DIGITAL MULTIMETER

Stock Number W1714

OWNERS MANUAL

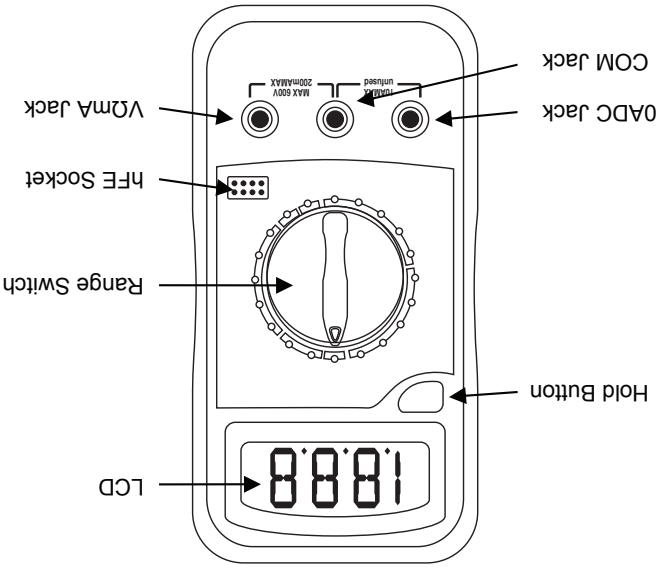
Please read these instructions carefully and retain them for future use.

On occasion, after printing of our literature is completed, our manufacturers may make changes and/or modifications to merchandise which will not be reflected in this manual. Although we strive to maintain complete and accurate information, it is possible in some instances, that the product may differ slightly from printed specifications. Illustrations are intended for reference only. Actual merchandise may vary. Wilmar is not responsible for typographical errors.

Performance Tool®

GENERAL SPECIFICATIONS

Max display: LCD 3 ½ digits (1999 count) 0.6" high
Polarity: Automatic, indicated minus, assumed plus.
Measure method: double integral A/D switch implement
Sampling speed: 2 times per second
Over-load indication: "1" is displayed
Operating Environment: 0°C~40°C, at <80%RH
Storage Environment: -10°C~50°C, at <85%RH
Power: 9V NEDA 1604 or 6F22
Low battery indication: "🪫"
Static electricity: about 4mA
Product Size: 5.3 x 2.6 x 1.3 in. (135 x 67 x 33mm)
Product net weight: 5.1 oz. (145g) including battery



TECHNICAL SPECIFICATIONS

Accuracies are guaranteed for 1 year, 23°C±5°C, less than 80%RH

DC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200mV	100uV	±(0.5% of rdg + 3D)
2V	1mV	±(0.8% of rdg + 5D)
20V	10mV	
200V	100mV	
600V	1V	±(1.0% of rdg + 5D)

OVERLOAD PROTECTION: 220V rms AC for 200mV range and 600V DC or 600V rms for all ranges.

AC VOLTAGE

RANGE	RESOLUTION	ACCURACY
200V	100mV	±(2.0% of rdg +10D)
600V	1V	

RESPONSE: Average responding, calibrated in rms of a sine wave.
FREQUENCY RANGE: 45Hz ~ 450Hz
OVERLOAD PROTECTION: 600V DC or 600V rms for all ranges.

DC ELECTRIC CURRENT

RANGE	RESOLUTION	ACCURACY
200uA	100nA	±(1.8% of rdg +2D)
2mA	1uA	
20mA	10uA	
200mA	100uA	±(2.0% of rdg +2D)
10A	10mA	±(2.0% of rdg +10D)

OVERLOAD PROTECTION: 500mA/250V fuse (10A range unfused).
MEASURING VOLTAGE DROP: 200mV

RESISTANCE

RANGE	RESOLUTION	ACCURACY
200Ω	0.1Ω	±(1.0% of rdg +10D)
2KΩ	1Ω	±(1.0% of rdg +4D)
20KΩ	10Ω	
200KΩ	100Ω	
2MΩ	1KΩ	

MAXIMUM OPEN CIRCUIT VOLTAGE: 3V.
OVERLOAD PROTECTION: 15 seconds maximum 220Vrms.

WARNING!
To avoid possible electric shock or personal injury, and to avoid possible damage to the Meter or to the equipment under test, adhere to the following rules:

- **Before using the Meter inspect the case. Do not use the Meter if it is damaged or the case (or part of the case) is removed. Look for cracks or missing plastic. Pay attention to the insulation around the connectors.**
- **Inspect the test leads for damaged insulation or exposed metal. Check the test leads for continuity.**
- **Do not apply more than the rated voltage, as marked on the Meter, between the terminals or between any terminal & grounding.**
- **The rotary switch should be placed in the right position & no any changeover of range shall be made during measurement is conducted to prevent damage of the Meter.**
- **When the Meter working at an effective voltage over 60V in DC or 30V rms in AC, special care should be taken for there is danger of electric shock.**
- **Use the proper terminals, function, & rangefor your measurements.**
- **Do not use or store the Meter in an environment of high temperature, humidity, explosive, inflammable & strong magnetic field. The performance of the Meter may deteriorate after dampened.**
- **When using the test leads, keep your fingers behind the finger guards.**
- **Disconnect circuit power & discharge all high-voltage capacitors before testing resistance, continuity, diodes or hFE.**
- **Replace the battery as soon as the battery indicator appears. With a low battery, the Meter might produce false readings that can lead to electric shock and personal injury.**
- **Remove the connection between the testing leads and the circuit being tested, & turn the Meter power off before opening the Meter case.**

- **When servicing the Meter, use only the same model number or identical electrical specifications replacement parts.**
- **The internal circuit of the Meter shall not be altered at will to avoid damage of the Meter & any accident.**
- **Soft cloth & mild detergent should be used to clean the surface of the Meter when servicing. No abrasive & solvent should be used to prevent the surface of the Meter from corrosion, damage & accident.**
- **The Meter is suitable for indoor use.**
- **Turn the Meter power off when it is not in use & take out the battery when not using for a long time. Constantly check the battery as it may leak when it has been using for some time, replace the battery as soon as leaking appears. A leaking battery will damage the Meter.**

OPERATING INSTRUCTIONS

DC & AC VOLTAGE MEASUREMENT
1. Connect red test lead to "VΩmA" jack, Black lead to "COM" jack.
2. Set RANGE switch to desired VOLTAGE position, if the voltage to be measured is not known beforehand, set switch to the highest range and reduce it until satisfactory reading is obtained.
3. Connect test leads to device or circuit being measured.
4. Turn on power of the device or circuit being measured voltage value will appear on Digital Display along with the voltage polarity.

DC CURRENT MEASUREMENT
1. Red lead to "VΩmA". Black lead to "COM" (for measurements between 200mA and 10A connect red lead to "10A" jack with fully depressed.)
2. RANGE switch to desired DCA position.
3. Open the circuit to be measured, and connect test leads INSERIES with the load in witH current is to measure.
4. Read current value on Digital Display.
5. Additionally, "10A" function is designed for intermittent use only. Maximum contact time of the test leads with the circuit is 15 seconds, with a minimum intermission time of seconds between tests.

RESISTANCE MEASUREMENT
1. Red lead to "VΩmA". Black lead to "COM".
2. RANGE switch to desired OHM position.
3. If the resistance being measured is connected to a circuit, turn off power and discharge all capacitors before measurement.
4. Connect test leads to circuit being measured.
5. Read resistance value on Digital Display.

DIODE MEASUREMENT
1. Red lead to "VΩmA", Black lead to "COM".
2. RANGE switch to "+" position.
3. Connect the red test lead to the anode of the diode to be measured and black test lead to cathode.
4. The forward voltage drop in mV will be displayed. If the diode is reversed, figure "1" will be shown.

TRANSISTOR hFE MEASUREMENT
1. RANGE switch to the hFE position.
2. Determine whether the transistor is PNP of NPN type and locate the Emitter, Base and Collector leads. Insert the leads into the proper holes of the hFE Socket on the front panel.
3. The meter will display the approximate hFE value at the condition of base current 10μA and VCE2.8V.

BATTERY AND FUSE REPLACEMENT

Fuse rarely need replacement and blow almost always as a result of operator error.
If " ⊟ " appears in display, it indicates that the battery should be replaced.
To replace battery & Fuse (500mA/250V) remove the 3 screws in the bottom of the case, simply remove the old, & replace with a new one. Be careful to observe polarity.

ACCESSORIES

Operator's instruction manual
Set of test leads
9-volt battery