

# OTS100AF, OTS80AF and OTS60AF

## Laboratory oil testers



- **Laboratory instruments for measuring insulating oil breakdown voltage**
- **Lock in precision – oil vessel with lockable adjustment**
- **Bright 3.5" colour display visible out doors**
- **Suitable for mineral, ester and silicon oils**
- **Trip detection circuit with direct measurement of voltage and current**
- **Ultra fast (< 10  $\mu$ s) HV switch off time**

### DESCRIPTION

Megger's automatic laboratory oil test sets perform accurate breakdown voltage tests on mineral, ester and silicon insulating liquids. Moulded test vessels give repeatable results with lock in precision electrode gap setting adjustment wheels. The transparent, shielded lid and large test chamber enable easy access to the test vessel.

All three laboratory models are fitted with a 12 key alphanumeric keypad to facilitate entry of test ID, filenames, notes etc. Alpha characters are entered by repetitive pressing on a key, the same way as text is entered modern cellular telephones.

Test standards are preloaded in the instrument and new versions can be uploaded via USB flash drive. All laboratory models support the creation of user defined custom tests. Test results are identified either by a serial number or asset ID and are time and date stamped. Megger's asset and data management software, PowerDB Lite, is bundled at no extra cost providing an excellent tool for downloading and printing results.

An optional internal printer provides a hard copy of results. Ink based printout ensures durability at all temperatures. USB interfaces (x3) support PC connection, USB flash drive, external USB printer and barcode scanner.

User safety is paramount and Megger have designed independent and dual redundant high voltage cut-off circuitry to ensure safety. During a test the operator can terminate by pressing any button on the keyboard which will remove high voltage immediately and abort the test. The transparent lid provides ample visibility within the chamber yet is protected and electrically shielded by a screen with multiple links to instrument ground.

### FEATURES AND BENEFITS

- Test voltages : 60 kV, 80 kV and 100 kV
- Lock in precision oil vessel - lockable gap setting
- Flat electrode gap gauges that will not damage electrodes
- Automatic oil temperature measurement
- QVGA colour display with backlight visible in sunlight
- Large, easy clean test chamber with oil drain
- High visibility test chamber
- Safe operation with dual redundant micro switch
- Intuitive user interface

### OPTIONAL FEATURES

- Internal printer
- Motorised lid impeller
- Voltage check unit (VCM100D/VCM80D)

### APPLICATION

Monitoring and maintenance of oil quality is essential in ensuring the reliable operation of oil filled electrical equipment. Codes of practice have been established in many countries that include several different types of test on insulating oils.

One of the fundamental tests of oil quality is the breakdown voltage test, which is a measure of the oil's ability to withstand electric stress. A low breakdown voltage can indicate the presence of contaminants such as water or conducting particles.

Care should be taken to ensure the process of sampling oil and subsequent testing does not in any way contaminate it with foreign objects. Cleaning vessels between oil tests should be a rinse with the next sample, never clean with fibrous materials. To ensure an accurate reading set gap carefully and lock adjusting wheels.

## SPECIFICATIONS

### Test voltage

OTS60AF -30 to +30 kVrms

OTS80AF -40 to +40 kVrms

OTS100AF -50 to +50 kVrms

Voltage resolution and accuracy

0.1 kV  $\pm 1\%$   $\pm 2$  digits

Programmed test sequences

ASTM D 1816-04

ASTM D 877A-02

ASTM D 877B-02

IEC 60156-95

Vessels 400 ml (standard) 150 ml (option)

Nylon 12 chamber provides precision electrode alignment, adjustment wheels lock electrodes in position, option of 150 ml vessel for low volume oil samples

Temperature sensor resolution

1 °C

Power supply

Line voltage 85 to 265 VAC

Line frequency 50/60 Hz

Interfaces

USB 2.0 compatible

2 x USB type-A (Flash drive, printer, other)

1 x USB type-B (PC)

Internal printer (option)

Matrix impact printer

Paper 57.5 mm wide

External printer

Any printer with USB interface and PCL3 driver

Protection

Dual safety micro switches on chamber cover

Display

320 x 240 QVGA colour display with backlight

### Environment

Operating temperature

0 °C to +50 °C

Storage temperature

-30 °C to +65 °C

Humidity

80% RH at 40 °C operation

95% RH at 40 °C storage

Altitude

2000 m

### Safety

Designed in accordance with IEC61010

### EMC

Light industrial IEC 61326-1 Class B, CISPR 22, CISPR 16-1 and CISPR 16-2

### Dimensions

All models 580 mm x 420 mm x 290 mm

### Weight

All models 30 kg with printer option fitted



400 ml vessel assembly (with electrodes fitted)














VCM100D/VCM80D

## ORDERING CONFIGURATION

Example of an ordering configuration:-

OTS100AF-USA-P4 = This order is for an OTS100AF with US power lead, ASTM electrode set, internal printer and lid stirrer.

Model:		OTS		AF-		-				Weights	
Select model	100 kV	100								29.5 kg	
	80 kV	80								29.5 kg	
	60 kV	60								29.5 kg	
Select power cord		EU lead	EU								
		UK lead	UK								
		US lead	US								
		Australian lead	AU								
		No plug lead	BL								
Select electrode set			ASTM set	A							
			IEC set	E							
			Full set	U							
Select printer option				Internal printer	P				0.54 kg		
				No printer	X				0.08 kg		
Select stirrer option				Stirrer lid assembly fitted	4			0.3 kg			
				Stirrer lid assembly not fitted	X						

**ORDERING INFORMATION**

Product	Order Code		
OTS60AF	configured*	Full electrode set ASTM and IEC electrodes	1001-479
OTS80AF	configured*	Vessel lid mounted impeller (ASTM D1816) for use	
OTS100AF	configured*	with 400 ml vessel	1001-102
<b>Included accessories (on all configurations)</b>		<b>Product</b>	<b>Order Code</b>
Vessel 400 ml assembly		<b>Optional accessories</b>	
Magnetic bead stirrers (2 off)		Vessel 400 ml assembly (no electrodes supplied)	1001-473
Magnetic bead retriever		Vessel 150 ml assembly (no electrodes supplied)	1001-474
Feeler gauge set 1, 2, 2.5, 2.54 mm		VCM100D digital voltage checker	1001-105
User manual CD		VCM80D digital voltage checker	1001-801
PowerDB Lite software		Printer paper, 1 roll (MOV applies) (4 rolls supplied	
<b>Configured accessories (to order additional or spares)</b>		if printer configured)	25995-001
IEC60156 electrode Set - 12.7 mm spherical (2),		Barcode reader, USB	1001-047
36 mm mushroom (2)	1001-477	* See ordering configuration on previous page	
ASTM D877/1816 electrode set - 25.4 mm cylindrical			
(2 std, and 2 none std), 36 mm mushroom (2)	1001-478		

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**CERTIFICATION ISO**  
 Registered to ISO 9001:2008 Cert. no. Q 09250  
 Registered to ISO 14001:2004 Cert. no. EMS 61597

**OTS100AF\_80AF\_60AF\_DS\_EN\_V02**  
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