
4. Data hold button
5. Rotary function switch
6. MODE select button
7. Hz% hold button
8. Relative button
9. LCD display
10. COM input jack
11. V Ω CAP TEMP Hz jack
12. Battery cover



Display Description

1. 4000 count main display
2. Negative reading indicator
3. AC/DC indicator
4. Auto range mode indicator
5. Diode test mode indicator
6. Audible continuity indicator
7. Data hold indicator
8. Relative mode indicator
9. Units of measurement
10. Low battery indicator
11. Temperature units



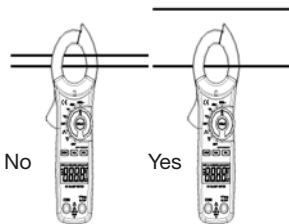
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Operating Instructions

AC Current Measurements

1. Set the function switch to the 400 or 40A range. If the range needed is not known, select the higher range first then move to the lower range if necessary.
2. Press the trigger to the open jaw and fully enclose one conductor. The LCD will display the reading.



AC/DC Voltage Measurements

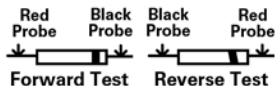
1. Insert the black test lead into the negative COM terminal and the red test lead into the positive V terminal.
2. Set the function switch to the V position, and select either AC or DC with the MODE button.
3. Connect the test leads in parallel to the circuit under test. The LCD will display the reading.

Resistance Measurements

1. Insert the black test lead into the negative COM terminal and the red test lead into the positive V terminal.
2. Set the function switch to the Ω position.
3. Touch the test probe tips across the circuit or component under test. It is best to disconnect one side of the device under test so the rest of the circuit will not interfere with the reading.
4. The LCD will display the reading.

Diode and Continuity Measurements

1. Insert the black test lead into the negative COM terminal and the red test lead into the positive V diode terminal.
2. Turn the rotary switch to the Ω position. Press the MODE button until the Diode Test indicator appears on the display.
3. Touch the test probes to the diode under test. Forward voltage will indicate 0.4V to 0.7V. Reverse voltage will be indicated by "OL". Shorted devices will indicate near 0mV and an open device will be indicated by "OL" in both polarities. For Continuity tests, if the resistance is < 150 , a tone will sound.



Capacitance Measurements

1. To avoid electric shock, disconnect power to the unit under test and discharge all capacitors before taking any capacitance measurements. Remove the batteries and unplug the line cords.
2. Set the rotary function switch to the CAP position.
3. Insert the black test lead into the negative COM terminal and the red test lead into the positive V terminal.
4. Touch the test leads to the capacitor to be tested. Read the capacitance value on the display.

Frequency or % Duty Cycle measurements

1. Set the rotary function switch to the V position.
2. Insert the black test lead into the negative COM terminal and the red test lead into the positive V terminal.
3. Select Hz or % duty with the Hz/% button.
4. Touch the test probe tips to the circuit under test. Read the frequency value on the display.

Temperature Measurements

1. To avoid electric shock, disconnect both test probes from any source of voltage before making a temperature measurement.
2. Set the function switch to °C or °F.
3. Insert the Temperature Probe into the negative COM and the positive V terminals, making sure to observe the correct polarity.
4. Touch the Temperature Probe head to the area to be measured. Keep the probe touching the part under test until the reading stabilizes (about 30 seconds).
5. Read the temperature value on the display. To avoid electric shock, be sure the thermocouple has been removed before changing to another function.

Non-Contact AC Voltage Measurements

1. Touch the probe tip to the hot conductor or insert into the hot side of the electrical outlet. If AC voltage is present, the detector will light up.
2. The conductors in electrical cord sets are often twisted. For best results, rub the probe tip along a length of the cord to assure placing the tip in close proximity to the live conductor.
3. The detector is designed with high sensitivity. Static electricity or other sources of energy may randomly trip the sensor.

Data Hold

While taking a measurement, press the Data Hold button to freeze the display. The HOLD indicator will also appear on the display. Press the Hold button again to resume measuring.

Relative Mode

Press the REL button for Capacitance Zero & Offset Adjustment.

Battery Replacement

1. Remove the Phillips screw on the back of the meter
2. Open the battery compartment
3. Replace the dead batteries and close the battery compartment

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