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PFS 503N SERIES

POWER FAIL SIMULATORS

FOR TESTS ACCORDING TO ...

› EN 61000-4-11
› EN 61000-4-29
› EN 61000-4-34
› EN 61000-6-1
› EN 61000-6-2
› IEC 60601-1-2
› IEC 61000-4-11
› IEC 61000-4-29
› IEC 61000-4-34
› IEC 61326

PFS 503N SERIES - SIMULATOR FOR DIPS, SHORT INTERRUPTIONS AND VOLTAGE VARIATIONS

Electronic and electrical equipment may be affected by voltage dips, short interruptions and voltage variations of the power supply. Dips and interruptions are caused by faults in the public supply network, in installations or by sudden large change of load. Testing to such phenomena is required to proof that electronic and electrical equipment do not fall into unsafe operation conditions.
EM TEST offers a full range of simulators up to 3x690VAC, 100A and DC voltage capability of up to 600V.

HIGHLIGHTS

- **Standalone test generator for dips, short interruptions and voltage variation**
- **Full-compliant three-phase system as per IEC 61000-4-11, Ed.2:2004 and IEC 61000-4-34 for testing delta and star supply systems**
- **6 electronic switches, short-circuit protected**
- **Rated voltage up to 3x690V AC, 600V DC**
- **Nominal current up to 100A per phase**

APPLICATION AREAS

- INDUSTRY
- RENEWABLE ENERGY
- MEDICAL
- BROADCAST
- TELECOM
- RESIDENTIAL

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TECHNICAL DETAILS

BENEFITS

PFS 503N SERIES - THE ONLY REAL THREE-PHASE POWER FAIL SIMULATOR

Unlike any other Power Fail simulator the EM TEST PFS 503N Series represents a real three-phase Power Fail simulator. Not only phase-by-phase testing is possible but any combination of phases and all three phases can be simultaneously tested. Herefore the PFS503N Series is equipped with six individually controlled semiconductor switches. Each switch is electronically short-circuit protected. Additionally the PFS 503N Series is available for nominal currents of up to 100A which is another outstanding and unreached feature for Power Fail testing.
The PFS 503N Series offers BNC outputs for individual current monitoring for each phase by means of an oscilloscope. The inrush current can be measured using these BNC outputs. An analog DC signal of 0 to 10V is supplied to drive an external motorised three-phase variac.
The PFS 503 can also be used for single phase testing offering a separate DUT output for this purpose.

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 2000, Windows XP, Windows Vista and Windows 7. Remote control is achieved either via USB or GPIB. iec.control supports a wide range of GPIB cards of National Instruments.

AUXILIARY DEVICES

TAPPED AUTOTRANSFORMER V3P40XXDS FOR TESTING THREE-PHASE DIPS AND INTERRUPTIONS

The tapped autotransformers of the V3P40xxDS series provide the fixed voltage levels as per IEC 61000-4-11 Ed.2:2004 and IEC 61000-4-34. These transformers can easily be configured for both delta connection and star connection to fully cover and comply to the test requirements as per IEC 61000-4-11, Ed.2:2004.

MOTORISED VARIAC MV3P40XXDS THREE-PHASE POWER FAIL TESTS

A motorised variac is required to set the reduced voltage levels to perform voltage dips as per IEC 61000-4-11 Ed.2:2004 and IEC 61000-4-34. The voltage level is set by means of an analog output signal provided by the Power Fail simulator to any level between 0V and the maximum voltage of the variac. The variac solution also provides capability to perform overvoltage tests.

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TECHNICAL DETAILS

PFS 503N SERIES MODEL CONFIGURATION	
PFS 503N32	3x480V AC, max. 32A per phase 277V AC (L-N), 360V DC
PFS 503N63	3x480V AC, max. 63A per phase 277V AC (L-N), 360V DC
PFS 503N100	3x480V AC, max. 100A per phase 277V AC (L-N), 360V DC
PFS 503N32.1	3x690V AC, max. 32A per phase 400V AC (L-N), 600V DC
PFS 503N63.1	3x690V AC, max. 63A per phase 400V AC (L-N), 600V DC
PFS 503N100.1	3x690V AC, max. 100A per phase 400V AC (L-N), 600V DC

POWER SWITCHES	
	Three-phase application
Voltage (L-L)	3x480V AC resp. 3x690V AC
Frequency	50Hz/60Hz
	Single phase application
Voltage (L-N)	277V AC resp. 400V AC 360V DC resp. 600V DC
Frequency	50Hz/60Hz and DC
Current AC/DC	Max. 32A (PFS 503N32/N32.1) Max. 63A (PFS 503N63/N63.1) Max. 100A (PFS 503N100/N100.1)
Peak current	PFS 503N32/N32.1: Better than 500A PFS 503N63/N63.1 and PFS 503N100/N100.1: Better than 1,000A as per IEC 61000-4-34
Fall/rise time	Between 1us and 5us for abrupt changes, generator loaded with resistive load
	Switches are electronically protected against short-circuit

TRIGGERING	
Automatic	Release of the events according to the settings
Repetition rate	0.01s to 9,999s
Duration td	0.02ms to 9,999s
Manual	Release of a single event via function key
External	Release of a single event by an external trigger signal
Synchronization	0° to 360°, resolution 1°

OUTPUTS	
3-phase application	L1, L2, L3, N and PE on the rear panel
1-phase application	L, N and PE on the front panel

MEASUREMENTS	
CRO Trigger	+15V trigger signal for oscilloscope
CRO Î	Built-in current probe 10mV/A; max. 700A on each line

TEST ROUTINES	
Quick Start	Immediate start, easy-to-use and fast
Standard Test routines	IEC 61000-4-11, Level 1 to Level 3
User Test routines	Customer specific routines Change duration after n events Change phase angle after n events Asynchronous mode Voltage variation
Service	Service routines, Set-up

INTERFACES	
Serial	USB
Parallel	IEEE 488, addresses 1 to 30
Analog output	0 to 10 V DC to control an external motor variac

GENERAL DATA	
Dimensions	19"/6 HU
Weight	app. 28kg; PFS 503N100/N100.1 app. 35kg
Supply voltage	115V/230V; +10/-15%
Fuses	2 x T 1A (230V) or 2 x T 2A (115V)

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TECHNICAL DETAILS

ACCESSORIES	
	Motor variac with delta/star mode selection
MV 3P4016DS	Input: 3x400V Output: 3x440V/16A, continously adjustable
MV 3P4032DS	Input: 3x400V Output: 3x440V/32A, continuously adjustable
MV 3P4063DS	Input: 3x400V Output: 3x440V/63A, continuously adjustable
MV 3P40100DS	Input: 3x400V Output: 3x440V/100A, continuously adjustable
	Tapped transformers with delta/star mode selection
V 3P4016DS	Input: 3x400V Output: 3x400V/16A, with taps @40%, 70% and 80% of the nominal voltage
V 3P4032DS	Input: 3x400V Output: 3x400V/32A, with taps @40%, 70% and 80% of the nominal voltage
	models for 3x690V available on request as well as models with lower input voltages

OPTIONS	
iec.control	Software to control the test, including standard library, test report facility and data conversion generator
CA PFS	Inrush current verification kit as per IEC 61000-4-11

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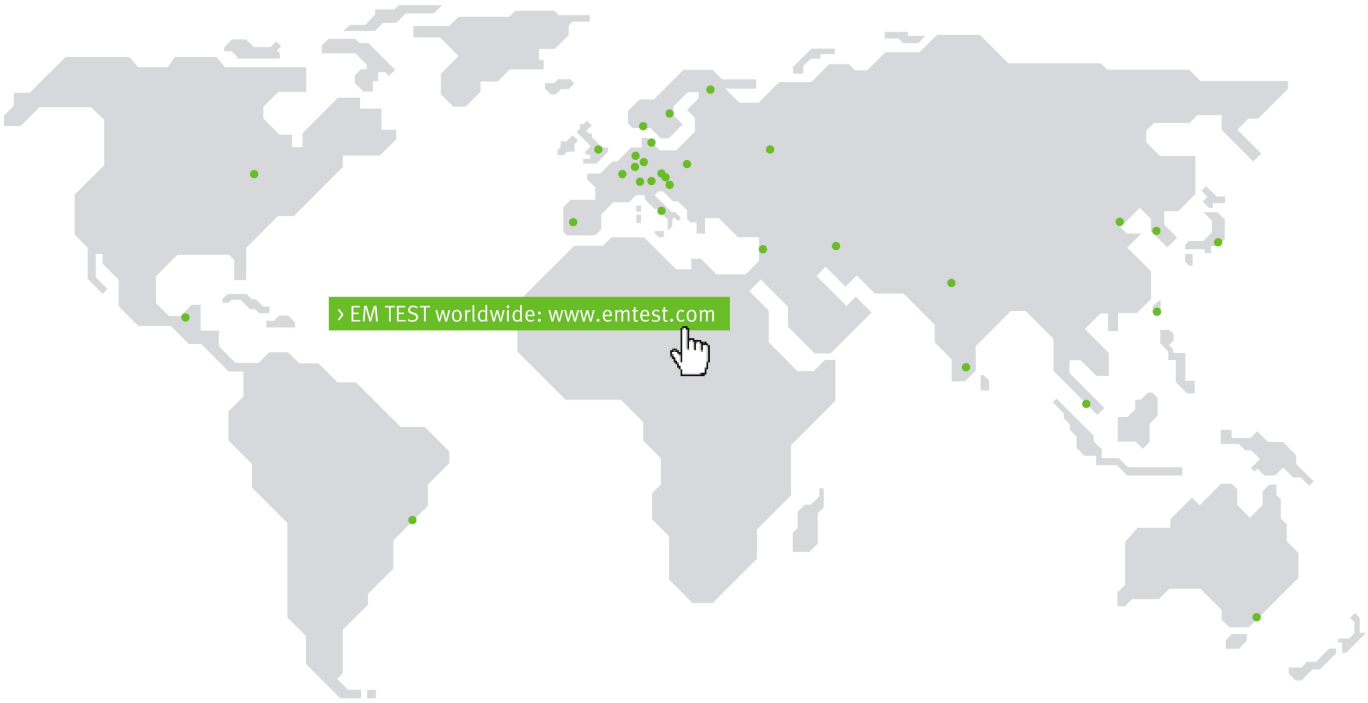
COMPETENCE WHEREVER YOU ARE



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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.