



COMPLETE TEST SOLUTIONS FOR

# Conducted Immunity Testing



 This document has been optimized for electronic media

 Smart navigation through technical specifications. Click the green links.



### 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, Ring wave, 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 modules when additional tests are needed.

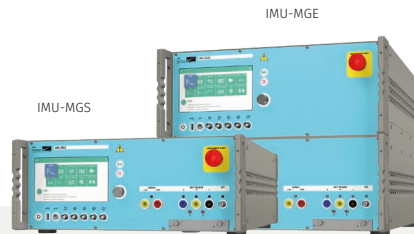


## DOW series

- DOW Mainframe Unit

### Available Modules

- SLOW 100kHz & 1MHz / 4.4kV
- FAST 3MHz, 10MHz & 30MHz / 4 kV
- CDN 690Vac & 500Vdc / 32A
- Insulation 1.2/50us 500Ω / 0.5J 8kV



## IMU series

- IMU Mainframe Unit

### Available Modules

- Surge / CWG 4kV / 5 kV / 6kV / 8kV
- Ring Wave 6kV / 8kV
- Telecom 6kV / 8kV
- EFT 4kV / 5kV / 6kV / 7kV / 8kV
- Common Mode 35V / 330V
- AC & DC Interrupts 16A / 32A / 75A
- AC DIPS & Variation 16A
- Differential Mode voltage / current
- ESD 16kV


## WHY MODULARITY ?

You get a cost-effective solution that fits your test requirements. Also, you can extend your system for other tests after initial purchase and on-site whenever you have new test requirements.







# AVAILABLE TESTS

## IMU Series

	<b>ESD Electrostatic Discharges</b> <span style="float: right;">up to 16kV</span>
	According to IEC/EN 61000-4-2
	<b>Electric Fast Transient / Burst (EFT)</b> <span style="float: right;">up to 8kV</span>
	According to IEC/EN 61000-4-4
	<b>Combination Wave / Surge (CWG)</b> <span style="float: right;">up to 8kV</span>
	According to IEC/EN 61000-4-5, ANSI C62.41
	<b>Telecom Impulse (10/700)</b> <span style="float: right;">up to 8kV</span>
	According to IEC/EN 61000-4-5, ITU-T K.44
	<b>Ring Wave 100kHz (Ring)</b> <span style="float: right;">up to 8kV</span>
	According to IEC/EN 61000-4-12, ANSI C62.41
	<b>Common Mode (CM)</b> <span style="float: right;">up to 35V continuous / 330V short</span>
	According to IEC/EN 61000-4-16
	<b>Differential Mode (DM)</b> <span style="float: right;">4.4A / 25V</span>
	According to IEC/EN 61000-4-19
	<b>AC &amp; DC Dips, Variations and Interruptions</b>
	According to IEC/EN 61000-4-11 / -29 / -34
	<b>Magnetic Field / Pulse</b>
	According to IEC/EN 61000-4-8 / -9

## DOW Series

	<b>SLOW Damped Oscillatory Waves</b> <span style="float: right;">100kHz &amp; 1 MHz</span>
	According to IEC/EN 61000-4-18, -10, ANSI C37.90
	<b>FAST Damped Oscillatory Waves</b> <span style="float: right;">3MHz, 10MHz, 30MHz</span>
	According to IEC/EN 61000-4-18
	<b>Insulation 0.5J / 500 Ω</b> <span style="float: right;">up to 8kV</span>
	According to IEC/EN 60255-27
	<b>Magnetic Field / DOW</b>
	According to IEC/EN 61000-4-10

## EMERGENCY STOP



### Enhanced safety is standard

Red/Yellow Emergency Stop button on front panel of generator can be complemented with remote option.

Add warning lamps and a test cabinet for enhanced test place safety.

## 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

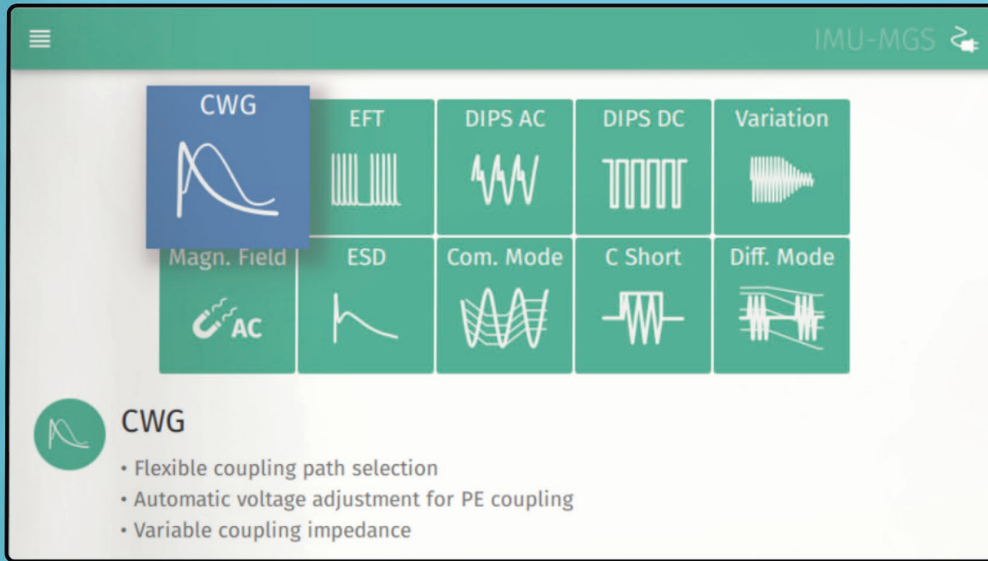


Software download from internet directly into the instrument.

### Extend testing capability



Hardware upgrades maintain the system value.



## EPOS – BEYOND BETTER

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

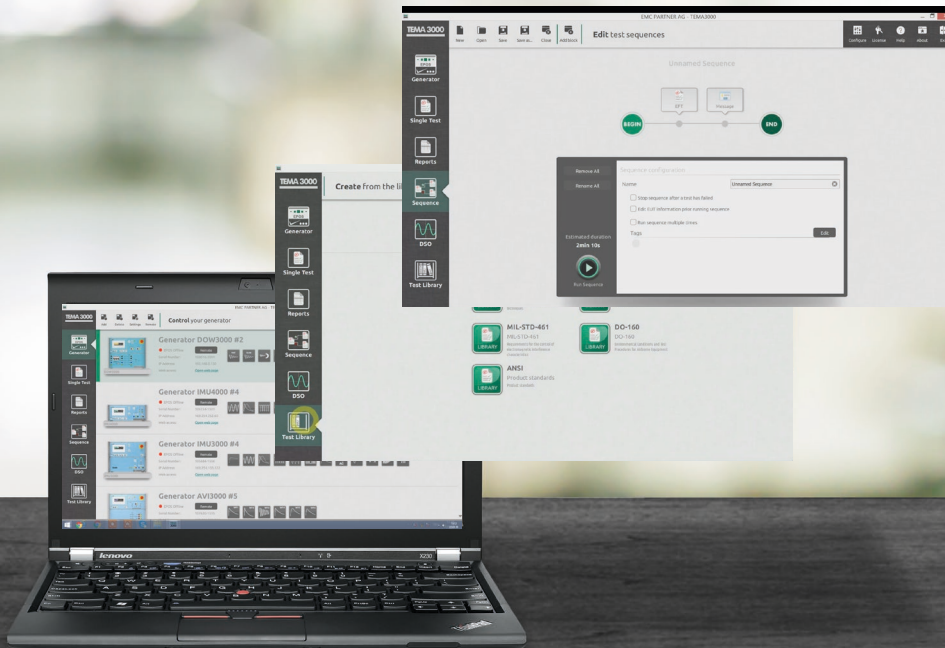


Active monitor and control of EUT power. EUT current limit to prevent damage.

### We speak your language



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

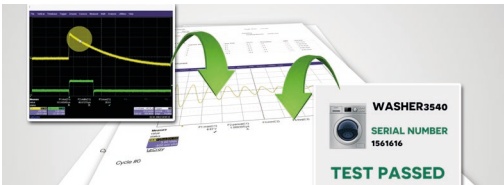


# TEMA3000 SOFTWARE SUITE

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

**Want to know more?** Further information and demo version available on the website

## 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

- > IMU-MGS
- > IMU-MGE
- > DOW-CG1

## CDNs

IEC 61000-4	-2	-4	-5	-8	-9	-11	-12	-16	-18	-19	-29	-34
<b>Supply Lines</b>												
<b>CDNs for burst, Surge and Ring wave</b>												
<b>4 kV / 6 kV line</b>												
CDN-M-6-32		✓	✓				✓					
CDN-A-6-32		✓	✓				✓					
CDN-A-6-63		✓	✓				✓					
CDN-A-6-125		✓	✓				✓					
CDN-A-6-200		✓	✓				✓					
<b>7.6 kV line</b>												
CDN-M-8-32		✓	✓				✓					
CDN-A-8-32		✓	✓				✓					
CDN-A-8-63		✓	✓				✓					
CDN-A-8-125		✓	✓				✓					
CDN-A-8-200		✓	✓				✓					
<b>8 kV burst</b>												
CDN-F-125		✓										
<b>CN/DNs for -16</b>												
CN16, CN16-300								✓				
CN16DC								✓				
DN16-1P6								✓				
DN16-1P16								✓				
<b>I/O Lines</b>												
CDN-KIT1000 ED3			✓									
CDN-DATA-4L			✓				✓					
CDN-DATA-8L			✓				✓					
CDN-UTP ED3			✓				✓					
CDN-UTP8 ED3			✓				✓					
CN16T, CN16T4, CN16T8								✓				
CN-R40C05			oth- er									
CN-R40C05 8			oth- er									
CDN-DOW-DATA-LF									✓			
CDN-DOW-DATA-HF18									✓			

# ACCESSORIES

IEC 61000-4	-2	-4	-5	-8	-9	-10	-11	-12	-16	-18	-19	-29	-34
EXT-IMU-E	✓												
ESD-TARGET2 DN	✓												
TARGET2-ADAPTER N-MALE	✓												
TARGET2-ADAPTER N-FEMALE	✓												
ESD-VERI-V	✓												
ESD-STAND Ed2	✓												
EARTH CABLE	✓												
ESD-VCP50	✓												
CN-EFT1000		✓								✓			
VERI50 EFT		✓								✓			
VERI50-8KV		✓								✓			
VERI1K EFT		✓								✓			
VERI-CP-EFT		✓								✓			
ADAPTER EFT-CDN		✓											
CN-BALUN AC		ANSI											
EFT-INSULATION		✓											
V-PROBE-SI			✓					✓					
I-PROBE-P110A			✓										
VERI-C18-S			✓										
MF1000-1				✓	✓	✓							
MF1STAND				✓	✓	✓							
MF1000-2				✓	✓	✓							
MF1000-3				✓									
MF3STAND				✓									
VAR-EXT1000				✓			✓						
SRC16-1P							✓						
VERI-DIPS							✓					✓	✓
DIPS100E							✓					✓	✓
PFS32							✓						✓
SRC32-18UH							✓						✓
SRC32-AMD1-18 UH							✓						✓
PFS75							✓						✓
PFS75-690V							✓						✓
SRC75-18UH							✓						✓
SRC75-690V-18UH							✓						✓
PS3, PS3 SOFT EXT									✓			✓	
RS485-RS232 ADAPT.									✓			✓	
EXT-IMU C-SHORT									✓				
VERI01 OSI										✓			
CN-0U5-SDOW-DIRECT										✓			
IMU SLAVE SMART V1											✓		
IMU SLAVE SMART I1											✓		
IMU SLAVE SMART I1V1											✓		
VERI10/50											✓		
EXT-IMU D-29D   EXT-IMU D-29I												✓	
EMERGENCY STOP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WARNING LAMP	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
TC-ST			✓					✓					
TEMA3000 SOFTWARE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

# GENERATORS

## IMU-MGS

### IMU-MGS Mainframe

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



### IMU-MGS Control Features

<b>Operating system</b>	EPOS proprietary firmware
<b>Languages</b>	8 menu languages, selectable
<b>User interface</b>	7" capacitive touch display
<b>Connectivity</b>	gigabit ethernet, USB, RS485
<b>Environment meas.</b>	built-in temperature and humidity sensor
<b>EUT power monitor</b>	supply voltage, current and freq. on screen
<b>EUT supply voltage waveform</b>	monitoring BNC output connector max. 15 V
<b>EUT supply current waveform</b>	monitoring BNC output connector max. 15 V
<b>Surge monitoring</b>	peak voltage and current on screen, waveform available at BNC outputs
<b>Surge voltage waveform</b>	monitoring BNC output connector max. 15 V
<b>Surge current waveform</b>	monitoring BNC output connector max. 15 V
<b>Trigger out</b>	BNC connector, max. 6 V
<b>Trigger in</b>	auto, manual or via programmable BNC
<b>Programmable connectors</b>	2 BNC connectors (inputs/outputs) as follows
<b>Programmable input functions</b>	Trigger Input, Start Test, Stop Test, EUT Fail, EUT Mark, Emergency Stop
<b>Programmable input max. voltage</b>	low range: 0 – 1.5 V, high range: 2.3 – 24 V
<b>Programmable output functions</b>	Running State, Safety Circuit State
<b>Programmable output max. U, I</b>	max. 24 V, max. 300 mA
<b>Synchronization source</b>	EUT power, direct out, external
<b>Synchronization angle</b>	0 – 359° ± 5°, 1° step
<b>Input EUT power selection</b>	PWR1 and PWR2 selectable on the screen
<b>Power ON/OFF process</b>	sophisticated functions allow to switch EUT

	power ON/OFF at selectable voltage angle (0 – 359°, 1° step)
<b>Impulse polarity</b>	positive, negative, alternating
<b>Automatic ramps</b>	test level, sync. angle, coupling path
<b>EUT overcurrent protection</b>	automatic programmable fuse up to 16 A
<b>PS3 control</b>	DC, 16.7 Hz, 50 Hz, 60 Hz supply power
<b>Safety features (standard)</b>	Emergency stop button on front panel red/yellow as per IEC 60947-5-5, IEC 60204-1, ISO 13850, Safety circuit
<b>Safety accessories (optional)</b>	<a href="#">WARNING LAMP</a> (24 V, max. 2.4 W), <a href="#">TC-ST</a> test cabinet Remote <a href="#">EMERGENCY STOP</a> button

### IMU-MGS module: EXT-IMU P

<b>Application</b>	enhances CDN DC capability from 90 V to 300 V required when the D module is not included
<b>EUT power</b>	0 V - 300 V max. 16 A
<b>EUT frequency</b>	DC - 60 Hz

### IMU-MGS module: EXT-IMU-E, ESD extension 16 kV

See section [Accessories](#) for IMU Series: IEC 61000-4-2

### IMU-MGS module: EXT-IMU4000 F4, EFT / Burst extension 4.4 kV

<b>Standard</b>	IEC 61000-4-4 latest edition
<b>Output impedance</b>	50 Ω
<b>Voltage OC</b>	0.2 kV – 4.4 kV
<b>Voltage into 50 Ω</b>	0.1 kV – 2.2 kV ± 10 %
<b>Waveform into 50 Ω</b>	5 ± 1.5 ns / 50 ± 15 ns
<b>Voltage into 1 kΩ</b>	0.191 kV - 4.18 kV ± 20%
<b>Waveform into 1 kΩ</b>	5 ± 1.5 ns / 50 ns (-15/+100 ns)
<b>Spike frequency</b>	1 kHz - 1 MHz
<b>Maximum spikes / second</b>	8000 @ 1 kV
<b>Burst duration</b>	0.01 ms - 30 ms, continuous up to 8 kHz
<b>Burst repetition</b>	1 - 1000 ms
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 359°, step 1°
<b>Ramps</b>	voltage, spike frequency, burst duration
<b>Optional accessories</b>	<a href="#">CDNs</a> , <a href="#">Accessories</a>

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

Standard	IEC 61000-4-4 latest edition
Output impedance	50 $\Omega$
Voltage OC	0.2 kV – 5.1 kV
Voltage into 50 $\Omega$	0.1 kV – 2.55 kV $\pm$ 10 %
Waveform into 50 $\Omega$	5 $\pm$ 1.5 ns / 50 $\pm$ 15 ns
Voltage into 1 k $\Omega$	0.191 kV – 4.85 kV $\pm$ 20 %
Waveform into 1 k $\Omega$	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 – 359°, step 1°
Ramps	voltage, spike frequency, burst duration
Optional accessories	<a href="#">CDNs</a> , <a href="#">Accessories</a>

### IMU-MGS module: EXT-IMU4000 S4, CWG / Surge extension 4.1 kV

Standard	IEC 61000-4-5 latest edition
Output impedance	2 $\Omega$
Voltage OC	0.25 kV - 4.1 kV $\pm$ 10 %
Voltage waveform	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
Current SC	0.125 kA - 2.05 kA $\pm$ 10 %
Current waveform	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
Pulse repetition	up to 1 / s @ 0.8 kV, 1 / 5 s @ 4.1 kV
Polarity	positive, negative, alternating
Synchronization	0 – 359°, step 1°
Ramps	voltage, synchronisation angle
Magnetic pulse test	IEC 61000-4-9, see <a href="#">MF1000-x</a> coils
Optional accessories	<a href="#">CDNs</a> , <a href="#">CDNs for I/O Lines</a> , <a href="#">Accessories</a>

### IMU-MGS module: EXT-IMU4000 S5, CWG / Surge extension 5.1 kV

Standard	IEC 61000-4-5 latest edition
Output impedance	2 $\Omega$
Voltage OC	0.25 kV - 5.1 kV $\pm$ 10 %
Voltage waveform	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
Current SC	0.125 kA - 2.55 kA $\pm$ 10 %
Current waveform	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
Pulse repetition	up to 1 / s @ 0.8 kV, 1 / 5.5 s @ 5.1 kV
Polarity	positive, negative, alternating
Synchronization	0 – 359°, step 1°
Ramps	voltage, synchronisation angle
Magnetic pulse test	IEC 61000-4-9, see <a href="#">MF1000-x</a> coils
Optional accessories	<a href="#">CDNs</a> , <a href="#">CDNs for I/O Lines</a> , <a href="#">Accessories</a>

### IMU-MGS module: EXT-IMU D, AC/DC dips, interruptions extension

<b>Standard</b>	IEC 61000-4-11 latest edition
<b>EUT AC power</b>	0 V – 300 V, max. 16 A
<b>EUT frequency with variac</b>	48 Hz – 60 Hz
<b>Switch time into 100 Ω</b>	1 μs – 5 μs
<b>Interruption time</b>	50 μs – 60 s
<b>Inrush current</b>	> 500 A peak
<b>Dips internal variac</b>	voltage 0 – 110 %, max. 5 A
<b>Dips extern. variac</b>	voltage 0 – 110 %, max. 16 A
<b>EUT turn ON/OFF phase</b>	selectable, 0° – 359°
<b>Variation mode</b>	adjust, abrupt
<b>Variation internal variac</b>	voltage 0 – 100 %, max. 5A
<b>Variation external variac</b>	voltage 0 – 100 %, max 16A
<b>Interruption &lt; one period</b>	input as phase angle
<b>Interruption &gt; one period</b>	input in ms
<b>Ramps</b>	voltage, synchronisation angle, time
<b>Requires</b>	<a href="#">EXT-IMU V</a> , <a href="#">SRC16-1P</a> or <a href="#">VAR-EXT1000</a> for AC dips
<b>Optional accessories</b>	<a href="#">Accessories</a>

<b>Standard</b>	IEC 61000-4-29 latest edition
<b>EUT DC power</b>	24 – 300 V, 0 – 16 A @ 300V
<b>Switch time into 100 Ω</b>	1 μs – 50 μs
<b>Interruption time</b>	0.1 ms – 60000 ms
<b>Requires</b>	1 x <a href="#">PS3</a> for DC interrupt., 2 x <a href="#">PS3</a> for DC dips

### IMU-MGS module: EXT-IMU V, dips and variations extension

<b>Standard</b>	IEC 61000-4-11 latest edition
<b>Construction</b>	internal variac
<b>Power input AC</b>	20 – 250 V, 5 A, 50/60 Hz
<b>Power output dips</b>	max. 275 V (110 %), max. 5 A continuous
<b>Power output variations</b>	max. 250 V (100 %), max. 5 A continuous
<b>Current capability dips</b>	10 A for 5 sec., 16 A for 300 ms
<b>Variation mode</b>	adjust, abrupt
<b>Voltage slew rate</b>	< 1.2 s from 0 to 100 %
<b>Switching time abrupt</b>	1 – 5 μs
<b>Ramp transition time</b>	25 – 999 periods @ 50/60 Hz
<b>Magnetic field test</b>	IEC 61000-4-8, see <a href="#">MF1000-x</a> coils

### IMU-MGS module: EXT-IMU C, Common mode extension

<b>Standard</b>	IEC 61000-4-16 latest edition
<b>Test voltage continuous</b>	0.1 – 35 Vrms
<b>Power harmonic test</b>	15 Hz – 150 kHz up to 35 V
<b>Sweep time</b>	adjustable, decade time: 10 s – 1000 s
<b>Test voltage short duration</b>	0.1 – 330 Vrms: requires PS3, EXT-IMU C-SHORT
<b>Power frequency test</b>	DC, 16.7 Hz, 50 Hz, 60 Hz
<b>Source impedance</b>	50 $\Omega$ $\pm$ 10 %
<b>Sync. turn on/off for AC</b>	0° $\pm$ 5°
<b>DC switching time</b>	1 - 5 $\mu$ s
<b>Residual ripple DC</b>	< 5%
<b>THD 15 Hz – 150 kHz</b>	< 1%
<b>THD power frequency</b>	< 10%
<b>Optional accessories</b>	<a href="#">CNs for I/O Lines, Accessories</a>

### IMU-MGS module: IMU SLAVE SMART external module

See section [Accessories](#) for IMU Series: IEC 61000-4-19

## POWER, WEIGHT, DIMENSIONS, CLIMATIC CONDITIONS

### IMU-MGS mainframe

<b>Operating voltage</b>	100 – 240 V (50/60 Hz) $\pm$ 10 %
<b>Power consumption</b>	ON < 150 VA, standby < 15 VA
<b>Weight</b>	16 kg (weight of modules not included)
<b>W x d x h</b>	520 x 433 x 180 mm
<b>Version</b>	19" unit, 4 UH
<hr/>	
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<hr/>	
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>Supply connection</b>	3 cables x 2 m, banana plugs
<b>User manual</b>	digital format (PDF)
<b>Calibration certificate</b>	factory calibration
<b>Ethernet cable</b>	1 piece
<b>USB stick</b>	1 piece
<b>CDN burst cal. adapter</b>	1 piece

# IMU-MGE

## IMU-MGE Mainframe

<b>EUT power input 1 (CDN)</b>	max. AC/DC 300V, 16A (fused 16A) with <a href="#">P module</a>
<b>EUT power input 2 (CDN)</b>	max. AC/DC 300V, 16A (not fused) with <a href="#">P module</a>
<b>Internal CDN freq. range</b>	DC, 50 Hz, 60 Hz
<b>Power freq. synchr.</b>	50/60 Hz
<b>Coupling Burst</b>	L, N, PE, L+N, L+PE, N+PE, L+N+PE, direct out
<b>Coupling Surge</b>	2 Ω: L-N, direct out, 12 Ω: L-PE, N-PE, direct out
<b>Coupling Ring wave</b>	12 Ω and 30 Ω: L-N, N-PE, L-PE, direct out



## IMU-MGE Control Features

<b>Operating system</b>	EPOS proprietary firmware
<b>Languages</b>	8 menu languages, selectable
<b>User interface</b>	7" capacitive touch display
<b>Connectivity</b>	gigabit ethernet, USB, RS485
<b>Environment meas.</b>	built-in temperature and humidity sensor
<b>EUT power monitor</b>	supply voltage, current and freq. on screen
<b>EUT supply voltage waveform</b>	monitoring BNC output connector max. 15 V
<b>EUT supply current waveform</b>	monitoring BNC output connector max. 15 V
<b>Surge monitoring</b>	peak voltage and current on screen, waveform available at BNC outputs
<b>Surge voltage waveform</b>	monitoring BNC output connector max. 15 V
<b>Surge current waveform</b>	monitoring BNC output connector max. 15 V
<b>Trigger out</b>	BNC connector, max. 6 V
<b>Trigger in</b>	auto, manual or via programmable BNC
<b>Programmable connectors</b>	2 BNC connectors (inputs/outputs) as follows
<b>Programmable input functions</b>	Trigger Input, Start Test, Stop Test, EUT Fail, EUT Mark, Emergency Stop
<b>Programmable input max. voltage</b>	low range: 0 – 1.5 V, high range: 2.3 – 24 V
<b>Programmable output functions</b>	Running State, Safety Circuit State
<b>Programmable output max. U, I</b>	max. 24 V, max. 300 mA
<b>Synchronization source</b>	EUT power, direct out, external
<b>Synchronization angle</b>	0 – 359° ± 5°, 1° step
<b>Input EUT power selection</b>	PWR1 and PWR2 selectable on the screen
<b>Power ON/OFF process</b>	sophisticated functions allow to switch EUT power ON/OFF at selectable voltage angle (0 – 359°, 1° step)
<b>Impulse polarity</b>	positive, negative, alternating

<b>Automatic ramps</b>	test level, sync. angle, coupling path
<b>EUT overcurrent protection</b>	automatic programmable fuse up to 16 A
<b>PS3 control</b>	DC, 16.7 Hz, 50 Hz, 60 Hz supply power
<b>Safety features (standard)</b>	Emergency stop button on front panel red/yellow as per IEC 60947-5-5, IEC 60204-1, ISO 13850, Safety circuit
<b>Safety accessories (optional)</b>	<a href="#">WARNING LAMP</a> (24 V, max. 2.4 W), <a href="#">TC-ST</a> test cabinet Remote <a href="#">EMERGENCY STOP</a> button

### IMU-MGE module: EXT-IMU P

<b>Application</b>	enhances CDN DC capability from 90 V to 300 V required when the D module is not included
<b>EUT power</b>	0 V - 300 V max. 16 A
<b>EUT frequency</b>	DC - 60 Hz

### IMU-MGE module: EXT-IMU E, ESD extension 16 kV

See section Accessories for IMU Series: [IEC 61000-4-2](#)

### IMU-MGE module: EXT-IMU3000 F5, EFT / Burst extension 5.3 kV

<b>Standard</b>	IEC 61000-4-4 latest edition
<b>Output impedance</b>	50 $\Omega$
<b>Voltage OC</b>	0.2 kV – 5.3 kV $\pm$ 10 %
<b>Voltage into 50 <math>\Omega</math></b>	0.1 kV – 2.65 kV $\pm$ 10 %
<b>Waveform into 50 <math>\Omega</math></b>	5 $\pm$ 1.5 ns / 50 $\pm$ 15 ns
<b>Voltage into 1 k<math>\Omega</math></b>	0.191 kV – 5.04 kV $\pm$ 20 %
<b>Waveform into 1 k<math>\Omega</math></b>	5 $\pm$ 1.5 ns / 50 ns (-15/+100 ns)
<b>Spike frequency</b>	1 kHz - 1 MHz
<b>Maximum spikes / second</b>	8000 @ 1 kV
<b>Burst duration</b>	0.01 ms - 30 ms, continuous up to 8 kHz
<b>Burst repetition</b>	1 - 1000 ms
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 359°, step 1°
<b>Ramps</b>	voltage, spike frequency, burst duration
<b>Optional accessories</b>	<a href="#">CDNs</a> , <a href="#">Accessories</a>

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

<b>Standard</b>	IEC 61000-4-4 latest edition
<b>Output impedance</b>	50 $\Omega$
<b>Voltage OC</b>	0.2 kV – 6.3 kV $\pm$ 10 %
<b>Voltage into 50 <math>\Omega</math></b>	0.1 kV – 3.15 kV $\pm$ 10 %
<b>Waveform into 50 <math>\Omega</math></b>	5 $\pm$ 1.5 ns / 50 $\pm$ 15 ns
<b>Voltage into 1 k<math>\Omega</math></b>	0.191 kV – 5.99 kV $\pm$ 20 %
<b>Waveform into 1 k<math>\Omega</math></b>	5 $\pm$ 1.5 ns / 50 ns (-15/+100 ns)

<b>Spike frequency</b>	1 kHz - 1 MHz
<b>Maximum spikes / second</b>	8000 @ 1 kV
<b>Burst duration</b>	0.01 ms - 30 ms, continuous up to 8 kHz
<b>Burst repetition</b>	1 - 1000 ms
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 359°, step 1°
<b>Ramps</b>	voltage, spike frequency, burst duration
<b>Optional accessories</b>	<a href="#">CDNs</a> , <a href="#">Accessories</a>

### **IMU-MGE module: EXT-IMU3000 F7, EFT / Burst extension 7.1 kV**

<b>Standard</b>	IEC 61000-4-4 latest edition
<b>Output impedance</b>	50 Ω
<b>Voltage OC</b>	0.2 kV – 7.1 kV ± 10 %
<b>Voltage into 50 Ω</b>	0.1 kV – 3.5 kV ± 10 %
<b>Waveform into 50 Ω</b>	5 ± 1.5 ns / 50 ± 15 ns
<b>Voltage into 1 kΩ</b>	0.191 kV – 6.75 kV ± 20 %
<b>Waveform into 1 kΩ</b>	5 ± 1.5 ns / 50 ns (-15/+100 ns)
<b>Spike frequency</b>	1 kHz - 1 MHz
<b>Maximum spikes / second</b>	8000 @ 1 kV
<b>Burst duration</b>	0.01 ms - 30 ms, continuous up to 8 kHz
<b>Burst repetition</b>	1 - 1000 ms
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 359°, step 1°
<b>Ramps</b>	voltage, spike frequency, burst duration
<b>Optional accessories</b>	<a href="#">CDNs</a> , <a href="#">Accessories</a>

### **IMU-MGE module: EXT-IMU3000 F8, EFT / Burst extension 8kV**

<b>Standard</b>	IEC 61000-4-4, latest edition
<b>Output impedance</b>	50 Ω
<b>Voltage OC</b>	0.2 kV – 8.0 kV ± 10 %
<b>Voltage into 50 Ω</b>	0.1 kV – 4 kV ± 10 %
<b>Waveform into 50 Ω</b>	5 ± 1.5 ns / 50 ± 15 ns
<b>Voltage into 1 kΩ</b>	0.191 kV – 7.61 kV ± 20 %
<b>Waveform into 1 kΩ</b>	5 ± 1.5 ns / 50 ns (-15/+100 ns)
<b>Spike frequency</b>	1 kHz – 1 MHz
<b>Maximum spikes / second</b>	8000 @ 1 kV
<b>Burst duration</b>	0.01 ms - 30 ms, continuous up to 8 kHz
<b>Burst repetition</b>	1 - 1000 ms
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 359°, step 1°
<b>Ramps</b>	voltage, spike frequency, burst duration
<b>Optional accessories</b>	<a href="#">CDNs</a> , <a href="#">Accessories</a>

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

Standard	IEC 61000-4-5 latest edition
Output impedance	2 $\Omega$
Voltage OC	0.25 kV - 6.6 kV $\pm$ 10 %
Voltage waveform	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
Current SC	0.125 kA - 3.3 kA $\pm$ 10 %
Current waveform	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
Pulse repetition	up to 1 / s @ 0.6 kV, 1 / 10 s @ 6.6 kV
Polarity	positive, negative, alternating
Synchronization	0 - 359°, step 1°
Ramps	voltage, synchronisation angle
Magnetic pulse test	IEC 61000-4-9, see MF1000-x coils
Optional accessories	CDNs, CDNs for I/O Lines, Accessories

### IMU-MGE module: EXT-IMU3000 S8, CWG / Surge extension 8 kV

Standard	IEC 61000-4-5, UL 1449, latest edition
Output impedance	2 $\Omega$
Voltage OC	0.25 kV - 8 kV $\pm$ 10 %
Voltage waveform	1.2 $\mu$ s $\pm$ 30 % / 50 $\mu$ s $\pm$ 20 %
Current SC	0.125 kA - 4 kA $\pm$ 10 %
Current waveform	8 $\mu$ s $\pm$ 20 % / 20 $\mu$ s $\pm$ 20 %
Pulse repetition	up to 1 / s @ 0.6 kV, 1 / 12 s @ 8 kV
Polarity	positive, negative, alternating
Synchronization	0 - 359°, step 1°
Ramps	voltage, synchronisation angle
Magnetic pulse test	IEC 61000-4-9, see MF1000-x coils
Optional accessories	CDNs, CDNs for I/O Lines, Accessories

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

Standard	IEC 61000-4-5 latest edition
Output impedance	15 $\Omega$ , 40 $\Omega$
Voltage OC	0.25 kV - 6.6 kV $\pm$ 10 %
Voltage waveform	10 $\mu$ s $\pm$ 30 % / 700 $\mu$ s $\pm$ 20 %
Current SC into 40 $\Omega$	6.25 A - 165 A $\pm$ 10 %
Current waveform	5 $\mu$ s $\pm$ 20 % / 320 $\mu$ s $\pm$ 20 %
Pulse repetition	up to 1 / s @ 0.3 kV, 1 / 20 s @ 6.6 kV
Polarity	positive, negative, alternating
Ramps	voltage
Optional accessories	CDNs for I/O Lines, Accessories

### IMU-MGE module: EXT-IMU3000 T8, Telecom Surge extension 8 kV

Standard	IEC 61000-4-5 latest edition
Output impedance	15 $\Omega$ , 40 $\Omega$
Voltage OC	0.25 kV - 8 kV $\pm$ 10 %
Voltage waveform	10 $\mu$ s $\pm$ 30 % / 700 $\mu$ s $\pm$ 20 %

<b>Current SC into 40 Ω</b>	6.25 A – 200 A ± 10 %
<b>Current waveform</b>	5 μs ± 20 % / 320 μs ± 20 %
<b>Pulse repetition</b>	up to 1 / s @ 0.3 kV, 1 / 24 s @ 8 kV
<b>Polarity</b>	positive, negative, alternating
<b>Ramps</b>	voltage
<b>Optional accessories</b>	<a href="#">CDNs for I/O Lines, Accessories</a>

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

<b>Standard</b>	IEC 61000-4-11 latest edition
<b>EUT AC power</b>	0 V – 300V @ 50 / 60 Hz, max. 16 A
<b>EUT frequency with variac</b>	48 Hz – 60 Hz
<b>Switch time into 100 Ω</b>	1 μs – 5 μs
<b>Interruption time</b>	50 μs – 30 s
<b>Inrush current</b>	> 500 A peak
<b>Dips internal variac</b>	voltage 0 – 110 %, max. 5 A
<b>Dips extern. variac</b>	voltage 0 – 110 %, max. 16 A
<b>EUT turn ON/OFF phase</b>	selectable, 0° – 359°
<b>Variation mode</b>	adjust, abrupt
<b>Variation internal variac</b>	voltage 0 – 100 %, max. 5A
<b>Variation external variac</b>	voltage 0 – 100 %, max 16A
<b>Interruption &lt; one period</b>	input as phase angle
<b>Interruption &gt; one period</b>	input in ms
<b>Ramps</b>	voltage, synchronisation angle, time
<b>Requires</b>	<a href="#">EXT-IMU V</a> , <a href="#">SRC16-1P</a> or <a href="#">VAR-EXT1000</a> for AC dips
<b>Optional accessories</b>	<a href="#">Accessories</a>

<b>Standard</b>	IEC 61000-4-29 latest edition
<b>EUT DC power</b>	24 – 300 V, 0 – 16 A @ 300V
<b>Switch time into 100 Ω</b>	1 μs – 50 μs
<b>Interruption time</b>	0.1 ms – 60000 ms
<b>Requires</b>	1 x <a href="#">PS3</a> for DC interrupt., 2 x <a href="#">PS3</a> for DC dips

### IMU-MGE module: EXT-IMU V, Variations extension

<b>Standard</b>	IEC 61000-4-11 latest edition
<b>Construction</b>	internal variac
<b>Power input AC</b>	20 – 250 V, 5 A, 50/60 Hz
<b>Power output dips</b>	max. 275 V (110 %), max. 5 A continuous
<b>Power output variations</b>	max. 250 V (100 %), max. 5 A continuous
<b>Current capability dips</b>	10 A for 5 sec., 16 A for 300 ms
<b>Variation mode</b>	adjust, abrupt
<b>Voltage slew rate</b>	< 1.2 s from 0 to 100 %
<b>Switching time abrupt</b>	1 – 5 μs
<b>Ramp transition time</b>	25 – 999 periods
<b>Magnetic field test</b>	IEC 61000-4-8, see <a href="#">MF1000-x</a> coils

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

Standard	IEC 61000-4-12 latest edition
Output impedance	12 $\Omega$ , 30 $\Omega$
Voltage OC	0.25 kV - 6.6 kV $\pm$ 10 %, decay as in IEC, ANSI
Voltage rise time/ osc. freq.	0.5 $\mu$ s $\pm$ 30 % / 100 kHz $\pm$ 10 %
Current SC into 12 $\Omega$	20.833 A - 550 A $\pm$ 10 %
Current SC into 30 $\Omega$	8.3 A - 220 A $\pm$ 10 %
Current rise time	0.2 - 1 $\mu$ s
Pulse repetition	up to 1 / s @ 1 kV, 1 / s @ 6.6 kV
Polarity	positive, negative, alternating
Synchronization	0 - 359°, step 1°
Ramps	voltage, synchronisation angle
Optional accessories	CDNs, CDNs for I/O Lines, Accessories

### IMU-MGE module: EXT-IMU3000 R8, 100 kHz Ring wave extension 8 kV

Standard	IEC 61000-4-12 latest edition
Output impedance	12 $\Omega$ , 30 $\Omega$
Voltage OC	0.25 kV - 8 kV $\pm$ 10 %, decay as in IEC, ANSI
Voltage rise time/ osc. freq.	0.5 $\mu$ s $\pm$ 30 % / 100 kHz $\pm$ 10 %
Current SC into 12 $\Omega$	20.83 A - 667 A $\pm$ 10 %
Current SC into 30 $\Omega$	8.3 A - 267 A $\pm$ 10 %
Current rise time	0.2 - 1 $\mu$ s
Pulse repetition	up to 1 / s @ 1 kV, 1 / s @ 8 kV
Polarity	positive, negative, alternating
Synchronization	0 - 359°, step 1°
Ramps	voltage, synchronisation angle
Optional accessories	CDNs, CDNs for I/O Lines, Accessories

### IMU-MGE 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 $\Omega$ $\pm$ 10 %
Sync. turn on/off for AC	0° $\pm$ 5°
DC switching time	1 - 5 $\mu$ s
Residual ripple DC	< 5%
THD 15 Hz - 150 kHz	< 1%
THD power frequency	< 10%
Optional accessories	CNs, CNs for I/O Lines, Accessories

### IMU-MGE module: IMU SLAVE SMART external module

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

## POWER, WEIGHT, DIMENSIONS, CLIMATIC CONDITIONS

### IMU-MGE mainframe

<b>Operating voltage</b>	100 – 240 V (50/60 Hz) ± 10 %
<b>Power consumption</b>	ON < 150 VA, standby < 15 VA
<b>Weight</b>	30 kg (weight of modules not included)
<b>W x d x h</b>	600 x 450 x 370 mm
<b>Version</b>	19" unit, 8 UH
<b>Temperature range</b>	10 – 35 °C
<b>Humidity</b>	< 80 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Included articles</b>	
<b>Power cord</b>	with country plug
<b>Supply connection</b>	3 cables x 2 m, banana plugs
<b>User manual</b>	digital format (PDF)
<b>Calibration certificate</b>	factory calibration
<b>Ethernet cable</b>	1 piece
<b>USB stick</b>	1 piece
<b>CDN burst cal. adapter</b>	1 piece

# DOW-CG1

## DOW-CG1 Mainframe

<b>Built-in CDN</b>	three phase CDN integrated
<b>EUT voltage AC</b>	max. 3 x 690 V L-L (400 V L-N), 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 32 A
<b>EUT protection AC</b>	over-current automatic prot., Type C charact.
<b>EUT power DC</b>	max. 500 V, 32 A L-L or L-PE
<b>EUT power switch</b>	ON / OFF switch on the touch screen
<b>Internal CDN freq. range</b>	DC, 50 Hz, 60 Hz
<b>Power freq. synchr.</b>	50 / 60 Hz for both slow and fast
<b>Coupling slow DOW</b>	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
<b>Coupling fast DOW</b>	L1-PE, L2-PE, L3-PE, N-PE, L1+N to PE, L1+L2+L3+N to PE



## DOW-CG1 Control Features

<b>Operating system</b>	EPOS proprietary firmware
<b>Languages</b>	8 menu languages, selectable
<b>User interface</b>	7" capacitive touch display
<b>Connectivity</b>	gigabit ethernet, USB, RS485
<b>EUT power monitor</b>	supply voltage, current and freq. on screen
<b>0.5 J surge monitoring</b>	peak voltage on screen, waveform available at BNC output
<b>Surge voltage waveform</b>	monitoring BNC output connector max. 15 V
<b>Trigger out</b>	BNC connector, max. 6 V
<b>Trigger in</b>	auto, manual or via programmable BNC
<b>Programmable connectors</b>	5 BNC connectors (inputs/outputs) as follows
<b>Programmable input functions</b>	Trigger Input, Start Test, Stop Test, EUT Fail, EUT Mark, Emergency Stop
<b>Programmable input max. voltage</b>	low range: 0 – 1.5 V, high range: 2.3 – 24 V
<b>Programmable output functions</b>	Running State, Safety Circuit State
<b>Programmable output max. U, I</b>	max. 24 V, max. 300 mA
<b>Impulse polarity</b>	positive, negative, alternating
<b>Automatic ramps</b>	test level, coupling path
<b>EUT overcurrent protection</b>	automatic programmable fuse up to 32 A/ph.
<b>Safety features (standard)</b>	Emergency stop button on front panel red/yellow as per IEC 60947-5-5, IEC 60204-1, ISO 13850, Safety circuit
<b>Safety accessories (optional)</b>	<a href="#">WARNING LAMP</a> (24 V, max. 2.4 W), <a href="#">TC-ST</a> test cabinet Remote <a href="#">EMERGENCY STOP</a> button

## DOW-CG1 module: DOW-CG1 S Slow damped oscillatory wave 5 kV

<b>Standards</b>	IEC 61000-4-18, ANSI C37.90, other
	IEC 61000-4-12:1995, IEC60255-26, latest editions
<b>Oscillation frequencies</b>	100 kHz, 1 MHz $\pm$ 10 %
<b>Voltage OC direct out</b>	0.2 kV – 5 kV $\pm$ 10 %
<b>Voltage OC CDN out</b>	0.2 kV – 4.4 kV $\pm$ 10 %
<b>Current SC direct out</b>	1 A – 25 A $\pm$ 20 %
<b>Current SC CDN out</b>	1 A – 22 A $\pm$ 20 %
<b>Output impedance</b>	200 $\Omega$
<b>Rise time OC</b>	75 ns $\pm$ 20 %
<b>Decay voltage waveform</b>	Pk5 > $\frac{1}{2}$ · Pk1, Pk10 < $\frac{1}{2}$ · Pk1
<b>Pulse repetition @ 100 kHz</b>	max. 50 / s
<b>Pulse repetition @ 1 MHz</b>	max. 500 / s
<b>Burst duration</b>	1 ms – 20 s @ 100 kHz, @ 1 MHz
<b>Burst repetition</b>	100 ms – 200 s @ 100 kHz, @ 1 MHz
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 359° $\pm$ 10°, 1° step
<b>Ramp</b>	test voltage
<b>Optional accessories</b>	<a href="#">CDNs for I/O Lines, Accessories</a>
<b>Standard</b>	IEC 61000-4-10
<b>Magnetic pulse generator</b>	as per IEC 61000-4 18 Slow DOW
<b>Magnetic field 100 kHz</b>	5 – 220 A/m with MF1000-1 $\pm$ 20 %
	5 – 160 A/m with MF1000-2 $\pm$ 20 %
<b>Magnetic field 1 MHz</b>	2.5 – 110 A/m with MF1000-1 $\pm$ 20 %
	2.5 – 60 A/m with MF1000-2 $\pm$ 20 %
<b>Requires</b>	<a href="#">MF1000-1</a> or <a href="#">MF1000-2</a> depend. on EUT size

### DOW-CG1 module: DOW-CG1 F Fast damped oscillatory wave 4.4 kV

<b>Standard</b>	IEC 61000-4-18 latest edition
<b>Oscillation frequencies</b>	3 MHz, 10 MHz, 30 MHz $\pm$ 10 %
<b>Voltage OC direct and CDN out</b>	0.4 kV – 4.4 kV
<b>Voltage calibrated</b>	0.5 kV – 4 kV $\pm$ 10 %
<b>Voltage waveform decay</b>	Pk5 > 1/2 · Pk1, Pk10 < 1/2 · Pk1
<b>Output impedance</b>	50 $\Omega$
<b>Voltage rise time</b>	5 ns $\pm$ 30 %
<b>Pulse repetition</b>	max. 6666 / s
<b>Burst duration</b>	1 ms – 20 s
<b>Burst repetition</b>	10 ms – 200 s
<b>Current SC direct &amp; CDN</b>	8 A – 88 A @ all frequencies
<b>Current SC calibrated</b>	10 A – 80 A $\pm$ 20 %
<b>Current rise time</b>	< 330 ns @ 3 MHz < 100 ns @ 10 MHz < 33 ns @ 30 MHz
<b>Current waveform decay</b>	Pk5 > 1/4 · Pk1, Pk10 < 1/4 · Pk1
<b>Polarity</b>	positive, negative, alternating
<b>Synchronization</b>	0 – 359° $\pm$ 10°, 1° step
<b>Ramp</b>	test voltage
<b>Optional accessories</b>	CN-EFT1000, VERI01 OSI, VERI1K EFT, VERI50-EFT

### DOW-CG1 module: DOW-CG1 I Insulation test 500 $\Omega$ / 0.5 J up to 8 kV

<b>Standards</b>	IEC 61180, IEC 62052-11, IEC 60255-27, IEC 60834-1/2, EN 50470-1
<b>Voltage test levels</b>	0.5 kV, 1 kV, 1.5 kV, 2 kV, 2.5 kV, 3 kV, 4 kV, 5 kV, 6 kV, 8 kV + 0 % / - 10 %
<b>Output impedance</b>	500 $\Omega$ $\pm$ 10 %
<b>Impulse rise time</b>	1.2 $\mu$ s $\pm$ 30 %
<b>Impulse duration</b>	50 $\mu$ s $\pm$ 20 %
<b>Pulse energy at test levels</b>	0.5 J $\pm$ 10 %
<b>Repetition rate</b>	1 s – 655 s
<b>Included articles</b>	cables and test clips

## POWER, WEIGHT, DIMENSIONS, CLIMATIC CONDITIONS

### DOW-CG1 mainframe

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

# CDNs FOR BURST, SURGE, RING WAVE ON POWER LINES

max. 4/6 kV surge	max. 7.6 kV surge / 8kV EFT	8 kV manual burst CDN
CDN-M-6-32	CDN-M-8-32	CDN-F-125
OPT-M-6-32 1000V DC	OPT-M-8-32 1000V DC	
OPT-M-6-32 RWG	OPT-M-8-32 RWG	
PROT32-AC690	PROT32-AC690	
PROT32-DC500	PROT32-DC500	
PROT32-DC1000	PROT32-DC1000	
DC-DC32	DC-DC32	
CN-R40C05	CN-R40C05 8	
CDN-A-6-32	CDN-A-8-32	
OPT-A-6-32 1000V DC	OPT-A-8-32 1000V DC	
OPT-A-6-32 1500V DC	OPT-A-8-32 1500V DC	
OPT-A-6-32 RWG	OPT-A-8-32 RWG	
PROT32-AC690	PROT32-AC690	
PROT32-DC500	PROT32-DC500	
PROT32-DC1000	PROT32-DC1000	
PROT32-DC1500	PROT32-DC1500	
OPT-A-6-32 ANSI	OPT-A-8-32 ANSI	
DC-DC32	DC-DC32	
CN-R40C05	CN-R40C05 8	
CDN-A-6-63	CDN-A-8-63	
OPT-A-6-63 1000V DC	OPT-A-8-63 1000V DC	
OPT-A-6-63 1500V DC	OPT-A-8-63 1500V DC	
OPT-A-6-63 RWG	OPT-A-8-63 RWG	
PROT63-AC690	PROT63-AC690	
PROT63-DC500	PROT63-DC500	
PROT63-DC1000	PROT63-DC1000	
PROT63-DC1500	PROT63-DC1500	
OPT-A-6-63 ANSI	OPT-A-8-63 ANSI	
OPT-A-6-63 FULL RANGE	OPT-A-8-63 FULL RANGE	
DC-DC63	DC-DC63	
CDN-A-6-125	CDN-A-8-125	
OPT-A-6-125 1000V DC	OPT-A-8-125 1000V DC	
OPT-A-6-125 1500V DC	OPT-A-8-125 1500V DC	
OPT-A-6-125 RWG	OPT-A-8-125 RWG	
PROT125-AC690	PROT125-AC690	
PROT125-DC500	PROT125-DC500	
PROT125-DC1000	PROT125-DC1000	
PROT125-DC1500	PROT125-DC1500	
OPT-A-6-125 ANSI	OPT-A-8-125 ANSI	
OPT-A-6-125 FULL RANGE	OPT-A-8-125 FULL RANGE	
DC-DC125	DC-DC125	
CDN-A-6-200	CDN-A-8-200	
OPT-A-6-200 1000V DC	OPT-A-8-200 1000V DC	
OPT-A-6-200 1500V DC	OPT-A-8-200 1500V DC	
OPT-A-6-200 RWG	OPT-A-8-200 RWG	
PROT200-AC690	PROT200-AC690	
PROT200-DC500	PROT200-DC500	
OPT-A-6-200 ANSI	OPT-A-8-200 ANSI	
OPT-A-6-200 FULL RANGE	OPT-A-8-200 FULL RANGE	
DC-DC200	DC-DC200	

Latest technology CDNs

## MANY OPTIONS ONE CHOICE

Solutions for professionals

- › Unique capabilities
- › Excellent decoupling
- › Highest EUT voltage supported
- › Truly flexible, subsequently upgradable
- › EUT and supply connectors included
- › Fully compliant with a single CDN
- › Ready for railway testing
- › Ready for EV charging station testing
- › Multicolour coupling path indication
- › Higher EUT current CDNs on demand

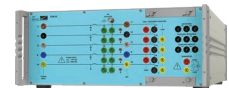


# 4/6 KV CDNS

## MANUAL CDNS AND OPTIONS (4/6 KV)

### CDN-M-6-32

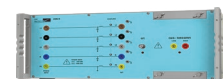
<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, other
<b>Can be upgraded for</b>	IEC61000-4-12 (for ANSI see automatic version)
<b>Type</b>	3-ph., manual
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 32A (covers 0 – 32 A as per standard)
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 32A (covers 0 – 32 A as per standard)
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 6 kV
<b>Test level surge (as per IEC)</b>	max. 6 kV
<b>Surge waveform</b>	as required for current EUT range 0 – 32A
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" unit, basic 4 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	10 connectors (power, EUT), 5 EUT cables adapter for burst calibration
<b>Generators</b>	<a href="#">IMU-MGS</a> , <a href="#">IMU-MGE</a>
<b>Options</b>	to be ordered additionally when required
<b>OPT-M-6-32 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-M-6-32 RWG</b>	extends capability of CDN for Ring Wave test up to 6 kV as per IEC61000-4-12
<b>PROT32-AC690</b>	3-ph. AC 690V/32A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT32-DC500</b>	DC 500V/32A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT32-DC1000 (requires voltage option)</b>	DC 1000V/32A automatic overcurrent circuit breaker (for tests on DC lines)
	all overcurrent protections can be ordered only one protection to be used at a time
<b>DC-DC32</b>	DC 1500V/32A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1
<b>CN-R40C05</b>	Coupling module for railway apparatus, 6 kV, according to EN50121 (to be used with a CDN)



## AUTOMATIC CDNS AND OPTIONS (4/6 KV)

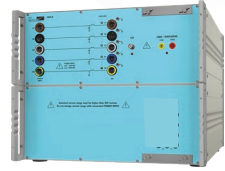
### CDN-A-6-32

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, other, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 32A (covers 0 – 32 A as per standard)
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 32A (covers 0 – 32 A as per standard)
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 6 kV
<b>Test level surge (as per IEC)</b>	max. 6 kV
<b>Surge waveform</b>	as required for EUT current range 0 – 32A
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" unit, basic 4 UH (with options max. 8 UH)
<b>Weight</b>	depending on options
<b>Included in delivery</b>	EUT connection cables (5 pieces), additionally 10 connectors (power, EUT), 5 EUT cables adapter for burst calibration
<b>Generators</b>	<a href="#">IMU-MGS</a> , <a href="#">IMU-MGE</a>
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-6-32 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-6-32 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-6-32 RWG</b>	extends capability of CDN for Ring Wave test up to 6 kV as per IEC61000-4-12
<b>PROT32-AC690</b>	3-ph. AC 690V/32A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT32-DC500</b>	DC 500V/32A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT32-DC1000</b> <b>(requires voltage option)</b>	DC 1000V/32A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT32-DC1500</b> <b>(requires voltage option)</b>	DC 1500V/32A automatic overcurrent circuit breaker (for tests on DC lines)
	all overcurrent protections can be ordered only one protection to be used at a time
<b>OPT-A-6-32 ANSI</b> <b>(for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>DC-DC32</b>	DC 1500V/32A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1
<b>CN-R40C05</b>	Coupling module for railway apparatus, 6 kV, according to EN50121 (to be used with a CDN)



## CDN-A-6-63

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, other, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 63A
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 63A
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 6 kV
<b>Test level surge (as per IEC)</b>	max. 6 kV
<b>Surge waveform</b>	as required for EUT current range 32 – 63A see FULL RANGE OPTION below
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" unit, 8 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	connectors for EUT and supply (10 pcs.) adapter for burst calibration
<b>Generators</b>	<a href="#">IMU-MGS</a> , <a href="#">IMU-MGE</a>
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-6-63 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-6-63 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-6-63 RWG</b>	extends capability of CDN for Ring Wave test up to 6 kV as per IEC61000-4-12
<b>PROT63-AC690</b>	3-ph. AC 690V/63A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT63-DC500</b>	DC 500V/63A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT63-DC1000 (requires voltage option)</b>	DC 1000V/63A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT63-DC1500 (requires voltage option)</b>	DC 1500V/63A automatic overcurrent circuit breaker (for tests on DC lines)
	all overcurrent protections can be ordered only one protection to be used at a time
<b>OPT-A-6-63 ANSI (for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>OPT-A-6-63 FULL RANGE</b>	ensures that surge waveform can be applied also when testing EUTs in current range 0-32A/phase as per IEC61000-4-5 ed. 3
<b>DC-DC63</b>	DC 1500V/63A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1



## CDN-A-6-125

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 125A
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 125A
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 6 kV
<b>Test level surge (as per IEC)</b>	max. 6 kV
<b>Surge waveform</b>	as required for EUT current range 63 – 125A see FULL RANGE OPTION below
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" rack with wheels, 18 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	connectors for EUT and supply (10 pcs.) adapter for burst calibration
<b>Generators</b>	<a href="#">IMU-MGS</a> , <a href="#">IMU-MGE</a>
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-6-125 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-6-125 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-6-125 RWG</b>	extends capability of CDN for Ring Wave test up to 6 kV as per IEC61000-4-12
<b>PROT125-AC690</b>	3-ph. AC 690V/125A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT125-DC500</b>	DC 500V/125A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT125-DC1000 (requires voltage option)</b>	DC 1000V/125A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT125-DC1500 (requires voltage option)</b>	DC 1500V/125A automatic overcurrent circuit breaker (for tests on DC lines)
	all overcurrent protections can be ordered only one protection to be used at a time
<b>OPT-A-6-125 ANSI (for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>OPT-A-6-125 FULL RANGE</b>	ensures that surge waveform can be applied also when testing EUTs in current range 0-63A/phase as per IEC61000-4-5 ed. 3
<b>DC-DC125</b>	DC 1500V/125A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1



## CDN-A-6-200

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 200A
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 200A
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 6 kV
<b>Test level surge (as per IEC)</b>	max. 6 kV
<b>Surge waveform</b>	as required for EUT current range 125 – 200A see FULL RANGE OPTION below
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" rack with wheels, 18 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	connectors for EUT and supply (10 pcs.) adapter for burst calibration
<b>Generators</b>	IMU-MGS, IMU-MGE
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-6-200 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-6-200 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-6-200 RWG</b>	extends capability of CDN for Ring Wave test up to 6 kV as per IEC61000-4-12
<b>PROT200-AC690</b>	3-ph. AC 690V/200A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT200-DC500</b>	DC 500V/200A automatic overcurrent circuit breaker (for tests on DC lines)
<b>OPT-A-6-200 ANSI (for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>OPT-A-6-200 FULL RANGE</b>	ensures that surge waveform can be applied also when testing EUTs in current range 0-125A/phase as per IEC61000-4-5 ed. 3
<b>DC-DC200</b>	DC 1500V/200A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1

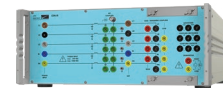


# 8KV EFT / 7.6 KV SURGE CDNS

## MANUAL CDNS AND OPTIONS 8KV EFT / 7.6 KV SURGE

### CDN-M-8-32

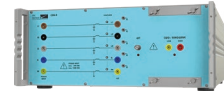
<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, other, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12 (for ANSI see automatic version)
<b>Type</b>	3-ph., manual
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 32A (covers 0 – 32 A as per standard)
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 32A (covers 0 – 32 A as per standard)
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 8 kV with IMU-MGE
<b>Test level surge (as per IEC)</b>	max. 8 kV supported (with IMU-MGE max. 7.6 kV)
<b>Surge waveform</b>	as required for current EUT range 0 – 32A
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" unit, basic 4 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	10 connectors (power, EUT), 5 EUT cables adapter for burst calibration
<b>Generators</b>	<a href="#">IMU-MGE</a>
<b>Options</b>	to be ordered additionally when required
<b>OPT-M-8-32 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-M-8-32 RWG</b>	extends capability of CDN for Ring Wave test up to 7.6 kV (with IMU-MGE) as per IEC61000-4-12
<b>PROT32-AC690</b>	3-ph. AC 690V/32A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT32-DC500</b>	DC 500V/32A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT32-DC1000 (requires voltage option)</b>	DC 1000V/32A automatic overcurrent circuit breaker (for tests on DC lines)  all overcurrent protections can be ordered only one protection to be used at a time
<b>DC-DC32</b>	DC 1500V/32A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1
<b>CN-R40C05 8</b>	Coupling module for railway apparatus, 8 kV, according to EN50121 (to be used with a CDN)



## AUTOMATIC CDNS AND OPTIONS 8KV EFT / 7.6 KV SURGE

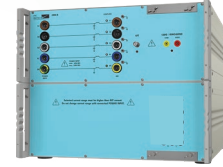
### CDN-A-8-32

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 32A (covers 0 – 32 A as per standard)
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 32A (covers 0 – 32 A as per standard)
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst</b>	max. 8 kV with IMU-MGE
<b>Test level surge</b>	max. 8 kV supported (with IMU-MGE max. 7.6 kV)
<b>Surge waveform</b>	as required for EUT current range 0 – 32A
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" unit, basic 4 UH (with options max. 8 UH)
<b>Weight</b>	depending on options
<b>Included in delivery</b>	10 connectors (power, EUT), 5 EUT cables adapter for burst calibration
<b>Generators</b>	<a href="#">IMU-MGE</a>
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-8-32 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-8-32 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-8-32 RWG</b>	extends capability of CDN for Ring Wave test up to 7.6 kV (with IMU-MGE) as per IEC61000-4-12
<b>PROT32-AC690</b>	3-ph. AC 690V/32A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT32-DC500</b>	DC 500V/32A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT32-DC1000</b> <b>(requires voltage option)</b>	DC 1000V/32A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT32-DC1500</b> <b>(requires voltage option)</b>	DC 1500V/32A automatic overcurrent circuit breaker (for tests on DC lines)
	all overcurrent protections can be ordered only one protection to be used at a time
<b>OPT-A-8-32 ANSI</b> <b>(for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>DC-DC32</b>	DC 1500V/32A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1
<b>CN-R40C05 8</b>	Coupling module for railway apparatus, 8 kV, according to EN50121 (to be used with a CDN)



## CDN-A-8-63

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 63A
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 63A
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 8 kV with IMU-MGE
<b>Test level surge (as per IEC)</b>	max. 8 kV supported (with IMU-MGE max. 7.6 kV)
<b>Surge waveform</b>	as required for EUT current range 32 – 63A see FULL RANGE OPTION below
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" unit, 8 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	connectors for EUT and supply (10 pcs.) adapter for burst calibration
<b>Generators</b>	IMU-MGE
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-8-63 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-8-63 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-8-63 RWG</b>	extends capability of CDN for Ring Wave test up to 7.6 kV (with IMU-MGE) as per IEC61000-4-12
<b>PROT63-AC690</b>	3-ph. AC 690V/63A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT63-DC500</b>	DC 500V/63A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT63-DC1000</b> <b>(requires voltage option)</b>	DC 1000V/63A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT63-DC1500</b> <b>(requires voltage option)</b>	DC 1500V/63A automatic overcurrent circuit breaker (for tests on DC lines)
	all overcurrent protections can be ordered only one protection to be used at a time
<b>OPT-A-8-63 ANSI</b> <b>(for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>OPT-A-8-63 FULL RANGE</b>	ensures that surge waveform can be applied also when testing EUTs in current range 0-32A/phase as per IEC61000-4-5 ed. 3
<b>DC-DC63</b>	DC 1500V/63A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1



## CDN-A-8-125

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 125A
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 125A
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 8 kV with IMU-MGE
<b>Test level surge (as per IEC)</b>	max. 8 kV supported (with IMU-MGE max. 7.6 kV)
<b>Surge waveform</b>	as required for EUT current range 63 – 125A see FULL RANGE OPTION below
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" rack with wheels, 18 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	connectors for EUT and supply (10 pcs.) adapter for burst calibration
<b>Generators</b>	IMU-MGE
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-8-125 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-8-125 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-8-125 RWG</b>	extends capability of CDN for Ring Wave test up to 7.6 kV (with IMU-MGE) as per IEC61000-4-12
<b>PROT125-AC690</b>	3-ph. AC 690V/125A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT125-DC500</b>	DC 500V/125A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT125-DC1000 (requires voltage option)</b>	DC 1000V/125A automatic overcurrent circuit breaker (for tests on DC lines)
<b>PROT125-DC1500 (requires voltage option)</b>	DC 1500V/125A automatic overcurrent circuit breaker (for tests on DC lines)
	all overcurrent protections can be ordered only one protection to be used at a time
<b>OPT-A-8-125 ANSI (for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>OPT-A-8-125 FULL RANGE</b>	ensures that surge waveform can be applied also when testing EUTs in current range 0-63A/phase as per IEC61000-4-5 ed. 3
<b>DC-DC125</b>	DC 1500V/125A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1



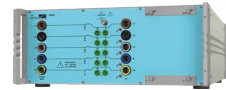
## CDN-A-8-200

<b>Standards</b>	IEC61000-4-4, IEC61000-4-5, latest editions
<b>Can be upgraded for</b>	IEC61000-4-12, ANSI C62.45 (see options)
<b>Type</b>	3-ph., automatic
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 200A
<b>EUT voltage DC</b>	max. 500V (can be upgraded, see options)
<b>EUT current DC</b>	max. 200A
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 8 kV with IMU-MGE
<b>Test level surge (as per IEC)</b>	max. 8 kV supported (with IMU-MGE max. 7.6 kV)
<b>Surge waveform</b>	as required for EUT current range 125 – 200A see FULL RANGE OPTION below
<b>Residual voltage</b>	typically < 5 % for burst and < 12 % for surge
<b>Dimensions</b>	19" rack with wheels, 18 UH
<b>Weight</b>	depending on options
<b>Included in delivery</b>	connectors for EUT and supply (10 pcs.) adapter for burst calibration
<b>Generators</b>	IMU-MGE
<b>Options</b>	to be ordered additionally when required
<b>OPT-A-8-200 1000V DC</b>	extends DC voltage capability of CDN from 500V DC to 1000V DC
<b>OPT-A-8-200 1500V DC</b>	extends DC voltage capability of CDN from 500V DC to 1500V DC
<b>OPT-A-8-200 RWG</b>	extends capability of CDN for Ring Wave test up to 7.6 kV (with IMU-MGE) as per IEC61000-4-12
<b>PROT200-AC690</b>	3-ph. AC 690V/200A automatic overcurrent circuit breaker (for tests on AC lines)
<b>PROT200-DC500</b>	DC 500V/200A automatic overcurrent circuit breaker (for tests on DC lines)
<b>OPT-A-8-200 ANSI (for Surge &amp; if selected Ring)</b>	extends capability of CDN to perform additional couplings as per ANSI C62.45
<b>OPT-A-8-200 FULL RANGE</b>	ensures that surge waveform can be applied also when testing EUTs in current range 0-125A/phase as per IEC61000-4-5 ed. 3
<b>DC-DC200</b>	DC 1500V/200A diode-resistor network as per IEC61000-4-5 ed. 3, Amendment 1



## CDN-F-125

<b>Standard</b>	IEC61000-4-4 latest edition
<b>Type</b>	3-ph., manual
<b>Coupling paths</b>	L1, L2, L3, N, PE, all → ground, any combination
<b>EUT voltage AC</b>	max. 3 x 690V L-L, 50 / 60 Hz
<b>EUT current AC</b>	max. 3 x 125A
<b>EUT voltage DC</b>	max. 1000V
<b>EUT current DC</b>	max. 125A @ 1000 V
<b>Current flow</b>	bi-directional (source to EUT and EUT to source)
<b>Test level burst (as per IEC)</b>	max. 8 kV with IMU-MGE
<b>Residual voltage</b>	typically < 5 %
<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	14 kg.
<b>Included in delivery</b>	10 connectors (power, EUT) adapter for burst calibration
<b>Generators</b>	<a href="#">IMU-MGS</a> , <a href="#">IMU-MGE</a>

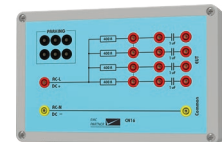


# COMMON MODE COUPLING NETWORKS AND DECOUPLING NETWORKS

Test type	CN 16	CN16 DC	DN16-1P6 EUT	DN16-1P16 EUT
AC test on AC lines	480 V	-	230 V / 6 A	230 V / 16 A
AC test on DC lines	480 V	-	-	-
DC test on AC lines	115 V(115 V test level)	250 V / 16 A	230 V / 6 A	230 V / 16 A
DC test on DC lines	115 V(115 V test level)	250 V / 16 A	-	-
Sweep test on AC lines	480 V	-	230 V / 6 A	230 V / 16 A
Sweep test on DC lines	480 V	-	-	-

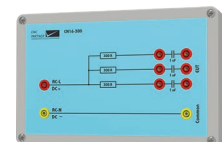
## CN16

Standard	IEC 61000-4-16 latest edition
Type	manual, for 1, 2 or 4 power lines
EUT voltage AC (see table)	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	limited only by decoupling
EUT power DC (see table)	max. 300 V (AC/RF disturbance) no current limit
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	IMU-MGS, IMU-MGE



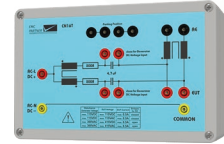
## CN16-300

Standard	IEC 61000-4-16 latest edition
Type	manual, for 3 power lines
EUT voltage AC	max. 3 x 480 V L-L (280 V L-N), 50 / 60 Hz
EUT current AC	limited only by decoupling
EUT power DC	max. 115 V (AC/RF disturbance) no current limit
Coupling paths	3 x 300 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	IMU-MGS, IMU-MGE



## CN16DC

<b>Standard</b>	IEC 61000-4-16 latest edition
<b>Type</b>	manual, for 2 power lines
<b>EUT power AC (see table)</b>	250 V, 50 / 60 Hz, 16 A
<b>EUT power DC (see table)</b>	250 V, 16 A
<b>Coupling paths</b>	2 x 200 $\Omega$
<b>Test level power tests</b>	330 V DC on AC and DC lines
<b>Dimensions</b>	28 x 19 x 11 cm
<b>Weight</b>	3 kg
<b>Requires</b>	PS3, EXT-IMU C-SHORT
<b>Optional</b>	DN16-1P6 or DN16-1P16 decoupling transformer
<b>Generators</b>	IMU-MGS, IMU-MGE

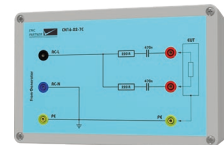


### CN16T

See section “Other CDNs for I/O Lines”

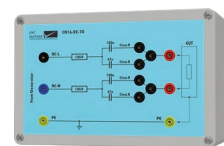
### CN16-22-7C

<b>Standard</b>	IEC60255-26 latest edition
<b>Type</b>	manual, for 2 power lines, common mode test
<b>EUT power AC</b>	415 V, 50 / 60 Hz, 16 A
<b>EUT power DC</b>	300 V, 16 A
<b>Coupling path</b>	2 x 220 $\Omega \pm 5\%$ , 0.47 $\mu\text{F} \pm 5\%$ per line
<b>Test level</b>	max. 300 V
<b>Dimensions</b>	28 x 18 x 11 cm
<b>Weight</b>	3.3 kg
<b>Requires</b>	PS3, EXT-IMU C-SHORT
<b>Generators</b>	IMU-MGS, IMU-MGE



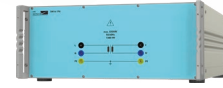
### CN16-22-7D

<b>Standard</b>	IEC60255-26 latest edition
<b>Type</b>	manual, for 2 power lines, diff. mode test
<b>EUT power AC</b>	415 V, 50 / 60 Hz, 16 A
<b>EUT power DC</b>	300 V, 16 A
<b>Coupling path 1 (class A)</b>	2 x 100 $\Omega \pm 5\%$ , 0.1 $\mu\text{F} \pm 5\%$ per line
<b>Coupling path 2 (class B)</b>	2 x 100 $\Omega \pm 5\%$ , 0.047 $\mu\text{F} \pm 5\%$ per line
<b>Test level</b>	max. 300 V
<b>Dimensions</b>	28 x 18 x 11 cm
<b>Weight</b>	3.5 kg
<b>Requires</b>	PS3, EXT-IMU C-SHORT
<b>Generators</b>	IMU-MGS, IMU-MGE



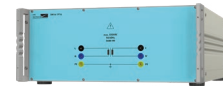
### DN16-1P6

<b>Standard</b>	IEC 61000-4-16c
<b>Type</b>	1P decoupling transformer for power lines
<b>EUT power AC (see table)</b>	230 V, 50 / 60 Hz, 6 A
<b>EUT power DC</b>	not suitable for DC applications
<b>Test level</b>	max. 330 V
<b>Insulation</b>	≥1 kV
<b>CM decoupling</b>	> 60 dB in the range 15 Hz – 150 kHz
<b>Dimensions</b>	19 " unit, 4 UH
<b>Weight</b>	30 kg
<b>Requires</b>	<a href="#">CN16</a> or <a href="#">CN16DC</a>
<b>Generators</b>	<a href="#">IMU-MGS</a> , <a href="#">IMU-MGE</a>







### DN16-1P16

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



# CDNs FOR SURGE & RING WAVE I/O (DATA) LINES

Type of lines	Line	CDN-KIT1000 ED3	CDN-DATA-4L	CDN-DATA-8L	CDN-UTP ED3	CDN-UTP8 ED3
Unsymmetrical, unshielded		Yes, max 2 lines	Yes, max 4 lines	Yes, max 8 lines	Yes, max 2 lines	Yes, max 4 lines
Symmetrical, unshielded		-	-	-	Yes, max 4 lines	Yes, max 8 lines
Unsymmetrical, shielded		No CDN required, surge and ring wave are applied on the shield directly from generator				
Symmetrical, shielded						

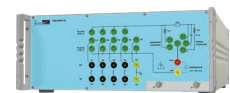
## CDN-KIT1000 ED3

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



## CDN-DATA-4L

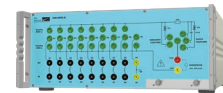
<b>Standards</b>	IEC 61000-4-5, -4-12 latest editions
<b>Application</b>	surge (fig. 9), ring wave on 4 unsym. lines
<b>EUT voltage per line</b>	max. 200 V DC or 240 V peak
<b>EUT current per line</b>	max. 4 A cont. or 5 A for 5 min.
<b>Line speed</b>	max. 100 kHz as per IEC 61000-4-5
<b>Coupling path surge 1</b>	40 Ω + 0.5 μF capacitor
<b>Coupling path surge 2</b>	40 Ω + 33 V bipolar diode
<b>Coupling path surge 3</b>	40 Ω + GDT 90 V, or any external element
<b>Coupling path ring wave 1</b>	33 V bipolar diode
<b>Coupling path ring wave 2</b>	any external element
<b>Decoupling</b>	20 mH per line, as per IEC 61000-4-5, -4-12
<b>Test level surge</b>	max. 6 kV, coupling L-L, L-PE
<b>Test level ring wave</b>	max. 6 kV, coupling L-L, L-PE (only IMU-MGE)



<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	17 kg
<b>Generators</b>	IMU-MGS, IMU-MGE, other EMCP models

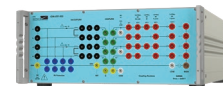
### CDN-DATA-8L

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



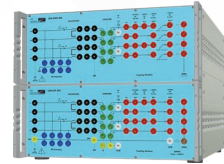
### CDN-UTP ED3

<b>Standards</b>	IEC 61000-4-5, IEC 61000-4-12 latest editions
<b>Application 1 (1.2 / 50 <math>\mu</math>s)</b>	surge (fig. 10) on up to 4 sym. lines
<b>Application 2 (1.2 / 50 <math>\mu</math>s)</b>	surge (fig. 9) on up to 2 unsym. lines
<b>Application 3 (10 / 700 <math>\mu</math>s)</b>	telecom surge (fig. A.4) on up to 4 sym. lines
<b>Application 4 (0.5 <math>\mu</math>s / 100kHz)</b>	ring wave as per fig. 8, 9 and 10
<b>EUT voltage per line</b>	max. 300 V DC or peak
<b>EUT current per line</b>	max. 1 A cont., total for all lines max. 2A
<b>EUT line(s) characteristics</b>	high speed, over 100 Mbps on 4 wires (2pairs)
<b>Example of EUT I/O lines</b>	RS485, Ethernet 4 wires, CAN bus, etc.
<b>Coupling path surge 1</b>	2 x 80 $\Omega$ for 2 lines or 4 x 160 $\Omega$ for 4 lines
<b>Coupling path surge 2</b>	1 x 40 $\Omega$ + 0.5 $\mu$ F
<b>Coupling path tel. surge 3</b>	2 x 25 $\Omega$ for 2 lines or 4 x 25 $\Omega$ for 4 lines
<b>Coupling path ring wave</b>	2 x GDT 90 V or 4 x GDT 90 V or 1 x 0.5 $\mu$ F
<b>Coupling elements</b>	2 x GDT 90 V or 4 x GDT 90 V or 1 x 0.5 $\mu$ F
<b>Decoupling</b>	up to 4 x 20 mH per line, current compensated
<b>AE protection</b>	4 x GDT 90 V or customer defined
<b>Test level surge, ring wave</b>	max. 6 kV, coupling CM and DM
<b>Test level telecom surge</b>	max. 5 kV, coupling CM (only IMU-MGE)
<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	40 kg
<b>Included</b>	Mentioned coupling elements, AE protection
<b>Optional</b>	ADAPTER BOX RJ45 (ask for details)
<b>Other relevant standards</b>	ITU-T K20, K21, K44, FCC part 68 / D
<b>Generators</b>	IMU-MGS, IMU-MGE, other EMCP models



### CDN-UTP8 ED3

<b>Standards</b>	IEC 61000-4-5, IEC 61000-4-12 latest editions
<b>Application 1 (1.2 / 50 µs)</b>	surge (fig. 10) on up to 8 sym. lines
<b>Application 2 (1.2 / 50 µs)</b>	surge (fig. 9) on up to 4 unsym. lines
<b>Application 3 ( 10 / 700 µs)</b>	telecom surge (fig. A.4) on up to 8 sym. lines
<b>Application 4 (0.5 µs /100kHz)</b>	ring wave as per fig. 8, 9 and 10
<b>EUT voltage per line</b>	max. 300 V DC or peak
<b>EUT current per line</b>	max. 1 A cont., total for all lines max. 2A
<b>EUT line(s) characteristics</b>	high speed, up to 1 Gbps
<b>Example of EUT I/O lines</b>	RS485, Ethernet 1Gbps, CAN bus, etc.
<b>Coupling path surge 1</b>	2 x 80 Ω, 4 x 160 Ω, 8 x 320 Ω
<b>Coupling path surge 2</b>	1 x 40 Ω + 0.5 µF
<b>Coupling path tel. surge 3</b>	2 x 25 Ω or 4 x 25 Ω or 8 x 25 Ω
<b>Coupling path ring wave</b>	2 or 4 or 8 x GDT 90 V or 1 x 0.5 µF
<b>Coupling elements</b>	2 or 4 or 8 x GDT 90 V or 1 x 0.5 µF
<b>Decoupling</b>	up to 8 x 20 mH per line, current compensated
<b>AE protection</b>	8 x GDT 90 V or customer defined
<b>Test level surge, ring wave</b>	max. 6 kV, coupling CM and DM
<b>Test level telecom surge</b>	max. 5 kV, coupling CM (only IMU-MGE)
<b>Dimensions</b>	19" unit, 8 UH
<b>Weight</b>	78 kg
<b>Included</b>	mentioned coupling elements, AE protection
<b>Optional</b>	ADAPTER BOX RJ45 (ask for details)
<b>Other relevant standards</b>	ITU-T K20, K21, K44, FCC part 68 / D
<b>Generators</b>	IMU-MGS, IMU-MGE, other EMCP models



### CN-R40C05

<b>Standard</b>	EN50121-4 latest edition
<b>Application</b>	surge on 2 unsymmetrical lines
<b>Test level surge</b>	max. 6 kV
<b>Low speed I/O + Railway</b>	unsymmetrical, coupling with capacitor
<b>Coupling path 1</b>	40 Ω + 0.5 µF capacitor or simply 40 Ω
<b>EUT current</b>	determined by CDN used for decoupling
<b>EUT voltage</b>	440V AC/DC
<b>Dimensions</b>	1 module
<b>Weight</b>	1 kg
<b>Requires</b>	IMU internal CDN or external CDN
<b>Generators</b>	IMU-MGS, IMU-MGE, other EMCP models

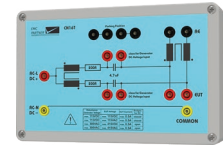
### CN-R40C05 8

<b>Standard</b>	EN50121-4 latest edition
<b>Application</b>	surge on 2 unsymmetrical lines
<b>Test level surge</b>	max. 8 kV
<b>Low speed I/O + Railway</b>	unsymmetrical, coupling with capacitor
<b>Coupling path 1</b>	40 Ω + 0.5 µF capacitor
<b>EUT current</b>	determined by CDN used for decoupling
<b>EUT voltage</b>	440V AC/DC
<b>Dimensions</b>	1 module
<b>Weight</b>	1 kg
<b>Requires</b>	IMU internal CDN or external CDN
<b>Generators</b>	IMU-MGS, IMU-MGE, other EMCP models

## OTHER CDNs FOR I/O LINES

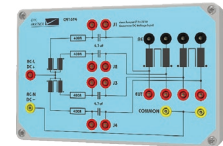
### CN16T

<b>Standard</b>	IEC 61000-4-16 latest edition
<b>Type</b>	manual, for 2 symmetrical I/O lines
<b>EUT voltage</b>	max. 250 V (AC test), max. 110 V (DC test)
<b>EUT current</b>	max. 0.5 A
<b>Coupling path</b>	2 x 200 Ω, + 4.7 μF per line
<b>Decoupling</b>	as per IEC 61000-4-16 (38 mH per line)
<b>Test level continuous</b>	35 V
<b>Test level short duration</b>	330 V (bridge open), 115 V (bridge closed)
<b>Dimensions</b>	28 x 18 x 11 cm
<b>Weight</b>	3 kg
<b>Generators</b>	IMU-MGS, IMU-MGE



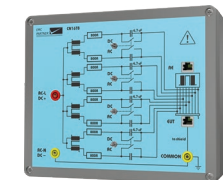
### CN16T4

<b>Standard</b>	IEC 61000-4-16 latest edition
<b>Type</b>	manual, for 4 symmetrical I/O lines
<b>EUT voltage</b>	max. 63 V (AC), max. 100 V (DC)
<b>EUT current</b>	max. 0.5 A
<b>Coupling path</b>	4 x 400 Ω, + 4.7 μF per line
<b>Decoupling</b>	as per IEC 61000-4-16 (38 mH per line)
<b>Test level continuous</b>	35 V
<b>Test level short duration</b>	330 V (bridge open), 115 V (bridge closed)
<b>Dimensions</b>	30.5 x 23 x 11 cm
<b>Weight</b>	approx 5 kg
<b>Generators</b>	IMU-MGS, IMU-MGE



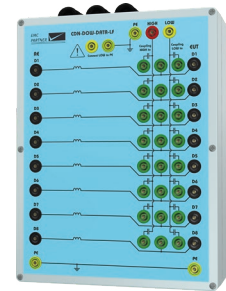
### CN16T8

<b>Standard</b>	IEC 61000-4-16 latest edition
<b>Type</b>	manual, for 8 symmetrical I/O lines
<b>EUT voltage</b>	max. 63 V (AC), max. 100 V (DC)
<b>EUT current</b>	max. 0.5 A
<b>EUT / AE connector</b>	RJ45
<b>Line speed</b>	1Gbps
<b>Coupling path</b>	8 x 800 Ω, + 4.7 μF per line
<b>Decoupling</b>	as per IEC 61000-4-16 (38 mH per line)
<b>Test level continuous</b>	35 V
<b>Test level short duration</b>	330 V (bridge open), 115 V (bridge closed)
<b>Dimensions</b>	30.5 x 23 x 11 cm
<b>Weight</b>	approx 6 kg
<b>Generators</b>	IMU-MGS, IMU-MGE



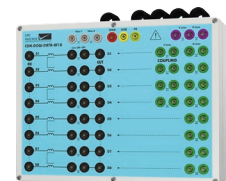
### CDN-DOW-DATA-LF

<b>Standard</b>	IEC61000-4-18, IEC60255-26, ANSI C37.90 latest editions
<b>Application</b>	manual CDN for applying SLOW DOW on max. 8 lines
<b>Frequency DOW</b>	100 kHz, 1 MHz $\pm$ 10 %
<b>Rise time</b>	75 ns $\pm$ 20 %
<b>Source impedance</b>	200 $\Omega$
<b>Decaying</b>	Pk5 to Pk1 > 50 %, Pk10 to Pk1 < 50 %
<b>EUT voltage per line</b>	max. 250 V DC or AC 50/60 Hz
<b>EUT current per line</b>	max. 4 A
<b>Coupling</b>	differential mode (line to line)
<b>IEC 61000-4-18, IEC 60255-26 (latest)</b>	common mode and differential mode
<b>IEC 60255-26 (1.0, 2.0) @ 1 MHz</b>	single line or pair to all other lines grounded (0.5 $\mu$ F) or floating
<b>Decoupling</b>	> 1.5 mH per line
<b>Voltage test level</b>	200 V - 4400 V $\pm$ 10 %
<b>Short circuit current</b>	1 A - 22 A $\pm$ 20 %
<b>Dimensions</b>	30.5 x 23 x 11 cm
<b>Weight</b>	5 kg
<b>Generators</b>	DOW-CG1, all models with SLOW module



### CDN-DOW-DATA-HF18

<b>Standard</b>	IEC61000-4-18 SLOW DOW latest edition
<b>Application</b>	manual CDN for applying SLOW DOW on max. 8 sym. high speed lines (1 Gbps)
<b>Frequency DOW</b>	100 kHz, 1 MHz $\pm$ 10 %
<b>Rise time</b>	75 ns $\pm$ 20 %
<b>Source impedance</b>	200 $\Omega$
<b>Decaying</b>	Pk5 to Pk1 > 50 %, Pk10 to Pk1 < 50 %
<b>Number of data lines</b>	4 lines / 2 pairs, 8 lines / 4 pairs
<b>EUT voltage per line</b>	max. 60 V DC (PoE) or signal voltage
<b>EUT current per line</b>	max. 1 A (PoE all versions)
<b>Coupling</b>	as per IEC61000-4-18
<b>Decoupling</b>	> 1.5 mH per line
<b>Voltage test level</b>	200 V - 4000 V $\pm$ 10 %
<b>Short circuit current</b>	1 A - 20 A $\pm$ 20 %
<b>Dimensions</b>	30.5 x 23 x 11 cm
<b>Weight</b>	3.7 kg
<b>Generators</b>	DOW-CG1, all models with SLOW module
<b>Optional accessories</b>	ADAPTER BOX RJ45-8L (2 pieces needed)



# ACCESSORIES

## ACCESSORIES AS PER IEC 61000-4-2

### EXT-IMU E, ESD add-on 16 kV

Discharge network	150 pF, 330 $\Omega$
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	2 – 16 kV $\pm$ 5 % / 2 – 10 kV $\pm$ 5 %
Continuous firing mode	2 – 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 $^{\circ}$ C
Humidity	30 - 60% non condensing
Generators	IMU-MGS, IMU-MGE



### ESD-TARGET2 DN

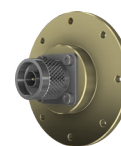
Standard	IEC 61000-4-2 latest
Application	current target for calibration of ESD generator
Surface Finish	gold plated, lifetime protection against corrosion
Input impedance	2 $\Omega$
Input voltage	max. 30 kV CD
Frequency range	$\pm$ 0.5 dB up to 1 GHz, $\pm$ 1.2 dB up to 4 GHz
Current range	0 – 120 A standard, could be extended
Transfer function	0.2 V / 1 A with 20 dB, 0.02 V / 1 A with 40 dB
Diameter	70 mm
Thickness	40 mm
Weight	398 g including attenuator
Fixing	8 x M3 screws, included in delivery
Included	40 dB att., 50 $\Omega$ coax. cable (1 m) with SMA out



### TARGET2-ADAPTER N-MALE

Standards	IEC 61000-4-2 latest
Application	verification of ESD-TARGET2 DN
Surface finish	gold plated, lifetime protection against corrosion
Output Impedance	50 $\pm$ 1 $\Omega$ (within 4 GHz bandwidth)
Return loss ( $\leq$ 1 GHz)	< 30 dB <sup>1)</sup>
Return loss ( $\leq$ 4 GHz)	< 20 dB <sup>1)</sup>
Insertion loss ( $\leq$ 4 GHz)	< 0.3 dB (total)
Geometry	conical as per standard
Coaxial Connector	N-Male
Diameter	70 mm
Thickness	30 mm
Weight	250g
Fixing	8x M3 screws, included in delivery
requires	ESD-TARGET2 DN

1) face-to-face with ESD-TARGET2 DN



## TARGET2-ADAPTER N-FEMALE

Standards	IEC 61000-4-2 latest
Application	verification of TARGET2-ADAPTER N-MALE
Surface finish	gold plated, lifetime protection against corrosion
Output Impedance	$50 \pm 1 \Omega$ (within 4 GHz bandwidth)
Return loss ( $\leq 1$ GHz)	$< 30$ dB <sup>1)</sup>
Return loss ( $\leq 4$ GHz)	$< 20$ dB <sup>1)</sup>
Insertion loss ( $\leq 4$ GHz)	$< 0.3$ dB (total)
Geometry	conical as per standard
Coaxial Connector	N-Female
Diameter	70 mm
Thickness	30 mm
Weight	250g
Fixing	8x M3 screws, included in delivery
requires	<a href="#">TARGET2-ADAPTER N-MALE</a>

1) face-to-face with TARGET2-ADAPTER N-MALE



## ESD-VERI-V

Application	adapter for ESD DC voltage measurement
Input impedance	$20 \text{ G}\Omega \parallel 3 \text{ pF}$
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

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	$2 \times 470 \text{ k}\Omega$
Length	2 m
Connectors	2 x banana plugs

## 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 $2 \times 470 \text{ k}\Omega$ )



## ACCESSORIES AS PER IEC 61000-4-4

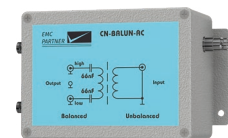
### CN-EFT1000

<b>Application</b>	capacitive coupling clamp for burst on I/O lines
<b>Coupling plate dimensions</b>	as per IEC 61000-4-4 latest edition
<b>Waveform into 50 Ω</b>	5 ± 1.5 ns / 50 ± 15 ns
<b>Test level 5/50 ns</b>	up to 8 kV
<b>Insulation DOW</b>	up to 5kV 3 MHz - 30 MHz
<b>Insulation 1.2/50 μs</b>	up to 5 kV
<b>Usable cable diameter</b>	up to 70 mm
<b>Coupling capacitance</b>	typically 100 pF – 1000 pF
<b>Dimensions</b>	114 x 15 x 10 cm
<b>Weight</b>	4 kg
<b>Included</b>	high voltage cable for connection to IMU
<b>Other applications</b>	IEC 61000-4-18, ANSI C37.90



### CN-BALUN-AC

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



### VERI50 EFT

<b>Application</b>	50 Ω calibration load for burst
<b>Input impedance</b>	50 Ω ± 2 %
<b>Input voltage</b>	max. 6.3 kV, max. 350 pulses/s @ 6.3 kV
<b>Tolerance up to 100 MHz</b>	± 1 dB, as per standard
<b>Tolerance up to 400 MHz</b>	± 3 dB in the range 100 MHz – 400 MHz
<b>Power dissipation</b>	max. 3 W, no EUT power during calibration
<b>Ratio 50 Ω DSO input</b>	1:1000, 60 dB
<b>Ratio 1MΩ DSO input</b>	1:500, 54 dB
<b>Dimensions</b>	15.5 x 2.5 x 2.5 cm
<b>Weight</b>	0.2 kg
<b>Other applications</b>	IEC 61000-4-18



### VERI50-8KV

<b>Application</b>	50 Ω high precision calibration load for burst
<b>Input impedance</b>	50 Ω ± 2 %
<b>Input voltage</b>	max. 8 kV, max. 350 pulses/s @ 8 kV
<b>Tolerance up to 100 MHz</b>	± 0.5 dB
<b>Tolerance 100 - 400 MHz</b>	± 1 dB



<b>Tolerance 400MHz - 1 GHz</b>	± 3 dB
<b>Power dissipation</b>	max. 3 W, no EUT power during calibration
<b>Ratio 50 Ω DSO input</b>	1 :1000, 60 dB
<b>Ratio 1 MΩ DSO input</b>	1:500, 54 dB
<b>Dimensions</b>	14 x 2.5 x 2.5 cm
<b>Weight</b>	0.1 kg
<b>Other applications</b>	IEC 61000-4-18

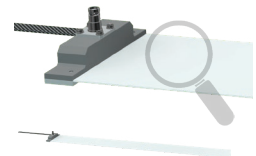
### VERI1K EFT

<b>Application</b>	1 kΩ calibration load for burst
<b>Input impedance</b>	1 kΩ ± 2 %
<b>Input voltage</b>	max. 8 kV, max. 350 pulses/s @ 8 kV
<b>Tolerance up to 100 MHz</b>	± 1 dB, as per standard
<b>Tolerance up to 400 MHz</b>	± 3 dB in the range 100 MHz – 400 MHz
<b>Power dissipation</b>	max. 3 W, no EUT power during calibration
<b>Ratio 50 Ω DSO input</b>	1 :2000, 66 dB
<b>Ratio 1MΩ DSO input</b>	1:1000, 60 dB
<b>Dimensions</b>	13.5 x 2.5 x 2.5 cm
<b>Weight</b>	0.1 kg
<b>Other applications</b>	IEC 61000-4-18, OC calibration for fast DOW



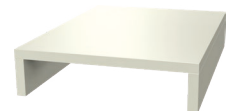
### VERI-CP-EFT

<b>Application</b>	calibration transducer plate for <a href="#">CN-EFT1000</a>
<b>Plate width</b>	120 ± 1 mm, as per norm
<b>Plate length</b>	1050 ± 5 mm, as per norm
<b>Insulation 5/50 ns</b>	up to 8 kV
<b>Insulation 1.2/50 μs</b>	minimum 2.5 kV
<b>Dimensions</b>	113 x 7 x 5 cm
<b>Weight</b>	1 kg
<b>Requires</b>	<a href="#">VERI50 EFT</a> or <a href="#">VERI50-8kV</a>
<b>Other applications</b>	IEC 61000-4-18



### EFT-INSULATION

<b>Application</b>	EUT support for burst test
<b>Number of plates</b>	2 pieces
<b>Height of plates</b>	10 cm
<b>Surface of both plates</b>	100 x 40 cm
<b>Maximum EUT weight</b>	50 kg
<b>Dimensions</b>	100 x 40 x 10 cm (both plates)
<b>Weight</b>	16 kg (both plates)
<b>Other applications</b>	IEC 61000-4-9, IEC 61000-4-10



## ACCESSORIES AS PER IEC 61000-4-5

### V-PROBE-SI VOLTAGE PROBE

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

### I-PROBE-P110A CURRENT PROBE

<b>Application</b>	measurement of surge I waveform up to 6 kA
<b>Output impedance</b>	50 $\Omega$
<b>Waveforms</b>	
<b>IEC 61000-4-5 waveform</b>	8/20 $\mu$ s (surge) max. 6 kA
<b>IEC 61000-4-5 waveform</b>	5/320 $\mu$ s (telecom) max. 300 A
<b>IEC 61000-4-9 waveform</b>	8/20 $\mu$ s (surge) 2 kA
<b>IEC 61000-4-10 waveform</b>	DOW 100 kHz, 1 MHz max. 300 A
<b>IEC 61643-11, similar</b>	10/350 $\mu$ s max. 300 A
<b>IEC 61000-4-12 waveform</b>	0.5 $\mu$ s/100 kHz ring wave max. 667 A
<b>Bandwidth (approx.)</b>	1 Hz – 20 MHz
<b>Accuracy</b>	+1 / -0 %
<b>Current time product</b>	max. 0.5 A-s (max. value requires core bias)
<b>I/f</b>	max. 1.5 A/Hz
<b>Sensitivity</b>	0.1 V/A without 20 dB (in 1 M $\Omega$ ) 0.01 V/A with 20 dB (in 1 M $\Omega$ )
<b>Output connector</b>	no 20 dB, directly: N-type with 20 dB: BNC type
<b>Dimensions without 20 dB</b>	10.2 x 11 x 2.6 cm, inner diam. ~5.3 cm
<b>Weight without 20 dB</b>	< 1 kg

### VERI-C18-S

<b>Standards</b>	IEC 61000-4-5, latest edition
<b>Application</b>	Coupling capacitor between Surge generator and external CDN
<b>Capacitor value</b>	18 $\mu$ F $\pm$ 10%
<b>EUT Voltage AC</b>	max. 690 V
<b>EUT Voltage DC</b>	max. 1000 V
<b>Surge test level</b>	up to 6 kV
<b>Output connectors</b>	banana plugs 4mm
<b>Weight</b>	2 kg
<b>Dimensions</b>	24 cm x 8 cm x 9 cm



### WARNING-LAMP

<b>Cable length</b>	5 m
<b>Dimensions</b>	diameter 7x cm x 25 cm
<b>Weight</b>	0.5 kg



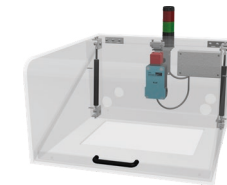
### EMERGENCY-STOP

<b>Cable length</b>	5 m
<b>Dimensions</b>	8 cm x 8 cm x 10 cm
<b>Weight</b>	0.3 kg



### TC-ST

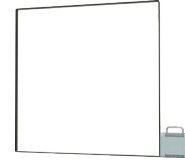
<b>Insulation withstand</b>	36 kV 1.2/50 $\mu$ s impulse
<b>max. EUT dimension</b>	20 cm x 20 cm x 30 cm
<b>Material</b>	7 mm acrylic glass
<b>Safety Features</b>	locked cover during test
<b>External Warning Lamp</b>	M12 / 5-pol connector
<b>Dimension</b>	47 cm x 43.5 cm x 25.4 cm
<b>Weight</b>	8.5 kg



## ACCESSORIES AS PER IEC 61000-4-8

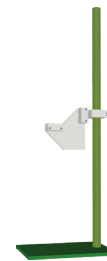
### MF1000-1

<b>Application</b>	coil for AC magnetic field, magnetic pulses
<b>Coil type</b>	1 x 1 m, one turn, as per standard
<b>Coil factor</b>	0.87
<b>Magnetic field 50, 60 Hz</b>	1 – 160 A / m, continuous (IEC 61000-4-8)
<b>Duration continuous MF</b>	29999 s
<b>Magnetic pulse 8/20 <math>\mu</math>s</b>	93 – 1521 A / m or 1855 A / m (IEC 61000-4-9) with 2 coils up to 1000 A / m ( $\geq$ 5kV surge)
<b>Magnetic pulse DOW</b>	up to 220 A / m (IEC 61000-4-10)
<b>Dimensions</b>	120 x 100 x 10.5 cm
<b>Weight</b>	6 kg



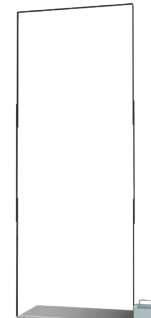
### MF1STAND

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



### MF1000-2

<b>Application</b>	coil for AC magnetic field, magnetic pulses
<b>Coil type</b>	1 x 2.6 m, one turn, as per standard
<b>Coil factor</b>	0.66
<b>Magnetic field 50, 60 Hz</b>	1 – 110 A / m, continuous (IEC 61000-4-8)
<b>Duration continuous MF</b>	29999 s
<b>Magnetic pulse 8/20 <math>\mu</math>s</b>	67 – 1103 A / m or 1345 A / m (IEC 61000-4-9)
<b>Magnetic pulse DOW</b>	up to 110 A / m (IEC 61000-4-10)
<b>Dimensions</b>	260 x 120 x 10.5 cm
<b>Weight</b>	24 kg



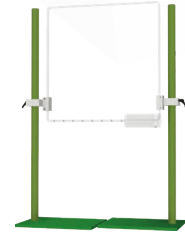
### MF1000-3

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



### MF3STAND

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



## ACCESSORIES AS PER IEC 61000-4-9

See IMU-MGS [EXT-IMU S4](#) | [EXT-IMU S5](#)  
See IMU-MGE [EXT-IMU S6](#) | [EXT-IMU S8](#)  
See [MF1000-1](#)  
See [MF1000-2](#)

## ACCESSORIES AS PER IEC 61000-4-10

See [DOW-CG1](#)  
See [MF1000-1](#)  
See [MF1000-2](#)

## ACCESSORIES AS PER IEC 61000-4-11, -4-34

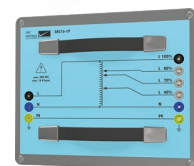
### VAR-EXT1000

<b>Application</b>	1P variac for dips and variations, IEC61000-4-11 latest edition
<b>Input voltage AC</b>	50 – 250 V, 50/60 Hz
<b>Output voltage 1</b>	input voltage
<b>Output voltage 2 dips</b>	0 – 110 % from input voltage, max. 275 V
<b>Output voltage 2 variations</b>	0 – 100 % from input voltage, max. 250 V
<b>EUT current</b>	max. 16 A continuous
<b>Voltage slew rate</b>	< 1.7 s from 0 to 100 %
<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	29 kg
<b>Magnetic field test</b>	IEC 61000-4-8, see MF 1000-x coils



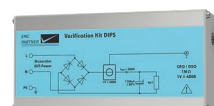
## SRC16-1P

<b>Application</b>	1P step transformer for dips test, IEC61000-4-11
<b>Input voltage AC</b>	max. 300 V, 50/60 Hz
<b>Output voltage AC</b>	40 %, 70 %, 80 %, 100 % $\pm$ 5 % from input volt.
<b>EUT continuous current</b>	max. 16 A continuous, tested for > 8 hours
<b>Short time output current</b>	80 %: 20 A for 5 s 70 %: 23.6 A for 5 s 40 %: 40 A for 3 s
<b>Voltage change with load</b>	< 5 % of input (when input V $\geq$ 100 V)
<b>Dimensions</b>	28 x 23 x 10 cm
<b>Weight</b>	17.5 kg



## VERI-DIPS

<b>Application</b>	calibration of inrush current before dips test
<b>Current range</b>	1 A – 1 kA
<b>Capacitance</b>	1700 $\mu$ F $\pm$ 20 %
<b>Discharge resistor</b>	4.7 k $\Omega$ $\pm$ 10 %
<b>DSO output</b>	50 $\Omega$ BNC connector
<b>Application time</b>	max. 30 seconds
<b>Dimensions</b>	20 x 10 x 11 cm
<b>Weight</b>	1 kg



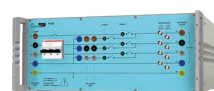
## DIPS100E

<b>Application</b>	calibration of dips switch time
<b>Resistor</b>	100 $\Omega$ $\pm$ 5 %, non-inductive
<b>Power</b>	max. 1 kW
<b>Impulse insulation</b>	3 kV
<b>Dimensions</b>	65 x 12 x 8 cm
<b>Weight</b>	3.8 kg



## PFS32

<b>Application</b>	3P AC dips generator, IEC 61000-4-34
<b>EUT AC voltage L-L</b>	3 x 200 V – 3 x 480 V, 50 or 60 Hz
<b>EUT AC current</b>	max. 3 x 32 A
<b>Output connection</b>	star or delta connection possible
<b>Overcurrent protection</b>	50 A per phase continuous, 220 A short term
<b>Rise &amp; fall time into 100 <math>\Omega</math></b>	1 – 5 $\mu$ s for AC
<b>Inrush current capability</b>	> 500 A
<b>Dip / interruption duration</b>	50 $\mu$ s – 60 s



<b>Synchronization</b>	0 – 359°, resolution 1°
<b>Output monitor BNC</b>	3 x I (1 V : 100 A), 3 x U (1 V : 100 V)
<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	26 kg
<b>Controlled by</b>	IMU-MGS D, IMU-MGE D
<b>Requires</b>	SRC32-18UH, SRC32-AMD1/AMD1-36UH

### SRC32-18UH

<b>Application</b>	3P tapped transformer for PFS32
<b>Construction type</b>	automatic switch between dip levels
<b>EUT AC voltage L-L</b>	3 x 200 V – 3 x 480 V, 50 or 60 Hz, Y or Δ
<b>EUT AC current</b>	max. 3 x 32 A at nominal voltage
<b>Overcurrent protection</b>	50 A per phase continuous, 220 A short term
<b>Dip levels</b>	0 %, 40 %, 70 %, 80 %, selectable
<b>Dimensions</b>	19" rack (wheels), 18 UH
<b>Weight</b>	307 kg
<b>Alternative rack</b>	36 UH rack available (ask for details)
<b>Controlled by</b>	PFS32

### SRC32-AMD1-18UH / 36UH

<b>Application</b>	3P tapped transformer for PFS32
<b>Construction type</b>	automatic switch between dip levels
<b>EUT AC voltage L-L</b>	3 x 200 V – 3 x 480 V, 50 or 60 Hz, Y or Δ
<b>EUT AC current</b>	max. 3 x 32 A at nominal voltage
<b>Overcurrent protection</b>	50 A per phase continuous, 220 A short term
<b>Dip levels</b>	0 %, 40 %, 50 %, 70 %, 80 %, selectable
<b>Dimensions</b>	19" rack (wheels), 18 UH
<b>Weight</b>	317 kg
<b>Alternative rack</b>	36 UH rack available (ask for details)
<b>Controlled by</b>	PFS32



## PFS75

<b>Application</b>	3P AC dips generator, IEC 61000-4-34
<b>EUT AC voltage L-L</b>	3 x 200 V – 3 x 480 V, 50 or 60 Hz
<b>EUT AC current</b>	max. 3 x 75 A
<b>Output connection</b>	star or delta connection possible
<b>Overcurrent protection</b>	220 A short term (< 2 s)
<b>Rise &amp; fall time into 100 Ω</b>	1 – 5 μs for AC
<b>Inrush current capability</b>	> 1000 A
<b>Dip / interruption duration</b>	50 μs – 60 s
<b>Synchronization</b>	0 – 359°, resolution 1°
<b>Output monitor BNC</b>	3 x I (1 V : 100 A), 3 x U (1 V : 100 V)
<b>Dimensions</b>	19" unit, 8 UH
<b>Weight</b>	40 kg
<b>Controlled by</b>	IMU-MGS D, IMU-MGE D
<b>Requires</b>	SRC75-18 UH



## SRC75-18UH

<b>Application</b>	3P tapped transformer for PFS75
<b>Construction type</b>	automatic switch between dip levels
<b>EUT AC voltage L-L</b>	3 x 200 V – 3 x 480 V, 50 or 60 Hz, Y or Δ
<b>EUT AC current</b>	max. 3 x 75 A at nominal voltage
<b>Overcurrent protection</b>	220 A short term (< 2 s)
<b>Dip levels</b>	0 %, 40 %, 70 %, 80 %, selectable
<b>Inrush current</b>	> 1000 A
<b>Dimensions</b>	19" rack (wheels), 18 UH
<b>Weight</b>	332 kg
<b>Alternative rack</b>	36 UH rack available (ask for details)
<b>Controlled by</b>	PFS75



## PFS75-690V

<b>Application</b>	3P AC dips generator, IEC 61000-4-34
<b>EUT AC voltage L-L</b>	3 x 200 V – 3 x 690 V, 50 or 60 Hz
<b>EUT AC current</b>	max. 3 x 75 A
<b>Output connection</b>	star or delta connection possible
<b>Overcurrent protection</b>	220 A short term (< 2 s)
<b>Rise &amp; fall time into 100 Ω</b>	1 – 5 μs for AC
<b>Inrush current capability</b>	> 1000 A
<b>Dip / interruption duration</b>	50 μs – 60 s
<b>Synchronization</b>	0 – 359°, resolution 1°
<b>Output monitor BNC</b>	3 x I (1 V : 100 A), 3 x U (1 V : 100 V)
<b>Dimensions</b>	19" unit, 8 UH
<b>Weight</b>	54 kg
<b>Controlled by</b>	IMU-MGS D, IMU-MGE D
<b>Requires</b>	SRC75-690V



### SRC75-690V-18UH

<b>Application</b>	3P tapped transformer for PFS75-690V
<b>Construction type</b>	automatic switch between dip levels
<b>EUT AC voltage L-L</b>	3 x 200 V – 3 x 690 V, 50 or 60 Hz, Y or Δ
<b>EUT AC current</b>	max. 3 x 75 A at nominal voltage
<b>Overcurrent protection</b>	220 A short term (< 2 s)
<b>Dip levels</b>	0 %, 40 %, 70 %, 80 %, selectable
<b>Inrush current</b>	> 1000 A
<b>Dimensions</b>	19" rack (wheels), 18 UH
<b>Weight</b>	502 kg
<b>Controlled by</b>	PFS75-690V



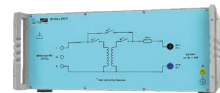
## ACCESSORIES AS PER IEC 61000-4-12

See [voltage probe](#) from Surge.

## ACCESSORIES AS PER IEC 61000-4-16

### EXT-IMU C-SHORT

<b>Application</b>	extension for IMU -C module, power tests
<b>Output impedance</b>	50 Ω ± 10 %
<b>Output voltage</b>	30 V – 330 V for 1000 seconds
<b>Power frequencies</b>	DC, 16.67 Hz, 50 Hz, 60 Hz
<b>Disturbance duration</b>	1 s – 1000 s to full test level
<b>Dimensions</b>	19" unit, 4 UH
<b>Weight</b>	54 kg
<b>Controlled by</b>	IMU-MGS C, IMU-MGE C
<b>Requires</b>	PS3, CN16 or CN16DC or CN16T



### PS3

<b>Application</b>	1P power source for IEC 61000-4-16, 300V test
<b>Type</b>	programmable, pre-programmed buttons
<b>Input</b>	AC 100V - 230V +/- 10%, 47 – 63 Hz
<b>Output voltage</b>	AC 50 – 250 V, DC 24 – 350 V
<b>Output frequency</b>	DC – 400 Hz
<b>Output current</b>	max. 16A @ 115V / 60Hz, 10 A @ 230V / 50Hz
<b>Output power</b>	max. 3 kW or 3 kVA
<b>Dimensions</b>	19" unit, 2 UH
<b>Weight</b>	18 kg
<b>Controlled by</b>	IMU-MGS C or IMU-MGE C for power test
<b>Requires</b>	EXT-IMU C-SHORT, RS485-RS232 ADAPT.
<b>Other applications</b>	IEC 61000-4-19, IEC 61000-4-29



### PS3SOFT-EXT

<b>Standards</b>	IEC61000-4-14, IEC610004-28
<b>Application</b>	Voltage and frequency fluctuation tests tests using PS3. Adjust voltage and frequency of PS3 power supply.
<b>Order information</b>	can be ordered only with PS3
<b>Requires</b>	PS3

## ACCESSORIES AS PER IEC 61000-4-18

### CN-OU5-SDOW-DIRECT

<b>Standards</b>	IEC 61000-4-18, ANSI C37.90
<b>Application</b>	slow DOW coupling through 0.5 $\mu$ F capacitor(s)
For IEC 61000-4-18	coupling on shielded cables
For ANSI C37.90	coupling in transverse mode
<b>EUT max. voltage AC</b>	480 V, 50 / 60 Hz (L-L/-N), for transverse mode coupling
<b>EUT max. voltage DC</b>	500 V, for transverse mode coupling
<b>Coupling capacitors</b>	2 x 0.5 $\mu$ F $\pm$ 20%
<b>Output mode 1</b>	direct output (no series capacitors)
<b>Output mode 2</b>	high via 0.5 $\mu$ F, low as direct output
<b>Output mode 3</b>	high and low via 0.5 $\mu$ F
<b>Approx. Dimensions</b>	60 mm x 50 mm x 80 mm
<b>Weight</b>	< 0.2 kg
<b>Generators</b>	DOW-CG1 with s module



### VERI50 EFT

See [VERI50 EFT](#) or [VERI50-8KV](#) technical specification.



### VERI1K EFT

See [VERI1K EFT](#) technical specification.



### VERI01 OSI

<b>Application</b>	0.1 $\Omega$ shunt for 3, 10, 30 MHz DOW SC current
<b>Input impedance</b>	0.1 $\Omega$ $\pm$ 2 %
<b>Input voltage</b>	max. 6.3 kV
<b>3 dB bandwidth</b>	> 400 MHz
<b>Power dissipation</b>	max. 3 W, max. 1000 spikes/s @ 4.4 kV
<b>Measurement ratio</b>	1 V @ 10 A in 1 M $\Omega$ $\pm$ 2 %
<b>Dimensions</b>	8.5 x 2.5 x 2.5 cm
<b>Weight</b>	0.1 kg
<b>At CDN output</b>	Calibration adapter delivered with DOW-CG1



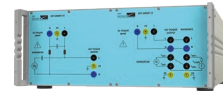
# ACCESSORIES AS PER IEC 61000-4-19 LATEST

## IMU SLAVE SMART I1V1\*

**Application** voltage & current test generator IEC 61000-4-19

### Voltage test module

<b>EUT voltage input AC</b>	80 – 500 V, L-L or L-N, 50 Hz and 60 Hz
<b>EUT current input</b>	0 – 16 A L-L or L-N
<b>Voltage waveform</b>	sinusoidal, THD < 5%
<b>Test voltage</b>	0.1 V – 25 V, tolerance $\pm 5\%$
<b>Output frequency range</b>	2 kHz – 150 kHz
<b>CDN output impedance</b>	10 $\Omega$ $\pm 30\%$ , 2 kHz – 150 kHz
<b>CDN decoupling better than</b>	-10dB@10kHz, -50dB@50 kHz, -50dB@150kHz
<b>Frequency step</b>	2 % standard, adjustable 1 % - 100 %
<b>Dwell time</b>	3s standard, adjustable 1 s – 300 s
<b>Pause time</b>	300 ms $\pm$ 200 ms, adjustable 0.1 s – 30 s
<b>Signal type</b>	continuous / pause, 50% rect. modulation
<b>Modulation frequency</b>	for 50 Hz: 3 Hz, 101 Hz, 301 Hz, 601 Hz for 60 Hz: 4 Hz, 121 Hz, 361 Hz, 721 Hz
<b>Modulation frequency</b>	3 Hz – 1 kHz, adjustable
<b>Calibration load</b>	10 $\Omega$ load built-in, automatically switched
<b>Measurement and control</b>	internal, automatic



### Current test module

<b>EUT voltage input AC</b>	80 – 500 V, L-L or L-N, 50 Hz, 60 Hz, 400 Hz
<b>EUT voltage input DC</b>	0 - 400 V, requires external current source and external 1 ohm decoupling
<b>EUT current input</b>	0 – 25 A L-L or L-N (0 – 15 A at 400 Hz)
<b>Current waveform</b>	sinusoidal, THD < 5%
<b>Test current</b>	0.1 A – 4.4 A, tolerance $\pm 5\%$
<b>Output frequency range</b>	2 kHz – 150 kHz
<b>Output impedance</b>	1 $\Omega$ $\pm 30\%$ , 2 kHz – 150 kHz
<b>Decoupling impedance</b>	>1 $\Omega$ $\pm 30\%$ , 2 kHz – 150 kHz
<b>Frequency step</b>	2 % standard, adjustable 1 % - 100 %
<b>Dwell time</b>	3s standard, adjustable 1 s – 300 s
<b>Pause time</b>	300 ms $\pm$ 200 ms, adjustable 0.1 s – 30 s
<b>Signal type</b>	continuous with pause, 50% rectangular modulation
<b>Modulation frequency</b>	for 50 Hz: 3 Hz, 101 Hz, 301 Hz, 601 Hz for 60 Hz: 4 Hz, 121 Hz, 361 Hz, 721 Hz
<b>Modulation frequency</b>	3 Hz – 1 kHz, adjustable
<b>Built-in reference load current source</b>	1 – 25 A @50/60 Hz (15A @400 Hz), synchr. to voltage input
<b>Measurement, synch.</b>	internal, automatic
<b>Dimensions</b>	19" unit, 4 UH (both modules)
<b>Weight</b>	22 kg
<b>Controlled by</b>	IMU-MGS, IMU-MGE, any configuration

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

### VERI10-50

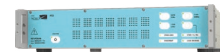
<b>Application</b>	10 / 50 $\Omega$ calibration balun for SLAVE SMART
<b>Input impedance</b>	2 x 10 $\Omega \pm 10 \%$
<b>Output impedance</b>	2 x 50 $\Omega \pm 10 \%$
<b>Frequency response</b>	2 kHz – 200 kHz $\pm 0.5$ dB
<b>Damping limit</b>	10 dB @ 2 kHz to 50 dB@ 150 kHz, linear var.
<b>Dimensions</b>	24 x 9 x 8 cm
<b>Weight</b>	1.2 kg



## ACCESSORIES AS PER IEC 61000-4-29

### 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 including adjustment and calibration of IMU-MGS D, IMU-MGE 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 500hm.

### EXT-IMU D-29I

Package including adjustment and calibration of IMU-MGS D, IMU-MGE 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.

## SOFTWARE

### TEMA3000

<b>Application</b>	modular control software for IMU / DOW system
<b>License</b>	1 license for 1 generator
<b>TEMA3000 basic</b>	remote control of generator, single tests
<b>TEMA3000-SEQUENCE</b>	more single tests linked in a sequence
<b>TEMA3000-REPORT</b>	generation of customized test reports
<b>TEMA3000-DSO</b>	control of DSOs via Ethernet, data in report
<b>TEMA3000-LIBRARY</b>	collection of norm pre-programmed tests
<b>Compatibility</b>	Windows (latest version)
<b>For generators</b>	DOW, IMU Series, other



EMC PARTNER

# PRODUCT APPLICATION RANGE

## CONSUMER & INDUSTRIAL ELECTRONICS

Transient Test Systems for conducted EMC tests on electronic equipment. ESD, EFT, surge, ring wave, DOW, dips, magnetic field, common and differential mode. Compliant to IEC, EN and ANSI standards.



## AEROSPACE ELECTRONICS

Impulse generators and couplers for avionic applications. Single stroke, multiple stroke and multiple burst according to RTCA / DO-160, EUROCAE / ED-14 and aircraft manufacturer standards.



## COMPONENT TESTING

Voltage and current Impulse generators for design and production testing of varistors, gas discharge tubes, surge protective devices, X / Y capacitors and specialist impulse generators for semiconductor tests.



## DEFENCE ELECTRONICS

Complete test solutions for MIL-STD-461 requirements CS06, CS106, CS115, CS116, CS117 and CS118.



## TELECOM & DATA LINE TESTING

Voltage and current impulse generators, CDNs, power contact, power induction equipment for exchange and customer equipment according to ITU, IEC, EN and ETSI requirements.



## ENERGY & UTILITY EQUIPMENT

High current CDNs combined with transient test equipment fulfil requirements to test renewable and classical energy distribution network and monitoring equipment.



## CUSTOMER SERVICES

Customer support throughout an equipment's lifetime is central to the EMC PARTNER AG philosophy. Directly from our ISO accredited facility in Switzerland or through our network of services centres, we provide support wherever you are.



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