

PHG 70 portable / PHG 80 portable

BAUR VLF test system



Portable, high performance test generator with VLF truesinus® technology

- 3 voltage shapes in one device:
VLF truesinus®, VLF square wave and DC voltage
- For medium-voltage cables of up to 50 kV operating voltage
- Cable testing, fault conditioning, cable sheath testing

The BAUR PHG 70/80 portable VLF test systems are used for cable and cable sheath testing of medium-voltage cables of up to 50 kV and electrical equipment. The programmable high voltage generators offer 3 tried and tested voltage shapes:

VLF truesinus® and VLF square wave

BAUR VLF truesinus® digital technology enables the most reliable detection of damage and offers the comparability of measurement results by means of load-independent voltage generation with digital control. Unlike other voltage shapes, the voltage is exact, symmetrical and continuous. The cable length has no influence on the test level. Medium-voltage cables are tested with utmost care and in compliance with the standards.

DC voltage

For DC voltage testing, e.g. for paper insulated mass-impregnated cables, the PHG 70/80 provides a stabilised DC voltage with positive and negative polarity of up to 80 kV.

The PHG system satisfies the highest requirements with regard to safety, robustness, operational convenience and automation. Customised test sequences can be defined and saved via the self-explanatory menu control. High-voltage electrical breakdowns are automatically recognised during the test. The system either switches off automatically or goes into burn mode after the breakdown according to how it is programmed.

Applications

- VLF truesinus® up to 38 / 57 kV_{rms}
- VLF square wave up to 57 / 80 kV
- DC voltage up to ±70 / ±80 kV
- Cable tests in compliance with IEC 60502, DIN VDE 0276-620/621 (CENELEC HD 620/621), IEC 60060.3, IEEE 400.2, IEEE 400-2012
- Cable sheath testing in compliance with IEC 60229
- Testing of generators, transformers and switchgear

Features

- High performance test generator (3 kW) with adjustable output voltage
- Compact, in a 19" housing
- Control via laptop
- VLF truesinus® test technology enables load-independent, reproducible sinusoidal high voltage
- Adjustable test frequency: 0.01 Hz – 1 Hz
- Individually programmable, fully automatic test sequences
- Greater flexibility via "Manual test" mode
- Automatic breakdown detection
- Burn mode or safe shutdown on breakdown
- Control of test generator with professional, self-explanatory software in 23 languages
- Cable database for management of cable data and structured, easy to search storage of logs
- Safety control unit in compliance with EN 50191
- Inverse voltage protection 50 Hz – 16 kV
- Variable connection options to cable stations of different models
- Standalone system or for installation in cable test vans
- Extendable to a partial discharge and dissipation factor diagnostics system

Technical data

Output voltage	PHG 70	PHG 80
Frequency range	0.01 – 1 Hz	0.01 – 1 Hz
VLF truesinus®	1 – 38 kV _{rms} 1.4 – 53.7 kV _{peak}	1 – 57 kV _{rms} 1.4 – 80.6 kV _{peak}
VLF square wave voltage	1 – 57 kV	1 – 80 kV
DC voltage	± 1 – 70 kV	± 1 – 80 kV
Resolution	0.1 kV	0.1 kV
Accuracy	1%	1%
Output current	PHG 70	PHG 80
Measurement range	0 – 200 mA	0 – 200 mA
Current with DC voltage	10 mA at 70 kV	1.8 mA at 80 kV
	60 mA at 50 kV	60 mA at 50 kV
	90 mA at 20 kV	90 mA at 20 kV
Burn current	Max. 120 mA	Max. 120 mA
Resolution	10 µA	10 µA
Accuracy	1%	1%
Max. capacitive load	Up to 20 µF	Up to 20 µF
		1.2 µF @ 0.1 Hz at 57 kV _{rms}
		3 µF @ 0.1 Hz at 38 kV _{rms}
		4 µF @ 0.1 Hz at 30 kV _{rms}
4 µF @ 0.1 Hz at 30 kV _{rms}	4 µF @ 0.1 Hz at 30 kV _{rms}	4 µF @ 0.1 Hz at 30 kV _{rms}
Laptop		
Processor type	Intel Core i5	
Operating system	Windows 7 Ultimate 32-bit (or higher)	
Working memory	min. 4 GB	
Hard disk	min. 256 GB SSD	

Standard delivery includes

- BAUR PHG 70/80 portable VLF test system
 - PHG 70 or PHG 80 HV generator
 - SCU safety control unit
 - Laptop with pre-installed Windows 7 Ultimate, BAUR system software and MS Office incl. carrying bag
 - Windows 7 Ultimate on USB drive
 - BAUR system software on USB drive
 - GDR 80-500 discharge and earth rod
 - 19" rack for PHG 70/80 portable, incl. HV connection cable, earth cable and mains supply cord, cable lengths of 10 m respectively
 - USB cable 2.0, A connector on A connector, 1 m
 - Set of 4 wheels for 19" rack, mounted
 - Carry handles for 19" rack
 - User manual

General	
Input voltage	200 – 260 V, 50/60 Hz
Option	100 – 140 V, 50/60 Hz (with auto transformer)
Power consumption	Max. 3 500 VA
Degree of protection	IP22
Dimensions HV generator (W x H x D)	755 x 850 x 991 mm (19", 15 RU)
Weight HV generator	Approx. 199 kg, incl. rack and connection cable
Ambient temperature (HV generator)	-20°C to +55°C*
Storage temperature (HV generator)	-30°C to +70°C
Humidity	Non-condensing
Safety and EMC	CE compliant according to Low Voltage Directive (2014/35/EC) and EMC Directive (2014/30/EC) Environmental testing EN 60068-2-ff
Software available in 23 languages	English, Arabic, Chinese (CN), Chinese (TW), Czech, Danish, Dutch, German, Finnish, French, Greek, Italian, Korean, Malay, Norwegian, Polish, Portuguese, Rumanian, Russian, Serbian, Swedish, Spanish, Turkish

* From 45°C with reduction in performance

Options

- External auto transformer, 110/230 V; 3.0 kVA
- BAUR PD-TaD 60 portable PD diagnostics system (PD measurement up to 38 kV_{rms}/42.5 kV_{rms})
- Integrated dissipation factor measurement up to 38 kV_{rms}/42.5 kV_{rms} (in combination with PD-TaD 60)