

CLARKE®



DIGITAL MULTIMETER

MODEL NO: CDM10C

PART NO: 4501140

OPERATING INSTRUCTIONS



DL0723

INTRODUCTION

Thank you for purchasing this CLARKE product.

Before attempting to use this product, please read this manual thoroughly and follow the instructions carefully. In doing so you will ensure the safety of yourself and that of others around you, and you can look forward to your purchase giving you long and satisfactory service.

GUARANTEE

This product is guaranteed against faulty manufacture for a period of 12 months from the date of purchase. Please keep your receipt which will be required 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.

ENVIRONMENTAL RECYCLING POLICY



Through purchase of this product, the customer is taking on the obligation to deal with the WEEE in accordance with the WEEE regulations in relation to the treatment, recycling & recovery and environmentally sound disposal of the WEEE.

In effect, this means that this product must not be disposed of with general household waste. It must be disposed of according to the laws governing Waste Electrical and Electronic Equipment (WEEE) at a recognised disposal facility.

SAFETY INFORMATION



WARNING: TAKE CARE WHEN USING THIS METER. IMPROPER USE CAN RESULT IN ELECTRIC SHOCK OR DAMAGE TO THE METER. TAKE ALL NORMAL SAFETY PRECAUTIONS AND FOLLOW THE SAFEGUARDS SUGGESTED IN THIS MANUAL.

BEFORE USE

1. When using the meter, the user must observe all normal safety rules concerning:
 - General protection against electric shock.
 - Protection of the meter against misuse.
2. When the meter is delivered, confirm it has not been damaged in transit.
3. The test leads must be kept in good condition. Before using, check that the insulation on the test leads has not been damaged or any wire exposed.
4. Use only the test leads supplied to ensure operational safety. If necessary, they must be replaced with test leads of the same model or class.






DURING USE

1. Do not take measurements that exceed the maximum values for this meter.
2. Do not touch the metal probes of the test leads when the meter is connected to the circuit being measured.
3. Keep your fingers behind the probe barriers when taking measurements.
4. Do not take voltage measurements if you suspect the value exceeds 600V.
5. If the appropriate value range is unknown, select the highest range on the scale.
6. Disconnect the test leads from the circuit under test before turning the rotary function selector.
7. Do not measure the resistance, diode or continuity of live circuits.
8. Do not connect the meter to any voltage source while the rotary selector is in the Current, Resistance, Diode or Continuity range.
9. Do not use the meter near explosive gases or steam.
10. Stop using the meter if any abnormalities or faults are observed.
11. Do not use the meter unless its rear case and battery cover is correctly and securely fastened.

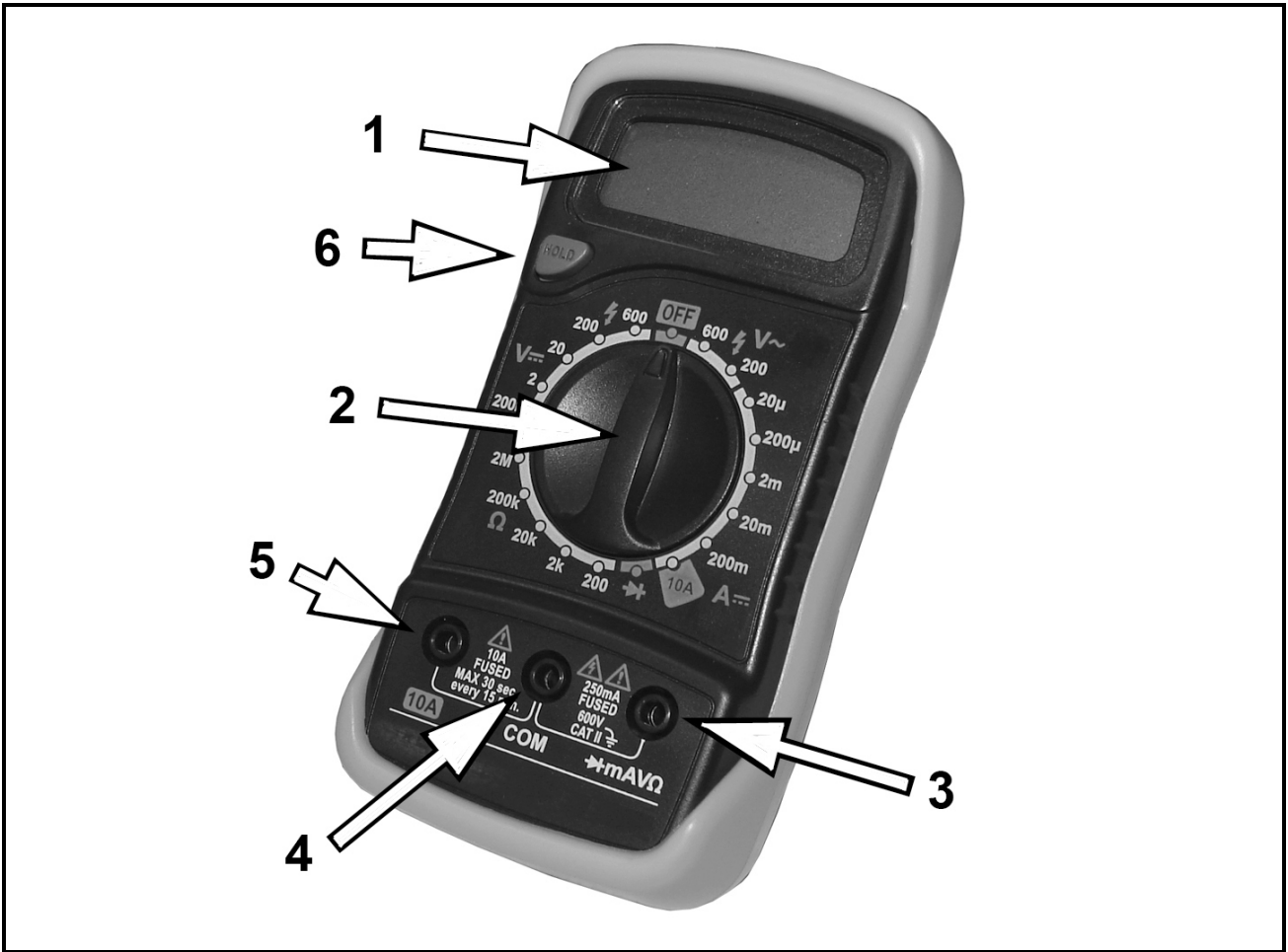
12. Do not store or use the meter in areas exposed to direct sunlight, at high temperature or with high relative humidity.
13. To avoid false readings, replace the batteries as soon as the Low Battery indicator appears.
14. Before use, verify the meter operation by measuring a known voltage.
15. Never touch exposed wiring, connections or any live circuit while taking any measurements.
16. Keep your body isolated from ground by using dry clothing, rubber shoes, rubber mats or any approved insulating material.

SAFETY SYMBOLS

Please read all of the safety and operating instructions carefully before using this product. The following safety symbols may be found on the product.

	General hazard warning		High voltage danger.
	Earth		Class II cabling without earth conductor.
	Possibility of high voltage		

FEATURES



COMPONENTS OF THE METER

1. Liquid Crystal Display (LCD)
2. Rotary switch
 - Selects both different functions and ranges
3. VmA Jack
4. COM jack
5. 10A Jack
6. Data Hold button
 - Press the **HOLD** button. The LCD will hold the last reading measured and display the **H** symbol. When the button is released, the meter will return to normal.

MEASUREMENT FEATURES OF THIS METER

- AC voltage measurement:- V_{\sim}
- DC voltage measurement:- V_{DC}
- DC current measurement:- A_{DC}
- Resistance measurement:- Ω
- Diode measurement:- $\rightarrow|+$

ITEMS SUPPLIED

- Multi-meter
- Pair of test lead/probes (1 red/1 black)
- PP3 type 9-volt battery
- Polymer holder c/w fold-out stand

SPECIFICATION

Model Number	CDM10C
Product dimensions: (D x W x H)	40 x 75 x 144 mm
Weight (including case)	303 g
Test leads length (inc probes)	990 mm
Max voltage between input & earth	CATII 250V
Fuse	F1 125mA/600V F2 10A/600V
Power	PP3 9V battery, (NEDA 1604 or 6F22)
Maximum display value	1999
Over-range indication	"1"
Polarity display	"-" for negative polarity
Detects and measures voltages	DCV 200m/2/20/200 \pm 0.5%, 600 \pm 0.8% ACV 200,600 \pm 1.2%
Detects and measures resistance	Ohm 200/2k/20k/200k \pm 0.8%, 2M \pm 1%
Detects and measures current	DCA:20 μ , 200 μ , 2m, 20m \pm 1%, 200m \pm 1.5%, 10 \pm 3%
Operating temperature	0-40°C
Storage temperature	-10°C to 50°C

OPERATION

Before taking the measurement of voltage with the probe, make sure there is no electronic device connected to the test socket of the instrument.

DC VOLTAGE MEASUREMENT

Range	Resolution	Accuracy
200mV	0.1 μ V	$\pm 0.5\%$ of reading, ± 3 digits
2V	1mV	
20V	10mV	
200V	100mV	
600V	1V	$\pm 0.8\%$ of reading, ± 5 digits

- Overload protection: 200mV range: 250V dc or rms the other ranges 600V dc or rms

DC CURRENT MEASUREMENT

Range	Resolution	Accuracy
20 μ A	0.01 μ A	$\pm 1\%$ of reading, ± 3 digits
200 μ A	0.1 μ A	
2mA	1 μ A	
20mA	10 μ A	$\pm 1\%$ of reading, ± 5 digits
200mA	100 μ A	$\pm 1.5\%$ of reading, ± 5 digits
10A	10mA	$\pm 3\%$ of reading, ± 10 digits

- Overload protection: F1 250mA/600V Fuse F2 10A/600V

AC VOLTAGE MEASUREMENT

Range	Resolution	Accuracy
200V	0.1mV	$\pm 1.2\%$ of reading, ± 10 digits
600V	1V	



- Overload protection: 600V or rms Frequency range: 40Hz to 400Hz
- Display: Average (effective value of sine wave).

RESISTOR



Range	Resolution	Accuracy
200Ω	0.1Ω	± 0.8% of reading, ± 5 digits
2kΩ	1Ω	± 0.8% of reading, ± 2 digits
20kΩ	10Ω	
200kΩ	100Ω	
2MΩ	1kΩ	± 1.0% of reading, ± 5 digits

- Maximum open circuit voltage: 3.2V
- Overload protection: 250V DC or rms

BEFORE OPERATION

1. If the battery is low when the meter is switched on, the  symbol will display. You will need to replace the battery.
2. The  beside the probe jack indicates that the input voltage or current should not exceed the specified limits in order to protect the internal circuits.

DC VOLTAGE MEASUREMENT

1. Insert the red probe into the " mAVΩ" jack and the black probe into the **COM** jack.
2. Turn the rotary switch to the range of  and connect the probes to the power supply or load to be measured. The value detected will be displayed.


NOTE: If you do not know the measured voltage range in advance, set the function/range switch to the maximum range, and then gradually turn to smaller ranges until a satisfactory resolution is found.

NOTE: If the display shows "1", this indicates an over-range measurement and the switch should be set to a higher range.

NOTE: Do not input a voltage of more than 250V. The meter is capable of indicating a higher voltage, but with the risk of damaging the internal circuits.


NOTE: When measuring high voltages, pay special attention to avoid an electric shock.

DC CURRENT MEASUREMENT


1. Plug the black probe into the **COM** jack. For current to be measured not exceeding 200mA, plug the red probe into the “ **mAVΩ**” jack. For current to be measured between 200mA and 10A, plug the red probe into the 10A jack.
2. Set the rotary switch to the desired **A** range and connect the probe in series with the load to be measured. The current value and the polarity connected to the red probe will be shown on the display.

NOTE: If you do not know the measured voltage range in advance, set the rotary switch to the maximum range, and then gradually turn to smaller ranges until satisfactory resolution is found.

NOTE: If the display shows “1”, this indicates an over-range measurement, and the switch should be set to a higher range.


NOTE: The  symbol beside the probe indicates the maximum input current is 200mA or 10A, depending on the inserted jack. Excess current will blow the fuse.

AC VOLTAGE MEASUREMENT

1. Plug the red probe into the “ **mAVΩ**” jack and the black probe into the “**COM**” jack.
2. Turn the rotary switch to **V~** and connect the probe to the power supply or load to be measured.

NOTE: Refer to points above for direct current voltage measurement.

RESISTANCE MEASUREMENT

1. Plug the black probe into the **COM** jack and the red one into the  **mAVΩ** jack.
2. Turn the rotary switch to the **COM** jack and connect the test probes to the resistor being measured. Read the results on the display.

NOTE: If the resistor being measured is greater than the maximum value of the selected range, the display will show “1”, requiring the selection of a higher range. It normally takes a few seconds for the reading to get stable when measuring a resistor larger than 1MΩ.

NOTE: In default of input, for instance, open circuit, the display shows “1”.

NOTE: When measuring an online resistor, de-energize the circuit being measured and discharge all capacitors.

DIODE MEASUREMENT

1. Insert the black probe into the **COM** socket and the red one into the **VΩ.mA**, to give the red probe positive polarity.
2. Turn the rotary switch to the **→|+** range, and connect the red probe to the positive pole of the diode being measured and the black one to the negative pole. Read the approximate forward voltage drop of the diode on the display.

MAINTENANCE

GENERAL CARE



WARNING: BEFORE REMOVING THE REAR COVER, DISCONNECT THE PROBES FROM THE CIRCUIT TO BE MEASURED. ENSURE THE COVER IS TIGHTLY SECURED BEFORE USING THE INSTRUMENT.

Clean the housing of the meter only with a wet rag dipped in a little detergent but never a chemical solution.

In case of any abnormality, stop using the meter and send it for maintenance.

REPLACEMENT OF BATTERY AND FUSE

1. The battery for this multimeter is a PP3 (9Volt) as stated on page 4. The replacement should be of the same specification.
2. Replacement of the fuse, if necessary, is better done by your Clarke service department using one of those listed on page 6.
3. Never use the meter until the rear cover is screwed on after replacing a battery or fuse.

DECLARATION OF CONFORMITY



Hemml Street, Epping, Essex, CM16 4LG

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation:

- The Batteries and Accumulators (Placing on the Market) Regulations 2008
- The Electromagnetic Compatibility Regulations 2016
- The Electrical Equipment (Safety) Regulations 2016
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

The following standards have been applied to the product(s):

- IEC 62321-1:2013, IEC 62321-2:2013, IEC 62321-3-1:2013, IEC 62321-4:2013+A1:2017,
- IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-8:2017,
- ISO 17075-1:2017, EN 61010-1:2010+A1:2019, EN 61010-2-030:2010, EN 61010-2-033:2012,
- EN IEC 61326-1:2021, EN IEC 61326-2-2:2021

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The UKCA mark was first applied in: 2023

Product Description: Multimeter
Model Number(s): CDM10C
Serial/Batch Number: Refer to product/packageing label
Date of Issue: 26/07/2023
Signed: 

J.A Clarke
Director



Fitzwilliam Hall, Fitzwilliam Place, Dublin 2

DECLARATION OF CONFORMITY

This is an important document and should be retained.

We hereby declare that this product(s) complies with the following legislation:

- 2006/66/EC Battery Directive
- 2014/30/EU Electromagnetic Compatibility Directive
- 2014/35/EU Low Voltage Directive
- 2011/65/EU Restriction of Hazardous Substances (RoHS) Directive

The following standards have been applied to the product(s):

- IEC 62321-1:2013, IEC 62321-2:2013, IEC 62321-3-1:2013, IEC 62321-4:2013+A1:2017,
- IEC 62321-5:2013, IEC 62321-6:2015, IEC 62321-7-1:2015, IEC 62321-7-2:2017, IEC 62321-8:2017,
- ISO 17075-1:2017, EN 61010-1:2010+A1:2019, EN 61010-2-030:2010, EN 61010-2-033:2012,
- EN IEC 61326-1:2021, EN IEC 61326-2-2:2021

The technical documentation required to demonstrate that the product(s) meet(s) the requirement(s) of the aforementioned legislation has been compiled and is available for inspection by the relevant enforcement authorities.

The CE mark was first applied in: 2012

Product Description: Multimeter
Model Number(s): CDM10C
Serial/Batch Number: Refer to product/packageing label
Date of Issue: 26/07/2023
Signed: 

J.A Clarke
Director

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