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Data Sheet

UT5470 Series Withstand Voltage Testers

V1.0

December 2025

1. Key Features

- Compliant with major safety standards, including CCC, IEC, EN, VDE, BS, UL, and JIS.
- 5-inch LCD capacitive touch screen
- Provides high-voltage output up to AC 10 kV (UT5470) and DC 12kV (UT5472)
- Equipped with an arc detection circuit (ARC) capable of detecting minor abnormal discharges
- PLC-based control supports remote operation, reducing operator exposure to test hazards
- During step transitions, the output voltage increases continuously and smoothly, without power interruption
- Electric shock protection barrier technology enables real-time circuit monitoring to mitigate electric shock risks and enhance operator safety
- Provides RS232, RS485, and LAN interfaces to support automated testing and improve test efficiency
- Supports SCPI and MODBUS protocols for straightforward integration into automated test systems

2. Product Overview

UT5470 series withstand voltage testers are designed to meet the high-voltage and insulation-material component testing requirements. The series provides a high-range output voltage of up to 12 kV and a current resolution of 0.1 μA, addressing customers' stringent testing needs.

This series includes two models: UT5470 for AC withstand testing (10 kV / 20 mA); UT5472 for DC withstand testing (12 kV / 10 mA)

The UT5470 is equipped with an OSC (Open/Short Circuit) function, which verifies the integrity of the DUT connection before high-voltage testing. The UT5472 features an insulation resistance measurement function, offering a rated output capability of 6 kV / 50 GΩ.

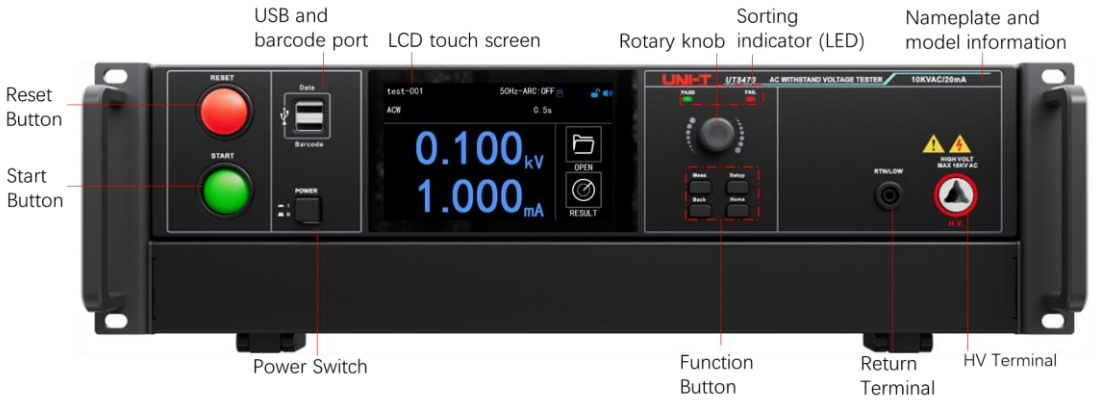
For operation, the instrument incorporates a 5-inch multi-touch display and supports barcode-scanner connectivity, providing a more intuitive and efficient user experience. The series also offers a

variety of communication interfaces, enabling seamless integration into automated test systems with high safety and reliability requirements.

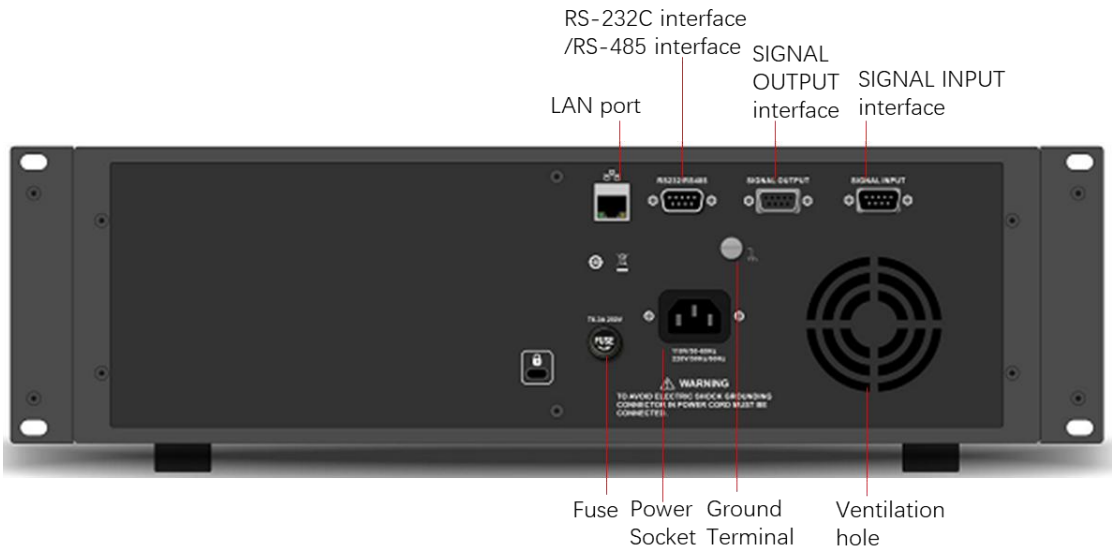
Application Fields

- Devices with high insulation requirements, such as high-withstand-voltage test objects, high-voltage optocouplers, high-voltage relays, and high-voltage switches
- Electronic components, including capacitors, inductors, magnetic cores, chokes, and filters
- Electrical products, such as household appliances, information technology equipment, audio-visual equipment, electric heating appliances, and lighting equipment
- Withstand voltage and insulation resistance testing for non-electrical products, wires and cables, and insulating materials
- New energy vehicles
- Automated test systems

Front Panel

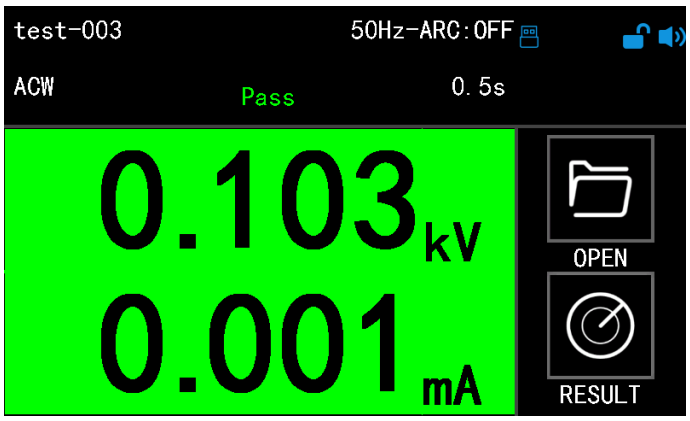


Rear Panel



3. Design Highlights

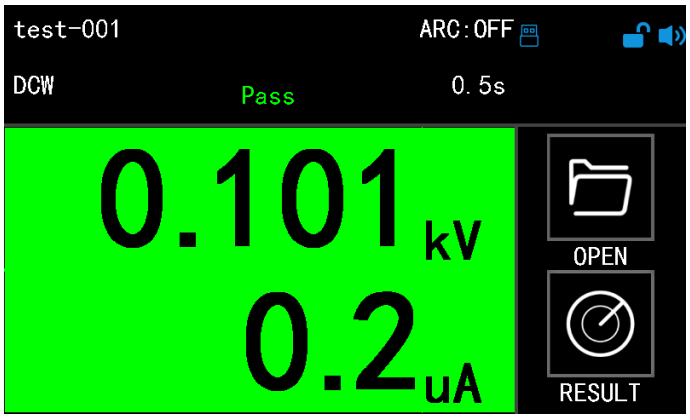
AC Withstand Voltage Test (UT5470)



Maximum supported range:

- Voltage: 0.05 kV to 10 kV
- Current: 0.001 mA to 20.00 mA

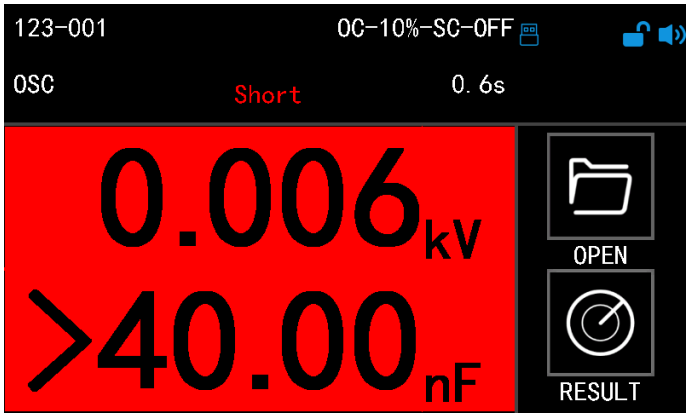
DC Withstand Voltage Test (UT5472)



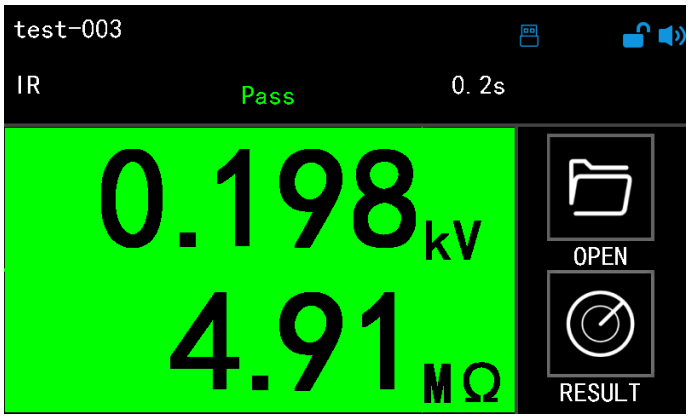
Maximum supported range:

- Voltage: 0.05 kV to 12 kV
- Current: 0.1 μA to 10.00 mA

Open/Short Detection (UT5470)



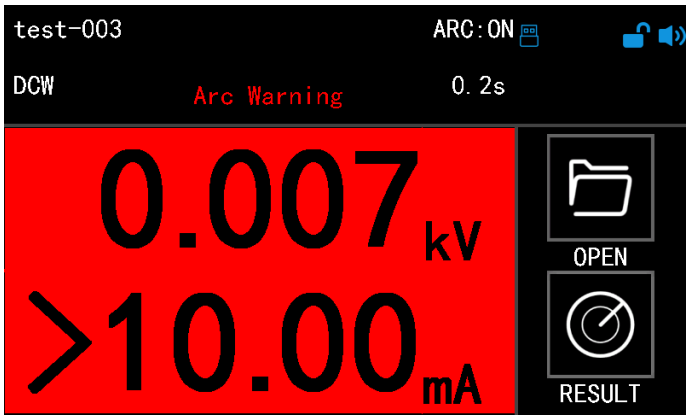
Insulation Resistance Test (UT5472)



Maximum supported range:

Resistance: 0.1 MΩ to 50 GΩ

Arc Detection Function (UT5472)



Detects high-voltage discharges caused by insufficient electrical clearance, damaged conductor insulation, or poor electrical contact.

Multiple Safety Protections

The instrument adopts a multi-layer safety protection design and is equipped with electric shock protection, short-circuit protection, upper and lower limit monitoring, and over-temperature protection to ensure the safety of both operators and equipment.

In particular, the electric shock protection function is implemented using an independent protection circuit, which can immediately shut off the high-voltage output in the event of accidental human contact, thereby ensuring personal safety.

4. Technical Specification

Model	Output Power	ACW	OSC	DCW	IR
UT5470	200 VA	√	√	/	/
UT5472	120 VA	/	/	√	√

AC Withstand Voltage Test (UT5470)			
Rated output	UT5470: 10 kV/20 mA		
	Range	Resolution	Accuracy
AC voltage output	50 to 10000 VAC	1 VAC	±(1.5% × the setting value + 10 V)
AC voltage measurement	0.050 to 10.000 kV	0.001 kV	±(2% × the reading value + 20 V)
Output frequency	50/60 Hz±0.1%, user-defined		
Output waveform	Sine wave, distortion rate: < 3% (when output voltage ≥ 0.5 kV, under no-load or purely resistive load conditions)		
Output adjustment range	±(1%× the setting value + 10 V), from no-load to full load		
Upper/lower limit of current (Unit: mA)	0.000 to 9.999	0.001	±(2% × the setting value + 2 digits)
	10.00 to 20.00	0.01	
Current measurement (Unit: mA)	0.000 to 3.500	0.001	±(2% × the reading value + 10 digits)
	3.00 to 20.00	0.01	±(2% × the reading value + 3 digits)
Rise time	0.3 to 999.9 s	0.1 s	±(0.1% × the setting value + 0.05 s)
Fall time	0, 0.0 to 999.9 s (0=off)		
Test time	0,0.1 to 999.9 s (0=continuous test)		
Arc detection	Setting voltage <7.00 kV: 1 to 9 levels Setting voltage ≥7.00 kV: 1 to 8 levels Off: Turn off Arc detection		
Current zero compensation	0.000 to 20.00 mA		
Open/Short-Circuit Check (UT5470)			
Sampling standard Capacitance Range	0.001 to 40 nF		

Open-circuit Range	10% to 100%		
Short-circuit Range	0, 100% to 500%, (0=Off)		
DC Withstand Voltage Test (UT5472)			
Rated output	UT5472: 12 kV/10 mA		
	Range	Resolution	Accuracy
DC voltage output	50 to 12000 VDC	1 V	±(1.5% × the setting value + 10 V)
DC voltage measurement	0.050 to 12.000 kV	0.001 kV	±(2% × the reading value + 20 V)
Output ripple	< 5%, 9999 μA (resistive load)		
Output adjustment range	±(1%× the setting value + 10 V), from no-load to full load		
Upper/lower limit of current (Unit: μA)	0.0 to 350	0.1	±(2% × the setting value + 2 digits)
	351 to 3500	1	
	3510 to 10000	10	
Current measurement (Unit: μA)	0.0 to 350.0	0.1	±(2% × the reading value + 10 digits)
	300 to 3500	1	
	3000 to 10000	10	±(2% × the reading value + 3 digits)
Rise time	0.4 to 999.9 s	0.1 s	±(0.1% × the setting value + 0.05 s)
Fall time	0, 0.1 to 999.9 s (0=Off)		
Test time	0,0.1 to 999.9 s (0=continuous test)		
Slow-rise upper current (Unit: μA)	0.0 to 350	0.1	±(2% × the setting value + 2 digits)
	351 to 3500	1	
	3510 to 10000	10	
Minimum charging current	(0 to 350.0) μA, auto, manual		
Discharge time	< 100 ms		
Arc detection	1 to 9 (9 = highest sensitivity), off		
Current zero compensation	0.0 to 10000 μA		
Maximum capacitive load	1.5 μF < 2 kV, 0.28 μF < 4 kV, 0.18 μF < 6 kV, 0.15 μF < 8 kV, 0.12 μF < 12 kV		
Insulation Resistance Test (UT5472)			
Rated output	6 kV/50 GΩ		
	Range	Resolution	Accuracy
DC voltage output	50 to 6000 V	1 V	±(1.5% × the setting value + 10 V)
DC voltage measurement	0.050 to 6.000 kV	0.001 kV	±(2%× the reading value + 20 V)
Upper/lower limit of current (Unit: MΩ)	0.1 to 999.9 (Upper limit: 0 = no comparison)	0.1	±(5%× the setting value + 2 digits)
	1000 to 50000	1	±(15%× the setting value + 2 digits)
Insulation resistance measurement	50 to 999 V / 0.1 to 1.999	0.001	±(15% × the reading value + 10 digits)
	50 to 999 V / 2.00 to 19.99	0.01	

(Unit: MΩ)		20.0 to 199.9	0.1	
		200 to 2000 (50 to 199 V)	1	
		200 to 10000 (200 to 499 V)	1	
		200 to 20000 (500 to 999 V)	1	
	1000 to 6000 V	1 to 9.999	0.001	±(3% × the reading value + 10 digits)
		10.00 to 99.99	0.01	±(5% × the reading value + 10 digits)
		100.0 to 999.9	0.1	±(7% × the reading value + 10 digits)
		1000 to 50000	1	±(15% × the reading value + 10 digits)
Slow rise time	0.4 to 999.9 s		0.1S	±(0.1% × the setting value + 0.05 s)
Slow fall time	0, 0.1 to 999.9 s (0=Off)			
Test time	0,0.1 to 999.9 s (0=continuous test)			
Delay time	0.5 to 999.9 s			
Minimum charging current	(0 to 3.50) μA, auto, manual			
Input Power				
Voltage (AC)	100 to 120 VAC / 200 to 240 VAC			
Frequency	50/60 Hz ± 5%			
Apparent power	< 500 VA, fuse: T6.3A/250 VAC			
General Specifications				
Display screen	5-inch LCD capacitive touch screen			
Storage	Store up to 100 test files, with each file containing up to 200 test steps			
Breakdown voltage test	√			
Step connection without power interruption	√			
Self-detection	√			
Scanner Interface	√			
Advanced user security	Customized permissions and password protection			
Electrical shock protection	Grounding function (< 1 mA)			
Language	English, Traditional Chinese, Simplified Chinese			
Communication interface	RS232, RS485, LAN, USB-HOST, HANDLER			
Communication protocol	SCPI, Modbus-RTU			
Dimensions	430*134.3*435			
Weight (kg)	25kg			
Environmental Requirements				
Normal operating temperature	0 to 40℃ Below 28℃, 30 to 70%RH (No condensation) Above 28℃, < 50%RH (No condensation)			
Storage temperature	-20 to 60℃ / < 90%RH (No condensation)			

5. Accessories

Items	Quantity	Remarks
Withstand voltage testers	1	
High-voltage test cable (Red, black)	1	
Interlock switch	1	Attached to the tester
Power cable	1	
Fuse	2	T6.3A 250V
RS232C communication line	1	
Quick Start Guide	1	

6. Limited Warranty and Liability

UNI-T guarantees that the Instrument product is free from any defect in material and workmanship within three years from the purchase date. This warranty does not apply to damages caused by accident, negligence, misuse, modification, contamination, or improper handling. If you need a warranty service within the warranty period, please contact your seller directly. UNI-T will not be responsible for any special, indirect, incidental, or subsequent damage or loss caused by using this device. For the probes and accessories, the warranty period is one year. Visit instrument.uni-trend.com for full warranty information.

Learn more at: www.uni-trend.com

Register your product to confirm your ownership. You will also get product notifications, update alerts, exclusive offers and all the latest information you need to know.

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