

Lightning Surge Simulator

LSS-720B2

Features

This simulator simulates "high-energy induced lightning noise" induced in distribution lines and communication lines due to ground potential fluctuations caused by lightning strikes, and evaluates the resistance of electronic devices.

It is possible to check the dielectric strength due to induced lightning at a level that cannot be confirmed with the combination waveform required by the IEC standard.

- **Lightning surge simulator (Generator) conforming to JEC 210 / 212 Standard**
- **Maximum output voltage : 20 kV**
Enables verifying dielectric strength against induced lightning surge which level cannot be available with the combination surge simulators
- **Maximum output current : 4000 A**
Enables conducting testing for surge absorbers for their current handling capability
- **Enables observing the output waveform only with an oscilloscope at hand and 1 / 10 voltage probes since 1 / 100 waveform check terminal is standard equipped**
- **Isolation transformer built-in so that the primary power input and EUT can be easily connected**



Specifications

Parameter	Specification	
Voltage surge	Output waveform	1.2/50 μ s
	Max. output voltage	20 kV
	Polarity	Positive or negative
	Output impedance	6 Ω \pm 10 %
	Built-in load resistance	50 Ω \pm 10% (Current limit resistance 100 Ω)
	Short current at max. output	3300 A
Current surge	Output waveform	8 / 20 μ s
	Max. output current	4000 A
	Polarity	Positive or negative
	Output impedance	5 Ω \pm 10%
	Built-in load resistance	3 k Ω \pm 10%
Surge repetitive cycle single output	Single output	
EUT power capacity	Single phase 240 V / 20 A	
Dimensions	(W) 555 \times (H) 1860 \times (D) 840 mm	
Weight	Approx. 450 kg	

Accessories

Parameter	Model number	Q'ty
Bag for accessories		1 pc.
Power cable		1 pc.
Surge ground cable		1 pc.
Switch for external trigger	04-00003A	1 pc.
Surge output cable		1 pc.
Single phase input cable	05-00003A	1 pc.
Check terminal	02-00023A	1 pc.
Residual voltage discharge probe		1 pc.
Warning lamp		1 pc.
Fuse		2 pcs.
Output cable	05-00015A	2 pcs.
Interlock connector		1 pc.
Instruction manual		1 volume
Switch key		2 pcs.
Waveform switching connection bar		6 pcs.

JEC Standard Overview

Standard

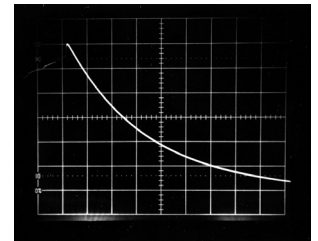
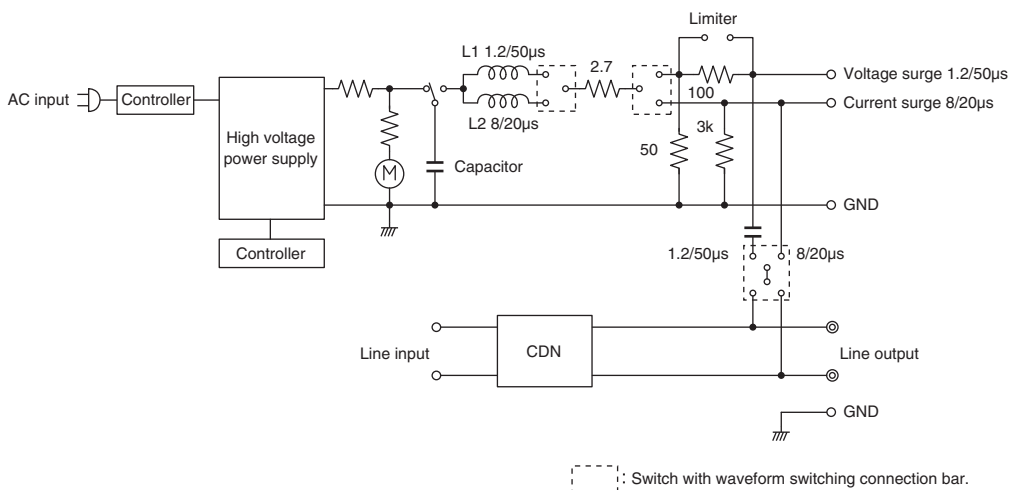
Provides dielectric strength test for electronic equipment connected to electric power systems, and specifies test voltage and object circuits for purpose of protection of electric facilities.

■ Examples of Surge Injection to Power Lines

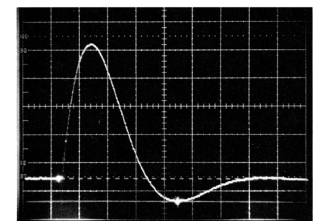
In low voltage control dielectric test method, test voltage induction and voltage resistibility test against lightning surge impulse specified in JEC-210 (The Institute of Electrical Engineers of Japan / Japanese Electrotechnical Committee), verify whether EUT can be resistible against the lightning impulses (Standardized 1.2/50 μ s) which test conditions are specified in the Standard and which are injected both to the positive and negative each 3 times.

Circuit class NO.	Lightning impulse test voltage (V)			Object circuit
	To ground	Between inter electric circuit	Between contact points and between coil terminals Instrument transformer DC/AC circuits	
1	7	4.5	4.5	Secondary and third circuits in instrument transformer which is used for main circuit (main unit side)
2A	7	3		Operation / Control circuits in breaker of disconnecter used for main circuit
2B	5	3		DC100-200V/AC100-400V circuits auxiliary equipment in main unit attached
3	3	3		DC100-200V/AC100-400V circuits in direct / protective relay / observation control board, etc.
4	4	4.5	3	Secondary and third circuits in instrument transformer of observation / protective relay / remote observation control board, etc.
5	4	3		DC100-200V/AC100-400V circuits in direct / protective relay / observation control board, etc.

Block Diagram and Waveforms



Voltage surge waveform 1.2/50 μ s
Voltage : 3 kV
V : 500 V / Div.
H : 20 μ s / Div.



Current surge waveform 8 / 20 μ s
Current : 2400 A
I : 500 A / Div.
H : 10 μ s / Div.