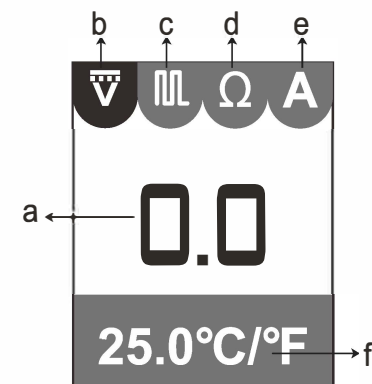
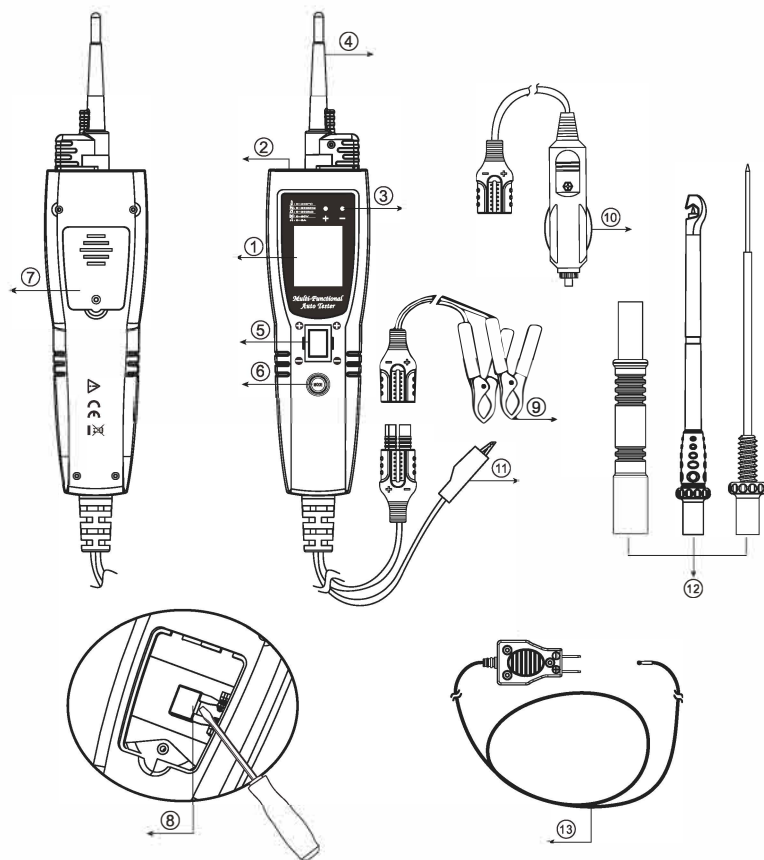


## I. SPECIFICATION

- SUPPLY VOLTAGE: 8 – 30 VDC
- VOLTAGE MEASUREMENT RANGE: 0 – 70 V
- DC CURRENT MEASUREMENT RANGE: 0 – 5A DC
- FREQUENCY MEASUREMENT RANGE: 0 – 300 KHz (SQUARE WAVE)
- RESISTANCE MEASUREMENT RANGE: 0 – 200 KΩ
- WORKING TEMPERATURE: 0 – 50 °C
- STORAGE TEMPERATURE: – 10 – 60 °C
- WORKING HUMIDITY: ≤ 85%
- MEASURED TEMPERATURE RANGE: 5 – 200 °C / 41 – 392 °F

(The display will appear "ERROR" when tester is not connected with temperature probe.)

## II. PRODUCT DESCRIPTION



### CD. SCREEN

- (a) Measured value
- (b) DC voltage measurement
- (c) Signal measurement
- (d) Resistance measurement
- (e) DC Current measurement
- (f) Temperature (Press and hold "MODE" button to change between °C/°F)

### ②. ILLUMINATION

### ③. POLARITY INDICATION LIGHT

- Positive: RED
- Negative: GREEN

### ④. TESTING PROBE

- Available to take off.

### ⑤. POWER PROVIDING SWITCH

### ⑥. MODE BUTTON

- Short Press: To switch the measurement function.
- Long Press: To switch ON/OFF the illumination.

### ⑦. FUSE BOX CAP

- Open it to change the fuse

### ⑧. FUSE

- 5A mini fuse, user can change the current protection level by replacing any mini fuse smaller than 5A.

### ⑨. POWER CLIPS

### ⑩. CIGARETTE LIGHTER PLUG

### ⑪. AUXILIARY GROUND CONNECTOR

### ⑫. ACCESSORY

- Connector
- Long Testing Probe
- Wire Piercing Probe

### ⑬. THERMOCOUPLE (OPTIONAL)

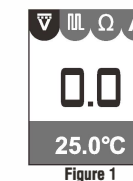
## III. OPERATION

- Short press "MODE" button to switch function between DC voltage, signal measurement, resistance, and DC current.
- Connecting the red clip to positive of battery, and black clip to negative of battery.
- Auxiliary ground connector is used to connect with the negative of testing object when it is necessary.

### (1) DC Voltage Measurement (V)

2

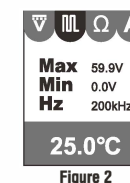
- (a) Short press "MODE" button to switch the function to DC Voltage Measurement. (Refer Figure 1.)



- (b) Connect the testing probe and auxiliary ground connector to the two polarity of the testing object. (CAUTION: DO NOT PRESS THE "POWER PROVIDING SWITCH" DURING THE MEASUREMENT.)
- (c) Read the voltage value from the screen.

### (2) Signal Frequency And Max/Min Voltage Measurement (square wave)

- (a) Short press "MODE" button to switch the function to signal measurement. (Refer Figure 2.)



- (b) Connecting the testing probe and auxiliary ground connector to the two side of the testing target; probe to the positive, and auxiliary ground connector to the negative.
- (c) Read the value from the screen.

### (3) Resistance Measurement (Ω)

- (a) In order to prevent electrical hazard, please disconnect the power connection and make sure all capacitors have been discharged before the measurement.
- (b) Short press "MODE" button to switch the function to Resistance Measurement. (Refer Figure 3.)



- (c) Connecting the testing probe and auxiliary ground connector to the two side of the resistor, and read the value from the screen.
- (d) Measuring the resistance of the testing target, if the resistance is less than 30 ohms, the buzzer will buzz, and the negative polarity indicator light up (Green Colour).

### (4) DC Current Measurement (A)

There are two method to measure the current:

#### Method 1

3

- (a) Short press “MODE” button to switch the function to Current Measurement.  
(Refer Figure 4)

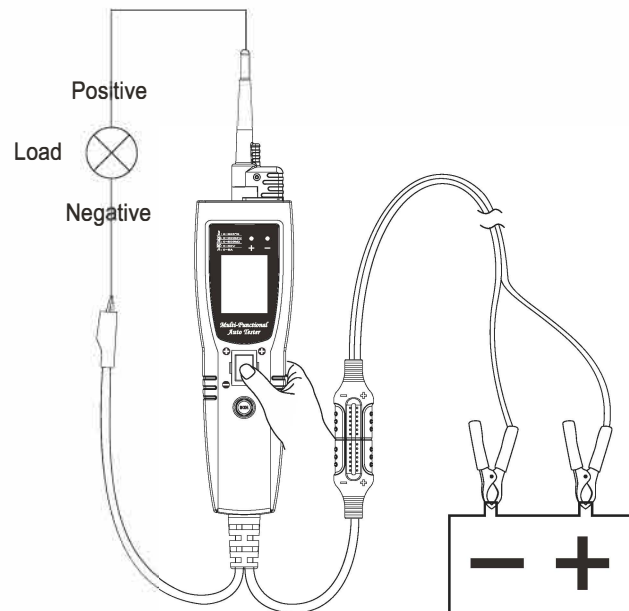


Figure 4

- (b) Disconnecting all connections from the testing load.  
(c) Connecting the testing probe to the positive of testing load, and auxiliary ground connector to the negative of testing load.  
(d) Press the “POWER PROVIDING SWITCH” forward, and read the value from the screen.

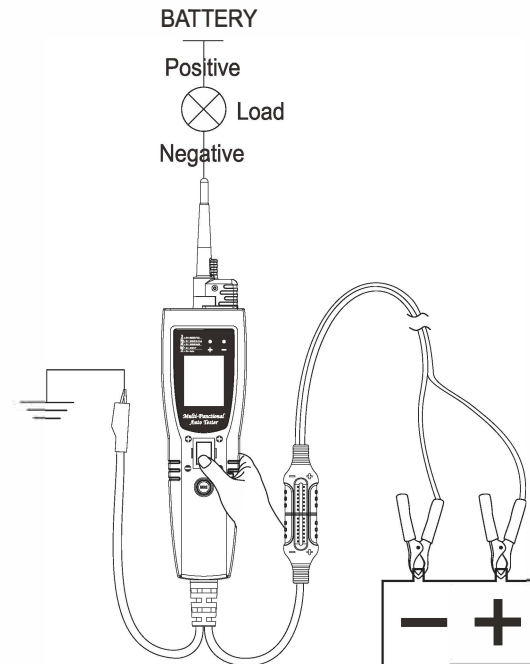
**CAUTION:**

- With Method 1, voltage and current will directly provide by the battery connecting with the tester. Please make sure the testing load (testing component) can support such voltage level. For example, if the tester is connecting with a 12V lead acid battery, please make sure the testing load is a 12V component.
- Please make sure the current of the testing load is < 5A.



**Method 2**

- (a) Short press “MODE” button to switch the function to Current Measurement.  
(b) Disconnecting negative connection from the testing load.  
(c) Connecting the testing probe to the negative of testing load, and auxiliary ground connector to the ground of the circuit.  
(d) Press the “POWER PROVIDING SWITCH” backward, and read the value from the screen.



**(5) Testing Power Providing**

- This function can be activated anytime when the “POWER PROVIDING SWITCH” has been pressed.
- Press “POWER PROVIDING SWITCH” forward, the positive voltage will be sent to the testing probe, and positive polarity indicator will light up (Red Colour).
- Press “POWER PROVIDING SWITCH” backward, the negative voltage will be sent to the testing probe, and negative polarity indicator will light up (Green Colour). The providing voltage value will depend on the supply voltage level. For example, is a 12 V battery has used as the supply voltage, the providing voltage will be 12V.

**IV. CAUTION**

If the “OVER-CURRENT RESET BUTTON” is triggered, it may indicate the presence of a short circuit. High temperature generally occurs during a short circuit; in order to prevent scalding, please do not touch the testing probe or any metal conductor of the tester.

**V. ACCURACY**

(V) DC Voltage	0 – 70V ± ( 2% + 3 )
(f) Signal Frequency	0 – 300 KHz ± ( 3% + 3 )
(Ω) Resistance	0 – 200K ± ( 5% + 3 )
(A) DC Current	0 – 5A ± ( 3% + 3 )
Temperature	5 – 200°C / 41 – 392°F ± ( 1.5% + 5 )