

# TSS 500N10

## TELECOM SURGE GENERATOR AS PER ITU / FCC UP TO 10 KV



### FOR TESTS ACCORDING TO ...

- > EN 60950-1
- > EN 61000-4-5
- > FCC 97-270 (part 68)
- > IEC 60065
- > IEC 60950-1
- > IEC 61000-4-5
- > ITU-T K.17
- > ITU-T K.20
- > ITU-T K.21
- > ITU-T K.28
- > ITU-T K.45

### TSS 500N10 - 10 KV TELECOM SURGE GENERATOR FOR 10/700 US TEST PULSE







Telecommunication networks are exposed to lightning events. Therefore telecommunication equipment being connected to the outside world need to have appropriate protection to show an acceptable immunity to surge transients in order not to fail in case of lightning events. Telecom Surge Simulators of the TSS 500N series are used to proof the immunity of telecommunications equipment.

The TSS 500N10 is used to perform tests as per EN/IEC 61000-4-5 and related standards and complies with the requirements of ITU-T and FCC 97-270 (part 68) for Surge B pulse. It also generates the Surge voltage pulse 1.2/50 us as per EN/IEC 60950.

### HIGHLIGHTS

- > **Standalone tester for 10/700 us pulse as per EN/IEC 61000-4-5**
- > **Test voltage up to 10 kV**
- > **Complies to ITU-T for enhanced level testing**
- > **Complies to FCC part 68 (Surge B pulses)**
- > **Built-in CDNs for 2-wire and 4-wire applications**

### APPLICATION AREAS

- |  |   |
|--|---|
|  INDUSTRY   |  TELECOM     |
|  COMPONENTS |  RESIDENTIAL |
|  MEDICAL    |   |
|  BROADCAST  |   |

**TECHNICAL DETAILS**

**TELECOM SURGE GENERATOR**

AS PER ITU AND ETS RECOMMENDATIONS	
	Pulse 1.2/50 us
Voltage (o.c.)	500 V - 10,000 V ± 10%
Rise time*)	1 us ± 30%
Pulse duration*)	50 us ± 20%
Energy storage capacitor	1 uF
	Pulse 10/700 us
Voltage (o.c.)	500 V - 10,000 V ± 10%
Rise time*)	6.5 us ± 30%
Pulse duration*)	700 us ± 20%
Energy storage capacitor	20 uF
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless
*) definition of waveform parameters as per IEC 60469-1. As per IEC 61000-4-5 this is considered to be equal to the waveform parameter definition as per IEC 60060-1 for the 1.2/50us pulse and CCITT for the 10/700us pulse.	

AS PER FCC PART 68	
	Surge Pulse B
Voltage (o.c.)	500 V - 10,000 V ± 10%
Front time	9 us ± 30%
Pulse duration	720 us ± 20%
Current (s.c.)	12.5 - 250 A for T1 to COM or T2 to COM
Rise time	5 us ± 30%
Pulse duration	320 us ± 20%
Energy storage capacitor	20 uF
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

**TELECOM SURGE GENERATOR**

AS PER EN/IEC 61000-4-5	
	Pulse 10/700 s
Voltage (o.c.)	500 V - 10,000 V ± 10%
Rise time*)	10 us ± 30%
Pulse duration*)	700 us ± 20%
Current (s.c.)	12.5 - 250 A for T1 to COM or T2 to COM
Rise time*)	5 us ± 20%
Pulse duration*)	320 us ± 20%
Energy storage capacitor	20 uF
Source impedance	40 ohm
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

COUPLING AS PER	
ITU-T	2-wire: T1 and T2 with 25 ohm each
FCC part 68	2-wire: T1 and T2 with 25 ohm each
EN/IEC 61000-4-5	4-wire: T1, T2, T3, T4 with 25 ohm each

TRIGGER	
Automatic	Automatic pulse release
Manual	Single pulse release
External	External pulse release
CRO trigger	5V trigger signal for oscilloscope

## TECHNICAL DETAILS

## GENERAL DATA

## TEST ROUTINES

Quick Start	Immediate start; easy-to-use and fast
User Test routines	Change Polarity after n pulses Change voltage after n pulses
Standard Test routines	IEC 61000-4-5 Level 1,000 V IEC 61000-4-5 Level 2,000 V IEC 61000-4-5 Level 4,000 V FCC part 68, Pulse B Metallic 1,000 V FCC part 68, Pulse B Longitudinal 1,500 V
Service	Service, setup, self test

## INTERFACE

Optical interface	Opto link, 3 m cable USB A connector
Parallel interface	IEEE 488, addresses 1 - 30

## SAFETY

Safety circuit	Control input (24V dc)
Warning lamp	Floating output contact

## GENERAL DATA

Dimensions, weight	19"/9 HU, 420 mm x 448 mm x 500 mm, 37.1 kg
Supply voltage	115/230 V +10/-15%
Fuses	2x 2 AT (230V) or 2x 4 AT (115V)
Temperature	10° C to 35° C
Rel. humidity	Max. 85 %, non condensing
Atmospheric pressure	86 kPa (860 mbar) to 106 kPa (1,060 mbar)

## ALTERNATIVE CONFIGURATIONS

T1-N10	0.5/700us up to 10kV
T2-N10	100/700us up to 10kV
	to replace one of the standard pulses

## OPTIONS

## OPTIONS

CNV 504T5	Coupling/decoupling network for unshielded symmetrical lines (communication lines) as per IEC/EN 61000-4-5 Ed.3 (fig. 10) for 4 lines.
CNV 508T8	Coupling/decoupling network for unshielded symmetrical lines (communication lines) as per IEC/EN 61000-4-5 Ed.3 (fig. 10) for 8 lines.
iec.control 1	Software to control the test, including standard library, test report facility and data conversion generator

# COMPETENCE WHEREVER YOU ARE



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Information about scope of delivery, visual design and technical data correspond with the state of development at time of release. Subject to change without further notice.