

CPC 80 + CP TD12/15

Test system for measuring power/dissipation factor



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OMICRON's CPC 80 + CP TD12/15 is the perfect test system for analyzing the insulation condition of high voltage equipment by measuring the power/dissipation (tan delta) factor value and capacitance.

Our solution

The test system consists of two units – the CPC 80 control unit and the 12 kV / 15 kV insulation analyzing system CP TD12/15. With a weight of 18 kg / 40 lbs for CPC 80 and 23 kg / 51 lbs respectively 24 kg / 53 lbs for CP TD12/15, each unit can easily be handled by one person.

Insulation condition assessment

The test set provides automated voltage and frequency sweeps. Measuring the power/dissipation factor over a broad frequency range delivers more details than a single power/dissipation factor measurement. This helps you to better assess the insulation condition and for example, detect whether moisture contamination is in the cellulose or if the oil is contaminated or otherwise affected.

Excellent noise suppression

CPC 80 + CP TD12/15 is designed to produce reliable, repeatable and exceptionally precise results as the test system offers excellent noise suppression even under extreme conditions.

Temperature correction

The measured values can be corrected using already saved temperature correction curves.

Report generation

After testing, the results and routines are automatically stored and reports in various languages can easily be generated with the software provided.

Safety features

Safety features provide the highest operator safety during the testing. These features include ground connection check, emergency switch-off button, safety key lock and optional safety accessories.

Assets to be tested with CPC 80 + CP TD12/15:

- > Power transformers
- > Bushings
- > Circuit breakers
- > Rotating machines
- > Surge arresters
- > Cables
- > Current and voltage transformers
- > Capacitors

Parameters to be determined:

- > Power factor ($\cos \varphi$) / dissipation factor ($\tan \delta$)
- > Capacitance
- > Exciting current
- > Watts / power (P, Q, S)
- > Inductance
- > Impedance
- > Voltage
- > Current
- > Phase angle
- > Quality factor QF
- > Automated voltage sweeps (tip-up)
- > Automated frequency sweeps (15 Hz ... 400 Hz)



Technical data

High-voltage output

U/f	THD	I	S _{max}	t _{max}
0 ... 12 kV AC	< 2 %	300 mA	3600 VA	> 2 min
		100 mA	1200 VA	> 60 min
0 ... 15 kV AC	< 2%	300 mA	4500 VA	> 2 min
		100 mA	1500 VA	> 60 min

Capacitance Cp (equivalent parallel circuit)

Range	Typical accuracy ¹	Conditions
1 pF ... 3 μF	Error < 0.05 % of reading + 0.1 pF	I _x < 8 mA, V _{test} = 2 kV ... 10 kV
1 pF ... 3 μF	Error < 0.2 % of reading	I _x > 8 mA, V _{test} = 2 kV ... 10 kV

Power factor (cos φ) / Dissipation factor (tan δ)

Range	Typical accuracy ¹	Conditions
0 ... 10 % (capacitive)	Error < 0.1 % of reading + 0.005 %	f = 45 Hz ... 70 Hz I < 8 mA V _{test} = 2 kV ... 10 kV
0 ... 100 % (cos φ)	Error < 0.5 % of reading + 0.02 %	V _{test} = 2 kV... 10 kV
0 ... 10000 % (tan δ)	Error < 0.5 % of reading + 0.02 %	V _{test} = 2 kV... 10 kV

¹ Means "typical accuracy"; at typical temperatures of 23 °C ± 5 K; 98 % of all units have an accuracy which is better than specified

² There are power restrictions for mains voltages below 190 V AC

Power supply

Single-phase, nominal ²	100 V AC ... 240 V AC, 16 A
Frequency, nominal	50 Hz / 60 Hz
Power consumption	< 3500 VA (< 7000 VA for a time < 10 s)
PC Interface	Ethernet and USB stick

Mechanical data

CPC 80

Dimensions (W x H x D)	468 x 394 x 233 mm (without handles) / 18.4 x 15.5 x 9.2 in (without handles)
Weight	18 kg / 40 lbs

CP TD12/15

Dimensions (W x H x D)	450 x 330 x 220 mm / 17.7 x 13 x 8.7 in
Weight CP TD12	23 kg / 51 lbs
Weight CP TD15	24 kg / 53 lbs

Environmental conditions

Operating temperature	-10 °C ... +55 °C / +14 °F ... +131 °F
Storage temperature	-20 °C ... +70 °C / -4 °F ... +158 °F
Humidity range	5 % ... 95 % relative humidity, no condensation

Ordering information

	Ordering no.	Description
CPC 80 + CP TD12 test system	P0000824	1 × CP TD12 high-voltage unit including cables, leads, clamps 1 × CPC 80 control unit including cables, leads, clamps 1 × Software for PC and CPC 80 control unit including test templates and user manual 2 × Transport cases
CPC 80 + CP TD15 test system	P0000827	1 × CP TD15 high-voltage unit including cables, leads, clamps 1 × CPC 80 control unit including cables, leads, clamps 1 × Software for PC and CPC 80 control unit including test templates and user manual 2 × Transport cases
PTM Advanced software license	P0006797	License for PC software upgrade adding guided workflow, customized test plans, automatic assessment, graphical comparison and trending
SAA2 Warning lamp set – standard package	P0006338	1 × SAA2 control unit 1 × Signal lamp 1 × Transport case for 4 signal lamps

OMICRON is an international company that works passionately on ideas for making electric power systems safe and reliable. Our pioneering solutions are designed to meet our industry's current and future challenges. We always go the extra mile to empower our customers: we react to their needs, provide extraordinary local support, and share our expertise.

Within the OMICRON group, we research and develop innovative technologies for all fields in electric power systems. When it comes to electrical testing for medium- and high-voltage equipment, protection testing, digital substation testing solutions, and cybersecurity solutions, customers all over the world trust in the accuracy, speed, and quality of our user-friendly solutions.

Founded in 1984, OMICRON draws on their decades of profound expertise in the field of electric power engineering. A dedicated team of more than 900 employees provides solutions with 24/7 support at 25 locations worldwide and serves customers in more than 160 countries.

For more information, additional literature, and detailed contact information of our worldwide offices please visit our website.

