



# HV High Power Lightning Surge Coupling/Decoupling Network

## SPN 3850T15

- IEC 61000-4-5
- GB/T 17626.5
- EN 61000-4-5:2014+A1:2017

### Features

- > Max. EUT DC load capacity DC 380 V/50 A
- > Max. EUT AC load capacity DC 380 V/50 A, three-phase five-wire
- > Supports test schedule of voltage, polarity, phase synchronization angle, etc. for fully automated network switching
- > Supports phase angle superimposition of any selected lines
- > Coupling path indication (LED indicators)
- > Coupling resistor selectable between IEC standard values and user-defined settings
- > Plug-in insulated connectors for safe and convenient operation
- > Emergency stop button automatically disconnects EUT power supply and high-voltage coupling paths

### Introduction

The SPN 3850T15 HV High-Power Lightning Surge Coupling/Decoupling Network complies with IEC 61000-4-5 requirements and provides fully automated single-phase/three-phase coupling and decoupling functions. It supports both AC and DC power supply tests and is designed for use with the CWS series surge generators.

The EUT supports maximum load capabilities of DC 380 V/50 A and AC 380 V/50 A three-phase five-wire systems. Other EUT voltage and current ratings can be customized according to customer requirements.

### Application Areas



## Technical Parameters

|                                              |                                                                                                   |
|----------------------------------------------|---------------------------------------------------------------------------------------------------|
| Network Type                                 | Automated single-phase/three-phase CDN                                                            |
| EUT Load Capacity                            | Max. DC 380 V 50 A                                                                                |
|                                              | Max. AC 380 V 50 A, 50/60 Hz, three-phase five-wire                                               |
| Phase Synchronization                        | Phase angle superimposition between any selected lines of L1, L2, L3, N, and PE                   |
| Coupling Path                                | Automatic switching of any combination of L1, L2, L3, N, and PE coupling paths                    |
| Coupling Switching Mode                      | Automatic switching                                                                               |
| <b>IEC 61000-4-5 Surge Parameters</b>        |                                                                                                   |
| Network Port Test Voltage                    | Coupling waveform: 1.2/50 $\mu$ s, 0.25 kV ~ 15 kV $\pm$ 10% (15 kV generator)                    |
| Network Port Test Current                    | Coupling waveform: 8/20 $\mu$ s, 0.125 kA ~ 7.5 kA $\pm$ 10% (15 kV generator)                    |
| Surge Input Port                             | 6 mm banana socket                                                                                |
| Coupling Capacitor                           | 9 $\mu$ F, 18 $\mu$ F                                                                             |
| Coupling Resistor                            | 10 $\Omega$ , 0 $\Omega$                                                                          |
| Open Circuit Voltage Waveform                | Front time: 1.2 $\mu$ s $\pm$ 30%                                                                 |
|                                              | Duration: 50 $\mu$ s $\pm$ 20%                                                                    |
| Short Circuit Current Waveform               | Front time: 8 $\mu$ s $\pm$ 20%                                                                   |
|                                              | Duration: 20 $\mu$ s $\pm$ 20%                                                                    |
| Coupling Attenuation                         | < 2 dB (generator automatic compensation)                                                         |
| Residual Pulse Voltage at EUT Injection Port | $\leq$ 15% of the applied test pulse voltage or $\leq$ 2 times the peak voltage rating of the CDN |

## General Parameters

|                             |                                          |
|-----------------------------|------------------------------------------|
| EUT Power Input/Output Port | Plug-in Insulated Plug                   |
| Working power               | AC 220 V $\pm$ 10%, 50/60 Hz             |
| Fuse                        | 6 A                                      |
| Max. Power Consumption      | 500 W                                    |
| Auxiliary Interface         | D-sub 25pin                              |
| Working Status Indication   | LED indication on front panel            |
| Grounding method            | Flat grounding wire                      |
| Dimension                   | 22 U rack, 600 (W)*1,250 (H)* 800 (D) mm |
| Weight                      | Approx. 150 kg                           |
| Ambient Temperature         | 15°C ~ 35°C                              |
| Relative Humidity           | 45% ~ 75% RH (no condensation)           |
| Atmospheric Pressure        | 86 kPa ~ 106 kPa                         |

## Standard Accessories

Power Cord, Test Cable, Grounding Wire, User Manual, Fuse, CN25 Cable, RF Cable, Surge Calibration Test Cable

### Optional Main Unit

|   |                                            |                                                                                                                                                                                                                                                                                                    |                                                                                     |
|---|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1 | Multi-functional Lightning Surge Simulator | Model: CWS 1500MS<br>Max. pulse output: 15 kV (1.2/50 $\mu$ s), 7.5 kA (8/20 $\mu$ s)<br>Dimension: 35 U rack<br>Compliant with IEC-61000-4-5;<br>Supports different plug-in modules for generating 1.2/50 $\mu$ s and 8/20 $\mu$ s combination waves, with various voltage and current waveforms. |  |
|---|--------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

### Optional Accessories

|   |                                 |                                                                                                                                                                                                                                                                     |                                                                                       |
|---|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|
| 1 | Broadband Current Monitor Probe | Model: CM 0301M<br>Peak Current: 200 kA<br>Sensitivity: 0.001 V/A<br>Max. Continuous Current (RMS): 400 A<br>Frequency: 10 Hz ~ 1 MHz<br>Output Impedance: 50 $\Omega$<br>Maximum Charge: 6 A·s<br>Connector Type: BNC<br>Dimensions:<br>40 (ID)*116 (OD)*40 (T) mm |    |
| 2 | Broadband Current Monitor Probe | Model: CM 0220M<br>Peak Current: 20 kA<br>Sensitivity: 0.01 V/A<br>Max. Continuous Current (RMS): 150 A<br>Frequency: 10 Hz ~ 20 MHz<br>Output Impedance: 50 $\Omega$<br>Maximum Charge: 1 A·s<br>Connector Type: BNC<br>Dimensions:<br>40 (ID)*116 (OD)*40 (T) mm  |  |
| 3 | Immunity Test Software          | Model: CoreLab<br>> Support Windows 7/8/10 /11<br>> Supports Ethernet and serial communication modes<br>> Supports parameter sequence, test sequences, easy for operation<br>> Supports customer information configuration and automatic test report printing.      |  |

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