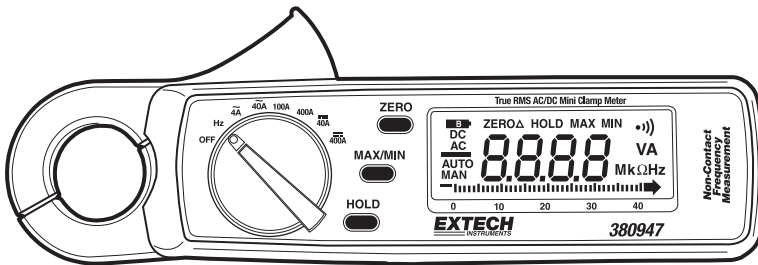**User's Guide**

EXTECH
INSTRUMENTS

True RMS AC/DC Mini Clamp Meter
Model 380947

Warranty

EXTECH INSTRUMENTS CORPORATION warrants this instrument to be free of defects in parts and workmanship for one year from date of shipment (a six month limited warranty applies on sensors and cables). If it should become necessary to return the instrument for service during or beyond the warranty period, contact the Customer Service Department at (781) 890-7440 ext. 210 for authorization or visit our website at www.extech.com for contact information. A Return Authorization (RA) number must be issued before any product is returned to Extech. The sender is responsible for shipping charges, freight, insurance and proper packaging to prevent damage in transit. This warranty does not apply to defects resulting from action of the user such as misuse, improper wiring, operation outside of specification, improper maintenance or repair, or unauthorized modification. Extech specifically disclaims any implied warranties or merchantability or fitness for a specific purpose and will not be liable for any direct, indirect, incidental or consequential damages. Extech's total liability is limited to repair or replacement of the product. The warranty set forth above is inclusive and no other warranty, whether written or oral, is expressed or implied.

Introduction

Congratulations on your purchase of the Extech 380947 True RMS Clamp Meter. This Clamp meter measures current up to 400A DC/AC and measures Frequency up to 100 kHz. Careful use of this meter will provide years of reliable service.

Safety

1. **NEVER** exceed the specified voltage/current maximum
2. **USE EXTREME CAUTION** when working with high voltages.
3. **NEVER** operate the meter unless the back cover and the battery/fuse door are in place and fastened securely.

International Safety Symbols

= = =	DC Voltage DC Current	⚠	Refer to explanation in owners manual
∿	AC Voltage AC Current	⚡	Dangerous voltage risk of electrical shock
⏚	Ground	▣	Double Insulation

Specifications

General Specifications

|	
Display	3-3/4 Digit LCD with 40 segment bargraph
Functions	Current (ACA, DCA) and Frequency (Hz)
Polarity	"-" indicates negative polarity (positive polarity assumed)
Current sensor	Hall effect
Overload	Display indicates "1___" or "-1___"
DCA zero adjust	One-touch zero key (also used as a Relative function)
Display rate	2 readings/second (20 readings/second for bargraph)
Battery	Two 1.5V AA batteries
Operating temperature	4^0F to 122^0F (-10^0C to 50^0C)
Operating Humidity	< 85% RH
Power consumption	10mA DC approx.
Weight	6.2 oz. (190g) including battery
Dimensions	7.2 x 2.5 x 1.4" (183 x 63.6 x 35.6mm) (H x W x D)
Jaw opening	0.9" (23mm)
Standards	IEC 1010 Category III 300V, Category II 600V

Range Specifications

DC Current	Resolution	Accuracy (of rdg + digits)	Overload Protect
40A	10mA	±(1.0% + 2d)	400A DC
400A (0 to 150A)	100mA	±(1.0% + 2d)	400A DC
400A (150 to 200A)	100mA	±(2.2% + 2d)	400A DC
400A (200 to 400A)	100mA	±(4.0% + 2d)	400A DC

AC Current	Resolution	50/60Hz	40Hz - 1kHz	Overload Protect
4A (0 to 500mA)	1mA	±(1.5% + 7d)	±(2.0% + 7d)	400A AC
4A (500mA to 4A)	1mA	±(1.5% + 3d)	±(2.0% + 4d)	400A AC
40A	10mA	±(1.5% + 3d)	±(2.0% + 4d)	400A AC
100A (0 to 100A)	100mA	±(1.5% + 3d)	±(2.0% + 4d)	500A AC
400A (100 to 200A)	100mA	±(2.2% + 3d)	±(2.5% + 4d)	500A AC
400A (200 to 400A)	100mA	±(4.0% + 3d)	±(5.0% + 4d)	500A AC

Frequency (Hz)	Resolution	Accuracy	Sensitivity	Overload Protect
40Hz to 250Hz	0.01 to 0.1Hz	±(0.5% + 2d)	3.0A	500A AC
250Hz to 10kHz	0.1 to 1Hz	±(0.5% + 2d)	0.3A	500A AC

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Meter Description

1. Conductor under test

2. Clamp Jaws

3. Jaw trigger – Opens the meter jaws

4. ZERO / Relative button – Zeroes the DCA reading

5. Function select switch

6. HOLD button to freeze displayed reading

7. MAX/MIN button – Press to track and view highest and lowest readings

8. LCD Display with function indicators, units of measure, and bargraph
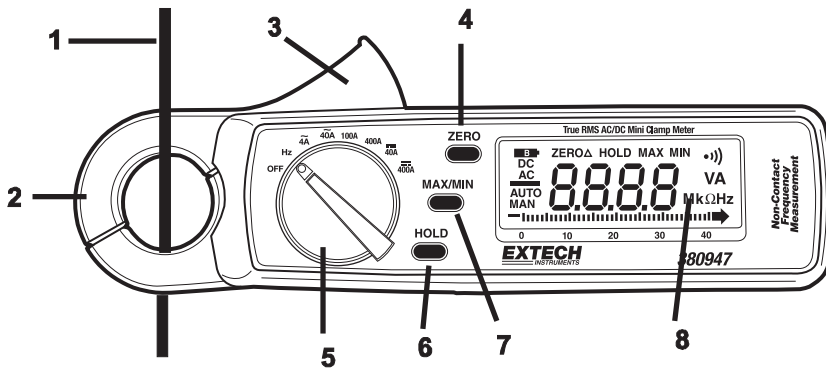
Display icons

B	Low battery
DC	Direct current
AC	Alternating current
━	Minus sign
AUTO	Automatic range (frequency only)
MAN	Manual range
ZERO	Zero function
HOLD	HOLD function
MAX	Highest reading
MIN	Lowest reading
A	Current unit of measure
M	Prefix MEGA (millions of units)
k	Prefix KILO (thousands of units)
Hz	Hertz (unit of measure for frequency)

Bargraph display

The 40 segment bargraph display shown below is a graphical interpretation of the measurement. It is displayed under the display digits on the LCD.

The bars in the bargraph indicate a presence of an electronic signal. The more bars showing, the higher the signal. The digits below the graph help the user see how many bars are showing. If 40 segments are showing, the bars will reach the '40' mark, if 20 bars are showing the bars will reach the '20' mark.

The bargraph is to be interpreted based on the range the meter is in while the measurement is being made. If the bargraph shows 40 segments lit, then the signal is at the highest end of the meter's present range.

Operation

AC Current Measurements

WARNING: To avoid electric shock, disconnect the test leads from the meter before making current measurements.

1. Set the Function switch to the 4, 40, 100, or 400A AC range.
2. Press the Trigger to open the clamp jaw.
3. Clamp onto a single conductor (fully enclosing it). Do not allow a gap between the two halves of the jaw.
4. Read the ACA value on the LCD.

DC Current Measurements

WARNING: To avoid electric shock, disconnect the test leads from the meter before making current measurements.

1. Set the Function switch to the 40 or 400A DC range.
2. Press the DCA zero key to null the meter display.
3. Press the Trigger to open the current sense Jaw.
4. Fully enclose a single conductor to be measured. Do not allow a gap between the two halves of the jaw.
5. Read the DCA value on the LCD.

Frequency Measurements

1. Ensure that at least 0.1A AC is detectable before measuring Frequency.
2. Set the Function switch to the Hz position.
3. Press the Trigger to open the jaw and fully enclose one conductor.
4. Read the Frequency measurement on the LCD in Hz.

MIN, MAX Function

Press the MIN/MAX key to display ONLY the highest (MAX) and the lowest (MIN) readings. Press the MIN/MAX key once to view the minimum reading, press it again to view the maximum reading. Note that the displayed readings will only change when a measurement is taken higher than the previous MAX or lower than the previous MIN readings. The HOLD display icon (along with the MIN or MAX icon) will appear on the LCD in MIN/MAX mode. Pressing the MIN/MAX key a 3rd time returns the meter to normal operation.

Data Hold

To freeze the displayed reading on the LCD, press the Data Hold key (the HOLD icon will appear on the display). To release the Data Hold function and return the meter to normal operation, press the Data Hold key again (the HOLD icon will switch off).

Zero button for Relative Measurements

1. Press the ZERO key and the present measurement will zero.
2. All subsequent measurements are displayed with respect to the zeroed reading. For example, if a 20A reading is zeroed and a 30A reading is subsequently measured, the LCD will display 10A.
3. To return to normal operation, press and hold the ZERO key for 2 seconds.
4. Note that Relative mode is not available if the MIN/MAX mode is enabled.

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Battery Replacement

1. When the low battery symbol appears on the LCD, the batteries must be replaced.

2. Turn the meter off and remove the rear battery compartment screw.

3. Lift off the battery compartment cover and replace the two 1.5V AA cells.

4. Replace the compartment cover and secure the screw.

Cleaning

Use only a dry cloth to clean the plastic case.

Calibration and Repair Services

Extech offers repair and calibration services for the products we sell. Extech also provides NIST certification for most products. Call the Customer Service Department for information on calibration services available for this product. Extech recommends that annual calibrations be performed to verify meter performance and accuracy.

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