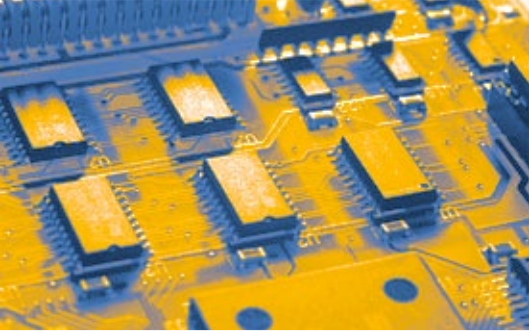


IMU4000 Test System



- IMU4000 Overview 2**
- Features & Benefits. 4**
- Application Options. 6**
- Standards. 7**
- Technical Specifications. 8**
- Accessories and Options. 12**
- TEMA3000 Software 18**
- EMC PARTNER's Product Range 19**

IMU4000 is the Tester You want!

VARIATION
V extension



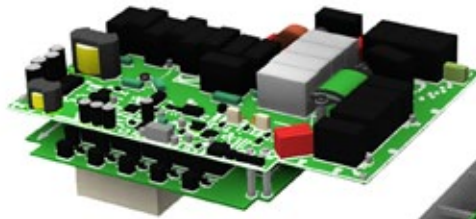
COMMON MODE
C extension



SURGE
S extension



DIPS
D extension



EFT / BURST
F/F5 extension



EPOS Module

EMC PARTNER Operating System (EPOS) is the heart of IMU4000.

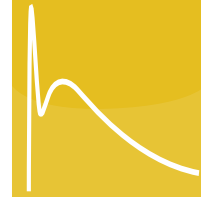
The user interface is a modern 7" touch panel display with colour graphics that makes parameter entry and system programming an experience that is second to non.

E extension

PN: 104023

Electrostatic Discharges (ESD)

Connected to the IMU4000 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.



F extension

4kV PN: 104024 / 5kV PN: 106022

Electric Fast Transient / Burst (EFT)

Plug-in for the IMU4000 mainframe. EXT-TRA3000 F / F5 generates fully compliant impulses up to 4kV / 5kV, meeting and exceeding IEC and EN basic standard requirements. HV output for use with Capacitive coupling clamp and 3-Phase CDNs

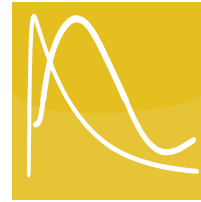


S extension

PN: 104027

Combination Wave Generator / Surge (CWG)

Plug-in for the IMU4000 mainframe. EXT-TRA3000 S generates fully compliant impulses up to 4.1kV, meeting and exceeding IEC and EN basic standard requirements. HV output for use with 3-Phase CDNs



C extension

PN: 104028

Common Mode Generator (CM)

Plug-in for the IMU4000 mainframe. EXT-TRA3000 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 IMU4000 mainframe. EXT-TRA3000 D is an electronic switch for interrupt testing to 16A. Can be used with internal (EXT-IMU3000 V) or external VAR-EXT1000 for DIP testing.

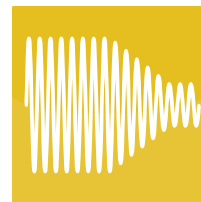


V extension

PN: 104025

AC Dips & Variations

Plug-in for the IMU4000 mainframe. EXT-IMU3000 V gives 5A DIP and variation capability.

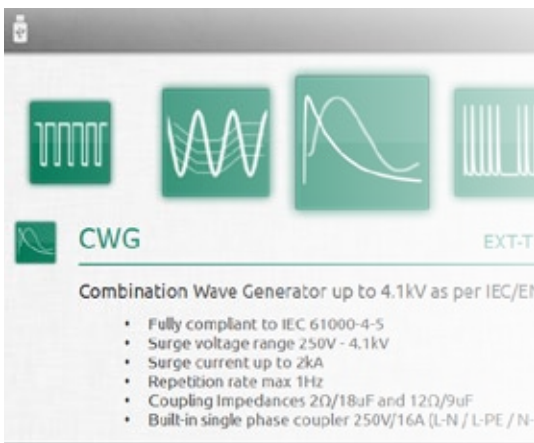


Features



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
Impulse up to 4.1kV
EFT up to 5kV test level
Compatible with existing Transient accessories.

Benefits

TEST REPORT



GENERATOR DETAILS

Model: IMU3000
 No: 1010
 Date: 11.09.2013

INFORMATION

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

Component Under Test) DETAILS

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

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

Nominal	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
8000V	0	8000V	825A

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

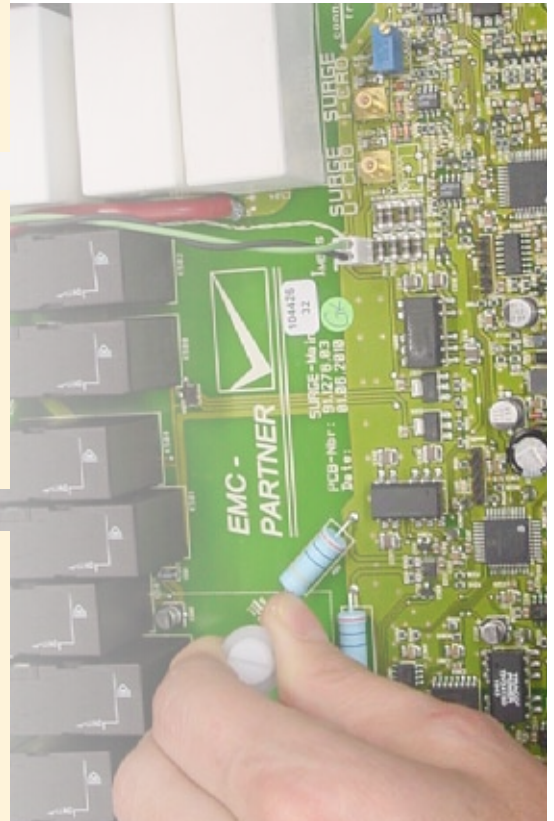
Start with a single function tester.
 Add new extensions on site
 Customize to your requirements

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



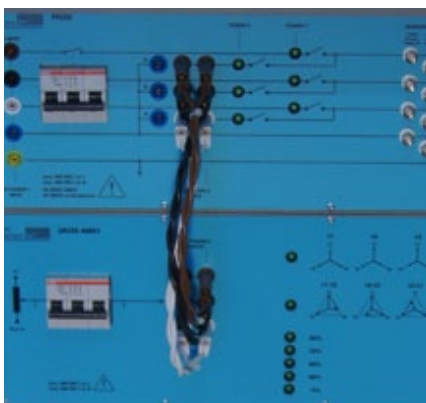
Application Options



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 IMU4000. Menu structure updated if an automated CDN is connected. Range of products from 32A up to 200A per phase.

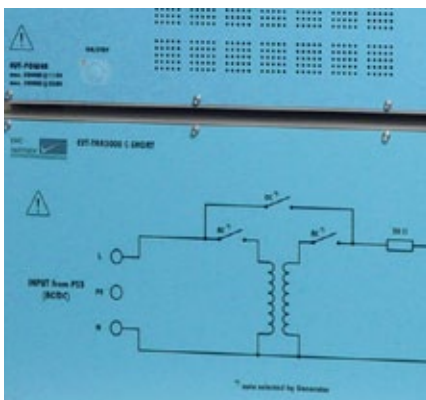


3-Phase AC Dips and Interrupts

Units for Interrupt and/or dip testing. Fully automatically controlled via the RS485 bus on IMU4000. 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.

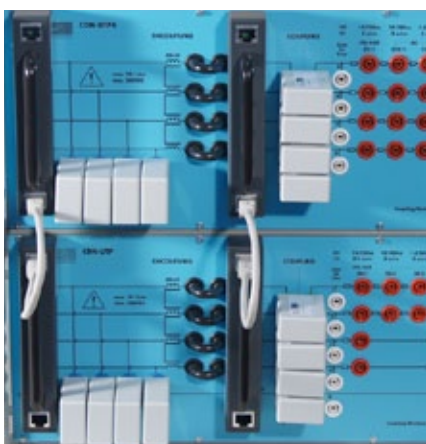


DC Dips and Interrupts

Specially designed for dc tests with safety features to isolate dc. Switching automatically controlled from IMU4000 via RS485 bus.

Applications include Electric vehicles, solar 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 IMU4000. Connection via RS485 bus. Requires PS3 source to derive the 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 IMU4000 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 IMU4000 SURGE circuit for testing unshielded symmetrical inter-connection lines in accordance with IEC 61000-4-5 (Figure 12). CDN-UTP ED3 operates up to 100Mb/s (100baseT). CDN-UTP8 ED3 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 61000-4-16 : 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 over currents

ITU-T K21: Resistibility of telecommunication equipment installed in customer premises to over voltages and over currents

ITU-T K44: Resistibility tests for telecommunication equipment exposed to over voltages and over currents – Basic Recommendation



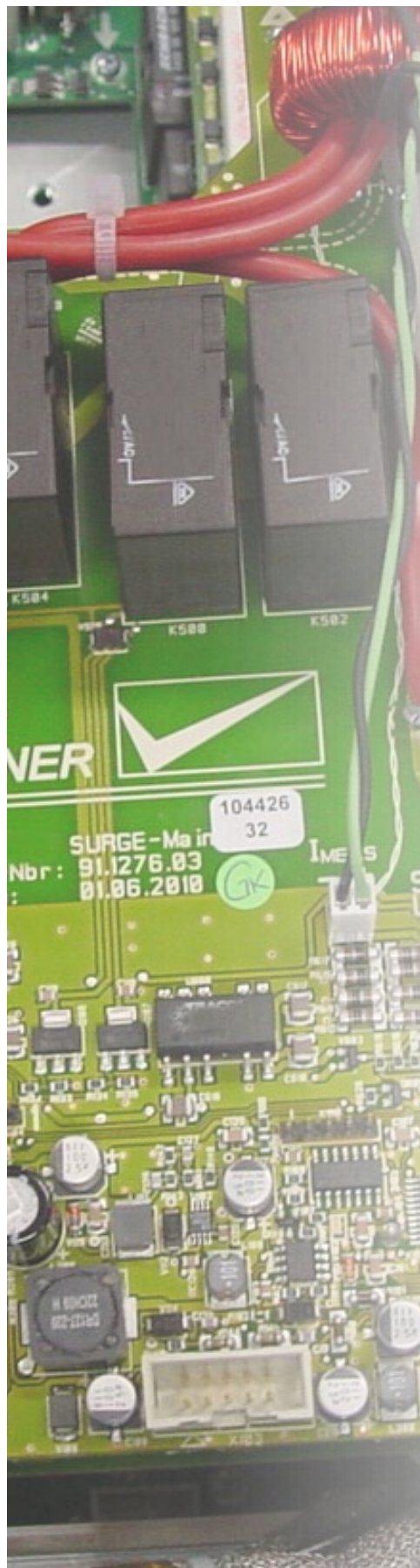
American National Standards Institute (ANSI)

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



Technical Specifications



Mainframe Specifications

IMU4000 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 (with accessory)
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°

IMU4000 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

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

Technical Specifications

Electric Fast Transient (Burst)

EXT-TRA3000 F (EFT 4kV)

Voltage range	0.25 up to 4.4kV
Voltage amplitude into 50ohm	0.125 up to 2.0kV
Voltage amplitude into 1kohm	0.24 up to 4.0kV

EXT-TRA3000 F5 (EFT 5kV)

Voltage range	0.25 up to 5.1kV
Voltage amplitude into 50ohm	0.125 up to 2.55kV
Voltage amplitude into 1kohm	0.24 up to 4.8kV

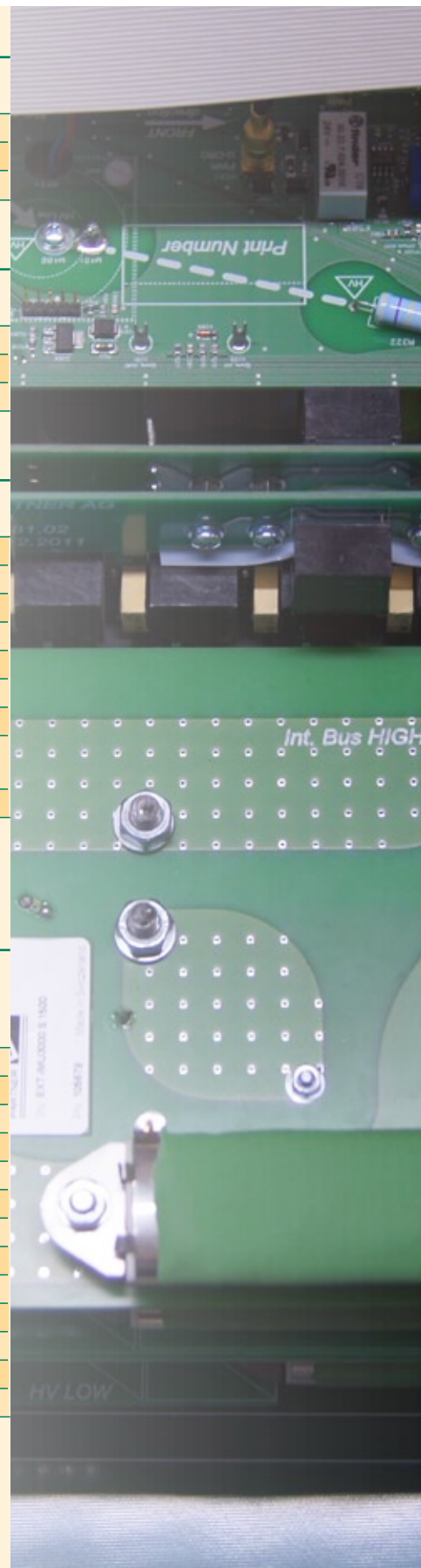
COMMON EFT SPECIFICATIONS

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
Spike distribution	IEC burst pattern and random

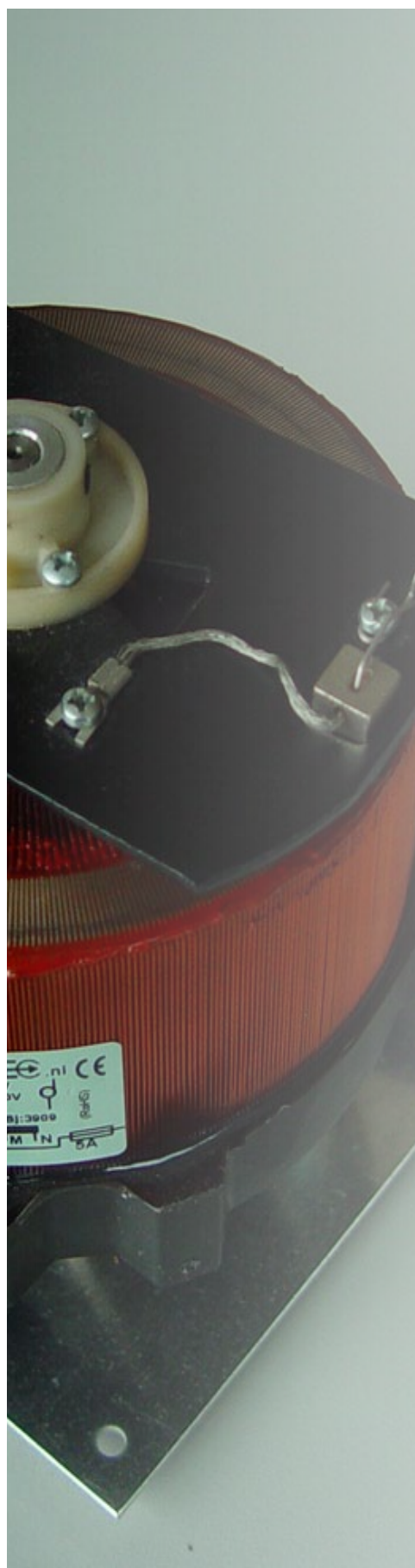
Surge Impulses

EXT-TRA3000 S (CWG 4kV)

Voltage range	0.25 up to 4.1kV
Current range	0.125 up to 2.05kA
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



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
Option 3.2 Special Program	50ms Interrupt test to IEC 62052-11

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
Sweep Frequency Programable	8 Frequency Points
Sweep Amplitude Programable	8 Amplitude Points
Sweep Change	Linear or Logarithmic

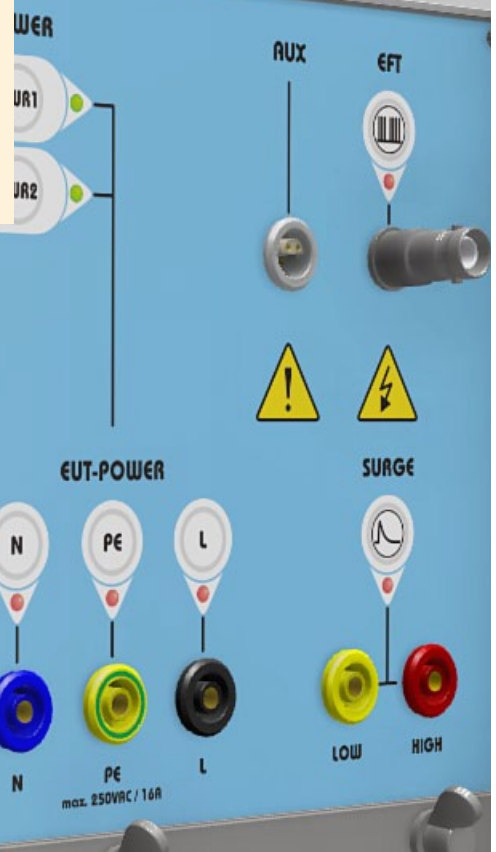
Technical Specifications

IMU4000 Selection Guide

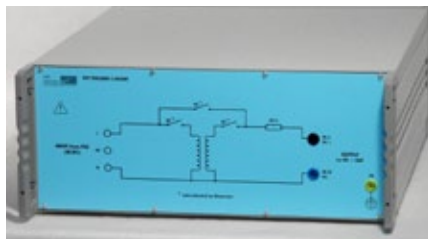
STANDARDS						External Options								
	IMU4000 Mainframe	EXT-TRA3000 F or F5	EXT-TRA3000 S	EXT-TRA3000 D	EXT-TRA3000 V		EXT-TRA3000 C	VAR-EXT1000	MF1000-1, -2 & -3	CN16, CN16-22-7	CN-EFT1000	PS3	PFSx & SRCx	EXT-TRA300 E
IEC61000-4-2 ESD	●												●	
IEC61000-4-4 EFT	●	●								●				
IEC61000-4-5 CWG	●		●				■							
IEC61000-4-8 AC MF	●					■		●			■ ¹			
IEC61000-4-9 Impulse MF	●		●					●						
IEC61000-4-11 AC Dips	●			●		■ ²	■ ²				■ ³			
IEC61000-4-16 Common mode	●					●			●					■
IEC61000-4-29 DC Dips	●			●							● ⁴			
IEC61000-4-34 AC DIPS > 16A	●											●		

● = necessary ■ = options

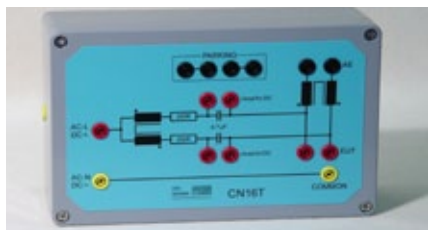
1. PS3 can be used for magnetic field testing including 16.7Hz
2. Internal and external variac >500A inrush current
3. PS3 ca. 100A inrush current frequency range DC to 400Hz
4. Requires 2 x PS3 for automatic control or customer supplied PSUs for manual control



Accessories and Options



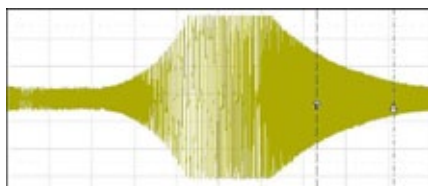
EXT-TRA3000 C SHORT



CN16 T



MF-COIL-HAND



CM SWEEP Software

COMMON MODE TESTS DC to 150kHz

EXT-TRA3000 C-SHORT

Extends IMU4000 C with 1s short test. DC, 16.7Hz, 50Hz and 60Hz up to 300V. External box with 50 ohm output. Programming and control from IMU4000 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. $R = 220 \text{ ohm}$ and $C = 0.47\mu\text{F}$.

CN16-22-7 D

Coupling network for 2 port common mode testing in accordance with IEC 60255-22-7. $R = 100 \text{ ohm}$ and $C = 0.1\mu\text{F}$.

MF-COIL-HAND

MF-COIL-HAND extends IMU4000 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 IMU4000 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 programmable frequency and amplitude variations to be programmed in the Common Mode module. Sweep events can be programmed with linear or logarithmic progressions over the frequency range 9kHz to 150kHz. CM-SWEEP is standard in IMU4000.

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

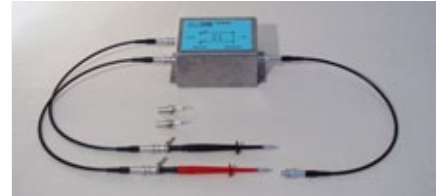
Transducer plate for capacitive coupling clamp calibration. Connector HV BNC with 15cm strap to bond to the reference ground plane.



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 IMU4000 and IMU3000.



NW-K44PC + NW-K44PI

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 8 wire testing.

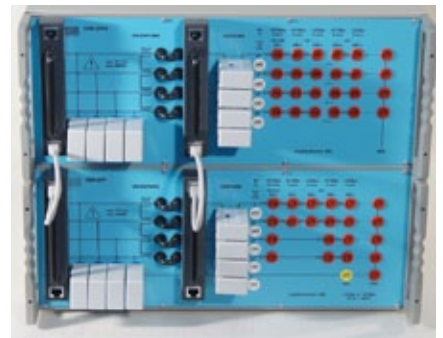
CDN-UTP ED3 and CDN-UTP8 ED3

The CDN-UTP ED3 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). The maximum data rate is 100Mb/s. CDN-UTP8 ED3 has 4 pairs (8 lines) and a maximum data rate of 1Gb/s

Both are designed for 1.2/50µs and 10/700µs pulses up to 6.6kV.

ADAPTER BOX200, extends CDN-UTP8 ED3 for ITU-T K44 External Symmetrical Pairs testing

ADAPTER BOX RJ45, enables high speed Ethernet connection.



CDN-UTP8 ED3

3-Phase EFT, SURGE and Ringwave CDNs



CDN2000-06-32



CDN2000A-06-63



CDN-A-3P100-690 F-S



CDN-A-3P100-AC-DC

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 and CWG surge. 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 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 for Three Phase Coupling

Add higher current three phase capability with automatic coupling network CDN2000A-06-63. This can be used for EFT and CWG surge.

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 and ANSI C62.41 standards.

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

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, IMU4000 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, IMU4000 and IMU3000.

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, IMU4000 and IMU3000.

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, IMU4000 and IMU3000.

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. Controlled directly from IMU4000.

SURGE NETWORKS

CDN-KIT1000 ED3

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 ED3

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: 5/50 μ s (1.8kV), Zout 100ohm.

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



NW-TRA-RAIL

DN2000-22-5

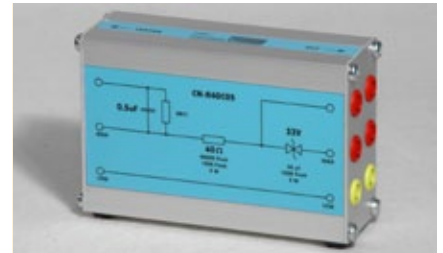
Decoupling module for IEC 60255-22-5 applications. 20mH inductance, 275V varistor to protect auxilliary equipment.



DN2000-22-5

CN-R40C05

Surge coupling network according to IEC61000-4-5 and EN50121-4 railway applications. 2 each 40ohm resistors and 0.5 μ F 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 IMU4000 or IMU3000.



CN16-450C

ELECTROSTATIC 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 Test System". For use ONLY with IMU4000 and 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

PFS

PFS extends the IMU4000 and 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 IMU4000 and 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

External 16A variac module extends the internal capability of IMU4000 and IMU3000 for higher powered EUTs.

VERI-DIPS

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

DIPS100E

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



PFS32 & SRC32



VAR-EXT1000



VERI-DIPS



DIPS100E

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 antennas MF1000-1 and MF1000-3 can be mounted on stands that facilitate testing in all axis.

Antenna	Coil dimensions	AC magnetic fields (50/60Hz)	Impulse magnetic fields (8/20 μ s)
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 antennas 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 IMU4000 or 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 IMU4000 or IMU3000. Output selected between 230V/50Hz, 115V/60Hz, 230V/16.7Hz and 115V/400Hz. 3000W capability.

For use with IMU3000 or IMU4000 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.



ADAPTER BOX TRA-ACC

ADAPTER BOX TRA-ACC

Extends the application of the TRA 3-Phase CDN accessories with com port for use with IMU4000. The ADAPTER BOX TRA-ACC is needed as an interface between IMU4000 and all automatic CDN2000A models.

OPTICAL LINK

The 10m long fibre optic cable provides EMC isolation between IMU4000, IMU3000 and a remote control PC. The remote control PC will not be disturbed by the impulses generated by IMU4000 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.



OPT-LINK-CTRL3000

TEMA3000 Software



Remote control from a PC requires TEMA3000 software and an OPTICAL LINK to galvanically separate the PC from IMU4000.

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 IMU4000, TEMA3000 opens a window which emulates the EPOS in IMU4000. All parameters are input exactly as on the IMU3000 front panel. Any generator connected to TEMA3000 will be simultaneously programmed 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 IMU4000 can be combined to form a complex test sequence. This feature enables ESD, EFT, SURGE, VARIATIONS, 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.

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 dependency on obsolete or expensive interfaces.

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

EMC PARTNER's Product Range

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

Immunity Tests

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

Lightning Tests

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

Component Tests

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

Emission Measurements

Measurement of Harmonics and Flicker in 1-phase and 3-phase electrical and electronic products according to IEC /EN 61000-3-2 and 61000-3-3 . HARCS Immunity software adds interharmonic tests, voltage variation and ripple on DC tests according to IEC/EN 61000-4-13, -4-14, -4-17.

System Automation

A full range of accessories enhance the test systems. Test cabinets, test pistols, adapters and remote control software, simplify interfacing with the EUT.

Programmable PSU, EMC hardened for frequencies from 16.7Hz to 400Hz. Frequency PS3-SOFT-EXT complies with IEC / EN 61000-4-14 and -4-28.

Service

Our commitment starts with a quality management system backing up our ISO 17025 accreditation. With the SCS number 129, EMC PARTNER provide accredited calibration and repairs. Our customer support team are at your service!



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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