

Triplett CM650

Triplett CM650 True RMS 6000 Count 600A AC/DC Clamp Meter

User Instruction Manual

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1. SAFETY INFORMATION

Please read and understand all safety information before operating the Triplett CM650 Clamp Meter. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always adhere to local and national safety codes.
- Do not use the meter if it appears damaged or if the test leads are damaged.
- Ensure the meter is set to the correct function and range before making measurements.
- Do not exceed the maximum input limits for any function. The CM650 is rated CAT III-600V.
- Use caution when working with voltages above 30V AC RMS, 42V peak, or 60V DC, as these pose a shock hazard.
- Keep fingers behind the finger guards on the test leads during use.
- Replace batteries immediately when the low battery indicator appears to ensure accurate readings.
- Do not operate the meter in explosive gas, vapor, or dust environments.

2. PRODUCT OVERVIEW

The Triplett CM650 is a True RMS 6000-count AC/DC clamp meter designed for accurate electrical measurements. It features a large backlit LCD, inrush current measurement, and a non-contact voltage detector.





Figure 2.1: Front view of the Triplet CM650 True RMS 600A AC/DC Clamp Meter. This image displays the meter's

main body, the red clamp jaws, the rotary dial, the LCD screen, and the function buttons.

2.1 Components and Controls

- **Clamp Jaws:** Used for non-contact AC/DC current measurement.
- **Clamp Trigger:** Opens and closes the clamp jaws.
- **Rotary Function Switch:** Selects the desired measurement function.
- **LCD Display:** 6000-count backlit display for reading measurements.
- **Function Buttons:** Include RANGE, MODE/VFD, PEAK INRUSH, REL/Light, and Data Hold.
- **Input Jacks:** For connecting test leads (COM, V Ω CAPHzTemp).
- **NCV Sensor:** Non-Contact Voltage detection sensor.
- **Flashlight:** Integrated LED light for illuminating work areas.



Figure 2.2: Close-up view of the Triplet CM650's rotary dial and function buttons. This image highlights the various measurement selections such as 60A, 600A, Temperature, Resistance/Capacitance, Continuity/Diode, Voltage, and VFD mode, along with the REL and backlight button.

3. SETUP

3.1 Battery Installation

The CM650 requires 3 AAA batteries (included). To install or replace batteries:

1. Ensure the meter is OFF and disconnect all test leads.
2. Locate the battery compartment on the rear of the meter.
3. Use a screwdriver to open the battery compartment cover.
4. Insert the 3 AAA batteries, observing correct polarity (+/-).
5. Replace the battery compartment cover and secure it with the screw.

3.2 Connecting Test Leads

For voltage, resistance, capacitance, frequency, temperature, diode, and continuity measurements, connect the test leads as follows:

- Insert the black test lead into the **COM** input jack.
- Insert the red test lead into the **VΩCAPHzTemp** input jack.



Figure 3.1: The Triplet CM650 clamp meter shown with its included accessories: test leads, K-type thermocouple probe, and a soft carrying case. This illustrates the complete package provided with the device.

4. OPERATING INSTRUCTIONS

Turn the rotary switch to the desired function to begin measurement. The meter features an automatic shutdown function to conserve battery life, which can be deactivated if needed.

4.1 AC/DC Current Measurement (Clamp)

To measure AC or DC current up to 600A without breaking the circuit:

1. Turn the rotary switch to the **60A** or **600A** AC/DC current range.
2. Press the clamp trigger to open the jaws.
3. Enclose only one conductor within the clamp jaws. Ensure the jaws are fully closed.
4. Read the current value on the LCD display.



Figure 4.1: A hand holding the Triplet CM650 clamp meter, with its jaws clamped around a single wire within an electrical panel, demonstrating how to measure current. The display shows a reading of 60.0 A.



Figure 4.2: The Tripplett CM650 clamp meter being used to measure current on a wire connected to an industrial motor. The meter's display shows a reading of 16.00 A, illustrating its application in industrial settings.

4.2 Voltage Measurement (AC/DC)

To measure AC or DC voltage:

1. Connect the test leads to the appropriate input jacks (COM and VΩCAPHzTemp).
2. Turn the rotary switch to the **V** (Voltage) position. The meter will auto-range.
3. Touch the test probes to the circuit points where voltage is to be measured.
4. Read the voltage value on the LCD display.

4.3 Resistance, Capacitance, Frequency, Temperature, Diode, and Continuity

For these measurements, connect the test leads as described in Section 3.2 and select the corresponding function on the rotary switch. Use the **MODE** button to cycle through sub-functions if necessary (e.g., Resistance, Capacitance, Diode, Continuity share a dial position).

- **Resistance (Ω):** Measures electrical resistance in Ohms.
- **Capacitance (CAP):** Measures capacitance in Farads.
- **Frequency (Hz):** Measures the frequency of an AC signal.
- **Temperature ($^{\circ}\text{C}/^{\circ}\text{F}$):** Use the K-type thermocouple probe for temperature measurements.
- **Diode Test:** Checks the forward voltage drop of a diode.
- **Continuity:** Emits an audible tone if the circuit has low resistance (continuity).

4.4 Special Functions

- **True RMS:** Provides accurate readings for non-sinusoidal or noisy AC waveforms.
- **Inrush Current (PEAK INRUSH):** Captures the instantaneous surge current when electrical equipment is powered on. Press the **PEAK INRUSH** button to activate this function.

- **Low Pass Filter (LPF/VFD):** Filters out high-frequency noise and harmonics when measuring variable frequency drives (VFDs). Activate by pressing the **MODE** button in the voltage function until VFD appears.
- **Non-Contact Voltage (NCV):** Detects AC voltage without physical contact. Hold the NCV sensor near a live conductor. An LED indicator and audible beep will signal the presence of voltage.
- **Relative Mode (REL):** Allows for comparisons with a stored reference value. Press the **REL** button to store the current reading as a reference. Subsequent readings will show the difference from this reference.
- **Data Hold:** Freezes the current reading on the display. Press the **HOLD** button to activate/deactivate.
- **Min/Max:** Records the minimum and maximum values during a measurement session.
- **Flashlight:** Press the **REL/Light** button briefly to turn the integrated flashlight on or off.

5. MAINTENANCE

5.1 Cleaning

Wipe the meter with a dry, clean cloth. Do not use abrasives or solvents. Keep the input terminals free of dirt and moisture.




5.2 Battery Replacement

Refer to Section 3.1 for battery replacement instructions. Replace batteries promptly when the low battery indicator appears on the display to ensure accurate measurements.



6. TROUBLESHOOTING

Problem	Possible Cause	Solution
Meter does not power on	Dead or incorrectly installed batteries	Check battery polarity; replace batteries.
No reading or "OL" displayed	Incorrect function/range; open circuit; measurement exceeds range	Select correct function/range; check circuit continuity; ensure measurement is within meter's limits.
Inaccurate readings	Low battery; external interference; dirty test leads	Replace batteries; move away from strong electromagnetic fields; clean test leads and input jacks.
NCV not detecting voltage	Voltage too low; sensor not close enough; shielded wire	Ensure voltage is present and within detectable range; place sensor closer to conductor; NCV may not work on shielded wires.

7. SPECIFICATIONS

<div><div><div>User Manual</div><div>TRIPLETT</div><div>VCT1000</div><div>Voltage and Current Tester with Phase Rotation Indicators and Non-Contact AC Voltage Detection</div></div><div></div><div><div>1.888.876.7664</div><div>www.triplett.com</div><div>sales@triplett.com</div></div><div>CE</div></div>	<p>Triplet VCT1000 Voltage and Current Tester User Manual</p> <p>User manual for the Triplet VCT1000 Voltage and Current Tester. This guide details features, safety, operation for AC/DC voltage, current, phase rotation, continuity, resistance, and NCV testing, along with specifications and warranty.</p>
<div><div><div>User Manual</div><div>TRIPLETT</div><div>MG420</div><div>Analog Megohmmeter/Insulation Tester</div></div><div></div><div>CE</div></div>	<p>Triplet MG420 Analog Megohmmeter/Insulation Tester User Manual</p> <p>User manual for the Triplet MG420 Analog Megohmmeter/Insulation Tester. Provides detailed information on safety, operation, specifications, battery replacement, and warranty.</p>
<div><div><div>User Manual</div><div>TRIPLETT</div><div>ET400</div><div>Non-Contact AC Voltage Detector and Phase Sequence Indicator</div></div><div></div><div>CE</div></div>	<p>Triplet ET400 Non-Contact AC Voltage Detector and Phase Sequence Indicator User Manual</p> <p>User manual for the Triplet ET400, a non-contact AC voltage detector and phase sequence indicator. Learn about its features, operation, safety precautions, and specifications.</p>

Documents - Triplet – CM650

<div><div><div>User Manual</div><div>TRIPLETT</div><div>CM650</div><div>600A TRMS AC/DC Clamp Meter</div></div><div></div><div>CE</div></div> <div><div><div>Introduction</div><div>Congratulations on your purchase of the Triplet CM650 600A True RMS AC/DC Clamp meter. The CM650 True RMS AC/DC Clamp meter features:</div><div><ul style="list-style-type: none">• AC/DC Current measurements up to 600A• Variable Frequency Drive (VFD) Voltage Measurements• Inrush Current Mode• Temperature Measurements• Non-contact AC voltage detection• Auto Power OFF</div></div></div>	<p>[pdf] User Manual</p> <p>Mike Oster cm650 files triplet manual </p> <p>User Manual CM650 600A TRMS AC/DC Clamp Meter Introduction Congratulations on your purchase of the Triplet CM650 600A True RMS AC/DC Clamp meter. The CM650 True RMS AC/DC Clamp meter features: AC/DC Current measurements up to 600A. Variable Frequency Drive VFD Voltage Measurements Inrush Curre...</p> <p>lang:en score:44 filesize: 1.4 M page_count: 15 document date: 2020-11-11</p>
<div><div><div>User Manual</div><div>TRIPLETT</div><div>CM600</div><div>600A TRMS AC Clamp Meter</div></div><div></div><div>CE</div></div> <div><div><div>Introduction</div><div>Congratulations on your purchase of the Triplet CM600 600A True RMS AC Clamp meter. The CM600 True RMS AC Clamp meter features:</div><div><ul style="list-style-type: none">• AC Current measurements up to 600A• Variable Frequency Drive (VFD) Voltage Measurements• Inrush Current Mode• Temperature Measurements• Non-contact AC voltage detection• Auto Power OFF</div></div></div>	<p>[pdf] User Manual</p> <p>3m manual TRIPLETT CM650 True RMS AC Clamp Meter 600 A 6000 count cm650 globaltestsupply s cache </p> <p>User Manual CM600 600A TRMS AC Clamp Meter Introduction Congratulations on your purchase of the Triplet CM600 600A True RMS AC Clamp meter. The CM600 True RMS AC Clamp meter features: AC Current measurements up to 600A. Variable Frequency Drive VFD Voltage Measurements Inrush Current Mode Te...</p> <p>lang:en score:31 filesize: 1.74 M page_count: 15 document date: 2015-09-17</p>

CM600
600A TRMS AC Clamp Meter



C E

Introduction

Congratulations on your purchase of the Triplett CM600 600A True RMS AC Clamp meter. The CM600 True RMS AC Clamp meter features:

- AC Current measurements up to 600A
- Variable Frequency Drive (VFD) Voltage Measurements
- Inrush Current Mode
- Temperature Measurements
- Non-contact AC voltage detection
- Auto Power OFF

800,561,8187

www. **icn** .com

information@itm.com

CM600 & CM650 600A AC and AC/DC True RMS Clamp Meters

True RMS Clamp Meter with Inrush current and Low Pass Filter

- Captures the instantaneous surge (inrush) current when power equipment is turned on
- 1.2" (30mm) clamp jaw
- Low Pass Filter (LPF) for filtering frequency and harmonic interference when measuring variable frequency drives
- Peak voltage measurement with Min/Max
- Built-in Non-Contact Voltage Detector with LED
- Data Hold freezes the display
- Relative Mode for making comparisons to a stored reference value
- Auto power off with disable
- Built-in flashlight
- Includes test leads, Type K thermocouple bead probe, 3 AAA batteries, and carrying case
- 1-year warranty

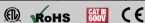
Model CMR00:

- Model CM600:**
• Measures 600A True RMS AC Current
- Model CM600G:**
• Measures 600A True RMS AC and DC Current

- DC Zero func

Applications:
Typically when using a multimeter to measure current, you would have to "break the circuit" and place the meter in series with it, so that voltage and current would pass through it. A clamp meter allows you to easily measure current without breaking the circuit by clamping around a single conductor. This saves time and the circuit will not be damaged.

	EMMO	CM80
Size (MB)	1	2
Startup events	6000 / sec	6000 / sec
Startup time	400 s	400 s
ACU Assembly	225 / sec	225 / sec
ACU Current	—	600 A
ACU Voltage	—	300 V
ACU Power	—	180 kW
Temperature	4 to 160°F (3 to 70°C)	4 to 160°F (3 to 70°C)
Capacitance	1000 pF	—
Frequency	1000 Hz	1000 Hz
Peak Load	20 to 100 Hz	20 to 100 Hz
Power	—	100 W
Low Power Filter (Hz)	Yes	—
RF Detector	Yes	—
Internal Noise	—	100 mV
Internal Leakage	—	100 mV
Internal Leakage	—	100 mV
Dimensions	8.4 x 3.1 x 1.3 (213 x 79 x 33 mm)	8.4 x 3.1 x 1.3 (213 x 79 x 33 mm)
Weight	1.56 lb (708 g)	15.5 lb (700 g)



TRIPLETT

Find Quality Products Online at: www.GlobalTestSupply.com sales@GlobalTestSupply.com

CM600 & CM650 600A AC and AC/DC True RMS Clamp Meters

True RMS Clamp Meter with Inrush current and Low Pass Filter
Features:

- Captures the instantaneous surge (inrush) current when power equipment is turned on
- 5.2" (23mm) clamp jaw
- Low Pass Filter (LPF) for filtering frequency and harmonic interference when measuring variable frequency drives
- Peak-voltage measurement with Min/Max
- Built-in Non-Contact Voltage Detector with LED
- Data Hold freezes the display
- Relative Mode for making comparisons to a stored reference value
- Auto power off with disable
- Built-in flashlight
- Includes test leads, Type K thermocouple bead probe, 3 AAA batteries, and carrying case
- 1-year warranty

Model CIR900:

- Model CM600:**
• Measures 600A True RMS AC and DC Current

- DC Zero function

Applications:
Typically when using a multimeter to measure current, you would have to "break the circuit" and place the meter in series with it, so that voltage and current would pass through it. A clamp meter allows you to easily measure current without breaking the circuit by clamping around a single conductor. This saves time and the circuit will not be damaged.

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[\[pdf\]](#) User Manual Datasheet

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User Manual CM600 600A TRMS AC Clamp Meter Introduction Congratulations on your purchase of the Triplet CM600 600A True RMS AC Clamp meter. The CM600 True RMS AC Clamp meter features: AC Current measurements up to 600A. Variable Frequency Drive VFD Voltage Measurements Inrush Current Mode Te...

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[\[pdf\]](#) Datasheet Warranty

3m datasheet TRIPLETT CM650 True RMS AC Clamp Meter 600 A 6000 count cm650 globaltestsupply s cache ||| CM600 **CM650** 600A AC and AC/DC True RMS Clamp Meters True RMS Clamp Meter with Inrush current and Low Pass Filter Features: Captures the instantaneous surge inrush current when power equipment is turned on 1.3 33mm clamp jaw Low Pass Filter LPF for filtering frequency and harmonic interf...

lang:en score:27 filesize: 373.2 K page count: 1 document date: 2015-09-17

[\[pdf\]](#) Datasheet Warranty

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CM600 **CM650** 600A AC and AC/DC True RMS Clamp Meters True RMS Clamp Meter with Inrush current and Low Pass Filter Features: Captures the instantaneous surge inrush current when power equipment is turned on 1.3 33mm clamp jaw Low Pass Filter LPF for filtering frequency and harmonic interf...

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CM600 & CM650 600A AC and AC/DC True RMS Clamp Meters

True RMS Clamp Meter with Inrush current and Low Pass Filter

Features:

- Captures the instantaneous surge (inrush) current when power equipment is turned on
- 1.3" (33mm) clamp jaw
- Low Pass Filter (LPF) for filtering frequency and harmonic interference when measuring variable frequency drives
- Peak voltage measurement with MicroMax
- Built-in Non-Contact Voltage Detector with LED
- Data Hold freezes the display
- Relative Mode for making comparisons to a stored reference value
- Auto power off with display
- Built-in backlight
- Includes test leads, Type K thermocouple lead wires, 3 AAA batteries, and carrying case
- 1 year warranty

Model CM600:

- Measures AC/DC True RMS AC Current
- Measures AC/DC True RMS AC and DC Current
- DC Zero function

Model CM650:

- Measures AC/DC True RMS AC Current
- Measures AC/DC True RMS AC and DC Current
- DC Zero function

Applications:

Typically when using a multimeter to measure current, you need to break the circuit and place the meter in series with it. In that voltage and current could pass through it. A clamp meter allows you to easily measure current without leaving the circuit by clamping around a single conductor. This saves time and the circuit will not be damaged.

Ordering Information:

CM600 AC/DC True RMS Clamp Meter
CM650 AC/DC True RMS Clamp Meter
CM600-NIST CM600 with Certificate of Traceability to NIST
CM650-NIST CM650 with Certificate of Traceability to NIST
CM600-FAST CM600 with Certificate of Traceability to NIST

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1800.544.2843 www.calcert.com sales@calcert.com

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CM600 **CM650** 600A AC and AC/DC True RMS Clamp Meters True RMS Clamp Meter with Inrush current and Low Pass Filter Features: Captures the instantaneous surge inrush current when power equipment is turned on 1.3 33mm clamp jaw Low Pass Filter LPF for filtering frequency and harmonic interf...

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CM600 & CM650 600A AC and AC/DC True RMS Clamp Meters

True RMS Clamp Meter with Inrush current and Low Pass Filter

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Model CM600:

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- Measures AC/DC True RMS AC and DC Current
- DC Zero function

Model CM650:

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Ordering Information:

CM600 AC/DC True RMS Clamp Meter
CM650 AC/DC True RMS Clamp Meter
CM600-NIST CM600 with Certificate of Traceability to NIST
CM650-NIST CM650 with Certificate of Traceability to NIST
CM600-FAST CM600 with Certificate of Traceability to NIST

TRIPLETT
Test Equipment Depot - 800.544.2843 - 5 Commonwealth Ave., MA 01801
TestEquipmentDepot.com

[pdf] Datasheet

CM600 Datasheet Datasheet424 42 KB Triplet CM650 NIST Test Equipment Depot cm600 datasheet 44f0

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GP Batteries

Safety Data Sheet for GP 9V Carbon Zinc & Zinc Chloride Batteries

Revised: 07/2016 (SDS-0002)

GP Batteries are a subsidiary of the Global Harmonized System (GHS) and exempt from GHS classification criteria. The Safety Data Sheet (SDS) format requires data to be provided for the battery, as this does not fit the general classification criteria under normal conditions of use. The purpose of this SDS is to provide information for the safety handling of the product.

Please follow the handling and precautions listed below to avoid possible hazard from the improper use of batteries and to ensure that they are used safely. The following safety data sheet and transportation and other regulatory information are provided to ensure the safe handling of the battery. For more information, please refer to the battery label.

Section 1 - Product and Company Identification

Product Name: GP 9V Carbon Zinc & Zinc Chloride Batteries

Manufacturer's Name: GP Batteries, Inc.

Emergency Telephone Number: 800-333-3333 (USA and Canada) or +1-708-333-3333 (Outside USA and Canada)

Address: 1000 W. 15th Street, Suite 100, Chicago, IL 60604, USA

Phone: 773-333-3333

Date of preparation and revised: 7th Sep 2016

Section 2 - Hazard Identification

GHS Classification: N/A

Improper handling of the battery could lead to irritation, poisoning, or explosion and cause human injury or equipment trouble. Especially touch with liquid leaked out of battery could cause injury like skin of eye. Please avoid contact with children.

Under normal conditions of use, the battery is chemically sealed and not classified as hazardous. If the electrolyte is leaked, hazardous material may be released.

Section 3 - Environmental Information

GP Batteries are a subsidiary of the Global Harmonized System (GHS) and exempt from GHS classification criteria. The Safety Data Sheet (SDS) format requires data to be provided for the battery, as this does not fit the general classification criteria under normal conditions of use. The purpose of this SDS is to provide information for the safety handling of the product.

[pdf] Instructions Datasheet Safety Datasheet Catalog Label

600 Amp True RMS AC DC Clamp Meter with Certificate of Traceability to NIST SDS TRIPLETT CM650 NIST

614395003357 0614395003357 10064055532 33b07551 e784 4162 b0ad 831f5580cb0c images thdstatic catalog

Images 33 |||

Page 1 of 8 Safety Data Sheet for GP 9V Carbon Zinc Zinc Chloride Batteries Document

Number: MWW002 Revision: 1 Date of prepared: 7th Sep 2016 Batteries are articles under

the Globally Harmonized System GHS and exempt from GHS classification criteria. The

Safety Data Sheet SDS format requ...

lang:en score:10 filesize: 431.17 K page_count: 8 document date: 2021-04-16