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Digital Multimeter Model: DT9205A Operator's Instruction Manual

This meter is a hand held (size 3 and a half inch) battery operated (free battery provided) digital multimeter for measuring DC and AC Voltage, DC and AC current, Resistance, Diode, Transistor, frequency, temperature, capacitance and Continuity Test.

DIGITAL MULTIMETER

OPERATOR'S

INSTRUCTION MANUAL

SAFETYINFORMATION

This multimeter has been designed according to IEC–1010 concerning electronic measuring instruments with an overvoltage category(CATII) and pollution 2.
Follow all safety and operating instructions to ensure that the meter is used safely and is kept in good operating condition.
Full compliance with safety standards can be guaranteed only with test leads supplied if necessary, they must be replaced with the type specified in this manual.

SAFETYSYMBOLS

 Important safety information, refer to the operating manual.

 Dangerous voltage may be presented.

 Earth ground

 Double insulation (Protection class II).

MAINTENANCE

- Before Opening the case, always disconnect test leads from all energized circuits.
- For continue protection against fire; replace fuse only with the specified voltage and current ralings:F 500mA/250V(Quick Acting)
- Never use the meter unless the back cover is in place and fastened completely.
- Do not use abrasives or solvents on the meter.To clean it using a damp cloth and mild detergent only.

DURING USE

- Never exceed the protection limit values indicated inspecifications for each range of measurement.
- When the meter is linked to measurement circuit,do not touch unused terminals.
- Never use the meter to measure voltages that might exceed 1000V DC or 700V AC above earth ground in category II installations.
- When the value scale to be measured is unknown beforehand, set the range selector at the highest position.

- Before rotating the range selector to change functions,disconnect test leads from the circuit under test.
- When carrying out measurements on TV or switching power circuits always remember that there may be high amplitude voltages pulses at test points, which can damage the meter.
- Always be careful when working with voltages above 60Vdc or 30V ac rms. Keep fingers behind the probe barriers while measuring.
- Before attempting to insert transistors for testing,always be sure that test leads have been disconnected from any measurement circuits.
- Components should not be connected to the hFE socket when making voltage measurements with test leads.
- Never perform resistance measurements on live circuits.

GENERAL DESCRIPTION

The meter is a hand held 31/2 digital multimeter for measuring DC and AC Voltage,DC and AC current, Resistance, Diode, Transistor, freguency,temperature,capacitance and Continuity Test with battery operated.The Back light of display is optional.

SPECIFICATIONS

Accuracy is specified for a period of one year after calibration and at 18 to 28℃(64°F to 82°F)with relative humidity to 80%

GENERAL

Maximum voltage between terminals and earth ground	:1000VDC or 700VAC
Fuse protection	:F 500mA/250V
Power	:9V battery, NEDA 1604 or 6F22
Display	:LCD, 1999 counts, updates 2–3/ sec.
Measuring method	:Dual–slope integration A/D converter
Overrange Indication	Only figure "1" on the display
Poladty indication	"–"displayed for negative polarity
Operating Environment	0 to 40℃
Storage temperature	:–10℃ to 50℃
Low battery indication	:  appears on the display
Size	:31.5X91X189mm
Weight	Approx.280g.

DC VOLTAGE

Range	Resolution	Accuracy
200mV	100 μ V	± (0.8%+3)
2V	1mV	
20V	10mV	
200V	100mV	
1000V	1V	± (0.8%+4)

Overload Protection: 250V rms, For 200mv range and 1000V dc or rms, ac for other ranges.

AC VOLTAGE

Range	Resolution	Accuracy
200mV	100 μ V	± (1.2%+3)
2V	1mV	± (0.8%+3)
20V	10mV	
200V	100mV	
750V	1V	± (1.2%+3)

Overload Protection: 250V rms, For 200mv range and 1000V dc or rms, ac for other ranges.
Frequency range: 40Hz to 400Hz. Response: Average responding, calibrated In rms. Of a sine wave.

DC CURRENT

Range	Resolution	Accuracy
2mA	1 μ A	± (1.2%+2)
20mA	10 μ A	
200mA	100 μ A	± (1.4%+2)
20A	10mA	± (2.0%+2)

Overload Protection: 250V dc or rms. ac.
Overload Protection: F500mA/250V fuse.(20A range unfused)

AC CURRENT

Range	Resolution	Accuracy
2mA	1 μ A	± (1.2%+3)
20mA	10 μ A	
200mA	100 μ A	± (1.4%+3)
20A	10mA	± (2.0%+7)

Overload Protection: 250V rms, For 200mv range
Frequency range: 40Hz to 400Hz. Response: Average responding, calibrated In rms. Of a sine wave.

RESISTANCE

Range	Resolution	Accuracy
200Ω	0.1Ω	±(1.0%+2)
2kΩ	1Ω	±(0.8%+2)
20kΩ	10Ω	
200kΩ	100Ω	
2MΩ	1kΩ	
20MΩ	10kΩ	±(1.2%+2)
200MΩ	100kΩ	±(2.0%+10)
2000MΩ	1MΩ	±(10.0%+10)

Maximum Open circuit Voltage: 3.2V
Overload Protection: 250V dc or rms. ac for all ranges

FREQUENCY

Range	Resolution	Accuracy
2kHz	1Hz	±(0.8%+2)
20kHz	10Hz	±(1.5%+5)
200kHz	100Hz	±(1.5%+5)

TEMPERATURE

Range	Resolution	Accuracy		
		-20℃to0℃	0℃to400℃	400℃to1000℃
-20℃to 1000℃	1℃	±5.0% of rdg ±4 digits	±1.0% of rdg ±3 digits	±2.0% of rdg ±5 digits

CAPACITANCE

Range	Resolution	Accuracy
2nF	1pF	±(4.0%+10)
20nF	1pF	
200nF	100pF	
2μF	1nF	
20μF	10nF	
200μF	100nF	±(6.0%+20)

OPERATINGINSTRUCTIONS

DC VOLTAGE' MEASUREMENT

1.Connect the red test lead to the "V.Ω.mA"jack and the black lead to the"COM" jack.

2. Set rotary switch at desired DCV position. If the voltage to be measured is unkonwn beforehand, set range switch at the highest rangeposition and the reduce it until satisfactory resolution is obtained.
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display along with the polarity of the red lead connection.

CURRENT MEASUREMENT

1. Connect the red test lead to the "mA" jack and the black test lead to "COM"jack. (Formeas–urements between 200mA and 20A, remove red lead to "20A" jack.)
2. Set the rotary switch at desired DCA position.
3. Open the circuit in which the current is to be measured and connect test leads in series with the circuit.
4. Read current value on LCD display along with the polarity of red lead connection.

AC VOLTAGE MEASUREMENT

1. Connect the red test lead to"V, Ω" jack and the black test lead to the "COM" jack.
2. Set the rotary switch at desired ACV position.
3. Connect test leads across the source or load being measured.
4. Read voltage value on the LCD display.

RESISTANCE MEASUREMENT

1. Connect the red test lead to"V, Ω" jack and the black test lead to the "COM" jack.(The polarity of red lead is positive "+")
2. Set the rotary switch at desired "Ω" range position.
3. Connect test leads across the resistor to be measured and read LCD display.
4. If the Resistanle being measured is connected to a circuit, turn off power and discharge all capacitors before applying test probes.

DIODE TEST

1. Connect the red test lead to"V, Ω" jack and the black test lead to the "COM" jack.(The polarity of red lead is positive "+")
2. Set the rotary switch at "→|–" position.
3. Connect test red test lead to the anode of the diode to be tested and the black test lead to the cathode of the diode. The approx. forward voltage drop of the diode will be displayed. If the connection is reversed.Only figure"1" will be shown.

TRANSISTOR TEST

1. Set the rotary switch at "hFE" position.
2. Determine whether the transistor under testing is NPN or PNP and locate the emitter, base and collector leads. insert the leads into proper holes of the hFE socket on the front of panel.
3. Read the approximate hFE value at the test condition of base current 10 μA and Vce 3V.

NOTE:

To avoid electrical shock, remove test leads from measurement circuits before testing a transistor.

AUDIBLE CONTINUITY TEST

1. Connect red test lead to "V, Ω", black test lead to "COM"
2. Set range switch to"•))" "Positon.
3. Connect test leads to two points ofcircuit to be tested. If continuity exists, built–in buzzer will sound.

MEASURING TEMPERATURE

1. Set the rotary switch at TEMP Positiom and the LCD display will show the current environment temperature.
2. Connect the K type thermoelectric couple to "VΩ.mA℃" and "COM" jacks.
3. The display will read Temperautre Value

MEASURING FREQUENCY

1. Connect the black test lead to the COM jack and the red test lead to the VΩHz jcak.
2. Set the rotaty switch at kHz position and connect test leads across the source or load under measruement

NOTE:

1. Reading is possible at input voltages above 10Vrms, but the accurcay is not guaranteed.
2. In noisy environment, it is preferable to use shield cable for measuring small signal.

MEASURING CAPACITANCE

1. Set the rotary switch at desired F position.
2. Beforinserting capacitor under measurement into capacitance testing socket.be sure that the capacitor has been discharged fully.

3. When measuring capacitors with shorter leads,a testing adapter is provided with the meter into the capacitance testing socket on the front panel to continue measurements.
4. When testing large capacitances, note that there will bea certain time lage befor the final indication.

FIREWIRE RECOGNITION

Set the black test lead to the "COM" jack and the red test lead to the "V/Ω"jack. When recognize the firewire, Only connect with the red test lead, the meter Would show "HV",Otherwisw without "HV".

⚠ WARNING

To avoid electridal shock,be sure the capacitor measuring adapter has been removed before changing to another function measruement.

BATTERY & FUSE REPLACEMENT

If " [-+] " appears on displary, it indicates that the battery should be replaced.
Fuse rarely need replacement and blow almost always as a result of operator's error.
To replace battery & fuse (500mA/250V)remove the 2 screws in the bottom of the case. Simply remove the old, and replace with a new one.Be careful to observe battery polarity.

⚠ WARNING

Before attempting to open the case, always be sure that test leads have been disconnected from measurement circutis.
Close case and tighten screws completely before using the meter to avoid electrical shock hazard.

ACCESSORIES

- Operator's instruction manual
- Set of test leads
- Gift box
- 9 volt battery. NEDA 1604 6F 22 006P type
- Holster(option)
- "K"type thermocouple

FOR THE FUNCTION OF THE PRODUCTS,SEE THE PANEL OF THE DIGITAL MULTIMERERS OF ALL TYPES.


DIGITAL
MULTIMETER
AUTO POWER OFF
DIGITAL MULTIMETER
DATA HOLD
AUTO POWER OFF
LARGE LCD DISPLAY
AUTO ZERO FUNCTION
SINGLE 32 POSITION SWITCH FOR FUNCTION AND RANGE
MADE IN CHINA
Basement - B1,
Accra Trade Center,
Accra Rd, Nairobi.

Additional Information & how to order 👉 - **got to Instant Device**.

