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Data Sheet

UT5140 Ground Bond Tester

REV 1.0

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1. Key Features

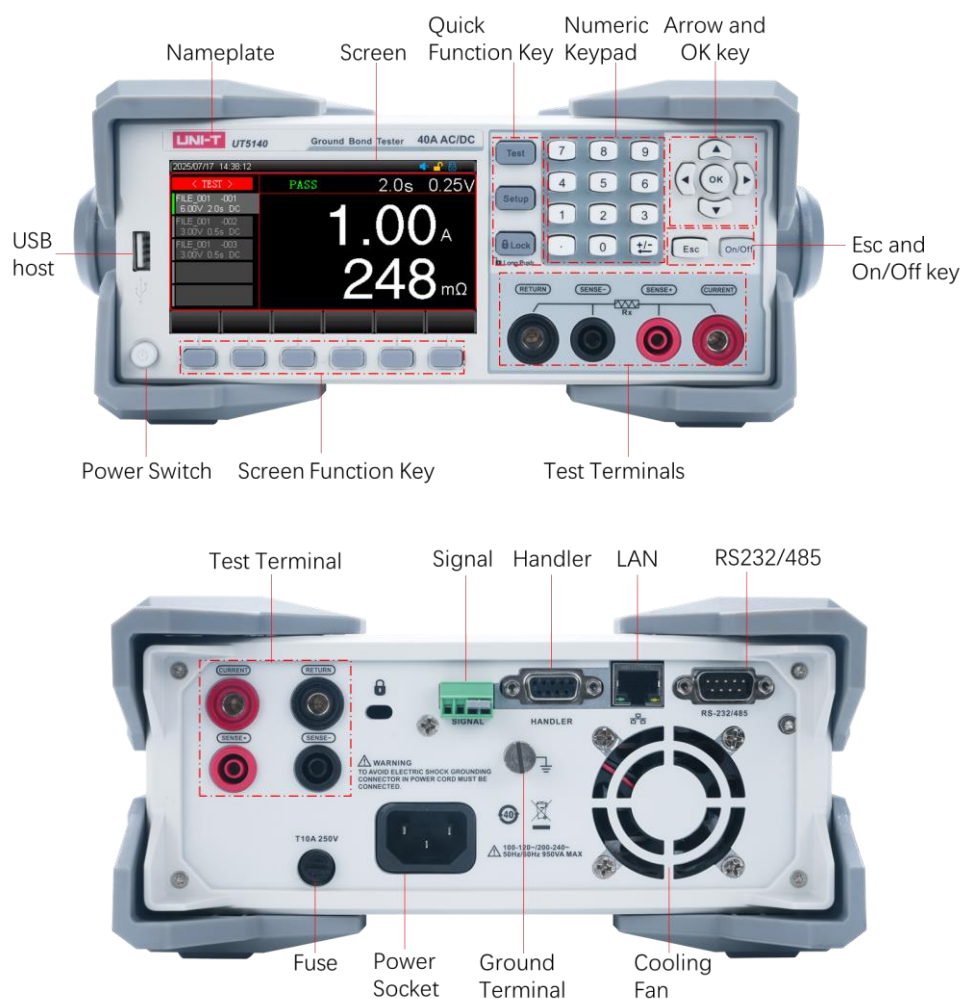
- Compliant with major safety standards, including CCC, IEC, EN, VDE, BS, UL, and JIS.
- 4.3-inch TFT-LCD display with an intuitive panel layout; test results and parameters are clearly visible.
- Supports a maximum test current of up to 40 A, suitable for most application scenarios.
- Adopts four-wire (Kelvin) measurement to eliminate lead resistance and enhance measurement accuracy.
- Preset upper/lower limit with automatic pass/fail judgment and audible/visual alarms.
- Built-in memory for storing up to 100 test files, each containing up to 100 test steps.
- Easy file and data import/export via USB interface.
- Multiple communication interfaces supporting SCPI and MODBUS protocols for seamless integration into automated test systems.

2. UT5140 Overview

The UT5140 is a next-generation AC/DC ground bond tester featuring a 4.3-inch TFT-LCD display in a compact and lightweight design. With a maximum test current of 40 A, it delivers stable current output for both AC and DC ground testing and adopts a four-terminal configuration to ensure accurate and efficient measurements. Its adjustable open-circuit voltage enhances safety for both operators and the device under test. Equipped with versatile communication interfaces, the UT5140 is an ideal solution for automated systems and production line testing.

Application Fields

Automated test systems, household appliances, audio and video equipment, transformers, motors, electrical devices, electric heating appliances, lighting products, new energy vehicles, electronic components, and medical devices.



3. Design Highlights

High Precision, High Resolution, and Fast Judgment

The instrument is equipped with a high-precision, high-resolution measurement circuit, delivering voltage and current accuracy up to 2%, with resolutions reaching 0.01 V / 0.01 A. It also achieves 2% impedance measurement accuracy and supports fast test judgment within 0.5 seconds. These capabilities ensure precise and efficient measurement and analysis of safety parameters, helping to protect the end user's product reliability and safety.

Comprehensive Safety Protections

With a robust multi-layer safety protection design, the instrument integrates upper/lower limit judgment and overcurrent protection, ensuring the safety of both operators and equipment during testing.

Built-in Self-Test Function

UT5140 features an instrument self-test function that allows users to easily verify the instrument's operational status and evaluate its reliability before performing measurements.

4. Technical Specification

Output voltage (open-circuit)	Range	3.00 – 8.00 V AC/DC
	Resolution	0.01 V
	Accuracy	±(3% of setting + 3 counts)
Output frequency		50Hz/60Hz, or users could change to DC mode
Output current	Range	0-150 mΩ: 30.01-40.00 A
		0-200 mΩ: 10.01-30.00 A
		0-600 mΩ: 1.00-10.00 A
	Resolution	0.01 A
	Accuracy	±(3% of setting + 3 counts)
Maximum Loading	Range	1.00-10.00A : 0-600mΩ
		10.01-30.00A : 0-200mΩ
		30.01-40.00A : 0-150mΩ
	Resolution	1mΩ
	Accuracy	±(2% of setting +2 counts)
Max and Min-Limit Resistance	Range	0 - 150 mΩ (30.01 to 40.00 A)
		0 - 200 mΩ (10.01 to 30.00 A)

		0 - 600 mΩ (1.00 to 10.00 A)
	Resolution	1 mΩ
	Accuracy	$\pm(2\% \times \text{setting} + 2 \text{ counts})$
HI/LO-Limit Voltage	Range	0-6V
	Resolution	0.01
	Accuracy	$\pm(2\% \times \text{setting} + 2 \text{ counts})$
Dwell Time	Range	0, (0.5 to 999.9) s, (0 = continuous)
	Resolution	0.1s
	Accuracy	$\pm 0.1\% \times \text{setting}$
Resistance Offset	Range	0-100mΩ
	Resolution	1mΩ
	Accuracy	$\pm(2\% \times \text{setting} + 2 \text{ counts})$
Voltage offset	Range	0-4.00V
	Resolution	0.01V
	Accuracy	$\pm(2\% \times \text{setting} + 2 \text{ counts})$
Measurement Current	Range	0.00-40.00A AC/DC
	Resolution	0.01 AC/DC
	Accuracy	$\pm(2\% \times \text{setting} + 2 \text{ counts})$
Measurement Voltage	Range	0-8.00V AC/DC
	Resolution	0.01 AC/DC
	Accuracy	$\pm(2\% \times \text{setting} + 2 \text{ counts})$
Resistance	Range	0-600mΩ : 1.00-5.99A
	Resolution	1mΩ
	Accuracy	$\pm(3\% \times \text{setting} + 3 \text{ counts})$
	Range	0-600mΩ : 6-40A
	Resolution	1mΩ
	Accuracy	$\pm(2\% \times \text{setting} + 2 \text{ counts})$
General Characteristics		
Interface	USB Host, HANDLER, RS232C/RS485, LAN	
Memory	100 test files and each for 100 steps	
Power	100 to 120 VAC / 200 to 240 VAC 50 / 60 Hz $\pm 5\%$	
Display mode	4.3-inch LCD screen	
Product size (W×H×D)	214 mm×88 mm×349 mm	
Product net weight	5.3 kg	

5. Packaging List

Article	Quantity	Remarks
UT5140 Ground Bond Tester	1 pc	
Interlock Terminal	1 pc	Included with the instrument
Power Cord	1 pc	
RS232 Communication Cable	1 pc	
Ground Impedance Output Wire (One red, one black)	1 pair	
Spare Fuse	2 pcs	T10A 250V
Quick Start Guide	1 pc	
User Manual	/	The electronic user manual can be downloaded from the official website.

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.



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