R5040

REED INSTRUMENTS

1000A AC/DC True RMS Clamp Meter

WARRANTY 1 YEAR WARRANTY

Instruction Manual

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Introduction

Thank you for purchasing your REED R5040 1000A AC/DC True RMS Clamp Meter. Please read the following instructions carefully before using your instrument. By following the steps outlined in this manual your meter will provide years of reliable service.

Product Quality

This product has been manufactured in an ISO 9001 facility and has been calibrated during the manufacturing process to meet stated product specifications. If a certificate of calibration is required please contact the nearest authorized REED distributor or authorized Service Center. Please note an additional fee for this service will apply.

Safety

- Never attempt to repair or modify your instrument. Dismantling your product, other than for the purpose of replacing batteries, may cause damage that will not be covered under the manufacturer's warranty. Servicing should only be provided by an authorized service center.
- 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.
- 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.
- 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.

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- 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/DC current/voltage, resistance, capacitance, frequency, duty cycle, and temperature
- 50,000-count backlit LCD display and analog bargraph
- Low battery and overrange indicators
- Built-in non-contact voltage detector with LED indicator
- True RMS AC measurements
- Min/Max, display hold and relative mode
- Diode test and continuity check functions
- Durable double molded plastic housing
- Cat. III 600V safety rating

Included

- Test Leads
- Thermocouple Wire Probe
- Thermocouple Adapter
- Soft Carrying Case
- Battery

Specifications

AC/DC Current

Range:	500, 1000A
Accuracy:	AC: ±(2.8% rdg. +30 dgt.) DC: ±(2.5% rdg. +30 dgt.)
Resolution:	0.01, 0.1, 1A

AC/DC Voltage

Range:	AC: 500mV, 5, 50, 500, 750V DC: 500mV, 5, 50, 500, 1000V
Accuracy:	AC: ±(1.0% rdg. +30 dgt.) DC: ±(0.1% rdg. +4 dgt.)
Resolution:	AC/DC: 0.1mV, 0.001, 0.01, 0.1, 1V

Resistance

Range:	500Ω, 5, 50, 500kΩ, 5, 50MΩ
Accuracy:	±(1.0% rdg. +4 dgt.) 0.1Ω, 0.001, 0.01, 0.1kΩ, 0.001, 0.01MΩ

Capacitance

Range:	500, 5000nF, 50, 500µF, 5mF
Accuracy:	±(3.5% rdg. +10 dgt.)
Resolution:	0.01, 0.1nF, 0.01, 0.1µF, 0.1mF

Frequency

Range:	10kHz
Accuracy:	±(0.3% rdg. +2 dgt.)
Resolution:	0.001Hz

Temperature

Range:	-148 to 1832°F (-100 to 1000°C)
Accuracy:	±(1.0% rdg. + 4.5°F) ±(1.0% rdg. + 2.5°C)
Resolution:	1°F, 1°C

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General Specifications

Range Selection:	Autoranging/Manual
True RMS:	Yes
Display:	50,000 count LCD display
Display Hold:	Yes
Max/Min:	Yes
Relative Mode:	Yes
Diode Test:	Yes
Backlit Display:	Yes
Analog Bargraph:	Yes (61-segment)
Continuity Check:	Audible signal if resistance <35Ω
Duty Cycle:	Yes
Non-Contact Voltage Detector:	Yes
Autoshut Off:	Yes (after 15 minutes)
Power Supply:	9V Battery
Low Battery Indicator:	Yes
Jaw Opening:	1.5" (40mm), up to 500 MCM
Overvoltage Category:	CAT. III 600V
Product Certifications:	CE
Operating Temperature:	32 to 122°F (0 to 50°C)
Storage Temperature:	-4 to 140°F (-20 to 60°C)
Dimensions:	9.1 x 3.0 x 1.5" (232 x 77 x 39mm)
Weight:	9.6oz (271g)

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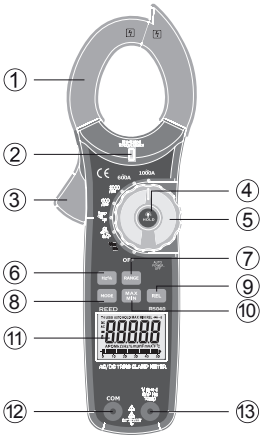
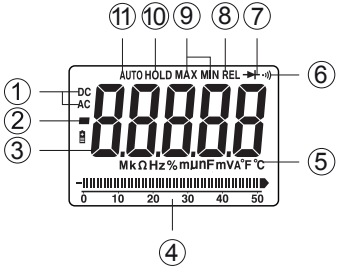
Instrument Description

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. Positive Input Jack



Display Description

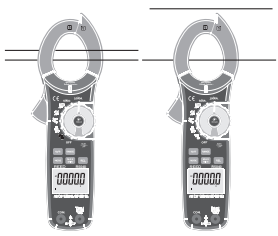
1. AC/DC Indicator
2. Negative Reading Indicator
3. 50,000 Count Main Display
4. Analog Bargraph
5. Units of Measurement
6. Audible Continuity Indicator
7. Diode Test Mode Indicator
8. Relative Mode Indicator
9. Max/Min Mode Indicator
10. Data Hold Indicator
11. Auto Range Mode Indicator



Operating Instructions

AC/DC Current Measurements

1. Set the rotary 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.
3. 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 rotary 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.
5. 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 rotary 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.

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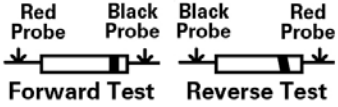
Diode and Continuity Measurements

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 function 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 under test.
5. The LCD will display the reading.

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.
5. The LCD will display the reading.

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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. The LCD will display the reading.

Note: To avoid electric shock, be sure the thermocouple has been removed before changing to another function.

Non-Contact AC Voltage Measurements

1. Set the rotary function switch to the V position.
2. 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.
3. 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.
4. 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 the proper range before selecting MIN/MAX to ensure that the 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.

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Data Hold

1. While taking a measurement, press the **HOLD** button to freeze the current reading on the display.
2. While in this mode, a HOLD symbol will appear.
3. Press the **HOLD** button again to exit and resume normal operation.

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 "AutoRanging".

Battery Replacement

1. Remove the Phillips screw on the back of the meter.
2. Open the battery compartment.
3. Replace the 1 x 9V battery and secure the battery compartment.

Applications

- Industrial maintenance teams performing scheduled and preventative maintenance on electro-mechanical equipment and systems.
- Facilities, building maintenance and electricians looking to troubleshoot electrical equipment installation problems.

Accessories and Replacement Parts

- **R2990** Thermocouple Adapter
- **R5400** Line Splitter
- **R1000** Safety Test Lead Set, Double Insulated
- **R1020** Fused Test Lead Set
- **TP-01** Type K Thermocouple Wire Probe
- **R2920** Surface Thermocouple Probe
- **R2930** Right Angle Thermocouple Surface Probe
- **R2940** Air/Gas Thermocouple Probe
- **R2950** Immersion Thermocouple Probe
- **R2960** Needle Tip Thermocouple Probe
- **CA-05A** Soft Carrying Case
- **R9940** Hard Shell Carrying Case

Don't see your part listed here? For a complete list of all accessories and replacement parts visit your product page on www.reedinstruments.com.

Product Care

To keep your instrument in good working order we recommend the following:

- Store your product in a clean, dry place.
- Change the battery as needed.
- If your instrument isn't being used for a period of one month or longer please remove the battery.
- Clean your product and accessories with biodegradable cleaner. Do not spray the cleaner directly on the instrument. Use on external parts only.

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Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of one (1) year from date of shipment. During the warranty period, REED Instruments will repair or replace, at no charge, products or parts of a product that proves to be defective because of improper material or workmanship, under normal use and maintenance. REED Instruments total liability is limited to repair or replacement of the product. REED Instruments shall not be liable for damages to goods, property, or persons due to improper use or through attempts to utilize the instrument under conditions which exceed the designed capabilities. In order to begin the warranty service process, please contact us by phone at 1-877-849-2127 or by email at info@reedinstruments.com to discuss the claim and determine the appropriate steps to process the warranty.

Product Disposal and Recycling

Please follow local laws and regulations when disposing or recycling your instrument. Your product contains electronic components and must be disposed of separately from standard waste products.

Product Support

If you have any questions on your product, please contact your authorized REED distributor or REED Instruments Customer Service by phone at 1-877-849-2127 or by email at info@reedinstruments.com.

Please visit **www.REEDInstruments.com** for the most up-to-date manuals, datasheets, product guides and software.

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