

# Component Parameter Test Instruments

## A. TH2827 Series of Precision LCR Meter

### Features

- 4.3-inch TFT LCD display
- Selectable Chinese and English operation interfaces
- Maximum test frequency of 1MHz, resolution of 10mHz
- Balance test function
- Transformer parameter test function
- Maximum test speed: 13ms/time
- Automatic level control (ALC) function for V and I
- Test signal level monitor function for V and I
- Included interior DC bias source
- External DC bias source of large current
- 10-point list sweep function
- Selectable internal resistance of 30Ω, 50Ω and 100Ω
- Internal file storage and external USB-disk file storage
- Test data can be saved to USB-disk directly
- RS232C, USB, LAN, HANDLER, GPIB, DCI interface



**TH2827 Series**

### Brief Introduction

■ TH2827 series is a new precision LCR meter with various functions and a higher test frequency. With small size and portable appearance, it is convenient for use on the shelves. This instrument has a basic accuracy of 0.05%, maximum test frequency of 1MHz and resolution of 10 mHz. It is easy to operate with a 4.3-inch LCD screen as well as selectable Chinese and English operation interfaces. Integrated transformer test function and balance test function greatly improve the test efficiency. The instrument is also provided with multiple interfaces which can meet various requirements of the automatic sorting test, data transmission and storage.

### Specifications

Display		800×RGB×480 7-inch TFT LCD display	
Frequency of test signal	TH2827A	20Hz—300kHz	
	TH2827B	20Hz—500kHz	
	TH2827C	20Hz—1MHz	
	Minimum resolution	10mHz, 4-digit frequency input	
	Accuracy	0.01%	
AC Level	Voltage range of test signal		10mV—2Vrms
	Minimum resolution of voltage		100μV, 3-digit input
	Accuracy	ALC ON	10% x set voltage + 2mV
		ALC OFF	6% x set voltage + 2mV
	Current range of test signal		100μA—20mA
	Minimum resolution of current		1μA, 3-digit input
	Accuracy	ALC ON	10% x set current + 20μA
		ALC OFF	6% x set voltage + 20μA
DC bias voltage source	Voltage /Current range		0V— ±5V / 0mA—±50mA
	Resolution		0.5mV / 5μA
	Voltage accuracy		1% x set voltage + 5mV
	ISO ON		Be used for the bias test of inductance and transformer
AC Source impedance	ISO ON	100Ω	
	ISO OFF	30Ω、50Ω、100Ω selectable	
DCR source impedance		30Ω、50Ω、100Ω selectable	
Test parameters of LCR		Z ,  Y , C, L, X, B, R, G, D, Q, θ, DCR, Vdc-Idc	
Parameter display of test page		One set of main/sub parameter, 10-point list sweep	
Test parameters of transformer		DCR1(primary, 2-terminal), DCR2(secondary, 2-terminal), M (mutual inductance), N, 1/N, Phase, Lk(leakage inductance), C(primary, secondary capacitance), balance test	

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Basic accuracy	LCR test parameter	0.05%
	N	0.1%
	Calibration	Warm-up time $\geq 30$ seconds; Environment temperature: $23\pm 5^{\circ}\text{C}$ ; Signal voltage: 0.3Vrms-1Vrms; Zeroing: After OPEN or SHORT; Length of test cable: 0 m
Measurement time ( $\geq 10$ kHz)		Fast: 13 ms / time Medium: 67 ms / time Slow: 187 ms / time Plus the refresh time of display character
Display range of LCR parameter	Z , R, X, DCR	0.00001 $\Omega$ — 99.9999M $\Omega$
	Y , G, B	0.00001 $\mu\text{s}$ — 99.9999s
	C	0.00001pF — 9.99999F
	L	0.00001 $\mu\text{H}$ — 99.9999kH
	D	0.00001 — 9.99999
	Q	0.00001 — 99999.9
	$\theta(\text{DEG})$	-179.999 $^{\circ}$ — 179.999 $^{\circ}$
	$\theta(\text{RAD})$	-3.14159 — 3.14159
	$\Delta\%$	-999.999% — 999.999%
	Equivalent circuit	Serial, Parallel
Range mode	Auto, Hold	
Trigger mode	Internal, Manual, External, Bus	
Average times	1–255	
Calibration function	Open, short calibration with full frequency or dot frequency, Load	
Math operation	Direct reading, $\Delta\text{ABS}$ , $\Delta\%$	
Delay time setup	0–999, minimum resolution: 100us	
Comparator	10-bin sorting, BIN1–BIN9, NG, AUX	
	Bin counter	
	PASS/FAIL on front panel, LED indication	

List sweep	<ul style="list-style-type: none"> <li>·10 points list sweep</li> <li>·Frequency, AC voltage/current, internal/external bias voltage/current can be swept.</li> <li>·Each sweep point can be sorted separately.</li> </ul>		
Internal nonvolatile memory	100 sets of LCRZ setting files 201 times test results		
External USB memory	GIF files LCRZ setting files Test data can be stored via USB memory directly.		
Interface	I/O interface	HANDLER on rear panel	
	SCI	USB, RS232C	
	PCI	GPIB (optional)	
	NI	LAN	
	Memory interface	USB HOST (front panel)	
	Bias current source control interface DCI	External DC bias current source can be controlled by using DCI interface. The maximum bias current can reach 120A.	
		Option. Only choose either DCI or GPIB	
General Specifications			
Operating temperature and humidity		0 $^{\circ}\text{C}$ — 40 $^{\circ}\text{C}$ , $\leq 90\%$ RH	
Power supply	Voltage	99V–121V, 198V–242V AC	
	Frequency	47Hz–63Hz	
Consumption		Max. 80 VA	
Dimension(W×H×D)		280 mm × 88 mm × 370 mm (with no sheath) 369 mm × 108 mm × 408 mm (with sheath)	
Weight		Approx. 5 kg	