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VCS 500

COMBINATION WAVE SIMULATOR

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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 VOLTAGE UP TO 4KV
- SURGE CURRENT UP TO 2KA
- VOLTAGE/CURRENT MONITORS
- BUILT-IN 1PH OR 3PH CDN
- INTERLOCK
- WARNING LAMP CONTROL
- MANUAL OPERATION
- RS232 AND GPIB INTERFACE

APPLICATION AREAS

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

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TECHNICAL DETAILS

STANDARDS

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 55024, IEC 61000-4-5, IEC 61000-4-9, IEC 61326, IEC 61850-3, ITU-T K.20, ITU-T K.21, ITU-T K.41, ITU-T K.45

BENEFITS

VCS 500 - COMBINATION WAVE SIMULATOR WITH INTEGRATED CDN

The VCS 500 offers an integrated coupling/decoupling network either single phase or three-phase with a nominal current of 16A per phase. In case higher current is required its capability can be extended by an external CDN to achieve nominal currents of 100A and more per phase.
By selecting the desired coupling the source impedance and the coupling capacitor is set automatically what ever CDN is connected.
Fail inputs are offered as standard for DUT monitoring purposes. Peak values of voltage and current are shown in the display and these values are transferred to the software for reporting.
To comply with safety regulations the VCS 500 is equiped with a contact to control warning lamps and with a safety interlock.
Pre-programmed Standard Test routines allow highest user convenience. Still the VCS 500 offers the Quick Start test routine where parameters can be changed on-line during the test to evaluate the susceptibility level of an individual DUT.

OPERATION

EASY TO OPERATE

Front panel menu and function keys enable the user to program his test routines quickly and accurately. The cursor allows fast control of all test parameters of the programmed routine, thus test procedures are simplified and confidence is generated that every step is carried out correctly.

SOFTWARE

IEC.CONTROL SOFTWARE FOR CONTROL AND DOCUMENTATION

Outstanding user convenience, clearly structured windows and operation features and the EM TEST standards library along with the flexibility to generate user specific test sequences very easily are the main features of iec.control software. The software is automatically configured according to the connected EM TEST generators. Extensive reporting capabilities help the user to create test reports that meet international requirements.
iec.control is supported by Windows 95/98, Windows ME, Windows NT, Windows 2000, Windows XP and Windows Vista. Remote control is achieved either via RS232 or GPIB. iec.control supports a wide range of GPIB cards of National Instruments.

AUXILIARY DEVICES

CNV 503 - 3PHASE COUPLING/DECOUPLING NETWORKS FOR SURGE

EM TEST offers a range of fully automatic 3phase coupling/decoupling networks for surge to extend the test capability for three-phase DUTs. The networks have a rated current of up to 100A.

CNI 503 - 3PHASE COUPLING/DECOUPLING NETWORKS FOR BURST AND SURGE

EM TEST offers a range of fully automatic 3phase coupling/decoupling networks for burst and surge to extend the test capability for three-phase DUTs. The networks have a rated current of up to 100A.

CNV 504A/508A - SURGE COUPLING/DECOUPLING NETWORKS FOR SIGNAL/DATA LINES

CNV 504A/508A coupling/decoupling networks are available to perform surge tests on I/O lines, signal/data lines and telecom lines as per IEC 61000-4-5.

ACCESSORIES

MS 100 - MAGNETIC FIELD COIL

By means of the MS 100 magnetic field coil of EM TEST pulsed magnetic fields as per IEC 61000-4-9 and related standards can be generated.

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TECHNICAL DETAILS

COMBINATION WAVE 1.2/50US - 8/20US	
Voltage (o.c.)	160V - 4,000V ± 10%
Pulse front time	1.2us ± 30%
Pulse time to half value	50us ± 20%
Current (s.c.)	max. 2,000A ± 10%
Pulse front time	8us ± 20%
Pulse time to half value	20us ± 20%
Polarity	Positive/negative/alternating
Event counter	1 - 30,000 or endless
Pulse counter	1 - 1,000,000

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

OUTPUT	
Direct	Via HV-connector; Zi = 2ohm To connect an external surge coupler
CDN 1-M4	Internal single phase coupler
Coupling mode	Line to line with 2ohm impedance Line(s) to PE with 12ohm impedance
DUT supply	AC: 250V/16A; 50/60Hz DC: 250V/10A

MEASUREMENTS	
Peak voltage	4,000V in the LCD display
Peak current	2,000A 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	
Serial interface	RS 232, baud rate 1,200 - 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"/3HU, approx. 20kg
Supply voltage	115/230V +10/-15%
Fuses	2 x T 2AT (230V) or 2 x T4AT (115V)

COUPLING/DECOUPLING NETWORKS FOR POWER LINES	
CN 503A	3phase coupling/decoupling network for EFT and Surge; 3x440V/16A
CNI 503A2	3phase coupling/decoupling network for EFT and Surge; 3x440V/32A
CNI 503A3	3phase coupling/decoupling network for EFT and Surge; 3x440V/63A
CNI 503A4	3phase coupling/decoupling network for EFT and Surge; 3x440V/100A
CNV 503	3phase coupling/decoupling network for Surge only; 3x440V/16A
CNV 503S1	3phase coupling/decoupling network for Surge only; 3x440V/32A
CNV 503S2	3phase coupling/decoupling network for Surge only; 3x440V/63A
CNV 503S3	3phase coupling/decoupling network for Surge only; 3x440V/100A

COUPLING/DECOUPLING NETWORKS FOR SIGNAL/TELECOM LINES	
CNV 504A	4 signal/data lines as per figures 10 & 11, IEC 61000-4-5
CNV 504S1	4 telecom lines as per fig. 12, IEC 61000-4-5
CNV 508A	8 signal/data lines as per figures 10 & 11, IEC 61000-4-5
CNV 508S1	8 telecom lines as per fig. 12, IEC 61000-4-5

PULSED MAGNETIC FIELD AS PER IEC 61000-4-9	
Antenna	MS 100 for up to 5,000A/m

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COMPETENCE WHEREEVER YOU ARE

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