

# Electrical Test & Measurement Instruments





## OTS 60A, 80A, 100A

Fully automatic insulating oil dielectric breakdown testing



OTS-A series is a fully automatic microprocessor-based Oil BDV Tester designed with advanced technologies to measure the electrical breakdown strength of insulating oil. OTS-A has a quick sensing ability to measure accurate breakdown voltage. OTS-A series is equipped with national & international standards for test sequences and it also has user-friendly customized test sequences. The color TFT display with keypad provides easy operation. It is provided with internal memory for 100 data storage & inbuilt thermal printer for the onsite report. As for safety, the OTS-A series has open ground detection feature to avoid damage. The molded oil test vessel is suitable to test Mineral, Ester & Synthetic Oil and it is provided with an adjustable electrode gap setting to conduct the test as per standards. The portable voltage checker is useful for onsite calibration verification.

OTS-A series has a Bluetooth connectivity module with MOT-WARE mobile app for remote access of testing data & storage in the cloud for further analysis & record purposes.

## Features

- ✓ 25 Pre-programmed & 10 Customized test standards
- ✓ Upgraded Sequence as per IEC60156-2018
- ✓ Oil temperature measurement
- ✓ Easy externally adjustable locking electrode gap
- ✓ Fast precision breakdown detection
- ✓ Ultra-fast HV switch off time
- ✓ Suitable for mineral, ester and silicone oils
- ✓ QR code generation for identification
- ✓ Bluetooth connectivity
- ✓ RBM Test

## Applications

Transformer oil is used as insulating medium in transformer, switchgear and other electrical apparatuses and it also acts as a coolant which dissipates (or to dissipate) heat of the transformer. In addition to these, insulating oil serves other purposes like, it helps to preserve the core and winding as these are fully immersed inside oil and another important purpose of Insulating oil is, it prevents direct contact of atmospheric oxygen with cellulose made of paper insulation used in windings, which is susceptible to oxidation. When insulating oil deteriorates due to aging / contamination which leads to catastrophic event due to flashover in insulation. The voltage withstands capability of oil which often is reduced ( which often reduces) due to contamination like dirt, water ingress and foreign particles.

**The Motwane's OTS-A series useful for Oil Testing in the following equipments:**

- Power and Distribution Transformer
- Bushing
- Instrument Transformer
- Switchgear
- Capacitors

**Technical Details**
**OTS A Series**
**Specification**

<b>Power supply</b>	110V/230V $\pm$ 10% AC, 50Hz/60Hz single phase	<b>Temperature Measuring Range</b>	0°C - 99.9°C (ASTM D877 requires oils to be within 20°C and 30°C)
<b>Test Voltage</b>	OTS60A 0 to 60 kV rms maximum (30 kV - 0 - 30 kV) OTS80A 0 to 80 kV rms maximum (40 kV - 0 - 40 kV) OTS100A 0 to 100 kV rms maximum (50 kV - 0 - 50 kV)		(IEC 60156 required oil to be within 15°C and 25°C)
<b>Voltage Rise Time</b>	0.5 kV/s, 2.0 kV/s or 3 kV/s depending on selected test standard and 0.5 kV/s up to 10kV/s in custom test	<b>Temperature sensor resolution</b>	0.1°C
<b>Voltage Rise Time Accuracy</b>	Better than 5%	<b>Interface</b>	USB
<b>Voltage Resolution</b>	0.1 kV	<b>Printer</b>	Inbuilt Thermal Printer
<b>Accuracy</b>	$\pm$ 0.1% $\pm$ 1 kV	<b>Data Storage</b>	100 Reports
<b>Trip time</b>	< 10 $\mu$ s	<b>Protection &amp; Safety</b>	Dual safety micro switches on Chamber cover
<b>Over voltage protection limit</b>	After 60/80/100 kV (depending on model)		Safety Door interlock
<b>Tripping current</b>	$\leq$ 10mA		Zero start interlock
<b>Vessels</b>	400 ml (standard) The test vessels, built from the most chemical-resistant clear polymer, ensure tried-and-tested reliable results. They also feature precision electrode alignment and adjustment wheels that lock electrodes in position.		Overload protection
<b>Programmable Parameters</b>	Stand Time - 0 to 999 secs Stirring Time - 0 to 999 secs Intermediate Stand Time - 0 to 999 secs Voltage Ramp up - 0.5 kV/sec to 10 kV/sec Iterations - 24	<b>Display</b>	TFT Color Display
		<b>Operating temperature range and humidity</b>	-10°C to 60°C <90% RH (Non-condensing)
		<b>IP Rating</b>	IP 40
		<b>Safety Standards</b>	IEC61010-1:2010 AMD:2016
		<b>EMC</b>	IEC 61326
		<b>Dimensions</b>	655 mm(L) x 325 mm(W) X 385 mm(H)
		<b>Weight</b>	35 Kg (Approx.)
		<b>Language</b>	English

**Technical Details**
**OTS A Series**

Sr. No.	Test Name	Initial Stand Time in Sec	Intermediate Stand Time in Sec	Stirring Time in Sec	Rate of Rise	No. of Test
					kV / Sec	
1.	BS 5730A	60	NA	NA	2	*2
2.	BS 5730	60	NA	NA	2	1
3.	BS 5874	300	120	120	5	6
4.	NFC 27	300	120	120	5	6
5.	OCT 6581	300	120	120	5	6
6.	AS 1767	300	120	120	5	6
7.	IP 295	300	120	120	5	6
8.	IEC 60156 Rev.2.0. 1995	300	120	Continuous	2	6
				120		
				No		
9.	IEC 60156 Revised std.3.0. 2018	300	120	Continuous	2	6
				No		
10.	IEC 60156 Revised std. 2018 (I)	300	60	Continuous	2	10
11.	ASTM D1816-12	180	60	60	0.5	5
12.	IS 6792-92	300	120	Continuous	2	6
				120		
				No		
13.	IS 6792-18	300	120	Continuous	2	6
				No		
14.	IS 6792-23	300	60	Continuous	2	10
15.	STAS 286	600	120	60	2	6
16.	BS 148	300	120	120	5	6
17.	VDE 0370	300	120	120	5	6
18.	CE 1344	300	120	120	5	6
19.	SABS 555	300	120	120	5	6
20.	STA 8286	300	120	120	5	6
21.	UNE 21	600	240	60	2	6
22.	ASTM D877-19	140	60	0	3	5
23.	5 Min Test	60	30	30	1	3
					2	
24.	Withstand A	Programmable	Rise voltage @2kV/sec till the set limit and withstand for 60Sec, if withstood for 60sec report pass if not report fail			
25.	Withstand B	Programmable	Rise voltage @2kV/sec till the set limit and withstand for 60Sec if test is pass rise the voltage till breakdown report both values Withstood Voltage and Breakdown Voltage			

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26.	Custom 1 to 10	Programmable	Programmable	Programmable	Programmable	Programmable
		Selectable 999	Selectable 999	continuous	Selectable 5KV	Selectable up to 24
				selectable up to 999		
No						

**Including accessories**

■ Oil cup assembly (new design with electrodes, spring & lock) and oil temperature sensor	1 Set
■ Mushroom, spherical & flat electrodes	1 Set each
■ GO NOGO Gauge (1mm, 2mm, 2.5mm, 2.54mm, 4mm)	1 No each
■ Pointer Oil cup	1 No.
■ Pen Drive	1 No.
■ Magnetic Stirrer capsule	2 No.
■ Mains Power Cord	1 No.
■ Ground/Earth Leads	1 No.
■ USB cable	1 No.
■ Thermal Printer Paper Roll	2 No.
■ Carrying bag with accessories	1 No.
■ Instrument Carrying Case with Foam	1 No.
■ Fuse small 5A slow blow ( Included inside the instrument)	2 Nos.
■ Instruction Manual for OTS-100A	1 No.
■ Test & Calibration Certificate	1 No.

**Optional accessories:**

■ 1096V6010 Voltage checker	1 No.
■ Bluetooth Software (Standard)	
■ MOT-WARE Desktop Application (Standard)	

**ORDERING INFORMATION**

Product	Order Code
<b>OTS 60A</b>	<b>1096Z7210</b>
<b>OTS 80A</b>	<b>1096Z8210</b>
<b>OTS 100 A</b>	<b>1096X8310</b>
<b>with Standard Accessories</b>	

## Contact Details

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