REED

Model R5040

1000A AC/DC True RMS Clamp Meter

Instruction Manual

www.reedinstruments.com

Table of Contents

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 and DC voltage and current, resistance, capacitance and frequency as well as temperature
- True RMS AC measurements
- Diode and continuity test with beeper
- Inrush current measurement
- 50,000-count digital display with 61-segment analog
- Bar graph and backlight
- Max/Min and Relative (zero) functions
- Data Hold function
- Auto or manual ranging
- Low battery indication and auto power-off
- Double molded plastic housing
- Conforms to EN61010 600V Cat. III

Specifications

Function	Range & Resolution	Accuracy (% of reading)
DC Current	500.00 ADC	±(2.5% + 30 dgt)
	1000.0 ADC	
AC Current	500.00 AAC	±(2.8% + 30 dgt)
	1000.0 AAC	
DC Voltage	500.00 mVDC	±(0.1% + 5 dgt)
	5.0000 VDC	±(0.1% + 4 dgt)
	50.000 VDC	
	500.00 VDC	
	1000.0 VDC	±(0.5% + 4 dgt)
AC Voltage	500.00 mVAC	±(1.0% + 40 dgt) (50/60Hz)
	5.0000 VAC	±(1.0% + 30 dgt)
	50.000 VAC	
	500.00 VAC	
	750.0 VAC	
Resistance	500.00Ω	±(1.0% + 9 dgt)
	5.0000KΩ	±(1.0% + 4 dgt)
	50.000KΩ	
	500.00KΩ	
	5.0000MΩ	±(2.0% + 10 dgt)
	50.000MΩ	±(3.0% + 10 dgt)
Capacitance	500.00nF	±(3.5% reading + 40 dgt)
	5000.0nF	±(3.5% reading + 10 dgt)
	50.00µF	
	500.0µF	
	5.000mF	±(5% reading + 10 dgt)
Frequency	10.000K	±(0.3% reading + 2 dgt)
Duty Cycle	5.0 to 95.0%	±(1.0% reading + 2 dgt)
Temp (type-K)	-100.0 to 1000.0°C	±(1.0% reading + 2.5°C)
	-148.0 to 1832.0°F	±(1.0% reading + 4.5°F)

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Jaw Opening:	40mm (1.5”)
Diode Test:	Test current of 0.3mA typical; Open circuit voltage 1.5V DC typical
Continuity Check:	Threshold <35Ω; Test current <0.5mA
Power Supply:	One 9V battery
Dimensions:	232 x 77 x 39mm
Weight:	271g
Includes:	One set of test leads, one temperature probe, battery, and a soft carrying case
Optional Accessories:	Accredited Calibration Certificate (CERTICM1)

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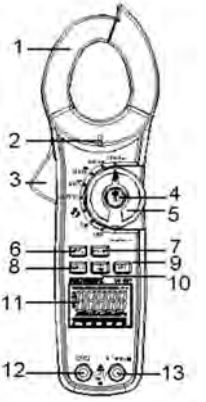
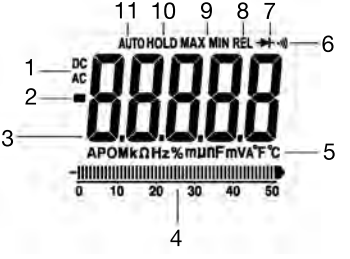
Instrument Description

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



Display Description

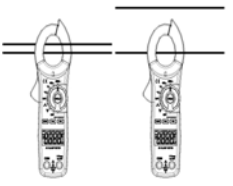
1. AC/DC indicator
2. Negative reading indicator
3. 50000 count main display
4. Analog Bargraph
5. Units of measurement
6. Audible continuity indicator
7. Diode test mode indicator
8. Relative mode indicator
9. Max/Min mode indicator
10. Data hold indicator
11. Auto range mode indicator



Operating Instructions

AC/DC Current Measurements

1. Set the function switch to the 1000ADC, 600ADC,1000AAC or 600AAC 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

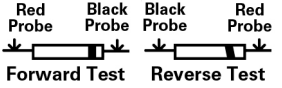
1. Insert the black test lead into the negative COM terminal and the red test lead into the positive V terminal.
2. Set the function switch to the V position, and select either AC or DC with the MODE button.
3. Select Hz,% or ACV with the Hz% button.
4. Connect the test leads in parallel to the circuit 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 < 40Ω, 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. Select ACV with the MODE button and press the Hz/% button to indicate "Hz" in the display.
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 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 TEMP. Press the Mode button to change between °C and °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.

Min/Max Recording

While in Manual Range, select te proper range before selecting MIN/MAX mto ensure that they MIN/MAX reading will not exceed the testing range. Press the MIN/MAX button to select the minimum reading. Press the MIN/MAX button again to select the maximum reading. Press the MIN/MAX button again to exit and resume normal measuring.

Relative Mode

Press the REL button for Capacitance Zero & Offset Adjustment.

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.

Auto and Manual Range

When the meter is first turned on, it automatically goes into AutoRanging. This automatically selects the best range for the measurements being made and is generally the best mode for most measurements. For measurement situations requiring that a range be manually selected, perform the following:

1. Press the RANGE button. The “Auto Range” display indicator will turn off and “Manual Range” display indicator will turn on.
2. Press the RANGE button to step through the available ranges until you select the range you want.
3. Press and hold the RANGE button for 2 seconds to exit Manual Ranging mode and return to Auto Ranging.

Battery Replacement

1. Remove the Phillips screw on the back of the meter
2. Open the battery compartment

Replace the dead batteries and close the battery compartment

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Notes