

TANGENT-3M

Automatic Insulating Oil Dissipation Factor Meter



The system measures:

- Dissipation factor $\text{tg}\delta$
- Dielectric capacity ϵ
- Capacitance C
- Voltage applied to a measurement cell
- A transformer oil sample temperature

A Digital Automatic Dissipation Factor Measurement Apparatus Tangent-3M is designed for measuring the dielectric dissipation factor $\text{tg}\delta$ of transformer oil and other insulating fluids according to IEC 60247 and GOST 6581-75 standards.



Tangent-3M control panel

YAPI-3



The device can operate with six different measurement cells parameters of which are stored in a non-volatile memory and are easily accessible from the built-in menu. All settings and 2000 last measurements are also stored in a non-volatile memory of the unit.

The package includes software on a CD-ROM that allows importing the measurements data from the device to a PC. The data can be imported in MS Word or MS Excel formats. The device connects to a PC via the serial interface (RS232C).



TANGENT-3M



Automatic Insulating Oil Dissipation Factor Meter

Specifications :

Digital Automatic Dissipation Factor Measurement Apparatus	Tangent-3M
Dissipation factor (DF) measuring range	0.0001 ... 1.0000 (0.01% ... 100%)
DF measuring accuracy	$\pm (0.03 \text{ tg}\delta + 0.0002)$
Resolution	0.00001
Output AC voltage, V_{RMS}	1940 ... 2060 (2000)
Measuring uncertainty, %	2.5 of reading
Capacitance measuring range, pF	5 ... 50
Testing temperature, °C	90
Temperature measuring accuracy, °C	± 1
Measuring time including calibration & heating to 90°C (measuring at 70°C and 90°C), minutes	≤ 45
Measuring time including calibration & heating to 95°C (measuring at 70°C / 80°C / 90°C) on increasing temperature) & cooling (measuring at 90°C / 80°C / 70°C) on decreasing temperature), minutes	≤ 100
Input voltage, V	$230 \pm 10\%$
Frequency, Hz	50 ± 1
Power consumption, kVA, max	0.3
Dimensions W x H x D, mm	405 x 90 x 260
Weight (incl. package), kg, max	5
Ambient operation temperature, °C	+ 10 ... + 35
Relative air humidity	Non condensing
Atmospheric pressure, mm Hg	630 to 800

Package contents :

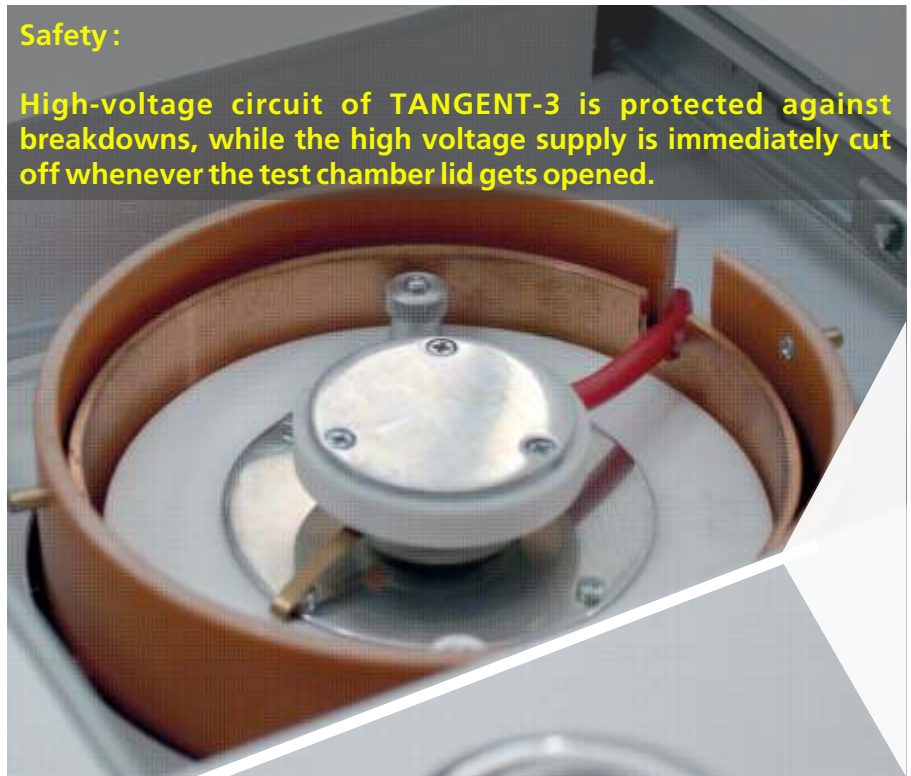
Digital Automatic Dissipation Factor Measurement Apparatus	Tangent-3M
Test cell YAPI-3	3
Power cable	1
AC voltage corresponding to electric field strength of 1 MV/m, kV_{RMS}	1
User manual	1

YAPI-3 test cell :

Test cell	YAPI-3
Terminals count	3
Volume, cm^3	11 ... 13
AC voltage corresponding to electric field strength of 1 MV/m, kV_{RMS}	2

Safety :

High-voltage circuit of TANGENT-3 is protected against breakdowns, while the high voltage supply is immediately cut off whenever the test chamber lid gets opened.



YAOI-3

Reference Test Cell

YAOI-3 Reference Test cell is used as a working measurement standard during the calibration of the automatic insulating oil dissipation factor meter Tangent-3M.

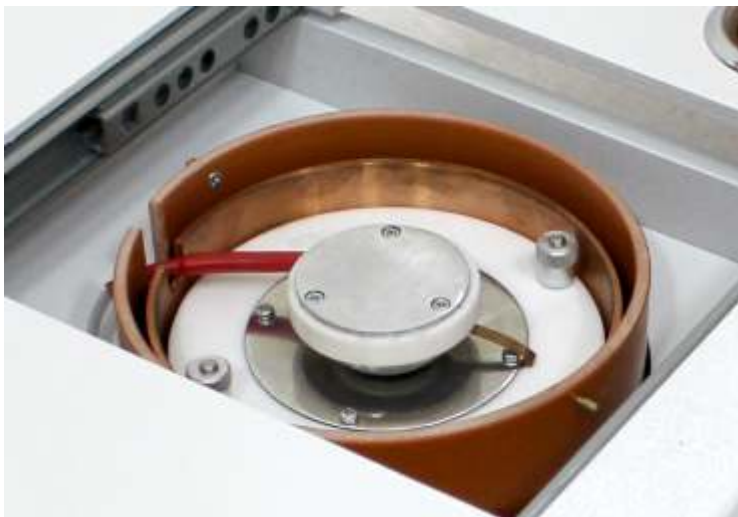


- Highly accurate calibration based upon multiple reference value
- Provides stable reference values as metal protective body prevent from external impurities.
- Transportation case for ease of transportation - optional

YAPI-3

Three - Terminal Test Cell

The YAPI-3 three terminal test cell is used as a vessel for holding the oil sample in the automatic tester TANGENT-3M during the measurement of the dielectric dissipation factor ($\tan\delta$).



- Complies to IEC60247 international standard.
- Smoothly polished cell offers ease of cleaning & maintenance
- Stainless-steel electrodes help in isolation from external environmental impurities



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Quality
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ISO 9001:2015

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