Oil tan delta measurement device TANGENS-3M3

Description

The dielectric loss measurement device Tangens-3M-3 is designed to measure the dielectric loss tangent (tan delta) of transformer oil and several other liquid dielectrics.

Under the normal conditions, the device Tangens-3M-3 provides the measurement of the dielectric loss tangent (tgδ) and the capacity of liquid dielectric samples (Cx) in the ranges with basic measurement error given below:

- measurement range of dielectric loss tangent – from $1 \cdot 10^{-4}$ to 0.99;
- limit of permissible absolute basic error when measuring the dielectric loss tangent1) – $+(2 \cdot 10^{-4} + 0.05\ tg\delta)\%$;
- range of capacity measurement at a test voltage – from 1.5 to 2 kV from 5 pF to 100 pF;
- limit of permissible basic error when measuring the -capacity at a frequency of 50 Hz – 1 pF+0.01 Cx;
- limit of permissible basic error when measuring the -capacity at a frequency of 54 Hz – 1 pF+0.03 Cx;
- limit of measured liquid temperature deviation from the preset temperature, °C, – +1;
- limit of permissible absolute basic error when measuring the dielectric loss tangent[2)] – $+(2.5 \cdot 10^{-4} + 0.07\ tg\delta)$;
- limit of permissible relative error when measuring the RMS voltage value at a frequency of 50 Hz in the voltage measurement range – from 1 to 2 kV +3%;
- limit of permissible relative error when measuring the RMS voltage value at a frequency of 54 Hz in the voltage measurement range – from 1 to 2 kV +3%;
- limit of permissible absolute measurement error of the measured liquid dielectric temperature – +1 °C;
- heat time up to 90°C, min, – $80^{\pm 20}$;
- cell volume, cm^3, – $60^{\pm 2}$;
- single-phase AC supply voltage, V, – $220^{\pm 22}$;
- power consumption, W, max, – 0.6.

[1] – for the full range of capacity measurement at a test voltage frequency of 50 Hz;
[2] – for the full range of capacity measurement at a test voltage frequency of 54 Hz.

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