

Clarke®



OPEN JAW DIGITAL MULTIMETER

MODEL No: CDM85

Part No: 4500095

OPERATING & MAINTAINENCE INSTRUCTIONS



0508

Thank you for purchasing this CLARKE CDM85 Digital Multimeter.

Please read this leaflet thoroughly and follow the instructions carefully, in doing so you will ensure that operations are carried out in complete safety, and you can look forward to the tool giving you long and satisfactory service.

GUARANTEE

This CLARKE product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt as proof of purchase. This guarantee is invalid if the product is found to have been abused or tampered with in any way, or not used for the purpose for which it was intended.

Faulty goods should be returned to their place of purchase, no product can be returned to us without prior permission.

This guarantee does not effect your statutory rights.

SAFETY INFORMATION

This clamp meter has been designed according to IEC-61010 concerning electronic measuring instruments with a measurement category (CAT II 600 V).

ELECTRICAL SYMBOLS

~ AC (Alternating Current)

 DC (Direct Current)

·  Important safety information. Refer to the manual.

·  Dangerous voltage may be present.

 Earth ground

 Conforms to European Union directives

 Double insulated

 Diode

WARNING

To avoid possible electric shock or personal injury, follow these guidelines:

- Do not use the meter if it is damaged. Before you use the meter, inspect the case. Pay particular attention to the insulation surrounding the connectors.
- Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity. Replace damaged test leads before you use the meter.
- Do not use the meter if it operates abnormally. Protection may be impaired. When in doubt, have the meter serviced.
- Do not operate the meter around explosive gas, vapor, or dust.
- Do not apply more than the rated voltage, as marked on the meter, between terminals or between any terminal and earth ground.
- Before use, verify the meter's operation by measuring a known voltage.
- When servicing the meter, use only specified replacement parts.
- Use with caution when working above 30V ac rms, 42V peak, or 60V dc. Such voltages pose a shock hazard.
- When using the probes, keep your fingers behind the finger guards on the probes.
- Connect the common test lead before you connect the live test lead. When you disconnect test leads, disconnect the live test lead first.
- Remove the test leads from the meter before you open the battery door or measure AC current.
- Do not operate the meter with the battery door or portions of the case removed or loosened.
- To avoid false readings, which could lead to possible electric shock or personal injury, replace the batteries as soon as the low battery indicator appears.
- Before using the clamp jaws to clamp the conductor to be measured, make sure that all the test leads have been removed from the clamp meter.
- Remove test leads from the meter and remove the clamp jaw from the clamped conductor before opening the meter case or the battery door.

- Remaining endangerment: When an input terminal is connected to dangerous live potential it is to be noted that this potential at all other terminals can occur!
- CATII - Measurement Category II is for measurements performed on circuits directly connected to low voltage installation. (Examples are measurements on household appliances, portable tools and similar equipments.) Do not use the meter for measurements within Measurement Categories III and IV.

CAUTION

To avoid possible damage to the meter or to the equipment under test, follow these guidelines:

- Disconnect circuit power and discharge all high-voltage capacitors before testing resistance, diode and continuity.
- Use the proper function and range for your measurements.
- Before moving the rotary switch to change functions, disconnect test leads from the circuit under test and remove the clamp jaws from the clamped conductor.

GENERAL SPECIFICATION

Display:	3 1/2 -digit LCD
Overrange indication :	"1" shown on LCD
Sampling rate:	Approximate 3 times per sec.
Jaw opening capability :	27mm
Max. measurable conductor : ..	(D 25mm)
Battery :	3V, CR2032, three batteries
Operation temperature :	0°C -40°C <75%RH
Storage temperature :	-20°C -60 °C, <85%RH
Dimensions:	151 mm X 65mm X 34mm
Weight :	about 127g(including battery)

PARTS ID



1. Clamp Jaw

Used to clamp the conductor to be measured. To get more accurate reading, the conductor should be in the center of the jaws.

2. Trigger

Used to open and close the jaws for AC current measurement.

3. Display

3 1/2-digit LCD, with a max. reading 1999.

4. “COM” Jack

Plug-in jack for the black (Negative) test lead.

5. “V Ω -0+” Jack

Plug-in jack for the red (Positive) test lead.

6. Rotary Switch

Used to select desirable function and range as well as to turn the meter on/off.

7. “HOLD” Button

After pressing the button, the present reading is held on the display, meanwhile “HOLD” is displayed on LCD as an indicator. To exit the Hold Mode, press the button again and the indicator “HOLD” will disappear.

OPERATING INSTRUCTIONS

Measuring DC Voltage

- 1 Insert the plug of the black test lead to the "COM" jack, the plug of the red test lead to the 'V Ω $\rightarrow$ $\vdash$ ' jack.
- 2 Set the rotary switch to "600V $\equiv$ " position.
- 3 Connect the test leads to the source or load to be measured.
- 4 Read the voltage value on the LCD. The polarity of the red test lead connection will be indicated as well.

Measuring AC Voltage

- 1 Insert the plug of the black test lead to the "COM" jack, the plug of the red test lead to the 'V Ω $\rightarrow$ $\vdash$ ' jack.
- 2 Set the rotary switch to "600V $\sim$ " position.
- 3 Connect the test leads to the source or load to be measured.
- 4 Read the voltage value on the LCD.

Measuring AC Current

- 1 Set the rotary switch to the desired AC current range position.
- 2 Press the trigger and clamp the conductor to be measured with the jaws.

Make sure that the jaws are perfectly closed.

Note:

- a. Each time only one conductor should be clamped.
 - b. The conductor should be in the center of the area closed by the jaws in order to get an accurate reading.
 - c. Don't touch the conductor with your hand or skin.
- 3 Read the reading on the display.

Measuring Resistance

- 1 Insert the plug of the black test lead to the "COM" jack, the plug of the red test lead to the 'V Ω ' jack.
- 2 Set the rotary switch to the desired resistance range position ("2000 Ω " or "200k Ω ").
- 3 Connect the test leads across the load to be measured.
- 4 Read the reading on LCD.

Note:

The built-in buzzer will sound when the resistance being measured is less than about 30 Ω with the rotary switch in "2000 Ω " position.

Before you do in-circuit resistance measurement, make sure that the power of the circuit has been disconnected and all the capacitors have been discharged.

Measuring for continuity

- 1 Insert the plug of the black test lead to the "COM" jack, the plug of the red test lead to the 'V Ω ' jack.
- 2 Set the rotary switch to the "  " position.
- 3 Connect the test leads across the load to be measured.
- 4 When the resistance being measured is less than about 30 Ω , the buzzer will sound.

Measuring Diode

- 1 Insert the plug of the black test lead to the "COM" jack, the plug of the red test lead to the 'V Ω ' jack. (the polarity of the red test lead is "+").
- 2 Set the rotary switch to the "" position.
- 3 Connect red test lead to the anode of the diode, black test lead to the cathode of the diode.

Read the approximate forward voltage on LCD.

Note: Reading's unit is "mV".

TEST RANGE SPECIFICATION

Accuracy specifications take the form of:
 $\pm(\% \text{ of Reading} + \text{number of least significant digits})$.

AC Voltage

Range	Resolution	Accuracy	Overload Protection
600V	1V	$\pm(1.2\%+3)$	DC 600V AC 600vrms

Input impedance: $9M\Omega$

Frequency Response: 40Hz~400Hz

Maximum permitted input voltage: 600Vrms

DC Voltage

Range	Resolution	Accuracy	Overload Protection
600V	1V	$\pm(1.0\%+2)$	DC 600V AC 600vrms

Input impedance: $9M\Omega$

Maximum permitted input voltage: 600Vrms

Resistance

Range	Resolution	Accuracy	Overload Protection
2000Ω	1Ω	$\pm(1.2\%+2)$	DC 250V AC 250Vrms
$200k\Omega$	100Ω	$\pm(1.5\%+2)$	DC 250V AC 250Vrms

AC Current

Range	Resolution	Accuracy	Overload Protection
20A	10mA	$\pm(3.0\%+5)$	500A (30 Seconds)
200A	100mA	$\pm(2.5\%+5)$	500A (30 Seconds)
400A	1A	$\pm(2.5\%+5)$	500A (30 Seconds)

Response: Average, calibrated in rms of a sine wave

Frequency range: 50 ~ 60 Hz

Audible Continuity

Range	Resolution	Accuracy
	1 Ω	When the resistance drops below about 30 Ω , The buzzer will sound

Diode

Range	Resolution	Accuracy	Overload Protection
	1mV	Approx. forward voltage drop will be displayed. (open circuit voltage is around 3V)	DC 250V AC 250Vrms

GENERAL MAINTAINANCE

Periodically wipe the case with a damp cloth and mild detergent. Do not use abrasives or solvents.

Dirt or moisture in the jaws can affect readings.

Clean the jaws as follows:

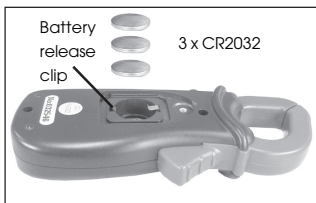
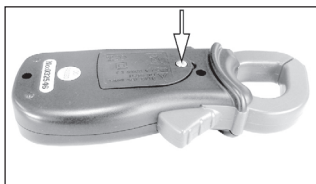
- 1 Make sure that no object is clamped in the jaws.
- 2 Turn the meter off and remove the test leads.
- 3 Shake out any dirt that may be in the jaws.
- 4 Soak a new swab with alcohol. Work the swab around in each jaw.

BATTERY REPLACEMENT

- 1 Remove the screw from the battery cover.
- 2 Gently pull back the battery release clip and remove the 3 batteries.
3. Replace the 3 batteries, making sure that the positive side is facing upwards on each battery.

The batteries required are 3 x CR2032

Dispose of your old batteries in accordance with local regulations.



NOTES

A SELECTION FROM THE VAST RANGE OF

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Hemnall Street, Epping, Essex CM16 4LG