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COMPACT NX5

MULTIFUNCTIONAL TEST GENERATOR FOR TRANSIENTS (EFT/BURST, SURGE & POWER FAIL) UP TO 5.5 KV

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 50121
› EN 55024
› EN 61000-4-11
› EN 61000-4-29
› EN 61000-4-4
› EN 61000-4-5
› EN 61000-4-8
› EN 61000-4-9
› EN 61000-6-1
› EN 61000-6-2
› FCC 97-270 (part 68)
› IEC 60255-22-5
› IEC 61000-4-11
› ...

COMPACT NX5 - COMPACT TESTER FOR EFT/BURST, SURGE AND POWERFAIL

The compact Next Generation NX5 is the most versatile tester to address transient and power fail requirements for both international and commercial standards.
Featuring an easy-to-use color touch screen, the NX5 provides an economical solution for pre-compliance immunity testing as well as full-compliance testing and CE Marking. Its internal single-phase Coupling/Decoupling Network (CDN) can be extended for testing three-phase EUTs by means of an automatically controlled external CDN up to 200 A per phase. EM TEST supplies a large range of accessories for various applications such as magnetic field tests and more.

HIGHLIGHTS

› **Smallest compact generator with 7" touch screen**
› **Burst 5.5 kV, Surge 5.0 kV and Power Fail**
› **Built-in single phase CDN 300 V/16 A**
› **Manual operation from front panel**
› **Separate buttons for START/STOP operation with LED indication**

APPLICATION AREAS

INDUSTRY
COMPONENTS
MEDICAL
BROADCAST
RESIDENTIAL
RENEWABLE ENERGY
TELECOM

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TECHNICAL DETAILS

BENEFITS

ALL IN ONE - ALL YOU NEED FOR YOUR TESTS

The compact NX5 is a standalone generator which includes everything necessary to perform fully compliant tests. With separate power mains supply inputs, it allows the utilization of different EUT supply voltages for maximum flexibility.

The NX5 can be operated manually from the intuitive front touch screen or remotely via its built-in Ethernet, USB or optical interface. Failure inputs allow control of an ongoing test sequence based on the state of the EUT. Monitoring outputs (BNC) offer easy signal verification and measurements. For enhanced safety requirements, features like interlock and a warning lamp are available.

NX5 is the first generator that recognizes the connected EUT power configuration. Only coupling selections to active lines are enabled. Non existing lines will be disabled from the menu settings. Pre-programmed routines with common Test Standards allow maximum user convenience. Quick Start Test routines where parameters can be changed during susceptibility level evaluation are also available.

OPERATION

EASY TO OPERATE

An innovative color touch screen with intuitive menu structure and defined keys for Start / Stop / Break, indicated by LED bars, enables the user to program test routines quickly and accurately. The touch screen and knob allow fast control of all test parameters of the programmed routine, ensuring that test procedures are simplified and confidence is high that every step is carried out correctly.

SOFTWARE

IEC.CONTROL SOFTWARE FOR CONTROL AND DOCUMENTATION

Outstanding user convenience, clearly structured windows and operation features, EM TEST's comprehensive standards library along with the flexibility to easily generate user specific test sequences are the main features of iec.control software. The software will be automatically configured in accordance with 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 XP, Windows Vista, Windows 7 and Windows 8. Remote control is achieved either via Ethernet, USB or optical interface.

OTHER MODELS

UCS 500N7 - COMPACT TESTERS UP TO 7KV

Ultra-compact testers for EFT/burst, Surge, Power Fail, Telecom Surge and Ringwave with voltage capability up to 7kV.

TECHNICAL DETAILS

AUXILIARY DEVICES

COUPLING NX5 - 3PHASE COUPLING/DECOUPLING NETWORKS FOR BURST AND SURGE

EM TEST offers a range of fully automatic 3-phase coupling/decoupling networks for burst, surge and ringwave to extend the test capability for three-phase EUTs. The networks have a rated current of up to 200 A.

MV 2616 - MOTORISED VARIAC FOR VOLTAGE VARIATION

A motorized variac is offered as an alternative to the tapped autotransformers for voltage dips/interruptions and voltage variation tests as per IEC/EN 61000-4-11. The motorized variac can also be used for automated magnetic field tests.

TVT 1-250-16 - TAPPED VOLTAGE TRANSFORMER FOR VOLTAGE DIPS

The TVT 1-250-16 tapped autotransformer is designed to supply the required voltages as per IEC/EN 61000-4-11 to perform voltage dips.

TVT 1-250-16.1 - TAPPED STEP TRANSFORMER AUTOMATIC FOR VOLTAGE DIPS

The TVT 1-250-16.1 is an automatic tapped auto transformer, designed to supply the required voltages as per IEC/EN 61000-4-11 to perform voltage dips and interruptions. Compared to the manually operated TVT 1-250-16, the TVT 1-250-16.1 model offers automatic change of taps according to the selected voltage level.

CNV 504/508 N- AND T-SERIES - SURGE COUPLING/DECOUPLING NETWORKS FOR SIGNAL/DATA LINES

CNV 504/508 N- and T-series coupling/decoupling networks are available to perform surge tests on I/O lines, signal/data lines and telecom lines as per IEC/EN 61000-4-5 Ed 3.0

ACCESSORIES

MFC SERIES - MAGNETIC FIELD COIL FOR POWER-FREQUENCY AND PULSED MAGNETIC FIELDS

The MFC 1000 is a 1m x 1m magnetic field coil as specified in IEC/EN 61000-4-8 and IEC/EN 61000-4-9. Its design allows easy moving of the coil. The field coil is adjustable in height and allows for 360degree rotation. To generate power-frequency magnetic fields in the lower range the current transformer MFT 30 is used while high-field strength above 100 A/m up to 1000 A/m requires the MFT 100 current transformer.

CCI - CAPACITIVE COUPLING CLAMP

Capacitive coupling clamp as per specification IEC/EN 61000-4-4.

ITP - IMMUNITY TEST PROBES

ITP is a tool being used for development test. It consists of a variety of electrical field probes. The probes allow to locate weak points within a system or on a PCB. The burst pulse is used to generate the disturbance signal.

PVF BKIT 1 - VERIFICATION KIT FOR EFT/BURST PULSES

As per IEC/EN 61000-4-4 the characteristic of the burst generator needs to be verified with two different loads, 50 ohm and 1,000 ohm. EM TEST offers a calibration kit consisting of the two loads and an adapter to verify the pulses at the EUT output.

CCI PVKIT 1 - VERIFICATION KIT FOR CAPACITIVE COUPLING CLAMP

The IEC/EN 61000-4-4 Ed 3.0 standard published in 2012 recommends the calibration of the capacitive coupling clamp into a 50 ohm coaxial load.
The capacitive coupling clamp (CCI) is connected to the 50 ohm output of the EFT generator. A flexible insulated plate inside the HFK is connected to a coaxial 50 ohm load resistor for verifying the EFT/Burst wave of the capacitive coupling clamp.

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TECHNICAL DETAILS

ELECTRICAL FAST TRANSIENTS

BURST MODULE, EFT/NX5	
	As per IEC/EN 61000-4-4 and EN 61000-6-1, -6-2
Test voltage	200 V - 5,500 V ± 10%; 100 V - 2,750 V ± 10% into 50 ohm
Pulse shape	5/50 ns into 50 ohm and 1,000 ohm
Rise time tr	5 ns ± 30% into 50 ohm; 5 ns ± 30% into 1,000 ohm
Pulse width td	50 ns ± 30% into 50 ohm; 50 ns -15/+100 ns into 1,000 ohm
Source impedance	50 ohm
Polarity	Positive/negative

TRIGGER CIRCUIT	
Trigger of bursts	Automatic, manual, external
Synchronization	0° - 360°, resolution 1° (16 - 500 Hz)
Burst duration (td)	td = 0.10 ms - 9999 ms
Repetition rate (tr)	tr = 10 ms - 9,999 ms
Spike frequency	f = 0.1 kHz - 1,000 kHz
Test duration	T = 0:01 min - 99:59 min T › 99:59 min --› endless

OUTPUTS	
Direct	Via 50 ohm coaxial connector
Coupling mode	L, N, PE; all combinations
EUT supply	AC: 300 V/16 A; 50/60 Hz DC: 300 V/16 A
CRO trigger	5 V trigger signal for oscilloscope

ELECTRICAL FAST TRANSIENTS

TEST ROUTINES	
Quick Start	On-line adjustable parameters, easy-to-use
Standard Test routines	As per IEC/EN 61000-4-4, Levels 1 - 4 As per IEC/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	
CCI	Capacitive coupling clamp as per IEC/EN 61000-4-4
CCI PVKIT 1	Adapter set for capacitive coupling clamp calibration included: - Transducer plate as per IEC/EN 61000-4-4 Ed 3.0 - Support for positioning the PVF 50 adapter on 100 mm height as the capacitive coupling clamp - PVF AD 3 to match the Transducer plate to the PVF50
PVF 50	100:1 divider, 50 ohm
PVF 1000	500:1 divider, 1,000 ohm
PVF BKIT 1	Kit for burst pulse verification consisting of PVF 50, PVF 1000 and adapter for EUT port in a plastic case for storage
PVF AD 1	Adapter to match PVF 50 load resistor to the EUT supply of NX-series coupling network, 3-phase coupling network
ITP EF	Immunity test probes (electrical field generation)
ITP MF	Immunity test probe (magnetic field generation)

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TECHNICAL DETAILS

COMBINATION WAVE / SURGE

SURGE MODULE, SURGE/NX5	
	As per IEC/EN 61000-4-5 and IEC/EN 61000-6-1, -6-2
Voltage (o.c.)	160 V - 5,000 V ± 10%
Pulse front time	1.2 us ± 30%
Pulse time to half value	50 us ± 20%
Current (s.c.)	Max. 2,500 A ± 10%
Pulse front time	8 us ± 20%
Pulse time to half value	20 us ± 20%
Polarity	Positive/negative/alternating
Event counter	1 - 99,999 or endless, selectable

TRIGGER CIRCUIT	
Release of pulses	Automatic, manual, external
Synchronization	0° - 360°, resolution 1°
Repetition rate	max. 1 Hz (1 s - 9999 s)

OUTPUTS	
Direct	Via HV connectors for external coupling networks
Coupling mode	Line to line Line(s) to ground
EUT supply	AC: 300 V/16 A; 50/60 Hz DC: 300 V/16 A
CRO trigger	5 V trigger signal for oscilloscope

MEASUREMENTS	
CRO Û-monitor	10 Vp at 5,000 V
CRO Î-monitor	10 Vp at 2,500 A
Peak voltage	5,000 V in the touch display
Peak current	2,500 A in the touch display
Overcurrent protection	Breaks the Surge test when the surge current is over the limit, Limiter for differential mode, Limiter for common mode
EUT current	RMS current, Range 50 A, ‹ ±5%
EUT overcurrent protection	Breaks the test when the EUT current is over the limit,

COMBINATION WAVE / SURGE

TEST ROUTINES	
Quick Start	One-line adjustable parameters, easy-to-use
Standard Test routines	As per IEC/EN 61000-4-5, Levels 1 - 4 As per IEC/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/EN 61000-4-9 Test levels 100, 300 and 1,000A/m Test level continuously adjustable under Quick Start

OPTIONS	
CNV 504Nx	Coupling network for 4 signal/data lines as per IEC/EN 61000-4-5 Ed 3.0
CNV 508Nx	Coupling network for 8 signal/data lines as per IEC/EN 61000-4-5 Ed 3.0
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 8 lines.
HSC 3-8	Set of coupling/decoupling and protection networks for testing unshielded and shielded high-speed communication lines (Ethernet lines)
SPN 8	Surge protection network to reduce the surge voltage ‹10 V at the AE
PVS VP7	Pulse Verification Surge, Voltage Probe 7kV Differential, 7kV Common

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TECHNICAL DETAILS

POWER FAIL, DIPS & INTER-RUPTIONS, VOLTAGE VARIATIONS

POWER FAIL MODULE, PFS/NX5	
As per	IEC/EN 61000-4-11, IEC/EN 61000-4-29 and IEC/EN 61000-6-1, -6-2
Channel PF1/PF2	AC voltage: max. 300 V AC current: max. 16 A DC voltage: max. 300 V DC current: max. 16 A
Frequency	16 Hz - 500 Hz and DC
Switching time	› 1 us ‹ 5 us into a 100 ohm resistive load (SVP 100)
Inrush current	› 500 A
Protection	Both channels are protected against short-circuit conditions.

TRIGGER CIRCUIT	
Trigger of events	Automatic, manual, external
Synchronization	0° - 360°, resolution 1° (16 - 500 Hz)
Repetition rate	10 ms - 9,999 s
Event duration	20 us - 9,999 s

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

MEASUREMENTS	
EUT voltage (rms)	In the touch screen
EUT current (rms)	In the touch screen
MON V	Measurement of the EUT voltage, 10 V : 300 V rms, built-in divider 42,5:1 300 V rms, 425 V Peak
MON I	Measurement of the EUT current, 10 V : 16 A rms, 2.26 A/V; max. 25 A DC, max. 16 A rms

POWER FAIL, DIPS & INTER-RUPTIONS, VOLTAGE VARIATIONS

TEST ROUTINES	
Quick Start	On-line adjustable parameters, easy-to-use
Standard Test routines	As per IEC/EN 61000-4-11 for AC supplies As per IEC/EN 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
50/60 Hz magnetic field	As per IEC/EN 61000-4-8 Test levels 1, 3, 10 and 30 A/m with external current transformer MFT 30 Test levels 100, 300 and 1,000 A/m with external current transformer MFT 100

OPTIONS	
TTM 1-250-16	Tapped autotransformer as per IEC/EN 61000-4-11 Ed.2
TTA 1-250-16	Tapped autotransformer as per IEC/EN 61000-4-11 Ed.2 with automatic change of tap
MV 2616	Motorized variac (0 - 250 V, 16 A)
MFC x	Magnetic field coil, 1 m x 1 m MFC 1000, 1000 A/m
MFT 30	Current transformer for magnetic fields up to 30 A/m
MFT 100	Current transformer for magnetic fields up to 1,000 A/m
SVP 1700	Calibration box for inrush current verification as per IEC/EN 61000-4-11
SVP 100	100 ohm low inductive load resistor, for rise and fall time verification

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TECHNICAL DETAILS

GENERAL DATA

INTERFACES	
Serial interface	2 x USB A / 1 x USB B Opto - Link
Lan	Ethernet
Analog output	0 - 10 VDC to control an external transformer
Sys.link	26 pin high density connector to control an external coupling network
Fail inputs	EUT monitoring via input (one each) EUT Monitor 1 EUT Monitor 2
Ext. Trigger	BNC Ext. Trigger IN pos slope 5 V
Ext. Sync Input	Differential input, 50 V - 690 VAC, 2 x 4 mm MC Safety connectors

DIMENSIONS	
Dimensions	19", 3HU,
Weight	21.8 kg

MAINS	
Supply voltage	85 V - 264 V
Frequency	50/60 Hz
Power	approx. 75 W
Fuses	2 x 2 AT

SAFETY	
Safety standard	IEC/EN 61010
Security circuit	Control input (24 VDC)
Warning lamp	Floating contact (max. 60 V/2 A)

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

SPECIAL EQUIPMENT (ON REQUEST)

OPTIONS	
coupling NX5	3-phase coupling/decoupling networks as per - IEC/EN 61000-4-4 and - IEC/EN 61000-4-5 and - IEC/EN 61000-4-12 up to 200 A per phase
iec.control 1	Remote control and documentation software, including standard test routines and reporting capabilities.

AVAILABLE MODELS:	
Compact NX5 series	Compact simulator with EFT/NX5 up to 5.5 kV, VCS/NX5 up to 5.0 kV and PFS/NX5; 1ph CDN 300 V AC/DC (p-n) / 16 A
compact NX5 bsp-1-300-16	Burst, Surge, Power Fail
compact NX5 bs-1-300-16	Burst, Surge
compact NX5 bp-1-300-16	Burst, Power Fail
compact NX5 bst-1-300-16	Burst, Surge, Telecom
compact NX5 bspt-1-300-16	Burst, Surge, Power Fail, Telecom
compact NX5 b-1-300-16	Burst
compact NX5 s-1-300-16	Surge
compact NX p-1-300-32	Power Fail

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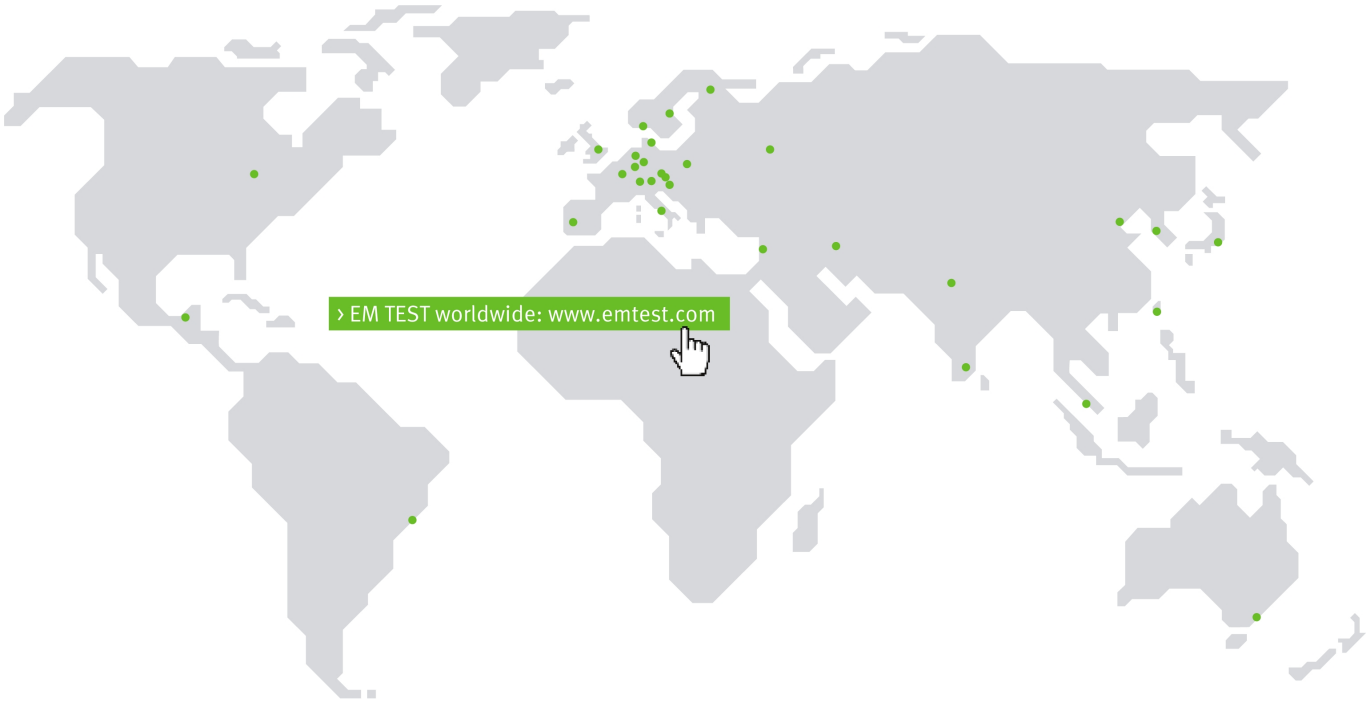
COMPETENCE WHEREVER YOU ARE



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