R5075

REED INSTRUMENTS

Professional Solar Clamp Meter

WARRANTY 2 YEAR WARRANTY

Instruction Manual

REED Instruments
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Introduction

Thank you for purchasing your REED R5075 Professional Solar 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 ISO9001 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

This product is designed and manufactured in compliance with IEC/EN 61010-1, 61010-2-032, 61010-031, and the Electromagnetic Compatibility standard EN 61326-1. It meets Double Insulation standards, Overvoltage categories CAT III 1500V / CAT IV 600V, and Pollution Degree 2 for indoor use. Failure to adhere to the operating instructions may compromise or eliminate the protection provided by the product.

- Before each use, thoroughly inspect the product and test leads for any visible damage. If you notice exposed wires, a damaged case, an abnormal display, or any other issues, discontinue use immediately.

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- Always ensure that the product cover is securely closed during use. Operating the device without the cover may expose users to electric shock hazards.
- If a test lead is damaged, replace it with a new one that meets or exceeds the product's rating, conforming to EN 61010-031 standards.
- Avoid direct contact with exposed wires, connectors, unused terminals, or any part of the circuit during measurements to prevent electric shock.
- Exercise caution when working with voltages exceeding 60V DC, 30V AC RMS, or peak voltage above 42.4V. Keep your fingers behind the tactile barrier for added protection.
- Set the product to the maximum range when measuring an unknown value to avoid potential damage.
- Never apply a voltage beyond the specified limits between terminals or between any terminal and ground.
- Ensure the rotary switch is set to the appropriate position before measurement. Disconnect the test leads from the circuit before adjusting the rotary switch to avoid damaging the product.
- For accurate circuit resistance and diode measurements, ensure all power is disconnected, and discharge any capacitors in the circuit before testing.
- Do not use the product in circuits where voltage exceeds the product's rated limits.
- Disconnect the test probe from the circuit before opening the battery cover or rear cover to avoid electric shock.
- Avoid using or storing the product in high-temperature, high-humidity, or strong electromagnetic field environments, and keep away from flammable or explosive materials.
- Do not attempt to modify or tamper with the internal wiring of the product. Unauthorized alterations can damage the product and create safety hazards.
- Turn off the power after completing measurements, and remove the batteries if the product will not be used for an extended period.
- Measure a known voltage source before each use to confirm that the product is functioning correctly.

Electrical Symbols

Symbol	Description
	Equipment protected throughout by double insulation or reinforced insulation
	Earth (ground)
	Warning or Caution
	Alternating current
	Direct current
	Continuity buzzer
	Diode
	Capacitance
	Alternating current or direct current
	Caution, possibility of electric shock
	Application around and removal from uninsulated hazardous live conductors is permitted
CE	Complies with European Union Standards
c ETL us Intertek 4007682	Conforms to UL STD 61010-1, 61010-2-032, 61010-2-033, Certified to CSA STD C22.2 No. 61010-1, 61010-2-032, 61010-2-033
CAT III	It is applicable to testing and measuring circuits connected to the distribution part of the building's low-voltage mains installation
CAT IV	It is applicable to testing and measuring circuits connected at the source of the building's low-voltage mains installation

Features

- Measures AC/DC current and voltage, resistance, capacitance, frequency, and contact temperature
- High-resolution 9,999-count backlit LCD display
- Dual display allows simultaneous viewing of voltage an current measurements
- True RMS voltage and current for accurate measurements
- Expandable AC current measurement up to 3000A with the flexible current probe (R5065, sold separately)
- Slim jaw design for easy access to cables in crowded combiner boxes, with the capacity to clamp around multiple cables
- Ergonomically designed for a comfortable grip and can be used with protective gloves
- DC power measurement capability with kVA readings
- IP65-rated for reliable performance in dusty or damp outdoor environments, ideal for solar and wind power applications
- Audible and visual polarity indicator to prevent accidental miswiring
- Low Pass Filter (LPF) and inrush measurement capabilities for precise motor and HVAC testing
- Min, Max, Average, Peak capturing and display hold
- Diode test and continuity check functions
- Low battery and over-range indicators
- Cat. III 1500V, Cat. IV 600V safety rating

Included

- Clamp Meter
- Thermocouple Wire Probe (Type K)
- Thermocouple Adapter
- Test Leads
- Carrying Case
- Batteries

Specifications

AC/DC Current

Range:	999.9A
Accuracy:	AC: ±(2.5% rdg. +5 dgt.) DC: ±(2.0% rdg. +5 dgt.)
Resolution:	0.1A

AC/DC Voltage

Range:	AC: 999.9V, 1500V DC: 999.9mV, 999.9V, 2500V
Accuracy:	±(1.0% rdg. +5 dgt.)
Resolution:	0.1mV, 0.1V, 1V

Resistance

Range:	999.9Ω, 9.999KΩ, 99.99KΩ
Accuracy:	±(1% rdg. +5 dgt.)
Resolution:	0.1Ω, 0.001KΩ, 0.01KΩ

Capacitance

Range:	100µF, 1000µF
Accuracy:	±(1% rdg. +5 dgt.)
Resolution:	0.1µF, 1µF

Frequency

Range:	5.0Hz to 999.9Hz
Accuracy:	±(0.5% rdg. +5 dgt.)
Resolution:	0.1Hz

Low Pass Filter (LPF)
AC Voltage

Range:	999.9V
Accuracy:	±(2% rdg. +9 dgt.)
Resolution:	0.1V

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Low Pass Filter (LPF)
AC Current

Range:	999.9A
Accuracy:	±(2.5% rdg. +9 dgt.)
Resolution:	0.1A

DC Power

Range:	999.9kVA, 2500kVA
Accuracy:	±(2% rdg. +20 dgt.)
Resolution:	0.1kVA, 1kVA

Flexible AC Current Probe (with optional R5065)

Range:	30.00A, 300.0A, 3000A
Accuracy:	±(3% rdg. +5 dgt.) LPF: ±(4.0% rdg. +9 dgt.)
Resolution:	0.01A, 0.1A, 1A

Temperature

Range:	-40 to 752°F (-40 to 400°C)
Accuracy:	±(1.0% rdg. + 60 dgt.)°F ±(1.0% rdg. + 30 dgt.)°C
Resolution:	0.2°F, 0.1°C

General Specifications

Low Pass Filter (LPF):	Yes
Inrush Measurement:	Yes
True RMS:	Yes
Display:	9,999 count LCD display
Display Hold:	Yes
Max/Min:	Yes
Peak Capturing:	Yes
Zero Push Button Adjustment:	Yes
Diode Test:	Yes

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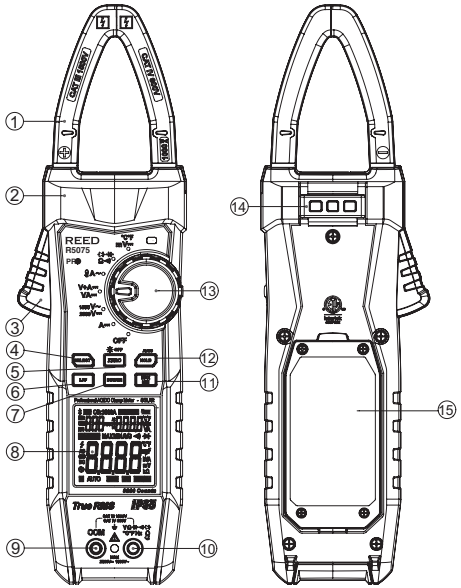
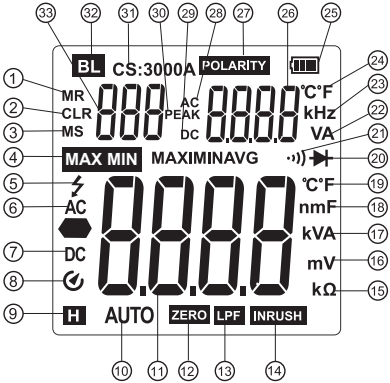
Backlit Display:	Yes
Overrange Indicator:	Audible signal if resistance ≤30Ω
Magnetic Hanging Strap Compatible:	Yes (R5900 sold separately)
Continuity Check:	Audible and visual indicators if resistance ≤30Ω
Auto Power Off:	Yes (after 15 mins, off)
Flexible Current Probe Compatible:	Yes (R5065 sold separately)
Power Supply:	2 x AA
Low Battery Indicator:	Yes
Jaw Opening:	1.4" (35mm)
Overvoltage Category:	CAT. III 1500V, CAT. IV 600V
Product Certifications:	CE, ETL, ROHS, IP65
Operating Temperature:	32 to 122°F (0 to 50°C)
Storage Temperature:	-4 to 140°F (-20 to 60°C)
Dimensions:	11.6 x 2.9 x 2.0" (295 x 73 x 50mm)
Weight:	19oz (540g)

Instrument Description



1) Clamp jaw
2) Tactile barrier
3) Trigger
4) SELECT button
5) ZERO/Backlight button
6) LPF button
7) INRUSH button
8) LCD display
9) COM input terminal
10) Signal input terminal
11) MAX/MIN button
12) HOLD/AUTO button
13) Rotary switch
14) Hanging strap bracket
15) Battery compartment

Display Description



1. Auto-Save Data Indicator
2. Clearing Storage Data Indicator
3. Recording Data Indicator
4. Max/Min/Avg Indicator
5. Hazardous Voltage Indicator
6. AC Measurement Indicator
7. DC Measurement Indicator
8. Auto Power OFF Indicator
9. Data Hold Indicator
10. Auto Data Hold Indicator
11. Displayed Value
12. ZERO Mode Indicator
13. Low Pass Filter Indicator
14. INRUSH Measurement
15. Resistance Measurement Indicator
16. Voltage Measurement Indicator
17. Current/Power Measurement Indicator
18. Capacitance Measurement Indicator
19. Temperature Measurement Indicator
20. Diode Measurement Indicator
21. Continuity Measurement Indicator
22. Voltage/Current Measurement Indicator (sub-display)

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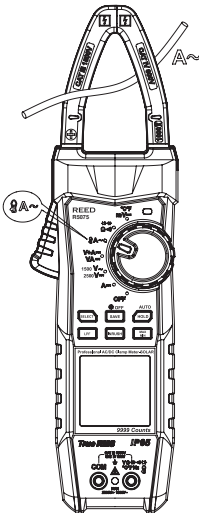
23. Frequency Measurement Indicator
24. Temperature Measurement Indicator (sub-display)
25. Battery Status Indicator
26. Displayed Value (sub-display)
27. Polarity Indicator
28. AC Measurement Indicator (sub-display)
29. DC Measurement Indicator (sub-display)
30. Peak Measurement Indicator
31. Flexible Current Probe Range Indicator (R5065 required)
32. Backlight Indicator
33. Number of save data Indicator

Operating Instructions

DC Current Measurements

Prior to taking DC current measurements wait for the display to stabilize. When stable, push the Zero button to ensure accurate readings. Zeroing the meter removes DC offset from the measurement reading.
Note: The Zero function works only when the dial is set to the DC current measurement position. Before zeroing the meter, make sure the jaws are closed and no conductor is inside the jaw.



1. Set the rotary function switch to A⎓.
2. Press and hold the trigger to open the clamp jaws. Position the clamp around the conductor to be measured, then slowly release the trigger to close the clamp jaws fully around the conductor.
3. Read the measurement result from the LCD screen.

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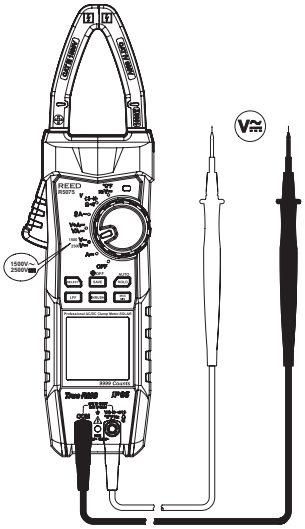
Warning: Only measure one current-carrying conductor at a time. Measuring multiple conductors will result in an inaccurate reading. To ensure accuracy, position the conductor at the center of the clamp jaws. Misalignment may result in an error margin of ±1.0%. If there is a residual reading during DC current measurement, press the **ZERO** button to clear it.
If the measured DC current is ≥1000 A, "OL" will appear on the display, indicating an overload.

AC/DC voltage measurements

1. Connect the red test lead to the "V" terminal and the black test lead to the "COM" terminal.
2. Set the rotary switch to 1500V~ 2500V⎓ and press the **SELECT** button to switch to either ACV or DCV mode. Then, connect the test leads in parallel to the source or load you wish to measure.
3. Read the measurement result on the LCD display.
4. The main display will show the measured AC voltage as a True RMS value, while the sub-display shows the frequency.



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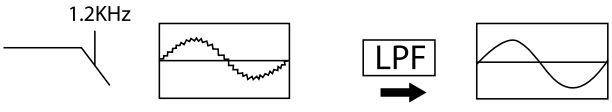
5. To activate the ACV LPF (Low Pass Filter) function, press the **LPF** button while measuring ACV. This mode allows the measurement of composite sine signals, such as those generated by inverters and variable frequency motors, as shown in the figure below.

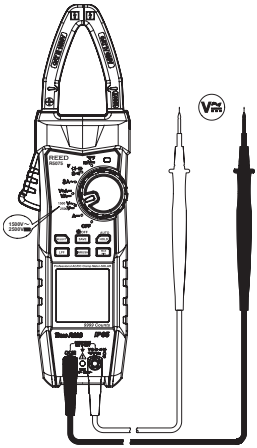


ACV-LPF

Warning: Do not input voltages exceeding 2500V DC or 1500V AC. Although the device can measure higher voltages, doing so may damage the Clamp Meter.
When measuring high voltage, take extra precautions to avoid electric shock.
If the measured voltage is ≥30V (AC/DC), a high-voltage warning symbol " ⚡" will appear on the display. The LCD will show "OL" if the measured voltage exceeds ±2510V DC or ±1510V AC.
For DC voltages below -10V, the device will trigger a red backlight, flashing LED, and sound a buzzer for 10 seconds. Additionally, the "POLARITY" symbol will blink.
For frequency to appear on the sub-display, the input amplitude must be at least 5V RMS for 20Hz to 100Hz signals, and at least 10V RMS for 100Hz to 1000Hz signals.
The low pass filter has an attenuation of -3dB with a cut off frequency at 1.2KHz.

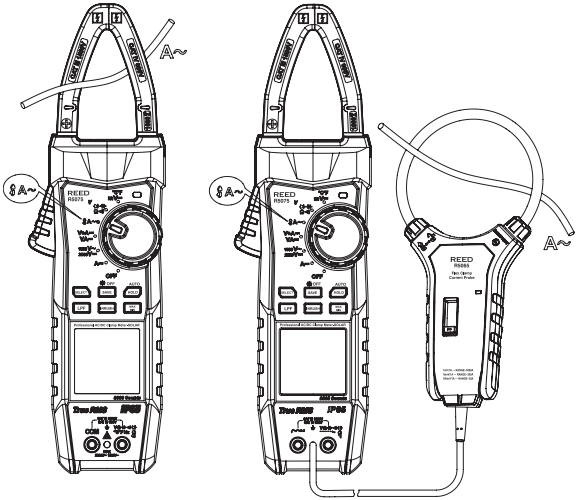
DC power and DC voltage/current Measurements

1. Connect the red test lead to the "V" terminal and the black test lead to the "COM" terminal.
2. Set the rotary switch to V+A ⎓ / VA ⎓ and press the **SELECT** button to switch to the VA or V+A function. Connect the test leads in parallel with the source or load you wish to measure. Then, press and hold the trigger to open the clamp jaws, position the conductor within the clamp, and slowly release the trigger to close the jaws completely.
3. Read the measurement results on the LCD display. The main display shows DC power or voltage, while the sub-display shows DC current.



Warning: Do not input voltages over 2500V DC. Although higher voltages can be measured, they may cause damage to the Clamp Meter. For high-voltage measurements, take extra precautions to avoid electric shock.
If the measured voltage is ≥30V (AC/DC), a high-voltage warning symbol "⚡" will appear on the display. The LCD will show "OL" if the measured voltage exceeds ±2510V DC.
The power range is controlled by adjusting the voltage range.

AC Current Measurement (Using Clamp Jaws and Flex Current Sensor)



1. Set the rotary switch to ⏻A≅ When the flex current sensor is connected, the Clamp Meter will automatically switch to the appropriate measurement range, displaying "CS" along with the symbol for the selected range.
2. Press and hold the trigger to open the clamp jaws, position the conductor within the jaws, then slowly release the trigger to close the jaws completely around the conductor.
3. Read the measurement results on the LCD display, where the main display shows the True-RMS current and the sub-display shows the frequency.

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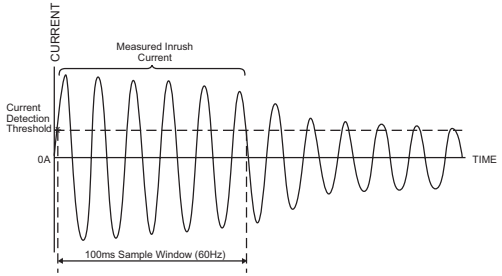
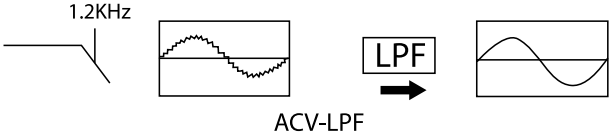
4. While in ACA (clamp jaw) or flex current sensor measurement mode, press the **INRUSH** button to activate the AC inrush and peak measurement function. This feature allows you to measure the instantaneous current at the startup of electrical appliances. The inrush current represents the maximum current over a 100 ms period. Press the **INRUSH** button again to exit this function.



5. In the same ACA (clamp jaw) or flex current sensor measurement mode, press the **LPF** button to enable the ACA-LPF (Low Pass Filter) function. This mode allows for the measurement of composite signals generated by inverters or variable-frequency motors. Press the **LPF** button again to exit the ACA-LPF function.



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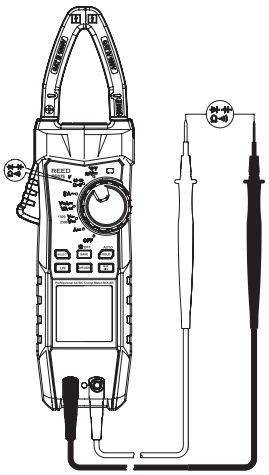
Warning: Measure only one current conductor at a time. Measuring multiple conductors simultaneously will result in inaccurate measurements. For the most accurate results, position the measured conductor at the center of the clamp jaws. Off-center positioning may introduce an additional error of ±1.0%. When monitoring in-circuit frequency at the AC current measurement setting, the current amplitude should meet the following requirements:
5 Hz-10 Hz: ≥10 A
10 Hz-100 Hz: ≥5 A
100 Hz-999.9 Hz: ≥10 A
The error specified for the flex current sensor represents the intrinsic error of the R5075.

Resistance Measurement

1. Connect the red test lead to the "V" terminal and the black test lead to the "COM" terminal.
2. Set the rotary switch to Ω and press the **SELECT** button to switch to the resistance measurement mode. Then, connect the test leads in parallel with both ends of the resistor to be measured.
3. Read the measurement result on the LCD display.



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Warning: During a continuity test at 999.9Ω, fast response may not be achievable. For resistance values ≤30Ω, a continuous sound will be generated, and the green backlight will light up. For resistance values ≥50Ω, no sound will be produced.
Before measuring in-circuit resistance, ensure all power sources are turned off and that all capacitors are fully discharged.
If the resistance of the shorted test leads is ≥0.5Ω, check for loose connections or other potential issues with the leads.
To avoid personal injury, do not input voltages over 30V DC/AC.

Diode Measurement

1. Connect the red test lead to the "V" terminal and the black test lead to the "COM" terminal.
2. Set the rotary switch to then press the **SELECT** button to switch to the diode measurement mode. The red test lead will have a positive polarity ("+"), and the black test lead will be negative ("-"). Connect the red test lead to the positive (anode) side of the diode and the black test lead to the negative (cathode) side.
3. Read the approximate forward voltage of the PN junction on the LCD. For a typical silicon diode, the forward voltage should be around 0.5 to 0.8V.

Warning: If "OL" is displayed, the diode is either open or the polarityis reversed.
Before measuring an in-circuit diode, ensure all power sources are switched off and all capacitors are fully discharged.The open-circuit voltage for diode measurement is approximately 3.0 V.
To avoid personal injury, do not input voltages over 30V DC/AC.
After completing all measurement operations, disconnect the test leads from the circuit.

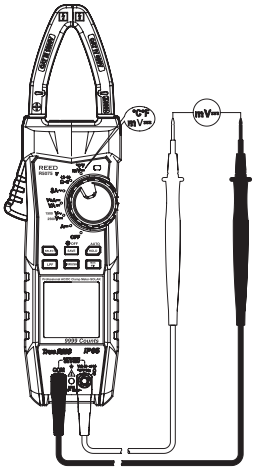
Capacitance measurement

1. Connect the red test lead to the "V" terminal and the black test lead to the "COM" terminal.
2. Set the rotary switch to Ω and press the **SELECT** button to switch to the capacitance measurement mode. Then, connect the test leads in parallel with both ends of the capacitor to be measured.
3. Read the capacitance value on the LCD display.

Warning: "OL" will be displayed if the measured capacitor is shorted or the capacitance exceeds the specified maximum range. To avoid damage to the Clamp Meter and personal injury, please switch off all powers of the measured circuit and discharge all capacitors thoroughly before measurement, especially the capacitor with high voltage.
Disconnect the test leads from the measured circuit after all measurement operations are completed.

DC Voltage (mV) Measurement

1. Connect the red test lead to the "V" terminal and the black test lead to the "COM" terminal.
2. Set the rotary switch to °C °F mV and press the **SELECT** button to switch to DCmV measurement mode. Then, connect the test leads in parallel with the source or load to be measured.
3. Read the measured voltage on the LCD display.



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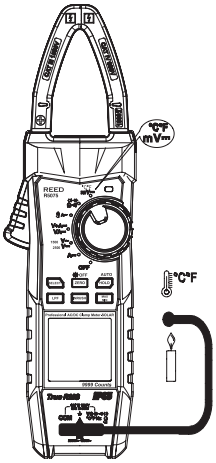
Warning: The input impedance for DC mV measurements is approximately 10MΩ.
Measurement errors may occur when measuring circuits with high impedance. In most cases, circuit impedance is below 10kΩ, making any error (≤0.1%) negligible.
Do not exceed the input voltage range, as this may result in inaccurate measurements, damage to the Clamp Meter, or potential personal injury.
Avoid inputting voltages over 999.9mV. Although higher voltages can be measured, doing so may compromise the Clamp Meter's protective features.To ensure the product is functioning correctly, measure a known voltage before use.
The high-voltage warning symbol "⚡" will appear on the LCD if the measured voltage exceeds ±999.9mV DC. After completing all measurement operations, disconnect the test leads from the circuit.

Temperature measurement

1. Connect the Type K thermocouple to the input terminal.
2. Set the rotary switch to °C °F mV ⎓ and press the **SELECT** button to switch to temperature measurement mode.
3. Place the temperature probe on the surface of the object to be measured. After a few seconds, read the temperature on the LCD display.



Warning: Ensure the ambient temperature is between 18°C and 28°C to avoid measurement errors. Significant errors may occur at lower temperatures. To prevent personal injury, do not input voltages exceeding 30V DC/AC.
After completing all measurements, remove the temperature probe from the input terminal.

Auto Power Off

1. To preserve battery life, the meter is programmed to turn off after approx. 15 minutes of inactivity.
2. To turn this function off, press and hold the **SELECT** button while powering on the meter.
3. If the meter is turned off then back on, the "Auto Power Off" feature will be enabled again.

MAX/MIN/AVG Measurements

1. Press the **MAX/MIN** button to select the maximum reading as indicated by the "MAX" symbol. The Max value is updated when a new maximum data value has been attained.
2. Press the **MAX/MIN** button again to select the minimum reading as indicated by the "MIN" symbol. The Min value is updated when a new minimum data value has been attained.
3. Press the **MAX/MIN** button a third time to select the average reading as indicated by the "AVG" symbol. The average value is updated when a new average data value has been attained.
4. Press and hold the **MAX/MIN** button to exit and resume normal operation.

Data Hold

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

Automatic Backlight

Press and hold the **ZERO** button to turn the Automatic Backlight on and off.

Battery Replacement

When the low battery icon appears on the LCD, you will need to replace the batteries. Remove the battery cover using a Phillips head screwdriver, insert 2 x new AA batteries and secure the cover.

Applications

- Monitoring and maintenance of solar power systems
- Ensuring efficient operation in wind power installations
- Testing and maintenance in electric railway systems
- Power quality analysis in data centers
- Managing and maintaining battery banks for uninterruptible power supplies (UPS)

Accessories and Replacement Parts

- R5400 Line Splitter
- R5900 Magnetic Meter Strap
- R2990 Thermocouple Adapter
- R2920 Surface Thermocouple Probe
- R2930 Right Angle Thermocouple Surface Probe
- R2940 Air/Gas Thermocouple Probe
- R2950 Immersion Thermocouple Probe
- R2960 Needle Tip Thermocouple Probe
- R1020 Fused Test Lead Set
- R1000 Safety Test Lead Set
- CA-05A Medium Soft Carrying Case

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.

Product Warranty

REED Instruments guarantees this instrument to be free of defects in material or workmanship for a period of two (2) years 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 email at 1-877-849-2127 or 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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