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VCS 500N10T

COMBINATION WAVE (SURGE) AND TELECOM SURGE GENERATOR UP TO 10KV

FOR TESTS ACCORDING TO ...

› EN 300386 V1.3.2
› EN 61000-4-5
› EN 61000-4-9
› IEC 60255-22-5
› IEC 61000-4-5
› IEC 61000-4-9
› IEC 61326
› IEC 61850-3
› ITU-T K.12
› ITU-T K.20
› ITU-T K.21
› ITU-T K.45

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 electronical 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

› **Combination Wave up to 10kV/5kA**
› **Telecom surge voltage up to 10kV**
› **Telecom surge current up to 666A**
› **Repetition rate 60s @10kV Surge**
› **Built-in coupling for telecom port testing**
› **USB (optical link) and GPIB interface**
› **Interlock**

APPLICATION AREAS

INDUSTRY
TELECOM
COMPONENTS
RESIDENTIAL
MEDICAL
BROADCAST

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TECHNICAL DETAILS

SURGE GENERATOR

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

TELECOM PORT TESTING, PULSE 10/700US - 4/300US AS PER IEC 61000-4-5	
Voltage (o.c.)	500V - 10,000V ±10%
Rise time	10us ± 30%
Pulse duration	700us ± 20%
Current (s.c.)	12.5A - 250A
Rise time	5us ± 20%
Pulse duration	320us ± 20%
Energy storage capacitor	20uF
Source impedance	40ohm (15ohm from generator and 25ohm at Tx)
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.)	500V - 10,000V ±10%
Rise time	10us ± 30%
Pulse duration	700us ± 20%
Energy storage capacitor	20uF
Polarity	Positive, negative or alternating
Counter	1 - 30,000 or endless

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

SURGE GENERATOR

COUPLING ON TO MAINS SUPPLY LINES AS PER	
	External CDN is required
IEC 61000-4-5	Line(s) to line with 2ohm Line(s) to ground with 12ohm
ITU-T	Line(s) to line with 2ohm Line(s) to ground with 2ohm

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

MEASUREMENTS	
CRO Û-monitor	10Vp for 10,000V
CRO Î-monitor	10Vp for 5,000A
Peak voltage	10,000V in the LCD display
Peak current	5,000A in the LCD display

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

TEST ROUTINES	
Quick Start	Immediate start; easy-to-use and fast
User Test routines	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

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TECHNICAL DETAILS

GENERAL DATA

INTERFACE	
Optical interface	Opto link, 3 m cable USB A connector
Parallel interface	IEEE 488, addresses 1 - 30
CN interface	To control external coupling matrix

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

DIMENSIONS	
Dimensions	19"/12HU
Weight	approx. 44kg

MAINS	
Supply voltage	115/230V +10/-15%
Fuses	2 x T2AT (230V) or 2 x T4AT (115V)

OPTIONS

DIRECT COUPLING FROM HV - COM OUTPUT	
IMN2	Impedance matching adapter to match direct output for Surge to 2ohm source impedance

COUPLING/DECOUPLING NETWORKS FOR POWER LINES	
CNV 503S9.1	3phase coupling/decoupling network for Surge as per IEC 61000-4-5 and ITU-T 3x480V/16A
CNI 503S10.1	3phase coupling/decoupling network for Surge as per IEC 61000-4-5 and ITU-T 3x480V/32A

OPTIONS

COUPLING/DECOUPLING NETWORKS FOR SIGNAL/DATA LINES	
General data	Coupling/decoupling networks for Surge and Ringwave with 40ohm via 0.5µF capacitor or arrestor (as per Fig. 9, IEC 61000-4-5 Ed.3); with 3.3µF capacitor for Ringwave (as per Fig. 9, IEC 61000-4-12 Ed.2)
CNV 504N3	CDN for 4 signal lines Test voltage up to 10kV
CNV 508N3	CDN for 8 signal lines Test voltage up to 10kV

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 504S10	Impedance network 4 x 25ohm Test voltage up to 10kV

COUPLING/DECOUPLING FOR HIGH-SPEED COMMUNICATION LINES	
CNI 508N1 assembly	Application for shielded lines or unshielded lines
CNI 508N1	Coupling/decoupling network for shielded high-speed communication lines
CN 508N1	Coupling network for unshielded high-speed communication lines
SPN 508N1	Protection network for the auxiliary equipment (AE) with unshielded lines

PULSED MAGNETIC FIELD AS PER IEC 61000-4-9	
MS 100N	Magnetic field coil for up to 3,200A/m

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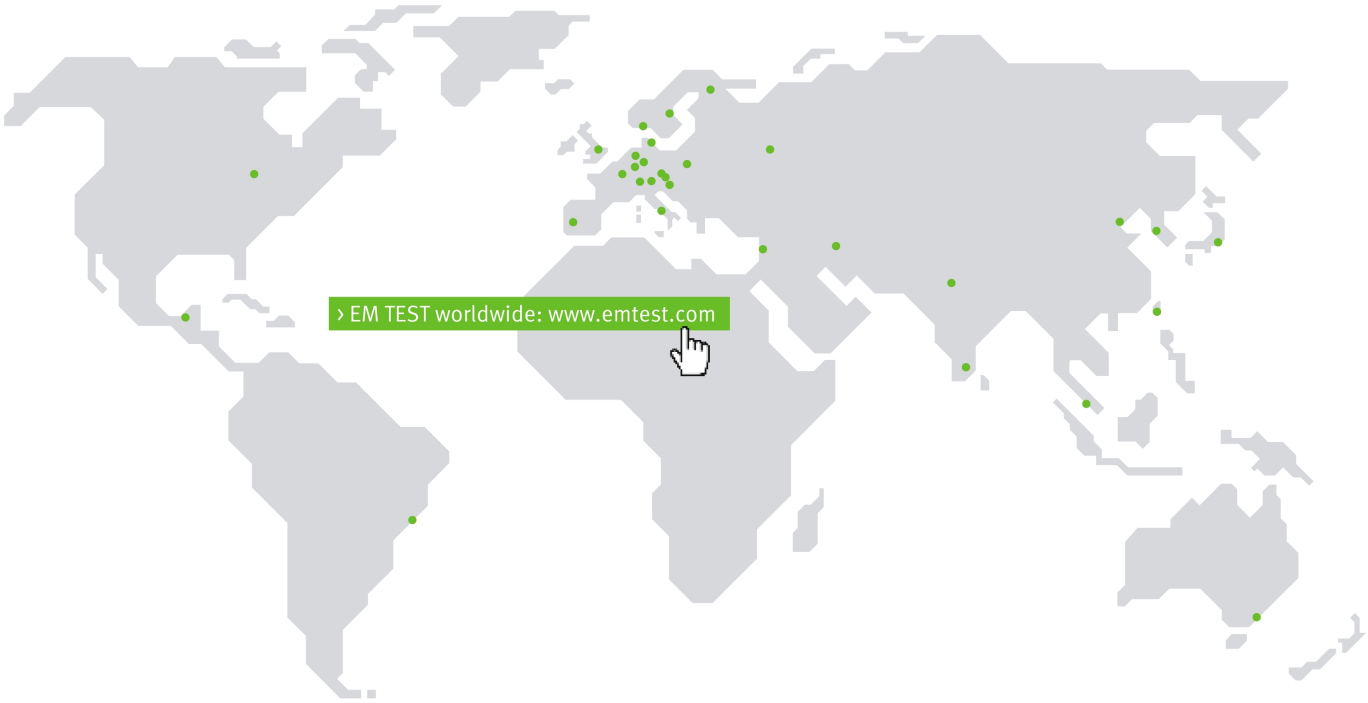
COMPETENCE WHEREVER YOU ARE



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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.