

REED

Model R5030

AC/DC True RMS Clamp
Meter with
Temperature



Instruction Manual

www.reedinstruments.com

REED Instruments

1-877-849-2127 | info@reedinstruments.com | www.reedinstruments.com

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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
- Individual protective equipment must be used around voltages above 60V DC, 42.4V peak or 30V AC RMS
- 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/DC Current, AC/DC Voltage, Resistance, Capacitance, Frequency, Duty Cycle, and Temperature with Type K Thermocouple Probe
- Diode Test and Continuity Check
- Auto Power-Off and Backlight
- Data Hold and Zero/Offset functions
- 50,000-count LCD displays low battery and over-range indications
- For indoor use in accordance with Overvoltage Category II, Pollution Degree 2

Specifications

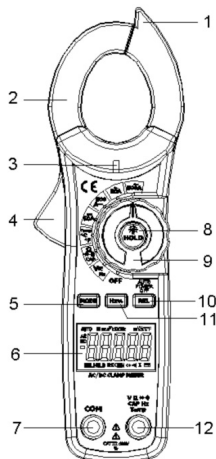
Clamp Size:	Opening 1.2" (30mm) approx.
Diode Test:	Test current of 0.3mA typical; Open circuit voltage 2.5V DC typical
Continuity Check:	Threshold <35 Ω ; Test current < 0.5mA
Measurements Rate:	4 per second, nominal
Input Impedance:	10M Ω (VDC and VAC)
Display:	50,000 count LCD
Auto Off:	Approx. 15 minutes
AC Current:	50-1000Hz (AAC)
AC Voltage Bandwidth:	50-1000Hz (VAC)
Over Voltage:	Category III 600V
Battery:	Two AAA 1.5V Batteries
Dimensions/Weight:	198 x 66 x 36mm / 230g
Includes:	One set of test leads, one temperature probe, batteries, and a soft carrying case

Electrical Specifications

Function	Range	Accuracy (% of rdg)
DC Current	50.00 ADC	$\pm (2.5\% + 30 \text{ digits})$
	500.0 ADC	
AC Current True RMS (50Hz to 60 Hz)	50.00 AAC	$\pm (2.8\% + 30 \text{ digits})$
	500.0 AAC	
DC Voltage	500.00 mVDC	$\pm (0.1\% + 5 \text{ digits})$
	5.0000 VDC	$\pm (0.1\% + 4 \text{ digits})$
	50.000 VDC	
	500.00 VDC	
	1000.0 VDC	$\pm (0.5\% + 4 \text{ digits})$
AC Voltage True RMS (50 Hz to 1000 Hz)	500.00 mVAC	$\pm (1.0\% + 40 \text{ digits})$
	5.0000 VAC	$\pm (1.0\% + 30 \text{ digits})$
	50.000 VAC	
	500.00 VAC	
	750.0 VAC	
Resistance	500.00 Ω	$\pm (1.0\% + 9 \text{ digits})$
	5.0000K Ω	$\pm (1.0\% + 4 \text{ digits})$
	50.000K Ω	
	500.00K Ω	
	5.0000M Ω	$\pm (2.0\% + 10 \text{ digits})$
	50.000M Ω	$\pm (3.0\% + 10 \text{ digits})$
Capacitance	500.00nF	$\pm (3.5\% \text{ rdg} + 40 \text{ digits})$
	5000.0nF	$\pm (3.5\% \text{ rdg} + 10 \text{ digits})$
	50.00. μ F	
	500.0. μ F	
	5.000mF	$\pm (5\% \text{ rdg} + 10 \text{ digits})$
Frequency	10.000K	$\pm (0.5\% \text{ rdg} + 10 \text{ digits})$
Temp (type-K)	-100.0 to 1000.0°C	$\pm (1.0\% \text{ rdg} + 2.5^\circ\text{C})$
	-148.0 to 1832.0°F	$\pm (1.0\% \text{ rdg} + 4.5^\circ\text{F})$

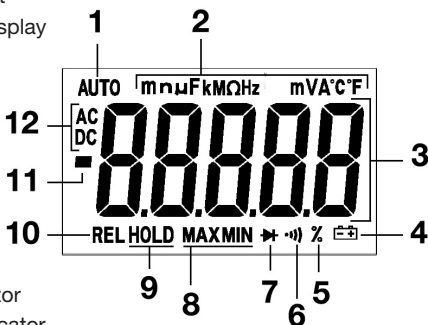
Instrument Description

1. Non-Contact Voltage Detector
2. Current clamp
3. Non-Contact LED indicator
4. Clamp trigger
5. MODE select button
6. LCD display
7. COM input jack
8. Data Hold and Backlight button
9. Rotary Function switch
10. Relative button
11. Hz% Hold button
12. V Ω CAP TEMP Hz jack



Display Description

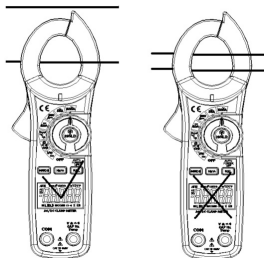
1. Auto range mode indicator
2. Units of measurement
3. 50,000 count main display
4. Low battery indicator
5. Hz % indicator
6. Continuity indicator
7. Diode test mode indicator
8. Max/Min mode indicator
9. Data hold indicator
10. Relative mode indicator
11. Negative reading indicator
12. AC/DC indicator



Operating Instructions

AC/DC Current Measurements

1. Rotate the Function switch to the 500ADC, 50ADC, 500AAC or 50AAC position.
2. If the range needed is not known, select the higher range first then move to the lower range if necessary.
3. 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.

Continuity Test

1. Insert the black test lead into the negative COM terminal and the red test lead into the positive V diode terminal.
2. Press the MODE button until the “Continuity indicator” appears on the display.
3. Touch the test probe tips across the circuit or component under test. If the resistance is $< 35\Omega$, a tone will sound.

Diode Test

1. Insert the black test lead into the negative COM terminal and the red test lead into the positive V diode terminal.
2. Press the MODE button until the “Diode Test indicator” appears on the display.
3. Touch the test probe tips to the diode or semiconductor junction under test. Note the meter reading.
4. The diode or junction can be evaluated as follows:
 - If one reading displays a value (typically 0.400V to 01.800V) and the other reading displays OL, the diode is good.
 - If both readings display OL the device is open.
 - If both readings are very small or ‘0’, the device is shorted.

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. Press the MODE button until CAP is indicated on the display.
4. Insert the black test lead into the negative COM terminal and the red test lead into the positive V terminal.
5. Touch the test leads to the capacitor to be tested. Read the capacitance value on the display.

Frequency/Duty Cycle Measurements

1. Set the rotary function switch to the V position.
2. 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.
5. Press the Hz/% button again to indicate “%” on the display.
6. Read the % of duty cycle 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 the TEMP position.
3. Select °C or °F with the MODE button.
4. Insert the Temperature Probe into the negative COM and the positive V terminals, making sure to observe the correct polarity.
5. 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).
6. 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 clamp 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 and Backlight

1. While taking a measurement, press the Data Hold button to freeze the display and to activate the LCD Backlight.
2. The HOLD indicator will also appear on the display.
3. Press the Hold button again to resume measuring.
4. Press and hold the Data Hold button for two seconds to turn the backlight on and off.

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