

REED

Model ST-9800T

True RMS
AC/DC Clamp Meter
with Temperature
Function



Instruction Manual

www.reedinstruments.com

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For service on this or any other REED product, contact REED Instruments at info@reedinstruments.com.

Safety

International Safety Symbols



This symbol, adjacent to another symbol or terminal, indicates the user must refer to the manual for further information.



This symbol, adjacent to a terminal, indicates that, under normal use, hazardous voltages may be present



Double insulation

Safety Notes

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

Warnings

- Set 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.

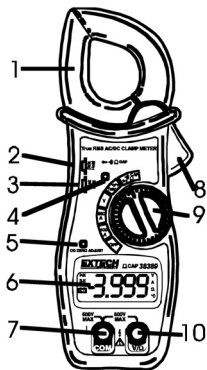
Cautions

- 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 the meter. Repair or replace any damage before use.
- Use great care when making measurements if the voltages are greater than 25VAC rms or 35VDC. These voltages 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. Other means should be used to ensure that the terminals are not “live”.
- If the equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Input Limits	
Function	Maximum Input
A AC, A DC	600A
V DC, V AC	600V DC/AC
Resistance, Capacitance, Diode Test	250V DC/AC
Temperature	60V DC, 24V AC

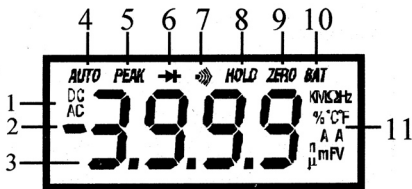
Meter Description

1. Current clamp
2. Data Hold button
3. Peak Hold button
4. Mode select button
5. ZERO button
6. LCD display
7. COM input jack
8. Clamp trigger
9. Rotary Function switch
10. V/ Ω CAP/TEMP jack



Display Description

1. AC (alternating current) & DC (direct current)
2. Minus sign
3. 4000 count (0 to 3999) measurement reading
4. AutoRange mode
5. Peak Hold mode
6. Diode test mode
7. Audible Continuity
8. Data Hold mode
9. ZERO (Relative) mode
10. Low Battery icon
11. Units of measure list



Specifications

Function	Range & Resolution	Accuracy (% of reading)
DC Current	400.0 ADC	0 to 70A: $\pm (2.5\% + 0.6A)$
		70 to 300A: $\pm (3.0\% + 0.3A)$
		300 to 400A: $\pm (3.5\% + 0.3A)$
	600 ADC	0 to 150A: $\pm (2.5\% + 4A)$
		151 to 350A: $\pm (3.0\% + 4A)$
		351 to 600A: $\pm (4.0\% + 6A)$
AC Current	400.0 AAC	0 to 70A: $\pm (3.0\% + 0.6A)$
		70 to 300A: $\pm (3.5\% + 0.3A)$
		300 to 400A: $\pm (3.5\% + 0.6A)$
	600 AAC	0 to 150A: $\pm (3.0\% + 4A)$
		151 to 350A: $\pm (3.5\% + 5A)$
		351 to 600A: $\pm (4.0\% + 8A)$
DC Voltage	400.0 mVDC	$\pm (0.5\% + 5 \text{ digits})$
	4.000 VDC	$\pm (1.2\% + 3 \text{ digits})$
	40.00 VDC	
	400.0 VDC	
	600 VDC	$\pm (1.5\% + 3 \text{ digits})$
AC Voltage	4.000 VAC	$\pm (1.0\% + 5 \text{ digits})$
	40.00 VAC	$\pm (1.5\% + 3 \text{ digits})$
	400.0 VAC	
	600 VAC	$\pm (2.0\% + 4 \text{ digits})$
Resistance	400.0 Ω	$\pm (1.0\% + 4 \text{ digits})$
	4.000K Ω	$\pm (1.5\% + 2 \text{ digits})$
	40.00K Ω	
	400.0K Ω	
	4.000M Ω	$\pm (2.0\% + 3 \text{ digits})$
40.00M Ω	$\pm (3.0\% + 5 \text{ digits})$	
Temperature	-4 to 1400°F	$\pm (3.0\% + 5^\circ)$
	-20 to 760°C	

Capacitance	40.00 nF	± (5.0% + 7 digits)
	400.0 nF	± (3.5% + 5 digits)
	4.000 µF	
	40.00 µF	
	100.0 µF	± (5.0% + 5 digits)

Clamp size	Opening 1.3" (33mm) approx
Diode Test	Test current of 0.3mA typical; Open circuit voltage 1.5V DC typical.
Continuity Check	Threshold <50Ω; Test current < 1mA
Low Battery Indication	"BAT" is displayed
Overrange Indication	"OL " is displayed
Measurements Rate	2 per second, nominal
Temperature sensor	Type K thermocouple
Input Impedance	7.8MΩ (VDC and VAC)
Display	3-3/4 digits (4000 counts) LCD
AC bandwidth	50/60Hz (AAC and VAC)
AC response	True rms (AAC and VAC)
Operating Temperature	14 to 122°F (-10 to 50°C)
Storage Temperature	-14 to 140°F (-30 to 60°C)
Relative Humidity	90%(0°C to 30°C); 75%(30°C to 40°C); 45%(40°C to 50°C)
Altitude	Operating: 3000m; Storage 10,000m
Over voltage	Category II 600V
Battery	9V Battery
Auto OFF	approx. 15 minutes
Dimensions/Weight	8x3.2x1.7" (204x80x43mm)/0.62 lbs. (281g)
Safety	For indoor use and in accordance with Overvoltage Category II, Pollution Degree 2. Category II includes local level, appliance, portable equipment, etc., with transient overvoltages less than Overvoltage Cat. III

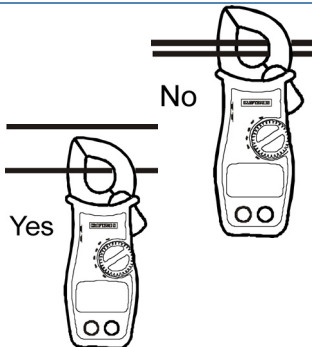
Operating Instructions

NOTE: Read and understand all *warning* and *precaution* statements listed in the safety section of this operation manual prior to using this meter. Set the function select switch to the OFF position when the meter is not in use.

AC/DC Current Measurements

WARNING: Ensure that the test leads are disconnected from the meter before making current clamp measurements.

1. Set the Function switch to the **600** or **400A** range. If the range of the measured is not known, select the higher range first then move to the lower range if necessary.
2. Select AC or DC with the AC/DC button. Press the zero button to zero the meter in the DCA mode only.
3. Press the trigger to open jaw. Fully enclose one conductor to be measured.
4. The clamp meter 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.
3. Select AC or DC with the **AC/DC** button.
4. Connect the test leads in parallel to the circuit under test.
5. Read the voltage measurement on the LCD display.



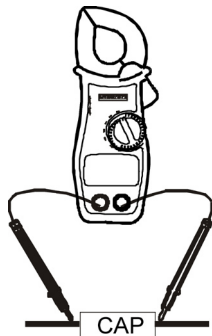
Resistance and Continuity Measurements

1. Insert the black test lead into the negative COM terminal and the red test lead into the positive terminal.
2. Set the function switch to the $\rightarrow|+ \cdot \cdot \cdot \Omega$ CAP position.
3. Use the multifunction button to select resistance.
4. 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 resistance reading.
5. For Resistance tests, read the resistance on the LCD display.
6. For Continuity tests, if the resistance is $< 50\Omega$, a tone will sound.

Capacitance Measurements

WARNING: To avoid electric shock, discharge the capacitor under test before measuring.

1. Set the function switch to the $\rightarrow|+ \cdot \cdot \cdot \Omega$ CAP Position.
2. Press the multifunction button to select the capacitance function.
3. Insert the black test lead banana plug into the negative (COM) jack and the red test lead banana plug into the positive jack.
4. Touch the test probe tips across the part under test.
5. Read the capacitance in the display.
6. The display will indicate the proper decimal point and value.



Temperature Measurements

WARNING: To avoid electric shock, disconnect both test probes from any source of voltage before making a temperature measurement.

1. Set the function switch to **TEMP**.
2. Insert the Temperature Probe into the negative (COM) and the positive jacks, making sure to observe the correct polarity.
3. Touch the Temperature Probe head to the part whose temperature you wish to measure. Keep the probe touching the part under test until the reading stabilizes (about 30 seconds).
4. Read the temperature in the display. The digital reading will indicate the proper decimal point and value.

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

Data Hold

To freeze the LCD meter reading, press the data hold button. The data hold button is located on the left side of the meter (top button). While data hold is active, the DH display icon appears on the LCD. Press the data hold button again to return to normal operation.

Peak Hold

To hold the highest reading on the LCD, press the peak hold button. The peak hold button is located on the left side of the meter (bottom button). The meter reading will not change as readings change, rather it will only display the highest reading encountered since the peak hold button was pressed. Press the peak hold button again to return to normal operation.

Battery Replacement

1. Remove the three rear Phillips head screws
2. Open the battery compartment
3. Replace the '9V' battery IEC 6F22, NEDA 1604.
4. Re-assemble the meter

Notes _____
