UNI-T®

UT525/526
Electrical Testers
Operating Manual

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Overview

UT525/UT526 is a digital multi-functional electric testing instrument adopting new design and integrating large scale analog integrated circuit, digital circuit and microprocessor chips, which can mainly test parameters of residual current device (RCD), earth, insulation resistance, DCV and ACV; with features of full functions, high accuracy, stable performance, easy and reliable operation, it is available to test RCD, insulation and earth of electric equipments. UT525/ UT526 is the ideal selection for repairing, maintaining and testing RCD of all electric equipments.

I. Safety Precautions

This instrument was designed, manufactured and tested according to IEC61010 safety standard (Safety Requirements for Electrical Equipment). This Instructions describe the warnings and safety rules which ensure the safe operation and safe state of the instrument, which the user must follow. Please read following instructions before using.

⚠ **Warning**

- **Please read and understood the Instructions before using.**
- **Please follow the requirements of the Instructions, keep the Instructions well for further reference at any time.**
- **During testing, incorrect operation will cause accident and instrument damage.**

Sign ⚠ on the instrument tell the user that some operations should be made according to relative requirements of the Instructions to ensure safety operation of the instrument.

⚠	Danger	It means under some conditions, the operation may cause serious or fatal damages may be caused.
⚠	Warning	It means taking care to keep away from electric shock.
⚠	Note	It means avoiding instrument damage and gain accurate testing.

⚠ Danger

- Do not test circuit with AC440V/DC440V or above.
- Do not test in the place with inflammable conditions.
- Do not operate the instrument if the surface of the instrument is wet or the hand is wet.
- During testing, do not touch the conductive part of the testing pen.
- Do not open the battery cover during testing.
- During testing insulation and RCD, do not touch the circuit to be tested.

⚠ Warning

- When there is anything unusual to the instrument, such as the instrument is damaged or the metal is exposed, please do not use it.

- Operate carefully under the voltage over 33Vrms, 46.7Vacrms or 70Vdc, electric shock may be caused under such kind of voltage during operating.
- After completing high resistance testing, the charge storage of the circuit to be tested must be released.
- Do not replace battery if the instrument is in place with humidity.
- Make sure the all testing wires are connected with the testing ports firmly.
- Before opening cover of the battery, please make sure the instrument is turned off.

⚠ Note

- Before testing resistance, the circuit to be tested must be discharged completely and separated from the power circuit absolutely.
- If the testing pen or adapter is damaged and needs to be replaced, please replace with testing pen or adapter with the same model and electric specifications.
- When the battery sign ( ) shows that the battery is used up, please do not use the instrument any more. If the instrument won't be used for a long time, please take out the battery and then keep the instrument well.

- Do not put or use the instrument in the place with high temperature, high humidity, inflammable or explosive matters and high electromagnetic field.
- Do not clean the cover of the instrument with wet cloth of detergent, do not use abrasives or solvent.
- When the instrument is wet, please make it dry and then put it in the proper place.

II. Features

⚠	Danger of electric shock may happen
⧈	The instrument has double-insulation or reinforced insulation
⎓	DC
~	AC
⏚	Earth

- Designed and manufactured strictly according to IEC61010 safety standard, the instrument meets with Over Voltage Standard (CATIII600V) and safety standard of Class II Pollution.
- Auto discharge function.
- Red warning light.

III. Specifications

Error limit: ±(a% reading + digits), one year of warranty period
Environment temperature: 23±5℃
Environment humidity: 45-75%RH

UT525/UT526 RCD testing indexes

RCD testing current	10mA	30mA	100mA	300mA
Applied voltage	Voltage: 220V±10%, frequency: 45Hz-65Hz			
Accuracy tolerance	RCD testing current accuracy tolerance with AC (220V±2): (0+10%)			
Testing time range when switch of RCD is off	(10mA) range: 0-2,000mS (30mA) range: 0-500mS (100mA) range: 0-300mS (300mA) range: 0-300mS			
Accuracy tolerance	±(5%+2)			

UT525 earth testing indexes

Rated voltage	About 5.0V
Test range	0.01Ω-200Ω
Test current	＞200mA for 0.00Ω-2.00Ω
Accuracy tolerance	0.01Ω-200Ω: ±(2%+5)

UT526 earth testing indexes

Rated voltage	About 5.0V
Test range	0.01Ω-2,000Ω
Test current	＞200mA within 0.00Ω-2.00Ω
Accuracy tolerance	0.01Ω-2,000Ω: ±(2%+5)

UT525 insulation resistance testing indexes

Rated voltage	100V	250V	500V
Test range	0.05MΩ-200MΩ		
Open circuit voltage	DC 100V±10%	DC 250V±10%	DC 500V±10%
Rated test current	100KΩ load 0.9mA-1.1mA	250KΩ load 0.9mA-1.1mA	500KΩ load 0.9mA-1.1mA
Short circuit	＜1.8mA		
Accuracy tolerance	0.05MΩ-200MΩ: ±(5%+5)		

UT526 insulation resistance testing indexes

Rated voltage	250V	500V	1,000V
Test range	0.05MΩ-200MΩ	0.05MΩ-300MΩ	0.05MΩ-500MΩ
Open circuit voltage	DC 250V±10%	DC 500V±10%	DC 1,000V±10%
Rated test current	500KΩ load 0.9mA-1.1mA	1MΩ load 0.9mA-1.1mA	250KΩ load 0.9mA-1.1mA
Short circuit	＜1.8mA		
Accuracy tolerance	0.05MΩ-500MΩ: ±(5%+5)		

UT525/UT526 voltage testing indexes

	DCV	ACV
Test range	±0-±440V	0-440 (50/60Hz), just for reference to that less than 10V
Resolution	1V	
Accuracy tolerance	±(2%+3)	

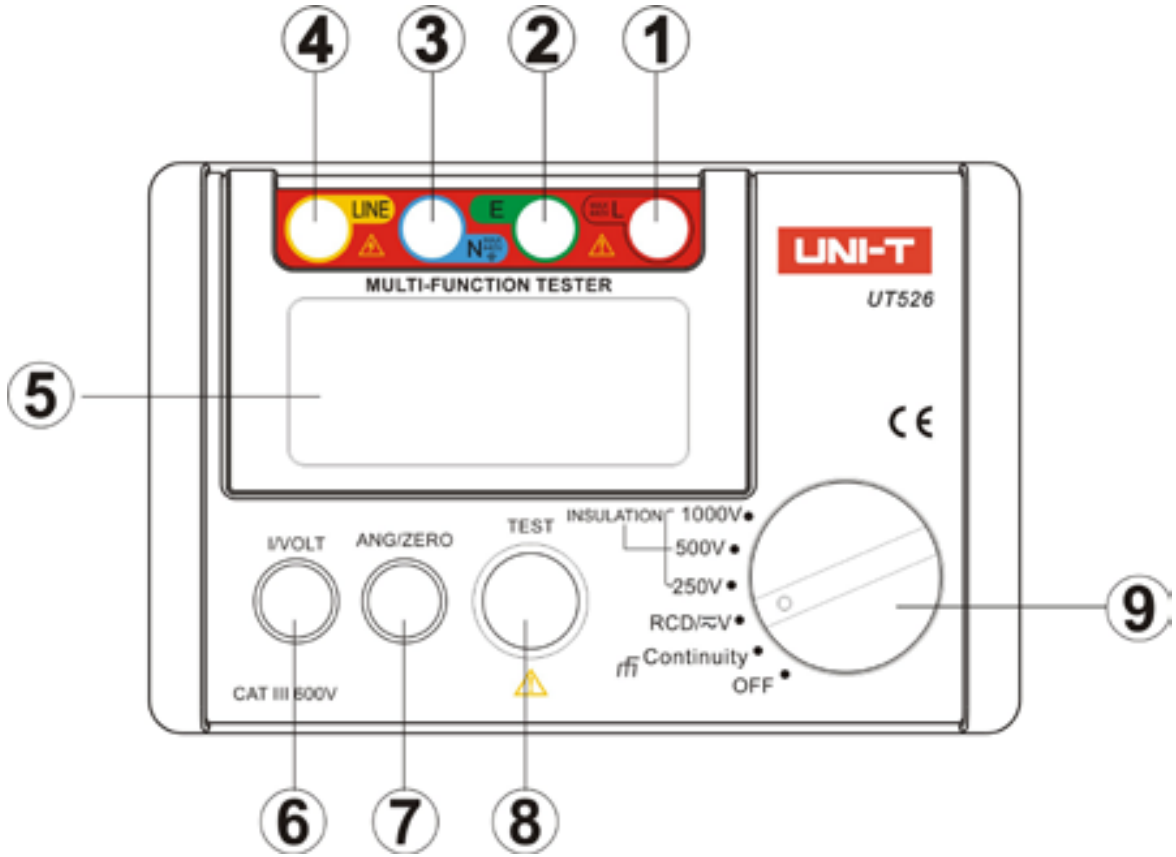
UT525/UT526 frequency testing indexes

Test range	20Hz-100Hz
Resolution	1Hz
Accuracy tolerance	Just for reference

- Display: LCD display, max reading: 9999
- Low battery voltage warning:
- Over limit indication: “**OL**”
- Auto range function
- Unit display: can display function, electric unit signs
- Work conditions: 0℃-40℃/ 85%RH or less
- Storage condition: -20℃-60℃/90%RH or less
- Dimensions: 150mm(L)×100mm(W)×71mm(D)
- Current consumption: about 50mA (1,000V output) (about 10mA in general condition)
- Accessories: testing wire, alkaline battery (1.5V, AA)×6, Instructions, carrying bag
- Weight: 0.7kg (including batteries)
- Power: alkaline battery (1.5V, AA)×6

IV. Front View of the Instrument (see Picture 1)

1. **L**: jack of live wire terminal for RCD testing and positive terminal for voltage testing
2. **E**: jack of earth for RCD testing
3. **N**: jack of null wire terminal for RCD testing and input negative terminal for voltage testing
4. **LINE**: jack of high voltage output for insulation resistance testing
5. LCD
6. RCD current setup key and voltage testing switch key
7. RCD angles switch key and return-to-zero key
8. Test button
9. Dial plate


4
3
2
1
LINE
N
E
L
MULTI-FUNCTION TESTER
UNI-T
UT526
CE
5
I/VOLT
ANG/ZERO
TEST
INSULATION
1000V
500V
250V
RCD/≂V
Continuity
OFF
9
CAT III 600V
6
7
8

Picture 1

V. Function of Keys and Dial Plate

1. I/VOLT is RCD current testing range selection and voltage testing switch key;
2. ANG/ZERO is RCD testing angle switch key and return-to-zero key before starting earth testing;
3. TEST is test key;
4. When dial plate points to Continuly, enter earth test;
5. When dial plate points to RCD/V, enter RCD testing and AC and DC voltage testing;
6. When dial plate points to UT525 output voltage: 100V/250V/500V or UT526 output voltage: 250V/500V/1,000V (select the demanded output voltage) respectively, enter insulation resistance testing;

VI. Testing Preparation

When turning on the instrument, if the battery sign on the left of LCD shows low voltage, it means the battery is almost used up and needs to be replaced.

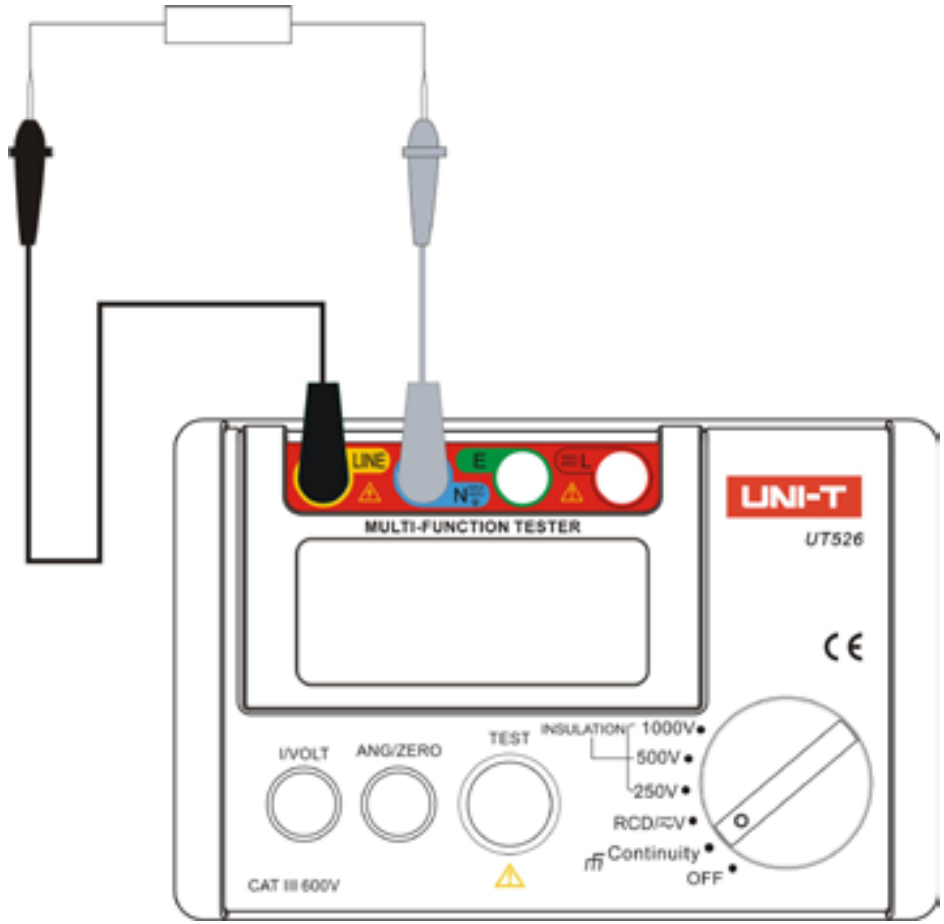
Low voltage display sign	Voltage of battery
	7V or less

VII. Earth Testing (see Picture 2 for the connection diagram)

Connect the object to be tested with the instrument according to the diagram, after that make the dial plate point to Continuly, and then press **TEST** key to start earth test.

⚠ Note

1. To keep the accuracy of test, return-to-zero operation must be made (return-to-zero operation by pen: in state of earthing, make the two pens in reliable short circuit state, after that press TEST key, and then press ANG/ZERO return-to-zero key, the resistance of the pens will be clear to “0”, and the LCD displays ZERO.
2. Do not test live object.


LINE
E
L
N
MULTI-FUNCTION TESTER
UNI-T
UT526
CE
I/VOLT
ANG/ZERO
TEST
INSULATION
1000V
500V
250V
RCD
Continuity
OFF
CAT III 600V

Picture 2

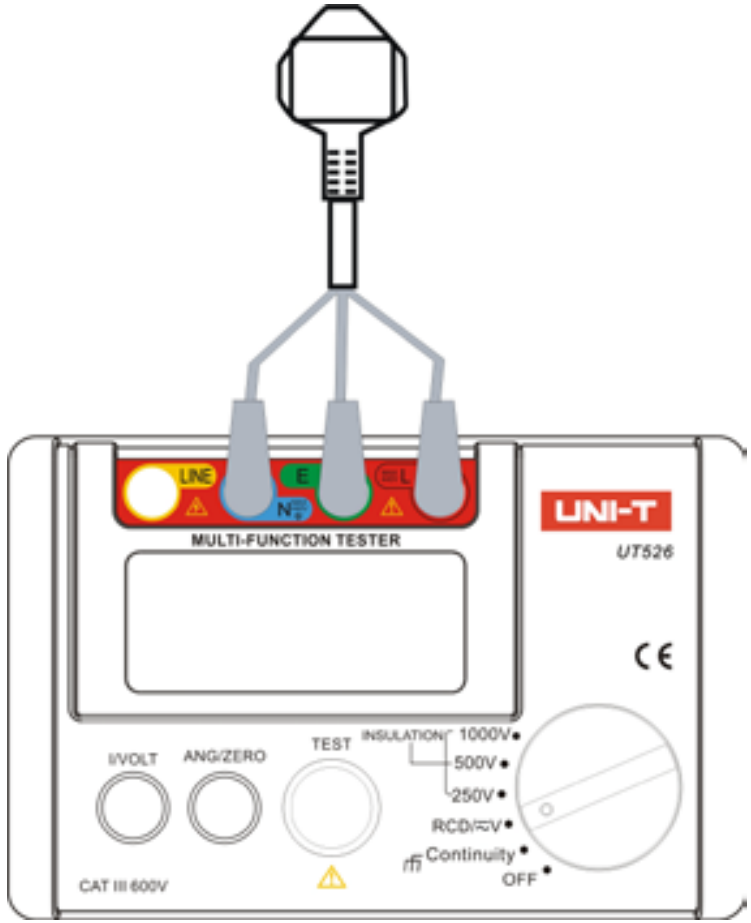
VIII. RCD Testing (see Picture 3 for the connection diagram)

Make the dial plate point to RCD/V and press I/VOLT key to set up test current (test current: 10mA\30mA\100mA\300mA) to start RCD testing.

Connection Method:
Connect the red, green and blue testing wires of three-wire plug with the red (L), green (E) and blue (N) ports respectively, and then insert the three-wire plug into the 220V civil jack and press TEST key.

⚠ Note

1. During testing RCD, the earth terminal of power jack must be grounded reliably.
2. During testing RCD, make sure that connection of L (live wire), N (null wire) and E (earth wire) of power jack are connected rightly.
3. This testing is made under high voltage, pay attention to personnel safety


LINE
E
N
L
MULTI-FUNCTION TESTER
UNI-T
UT526
CE
I/VOLT
ANG/ZERO
TEST
INSULATION
1000V
500V
250V
RCD/≈V
Continuity
OFF
CAT III 600V

Picture 3

IX Voltage Testing (see Picture 4 for the connection diagram)

Make the dial plate point to RCD/V and the long press I/VOLT key to switch to AC, DC voltage testing state:

Connection method 1:

(1) Insert red testing wire into “L” input port, and black testing wire into “N” input port.

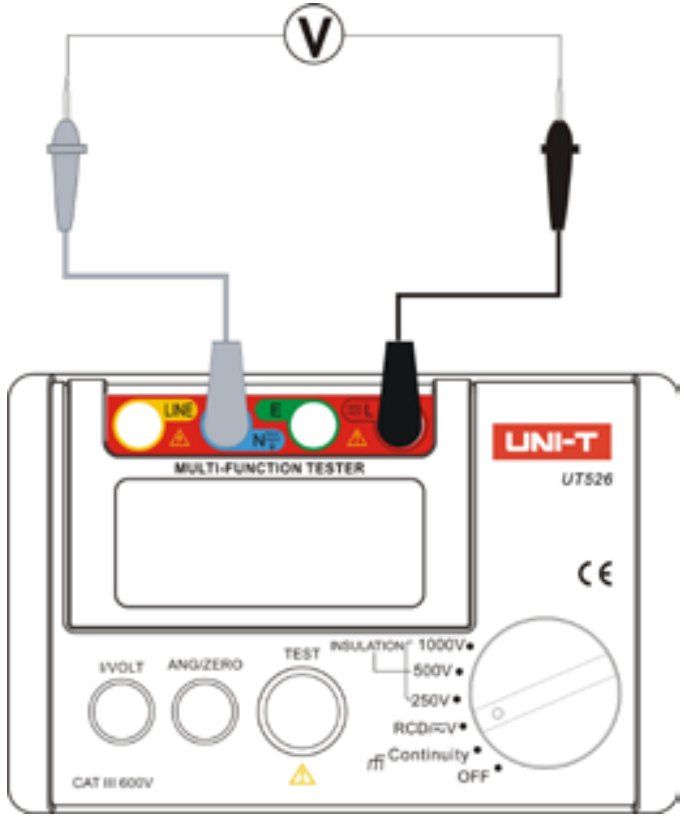
(2) After connecting red, black alligator clips or probes to the circuit to be tested firmly, press TEST key, the system will judge the AC or DC voltage automatically, and the voltage and frequency will be displayed on LCD.

Connection method 2:

Connect the red, green and blue testing wires of three-wire plug to the red (L), green (E) and blue (N) ports of the instrument respectively, after that insert the plug into the jack of the circuit to be tested and press TEST key, the system will judge the AC or DC voltage automatically, and the voltage and frequency will be displayed on LCD.

⚠ Note

1. Do not input voltage over 440V or 440Vrms. It is possible to display higher voltage, but the instrument may be damaged.
2. During testing high voltage, especially avoid electric shock.
3. After completing all the testing, cut the connection between testing wires and the circuit tested, and dismantle the testing wires from input terminal of the instrument.
4. When the battery cover is open, do not test.


V
LINE
MULTI-FUNCTION TESTER
UNI-T
UT526
I/VOLT
ANG/ZERO
TEST
INSULATION
1000V
500V
250V
RCD
Continuity
OFF
CAT III 600V

Picture 4

X Insulation Resistance Testing (see picture 5 for the connection diagram)

⚠ Note

1. Before testing, make sure that the circuit to be tested is uncharged, do not test the insulation of charged equipment or live circuit.
2. When the battery cover is open, do not test.
3. Do not make the two pens short circuit state under high voltage input and do not test the insulation resistance after outputting high voltage.

Press to make the dial plate point to UT525 (100V/250V/500V) or UT526 (250V/500V/1,000V)

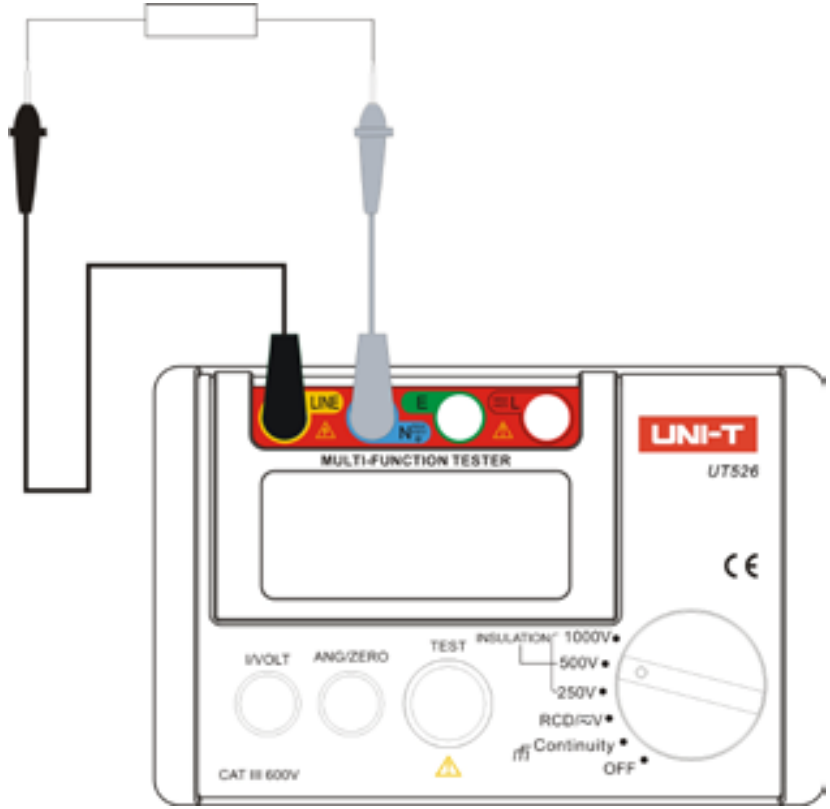
1. Before testing insulation resistance, the circuit to be tested must be discharged completely and separated from the power circuit absolutely.
2. Insert the red testing wire into “**LINE**” input terminal, and black testing wire into “**N**” input terminal.
3. Connect the red, black alligator clips to the circuit to be tested, and the high voltage is outputted from **LINE** terminal.

Continuous Testing Operation

Select one test voltage with dial plate (the optional voltages of UT525: 100V/250V/500V; the optional voltages of UT526: 250V/500V/1,000V) and press TEST key which is in self-locking state to make continuous testing and output insulation resistance testing voltage, and the test light become red. After completing testing, press TEST key to unlock to stop testing.

⚠ Note

1. Before testing, make sure that the circuit to be tested is uncharged, do not test the insulation of charged equipment or live circuit.
2. After completing testing, do not touch the circuit with hand, the stored electric capacity may cause electric shock.
3. Cut the connection between testing wires and the circuit tested, do not touch them with hand until the voltage is released completely.
4. When the battery cover is open, do not test.


LINE
E
L
MULTI-FUNCTION TESTER
UNI-T
UT526
CE
I/VOLT
ANG/ZERO
TEST
INSULATION
1000V
500V
250V
RCD
Continuity
OFF
CAT III 600V

Picture 5

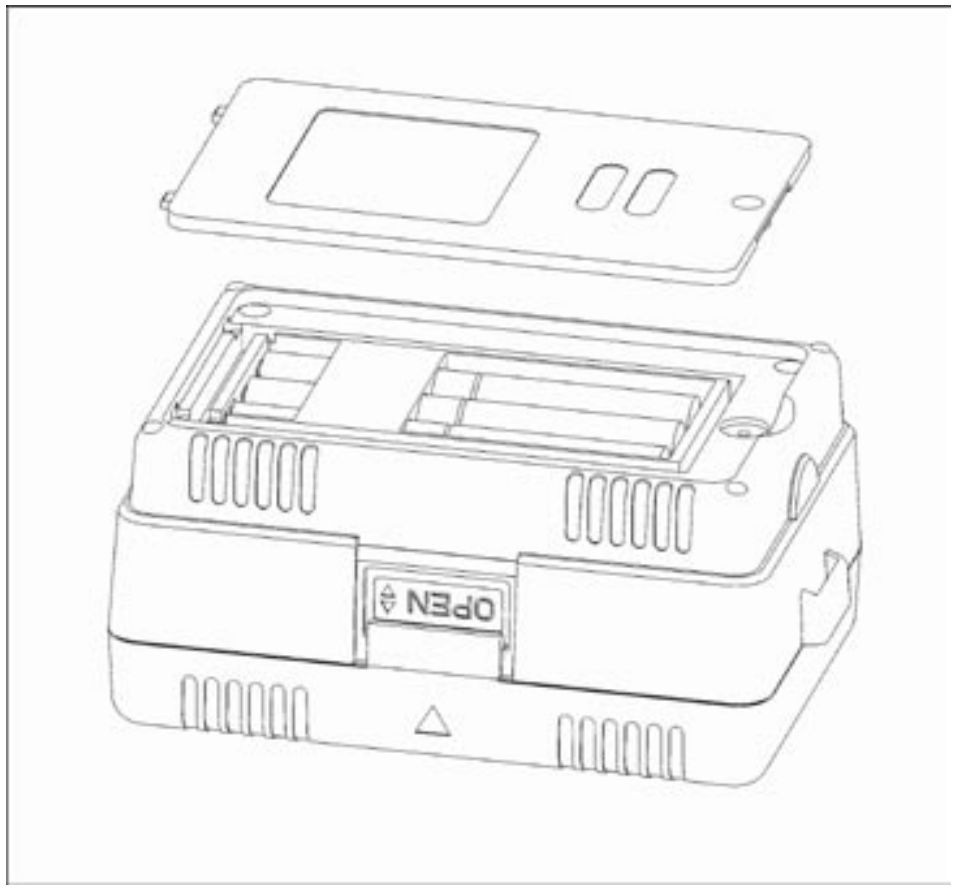
XI. Replace Battery (see Picture 6)

⚠ Note

1. Do not use old and new batteries at the same time.
2. Pay attention to the polarity during replacing battery.

⚠ Danger

1. To avoid potential electric shock, move the lead from the instrument before replacing battery.
2. When the battery cover is open, do not test
3. When sign “ ▭ ” is displayed on LCD, it means the battery needs to be replaced, please operate as following:
   1) Turn off the power (namely make the dial plate point to OFF), and move testing wires away.
   2) Loosen screw on the battery cover, and move away the battery cover, and then replace the 6 batteries.
   3) After replacing the batteries, make sure that the screw is tightened firmly.



Picture 6

XII. Maintenance

Clear the shell

- Wipe the surface with soft wet cloth or sponge.
- To avoid instrument damage, do not dip the instrument into water.
- When the instrument is wet, make it dry and then store.
- When the instrument needs to be checked or repaired, please let qualified professional maintenance man to repair or send it to the designated maintenance point.

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Manufacturer:
Uni-Trend Technology (Dongguan) Limited
Dong Fang Da Dao
Bei Shan Dong Fang Industrial Development District
Hu Men Town, Dongguan City
Guang Dong Province
China
Postal Code: 523 925

Headquarters:
Uni-Trend Group Limited
Rm901, 9/F, Nanyang Plaza
57 Hung To Road
Kwun Tong
Kowloon, Hong Kong
Tel: (852) 2950 9168
Fax: (852) 2950 9303
Email: info@uni-trend.com
http://www.uni-trend.com