USERS MANUAL

SMART DIGITAL MULTIMETER

⚠ Before using the instrument,please read this manual carefully,and save it well for future using.

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Safety statement

⚠ **Caution**：

Operation that may cause damage to meter or equipment.

⚠ **"Warning"**:

operation that may cause danger to users。

Safety Instructions

The meter conforms to IEC61010-1 CAT.III 600V overvoltage safety standard and pollution level 2.

Safety specification

⚠**Warning**

To avoid possible electric shock or personal injury, please observe the following specifications:

- Please read this manual carefully and pay special attention to safety warning information before using the meter.
- Operate the meter according to the manual, otherwise the protection function provided by the instrument may be damaged or weakened.
- Take special care when measuring values that exceed 60VDC, 30vac RMS, or 42V. This kind of voltage has the danger of electric shock.
- Do not measure voltage higher than the rated value between terminals or between terminals and ground.
- Measure the known voltage to check whether the meter works normally. If

it is not normal or damaged, please do not use it again.

- Before using the meter, please check whether there are cracks or damaged plastic parts in the instrument shell. If so, please do not use it again.
- Before using the meter, please check whether the probe is cracked or damaged. If so, please replace the probe with the same model and the same electrical specification.
- Please use the meter according to the measurement category, voltage or current rating specified in the meter or manual.
- Please observe local and national

safety regulations. Wear personal protective equipment (such as approved rubber gloves, masks and flame retardant clothing, etc.) to prevent injury caused by electric shock and electric arc when dangerous live conductors are exposed.

- When the "a" symbol is displayed on the meter, please replace the battery in time to prevent measurement error.
- Do not use the meter in the environment with explosive gas or steam or humid environment.
- When using the probe, please hold your fingers behind the probe finger

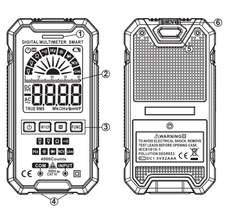
guard.

- When measuring, please connect the null or ground wire first, then the live wire; when disconnected, please disconnect the live wire first, and then the null or ground wire.
- Remove the probe from the meter before opening the case or battery cover. Do not use the meter when the meter is disassembled or the battery cover is opened.
- The meter can only be used together with the probe provided to meet the requirements of the safety standard. If the probe is damaged and needs to be replaced, the probe of the same model and electrical specification

must be replaced.

Overview

This meter is an intelligent true RMS digital multimeter with gear display, analog bar multiple display.



① Warning indicator

② Display

③ key

④ Input jack

⑤ Flashlight

⑥ NCV Sensor area

Power on / off

Press and hold the " ⏻ " key for about 2 seconds to turn on or off.

Gear selection

Press the **"FUNC"** key to manual mode; then press to select shift position; press and hold the **"FUNC"** key for about 2 seconds to return to the intelligent (AUTO) measurement mode.

Power on is in intelligent measurement mode by default.

Data hold

Press "**H**" key to turn on or off data holding.

Note：Invalid in NCV / Live.

Flashlight

Press and hold " 🔆 " key to turn on or off flashlight.

Backlight

Press" 🔆 " key to turn on or off backlight.

Auto power off

After power on, auto power off will be on by default and "⏻" symbol will be displayed. Without any key operation in about 15 minutes, the meter will automatically shut down to save battery energy.

Press and hold "**FUNC**" key to turn on meter, the auto power off function will be canceled. The "⏻" symbol is not displayed.

Measurement operation

⚠**Warning**

- **Do not measure the voltage higher than 600V, otherwise the meter may**

be damaged.

- **Pay special attention to safety when measuring high voltage to avoid electric shock or personal injury.**
- **Before use, test the known voltage with the meter to confirm that the meter is in good condition.**

Smart (AUTO) measurement

This measurement mode is default when power on. In this mode, DC voltage, AC voltage, resistance, continuity can be measured, and the meter can automatically identify the measurement signal.

1) Press ⏻ key to power on, display Auto and enter the intelligent measurement mode.
2) Insert the red probe into "**INPUT**" jack and the black probe into the "**COM"** jack.
3) Contact the probe of the probe with both ends of the measured power supply or resistance (parallel), and the meter will automatically recognize the measured signal.
4) Read the results from the display.

NOTE： The minimum measurable voltage of this mode: 0.8V

Professional measurement

AC/DC voltage measurement

1) Press ⏻ key to power on, display Auto and enter the intelligent measurement mode.
2) Press **"FUNC"** key to select "$\tilde{V}$" or "$\bar{\tilde{V}}$" gear.
3) Insert the red probe into "**INPUT**" jack and the black probe into the "**COM"** jack.
4) Contact the probe with both ends of the measured power supply (parallel).
5) Read the results from the display.

Resistance measurement

1) Press ⏻ key to power on, display Auto and enter the intelligent measurement mode.
2) Press **"FUNC"** key to select "Ω" gear.
3) Insert the red probe into "**INPUT**" jack and the black probe into the "**COM"** jack.
4) Contact the probe with both ends of the measured resistance (parallel).
5) Read the results from the display.

Continuity test

1) Press ⏻ key to power on, display

Auto and enter the intelligent measurement mode.

2) Press **"FUNC"** key to select "))" gear.
3) Insert the red probe into "**INPUT**" jack and the black probe into the "**COM"** jack.
4) Contact the probe with both ends of the measured resistance or Circuit (parallel).
5) When the resistance value is less than 50 Ω, the buzzer will sound and the alarm indicator will be on.
6) Read the results from the display.

Frequency measurement

1) Press ⏻ key to power on, display Auto and enter the intelligent measurement mode.
2) Press **"FUNC"** key to select **"Hz"** gear.
3) Insert the red probe into "**INPUT**" jack and the black probe into the "**COM"** jack.
4) Contact the probe with both ends of the measured power supply
5) Read the results from the display.

Capacitance measurement

1) Press ⏻ key to power on, display

Auto and enter the intelligent measurement mode.

2) Press **"FUNC"** key to select "⊣⊢" gear.
3) Insert the red probe into "**INPUT**" jack and the black probe into the "**COM"** jack.
4) Contact the probe with both ends of the measured capacitance (parallel).
5) Read the results from the display.

Diode test

1) Press ⏻ key to power on, display Auto and enter the intelligent

measurement mode.

2) Press **"FUNC"** key to select "→|" gear.
3) Insert the red probe into "**INPUT**" jack and the black probe into the "**COM"** jack.
4) The red probe contacts the anode of the diode and the black probe contacts the cathode of the diode.
5) If the probe polarity is opposite to the diode polarity, the display will display "OL".
6) Read the results from the display.

Non-contact AC voltage detection

1) Press ⏻ key to power on, display Auto and enter the intelligent measurement mode.
2) Press **"FUNC"** key to select "**NCV** " gear.
3) The NCV sensor area is gradually close to the conductor.
4) When the weak electric field signal is detected, it will display **"---L"**; the buzzer will sound slowly and the green light on.
5) When the strong electric field signal is detected, it will display "---H"; the

buzzer will sound quickly and the red light on.

Live wire detecting

1) Press ⏻ key to power on, display Auto and enter the intelligent measurement mode.
2) Press **"FUNC"** key to select "**Live**" gear.
3) Insert the red probe into "**INPUT**" jack and remove the black probe.
4) Use the red probe contact the conductor.
5) When the weak electric field signal is detected, it will display "---L"; the

buzzer will sound slowly and the green light on.

6) When the strong electric field signal is detected, it will display "---H"; the buzzer will sound quickly and the red light on.

General Technical Specifications

- Environment condition of using:
  CAT. III 600V：
  Pollution level 2, Altitude < 2000m
  Working temperature and humidity：
  0~40°C(<80% RH，<10°C non condensing)
  Storage temperature and humidity：
  -10~60°C(<70% RH, remove the battery)

- Temperature coefficient：
  0.1× accuracy /°C（<18°C or >28°C）。
- MAX. Voltage between terminals and earth ground：600V
- Sampling rate: approx. 3 times/second.
- Display: 4000 counts
- Over range indication: "OL".
- Low battery indication: "🔋" will be displayed.
- Input polarity indication: display "–".
- Power requirement: 2 x 1.5V AAA batteries.

Accuracy Specifications

The accuracy applies within one year after the calibration.

Reference condition: the environment temperature 18°C to 28°C, the relative humidity is no more than 80%,

accuracy: ±（% reading + word）.

DC voltage

Range	Resolution	Accuracy
400mV	0.1mV	
4V	0.001V	±(0.5% +3)
40V	0.01V	Impedance:
400V	0.1V	Approx.10MΩ
600V	1V	

AC voltage

Range	Resolution	Accuracy
4V	0.001V	±(0.8%+3)
40V	0.01V	Impedance: Approx.10MΩ
400V	0.1V	Frequency Response:
600V	1V	40Hz~1kHz; TRMS

Resistance

Range	Resolution	Accuracy
400Ω	0.1Ω	
4KΩ	0.001 KΩ	
40 KΩ	0.01 KΩ	±(1.0%+5)
400 KΩ	0.1 KΩ	
4MΩ	0.001 MΩ	
40 MΩ	0.01 MΩ	±(1.5%+10)
Overload protection：250V		

Diode/ Continuity

→|	Display diode voltage drop
•))	<Approx. 50Ω，Buzzer will sound and the indicator light will be on.。

Capacitance

Range	Resolution	Accuracy
4nF	0.001nF	
40nF	0.01nF	
400nF	0.1nF	
4μF	0.001μF	±(4.0%+5)
40μF	0.01μF	
400μF	0.1μF	
4mF	0.001mF	
Overload protection：250V		

Frequency

Range	Resolution	Accuracy
4Hz	0.001Hz	
40Hz	0.01Hz	
400Hz	0.1Hz	
4KHz	0.001KHz	±(1.0%+3)
40kHz	0.01kHz	
400kHz	0.1kHz	
4MHz	0.001MHz	
Overload protection：250V		

Maintenance

Clean

When cleaning the meter, please follow the following steps:

1) Turn off the meter power and remove the probes.
2) Wipe the case with a damp cloth or mild detergent. Do not use abrasives or solvents. Wipe the contacts in each input socket with a clean swab soaked in alcohol.

⚠**Warning**

Always keep the inside of the meter clean and dry to prevent electric shock or damage to the meter.

Replace battery

1) Turn off the meter power and remove the probes.
2) Remove the screw fixing the battery cover and remove the battery cover.
3) Remove the old battery and replace it with a new one of the same specification. Please pay attention to the battery polarity.
4) Install the battery cover back to its original position, and fix and lock the battery cover with screws.

⚠**Warning**

- **To avoid electric shock or personal injury caused by wrong**

reading, please replace the battery immediately when the battery is low. Do not discharge the battery by shorting it or reversing its polarity.

- **To operate and maintain the meter safely, please take out the battery when it is not used for a long time to prevent the battery leakage from damaging the product.**

EMC&LVD

65X100mm需折页 双面印刷形式