



## Data Sheet



IEC156/1995-05	
MEAN VALUE	97.6 kV
STD. DEV.	2.6
S/M	2.7 %
TEST 1	95.6 kV

MENU    ↑    ↓    START

## Automatic Insulating Oil Tester DTA 100 E

The new DTA 100 E offers special extras, maximum safety and highest accuracy for determination of the electrical breakdown strength of liquids and gaseous insulants. With this derivative of the proven DTA 100 all known test standards are available, e.g. IEC, VDE, ASTM, UTE etc.

### User-oriented features

Individual test cycles and highest safety for user!

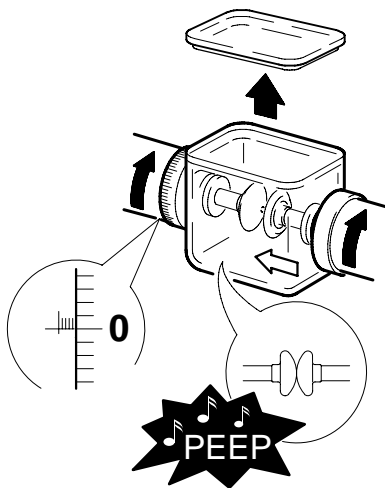
- Fully automatic test cycle according to selected test standard (IEC 156 / 1995 - 05, UNE 21309 / 89 etc.)
- Additionally, up to 5 test cycles are freely programmable
- Electromagnetic screening - nearby electronic appliances are not affected by any interference
- Stable test voltage; not affected by line voltage variations
- Selectable test voltages up to 100 kV<sub>rms</sub>
- Easy operation by self-explaining menu guidance
- Input of sample number and temperature
- Quick breakdown detection and current break time < 1 ms. Avoids formation of fibres or carbonation of mineral oils





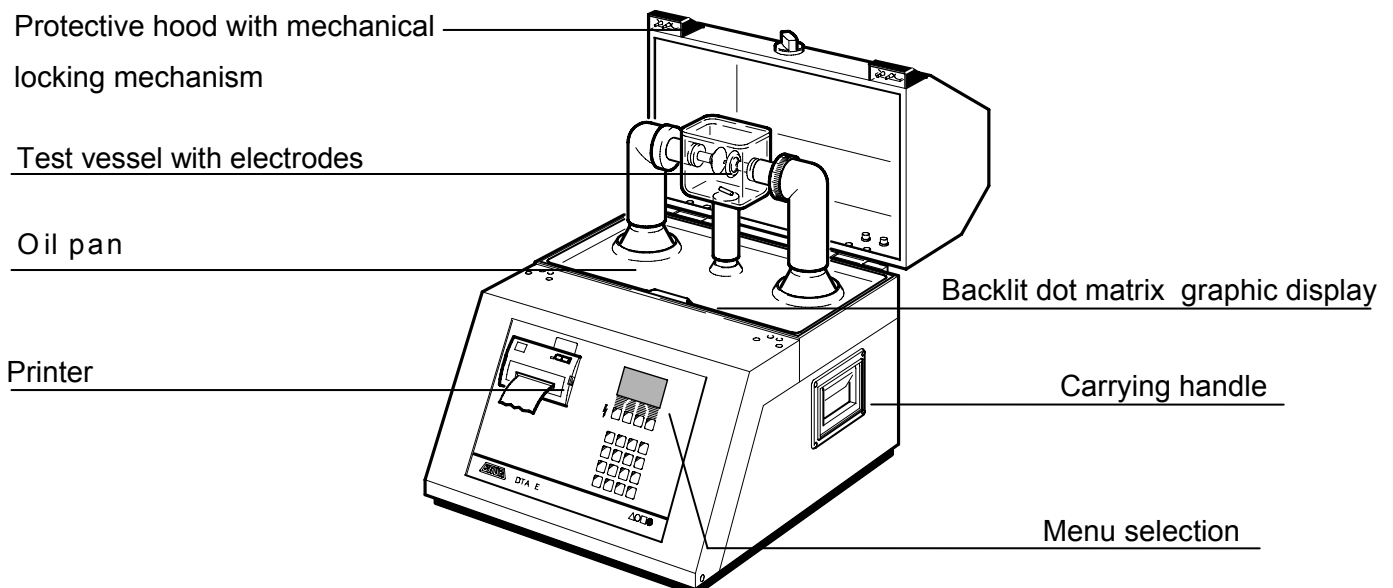
- Recall of individual breakdown values
- Withstand voltage test (1 - 999 min)
- Step test (1 - 10 steps)
- PC communication via serial interface RS 232
- Evaluation of measured data via LCD display and via printer log
- designed and manufactured acc. to standard (ref. to technical data)
- DTA 100 E AD for flow-type oil test

### Test vessel with cover quick and easy - adjusting electrodes precisely



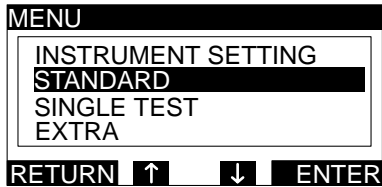
- Exact adjusting of electrode spacings in conformance with the standards by means of a built-in vernier and an electro-acoustic zero spacing control.
- Undisturbed electric field around electrodes thanks to horizontal electrode feeding
- Easy handling and cleaning by a stirrer.
- Test vessel cover acc. to IEC156/1995-05 in order to avoid moisture absorption during a test cycle.

### Ergonomic design - compact and user-friendly





## Menu guiding from input to start comfortable and clear



The DTA 100 E offers a user-friendly and clear menu guidance. The display can be set to different languages, e.g. German, English or French. Menu functions to be activated are marked with the black cursor bar and can be quickly and easily selected via control keys. When unit is switched on again, the last used test standard and languages is selected automatically.

## Menu display and entry keys

actual menu

menu window

display of functions to be activated

key assignment

entry keys for menu guiding

numerical keys for data entry

quick access to selection of

quick access to selection of

quick access to printer on/off

erase values

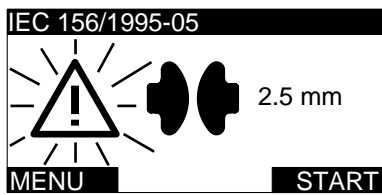
confirm values





### Before starting a test cycle

- Check displayed shape of electrode and adjusted electrode spacing
- Enter report no.
- Enter sample temperature



TEST REPORT DTA100E V1.0  
15.07.96 09:30

PRINT-OUT NO.:  
4507

STANDARD:  
IEC 156/1995-05

ELECTRODES : .....

SPACING : .....

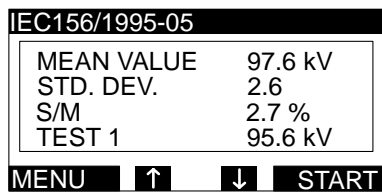
STIRRING CONTINUOUSLY

TEST FREQUENCY 60 Hz

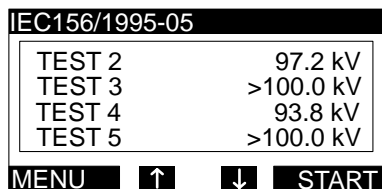
TEMPERATURE 25 °C

S/M 2.7 %  
STD. DEV. 2.6  
MEAN VALUE 97.6 kV

TEST 6 96.8 kV  
TEST 5 > 100.0 kV  
TEST 4 93.8 kV  
TEST 3 > 100.0 kV  
TEST 2 97.2 kV  
TEST 1 95.6 kV



000DTANe.eps



After test cycle - Reading test results  
from display or from printer test report





## Technical data

	DTA 100 E
Power supply	100 - 240 V (50 Hz - 60 Hz)
Power consumption	max. 200 VA
Display	backlit, 160 x 80 dot-matrix, LCD
Voltage indication, digital	0 - 100 kV; $\pm 1$ kV
Resolution (displayed)	0,1 kV
Selectable languages	German, English, French, Italian, Spanish, Dutch; other language on request
Test cycles according to a standard	13 pre-programmed test standards are available: ASTM D 1816 / 97; ASTM D 877 / 87; BS EN 60156; CEI EN 60156; CSSR RVHP / 85; IEC 156 / 95; IRAM 2341 / 72; JIS C2101 / 78; PN 77 / ED 4408; SEV EN 60156; UNE 21 309 / 89; NF EN 60156; VDE 0370 part 5 / 96;
Additional test cycles	5 free programmable test cycles
Test voltage, testing insulants	0 ... 100 kV <sub>rms</sub> , symmetric
Voltage rate of rise	0,5 kV / s / 1 kV / s / 2 kV / s / 3 kV / s / 5 kV / s
Switch off current	4 mA
Switch off time on breakdown	< 1 ms
RBM (Real Breakdown Monitoring)	Real Breakdown Monitoring detects insulating liquids with specific resistance too low $\rho < 30 \text{ M}\Omega$
Relative humidity	< 90 % not condensing
Maximum ambient temperature	Working: 0... + 45 ° C Storage: - 20 ... + 55 ° C
Dimensions (W x H x D)	450 x 460 x 500 mm
Weight	37,6 kg
Printer	Matrix printer, 24 char., 57 mm plain paper
Interface	bi-directional RS 232, 9 pin sub D Option: Windows PC Software
Designed and built acc. to the following standards	Low voltage directive 73 / 23 / EWG, EN 61010 - 1 EMV directive 89 / 336 / EWG with modification 91 / 263 / EWG, 92 / 31 / EWG VDE 0843 part 2, IEC 801 - 2 / VDE 0843 part 4, IEC 801 - 4 VDE 0875 part 11, EN 55 011
Use	for insulating liquids / gas with $\tan \delta$ - values < 4,5 specific resistance $\rho > 30 \text{ M}\Omega\text{m}$





**Order instructions:**

Please specify in each enquiry or order:

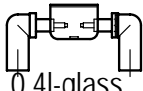


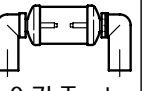
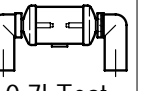


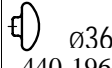

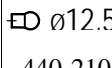

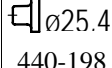

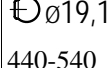
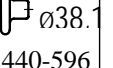
<b>Automatic Insulating Oil Tester DTA 100 E</b>		<b>415+036</b>	
<b>Delivery includes:</b>		<b>Standard</b>	<b>Selection</b>
Automatic insulating oil tester DTA 100 E without accessories		■	
Test vessel		■	
Test vessel 0.4 l according to IEC 156 fig. I with cover; for insulating liquids			<input type="checkbox"/>
Test vessel 0.4 l according to IEC 156 fig. II with cover; for insulating liquids			<input type="checkbox"/>
Test vessel 0.4 l according to ASTM D 877 with cover; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to IEC 156 fig. I; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to IEC 156 fig. II; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to ASTM D 877; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to ASTM D 2477; for insulating gases			<input type="checkbox"/>
Oil collecting tray		■	
Magnetic oil stirrer		■	
Drive for stirrer		■	
Lifting stick for oil stirrer		■	
Setting gauge 2,54 mm ASTM 877		■	
Mains connection cable		■	
Ink ribbon for plain paper printer - fed into printer		■	
Paper roll for plain paper printer, 57 mm width, Ø 30 mm, inserted in printer		■	
Operating manual		■	
<b>Options:</b>			
Transport case made of plywood			<input type="checkbox"/>
Test vessel 0.4 l according to IEC 156 fig. I with cover; for insulating liquids			<input type="checkbox"/>
Test vessel 0.4 l according to IEC 156 fig. II with cover; for insulating liquids			<input type="checkbox"/>
Test vessel 0.4 l according to ASTM D 877 with cover; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to IEC 156 fig. I; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to IEC 156 fig. II; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to ASTM D 877; for insulating liquids			<input type="checkbox"/>
Test-Cell 0.7 l according to ASTM D 2477; for insulating gases			<input type="checkbox"/>
Dust cover			<input type="checkbox"/>
Setting gauge 1 mm			<input type="checkbox"/>
Setting gauge 2 mm			<input type="checkbox"/>
Setting gauge 2,54 mm			<input type="checkbox"/>
Setting gauge 4 mm			<input type="checkbox"/>
Setting gauge 5 mm			<input type="checkbox"/>
Ring nut wrench for dismounting of test vessel			<input type="checkbox"/>
Demo software for DTA 100 E and DTL			<input type="checkbox"/>
Windows software with connection cables for DTA 100 E			<input type="checkbox"/>
<b>Consumer parts for plain paper printer:</b>			
Ink ribbon for plain paper printer			<input type="checkbox"/>
Paper roll for plain paper printer, 57 mm width, Ø 30 mm			<input type="checkbox"/>
<b>Mains supply:</b>			
■ 110 V ~ to 240 V ~			

■ ..... Included in standard delivery, □ Selectable (please mark with a cross or specify)





## Selection of test vessels and electrodes - Overview test arrangements

DTA 100 E *DTA 100 E-AD			Liquid Insulants				Gaseous Insulants		
			470-655  0,4l-glass vessel	470-656  0,7l-Test Cell	471-478  0,7l-Test Cell	471-480  0,7l-Test Cell	470-654  0,7l-Test Cell	471-480  0,7l-Test Cell	
 415-538	 440-196		IEC156/95 Fig.II VDE0370/12.78 415-522	IEC156/95 Fig.II VDE0370/part5/96 415-528	IEC156/95 Fig.II VDE0370/part5/96 ASTM D1816 415-594				
 415-539	 440-210		IEC156/95 Fig.I 415-523	IEC156/95 Fig.I 415-529	IEC156/95 Fig.I 415-593				
 415-540	 440-198		ASTM D877 415-524	ASTM D877 415-530		ASTM D877 415-580			
 415-542	 440-540	 440-596					ASTM D2477 415-534	ASTM D2477 415-581	

The DTA 100 E is also available as Flow-type Unit DTA 100 E-AD..

