

User's Guide

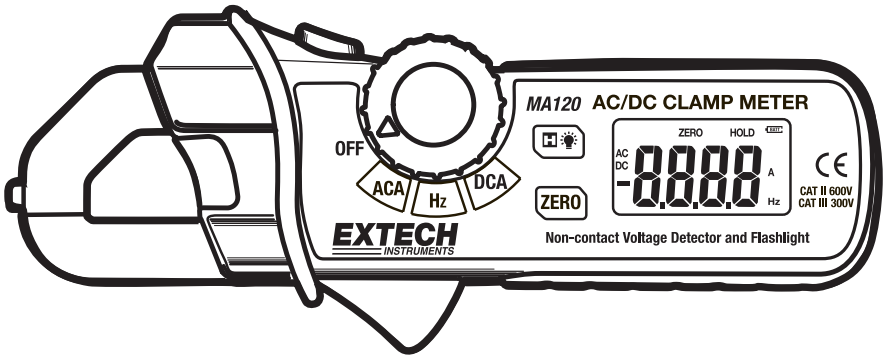
EXTECH[®]
INSTRUMENTS
A FLIR COMPANY

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Model MA120 200A AC/DC Mini Clamp-on Meter

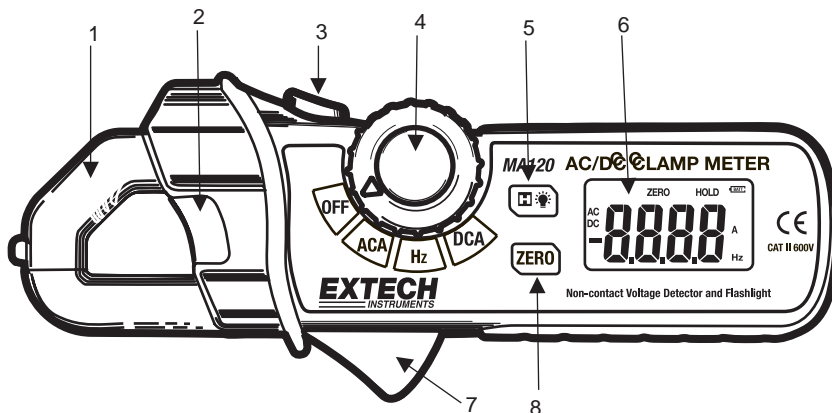


Introduction

Congratulations on your purchase of Extech's MA120 AC/DC Mini Clamp Meter. This professional meter, with proper care, will provide years of safe reliable service.

Meter Description

1. Current sense jaw
2. Non-contact AC voltage indicator light
3. Flashlight button
4. Rotary function switch
5. Data HOLD and Backlight key
6. LCD display
7. Clamp trigger
8. One-touch DCA ZERO key



Safety Information



Caution! Refer to the explanation in this Manual



Double Insulation

This meter has been designed to be safe in use, but the operator must use caution in its operation. The rules listed below should be carefully followed for safe operation.

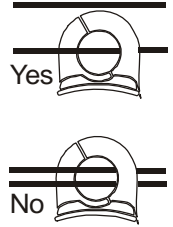
1. **NEVER** apply voltage or current to the meter that exceeds the specified maximum:
2. **USE EXTREME CAUTION** when working with voltages greater than 60VDC or 25VAC rms. These voltages are considered a shock hazard.
3. **NEVER** operate the meter unless the back cover and the battery/fuse door are in place and fastened securely.

Input Limits	
Function	Maximum Input
AC Current	200A
DC Current	±200A
Frequency	1kHz

Operation

AC Current Measurements

- 1) Set the Function switch to the ACA range.
- 2) Press the jaw trigger and clamp around, fully enclosing a single conductor. Do not allow a gap between the two halves of the jaw. Refer to the diagram at right for the correct way to enclose a single conductor.
- 3) Read the ACA value on the LCD.



DC Current Measurements

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

Non-Contact AC Voltage Detection

WARNING: Risk of Electrocution. Before use, always test the Voltage Detector on a known live circuit to verify proper operation

- 1) AC Voltage detection operates on any of the four Function switch positions.
- 2) Touch the probe tip to the hot conductor or insert into the hot side of the electrical outlet.
- 3) If AC voltage is present, the detector light will illuminate.

NOTE: The conductors in electrical cord sets are often twisted. For best results, slowly slide the probe tip along a length of the cord to assure placing the tip in close proximity to the live conductor.

NOTE: The detector is designed with high sensitivity. Static electricity or other sources of energy may randomly turn the detector light on. This is normal operation

Frequency Measurements

- 1) Set the Function switch to the Hz position.
- 2) Fully enclose the conductor to be measured. Do not allow a gap between the two halves of the jaw.
- 3) Read the Frequency value on the LCD.

Flashlight

Press and hold the top button to turn the flashlight on. Release the button to turn the flashlight off.

Data Hold


To freeze the current reading on the LCD, press the "Hold / Backlight" key. The word HOLD will appear on the LCD while the meter is in the Data Hold mode. To release the Data Hold function and return the meter to normal operation, press the "Hold / Backlight" key again. The word HOLD will switch off.

Backlight Display

Press and hold the "Hold / Backlight" key for more than 2 seconds to turn on the backlight. This will also activate the Data Hold function. To release the Data Hold function and return the meter to normal operation, press the Data Hold key momentarily. To turn off the backlight, press and hold the "Hold Backlight" key for more than 2 seconds.

Specifications

General Specifications

Display	3-2/3 (2400 count) Digit LCD with white LED backlight
Polarity	Minus sign (-) indicates negative polarity
Current sensor	Hall effect sensor type
Overload indication	“OL” displayed on the LCD
DCA zero adjust	One touch zero key
Display rate	2 readings/second, nominal
Battery	Two 1.5V AAA batteries
Low Battery indication	“BATT” displayed on the LCD
Operating conditions	32°F to 86°F (0°C to 30°C) 90%RH; 86°F to 104°F (30°C to 40°C) 75%RH; 104°F to 122°F (40°C to 50°C) 45%RH
Storage conditions	- 14°F to 140°F (-30°C to 60°C); < 90% Relative Humidity
Altitude	Operate at less than 3000 meters
Weight	6.2 oz. (176g) including battery
Dimensions	6.5 x 2.6 x 1.3” (164 x 65 x 32mm) (HWD)
Jaw opening	0.7” (18mm)
Standards	IEC 1010 Category III 300V, Category II 600V, 

Range Specifications

Function	Range	Resolution	Accuracy (of reading)
DC Current	200A	0.1A	± (2.8% + 8 digits)
AC Current	200A	0.1A	±(3.0% + 8 digits)
Frequency (Auto-Ranging)	40-51Hz	0.01Hz	±(1.2% + 5 digits) Input Sensitivity: 2.5A AC RMS min.
	51-510Hz	0.1Hz	
	0.51-1kHz	0.001kHz	
Non-Contact AC Voltage	100VAC to 600VAC 50/60Hz		

Maintenance

Battery Replacement

- 1) When the low battery symbol appears on the LCD the batteries must be replaced.
- 2) Power down and remove the rear battery compartment Phillips screw.
- 3) Lift off the battery compartment cover and replace the two 1.5V AAA cells.
- 4) Replace compartment cover and secure the screw.



You, as the end user, are legally bound (**EU Battery ordinance**) to return all used batteries, **disposal in the household garbage is prohibited!** You can hand over your used batteries / accumulators at collection points in your community or wherever batteries / accumulators are sold!

Disposal: Follow the valid legal stipulations in respect of the disposal of the device at the end of its lifecycle

Cleaning

Caution: Use only a dry cloth to clean the plastic case.

Warranty

EXTECH INSTRUMENTS CORPORATION (a FLIR company) 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 to 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 for authorization.

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.

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.