

# User manual

## Safety Operation Specifications



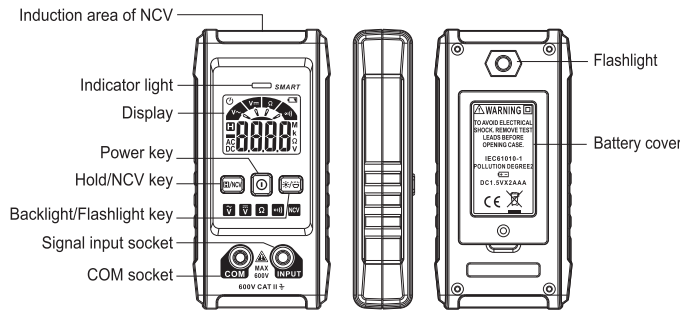
### Warning

In order to avoid possible electric shock or personal injury and other safety accidents, please abide by the following specifications:

- Please read this manual carefully before using the instrument, and pay special attention to safety warning information.
- Strictly observe the operation of this manual and use this instrument. Otherwise, the protection function of the instrument may be damaged or weakened.
- Please be careful if the measurement exceeds 30V AC true RMS, 42V AC peak or 60V DC. There may be danger of electric shock at this kind of voltage
- By measuring the known voltage to check whether the meter work is normal, if it is not normal or damaged, do not use it again.
- Before using the instrument, please check whether there is any crack or plastic damage in the instrument case. If you do, do not use it again.
- Before using the instrument, please check whether the probe is cracked or damaged. If so, please replace the same type and the same electrical specifications.
- The instrument shall be used in accordance with the specified measurement category, voltage or current rating.
- Please comply with local and national safety code. Wear personal protection equipment (such as approved rubber gloves, masks and flame retardant clothes, etc.) to prevent being damaged by electric shock and electric arc due to exposed hazardous live conductor
- When it shows low battery indicator, please replace the battery in time in case of any measurement error.
- Do not use the instrument around explosive gas, steam or in wet environment.
- When using the probe, please put your fingers behind the finger protector of the probe.
- When measuring, please connect the zero line or the ground line firstly, then connect the live wire; but when disconnecting, please disconnect the live wire firstly, then disconnect the zero line and ground line.

- Before opening the outer cabinet or battery cover, please remove the probe on the instrument. Do not use the instrument in the circumstances that the instrument is taken apart or battery cover is opened.
- It only meets the safety standards when the instrument is used together with the supplied probe. If the probe is damaged and needs to replace, the probe with same model number and same electrical specifications must be used for replacement.

## Instrument panel



## Measurement operation

### 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 0.8V

### Non-contact AC voltage detection

- 1) Press **ⓘ** key to power on, display **Auto** and enter the intelligent measurement mode.

- 2) Press and hold "**NCV**" key to select “NCV” gear.
- 3) The NCV induction area is gradually close to the conductor.
- 4) When the weak electric field signal is detected, it will display “---L”; the backlight on, the buzzer will sound slowly and the green light on.
- 5) When the strong electric field signal is detected, it will display “---H”; the backlight on, the buzzer will sound quickly and the red light on.

### Data hold

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

### Backlight

Press "**☀/☾**" key to turn on or off backlight.

### Flashlight

Press and hold "**☀/☾**" key for about 2 seconds to turn on or off flashlight.

### Auto power off:

- If there is no operation within 15 minutes, the meter will auto power off.
- Press and hold the "**NCV**" key then turn on the power to cancel the auto power off function and the symbol **⏻** will no longer be displayed. The next time the **ⓘ** key is turned on, the automatic shutdown function will be restored.



### WARNING

- It is not possible to measure voltages higher than 600V, otherwise the instrument 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 and make sure the meter is in good function.

## Technical Specifications

- Environment condition of using:  
CAT.II 600V  
Pollution level: 2


Altitude < 2000m.

Working environment temperature and humidity:

0~40°C (<80% RH, <10°C non condensing).

Storage environment 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: about 3 times/second.
- Display: 4000 counts.
- Over range indication: it displays “OL”.
- Low battery indication: “ ” will be displayed.
- Input polarity indication: automatically display “-”.
- Power requirement: 2X1.5V AAA battery.

## 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:  $\pm$  ( % reading + word ) .

### DC Voltage

Range	Resolution	Accuracy
4V	0.001V	±(1.0% reading+5 word)
40V	0.01V	
400V	0.1V	
600V	1V	
Voltage range: 0.8V~600V		

Overload protection: 600V; Maximum input voltage: 600V

### AC Voltage

Range	Resolution	Accuracy
4V	0.001V	±(1.2% reading+5 word)
40V	0.01V	
400V	0.1V	
600V	1V	
Voltage range: 0.8V~600V		


Overload protection: 600V; Frequency Response:

40~1000Hz; TRMS

### Resistance

Range	Resolution	Accuracy
4KΩ	0.001kΩ	±(1.2%reading+5 word)
40KΩ	0.01kΩ	
400KΩ	0.1kΩ	
4MΩ	0.001MΩ	
40MΩ	0.01MΩ	
Overload protection: 250V		

### Continuity

	<Approx. 50 $\Omega$ , Buzzer will sound and the green light will be on.
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## Clean

If there is dust or humidity on the terminals, wrong measurements may be made. Please clean the instrument as follows:

- 1) Turn off the meter power and remove the test probe.
- 2) Clean the dust accumulated in the socket. Wipe the case with a wet cloth or mild detergent. Do not use abrasives or solvents. Wipe the contacts in each input jack with a clean cotton swab soaked in alcohol.

## Replace Battery

- 1) Turn off the meter power and remove the test probe.
- 2) Remove the screws that fix the battery cover and remove the battery cover.
- 3) Remove the old battery and replace it with a new battery of the same specification.
- 4) Put 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.

- When it is not used for a long time, please take out the battery to prevent the battery leakage from damaging the product.