

High-voltage pulse generator IPG 1012s

Surge voltage:

0.1 - 10 kV
1.2 / 50 μ s

Surge voltage test
acc. to VDE 0110, VDE
0411, VDE 0420 etc.



Impulse dielectric strength test of components, insulations and air-and surface flash-over gaps

The high-voltage pulse generator IPG 1012s has been designed for testing impulse dielectric strength of electrical components, electrical insulations and air-and surface flash-over gaps.

It generates standard impulse voltages with the waveform 1.2/50 μ s according to IEC 60.

Output adjustable between 0.2 kV and 12 kV. The output pulse voltage polarity can be selected via a polarity switch.

The Generator has a CURRENT SENSE circuitry, monitoring the output current of the high-voltage output and is triggered if the test object flashes over. Current sense sensitivity ($i_{dt} = \text{charge flow}$) is adjustable from 50 μ C to 500 μ C. Upon triggering the current sense circuitry, the signal lamp RESET lights up. Automatic operation is stopped on occurrence of an overload current. Operating the key RESET, automatic testing is continued.

HV pulse generator IPG 1012s is used for continuous quality control in automated production lines. In this application, the generator can be remotely controlled by use of the built-in PCL-Interface. Control commands and reply signals are transferred via the PLC-interface. Pulse voltage amplitude can be set by an external preset voltage, 0 - 10 V \equiv 0 - 100%. Upon applying the command, USE/ the external preset voltage is used as the set point value. Otherwise, the internal value from the set point potentiometer on the front panel is used.

Moreover, a peak detector with a window discriminator can be integrated. The output signals can be used for selection of test devices or to make sure, that the test voltage has been really applied to the device under test, see Option 1.

The generator comprises several safety measures, which provide for high-level personal safety of the operator. The external safety loop (connector SAFETY) allows safeguarding of the test set-up. Interrupting the external safety loop, causes deenergization of the generator and discharging of the energy storage capacitor. Outputs for external red and green warning lights according to VDE 0104 are provided.

Technical specification:
IPG 1012s

Charging voltage, selectable (10 turn pot.)	0 - 10.5 kV
Digital read-out of charging voltage calibrated in amplitude values of pulse output voltage	0 - 10.00 kV
Energy storage capacitor Cs	0.25 μ F/10 kV
Max. stored energy	12 Wsec
Load capacitance Cb	4 nF/12 kV
Damping resistor to HV-OUT terminal or damping resistor to HV-OUT terminal, alternatively	50Ω 200 Ω
Pulse voltage wave form: front time / tail time acc. to IEC 60, VDE 0433 etc.	1.2/50 μ s \pm 30%/20%
Peak value of pulse output voltage, adjustable	0.2 - 10 kV \pm 5%
Polarity of the output voltage, selectable	pos./neg.
Charging time	< 1.0 sec
HV-OUT connector on the rear panel	coaxial
Triggering: a) manual b) external trigger input c) remote control, PLC signal	push button 10V / 1k Ω 24 V=
CURRENT SENSE threshold value, selectable Display of over-current condition Reset of over-current condition range of operation, impulse voltage setting:	built-in 50 - 500 μ C signal lamp RESET key 1.0 - 10 kV
Remote control via PLC - Interface Control commands Analogue input for preset voltage Reply signals Impulse voltage divider, integrated	25-pol D-connector ON/OFF/START/TRIG/POL 0-10V = 0-100% SI/GE/.... ratio = 1000 : 1
Supply voltage for external safety interlock and external red and green warning lights acc. to VDE 0104	24V = 230 V / 60 W
Mains supply voltage	230V / 50 Hz
Dimensions: 19"-cabinet, 4 DIV w*h*d	453*180*420 mm ³
Weight	18 kg
Option 1: Peak detector and window discriminator, reply signals via PCL-interface Check of pulse output amplitude:	built-in
Limit values, adjustable: U1 = 0.0 - 3.3 kV; U2 = 3.3 -6.6 kV, U3 = 6.6 - 10 kV	
Reply signals: Ua < U1; U1 < Ua < U2, U2 < Ua < U3, Ua > U3	
Accessories: Mains cable, safety connector, lock key, connecting plug for ext. red/green warning lamps, HV-output cable 1.0 m long, instruction manual.	

Technical data subject to change

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