TH343X / TH344X Series

Wideband Multi-Channel Digital Power Meter

A wideband digital power meter for voltage/current RMS, active/reactive/apparent power, power factor, harmonics, energy integration and waveform/vector display, covering **DC and 0.1 Hz–100 kHz** — well beyond mains frequency, suited to switching power supplies, inverters, motor drives and other non-sinusoidal or high-frequency signals. Six models combine two current tiers (2 A / 20 A) with 1, 3 or 4-channel configurations. Built for source and load testing on power supplies, motors, transformers, and household/industrial electrical equipment.

Working size: 236(W) × 154(H) × 475.5(D) mm · Shelf size: 215(W) × 132(H) × 441(D) mm · 8.1 kg



- **0.1% basic accuracy** (reading + range) on voltage and current, across all six models
- Ultra-wide input bandwidth **DC / 0.1 Hz–100 kHz** — for switching supplies, inverters, motor drives and other wideband signals
- 1 / 3 / 4-channel combinations across six models (TH3431–TH3444)
- 7" (800×480) color TFT resistive touch screen, mouse operation supported
- 3/4-channel models: 5 wiring modes (1P2W/1P3W/3P3W/3P4W/3V3A); 1-channel models: 1P2W
- Harmonic analysis to 1.2 kHz, list and bar-graph display; waveform and vector display
- 8-channel programmable comparator output via HANDLER interface
- Selectable measurement update rate: 0.1/0.25/0.5/1/2/10/20 s
- USB Host (FAT16/32, U-disk storage), USB Device, LAN, RS232 standard; RS485 available as a factory-installed option
- SCPI command set and MODBUS protocol supported for automated test systems

Six models, two current tiers

Model	Channels	Current range	Power range	Micro current
TH3431	1	0.01 mA – 2 A	0.01 mW – 1.2 kW	Yes
TH3433	3	0.01 mA – 2 A	0.01 mW – 1.2 kW	Yes
TH3434	4	0.01 mA – 2 A	0.01 mW – 1.2 kW	Yes
TH3441	1	0.1 mA – 20 A	0.1 mW – 12 kW	No
TH3443	3	0.1 mA – 20 A	0.1 mW – 12 kW	No
TH3444	4	0.1 mA – 20 A	0.1 mW – 12 kW	No

All six models share the same voltage range (1 V – 600 V), 0.1% basic accuracy, DC/0.1 Hz–100 kHz bandwidth and chassis. TH343X (2 A tier) adds micro-current measurement; TH344X (20 A tier) covers higher-current loads. 1-channel models support 1P2W wiring only; 3/4-channel models add 1P3W, 3P3W, 3P4W and 3V3A.

Applications

Source equipment

AC power supplies, DC power supplies, linear and switching power supplies, inverters and other source-output equipment.

Load equipment

Household appliances, industrial appliances, electronic loads and other power-consuming equipment.

Industry applications

Motors and transformers, electronic production lines, lighting, aerospace/military, network communication, audio/video equipment, monitoring equipment.

Technical specifications

Parameter	TH343X (2 A): TH3431 / TH3433 / TH3434	TH344X (20 A): TH3441 / TH3443 / TH3444
Number of channels	1 / 3 / 4	1 / 3 / 4
Display	7" (800×480) color TFT resistive touch screen	
Wiring modes	1-channel models: 1P2W only · 3/4-channel models: 1P2W · 1P3W · 3P3W · 3P4W · 3V3A	
Basic features	AC, DC, precision type, harmonic analysis, electric energy test	
Micro current	Yes	No
Display modes	Data, integration data, waveform graph, vector analysis, histogram	
Basic accuracy (1 year)	Voltage: 0.1% reading + 0.1% range · Current: ±(0.1% reading + 0.1% range)	
Voltage range	1 V – 600 V (15/30/60/150/300/600 V)	
Voltage resolution	0.001 V	
Voltage input impedance	2 MΩ	
Voltage max. input	1000 V (1 s) / 700 V (continuous)	
Current range	0.01 mA – 2 A: 0.5/1/2/5/10/20 mA (4 Ω); 0.05/0.1/0.2/0.5/1/2 A (40 mΩ)	0.1 mA – 20 A: 5/10/20/50/100/200 mA (400 mΩ); 0.5/1/2/5/10/20 A (4 mΩ)
Current resolution	0.1 µA	1 µA
Current max. input	3 A (1 s) / 2 A (continuous)	30 A (1 s) / 20 A (continuous)
Power range	0.01 mW – 1.2 kW	0.1 mW – 12 kW
Power resolution	0.001 mW	0.01 mW
Frequency range	DC / 0.1 Hz – 100 kHz, 500 Hz filter	
Frequency resolution	0.01 Hz	
Power factor	−1.000 – 1.000, resolution 0.001	
Harmonic analysis	10 Hz – 1.2 kHz, accuracy ±(5% reading + 0.3% range)	
Energy integration	0 – 99999 kWh, resolution 0.001 Wh, accuracy ±(0.2% RDG + 0.3% RNG)	
Energy timing	0 – 9999:59:59, resolution 1 s, accuracy ±0.05%	
Update rate	Selectable: 0.1 / 0.25 / 0.5 / 1 / 2 / 10 / 20 s	
Range method	Auto / manual	
Lock function	Data lock; keyboard/touch-screen lock	
Comparator	Over-limit sound and light alarm, 8-channel programmable relay output (HANDLER)	
Data storage	Buffered test results to USB disk for PC-side statistical analysis; measurement/system settings save & load	
Storage media	USB waveform data, setting files	
Power supply	AC 220 V ±10%, 50/60 Hz ±5%, soft power switch	
Working / shelf size	236 × 154 × 475.5 mm (with sleeve) / 215 × 132 × 441 mm	
Weight	8.1 kg	

Interfaces

USB Host	USB Device	LAN	Handler	SCPI / MODBUS	RS232	RS485
standard	standard	standard	standard	standard	standard	option[1]

[1] RS485 is available as a factory-installed option in place of RS232 — specify before shipment. USB Host accepts FAT16/FAT32 U-disks. USB Device complies with USBTMC-USB488 / USB 2.0 (CDC or TMC mode selectable).

Standard accessories

Item	Description
–	EU power cable (Schuko, CEE 7/7)

Related series

Series	Description
TH342X	Fixed 4-channel mains-frequency power meter, DC/45–420 Hz — see separate datasheet

TH343X/TH344X and TH342X are separate Tonghui product series with different frequency bandwidths and accuracy classes — see the TH342X datasheet for standard mains-frequency testing.

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