

Safety statement

⚠ Caution:
Operation that may cause damage to meter

⚠ Warning:
operation that may cause danger to users.

Safety Instructions

The meter conforms to IEC61010-1 CAT.III600V 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

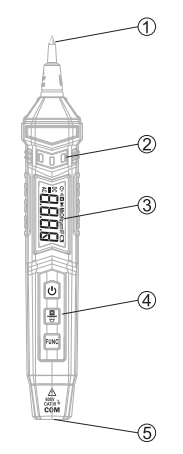
flame retardant clothing, etc.) to prevent injury caused by electric shock and electric arc when dangerous live conductors are exposed.

- 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 instrument is a true RMS digital multi-meter with intelligent test function.



- ① Input terminal
- ② Signal intensity indicator
- ③ Display LCD
- ④ Function key
- ⑤ Input COM terminal


Power on / off

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


Gear selection

Press the "FUNC" key to make gear selection. 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  key to turn on or off data holding.

Flashlight

Press and hold  key for about 2 seconds to turn on or off flashlight.

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.



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.

1. 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  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 with both ends


of the measured subject or resistance (parallel), and the meter will automatically recognize the measured signal.

When measuring the resistance, if the resistance value is < about 50 Ω, the buzzer will sound


- 4) Read the results from the display.

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

2. Frequency measurement

- 1) Press  key to power on,
- 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 subject.
- 5) Read the results from the display.


3. Cap measurement

- 1) Press  key to power on,
- 2) Press "FUNC" key to select "Cap"

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 Cap.
- 5) Read the results from the display.

4. Diode measurement

- 1) Press  key to power on,
- 2) Press "FUNC" key to select "Diode" gear.
- 3) Insert the red probe into "INPUT" jack and the black probe into the "COM" jack.
- 4) Connect the red probe to the anode of the diode and the black probe to the cathode of the diode
- 5) Read the forward bias value on the display screen.
- 6) If the electrode of the test wire is inversely connected with the electrode of the diode, the display will read OL, which can be used to distinguish the


anode and cathode of the diode

5. Live wire detecting

- 1) Press  key to power on,
- 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.

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

6. Phase sequence detection

- 1) Press  key to power on,
- 2) Press "FUNC" key to select "Phase" gear to enter the phase sequence detection state


- a) Display the "PA" symbol with the "A" letter flashing and plug in the sensing probe to the first phase line socket, waiting for a beep

- b) Display the "PAB" symbol with the "B" letter flashing and plug in the sensing probe to the second phase line socket and wait for a beep
- c) Display the "PABC" symbol with the "C" letter flashing and plug in the sensing probe to the third phase line socket and wait for a long beep
- d) At the end of the test, the display will display the measurement results on the display

- ◆ "P --- L" symbol displayed on the screen indicates left-handed phase sequence
- ◆ "P --- R" symbol displayed on the screen indicates right -handed phase sequence

Note1: Please complete the test on the three wires within 1 minute, otherwise the detection timeout error will occur. The prompt is that the PABC symbol appear and the P letter flashes. In case of timeout error, please return to phase sequence detection function for the retest .

General Technical Specifications

- Environment condition of using:
CAT. III 600V;
Pollution level2, 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 test

Range	Resolution	Accuracy
4V	0.001V	±(0.5%+3)
40V	0.01V	
400V	0.1V	
600V	1V	

measurable voltage: 0.8V~600V

- ◆ Impedance: Approx.10MΩ

AC voltage test

Range	Resolution	Accuracy
4V	0.001V	±(0.8%+3)
40V	0.01V	
400V	0.1V	
600V	1V	

measurable voltage: 0.8V~600V


- ◆ Impedance: Approx.10MΩ
- ◆ Frequency Response: 40Hz~1kHz; TRMS

Resistance test

Range	Resolution	Accuracy
4000 Ω	1 Ω	±(1.0%+5)

40 KΩ	0.01 KΩ	±(1.5%+10)
400 KΩ	0.1 KΩ	
4MΩ	0.001 MΩ	
40 MΩ	0.01 MΩ	

Continue test

 <Approx. 50Ω. Buzzer will sound and the indicator light will be on..

Cap test

Range	Resolution	Accuracy
40nF	0.01 nF	±(4.0%+5)
400nF	0.1 nF	
4uF	0.001uF	
40 uF	0.01uF	
400 uF	0.1uF	±(5.0%+5)
4mF	0.001 mF	

Frequency test

Range	Resolution	Accuracy
40Hz	0.01Hz	±(1.0%+3)
400Hz	0.1Hz	
4KHz	0.001KHz	
40kHz	0.01kHz	

400kHz	0.1kHz	±(1.0%+3)
4MHZ	0.001 MHZ	

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.

65X150mm 需折页，双面印刷形式