

# Specification



## TSS 500M10 Telecom Surge Generator

- ITU Recommendations
- IEC 61000-4-5
- FCC part 68 pulse B

The surge simulator type TSS 500M10 generates high voltage transients as required by ITU (International Telecom Union) and IEC recommendations up to 10kV.



## As per ITU and ETS recommendations

|                             |                                   |
|-----------------------------|-----------------------------------|
| Output voltage open circuit | 500V – 10,000V ± 10%              |
| Pulse 1.2/50µs              |                                   |
| Rise time tr*               | 1µs ± 30%                         |
| Pulse duration td*          | 50µs ± 20%                        |
| Energy storage capacitor    | 1µF                               |
| Pulse 10/700µs              |                                   |
| Rise time tr*               | 6.5µs ± 30%                       |
| Pulse duration td*          | 700µs ± 20%                       |
| Energy storage capacitor    | 20µF                              |
| Polarity                    | Positive, negative or alternating |
| Counter select              | 1 – 30,000 or endless             |

## As per IEC 61000-4-5

|                              |  |
|------------------------------|--|
| Pulse 10/700µs               |  |
| Open circuit output voltage  | 500V – 10,000V ±10%                    |
| Rise time tr*                | 6.5µs ± 30%                            |
| Pulse duration td*           | 700µs ± 20%                            |
| Short circuit output current | 12.5 – 250A for T1 to Com or T2 to Com |
| Rise time tr*                | 4µs ± 20%                              |
| Pulse duration td*           | 300µs ± 20%                            |
| Energy storage capacitor     | 20µF                                   |
| Source impedance             | 40Ω (15Ω from generator and 25Ω at Tx) |
| Polarity                     | Positive, negative or alternating      |
| Counter select               | 1 – 30,000 or endless                  |

## Coupling

|                      |   |
|----------------------|---|
| As per ITU           | For 2 wire T1 and T2 with 25Ω each<br>For 4 wire T1, T2, T3, T4 with 25Ω each |
| As per FCC part 68   | For 2 wire T1 and T2 with 25Ω each  |
| As per IEC 61000-4-5 | External networks are required (options)                                      |

## 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<br>Change voltage after n pulses by ΔV |
| Service            | Service, setup, self test   |

## Interface

|                    |                                 |
|--------------------|---------------------------------|
| Serial interface   | RS 232, baud rate 1200 - 19,200 |
| Parallel interface | IEEE 488, address 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              | 2 x T 2AT (230V) or 2 x T4AT (115V) |

## Options

|           |   |
|-----------|---|
| CNV 504S1 | 4 telecom lines as per fig. 12 IEC 61000-4-5    |
| CNV 508S1 | 8 telecom lines as per fig. 12 IEC 61000-4-5    |
| CNV 504S5 | Coupling network providing 4x100ohm and 2x25ohm |

## Model configuration

|         |   |
|---------|---|
| T1-M10* | 0.5/700µs up to 10kV                    |
| T2-M10* | 100/700µs up to 10kV                    |
|         | * to replace one of the standard pulses |

\* definition of waveform parameters as per IEC 469-1. Acc. to IEC 61000-4-5 this is considered to be equal to the waveform parameter definition as per IEC 60-1 for the 1.2/50µs pulse and CCITT for the 10/700µs pulse.

Technical data subject to change without notice.