Handheld Winding Ohmmeter RMO-TH

- Unique handheld instrument on the market
- Performs 2 different tests:
  - Winding resistance
  - Demagnetization
- Two DC current sources:
  - Test current up to 2 A DC for transformer HV side
  - Test current up to 10 A DC for transformer LV side
- Extremely lightweight – only 1.4 kg / 3.1 lbs
- Battery-powered
- Measures single-phase and three-phase transformers

Description

RMO-TH is a handheld, battery operated, fully automatic test set specially designed for winding resistance measurements of transformers and other inductive objects, such as motors and generators. It can also perform demagnetization of transformers, motors, and generators.

Winding resistance is determined by injecting DC current through a winding, accurately measuring DC voltage across the winding, and then calculating resistance as the ratio of voltage and current.

The device generates true DC ripple-free currents. Both the injection of the current and the discharge of energy from transformer magnetic circuit are automatically regulated.

Application

The list of instrument application includes:

- Winding resistance measurement of distribution and instrument transformers, and motors and generators
- Demagnetization of distribution and instrument transformers, and motors and generators

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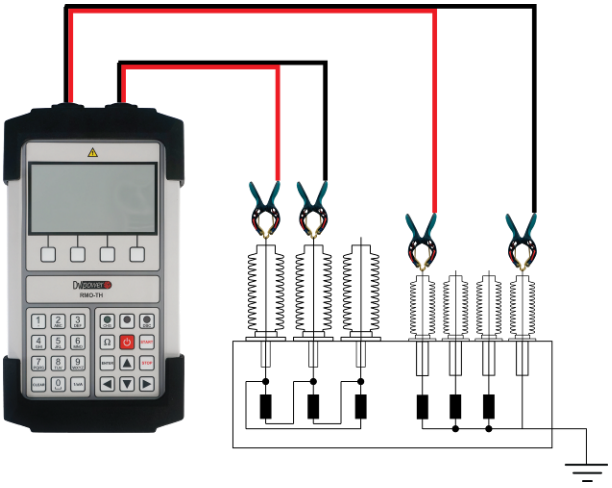
Connecting RMO-TH to Test Object

Distribution Transformer

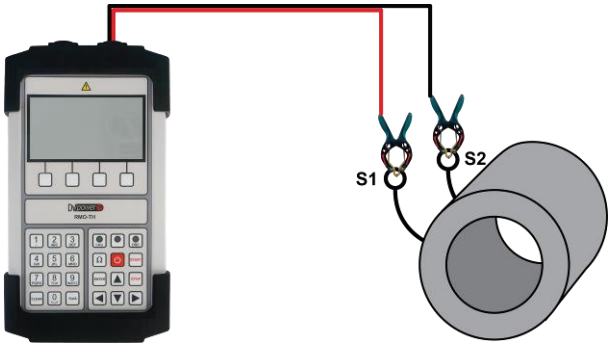
Using two sets of cables, RMO-TH can be connected to one phase at transformer HV side, and one phase at transformer LV side, simultaneously. For winding resistance measurement, RMO-TH can be connected to either transformer HV side or LV side, or to both in case when HV and LV winding resistances are going to be measured simultaneously.



Connecting RMO-TH to a three-phase distribution transformer

Current Transformer (CT)

RMO-TH can be used for testing winding resistance, as well as for demagnetization, of a current transformer (CT). Either DC source 1 (H side) or DC source 2 (X side) can be connected to CT secondary for measuring its winding resistance. Demagnetization should be performed from CT secondary side. Since RMO-TH's DC source 1 (H side) is used for demagnetization process, this source should be connected to CT secondary winding for the purpose of demagnetizing CT.



Connecting RMO-TH's DC source 1 (H side) to an unmounted current transformer (CT) secondary winding

Benefits and Features

Two Output DC Sources

A common issue when testing winding resistance of distribution transformers is the selection of test current. Distribution transformers have high turns ratio, and therefore high difference between rated HV and LV currents. Testing HV and LV winding with the same current source can be challenging – test current must be less than or equal to 10% of the HV rated current, which is very often too low for LV winding. For this reason, RMO-TH has two output DC sources – one for transformer HV side, and the other for transformer LV side. This way, transformer HV and LV windings can be tested using different test currents.

Internal Battery

RMO-TH is powered by internal, user-replaceable, rechargeable Li-Ion battery. A full day of testing can be performed with fully charged battery. RMO-TH can also be operated while connected to mains power supply.

Memory

RMO-TH has 100 transformer records. Up to 15 winding resistance results can be stored in each transformer record.

DV-TR Software

All results from RMO-TH internal memory can be easily transferred to a DV-TR software via Bluetooth communication. This allows user to analyze results in the office, to print them, or to create customized test reports. The software is included in the purchase price.

Technical Data

Battery

- Type: Li-Ion, 14.8 V, 2.9 Ah
- Rechargeable
- User replaceable

Power Supply Adapter

- Input voltage: 90 – 264 V AC, 50/60 Hz
- Output voltage: 12-19 V DC
- Output current: 2 A DC

Output DC Source 1

- Current: 2 A, 1 A, 500 mA, 100 mA, 50 mA, 10 mA, 5 mA

Output DC Source 2

- Current: 10 A, 5 A, 2 A, 1 A, 500 mA

Winding Resistance Measurement

- Measurement range: 1 µΩ – 3 kΩ
- Range / resolution:

1 µΩ – 9.999 mΩ	1 µΩ
10.00 mΩ – 99.99 mΩ	0.01 mΩ
100.0 mΩ – 999.9 mΩ	0.1 mΩ
1.000 Ω – 9.999 Ω	0.001 Ω
10.00 Ω – 99.99 Ω	0.01 Ω
100.0 Ω – 999.9 Ω	0.1 Ω
1.000 kΩ – 3.000 kΩ	1 Ω

- Typical accuracy: ±(0.5% rdg + 0.5% F.S.)

Display

- LCD 4.8” display, 240 x 128 pixels

Interface

- Bluetooth

Internal Memory

- 100 transformer records
- Each record contains up to 15 results

Warranty

- 3 years + additional 1 year upon registration on DV Power official website

Environmental Conditions

- Operating temperature:
  -20 ºC – +55 ºC / -4 ºF – +131 ºF
- Storage & transportation:
  -40 ºC – +70ºC / -40 ºF – +158 ºF
- Humidity: 0% – 95% relative humidity, non-condensing

Dimensions and Weight

- Dimensions (W x H x D):
  170 x 310 x 58 mm / 6.69 x 12.21 x 2.28 in
- Weight: 1.4 kg / 3.1 lbs

Applicable Standards

- Installation/Overvoltage category: II
- Pollution degree: 2
- Safety: LVD 2014/35/EU (CE Conform)
  Standard EN 61010-1:2010
- EMC: Directive 2014/30/EU (CE Conform)
  Standard EN 61326-1:2013

All specifications herein are valid at ambient temperature of +25 °C / +77 °F and standard accessories.
Specifications are subject to change without notice.

H winding current and sense cables with small TTA clamps

X winding current and sense cables with small TTA clamps

Power supply adapter

Plastic transport case for TWR-H, TRT-H & RMO-TH

Test shunt

Ordering Info

Instrument	Article No
Handheld Winding Ohmmeter RMO-TH	RMOTH00-N-02

Included accessories
Windows-based DV-TR PC software
Power supply adapter
Transport bag
Carrying belts

Standard accessories	Article No
H winding current and sense cables 2 m (6.56 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	HCS-02-2NCWS
X winding current and sense cables 2 m (6.56 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	XCS-02-2NCWS

Optional accessories	Article No
H winding current and sense cables 1 m (3.28 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	HCS-01-2NCWS
X winding current and sense cables 1 m (3.28 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	XCS-01-2NCWS
H winding current and sense cables 3 m (9.84 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	HCS-03-2NCWS
X winding current and sense cables 3 m (9.84 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	XCS-03-2NCWS
H winding current and sense cables 5 m (16.4 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	HCS-05-2NCWS
X winding current and sense cables 5 m (16.4 ft), 2.5 mm^2 (14 AWG) with small TTA clamps	XCS-05-2NCWS
H winding current and sense cables 10 m (32.8 ft), 4 mm^2 (12 AWG) with small TTA clamps	HCS-10-4NCWS
X winding current and sense cables 10 m (32.8 ft), 4 mm^2 (12 AWG) with small TTA clamps	XCS-10-4NCWS
H winding current and sense cables 2 m (6.56 ft), 2.5 mm^2 (14 AWG) with test probes	HCS-02-2NCTP
X winding current and sense cables 2 m (6.56 ft), 2.5 mm^2 (14 AWG) with test probes	XCS-02-2NCTP
Test shunt 150 A / 150 mV	SHUNT-150-MK
Li-Ion battery 14.8 V 2900 mAh within fire retardant battery bag	LION-BAT-002
Fire retardant battery bag	FIR-RTBBAG-0
Plastic transport case for TWR-H, TRT-H & RMO-TH	HARD-CASE-TW

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