



# Datasheet

UTR2810+ Series Digital LCR Meter

V1.0 2024-07-10

### 1. Main Features

2.8" TFT true color LCD

Multiple measurement frequency: 100Hz, 120Hz, 1kHz, 10kHz, accuracy: 0.02%

Highest measurement accuracy: 0.1%

The main and auxiliary parameters can be matched freely, with 42 combinations in total

Test speed: slow / medium / fast

The fastest test speed is 33 times / s

Automatic LCR measurement function

Comparator function (4th gear sorting)

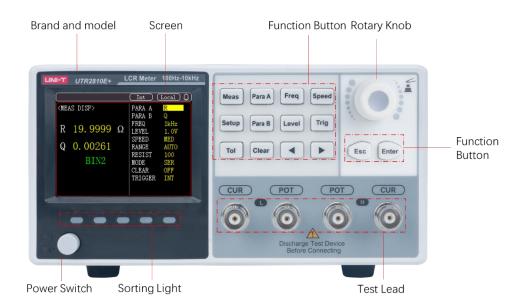
UTR2810E can send sorting signal through Handler interface

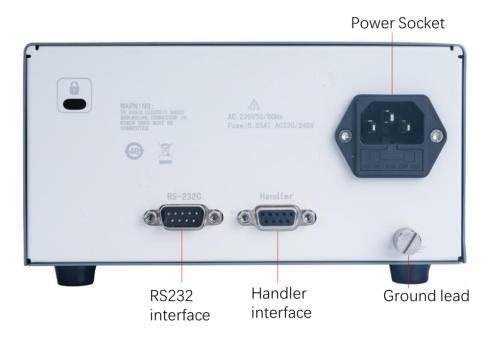
UTR2810E can be connected to the upper computer for statistical analysis

UTR2810E has bus trigger and external trigger functions

### 2. Product Overview

UTR2810+ series LCR digital bridge is a new generation of low frequency component measuring instrument. Small size, light weight, beautiful appearance, simple operation, ultrahigh cost performance and good test stability. It can meet the needs of production line quality assurance, incoming material inspection and automatic production.





# 3. Design Highlights

Four stage sorting

The full series of UTR2810+ is equipped with four gear sorting comparators, BIN1, BIN2, BIN3, NG. Cooperate with auxiliary parameter AUX to realize multi-stage sorting function. Help you better and more carefully control the quality of electronic components.

[			nt ) (Local	I) (L)	[			Int (	Local Q)
<tolera PARA A</tolera 	NCE> R	STAND	+000.000	Ω	<me<i>i</me<i>	AS DISP>		PARA A PARA B	R Q
PARA B	Q ABS	COMP	ON ON	32	R	10.0157	Ω	FREQ	9 1kHz 1.0V
LOW	[Ω]	HIGH	[Ω]		Q	0.00265		SPEED RANGE	MED AUTO
BIN1 BIN2	+010.000	BIN1 BIN2 BIN2	+015.000			BIN1		RESIST	100 SER
BIN3 AUX	+000.000 +000.000	BIN3 AUX	+000.000 +000.000	[-]				CLEAR TRIGGER	OFF INT

#### 2.8inch TFT LCD display

UTR2810+ series is equipped with 2.8inch full-color LCD display. More parameters are displayed, and the color discrimination of measurement results is more intuitive. It is more conducive to human-computer interaction and improve the use experience.

	Int Local Q	[			Int (	Local 🗘
<pre><system setting=""></system></pre>		<me.< td=""><td>AS DISP&gt;</td><td></td><td>PARA A</td><td>R</td></me.<>	AS DISP>		PARA A	R
COMMUNICATION MODE	RS232				PARA B	Q
BAUD RATE	115.2k	Б	6 67604	$\sim$	FREQ	1kHz
PASS SOUND	ON	ĸ	6.67604	55	LEVEL	1.0V
FAIL SOUND	ON	~	0.00074		SPEED	MED
KEY SOUND	ON	Q	0.00274		RANGE	AUTO
LANGUAGE	ENGLISH				RESIST	100
DEFAULT SETTING	ENTER		NG		MODE	SER
AUTO LCR	OFF				CLEAR	OFF
SAVE SET	OFF				TRIGGER	INT
SYS INFO	HWV2.2 SWV1.6					

#### Full screen display

Long press the [Meas] key, the test result could be displayed in full screen.

	Int (	Local 🗘				Int (	Local
<meas disp=""></meas>	PARA A	R	< MEAS	DISP>			
D 0 05001 0	PARA B FREQ	Q 1kHz		FREQ	1kHz	LEVEL <mark>O</mark>	.3V
R 0.37621 Ω	LEVEL	0.3V	D	$\mathbf{O}$	27	608	$\cap$
Q 0.00296	SPEED RANGE	SLOW AUTO					22
·	RESIST	100	$\mathbf{O}$	$\cap$	00	295	
	MODE CLEAR	SER OFF	Q	U		200	
	TRIGGER	INT					

#### High measurement accuracy

The basic accuracy of UTR2810+ series measurement can reach 0.1%. Provide multi frequency, multi-level, multi internal resistance and other measurement parameters. Make the measurement results more accurate and meet a variety of application scenarios

<pre><meas disp=""> PARA A C <meas disp=""> PARA A R</meas></meas></pre>	<u>1 J Q</u>
Cs 353. 491uFPARA B FREQQ IkHz LEVELR19. 99999ΩPARA B FREQQ IkHz LEVELQ7. 18589MED RANGEAUTO RESISTR19. 09999ΩPARA B FREQQ IkHz LEVELQQ0. 00261 RESISTRANGE RANGEQ0. 00261 RANGERANGE RANGEAUTO RESISTNODE RANGESPEED MED RANGENODE RANGESPEED RANGENODE RANGENODE RANGENODE RANGESPEED RANGENODE RANGESPEED RANGENODE RANGENODE RANGENODE RANGENODE RANGENODE RANGENODE RANGENODE RANGENODE RANGENODE RANGENODE RANGENODE RANGE <th>Hz DV D TO D R R</th>	Hz DV D TO D R R

#### Remote control

The UTR2810E+ uses the RS232 interface to connect the upper computer, so as to realize remote control. With the host computer software, the data record and filtering can be displayed at the same time. Support SCPI protocol, which can be applied to automatic construction.

File – System	1 ~		UNIT,UTR28	10E+,CDB2024140002,REVA2	2.8				- 6
Para A	c ~		C:43.1838u			Q:10.66	86		
Para B	a ~					COMP	OET		
F		id	Date	С	Q	CONF	3E1		
Freq	1.00E+03 ~	11	2024:06:25 17:22:24	43.1793u	10.6611	Nominal	0		
.evel	1V ~	12	2024:06:25 17:22:25	43.1814u	10.6661	Comp Mode	ABS		
Range	AUTO V	13	2024:06:25 17:22:26	43.1854u	10.6662		с		Q
Speed	MED V	14	2024:06:25 17:22:27	43.1838u	10.6686	Comp Switch	OFF	<ul> <li>Comp Switch</li> </ul>	OFF V
Resist	100 ~					High1	0	High	0
lode	PAR V					Low1	0	Low	0
īme	1S ~					High2	0		
Pause						Low2	0		
						High3	0		
		< 1 2 >				Low3	0		
							Set		

### 4. Technical Index

Model		UTR2811E+	UTR2810E+		
Test signal	Frequency	100Hz,120Hz,1kHz,10kHz	100Hz,120Hz,1kHz,10kHz		
frequency Accuracy		0.02%	0.02%		
AC level Voltage		0.1V,0.3V,1V	0.1V,0.3V,1V		
	range				
	Accuracy	±10%×set value	±10%×set value		
Internal	Resistanc	30Ω / 100Ω	30Ω / 100Ω		
resistance of e					
AC source Accuracy		±5%	±5%		
Measurement p	parameters	Main parameters:	Main parameters:		
		Cp,Cs,Lp,Ls,Z,R,G,Y	Cp,Cs,Lp,Ls,Z,R,G,Y		
		Secondary parameters:	Secondary parameters:		
		D,Q,X,B,Rp,Rs, <b>θ</b> r, <b>θ</b> d	D,Q,X,B,Rp,Rs, <b>θ</b> r, <b>θ</b> d		
		Auto LCR	Auto LCR		
		Free collocation of main and	Free collocation of main and		
		auxiliary parameters	auxiliary parameters		
Test speed (ms	: / time)	Fast: 43ms; Medium speed:	Fast: 43ms; Medium speed:		
		185ms; Slow speed: 350ms	185ms; Slow speed: 350ms		

	1				
Display range	R, X,  Ζ : 0.00001Ω ~	R, X,  Ζ : 0.00001Ω ~			
	99.9999M <b>Ω</b> ;	99.9999MA;			
	G, B,  Y  : 0.00001uS ~	G, B,  Y  : 0.00001uS ~			
	999.999S;	999.999S;			
	L: 0.00001uH~9.99999kH;	L: 0.00001uH~9.99999kH;			
	C: 0.00001pF~999.999mF;	C: 0.00001pF~			
	D: 0.00001~9.99999;	999.999mF;			
	Q: 0.00001~99999.9;	D: 0.00001~9.999999;			
	<b>θ</b> d: -179.999°~179.999°;	Q: 0.00001~99999.9;			
	<b>θ</b> r: -3.14159 ~ 3.14159;	θd: -179.999°~179.999°;			
		<b>θ</b> r: -3.14159 ~ 3.14159;			
Basic accuracy	C: 0.1% (1+ Cx/Cmax+ Cmin/Cx	(1+Dx ( 1+ks+kv+kf )ke			
	L: 0.1% (1+ Lx/Lmax+ Lmin/Lx )	(1+1/Qx )( 1+ks+kv+kf )ke			
	Z: 0.1% (1+ Zx/Zmax+ Zmin/Zx )	(1+ks+kv+kf )ke			
	R: 0.1%(1+ Rx/Rmax+ Rmin/Rx ((1+Qx)(1+ks+kv+kf )ke				
	D: 0.0010(1+ Zx/Zmax+ Zmin/Zx (1+Dx+Dx2 (1+ks+kv+kf )ke				
	Q: 0.0015(1+ Zx/Zmax+ Zmin/Zx ((Qx+1/Qx ((1+ks+kv+kf )ke				
Test end configuration	Open circuit, short circuit	Open circuit, short circuit			
Clear function	Open circuit, short circuit	Open circuit, short circuit			
Equivalent mode	Series, parallel	Series, parallel			
Range mode	Hold, auto	Hold, auto			
Trigger mode	Internal manual				
	Internal, manual	Internal, manual, external,			
Mathematical operation	mternal, manual	Internal, manual, external, bus			
	Direct reading, $\triangle ABS$ , $\triangle \%$				
Comparator		bus			
· · ·	Direct reading, ∆ABS, ∆%	bus Direct reading, ∆ABS, ∆%			
· · ·	Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1-	bus Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1-			
· · ·	Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear	bus Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear			
· · ·	Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel	bus Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel			
Comparator	Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel	bus Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display			
Comparator	Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display -	bus Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display RS232、HANDLER			
Comparator	Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display -	bus Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display RS232、HANDLER Statistical analysis of upper			
Comparator Interface Upper computer function	Direct reading, ∆ABS, ∆% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display -	bus Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display RS232、HANDLER Statistical analysis of upper computer			
Comparator Interface Upper computer function	Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display - - 110V/220V 50/60Hz 20W-	bus Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display RS232、HANDLER Statistical analysis of upper computer 110V/220V 50/60Hz 20W-			
Comparator Interface Upper computer function Power	Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display - - 110V/220V 50/60Hz 20W- 30W	bus Direct reading, △ABS, △% Para A 4-gear sorting, BIN1- BIN3, NG, Para B 2-gear sorting, AUX, NG, front panel LCD display RS232、HANDLER Statistical analysis of upper computer 110V/220V 50/60Hz 20W- 30W			

## 5.Accessory

Name Number		Description
UTR-001 1		Short circuit board (UTR2810E+)
UTR-L10kE	1	Kelvin test cable with crocodile clip
UTR-S100KE 1		4-wire test box (UTR2810E+)
Communication cable 1		RS232 Communication cable (UTR2810E+)
Power cable	1	Fits the standard of destination country
Fuse 2		0.25A for 220V, 0.5A for 110V

### 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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