

 Please read this manual carefully before using this product, and keep it properly for future use!

Overview

- This meter is a 4000-counting automatic range clamp meter, which has the functions of true effective value measurement, data hold, flashlight, backlight, automatic shutdown, battery undervoltage indication and full-range overload protection, etc.
- The instrument can be used to measure AC current, AC/DC voltage, resistance, capacitance, diode, on/off, frequency, NCV detection, and Live fire identification. It is an ideal multifunctional product for professionals, factories, schools, instrument lovers or families.

1. Safety information



Attention should be paid to the use of the instrument. Wrong operation may cause electric shock or damage. Please read the instructions carefully before use.

- * Upon receipt, please check whether the unit and accessories are damaged in transit.
- * Please comply with local and national safety regulations, test in the exposed environment of dangerous live conductors, and use personal protective equipment to prevent electric shock and arc discharge.
- * When using, please make sure that the unit shell is not damaged, that the insulation layer of the probe is completely conducted, that the battery cover is closed and the screw is locked, and that the functional range is correct.
- * It's forbidden to measure beyond the indicated value of the protection range, or to switch positions during measurement.
- * When the unit is connected to the measuring circuit, the finger must be placed behind the protection device of the probe sheath, and it is forbidden to touch the top (metal part) of the probe.
- * If the measured voltage is higher than DC 60V or AC 30V (effective value), caution should be taken to prevent electric shock, and the highest measured voltage at the input end should not exceed AC/DC600V.
- * Before rotating the switch to change the measuring function, please remove the probe from the circuit under test.

- * When measuring the current, please pull out the test probe from the COM end and the INPUT end.
- * Non-professional maintenance personnel are forbidden to open the bottom shell to adjust or repair the unit.
- * Please disconnect the power supply of the measuring circuit and discharge all high-voltage capacitors in the circuit before measuring resistance, capacitance and on-off test.
- * It's forbidden to use instrument jaws to measure AC voltage and current with load greater than 600A or 600V.

2. Marks

Marks	Description
	AC voltage
	DC voltage
	Warning! Please read the relevant Safety Operation Specifications before use.
	To earth wire
	Double insulation
	Warning! High voltage danger!
	Comply with European Union (EU) standards
CAT III	Refers to the level of pulse withstand voltage protection provided by over-voltage (installation) level III and pollution degree 2 according to IEC-61010 standard

3. Display Description

Symbol	Description
	Automatic shut-down
NCV	Non-contact AC voltage detection
Live	Live fire identification
HOLD	Data hold
	Battery undervoltage symbol
	AC voltage
	DC volatge
mV	Millivolt
V	Volt
	Negative pole
	On-off test
	Diode
nF	Nanofarad
uF	Microfarad
mF	Millifarad
Ω	Ohm
kΩ	Kilo-ohm
MΩ	Megohm
Hz	Frequency
A	Current
OL	Exceeding the test range

4. Technical parameters

Automatic measuring range	Yes
Full range overload protection voltage	250V
Maximum INPUT voltage of COM and input end	AC/DC 600V
Operational altitude	Maximum 2000m
Display	LCD
Maximum display value	3999
Over-range display	0L or-0L
Sampling time	About 3 times/second
Automatic shutdown time	About 15 minutes
Power Supply	2x1.5V AAA battery
Working temperature	0°C ~ 40°C
Storage temperature	-10°C ~ 60°C
Size	200x75x37mm
Jaw size	35mm
Weight	About 225g (without battery)

Keys

Keys	Description
SEL	Function selection key
HZ	Frequency
	Short press to turn on or off the backlight
HOLD/ 	Data hold (short press)/flashlight on or off (long press)

Input end

INPUT SOCKET	Description
COM end	Connect with the black probe
INPUT end	Connect with the red probe

5.Functions

- * SEL function selection key: switch to AC/DC voltage, NCV, Live, resistance, on/off, and diode.
- * Automatic shutdown function: after starting for about 15 minutes, if there is no operation, the instrument will automatically enter the sleep state, and press SEL key to restart.
- * Cancel the automatic shutdown function: switch to the OFF position, press the SEL key and turn it on at the same time, the buzzer will sound four times, the upper left corner of the screen () will disappear, and the automatic shutdown function will be cancelled. Switch to the OFF position and restart to restore the automatic shutdown function.
- * Battery undervoltage indication: When () appears on the screen, it means that the battery is low. Please replace the battery in time to avoid the effect on the measurement data.

NCV non-contact AC voltage detection

* **HOLD key:** short press to hold the measured data, rotate the gear or short press the HOLD key again to exit the data hold, and long press to turn on or off the flashlight.

* **HZ function:** At AC voltage range, current 40A and 600A, short press the HZ key to switch to the frequency measurement function for measurement of the frequency of current voltage and current.

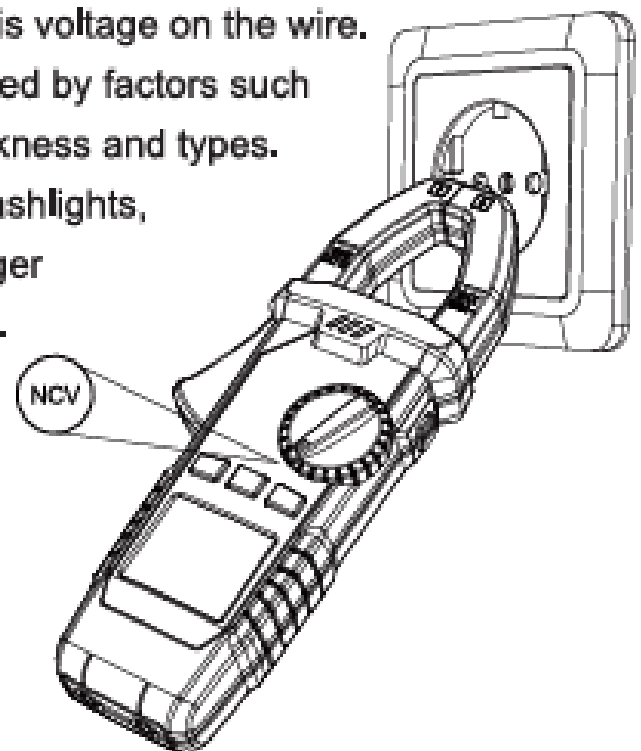
6.How to use (black probe inserted into COM end and red probe into INPUT end.)

6.1 NCV non-contact AC voltage detection

Turn the switch to the NCV key. Close the top of the clamp head to the conductor to detect the voltage signal. For the low voltage the screen displays —L, for the high voltage, the screen displays —H, and the indicating light and buzzer give out warnings with different frequencies.

Notes:

- ① Even if there is no indication, voltage may still exist. Don't rely on non-contact voltage detection to judge whether there is voltage on the wire.
- ② The detection process may be influenced by factors such as socket design, different insulation thickness and types.
- ③ Environmental interference (such as flashlights, motors, electromagnetism, etc.) may trigger non-contact voltage detection by mistake.

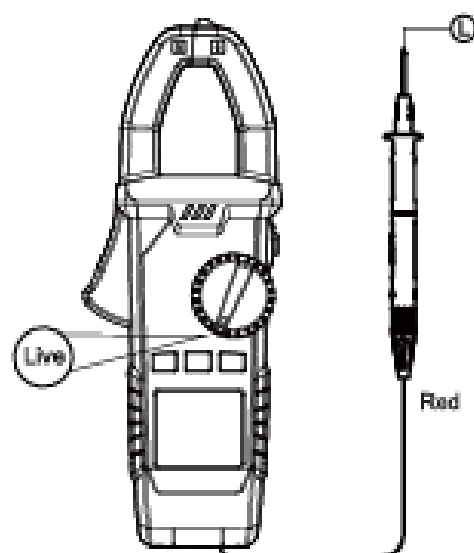


6.2 Live wire identification

Turn the switch to the Live function, and short press the SEL key to the Live wire identification function. Insert a single red probe into the INPUT end, and when it touches the measured wire the screen displays H, and the buzzer sounds an alarm. Then the measured wire is the live wire, otherwise the neutral wire or earth wire.

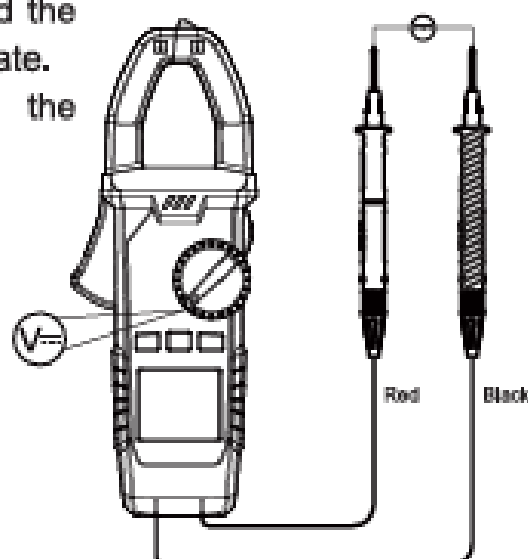
Notes:

- ① Before use, please test on a known live conductor to ensure that the instrument is in good working condition.
- ② During the testing of the live wire of the socket, other electrical devices on the socket may affect the measurement results. Please unplug the other electrical devices during the test.



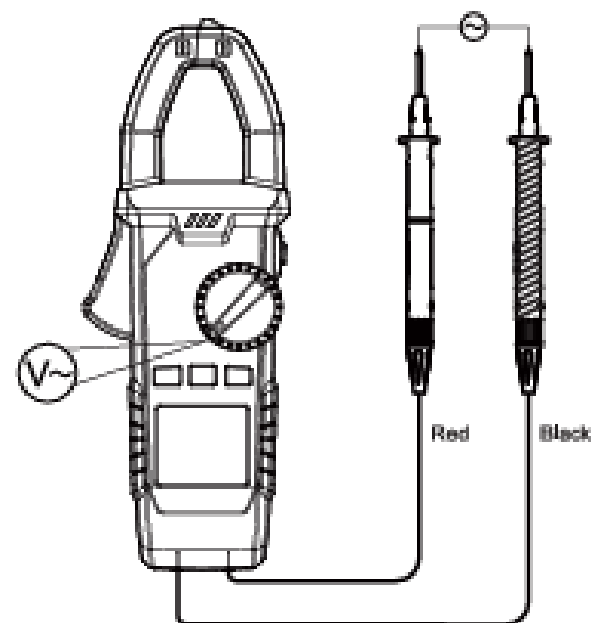
6.3 DC voltage

- (1) Turn the switch to the ($\text{Hz} \approx \text{V}$) position, and the instrument is in the DC voltage measurement state.
- (2) Connect the red and black probes to the measured circuit.



6.4 AC voltage

- (1) Turn the switch to the ($\text{Hz} \approx \text{V}$) position, short press the SEL key and the screen displays (AC). At this time, the instrument is in the AC voltage measurement state.
- (2) Connect the red and black probes to the measured circuit.

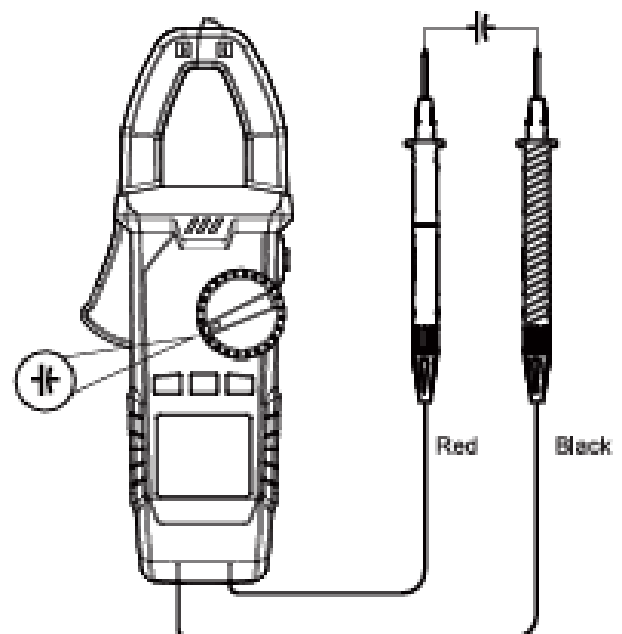


6.5 Capacitance

- (1) Turn the switch to the (F) position.
- (2) Connect the red and black probes to the measured capacitance.

Notes:

- ① For the capacitance measurement, it is necessary to discharge the capacitance first. The unit will charge the capacitance during the measurement, and it will take some time for the stable measurement.
- ② For the capacitance measurement, other devices will be connected in series or in parallel, so the measured data will be different from the actual one.



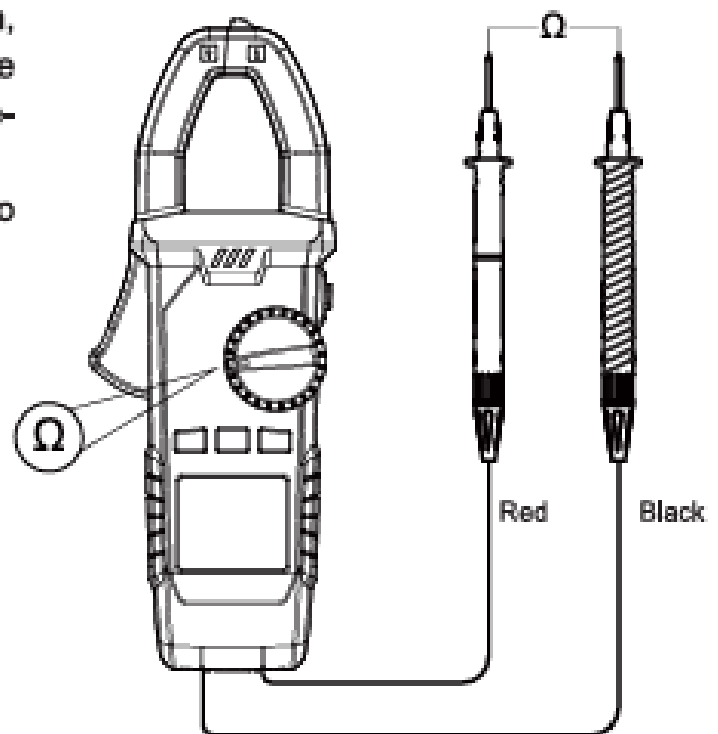
6.6 Resistance

(1) Turn the switch to the (Ω) position, and the screen shows M Ω . At this time, the instrument is in the resistance measurement state.

(2) Connect the red and black probes to the measured resistance.

Notes:

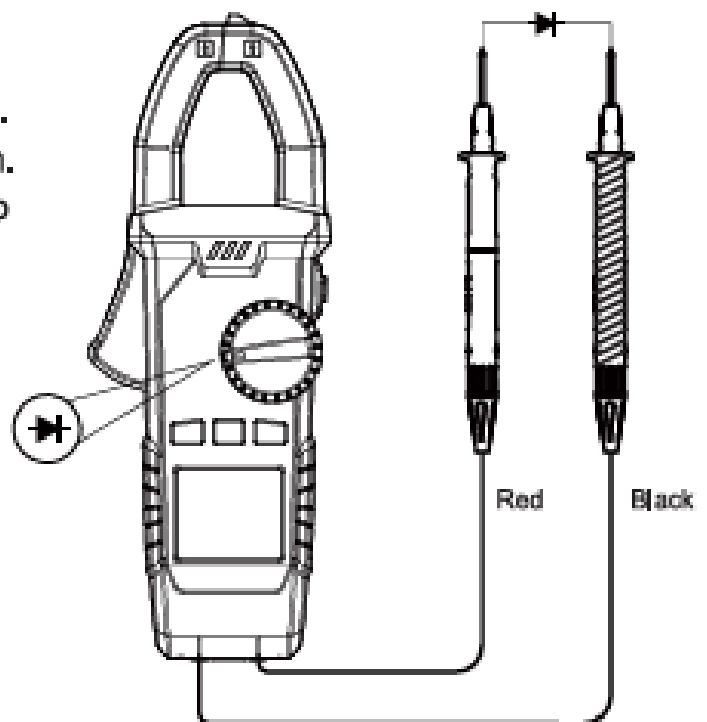
- ① During maintenance, it is forbidden to measure resistance on the live circuit.
- ② The measured resistance on the circuit will be different from the actual one.
- ③ When the unit is open or the measured resistance is too large, "OL" will be displayed, indicating that the measured value is beyond the measuring range.



6.7 Diode

- (1) Turn the switch to the ($\rightarrow| \leftarrow$) position.
- (2) Press SEL key to select ($\rightarrow| \leftarrow$) position.
- (3) Connect the red and black probes to the measured diode.

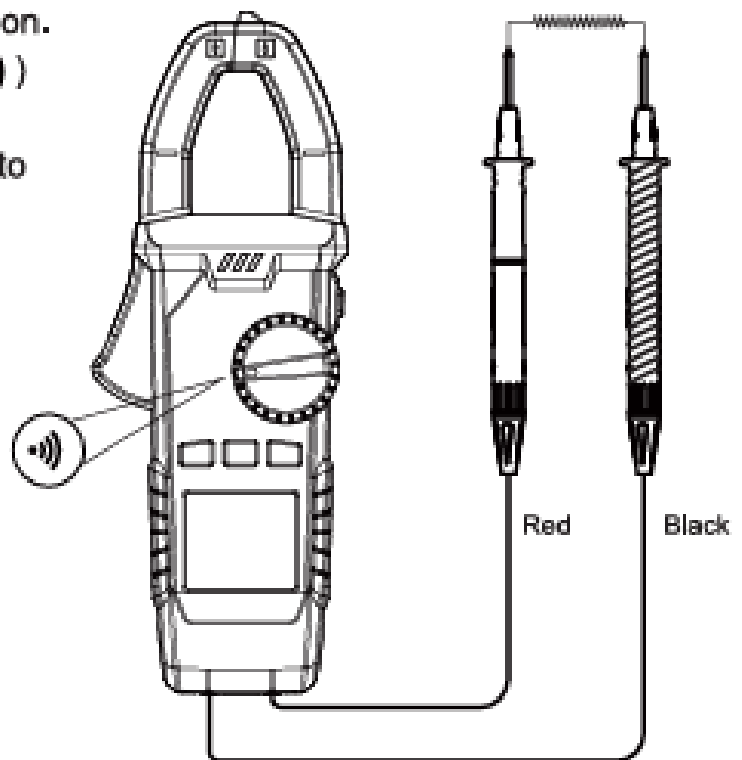
For measurement of a normal diode, the instrument shows the forward voltage drop of the measured diode under test, but it is not conductive in the reverse direction.



6.8 On-off test

- (1) Turn the switch to the (Ω) position.
- (2) Press the SEL key to select the (•••) position.
- (3) Connect the red and black probes to the measured circuit.

When the resistance of the wire to be measured is less than about 50, the indicator light of the instrument is always on, and the buzzer gives a continuous alarm sound.

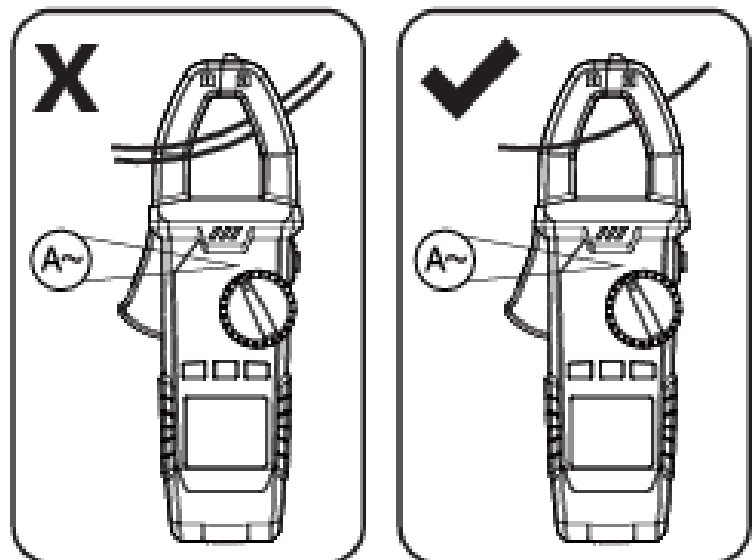


6.9 AC current

- (1) Turn the switch to A position, and current (A~) will be displayed on the screen.
- (2) Hold the instrument trigger to open the jaw, place the single conductor of the measured wire in the center of the clamp head, and the instrument will display the measured current value when the jaw is completely closed.

Notes:

- ① To measure the current, only a single conductor (live wire or neutral wire) is needed and two or more conductors can affect the correct measurement. The load must be in working condition, otherwise the current value of the load cannot be measured.
- ② The measured wire is in the center of the clamp head, and the maximum measured AC current is 600 A/50 ~ 60 Hz.



DC voltage/AC voltage/Resistance

7. Technical indicators

7.1 DC voltage

Range	Resolution	Accuracy
400mV	0.1mV	± (0.5%reading +3digits)
4V	0.001V	
40V	0.01V	
400V	0.1V	± (0.8%reading +3digits)
600v	1V	

Input impedance: 10MΩ / Maximum input voltage: DC 600V

7.2 AC voltage

Range	Resolution	Accuracy
4V	0.001V	± (0.8%reading + 5digits)
40V	0.01V	
400V	0.1V	± (1.0%reading + 5digits)
600V	1V	

Input impedance: 10MΩ/ maximum input voltage: AC 600V/
frequency response: 40Hz ~ 1KHz.

7.3 Resistance

Range	Resolution	Accuracy
400Ω	0.1Ω	± (1.0%reading +5digits)
4kΩ	0.001KΩ	
40kΩ	0.01KΩ	
400kΩ	0.1KΩ	
4MΩ	0.001MΩ	± (2.0%reading +5digits)
40MΩ	0.01MΩ	

Overload protection: 250V Open circuit voltage: about 1V.

Diode/On-off test/Capacitance/AC current

7.4 Diode

Function	Range	Test condition
Diode test 	0-2V	Open circuit voltage: about 2.2V/ current: about 1mA. The instrument shows the approximate value of diode forward voltage drop.

Overload protection: 250V

7.5 On-off test

Function	Range	Description	Test condition
	400Ω	If the resistance is less than 50Ω, the buzzer will give an alarm.	Open circuit voltage: about 2V

Overload protection: 250V

7.6 Capacitance

Range	Resolution	Accuracy
4nF	0.001nF	±(4.0%reading + 5digits)
40nF	0.01nF	
400nF	0.1nF	
4μF	0.001μF	
40μF	0.01μF	
400μF	0.1μF	±(5.0%reading + 10digits)
4mF	0.001mF	

Overload protection: 250V

7.7 AC current

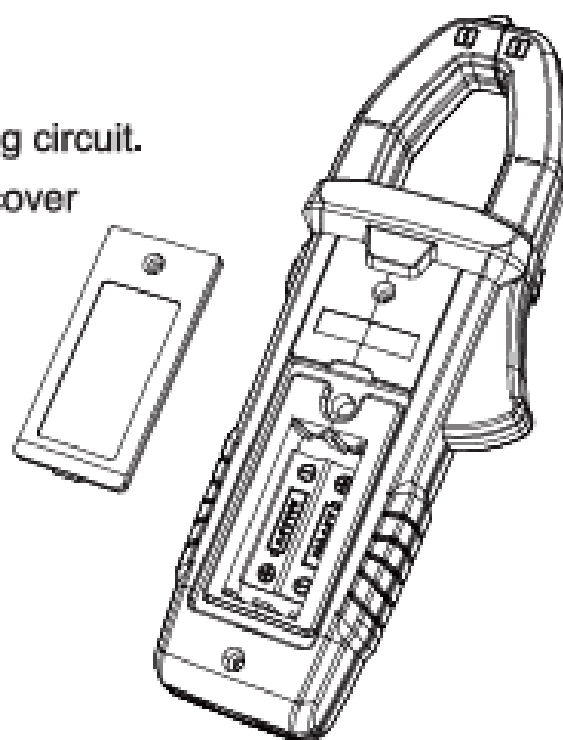
Range	Resolution	Accuracy
4A	0.001A	±(2.0%reading + 5digits)
40A	0.01A	±(2.5%reading + 5digits)
600A	1A	

Maximum input current: AC 600A/frequency response: 50HZ ~ 60Hz.

8. Battery replacement

Before opening the battery cover to replace the battery, turn the unit off and make sure that the test probe has been disconnected from the measuring circuit.

- ①. Turn off the power supply.
- ②. Remove the test probe from the measuring circuit.
- ③. Use a screwdriver to remove the battery cover screw on the back of the instrument.
- ④. Remove the battery cover.
- ⑤. Remove the old battery.
- ⑥. Replace with a new 1.5Vx2AAA battery.
- ⑦. Install the battery cover and tighten the fixing screws.



9. Accessories

1. Clamp meter	x1
2. Instructions manual	x1
3. Test probe	x1
4. 1.5Vx2 AAA battery	x2
5. Storage bag	x1

USER'S MANUAL

Made in china

CE RoHS



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