

## TSS 500N10

### TELECOM SURGE GENERATOR



#### 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 - 10KV TELECOM SURGE GENERATOR FOR 10/700US 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 1.2/50us as per EN/IEC 60950.

#### HIGHLIGHTS

- > Standalone tester for 10/700us pulse as per EN/IEC 61000-4-5
- > Test voltage up to 10kV
- > 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**

AS PER ITU AND ETS RECOMMENDATIONS	
	Pulse 1.2/50us
Voltage (o.c.)	500V - 10,000V ± 10%
Rise time*)	1us ± 30%
Pulse duration*)	50us ± 20%
Energy storage capacitor	1uF
	Pulse 10/700us
Voltage (o.c.)	500V - 10,000V ± 10%
Rise time*)	6.5us ± 30%
Pulse duration*)	700us ± 20%
Energy storage capacitor	20uF
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.)	500V - 10,000V ±10%
Front time	9us ± 30%
Pulse duration	720us ± 20%
Current (s.c.)	12.5 - 250A for T1 to COM or T2 to COM
Rise time	5us ± 30%
Pulse duration	320us ± 20%
Energy storage capacitor	20uF
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

AS PER EN/IEC 61000-4-5	
	Pulse 10/700 s
Voltage (o.c.)	500V - 10,000V ±10%
Rise time*)	6.5us ± 30%
Pulse duration*)	700us ± 20%
Current (s.c.)	12.5 - 250A for T1 to COM or T2 to COM
Rise time*)	4us ± 20%
Pulse duration*)	300us ± 20%
Energy storage capacitor	20uF
Source impedance	40ohm
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

COUPLING AS PER	
ITU-T	2-wire: T1 and T2 with 25ohm each
FCC part 68	2-wire: T1 and T2 with 25ohm each
EN/IEC 61000-4-5	4-wire: T1, T2, T3, T4 with 100ohm each

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

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 1,000V IEC 61000-4-5 Level 2,000V IEC 61000-4-5 Level 4,000V FCC part 68, Pulse B Metallic 1,000V FCC part 68, Pulse B Longitudinal 1,500V
Service	Service, setup, self test

## TECHNICAL DETAILS

### INTERFACE

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

### SAFETY

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

### GENERAL DATA

Dimensions, weight	19"/6HU, approx. 35kg
Supply voltage	115/230V +10/-15%
Fuses	2xT2AT (230V) or 2xT4AT (115V)

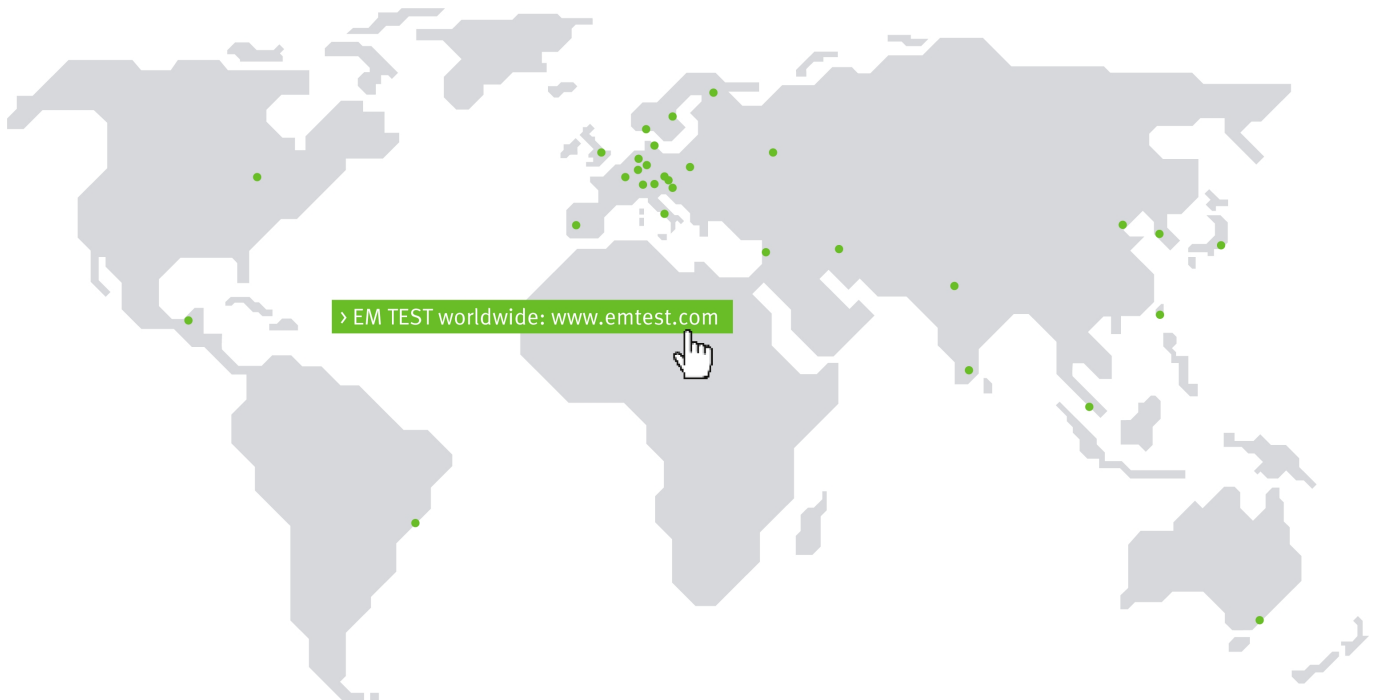
### ALTERNATIVE CONFIGURATIONS

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

### OPTIONS

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.
CNV 504S5	Coupling network providing 4x100ohm and 2x25ohm
iec.control 1	Software to control the test, including standard library, test report facility and data conversion generator

# COMPETENCE WHEREVER YOU ARE



## CONTACT EM TEST DIRECTLY

### Switzerland

EM TEST (Switzerland) GmbH > Sternenhofstraße 15 > 4153 Reinach > Switzerland  
 Phone +41 (0)61/7179191 > Fax +41 (0)61/7179199  
 Internet: www.emtest.ch > E-mail: sales.emtest@ametek.com

### Germany

EM TEST GmbH > Lünener Straße 211 > 59174 Kamen > Deutschland  
 Phone +49 (0)2307/26070-0 > Fax +49 (0)2307/17050  
 Internet: www.emtest.com > E-mail: info.emtest@ametek.de

### France

EM TEST FRANCE > Le Trident - Parc des Collines > Immeuble B1 - Etage 3 > 36, rue Paul Cézanne > 68200 Mulhouse > France  
 Phone +33 (0)389 31 23 50 > Fax +33 (0)389 31 23 55  
 Internet: www.emtest.fr > E-mail: info@emtest.fr

### Poland

EM TEST Polska > ul. Ogrodowa 31/35, 00-893 Warszawa > Polska  
 Phone +48 (0)518 64 35 12  
 Internet: www.emtest.com/pl > E-mail: info\_polska.emtest@ametek.de

### USA / Canada

AMETEK Compliance Test Solutions > 52 Mayfield Ave. > Edison > NJ 08837  
 Phone +1 (732) 417-0501  
 Internet: www.emtest.com > E-mail: sales.emtest@ametek.com

### P.R. China

E & S Test Technology Limited > Rm 913, Leftbank > No. 68 Bei Si Huan Xi Lu > Haidian District > Beijing 100080 > P.R. China  
 Phone +86 (0)10 82 67 60 27 > Fax +86 (0)10 82 67 62 38  
 Internet: www.emtest.com > E-mail: info@emtest.com.cn

### Republic of Korea

EM TEST Korea Limited > #405 > WooYeon Plaza > #986-8 > YoungDeok-dong > Giheung-gu > Yongin-si > Gyeonggi-do > Korea  
 Phone +82 (31) 216 8616 > Fax +82 (31) 216 8616  
 Internet: www.emtest.co.kr > E-mail: sales@emtest.co.kr

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.