Triplett CM650

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

User Instruction Manual

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 Triplett 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, VΩCAPHzTemp).
- **NCV Sensor:** Non-Contact Voltage detection sensor.
- **Flashlight:** Integrated LED light for illuminating work areas.

Figure 2.2: Close-up view of the Triplett 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 Triplett 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 Triplett 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 Triplett 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 (°C/°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

Feature	Specification
Model	CM650
Display	6000 Count, Backlit LCD
AC/DC Current	Up to 600A
True RMS	Yes
Inrush Current	Yes
Low Pass Filter (LPF)	Yes
Non-Contact Voltage (NCV)	Yes, with LED indicator
Measurements	Resistance, Capacitance, Frequency, Temperature, Diode Test, Continuity
Safety Rating	CAT III-600V
Power Source	3 AAA batteries (included)
Product Dimensions	22.35 x 7.62 x 4.06 cm
Item Weight	290.3 g
Included Accessories	Test cables, K-type thermocouple probe, carry case

8. Warranty and Support

The Triplett CM650 True RMS 6000 Count 600A AC/DC Clamp Meter comes with a**1-year warranty** from the date of purchase. This warranty covers defects in materials and workmanship under normal use.
For warranty claims, technical support, or service inquiries, please contact Triplett customer service. Keep your proof of purchase for warranty validation.
For more information, visit the official Triplett website or contact your local distributor.

Related Documents

 User Manual TRIPLETT CM1000 1000A TRMS AC Clamp Meter CE Introduction	Triplett CM1000 1000A TRMS AC Clamp Meter User Manual Comprehensive user manual for the Triplett CM1000 1000A True RMS AC Clamp Meter, covering features, operation, safety, specifications, and maintenance for accurate electrical measurements.

	Triplett VCT1000 Voltage and Current Tester User Manual User manual for the Triplett 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.
	Triplett MG420 Analog Megohmmeter/Insulation Tester User Manual User manual for the Triplett MG420 Analog Megohmmeter/Insulation Tester. Provides detailed information on safety, operation, specifications, battery replacement, and warranty.
	Triplett ET400 Non-Contact AC Voltage Detector and Phase Sequence Indicator User Manual User manual for the Triplett ET400, a non-contact AC voltage detector and phase sequence indicator. Learn about its features, operation, safety precautions, and specifications.

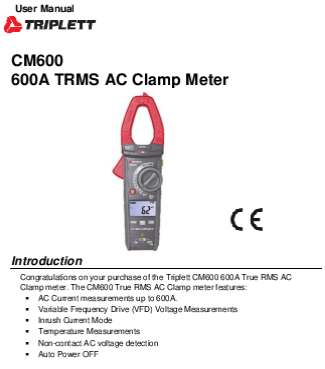
Documents - Triplett – CM650

[pdf] User Manual

Mike Oster cm650 files triplett manual |||

User Manual **CM650** 600A TRMS AC/DC Clamp Meter Introduction Congratulations on your purchase of the Triplett **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...

lang:en score:44 filesize: 1.4 M page_count: 15 document date: 2020-11-11



[pdf] User Manual

3m manual TRIPLETT CM650 True RMS AC Clamp Meter 600 A 6000 count cm650 globaltestsupply s cache |||

User Manual CM600 600A TRMS AC Clamp Meter 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 Te...

lang:en score:31 filesize: 1.74 M page_count: 15 document date: 2015-09-17


User Manual
TRIPLETT
CM600
600A TRMS AC Clamp Meter
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

[pdf] User Manual Datasheet

ITM Datasheet Template manual TRIPLETT CM650 NIST AC DC True RMS Clamp Meter 600 A cm650 nist itm s cache |||

User Manual CM600 600A TRMS AC Clamp Meter 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 Te...

lang:en score:30 filesize: 1.75 M page_count: 15 document date: 2015-03-23


CM600 & CM650 600A AC and AC/DC True RMS Clamp Meters
True RMS Clamp Meter with Inrush current and Low Pass Filter
Features:
Model CM600:
Model CM650:
Applications:
Ordering Information:
Find Quality Products Online at: www.GlobalTestSupply.com sales@GlobalTestSupply.com

[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


CM600 & CM650 600A AC and AC/DC True RMS Clamp Meters
True RMS Clamp Meter with Inrush current and Low Pass Filter
Features:
Model CM600:
Model CM650:
Applications:
Ordering Information:

[pdf] Datasheet Warranty

cm600 files triplett datasheet |||

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:19 filesize: 352.15 K page_count: 1 document date: 2021-01-25

[pdf] Datasheet Warranty

ITM Datasheet Template datasheet TRIPLETT CM600 NIST AC True RMS Clamp Meter 600 A cm600 nist calcert 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...

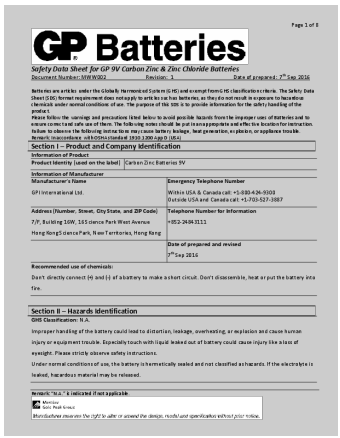
lang:en score:17 filesize: 389.03 K page_count: 1 document date: 2022-03-29

[pdf] Datasheet

CM600 Datasheet Datasheet424 42 KB Triplett CM650 NIST Test Equipment Depot cm600 datasheet 44f0 testequipmentdepot media akeneo connector asset files c m |||

...

lang:en score:11 filesize: 424.42 K page_count: 1 document date: 2021-05-07



[pdf] Instructions Datasheet Safety Datasheet Catalog Label

600 Amp True RMS AC DC Clamp Meter with Certificate of Traceability to N I S T SDS TRIPLETT CM650 NIST 614395003357 0614395003357 1006405532 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