

A4430 series

Digital Insulation Resistance Tester

Operating Manual

Contents

1. Summary
2. Safety notice
3. Feature
4. Technique specification

5. Panel map
6. Operating
7. Maintenance
8. Accessories

1. Summary

The newly style of Digital Insulation Resistance Tester is A4430 series, including A4431, A4432 etc. It has fashionable design and improved electronic circuit, so that has more fully function, higher precision, easier operation.

The output testing voltage can be selected in 15V/50V/100V/250V/500V/1000V/2500V for deferent measurement. Resistance range can touch 20GΩ. Alternating voltage also can be tested.

This tester apply for all kinds of electric equipment and insulation materials such as transformer, electromotor, cable, switch appliance, etc.It is a perfect electrical testing meter.

2.Safety notice

- (1) Read this Operation Manual carefully before use it.
- (2) This meter is designed in accordance with ICE publication 1010, pollution degree and installation category (over voltage category) .
- (3) Shouldn't use it before close the back lid cause of the danger of electroshock.
- (4) Check the insulation skin of the test lead.
- (5) Don't rotate switch when testing.
- (6) When seeing “ ” on the LCD, means battery is low. Please replace battery to ensure accurately testing.

3.Feature

- (1) Low power consumed CMOS double integral A/D convertor IC
- (2) 3 digits LCD display, the max reading is 1999.
- (3) Data holding with symbol.
- (4) LED indicating shows high voltage is generated.
- (5) Voltage below AC750V can be tested.
- (6) Low battery indicated.
- (7) Output short current is over 1mA.
- (8) Perfect circuit protect.

- (10) Power: R6P(AA)(1.5V).
Supply for battery Adapter (optional);
- (10) Size : 167.8×111.2×72mm.
- (11) Weight: 790g (Including batteries).
- (15) Environment:
Working temperature: 0~40℃ , relative humidity<80%
Storage temperature: -10~50℃ , relative humidity<85%
Temperature to ensure precision: 23℃~5℃ , relative humidity<75%

- (9) Auto power off (only A4431 and A4432)

4. Technique specification

Accuracy: (% of reading + counts)

Environment temperature: 23℃ ± 5℃ , relativehumidity<75%

Insulation Resistance

MODEL	A4430 (Auto range)	A4431	A4432
Test Voltage	250V/500V/1000V/2500V	100V/250V/500V/1000V	15V/50V/100V 250V
Output Voltage	Test nominal Voltage of 90-120%		
Range	0-20GΩ	0-2000MΩ	0-2000MΩ
MAX. Resolution	0.01MΩ	0.001MΩ	0.001MΩ
Accuracy	0-200MΩ ±(3%rdg + 5 d)		
	200MΩ-10GΩ ±(5%rdg+ 5 d)		
	10GΩ-20GΩ ±(10%rdg+ 10 d)		
ACV Range	0-750V		
ACV Accuracy	±(2.0%rdg+ 5个字)		
ACV Resolution	1V		
ACV Frequency Range	40Hz-400Hz		
Continuity test	Range: 0~200Ω , i.e. resistance less than about 70Ω±30Ω		

AC Voltage

Function	Range	Resolution	Accuracy
AC Voltage	0~750V	1V	±(2.0%rdg+5d)

-- Frequency Range: 40 to 400Hz

-- Response: average, calibrated in rms of sine wave

Notice:

The buzzer will sound if the load is less than 1MΩ .The test power will be shutted off after sounding 30 times so that to protect the meter damage You need to press “PRESS TO TEST” button once again if you want to continue measurement

5. Panel map

- (1) LCD display
- (2) E (EARTH) socket
- (3) L (LINE) socket
- (4) G socket (leakage current for insulation/input for ACV and Continuity)

(5) High voltage button: PRESS TO TEST A4430: Press the button and begin testing ,Press again and stop testing; A4431 and A4432:Press and **clockwise rotation 45°,will hold the** condition of testing.

(6) Power

(7) A4430: Date hole——Press the button after hold the test date, eject will opposed condition A4431 and A4432: Change the range , **the** condition of before eject 200MΩ, **the** condition of 2000 MΩ before press

(8) A4430: Backlight switch——Press after turn on the backlight, Eject after turn off the backlight; A4431 and A4432: the date hold button ——Press after hold the display, Eject after relief the hold

(9) High voltage indicator light

(10) input(ACV and continuity input)

(11) Rotary switch

6. Operating

(1) Safety notices

(2) AC voltage test

- ①. There is a possibility of causing an accident of electric shock after the measurement of insulation resistance is completed, Be sure to discharge the high voltage charged in the measuring object.
- ②. There is a risk of electric shock during the measurement. Be careful not to touch the measuring terminal and measuring object during the measurement.
- ③. Make measurement within the insulation resistance measuring range, and never lead voltage from outside, or the tester will be destroyed.
- ④. Be sure to confirm the position of rotary switch and the connection of measuring lead with the tester before starting the measurement.
- ⑤. When start the high voltage button, There is a high voltage about 15V-2500V between “L” and “E”, Don't touch the bare part of meter and be tested object ,cause of the danger.

(2) AC voltage test

- ①.  Don't test over AC 750V or high voltage. It is dangerous!
- ②. Connect the measuring Leads insert the plug of lead with probe to measuring terminal ACV, and the plug of lead with clip to measuring terminal G respectively.
- ③. Connect to the measuring object using the rotary switch select the (750V) position. Connect the probe of red and black lead to the measuring object.

(3) Continuity test

- ①. Connect the black test lead to “G” jack and the red to “ ” jack.
- ②. Set the rotary switch at the “ ” range position.
- ③. Connect test leads across two points of the circuit under testing.
- ④. If continuity exists (i.e. resistance less than about $70\Omega \pm 30\Omega$), built-in buzzer will sound.

NOTE:

If the input open circuit, the figure ‘1’ will be displayed. Note;The function only test continuity check,Don't test resistance.Because when teresistance greater than 200Ω,residual will largen.the short output terminal will display about 10 base figure , is normal phenomenon

(4) Insulation resistance testing

- ①. Connection of measuring lead
Insert the plug of lead with big probe to “L” socket. Insert the plug of lead with big clip to “E” socket. The lead with the big measuring clip is connected with the earth. The lead with big probe is connected to measuring object. The lead insert in “G” socket is the shield lead to leak current of testing resistance, connected to ground.
- ②. DC test voltage select
Select the DC voltage which the insulation resistance you want to test.
Turn the rotating switch to the needed voltage .
- ③. Testing

Turn on the power by lightly pressing the button (PRESS TO TEST). The power is turned on when the button is pressed, Press the button once again to turn the power off. A4430: Press the “PRESS TO TEST” and begin testing, The board of LED will light on. Press again and stop testing, LED light off.

A4431 and A4432: After press and **clockwise rotation 45°, will hold the** condition of testing. After eject and **counter-clockwise , will stop testing.**

When the power is turned on, measuring high voltage is generated, measurement is started, and LED on the panel will light. the value will be showed on the LCD. This is the value of insulation resistance measured.

If the high voltage indicator LED on the panel is lighting at this time, it means that the tester is working correctly and correct voltage has been impressed on the measuring object. This LED does not light when the batteries have been exhausted or the contact of batteries is not proper.

④. Finish

Press the button (PRESS TO TEST) once more after the measurement completed. When the red LED off, means the output testing high voltage has been over. Turn the rotary switch to “OFF” position. If the load contains capacitance, please short the testing object first to discharge residually electricity before move the testing leads.

7. Maintenance

This is a precise instrument and needs careful maintenance.

- ①. Don't open the back lid . Don't use it if the back lid not fixed.
- ②. Take out the test lead and turn off the power before replace battery. Please open the lid and fit the new battery.
- ③. Take out battery and put it in the place where dry and airiness if the meter will be unused for longterm.
- ④. Don't change the inner circuit .
- ⑤. Please contact with us if there is any problem.

8. Accessories

- ①. Test lead: 1 set
- ②. User's manual: 1 piece
- ③. Batterise: R6P(AA)(1 5V) 6 piece