

COMPLETE TEST SOLUTIONS FOR

Conducted Immunity Testing





Accredited Calibration

Quality at EMC PARTNER is based on an ISO 9001 management system. This is the foundation for an ISO 17025 accreditation verified by the Swiss Calibration Service (SCS). SCS No. 146 is the accreditation number of EMC PARTNER AG. Locally accredited but recognized worldwide through affiliation with the ILAC organisation



THE CONDUCTED IMMUNITY TEST SYSTEM

MANY CHOICES ONE SOLUTION

Basic and product standards require a mix of conducted immunity EMC tests.

Required test types can include:

- › Electric Fast Transient (EFT)
- › SURGE (CWG, RINGWAVE, TELECOM)
- › Damped Oscillatory Wave (DOW)
- › AC / DC Dips & Interrupts
- › AC / Impulse / DOW magnetic field.
- › Common Mode
- › Differential Mode

The ideal is a flexible test equipment that combines any or all of these requirements into one single solution.

CUSTOM IS STANDARD

IMU and DOW generators are designed with the user in mind. A modular architecture allows configuration of test circuits to meet any requirement. A solution that can easily be extended with more circuits when additional tests are needed.



DOW series

- DOW Mainframe Unit

Available Extensions

- SLOW 100kHz & 1MHz / 4.4kV
- FAST 3MHz, 10MHz & 30MHz / 4.4kV
- CDN 690Vac & 500Vdc / 32A
- Insulation 1.2/50us 500Ω / 0.5J 8kV



IMU series







- IMU Mainframe Unit

Available Extensions




- Surge / CWG 4kV / 6kV / 8kV
- Ringwave 6kV / 8kV
- Telecom 6kV / 8kV
- EFT 4kV / 5kV / 6kV
- Common Mode 35V / 330V
- AC & DC Interrupts 16A / 32A / 75A
- AC DIPS & Variation 16A
- Differential Mode voltage / current
- ESD Electrostatic Discharge 16kV

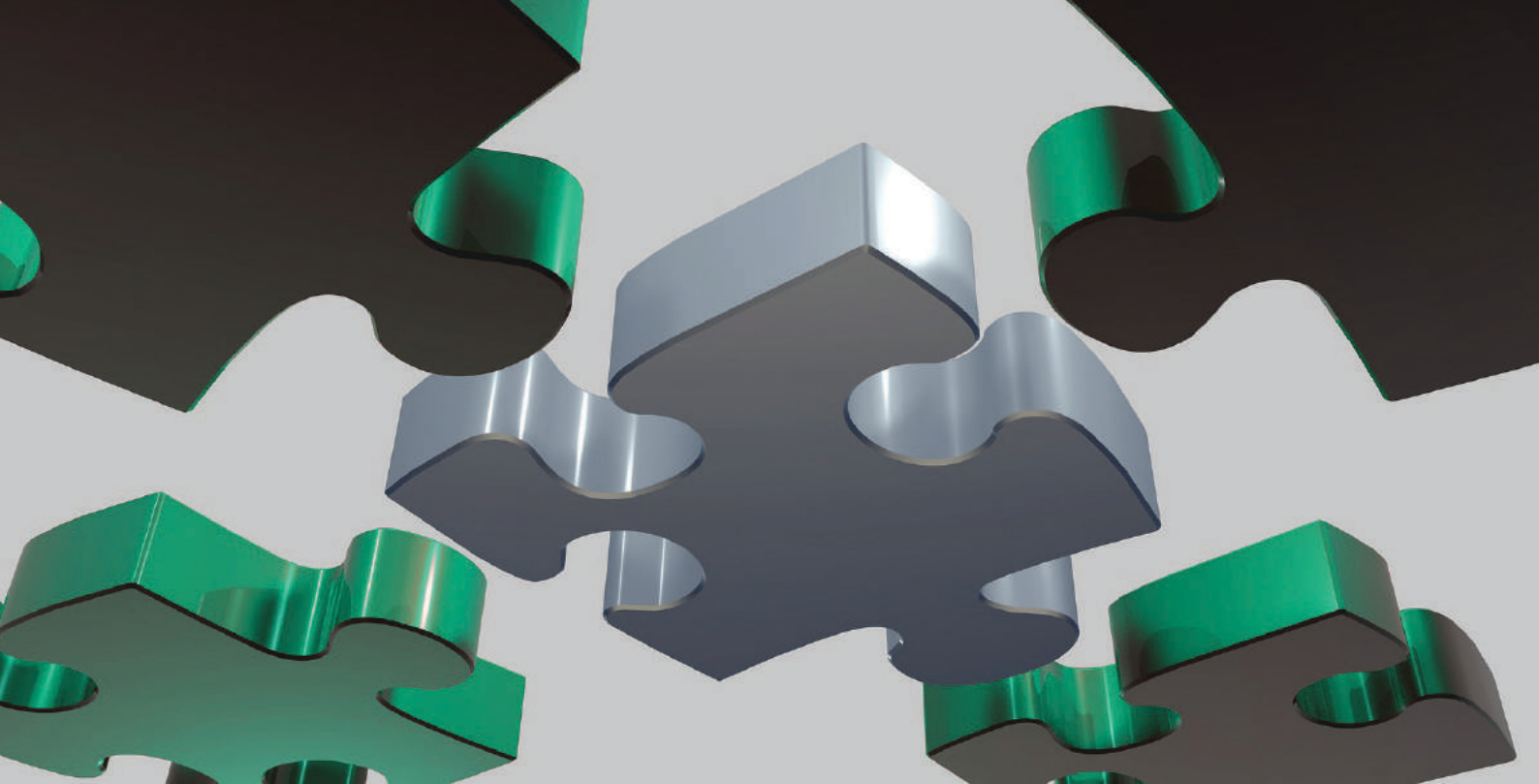
AVAILABLE CIRCUITS

IMU Series

	ESD Electrostatic Discharges up to 16kV
	According to IEC/EN 61000-4-2
	Electric Fast Transient / Burst (EFT) up to 6kV
	According to IEC/EN 61000-4-4
	Combination Wave Generator / Surge (CWG) up to 8kV
	According to IEC/EN 61000-4-5, ANSI C62.41
	Telecom Impulse (10/700) up to 8kV
	According to IEC/EN 61000-4-5, ITU-T K.44
	Ringwave 100kHz (Ring) up to 8kV
	According to IEC/EN 61000-4-12, ANSI C62.41
	Common Mode Generator (CM) up to 35V continuous / 330V short
	According to IEC/EN 61000-4-16
	AC & DC Dips, Variations and Interrupts
	According to IEC/EN 61000-4-11 / -29 / -34
	Magnetic Field
	According to IEC/EN 61000-4-8 / -9 / -10
	Differential Mode Generator (DM)
	According to IEC/EN 61000-4-19

DOW Series

	SLOW Damped Oscillatory Waves 100kHz & 1 MHz
	According to IEC/EN 61000-4-18, ANSI C37.90
	FAST Damped Oscillatory Waves 3MHz, 10MHz, 30MHz
	According to IEC/EN 61000-4-18
	Insulation up to 8kV
	According to IEC60060-1



UNIQUE FEATURES

Leading technology - New designs take advantage of latest innovations.

Test routines



Link together many different test types into one sequence.

Test reporting



Generate test reports via USB interface or built in webserver as csv, html and pdf formats.

Online updates free of charge

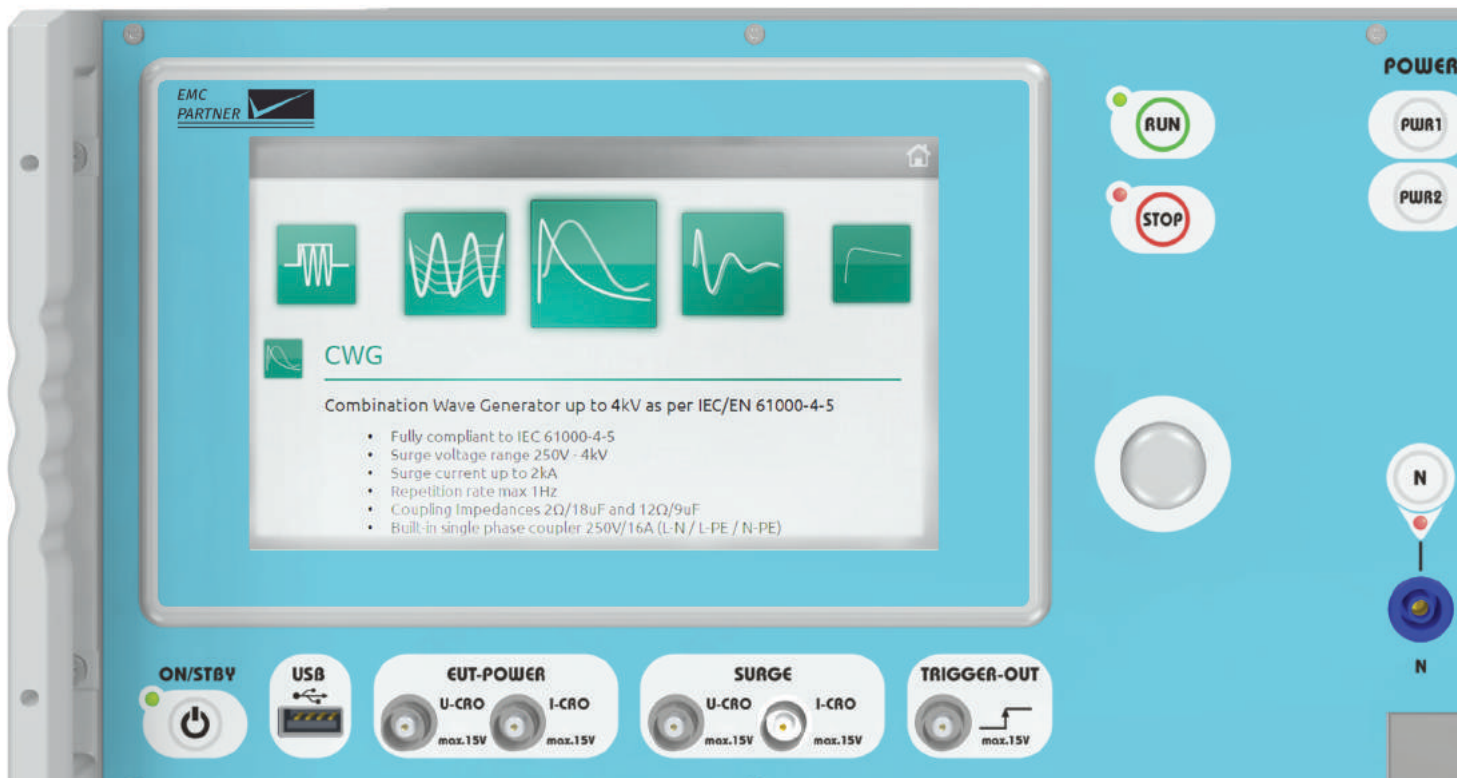


Software download from internet directly into the instrument.

Extend testing capability



Hardware upgrades maintain the system value.



EPOS – TOUCH THE FUTURE

EMC PARTNER Operating System (EPOS) is an independent software with free-of-charge updates for lifetime. EPOS is based on a full colour graphic interface and easy to follow on-screen graphics. Pop-up help gives information when needed, directly during the setting process. EPOS is full of features found only in top of the range instrumentation.

Test setup libraries



Pre-programmed tests for all basic and generic standards included.

Simple touch screen navigation



Save time with the latest in intuitive menu structures.

Power management



Active monitor and control of EUT power. EUT current limit to prevent damage.

We speak your language



Select between English, German, French, Italian, Spanish, Russian, Chinese (traditional and simplified).



TEMA3000 SOFTWARE SUITE

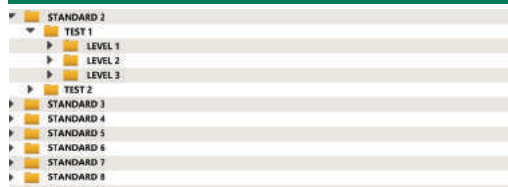
The best solution for professional EMC Test Labs enables comfortable test setups, easy parameter changes and customizable test reports and DSO integration.

Customizable test reports



- › Customize & edit your protocols
- › Export to multiple file formats
- › Integrate DSO measurements

Manage tests and sequences



- › Predefined test setups
- › Save and load own tests and sequences

Productive workflow



- › Minimum learning time
- › Integrated assistant function

Smart connectivity



- › Transfer tests / reports to PC
- › Integrated web server
- › Remote control from computer

Technical Specifications

GENERATORS

- > IMU3000
- > IMU4000
- > DOW3000

CDNs

IEC 61000-4- Supply Lines	-2	-4	-5	-8	-9	-11	-12	-16	-18	-19	-29	-34
CN-A-IMU-ANSI			ANSI				ANSI					
CDN2000-06-32		✓	✓				✓					
CDN2000A-06-32		✓	✓									
CDN2000A-06-32 480V		✓	✓									
CDN2000A-06-32 690V		✓	✓									
CDN2000A-06-63		✓	✓									
CDN3000A-06-32 480V		✓	✓				✓					
CDN3000A-06-32 690V		✓	✓				✓					
CDN3000-08-32 480V		✓	✓				✓					
CDN3000A-08-32 690V		✓	✓				✓					
CDN3000A-08-32 CMC 690V		✓	✓				✓					
CDN-A-3P100-480 F-S		✓	✓									
CDN-A-3P100-690 F-S		✓	✓									
CDN-A-3P100-AC-DC		✓	✓				✓					
CDN-A-3P200-480 F-S		✓	✓									
CDN-A-3P200-690 F-S		✓	✓									
CDN-A-3P200-AC-DC		✓	✓				✓					
CN16								✓				
CN16DC								✓				
DN16-1P6								✓				
DN16-1P16								✓				
I/O Lines	-2	-4	-5	-8	-9	-11	-12	-16	-18	-19	-29	-34
CDN-KIT1000 ED3			✓									
CDN-DATA-4L			✓				✓					
CDN-DATA-8L			✓				✓					
CDN-UTP ED3			✓									
CDN-UTP8 ED3			✓									
CN16T								✓				
CDN-DOW-DATA-LF									✓			
CDN-DOW-DATA-HF									✓			
ADAPTER BOX TRA-ACC	For most of the external CDNs for supply lines and PFS devices											

ACCESSORIES

IEC 61000-	-2	-4	-5	-8	-9	-11	-12	-16	-18	-19	-29	-34	Other
EXT-IMU-E	✓												
ESD-TARGET2	✓												
ESD-VERI-V	✓												
ESD-STAND Ed2	✓												
EARTH CABLE	✓												
ESD-VCP50	✓												
CN-EFT1000		✓							✓				
VERI50 EFT		✓											
VERI1K EFT		✓							✓				
VERI-CP-EFT		✓											
ADAPTER EFT-CDN		✓											
ADAPTER EFT100		✓											
ADAPTER EFT250		✓											
CN-BALUN AC		✓											ANSI
EFT-INSULATION													
MF1000-1				✓	✓								
MF1STAND				✓	✓								
MF1000-2				✓	✓								
MF1000-3				✓									
MF3STAND				✓									
VAR-EXT1000				✓		✓							
VERI-DIPS						✓					✓	✓	
DIPS100E						✓					✓	✓	
PFS32						✓						✓	
SRC32-18UH						✓						✓	
SRC32-AMD1						✓						✓	
SRC32-AMD1 36UH						✓						✓	
PFS75						✓						✓	
PFS75-690V						✓						✓	
SRC75-18UH						✓						✓	
SRC75-690V						✓						✓	
PS3								✓			✓		
RS485-RS232 ADAPT.								✓			✓		
EXT-IMU-C-SHORT								✓					
VERI01 OSI									✓				
IMU SLAVE SMART V1										✓			
IMU SLAVE SMART I1										✓			
IMU SLAVE SMART I1V1										✓			
VERI10/50										✓			
EXT-IMU D-29D											✓		
EXT-IMU D-29I											✓		

1. IMU4000

1.1. TECHNICAL SPECIFICATIONS

IMU4000 Mainframe

EUT power input 1 (CDN)	AC/DC 300V, 16A (fused 16A)
EUT power input 2 (CDN)	AC/DC 300V, 16A (not fused)
Internal CDN freq. range	DC, 50 Hz, 60 Hz
Power freq. synchr.	16 Hz up to 60 Hz
Coupling Burst	L, N, PE, L+N, L+PE, N+PE, L+N+PE, direct out
Coupling Surge	2 Ω: L-N, direct out, 12 Ω: L-PE, N-PE

IMU4000 Control features

Operating system	EPOS proprietary firmware
Languages	8 menu languages, selectable
User interface	7" colour touch display
Connectivity	ethernet, USB, RS485
Environment meas.	built-in temperature and humidity sensor
EUT power monitor	supply voltage, current and freq. on screen
EUT voltage monitor BNC	10 V = 400 Vac, max. 15 V
EUT current monitor BNC	10 V = 50 Aac, max. 15 V
Surge voltage monitor BNC	10 V = 8 kV, max. 15 V
Surge current monitor BNC	10 V = 4 kA, max. 15 V
Trigger out	BNC, max. 15 V
Trigger in	auto, manual, external (BNC input)
Synchro. source	EUT Power, direct out, external
Power synchro. on/off	0 – 360° ± 1°, 1° step
Input power selection	PWR1 or PWR2 buttons on front panel
EUT overcurrent protection	automatic programmable fuse up to 16 A
Emergency stop	BNC input
PS3 Control	DC, 16.7Hz, 50Hz, 60Hz

IMU4000 module: EXT-IMU-E, ESD extension 16 kV

See section Accessories for IMU Series: IEC 61000-4-2

IMU4000 module: EXT-IMU4000 F, EFT / Burst extension 4.4 kV

Standard	IEC 61000-4-4 (latest edition)
Output impedance	50 Ω ± 10 %
Voltage OC	0.25 kV – 4.4 kV ± 10 %
Voltage into 50 Ω W	0.125 kV – 2.2 kV ± 10 %
Waveform into 50 Ω	5 ± 1.5 ns / 50 ± 15 ns
Voltage into 1 kΩ	0.238 kV - 4 kV
Waveform into 1 kΩ	5 ± 1.5 ns / 50 ns (-15/+100 ns)

Spike frequency	1 kHz - 1 MHz
Maximum spikes / second	8000 @ 1 kV
Burst duration	0.01 ms - 30 ms, continuous up to 8 kHz
Burst repetition	1 - 1000 ms
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, spike frequency, burst duration
Optional accessories	CDNs , Accessories

IMU4000 module: EXT-IMU4000 F5, EFT / Burst extension 5.1 kV

Standard	IEC 61000-4-4 (latest edition)
Output impedance	50 Ω \pm 10 %
Voltage OC	0.25 kV – 5.1 kV \pm 10 %
Voltage into 50 Ω W	0.125 kV – 2.55 kV \pm 10 %
Waveform into 50 Ω	5 \pm 1.5 ns / 50 \pm 15 ns
Voltage into 1 kΩ	0.238 kV – 4.86 kV
Waveform into 1 kΩ	5 \pm 1.5 ns / 50 ns (-15/+100 ns)
Spike frequency	1 kHz - 1 MHz
Maximum spikes / second	8000 @ 1 kV
Burst duration	0.01 ms - 30 ms, continuous up to 8 kHz
Burst repetition	1 - 1000 ms
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, spike frequency, burst duration
Optional accessories	CDNs , Accessories

IMU4000 module: EXT-IMU4000 S, CWG / Surge extension 4.1 kV

Standard	IEC 61000-4-5 (latest edition)
Output impedance	2 Ω \pm 20 %
Voltage OC	0.25 kV - 4.1 kV \pm 10 %
Voltage waveform	1.2 μ s \pm 30 % / 50 μ s \pm 20 %
Current SC	0.125 kA - 2.05 kA \pm 10 %
Current waveform	8 μ s \pm 20 % / 20 μ s \pm 20 %
Pulse repetition	up to 1 / s @ 1 kV, 1 / 5 s @ 4.1 kV
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, synchronisation angle
Magnetic pulse test	IEC 61000-4-9, see MF1000-x antennas
Optional accessories	CDNs , CDNs for I/O Lines , Accessories

IMU4000 module: EXT-IMU D, AC/DC Dips, Interruptions extension

Standard	IEC 61000-4-11 (latest edition)
EUT AC power	0 V – 250 V, max. 16 A
EUT frequency with variac	48 Hz – 60 Hz
Switch time into 100 Ω	1 μ s – 5 μ s
Interruption time	50 μ s – 30 s
Inrush current	> 500 A peak
Dips internal variac	voltage 0 – 110 %, max. 5 A
Dips extern. variac	voltage 0 – 110 %, max. 16 A
EUT turn ON/OFF phase	selectable, 0° – 360°
Variation mode	adjust, abrupt
Variation internal variac	voltage 0 – 100 %, max. 5A
Variation external variac	voltage 0 – 100 %, max 16A
Interruption < one period	input as phase angle
Interruption > one period	input in ms
Ramps	voltage, synchronisation angle, time
Requires	EXT-IMU V or VAR-EXT1000 for AC dips
Optional accessories	Accessories

Standard	IEC 61000-4-29 (latest edition)
EUT DC power	20 – 300 V, 0 – 16 A @ 300V
Switch time into 100 Ω	1 μ s – 50 μ s
Interruption time	1 ms – 29999 ms
Requires	1 x PS3 for DC interrupt., 2 x PS3 for DC dips

IMU4000 module: EXT-IMU V, dips and variations extension

Standard	IEC 61000-4-11 (latest edition)
Construction	internal variac
Power input	20 – 250 V, 5 A
Power output dips	max. 275 V (110 %), max. 5 A continuous
Power output variations	max. 250 V (100 %), max. 5 A continuous
Current capability dips	10 A for 5 sec., 16 A for 300 ms
Variation mode	adjust, abrupt
Voltage slew rate	< 1.2 s from 0 to 100 %
Switching time abrupt	1 – 5 μ s
Ramp transition time	25 – 999 periods
Magnetic field test	IEC 61000-4-8, see MF1000-x antennas

IMU4000 module: EXT-IMU C, Common mode extension

Standard	IEC 61000-4-16 (latest edition)
Test voltage continuous	0.1 – 35 Vrms
Power harmonic test	15 Hz – 150 kHz
Sweep time	adjustable, decade time: 10 s – 1000 s
Test voltage short duration	0.1 – 330 Vrms: PS3, EXT-IMU C-SHORT
Power frequency test	DC, 16.7 Hz, 50 Hz, 60 Hz

Source impedance	50 Ω \pm 10 %
Sync. turn on/off for AC	0° \pm 5 %
DC switching time	1 - 5 μ s
Residual ripple DC	< 5%
THD 15 Hz – 150 kHz	< 1%
THD power frequency	< 10%
Optional accessories	CDNs , CDNs for I/O Lines , Accessories

IMU4000 MODULE: IMU SLAVE SMART EXTERNAL MODULE

See section Accessories for IMU Series: IEC 61000-4-19

1.2. POWER, WEIGHT, DIMENSIONS, CLIMATIC CONDITIONS

IMU4000 mainframe

Operating voltage	100 – 240 V (50/60 Hz) \pm 10 %
Power consumption	ON < 50 VA, standby < 5 VA
Weight	28 kg
W x d x h	520 x 433 x 180 mm
Version	19" unit, 4 UH
Temperature range	10 – 35 °C
Humidity	25 – 80 % non-condensing
Air pressure	86 – 106 kPa
Included articles	
Power cord	with country plug
Supply connection	3 cables x 2 m, banana plugs
User manual	digital format (PDF)
Calibration certificate	factory calibration
Ethernet cable	1 piece
USB stick	1 piece

2. IMU3000

2.1. TECHNICAL SPECIFICATIONS

IMU3000 Mainframe

EUT power input 1 (CDN)	AC/DC 300V, 16A (fused 16A)
EUT power input 2 (CDN)	AC/DC 300V, 16A (not fused)
Internal CDN freq. range	DC, 50 Hz, 60 Hz
Power freq. synchr.	16 Hz up to 60 Hz
Coupling Burst	L, N, PE, L+N, L+PE, N+PE, L+N+PE, direct out
Coupling Surge	2 Ω: L-N, direct out, 12 Ω: L-PE, N-PE
Coupling Ring wave	12 Ω and 30 Ω: L-N, N-PE, L-PE

IMU3000 Control features

Operating system	EPOS proprietary firmware
Languages	8 menu languages, selectable
User interface	7" colour touch display
Connectivity	ethernet, USB, RS485
Environment meas.	built-in temperature and humidity sensor
EUT power monitor	supply voltage, current and freq. on screen
EUT voltage monitor BNC	10 V = 400 Vac, max. 15 V
EUT current monitor BNC	10 V = 50 Aac, max. 15 V
Surge voltage monitor BNC	10 V = 8 kV, max. 15 V
Surge current monitor BNC	10 V = 4 kA, max. 15 V
Trigger out	BNC, max. 15 V
Trigger in	auto, manual, external (BNC input)
Synchro. source	EUT Power, direct out, external
Power synchro. on/off	0 – 360° ± 1°, 1° step
Input power selection	PWR1 or PWR2 buttons on front panel
EUT overcurrent protection	automatic programmable fuse up to 16 A
Emergency stop	Emergency button on front panel, BNC input
PS3 Control	DC, 16.7Hz, 50Hz, 60Hz

IMU3000 module: EXT-IMU E, ESD extension 16 kV

See section Accessories for IMU Series: IEC 61000-4-2

IMU3000 module: EXT-IMU3000 F5, EFT / Burst extension 5.1 kV

Standard	IEC 61000-4-4 (latest edition)
Output impedance	50 Ω ± 10 %
Voltage OC	0.25 kV – 5.1 kV ± 10 %

Voltage into 50 Ω W	0.125 kV – 2.55 kV ± 10 %
Waveform into 50 Ω	5 ± 1.5 ns / 50 ± 15 ns
Voltage into 1 kΩ	0.238 kV – 4.86 kV
Waveform into 1 kΩ	5 ± 1.5 ns / 50 ns (-15/+100 ns)
Spike frequency	1 kHz - 1 MHz
Maximum spikes / second	8000 @ 1 kV
Burst duration	0.01 ms - 30 ms, continuous up to 8 kHz
Burst repetition	1 - 1000 ms
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, spike frequency, burst duration
Optional accessories	CDNs , Accessories

IMU3000 module: EXT-IMU3000 F6, EFT / Burst extension 6.3 kV

Standard	IEC 61000-4-4 (latest edition)
Output impedance	50 Ω ± 10 %
Voltage OC	0.25 kV – 6.3 kV ± 10 %
Voltage into 50 Ω	0.125 kV – 3.15 kV ± 10 %
Waveform into 50 Ω	5 ± 1.5 ns / 50 ± 15 ns
Voltage into 1 kΩ	0.238 kV – 5.98 kV
Waveform into 1 kΩ	5 ± 1.5 ns / 50 ns (-15/+100 ns)
Spike frequency	1 kHz - 1 MHz
Maximum spikes / second	8000 @ 1 kV
Burst duration	0.01 ms - 30 ms, continuous up to 8 kHz
Burst repetition	1 - 1000 ms
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, spike frequency, burst duration
Optional accessories	CDNs , Accessories

IMU3000 module: EXT-IMU3000 S6, CWG / Surge extension 6.6 kV

Standard	IEC 61000-4-5 (latest edition)
Output impedance	2 Ω ± 20 %
Voltage OC	0.25 kV - 6.6 kV ± 10 %
Voltage waveform	1.2 μs ± 30 % / 50 μs ± 20 %
Current SC	0.125 kA – 3.3 kA ± 10 %
Current waveform	8 μs ± 20 % / 20 μs ± 20 %
Pulse repetition	up to 1 / s @ 1 kV, 1 / 10 s @ 6.6 kV
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, synchronisation angle
Magnetic pulse test	IEC 61000-4-9, see MF1000-x antennas
Optional accessories	CDNs , CDNs for I/O Lines , Accessories

IMU3000 module: EXT-IMU3000 S, CWG / Surge extension 8 kV

Standard	IEC 61000-4-5 (latest edition)
Output impedance	2 Ω \pm 20 %
Voltage OC	0.25 kV – 8 kV \pm 10 %
Voltage waveform	1.2 μ s \pm 30 % / 50 μ s \pm 20 %
Current SC	0.125 kA – 4 kA \pm 10 %
Current waveform	8 μ s \pm 20 % / 20 μ s \pm 20 %
Pulse repetition	up to 1 / s @ 1 kV, 1 / 12 s @ 8 kV
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, synchronisation angle
Magnetic pulse test	IEC 61000-4-9, see MF1000-x antennas
Optional accessories	CDNs, CDNs for I/O Lines, Accessories

IMU3000 module: EXT-IMU3000 T6, Telecom Surge extension 6.6 kV

Standard	IEC 61000-4-5 (latest edition)
Output impedance	15 Ω \pm 20 %, 40 Ω \pm 20 %
Voltage OC	0.25 kV – 6.6 kV \pm 10 %
Voltage waveform	10 μ s \pm 30 % / 700 μ s \pm 20 %
Current SC into 40 Ω	6.25 A – 165 A \pm 10 %
Current waveform	5 μ s \pm 20 % / 320 μ s \pm 20 %
Pulse repetition	up to 1 / s @ 1 kV, 1 / 20 s @ 6.6 kV
Polarity	positive, negative, alternating
Ramps	voltage
Optional accessories	CDNs for I/O Lines, Accessories

IMU3000 module: EXT-IMU3000 T, Telecom Surge extension 8 kV

Standard	IEC 61000-4-5 (latest edition)
Output impedance	15 Ω \pm 20 %, 40 Ω \pm 20 %
Voltage OC	0.25 kV – 8 kV \pm 10 %
Voltage waveform	10 μ s \pm 30 % / 700 μ s \pm 20 %
Current SC into 40 Ω	6.25 A – 200 A \pm 10 %
Current waveform	5 μ s \pm 20 % / 320 μ s \pm 20 %
Pulse repetition	up to 1 / s @ 1 kV, 1 / 24 s @ 8 kV
Polarity	positive, negative, alternating
Ramps	voltage
Optional accessories	CDNs for I/O Lines, Accessories

IMU3000 module: EXT-IMU D, AC/DC Dips, Interruptions extension

Standard	IEC 61000-4-11 (latest edition)
EUT AC power	0 V – 250 V, max. 16 A
EUT frequency with variac	48 Hz – 60 Hz
Switch time into 100 Ω	1 μ s – 5 μ s
Interruption time	50 μ s – 30 s
Inrush current	> 500 A peak

Dips internal variac	voltage 0 – 110 %, max. 5 A
Dips extern. variac	voltage 0 – 110 %, max. 16 A
EUT turn ON/OFF phase	selectable, 0° – 360°
Variation mode	adjust, abrupt
Variation internal variac	voltage 0 – 100 %, max. 5A
Variation external variac	voltage 0 – 100 %, max 16A
Interruption < one period	input as phase angle
Interruption > one period	input in ms
Ramps	voltage, synchronisation angle, time
Requires	EXT-IMU V or VAR-EXT1000 for AC dips
Optional accessories	Accessories
Standard	IEC 61000-4-29 (latest edition)
EUT DC power	20 – 300 V, 0 – 16 A @ 300V
Switch time into 100 Ω	1 μs – 50 μs
Interruption time	1 ms – 29999 ms
Requires	1 x PS3 for DC interrupt., 2 x PS3 for DC dips

IMU3000 module: EXT-IMU V, Variations extension

Standard	IEC 61000-4-11 (latest edition)
Construction	internal variac
Power input	20 – 250 V, 5 A
Power output dips	max. 275 V (110 %), max. 5 A continuous
Power output variations	max. 250 V (100 %), max. 5 A continuous
Current capability dips	10 A for 5 sec., 16 A for 300 ms
Variation mode	adjust, abrupt
Voltage slew rate	< 1.2 s from 0 to 100 %
Switching time abrupt	1 – 5 μs
Ramp transition time	25 – 999 periods
Magnetic field test	IEC 61000-4-8, see MF1000-x antennas

IMU3000 module: EXT-IMU3000 R6, 100 kHz Ring wave extension 6.6 kV

Standard	IEC 61000-4-12 (latest edition)
Output impedance	12 Ω ± 20 %, 30 Ω ± 20 %
Voltage OC	0.25 kV - 6.6 kV ± 10 %, decay as in IEC, ANSI
Voltage rise time/ osc. freq.	0.5 μs ± 30 % / 100 kHz ± 10 %
Current SC into 12 Ω	20.833 A – 550 A ± 10 %
Current SC into 30 Ω	6.25 A – 220 A ± 10 %
Current rise time	< 1 μs
Pulse repetition	up to 1 / s @ 1 kV, 1 / s @ 6.6 kV
Polarity	positive, negative, alternating
Synchronization	0 – 360°, step 1°
Ramps	voltage, synchronisation angle
Optional accessories	CDNs , CDNs for I/O Lines , Accessories

IMU3000 module: EXT-IMU3000 R, 100 kHz Ring wave extension 8 kV

Standard	IEC 61000-4-12 (latest edition)
Output impedance	12 Ω \pm 20 %, 30 Ω \pm 20 %
Voltage OC	0.25 kV - 8 kV \pm 10 %, decay as in IEC, ANSI
Voltage rise time/ osc. freq.	0.5 μ s \pm 30 % / 100 kHz \pm 10 %
Current SC into 12 Ω	20.833 A - 667 A \pm 10 %
Current SC into 30 Ω	6.25 A - 267 A \pm 10 %
Current rise time	< 1 μ s
Pulse repetition	up to 1 / s @ 1 kV, 1 / s @ 8 kV
Polarity	positive, negative, alternating
Synchronization	0 - 360°, step 1°
Ramps	voltage, synchronisation angle
Optional accessories	CDNs, CDNs for I/O Lines, Accessories

IMU3000 module: EXT-IMU C, Common mode extension

Standard	IEC 61000-4-16 (latest edition)
Test voltage continuous	0.1 - 35 Vrms
Power harmonic test	15 Hz - 150 kHz
Sweep time	adjustable, decade time: 10 s - 1000 s
Test voltage short duration	0.1 - 330 Vrms: PS3, EXT-IMU C-SHORT
Power frequency test	DC, 16.7 Hz, 50 Hz, 60 Hz
Source impedance	50 Ω \pm 10 %
Sync. turn on/off for AC	0° \pm 5 %
DC switching time	1 - 5 μ s
Residual ripple DC	< 5%
THD 15 Hz - 150 kHz	< 1%
THD power frequency	< 10%
Optional accessories	CDNs, CDNs for I/O Lines, Accessories

IMU3000 module: IMU SLAVE SMART external module

See section Accessories for IMU Series: IEC 61000-4-19

2.2. POWER, WEIGHT, DIMENSIONS, CLIMATIC CONDITIONS

IMU3000 mainframe

Operating voltage	100 - 240 V (50/60 Hz) \pm 10 %
Power consumption	ON < 50 VA, standby < 5 VA
Weight	39 kg
W x d x h	520 x 433 x 360 mm
Version	19" unit, 8 UH

Overview | [IMU4000](#) | [IMU3000](#) | [DOW3000](#) | [CDNs](#) | [Accessories](#)

Temperature range	10 – 35 °C
Humidity	25 – 80 % non-condensing
Air pressure	86 – 106 kPa

Included articles

Power cord	with country plug
Supply connection	3 cables x 2 m, banana plugs
User manual	digital format (PDF)
Calibration certificate	factory calibration
Ethernet cable	1 piece
USB stick	1 piece

3. DOW3000

3.1. TECHNICAL SPECIFICATIONS

DOW3000 Mainframe

Built-in CDN	three phase CDN integrated
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 500 V, 32 A L-L or L-PE
EUT power switch	ON / OFF switch on the front panel
Internal CDN freq. range	DC, 50 Hz, 60 Hz
Power freq. synchr.	Yes, 16 Hz up to 60 Hz for both slow and fast
Coupling slow DOW	L1-L2, L1-L3, L2-L3, L1-N, L2-N, L3-N, L1-PE, L2-PE, L3-PE, N-PE, L1+N to PE, L1+L2+L3+N to PE
Coupling fast DOW	L1-PE, L2-PE, L3-PE, N-PE, L1+N to PE, L1+L2+L3+N to PE

DOW3000 Control features

Operating system	EPOS proprietary firmware
Languages	8 menu languages, selectable
User interface	7" colour touch display
Connectivity	ethernet, USB, RS485
EUT power monitor	supply voltage, current and freq. on screen
Surge voltage monitor BNC	1 V = 4 kV @ 50 Ω
Trigger in	auto, manual, external (BNC input max 24 V)
Synchro. source	EUT Power
Power synchro. on/off	0 – 360° ± 10°, 1° step
Emergency stop	Emergency button on front panel
EUT fail input	BNC max 24 V
Safety circuit	safety circuit, output for warning lamps

DOW3000 module: DOW3000 S Slow damped oscillatory wave 4 kV

Standards	IEC 61000-4-18 (latest), ANSI C37.90, IEC 61000-4-12:1995, IEC60255-27, other
Oscillation frequencies	100 kHz, 1 MHz ± 10 %
Voltage OC direct out	0.2 kV – 5 kV ± 10 %
Voltage OC CDN out	0.2 kV – 4.4 kV ± 10 %
Current SC direct out	1 A – 25 A ± 20 %
Current SC CDN out	1 A – 22 A ± 20 %
Output impedance	200 Ω
Rise time	75 ns ± 20 %
Decay voltage waveform	Pk5 > ½ · Pk1, Pk10 < ½ · Pk1
Pulse repetition @ 100 kHz	max. 50 / s
Pulse repetition @ 1 MHz	max. 500 / s
Burst duration	1 ms – 20 s @ 100 kHz, @ 1 MHz
Burst repetition	100 ms – 200 s @ 100 kHz, @ 1 MHz
Polarity	positive, negative, alternating
Synchronization	0 – 360° ± 10°, 1° step
Ramp	test voltage
Optional accessories	CDNs for I/O Lines, Accessories
Standard	IEC 61000-4-10
Magnetic pulse generator	as per IEC 61000-4 18 Slow DOW
Magnetic field 100 kHz	5 – 220 A/m with MF1000-1 5 – 160 A/m with MF1000-2
Magnetic field 1 MHz	2.5 – 110 A/m with MF1000-1 2.5 – 60 A/m with MF1000-2
Requires	MF1000-1 or MF1000-2 depend. on EUT size

DOW3000 module: DOW3000 F Fast damped oscillatory wave 4 kV

Standard	IEC 61000-4-18 (latest edition)
Oscillation frequencies	3 MHz, 10 MHz, 30 MHz \pm 10 %
Voltage OC direct out	0.4 kV – 4.4 kV \pm 10 %
Voltage OC CDN out	0.4 kV – 4.4 kV \pm 10 %
Voltage calibrated	0.5 kV – 4 kV
Voltage waveform decay	Pk5 > $\frac{1}{2}$ · Pk1, Pk10 < $\frac{1}{2}$ · Pk1
Output impedance	50 Ω
Voltage rise time	5 ns \pm 30 %
Pulse repetition	max. 6000 / s
Burst duration	1 ms – 20 s
Burst repetition	10 ms – 200 s
Current SC direct & CDN	8 A – 88 A \pm 20 % @ all frequencies
Current SC calibrated	10 A – 88 A
Current rise time	< 330 ns @ 3 MHz < 100 ns @ 10 MHz < 33 ns @ 30 MHz
Current waveform decay	Pk5 > $\frac{1}{4}$ · Pk1, Pk10 < $\frac{1}{4}$ · Pk1
Polarity	positive, negative, alternating
Synchronization	0 – 360° \pm 10°, 1° step
Ramp	test voltage
Optional accessories	CN-EFT1000, VERI01 OSI, VERI1K EFT, VERI50-EFT

DOW3000 module: DOW3000 I Insulation test 500 Ω / 0.5 J up to 8 kV

Standards	IEC 61180-1/2, IEC62052-11, IEC60255-27, IEC60834-1/2
Voltage test levels	0.5 kJ, 1 kV, 1.5 kV, 2 kV, 2.5 kV, 3 kV, 4 kV, 5 kV, 6 kV, 8 kV + 10 % / - 0 %
Output impedance	500 Ω \pm 10 %
Impulse rise time	1.2 μ s \pm 30 %
Impulse duration	1.2 μ s \pm 20 %
Pulse energy at test levels	0.5 J \pm 10 %
Repetition rate	1 s – 655 s
Included articles	cables and test clips

3.2. POWER, WEIGHT, DIMENSIONS, CLIMATIC CONDITIONS

DOW3000 mainframe

Operating voltage	100 – 240 V (50/60 Hz) ± 10 %
Power consumption	ON < 400 VA, standby < 15 VA
Weight	43.3 kg full version
W x d x h	600 x 450 x 370 mm
Version	19" unit, 8 UH
Temperature range	10 – 35 °C
Humidity	25 – 80 % non-condensing
Air pressure	86 – 106 kPa
Included articles	
Power cord	with country plug
Supply connection	5 cables x 2 m, banana plugs
User manual	digital format (pdf)
Calibration certificate	factory calibration
Calibration adapter	included, for CDN
Ethernet cable	1 piece
USB stick	1 piece

4. ACCESSORIES FOR IEC TEST SYSTEMS

4.1. COUPLING/DECOUPLING NETWORKS FOR POWER LINES

TYPICAL COUPLING PATHS FOR 3P CDNs from EMC PARTNER

IEC 61000-4-4	L1 or L2 or L3 or N or PE to ground, any combination of 2, 3, 4 lines to ground, L1+L2+L3+N+PE to ground
IEC 61000-4-5	L1-L2, L1-L3, L2-L3, L1-N, L2-N, L3-N, L1-PE, L2-PE, L3-PE, N-PE
IEC 61000-4-12	L1-L2, L1-L3, L2-L3, L1-N, L2-N, L3-N, L1-PE, L2-PE, L3-PE, N-PE
ANSI surge (if applicable)	additional to IEC: L1+L2+L3+N to PE (2 Ω)
ANSI ring (if applicable)	additional to IEC: L1+L2+L3+N to PE (12/30 Ω)

CN-A-IMU-ANSI

Standards	ANSI C62.41 latest edition
Type	1P, automatic
EUT voltage AC	max. AC/DC 300V, 50 / 60 Hz
EUT current AC	max. 16 A
Test level surge	max. 8 kV, ANSI, L+N to PE included
Test level ring wave	max. 8 kV, ANSI, L+N to PE included
Coupling and decoupling	full compliant to latest edition
Dimensions	19 " unit, 4 UH
Weight	8 kg
Generators	IMU3000

CDN2000-06-32

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, manual
EUT voltage AC	max. 3 x 415 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 250 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Test level ring wave	max. 6 kV, IMU3000 only, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 4 UH
Weight	29 kg
Generators	IMU3000 , IMU4000 , other EMCP models

CDN2000A-06-32

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 415 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 250 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Test level ring wave	max. 6 kV, IMU3000 only, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 4 UH
Weight	29 kg
Generators	IMU3000 , IMU4000 , other EMCP models

CDN2000A-06-32 480 V

Standards	IEC 61000-4-4, -4-5 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 300 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 4 UH
Weight	29 kg
Generators	IMU3000, IMU4000, other EMCP models

CDN2000A-06-32 690 V

Standards	IEC 61000-4-4, -4-5 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 420 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 4 UH
Weight	29 kg
Generators	IMU3000, IMU4000, other EMCP models

CDN3000A-06-32 480 V

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 300 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Test level ring wave	max. 6 kV, IMU3000 only, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 4 UH
Weight	32 kg
Generators	IMU3000, other EMCP models

CDN3000A-06-32 690 V

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 420 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Test level ring wave	max. 6 kV, IMU3000 only, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 4 UH
Weight	33 kg
Generators	IMU3000 , other EMCP models

CDN3000-08-32 480 V

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, manual
EUT voltage AC	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 300 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 8 kV, all IEC couplings
Test level ring wave	max. 8 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 4 UH
Weight	31 kg
Generators	IMU3000

CDN3000A-08-32 690 V

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 420 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 8 kV, all IEC couplings
Test level ring wave	max. 8 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 8 UH
Weight	43 kg
Generators	IMU3000

CDN3000A-08-32 CMC

Standards	IEC 61000-4-4, -4-5, -4-12, ANSI C62.45
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 32 A
EUT protection AC	over-current automatic prot., < 1 s @ 125 A
EUT power DC	max. 420 V, 60 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 8 kV, all IEC couplings
Test level ring wave	max. 8 kV, all IEC couplings
ANSI surge and ring wave additional couplings	L1+L2+L3 -N, L1+L2+L3-N, L1+L2+L3+N-PE, surge: 2 Ω + 18 μF, ring wave: 12/ 30 Ω + 3 μF
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 8 UH
Weight	46 kg
Generators	IMU3000

CDN2000A-06-63

Standards	IEC 61000-4-4, -4-5 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 63 A
EUT protection AC	over-current automatic prot., < 1 s @ 250 A
EUT power DC	max. 300 V, 100 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " unit, 8 UH
Weight	56 kg
Generators	IMU3000 , IMU4000 , other EMCP models

CDN-A-3P100-480 F-S

Standards	IEC 61000-4-4, -4-5 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 100 A
EUT protection AC	over-current automatic prot., < 2 s @ 500 A
EUT power DC	max. 300 V, 160 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " rack (wheels), 18 UH
Weight	159 kg
Generators	IMU3000 , IMU4000

CDN-A-3P100-690 F-S

Standards	IEC 61000-4-4, -4-5 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 100 A
EUT protection AC	over-current automatic prot., < 2 s @ 500 A
EUT power DC	max. 420 V, 160 A (ask for details)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 6 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " rack (wheels), 18 UH
Weight	160 kg
Generators	IMU3000 , IMU4000

CDN-A-3P100-AC-DC

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 100 A
EUT protection AC	over-current automatic prot., < 2 s @ 500 A
EUT power DC	max. 1000 V, 2 x 100 A (2 x DC strings)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Burst coupling on DC	DC1+ and/or DC1- to PE, same for DC2, all to PE
Test level surge	L-PE max. 8 kV, L-L max. 7.5 kV
Surge coupling on DC	DC1+ to DC1-, DC2+ to DC2-, DC1+ to DC2+, DC1- to DC2-, DC1+ to PE, DC1- to PE, DC2+ to PE, DC2- to PE
Test level ring wave	max. 8 kV, all IEC couplings
Ring wave coupling on DC	DC1+ to DC1-, DC2+ to DC2-, DC1+ to DC2+, DC1- to DC2-, DC1+ to PE, DC1- to PE, DC2+ to PE, DC2- to PE
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " rack (wheels), 18 UH
Weight	174 kg
Generators	IMU3000

CDN-A-3P200-480 F-S

Standards	IEC 61000-4-4, -4-5 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 200 A
EUT protection AC	over-current automatic prot., < 2 s @ 500 A
EUT power DC	max. 300 V, 200 A (ask for details)
Voltage drop	< 10 V @ 200 A
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 8 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " rack (wheels), 36 UH
Weight	275 kg
Generators	IMU3000 , IMU4000

CDN-A-3P200-690 F-S

Standards	IEC 61000-4-4, -4-5 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 200 A
EUT protection AC	over-current automatic prot., < 2 s @ 500 A
EUT power DC	max. 420 V, 200 A (ask for details)
Voltage drop	< 10 V @ 200 A
Test level burst	max. 6 kV, all IEC couplings, additional ones
Test level surge	max. 8 kV, all IEC couplings
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " rack (wheels), 36 UH
Weight	276 kg
Generators	IMU3000 , IMU4000

CDN-A-3P200-AC-DC

Standards	IEC 61000-4-4, -4-5, -4-12 latest editions
Type	3P, automatic
EUT voltage AC	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
EUT current AC	max. 3 x 200 A
EUT protection AC	over-current automatic prot., < 2 s @ 500 A
EUT power DC	max. 1000 V, 2 x 200 A (2 x DC strings)
Test level burst	max. 6 kV, all IEC couplings, additional ones
Burst coupling on DC	DC1+ and/or DC1- to PE, same for DC2, all to PE
Test level surge	L-PE max. 8 kV, L-L max. 7.5 kV
Surge coupling on DC	DC1+ to DC1-, DC2+ to DC2-, DC1+ to DC2+, DC1- to DC2-, DC1+ to PE, DC1- to PE, DC2+ to PE, DC2- to PE
Test level ring wave	max. 8 kV, all IEC couplings

Ring wave coupling on DC	DC1+ to DC1-, DC2+ to DC2-, DC1+ to DC2+, DC1- to DC2-, DC1+ to PE, DC1- to PE, DC2+ to PE, DC2- to PE
Coupling and decoupling	full compliant to latest editions
Dimensions	19 " rack (wheels), 36 UH
Weight	~ 290 kg
Generators	IMU3000

COMMON MODE CDNS

Test type	CN 16	CN16 DC	DN16-1P6 EUT	DN16-1P16 EUT
AC test on AC lines	415 V	-	230 V / 6 A	230 V / 16 A
AC test on DC lines	415 V	-	-	-
DC test on AC lines	115 V (115V test level)	230 V / 16 A	230 V / 6 A	230 V / 16 A
DC test on DC lines	115 V (115V test level)	300 V / 16 A	-	-
Sweep test on AC lines	415 V	-	230 V / 6 A	230 V / 16 A
Sweep test on DC lines	415 V	-	-	-

CN16

Standard	IEC 61000-4-16
Type	manual, for 1, 2 or 4 power lines
EUT voltage AC (see table)	max. 3 x 415 V L-L (240 V L-N), 50 / 60 Hz
EUT current AC	limited only by decoupling
EUT power DC (see table)	max. 115 V, current limited only by decoupling
Coupling paths	1 x 100 Ω, 2 x 200 Ω, 4 x 400 Ω, 1 μF per line
Test level power tests	330 V @ 16.67 Hz, 50 Hz, 60 Hz, 115 V @ DC
Test level sweep test	35 V
Dimensions	28 x 18 x 11 cm
Weight	3 kg
Optional	PS3 , EXT-IMU C-SHORT DN16-1P6 or DN16-1P16 decoupling transformer
Generators	IMU3000 , IMU4000

CN16DC

Standard	IEC 61000-4-16
Type	manual, for 2 power lines
EUT power AC (see table)	230 V, 50 / 60 Hz, 16 A
EUT power DC (see table)	300 V, 16 A
Coupling paths	2 x 200 Ω
Test level power tests	330 V DC on AC and DC lines
Dimensions	28 x 19 x 11 cm
Weight	3 kg
Requires	PS3, EXT-IMU C-SHORT
Optional	DN16-1P6 or DN16-1P16 decoupling transformer
Generators	IMU3000, IMU4000

CN16-22-7C

Standard	IEC60255-22-7
Type	manual, for 2 power lines, common mode test
EUT power AC	415 V, 50 / 60 Hz, 16 A
EUT power DC	300 V, 16 A
Coupling path	2 x 220 $\Omega \pm 5 \%$, 0.47 $\mu\text{F} \pm 5 \%$ per line
Test level	max. 300 V
Dimensions	28 x 18 x 11 cm
Weight	3.3 kg
Requires	PS3, EXT-IMU C-SHORT
Generators	IMU3000 C, IMU4000 C

CN16-22-7D

Standard	IEC60255-22-7
Type	manual, for 2 power lines, diff. mode test
EUT power AC	415 V, 50 / 60 Hz, 16 A
EUT power DC	300 V, 16 A
Coupling path 1 (class A)	2 x 100 $\Omega \pm 5 \%$, 0.1 $\mu\text{F} \pm 5 \%$ per line
Coupling path 2 (class B)	2 x 100 $\Omega \pm 5 \%$, 0.47 $\mu\text{F} \pm 5 \%$ per line
Test level	max. 300 V
Dimensions	28 x 18 x 11 cm
Weight	3.5 kg
Requires	PS3, EXT-IMU C-SHORT
Generators	IMU3000 C, IMU4000 C

DN16-1P6

Standard	IEC 61000-4-16
Type	1P decoupling transformer for power lines
EUT power AC (see table)	230 V, 50 / 60 Hz, 6 A
EUT power DC	not suitable for DC applications
Test level	max. 330 V
Insulation	≥ 1 kV

CM decoupling	> 60 dB in the range 15 Hz – 150 kHz
Dimensions	19 " unit, 4 UH
Weight	30 kg
Requires	CN16 or CN16DC
Generators	IMU3000 C, IMU4000 C

DN16-1P16

Standard	IEC 61000-4-16
Type	1P decoupling transformer for power lines
EUT power AC (see table)	230 V, 50 / 60 Hz, 16 A
EUT power DC	not suitable for DC applications
Test level	max. 330 V
Insulation	≥1 kV
CM decoupling	> 60 dB in the range 15 Hz – 150 kHz
Dimensions	19 " unit, 4 UH
Weight	50 kg
Requires	CN16 or CN16DC
Generators	IMU3000 C, IMU4000 C

4.2. COUPLING/DECOUPLING NETWORKS FOR I/O (DATA) LINES

CDN-KIT1000 ED3

Standard	IEC 61000-4-5 latest edition
Application	surge on 2 unsymmetrical lines, figure 9
Test level surge	max. 6 kV
Low speed I/O	unsymmetrical, coupling with capacitor
EUT voltage per line	max. 200 V DC or 240 V peak
EUT current per line	max. 3 A cont. or 5 A for 5 min.
Coupling path 1	40 Ω + 0.5 μF capacitor
Decoupling 1	20 mH per line (protected 275 V max.)
Higher speed I/O	unsymmetrical, coupling with diode
EUT voltage per line	max. 24 V DC or peak
EUT current per line	max. 3 A cont. or 5 A for 5 min.
Coupling path 2	40 Ω + 27 V diode
Decoupling 2	560 Ω per line (protected 18 V max.)
Dimensions	4 modules in carrying case: 33 x 27 x 17 cm
Weight	7 kg (all modules and carrying case)
Generators	IMU3000, IMU4000, other EMCP models

CDN-DATA-4L

Standards	IEC 61000-4-5, -4-12 latest editions
Application	surge (fig. 9), ring wave on 4 asym. lines
EUT voltage per line	max. 200 V DC or 240 V peak
EUT current per line	max. 3 A cont. or 5 A for 5 min.
Line speed	max. 100 kHz as per IEC 61000-4-5
Coupling path surge 1	40 Ω + 0.5 μ F capacitor
Coupling path surge 2	40 Ω + 33 V bipolar diode
Coupling path surge 3	40 Ω + GDT 90 V, or any external element
Coupling path ring wave 1	33 V bipolar diode
Coupling path ring wave 2	any external element
Decoupling	20 mH per line, as per IEC 61000-4-5, -4-12
Test level surge	max. 6 kV, coupling L-L, L-PE
Test level ring wave	max. 6 kV, coupling L-L, L-PE (only IMU3000)
Dimensions	19" unit, 4 UH
Weight	17 kg
Generators	IMU3000, IMU4000, other EMCP models

CDN-DATA-8L

Standards	IEC 61000-4-5, -4-12 latest editions
Application	surge (fig. 9), ring wave on 8 asym. lines
EUT voltage per line	max. 200 V DC or 240 V peak
EUT current per line	max. 3 A cont. or 5 A for 5 min.
Line speed	max. 100 kHz as per IEC 61000-4-5
Coupling path surge 1	40 Ω + 0.5 μ F capacitor
Coupling path surge 2	40 Ω + 33 V bipolar diode
Coupling path surge 3	40 Ω + GDT 90 V, or any external element
Coupling path ring wave 1	33 V bipolar diode
Coupling path ring wave 2	any external element
Decoupling	20 mH per line, as per IEC 61000-4-5, -4-12
Test level surge	max. 6 kV, coupling L-L, L-PE
Test level ring wave	max. 6 kV, coupling L-L, L-PE (only IMU3000)
Dimensions	19" unit, 4 UH
Weight	25 kg
Generators	IMU3000, IMU4000, other EMCP models

CDN-UTP ED3

Standard	IEC 61000-4-5 latest edition
Application 1 (1.2 / 50 μs)	surge (fig. 10) on up to 4 sym. lines
Application 2 (1.2 / 50 μs)	surge (fig. 9) on up to 2 asym. lines
Application 3 (10 / 700 μs)	telecom surge (fig. A.4) on up to 4 asym. lines
EUT voltage per line	max. 300 V DC or peak
EUT current per line	max. 1 A cont., total for all lines max. 2A
EUT line(s) characteristics	high speed, over 100 Mbps on 4 wires (2pairs)
Example of EUT I/O lines	RS485, USB, Ethernet 4 wires, CAN bus, etc.

Coupling path surge 1	2 x 80 Ω for 2 lines or 4 x 160 Ω for 4 lines
Coupling path surge 2	1 x 40 Ω + 0.5 μF
Coupling path surge 3	2 x 25 Ω for 2 lines or 4 x 25 Ω for 4 lines
Coupling elements	2 x GDT 90 V or 4 x GDT 90 V or 1 x 0.5 μF
Decoupling	up to 4 x 20 mH per line, current compensated
AE protection	4 x GDT 90 V or customer defined
Test level surge	max. 6 kV, coupling CM and DM
Test level telecom surge	max. 6 kV, coupling CM (only IMU3000)
Dimensions	19" unit, 4 UH
Weight	40 kg
Included	Mentioned coupling elements, AE protection
Optional	ADAPTER BOX RJ45 (ask for details)
Other relevant standards	ITU-T K20, K21, K22, K44, FCC part 68 / D
Generators	IMU3000, IMU4000, other EMCP models

CDN-UTP8 ED3

Standard	IEC 61000-4-5 latest edition
Application 1 (1.2 / 50 μs)	surge (fig. 10) on up to 8 sym. lines
Application 2 (1.2 / 50 μs)	surge (fig. 9) on up to 4 asym. lines
Application 3 (10 / 700 μs)	telecom surge (fig. A.4) on up to 8 asym. lines
EUT voltage per line	max. 300 V DC or peak
EUT current per line	max. 1 A cont., total for all lines max. 2A
EUT line(s) characteristics	high speed, over 1 Gbps
Example of EUT I/O lines	RS485, USB, Ethernet 1Gbps, CAN bus, etc.
Coupling path surge 1	2 x 80 Ω, 4 x 160 Ω, 8 x 320 Ω
Coupling path surge 2	1 x 40 Ω + 0.5 μF
Coupling path tel. surge 3	2 x 25 Ω or 4 x 25 Ω or 8 x 25 Ω
Coupling elements	2 or 4 or 8 x GDT 90 V, or 1 x 0.5 μF
Decoupling	up to 8 x 20 mH per line, current compensated
AE protection	8 x GDT 90 V or customer defined
Test level surge	max. 6 kV, coupling CM and DM
Test level telecom surge	max. 6 kV, coupling CM (only IMU3000)
Dimensions	19" unit, 8 UH
Weight	78 kg
Included	mentioned coupling elements, AE protection
Optional	ADAPTER BOX RJ45 (ask for details)
Other relevant standards	ITU-T K20, K21, K22, K44, FCC part 68 / D
Generators	IMU3000, IMU4000, other EMCP models

CN16T

Standard	IEC 61000-4-16
Type	manual, for 2 symmetrical I/O lines
EUT voltage	max. 300 V (AC test), max. 115 V (DC test)
EUT current	max. 0.5 A
Coupling path	2 x 200 Ω , + 4.7 μ F per line
Test level	300 V (bridge closed), 115 V (bridge open)
Dimensions	28 x 18 x 11 cm
Weight	3 kg
Generators	IMU3000 C, IMU4000 C

CDN-DOW-DATA-LF

Standards	IEC 61000-4-18, ANSI C37.90
Application	DOW on max. 8 sym. or unsym. lines
EUT voltage per line	max. 250 V DC or AC 50/60 Hz
EUT current per line	max. 4 A
Coupling capacitor	0.5 μ F capacitor
Decoupling	> 1.5 mH per line
Test level slow DOW	max. 2500 V
Dimensions	19" unit, 4 UH
Weight	17 kg
Generators	DOW3000, all models with SLOW module

CDN-DOW-DATA-HF

Standards	IEC 61000-4-18 SLOW DOW latest edition
Application	DOW on max. 8 sym. high speed lines
EUT voltage per line	max. 250 V DC or AC 50/60 Hz
EUT current per line	max. 1 A
Coupling device	coupling device
Decoupling	> 1.5 mH per line
Test level slow DOW	max. 2500 V
Dimensions	19" unit, 4 UH
Weight	17 kg
Generators	DOW3000, all models with SLOW module

4.3. ACCESSORIES AS PER IEC 61000-4-2 LATEST EDITION

EXT-IMU E, ESD extension 16 kV

Discharge network	150 pF, 330 Ω
Rise time	0.8 ns \pm 25 %
Current waveform	as per IEC 61000-4-2
Discharge modes	air (AD) and contact (CD)
Voltage range AD / CD	0.5 – 16 kV \pm 5 % / 0.5 – 10 kV \pm 5 %
Continuous firing mode	0.5 – 16kV \pm 5 %

Voltage increment	1 V step
Discharge repetition CD	0.05 s – 30 s (max. 20 Hz)
Discharge Polarity	positive, negative, alternating
Counter	pre-selectable 1-29999, discharge detection
Ramp	Voltage
Temperature range	15 - 35 °C
Humidity	30 - 60% non condensing
Generators	IMU3000, IMU4000

ESD-TARGET2

Application	current target for calibration of ESD generator
Input impedance	2 Ω
Input voltage	max. 10 kV CD
Frequency range	± 0.5 dB up to 1 GHz, ± 1.2 dB up to 4 GHz
Current range	0 – 50 A standard, could be extended
Transfer function	0.2 V / 1 A with 20 dB
Diameter	70 mm
Thickness	40 mm
Weight	1 kg
Fixing	8 x M3 screws, not included in delivery
Included	20 dB att., 50 Ω coax. cable (1 m) with BNC out

ESD-VERI-V (optional)

Application	target for ESD DC voltage measurement
Input impedance	20 GΩ 3 pF
Input voltage range	0 – 32 kV
Output voltage range	0 – 1.6 V
Output connector	BNC
Dimensions	17 cm height, 5.5 cm diameter
Weight	0.5 kg
Included	earth conductor

ESD-STAND Ed2 (optional)

Application	stand for supporting ESD gun, fixed point test
Height	50 – 180 cm, adjustable
Position	360° adjustable
Dimensions	64 x 17 x 12 cm (packed)
Weight	4 kg
Included	cable holder for calibration

EARTH CABLE

Application	connection of HCP or VCP to ground plane
Impedance	2 x 470 kΩ
Length	2 m

Connectors	2 x banana plugs
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ESD-VCP50

Application	indirect ESD application as per standard
Spacer in between	10 cm plastic spacer
Coupling plane	50 x 50 cm
Application points	one on each side
Dimensions	50 x 50 x 10 cm
Weight	8 kg
Included	2 m earth cable (with 2 x 470 k Ω)

4.4. ACCESSORIES AS PER IEC 61000-4-4 LATEST EDITION

CN-EFT1000

Application	capacitive coupling clamp for EFT on I/O lines
Coupling plate dimensions	as per IEC 61000-4-4 latest edition
Waveform into 50 Ω	5 \pm 1.5 ns / 50 \pm 15 ns
Insulation 5/50 ns	up to 8 kV
Insulation 1.2/50 μs	up to 5 kV
Usable cable diameter	up to 70 mm
Coupling capacitance	typically 100 pF – 1000 pF
Dimensions	114 x 15 x 10 cm
Weight	4 kg
Included	high voltage cable for connection to IMU
Other applications	IEC 61000-4-18, ANSI C37.90

CN-BALUN-AC

Application	differential burst test adapter
Standards applicable	ANSI C37.90, fig. 6, ISO7637-4
Input	6 kV EFT signal, common mode
Output	6 kV signal, differential mode line to line
EUT voltage	max. 480 V L-L @ 50, 60 Hz
Decoupling	2 x 66 nF built-in
Dimensions	18 x 10 x 8 cm
Weight	2 kg including accessories
Included	2 x test tips and cables, cable to generator

VERI50 EFT

Application	50 Ω calibration load for burst
Input impedance	50 Ω \pm 2 %
Input voltage	max. 6.3 kV
Tolerance up to 100 MHz	\pm 1 dB, as per standard

Tolerance up to 400 MHz	± 3 dB in the range 100 MHz – 400 MHz
Power dissipation	max. 3 W, no EUT power during calibration
Ratio 50 Ω DSO input	1 :1000, 60 dB
Ratio 1MΩ DSO input	1:500, 54 dB
Dimensions	15.5 x 2.5 x 2.5 cm
Weight	0.2 kg

VERI1K EFT

Application	1 kΩ calibration load for burst
Input impedance	1 kΩ ± 2 %
Input voltage	max. 6.3 kV
Tolerance up to 100 MHz	± 1 dB, as per standard
Tolerance up to 400 MHz	± 3 dB in the range 100 MHz – 400 MHz
Power dissipation	max. 3 W, no EUT power during calibration
Ratio 50 Ω DSO input	1 :2000, 66 dB
Ratio 1MΩ DSO input	1:1000, 60 dB
Dimensions	13.5 x 2.5 x 2.5 cm
Weight	0.2 kg
Other applications	IEC 61000-4-18, OC calibration for fast DOW

VERI-CP-EFT

Application	calibration transducer plate for CN-EFT1000
Plate width	120 ± 1 mm, as per norm
Plate length	1050 ± 5 mm, as per norm
Insulation 5/50 ns	up to 4 kV
Insulation 1.2/50 μs	minimum 2.5 kV
Dimensions	113 x 7 x 5 cm
Weight	1 kg
Requires	VERI50 EFT

ADAPTER EFT-CDN

Application	matching VERI50 EFT to 16 A, 32 A, 63 A CDN
Connector to CDN	multi-contact, banana
Connector to VERI50 EFT	high voltage BNC
Insulation 5/50 ns	up to 8 kV with VERI50 EFT connected
Dimensions	27 x 6 x 2 cm with ground connection
Weight	0.2 kg
Included	ground connection

ADAPTER EFT100

Application	matching VERI50 EFT to 100 A CDN
Connector to CDN	multi-contact, banana
Connector to VERI50 EFT	high voltage BNC
Insulation 5/50 ns	up to 8 kV with VERI50 EFT connected
Dimensions	15 x 6 x 4 cm with ground connection

Overview [IMU4000](#) | [IMU3000](#) | [DOW3000](#) | [CDNs](#) | [Accessories](#)

Weight	0.2 kg
Included	ground connection

ADAPTER EFT250

Application	matching VERI50 EFT to 200 A or 1000 V CDN
Connector to CDN	multi-contact, banana
Connector to VERI50 EFT	high voltage BNC
Insulation 5/50 ns	up to 8 kV with VERI50 EFT connected
Dimensions	27 x 6 x 4 cm with ground connection
Weight	0.2 kg
Included	ground connection

EFT-INSULATION

Application	EUT support for burst test
Number of plates	2 pieces
Height of plates	10 cm
Surface of both plates	100 x 40 cm
Maximum EUT weight	50 kg
Dimensions	100 x 40 x 10 cm (both plates)
Weight	16 kg (both plates)

4.5. ACCESSORIES AS PER IEC 61000-4-5 LATEST EDITION

V-PROBE-SI VOLTAGE PROBE

Application	measurement of surge U waveform up to 7 kV
Type of probe	differential (can measure CM as well)
Waveforms	1.2/50 μ s, 10/700 μ s and 0.5 μ s / 100 kHz ring
Bandwidth	DC – 70 MHz (-3 dB)
Accuracy	\pm 2 %
Input impedance	10 M Ω 10 pF
Input voltage	max. 7 kV DC + peak, max. 2.5 kV r.m.s.
Attenuation ratio	1:100 or 1:1000
Power supply	4 x AA batteries and/or mains adapter
Probe dimensions	20.2 x 8.3 x 3.8 cm
Weight	0.5 kg
Included	carrying case, mains adapter, AA batteries

I-PROBE-P101 CURRENT PROBE

Application	measurement of surge I waveform up to 5 kA
Output impedance	50 Ω
Waveforms	8/20 μ s (surge), 5/320 μ s (telecom surge)
Current rating	5 kA peak or 200 A r.m.s.
Bandwidth	0.25 Hz - 4 MHz (-3 dB)

Sensitivity	0.01 V / A into 1 MΩ
Accuracy	+1 % / -0 %
Current time product	2.5 As
I/f	12 A / Hz
Probe dimensions	12 x 10 x 3 cm, inner diameter 5 cm
Weight	1 kg
Included	carrying case

4.6. ACCESSORIES AS PER IEC 61000-4-8 LATEST EDITION

MF1000-1

Application	antenna for magnetic field, magnetic pulses
Antenna type	1 x 1 m, as per standard
Antenna factor	0.87
Magnetic field 50, 60 Hz	1 – 160 A / m, continuous (IEC 61000-4-8)
Duration continuous MF	29999 s
Magnetic pulse 8/20 μs	93 – 1521 A / m or 1855 A / m (IEC 61000-4-9)
Magnetic pulse DOW	up to 220 A / m (IEC 61000-4-10)
Dimensions	120 x 100 x 10.5 cm
Weight	6 kg

MF1STAND

Application	stand for MF1000-1
Height	0.2 - 1.8 m
Adjustable	on all 3 directions, 360°
Dimensions	60 x 50 cm stand
Weight	16 kg

MF1000-2

Application	antenna for magnetic field, magnetic pulses
Antenna type	1 x 2.6 m, as per standard
Antenna factor	0.66
Magnetic field 50, 60 Hz	1 – 110 A / m, continuous (IEC 61000-4-8)
Duration continuous MF	29999 s
Magnetic pulse 8/20 μs	67 – 1103 A / m or 1345 A / m (IEC 61000-4-9)
Magnetic pulse DOW	up to 110 A / m (IEC 61000-4-10)

Dimensions	260 x 100 x 10.5 cm
Weight	24 kg

MF1000-3

Application	antenna for short duration magnetic field
Antenna type	1 x 1 m, as per standard
Antenna factor	0.87
Magnetic field 50, 60 Hz	150 – 500 A / m, continuous (IEC 61000-4-8)
Duration continuous MF	29999 s
Magnetic field 50, 60 Hz	150 – 1100 A / m, short term (IEC 61000-4-8)
Duration short term MF	3 s
Dimensions	100 x 100 x 13 cm
Weight	18 kg

MF3STAND

Application	stand for MF1000-3
Height	0.2 - 1.8 m
Adjustable	360°, easy to move
Dimensions	2 x (60 x 50 cm) stands
Weight	32 kg

4.7. ACCESSORIES AS PER IEC 61000-4-9 LATEST EDITION

See MF1000-1
See MF1000-2

4.8. ACCESSORIES AS PER IEC 61000-4-10 LATEST EDITION

See MF1000-1
See MF1000-2

4.9. ACCESSORIES AS PER IEC 61000-4-11, -4-34 LATEST EDITIONS

VAR-EXT1000

Application	1P variac for dips and variations
Input voltage	50 – 250 V, 50/60 Hz
Output voltage 1	input voltage
Output voltage 2 dips	0 – 110 % from input voltage, max. 275 V
Output voltage 2 variations	0 – 100 % from input voltage, max. 250 V
EUT current	max. 16 A continuous
Voltage slew rate	< 1.7 s from 0 to 100 %

Overview | [IMU4000](#) | [IMU3000](#) | [DOW3000](#) | [CDNs](#) | [Accessories](#)

Dimensions	19" unit, 4 UH
Weight	29 kg

VERI-DIPS

Application	calibration of inrush current before dips test
Current range	1 A – 1 kA
Capacitance	1700 μ F \pm 20 %
Discharge resistor	4.7 k Ω \pm 10 %
DSO output	1 V = 400 A, BNC connector
Dimensions	20 x 10 x 11 cm
Weight	1 kg

DIPS100E

Application	calibration of dips switch time
Resistor	100 Ω \pm 5 %, non-inductive
Power	max. 1 kW
Insulation	3 kV
Dimensions	65 x 12 x 8 cm
Weight	3.8 kg

PFS32

Application	3P AC dips generator
EUT AC voltage L-L	3 x 200 V – 3 x 480 V, 50 or 60 Hz
EUT AC current	max. 3 x 32 A
Output connection	star or delta connection possible
Overcurrent protection	50 A per phase continuous, 220 A short term
Rise & fall time into 100 Ω	1 – 5 μ s for AC
Inrush current capability	> 500 A
Dip / interruption duration	50 μ s – 60 s
Synchronization	0 – 359°, resolution 1°
Output monitor BNC	3 x I (1 V : 100 A), 3 x U (1 V : 100 V)
Dimensions	19" unit, 4 UH
Weight	26 kg
Controlled by	IMU3000 D , IMU4000 D , ADAPTER TRA-ACC
Requires	SRC32-18 UH , SRC32-AMD1 or AMD1-36 UH

SRC32-18UH

Application	3P tapped transformer for PFS32
Construction type	automatic switch between dip levels
EUT AC voltage L-L	3 x 200 V – 3 x 480 V, 50 or 60 Hz, Y or Δ
EUT AC current	max. 3 x 32 A at nominal voltage
Overcurrent protection	50 A per phase continuous, 220 A short term

Dip levels	0 %, 40 %, 70 %, 80 %, selectable
Dimensions	19" rack (wheels), 18 UH
Weight	307 kg
Controlled by	PFS32

SRC32-AMD1

Application	3P tapped transformer for PFS32
Construction type	automatic switch between dip levels
EUT AC voltage L-L	3 x 200 V – 3 x 480 V, 50 or 60 Hz, Y or Δ
EUT AC current	max. 3 x 32 A at nominal voltage
Overcurrent protection	50 A per phase continuous, 220 A short term
Dip levels	0 %, 40 %, 50 %, 70 %, 80 %, selectable
Dimensions	19" rack (wheels), 18 UH
Weight	317 kg
Controlled by	PFS32

SRC32-AMD1 36UH

Application	3P tapped transformer for PFS32
Construction type	automatic switch between dip levels
EUT AC voltage L-L	3 x 200 V – 3 x 480 V, 50 or 60 Hz, Y or Δ
EUT AC current	max. 3 x 32 A at nominal voltage
Overcurrent protection	50 A per phase continuous, 220 A short term
Dip levels	0 %, 40 %, 50 %, 70 %, 80 %, selectable
Dimensions	19" rack (wheels), 36 UH
Weight	336 kg
Controlled by	PFS32

PFS75

Application	3P AC dips generator
EUT AC voltage L-L	3 x 200 V – 3 x 480 V, 50 or 60 Hz
EUT AC current	max. 3 x 75 A
Output connection	star or delta connection possible
Overcurrent protection	220 A short term (< 2 s)
Rise & fall time into 100 Ω	1 – 5 μ s for AC
Inrush current capability	> 1000 A
Dip / interruption duration	50 μ s – 60 s
Synchronization	0 – 359°, resolution 1°
Output monitor BNC	3 x I (1 V : 100 A), 3 x U (1 V : 100 V)
Dimensions	19" unit, 8 UH
Weight	40 kg
Controlled by	IMU3000 , IMU4000 , ADAPTER TRA-ACC
Requires	SRC75-18 UH

SRC75-18UH

Application	3P tapped transformer for PFS75
Construction type	automatic switch between dip levels
EUT AC voltage L-L	3 x 200 V – 3 x 480 V, 50 or 60 Hz, Y or Δ
EUT AC current	max. 3 x 75 A at nominal voltage
Overcurrent protection	220 A short term (< 2 s)
Dip levels	0 %, 40 %, 70 %, 80 %, selectable
Inrush current	> 1000 A
Dimensions	19" rack (wheels), 18 UH
Weight	332 kg
Controlled by	PFS75

PFS75-690V

Application	3P AC dips generator
EUT AC voltage L-L	3 x 200 V – 3 x 690 V, 50 or 60 Hz
EUT AC current	max. 3 x 75 A
Output connection	star or delta connection possible
Overcurrent protection	220 A short term (< 2 s)
Rise & fall time into 100 Ω	1 – 5 μ s for AC
Inrush current capability	> 1000 A
Dip / interruption duration	50 μ s – 60 s
Synchronization	0 – 359°, resolution 1°
Output monitor BNC	3 x I (1 V : 100 A), 3 x U (1 V : 100 V)
Dimensions	19" unit, 8 UH
Weight	54 kg
Controlled by	IMU3000 D, IMU4000 D, ADAPTER TRA-ACC
Requires	SRC75-690V

SRC75-690V

Application	3P tapped transformer for SRC75-690V
Construction type	automatic switch between dip levels
EUT AC voltage L-L	3 x 200 V – 3 x 690 V, 50 or 60 Hz, Y or Δ
EUT AC current	max. 3 x 75 A at nominal voltage
Overcurrent protection	220 A short term (< 2 s)
Dip levels	0 %, 40 %, 70 %, 80 %, selectable
Inrush current	> 1000 A
Dimensions	19" rack (wheels), 36 UH
Weight	332 kg
Controlled by	PFS75-690V

4.10. ACCESSORIES AS PER IEC 61000-4-12 LATEST EDITION

See voltage probe from Surge.

4.11. ACCESSORIES AS PER IEC 61000-4-16 LATEST EDITION

EXT-IMU C-SHORT

Application	extension for IMU -C module, power tests
Output impedance	50 $\Omega \pm 10 \%$
Output voltage	30 V – 330 V
Power frequencies	DC, 16.67 Hz, 50 Hz, 60 Hz
Disturbance duration	1 s – 1000 s to full test level
Dimensions	19" unit, 4 UH
Weight	54 kg
Controlled by	IMU4000 C or IMU3000 C
Requires	PS3, CN16 or CN16DC or CN16T

PS3

Application	1P power source for IEC 61000-4-16, 300V test
Type	programmable, pre-programmed buttons
Input	AC 100 V – 240 V, 47 – 63 Hz
Output voltage	AC 0 – 250 V, DC 0 – 350 V
Output frequency	DC – 400 Hz
Output current	max. 16A @ 115V / 60Hz, 10 A @ 230V / 50Hz
Output power	max. 3 kW or 3 kVA
Dimensions	19" unit, 2 UH
Weight	18 kg
Controlled by	IMU4000 C or IMU3000 C for power test
Requires	EXT-IMU C-SHORT, RS485-RS232 ADAPT.
Other applications	IEC 61000-4-19, IEC 61000-4-29

4.12. ACCESSORIES AS PER IEC 61000-4-18 LATEST EDITION

VERI1K EFT

See VERI1K EFT technical specification.

VERI01 OSI

Application	0.1 Ω shunt for 3, 10, 30 MHz DOW SC current
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Input impedance	0.1 Ω \pm 2 %
Input voltage	max. 6.3 kV
3 dB bandwidth	> 400 MHz
Power dissipation	max. 3 W, max. 1000 spikes/s @ 4.4 kV
Measurement ratio	1 V @ 10 A in 1 M Ω \pm 2 %
Dimensions	8.5 x 2.5 x 2.5 cm
Weight	0.1 kg
At CDN outPUT	Calibration adapter delivered with DOW3000

4.13. ACCESSORIES AS PER IEC 61000-4-19 LATEST EDITION

IMU SLAVE SMART I1V1*

Application	voltage & current test generator IEC 61000-4-19
Voltage test module	
EUT voltage input	80 – 500 V, L-L or L-N, 50 Hz and 60 Hz
EUT current input	0 – 16 A L-L or L-N
Voltage waveform	sinusoidal, THD < 5%
Test voltage	0.1 V – 25 V, tolerance \pm 5%
Output frequency range	2 kHz – 150 kHz
CDN output impedance	10 Ω \pm 30%, 2 kHz – 150 kHz
CDN decoupling better than	-10dB@10kHz, -50dB@50 kHz, -50dB@150kHz
Frequency step	2 % standard, adjustable 1 % - 100 %
Dwell time	3s standard, adjustable 1 s – 300 s
Pause time	300 ms \pm 200 ms, adjustable 0.1 s – 30 s
Signal type	continuous / pause, 50% rect. modulation
Modulation frequency	for 50 Hz: 3 Hz, 101 Hz, 301 Hz, 601 Hz for 60 Hz: 4 Hz, 121 Hz, 361 Hz, 721 Hz
Modulation frequency	3 Hz – 1 kHz, adjustable
Calibration load	10 Ω load built-in, automatically switched
Measurement and control	internal, automatic
Current test module	
EUT voltage input	80 – 500 V, L-L or L-N, 50 Hz, 60 Hz, 400 Hz
EUT current input	0 – 25 A L-L or L-N (0 – 15 A at 400 Hz)
Current waveform	sinusoidal, THD < 5%
Test current	0.01 A – 4.4 A , tolerance \pm 5%
Output frequency range	2 kHz – 150 kHz
Output impedance	1 Ω \pm 30%, 2 kHz – 150 kHz
Decoupling impedance	1 Ω \pm 30%, 2 kHz – 150 kHz
Frequency step	2 % standard, adjustable 1 % - 100 %
Dwell time	3s standard, adjustable 1 s – 300 s
Pause time	300 ms \pm 200 ms, adjustable 0.1 s – 30 s
Signal type	continuous with pause, 50% rectangular modulation
Modulation frequency	for 50 Hz: 3 Hz, 101 Hz, 301 Hz, 601 Hz

	for 60 Hz: 4 Hz, 121 Hz, 361 Hz, 721 Hz
Modulation frequency	3 Hz – 1 kHz, adjustable
Built-in reference load current source	1 – 25 A @50/60 Hz (15A @400 Hz), synchr. to voltage input
Measurement, synch.	internal, automatic
Dimensions	19" unit, 4 UH (both modules)
Weight	22 kg
Controlled by	IMU4000 or IMU3000, any configuration

* Voltage or current modules can also be ordered separately, contact sales.

VERI10-50

Application	10 / 50 Ω calibration balun for SLAVE SMART
Input impedance	2 x 10 Ω \pm 10 %
Output impedance	2 x 50 Ω \pm 10 %
Frequency response	2 kHz – 200 kHz \pm 0.5 dB
Damping limit	10 dB @ 2 kHz to 50 dB@ 150 kHz, linear var.
Dimensions	24 x 10 x 8 cm
Weight	1.2 kg

4.14. ACCESSORIES AS PER IEC 61000-4-29 LATEST EDITION

PS3

See PS3 technical specification.

1 x PS3 power source needed for DC interruptions, 2 x PS3 power sources needed for DC dips.

EXT-IMU D-29D

Package of services including adjustment and calibration of IMU3000 D or IMU4000 D together with 2 x PS3 and 2 x RS485-RS232 ADAPTER in order to ensure compliance of the test system with IEC 61000-4-29 requirements for DC dips. Requires 2x Resistor 50Ohm.

EXT-IMU D-29I

Package of services including adjustment and calibration of IMU3000 D or IMU4000 D together with 1 x PS3 and 1 x RS485-RS232 ADAPTER in order to ensure compliance of the test system with IEC 61000-4-29 requirements for DC interruptions.

4.15. GENERAL ACCESSORIES FOR IMU SERIES




ADAPTER BOX TRA-ACC

Application	adapter for communication with accessories
Type	allows daisy chain connection
Automatic CDN range	-2000A, -3000A (6 kV), CDN-A-3Px00
PFS range	PFS32, PFS75, all other PFS models
Communication with IMU	1 x adapter for each accessory
Dimensions	10.5 x 5.5 x 3 cm
Weight	0.1 kg

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Transient Test Systems for all EMC tests on electronic equipment. ESD, EFT, surge, AC dips, AC magnetic field, surge magnetic field, common mode, damped oscillatory and DC dips. According to IEC and EN 61000-4-2, -4, -5, -8, -9, -10, -11, -12, -13, -14, -16, -18, -19, -29.



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Impulse test equipment and accessories for aircraft, military and telecom applications. Complete solutions for RTCA / DO-160 and EURO-CAE / ED-14 for indirect lightning on aircraft systems, MIL-STD-461 tests CS106, CS115, CS116, CS117, CS118 and Telecom, ITU-T .K44 basic and enhanced tests for impulse, power contact and power induction.



COMPONENT TESTS

Impulse generators for testing; varistors, gas discharge tubes (GDT), surge protective devices (SPDs), X / Y capacitors, circuit breakers, electricity meters, protection relays, insulation material, suppressor diodes, connectors, chokes, fuses, resistors, emc-gaskets, cables, etc.



EMISSION MEASUREMENTS

Measurement of Harmonics and Flicker in 1-phase and 3-phase electrical and electronic products according to IEC / EN 61000-3-2 and 61000-3-3 . HARCS Immunity software adds interharmonic tests, voltage variation according to IEC/EN 61000-4-13, -4-14.



SYSTEM AUTOMATION

A full range of accessories enhance the test systems. Test cabinets, test pistols, adapters and remote control software, simplify interfacing with the EUT. Programmable PSU, EMC hardened for frequencies from 16.7Hz to 400Hz. PS3-SOFT-EXT complies with IEC / EN 61000-4-14 and -4-28.



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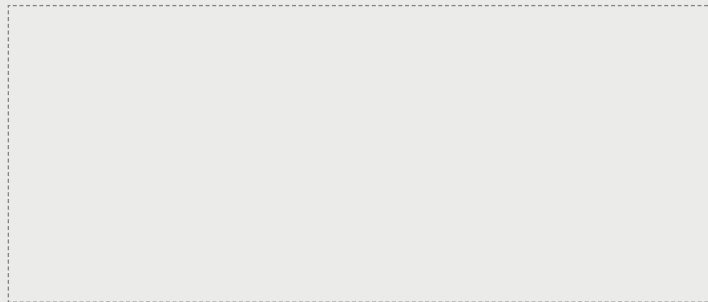


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