



# DIGITAL MULTIMETER

Model No: CDM 25

## OPERATING INSTRUCTIONS

Thank you for purchasing this CLARKE compact digital multimeter.

This instrument is designed to measure AC and DC voltages, AC and DC current, Resistance, Diode, and to perform continuity checks with accuracy and ease.

### GUARANTEE

This product is guaranteed against faults in manufacture for 12 months from purchase date. Keep your receipt as proof of purchase. This guarantee is invalid if the product has been abused or tampered with in any way, or not used for the purpose for which it is intended. The reason for return must be clearly stated. This guarantee does not affect your statutory rights.

### FEATURES

- Automatic Power Off.
- DC / AC Voltage measurement 1mV to 600V
- DC / AC Current measurement 0.01mA to 400mA
- Full overload protection
- Fully auto-Ranging
- Resistance measurement 0.1Ω to 40 MΩ
- Data Hold function
- Audible continuity function
- Diode test at 25μA test current
- 3.75 LCD Display
- Auto polarity indication

### SPECIFICATIONS

<b>Measuring Method:</b>	Dual integration mode
<b>Sampling Rate:</b>	2 - 3 times per second
<b>Low Battery Indication:</b>	BATT displayed on the left of LCD
<b>Operating Temperature:</b>	0EC - 40EC, less than 80% RH
<b>Dimensions:</b>	70 (W) x 120 (H) x 18 (D) mm
<b>Weight Approx:</b>	110g (Incl batteries)
<b>Battery:</b>	3V, SR44 x 2 or equivalent.
<b>Accessories:</b>	Carrying case, Fuse, Operating Instruction booklet

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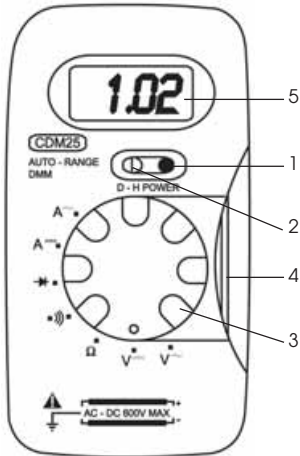
When disposing of this product, do not dispose of with general waste. It must be disposed of according to the laws governing Waste Electrical and Electronic equipment, at a recognised disposal facility.

### SAFETY PRECAUTIONS

Read this information before using the meter, taking special care regarding any WARNING or IMPORTANT notices. The following safe practices and proper operating procedures should be followed when using any multimeter:

- **WARNING: TO AVOID ELECTRIC SHOCK, USE CAUTION WHEN WORKING ABOVE 40V DC OR 25V AC RMS. SUCH VOLTAGES POSE A SHOCK HAZARD**
- Inspect the test leads for insulation damage or exposed metal. Damaged leads should be replaced.
- Select the proper function and range for your measurement.
- Avoid severe shocks and do not drop the multimeter.
- Do not allow the meter to be used if it is damaged or if its safety is impaired.
- Electrically disconnect the live, or hot, test lead before disconnecting the common test lead.
- Follow all equipment safety procedures. Disconnect the input power and discharge all high-voltage capacitors through a protective impedance before testing in Ω and  $\rightarrow$  with the multimeter.
- Avoid working alone.
- When making a current measurement, turn the power off before connecting the multimeter in the circuit. Overloading a current shunt will cause excessive heat.
- When measuring transformer secondary or motor winding current, check the multimeter fuses first.
- When testing circuits take extra care not to touch any bare metal including the ends of the test probes.
- The use of makeshift fuses and the short-circuiting of fuse holders is prohibited.
- Whenever it is likely that the protection has been impaired, the meter shall be made inoperative and be secured against any unintended operation.
- Never attempt to measure a voltage or current higher than the maximum rating of the meter.

### DESCRIPTION OF PANEL



- 1 - Push Button ON/OFF switch
- 2 - D - H Push Button for data hold function
- 3 - Rotary Function Switch
- 4 - Test Leads. Red - positive, Black - negative polarity
- 5 - 3 1/2 digit LCD from 0 to 9999 counts

### OPERATING INSTRUCTIONS

**WARNING: Extreme care should be taken when reading high voltages. DO NOT exceed maximum voltage for which the meter is designed.**

#### DC VOLTAGE MEASUREMENT

1. Set function switch to V<sup>DC</sup> position
2. Set range switch to desired position. If magnitude of voltage is unknown beforehand, set the switch to its highest range and then reduce until satisfactory reading is obtained.
3. Connect test leads across the source or load under measurement. The polarity of the RED lead connection will be indicated as well as the voltage.

Range	Resolution	Accuracy (1 year 18EC 28EC)
4V	1mV	± 0.5% of rdg ± 2 digits
40V	10mV	
400V	0.1V	
600V	1V	

Maximum allowable input: 600V DC

Input Impedance: 10MΩ

#### AC VOLTAGE MEASUREMENT

1. Set function switch to V<sup>AC</sup> position.
2. Set range switch to desired position. Measurement reading can be obtained at 2V and 20V positions, but accuracy is not guaranteed.
3. Connect test leads across load or source under measurement. Read voltage value on display.

Range	Resolution	Accuracy (1 year 18EC 28EC)
4V	1mV	± 0.5% of full scale ± 2 digits
40V	10mV	
400V	0.1V	
600V	1V	

Frequency Range: 50 - 400Hz, 50 - 60 Hz for 400/600V ranges.

Max. Allowable Input: 600V rms AC

#### DC CURRENT

1. Set function switch to A<sup>DC</sup> position
2. Open the circuit to be measured and connect the test leads in series with the load in which current is to be measured.
3. Read current value on display along with polarity of RED test lead.

Range	Resolution	Accuracy (1 year 18EC 28EC)
40mA	0.01mA	± 2.0% of rdg ± 2 digits
400mA	0.1mA	

Overload Protection: 0.5A/250V fuse.

#### AC CURRENT

1. Set function switch to A<sup>AC</sup> position
2. Open the circuit to be measured and connect the test leads in series with the load in which current is to be measured.
3. Read current value on display along with polarity of RED test lead.

Range	Resolution	Accuracy (1 year 18EC 28EC)
40mA	0.01mA	± 2.0% of rdg ± 2 digits
400mA	0.1mA	

Overload Protection: 0.5A/250V fuse.

## RESISTANCE MEASUREMENT

**WARNING: If resistor to be measured is connected to a circuit, ensure all power to the circuit is OFF, and all capacitors are fully discharged before attaching test leads.**

1. Set function switch to  $\Omega$  position.
2. Connect test leads across resistor to be measured, and read resistance value on display.

Range	Resolution	Accuracy (1 year 18EC 28EC)
400W	0.1W	±1.5% of rdg ± 2 digits
4kW	1W	
40kW	10W	
400kW	100 kW	
4MW	1KW	
40MW	10KW	±3.0% of rdg ± 2 digits

Maximum Open Circuit Voltage: 0.65V

Overload Protection: 250V rms AC

## DIODE TEST

1. Set function switch to  $\rightarrow$  position.
2. Connect the red lead to the anode of the diode to be tested, and the black lead to the cathode. Read the approx. forward voltage drop on the display in mV. If the leads are reversed, "OL" will be displayed.

Resolution	Test Current (Max)	Open Circuit Voltage
1mV	25 $\mu$ V	3.0V

Overload Protection: 250V rms AC

## AUDIBLE CONTINUITY TEST

1. Set function switch to ))) position.
2. Connect the test leads to two points of a circuit. The buzzer will sound if the resistance is lower than 50 ohms.

Resolution	Description
0.1 ohm	Built in buzzer sounds when resistance is less than 50 ohms

Overload Protection: 250V rms AC

## DATA HOLD FUNCTION

D-H button is used to hold a measuring result. When this button is pushed, the last reading will be held on the LCD until the button is pushed again, or the function switch is reset.

## MAINTENANCE

CAUTION:

1. Make sure test leads are disconnected from the test circuit, and range switch is set to OFF before opening the case.
2. Do not operate the instrument unless the back cover is in place and fastened.

## BATTERY REPLACEMENT

1. When batteries become exhausted, or drop below the operating voltage, "BATT" sign will appear on the LCD.
2. Turn off meter and remove test leads from all test circuits prior to replacing batteries.
3. Remove the screw from the back cover and open the case. Replace batteries, ensuring proper polarity is observed.

## REPLACEMENT OF FUSE

Proceed as for changing battery, ensuring the fuse replacement is of the same size and rating as the original.

Failure to do so may result in serious damage to your meter or possibly even fire.

(Fuse must be no more than 0.5A/250V)

## REPLACEMENT PARTS

1. Test Leads (pair) Part No. CH1501
2. Fuse (0.5A/250V) Part No. CH1502

Other Clarke quality products include:

- AIR COMPRESSORS
- WELDERS
- POWER WASHERS
- GENERATORS
- BATTERY CHARGERS/BOOSTERS
- ENGINE CRANES
- WOOD & METAL LATHES
- SANDERS
- BANDSAWS/TABLE SAWS
- AND MUCH MUCH MORE

## PARTS & SERVICE

For spare parts and servicing, please contact your nearest dealer, or Clarke International on one of the following numbers:

For Spare Parts and Service, please contact your nearest dealer, or CLARKE International, on one of the following numbers.

PARTS & SERVICE TEL: 020 8988 7400

PARTS & SERVICE FAX: 020 8558 3622

or e-mail as follows:

PARTS: [Parts@clarkeinternational.com](mailto:Parts@clarkeinternational.com)

SERVICE: [Service@clarkeinternational.com](mailto:Service@clarkeinternational.com)