



User Manual

UT5470 Series Withstand Voltage Testers

REV 1.0

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Foreword

Thank you for choosing this UNI-T instrument. For safe and proper use of this instrument, please read this manual carefully, especially the safety instructions section.

After reading this manual, it is recommended to keep the manual in a convenient location, preferably near the device, for future reference.

1. Introduction

This manual describes the safety requirements, installation, and operation of the UT5470 withstand voltage testers.

2. Safety Instructions

This chapter contains information and warnings that must be observed. Ensure that the instrument is operated under safe conditions. In addition to the safety precautions indicated in this chapter, you must also follow accepted safety procedures.

Safety Precautions	
Warning	Please follow these guidelines to avoid possible electric shock and risk to personal safety.
	Users must adhere to standard safety precautions during the operation, servicing, and maintenance of this device. UNI-T will not be liable for any personal safety and property loss caused by the user's failure following the safety precautions. This device is designed for professional users and organizations responsible for measurement purposes. Do not use this device in any manner not specified by the manufacturer. This device is intended for indoor use only, unless otherwise stated in the product manual.
Safety Statements	
Warning	"Warning" indicates the presence of a hazard. It warns users to pay attention to a certain operation process, operation method or similar. Personal injury or death may occur if the rules in the "Warning" statement are not properly executed or observed. Do not proceed to the next step until you fully understand and meet the conditions stated in the "Warning" statement.
Caution	"Caution" indicates the presence of a hazard. It warns users to pay attention to a certain operation process, operation method or similar. Product damage or loss of important data may occur if the rules in the "Caution" statement are not properly executed or observed. Do not proceed to the next step until you fully understand and meet the conditions stated in the "Caution" statement.
Note	"Note" indicates important information. It reminds users to pay attention to procedures, methods, and conditions, etc. The contents of "Note" should be highlighted if necessary.

Safety Signs		
	Danger	It indicates danger of electric shock, which may cause personal injury or death.
	Warning	It indicates that there are factors you should be cautious of to prevent personal injury or product damage.
	Caution	It indicates danger, which may cause damage to this device or other equipment if you fail to follow a certain procedure or condition. If the "Caution" sign is present, all conditions must be met before you proceed to operation.
	Note	It indicates potential problems, which may cause failure of this device if you fail to follow a certain procedure or condition. If the "Note" sign is present, all conditions must be met before this device will function properly.
	AC	Alternating current of device. Please check the region's voltage range.
	DC	Direct current device. Please check the region's voltage range.
	Grounding	Frame and chassis grounding terminal
	Grounding	Protective grounding terminal
	Grounding	Measurement grounding terminal
	OFF	Main power off
	ON	Main power on
	Power	Standby power supply: When the power switch is turned off, this device is not completely disconnected from the AC power supply.
	Waste	Do not place equipment and accessories in the trash. Items must be properly disposed of in accordance with local regulations.
	EEUP	This environment-friendly use period (EFUP) mark indicates that dangerous or toxic substances will not leak or cause damage within this indicated time period. The environmentally friendly use period of this product is 40 years, during which it can be used safely. Upon expiration of this period, it should enter the recycling system.
Safety Requirements		
Warning		
Preparation before use	Please connect this device to AC power supply with the power cable provided. The AC input voltage of the line reaches the rated value of this device. See the product manual for specific rated value. The line voltage switch of this device matches the line voltage. The line voltage of the line fuse of this device is correct. This device is not intended for measuring the main circuit.	

Check all terminal rated values	Please check all rated values and marking instructions on the product to avoid fire and the impact of excessive current. Please consult the product manual for detailed rated values before connection.
Use the power cord properly	You can only use the special power cord for the instrument approved by the local and state standards. Please check whether the insulation layer of the cord is damaged, or the cord is exposed, and test whether the cord is conductive. If the cord is damaged, please replace it before using the instrument.
Instrument Grounding	To avoid electric shock, the grounding conductor must be connected to the ground. This product is grounded through the grounding conductor of the power supply. Please be sure to ground this product before it is powered on.
AC power supply	Please use the AC power supply specified for this device. Please use the power cord approved by your country and confirm that the insulation layer is not damaged.
Electrostatic prevention	This device may be damaged by static electricity, so it should be tested in the anti-static area if possible. Before the power cable is connected to this device, the internal and external conductors should be grounded briefly to release static electricity. The protection grade of this device is 4 kV for contact discharge and 8 kV for air discharge.
Measurement accessories	Measurement accessories designated as lower-grade, which are not applicable to main power supply measurement, CAT II, CAT III, or CAT IV circuit measurement. Probe subassemblies and accessories within the range of IEC 61010-031 and current sensors within the range of IEC 61010-2-032 can meet its requirements.
Use the input / output port of this device properly	Please use the input / output ports provided by this device in a proper manner. Do not load any input signal at the output port of this device. Do not load any signal that does not reach the rated value at the input port of this device. The probe or other connection accessories should be effectively grounded to avoid product damage or abnormal function. Please refer to the product manual for the rated value of the input / output port of this device.
Power fuse	Please use a power fuse of exact specification. If the fuse needs to be replaced, it must be replaced with another one that meets the specified specifications by the maintenance personnel authorized by UNI-T.
Disassembly and cleaning	There are no components available for operators inside. Do not remove the protective cover. Qualified personnel must conduct maintenance.
Service environment	This device should be used indoors in a clean and dry environment with ambient temperature from 0 °C to +40 °C. Do not use this device in explosive, dusty, or high humidity conditions.
Do not operate in humid environment	Do not use this device in a humid environment to avoid the risk of internal short circuit or electric shock.
Do not operate in flammable and explosive environment	Do not use this device in a flammable and explosive environment to avoid product damage or personal injury.
Caution	

Abnormality	If this device may be faulty, please contact the authorized maintenance personnel of UNI-T for testing. Any maintenance, adjustment or parts replacement must be done by the relevant personnel of UNI-T.
Cooling	Do not block the ventilation holes at the side and back of this device. Do not allow any external objects to enter this device via ventilation holes. Please ensure adequate ventilation and leave a gap of at least 15 cm on both sides, front and back of this device.
Safe transportation	Please transport this device safely to prevent it from sliding, which may damage the buttons, knobs, or interfaces on the instrument panel.
Proper ventilation	Insufficient ventilation will cause the device temperature to rise, thus causing damage to this device. Please keep proper ventilation during use, and regularly check the vents and fans.
Keep clean and dry	Please take actions to avoid dust or moisture in the air affecting the performance of this device. Please keep the product surface clean and dry.
Note	
Calibration	The recommended calibration period is one year. Calibration should only be conducted by qualified personnel.

3. UT5470 Series 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 μ A, 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 G Ω .

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.

3.1 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 vehicle
- Automated test systems

3.2 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	±(1%× the setting value + 10 V), from no-load to full load		

range				
Upper/lower limit of current (Unit: μA)	0.0 to 350	0.1	$\pm(2\% \times \text{the setting value} + 2 \text{ digits})$	
	351 to 3500	1		
	3510 to 10000	10		
Current measurement (Unit: μA)	0.0 to 350.0	0.1	$\pm(2\% \times \text{the reading value} + 10 \text{ digits})$	
	300 to 3500	1		
	3000 to 10000	10	$\pm(2\% \times \text{the reading value} + 3 \text{ digits})$	
Rise time	0.4 to 999.9 s	0.1 s	$\pm(0.1\% \times \text{the setting value} + 0.05 \text{ s})$	
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	$\pm(2\% \times \text{the setting value} + 2 \text{ digits})$	
	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 G Ω			
	Range	Resolution	Accuracy	
DC voltage output	50 to 6000 V	1 V	$\pm(1.5\% \times \text{the setting value} + 10 \text{ V})$	
DC voltage measurement	0.050 to 6.000 kV	0.001 kV	$\pm(2\% \times \text{the reading value} + 20 \text{ V})$	
Upper/lower limit of current (Unit: M Ω)	0.1 to 999.9 (Upper limit: 0 = no comparison)	0.1	$\pm(5\% \times \text{the setting value} + 2 \text{ digits})$	
	1000 to 50000	1	$\pm(15\% \times \text{the setting value} + 2 \text{ digits})$	
Insulation resistance measurement (Unit: M Ω)	50 to 999 V	0.1 to 1.999	$\pm(15\% \times \text{the reading value} + 10 \text{ digits})$	
		2.00 to 19.99		
		20.0 to 199.9		
		200 to 2000 (50 to 199 V)		
		200 to 10000 (200 to 499 V)		
		200 to 20000 (500 to 999 V)		
	1000 to 6000 V	1 to 9.999	0.001	$\pm(3\% \times \text{the reading value} + 10 \text{ digits})$
		10.00 to 99.99	0.01	$\pm(5\% \times \text{the reading value} + 10 \text{ digits})$
		100.0 to 999.9	0.1	$\pm(7\% \times \text{the reading value} + 10 \text{ digits})$

		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(ProVOLT)	√			
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℃, 30 to 50%RH (No condensation)			
Storage temperature	-20 to 60℃ / < 90%RH (No condensation)			

Accuracy guarantee temperature range: 25 $\pm$ 5°C

Calibration interval: One year

3.3 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 20 kV
- 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

4. Panel Overview

4.1 Front Panel

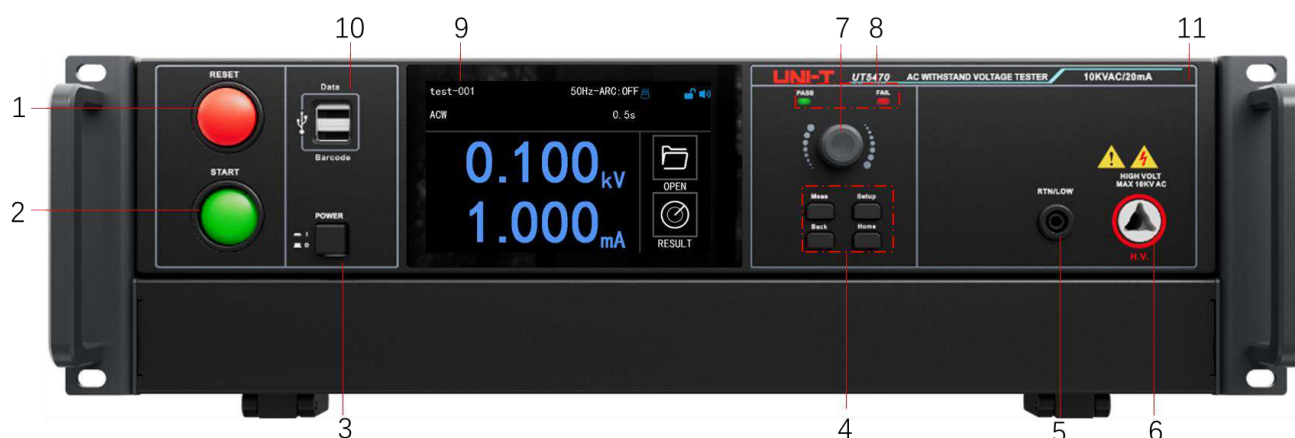


Figure 4-1 Front Panel

No.	Item	Description
1	RESET button	A red momentary pushbutton. Returns to the measurement display when setting parameters. Aborts the test during test execution. Mutes the alarm and advances to the next test state during a test.
2	START button	A green momentary pushbutton used to start the test.
3	Power switch	Marked with symbols "I" (ON) and "O" (OFF), controls the instrument's input power.
4	Meas	Enters the Test interface.
	Setup	Enters the Parameter Setting interface for the current test step.
	Back	Returns to the previous menu (swipe left)
	Home	Enters the Home interface.
5	RETURN	Return terminal.
6	HV	High voltage output terminal.
7	Rotary knob	A control knob used to fine-adjust the output voltage when the voltage

		adjustment function is enabled.
8	Test indicators (LED)	PASS: The PASS indicator illuminates when the test result meets the specified criteria. FAIL: The FAIL indicator illuminates when the test result does not meet the specified criteria.
9	LCD	5-inch TFT-LCD displays settings and test results.
10	USB port	Enables file import/export and test result export.
11	Nameplate	UNI-T Logo and model information.

4.2 Rear Panel

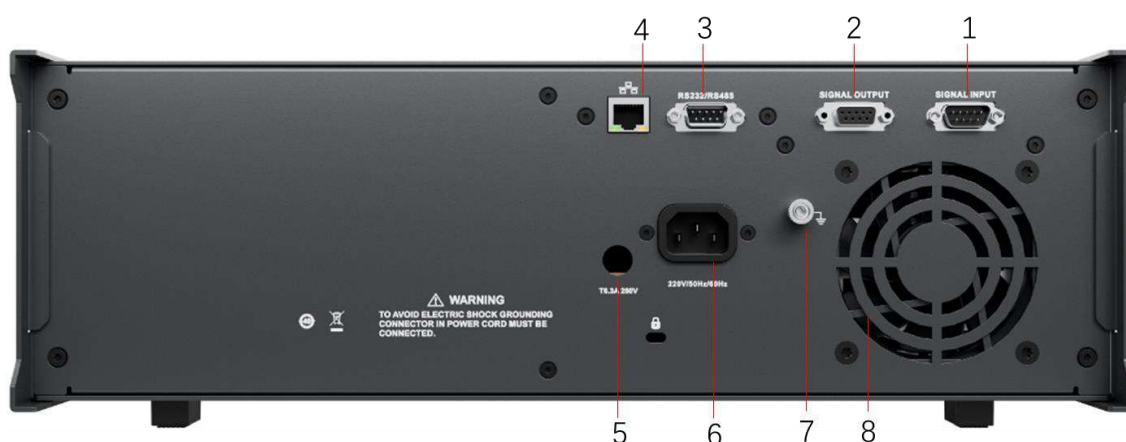


Figure 4-2 Rear Panel

No.	Item	Description
1	SIGNAL INPUT	Remote control signal input terminal for receiving RESET and START control signals. It also includes an INTERLOCK input; when this input is not connected, the instrument cannot enter the test interface. In addition, four sets of test option inputs are reserved and are disabled by default.
2	SIGNAL OUTPUT	Remote control signal output terminal that provides PASS, FAIL, and TEST status signals via relay contacts.
3	RS-232C/485	Serial communication interface for connecting to a computer.
4	LAN	Connection port for the LAN interface.
5	Fuse	Holds the input power fuse. When replacing, ensure the fuse matches the instrument's specified rating.
6	Power socket	Standard IEC 320 socket for connecting to NEMA-standard power cords.
7	Ground terminal	Chassis grounding terminal. Ensure the instrument is properly grounded before operation.
8	Ventilation hole	Provides heat dissipation for the instrument.

5. Inspection and Preparation

5.1 Packing List

Upon receiving the instrument, please check the packaging and list as follows.

1. Inspect the instrument for any damage, scratches, or other defects.
2. Verify all accessories against the packing list to ensure nothing is missing.

If any damage is found or accessories are missing, contact the UNI-T sales department or your local distributor for assistance.

Item	Quantity	Remarks
Withstand voltage tester	1 pcs	Model subject to order.
Power cable	1 pcs	
RS232 communication line	1 pcs	
Fuse	2 pcs	T6.3A 250 V
High-voltage test cable (Red/Black)	1 pair	
Interlock		
User manual		Electronic version, available for download from the official website.

5.2 Power Requirements

This instrument is designed for operation under Overvoltage Category II conditions. Do not use it under Overvoltage Category III or IV conditions.

Before powering on the instrument, ensure that the supply voltage and fuse ratings comply with the specifications indicated on the rear-panel silk-screen markings.

Parameter	Specification
Voltage	AC 220±10%V or AC 110±10%V
Frequency	50/60 HZ
Power consumption	≤500VA
Fuse	T6.3A 250 V

- The supplied power cord is a three-core cable. Ensure that the power outlet's ground terminal is properly connected before use.
- The instrument is fitted as standard with a 250 V / T6.3 A fuse (5 × 20 mm). A spare fuse is preinstalled in the fuse holder at the factory.
- When replacing the fuse, first disconnect the external power cord. Open the fuse holder located below the power inlet, remove the old fuse, and install a new fuse of the corresponding rating. Reinstall the fuse holder, and the instrument is ready for use.



Warning: Do not use the power cable if it is damaged, as this may cause electric shock or other hazards!

5.3 Environmental Requirements

The environmental requirements for operating the UT5470 series are shown in the table below. During load operation, the cooling fan of the safety analyzer adjusts its speed automatically based on the heat sink temperature.

Operating Environment	Requirements
Operating humidity	20% to 80% (non-condensation)
Operating temperature	0°C to 40°C
Storage temperature	-20°C to 60°C
Altitude	≤2000 meters
Pollution degree	2

5.4 Cleaning

To prevent the risk of electric shock, always disconnect the power cord before cleaning. Wipe the housing and front panel with a clean, lightly dampened cloth, and ensure they are completely dry to prevent water from entering the instrument. Do not clean the interior of the instrument.



Caution: Do not use solvents such as alcohol or gasoline for cleaning.

5.5 Daily Check

To prevent accidents, ensure that the following conditions are met before operation.

1. The instrument input power supply complies with the specified requirements, and the power configuration is correct.
2. The instrument is reliably connected to protective earth.
3. The test leads are in good condition, with no breaks, cracks, or other damage.

6. Measurement Menu

6.1 Power-On

Before powering on the instrument, ensure it is intact and installed in its intended operating position. Perform the following checks.

1. Connect only the instrument's power cord; do not connect any other test leads. Turn on the tester's power switch.
2. The instrument will enter the measurement display. Press the START key to begin a test. The instrument

is considered basically functional if the test result meets the following condition:

The tester displays a low breakdown current or zero value.

3. If the instrument does not display any information when powered on for the first time, verify that the power cord is securely connected.
If malfunctions occur during test startup, such as failure to power on, unresponsive keys, or no audible relay operation. Please contact UNI-T Technical Support.



Warning: Confirm that the instrument's rated voltage matches the mains supply voltage before powering on; incorrect voltage may damage the instrument.
Ensure the main power plug is connected to a properly earthed power socket. Do not use extension cords that lack protective earthing.

6.2 High-Voltage Connection

The safety tester connects to the device under test (DUT) via the HV and RETURN terminals on the front panel.

- Red high-voltage test lead: Connect to the HV terminal on the front panel.
- Black high-voltage test lead: Connect to the RETURN terminal on the front panel.
- Red high-voltage test clip: Connect to the L (Line) and N (Neutral) terminals of the DUT.
- Black high-voltage test clip: Connect to the earth wire or metal enclosure of the DUT.

6.3 Screenshot

This instrument features a screenshot function.

To capture the screen:

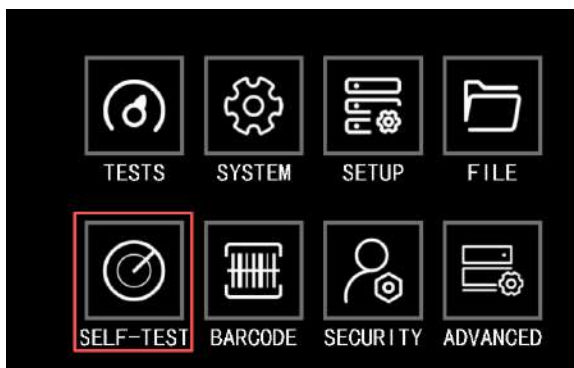
1. Insert a USB flash drive to the USB port on the front panel.
2. When the USB flash drive icon appears on the display, long-press the rotary knob to capture and save the current screen to the USB device for later review.

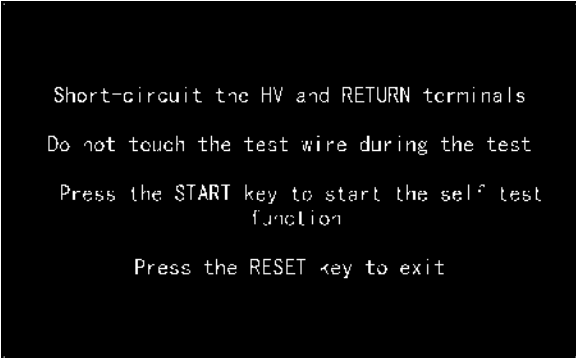
Notes:

- Use a reputable USB flash drive for the instrument port.
- The supported file system is FAT32, with a maximum capacity of 128 GB.

6.4 Self-Test

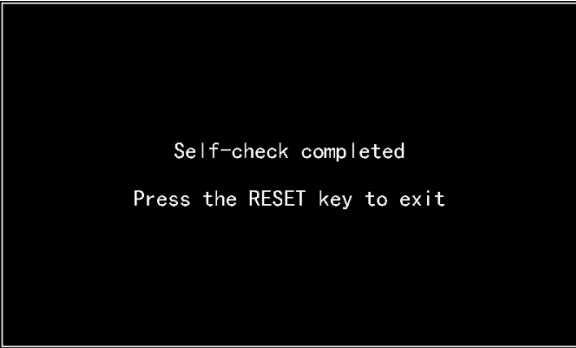
1. Press the [Home] key and select the Self-Test function on the display.
2. Follow the on-screen instructions to short-circuit the RTN and HV test clips, then press the START key to begin the self-test.





Short-circuit the HV and RETURN terminals
Do not touch the test wire during the test
Press the START key to start the self test
function
Press the RESET key to exit

3. Upon completion of the self-test:
 - The PASS (green) indicator illuminates if the test passes.
 - The FAIL (red) indicator illuminates if a fault is detected.
4. Press the RESET key to exit self-test mode.



Self-check completed
Press the RESET key to exit



Self-check function error
Make sure that the HV and RETURN terminals are
connected
Press the RESET key to exit

7. Test Menu

7.1 Test Menu

When the high-voltage output is stopped, press the [Meas] button or select [Test] on the Home interface to enter the Test Display interface. High-voltage output can be activated only from this interface.

The Test Display interface is used primarily to show test results and test judgments.

Figure 7-1 Test Interface

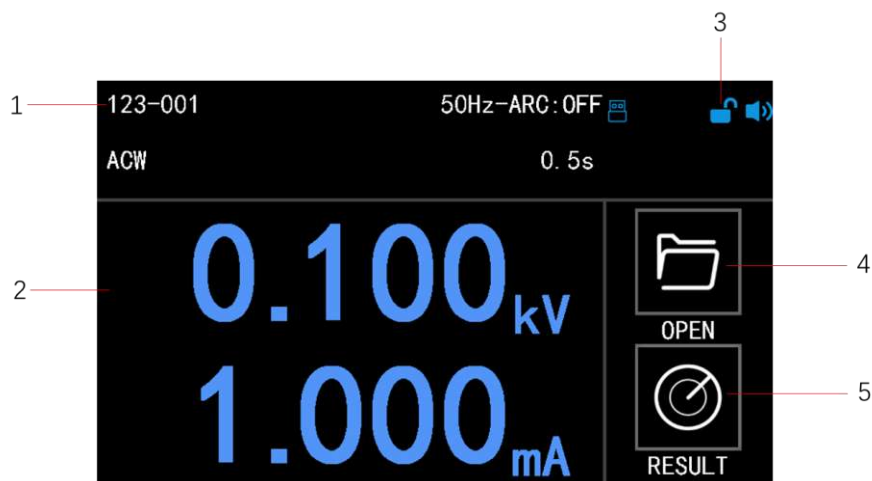


Table 7-1 Test Setting

No.	Item	Description
1	Test Parameters	Displays the file name, step number, test frequency, arc detection status, test mode, test duration, and test status for the current step.
2	Data Display	Shows the set voltage and upper current limit, as well as the real-time voltage and current values during testing.
3	Icons	Indicate the connection status of the USB flash drive, barcode scanner, and network, as well as the status of the key lock and buzzer.
4	Open	Tap to access the File management interface.
5	Test Results	Tap to access the Test Results interface.

7.1.1 Open

Tap the OPEN icon to switch to the File management interface, allowing users to quickly switch between test files.

If multiple test files are saved, tap the OPEN icon displays all available test files, allowing the user to select the desired file.

Press the [Meas] button or [RESET] button to access the Test menu.

7.1.2 Result

Tap RESULT icon to open the <RESULT> interface.

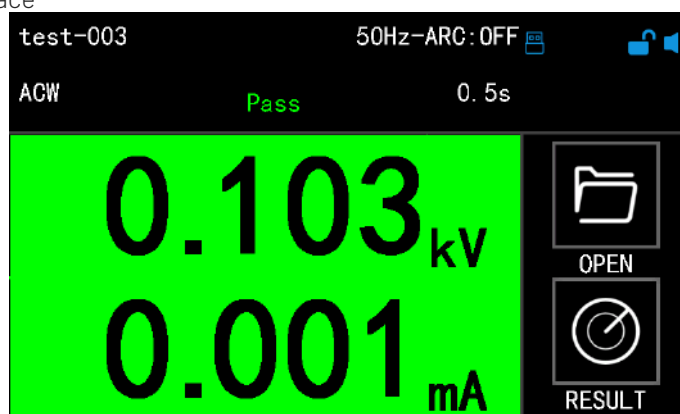
RESULT 3 Step	Historical Data 29 Step
Last Step	Clear Result
Export Result	

Item	Description
Result	Displays the last test result.
Historical Data	Displays all historical test results.
Last Step	Displays the test result of the final step.
Clear Result	Clears all test results.
Export Result	Exports test results to a USB flash drive.

7.2 Test Result

High-voltage output for testing the DUT can only be activated from the Test menu, and its test parameters can be configured in the Test settings.

Figure 7-2 Test Pass Interface



1. Real-Time Test Data

After starting a measurement, the two large numerical values displayed at the center of the LCD screen indicate real-time test data:

- Upper value: High-voltage output voltage. The unit is kilovolt (kV) for withstand voltage testing.
- Lower value: Measured current on the low-voltage side. The unit is milliampere (mA) in AC current mode and microampere (μA) in DC current mode.

2. Test Status and Duration

The central area at the top of the LCD screen displays the instrument's test status and judgment result. The right-hand area shows the test duration of the high-voltage test. In continuous test mode, the duration can display up to 999.9 s.

3. Result Judgment

The upper and lower limits of the breakdown current for withstand voltage testing allow real-time evaluation of measurement results during testing.

Result Judgment	Description
High Limit	Indicates that the measured value exceeds the set upper limit.
Low Limit	Indicates that the measured value is below the set lower limit.
Short	Indicates that the instrument output current exceeds the internal fixed current limit (non-adjustable).
Arc Warning	Indicates that the arc current exceeds the set arc upper limit during AC withstand voltage testing.
Ground Protection	Indicates that the ground current exceeds the internal fixed current limit (non-adjustable).
Over-Temperature	Indicates that the operating temperature exceeds the internal fixed temperature limit (non-adjustable).
OC	Indicates that the test current is below the open-circuit sampling threshold in open/short detection mode.
SC	Indicates that the test current exceeds the short-circuit sampling threshold in open/short detection mode.
Ramp-HI	Indicates that the current exceeds the ramp-up upper limit during the voltage ramp-up phase in DC withstand voltage mode.
Charge-LO	Indicates that the charging current is below the charging lower limit in DC withstand voltage and insulation resistance modes.
Low Volt	Triggers an alarm when the test voltage falls below the specified percentage of the rated voltage during the test phase.
High Volt	Triggers an alarm when the test voltage exceeds the specified percentage of the rated voltage during the test phase.

8. Setup Menu

When the high-voltage output is stopped, press the [SETUP] key or swipe left on the Test display interface to enter the Test settings.

8.1 Test Mode

UT5470 supports two test modes: AC withstand voltage test and open/short detection (OSC) test.

UT5472 supports two test modes: DC withstand voltage test and insulation resistance test.

8.2 AC Withstand Voltage Test

Test Type	Voltage	Frequency
ACW	0.100 kV	50Hz
HI-Limit	LO-Limit	Arc Detect
1.000 mA	0.000 mA	OFF
Arc Sense	Ramp Up	Dwell Time
Level 5	0.5 s	0.5 s
Ramp Down	Offset	Range
0.5 s	0.000 mA	Auto

Item	Setting	Default	Description	
Test Type	ACW/OSC	ACW	Select the test type (UT5470).	
Voltage	(50 to 10000)V	100 V	Output voltage of AC withstand voltage test.	
Frequency	50 Hz, 60 Hz	50 Hz	Output frequency of AC withstand voltage test.	
HI-Limit	(0.001 to 20.00)mA	1 mA	Upper limit of current.	
LO-Limit	(0 to 20.00)mA, 0=OFF	OFF	Lower limit of current.	
Arc Detect	ON, OFF	OFF	Enables or disables the Arc detection function.	
Arc Sense	Level 1-9	OFF	Alarm sensitivity level for arc detection. The arc alarm level can be preset for judgment, with a selectable range from Level 1 to Level 9. Level 9 represents the highest sensitivity. The peak current corresponding to each alarm level is shown in the table below.	
			Arc Sense (Level)	Threshold Peak Current (V)
			9	0.651
			8	1.084
			7	1.714
			6	2.148
			5	2.328
			4	3.187
			3	3.449
			2	3.702
	1	4		

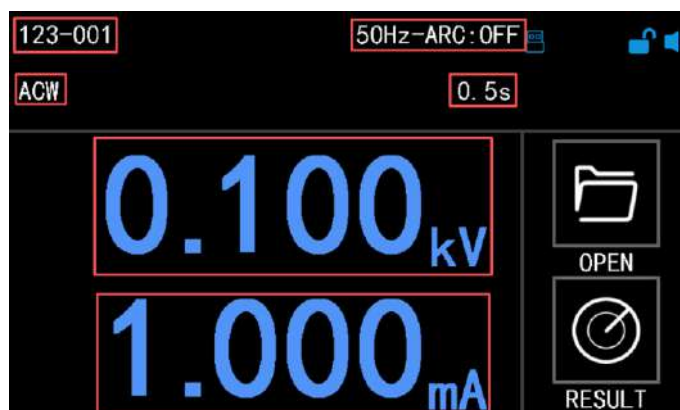
Ramp up	(0.3 to 999.9) s	0.5 s	Limits the output voltage ramp-up to the set value.
Dwell Time	(0.1 to 999.9) s, 0=Continuous test	0.5 s	Indicates the test duration of the current step.
Ramp down	(0.1 to 999.9) s, 0=OFF	0.5 s	Limits the output voltage ramp-down to the set value.
Offset	(0 to 20.00) mA	0	Set the leakage current to 0 mA during the no-load test.
Range	Auto, Fixed	Auto	Test current range switching mode

Swipe upward on the Test settings interface to display the remaining options.

HI-Limit	LO-Limit	Arc Detect
1.000 mA	0.000 mA	OFF
Arc Sense	Ramp Up	Dwell Time
Level 5	0.5 s	0.5 s
Ramp Down	Offset	Range
0.5 s	0.000 mA	Auto
Prompt	Default	Fast Index

Item	Setting	Description
Prompt	<Message>	Displays the prompt information for the corresponding test step.
Default		Restores the default parameter settings.
Fast Index	1 to 200	Index number of the test step.

In addition to configuring parameters on the <SETUP> page, quick setup is also available for the parameters highlighted in the red box in the figure below on the <Test> interface after pressing the [Meas] button. The following parameters can be set individually: test step, test type, frequency, arc detection, test duration, output voltage, and upper current limit.



8.3 Open/Short Circuit (OSC) Detection

Test Type	Open Alarm	Short Alarm
OSC	10%	OFF
Standard	Prompt	Default
0.100 nF		
Fast Index		

Item	Setting	Default	Description
Test Type	ACW/OSC	ACW	Select the test type (UT5470).
Open Alarm	10 to 100%	10%	Triggers an open-circuit determination when the measured value falls below a specified percentage of the sampling reference.
Short Alarm	100 to 500%, 0=OFF	OFF	Triggers a short-circuit determination when the measured value exceeds a specified percentage of the sampling reference.
Standard	0.001 to 40.00 nF	0.1 nF	Sets the reference value used for sampling.
Prompt	<Message>	/	Displays the prompt information for the corresponding test step.
Default	Yes, No	/	Restores the default parameter settings.
Fast Index	1 to 200	/	Index number of the test step.

8.4 DC Withstand Voltage Test

Test Type	Voltage	Low Range
DCW	0.100 kV	OFF
HI-Limit	LO-Limit	Arc Detect
1.000 mA	0.0 uA	OFF
Arc Sense	Ramp Up	Dwell Time
Level 5	0.5 s	0.5 s
Ramp Down	Ramp-HI	Charge-LO
0.5 s	0.0 uA	0.0 uA

Item	Setting	Default	Description
Test Type	DCW/IR	DCW	Select the test type (UT5472).

Voltage	(50 to 12000) V	100 V	Output voltage of DC withstand voltage test.																						
Arc Detect	ON, OFF	OFF	Enables or disables the Arc detection function.																						
Arc Sense	Level 1-9	OFF	Alarm sensitivity level for arc detection. The arc alarm level can be preset for judgment, with a selectable range from Level 1 to Level 9. Level 9 represents the highest sensitivity. The peak current corresponding to each alarm level is shown in the table below.																						
			<table><tr><td>Arc Sense (Level)</td><td>Threshold Peak Current (V)</td></tr><tr><td>9</td><td>0.651</td></tr><tr><td>8</td><td>1.084</td></tr><tr><td>7</td><td>1.714</td></tr><tr><td>6</td><td>2.148</td></tr><tr><td>5</td><td>2.328</td></tr><tr><td>4</td><td>3.187</td></tr><tr><td>3</td><td>3.449</td></tr><tr><td>2</td><td>3.702</td></tr><tr><td>1</td><td>4</td></tr><tr><td>OFF</td><td></td></tr></table>	Arc Sense (Level)	Threshold Peak Current (V)	9	0.651	8	1.084	7	1.714	6	2.148	5	2.328	4	3.187	3	3.449	2	3.702	1	4	OFF	
Arc Sense (Level)			Threshold Peak Current (V)																						
9			0.651																						
8			1.084																						
7			1.714																						
6			2.148																						
5			2.328																						
4			3.187																						
3			3.449																						
2			3.702																						
1	4																								
OFF																									
Ramp Up	(0.4 to 999.9) s	0.5 s	Limits the output voltage ramp-up to the set value.																						
Dwell Time	(0 to 999.9) s, 0=Continuous test	0.5 s	Indicates the test duration of the current step.																						
Ramp Down	(0 to 999.9) s, 0=OFF	0.5 s	Limits the output voltage ramp-down to the set value.																						
Ramp-HI	(0.1 to 100000) μA	10000 μA	Upper limit of breakdown current.																						
Charge-LO	(0 to 100000) μA, 0=OFF	OFF	Lower limit of breakdown current.																						
Offset	(0 to 10000) μA	0	Set the leakage current to 0 mA during the no-load test.																						
Range	Auto, Fixed	Auto	Test current range switching mode																						

Swipe upward on the Test settings interface to display the remaining options.

Arc Sense	Ramp Up	Dwell Time
Level 5	0.5 s	0.5 s
Ramp Down	Ramp-HI	Charge-LO
0.5 s	0.0 μ A	0.0 μ A
Offset	Range	Prompt
0.0 μ A	Auto	
Default	Fast Index	

Item	Setting	Description
Prompt	<Message>	Displays the prompt information for the corresponding test step.
Default	Yes, No	Restores the default parameter settings.
Fast Index	1 to 200	Index number of the test step.

8.5 Insulation Resistance Test

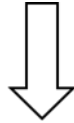
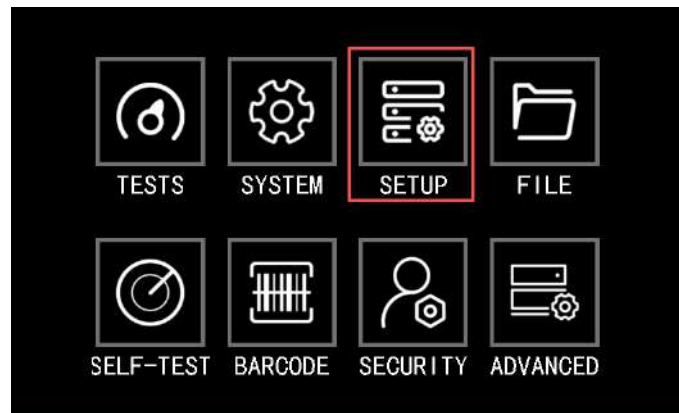
Test Type	Voltage	Charge-LO
IR	0.100 kV	0.000 uA
HI-Limit	LO-Limit	Ramp Up
0.00 MΩ	0.10 MΩ	0.5 s
Delay Time	Dwell Time	Ramp Down
0.5 s	0.5 s	0.5 s
Prompt	Default	Fast Index

Item	Setting	Default	Description
Test Type	DCW/IR	DC	Select the test type (UT5472).
Voltage	(50 to 6000) V	100 V	Output voltage of insulation resistance test.
HI-Limit	(0 to 50000) MΩ, 0=OFF	OFF	Upper limit of resistance.
LO-Limit	(0.1 to 50000) MΩ	0.1 MΩ	Lower limit of resistance.
Ramp Up	(0.4 to 999.9) s	0.5 s	Limits the output voltage ramp-up to the set value.
Delay Time	(0.5 to 999.9) s	0.5 s	Delays the determination of whether the resistance value exceeds the upper or lower limit.
Dwell Time	(0 to 999.9) s, 0=Continuous test	0.5 s	Indicates the test duration of the current step.
Ramp Down	(0 to 999.9) s, 0=OFF	0.5 s	Limits the output voltage ramp-down to the set value.
Prompt	<Message>		Displays the prompt information for the corresponding test step.
Default			Restores the default parameter settings.
Fast Index	1 to 200		Index number of the test step.

9. Parameter Setting

9.1 New Test File

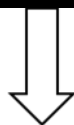
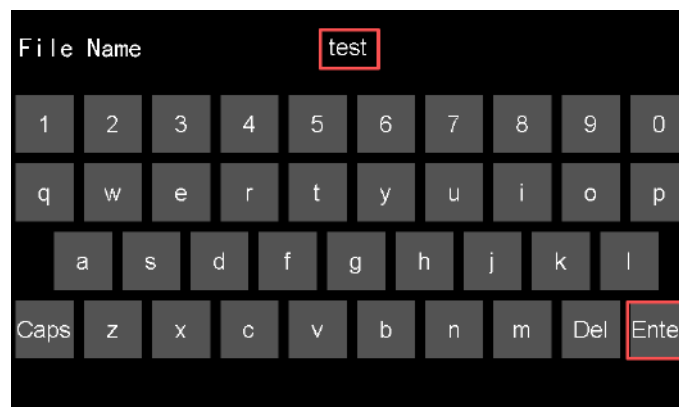
1. In the Home menu, tap SETUP icon to access the parameter setting menu.



2. In the system setting menu, tap New File to open the new file page.



3. On the new file page, use the numeric keyboard to enter the filename, and tap Enter key to complete the setting.



4. The new file is added, as shown in the following figure. In this example, the file number is 02 and the file name is test. The new file is added, as shown in the following figure. In this example, the file number is

02 and the file name is test.

001: 202525003 123 All Steps = 3	002: 1111 test All Steps = 0
New File	

9.2 Test File and Test Step

An auto test consists of test files and test steps. A test file is a collection of test steps.

A specific test can be assigned to each step, starting from step 1 and executed sequentially. When the last step is completed, the test file is finished.

9.3 Add Step

1. In the system setting menu, tap the test file <FILE02>.

001: 202525003 123 All Steps = 3	002: 1111 test All Steps = 0
New File	



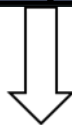
2. In the system setting menu, tap New Item to add a step.

New Step	



3. Tap New Item again to add multiple steps in sequence.

001:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	New Step



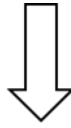
4. Add four steps, as shown in the following figure.

001:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	002:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s
003:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	004:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s
New Step	

9.4 Insert/Delete Step

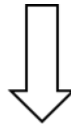
1. In the step setting menu, long-tap the selected test step to delete it. For example, to delete Step <002>, as shown in the following figure.

001:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	002:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s
003:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	004:ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s
New Step	



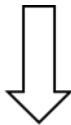
2. In the step setting menu, four options are available.
- Insert up: Inserts a new step immediately above the currently selected step. For example, a step can be inserted between the first and second steps.
 - Delete: Deletes the currently selected step.
 - Insert down: Inserts a new step immediately below the currently selected step. For example, a step can be inserted between the second and third steps.
 - TESTS: Jump to the test interface and run all selected steps.
- For example, tap Delete option.

Current Step	[2]	
Insert Up		CANCEL
Insert Down		
Delete		ENTER



3. Tap Enter to confirm.

Current Step	Delete	
Insert Up		CANCEL
Insert Down		
Delete		ENTER



4. The second step is deleted, reducing the total number of test steps from 4 to 3.

001: ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	002: ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s
003: ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	New Step

9.5 Edit Test Parameter

- Using Step <001> as an example, tap Step 1 field to enter the parameter setting menu.

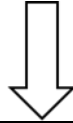
001: ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	002: ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s
003: ACW 0.100kV 1.000mA, 0.000mA 0.5s, 0.5s	New Step



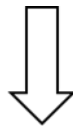
Test Type	Voltage	Frequency
ACW	0.100 kV	50Hz
HI-Limit	LO-Limit	Arc Detect
1.000 mA	0.000 mA	OFF
Arc Sense	Ramp Up	Dwell Time
Level 5	0.5 s	0.5 s
Ramp Down	Offset	Range
0.5 s	0.000 mA	Auto

- Set each parameter in sequence as required. Tap "<" or ">" to switch between parameters for adjustment. After modifying a test parameter, tap Enter to confirm. The interface automatically moves to the next test parameter.

Test Type [ACW]		
ACW		<
OSC		
		>



Voltage [100V]			
Range: 50 - 10000V			
7	8	9	<
4	5	6	
1	2	3	>
0	.	<-	



3. Finally, configure the quick index to directly navigate to the target test step page.

Fast Index [1]			
Please enter the test step you want to jump to: 1 - 200			
7	8	9	<
4	5	6	
1	2	3	>
0	.	<-	

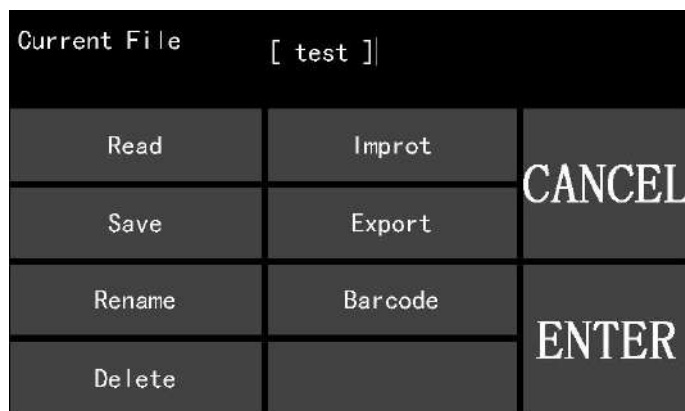
Parameter configuration can also be performed using the following methods.

1. Press the [Setup] key to access the global parameter configuration interface.
2. To modify a specific parameter, tap the corresponding area on the [Meas] interface for direct editing.

9.6 Test File Setting

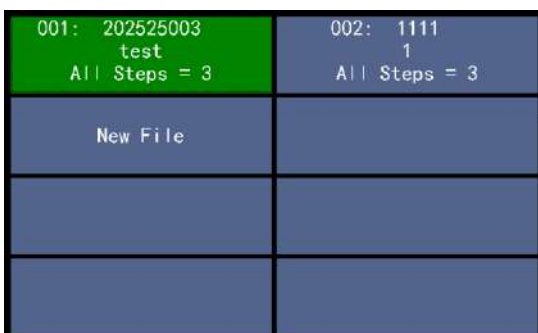
The test file setting supports the following operations: read, save, rename, delete, import, export, and barcode scanning.

Enter the parameter settings interface, then long-press the test file to select it for editing.



Item	Description
Read	The read function loads the parameter settings stored in the selected file, allowing users to quickly select the required test items for their products. Note: Read operation will overwrite any modified parameter settings currently in use. Therefore, if necessary, users should save the current parameter settings before executing the Read operation.
Save	The save function stores the currently modified parameter settings to the selected file. Parameter settings can be saved to multiple files as required. Note: Save operation applies only to the user-selected file and does not update the currently active file. After the save operation is completed, the system remains on the selected file.
Rename	Renames the selected file. The filename supports a maximum of 9 characters, including uppercase letters, lowercase letters, and numbers.
Delete	Deletes the selected file.
Import	Imports the contents of an existing file from a USB flash drive into the currently active file. Before importing, place the target file in the ...\\UT5470\\DATA directory on the USB flash drive. The file must have a .STA extension. The import operation overwrites the contents of the currently active file. It is recommended to select an empty file for importing. The system can recognize multiple files on a USB flash drive, supporting the selection of up to 8 files. Users can select the desired file to import based on its filename. Note: This operation is not supported if no USB flash drive is connected.
Export	Exports the contents of the currently active file to a USB flash drive. A file with a .STA extension is generated in the ...\\UT5470\\DATA directory on the USB flash drive, using the same filename as the currently active file. Note: This operation is not supported if no USB flash drive is connected. test.STA 2025/10/25 11:22 unit.STA 2025/10/25 11:23
Barcode	A unique barcode can be assigned in the file information. When the product code matches the barcode (either partially or fully), the test file associated with the barcode is automatically loaded.

Click the barcode icon, enter the barcode using the on-screen keyboard, and the barcode will appear in the file section.

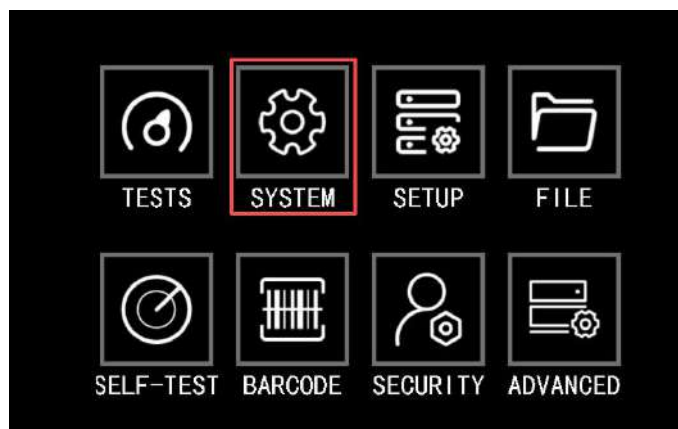


10. System Setting

10.1 System Menu

The <System> settings interface is used to configure language, time, communication settings, test parameters, and factory reset.

When high-voltage output is stopped, press the [Home] key to enter the <Menu> interface, then tap the [System] to access the <System> settings interface



The <System> settings interface also includes a <System Information>, which displays the model name, instrument serial number, and firmware version. No user configuration is required for this section.

Language	Date	Time
English	2025-11-28	11:07:09
COM Mode	COM Protocol	Protocol Sel
RS232	SCPI	Default
Reply Return	Baud Rate	Address
OFF	9600	1
IP Address	Port Number	Volume
192.168.30.1	502	Low Volume

Item	Setting	Default	Description
Language	English, Simplified Chinese, Traditional Chinese	Simplified Chinese	Select the instrument interface language.
Date			Date format: YYYY-MM-DD (Year-Month-Day).
Time			Time format: HH:MM:SS (Hour:Minute:Second).
COM Mode	RS232, RS485, LAN	RS232	Select the remote control interface. The instrument supports RS232, RS485, and LAN.
COM Protocol	SCPI, MODBUS	SCPI	Select the communication protocol. The instrument supports SCPI and Modbus (RTU). SCPI is recommended for easy communication with computers. Modbus (RTU) is recommended for communication with industrial control devices such as PLCs.
Protocol Sel	Default, Protocol E	Default	
Baud Rate	9600, 19200, 38400, 57600, 115200	9600	Set the baud rate for the serial port.
Address	1 to 255	1	The station ID can only be set when RS485 communication mode and Modbus (RTU) protocol are selected.
IP Address	192.168.30.1		Set the communication address for Ethernet port communication.
Port	502	502	Set the Ethernet port number. Fixed at 502 and not adjustable.
Volume	Low Volume, Medium Volume, High Volume	Low	Set the volume level for sounds generated by key operations, touch interactions, and test result prompts.
PLC Remote	ON, OFF	OFF	Select whether the test start button is controlled by the panel or remotely by a PLC.
Step Mode	ON, OFF	OFF	Set the test program execution mode. ON: Single-step mode OFF: Continuous mode

Swipe upward on the Setup settings interface to display the remaining options.

PLC Remote	Step Mode	Fail Stop
OFF	NORMAL	ON
Auto Save	ProVOLT	Adjustable
ON	OFF	OFF
Home Screen	Reset Clear	Refresh
Menu	ON	Step
Data Reset	Information	

Item	Setting	Default	Description
Fail Stop	ON, OFF	ON	Stops the test if a fail alarm is triggered during the test process.
Auto Save	ON, OFF	OFF	Automatically saves the parameter settings when the test program starts, if any settings have been modified.
ProVOLT	ON, OFF	OFF	In multi-step testing, if the test mode of the next step is the same as the current step, the system skips the voltage ramp-down phase and directly outputs the voltage set for

			the next test step.
Adjustable	ON, OFF	OFF	Allows the voltage to be adjusted via the rotary knob during the test, with a voltage step of 10 V.
Home Screen	Menu, Test, SETUP	Menu	Sets the default display interface shown when the instrument is powered on.
Reset Clear	ON, OFF	ON	Requires the [RESET] button to be pressed to clear and reset the system after a test failure before the test can be resumed.
Refresh	Step, Last	Step	Selects the display mode during testing: either a step-by-step display of test results or display of only the last step's test results.
Data Reset	YES, NO		Restores the entire system to factory default settings.
Information			Displays the instrument model, serial number (SN), and firmware version.

10.2 System Information

System information displays the instrument model, serial number (SN), and firmware version.



11. File Management

The File management page allows users to recall existing test files and configure test items and steps. Deleting, renaming, or saving existing test files is not supported in this interface.

File management enables users to save settings to up to 100 memory groups, enabling quick recall during instrument startup or when switching between product specifications.

To recall a file, tap [File] or [Open] on the [Meas] interface.





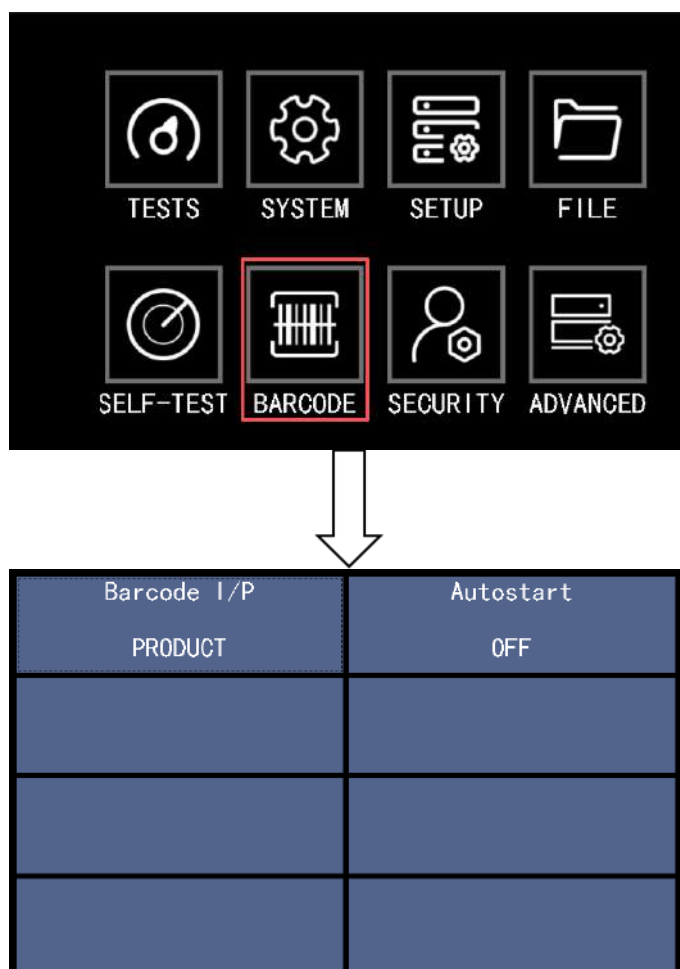
Select the desired file from the list to complete the recall.

12. Barcode Setting

This series supports performing tests after scanning a barcode.

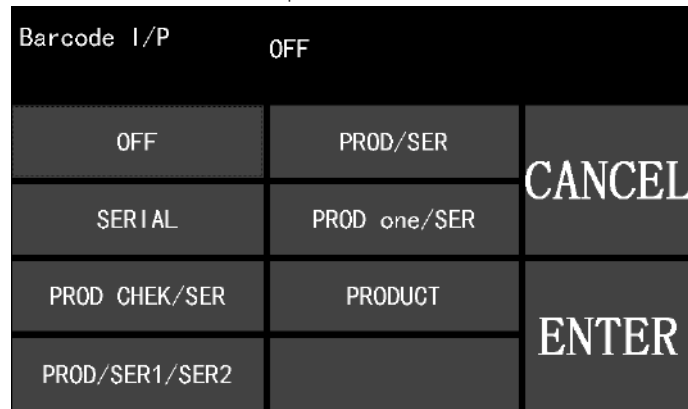
For convenience, different barcode rules can be configured according to user requirements.

Access the Barcode settings menu as shown in the figure below.



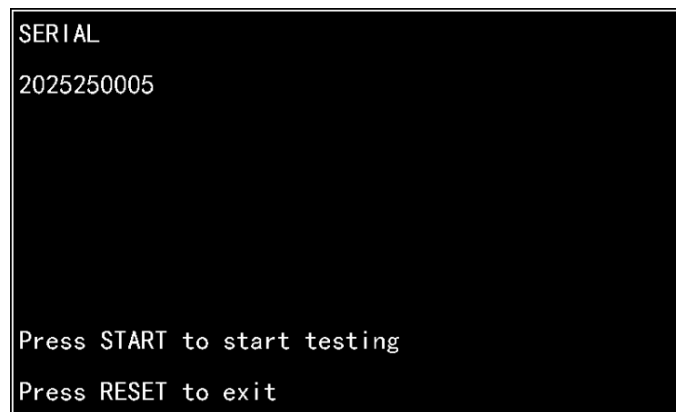
12.1 Barcode Input

Tap Barcode Input icon to access the Barcode Input menu.

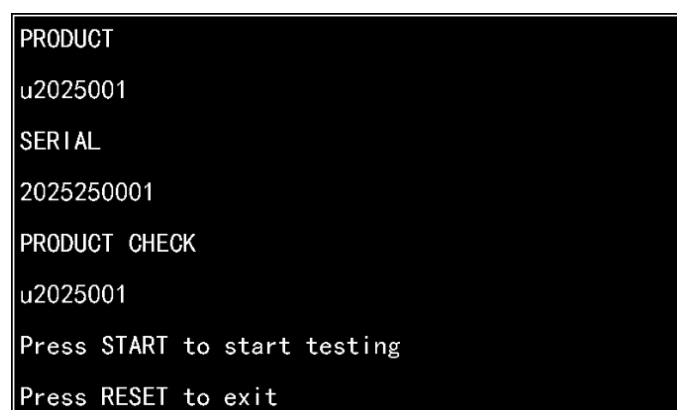


Barcode Input Settings

1. **OFF:** Disables the barcode scanner detection and input function.
2. **SERIAL:** Scan a Product SN to enter the barcode scanning interface. If auto-test is enabled, the test starts automatically.



3. **PROD CHEK/SN**
 - Requires three sequential scans: Product Code, Product SN, and Confirm Code.
 - A unique Product Code can be configured in the file information.
 - If a test file with a matching Product Code exists, it will be selected automatically; otherwise, no action is performed.
 - If the auto-test is enabled, the test runs automatically only if the Product Code matches the Confirm Code.



4. PROD/SER1/SER2

- Requires three sequential scans: Product Code, Product Serial Number 1 (SER1), and Product Serial Number 2 (SER2).
- A unique Product Code can be configured in the file information.
- If a test file with a matching Product Code exists, it will be selected automatically; otherwise, no action is performed.
- If auto-test is enabled, the test starts automatically.

```
PRODUCT
u2025001
SERIAL 1
2025250001
SERIAL 2
2025250002
Press START to start testing
Press RESET to exit
```

5. PROD/SER

- Requires two sequential scans: Product Code and Product Serial Number (SN).
- A unique Product Code can be configured in the file information.
- If a test file with a matching Product Code exists, it will be selected automatically; otherwise, no action is performed.
- If auto-test is enabled, the test starts automatically.

```
PRODUCT
u2025001
SERIAL
2025250001

Press START to start testing
Press RESET to exit
```

6. PROD1/SER

- Scan the Product Code only for the first operation; for subsequent operations, scan the Product SN.
- A unique Product Code can be configured in the file information.
- If a test file with a matching Product Code exists, it will be selected automatically; otherwise, no action is performed.
- If auto-test is enabled, the test starts automatically.

```

PRODUCT
u2025001
SERIAL
2025250001

Press START to start testing
Press RESET to exit

```

7. Product

- Only the Product Code is scanned.
- A unique Product Code can be configured in the file information.
- If a test file with a matching Product Code exists, it will be selected automatically; otherwise, no action is performed.
- If auto-test is enabled, the test starts automatically.

```

PRODUCT
2025250004

Press START to start testing
Press RESET to exit

```

12.2 Auto Test

Tap Autostart to turn it ON or OFF.

Autostart [OFF]		
OFF		<
ON		
		>

ON: When auto test is enabled, the test is executed automatically immediately after barcode scanning is completed.

OFF: When auto test is disabled, this function is turned off. The test must be initiated manually by pressing the START button after barcode scanning.

Note: Route the barcode scanner cable separately from the high-voltage (H.V.) cable to avoid interference and related issues.

13. Security Setting

13.1 New User

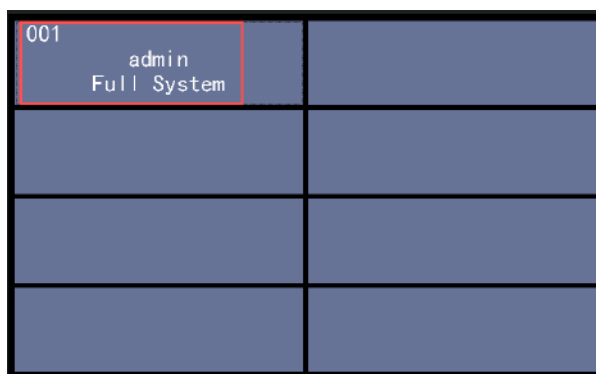
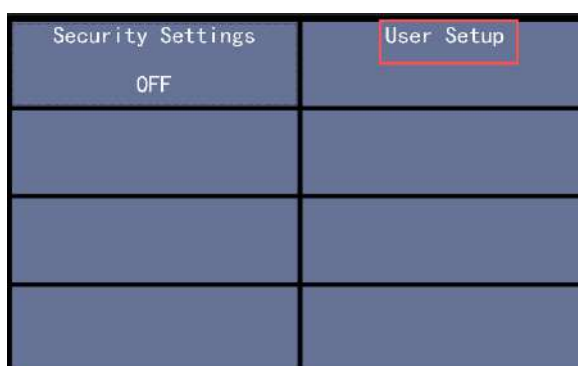
When adding a user to the instrument system, user can edit the account name, set a 4-character password, and configure the security level.

The instrument system supports four security levels:

- Test Only: Allows test execution only.
- Load Parameter: Allows test file loading and test execution.
- Edit Parameter: Allows test file editing, test parameter configuration, and test execution.
- Full Function: Provides access to all system functions.

Setting Steps

1. Tap [Security] settings, then tap [User Level].
2. Press and hold the [admin] option.
3. Select [New User] and press [Enter] to confirm.
4. Enter a new user name (e.g., unit) and press [Enter] to confirm.
5. Enter a password, confirm it, select the required security level (e.g., Full Functionality), and press [Enter] to confirm.
6. The new user has now been created.



New User

1	2	3	4	5	6	7	8	9	0
q	w	e	r	t	y	u	i	o	p
a	s	d	f	g	h	j	k	l	
Caps	z	x	c	v	b	n	m	Del	Enter

Password

7	8	9	CANCEL
4	5	6	
1	2	3	ENTER
0	.	<—	

Confirm Password

7	8	9	CANCEL
4	5	6	
1	2	3	ENTER
0	.	<—	

Security Level |

Run Only		CANCEL
Recall Setup		
Edit Setup		ENTER
Full System		

Password

7	8	9	CANCEL
4	5	6	
1	2	3	ENTER
0	.	<—	

Confirm Password

7	8	9	CANCEL
4	5	6	
1	2	3	ENTER
0	.	<—	

Security Level |

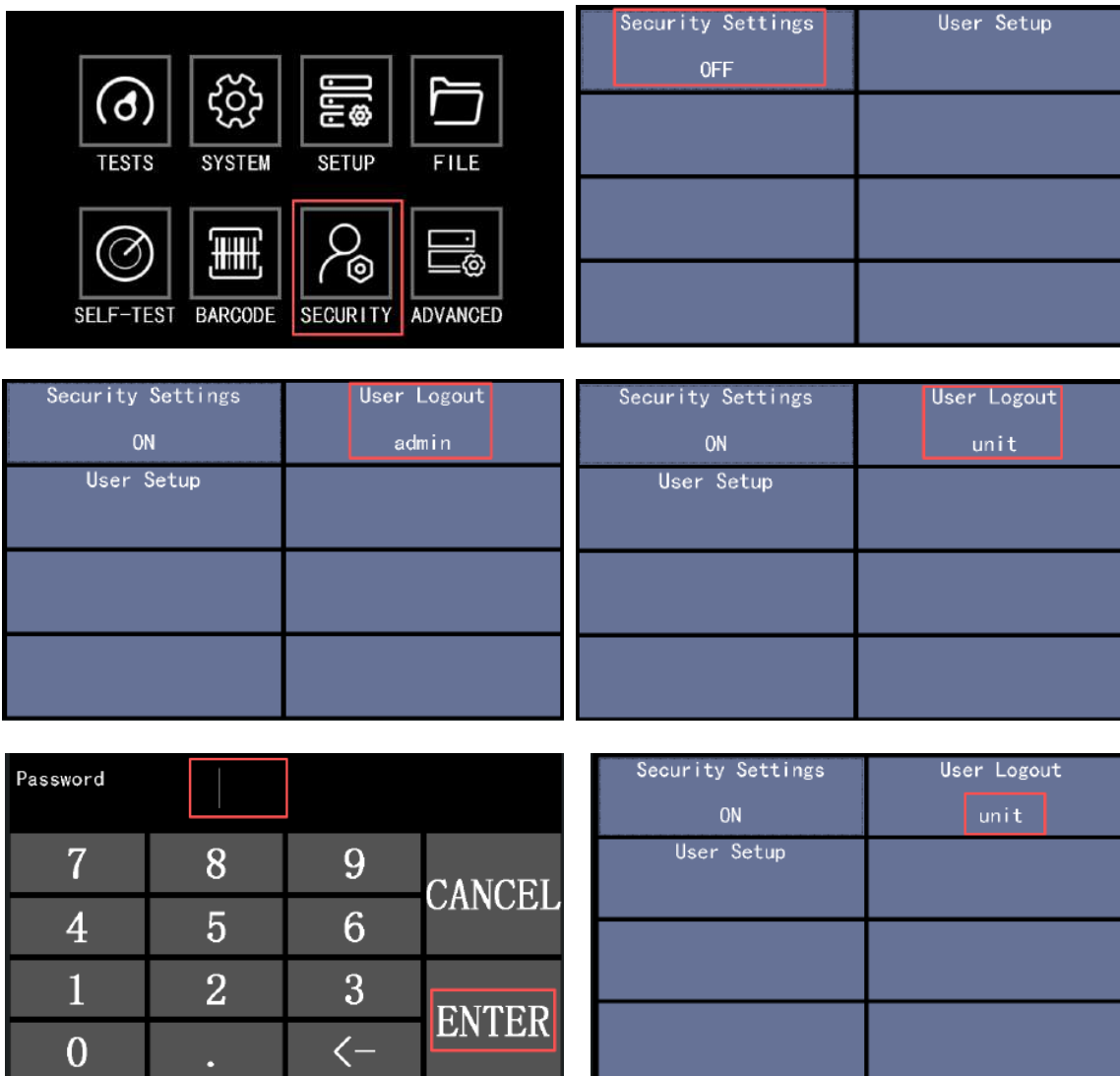
Run Only		CANCEL
Recall Setup		
Edit Setup		ENTER
Full System		

001	002
admin Full System	unit Full System

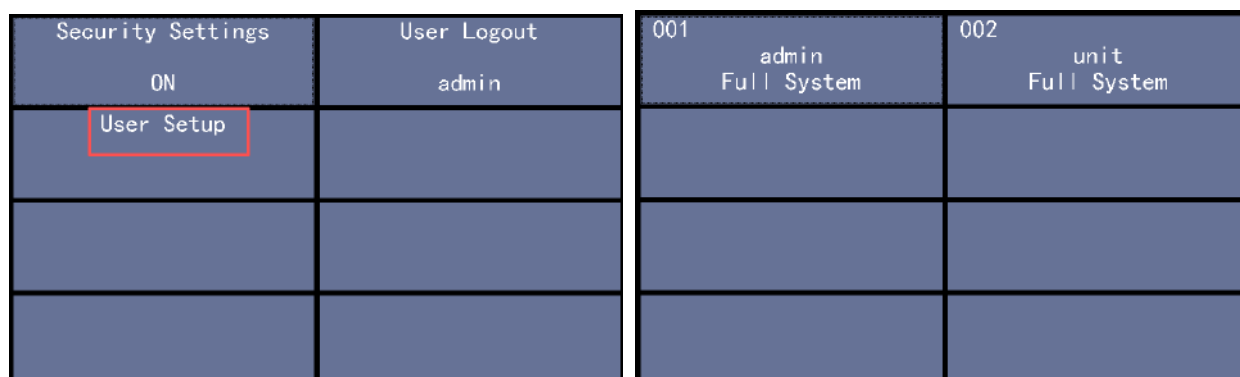
User Recall

1. Tap [Security] settings to enter the security Settings interface.
2. Set [Security] to ON; the [Logout] option will appear. Tap [Logout] to log out the current [admin] user.
3. The User Selection interface will open (this interface cannot be exited).
4. Select a user (e.g., unit), enter the corresponding password, and the user will be recalled.

Note: Default [admin] password: 8888



13.2 User Management



Press and hold a user entry to create a new user or delete the selected user, as shown in the figure below.

Note: The [admin] user cannot be deleted, and the currently logged-in user cannot be deleted.

User Management [admin]		
New User		CANCEL
Delete		
		ENTER

Tap a user entry to modify the user's password and security level.

Note: The [admin] user can only modify its password.

User ID	Password
admin	*****
Security Level	
Full System	

14. Breakdown Test (Advanced Feature)

14.1 Breakdown Test

To access the breakdown test, press the [Home] key to enter the main interface, then tap [Advanced].

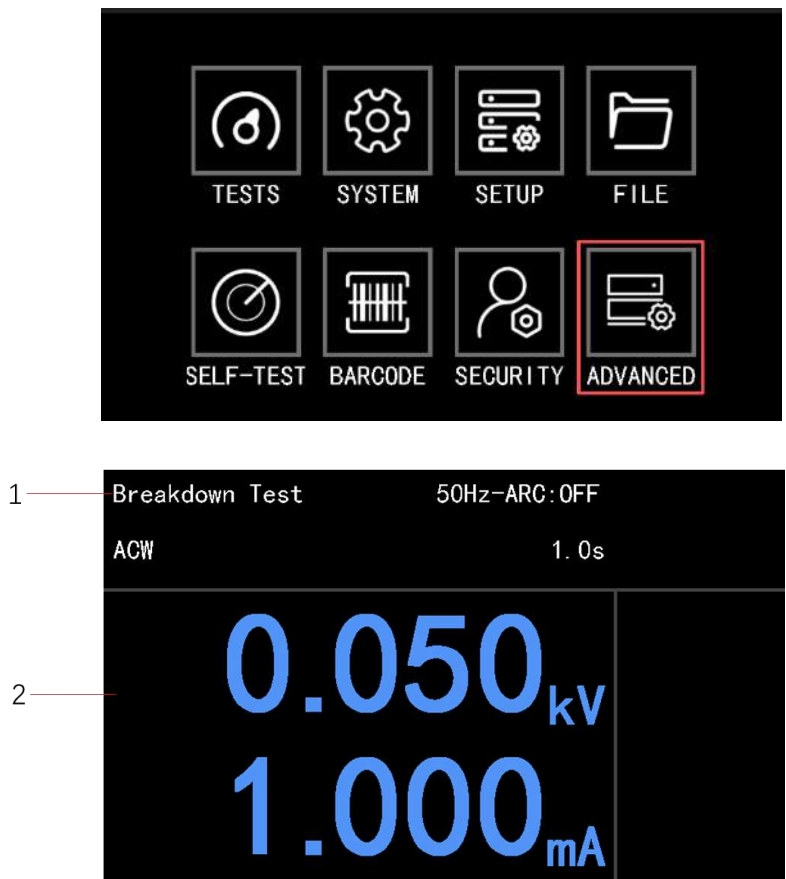


Table 14-1 Breakdown Test Interface

No.	Item	Description
1	Test Parameters	Test frequency, arc detection, test mode, test duration, and test status.
2	Data Display	Displays the set voltage value and upper current limit, as well as the real-time voltage and current values during the test.

14.2 Breakdown Test Setting

In the Breakdown Test interface, swipe left or press the [Setup] key to enter the breakdown test parameter settings.

Step Mode	Test Step	Test Type	Step Mode	Step Volt	Test Type
Normal Step	2	ACW	Volt Step	10 V	ACW
Initial Volt	Final Volt	Frequency	Initial Volt	Final Volt	Frequency
50 V	50 V	50Hz	50 V	50 V	50Hz
HI-Limit	LO-Limit	Arc Detect	HI-Limit	LO-Limit	Arc Detect
1.000 mA	0.000 mA	OFF	1.000 mA	0.000 mA	OFF
Ramp Up	Dwell Time	Arc Sense	Ramp Up	Dwell Time	Arc Sense
0.0 s	1.0 s	Level 5	0.0 s	1.0 s	Level 5

Item	Setting	Default	Description
Step Mode	Normal Step/ Volt Step	Normal Step	Voltage step mode: Normal step voltage: Voltage stepping based on the number of test steps. Voltage step: Voltage stepping based on the specified step voltage value.
Test Step	2-999	2	Voltage adjustment mode corresponding to normal step voltage
Step Volt	(5-500) V	10 V	Voltage adjustment mode corresponding to voltage step
Test Type	ACW/DCW	ACW DCW	UT5470 UT5472
Initial Volt	(50 to 10000) V	50 V	Initial output voltage
Final Volt	(50 to 10000) V	50 V	Final output voltage
Frequency	50 Hz, 60 Hz	50 Hz	Output frequency of AC withstand voltage test.
HI-Limit	(0.001 to 20.00) mA	1 mA	Upper limit of current
LO-Limit	(0 to 20.00) mA, 0=OFF	OFF	Lower limit of leakage current
Arc Detect	ON, OFF	OFF	Enables or disables the Arc detection function.
Arc Sense	Level 1-9		Alarm sensitivity level for arc detection. The arc alarm level can be preset for judgment, with a selectable range from Level 1 to Level 9. Level 9 represents the highest sensitivity. The peak current corresponding to each alarm level is shown in the table below.

		5		Arc Sense (Level)	Threshold Peak Current (V)	
				9	0.651	
				8	1.084	
				7	1.714	
				6	2.148	
				5	2.328	
				4	3.187	
				3	3.449	
				2	3.702	
				1	4	
Ramp Up	(0.0 to 999.9) s	0.0 s	Ramp-up time for each voltage adjustment.			
Dwell Time	(0.3 to 999.9) s	1.0 s	Test duration at each voltage level.			

Swipe upward on the Test settings interface to display the remaining options.

Initial Volt	Final Volt	Frequency
50 V	50 V	50Hz
HI-Limit	LO-Limit	Arc Detect
1.000 mA	0.000 mA	OFF
Ramp Up	Dwell Time	Arc Sense
0.0 s	1.0 s	Level 5
Range	Continue	Default
Auto	OFF	

Item	Setting	Description
Range	Auto, Fixed	Test current range switching mode
Continue	ON, OFF	Determines whether the test continues after the voltage reaches the final value.
Default	YES, NO	Restores the default parameter settings.

15. Handler Interface

15.1 Signal Input

The tester is equipped with two 9-pin D-type terminals for remote control signals. For optimal performance, it is recommended to use shielded cables for both input control and output signal connections.

Figure 15-1 Signal Input Interface



All input signals shall be switching-type inputs. External voltage or current sources must not be connected to these terminals under any circumstances. Connecting non-switching sources may damage the instrument’s internal control circuitry or cause malfunction.

Table15-1 Signal Input Pin

Input	Pin	Signal	Description
Signal Input	1	Reserved Input (Group 3)	Short-circuit to COM to call a preprogrammed test routine inside the instrument.
	2	RESET (Stop)	The instrument stops the test when RESET is short-circuited to COM.
	3	START	The instrument initiates the test when START is short-circuited to COM.
	4	INTERLOCK	The instrument operates normally only when INTERLOCK is short-circuited to COM.
	5	COM (Low)	Common low terminal. Serves as the 0 V reference for all low-level control signals.
	6	Reserved Input (Group 4)	Short-circuit to COM to call a preprogrammed test routine inside the instrument.
	7	COM (Low)	Common low terminal. Serves as the 0 V reference for all low-level control signals.
	8	Reserved Input (Group 1)	Short-circuit to COM to call a preprogrammed test routine inside the instrument.
	9	Reserved Input (Group 2)	Short-circuit to COM to call a preprogrammed test routine inside the instrument.

15.2 Signal Output

The tester is equipped with 9-pin D-type (female) terminals for remote control signals.

Figure 15-2 Signal Output Interface



When the signal output requires a voltage above 220 V or a current above 2 A, the internal relays of the instrument cannot withstand such load. External switching devices should be used for signal conversion.

Table 15-2 Signal Output Pin

Output	Pin	Signal	Description
Signal Output	1	PASS1	When the test is passed, the internal relay pins PASS1 and PASS2 switch from open to closed.
	2	PASS2	
	3	FAIL1	When the test fails, the internal relay pins FAIL1 and FAIL2 switch from open to closed.
	4	FAIL2	
	5	UNDER TEST 1	While the test is in progress, the internal relay pins UNDER TEST 1 and UNDER TEST 2 switch from open to closed.
	6	UNDER TEST 2	
	7	Reserved Output 1	When the test is passed, the internal relay pins Reserved Output 1 and Reserved Output 2 switch from open to closed.
	8	Reserved Output 2	
	9	NC	Not connected.

Figure 15-3 Time Sequence for Signal Input and Signal Output

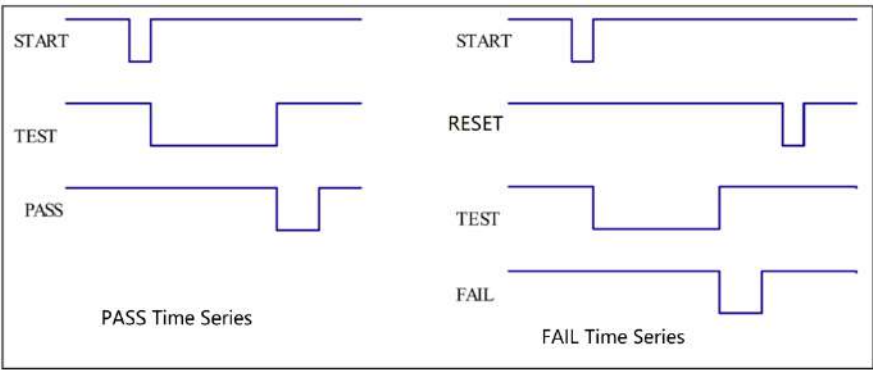


Table 15-3 Signal Input and Signal Output Status

Signal	Description
Test Start via SIGNAL INPUT Port	1. Determine the validity of the TEST (In Test) signal at the port. The START signal is accepted only when the TEST (In Test) signal is invalid. 2. When the condition above is met, send a START signal with a pulse width of 40 ms to 200 ms (on/off signal closure time) to initiate the test.
Test Stop via SIGNAL INPUT Port	Send a RESET signal with a pulse width of 40 ms to 200 ms (on/off signal closure time) at any time to abort the test.
Signal Input – Test (In Test)	The relay connects PIN5 and PIN6 while the instrument is performing a test. The relay returns PIN5 and PIN6 to the open state after the test is completed.
Signal Output—Test Pass	The relay connects PIN1 and PIN2 and latches when the DUT assesses the test. The relay returns PIN1 and PIN2 to the open state when a new test program is initiated or the STOP switch is pressed.
Signal Output—Test Fail	The relay connects PIN3 and PIN4 and latches when the DUT (Device Under Test) fails the test. The relay returns PIN3 and PIN4 to the open state when a new test program is initiated or the STOP switch is pressed.

16. Remote Communication

16.1 RS-232C Interface Setting

16.1.1 RS-232 Interface

RS-232 is a widely adopted serial communication standard, also known as the asynchronous serial communication standard. It is used to enable data communication between computers and between computers and peripherals. "RS" stands for "Recommended Standard," and "232" is the standard number.

This standard was officially released by the Electronic Industries Association (EIA) of the United States in 1969. It defines a method for transmitting data bit by bit over a data line.

In practice, most serial port configurations do not strictly adhere to the original RS-232 standard, which specified the use of 25-pin connectors for each port. Modern computers, however, generally use 9-pin connectors. Common RS-232 signals are shown in the table below.

Table 16-1 Common RS-232 Signal

Signal	Symbol	25-Core Connector Pin	9-Core Connector Pin
Request To Send	RTS	4	7
Clear To Send	CTS	5	8
Data Set Ready	DSR	6	6
Data Carrier Detect	DCD	8	1
Data Terminal Ready	DTR	20	4
Transmitted Data	TXD	2	3
Received Data	RXD	3	2
Signal Ground	GND	7	5

In addition to the standard RS-232 signals, a minimum signal subset can also be used with this instrument.

Table 16-1 Minimum Signal Subset

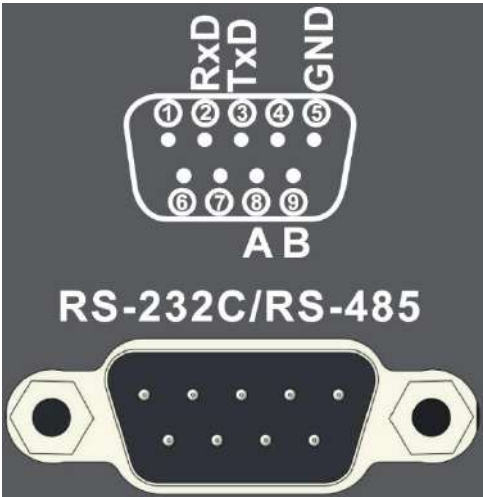
Signal	Symbol	9-Core Connector Pin
Transmitted Data	TXD	2
Received Data	RXD	3
Signal Ground	GND	5

16.1.2 RS-232C Connection



Note: To prevent electric shock, please turn off the power before plugging in the connector.

Figure 16-1 RS-232C Connector, 9-Pin D-Sub Male



To connect this instrument to a PC, use a 9-pin D-sub female to 9-pin D-sub female crossover cable.

RS232 Communication Settings

Transmission Mode: Full-duplex asynchronous communication with start and stop bits.

Communication Protocol: Select RS232 in communication mode.

Baud Rate: Configurable via the Baud Rate in the system setting.

Data Bits: 8 bits

Stop Bits: 1 bit

Parity: None

16.2 RS-485 Interface Setting

The instrument is equipped with an RS-232C interface. Users can purchase an RS232-to-RS485 converter separately to enable RS485 communication.

COM Mode [RS232]		
RS232		<
RS485		
LAN		>

The instrument’s station ID can be set to from 1 to 255 on the <System> settings. Station IDs for multiple slave devices must be different.

RS485 is a communication interface that supports multi-device connections, allowing a single master device to communicate in parallel with multiple slave devices.

The instrument's RS-485 interface shares a single DB9 connector with the RS-232 interface. Refer to Figure 16-1 for details.

Pin	Function
8	A
9	B

17. Appendix

17.1 Maintenance and Cleaning

(1) General Maintenance

Keep the instrument away from direct sunlight.

Caution

Keep sprays, liquids and solvents away from the instrument or probe to avoid damaging the instrument or probe.

(2) Cleaning

Regularly inspect the instrument based on its operating conditions. Follow the steps below to clean the exterior surfaces:

a. Exterior Cleaning

Use a soft, dry cloth to gently wipe off dust from the outer surface of the instrument.

b. LCD Screen

Take care when cleaning the LCD screen to avoid damaging the transparent surface. Use clean, soft cloth and avoid applying excessive pressure.

c. Dust Filter Screen

Use a screwdriver to remove the screws securing the dust cover.

Carefully remove the dust filter screen and clean it.

After cleaning, reinstall the screen and dust cover in the correct order.

d. Power and Cleaning

Disconnect the power supply before cleaning.

Wipe the instrument with a soft cloth dampened with water. Ensure the cloth is moist but not dripping.

Do not use abrasive or chemical cleaning agents on the instrument or probes.

Warning

Please confirm that the instrument is completely dry before use, to avoid electrical shorts or even personal injury caused by moisture.

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