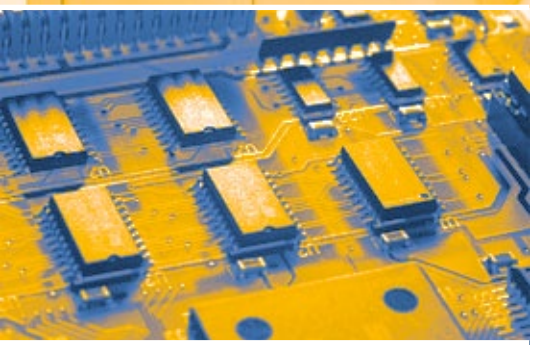
Immunity Tests



EMC - PARTNER

IMU3000 Test System

IMU3000 is the Tester You want!

T extension

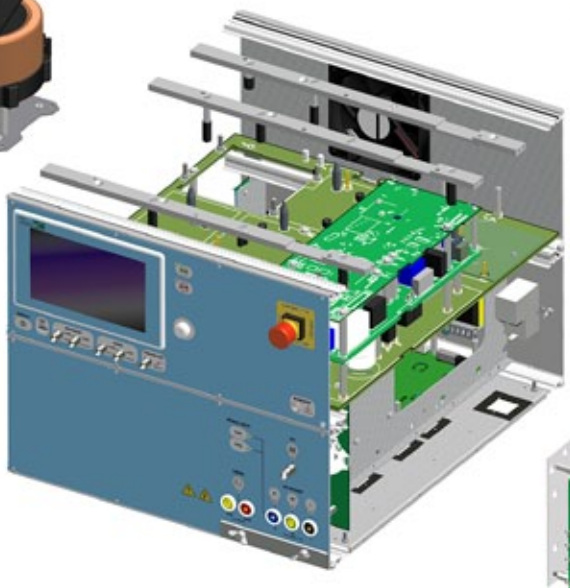
R extension

S extension

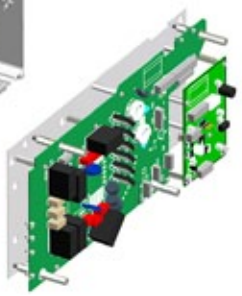
C extension

D extension

V extension



F5/F6 extension



EPOS Module

EMC PARTNER Operating System (EPOS) is the heart of IMU3000.

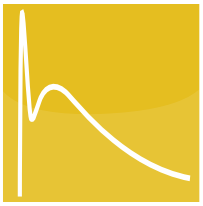
The user interface is a modern 7” touch panel display with colour graphics that make parameter entry and system programming an experience that is second to non.

E extension

PN: 104023

Electrostatic Discharges (ESD)

Connected to the IMU3000 front panel on the RS485 data bus, EXT-TRA3000 E gives 16kV Air discharge and 10kV Contact discharge. The additional “Firing” mode enables fault finding using continuous discharges.



F5 extension

PN: 106006

Electric Fast Transient / Burst (EFT)

Plug-in for the IMU3000 mainframe. EXT-IMU3000 F5 generates fully compliant impulses up to 5kV, meeting and exceeding IEC and EN basic standard requirements. HV output for use with Capacitive coupling clamp and 3-Phase CDNs

F6 extension

PN: 105680

Electric Fast Transient / Burst (EFT)

Plug-in for the IMU3000 mainframe. EXT-IMU3000 F6 generates fully compliant impulses up to 6kV meeting and exceeding all Product standard requirements. HV output for use with Capacitive coupling clamp and 3-Phase CDNs

S extension

PN: 105679

Combination Wave Generator /Surge (CWG)

Plug-in for the IMU3000 mainframe. EXT-IMU3000 S generates fully compliant impulses up to 8kV, meeting and exceeding IEC and EN basic standard requirements. HV output for use with 3-Phase CDNs

R extension

PN: 105682

Ringwave 100kHz (Ring)

Plug-in for the IMU3000 mainframe. EXT-IMU3000 R generates fully compliant Ringwaves up to 8kV with 12 and 30 Ohm impedances. HV output for use with 3-Phase CDNs.

T extension

PN: 105681

Telecom Impulse (10/700)

Plug-in for the IMU3000 mainframe. EXT-IMU3000 T generates fully compliant impulses up to 8kV, with 15 Ohm impedance and 25 Ohm switchable series resistor. Use with CDN-UTP or UTP8 to create a fully fledged IEC and ITU test suite.

C extension

PN: 104028

Common Mode Generator (CM)

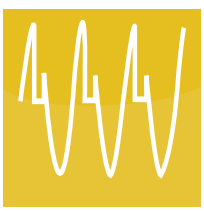
Plug-in for the IMU3000 mainframe. EXT-IMU3000 C is a complete on-board synthesiser for Continuous testing to 35V from DC to 150kHz. Combine with the EXT-TRA3000 C SHORT to perform 300V testing.

D extension

PN: 104031

AC & DC Interrupts

Plug-in for the IMU3000 mainframe. EXT-IMU3000 D is an electronic switch for interrupt testing to 16A. Can be use with internal (EXT-IMU3000 V) or external VAR-EXT1000 for DIP testing.

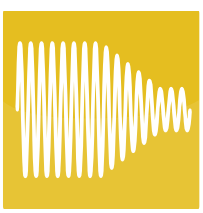


V extension

PN: 104025

AC Dips & Variations

Plug-in for the IMU3000 mainframe. EXT-IMU3000 V gives 5A DIP and variation capability.



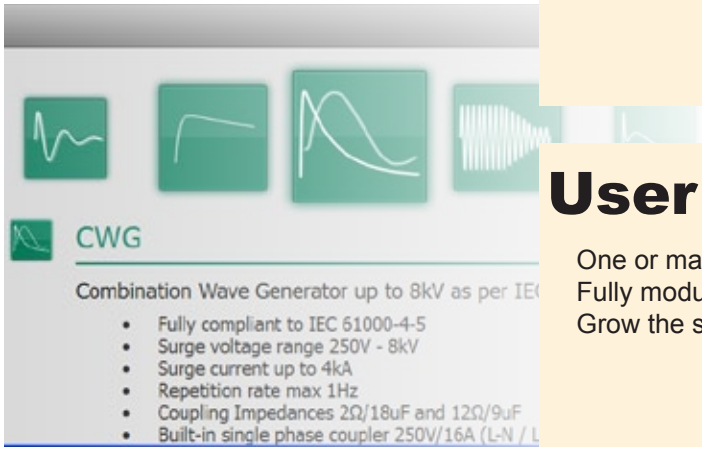
Features

Easy Programming

7” Colour touch panel
Rotary knob for navigation and data entry
EPOS (EMC PARTNER Operating System)
a new concept in graphical user interface

Single Port Testing

Built in 16A single phase CDN for AC and DC powered EUTs
Automatic switching between test events
Complete test report

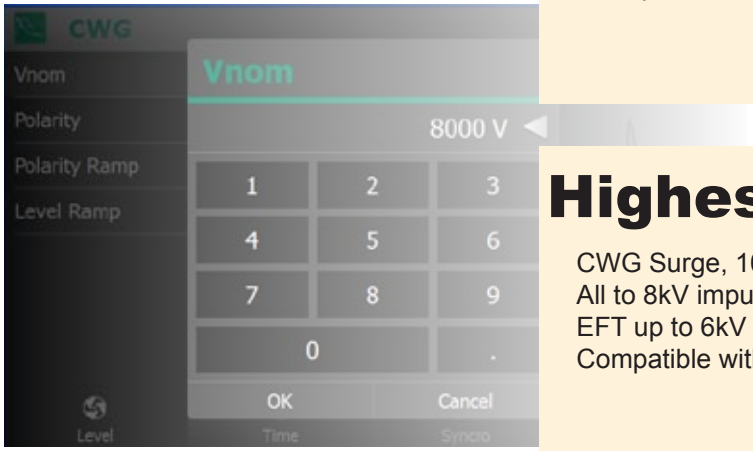


User Configurable

One or many disturbance sources
Fully modular design
Grow the system as needs evolve

Service Friendly

User replaceable extensions
Built in self test routines
USB port to access service data



Highest Test Levels

CWG Surge, 100kHz Ringwave, 10/700us Telecom
All to 8kV impulse
EFT up to 6kV test level
Compatible with existing Transient accessories.

Benefits

Get Testing Faster

Your aim is to perform testing
Minimum learning time
Easy to follow user interface

Save Time

Test setup fast and error free.
Finish the job quickly
Get test report information as HTML file

Upgrade on Site

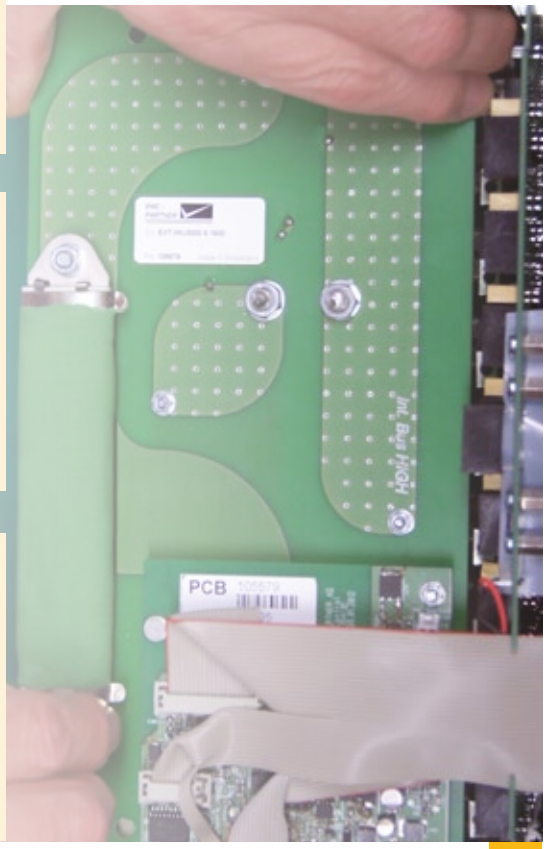
Start with a single function tester.
Add new extensions on site
Customize to your requirements

Keep Testing

Maximize system up time
Calibrated extensions exchanged on site
No disruption to the testing program

Only Need One Tester

Expandable to include many disturbance tests
Covers all EMC testing needs
Cost effective solution



TEST REPORT

EMC - PARTNER

ERATOR DETAILS
e: IMU3000
No: 1010
: 11.09.2013

INFORMATION
Test Company: EMC LAB
Operator: Anybody
Temperature: +23°C
Humidity: 45%

ment Under Test) **DETAILS**

Manufacturer: XYZ CAP Providence
Description: Motor drive with PWM control
Serial Number: 068
Comments: Second production batch

CWG 1.2/50us 2ohm

Surge - Repetition : 13s
Trigger: auto
Surge Syncro: on
Alternating Polarity : starting positive
Change Ramp value after: 5 pulse(s)

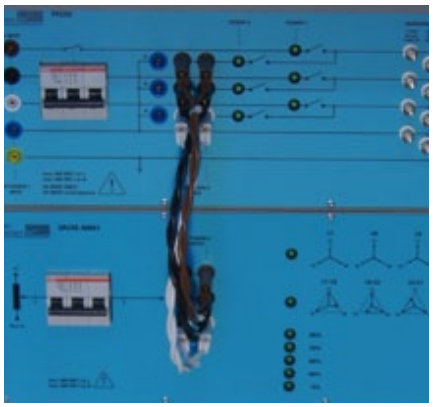
ominal	Synchro	V-peak	I-peak
E to: L-N			
8000V	0	+ 8063V	+ 825A
8000V	0	+ 8060V	+ 825A
8000V	0	+ 8040V	+ 825A
8000V	0	+ 8027V	+ 825A
8000V	0	+ 8047V	+ 825A
8000V	0	- 8096V	- 825A
8000V	0	- 8063V	- 825A
8000V	0	- 8086V	- 825A
8000V	0	- 8083V	- 825A
8000V	0	- 8050V	- 825A
E to: L-PE			
8000V	0	+ 8070V	+ 825A
+8000V	0	+ 8093V	+ 825A
8000V	0	+ 8073V	+ 825A
8000V	0	+ 80967V	+ 825A
8000V	0	+ 8066V	+ 825A

Application Options

3-Phase EFT, SURGE and Ringwave

Multi function Coupling Decoupling Networks provide a single EUT connection point for multiple tests. EFT, Surge and Ringwave can all be injected through the same CDN to save setup time.

External CDNs either manually operated or automated via the RS485 bus on IMU3000. IMU3000 menu structure automatically updates when an automated CDN is connected.



3-Phase AC Dips and Interrupts

Units for Interrupt and/or dip testing. Fully automatically controlled via the RS485 bus on IMU3000. Phase angle and amplitude adjustment for star and delta configurations. Comply with IEC61000-4-11 and IEC61000-4-34.

Range of products from 32A up to 75A per phase continuous operation.

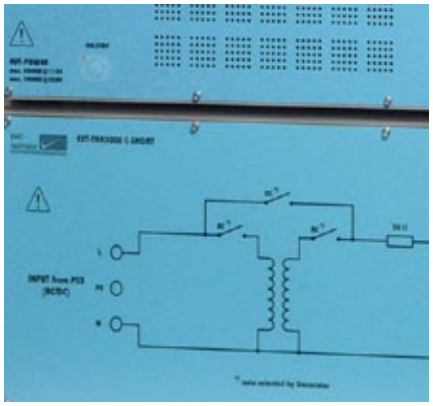
DC interrupt testing with AC units up to 500V.

DC Dips and Interrupts

Specially designed for dc tests with safety features to isolate dc. Switching automatically controlled from IMU3000 via RS485 bus.

Applications include Electro-autos, soalr inverters, etc.

For systems up to 1000V and 125A operation.

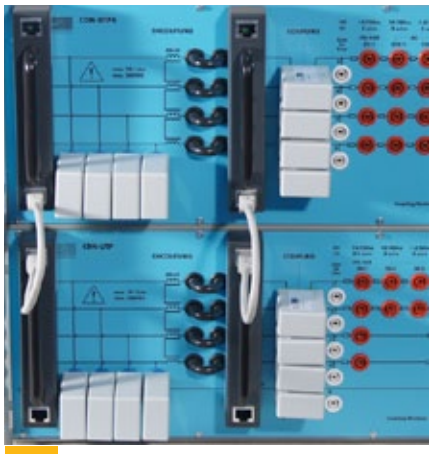


Common Mode Short Testing

Short duration high level tests as in IEC61000-4-16.

External extension to the EXT-TRA3000 C module in IMU3000. Connection via RS485 bus. Requires PS3 source to derive to 300V test level at DC, 16.7Hz, 50Hz and 60Hz.

Continuous mode accessories are also designed for use with the higher levels.



AC and Impulse Magnetic Fields

Antenna for both AC and IMPULSE magnetic fields. Direct connection to IMU3000 EUT power and Surge outputs. Menu changes to show Amps / meter (A/m).

Applicable standards are IEC 61000-4-8 up to 1000V/m for a.c. and IEC 61000-4-9 up to 2000V/m for impulse magnetic fields.

Choice of 3 antennas; MF1000-1, MF1000-2 and MF1000-3

High Speed Telecom

Accessories to IMU3000 SURGE and TELECOM circuits for testing unshielded symmetrical interconnection lines in accordance with IEC 61000-4-5 (Figure 12: , ITU-K20, K21 and FCC part 68. CDN-UTP operates up to 100Mb/s (100baseT). CDN-UTP8 with RJ45 adapters, operates up to 1Gb/s (1000baseT).

Standards

International Electrotechnical Committee (IEC)

IEC 61000-4-2 : Testing and measurement techniques - Electrostatic discharge immunity test.

IEC 61000-4-4 : Testing and measurement techniques - Electrical fast transient / burst immunity test.

IEC 61000-4-5: Testing and measurement techniques - Surge immunity test.

IEC 61000-4-8: Testing and measurement techniques - Power frequency magnetic field immunity test.

IEC 61000-4-9: Testing and measurement techniques - Pulse magnetic field immunity test.

IEC 61000-4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests.

IEC 61000-4-12: Testing and measurement techniques - Oscillatory waves immunity test (Ring wave).

IEC 61000-4-16 : Testing and measurement techniques - Test for immunity to conducted, common mode disturbances in the frequency range 0Hz to 150kHz.

IEC 61000-4-29: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations on d.c. input power port immunity tests.

IEC 61000-4-34: Testing and measurement techniques - Voltage, dips, short interruptions and voltage variations immunity tests for equipment with mains current more than 16A per phase.

European Standard (EN)

The same standards are applicable as for IEC (see above).

International Telecommunications Union (ITU)

ITU-T K.20: Resistibility of Telecommunications Equipment installed in a telecommunications centre to overvoltages and overcurrents

ITU-T K21: Resistibility of telecommunication equipment installed in customer premises to overvoltages and overcurrents

ITU-T K44: Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents – Basic Recommendation

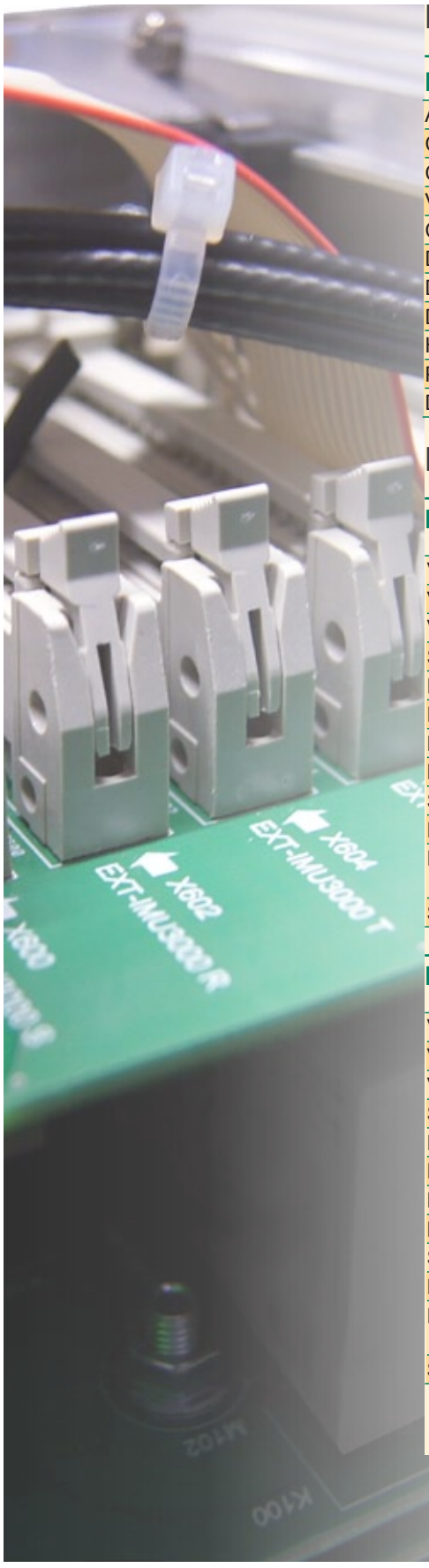
American National Standards Institute (ANSI)

C62.41: American National Standard for Electrostatic Discharge Test Methodologies and Criteria for Electronic Equipment.

C37.90.1: IEEE Standard for Surge Withstand Capability (SWC) Tests for Relays and Relay Systems associated with Electric Power Apparatus

C37.90.1: IEEE Standard for Surge Withstand Capability (SWC) Tests for Relays and Relay Systems associated with Electric Power Apparatus

Technical Specifications



Electro Static Discharge

EXT-TRA3000 E (ESD)

Air discharge	0.5 up to 16kV
Contact discharge	0.5 up to 10kV
Continuous Firing mode	0.5 up to 16kV
Voltage increment resolution	1 volt steps
Contact discharge repetition interval	0.05 to 30s
Discharge detection	every pulse or real discharges only
Discharge counter	1 to 29999
Discharge polarity	Positive / Negative / Alternating
Holding time	5s
Programmable parameter ramps	voltage, polarity
Discharge trigger	manual or automatic

Electric Fast Transient (Burst)

EXT-IMU3000 F5 (EFT 5kV)

Voltage range	0.25 up to 5.1kV
Voltgae amplitude into 50ohm	0.125 up to 2.55kV
Voltage amplitude into 1kohm	0.24 up to 4.8kV
Source impedance	50ohm
Pulse front time at 50ohm	5ns
Pulse duration at 50ohm	50ns
Burst duration	0.01 up to 30ms
Burst repetition	1 up to 1000ms
Spike repetition frequency	up to 1MHz
Polarity	Positive / Negative
Programmable parameter ramps	voltage, spike frequency, burst duration, synchronisation
Spike distribution	IEC burst pattern and random

EXT-IMU3000 F6 (EFT 6kV)

Voltage range	0.25 up to 6.1kV
Voltgae amplitude into 50ohm	0.125 up to 3.05kV
Voltage amplitude into 1kohm	0.24 up to 5.8kV
Source impedance	50ohm
Pulse front time at 50ohm	5ns
Pulse duration at 50ohm	50ns
Burst duration	0.01 up to 30ms
Burst repetition	1 up to 1000ms
Spike repetition frequency	up to 1MHz
Polarity	Positive / Negative
Programmable parameter ramps	voltage, spike frequency, burst duration, synchronisation
Spike distribution	IEC burst pattern and random

Technical Specifications

Surge Impulses

EXT-IMU3000 S (CWG)

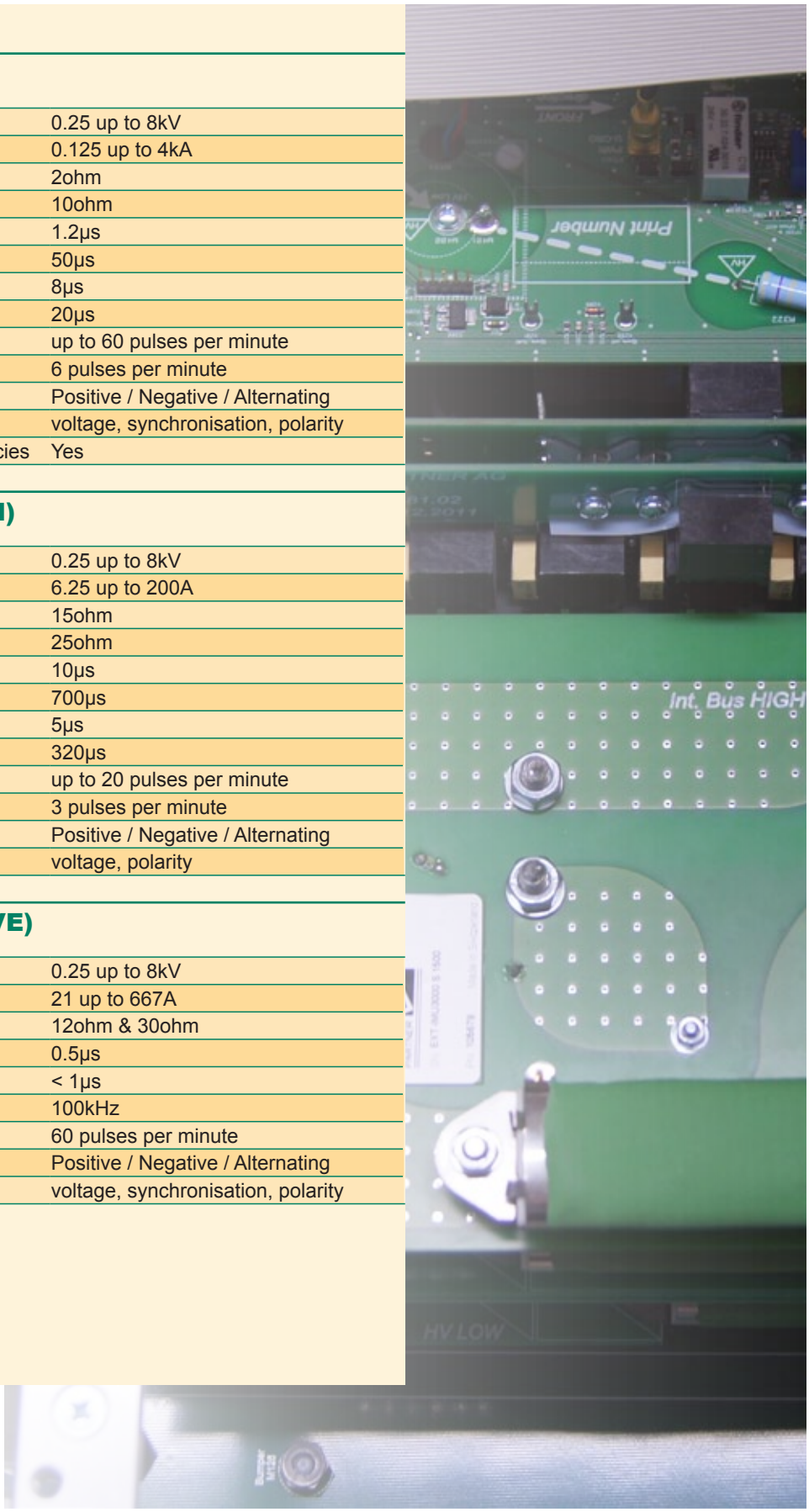
Voltage range	0.25 up to 8kV
Current range	0.125 up to 4kA
Source impedance	2ohm
Serial resistance common mode	10ohm
Pulse front time at open circuit	1.2µs
Pulse duration at open circuit	50µs
Pulse front time at short circuit	8µs
Pulse duration at short circuit	20µs
Pulse repetition	up to 60 pulses per minute
Pulse repetition at maximum voltage	6 pulses per minute
Polarity	Positive / Negative / Alternating
Programmable parameter ramps	voltage, synchronisation, polarity
Synchronisation on power line frequencies	Yes

EXT-IMU3000 T (TELECOM)

Voltage range	0.25 up to 8kV
Current range	6.25 up to 200A
Source impedance	15ohm
Serial resistance	25ohm
Pulse front time at open circuit	10µs
Pulse duration at open circuit	700µs
Pulse front time at short circuit	5µs
Pulse duration at short circuit	320µs
Pulse repetition	up to 20 pulses per minute
Pulse repetition at maximum voltage	3 pulses per minute
Polarity	Positive / Negative / Alternating
Programmable parameter ramps	voltage, polarity

EXT-IMU3000 R (RINGWAVE)

Voltage range	0.25 up to 8kV
Current range	21 up to 667A
Source impedance	12ohm & 30ohm
Pulse front time at open circuit	0.5µs
Pulse front time at short circuit	< 1µs
Ringing frequency	100kHz
Pulse repetition at maximum voltage	60 pulses per minute
Polarity	Positive / Negative / Alternating
Programmable parameter ramps	voltage, synchronisation, polarity



Technical Specifications

DIPS, Interrupts & Variations

EXT-TRA3000 D (AC Dips)

Voltage range	0 up to 250V
Frequency range with variac	48 up to 60Hz
Nominal current	16A
Interruption time	50µs up to 30s
Amplitude interrupt with internal variac	0 up to 100% max. 5A
Phase angle to turn on and off	0° up to 360°
Voltage variation with internal variac	0 up to 110% max. 5A
Interrupt less than 1 period	Input by phase angle
Interrupt more than 1 period	Input in milli seconds
Programmable parameter ramps	voltage, synchronisation, interrupt
Rise and fall time at 100ohm load	1 up to 5µs

EXT-TRA3000 D (DC Dips)

Voltage range	20 up to 300V
Current range	0 up to 10A
Interruption time	1 up to 29999ms
Rise and fall time at 100ohm load	1 up to 50µs

EXT-TRA3000 V (Voltage Variation)

Voltage range	0 up to 260V
Rated current	5A
Test modes	Abrupt, Adjust
Switching time abrupt	1 up to 5µs
Ramp transition time	25 up to 999 periods

Common Mode Tests

EXT-TRA3000 C

Continuous duration test level	0 up to 30Vrms
Voltage setting range	0.1 up to 35V
Source impedance	50ohm
Sync turn on for AC	0°
DC switching time	1 up to 5µs
Power frequency tests	DC, 16.7Hz, 50Hz, 60Hz
Power harmonic tests	15Hz up to 150kHz
Sweep time	1 decade / minute
Short duration test level	0 up to 300Vrms
Short duration tests	DC, 16.7Hz, 50Hz, 60Hz

Technical Specifications

Mainframe Specifications

IMU3000 Control features

User Interface	7” Colour touch panel
Operating System	EMC PARTNER (EPOS)
Communication Interface	Ethernet
Accessory control interface	RS485
Atmospheric measurement	Temperature, humidity, pressure
BNC monitor ports	EUT plus IMPULSE voltage & current
Trigger mode	Auto, manual, external
Synchro source	EUT power, Impulse out, External
Synchro on / off	0° up to 360°

IMU3000 Coupling Decoupling Network

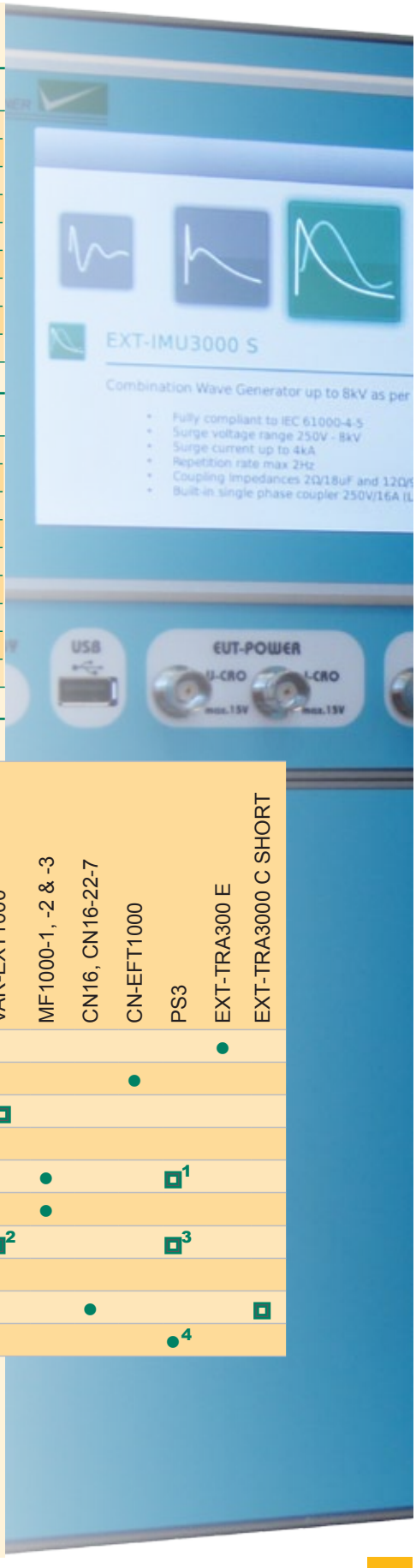
Maximum AC voltage	280V
Maximum DC voltage	300V
Maximum EUT current	16A
Frequency range	DC up to 60Hz
Power frequency synchro	16.7 up to 60Hz
Coupling EFT	L, N, PE, L+N, L+PE, N+PE, L+N+PE, direct
Coupling CWG	L-N, L-PE, N-PE, direct
Coupling RINGWAVE	L-N, L-PE, N-PE, direct
Coupling TELECOM	Direct

IMU3000 Selection Guide

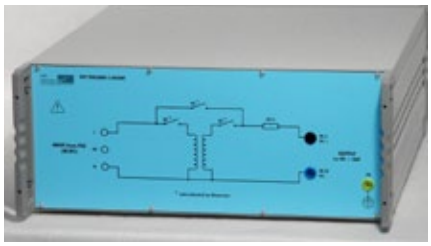
STANDARDS	IMU3000 Mainframe	EXT-IMU3000 HV	EXT-IMU3000 F5 or F6	EXT-IMU3000 S	EXT-IMU3000 R	EXT-IMU3000 T	EXT-TRA3000 D	EXT-TRA3000 V	EXT-TRA3000 C	External Options	VAR-EXT1000	MF1000-1, -2 & -3	CN16, CN16-22-7	CN-EFT1000	PS3	EXT-TRA300 E	EXT-TRA3000 C SHORT
IEC61000-4-2 ESD	●															●	
IEC61000-4-4 EFT	●	●	●											●			
IEC61000-4-5 CWG	●	●		●							□						
IEC61000-4-5 TELECOM	●	●				●											
IEC61000-4-8 AC MF	●							□				●			□[1]		
IEC61000-4-9 Impulse MF	●	●		●								●					
IEC61000-4-11 AC Dips	●						●	□[2]			□[2]				□[3]		
IEC61000-4-12 RINGWAVE	●	●			●												
IEC61000-4-16 Common mode	●								●				●				□
IEC61000-4-29 DC Dips	●						●								●[4]		

● = necessary □ = options

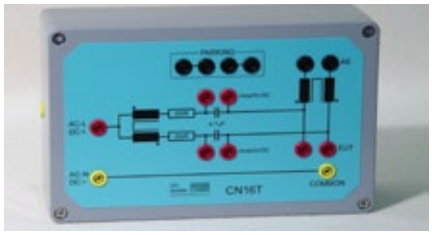
1. PS3 can be used for magnetic field testing including 16.7Hz
2. Internal and external variac >500A inrush current
3. PS3 ca. 100A inrush current frequency range DC to 400Hz
4. Requires 2 x PS3



Accessories and Options

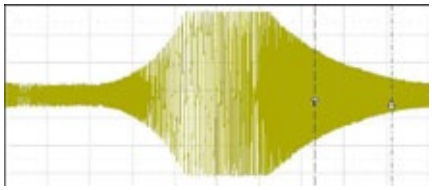


EXT-TRA3000 C SHORT



CN16 T

MF-COIL-HAND



CM SWEEP Software

COMMON MODE TESTS DC to 150kHz

EXT-TRA3000 C SHORT

Extends TRA3000 C with short test. DC, 16.7Hz, 50Hz and 60Hz up to 300V. External box with 50 ohm output. Programing and control from TRA3000 front panel.

CN16

Coupling network for common mode testing DC to 150kHz. Coupling onto DC, AC single and three phase supplies.

CN16T

T coupling network for common mode testing DC to 150kHz. Coupling onto telecom lines. One telecom pair per CN16T.

CN16-22-7 C

Coupling network for 2 port common mode testing in accordance with IEC 60255-22-7. R = 220 ohm and C = 0.47uF.

CN16-22-7 D

Coupling network for 2 port common mode testing in accordance with IEC 60255-22-7. R = 100 ohm and C = 0.1uF.

MF-COIL-HAND

MF-COIL-HAND extends TRA3000 C for magnetic field test in accordance with EN55103-2. Inhomogeneous field in range 0.01A/m up to 4A/m.

Frequency range 50Hz up to 10kHz

MF-HELMHOLTZ

MF-HELMHOLTZ extends TRA3000 C for magnetic field test in accordance with EN55103-2. Homogeneous field in range 0.01A/m up to 10A/m.

Frequency range 50Hz up to 10kHz

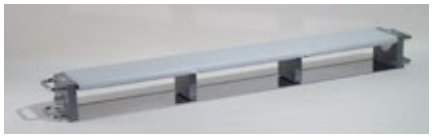
CM SWEEP Function

CM-SWEEP enables user programable frequency and amplitude variations to be programed in the Common Mode module. Sweep events can be programed with linear or logarithmic progressions over the frequency range 9kHz to 150kHz. CM-SWEEP is an option to IMU3000.

EFT / Burst

CN-EFT1000

Capacitive coupling clamp 100ohm according to IEC 61000-4-4 including 1m coax cable with BNC connectors.



CN-EFT1000

VERI-CP-EFT

Transducer plate for capacitive coupling clamp calibration. Connector HV BNC with 15cm strap to bond to the reference ground plane.

VERI-CP-EFT

CN-BALUN

Balanced/unbalanced transmission line transformer for EFT and 1MHz damped sine according to ANSI/IEEE C.37.90. Including coaxial cable with HV-BNC plugs (3x 0.5m), test tip + HV-BNC adapter (1 red, 1 black) and HV-BNC connector (2x).

CN-BALUN

VERI50EFT

50ohm termination with high voltage BNC connector and integrated divider for EFT calibration / verification in accordance with IEC 61000-4-4 Ed2.

VERI50EFT

VERI1K EFT

1kOhm termination with high voltage BNC connector and integrated divider for EFT calibration / verification in accordance with IEC 61000-4-4 Ed2.

VERI1KEFT

TELECOM TESTS ITU-T K20, K21, K44

NW-K44PC

Power contact network for telecom testing. For use with DIPS circuit of TRA3000 and TRA2006.

NW-K44PI

Power induction network for telecom testing.Requires NW-K44PC.

PCPI160E

Power contact current limiting resistor network for telecom testing. For use with NW-K44PC.

Two PCPI160E units are required for 4 wire testing.

NW-K44PC + TRA OPTION NW-K44PI

CDN-UTP and CDN-UTP8

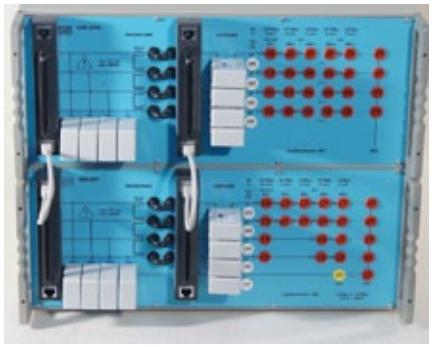
The CDN-UTP is a sophisticated coupling and de-coupling network for superimposing surge impulses on balanced communication lines in accordance with IEC 61000-4-5 (Figure 12: unshielded symmetrical interconnection lines), ITU-K20, K21 and FCC part 68. The maximum data rate is 100Mb/s.

It is designed for 1.2/50µs and 10/700µs pulses up to 6.6kV.

CDN-UTP8 has 4 pairs (8 lines) and a maximum data rate of 1Gb/s.

ADAPTER BOX200, extends CDN-UTP8 for ITU-T K44 testing

ADAPTER BOX RJ45, enables high speed Ethernet connection.



CDN-UTP-8

3-Phase EFT, SURGE and Ringwave CDNs

CDN2000-06-32

CDN2000-06-32 for Three Phase Coupling

Add three phase capability with automatic or manual three phase coupling networks. The CDN2000A-06-32 and CDN2000-06-32, can be used for EFT, CWG surge and ring wave. Coupling path selection is either automatic under software control, or manual on the CDN front panel. All coupling networks fulfill the requirements laid down in the IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-12 (ring wave) and ANSI C62.41 standards.

280V Lx to N/PE, 480V Lx-Lx, 480V Lx/N-PE

480V / CMC enables coupling according to ANSI C62.41 L1+L2+L3+N to PE.

CDN2000A-06-63

CDN2000A-06-63 for Three Phase Coupling

Add higher current three phase capability with automatic coupling network CDN2000A-06-63. This can be used for EFT, CWG surge and ring wave. Coupling path selection is automatic under software control. This coupling network fulfills the requirements laid down in the IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-12 (ring wave) and ANSI C62.41 standards.

280V Lx to N/PE, 480V Lx-Lx, 480V Lx/N-PE

CDN-A-3P200-690 F-S

CDN-A-3P100-480 F / F-S for 100A three Phase Coupling

Three phase CDN with line voltages L to N/PE=280V and L to L=480V, line current 100A per phase. Automatic coupling path selection for EFT or EFT and SURGE controlled by TRA2006, TRA3000, MIG0603INx and IMU3000.

CDN-A-3P100-690 F / F-S for 100A three Phase Coupling

Three phase CDN with line voltages L to N/PE=398V and L to L=690V, line current 100A per phase. Automatic coupling path selection for EFT or EFT and SURGE controlled by TRA2006, TRA3000, IMU3000 and MIG0603INx.

CDN-A-3P200-480 F / F-S for 200A three Phase Coupling

Three phase CDN with line voltages L to N/PE=280V and L to L=480V, line current 200A per phase. Automatic coupling path selection for EFT or EFT and SURGE controlled by TRA2006, TRA3000, IMU3000 and MIG0603INx.

CDN-A-3P200-690 F / F-S for 200A three Phase Coupling

Three phase CDN with line voltages L to N/PE=398V and L to L=690V, line current 200A per phase. Automatic coupling path selection for EFT or EFT and SURGE controlled by TRA2006, TRA3000, IMU3000 and MIG0603INx.

CDN-A-3P100-AC-DC

CDN-A-06-32-AC-DC Surge and EFT CDN

Combined automatic CDN for Solar Inverter testing on 2 strings. DC+ and DC- up to 1000V / 32A and AC 3-Phase 690V / 32A. Surge combination wave and EFT in one unit. Controlled by TRA2006, TRA3000, IMU3000 and MIG0603INx

CDN-A-3P100-AC-DC

Combined automatic CDN for Solar Inverter testing on 2 strings. DC+ and DC- up to 1000V / 100A and AC 3-Phase 690V / 100A. Surge combination wave and EFT in one unit.

SURGE NETWORKS

CDN-KIT1000

Surge coupling-decoupling network for data lines according to IEC 61000-4-5. Comprises one universal coupling module, one low frequency and one high frequency decoupling module.

CDN-KIT1000

NW-TRA-RAIL

Applicable standards are IEC 60571 Ed. 2.0b, EN 50155 and RIA12.

TRA2000 and option NW-TRA-RAIL fulfill the waveform A impulse requirement.

Waveform A: 5/50µs (1.8kV), Zout 100ohm.

In combination with the ESD3000DM8 which generates the higher level waveform B impulse.

NW-TRA-RAIL

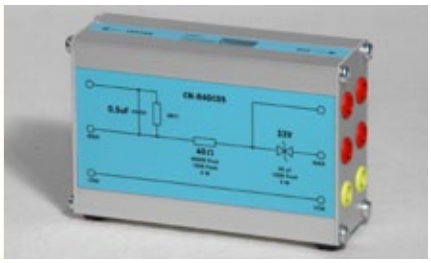
DN2000-22-5

Decoupling module for IEC 60255-22-5 applications. 20mH inductance, 275V varistor to protect auxilliary equipment.

DN2000-22-5

CN-R40C05

Surge coupling network according to IEC61000-4-5 and EN50121-4 railway applications. 2 each 40ohm resistor and 0.5µF capacitors. Can be used together with CDN2000-06-32 for testing on power lines



CN-R40C05

CN16-450C

Single phase CDN for superimposing surge and EFT into power lines. EUT power supply up to 16A at 115V 400Hz. For use ONLY with TRA2004 or TRA2006.

CN16-450C

ELECROSTATIC DISCHARGE

EXT-TRA3000E

ESD discharge module to fulfill IEC 61000-4-2 requirements. Self contained unit with high voltage generation. For full details, please refer to brochure “ESD Testers”. For use ONLY with IMU3000.

ESD-VCP50

Vertical coupling plate to perform indirect Contact discharge tests. Set includes grounding cable with 2 x 470kohm series resistors.

AC DIPS INTERRUPTS AND VARIATION

PFS32 & SRC32

PFS

PFS extends the IMU3000 Test System to include three phase testing of AC and DC interrupts up to 480V in accordance with IEC 61000-4-34.

Available with different current ratings:
- PFS32 for interruptions up to 32A per phase
- PFS63 for interruptions up to 63A per phase
- PFS75 for interruptions up to 75A per phase

SRC

SRC extends the IMU3000 Test System to include three phase testing of AC dips up to 480V in accordance with IEC 61000-4-34. Requires one PFS unit.

Available with different current ratings:
- SRC32 for dips up to 32A per phase
- SRC63 for dips up to 63A per phase
- SRC75 for dips up to 75A per phase

VAR-EXT1000

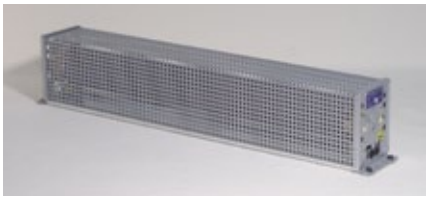
VAR-EXT1000

External 16A variac module extends the internal capability of TRA3000 for higher powered EUTs.

VERI-DIPS

VERI-DIPS

Measuring set for calibration / verification of the EUT inrush current.



DIPS100E

DIPS100E

100ohm non-inductive resitor for calibration of dips/interrupts switching times.

DC DIPS and INTERRUPTS

PFS100DC

PFS100DC

Extends IMU3000 D for dc interrupt testing. DC power fail simulator for Imax 100Adc. Vmax 600Vdc. Output floating DC+, DC- and ground.

Automatic control only from IMU3000 D front panel.

AC and Impulse Magnetic Fields

MF1000-1, MF1000-2 and MF1000-3

Applicable standards are IEC 61000-4-8 for a.c. and IEC 61000-4-9 for impulse magnetic fields.

Coil antenna MF1000-1 and MF1000-2 can be mounted on stands that facilitate testing in all axis.

Antenna	Coil dimensions	AC magnetic fields (50/60Hz)	Impulse magnetic fields (8/20µs)
MF1000-1	1m x 1m	1 up to 130A/m	0.1 up to 1.5kA/m
MF1000-2	1m x 2.6m	1 up to 110A/m	0.1 up to 1.1kA/m
MF1000-3	1m x 1m	0.3 up to 1kA/m	

MF1000-1 and MF1000-2 antenna can also be used with the damped oscillatory wave generators to fulfill the IEC61000-4-10 requirement. For further details please refer to the Oscillatory Wave Test System brochure.

MF1000-1, -2 & -3

GENERAL

ATS SENSOR

Humidity Temperature and Pressure sensor connects to IMU3000 front panel in series with ESD module. Atmospheric conditions are registered for inclusion in the test report.

ATS

PS3

Easy to use power supply for common voltage/frequencies. Control from TRA3000. Output selected between 230V/50Hz, 115V/60Hz, 230V/16.7Hz and 115V/400Hz. 3000W capability.

For use with TRA3000 for AC and DC DIPS testing.

PS3

PS3SOFT-EXT

PS3SOFT-EXT extends PS3 for applications such as IEC 61000-4-28 and magnetic field at 16.7Hz.

WEB SERVER

Use any PC with any operating system and internet browser to connect to the internal web server. This enables access to test report and service data either directly on a PC internet browser or using the USB memory stick. Customize the test report by uploading company logo and test information from the USB memory stick. Conversely, by simply selecting the GOTO USB button, test report and service information can be saved directly to the USB memory stick. Communication with a PC is by Ethernet, which again reduces dependancy on obsolete or expensive interfaces.

Remote control from a PC is best achieved with the OPTICAL LINK and the TEMA3000 software package.

OPTICAL LINK

The 10m long fibre optic cable provides EMC isolation between IMU3000 and a remote control PC. The remote control PC will not be disturbed by the impulses generated by IMU3000 and the operator can locate the PC in a less hostile environment. The optical isolation allows up to 4 generators with Ethernet connections to be linked to one PC.

OPTO-LINK-CTRL3000

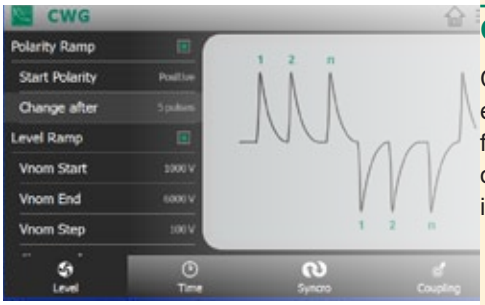
TEMA3000 Software

Remote control from a PC requires TEMA3000 software and an OPTICAL LINK to galvanically separate the PC from IMU3000.:

TEMA3000 is a modern software running under Win7 operating systems.

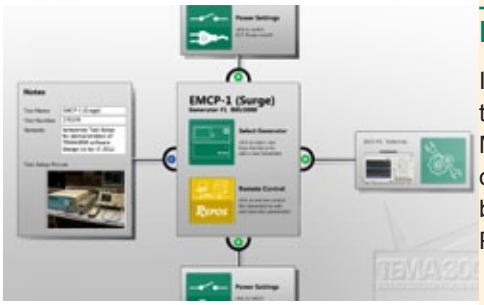
The heart of a complex test system, TEMA3000 includes the functions:

- Generator control from a PC
- Linking of test to form a complex sequence
- Library of predefined tests for IEC basic and product standards
- Integration of DSOs
- Test report generation



Generator control from a PC

Connected using the Ethernet cable to IMU3000, TEMA3000 opens a window which emulates the EPOS in IMU3000. All parameters are input exactly as on the IMU3000 front panel. Any generator connected to TEMA3000 will be simultaneously programed over the Ethernet cable. Conversely, parameters entered on IMU3000 are changed in TEMA3000.

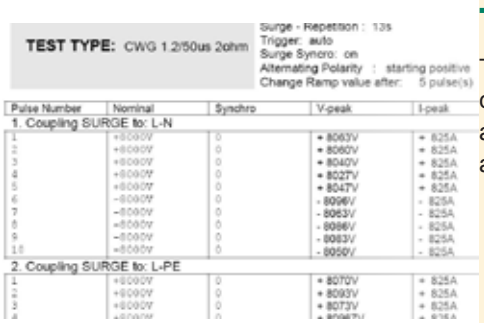


Linking tests to form a sequence

Individual tests stored on the PC or in IMU3000 can be combined to form a complex test sequence. This feature enables ESD, EFT, SURGE, RINGWAVE, DIPS and COMMON MODE tests to be linked and run in a continuous sequence. Apart from tests, other applications can be started, an oscilloscope can be integrated or a message box opened. As a LIBRARY module, pre-defined test routines are available from EMC PARTNER. These cover all IEC basic and generic standards.

Control of a DSO

A DSO module is available to extend the basic TEMA3000 software package. DSOs with Ethernet and USB interfaces can be controlled from TEMA3000 software. Apart from setting timebase and amplitude, measurement features in the DSO can also be accessed and measurement results added to the test report. Tektronix, Agilent, Lecroy and Rohde & Schwarz models are supported as standard.



Test Report Generation

TEMA3000 basic module generates a HTML format test report. The basic software can be extended with the PROTOCOL module which enables transfer of report data as .csv files for import into EXCEL©, custom report formatting and final reports generated as Adobe© .pdf files.

EMC PARTNER's Product Range

The Largest Range of Impulse Test Equipment up to 100kA and 100kV.

Immunity Tests

Transient Test System can be used to performs all EMC tests on electronic equipment. ESD, EFT, surge, AC dips, AC magnetic field, surge magnetic field, common mode, damped oscillatory and DC dips tests are available as stand-alone or combined test instruments. A large range of accessories for different applications is available: three phase couplers up to 690V/100A, telecom and data line couplers, verification sets, magnetic field coils. Immunity test systems fulfills IEC and EN 61000-4-2, -4, -5, -8, -9, -11, -12, -16, -18, -29.

TRA3000 and ESD3000 ideal for CE testing
Easily extended to meet other applications

Lightning Tests

A range of test equipment and accessories for aircraft, military and telecom applications. Complete solutions including all hardware and software to meet the requirements of RTCA / EUROCAE DO160 / ED14 for indirect lighting on aircraft systems, MIL-STD-461 tests CS106, CS115, CS116, for military vehicles, ITU-T .K44 basic and enhanced tests for impulse, power contact and power induction, FCC part 68 for telecom equipment testing.

MIG2000-6 – a flexible solution for military and avionic applications

Component Tests

Modular impulse generators (MIG) for transient component testing on: varistors, gas discharge tubes (GDT), surge protective devices (SPD), X Y capacitors, circuit breakers, watt-hour meters, protection relays, insulation material, suppressor diodes, connectors, chokes, fuses, resistors, emc-gaskets, cables, etc. Manual or fully automated solutions are available up to 100kA (8/20us) and 144kV (1.2/50us).

MIG1212CAP – an automatic 8 bank capacitor test system

Emission Measurements

One unit performs all measurements on the power supplies of electronic equipment and products for the CE-Mark. HAR1000 uses a novel techniques to deliver clean power source for the EUT in a compact and lightweight form. The system includes all hardware and software including line impedance networks, control and evaluation software. A basic 1-phase system can be easily extended to 3-phase by adding 2 further phases . HARCS Immunity software further expands the system by addidng interharmonic tests, voltage variation and ripple on DC tests. Complies with IEC / EN 61000-3-2, -3 IEC / EN 61000-4-13, -14,

HAR1000-3P and HARCS software a complete test system

System Automation

As addition to the basic generators, a range of accessories are available to enhance capability. Test cabinets, test pistols, adapters and software, simplify interfacing with the EUT.

PS3 programmable source is an EMC hardened supply for frequencies form 16.7Hz to 400Hz. Frequency variation tests can be made using the PS3-SOFT-EXT. Complies with IEC / EN 61000-4-28

For further information please do not hesitate to contact EMC PARTNER's representative in your region. You will find a complete list of our representatives and a lot of other useful information on our website:

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Version 02 November 2012. Subject to change without notice.