SUR S6 Surge Generator

Overview

Surge pulses occur due to direct or indirect lightning strikes or by power system switching transients caused by switching inductive loads or short circuits. This leads to currents or electromagnetic fields causing high voltage or current transients. The energy is particularly large. And the impact on the product may be destructive. A lightning surge generator is used to evaluate the performance of device subjected to high energy disturbances from the power line port and other signal line ports. Our surge generators simulate these disturbances for all the necessary voltage levels in accordance with IEC/ EN 61000-4-5.

Standard and basis of product designing & manufacturing

- GB/T 17626.5
- IEC/ EN 61000-4-5: Testing and measurement techniques – Surge immunity test

Power supply

- Input voltage: AC220V (≥150W)
- Frequency: 50/60Hz
- Coupling/ decoupling network: single-phase three-wire (L-N-PE)
- Voltage resolution: 1V
- Voltage harmonic distortion≤5%

Environment

- Indoor use
- Altitude not exceeding 1000metres
- Ambient temperature 15℃~35℃
- Relative humidity no more than 85%
- No conductive dust, no fire or explosion hazard, no corroding metal or insulating gas, sine wave voltage waveform, waveform distortion rate≤5%
- Earthing resistance not more than 0.5Ω

Features

- User friendly 7” Touch Panel Display
- Support multi-language & facilitate users
- Built-in environment self-test program
- Built-in international standard test levels make it more user friendly (Pre-programmed IEC 61000-4-5 test settings)
- EUT intelligent detection
- RS232 interface, PC control operation

Picture

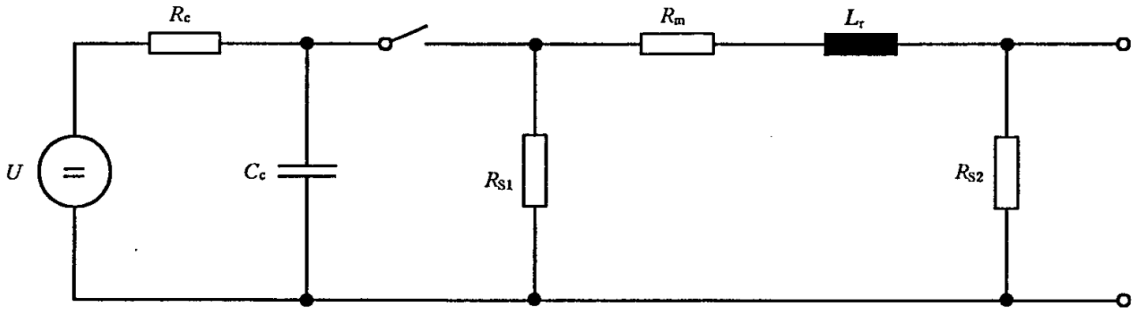
Technical data

Model	SUR S6
Surge Waveform	Open-circuit voltage wave: 1.2/50μs Short-circuit current wave: 8/20μs
Open-circuit Voltage	0.2～ 6kV
Short-circuit Current	0.1～ 3kA
Polarity	Positive/ negative/ alternating
Phase Angle	0~ 359°synchronous, asynchronous, or automatic
Effective output impedance	2Ω (common mode 12Ω)
Coupling/ decoupling network	Built-in, single-phase three-wire, 16A (customer specific on demand)
Coupling mode	Differential mode 18μF, common mode 9μF/ 10Ω
Count	1～9999
Interval	10～9999S
Power supply	AC220V 50/60Hz
Ambient temperature	15℃～35℃

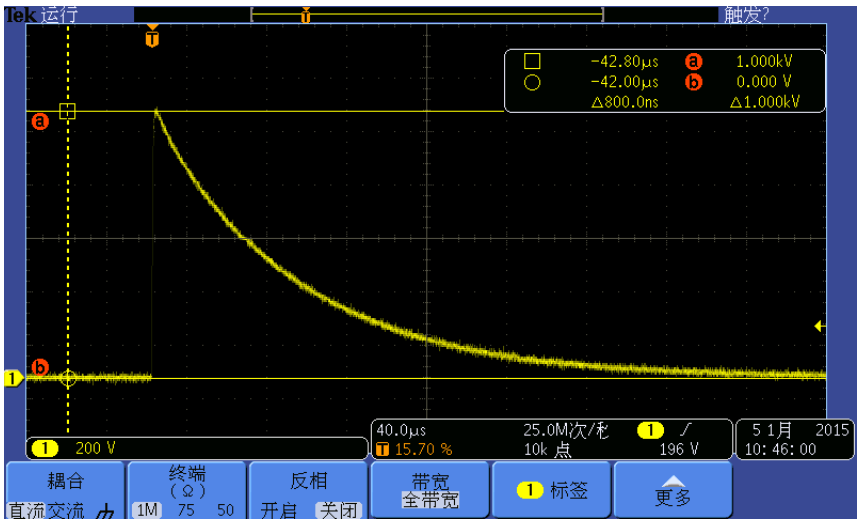
Basic circuit diagram

In the figure, Cc is the energy storage capacitor. Its actual capacity is about 10μF. The width of the voltage wave is mainly determined by the wave forming resistor Rs1. The impedance matching

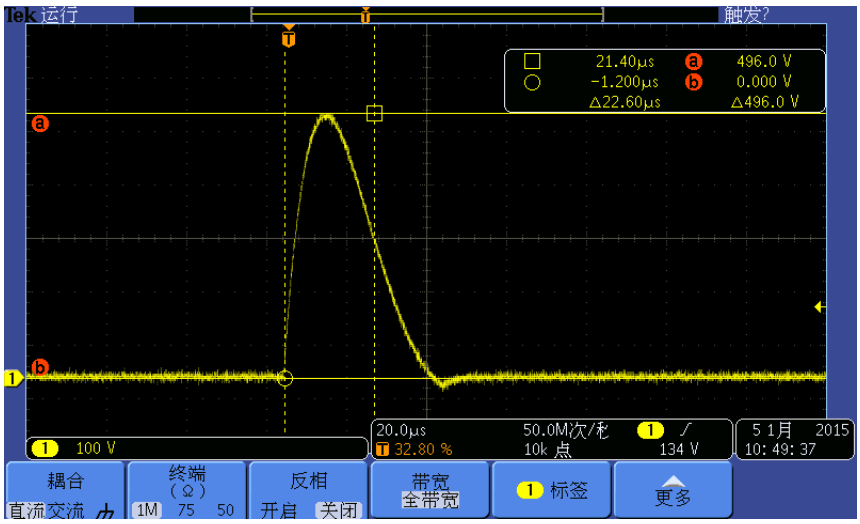
resistor Rm determines the ratio of open circuit voltage peak to short-circuit current peak value. Here is called the output impedance with standard specified as 2Ω (therefore, the peak value of open circuit voltage is 4kV, the short-circuit current peak is then 2kA). The rise and duration of current wave is mainly decided by the waveform inductor.



Measured waveform



Open-circuit voltage wave 1.2/50µs



Short-circuit current wave 8/20µs

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