TH2692

Insulation Resistance Tester

A high-voltage-ramp-rate, high-accuracy, high-stability insulation resistance tester built for production-line automation. TH2692 combines four-terminal high/low contact-check and upper/lower limit sorting with USB Device, RS232C and a 37-pin EXT.I/O interface. Its built-in low-voltage short-circuit check is designed for battery-cell micro-short-circuit testing: running this check at low voltage before the high-voltage test is intended to reduce the risk of burning through a micro-short and masking it as a good cell.



Dimensions: 215(W) × 89(H) × 154(D) mm (excl. terminals/connectors) · Weight: ≈1.9 kg

- **5-inch capacitive touch screen**, 800 × 480 resolution, English UI
- Up to **1000 V** adjustable test voltage, max **2.4 mA** test current
- **10 kΩ – 100 GΩ** resistance test range
- Fastest single test **30–50 ms** (80 ms on the 2 µA range)
- Resistance and current can both be sorted with upper/lower limits
- Four-terminal high/low **contact-check** function
- **Short-circuit check** function for battery micro-short-circuit testing
- Noise-check function for stable manual-probe measurement
- Current-zero (offset) function to cancel stray leakage current
- **16 internal test files** for quick switching between test conditions

TH2692 at a glance

Resistance range	Test voltage	Test current	Test speed	Interfaces
10 kΩ–100 GΩ	25–1000 V	0–2.4 mA	30–50 ms fast*	USB / RS232C / EXT.I/O

*Fast speed is 30–50 ms on the 2 mA / 200 µA / 20 µA ranges and 80 ms on the 2 µA range. SCPI and MODBUS protocols are supported over RS232C and USB Device for full remote control and automated data collection. A 0–4 V analog output on the rear panel mirrors the measured insulation resistance for external data loggers.

Applications

Material characterization

Semiconductors, nanomaterials, polymers, dielectric materials, electrochemical materials, ferroelectric materials, graphene, ceramics, biomaterials, rubber, thin films, metals and organic materials.

Electronic components

Leakage current and insulation resistance testing of capacitors, resistors, diodes, transistors, sensors, TFT/CNT-type and optoelectronic devices, nano devices, solar cells, switches and relays.

New energy & semiconductors

Battery-cell micro-short-circuit testing and insulation resistance testing for new-energy batteries; I–V characterization of semiconductors and other devices.

Technical specifications

Parameter	TH2692
Display	5" capacitive touch screen, 800 × 480, English UI
Measurement resolution	3 ¾ digits
Resistance measurement range	10 kΩ – 100 GΩ
Resistance accuracy	I > 100 nA: ±2% rdg | 10 nA < I ≤ 100 nA: ±5% rdg | 1 nA < I ≤ 10 nA: ±10% rdg
Resistance display resolution	R < 1 GΩ: 3 ¾ digit | 1 GΩ ≤ R < 10 GΩ: 2 decimal places | R ≥ 10 GΩ: 1 decimal place
Voltage setting range	25 – 1000 V, 1 V resolution
Voltage accuracy	Output & reading: 1% of setting ± 1 V
Voltage display resolution	25 V ≤ V < 40 V: 0.01 V | 40 V ≤ V < 400 V: 0.1 V | 400 V ≤ V ≤ 1000 V: 1 V
Current ranges	2 mA, 200 µA, 20 µA, 2 µA (auto or manual)
Current test range	2 mA: 220 µA–2.4 mA | 200 µA: 22–220 µA | 20 µA: 2.2–22 µA | 2 µA: 0–2.2 µA
Current display resolution	3 ¾ digits
Test speed	Fast 30–50 ms (80 ms on 2 µA range) | Medium 200 ms | Slow 500 ms
Comparator function	Upper/lower limits on resistance or current
Contact check	Four-terminal high/low contact-check, per-reading
Short-circuit check	3–4 V pre-test check; auto or manual duration; <100 kΩ = short
Noise check	Suppresses open-terminal reading jitter (manual-probe use)
Current zero (offset)	Cancels stray leakage current on the 2 µA range
Analog output	0–4 V, proportional to measured resistance (full-range or per-range)
Interfaces	USB Device, RS232C, USB Host, EXT.I/O (37-pin), Analog Output
Remote protocols	SCPI, MODBUS
Internal memory	16 test files (measurement conditions)
Operating temperature / humidity	0–40 °C, ≤ 80% RH
Power supply	AC 90-121 V (60 Hz) or 198-242V (50 Hz)
Power consumption	< 50 VA
Dimensions (excl. connectors)	215(W) × 89(H) × 154(D) mm
Weight	≈1.9 kg
EU compliance	LVD 2014/35/EU — EN 61010-1:2010+A1:2019 | EMC 2014/30/EU — EN IEC 61326-1:2021

CE certificates of conformity: No. MTZS25033879 (LVD, issued 2025-03-27) and No. MTZS25024065 (EMC, issued 2025-02-28), Shenzhen Most Technology Service Co., Ltd.

Interfaces

RS232C	USB Host	USB Device	EXT.I/O	Analog Output	SCPI / MODBUS
standard	standard	standard	standard	standard	standard

The 37-pin EXT.I/O connector carries START/STOP, file-select (LOAD0–LOAD3), interlock, PASS/UPPER FAIL/LOWER FAIL and BCD-coded reading outputs for direct integration with PLCs and handlers. The EXT.I/O input circuit is switchable between NPN (sink) and PNP (source) modes on the rear panel.



Rear panel — power, USB Device, RS-232C, EXT.I/O, Analog Output and contact-check terminals

Standard accessories

Item	Description
—	EU power cable (Schuko, CEE 7/7)
TH26004B	Two-terminal test cable
TH2692-1	37-pin D-sub mating connector for EXT.I/O

Ordering & support

Item	Description
TH2692	Insulation resistance tester, 1 model
—	Custom test fixtures on request

Custom fixtures and cable lengths available on request — ask your Techmize contact or authorized distributor.

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