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UCS 500N4

ULTRA-COMPACT SIMULATOR FOR INDUSTRIAL ELECTRONICS

FOR TESTS ACCORDING TO ...

› EN 300329
› EN 300340
› EN 300342-1
› EN 300386 V1.3.2
› EN 301489-1
› EN 301489-17
› EN 301489-24
› EN 301489-7
› EN 55024
› EN 61000-6-1
› EN 61000-6-2
› FCC 97-270 (part 68)
› IEC 61000-4-11
› IEC 61000-4-29
› IEC 61000-4-4
› IEC 61000-4-5
› IEC 61000-4-8
› 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

UCS 500N4 - COMPACT TESTER FOR EFT/BURST, SURGE AND POWER FAIL

The UCS 500N4 ultra-compact simulator is the most versatile tester to cover transient and power fail requirements according to international standards (basic and generic standards) and product/product family standards. The UCS 500N4 is the most economic solution for tests during development as well as for full-compliant immunity tests and CE Marking for single phase DUT with the ability to be extended for testing three-phase DUTs by means of an automatically controlled external coupling network up to 100A.
EM TEST supplies a large range of accessories for the various applications such as magnetic field tests.

HIGHLIGHTS

› **ULTRA-COMPACT SIMULATOR UP TO 4.4KV**
› **BURST MODULE (IEC 61000-4-4)**
› **SURGE MODULE (IEC 61000-4-5)**
› **TSURGE MODULE (IEC 61000-4-5); OPTIONAL**
› **POWERFAIL MODULE (IEC 61000-4-11)**
› **MAGNETIC FIELD TESTS WITH OPTIONAL ACCESSOIRES**

APPLICATION AREAS

INDUSTRY
COMPONENTS
MEDICAL
RESIDENTIAL
TELECOM

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TECHNICAL DETAILS

ELECTRICAL FAST TRANSIENTS

BURST MODULE, EFT/N4	
	As per EN/IEC 61000-4-4 and EN 61000-6-1, -6-2
Test voltage	200V - 4,400V ± 10%; 100V - 2,200V ± 10% into 50ohm
Pulse shape	5/50ns into 50ohm and 1,000ohm
Rise time tr	5ns ± 30% into 50ohm; 5ns ± 30% into 1,000ohm
Pulse width td	50ns ± 30% into 50ohm; 50ns -15/+100ns into 1,000ohm
Source impedance	50ohm
Polarity	Positive/negative

TRIGGER CIRCUIT	
Trigger of bursts	Automatic, manual, external
Synchronization	0° - 360°, resolution 1° (16 - 500Hz)
Burst duration	td = 0.10ms - 999.9ms
Repetition rate	tr = 10ms - 9,999ms
Spike frequency	f = 0.1kHz - 1,000kHz
Test duration	T = 0:01min - 99:59min T › 99:59min --› endless

OUTPUTS	
Direct	Via 50ohm coaxial connector
Coupling mode	L, N, PE; all combinations
DUT supply	AC: 250V/16A; 50/60Hz DC: 250V/10A
CRO trigger	5V trigger signal for oscilloscope

TEST ROUTINES	
Quick Start	On-line adjustable parameters, easy-to-use
Standard Test routines	As per IEC 61000-4-4, Levels 1 - 4 As per EN 61000-6-1, -6-2 Manual Standard Test routine
User Test routines	Synchronous burst release Random burst release Change voltage after T Frequency sweep within one burst Frequency sweep with constant number of pulses Frequency sweep with constant burst duration Change polarity after T

OPTIONS	
HFK	Capacitive coupling clamp as per IEC 61000-4-4
KW50	100:1 divider, 50ohm
KW1000	500:1 divider, 1,000ohm
CA EFT kit	Kit for burst pulse verification consisting of KW50, KW1000 and adapter for DUT port in a plastic case for storage
A6dB	6dB attenuator, 50ohm
ITP	Immunity test probes (electrical field generation)
ITP/H	Immunity test probe (magnetic field generation)

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TECHNICAL DETAILS

COMBINATION WAVE / SURGE

SURGE MODULE, VCS/N4	
	As per EN/IEC 61000-4-5 and EN 61000-6-1, -6-2
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, selectable

TRIGGER CIRCUIT	
Release of pulses	Automatic, manual, external
Synchronization	0° - 360°, resolution 1°
Repetition rate	max. 1Hz (1s - 999s)

OUTPUTS	
Direct	Via HV connector, Zi = 2ohm
Coupling mode	Line to line Line(s) to ground
DUT supply	AC: 250V/16A; 50/60Hz DC: 250V/10A
CRO trigger	5V trigger signal for oscilloscope

MEASUREMENTS	
CRO Û-monitor	10Vp at 4,000V
CRO Î-monitor	10Vp at 2,000A
Peak voltage	4,000V in the LCD display
Peak current	2,000A in the LCD display

TEST ROUTINES	
Quick Start	One-line adjustable parameters, easy-to-use
Standard Test routines	As per IEC 61000-4-5, Levels 1 - 4 As per EN 61000-6-1, -6-2 Manual Standard Test routine
User Test routines	Change polarity after n pulses Change coupling after n pulses Change voltage after n pulses Change phase angle after n pulses
Pulsed Magnetic Field	as per IEC 61000-4-9 Test levels 100, 300 and 1,000A/m Test level steplessly adjustable under Quick Start

OPTIONS	
CNV504N	Coupling network for 4 signal/data lines as per IEC 61000-4-5
CNV508N	Coupling network for 8 signal/data lines as per IEC 61000-4-5

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TECHNICAL DETAILS

POWER FAIL, DIPS & INTERRUPTIONS, VOLTAGE VARIATIONS

POWER FAIL MODULE, PFS/N4	
	As per EN/IEC 61000-4-11 and EN 61000-6-1, -6-2
Channel PF1/PF2	AC voltage: max. 250V AC current: max. 16A
Frequency	16Hz - 500Hz
Switching time	‹ 5us into a 100ohm resistive load
Inrush current	› 500A
Protection	Both channels are protected against short-circuit conditions.

TRIGGER CIRCUIT	
Trigger of events	Automatic, manual, external
Synchronization	0° - 360°, resolution 1° (16 - 500Hz)
Repetition rate	10ms - 99s
Event duration	100us - 9,900ms

OUTPUTS	
DUT terminals	L, N and PE
CRO trigger	5V trigger signal for oscilloscope

MEASUREMENTS	
DUT voltage	In the LCD display
DUT current	In the LCD display
MON V	Measurement of the DUT voltage; built-in 100:1 divider
MON I	Measurement of the DUT current; 10mV/A; max. 1,000A

TEST ROUTINES	
Quick Start	On-line adjustable parameters, easy-to-use
Standard Test routines	As per EN/IEC 61000-4-11 for AC supplies As per EN/IEC 61000-4-29 for DC supplies As per EN 61000-6-1, -6-2 Manual Standard Test routine
User Test routines	Voltage variation, control of an external variac Change phase angle after n events Change event duration after n events Inverse mode
50/60Hz magnetic field	As per EN/IEC 61000-4-8 Test levels 1, 3, 10 and 30A/m with external current transformer MC2630 Test levels 100, 300 and 1,000A/m with external current transformer MC26100

OPTIONS	
V4780	Tapped autotransformer as per IEC 61000-4-11 Ed.2
V4780 S2	Tapped autotransformer as per IEC 61000-4-11 Ed.2 with automatic change of tap
MV2616	Motorised variac (0 - 250V, 16A)
MS100	Magnetic field coil, 1m x 1m
MC2630	Current transformer for magnetic fields up to 30A/m
MC26100	Current transformer for magnetic fields up to 1,000A/m

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TECHNICAL DETAILS

TELECOM SURGE

TSURGE MODULE, TSURGE4	
Test voltage	160V - 4,000V ± 10%
Energy storage capacitor	20uF
Polarity	Positive, negative, alternating
Counter	1 - 30,000 or endless, selctable
	As per ITU and ETSI recommendations
Front time	10us ± 30%
Pulse duration	700us ± 20%
	As per FCC part 68, Pulse B
Front time	9us ± 30%
Pulse duration	720us ± 20%
Output current	4 - 100A (short-circuit)
Rise time	5us ± 30%
Pulse duration	320us ± 20%
	As per IEC 61000-4-5
Rise time	6.5us ± 30%
Pulse duration	700us ± 20%
Output current	4A - 100A (short-circuit)
Rise time	4us ± 20%
Pulse duration	300us ± 20%

COUPLING MODES	
As per ITU	For 2-wire T1/T2 with 25ohm each, For 4-wire T1,T2,T3,T4 with 100ohm each
As per FCC part 68	For 2-wire T1/T2 with 25ohm each
As per IEC 61000-4-5	An external network is required (optional)

GENERAL DATA

INTERFACES	
Serial interface	USB
Parallel interface	IEEE 488, address 1 - 30
Analog output	0 - 10VDC to control an external transformer
CN interface	15pin SubD connector to control an external coupling network
Fail inputs	DUT monitoring via Fail1 and Fail2 input (one each)

DIMENSIONS	
Dimensions	19", 3HU, 19", 6HU, (with TSurge4 module)
Weight	approx. 25kg

MAINS	
Supply voltage	115V/230VAC +10%/-15%
Power	approx. 75W
Frequency	50/60Hz
Fuses	2 x T 2AT (230V) or 2 x T 4AT (115V)

SAFETY	
Safety standard	EN/IEC 61010
Security circuit	Control input (24VDC)
Warning lamp	Floating contact (max. 230V/6A)

ACCESSORIES INCLUDED	
Mains supply	Plug depends on the country of use
DUT supply	Plug depends on the country of use
DUT adapter	Socket depends on the country of use
	Operation manual, Calibration certificate, iec.control remote control software

OPTIONS	
CNI 503Ax	3-phase coupling/decoupling networks as per IEC 61000-4-4 and -4-5 up to 100A per phase
iec.control 1	Remote control and documentation software, including standard test routines and reporting capabilities.

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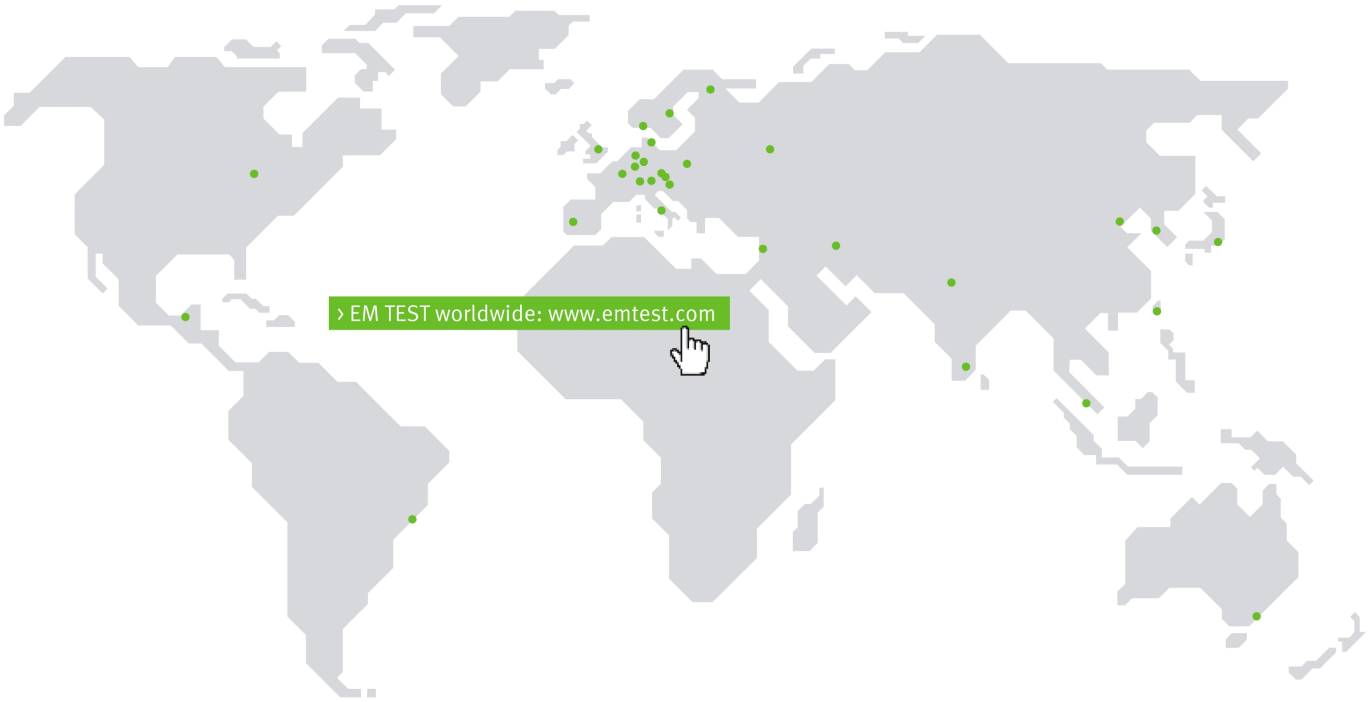
COMPETENCE WHEREEVER YOU ARE



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

