TSS 500N6B
COMPACT TELECOM SURGE GENERATOR AS PER BELLCORE/TELCORDIA GR-1089-CORE

Telecommunication networks are exposed to lightning events. Therefore telecommunications 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. The TSS 500N6B is used for 4-wire applications as per Bellcore GR-1089-Core and supports 12 pair telecom port testing via the CNB 500 optional coupler. It can also be used for the 2-wire telecom port testing.

FOR TESTS ACCORDING TO ...
› Bellcore GR-1089-Core
› ITU-T K.12
› ITU-T K.28
› ITU-T K.45

TSS 500N6B - TELECOM SURGE GENERATOR FOR BELLCORE 4-WIRE APPLICATIONS

HIGHLIGHTS
› Compact Tester for Bellcore/Telcordia GR-1089-CORE
› Test pulses for 4-wire telecom applications
› Also covers 2-wire telecom port testing
› Generates test pulses 10/360µs, 10/1,000µs and 2/10µs
› Includes all necessary matching resistors
› Built-in coupling network
› Supports testing 12 pairs (10/360µs)

APPLICATION AREAS

COMPONENTS

TELECOM
### Technical Details

#### First Level Lightning for 4-Wire Ports, Pulse 10/1,000US (600V)

- **Voltage (o.c.)**: 50V - 600V ·0/+15%, positive/negative
- **Current (s.c.)**: 8A - 100A per wire
- **Rise time**: 10µs +0µs/-4µs
- **Pulse duration**: 1,000µs +500µs/-0µs
- **Repetition rate**: 1 pulse every 36s at 600V/100A per wire

#### First Level Lightning for 4-Wire Ports, Pulse 10/1,000US (1,000V)

- **Voltage (o.c.)**: 50V - 1,000V ·0/+15%, positive/negative
- **Current (s.c.)**: 5A - 100A per wire
- **Rise time**: 10µs +0µs/-4µs
- **Pulse duration**: 1,000µs +500µs/-0µs
- **Repetition rate**: 1 pulse every 60s at 1,000V

#### First Level Lightning for 4-Wire Ports, Pulse 10/360US (1,000V)

- **Voltage (o.c.)**: 50V - 1,000V ·0/+15%, positive/negative
- **Current (s.c.)**: 5A - 100A per wire
- **Rise time**: 10µs +0µs/-2.5µs
- **Pulse duration**: 360µs +108µs/-0µs
- **Repetition rate**: 1 pulse every 20s at 1,000V

#### First Level Lightning for 4-Wire Ports, Pulse 2/10US (2,500V)

- **Voltage (o.c.)**: 100V - 2,500V ·0/+20%, positive/negative
- **Current (s.c.)**: 20A - 500A per wire
- **Rise time**: 2µs +0µs/-1µs
- **Pulse duration**: 10µs +7µs/-0µs
- **Repetition rate**: 1 pulse every 5s at 2,500V

#### First Level Lightning for 4-Wire Ports, Pulse 2/10US (5,000V)

- **Voltage (o.c.)**: 100V - 5,000V ·0/+20%, positive/negative
- **Current (s.c.)**: 10A - 500A per wire
- **Rise time**: 2µs +0µs/-1µs
- **Pulse duration**: 10µs +7µs/-0µs
- **Repetition rate**: 1 pulse every 10s at 5,000V

#### Intra Building Lightning for 4-Wire Ports, Pulse 2/10US (800V)

- **Voltage (o.c.)**: 100V - 800V ·0/+20%, positive/negative
- **Current (s.c.)**: 12.5A - 100A per wire
- **Rise time**: 2µs +0µs/-1µs
- **Pulse duration**: 10µs +7µs/-0µs
- **Repetition rate**: 1 pulse every 3s at 800V/100A per wire

#### Intra Building Lightning for 4-Wire Ports, Pulse 2/10US (1,500V)

- **Voltage (o.c.)**: 100V - 1,500V ·0/+20%, positive/negative
- **Current (s.c.)**: 6A - 100A per wire
- **Rise time**: 2µs +0µs/-1µs
- **Pulse duration**: 10µs +7µs/-0µs
- **Repetition rate**: 1 pulse every 3s at 1,500V/100A per wire

#### Second Level Lightning for 4-Wire Ports, Pulse 2/10US (5,000V)

- **Voltage (o.c.)**: 100V - 5,000V ·0/+20%, positive/negative
- **Current (s.c.)**: 10A - 500A per wire
- **Rise time**: 2µs +0µs/-1µs
- **Pulse duration**: 10µs +7µs/-0µs
- **Repetition rate**: 1 pulse every 10s at 5,000V

#### Measurements

- Peak voltmeter: 5,000V ± 10%
- Peak current meter: 500A ± 10%

#### Coupling

- Telecom ports (Tip, Ring, Tip1 and Ring1)
  - Each lead (T, T1, R, R1) to Generator with the other leads to Ground. T and R to Generator simultaneously, T1 and R1 to Ground. T and R to Ground simultaneously, T, R, T1 and R1 to Generator simultaneously.
### TECHNICAL DETAILS

#### 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**
  - Manual Standard Test Routine
  - Change Polarity after n pulses
  - Change voltage after n pulses
- **Standard Test routines**
  - Test levels as per GR-1089 CORE
- **Service**
  - Service, setup, self test

#### INTERFACE
- **Serial interface**
  - USB
- **Parallel interface**
  - IEEE 488, addresses 1 - 30

#### SAFETY
- **Safety circuit**
  - Control input (24Vdc)
- **Warning lamp**
  - Floating output contact

#### GENERAL DATA
- **Dimensions, weight**
  - 19”/9HU, approx. 45kg
- **Supply voltage**
  - 115/230V +10/-15%
- **Fuses**
  - 2xT2AT (230V) or 2xT4AT (115V)

#### OPTIONS
- **CNB 500**
  - 12 pair CDN for 10/360 s pulse up to 1,000V/25A per wire
- **iec.control**
  - Software to control the test, including standard library, test report facility and data conversion generator

### ADDITIONAL MODELS FOR GR-1089-CORE

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>TSS 500N2B</td>
<td>Telecom Surge Generator for first level lightning protection, test pulse 10/1000 µs up to 2000 V</td>
</tr>
<tr>
<td>TSS 500N4B</td>
<td>4kV/2kA Telecom Surge Generator as per Bellcore; Telecom Surge generator for high exposure premises, lightning surge&amp;broadband communication, test pulse 10/250µs up to 4kV/2kA</td>
</tr>
</tbody>
</table>
COMPETENCE WHEREVER YOU ARE

Contact EM Test Directly

**Switzerland**
AMETEK CTS GmbH > Sternenhofstraße 15 > 4153 Reinach > Switzerland
Phone +41 (0)61 204 41 11 > Fax +41 (0)61 204 41 00
Internet: www.ametek-cts.com > E-mail: sales.conducted.cts@ametek.com

**Germany**
AMETEK CTS Europe GmbH > Customer Care Center EMEA > Lünen Straße 211 > 59174 Kamen > Germany
Phone +49 (0) 2307 26070-0 > Fax +49 (0) 2307 17050
Internet: www.ametek-cts.com > E-mail: info.cts.de@ametek.com

**Poland**
AMETEK CTS Europe GmbH > Biuro w Polsce > ul. Twarda 44 > 00-831 Warsaw > Poland
Phone +48 (0) 518 643 12
Internet: www.ametek-cts.com > E-mail: infopolska.cts@ametek.com

**USA / Canada**
AMETEK CTS US > 52 Mayfield Ave > Edison > NJ 08837 > USA
Phone +1 732 417 0501
Internet: www.ametek-cts.com > E-mail: usasales.cts@ametek.com

**P.R. China**
AMETEK Commercial Enterprise (Shanghai) Co. Ltd. > Beijing Branch
Western Section, 2nd floor Jing Dong Fang Building (B10) > Chaoyang District > Beijing, China, 100015
Phone +86 10 8526 2111 > Fax +86 (0)10 82 67 62 38
Internet: www.ametek-cts.com > E-mail: chinasales@ametek.com

**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

**Singapore**
AMETEK Singapore Pte. Ltd. > No. 43 Changi South Avenue 2 > 04-01 Singapore 48164
Internet: www.ametek-cts.com > E-mail: singaporesales.cts@ametek.com

**Great Britain**
AMETEK GB > 5 Ashville Way > Molly Millars Lane > Wokingham > Berkshire RG41 2 PL > Great Britain
Phone +44 845 074 0660
Internet: www.ametek-cts.com

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.