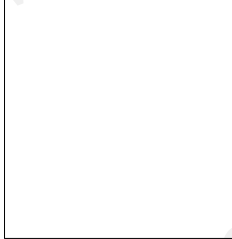


# DIGITAL MULTIMETER

4 1/2 digits, True RMS  
Model : DM-9027T



### **Caution Symbol**



**Caution :**

- \* Risk of electric shock !



**Caution :**

- \* Do not apply the overload voltage, current to the input terminal !
- \* Remove test leads before open the battery cover !
- \* Cleaning - Only use the dry cloth to clean the plastic case !

### **Environment Conditions**

- \* Installation categories II .
- \* Pollution Degree 2.
- \* Altitude up to 2000 meters.
- \* Indoor use.
- \* Relative humidity 80% max.

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## 1. FEATURES

- \* Design meet IEC 1010 safety requirement.
- \* 4 1/2 digits DMM, high precision.
- \* Large LCD display with annunciators.
- \* LCD display, easy read-out.
- \* True RMS measuring reading for ACV & ACA function.
- \* With data hold function
- \* Compact & strong housing case.
- \* Optional Holster case.
- \* Full range optional adapters for Temperature, Light, DC/AC CLAMP current, Humidity, RPM, Pressure measurement.

## 2. SPECIFICATIONS

### *2-1 General Specifications*

Display	15 mm(0.5") LCD, w/ annunciators, 4 1/2 digits Max. reading 19999
Measurement	28 ranges, DCV, ACV, DCA, ACA, ohms, hFE, DIODE, Continuity Beeper.
Polarity	Automatic Switching, '-' indicates negative polarity.
Zero Adjustment	Automatic adjustment.
Over-input Indicator	"1" mark indication.
Sampling Time	Approx. 0.4 second.
Operating Temp.	0 𐄂 to 50 𐄂 (32 蚌 to 122 蚌).
Operating Humidity	Less than 80% RH.
Power Supply	006 P DC 9V battery.
Power Consumption	Approx. DC 1.6 mA.
Dimensions	185 x 87 x 39 mm (6.7 X 3.5 X 1.4 inch)
Weight	320 g/0.71 LB

Fuse	The meter build in one fuse for current range(200u/2m/20m/200mA) protection, its spec. : Rating - 500 mA Size - 5 mm dia. x 20 mm
Accessories Included	Red and Black Test Leads ..... 1 pair. Instruction Manual ..... 1 PC.
Optional Accessories	Please refer page 9, 10, 11.

## **2-2 Electrical Specifications (23 #5 C)**

DC Voltage	
Range	200 mV / 2 V/ 20 V/ 200 V / 600 V
Resolution	0.01 mV / 0.1 mV /1 mV /10 mV / 0.1 V
Accuracy	#(0.1%+2d) -200mV. 3(0.2%+2d) -2V,20V,200V,600V.
Input Impedance	10 M ohm.
Over Load Protection	DCV, 350 ACV - 200mV range. DCV, 600 ACV - others.

AC Voltage (True RMS)	
Range	200 mV/2/20/200/600 V
Resolution	0.01 mV/0.1 m/1 m/10 m/0.1 V
Accuracy	#(0.8%+10d) -200mV,2V,20V,200V,600V * spec. are tested under 50/60 Hz.
Input Impedance	10 M ohm.
Over Load Protection	DCV, 350 ACV - 200mV range. DCV, 600 ACV - others.

DC Current	
Range	200u/2m/20m/200m/10A
Resolution	10n/100n/1u/10u/1mA
Accuracy	#(0.5%+5d) -200uA,2mA,20mA #(0.8%+10d) -200mA #(2%+5d) -10A
Over Load Protection	200u/2m/20m/200mA range : 0.5A fuse protection
	10 A range : Max. 10A ( no fuse ).

AC Current(True RMS)	
Range	200u/2m/20m/200m/10A
Resolution	10n/100n/1u/10u/1mA
Accuracy	#(0.8%+10d) -200uA,2mA,20mA,200mA #(2%+10d) -10A * spec. are tested under 50/60 Hz.
Over Load Protection	200u/2m/20m/200mA range : 0.5A fuse protection
	10 A range : Max. 10A ( no fuse ).

OHMS	
Range	200/2k/20k/200k/2M/20M ohm
Resolution	0.01/0.1/1/10/100/1k ohm
Accuracy	#(0.5%+5d) -200 ohm #(0.3%+5d) -2k,20k,200k,2 M ohm #(0.8%+3d) -20 M ohm.
Over Load Protection	DCV, 350 ACV.

*Remark : The above DCV, ACV, DCA, ACA, ohm spec. are tested under the environment RF Field Strength less than 3 V/M & frequency less than 30 MHz only.*

#### Diode Check

Range	Approx. forward voltage(VF), good/defect test.
Resolution	0.1 mV.

#### Transistor hFE

0-1000 hFE, NPN/PNP.

#### Data hold

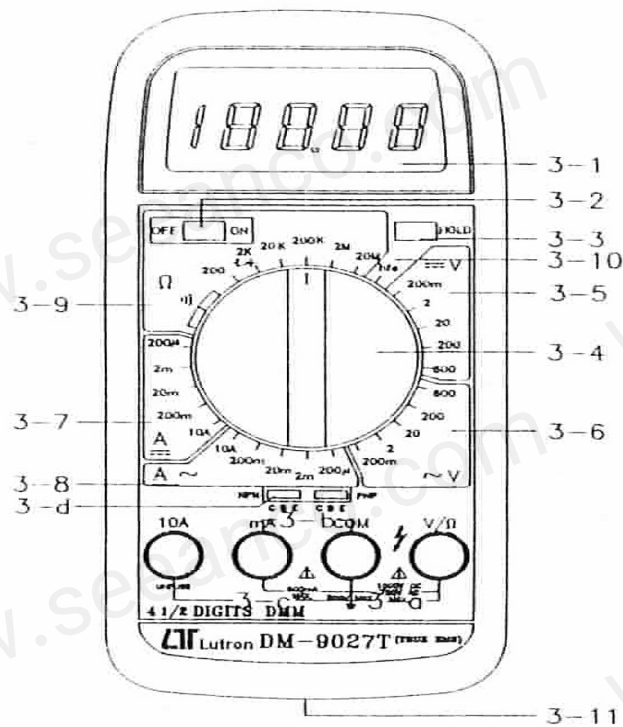
To freeze the display values.

#### Continuity

Sound beeper for continuity check.

Beeper will sound if the measuring resistance < 250 ohm approximately.

### 3. FRONT PANEL DESCRIPTION



- |                                |                          |
|--------------------------------|--------------------------|
| 3-1 Display                    | 3-a Volt/OHM/Diode Input |
| 3-2 Power On/Off Switch        | 3-b 200 mA Current Input |
| 3-3 Data Hold Switch           | 3-c 10 A Current Input   |
| 3-4 Function Rotary Switch     | 3-d Transistor hFE Input |
| 3-5 DCV Rotary Switch          |                          |
| 3-6 ACV Rotary Switch          |                          |
| 3-7 ACA Rotary Switch          |                          |
| 3-8 DCA Rotary Switch          |                          |
| 3-9 OHM Rotary Switch          |                          |
| 3-10 hFE Rotary Switch         |                          |
| 3-11 Battery Compartment/Cover |                          |



## 4. MEASURING PROCEDURE

### 4-1 DCV, ACV, DCA, ACA, OHM, Continuity beeper, Diode, hFE

When operate the MULTIMETER, first push on the "POWER SW."(3-2, Fig. 1). Then rotate the "Range Selector" to the right position. & plug in the test lead to the right "Input Terminal" according the following instruction & ref. Fig. 1.

Function	Range Selector	Input Terminal
DCV	3-5 DCV	3-a
ACV	3-6 ACV	3-a
DCA ( < 200 mA)	3-7 DCA	3-b
DCA ( 200 mA)	3-7 DCA	3-c
ACA ( < 200 mA)	3-8 ACA	3-b
ACA ( 200 mA)	3-8 ACA	3-c
OHM	3-9 ohm	3-a
Continuity beeper	3-9 ohm(beeper)	3-a
Diode	3-9 ohm(Diode)	3-a
hFE	3-10 hFE	3-d

### 4-2 Data hold

When make any measurement, if select the "Hold Switch" (3-3, Fig.1) to the "Hold" position will keep the data on the display. It will release the data hold function if select the "Hold Switch" to the "Off" position(left side) again.

## 5. MEASURING CONSIDERATIONS

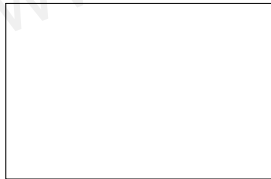


### ***Caution :***

**\* Do not apply the overload voltage, current to the input terminal !**

- (1) Ensure that the battery(006 P DC 9V) is connected to its snap terminal correctly and placed in the battery compartment.
- (2) Before operating this instrument, familiarize yourself with all instructions that mentioned in this manual.
- (3) Always check to make sure that the function switch is set to the proper position.
- (4) Place the RED Test Lead into the proper input terminal before making measurements.
- (5) Remove either of the test leads from the circuit under test when changing the measurement range.
- (6) Do not exceed the maximum rated signal of each range to the input terminal.
- (7) The "Power On/Off Switch" always to the "OFF" position when the instrument does not use. Remove the battery if the instrument is not to be used for a long period of time.
- (8) Be sure to slide the "Data Hold Switch" to the off position (left side) if the data function is not be executed.

## 6. MAINTENANCE



**Caution :**


**Remove test leads before  
open the battery cover !**



**Caution :**

**\* Risk of electric shock !**

### 6-1 Replacement of Battery

- (1) When the left corner of the LCD display shows "", it indicates the battery output less than 6.1 V - 7.7 V. Replacement of the battery is then needed. However measurement could still be taken for another few hours before the tester becomes inaccurate.
- (2) Open the "Battery Cover"(3-11, Fig. 1) on rear cabinet by loose the screw on the battery cover and remove the battery.
- (3) Replace with a 9V battery and reinstate the rear cabinet.

### 6-2 Replacement of Fuse

**Fuse :**

**Rating : 500 mA, Size : 5 mm dia. x 20 mm**

- (1) This instrument is provided with one 5 x 20 mm 500 mA fuse for 200mA, 20mA, 2mA, 200uA current range overload protection purpose.  
When the current range function (2 A range) can not operate, please check if the fuse is broken ?

- (2) When replace the fuse, please open the Battery Cover and remove the battery, refer Fig.2
- (3) Replace the fuse according the spec. and reinstate the battery cover again.

### 6-3 Cleaning



#### **Caution :**

**Cleaning - Only use the dry cloth to clean the plastic case !**

## 7. OPTIONAL ACCESSORIES & ADAPTERS

### 7-1 Holster, HS-01

High quality rubber protective holster.

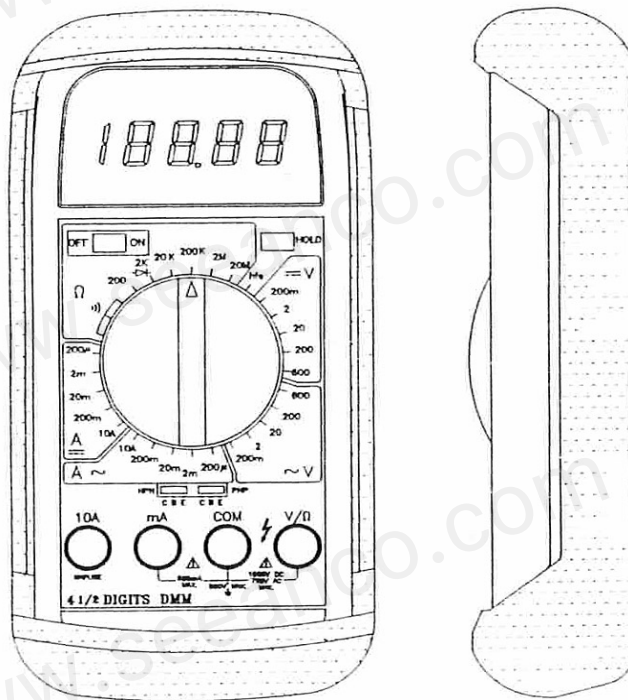


Fig. 2

### **7-2 Other optional accessories & adapters**

Carrying Case CA-03	Vinyl soft carrying case, high quality. 185 x 90 x 60 mm.
Temperature Adapter DH-802C, DH-802F	Match DMM to be used as the thermometer. DH-802C : CENTIGRADE MODEL DH-802F : FAHRENHEIT MODEL Sensor : Type k thermocouple probe, TP-01, included. Output : 0.1 mV DC / 0.1 𐄂 or 0.1 𐄂.
Test Lead, TL-02A	High quality and better performance test lead with silicon rubber wire & separate alligator clip sets.
LIGHT ADAPTER LX-02	Match DMM to be used as the Light meter. 3 ranges, 2000/20000/50000 LUX.
ANEMOMETER ADAPTER AM-402	Match DMM to be used as the Anemometer. Measurements : m/s, km/h, ft/min., knots.
HUMIDITY ADAPTER HA-701	Match DMM be used as the humidity meter. Range : 10 % to 95 % RH.
TACHOMETER ADAPTER TA-601	Match DMM to be used as the Tachometer. Photo type : 2 ranges. 100 - 20,000 RPM.

400 A AC/DCA CURRENT ADAPTER CA-501	Match DMM to be used as the DCA & ACA clamp meter. Range : 200A, 400A. Output :1 ACmV/1 ACA, 1 DCmV/1 DCA.
2000 A AC/DCA CURRENT ADAPTER CA-202	Match DMM to be used as the DCA & ACA clamp meter. Range : 200A, 2000A. Output :1 ACmV/1 ACA, 1 DCmV/1 DCA.
MINI ACA CURRENT ADAPTER CA-201	Match DMM to be used as the ACA clamp meter. clamp meter. Range : 20A, 200A. Output : 1 ACmV/1 ACA(200A), 10 ACmV/1 ACA(20A).
50 A CURRENT SHUNT, ST-50	50 A DCA/ACA resistance shunt. Match DMM to measure the current up to 50 A precisely.

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