High-Voltage Impulse Generator
PG 20 - 4000

Lightning surge:

Pulse Voltage:
20 kV, 10 / 700 µs

Pulse Current:
500 A, 5/310 µs

acc. to CCITT/ITU-T etc.

The high-voltage impulse generator PG 20-4000 generates standard impulse voltages with waveform 10/700 µs. Output voltage is adjustable between 1 kV and 20 kV. The polarity of the output voltage is selectable, positive or negative.

It is designed for dielectric testing of components and systems acc. to CCITT K17/K20/K22, ITU-T/K44, IEC 61000-4-5, EN 61000-4-5, VDE 0847. One high-voltage output with a series resistor of 25 Ω for direct testing of surge protection devices is available. The short circuit current with the waveform 5/310 µs can be adjusted up to 500 A by selection of charging voltage.

Output terminals are located on the top of the generator and are protected by an isolating cover. The safety test cover has a limit switch, which is connected to interlock loop of the generator. Interrupting the safety interlock loop causes deenergization of the high-voltage pulse generator and discharging of the energy storage capacitor.
Optionally the safety test cover can be delivered as a stand-alone unit, see picture above.

PG 20-4000 features a microprocessor controlled user interface and display unit for ease of use. The microprocessor allows the user to either execute standard test routines, or a ´user defined´ test sequence. The test parameters, which are shown on the built in display, are easily adjusted by means of the rotary encoder. A standard parallel interface provides the ability to print a summary of the test parameters whilst testing is being carried out.

All generator functions may be remotely controlled by a computer via optical link.

Technical specifications **PG 20-4000**

Main frame:

Microprocessor controlled LCD module			8*40 characters
Parallel printer interface for on-line documentation			25-way ´D´connector
Optical-interface for remote control of the generator			built-in
External Trigger input			10 V at 1 kΩ
External Trigger output			10 V at 1 kΩ
Connector for external safety interlock loop			24 V =
and external red and green warning lamps acc. to VDE 0104			230 V, 60W
Mains power			230 V , 50/60 Hz
Dimensions:	desk top case	W * H * D	555*604*800 mm^3
Weight			ca. 100 kg

High-voltage capacitor charging unit:

Charging voltage, adjustable	1 - 20 kV ± 2 %
max. energy stored	4000 J
Charging time, max.	< 50 sec
max. repetition rate	1/60 sec

Pulse forming network **10/700µs**

Peak output voltage, adjustable by preset of charging voltage	1 - 20 kV ±5%
Wave form of open loop output voltage: front time/tail time	10 / 700 µs ± 20%
Peak output current, adjustable by preset of charging voltage	25 - 500 A ±10%
Waveform of short circuit output current: front time/tail time	5/310 µs ± 50% / ± 20%
Polarity of pulse output, selectable	POS/NEG

Option 1: PG 20-4k software test package, for the external control of the device includes 5 m long fibre optic cable and PC Interface.
The control of the generator is connected to the computer by a light guide ring. Control commands and reply signals are transferred by the light guide ring. Test procedures may be user defined and are automatically executed. Generator settings are stored on disk during testing.

Option 2: Safety test cover, stand alone, besides the generator, Type PA 505
Upon lifting of the cover, switching-off of the generator or mains black-out the test object and the internal energy storage capacitor are discharged by a built-in high-voltage grounding switch.

Dimensions:	W * H * D	470 * 360 * 490 mm^3
Test space:	W * H * D	400 * 250 * 250/400 mm^3

Option 3:

Impulse voltage divider integrated	ratio = 1000:1 ± 2%
Monitor output for pulse output current, built-in	20 mΩ, 1.0 MHz