

TWR-H

Transformer Ratio Meters



Three tests in 1.4 kg: ratio, winding resistance and demagnetization

TWR-H

Handheld turns ratio and winding resistance tester

amperis

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Distribution and instrument transformer testing with a pocket-sized device.

Product overview



TWR-H

Front panel: 4.8-inch LCD display and H and X connections

Three tests with a single connection

This battery-powered handheld device measures the turns ratio together with excitation current and phase shift, measures winding resistance and demagnetizes the core, all with the same cable set. The deviation from the nameplate ratio is calculated automatically.

Two DC current sources

One source of up to 2 A tests the high-voltage winding and another of up to 10 A the low-voltage one: each winding of a distribution transformer is measured with the right current, even simultaneously.

Main features

- Ratio test voltage of 40, 10 or 1 V AC.
- 1 V AC to verify current transformers without saturating them.
- Turns ratio from 0.8 to 20 000.
- Winding resistance from 1 $\mu\Omega$ to 3 k Ω .
- Automatic demagnetization after the resistance test.
- Replaceable Li-Ion battery: a full day of testing.
- Only 1.4 kg; IP67 inside its closed case.



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Applications and software



TWR-H

The device in the field, connected to a distribution transformer

Applications

- Turns ratio of distribution transformers.
- Ratio and polarity verification of instrument transformers.
- Winding resistance of transformers, motors and generators.
- Excitation current and phase angle.
- Demagnetization of transformers, motors and generators.

PC software for control and analysis

Stored results are transferred over Bluetooth to the included PC software, which allows analysing them at the office, printing them and creating customized test reports.

Memory for 100 transformers

The internal memory organizes up to 100 transformer records, each with up to 15 resistance and 15 ratio results, so a complete field campaign fits in the device.



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TWR-H – MEASUREMENT DATA

Measurement	Range	Resolution	Typical accuracy
Turns ratio at 40 V AC	0.8 – 20 000	5 digits	±0.1% (0.8–999); ±0.15% (1000–3999); ±0.25% (4000–14 999); ±0.3% (15 000–20 000)
Turns ratio at 10 V AC	0.8 – 20 000	5 digits	±0.2% (0.8–3999); ±0.25% (4000–14 999); ±0.3% (15 000–20 000)
Turns ratio at 1 V AC	0.8 – 4000	5 digits	±0.2%
Excitation current	0 – 1 A	0.1 mA	±(1% of reading + 0.5 mA)
Phase angle	0 – 360°	0.01°	±0.06°
Winding resistance	1 µΩ – 3 kΩ	1 µΩ to 1 Ω by range	±(0.5% of reading + 0.5% FS)

Test sources: 40/10/1 V AC; 2 A DC (HV side) and 10 A DC (LV side).

Specifications valid at +25 °C. The manufacturer reserves the right to change them without prior notice.



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TWR-H — TECHNICAL SPECIFICATIONS

Type	Handheld turns ratio and winding resistance tester
AC source	40, 10 and 1 V AC
DC sources	Up to 2 A (HV side); up to 10 A (LV side)
Battery	14.8 V, 2.9 Ah Li-Ion, rechargeable and replaceable; up to 100 tests
Mains adapter	90 – 264 V AC, 50/60 Hz
Display	4.8-inch LCD, 240 × 128 pixels
Memory	100 transformer records, up to 30 results each
Communication	Bluetooth to PC
Operating temperature	-20 to +55 °C; storage -40 to +70 °C
Protection	IP40 (device); IP67 in the closed case
Dimensions and weight	170 × 310 × 58 mm; 1.4 kg
Standards	IEC 60076-1, IEEE C57.152, CIGRE 445; EN 61010-1; EN 61326-1



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