

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 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

- > **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**
- > **Voltage/current monitors**
- > **Interlock**

APPLICATION AREAS

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

TECHNICAL DETAILS

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	4us ± 20%
Pulse duration	300us ± 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 for 1.2/50us - 8/20us - Zi = 15ohm for 10/700us - 4/300us - for external couplers
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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 (an external network is required, optional)
FCC Part 68	2-wire T1,T2 with 25ohm each
IEC 61000-4-5	4-wire T1,T2, T3,T4 with 100ohm each

MEASUREMENTS

CRO Ū-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

TECHNICAL DETAILS

GENERAL DATA

INTERFACE

Serial interface	USB
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

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 (as per Fig. 11, IEC 61000-4-5) and arrestor (as per Fig. 12); with 3.3µF capacitor for Ringwave (as per Fig. 9, IEC 61000-4-12)
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 504S9	4 telecom lines as per fig. 14, IEC/EN 61000-4-5 Test voltage up to 10kV
CNV 508S16	8 telecom lines as per fig. 14, IEC/EN 61000-4-5 Test voltage up to 10kV
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



CONTACT EM TEST DIRECTLY

Switzerland

EM TEST (Switzerland) GmbH > Sternenhofstraße 15 > 4153 Reinach > Switzerland
 Phone +41 (0)61/7179191 > Fax +41 (0)61/7179199
 Internet: www.emtest.ch > E-mail: sales.emtest@ametek.com

Germany

EM TEST GmbH > Lünener Straße 211 > 59174 Kamen > Deutschland
 Phone +49 (0)2307/26070-0 > Fax +49 (0)2307/17050
 Internet: www.emtest.com > E-mail: info.emtest@ametek.de

France

EM TEST FRANCE > Le Trident - Parc des Collines > Immeuble B1 - Etage 3 > 36, rue Paul Cézanne > 68200 Mulhouse > France
 Phone +33 (0)389 31 23 50 > Fax +33 (0)389 31 23 55
 Internet: www.emtest.fr > E-mail: info@emtest.fr

Poland

EM TEST Polska > ul. Ogrodowa 31/35, 00-893 Warszawa > Polska
 Phone +48 (0)518 64 35 12
 Internet: www.emtest.com/pl > E-mail: info_polska.emtest@ametek.de

USA / Canada

EM TEST USA > 9250 Brown Deer Road > San Diego > CA 92121
 Phone +1 (858) 699 1685 > Fax +1 (858) 458 0267
 Internet: www.emtest.com > E-mail: sales.emtest@ametek.com

P.R. China

E & S Test Technology Limited > Rm 913, Leftbank > No. 68 Bei Si Huan Xi Lu > Haidian District > Beijing 100080 > P.R. China
 Phone +86 (0)10 82 67 60 27 > Fax +86 (0)10 82 67 62 38
 Internet: www.emtest.com > E-mail: info@emtest.com.cn

Republic of Korea

EM TEST Korea Limited > #405 > WooYeon Plaza > #986-8 > YoungDeok-dong > Giheung-gu > Yongin-si > Gyeonggi-do > Korea
 Phone +82 (31) 216 8616 > Fax +82 (31) 216 8616
 Internet: www.emtest.co.kr > E-mail: sales@emtest.co.kr

Information about scope of delivery, visual design and technical data correspond with the state of development at time of release. Technical data subject to change without further notice.