

Dielectric Strength Testing



Insulating oil tester
DPA 75

The portable insulating oil tester DPA 75 measures the electric breakdown strength of insulating liquids.

Features:

- functional and ergonomical design
- test voltages from 0 up to 75 kVrms
- multiple breakdown measurements on silicone oil samples are possible due to short breakdown time and progressive current limiting
- built-in sensor for acquisition of temperature of the insulating liquid
- integrated plain paper printer for automatic reporting of test data (option)
- interlock switch for protective hood
- oil-proof touch panel and an easily readable graphics display enables optimal and comfortable user communication
- compact design, low transport weight as well as a shoulder strap and a carrying handle (option) for easiest portability
- mains and battery operation (option)

The DPA is a modern, fully automatic oil tester with all features dedicated to safety, ergonomics and ease of use. Dielectric strength testing is performed up to 75 kV, therefore all kinds of insulating liquids such as transformer-, switchgear- and cable oil can be tested.

STANDARDS

All of the many national and international standards can be selected by a keypress. The standard sequences are performed automatically including correct rate of rise, multiple breakdowns, stirring- and waiting cycles. The unit can also store up to five user defined sequences.

INFORMATION

All relevant data is shown on a large easy to read back lit high resolution display. The self teaching user software is menu driven and very easy to operate. The built-in printer provides a hard copy of all test results plus test conditions such as oil temperature, measurement standard and sample number. The values of multiple measurements are recorded and compared. If the standard deviation $\sim\%$ exceeds a user defined value, message is displayed \sim according to ASTM and UNE.

COMFORT

The DPA stores all user settings and configurations such as desired standards or user defined test cycles in a nonvolatile memory, that is recalled automatically ~when the unit is switched on again)

THE TEST VESSEL

Designed to completely fulfil the international measurement standards. The whole instrument/ including the oil vessel, is very easy to clean. The electrodes are introduced horizontally into the test vessel, which prevents electrical field caused turbulences and corona. This also enables covering the oil sample with a lid - a measure required by most standards. The electrode distance can be set accurately even without a setting gauge by to the integrated calibrated vernier.

SAFETY

All conceivable measures have been taken to prevent any danger to the user during the test cycle, even when it is misoperated. The safety hood - when opened - disables the high voltage via double interlock (forced contact). At all times the DPA keeps the user informed about required actions/ such as checking the electrode distance. The unique permanent self check of the instrument gives the utmost measurement reliability. Real breakdown monitoring (RBM~ allows simple and safe classification of all oil samples). The international standards require visible electrodes and flashover. The DPA therefore offers viewing windows for the test vessel.

MAINS INDEPENDENT

The built-in battery permits up to 9 hours field operation without recharging. The charging status is displayed indicating the number of further possible breakdown tests.



- Small and lightweight: only 21 kg/ 50 lb (including battery)
- 0 -75 kVrms test voltage
- easy to use, menu operated and fully automatic
- fully automatic test sequences according to all current standards
- built in printer for hard copy test results
- rugged design with folding front panel and transport safe test vessel
- oil temperature recording during test cycle
- bidirectional PC interface for control and data aquisition
- built in rechargeable battery



Technical data: Automatic Oil Tester DPA 75

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|--|---|
| Output voltage, dielectric strength test | 0..75 kVrms symmetric |
| Display | Black lit 160 x 80 dot matrix LCD |
| Voltage indication digital | 0 - 75 kV, ± 1 kV |
| Resolution (displayed) | 0.1 kV |
| Rate of voltage rise | 0.5 - 1 - 2 - 3 - 5 kV/s |
| Switch-off current | 4 mA |
| Switch-off time on breakdown | < 1 ms |
| Real Breakdown Monitoring (RBM) | detects flash over |
| Internal temperature acquisition of oil sample | 0..99 °C/+ 32 °F . . . + 210 °F |
| Resolution | 1 °C/ 1 .8 °F |
| Operating temperature | 0..45 °C/ +32 °F..113 °F |
| Relativ humidity | < 90 % |
| PC-Interface | bidirectional RS232, 9 pin sub D |
| Power supply | width range 90 - 264 V, 50/60 Hz |
| Dimensions | 405 x 345 x 275 -mm / 16" x 13 1/2" x 10 3/4" |
| Weight | 21 kg/50 lb |
| Internal, rechargeable battery | 2x6V, 10Ahrs |
| DPA 75 is built according to the following standards | IEC 10 10, EN 61010-1, VDE 0411 Part 100 |

Measurement Standards

For insulation liquids with tan delta-values < 4.5 or specific resistance $\rho > 30$ MOHMm. For further information please refer to DPA 75 data-sheet.