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VCS 500N10 SERIES

COMBINATION WAVE SIMULATOR

FOR TESTS ACCORDING TO ...

› 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.45

COMBINATION WAVE SIMULATOR

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

- **Surge pulses up to 10kV/5kA**
- **Single phase or three-phase coupler up to 100A (external options)**
- **Fail inputs**
- **Warning lamp control**
- **Emergency interlock**
- **Standard test routines**

APPLICATION AREAS

INDUSTRY
TELECOM
COMPONENTS
RESIDENTIAL
MEDICAL
BROADCAST

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TECHNICAL DETAILS

VCS 500N10 MODELS	
VCS 500N10	10kV Surge Generator 1.2/50us - 8/20us; IEC coupling; CDN external; AC 480 V(p-p)
VCS 500N10.2	10kV Surge Generator 1.2/50us - 8/20us; IEC coupling; CDN external; AC 690 V(p-p); 9HU; Rack required; used with CNV 503S19 or CNV 503S19.1
VCS 500N10.3	10kV Surge Generator 1.2/50us - 8/20us, IEC & ANSI Cat.B coupling; CDN external; AC 480 V(p-p); 6HU; used with CNV 503N10.1

COMBINATION WAVE 1.2/50US - 8/20US	
Voltage (o.c.)	500V - 10,000V ± 10%
Pulse front time	1.2us ± 30%
Pulse time to half value	50us ± 20%
Current (s.c.)	max. 5,000A ± 10%
Pulse front time	8us ± 20%
Pulse time to half value	20us ± 20%
Polarity	Positive/negative/alternating
Event counter	1 - 30,000 or endless

TRIGGER	
Trigger of events	Automatic, manual, extern
CRO trigger	5V trigger signal for oscilloscope
Synchronization	0° - 360°, resolution 1°
Repetition rate	6s - 999s, depending on the voltage

OUTPUT	
Direct	2 outputs via HV connectors; - Zi = 2ohm - for external coupling networks

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

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	As per IEC 61000-4-5, Level 1,000V As per IEC 61000-4-5, Level 2,000V As per IEC 61000-4-5, Level 4,000V Manual Standard Test routine
Service	Service, setup, self test

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

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 T 4AT (115V)

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TECHNICAL DETAILS

COUPLING/DECOUPLING NETWORKS FOR POWER LINES	
CNI 503A16	3phase coupling/decoupling network for EFT and Surge; 3x440V/16A
CNI 503A18	3phase coupling/decoupling network for EFT and Surge; 3x440V/32A
CNI 503A19	3phase coupling/decoupling network for EFT and Surge; 3x440V/63A
CNI 503A20	3phase coupling/decoupling network for EFT and Surge; 3x440V/100A
CNV 501S4	1phase coupling/decoupling network for Surge; 250V/16A
CNV 503S9	3phase coupling/decoupling network for Surge; 3x440V/16A
CNV 503S10	3phase coupling/decoupling network for Surge; 3x440V/32A
CNV 503S11	3phase coupling/decoupling network for Surge; 3x440V/63A
CNV 503S12	3phase coupling/decoupling network for Surge; 3x440V/100A
CNV 503S19	3phase coupling/decoupling network for Surge; 3x690V/32A; requires VCS 500N10.2
CNV 503S19.1	3phase coupling/decoupling network for Surge; 3x690V/32A; DC: 1,000V; TEST ON function requires VCS 500N10.2
CNV 503N10.1	3-phase coupling/decoupling network for surge (IEC and ANSI Cat.B coupling); 3x480V/32A; requires VCS 500N10.3

COUPLING/DECOUPLING NETWORKS FOR SIGNAL/TELECOM LINES	
CNV 504Nx	4 signal lines as per fig. 11 & 12, IEC 61000-4-5
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 508Nx	8 signal lines as per fig. 11 & 12, IEC 61000-4-5
CNV 508T5	Coupling/decoupling network for unshielded symmetrical lines (communication lines) as per IEC/EN 61000-4-5 Ed.3 (fig. 10) for 8 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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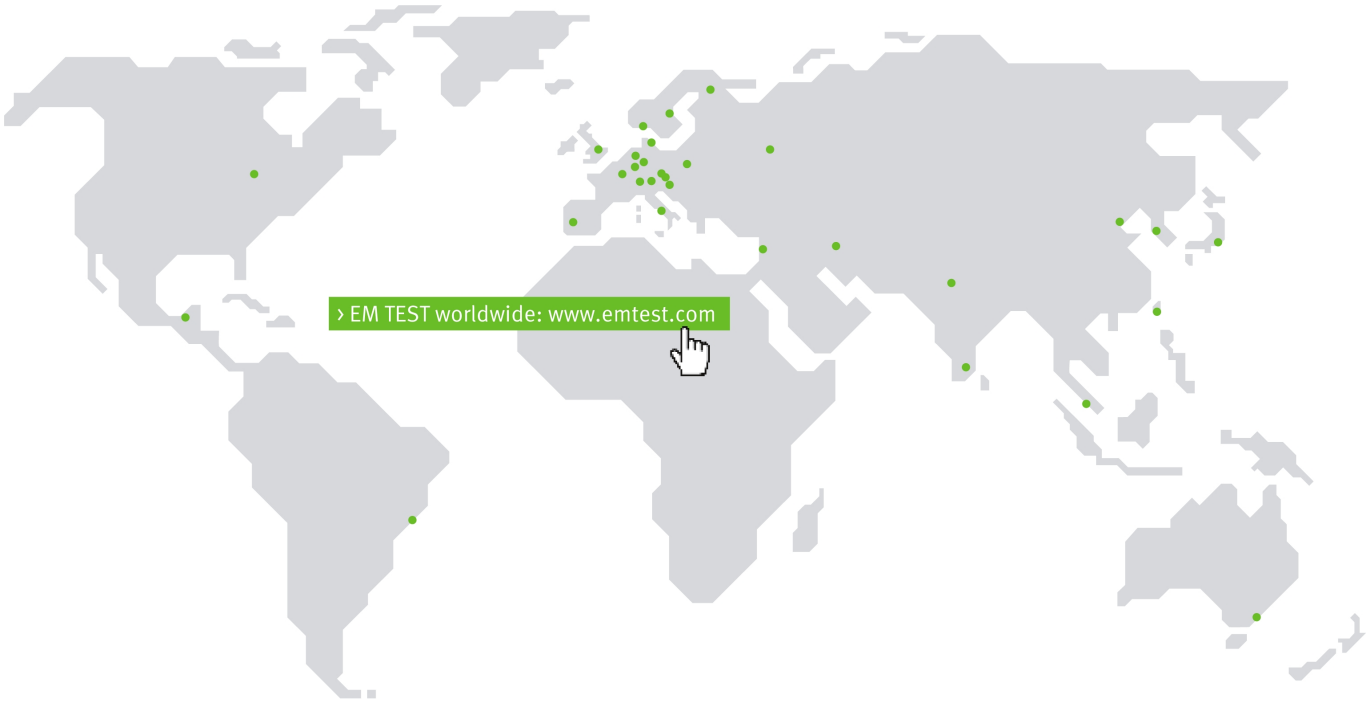
COMPETENCE WHEREVER YOU ARE



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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.