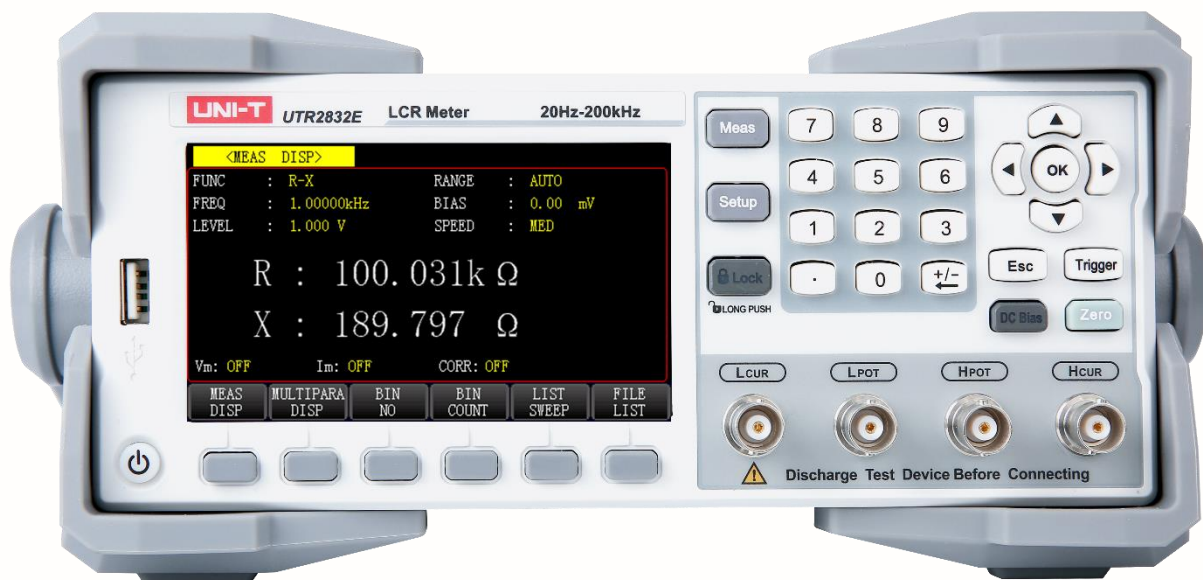


# UNI-T®

Instruments.uni-trend.com



## Datasheet

### UTR2830 Series Digital LCR Meter

# 1. Main Features

- 4.3 inch TFT - LCD, concise operation panel
- Maximum test frequency: 300kHz
- Basic accuracy: 0.05%
- Testing speed: 12.5ms/time
- Internal resistance: 30Ω, 50Ω, 100Ω
- 10 BIN sorting, count, PASS/FAIL
- Soft power switch
- DCR function
- Multiple interfaces: RS232, HANDLER, USB HOST, USB DEVICE, LAN

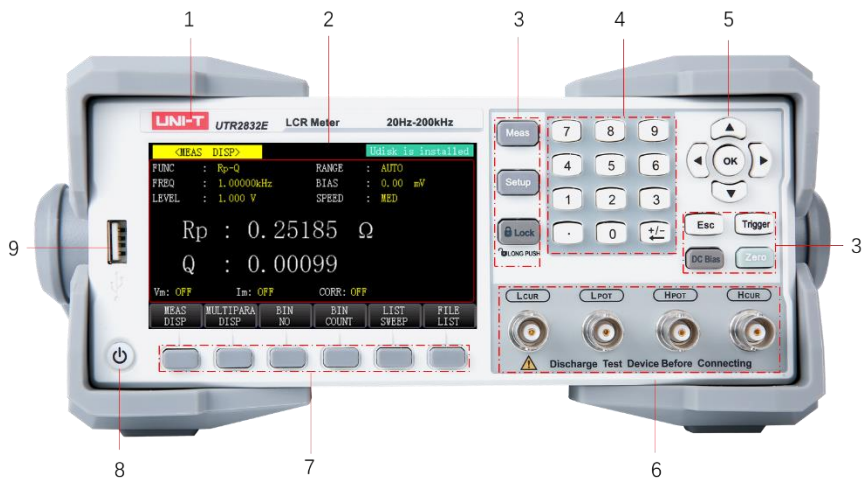
# 2. Product Introduction

UTR2830 series LCR is a new generation of low-frequency component measurement instruments. It has the advantages of small size, light weight, beautiful appearance, easy operation, ultra-high cost performance and good test stability. It can meet the needs of production line quality assurance, incoming and outgoing quality inspection and automatic production.

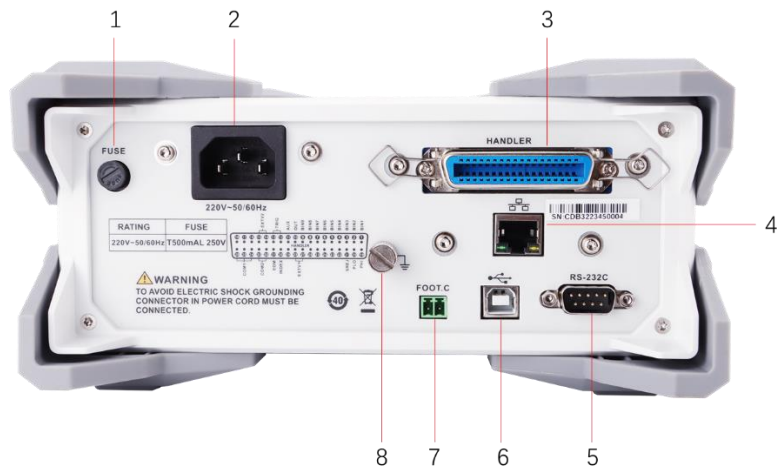
Application field

Passive component: evaluation of impedance parameters of capacitor, inductor, magnetic core, resistor, piezoelectric device, transformer, chip assemblies and network components, etc.

Other component: evaluation of impedance parameters of printed circuit board, relay, cable and battery, etc.



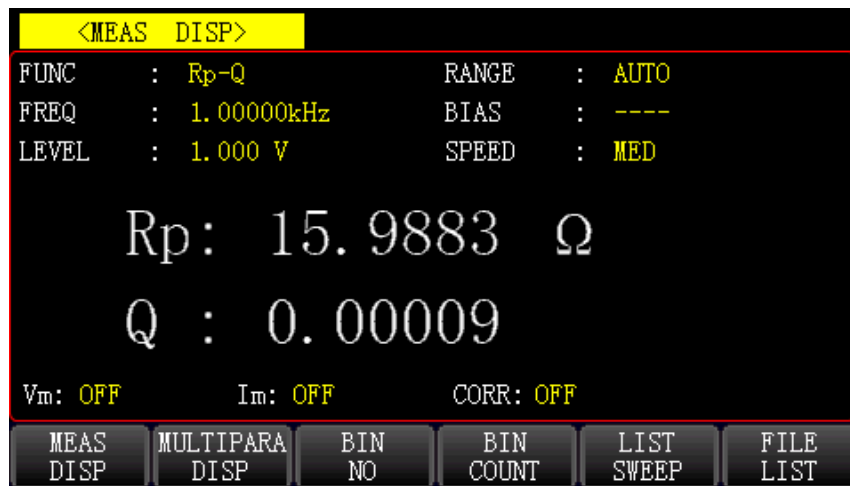
No.	Name	No.	Name
1	Nameplate	6	Test terminal
2	Display screen	7	Functional key of screen
3	Function key	8	Power switch
4	Numerical keyboard	9	USB HOST
5	Arrow key and OK key		



No.	Name	No.	Name
1	Fuse	5	RS232 interface
2	AC 220/110V power socket	6	USB DEVICE interface
3	HANDLER interface	7	3.81 plug-in terminal
4	Network interface	8	Ground terminal

### 3. Design Highlight

#### Measurement Display

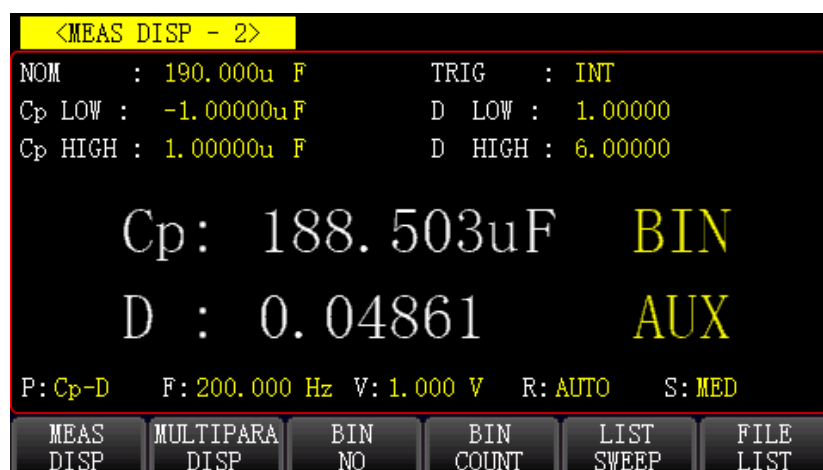


Double parameter display



Multiple parameter judgment and test result display

#### Comparator



UTR2830 series built-in comparator function divides the DUT to 10 BIN (BIN1 to BIN9 and BIN OUT). It can set the limit of 9 set of primary parameter and one pair of secondary parameter.

When the comparator function is enabled (ON), the sorted result will display on the measurement display 2 and BIN NO. page. The sorted result can also be output via HANDLER interface. The automatic sorting test can be realized when the test result is output to the automatic test system.

## List Sweep

<LIST SWEEP DISP>					
MODE : SEQ					
No.	FREQ[Hz]	LEVEL[V]	C <sub>p</sub> [F]	D[-]	CMP
001	1.00000k	1.000	180.805u	0.14451	P
*002	800.000	1.500	179.618u	0.11867	P
003	200.000	1.000	188.536u	0.04859	P
004	---	---	---	---	---
005	---	---	---	---	---
006	---	---	---	---	---
007	---	---	---	---	---
008	---	---	---	---	---
009	---	---	---	---	---
010	---	---	---	---	---

MEAS DISP MULTIPARA DISP BIN NO BIN COUNT LIST SWEEP FILE LIST

The list sweep function can perform automatic sweep test of up to 201 points of test frequency, test level or DC bias.

The test point is automatically swept and the test result is compared to the limit. During the test, the data change and judgment result will be displayed on the screen.

In list sweep, an icon "\*" on the left indicates the currently test point.

## Bin Count

<BIN COUNT DISP>			
FUNC : C <sub>p</sub> -D		NOM. : 180.000u	F COUNT : ON
BIN	LOW [F]	HIGH [F]	COUNT
1	-1.00000u	1.00000u	0
2	-2.00000u	2.00000u	17
3	-3.00000u	3.00000u	0
4	-----	-----	0
5	-----	-----	0
6	-----	-----	0
7	-----	-----	0
8	-----	-----	0
9	-----	-----	0
2nd	-----	-----	0
AUX :	OFF	OUT :	0

OFF ON RESET COUNT

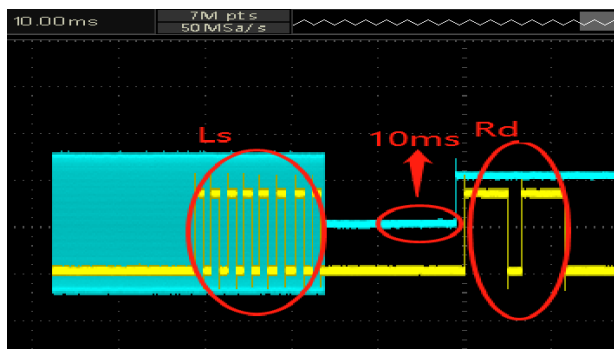
Bin count function can automatically count and display the number during the sorting test.

This page is related to the LIMIT SETUP page, so the parameter setting on the LIMIT SETUP page will be synchronized with the BIN COUNT DISP page.

The sorted result will directly display on BIN COUNT DISP page.

## Trigger Delay

<MEAS SETUP>			
FUNC :	Rp-Q	RANGE :	AUTO
FREQ :	1.00000kHz	BIAS :	----
LEVEL :	1.000 V	SPEED :	MED
TRIG :	INT	AVG :	1
ALC :	OFF	Vm/Im :	OFF
Rsou :	100Ω	DC RNG :	AUTO
TRIG DLY :	10ms	DC LEV :	1.000 V
STEP DLY :	0ms	REF A :	0.00000pΩ
DEV A :	OFF	REF B :	0.00000p



Trigger Delay: The delay between when the instrument starts to output the excitation signal and when the measurement starts.

## 4. Technical Specification

Model		UTR2830E	UTR2832E	UTR2833E
Display screen		4.3 TFT LCD 480×272	4.3 TFT LCD 480×272	4.3 TFT LCD 480×272
Frequency of test signal frequency	Test frequency	20Hz ~ 100kHz(± 0.02%) (continuous frequency point)	20Hz ~ 200kHz(± 0.02%) (continuous frequency point)	20Hz ~ 300kHz(± 0.02%) (continuous frequency point)
	Minimum resolution	100mHz	100mHz	100mHz
Accuracy		LCRZ 0.05%, DCR 0.1%	LCRZ 0.05%, DCR 0.1%	LCRZ 0.05%, DCR 0.1%
AC level	Voltage range of test signal	10mVrms - 2Vrms	10mVrms - 2Vrms	10mVrms - 2Vrms
	Minimum resolution of voltage	10mV	10mV	10mV
	Accuracy	10% x the set voltage + 2mV	10% x the set voltage + 2mV	10% x the set voltage + 2mV
	Current range of test signal	100μArms - 20mArms	100μArms - 20mArms	100μArms - 20mArms
	Minimum resolution of current	0.1mA	0.1mA	0.1mA
DC level	Voltage range of test signal	1V	50mV - 2V	50mV - 2V
Internal resistance of AC	ISO ON	100Ω	100Ω	100Ω
	ISO OFF	30Ω / 50Ω / 100Ω	30Ω / 50Ω / 100Ω	30Ω / 50Ω / 100Ω
DC bias voltage	Range of Voltage / Current	--	0V - ± 5V	0V - ± 5V
	Resolution	--	1mV	1mV
	Accuracy of voltage	--	1% x the set voltage + 5mV	1% x the set voltage + 5mV
Internal resistance of DCR		100Ω	100Ω	100Ω
Testing parameter		L, C, R,  Z , D, Q,  Y , G, X, θd, θr, RDC, Vm, Im, Δ%		
Testing speed (ms/time)		Fast speed: 12.5ms; Medium speed: 83ms; Slow speed: 167ms		
Display range		Display range: R, X,  Z : 0.00001Ω ~ 99.9999MΩ; G, B,  Y : 0.00001μS ~ 99.9999S;		

	L: 0.00001uH ~ 99.9999kH; C: 0.00001pF ~ 9.99999F; D: 0.00001 ~ 9.99999; Q: 0.00001 ~ 99999.9; $\theta d$ : - 179.999° ~ 179.999°; $\theta r$ : - 3.14159 ~ 3.14159; DCR: 0.00001Ω ~ 999.999MΩ; $\Delta$ %: - 999.999% ~ 999.999%
V/I monitoring	√
Test lead	5 - end
Zero clearing	Open - circuit, short - circuit, load
List sweep	201 counts, scanning parameter: test frequency, AC voltage, AC current, DC BIAS voltage, DC BIAS current
Equivalent circuit	Serial connection, parallel connection
Picture scanning analysis	--
Range mode	Auto, Hold
Trigger mode	Internal, manual, external, bus
Average number	1~255
Mathematical operation	Direct reading, $\Delta$ ABS, $\Delta$ %
Delay	Trigger delay, step delay: 0 - 60.000s, step by 1 ms
Comparator	10 BIN sorting, BIN1 - BIN9, NG, AUX, BIN count, PASS, FAIL display with LED on the front panel
Storage	Internal: 100 sets of instrument built-in test setup files, results of 201 test USB: setup file, BMP, CSV data file
Interface	RS232, HANDLER, USB HOST, USB DEVICE, Network port
Judgment function	PASS / FAIL
Size	350*215*88mm
Weight	4.65 kg
Other function	L - RDC concurrent testing, soft power switch, one - key screenshot, data record

## 5. Accessory

Article	Quantity	Remarks
LCR meter	1 pcs	
Power cable	1 pcs	
RS232C communication wire	1 pcs	
USB communication wire	1 pcs	
Short-circuit plate	1 pcs	
0 meter test fixture	1 pcs	
1 meter test clip	1 pcs	
Spare fuse	2 pcs	110V 1A, 220V 0.5A
Packing List	1 pcs	
Certification of Calibration	1 pcs	
Multi Language Safety Precaution	1 pcs	
User's manual	0 pcs	Electronic file can download from official website

## 6. Contact US

### Warranty Service

If the LCR is under warranty or is covered by a maintenance contract, it will be repaired under the terms of warranty as below. If the LCR is no longer under warranty, UNI-T will notify you of the cost of repair after examining the LCR.

UNI-T UTR2830 series LCR provide 3- year warranty for mainframes and 1-year warranty for accessories as standard.

The above warranty applies to all UNI-TREND test measurement instrument products procured through the UNI-TREND authorized distributors. Product purchased from outside the UNI-TREND instruments network will be serviced by the selling agents and not UNI-TREND TECHNOLOGY. Please Go to UNI-T official website ->instruments->support->Where to buy to find the authorized test and measurement instrument distributors.

Learn more at: [www.uni-trend.com](http://www.uni-trend.com)

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<https://instruments.uni-trend.com/ContactForm/>



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