TH2884

Impulse Winding Tester

A high-speed impulse winding tester purpose-built for low-inductance wound components — motor, transformer and inductor coils from 0.1 µH to 100 µH. A dual-coaxial four-terminal connection (separate drive and sense pairs) captures the true signal at the device under test, while impulse voltages down to 10 V improve resolution on low-inductance windings that standard winding testers struggle to characterize. The TH2884 stores a reference waveform and compares it against each unit under test using nine independent comparison methods to reveal turn-to-turn shorts, layer-to-layer shorts, winding-count differences and insulation weakness.



- **Inductance range:** 0.1 µH – 100 µH
- **Impulse voltage:** 10 V – 1000 V, 1 V steps
- **Waveform acquisition:** up to 200 MSPS, 12-bit, 12k sampling depth
- **Nine comparison methods** for waveform-based pass/fail judgement
- **Dual-coaxial four-terminal test connection** (drive + sense)
- **High-speed testing:** down to 16 ms per test pulse
- **Pre-test function** at reduced voltage to flag latent micro-shorts before full-voltage test
- **Breakdown-voltage analysis** to help find a suitable test voltage
- 10.1" capacitive touchscreen, 1280 × 800
- RS232, USB Host/Device, LAN, HANDLER standard; GPIB optional

Inductance range **0.1 – 100 µH**	Impulse voltage **10 – 1000 V**
Max. sampling rate **200 MSPS**	Measurement speed **16 ms**
Max. impulse energy **0.75 J**	Sampling depth **12k**

Dimensions (W×H×D): 430 × 177 × 570 mm | Weight: approx. 27 kg

How it works

The TH2884 applies a non-destructive, high-speed, low-energy voltage impulse to the winding under test. The internal storage capacitor forms an LC resonant circuit with the winding, and the resulting damped oscillation is captured and compared against a stored reference waveform from a known-good sample. Because low-inductance windings are especially sensitive to lead and fixture parasitics, the TH2884 uses a dual-coaxial four-terminal connection — separate drive and sense paths — so the measured waveform reflects the true response of the device under test rather than the test leads. An optional pre-test step applies a lower voltage before the full-voltage test, using peak-difference and burst detection to flag latent micro-shorts that a higher test voltage could otherwise burn through and mask.

Applications

Motor coils

Turn-to-turn insulation and layer-to-layer short-circuit testing of motor windings.

Transformer coils

Turn-to-turn insulation and layer-to-layer short-circuit testing of transformer windings.

Wound inductors

Turn-to-turn insulation and layer-to-layer short-circuit testing of wound inductor coils, including low-inductance and chip-type windings.

Technical specifications

Parameter	TH2884
Channels	1
Impulse voltage range	10 V – 1000 V, 1 V steps
Impulse voltage accuracy	± [1% of set value × (1 + 0.5 µH / Lx) + 2% F.S.]
Inductance test range	0.1 µH – 100 µH
Inductance accuracy	± (5% of reading + 0.5% F.S.) — 0.1–1 µH tested at 500 kHz; 1–100 µH tested at 100 kHz
Maximum impulse energy	0.75 J
Measurement speed	16 ms (test pulse count 1, ACQ width)
Applied pulse count	Test pulse: 1–32 | Excitation pulse: 0–9
Input impedance	4 MΩ
Display	10.1" capacitive touchscreen, 1280 × 800
Waveform sampling rate	200 MSPS max. / 5 ns
Waveform bit width	12 bits
Waveform sampling depth	12k
Sample averaging	1 – 32
Waveform measurement	Voltage, time, frequency
Comparison methods	9 — see below
Trigger mode	Manual, external, bus
Pass/fail output	On-screen PASS/FAIL, LED indicators, buzzer
Measurement statistics	Built-in statistical function for measurement results
Internal storage	32 GB
External storage	USB flash drive
Interfaces	RS232C, USB Device, USB Host, LAN, HANDLER standard; GPIB optional
Power supply	110 V / 220 V AC ± 10%, 50/60 Hz ± 5%
Power consumption	≤ 200 VA
Operating temperature	0 °C – 40 °C
Operating humidity	≤ 75% R.H.
Safety & EMC compliance	IEC 61010-1:2001, IEC 61326-2-1:2005
Dimensions (W×H×D)	430 × 177 × 570 mm
Weight	approx. 27 kg

Comparison methods

Area · Differential area · Total burr amount · Maximum burr · Crest ratio · Crest difference · Angular frequency · Attenuation coefficient · Quality factor.
Waveform area and differential-area comparisons reveal energy loss and inductance (L) differences typical of turn-to-turn and layer-to-layer shorts; total-burr and maximum-burr comparisons (first- and second-derivative analysis) reveal discharge activity from insulation damage or poor electrode connections; crest-ratio and crest-difference comparisons reflect differences in equivalent parallel resistance and Q factor; angular-frequency and attenuation-coefficient comparison (patent CN117192443) and quality-factor comparison detect fine differences between the unit under test and the reference sample.

Interfaces

RS232	USB Host	USB Device	Handler	LAN	GPIB
standard	standard	standard	standard	standard	optional

SCPI and MODBUS command protocols are standard across the Techmize range.

Standard accessories

Item	Description
—	EU power cable (Schuko, CEE 7/7)
TH2884-1	High-voltage BNC-to-alligator-clip RF test cable

Optional test fixtures

Item	Description
TH26095	SMD bottom-electrode turn-to-turn test fixture

More fixtures 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

© 2026 Techmize Electronic GmbH · Specifications subject to change without notice