

TANGENT DELTA

TANGENT DELTA (LOSS FACTOR) AND CAPACITANCE TESTER



TANGENT DELTA

Description

The Tangent Delta (Loss Factor) Meter is a fully automatic equipment for measuring the dielectric loss factor ($\tan \delta$) and capacitance of electrical equipment. It is suitable for applications in transformers, bushings, capacitors, current transformers, potential transformers, among others. It has an internal standard capacitor and an internal high voltage source up to 12 kV, it also can be used with an external source and external capacitor.

Benefits:

- Anti-interference frequency conversion system
- High precision, adopts digital waveform analysis and bridge self-calibration technology;
- Multi-level protection;
- Protection at the HV terminals: quick response when the object under test is short-circuited or has dielectric breakdown;
- The various operating modes can perform all types of dielectric loss tests. There is no need to connect external auxiliary equipment;
- Built-in series and parallel connections in two dielectric measurement modes;
- Both capacitance and dielectric loss can be measured in a single test.

Performance

- The tester uses a digital filter based on Fourier transform to measure capacitance, dielectric losses, and other parameters. The test results are highly accurate.
- With a touchscreen LCD display, the tester is easy to operate, and each process is clear due to the graphical interface.
- Data storage: Test results can be saved and viewed at any time, displaying the date and time of the tests performed.
- Equipment data can be exported via USB disk and managed on any PC using specific software.
- The tester is easy to operate, and the measurement process is controlled by a microprocessor. Once the appropriate measurement method is selected, the measurement can be performed automatically.
- The model is integrated with a standard capacitor and high-voltage power supply, making it convenient for local testing and reducing the number of conductors required.
- In case of accidental electric shock to the operator, the equipment immediately cuts off the high voltage to ensure operator safety.



Technical Specifications

Uncertainty	Cx Capacitance	$\pm (\text{reading} \times 1\% + 1\text{pF})$
	$\tan \delta$	$\pm (\text{reading} \times 1\% + 0,00040)$
Anti-interference	Anti-interference frequency conversion, less than 200% interference, can still achieve high accuracy	
Range for measuring capacitance	Internal HV terminal	3 - 60000 pF/12 kV 60 pF - 1 μ F/0,5 kV
	External HV terminal	3 pF - 1,5 μ F/12 kV 60 pF - 30 μ F/0,5 kV
	Resolution	Max. 0.001 pF (4 significant figures)
Range for $\tan \delta$	Limited, with 0.001% resolution (automatic identification of capacitor, inductor and resistor)	
Test current range	10 μ A ~ 5 A	
Internal high voltage	Adjustment voltage range	0,5 - 12 kV
	Max output current	200 mA
	Voltage increment/decrement	Continuous ramp
	Voltage accuracy	$\pm (1,5\% \times \text{reading} + 10\text{V})$
	Voltage resolution	1 V
	Test Frequency	45 - 65Hz 49/51 Hz and 45/55 Hz ((Automatic dual frequency conversion)
	Frequency accuracy	$\pm 0.01 \text{ Hz}$

Technical Specifications

Self-excitation at LV output	Voltage output 3 to 50 V, current output 3 to 30 A		
Communication	RS-232		
External high voltage	Maximum test current	5 A	(40-70 Hz) in UST
	Maximum test current	12 kV / 5 A	(40-70 Hz) in GST
Measurement time	Approximately 30 seconds (Related to the measurement method)		
Power supply	180 ~ 270 V, 50 Hz/60 Hz \pm 1 %		
Interface	RS232, U Disc		
Printer	Micro Printer		
Environment temperature	-10 ~ 50°C		
Relative humidity	< 90%		

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