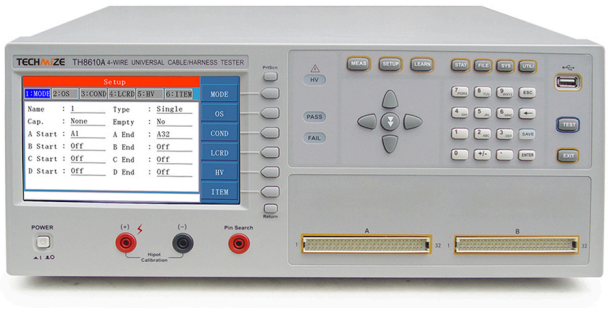
TH86XX Series

4-Wire Universal Cable & Wire Harness Testers

The TH86XX family covers four platforms — TH8610, TH8601, TH8602 and TH8603-4 — built around the same 4-wire (Kelvin) test architecture and 7" colour touch interface, scaling from 64 to 512 test pins. They combine continuity/open-short detection, passive-component measurement (R, C, diode), and AC/DC withstand-voltage & insulation-resistance safety testing in a single instrument, with patented high/low-voltage isolation for self-insulation impedance up to 100 GΩ. Typical uses include automotive wiring harnesses, IT/communication cables, connectors and Type-C cable assemblies.

Common chassis: 425(W) × 189(H) × 357(D) mm · 13 kg (all models)



- 7" TFT true-colour LCD, 800×480, 16-bit colour
- 4-wire internal / external measurement of continuity, open & short circuit, transient faults
- Resistance, capacitance and diode component testing
- AC & DC withstand-voltage and insulation-resistance safety testing with arc detection
- **(Patented)** high/low-voltage isolation — self-insulation impedance up to 100 GΩ*
- Multiple high-voltage test methods: one-pair-of-other, dichotomy, automatic test (TH8601/8602/8603-4 add a ground-test mode)
- Point testing / automatic point-search; connector and multi-file testing on TH8601–TH8603-4
- Type-C cable test support (EMARK chip check, constant-current voltage-drop test) on select models
- RS232, USB Host, USB Device, HANDLER standard; GPIB, RS485 optional
- SCPI remote-control command set; instrument self-test for online fault diagnosis

** TH8603-4 self-insulation impedance is rated ≥10 GΩ (higher-current platform); see page 3.*

Model lineup

Eleven models across four platforms — pick by channel count and feature set.

Series	Model	Test pins	Slots	Distinguishing capability
TH8610	TH8610	128	—	DC current source to 1 A; 3 HV test modes; thermistor test; micro-ohm-level resistance
TH8610	TH8610A	64	—	Compact 64-pin version of TH8610
TH8601	TH8601	128	4 (A–D)	Entry platform; 4 HV test modes incl. ground test; Type-C test framework
TH8601	TH8601A	64	4 (A–D)	Compact 64-pin version of TH8601
TH8602	TH8602-1	64	8 (A–H)	Base 64-pin model, 4-terminal test
TH8602	TH8602B	64	8 (A–H)	+ EMARK chip read/write check (Type-C)
TH8602	TH8602C	64	8 (A–H)	+ EMARK check, 5 A constant-current source, 5A/20V drop test
TH8602	TH8602-2	128	8 (A–H)	Higher channel count, no Type-C chip test
TH8602	TH8602-3	192	8 (A–H)	Higher channel count, no Type-C chip test
TH8602	TH8602-4	256	8 (A–H)	Top channel count in the TH8602 family
TH8603-4	TH8603-4	512	4 (A–D)	Family flagship; 10 A constant-current source; 40-output HANDLER

Quick selection matrix

All 11 models side by side — for full accuracy figures and notes, see pages 3–4.

Model	Pins	Cond. / interval cond.	Open & short circuit	Diode test	Capacitance	DC resistance
TH8610	128	10 mΩ–1 kΩ	1 kΩ–50 kΩ	0–10 V	10 pF–1000 µF	1 kΩ–1 MΩ
TH8610A	64	10 mΩ–1 kΩ	1 kΩ–50 kΩ	0–10 V	10 pF–1000 µF	1 kΩ–1 MΩ
TH8601	128	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	10 pF–1000 µF	10 mΩ–1 MΩ
TH8601A	64	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	10 pF–1000 µF	10 mΩ–1 MΩ
TH8602-1	64	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	1 µF–1000 µF	10 mΩ–1 MΩ
TH8602B	64	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	1 µF–1000 µF	10 mΩ–1 MΩ
TH8602C	64	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	1 µF–1000 µF	10 mΩ–1 MΩ
TH8602-2	128	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	1 µF–1000 µF	10 mΩ–1 MΩ
TH8602-3	192	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	1 µF–1000 µF	10 mΩ–1 MΩ
TH8602-4	256	10 mΩ–950 Ω	1 kΩ–50 kΩ	0–10 V	1 µF–1000 µF	10 mΩ–1 MΩ
TH8603-4	512	0.1 Ω–950 Ω	1 kΩ–50 kΩ	0–10 V	1 nF–1000 µF	10 mΩ–1 MΩ

Accuracy figures (e.g. 2%±1 digit) are omitted here for readability — see the full per-series tables on pages 3–4.

Model	AC withstand voltage	AC withstand / leakage current	DC withstand voltage	DC withstand / leakage current	Insulation resistance	Type-C EMARK check	Type-C 5A / drop test
TH8610	50 V–1000 V	10 µA–5 mA	50 V–1500 V	1 µA–5 mA	0.1 MΩ–1 GΩ	—	—
TH8610A	50 V–1000 V	10 µA–5 mA	50 V–1500 V	1 µA–5 mA	0.1 MΩ–1 GΩ	—	—
TH8601	50 V–1000 V	0.01–5 mA	50 V–1500 V	1 µA–5 mA	1 MΩ–1000 MΩ	—	—
TH8601A	50 V–1000 V	0.01–5 mA	50 V–1500 V	1 µA–5 mA	1 MΩ–1000 MΩ	—	—
TH8602-1	50 V–1000 V	0.01–5 mA	50 V–1500 V	1 µA–5 mA	1 MΩ–1 GΩ	—	—
TH8602B	50 V–1000 V	0.01–5 mA	50 V–1500 V	1 µA–5 mA	1 MΩ–1 GΩ	✓	—
TH8602C	50 V–1000 V	0.01–5 mA	50 V–1500 V	1 µA–5 mA	1 MΩ–1 GΩ	✓	✓
TH8602-2	50 V–750 V	0.01–5 mA	50 V–1000 V	1 µA–5 mA	1 MΩ–1 GΩ	—	—
TH8602-3	50 V–750 V	0.01–5 mA	50 V–1000 V	1 µA–5 mA	1 MΩ–1 GΩ	—	—
TH8602-4	50 V–750 V	0.01–5 mA	50 V–1000 V	1 µA–5 mA	1 MΩ–1 GΩ	—	—
TH8603-4	50 V–750 V	0.01–5 mA	50 V–1000 V	1–1000 µA	1 MΩ–1 GΩ	—	—*

* TH8603-4 has its own built-in constant-current source (up to 10 A) for cable voltage-drop testing, independent of the TH8602 Type-C/EMARK feature. All accuracy figures, HV test-voltage sub-ranges and self-insulation-impedance ratings are detailed on pages 3–4.

TH8610 / TH8610A

Test pins: TH8610 = 128 · TH8610A = 64 — otherwise identical specification

Parameter	Value
AC signal source	Frequency 50 Hz–300 kHz, 0.02% · Amplitude 1 Vrms, 10%
Programmable DC source	Voltage: 5 V MAX, 10%±1 word · Current: 1–20 mA / 100 mA / 1 A, 5%±1 word
Programmable HV source	DC: 50 V–1500 V, 5%±1 word · AC: 50 V–1000 V, 5%±1 word
Test speed	Short-circuit break (128 points): 10 ms
Capacitance	10 pF–1000 µF, 10%±1 word
DC resistance	1 kΩ–1 MΩ, 2%±1 word
Conduction resistance	10 mΩ–1 kΩ, 2%±1 word
Low resistance	10 µΩ–10 mΩ, 10%±5 word
Short-circuit test	1 kΩ–50 kΩ, 10%±1 word · Test voltage 0–10 V, 10%±1 word
Insulation resistance	0.1 MΩ–100 MΩ, 5%±5 word · 100 MΩ–1 GΩ, 10%±5 word
DC leakage current	1 µA–5 mA, 5%±2 word
AC leakage current	10 µA–5 mA, 10%±5 word
Self-insulation impedance	> 100 GΩ (patented high/low-voltage isolation)
HV test modes	One-pair-of-other, dichotomy, automatic test (3 modes, patented)

TH8601 / TH8601A

Test pins: TH8601 = 128 · TH8601A = 64 — otherwise identical specification

Parameter	Value
AC signal source	Frequency 50 Hz–100 kHz, 0.02% · Capacitance-test amplitude 1 Vrms, 10%
Programmable DC source	Voltage: 5 Vdc MAX, 10%±1 digit · Current: 1–20 mA, 10%±1 digit
Programmable HV source	DC: 50 V–1500 V (50–100 V 10%±1 digit, 100 V–1500 V 5%±1 digit) · AC: 50 V–1000 V (50–100 V 10%±1 digit, 100 V–1000 V 5%±1 digit)
Test speed	Transient open/short (128 pt): 2.6 ms · Single-side scan (64 ch): 150 ms · Network-table scan (64 ch): 1.8 ms · Base speed: 100 ms
Capacitance	10 pF–1000 µF, 10%±1 digit
Resistance	0.01 Ω–1 MΩ, 2%±1 digit
Conduction / interval cond.	0.01 Ω–950 Ω, 2%±1 digit
Open & short circuit	1 kΩ–50 kΩ, 10%±1 digit
Diode testing	0–10 V, 10%±1 digit
Insulation resistance	1 MΩ–100 MΩ, 5%±5 digit · 100 MΩ–1000 MΩ, 10%±5 digit
DC leakage current	1 µA–5 mA, 5%±2 digit
AC leakage current	0.01 mA–5 mA, 10%±5 digit
Self-insulation impedance	> 10 GΩ (patented high/low-voltage isolation)
HV test modes	One-pair-of-other, dichotomy, automatic test, ground test (4 modes, patented)

TH8602 Series

TH8602-1 / TH8602B / TH8602C = 64 pin · TH8602-2 = 128 · TH8602-3 = 192 · TH8602-4 = 256 pin

Parameter	Value — common to all six models
AC signal source	Frequency 50 Hz–100 kHz, 0.02% · Range 0–1 Vrms, 10%
DC signal source	Voltage 0–5 V, 10%±1 digit · Current 1–20 mA, 10%±1 digit
Capacitance	1 µF–1000 µF, 10%±1 digit
DC resistance (DCR)	10 mΩ–1 MΩ, 2%±1 digit
Conduction / interval cond.	10 mΩ–950 Ω
Open & short circuit	1 kΩ–50 kΩ, 10%±1 digit
Diode testing	0–10 V, 10%±1 digit
Test speed	Instant breakpoint: 4 ms · Instantaneous circuit: 5 µs–2 ms
Self-insulation impedance	> 100 GΩ (patented high/low-voltage isolation)
HV test modes	One-pair-of-other, dichotomy, automatic test, ground test (4 modes, patented)

High-voltage & insulation testing	TH8602-1 / B / C (64-pin)	TH8602-2 / -3 / -4 (128–256-pin)
DC withstand voltage	50 V–1500 V, 10%±1 digit · 1 µA–5 mA, 10%±5 digit	50 V–1000 V, 10%±1 digit · 1 µA–5 mA, 10%±5 digit
AC withstand voltage	50 V–1000 V, 10%±1 digit · 0.01–5 mA, 10%±5 digit	50 V–750 V, 10%±1 digit · 0.01–5 mA, 10%±5 digit
Insulation resistance	Voltage 50 V–1500 V · Resistance 1 MΩ–1 GΩ, 10%±5 digit	Voltage 50 V–1000 V · Resistance 1 MΩ–1 GΩ, 10%±5 digit

Type-C cable test	TH8602-1	TH8602B	TH8602C
EMARK chip read/write check	—	✓	✓
5 A independent constant-current source	—	—	✓
5 A / 20 V voltage-drop test	—	—	✓

Not offered on TH8602-2 / TH8602-3 / TH8602-4.

TH8603-4

512 test pins, 4 slots (A–D) — family flagship

Parameter	Value
AC signal source	Frequency 50 Hz–100 kHz, 0.02% · Range 0–1 Vrms, 10%
DC signal source	Voltage 0–5 V, 10%±1 digit · Current 1–15 mA, 10%±1 digit
Capacitance	1 nF–1000 µF, 10%±1 digit
DC resistance (DCR)	10 mΩ–1 MΩ, 5%±1 digit
Conduction / interval cond.	0.1 Ω–950 Ω, 5%±1 digit
Open & short circuit	1 kΩ–50 kΩ, 10%±1 digit
Diode testing	0–10 V, 10%±1 digit
DC withstand voltage	50 V–1000 V (50–100 V 10%±1 digit, 100 V–1000 V 5%±1 digit) · 1–1000 µA, 10%±5 digit
AC withstand voltage	50 V–750 V (50–100 V 10%±1 digit, 100 V–750 V 5%±1 digit) · 0.01–5 mA, 10%±5 digit
Insulation resistance	Voltage 50 V–1000 V · Resistance 1 MΩ–1 GΩ, 10%±5 digit
Test speed	Momentary short circuit: 20 ms (512 points) · Base speed: 100 ms
Self-insulation impedance	> 10 GΩ (patented high/low-voltage isolation)
Built-in constant-current source	Independent, up to 10 A, for voltage-drop measurement

Interfaces & HANDLER outputs

Series	Standard	Optional	HANDLER outputs
TH8610	RS232, USB Host, USB Device, HANDLER, SCPI	GPIB, RS485	—
TH8601	RS232, USB Host, USB Device, HANDLER, SCPI	GPIB, RS485	8 (opto-coupler driven)
TH8602	RS232, USB Host, USB Device, HANDLER, PLC, SCPI	GPIB, RS485	16 (relay driven, optional)
TH8603-4	RS232, USB Host, USB Device, HANDLER, SCPI	GPIB, RS485	40 (relay driven, optional)

SCPI is the standard remote-control command set across the family. MODBUS is not documented for this family and is not claimed here. User interface is English.

LAN is available to custom order only.

Standard accessories

Series	Included items
TH8610	EU power cable (Schuko, CEE 7/7); TH26036 test lead; TH26060H connecting cable (64-ch); TH26060A adapter fixture (64-ch, shared across the series)
TH8601/A	EU power cable; TH26036-R auto pin-finder probe; TH26060 adapter fixture (2 pcs TH8601A / 4 pcs TH8601); TH8601-32 test cable (2 pcs TH8601A / 4 pcs TH8601)
TH8602	EU power cable; TH26060D auto pin-finder probe; TH26060B adapter fixture; TH26060E Type-C test fixture (TH8602B/C only)
TH8603-4	EU power cable; TH26060B & TH26060C adapter fixtures; TH26060D auto pin-finder probe

Common platform data

Item	Value
Display	7" TFT true-colour LCD, 800×480, 16-bit
Dimensions	425(W) × 189(H) × 357(D) mm
Weight	13 kg (all models)
User interface	English

Applications

Automotive electronics

Battery FPC, CCS busbar welding resistance, PDU and ECU connecting wires, wiring harnesses, navigation and screen cables, in-vehicle electronic product cables, audio/video cables.

Communications & IT

Telephone and network cables, multi-strand cables, mobile-phone screen cables, Type-C and USB data cables, laptop screen cables, HDMI/VGA cables, IDE/SATA hard-disk cables.

Electronics & safety compliance

Flat/ribbon cables, connectors, power cords, multi-way switches, RS232/GPIB cables, multi-core sockets; AC/DC withstand voltage, insulation resistance and arc-detection testing.

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