

# VCS 500N7T

## SURGE/TELECOM SURGE GENERATOR



### FOR TESTS ACCORDING TO ...

- > EN 300329
- > EN 300340
- > EN 300342-1
- > EN 300386-2
- > EN 300386 V1.3.2
- > EN 301489-1
- > EN 301489-17
- > EN 301489-24
- > EN 301489-7
- > EN 61000-4-5
- > EN 61000-4-9
- > EN 61000-6-1
- > EN 61000-6-2
- > FCC 97-270 (part 68)
- > IEC 60255-22-5
- > IEC 61000-4-5
- > IEC 61000-4-9
- > IEC 61326
- > IEC 61850-3
- > ITU-T K.12

### COMBINED COMBINATION WAVE / TELECOM SURGE GENERATOR







Surge pulses occur due to direct or indirect lightning strokes to an external (outdoor) circuit. This leads to currents or electromagnetic fields causing high voltage or current transients. Another source for surge pulses are switching transients originating from switching disturbances and systems faults.

Due to the characteristic of the phenomenon nearly every electrical and electronic device may suffer from such lightning events which justifies the necessity of surge tests being widely performed. Surge voltage can reach several thousands of volts and surge current is seen to reach several thousands of amps.

### HIGHLIGHTS

- > Surge voltage up to 7 kV
- > Surge current up to 3.5 kA
- > Telecom surge voltage up to 7 kV
- > Telecom surge current up to 465 A
- > Voltage/current monitors
- > Built-in 1ph CDN 16 A
- > Interlock

### APPLICATION AREAS

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

**TECHNICAL DETAILS**

**SURGE GENERATOR**

AC POWER PORT TESTING, PULSE 1.2/50 US - 8/20 US AS PER IEC 61000-4-5	
Voltage (o.c.)	250 V - 7,000 V ±10 %
Rise time	1.2 us ± 30 %
Pulse duration	50 us ± 20 %
Current (s.c.)	125 A - 3,500 A
Rise time	8 us ± 20 %
Pulse duration	20 us ± 20 %
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

TELECOM PORT TESTING, PULSE 10/700 US AS PER IEC 61000-4-5	
Voltage (o.c.)	250 V - 7,000 V ±10 %
Rise time	10 us ± 30 %
Pulse duration	700 us ± 20 %
Current (s.c.)	6.25 - 175 A
Rise time	5 us ± 20 %
Pulse duration	320 us ± 20 %
Energy storage capacitor	20 uF
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

TELECOM TESTING PULSE 10/700US AS PER ITU AND ETS RECOMMENDATIONS	
Voltage (o.c.)	250 V - 7,000 V ±10 %
Rise time	10 us ± 30 %
Pulse duration	700 us ± 20 %
Energy storage capacitor	20 uF
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

PULSE OUTPUT	
Direct	Outputs with HV connectors: - Zi =2 ohm: 1.2/50 us - 8/20 us with optional adapter IMN2 - Zi =15 ohm: 10/700 us - 5/320 us - for external couplers

**SURGE GENERATOR**

COUPLING ONTO POWER PORTS AS PER	
IEC 61000-4-5	L-N, L-PE, N-PE, L+N-PE Single phase 250 V/16 A, AC/DC

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

MEASUREMENTS	
Peak voltage	7,000 V in the LCD display
Peak current	3,500 A in the LCD display
CRO Ū-monitor	10 Vp for 7,000 V
CRO Î-monitor	10 Vp for 3,500 A

TRIGGER	
Trigger of events	Automatic, manual, external
CRO trigger	5V trigger signal for oscilloscope
Synch.	0° - 360° on ac power ports

TEST ROUTINES	
Quick Start	Immediate start; easy-to-use and fast
User Test routines	Change Polarity after n pulses Change voltage after n pulses Change coupling after n pulses Change phase angle after n pulses
Standard Test routines	As per IEC 61000-4-5, Levels 1 - 4 As per ITU-T
Service	Service, set-up

## TECHNICAL DETAILS

## GENERAL DATA

INTERFACE	
Serial interface	USB interface
Parallel interface	IEEE 488, addresses 1 - 30
CN interface	To control external coupling matrix

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

GENERAL DATA	
Dimensions, weight	19"/6 HU, approx. 34 kg
Supply voltage	115/230 V +10/-15 %
Fuses	2 x 2 AT (230 V) or 2 x 4 AT (115 V)

## OPTIONS

COUPLING/DECOUPLING NETWORKS FOR POWER LINES	
CNI 503A5	3phase coupling/decoupling network for EFT/Surge; 3x480 V/16 A
CNI 503A7	3phase coupling/decoupling network for EFT/Surge; 3x480 V/32 A
CNI 503A8	3phase coupling/decoupling network for EFT/Surge; 3x480 V/63 A
CNI 503A9	3phase coupling/decoupling network for EFT/Surge; 3x480 V/100 A
CNV 503S5	3phase coupling/decoupling network for Surge only; 3x480 V/32 A
CNV 503S6	3phase coupling/decoupling network for Surge only; 3x480 V/63 A
CNV 503S7	3phase coupling/decoupling network for Surge only; 3x480 V/100 A

## PULSED MAGNETIC FIELD AS PER IEC 61000-4-9

MS 100N	Magnetic field coil for up to 3,200 A/m
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## OPTIONS

COUPLING/DECOUPLING NETWORKS FOR SIGNAL/DATA LINES	
General data	Coupling/decoupling networks for Surge and Ringwave with 40 ohm via 0.5 $\mu$ F capacitor (as per Fig. 11, IEC 61000-4-5) and arrestor (as per Fig. 12); with 3.3 $\mu$ F capacitor for Ringwave (as per Fig. 9, IEC 61000-4-12)
CNV 504N1	CDN for 4 signal lines Test voltage up to 4 kV
CNV 508N1	CDN for 8 signal lines Test voltage up to 4 kV
CNV 504N2	CDN for 4 signal lines Test voltage up to 7 kV
CNV 508N2	CDN for 8 signal lines Test voltage up to 7 kV

COUPLING/DECOUPLING NETWORKS FOR TELECOM LINES	
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 508T5	Coupling/decoupling network for unshielded symmetrical lines (communication lines) as per IEC/EN 61000-4-5 Ed.3 (fig. 10) for 4 lines.
CNV 504S13	Impedance network 4 x 25 ohm Test voltage up to 4 kV
CNV 504S10	Impedance network 4 x 25 ohm Test voltage up to 10 kV

OPTIONS	
iec.control 1	Remote control and documentation software, including standard test routines and reporting capabilities.
IMN 2	Impedance matching adapter to match direct output for Surge to 2 ohm source impedance

# 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.