

Sine - Wave Pulse Generator SPG 1.2-25000

Impulse Current Generator for 50 Hz semi-sinus waves

Wave shape:

Semi-sinus wave

T/2 = 10 ms

2 Current ranges:

- 0.5 - 7.5 kA
- 25 - 375 A

**Compact
Design**

**Safety-
EUT Cabinet**

Acc. to EN 50470-3

The Sine Wave Pulse Generator is used for impulse current tests of the current conductors of watt-hour meters. The generator produces sinusoidal impulse currents and the wave shape is a 50 Hz sinusoidal half wave and the amplitude is adjustable via the charging voltage of the energy storage capacitor from 0.5 kA to 7.5 kA.

For testing low power watt-hour meters a second output is available, which allows the generation of impulse amplitudes of 25 A up to 375 A.



The pulse shaping network comprises an impulse current measuring resistor for the surveillance of the impulse amplitude. The impulse current output is placed on the top of the generator and it is designed as a high current test adaptor.

The output clamping connectors, as well as at the EUT are placed in the upper part of the cabinet behind a transparent front door, which prevents accidental touching of the connectors, while the tests are in progress.

When the front door is opened the internal high voltage generator is switched off and the energy storage capacitor is discharged.

The operator can define test sequences via the microprocessor controlled operation and display unit, these can be stored on the onboard software and test sequences can be carried out. The following test parameters can be adjusted via a digital turn button and shown in the display: Charging voltage, polarity, number of impulses and impulse repetition rate.

Technical Data :

SPG 1.2-25000

Basic unit:

| | | |
|--|---------|------------------------------|
| Microprocessor control, display with LCD-module | | 8*40 characters |
| Remote control via optically isolate computer interface | | fibre optic link, length 5 m |
| Parallel printer interface for online test report generation | | D-25 with 25 poles |
| External trigger input | | 10 V an 1 k Ω |
| External trigger output | | 10 V an 1 k Ω |
| Diagnostic input for the surveillance of the EUT | | 4 channels, 5 V logic |
| Connectors for external safety circuit | | 24 V = |
| as well as external red and green warning lamps to VDE 0104 | | 230 V, 60W |
| Mains power supply | | 230 V / 50 Hz |
| Dimensions : 19" cabinet, B * H * D | approx. | 556*1970*800 mm ³ |
| Weight: | approx. | 500 kg |

High Current Impulse Generator:

| | | |
|---|--|--------------------------|
| Charging voltage adjustable | | 40 - 1200 V \pm 2 % |
| Display resolution | | 8 bit \pm 1 LSB |
| Polarity of the impulse current | | positive |
| Maximum stored energy | | 25 000 Ws |
| Charging time for max. charging voltage | | approx. 90s |
| Maximum impulse repetition rate | | 1/120 sec |
| Wave shape representing a sinusoidal half wave, see calculation | | |
| max. limit load integral of the current $\int i^2 dt$ max | | 281 000 A ² s |

Max. amplitudes of the impulse currents

| | |
|-------|-------------------|
| PFN 1 | 7500 A + 10%, -5% |
| PFN 2 | approx.. 500 A |

| | | |
|---|---------------------------|--------------------------|
| Impulse current measuring resistor built-in | | 1.0 m Ω , 800kHz |
| Impulse release : | a) manual | by key operation |
| | b) external trigger input | 10 V / 1 k Ω |
| | c) internal, automatic | depending on test progr. |

| | |
|--|----------|
| Remote control via serial interface | built-in |
| Accessories : Mains cable, Key, Operating instructions | |

Safety test room in the upper part of the 19" cabinet, 12 HE, with glass front door, Main switch connected to the safety circuit of the generator. Red and green warning lamps on top of the cabinet

| | |
|------------------------|----------|
| EUT fitting connectors | built-in |
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Auxiliary power supply for the watt-hour meters to be tested:

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|--|-------------------|
| 1-phase adjustable resp. switchable voltage: | 230 / 110 / 100 V |
| max. output power | 30 VA |
| Display of the auxiliary power supply voltage (in the testing space) | built-in |

Wave shape of the output current

