TH2523/A Series

Battery Internal-Resistance Testers

A 1 kHz AC constant-current battery tester family for fast, repeatable resistance and voltage measurement on button cells, cylindrical cells, battery packs and modules — from incoming inspection to production-line sorting and R&D discharge-curve monitoring. 4-terminal Kelvin measurement removes test-lead impedance from the reading, and TH2523A extends the voltage range to cover high-voltage EV and e-bike battery packs.

Rack mount: 215(W) × 88(H) × 335(D) mm · Bench: 235(W) × 105(H) × 360(D) mm · 3.6 kg



- **0.1% basic accuracy** on R, **0.05%** on V; 1 µΩ / 100 µV resolution
- 1 kHz AC constant-current source test method, five auto-ranged test currents
- 11 parameter combinations: R, V, R-V, R-Q, L-Q, L-R, R-X, C-D, R-C, Z-θ°, Z-θr
- Test speed up to **20 ms** (FAST, ≈50 rdg/s)
- 4-terminal (Kelvin) test — unaffected by test-lead impedance
- Contact check flags a poor test-lead connection during measurement
- REL deviation deduction and reference-value math, short-circuit zeroing
- Real-time V/I monitor of the actual test voltage and current on the DUT
- Graphic trace scanning to monitor battery discharge curves over time
- 9-bin comparator with pass/fail sorting, audible alarm and CpK/Cp statistics

Two models, one platform

TH2523

Standard-voltage battery and cell testing

DC voltage range	6 V / 60 V
Max. input voltage	65 V
Basic accuracy	R: 0.1% · V: 0.05%
Impedance range	1 µΩ – 3.5 kΩ

TH2523A

Extended range for high-voltage packs

DC voltage range	30 V / 300 V
Max. input voltage	350 V
Basic accuracy	R: 0.1% · V: 0.05%
Impedance range	1 µΩ – 3.5 kΩ

Both models share the same 30 mΩ–3 kΩ impedance ranges, 1 kHz AC constant-current source, comparator, statistics and interface set — TH2523A simply widens the DC voltage measurement and withstand rating for higher-voltage battery packs and modules.

Applications

Cells & battery packs

Fast internal-resistance and voltage inspection for button/coin cells, cylindrical cells and battery packs used in phones, wearables, power tools and home appliances.

Battery R&D and degradation

Graphic trace scanning monitors resistance and voltage through a discharge cycle, with contact check safeguarding each reading during long unattended test runs.

High-voltage & production sorting

TH2523A covers EV and e-bike battery-pack voltages up to 350 V; the 9-bin comparator with HANDLER output supports automated go/no-go sorting on the line.

Technical specifications

Parameter	TH2523	TH2523A
Display	4.3" TFT LCD, 480 × 272, 24-bit color	
Displayed digits	R: 5 digits (Slow/Med, max. reading 35000), 4 digits (Fast, max. 3500) | V: 5 digits (Slow/Med, max. reading 31000), 4 digits (Fast, max. 3100)	
Basic accuracy	R: 0.1% V: 0.05%	R: 0.1% V: 0.05%
Test parameters	R, V, R-V, R-Q, L-Q, L-R, R-X, C-D, R-C, Z-θ° (deg), Z-θr (rad)	
Test signal frequency	1 kHz ± 0.2 Hz, sine wave	
Constant test current	100 mA / 10 mA / 1 mA / 100 µA / 10 µA (± 10%, auto-ranged)	
Impedance R / |Z| / X range	0.001 mΩ – 3.5000 kΩ	
— Inductance L range	0.2000 nH – 1 H	
— Capacitance C range	0.0001 pF – 9.9999 F	
— Quality factor Q / D	0.001 – 9999.9	
— Phase angle θ	Deg: −179.99° – 179.99° | Rad: −3.1416 – 3.1416	
DC voltage display range	0.0001 – 65.000 V	0.0001 – 350.000 V
Math functions	Direct reading, ΔABS (absolute deviation), Δ% (percent deviation)	
Impedance range (R)	30 mΩ / 300 mΩ / 3 Ω / 30 Ω / 300 Ω / 3 kΩ — Auto or Hold	
DC voltage range	6 V / 60 V — Auto or Hold	30 V / 300 V — Auto or Hold
Max. input voltage	65 V	350 V
Test speed	FAST ≈ 20 ms (50 rdg/s) · MED ≈ 100 ms (10 rdg/s) · SLOW1 ≈ 154 ms · SLOW2 ≈ 333 ms	
Averaging	1 – 255 readings	
Trigger mode	Internal, Manual, External (HANDLER / foot switch), Bus	
Operation modes	Test-lead contact check · DUT V/I monitor · REL deviation deduction · short-circuit zero · trigger delay · graphic trace scan with auto-stop limits	
Comparator	9 bins (BIN1–BIN9), sorting or single-bin (go/no-go) mode, high/low/pass beeper, HANDLER bin output	
Statistics	Mean, σ (population), s (sample) std. deviation, Cp, CpK, Hi/Lo/In counts, Max/Min with index — up to 30,000 readings	
Storage	Up to 102 setting files (internal + USB) · USB: CSV measurement data, GIF screen capture	
Warm-up time	≥ 30 minutes for rated accuracy	
Operating environment	0–40 °C, ≤ 75% RH, non-condensing	
Power supply	220 V AC ± 10%, 50/60 Hz, ≤ 30 VA · fuse T1AL 250 V	
Dimensions (rack / bench)	215 × 88 × 335 mm / 235 × 105 × 360 mm	
Weight	≈ 3.6 kg	

Interfaces

RS232	USB Host	USB Device	Handler	USBTMC / USBCDC	GPIB
standard	standard	standard	standard	standard*	optional

* USBTMC and USBCDC (virtual COM) run over the same rear-panel USB Device port as an alternative bus mode. HANDLER outputs bin-sort and comparator results for automated test cells.

Standard accessories

Item	Description
—	EU power cable (Schuko, CEE 7/7)
TH26011CS	Four-terminal-pair Kelvin test clip lead

Remote control

Item	Description
SCPI	Full SCPI command set over RS232 / USBTMC / USBCDC / GPIB
HANDLER	36-pin bin-sort, comparator and interlock signals for automated cells

Optional test fixtures and cables available on request — ask your Techmize contact or authorized distributor.

Techmize Electronic GmbH

Office 125–126, Regus
Carl-Zeiss-Ring 15a, 85737 Ismaning, Germany
An international subsidiary of Changzhou Tonghui Electronic Co., Ltd. (China)

Contact

Mobile: +49 171 4981898
Email: dx.han@tonghui.com.cn
Web: en.tonghui.com.cn

Registration

Managing Director: Haohua Zhao
Register Court: Amtsgericht München
HRB 312530
VAT ID DE463170824

Website LinkedIn YouTube

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