

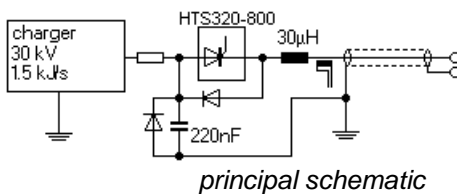
SCR-Puls 30-1500J

Pulse generator for short, powerful pulses up to 30kV

The SCR-Puls 30-1500J delivers short, powerful pulses with a voltage up to 30 kV. It is intended to supply flashlamps, under water discharges or other low impedance loads which need short pulses with high power.

The SCR-Puls 30-1500J charges an internal capacity to a voltage up to 30 kV. An SCR switch module discharges this load into the connected load. The load is connected by a high voltage coaxial cable. The cable screen is close to ground potential, the pulses have positive polarity. The pulses may be triggered with an external TTL-signal, manual with a push button, or with an internal trigger pulse generator.

Technical data



Voltage and current

- Internal voltage supply: 30 kV, 100 mA max., 1.5 kJ/s. After a pulse the charger is inhibited for 2ms.
- Pulse capacity 220nF.
- The pulse current is limited by the internal series inductor. Short circuit current is limited to <2.5kA.
- Maximum pulse energy: 100J.
- The pulse generator is designed for load impedances in the range 1Ω to 1kΩ; optimum is around 50Ω.
- With very small load impedances (short circuit) and higher frequency the generator may shut down due to overtemperature.

Switching

- For switching an SCR switch module, designed for 32kV and 8kA peak, is used.
- voltage rise (10% - 90%) around 300ns (high impedance load).
- Duration of current pulse is load dependent, the minimum is around 5µs FWHM at 10Ω load impedance. With very small load impedances the pulse width is again increasing.
- Maximum frequency around 15 Hz with 30 kV output voltage. With smaller voltage, higher pulse repetition rates are possible.
- Threshold control signal ~ 2V.
- Delay input signal rise to output voltage rise ~200ns.
- Jitter <5 ns.

Mechanical, instrumentation, delivery content

- 19" desktop housing 12 HE, 553*520*600 mm (H*W*D).

Front:

- Main switch
- Pushbutton high voltage on
- Pushbutton high voltage off
- analog voltage display.
- indicator LEDs for Load fault, Summary fault, EOC, Inhibit of the charger
- 10-turn potentiometer for voltage control
- 10-turn potentiometer for adjustment of repetition rate 0-15 Hz
- Switch for external control
- BNC-Plug for external control signal (TTL)
- Pushbutton for manual pulse triggering
- BNC-Plug voltage monitor signal 1:3000
- BNC-Plug current monitor signal (Rogowski coil), 5mV/A.

Rear side:

- Feedthrough for high voltage output cable, incl. 3m high voltage cable installed.
- Ground connector screw.
- Plug for grid supply cable

Further:

- Manual / documentation.

Environmental

- Operation temperature 5-35°C.
- Humidity 0-80%, the pulse generator is designed for operation in dry laboratory rooms.
- protection class I, IP20
- Power supply 220V-240V, 10A max.

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