

CM200

200A TRMS AC Open Jaw Clamp



Introduction

Congratulations on your purchase of the Triplet CM200 200A True RMS AC Open Jaw Current Clamp meter. The True RMS AC Open Jaw Clamp meter features:

- Open Jaw Current measurement
- Data Hold and Flash Light
- Negative Polarity LCD Display
- Low Z (Input Impedance) Testing AC/DC Voltage
- Non-contact AC voltage detection
- Auto Power OFF

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.
- When the instrument is not in use, press the ON/OFF key to turn off the meter.
- Remove the battery if meter is to be stored for longer than 60 days.

CAUTIONS

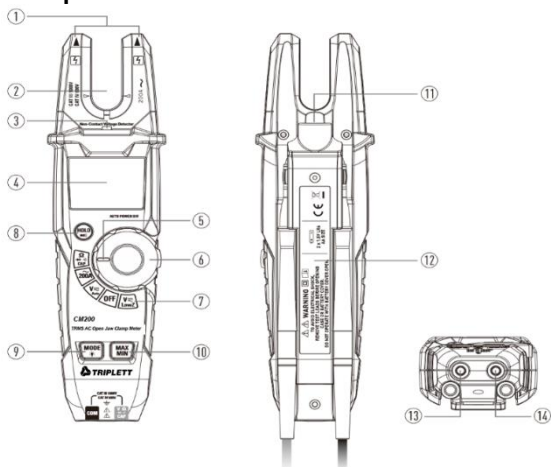
- Improper use of this meter can cause damage, shock, injury or death. Read and understand this user manual before operating the meter.
- Always remove the test leads before replacing the battery.
- The meter itself for any damage before operating the meter. Repair or replace any damage before use.
- Use great care when making measurements if the voltages are greater than 25VAC rms or 35VDC. These voltages are considered a shock hazard.
- 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”.

Input Limits

Function	Maximum Input
A AC	200A AC
V DC, V AC	1000V AC/DC
V DC, V AC (Low Input Impedance)	600V AC/DC
Resistance, Capacitance, Diode Test	300VAC/DC

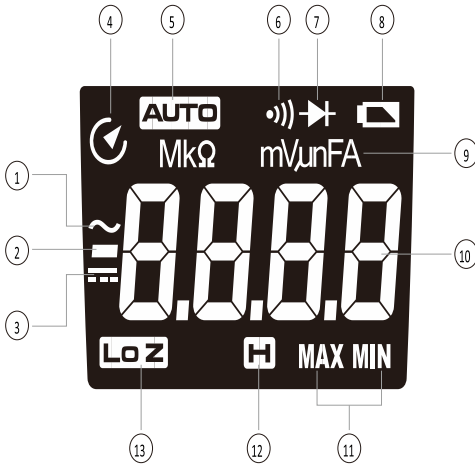
Description

Meter Description



1. NCV (Non-Contact Voltage) Sensor
2. Open Jaw Clamp
3. NCV (Non-Contact Voltage) Indicator LED
4. Negative Polarity LCD Display
5. Rotary Switch Indicator LED
6. Rotary Function Switch
7. Rotary Switch Backlight
8. Data HOLD/Flashlight Button
9. MODE/Backlight Button
10. MAX/MIN Button
11. Flashlight
12. Battery Cover
13. COM Input Jack
14. V, Ω , \rightarrow \bullet \bullet ,CAP Input Jack

Display Icons Description



1. Alternating Voltage and Current
2. Minus Sign
3. Direct Voltage and Current
4. Auto Power Off (APO)
5. Auto Range Mode
6. Continuity Test
7. Diode Test
8. Low Battery
9. Units of Measure
10. Display Digits
11. MAX/MIN
12. Data Hold
13. Lo Z (Low Impedance Input Mode)

Operation

AC Current Measurements

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

1. Set the Function switch to the AC Current.
2. Place the current open jaw around the middle of the test lead.
3. The clamp meter LCD will display the reading.

AC (True RMS)/DC Voltage Measurements

1. Insert the black test lead into the negative **COM** terminal and the red test lead into the positive **V Ω \rightarrow \rightarrow CAP** terminal.
2. Automatically change between AC or DC.
3. Connect the test leads in parallel to the circuit under test.
4. Read the voltage measurement on the LCD display.

Low Z Voltage Measurements

***NOTE:** *Observe all safety precautions when working on live voltage. Do not connect to circuits that exceed 600V AC/DC when the meter is set to Low Z.*

Low Z is used when there is a suspicion of a “ghost” voltage. Ghost voltages are present when non-powered wires are in close proximity to wires powered by AC voltage. Capacitive coupling between wires make it appear that non-powered wires are connected to a real source of voltage.

The Low Z setting places a load on the circuit, which dissipates and greatly reduces ghost voltage.

1. Set the rotary function switch to the Low Z position.
2. Momentarily press the MODE button to select AC or DC voltage. The AC or DC symbol will appear on the LCD display.
3. Insert the black test lead into the COM input jack and the red test lead into the V input jack. If measuring DC voltage, touch the red test lead to the positive side of the circuit and the black test lead to the negative side of the circuit.

4. Touch the test leads to the circuit under test.
5. Read the voltage on the LCD display.

Resistance Measurements

1. Set the function switch to the **V Ω \rightarrow CAP** position.
2. Insert the black test lead banana plug into the negative **COM** jack.
Insert the red test lead banana plug into the positive jack.
3. Press the **MODE** button to indicate " **Ω** " on the display.
4. Touch the test probe tips across the circuit or part under test. It is best to disconnect one side of the part under test so the rest of the circuit will not interfere with the resistance reading.
6. Read the resistance in the display.

Continuity Measurements

1. Set the function switch to the **V Ω \rightarrow CAP** position.
2. Insert the black lead banana plug into the negative COM jack.
Insert the red test lead banana plug into the positive jack.
3. Press the MODE button to indicate " **\rightarrow)**" and " **Ω** " on the display
4. Touch the test probe tips to the circuit or wire you wish to check.
5. If the resistance is less than approximately 50 Ω , the audible signal will sound. If the circuit is open, the display will indicate "OL".

Capacitance Measurements

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

1. Set the function switch to the **V Ω \rightarrow CAP** position.
2. Insert the black lead banana plug into the negative **COM** jack.
Insert the red test lead banana plug into the positive **V Ω \rightarrow CAP** jack.
3. Use the **MODE** button to select **CAP** Measurements.

4. Touch the test probe tips across the part under test.
 5. Read the capacitance value in the display.
 6. The display will indicate the proper decimal point and value.
- For very large values of capacitance measurement it can take several minutes before the final reading stabilizes.

Diode Measurements

1. Insert the black test lead banana plug into the negative **COM** jack and the red test lead banana plug into the $V \Omega \rightarrow \rightarrow \rightarrow$ CAP positive jack
2. Turn the function switch to $\Omega \rightarrow \rightarrow \rightarrow$ CAP position. Use the **MODE** button to select the diode function if necessary (diode symbol will appear on the LCD when in Diode test mode).
3. Touch the test probe tips to the diode or semiconductor junction under test. Note the meter reading.
4. Reverse the test lead polarity by reversing the red and black leads. Note this reading.
5. The diode or junction can be evaluated as follows:
 - If one reading displays a value (typically 0.400V to 0.900V) and the other reading displays "OL", the diode is good.
 - If both readings display "OL" the device is open.
 - If both readings are very small or "0", the device is shorted.

Non-Contact Voltage (NCV) Measurements

The NCV function works on any rotary switch position.

1. Test the detector on a known live circuit before use.
2. Hold the top of the meter very close to the voltage source as shown.
3. If voltage is present, the red light will long lighting.

***NOTE:** Do not touch the top of the meter when using this function. ***NOTE:** Test on known live circuit before using.

Function Buttons

MODE and Backlight Button

- Press MODE and Backlight Button to select OHM/Diode/Continuity/CAP/LoZ AC/DC Voltage.
- Press the MODE and Backlight button for over 1 second to turn the button, Knob and Rotary light on.
- Press again for over 1second to turn the button, Knob, and Rotary light off.

MAX/MIN Button

- Press MAX/MIN Button the maximum and minimum values are measured.
- This mode is activated on each measurement except for continuity test, diode test capacitance test and AUTO SENSE Voltage mode.
- This mode is disabled keeping pressed MAX/MIN Button or moving the rotary switch.

DATA HOLD and Flashlight Button

- To freeze the LCD reading, press the HOLD and Flashlight Button.
- While data hold is active, the HOLD icon appears on the LCD.
- Press the HOLD and Flashlight Button again to return to normal.
- Press the HOLD and Flashlight Button for over 1 second to turn the light on.
- Press again for over 1second to turn the light off.

Automatic Power OFF

- In order to conserve battery life, the meter will automatically turn off after approximately 15 minutes.
- To turn the meter on again, turn the function switch to the OFF position and then to the desired function position.
- To press and hold the **MODE and Backlight Button** to turn the system on, the auto power off function will be cancelled.

Maintenance

WARNING: To avoid electrical shock, disconnect the meter from any circuit, remove the test leads from the input terminals, and turn OFF the meter before opening the case. Do not operate the meter with an open case.

Cleaning and Storage

Periodically wipe the case with a damp cloth and mild detergent; do not use abrasives or solvents. If the meter is not to be used for 60 days or more, remove the battery and store it separately.

Battery Replacement

1. Remove the Phillips head screw that secures the rear battery door
2. Open the battery compartment.
3. Replace the 1.5V x 2 AA batteries.
4. Secure the battery compartment.

Specifications

Function	Range	Resolution	Accuracy \pm (% of reading+digits)
AC True RMS Current	200.0A	100mA	\pm (3% + 5 digits)

Over Rang Protection: Maximum input 200A; Frequency Response: 50 to 60Hz

AC True RMS Voltage (Auto Sense)	1.000 to 6.000V	1mV	\pm (1.2% + 5 digits)
	60.00V	10mV	\pm (1.2% + 2 digits)
	600.0V	100mV	
	1000V	1V	\pm (1.5% + 2 digits)

Input Impedance:10M Ω ; Low Input Impedance Test Voltage: \sim 3K Ω MAX 600V AC;

Accuracy Specified from +3.0% of rdg +8digits;

Over Rang Protection: 1000V rms

Frequency Response: 50 to 1000Hz(sine wave), 50/60(all wave)

DC Voltage (Auto Sense)	6.000V	1mV	\pm (0.9% + 5 digits)
	60.00V	10mV	\pm (1.0% + 2 digits)
	600.0V	100mV	
	1000V	1V	\pm (1.2% + 2 digits)

Input Impedance: 10M Ω ; Low Input Impedance Test Voltage: \sim 3K Ω MAX 600V DC; Accuracy Specified from+3.0% of rdg +8digits; Over Rang Protection: 1000V

Resistance	600.0 Ω	0.1 Ω	\pm (1.0% + 4 digits)
	6.000k Ω	1 Ω	
	60.00k Ω	10 Ω	\pm (1.5% + 4 digits)
	600.0k Ω	100 Ω	
	6.000M Ω	1k Ω	\pm (2.5% + 4 digits)
	60.00M Ω	10k Ω	\pm (3.5% + 4 digits)

Over Rang Protection: 300V rms

Function	Range	Resolution	Accuracy \pm (% of reading+digits)
Capacitance	60.00nF	0.01nF	\pm (3% + 5 digits)
	600.0nF	0.1nF	
	6.000 μ F	1nF	
	60.00 μ F	0.01 μ F	
	600.0 μ F	0.1 μ F	\pm (3.5% + 10 digits)
	4000 μ F	1 μ F	\pm (5.0% + 10 digits)

* >6nF no specification; Over Rang Protection: 300V rms

Function	Testing Condition	Reading
Diode	Test current of 1.5mA typical; Open circuit voltage <3VDC typical	Forward voltage drop of Diode.
Continuity	Test current <0.35mA	Buzzer makes a long sound, While resistance is less than(50 Ω).

Over Rang Protection: 300V rms

Note: Accuracy is given as \pm (% of reading + counts of least significant digit) at 23 °C \pm 5 , with relative humidity less than 80%RH.

General Specifications

Clamp jaw opening	0.6" (16mm) approx.
Display	(6000 counts) Negative Polarity LCD
Low Battery indication	'

Input Impedance	10M Ω (VDC and VAC)
Low Input Impedance	3K Ω (VDC and VAC)
AC response	True RMS (AAC and VAC)
ACA Bandwidth	50/60Hz(ALL WAVE) ;50Hz to 400Hz(SINE WAVE)
Operating Temperature	41°F to 104°F (5°C to 40°C)
Storage Temperature	-4°F to 140°F (-20°C to 60°C)
Operating Humidity	Max 80% up to 87°F (31°C) decreasing linearly to 50% at 104°F(40°C)
Storage Humidity	<80%
Operating Altitude	7000ft. (2000meters) maximum.
Battery	Two (2) 1.5V "AA" Batteries
Battery Life	Capacitance – 2000mAh (Alkaline)
	Work Time Without Knob, Rotary, Button, Flashlight backlight ~100h; With Knob, Rotary, Button, Flashlight backlight ~40h.
Auto power OFF	After approx. 15 minutes
Safety	For indoor use and in accordance with the requirements for double insulation to EN61010-1:2010; EN61010-2-030:2016, EN61010-031:2015, EN61010-2-032:2012, EN61010-2-033:2012 Overvoltage CATIV 600V/ CATIII 1000V Pollution Degree 2.
Weight:	7.78 oz (220.6g)
Dimensions:	9.0" x 2.5" x 1.7" (230 x 64 x 43.3mm)

Warranty Information

Triplett / Jewell Instruments extends the following warranty to the original purchaser of these goods for use. Triplett warrants to the original purchaser for use that the products sold by it will be free from defects in workmanship and material for a period of (1) one year from the date of purchase. This warranty does not apply to any of our products which have been repaired or altered by unauthorized persons in any way or purchased from unauthorized distributors so as, in our sole judgment, to injure their stability or reliability, or which have been subject to misuse, abuse, misapplication, negligence, accident or which have had the

serial numbers altered, defaced, or removed. Accessories, including batteries are not covered by this warranty

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