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Datasheet

UT3510+ and UT3515-Sx Series Bench Top Micro Ohm Meter

V1.1

April 2025

1. Main Features

- 4.3-inch TFT LCD
- Accuracy of 0.05 %, with 22,000 reading
- High resolution of 1 μΩ, with 4 1/2 digit display
- UT3513+ measurement range: 1 μΩ-20 kΩ
- UT3516+ measurement range: 1 μΩ-2 MΩ
- UT3515-Sx measurement scan mode range: 1 μΩ-200 kΩ, single mode range: 1 μΩ-2 MΩ
- Various test combinations: R, LPR, and T
- Low voltage (LRP) test mode for effective protection of the DUT (Device Under Test)
- Temperature correction (TC)
- Temperature conversion (Δt)
- USB flash drive for saving data and screenshots
- Comparator with sorting and beeper function
- Supports data storage and browse
- Maximum test speed: 10 ms/time
- Built-in temperature correction interface

2. Product Introduction

UT3510+ series Benchtop Micro Ohm Meter includes two models: UT3513+ and UT3516+.

UT3515-Sx series includes three models: UT3515-S10, UT3515-S20 and UT3515-S30.

The product features 4.3-inch LCD with high precision, high resolution, and high-speed measurement capabilities, boasting an accuracy of up to 0.05% and a high resolution of 1 μΩ.

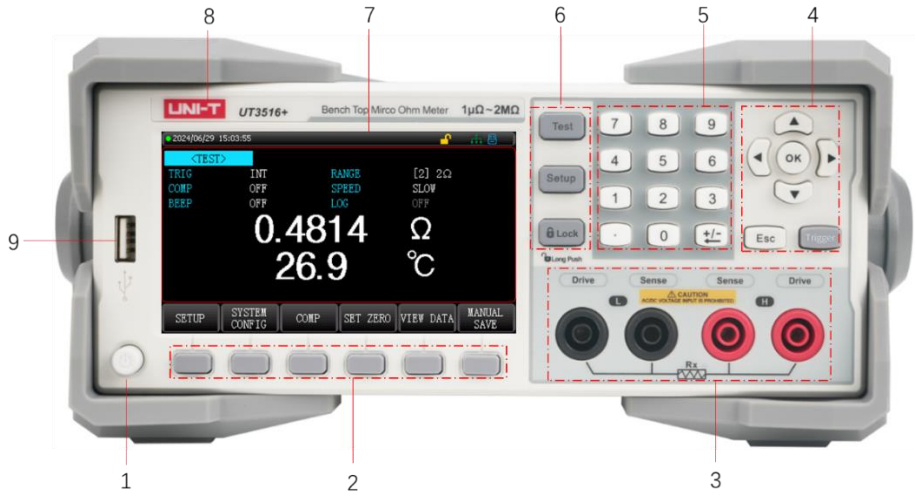
Both UT3510+ and UT3515-Sx series are equipped with RS-232C/RS485, LAN, and HANDLER communication interfaces, supporting SCPI and MODBUS RTU protocols. These interfaces enable communication with a PC, PLC, or WINCE device, facilitating efficient remote control and data acquisition functions.

Measurement Application

Components: Resistance, inductance, transformer, motor, relay, circuit solder joint, capacitor knuckle joint, cables, strand wire, connector, and various switches.

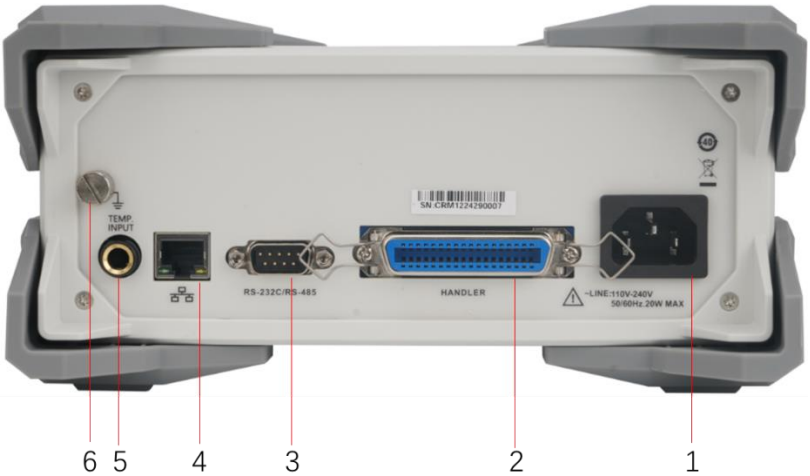
Materials: Thermal sensitive materials (fuses, heating regulator sensors), metal foil, and other conductive materials.

New energy: Connection bridge for electric vehicle battery pack, core connection resistance.

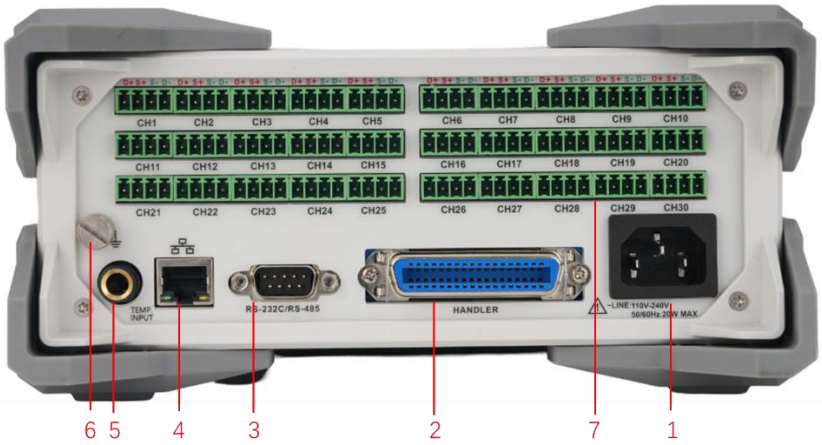


No.	Function	No.	Function
1	Power Switch	5	Numeric Keypad
2	Functional keys (at the bottom of the screen)	6	Test Key
3	Test Terminals		Setup Key
4	Arrow Keys		Lock Key
	OK Key	7	Screen
	Esc Key	8	Nameplate
	Trigger Key	9	USB Disk

UT3510+ Series:



UT3515-Sx Series:



No.	Function	No.	Function
1	Power Socket	5	PT1000 Temperature Interface
2	Handler Interface	6	Grounding Wire
3	RS232/485 Serial Interface	7	Multi-channel scanning test terminal
4	LAN Interface		

3. Product Function

Various Mode

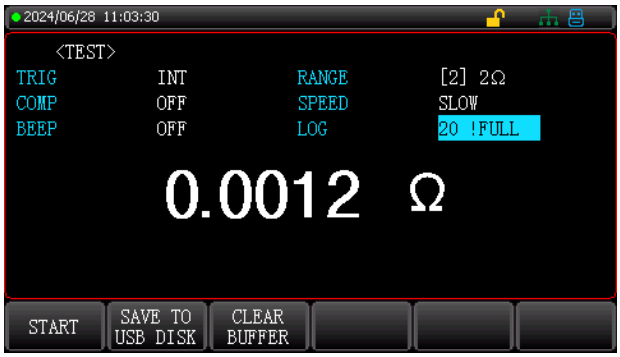
Five modes: R, R-T, T, LPR, and LPR-T.

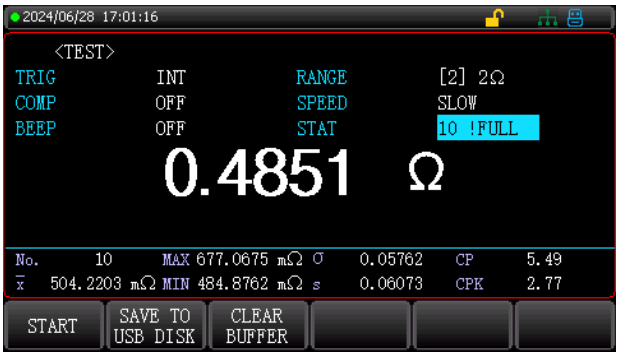
LPR is a low-voltage test mode designed to effectively protect of the DUT (Device Under Test).

6 BINs Comparison

Built-in comparator BIN allows for setting comparison results for 6 BINs. The measured component can be divided into 7 BINs: BIN1, BIN2, BIN3, BIN4, BIN5, BIN6, and NG.

Recording and Statistics Function

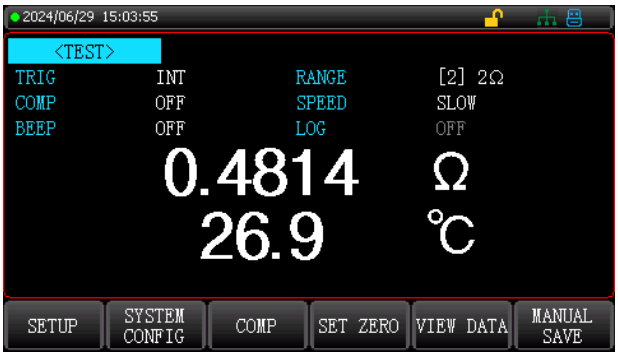


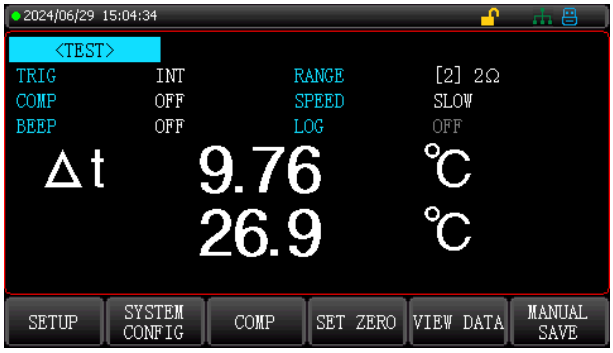


Recording: Up to 10,000 group of data can be recorded.

Statistics: Up to 10,000 group of data can be counted, and the process capability index can be calculated.

Temperature Correction and Temperature Conversion





Temperature Correction: This function compensates measurement bias caused by the temperature variations. It converts the resistance measured under the current ambient temperature to the resistance at a user-defined temperature.

Temperature Conversion: This function converts the change in resistance value into the difference between the internal temperature of the DUT and the ambient temperature, using the thermal effect of the resistor.

4. Technical Index

UT3513+(Range 0-6), UT3516+(Range 0-8)								
Range		Maximum Display	Resolution	Accuracy			Test Current	Open-circuit Voltage on Test End
				Fast	Medium	Slow		
0	20 mΩ	22.000 mΩ	1 μΩ	0.8 % ± 5	0.2 % ± 5	0.1 % ± 3	1A	< 1 V
1	200 mΩ	220.00 mΩ	10 μΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	1A	< 1 V
2	2 Ω	2.2000 Ω	100 μΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	100 mA	< 1 V
3	20 Ω	22.000 Ω	1 mΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	10 mA	< 2.7 V
4	200 Ω	220.00 Ω	10 mΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	1 mA	< 2.7 V
5	2 kΩ	2.2000 kΩ	100 mΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	1 mA	< 2.7 V
6	20 kΩ	22.000 kΩ	1Ω	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	100 μA	< 2.7 V
7	200 kΩ	220.00 kΩ	10 Ω	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	10 μA	< 2.7 V
8	2 MΩ	2.2000 MΩ	100 Ω	0.8 % ± 5	0.2 % ± 5	0.1 % ± 5	1 μA	< 2.7 V
(LPR Mode) UT3513+ and UT3516+ are the same range								
Range		Maximum Display	Resolution	Accuracy			Test Current	Open-circuit Voltage on Test End
				Fast	Medium	Slow		
0	2Ω	2.2000 Ω	100 μΩ	0.8 % ± 5	0.5 % ± 5	0.2 % ± 5	10 mA	< 40 mv
1	20 Ω	22.000 Ω	1 mΩ	0.8 % ± 5	0.5 % ± 5	0.2 % ± 5	1 mA	< 40 mv
2	200 Ω	220.00 Ω	10 mΩ	0.8 % ± 5	0.5 % ± 5	0.2 % ± 5	100 uA	< 40 mv
3	2 kΩ	2.2000 kΩ	100 mΩ	0.8 % ± 5	0.5 % ± 5	0.2 % ± 5	10 μA	< 40 mv
Range Mode			Auto, manual, and nominal Value					
Maximum Reading			22, 000					
Calibration			Short-circuit full ranges					
Beeper			OFF, Pass, and Fail					
Sorting								

	Three outputs: High (higher than the upper limit), Low (lower than the upper limit), and Pass. Sorting result: BIN1--BIN6, and NG
Compare Mode	Absolute deviation, percentage deviation, and sequence mode
Trigger Mode	Internal trigger, external trigger
Test Speed	High speed: 10 ms/time， Fast speed: 17ms/ time， Medium speed: 56ms/ time， Slow speed: 334 ms/ time
Test Terminal	Four terminals
Interface	HANDLER, RS-232, RS485, LAN, and PT1000
Supply Voltage Frequency	AC100-240 V 50/60 Hz
Temperature/Humidity Index	Temperature: 18℃--28℃， Humidity: < 65% RH.
Operating Temperature	0℃--40℃
Storage Temperature	-20℃--60℃
Operating Humidity	10--80% RH.
Storage Humidity	10--90% RH.
Operating Altitude	≤ 2000m
Standard Accessories	Kelvin low resistance test clips
	PT1000 temperature line (only for UT3516+)
	RS232 communication wire
Size	348.5 mm*215*88 mm
Weight	2.5 kg

UT3515-Sx Series, Single mode: 0-8 range, Scan mode: 0-7 range								
Range		Maximum Display	Resolution	Accuracy			Test Current	Open-circuit Voltage on Test End
				Fast	Medium	Slow		
0	20 mΩ	22.000 mΩ	1 μΩ	0.8 % ± 5	0.2 % ± 5	0.1 % ± 3	1A	< 1 V
1	200 mΩ	220.00 mΩ	10 μΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	Single Mode 1A Scan Mode100mA	< 1 V
2	2 Ω	2.2000 Ω	100 μΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	100 mA	< 1 V
3	20 Ω	22.000 Ω	1 mΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	10 mA	< 2.7 V
4	200 Ω	220.00 Ω	10 mΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	1 mA	< 2.7 V
5	2 kΩ	2.2000 kΩ	100 mΩ	0.5 % ± 5	0.1 % ± 3	0.05 % ± 2	1 mA	< 2.7 V

6	20 kΩ	22.000 kΩ	1Ω	0.5%±5	0.1%±3/0.3% ±5 (scan)	0.05%±2/0.1% ±5 (scan)	100 μA	< 2.7 V
7	200 kΩ	220.00 kΩ	10 Ω	0.5%±5/0.8%± 10 (scan)	0.1%±3/0.5% ±5 (scan)	0.05%±2/0.2% ±5 (scan)	10 μA	< 2.7 V
8	2 MΩ	2.2000 MΩ	100 Ω	0.8 % ± 5	0.2 % ± 5	0.1 % ± 5	1 μA	< 2.7 V

Range Mode	Auto, manual, and nominal
Maximum Reading	22, 000
Calibration	Short-circuit full ranges
Beeper	OFF, Pass, and Fail
Sorting	Three sorting results: H (exceed the upper limit), L (exceed the lower limit), and P(Pass).
Compare Mode	Absolute deviation, percentage deviation, and sequence mode
Trigger Mode	Internal trigger, external trigger
Test Speed	High speed: 10 ms/time， Fast speed: 17ms/ time， Medium speed: 56ms/ time， Slow speed: 334 ms/ time
Temperature Test Speed	(100±10)ms/time
Test Terminal	Four terminals
Interface	HANDLER, RS-232/RS485, LAN, and PT1000
Supply Voltage Frequency	AC100-240V 50/60 Hz
Temperature/Humidity Index	Temperature: 18℃--28℃， Humidity: < 65% RH.
Operating Temperature	0℃--40℃
Storage Temperature	-20℃--60℃
Operating Humidity	20--80% RH.
Storage Humidity	10--90% RH.
Operating Altitude	≤ 2000m
Standard Accessories	Kelvin low resistance test clips
	PT1000 temperature line
	RS232 communication wire
Size	348.5 mm*215*88 mm
Weight	2.65 kg

Zero adjustment: Pre-test zero clearing

Warm-up time: >30 minutes

Temperature test accuracy: 0.2% ±0.1℃

The measurement accuracy is the basic measurement accuracy listed in the table below multiplied by the temperature correction factor K listed in the table below:

Temperature （℃）	0--5	5--18	18--28	28--35	35--40
Temperature correction K	4	2	1	2	4

5. Accessory

Article	Quantity	Remarks
Bench Top Micro Ohm Meter	1 pcs	
Power cord	1 pcs	
RS232C communication wire	1 pcs	
Kelvin test wire	1 pair	
Temperature sensor PT1000	1 pcs	Only for UT3516+ and UT3515-Sx Series
Quick Start Guide	1 pcs	
Multi-channel wire terminal	1 set	According to channel quantity
User's Manual	0 pcs	The electronic file can be downloaded from UNI-T 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 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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