



OTS 60A, 80A, 100A

Fully automatic insulating oil dielectric breakdown test set



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. It features a motorized variac to adjust the test voltage. The colored TFT display with keypad provides easy operation. It is provided with internal memory for 2000 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 & silicon oils, 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

- ✓ 36 Pre-programmed & 10 Customized test standards
- ✓ Upgraded Sequence as per IEC 60156-2025
- ✓ 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
- ✓ Equipped with Real Breakdown Monitoring (RBM)
- ✓ Facility for manual testing
- ✓ Bluetooth & cloud connectivity

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

Power supply	110V/230V $\pm$ 10% AC, 50Hz/60Hz single phase	Temperature Measuring Range	0°C - 99.9°C (ASTM D877 requires oils to be within 20°C and 30°C)
Test Voltage			(IEC 60156 required oil to be within 15°C and 25°C)
OTS - 60A: 0 to 60 kV AC RMS maximum (30 kV - 0 - 30 kV)		Temperature sensor resolution	0.1°C
OTS - 80A: 0 to 80 kV AC RMS maximum (40 kV - 0 - 40 kV)			
OTS - 100A: 0 to 100 kV AC RMS maximum (50 kV - 0 - 50 kV)		Interface	USB
		Printer	Inbuilt Thermal Printer
Voltage Rise Time		Data Storage	2000 Reports
As per Test selected (0.5 kV/sec to 10.0 kV/sec & Custom selected.)		Protection & Safety	
			Dual safety micro switches on Chamber cover
Voltage Rise Time Accuracy	Better than 5%		Safety Door interlock
Voltage Resolution	0.1 kV		Zero start interlock
Accuracy	0.1% $\pm$ 1 kV		Overload protection
Trip time	< 10 μ s		Earth open Interlock
Over voltage protection limit	After 60/80/100 kV (depending on model)		Emergency Stop
Tripping current	$\leq$ 10mA		Open Ground Protection
			Auto trip and reset
Vessels	400 ml (standard)	Display	Colored TFT Display
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.		Operating temperature range and humidity	
			-10°C to 60°C
			<90% RH (Non-condensing)
Programmable Parameters		IP Rating	IP 40
Stand Time - 0 to 999 secs		Safety Standards	IEC61010-1:2010 AMD:2016
Stirring Time - 0 to 999 secs		EMC	IEC 61326
Intermediate Stand Time - 0 to 999 secs			
Voltage Ramp up - 0.5 kV/sec to 10.0 kV/sec		Dimensions	655 mm(L) x 325 mm(W) X 385 mm(H)
Iterations - 24		Weight	35 Kg (Approx.)
		Language	English

OTS A Series

Sr. No.	Test Name	Initial Stand Time in Sec	Intermediate Stand Time in Sec	Stirring Time in Sec	Rate of Rise kV / Sec	No. of Test	Electrode spacing in mm				
							1.00	2.00	2.50	2.54	4.00
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			√		
10	IEC 60156 18-A	300	60	continuous	2	10			√		
11	IEC 60156 18-V	900	360	continuous	2	6			√		
12	IEC 60156 18-AV	900	180	continuous	2	10			√		
13	IEC 60156 25	300	120	continuous	2	6			√		
14	IEC 60156 25-A	300	60	continuous	2	10			√		
15	IEC 60156 25-V	900	360	continuous	2	6			√		
16	IEC 60156 25-AV	900	180	continuous	2	10			√		
17	ASTM D1816-12	180	60	60	0.5	5	√	√			
18	IS 6792-92	300	120	continuous	2	6			√		
				120							
				No							
19	IS 6792-17	300	120	continuous	2	6			√		
				No							
20	IS 6792-23	300	60	continuous	2	10			√		
21	IS 6792-23A	300	60	continuous	2	10			√		
22	IS 6792-23V	900	360	continuous	2	6			√		
23	IS 6792-23AV	900	180	continuous	2	10			√		
24	STAS 286	600	120	60	2	6			√		
25	BS 148	300	120	120	5	6			√		
26	VDE 0370	300	120	120	5	6			√		
27	CE 1344	300	120	120	5	6			√		
28	SABS 555	300	120	120	5	6			√		
29	STA 8286	300	120	120	5	6			√		
30	UNE 21	600	240	60	2	6			√		
31	ASTM D877-19	140	60	0	3	5				√	
32	5 Min Test	60	30	30	1 2	3			√		
33	Withstand A	Programmble	Voltage increases to set value and remains there for 60Sec, if the sample with stands for 60Sec. Report Withstands/ PASS and if we get breakdown, reports will display Fail and Breakdown voltage will be stored and displayed						√		
34	Withstand B	Programmble	Voltage increases to set value and remains there for 60secs, after completion of 60sec increment voltage until breakdown occurs and reports both values with stand and BDV, If it fails, reports only display Breakdown value.						√		

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Sr. No.	Test Name	Initial Stand Time in Sec	Intermediate Stand Time in Sec	Stirring Time in Sec	Rate of Rise kV / Sec	No. of Test	Electrode spacing in mm				
							1.00	2.00	2.50	2.54	4.00
35	Custom 1 to 10	Programmble	Programmble	Programmble	Programmble	Programmble	Facility to enter from 1mm to 5mm				
		Selectable 999	Selectable 999	continuous	Selectable 10kV	Selectable upto 24	√	√	√	√	√
				selectable upto 999							
36	JIS C2101-99 (Mineral oil)	120	60	60	3kV	10			√		
37	JIS C2101-99 (Silicon oil)	120	0	0	3kV	5			√		

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.
■ Fuse 100mA slow blow	2 Nos.
■ Instruction Manual	1 No.
■ Test & Calibration Certificate	1 No.
■ Bluetooth Software	1 No.
■ QR Code Scanner	1 No.

Optional accessories:

■ Voltage Checker VC - 100
■ Pendrive Connectivity
■ Oil Drain Facility
■ MOT-WARE Application

Note:

- Image & weight are subjected to change.

ORDERING INFORMATION

Product	Order Code
OTS 60A	1096Z7210
OTS 80A	1096Z8210
OTS 100 A with Standard Accessories	1096X8310