Insulation Resistance Tester

YTE216XSeries

User Manual

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Catalog

1. Product introduction

YTE216X series is a multifunctional, digital insulation resistance measuring instrument specially designed for field testing. It is a portable device with high precision, high stability, low power consumption and easy to use. It is suitable for measuring the insulation resistance of motors, transformers, cables, switches, electrical equipment and insulating materials, etc., for maintenance, testing and verification of various electrical equipment.

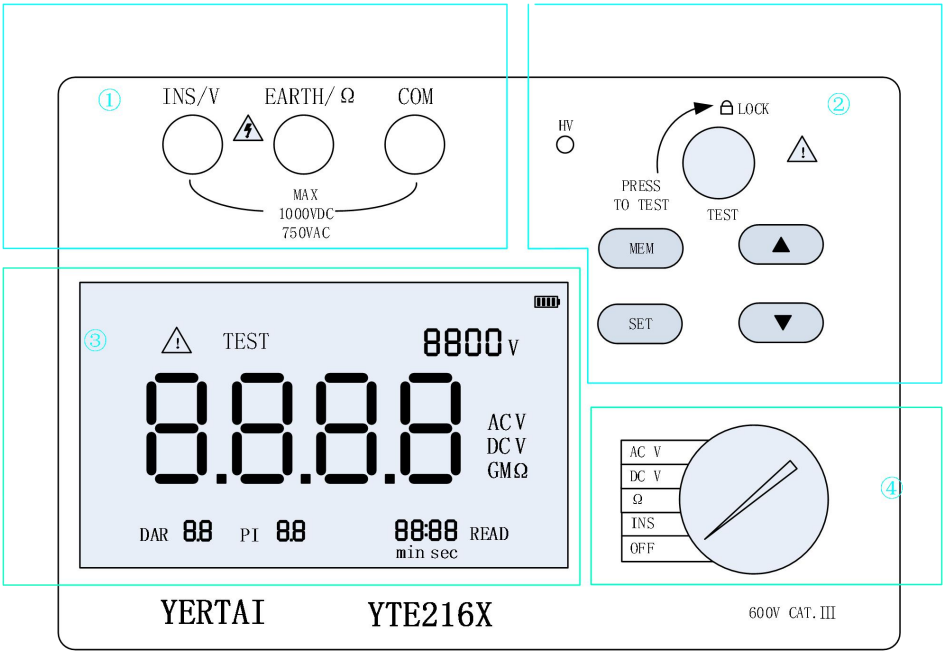
YTE216X series insulation resistance test instrument, also has functions of AC and DC voltage and small resistance measurement

1.1 Function features

- LCD display, backlight function for use in the dark.
- High voltage indicator, buzzer, and danger warning.
- Automatically releasing voltage.
- polarization index and absorption ratio are calculated.
- AC and DC voltage and small resistance measurement.
- 100 data storage functions.

1.2 Panel introduction

The front panel is shown as followed pic:



YTE216X, there are 4 parts in this panel.

① is the measuring terminals， they are INS/V、EARTH/Ω and COM。

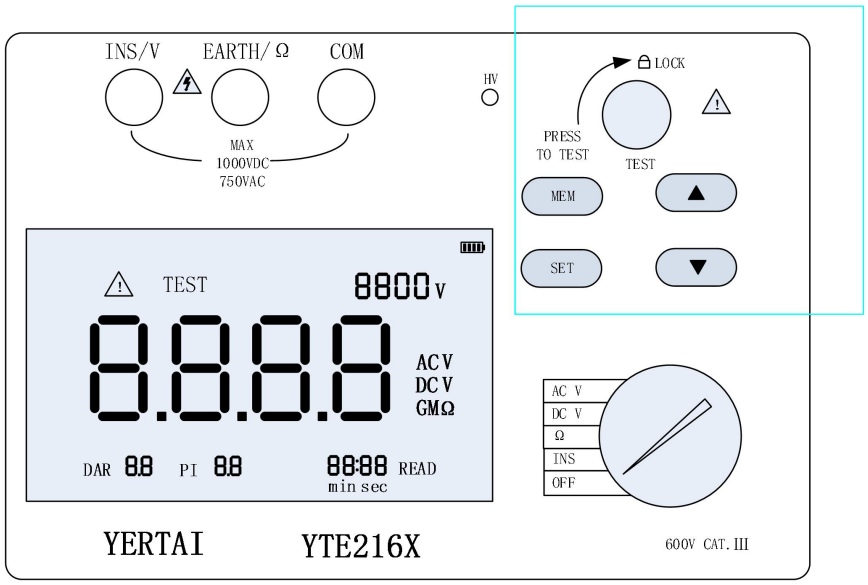
② are keys and high voltage indicator light

③Is LCD display screen

④ is dial switch

1. 3 Keys operation

The keys are as followed:



The instrument keyboard has five keys, respectively: MEM, SET, up, down, and measure.

Each key's function:

MEM key： Press this key to enter the history screen. Press the MEM key again to exit the history screen.

SET key： On the measurement screen interface, press it to save data; on the history screen interface, press it to delete history record, and hold down to clear history record.

Up and down keys： The insulation resistance interface is used to change the output voltage, and the history interface is used to change the number of history records.

TEST key： This key is the TEST button. Hold down the knob on the insulation resistance interface and turn the test key clockwise to measure the insulation resistance.

2. Performance Index

Model	YTE2160	YTE2161
Rated Voltage	100V、200V、500V、1000V	100V、200V、500V、1000V、2500V
output voltage accuracy	±10%±10V	±10%±10V
Insulation resistance range	0-10GΩ	0-100GΩ
Measuring function	Dc voltage, AC voltage, small resistance, insulation resistance	
Absorption ratio (dar) test	Yes	
Polarization index (PI) test	Yes	
Short circuit current	≤2mA	

Dc voltage input impedance	10M Ω
Ac voltage input impedance	5M Ω
Power	3.7V 1500mAH Lithium battery
Dimension	155mm*105mm*45mm
Weight	0.4kg
Display mode	LCD display, the max readings 9999
Data storage	100 sets
Voltage test	Voltage detection. When the battery voltage is lower than 3.2 V, the battery voltage needs to be charged in time

Insulation resistance test index:

Range		Resolution rate	Basic errors
Output Voltage DC100V±10%	0-5MΩ	0.01M Ω	±3%rdg±5dgt
	5MΩ-20MΩ	0.1M	
	20MΩ-50MΩ	0.1M	
	50MΩ-100MΩ	0.1M	
Output Voltage DC200V±10%	0-10MΩ	0.01M Ω	
	10MΩ-50MΩ	0.1M	
	50MΩ-100MΩ	0.1M	
	100MΩ-200MΩ	0.1M	
Output Voltage DC500V±10%	0-20MΩ	0.01M Ω	
	20MΩ-100MΩ	0.1M	
	100MΩ-200MΩ	0.1M	
	200MΩ-500MΩ	0.1M	
Output Voltage DC1000V±10%	0-200MΩ	0.1M Ω	±3%rdg±5dgt
	200MΩ-500MΩ	1M	±3%rdg±5dgt
	500MΩ-5GΩ	0.01G	±3%rdg±5dgt
	5G-10G	0.01G	±5%rdg±3dgt
Output Voltage DC2500V±10%	0-500MΩ	0.1M Ω	±3%rdg±5dgt
	500MΩ-1GΩ	1M	±3%rdg±5dgt
	1GΩ-10GΩ	0.01G	±5%rdg±3dgt
	10G-100G	0.1G	±10%rdg±3dgt

Polarization index/absorption ratio test function

PI（polarization index）	10min-Insulation resistance/1min-Insulation resistance			
Judgement standard	≥4	4-2	2-1	≤1.0
	Better	Good	Warning	Worse
DAR（absorptance）	1min Insulation resistance/15sec Insulation resistance			
Judgement standard	≥1.4	1.4-1.0	≤1.0	

	Better	Good	Worse

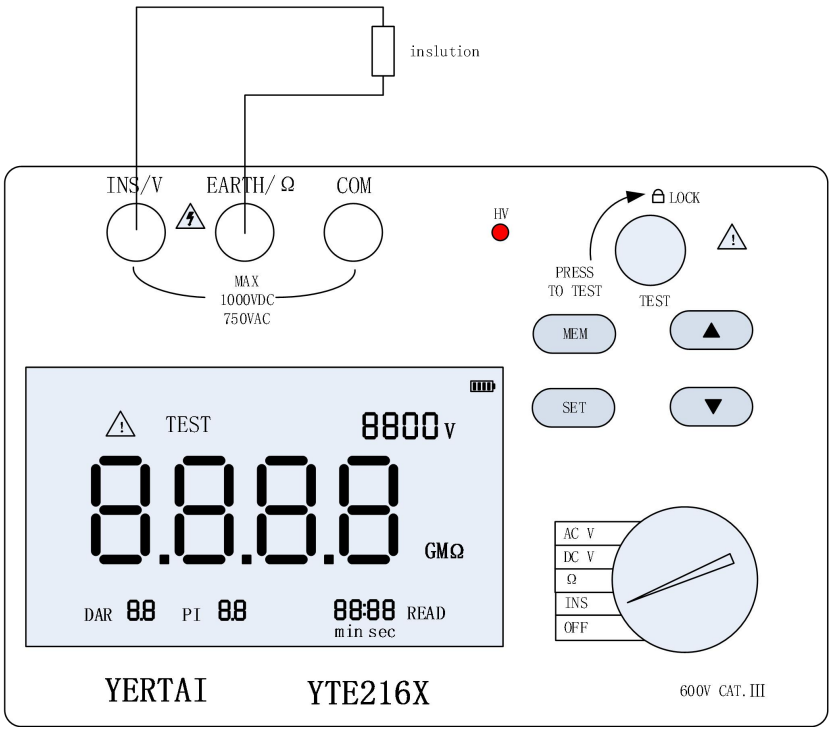
Ac and DC voltage test specifications

	Range	Resolution rate	Basic errors
DC Voltage	DC1V-1000V	1V	±0.5%±3
AC Voltage	AC1V-750V（50Hz/60Hz）	1V	±1%±3

Small resistance measurement index

Measuring current	Range	Resolution rate	Basic errors
1mA	0-200Ω	0.1Ω	±1%±3

3. Operation method



The insulation resistance measurement cable is shown in the figure above.

（1）Before measuring the insulation resistance, discharge the power. Do not measure the insulation resistance of a live circuit or device.

（2）Before the test, set the dial to INS, insert the red test leads into the LINE port and the black into the EARTH port, and connect the red and black crocodile clips into the resistance to be measured.

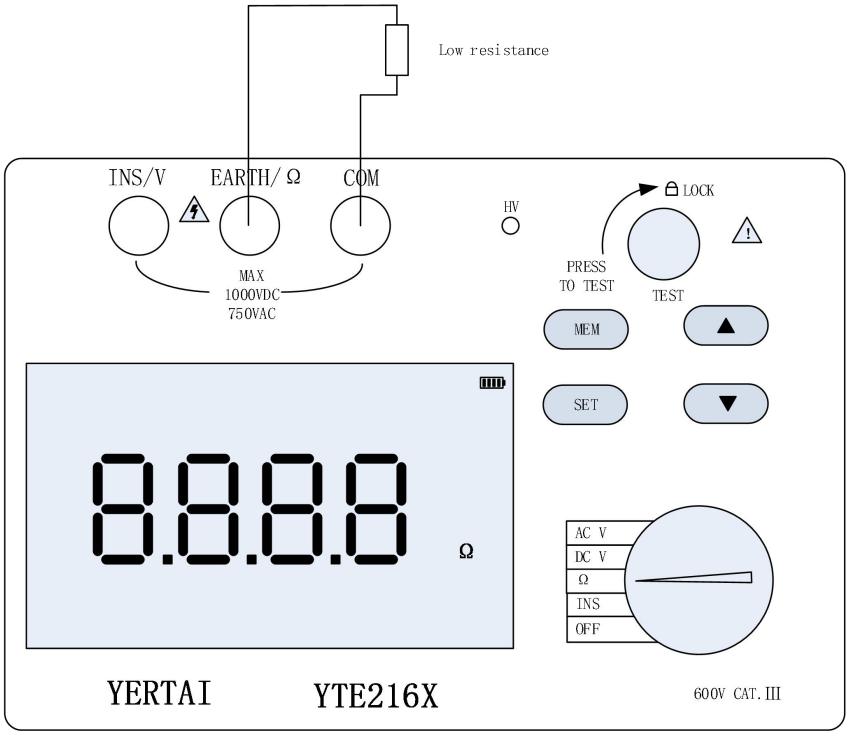
（3）Select the output voltage range by the up and down key, press the TEST key and turn the TEST key clockwise to lock the insulation resistance continuously. At this time, the high voltage indicator light emits red light, the LCD screen displays and tests, and the buzzer emits a warning tone to remind the user that the high voltage is being measured. If you cannot determine the approximate range of the insulation resistance value, you can first use the 100V gear to measure, control the output voltage gear

by the up and down keys, and find the appropriate gear for measurement.

（4）OL will be displayed when the measured value exceeds the range of this gear

（5）After the TEST key is pressed, the instrument will automatically start timing, and the polarization index and absorption ratio will be measured and calculated.

（6） After the measurement, turn the TEST key counterclockwise to release the lock, and the instrument will automatically discharge quickly.

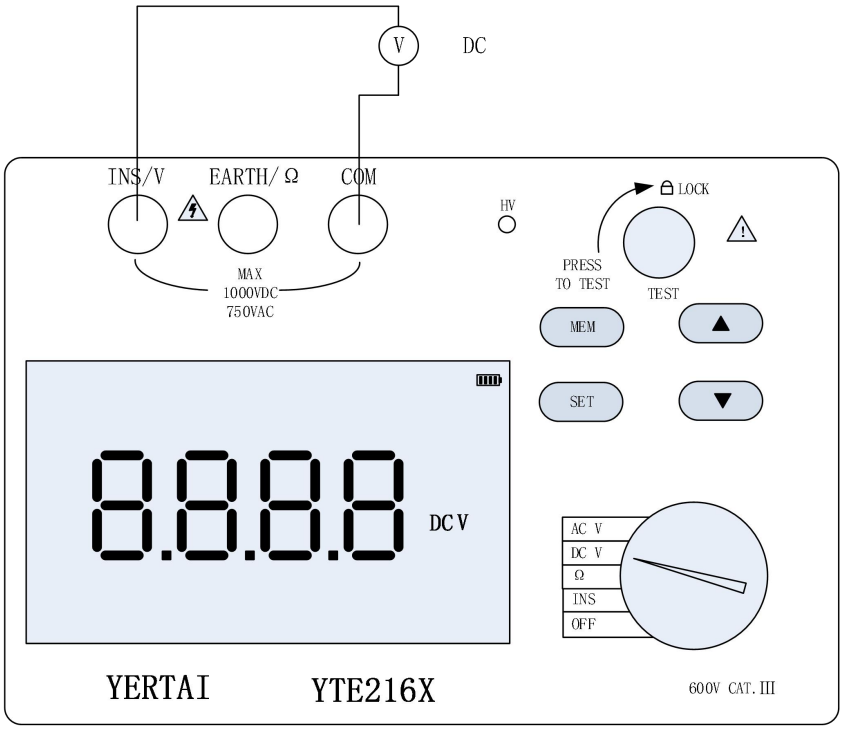


The small resistance measurement connection cable is shown in the figure above

（1） Before the test, set the dial to Ω, insert the red test pen into the EARTH port, and insert the black into the GUARD port.

（2）Connect the red and black test pen to the circuit to be measured to measure the resistance.

（3）OL is displayed when the measured value exceeds the range.

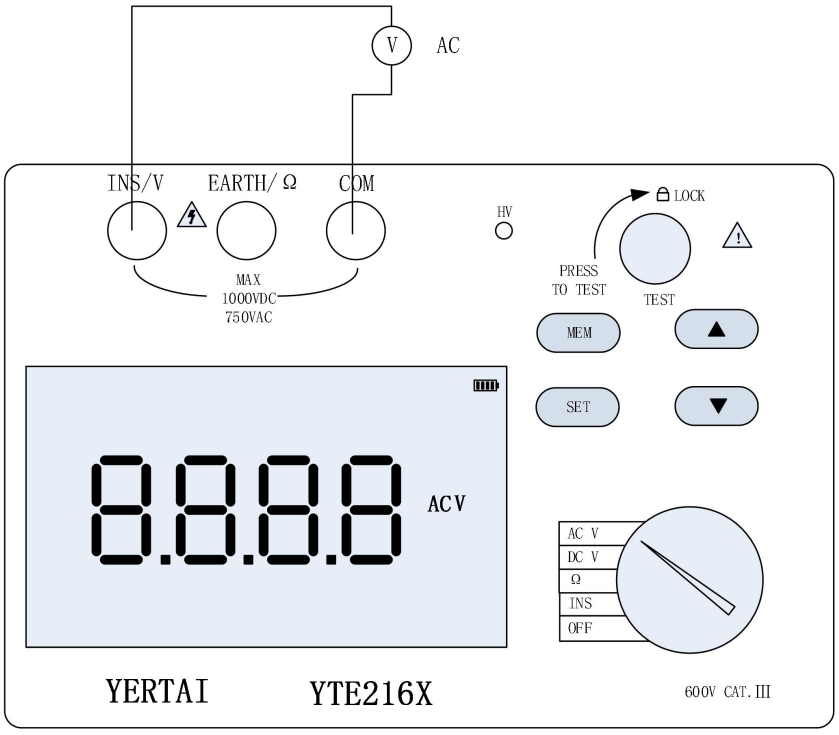


The DC voltage measurement cable is shown in the figure above.

（1）Before measuring, set the dial to the DCV file, insert the red test pen into the LINE port, and insert the black into the GUARD port.

（2）Connect the red and black test pen to the circuit to be measured. Do not measure voltage exceeding DC1000V, which may damage the instrument.

（3）OL is displayed when the measured value exceeds the range.



The AC voltage measurement cable is shown in the figure above.

（1）Before measuring, set the dial to ACV, insert the red test pen into the LINE port, and insert the

black pen into the GUARD port.

（2）Connect the red and black test pen to the circuit to be measured. Do not measure voltage exceeding AC750V, it may damage the instrument.

（3）OL is displayed when the measured value exceeds the range.

4. Appendix

4.1 Attention

（1）When measuring insulation resistance, the circuit to be tested needs to be fully discharged and be isolated from the power supply circuit.

（2）When measuring insulation resistance, the instrument will output high voltage. Pay attention to safety. Do not touch the circuit to be tested or the test pen.

（3）Do not measure the voltage above 1000V DC or 750V AC.

（4）When the battery power is too low, which indicated as followed:, please do not make any measurement. Charge it in time to avoid uncertainty measurement result.

（5）The instrument must be charged in time to avoid deep discharge of the battery and affect the battery life. Charge as much as possible every day under normal use (it is best to charge once a month if not used for a long time).

4.2 Packing List

The machine	1
Test cable	2cables（ red cable*1, black cable*1 both with alligator clip ）
Type-C charge cable	1
5V1A adaptor	1