SAFETY PRECAUTIONS

1. To avoid electrical shock and/or damage to the instrument, do not measure voltages that exceed 600V above ground.
2. Before use, ALWAYS inspect the test leads, connectors and prods for cracks, breaks or crazes in the insulation. If in doubt do not use. Renew the parts as necessary.
3. Never exceed the protection limit indicated in the specifications for each range of measurement.
4. Never perform resistance measurements on live circuits.
5. Before inserting transistors for testing, ensure that test leads have been disconnected from any measurement circuits.

DC VOLTAGE MEASUREMENT

1. Connect RED test lead to **"VΩmA"** socket and BLACK to COM
2. Set range selector switch to desired DC V position. If the value to be measured is unknown, set the selector to the highest range, and reduce until satisfactory reading is realised.
3. Connect test leads to device or circuit to be measured.
4. Turn power, to device being measured-ON. The voltage value will be displayed on the digital display along with the polarity.

DC CURRENT MEASUREMENT

1. Connect RED lead to **"VΩmA"** input socket for measurements up to 200mAmps, and the BLACK lead to COM.

   For measurements between 200mA and 10 Amps, connect RED lead to 10A input socket ensuring it is fully depressed.
2. Set range selector switch to desired DC A position.
3. Open the circuit to be measured and turn ON the power.
4. Connect the leads across the load, i.e. in series with the load to be measured.
5. Read the current value on the digital display.

AC VOLTAGE MEASUREMENTS

1. Connect RED lead to **"VemA"** socket and BLACK lead to COM.
2. Set range selector switch to desired AC A position.
3. Connect test leads to device or circuit to be measured.
4. Turn power, to device being measured -ON. The voltage value will be displayed on the digital display along with the polarity.

RESISTANCE MEASUREMENTS

1. Connect RED lead to **"VΩmA"** input socket and the BLACK lead to COM.
2. Set range selector switch to desired W position.
3. **IMPORTANT**: If the resistance to be measured is connected to a circuit, turn OFF the power and discharge ALL capacitors before applying the test prods.
4. Connect the test leads and read resistance value on the digital display

hFE MEASUREMENT

1. Insert E, B and C pins of transistor to the corresponding slots in the hFE socket, paying special attention as to its type - NPN or PNP.
2. Read the hFE value on the digital display.

DIODE TESTING

1. Connect RED test lead to **"VΩmA"** input socket and BLACK to COM
2. Set the rotary switch to the ⊣▶⊢ position.
3. Connect the RED test leads to the anode of the diode and the BLACK lead to the cathode.
4. The approx. forward voltage drop will be displayed on the LCD in mV. If the polarity is reversed, Fig. "1" will be displayed.

BATTERY AND FUSE REPLACEMENT

CAUTION
Before opening the back cover, ensure the test leads are disconnected from any energised circuits to avoid the possibility of electric shock.

It "BAT" appears on the LCD, this indicates that the battery needs replacing. The fuse should rarely need replacement, and a blown fuse is almost always as a result of operator error.

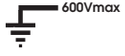
1. Remove the two phillips screws from the back of the unit, and carefully withdraw the back cover.
2. Carefully pull out the blown fuse and replace with one of the same value - 0.8Amp 250V Fast Blow.
3. Replace the battery with one of the same value- 9V alkaline or carbon-zinc battery (NEDA16O4), being careful to observe polarity

SAFETY SYMBOLS

This marking adjacent to another marking or terminal or operating device indicates that the operator must refer to an explanation in the Operating Instructions to avoid damage to the equipment and/or to avoid personal injury.

WARNING

This warning sign denotes a hazard, It calls attention to a procedure, practice or the like, which, it not correctly performed or adhered to, could result in personal injury.



This marking advises the user that the terminals so marked must not be connected to a circuit point at which the voltage, with respect to earth ground, exceeds, in this case, 600V.

This symbol adjacent to one or more terminals, identifies them as being associated with ranges that may, in normal use, be subjected to particularly hazardous voltages. For maximum safety, the instrument and the test leads should not be handled when these terminals are energised.

This symbol indicates that the instrument complies with all requirements for double insulation.

Clarke INTERNATIONAL
For Spare Parts and Servicing, please contact your nearest dealer, for CLARKE International on the following number:
020 8988 7400

Clarke™

DIGITAL MULTIMETER

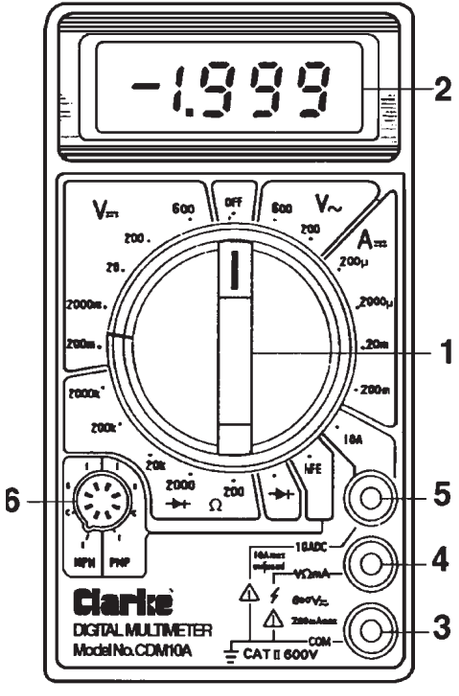
Model No: CDM10A
Part No: 45800005

Operating Instructions

Before using this instrument, you should read and fully understand this instruction leaflet.

Failure to understand and comply with the warnings and operating instructions can result in serious or even fatal injury and/or damage to property.

0507



DO NOT dispose of this product with general household waste. It must be disposed of according to all laws governing waste electrical and electronic products at a recognised disposal facility

Clarke INTERNATIONAL

Thank you for purchasing this Clarke Multi-Range Digital Multimeter.

This instrument is a compact, rugged, battery operated hand held 3½ digit, digital multimeter. It is designed to measure AC and DC voltage, DC current, Resistance, Diode, and Transistor testing.

It is an ideal instrument for use in the field, laboratories, workshops, and for hobby and home applications.

GUARANTEE

This product is guaranteed against faults in manufacture for 12 months from purchase date.

Your receipt will be required as proof of purchase.

This guarantee is invalid it 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.

FRONT PANEL

1. **Rotary Function and Range switch.**

   Selects the function and range as well as having an OFF position.

   Always remember to switch the instrument OFF when not in use to prolong battery life.

2. **Display**

   3 ½ Digit, 7 segment, 1/2" high LCD

3. **COM (Common) or Earth Socket**

   Plug in connection for BLACK (negative) test lead

4. **"VΩmA"Socket**

   Plug in connection for RED (positive) test lead for all measurements except 10 Amp range.

5. **10 Amp Socket**

   Plug in connection for RED test lead for 10 Amp measurement

6. **hFE Socket**

   For measuring transistor hFE

FEATURES

- Single 20 pos'n rotary switch for FUNCTION and RANGE selection.
- Automatic Battery indicator with BAT" displayed on LCD
- Auto over-range indication, with "1" being displayed on LCD.
- Automatic reverse polarity indication on DC ranges.
- DC Voltage measurement 0.1µV to 600V
- AC Voltage measurement l00mV to 750V RMS
- DC Current measurement 0.1µA to 10A
- Resistance measurement 0.1Ω to 2MΩ
- Diode testing with 1.5mA Fixed current.
- Transistor hFE test with 10A base current.

SPECIFICATIONS

Display: 3½ Digit, 7 segment, 1/2" high LCD with polarity

Over Range Indication: Fig. "1" displayed on LCD

Max. Common Mode Voltage: 600V peak

Operating Environment: 0 to 40°C. (32 to 104° F)

Storage Environment: -10C to 50°C (10 to 112 °F)

Power Supply: 9V alkaline or carbon-zinc battery (NEDA16O4)

Fuse Type: 250mAmp 250V. Fast blow.

Dimensions: 126x70x25mm (LxWxD)

Net Weight: 170gm (6oz)

DC VOLTAGE

RANGE	ACCURACY 18 TO 28°C	RESOLUTION
200mV	±0.5%±2digits	100µV
2V		1mV
20V		l0mV
200V		l00mV
600V	±0.8% ± 2 digits	1V

Overload protection 250V RMS for 200mV range and 600V DC or RMS AC for other ranges.

AC VOLTAGE

RANGE	ACCURACY 18 TO 28°C	RESOLUTION
200V	±12% of Rdg ± 10 digits	100mV
600V		1V

RESPONSE: Ave. responding, calibrated in rms of sine wave
FREQUENCY RANGE: 45Hz to 450MHz
OVERLOAD PROTECTION: 600V DC or RMS AC for all ranges.

DC CURRENT

RANGE	ACCURACY 18 TO 28°C	RESOLUTION
200µA	±1.0% of Rdg ± 2 digits	l00nA
2000µA		1µA
20mA		l0µA
200mA	±1.5% of Rdg ± 2 digits	l00µA
10A	±3.0% of Rdg ± 2 digits	l0mA

OVERLOAD PROTECTION: 250mA, 250V Fuse: 10A Range unprotected

RESISTANCE

RANGE	ACCURACY 18 TO 280C	RESOLUTION
200Ω	±0.8% of Rdg ±3digits	0.1Ω
2000Ω	±0.8% of Rdg ± 2 digits	1Ω
20kΩ		10Ω
200kΩ		100Ω
2000kΩ	±1.0% of Rdg ±2digits	1kΩ MAX.

OPEN CIRCUIT VOLTAGE: 3.2V
OVERLOAD PROTECTION: 250V RMS AC on all ranges.

DIODE TEST

Measures approx. forward voltage drop of the diode.
Overload protection: 250V RMS AC