Uni-Trend UT595

UNI-T UT595 Multifunction Installation Tester User Manual

Model: UT595

1. Introduction

The UNI-T UT595 is a professional multifunction installation tester designed for comprehensive electrical system verification. It performs various tests including Residual Current Device (RCD) trip time, loop/line impedance, earth resistance, continuity, insulation resistance, and AC/DC voltage measurements. This device is suitable for electrical installation, inspection, and repair tasks in residential, commercial, and industrial environments.

2. Safety Information

WARNING: Read and understand all safety instructions before operating the device. Failure to follow these instructions may result in electric shock, fire, or serious injury.

- Always ensure the device is in good working condition before use.
- Do not use the tester if it appears damaged or if the test leads are compromised.
- Verify the voltage and current ratings of the circuit before testing to avoid exceeding the tester's limits.
- Wear appropriate personal protective equipment (PPE), such as insulated gloves and safety glasses.
- Do not operate the tester in wet environments or in the presence of explosive gases or dust.
- Ensure proper grounding connections are made for earth resistance tests.
- Disconnect power to the circuit before performing continuity or insulation resistance tests, unless specified otherwise by the test procedure.

3. Product Features

The UT595 Multifunction Installation Tester offers a range of advanced features for accurate and reliable measurements:

- **Display:** 9999-count LCD with analogue bar for clear readings.
- **Insulation Resistance Test:** Measures insulation resistance from 250V to 1000V DC.
- **Continuity Test:** 200mA earth-resistance continuity test.
- **Loop Impedance Test:** Measures loop impedance, Prospective Fault Current (PFC), and Prospective Short Current (PSC).
- **RCD Testing:** Includes RCD trip time test with data storage, full/half wave testing, 30s countdown test mode, 0°/180° phase angle option, and RCD trip trigger current test.
- **Phase Sequence Test:** Detects phase sequence and missing phases.
- **Voltage Measurement:** Automatic AC/DC voltage check and test.
- **Connection Check:** Real-time display of connection status.
- **Convenience:** White backlight for visibility in low light, auto power-off function, low battery indication, and data storage capability.



Image: Front view of the UNI-T UT595 Multifunction Installation Tester, showing the LCD display, function buttons, and rotary selector.

4. Package Contents

Upon unpacking, verify that all items listed below are present and undamaged:

- UNI-T UT595 Multifunction Installation Tester unit
- Test leads (red, green, blue)
- Alligator clips
- Power cord
- Carrying case

- User manual
- 1.5V batteries (6x AA type)



Image: The UNI-T UT595 tester, test leads, and accessories neatly arranged within its protective carrying case.

5. Setup

5.1 Battery Installation

1. Locate the battery compartment on the rear of the UT595.
2. Use a screwdriver to open the battery compartment cover.
3. Insert six 1.5V AA batteries, observing the correct polarity (+/-) as indicated inside the compartment.
4. Replace the battery compartment cover and secure it with the screw.

5.2 Connecting Test Leads

Connect the test leads to the appropriate input terminals on the tester. Ensure connections are firm and secure before proceeding with any measurements.

6. Operating Instructions

This section outlines general operating procedures for common tests. Refer to the detailed instructions in the full manual for specific test parameters and safety precautions.

6.1 Power On/Off

Press the power button to turn the device on. The LCD will illuminate. The device will automatically power off after a period of inactivity to conserve battery life.

6.2 RCD Test (Residual Current Device)

1. Connect the test leads to the circuit under test, ensuring proper phase, neutral, and earth connections.
2. Select the RCD test function using the rotary switch.
3. Set the desired RCD current and trip time parameters (e.g., 30mA, 100mA, 300mA; x1/2, x1, x5).
4. Press the 'TEST' button to initiate the RCD trip test.
5. Observe the trip time displayed on the LCD. The RCD should trip within the specified time.

6.3 Loop/Line Impedance Test

1. Connect the test leads to the live and earth terminals for loop impedance, or live and neutral for line impedance.
2. Select the Loop/Line Impedance function.
3. Press 'TEST' to measure the impedance. The display will show the impedance value and calculated PFC/PSC.

6.4 Earth Resistance Test

This test typically requires auxiliary earth electrodes. Follow the connection diagram provided in the detailed manual.

1. Connect the test leads and auxiliary electrodes as per the diagram.
2. Select the Earth Resistance function.
3. Press 'TEST' to measure the earth resistance.

6.5 Insulation Resistance Test

WARNING: Ensure the circuit under test is de-energized before performing insulation resistance tests.

1. Connect the test leads to the conductors between which insulation resistance is to be measured.
2. Select the Insulation Resistance function and the desired test voltage (e.g., 250V, 500V, 1000V).
3. Press and hold the 'TEST' button. The insulation resistance value will be displayed.

6.6 Continuity Test

WARNING: Ensure the circuit under test is de-energized before performing continuity tests.

1. Connect the test leads to the points where continuity is to be checked.
2. Select the Continuity function.
3. The resistance value will be displayed. An audible tone indicates good continuity.



Image: The UNI-T UT595 tester with test leads connected to a standard electrical outlet, demonstrating a typical testing scenario.

7. Maintenance

7.1 Cleaning

Wipe the device with a soft, damp cloth. Do not use abrasive cleaners or solvents. Ensure the device is dry before storage or next use.

7.2 Battery Replacement

When the low battery indicator appears on the display, replace all six 1.5V AA batteries as described in Section 5.1. Remove batteries if the device will not be used for an extended period.

7.3 Storage

Store the UT595 in its carrying case in a cool, dry place, away from direct sunlight and extreme temperatures.

8. Troubleshooting

If you encounter issues with your UT595, refer to the following common troubleshooting steps:

- **Device does not power on:** Check battery installation and ensure batteries are fresh.
- **Inaccurate readings:** Verify test lead connections, ensure proper function selection, and check for external interference.
- **RCD does not trip:** Confirm RCD parameters are correctly set, check the RCD itself, and ensure proper wiring.

- **Display shows 'OL' (Overload):** The measured value exceeds the device's range. Check the circuit and ensure the correct test function is selected.

For persistent issues, contact customer support.

9. Specifications

The following table details the technical specifications of the UNI-T UT595 Multifunction Installation Tester:



Specification	Range		UT593	UT595
Insulation resistance (Ω)	Output voltage	250V/500V/1000V	±10%	
	250V	0.05MΩ~250MΩ	±(5%+5)	
	500V	0.05MΩ~500MΩ		
	1000V	0.05MΩ~1000MΩ		
	Short-circuit current		<2mA	
Low-resistance continuity test	Range	0.00Ω~199Ω	±(2%+5)	
	Test current	0.00~20: >200mA	√	
Line impedance (Ω)	Range	0.01Ω~2000Ω	±(5%+5)	
	Operating voltage (Frequency)	195V~440V (45Hz~65Hz)	√	
	Test current	20A	√	
	PFC test	0kA~26kA	√	
Loop impedance (Ω)	Range	0.01Ω~2000Ω	±(5%+5)	
	Operating voltage (Frequency)	195V~253V (45Hz~65Hz)	√	
	Test current	20A	√	
	PFC test	0kA~26kA	√	
Non-trip loop impedance (Ω)	Range	1.00Ω~2000Ω	±(5%+5)	
	Operating voltage (Frequency)	195V~253V (45Hz~65Hz)	√	
	Test current	15mA	√	
	PFC test	0kA~26kA	√	
RCD test	Operating voltage (Frequency)	195V~253V (45Hz~65Hz)	√	
	Test current	10mA/30mA/100mA/300mA/500mA	±10%	
	Trip time	×1/2 *I△n Range: 0ms~2000ms	±(5%+5)	
		×1 *I△n Range: 0ms~300ms ×1 *I△n Range: 0ms~500ms (Select count down)		
		×2 *I△n Range: 0ms~150ms		±(5%+5)
		×2 *I△n Range: 0ms~200ms (Select count down)		±(5%+5)
		×5 *I△n Range: 0ms~40ms	±(5%+5)	
Phase sequence test	Operating voltage (Frequency)	100V~440V (45Hz~65Hz)	√	
	Display	Phase sequence: L1→ L2→ L3, forward rotation; L1→ L3→ L2 reverse rotation	√	
	Test current	10mA/30mA/100mA/300mA/500mA	±10%	
AC voltage (V)	Range	0V~440V	±(5%+2)	
	Frequency response	45Hz~60Hz	√	
	Resolution	1V	√	
Safety	CAT III 300V			

Image: A comprehensive table outlining the technical specifications for both UT593 and UT595 models, including measurement ranges and accuracy.

UNI-T UT595 General Specifications

Parameter	Value
Display Count	9999
Insulation Resistance Test Voltage	250V, 500V, 1000V DC
Continuity Test Current	200mA
RCD Trip Time Test	Yes
Loop Impedance/PFC/PSC Test	Yes
Earth Resistance Test	Yes
AC/DC Voltage Auto Check	Yes
Phase Sequence Test	Yes

Parameter	Value
Power Source	6 x 1.5V AA Batteries
Product Dimensions	210mm x 175mm x 90mm
Product Weight	1000g (approx.)
Safety Rating	CAT III 600V
Certifications	CE, ISO 9001, RoHS, UKCA

10. Warranty and Support

The UNI-T UT595 Multifunction Installation Tester is covered by a standard manufacturer's warranty. Please refer to the warranty card included with your product for specific terms and conditions. For technical support, service, or warranty claims, please contact your local Uni-Trend distributor or visit the official Uni-Trend website.