



GPS-6800

Capacitance and Dissipation Factor Tester



Enter the Parameters. It Balances the Bridge Itself.

A 10 kV bridge for assessing the insulation in high voltage plant: transformers and their bushings, circuit breakers, cables, arresters and rotating machines. Capacitance and dissipation factor together, which is how insulation condition is judged.

The test runs itself. Enter the parameters and the set raises the voltage, balances the bridge, takes the readings, ramps back down to zero and puts the result on screen and through the printer. The operator sets it up rather than nursing it.

Dissipation factor is measured without a range limit. Capacitance runs from 15 pF to 300 nF, but the ceiling falls as the test voltage rises, so the figure to check is the one at the voltage your procedure calls for rather than the headline.

Interference suppression works by line frequency modulation, with the test run at a frequency offset from the mains, so a live substation does not put its own hum into the measurement.

KEY FEATURES

- 0.5 to 10 kV in 0.1 kV steps, 12 kV to order
- $\tan \delta$ without range limit, to 0.001%
- Capacitance 15 pF to 300 nF
- CVT C1 and C2 measured together
- Interference suppression by frequency offset
- One-piece set, 22.75 kg

IDEAL FOR

- Transformers and their bushings
- Circuit breakers and switchgear
- Cables and terminations
- Lightning arresters
- Rotating machinery

MEASUREMENT RANGES

Range	Accuracy	Resolution	Notes
High voltage output			
0.5 to 10 kV	2%	0.1 kV steps	200 mA maximum · 2000 VA
12 kV	—	—	Available to order
Dissipation factor and capacitance			
tan δ , no range limit	$\pm(1.0\% \text{ rdg} + 0.040\%)$	0.001%	
15 pF to 300 nF	$\pm(1.0\% \text{ rdg} + 1.00 \text{ pF})$	0.001 pF	
Capacitance ceiling · falls as the test voltage rises			
At 1 kV	—	—	Cx below 300 nF
At 5 kV	—	—	Cx below 150 nF
At 10 kV	—	—	Cx below 60 nF
CVT ratio			
10 to 10000	0.1%	0.01	C1 and C2 measured at the same time

The capacitance ceiling moves with the test voltage: 300 nF is available at 1 kV but only 60 nF at 10 kV, because the set has 200 mA and 2000 VA to give. Check the ceiling at the voltage your procedure specifies. Dissipation factor carries no such limit. CVT testing is bounded at 300 nF.



WHAT'S IN THE BOX

- GPS-6800 test set in its carrying case
- High and low voltage test leads, 8 m each
- CVT connecting lead, 5 m
- Ground lead 2 m and power cord 1.8 m
- Printer paper, two rolls, and 10 A fuses
- User guide and factory test report

ALSO AVAILABLE · An oil test cell and heating controller are available, which extend the set to dissipation factor measurement on insulating oil.

GENERAL SPECIFICATIONS

Code	Item	Part Number
GPS-6800	Capacitance and dissipation factor tester, 10 kV, 15 pF to 300 nF, tan δ without range limit	680090

MEASURES

Capacitance and dissipation factor on high voltage apparatus · CVT ratio and voltage angle difference · inductance and resistance by automatic LCR measurement

CVT

C1 and C2 dissipation factor and capacitance measured together, without disconnecting the cable · ratio and voltage angle difference also reported

LCR

Inductance above 20 H and resistance above 10 k Ω at 2 kV · accuracy 0.1% · angle resolution 0.01

PROTECTION

Input voltage fluctuation, output short circuit, over-voltage, over-current and temperature · grounding is verified before the voltage is raised · zero-crossing switch-on and lightning protection on the boost transformer

DISPLAY

Touch screen · English interface · built-in printer · USB for transfer to a PC

CONSTRUCTION

One-piece set: the dissipation bridge, variable frequency supply, boost transformer and SF6 standard capacitor are all inside the case, with no separate standard capacitor to carry or connect

DIMENSIONS

Main unit 470 × 370 × 380 mm · accessory box 430 × 350 × 130 mm

WARRANTY

1 year, subject to product registration with GPS LTD · service and calibration available

TEST MODES

UST, GST and GSTg · grounded and ungrounded apparatus · forward and reverse connection · internal or external standard capacitor · internal or external high voltage · CVT self-excitation

SELF-EXCITATION

AC 0 to 50 V at 15 A · 45/55, 47.5/52.5, 55/65 and 57.5/62.5 Hz · automatic dual frequency

INTERFERENCE

Suppressed by line frequency modulation, the test running at a frequency offset from the mains

MEMORY

200 groups held internally, with USB stick storage supported · results saved in time order and recallable

POWER

AC 220 V $\pm 10\%$ · a generator may be used

MASS

Main unit 22.75 kg · accessory box 5.25 kg

ENVIRONMENT

Operating -15 to 40 °C · relative humidity below 80%