

OTD Oil Tan Delta Oil Tester



- **NEW** OTD - Oil Tan Delta tester measures Tan Delta, Relative Permittivity and Resistivity of insulating oils
- Calibration certified to ISO 17025
- Fully automated standard and user defined tests - Supports all international standards
- Integrated test cell heating and cooling systems
- Efficient oil fill and integrated automated oil drain facility
- IEC 60247 Innovative Test Cell - easy to assemble and clean
- Stores up to 50 records on-board and download to PC
- Compact and lightweight (22 kg / 48 lbs 8 oz)

DESCRIPTION

A new addition to the comprehensive range of Megger Oil Test Sets, the OTD measures Tan Delta, resistivity and relative permittivity of insulating oils.

The OTD is a fully automated tester and comes loaded with a set of international test standards:

- IEC 60247:2004
- IEC 61620:1998
- ASTM D924-08
- ASTM D1169:2002
- BS 5737:1979
- JIS C2101:1999
- VDE 0380-2:2005_01
- IS 6262:1971
- IS 6103:1971

As well as the international set of standards, the OTD supports up to six customer configurable test sequences.

Productivity in the laboratory is maximised, with the focus on reducing the test cycle time by fan cooling and inductive heating, together with an oil drain facility, negating the need to move the oil vessel.

The OTD has a 12 key alpha-numeric keypad to facilitate entry of test ID, filenames, notes, etc .

Test results are identified by a test ID and are time and date stamped.

Megger's asset and data management software, PowerDB Lite, included at no extra cost, provides a tool for downloading results via the USB interface, while an internal printer provides hard copy results. Ink based printout ensures durability at all temperatures.

User safety is paramount and Megger have designed independent, dual redundant high voltage cut-off circuitry to ensure safety. During a test, press any button on the keypad to remove the high voltage immediately and abort the test.

The transparent lid provides ample visibility within the chamber.

APPLICATION

Monitoring and maintenance of oil quality is essential to ensure the reliable operation of oil filled electrical equipment. Codes of practice have been established in many countries that include tests for Tan Delta, Relative Permittivity and Resistivity.

Typical applications :

- New oil reception - quality test
- Regeneration of oil - quality test
- Monitoring and maintenance of oil quality in oil filled electrical equipment
 - Transformers
 - Switch Gear
 - HV Cables

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FEATURES AND BENEFITS

- Keypad and a tabular designed user interface for efficient navigation and control
- Bright 3.5" colour display for ease of use
- Fully automated test sequences
 - 16 pre-installed international standards
 - 6 user programmable sequences
- 14 supported languages on the display
- Test Cell heating up to 110 °C with uniformity across the cell - IEC 60247
- Oil drain facility - manual and fully automated micro processor controlled
- Minimal Test Cell components - easy to assemble and disassemble
- Safe operation with dual redundant micro switches
- Internal impact printer - automatically prints at the end of a test or manually if preferred
- USB download of stored results to PowerDB

ACCESSORIES

- Test Cell
- OTD-CC (Calibration Checker)

SPECIFICATIONS

Tan Delta	
Measurement range	1x10 ⁻⁶ to 4
Resolution	1x10 ⁻⁶
Accuracy	± 1% reading ± 1 x 10 ⁻⁵

Relative Permittivity	
Measurement Range	1 to 30
Resolution	0.01
Accuracy	± 0.5%

Resistivity Measurement	
Range	2.5 MΩm to 100 TΩm
Resolution	0.01
Accuracy	2%

Test Temperature	
Range	10 °C to 110 °C
Resolution	0.1 °C
Accuracy	± 1 °C

Test Voltage	
AC Range	500 V to 2000 V 55 Hz
DC Range	125 V to 500 V
Quasi Rectangular Square Wave	100 V 0.3 Hz
Resolution	1 V
Accuracy	±2% ±1 V
Power Supply	100 V to 240 V 50 Hz to 60 Hz 300 VA
Results Frequency	tan δ (Sin) 40 Hz - 65 Hz Quasi 100 V 0.3 Hz

Environmental Specifications

Operating Temperature Range	0 °C to +50 °C (32 °F to 122 °F)
Storage Temperature Range	-20 °C to +55 °C (4 °F to 131 °F)
Humidity	90% non-condensing
Dimensions	580 x 420 x 290 mm (22.8 x 16.5 x 11.5 inch)
Weight Instrument	22 kg (48 lb 8 oz)
Interface	USB Type B
IP Rating	IP30
EMC	IEC 61326
Maximum Altitude	2000 m (6560 ft)

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Test Cell

Capacitance Range 70 pF (± 3 pF)

Weight 2.7 kg (5 lb 14 oz)

Material 316L Stainless Steel / Quartz Glass

For detailed measurement range and environmental conditions for accuracy values see the user guide.

Calibration Checker

Resistor	Resistivity C0= 70 pF	Nominal Tan Delta (T.D.) $\epsilon_r (70\text{pF}) = 2.86$		
		50 Hz	55 Hz	60 Hz
5 G Ω	39.55 G Ωm	0.003183	0.002894	0.002653
500 M Ω	3.955 G Ωm	0.031831	0.028937	0.026526
50 M Ω	395.5 M Ωm	0.318310	0.289373	0.265258
5 M Ω	39.55 M Ωm	3.183099	2.893726	2.652582

Capacitance 200 pF $\pm 1\%$

Tan Delta Accuracy $\pm 2\%$ from calibrated value

Resistivity Accuracy $\pm 1\%$ from calibrated value

Operating Temperature Range

+15 °C - +30 °C (+59 °F to +86 °F)

Storage Temperature Range

-20 °C - +50 °C (-4 °F to +122 °F)

Humidity < 60% RH

Dimensions 190 x 120 x 250 (mm)
(7.5 x 4.75 x 9.8 inch)

Weight 1.5 kg (3 lb 5 oz)

Maximum altitude 2000 m (6560 ft)

Safety IEC61010

OTD Oil Tan Delta Oil Tester



Fully assembled Test Cell in the assembly stand with glass fill and riser funnels.



Tabular designed user interface for efficient navigation and control. Easy text input and concise display of test and configuration information.

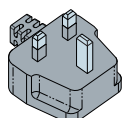
OTD Oil Tan Delta Oil Tester



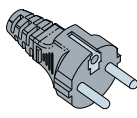
OTD CC Calibration Checker enables accurate customer verification of Tan Delta and Resistivity values.



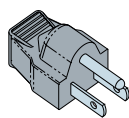
OTD CC provided in a toughened transport case. Available as an optional accessory.



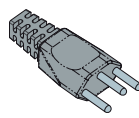
BS1363 (UK)
mains plug
(P1)



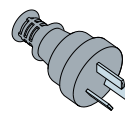
Schuko (EU)
mains plug
(P2)



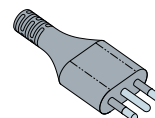
US NEMA
WD6 mains
plug (P3)



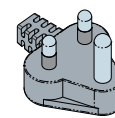
Swiss SN
SEV1011
mains plug (P4)



AUS/NZ mains
plug (P5)



Italian mains
plug (P6)



BS 546:1950
(Indian) mains
plug (P7)

ORDERING INFORMATION

Description

Order Code

Language group 1 - English - French - German - Dutch

OTD-LG1-P1 - BS1363 (UK) mains plug	1006-346
OTD-LG1-P2 - Schuko (EU) mains plug	1006-347
OTD-LG1-P4 - Swiss SN SEV1011 mains plug	1006-348
OTD-LG1-P5 - AUS/NZ mains plug	1006-349

Language group 2 - English - Spanish - Italian - Portuguese

OTD-LG2-P1 - BS1363 (UK) mains plug	1006-350
OTD-LG2-P2 - Schuko (EU) mains plug	1006-351
OTD-LG2-P3 - US NEMA WD6 mains plug	1006-352
OTD-LG2-P6 - Italian mains plug	1006-353

Language group 3 - English - Arabic - Turkish - French

OTD-LG3-P1 - BS1363 (UK) mains plug	1006-354
OTD-LG3-P2 - Schuko (EU) mains plug	1006-355
OTD-LG3-P3 - US NEMA WD6 mains plug	1006-356
OTD-LG3-P7 - BS 546:1950 (Indian) mains plug	1006-357

Language group 4 - English - Czech - Slovak - Polish

OTD-LG4-P1 - BS1363 (UK) mains plug	1006-358
OTD-LG4-P2 - Schuko (EU) mains plug	1006-359

Description

Order Code

Language group 5 - English - Chinese - Japanese - Korean

OTD-LG5-P1 - BS1363 (UK) mains plug	1006-360
OTD-LG5-P2 - Schuko (EU) mains plug	1006-361
OTD-LG5-P3 - US NEMA WD6 mains plug	1006-362
OTD-LG5-P8 - BS1363 (UK) mains plug and US NEMA WD6 mains plug	1006-363

Language group 6 - English - Hungarian - Romanian - Russian

OTD-LG6-P2 - Schuko (EU) mains plug	1006-364
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Language group 7 - English - Finnish - Norwegian - Swedish

OTD-LG7-P2 - Schuko (EU) mains plug	1006-365
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Included items

OTD test cell with carry case

Product CD

Mains lead

USB cable

Test cell probe

Drain hose

Printer paper

Printer Ribbon

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OTD Test Cell in a toughened transport case. Provided as standard with the OTD instrument. This test cell contains 32 components making it easy to clean and assemble.

ORDERING INFORMATION

Optional accessories

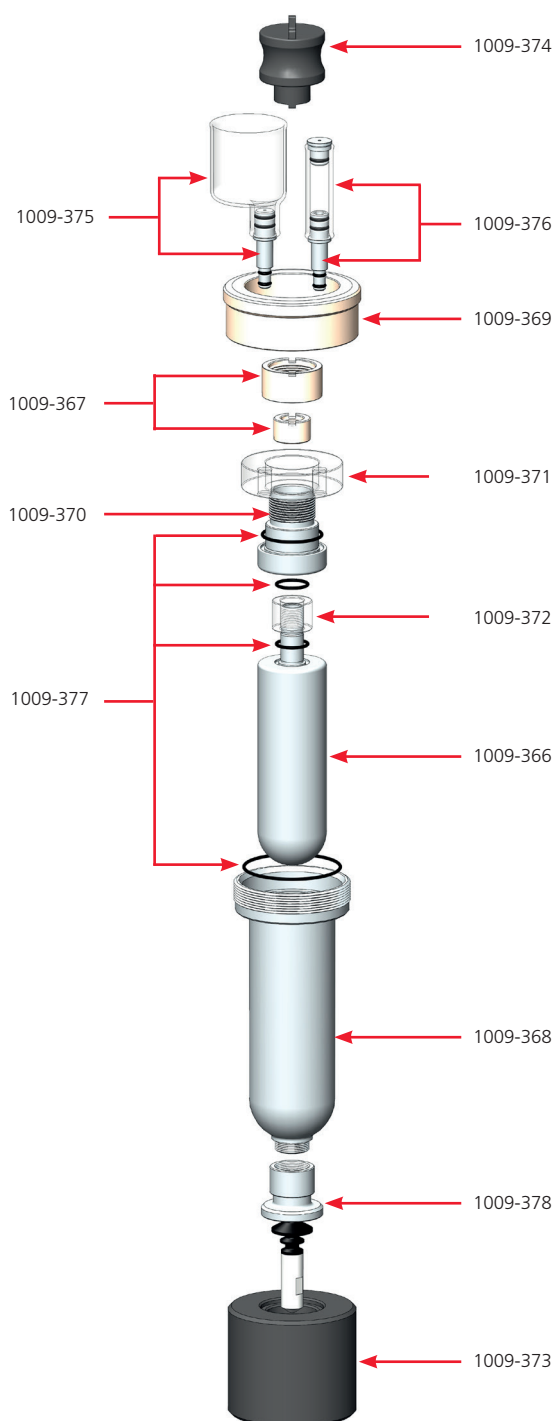
OTD test cell with carry case	1008-293
OTD-CC (Calibration Checker)	1008-291
Printer paper (20 rolls)	1008-030
Printer Ribbon Cassette	25995-002
OTD ISO17025 (UKAS) Calibration Certificate	1010-991

OTD instrument accessories

Oil drain hose	1009-363
Test cell probe	1009-364

OTD test cell accessories

Test cell carry case	1009-365
Inner electrode	1009-366
Outer electrode	1009-368
Guard electrode	1009-370
Guard insulator (glass)	1009-371
Measure insulator (glass)	1009-372
Sight (glass) and riser pipe	1009-376
Funnel (glass) and filler pipe	1009-375
O-ring kit	1009-377
Drain valve	1009-378
Captive nut	1009-369
Inner nut and Guard nut	1009-367
Test Cell Stand	1009-373
Test Cell Key	1009-374



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