

Multifunctional Lightning Surge Simulator CWS 1500MS & CWS 2000MS Datasheet



In Compliance with

- > IEC 61000-4-5
- > IEC 61643-1
- > GB/T 17626.5
- > GB/T 16927.1
- > ITU-T K.21
- > ITU-T K.44

Introduction

The multi-functional lightning surge simulator CWS 1500MS/CWS 2000MS is developed and designed according to IEC 61000-4-5 and GB/T 17626.5 standards. It is equipped with plugged-in waveform module and can generate various surge pulse waveforms with the maximum pulse voltage up to 15 kV /20 kV. CWM series module can produce 1.2/50 μ s, 8/20 μ s high-voltage pulse waveform; TSM series module can produce 10/700 μ s, 5/320 μ s high-voltage pulse waveform; VWM series module can generate various voltage pulse waveform; ICM series modules can generate various current pulse waveforms.

Features

- > 5.7 inch color touch screen front panel operation
- > Pulse voltage up to 15kV/20kV;
- > Modular design, easy to replace and operate;
- > Can produce 1.2/50 μ s, 8/20 μ s combination wave; 10/700 μ s, 5/320 μ s combined wave; Various voltage waves; Various current waves;
- > Built-in surge voltage, current value monitoring operation screen display;
- > System built-in fault alarm function;
- > Test scheduling function, easy to operate;

Application Areas

- | | |
|-------------------|-------------------------|
| > Communication | > IT |
| > Telecom | > Military |
| > Medical | > Avionics |
| > TV Broadcasting | > New energy electrical |
| > Railway | > New energy vehicles |

Equipment Composition	
CWS1500C/2000C	Combined wave lightning surge simulator-control module
CWM 1500/2000	1.2/50 μ s、8/20 μ s Combined wave module
TSM 1500/2000	10/700 μ s、5/320 μ s Combined wave module
VWM 1500/2000A	1.2/50 μ s Voltage wave module
VWM 1500/2000B	4/300 μ s Voltage wave module
VWM 1500/2000C	10/200 μ s Voltage wave module
ICM 55/75A	10/350 μ s Current wave module
ICM 1000B	4/10 μ s Current wave module
ICM 1000C	8/20 μ s Current wave module
ICM 18D/25D	10/1000 μ s Current wave module

CWM 1500/2000 Technical Parameters	
Test Voltage Range	0.5 kV ~ 15 (20) kV \pm 10%
Voltage Rise Time	1.2 μ s \pm 30%
Voltage Duration	50 μ s \pm 20%
Test Current Range	0.25 kA ~ 7.5 (10) kA \pm 10%
Current Rise Time	8 μ s \pm 20%
Current Duration	20 μ s \pm 20%
Output Impedance	2 ohm
Polarity	Plus, minus, plus and then minus
Time Between Experiments	8 s ~ 99 s
Voltage Peak Detection	Front panel BNC output :2000V: 1V; LCD displays the measured values
Current Peak Detection	Front panel BNC output :500A: 1V; LCD displays the measured values
Number of Test	1 ~ 999 times
Trigger Mode	Automatic, manual, external
Experiment Mode	Experimental parameters were scheduled

TSM1500/2000 Technical Parameters	
Test Voltage Range	0.5 kV ~ 15 (20) kV \pm 10%
Voltage Rise Time	10 μ s \pm 30%
Voltage Duration	700 μ s \pm 20%
Test Current Range	12.5 A ~ 375 (500) A \pm 10%
Current Rise Time	5 μ s \pm 20%
Current Duration	320 μ s \pm 20%
Output Impedance	15 ohm、40 ohm
Polarity	Plus, minus, plus and minus
Time Between Experiments	11 s ~ 99 s (Minimum time depends on experimental voltage)
Number of Test	1 ~ 999
Trigger Mode	Automatic, manual, external trigger input
Experiment Mode	Experimental parameters were scheduled

VWM1500/2000A Technical Parameters	
Test Voltage Range	0.5 kV ~ 15 (20) kV \pm 10%
Voltage Rise Time	1.2 μ s \pm 30%
Voltage Duration	50 μ s \pm 20%
Output Impedance	500 ohm (Customizable)

VWM1500/2000B Technical Parameters	
Test Voltage Range	0.5 kV ~ 15 (20) kV \pm 10%
Voltage Rise Time	4 μ s \pm 30%
Voltage Duration	300 μ s \pm 20%
Output Impedance	20 ohm

VWM1500/2000C Technical Parameters	
Test Voltage Range	0.5 kV ~ 15 (20) kV \pm 10%
Voltage Rise Time	10 μ s \pm 30%
Voltage Duration	200 μ s \pm 20%
Output Impedance	6 ohm

ICM55/74A Technical Parameters	
Charging Voltage Range	0.25 kV ~ 15 (20) KV±10%
Test Current Range	9 A ~ 555 (740) A±10%
Current Rise Time	10μs (-10% ~ +100%)
Current Duration	350μs±20%
Output Impedance	27 ohm

ICM1000B Technical Parameters	
Charging Voltage Range	0.25 kV ~ 10 kV±10%
Test Current Range	0.25 kA ~ 10 kA±10%
Current Rise Time	4μs±10%
Current Duration	10μs±10%
Output Impedance	1 ohm

ICM1000C Technical Parameters	
Charging Voltage Range	0.25 kV ~ 5 kV±10%
Test Current Range	0.5 kA ~ 10 kA±10%
current Rise Time	8μs±10%
Current Duration	20μs±10%
Output Impedance	0.5 ohm

ICM18/25D Technical Parameters	
Charging Voltage Range	0.25 kV ~ 15 (20) kV±10%
Test Current Range	3 A ~ 180 (250) A±10%
Current Rise Time	10μs (-10% ~ +100%)
Current Duration	1000μs±20%
Output Impedance	80 ohm

General Parameters	
Display Screen	5.7-inch TFT color touch screen
Operating Power Supply	AC 110 V / 220 V ±10%, 50/60 Hz±5% (default AC 220 V 50 Hz in mainland China)
Fuse	6 A
Max Power	400 W
User Storage Space	PC storage
Communication Mode	Ethernet
Failure Detection	In case of failure, the front panel LCD displays and interrupts the instrument work
Detection Output Mode	Standard 1 m BNC interface coaxial line
Dimension	35 U
Hot Swappable	About 8 kg
Weight	About 200 kg
Ambient Temperature	15 ~ 35°C
Relative Humidity	45% ~ 75%
Atmospheric Pressure	86kPa ~ 106kPa

Standard Accessories	
Test line, Power line, fuse, CN 25 line, Coaxial cable, Grounding line, Test report, User manual	

Optional Accessories
1. The Surge coupling decoupling network complies with IEC61000-4-5 SPN Series: 15 kV/20 kV external coupling/decoupling network can be customized
2. Signal line/communication line test coupling/decoupling network IEC61000-4-5 CDN 405 series
3. Broadband current monitoring clamp model: CM 0220M、CM 03203M
4. Pulsed magnetic field converter:PMC1200 IEC 61000-4-9 field coil: TCXS111 single turn coil IEC61000-4-8/9 general
5. PC control software Corelab Support Windows 10, Windows 11 operating system, easy to use, the user interface is beautiful, intuitive, the use of various operation functions and standard library users can easily complete the custom test program; Test equipment and automatic configuration, to help users flexibly generate test reports

10kV<U≤20kV Example of the major lightning strike configuration scheme												
instrument model	output waveform									output voltage	output current	output impedance
	1.2/50 μs 8/20μs	10/700 μs 5/320 μs	1.2/50 μs	4/10 μs	4/300 μs	8/20 μs	10/200 μs	10/350 μs	10/1000 μs			
CWM xxxx	√									0.25 – 20kV	0.5 – 10kA	2Ω
VWM xxxxA			√									500Ω
VWM xxxxB					√							20Ω
VWM xxxxC						√						6Ω
TSM xxxx		√								0.25 – 20kV		15/40Ω
ICM xxxxA								√		0.25 – 20kV	9 – 750A	27Ω
ICM xxxxB				√						0.25 – 10kV	0.25 – 10kA	1Ω
ICM xxxxC						√				0.25 – 5kV	0.5 – 10kA	0.5Ω
ICM xxxxD									√	0.25 – 20kV	3 – 250A	80Ω

Note: "XXXX" in the table represents the optional voltage/current range. Example: CWM 1500 means the pulse voltage is up to 15kV.



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