








Thanks for buying our products Please go through the instruction manual before starting to use the meter, and carefully follow these safety rules.

- The meter complies with IEC 1010-1 CAT I 600V.
- CAT I- For signal level, telecommunication, electronic with small transient over voltage.
- Use the Meter only as specified in this manual, otherwise the protection provided by the Meter may be impaired.
- Do not operate the Meter before the case has been closed and screwed safely as terminal can carry voltage.
- Make sure before each measurement the Meter is set to the suitable range.
- Before using the Meter, please inspect the case and test leads for damaged insulation or exposed metal.
- Connect the red and black test lead to the correct measuring input jack properly.

- Do not input values over the maximum range of each measurement to avoid damages of the Meter.
- Do not turn the rotary function switch during Voltage and Current measurement, otherwise the Meter could be destroyed.
- Make sure to use new fuse with proper rating in stead of bad fuse.
- To avoid electric shock or damages, do not apply more than 500V between the "COM" terminals and "⏏" earth ground.
- Use caution when working with Voltages above 60V(DC) or 30Vrms (AC).These Voltages pose shock hazard.
- 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.
- Turn off the Meter once finished measuring.

- Fetch out the battery, when the meter will not be used for long period.
- Test leads must be away from the circuit before open the case.
- Do not operate the Meter under adverse environmental condition especially humid area.
- To avoid damages and dangers, do not change the circuit.
- Periodically wipe the case with a damp cloth and mild detergent. DO not use abrasives or solvents.

The following legend applied to this manual:

-  Dangerous voltage (Take care not to get an electric shock in voltage measurement).
-  Ground (Allowable applied voltage range between the input terminal and earth.)
-  Refer to instruction manual (Very important description for safe use.)
-  Direct current(DC)
-  Alternating current(AC)
-  Replace fuse with Amp/Volt ratings shown
-  Double Insulation

A. INTRODUCTION:

1. SWITCH

Our DMM adopt rotational switch which situated at the middle of the front case. It is used for the selection of FUNCTION, RANGE AND POWER ON-OFF. In order to save energy, please turn the switch to "OFF" position when not in use.

2. DISPLAY

3 1/2 digits, 12mm height LCD display.

3. "COM" jack

Common jack

4. "V Ω mA" jack

Voltage, resistance, not more 200mA Current and battery input test jack, 50Hz square wave output jack.

5. "10A" jack

For the input of more than 200mA current

B. FEATURES:

Display: 3 1/2 LCD with maximum display 1999.

Polarity: Auto polarization

Overrange: Maximum display "1"

Working environment: temp. 0 ~ 40 °C relative humidity: < 75%

Storing environment: -15 ~ 50 °C

Battery: 9V Zinc NEDA 1604 or 6F22 or 006P

High voltage symbol: DC 500V or AC

500V range will show high voltage symbol "HV"

Low voltage indication : Left side of LCD will show  or BAT symbol.

Size: 150mmX70mmX24mm

Weight: 150g (include battery)

C. TECHNICAL SPECIFICATION:(1)

Accuracy: $\pm a\%$ reading \pm NO. of digits,
guaranteed for 1 year.

Environmental temperature: $23^{\circ}\text{C} \pm 5^{\circ}\text{C}$

Relative Humidity: $< 75\%$

1. DC Voltage:

RANGE	RESOLUTION	ACCURACY
200mV	100 μ V	$\pm (0.5\% \text{ of rdg} + 2 \text{ digits})$
2V	1mV	
20V	10mV	
200V	100mV	
500V	1V	$\pm (0.8\% \text{ of rdg} + 2 \text{ digits})$

Input impedance: $1\text{M}\Omega$ on all ranges Overload protection: DC or AC peak
Value of 500V.

C. TECHNICAL SPECIFICATION:(2)

2. DC Current:

RANGE	RESOLUTION	ACCURACY
200 μ A	100nA	\pm (1% of rdg+2digits)
2000 μ A	1 μ A	
20mA	10 μ A	
200mA	100 μ A	\pm (1.2% of rdg+2digits)
10A	10mA	\pm (2% ofrdg+2digits)

Overload protection:0.3A/250V fused.

10A range not fused, MAX 10 sec.

3. AC Voltage:

RANGE	RESOLUTION	ACCURACY
200V	100mV	\pm (1.2% of rdg+10digits)
500V	1V	

Frequency range: 45Hz to 400Hz.

Overload protection: AC500Vrms.

Indication: Average value(RMS of sine wave).

C. TECHNICAL SPECIFICATION:(3)

4. Resistance:

RANGE	RESOLUTION	ACCURACY
200 Ω	0.1 Ω	$\pm (0.8\% \text{ ofrdg}+2\text{digits})$
2000 Ω	1 Ω	
20k Ω	10 Ω	
200k Ω	100 Ω	
2000k Ω	1k Ω	$\pm (1\% \text{ ofrdg}+2\text{digits})$

Overload protection: 250VDC or AC rms. Less than 10 sec.
Maximum open circuit voltage:2.8V.

5. Temperature:

RANGE	RESOLUTION	ACCURACY
-40 $^{\circ}\text{C}$ to+ 1000 $^{\circ}\text{C}$	1 $^{\circ}\text{C}$	Less then 150 $^{\circ}\text{C}$ $\pm(3\%+2)$
		more then 15 0 $^{\circ}\text{C}$ $\pm 3\%$

6. Transistor hFE:

Vce approximately 2.8V, Ib approximately 10 μ A, Display show approximately hFE.0-1000.

When measuring the transistor, make sure the test lead is not connected.

7. Diode and Audible Continuity:

Diode: Testing voltage approx. 2.4V, current 1.5mA, indicate forward voltage approx. value.

Buzzer: Sounds when measure less than 70 Ω .

8. Square Wave Output:

Output square wave 50Hz, output voltage approx. 3Vp-p

9. Battery Test:

RANGE	CURRENT CONSUMED
1.5V	50mA
9V	5mA

D. OPERATING INSTRUCTION(1):

1. DC Voltage Measurement $V \equiv$ (DCV)

- 1.1 Connect RED test lead to "v Ω mA" jack, BLACK test lead to "COM" jack.
- 1.2 Set the FUNCTION switch to the desired $V \equiv$ (DCV) position.
If not sure, set to the highest range.
- 1.3 Connect the test leads across the source or load under measurement.

2. DC Current Measurement $A \equiv$ (DCA):

- 2.1 Connect RED test lead to "v Ω mA" jack, BLACK test lead to "COM" jack. when the current is less than 200mA and to "10A" jack when the current is larger than 200mA, connect the BLACK .test lead to the "COM" jack.
- 2.2 Set the FUNCTION switch to the desired DCA position.
- 2.3 Connect the test leads across the source or load under measurement.

D. OPERATING INSTRUCTION(2):

3. AC Voltage Measurement $V \sim$ (ACV):

- 3.1 Connect the RED test lead to "V Ω mA" jack and BLACK test lead to the "COM" jack.
- 3.2 Set the FUNCTION switch to the desired ACV position.
- 3.3 Connect the test leads across the source or load under measurement.

4. Resistance Measurement(Ω):

- 4.1 Connect the RED test lead to "V Ω mA" jack and BLACK test lead to "COM" jack
- 4.2 Set the FUNCTION switch to the Ω position.
- 4.3 Connect the test leads across the resistor under measurement.
- 4.4 When measuring the resistance, the power should be turned off and in short circuit status by connecting the two test leads.

5. Temperature Measurement:

- 5.1 Set the FUNCTION switch to T position. The built-in temperature sensor will show the room temperature.

D. OPERATING INSTRUCTION(3):

5.2 Insert the thermocouple plug into K PROBE socket and connect the object under measurement. The display will show the temperature value.


6. Transistor hFE Measurement:

6.1 Set the FUNCTION switch to hFE position.

6.2 Insert the E.B.C. of the PNP or NPN transistor to the proper jack in the socket on the front panel.

7. Diode and Audible Continuity Measurement:

7.1 Connect RED test lead to the "V Ω mA" jack and BLACK test lead to the "COM" jack.

7.2 Set the FUNCTION switch to the  position and connect the RED test lead to the ANODE of diode and BLACK to CATHODE. The display will then show the approx. forward voltage of this diode. If connect the test leads on the other way round, the display will show an overrange status "1".

D. OPERATING INSTRUCTION(4):

7.3 Buzzer sounds if the resistance between the two probes less then approximately $70\ \Omega$.

8. 50Hz Square Wave Output:

8.1 Connect RED test lead to the "V Ω mA" jack and BLACK test lead to the "COM" jack.

8.2 Turn the FUNCTION switch to \square position and the RED and BLACK test leads being the output jack.


Attention:(1) This function being the output message so don't used for measuring voltage.(2) The circuit being protected by short circuit device.(3) The voltage cannot exceed 40Vp-p.

9. Battery Test:

9.1 Connect RED test lead to the "V Ω mA" jack and BLACK test lead to the "COM" jack.

9.2 Turn the FUNCTION switch to the BATT position. Connect the test lead across the battery under measurement.The display will show the voltage of the battery.

E. BATTERY AND FUSE REPLACEMENT:

Use the same specification fuse (F.0.3A/250V ϕ 5X20mm) and battery (9V Zinc NEDA 1604 or 6F22 or 006P) when necessary. When the voltage of the battery is low, the symbol  or BATT will appear on the display. Then the battery should be replaced. You should check the fuse when no measurement could be taken for current using mA range

F. BRIEF SUMMARY OF THE FUNCTION:

	DT830A	DT830B	DT830C	DT830D	DT830E
DC Voltage	✓	✓	✓	✓	✓
DC Current	✓	✓	✓	✓	✓
AC Voltage	✓	✓	✓	✓	✓
Max,Resistance(M Ω)	2	2	2	2	2
Diode test	✓	✓	✓	✓	✓
Transistor Test		✓		✓	✓
Continuity Buzzer			✓	✓	✓
Temperature			✓		✓
Battery Test	✓				
Square Wave Output Signal	✓		✓	✓	
Large Current(A)		10	10	10	10
Small Current(μ A)	2000	200	2000	2000	2000

(Specifications are subject to change without notice.)

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