

M Precision Laboratories EMCPro Plus EMC Test System

Advanced EMC test system for compliance testing to IEC/EN standards

The M Precision Laboratories EMCPro Plus EMC Test System features resident capabilities for EMC CE Mark compliance testing to IEC/EN standards, and fully addresses new requirements for IEC 61000-4-4, IEC 61000-4-5 (Surge) and IEC 61000-4-11 (PQF).

- Portable, mid-range EMC test system for design integrity testing
- Resident capabilities for compliance testing to IEC/EN standards
- Addresses ANSI/IEEE, ITU, ETSI and
- Surge testing to 6.0kV with Combination, Telecom, and Ring Waves
- Monitors surge voltage and current at the output terminals
- Monitors output of the coupling unit and automatically switches connections according to coupling mode
- Highest test levels, widest selection of tests and lowest in-use costs
- Upgradable as standards change



A true, total immunity EMC test system
The M Precision Laboratories EMCPro PLUS is a midrange, multi-capability EMC immunity tester. It operates via our easy to use Windows™ based PC software or from the front panel, and is easily configured to meet immunity standards required for CE Marking and compliance requirements.

Portable and low cost, the EMCPro PLUS system is ideal for companies who require flexibility, versatility, and the highest test level-to-cost ratio instrument on the market.

It also accommodates companies that test beyond levels dictated by the EMC Directive, including demanding national and international standards such as ANSI/IEEE, ITU, ETSI, and UL, as well as company- and market-driven test programs, which ensure quality and reliability in the field.

Users can configure custom test protocols

to meet specific test requirements using the full line of options and accessories, including mains and I/O line coupler/decouplers, magnetic field monitors, coils, and more. When test requirements change, or standards evolve, upgrading is a simple matter of adding appropriate options or accessories.

Breaking the 4.4kV voltage barrier for combination Wave, Telecom and Ring Wave Surge testing

The EMCPro PLUS test system features surge testing to 6kV with the combination, telecom and ring waves. It is the only combination tester on the market to offer the combination wave with one of two additional built-in surge waveforms.

The EMCPro PLUS, and its many technically advanced, cost effective features will serve you well for many years to come.

Reach the Next Level of Success

Experience the many benefits of working with recognized experts in the field of EMC (ElectroMagnetic Compatibility) testing. Our commitment to the discipline is wide ranging; we actively participate on global standards committees and have helped define test methodologies to achieve regulatory standards such as CE Mark requirements, as well as company and market-driven product quality objectives. Our goal is to support you with lifelong service, from applications support, calibration services and preventive maintenance scheduling to full tactical field support.

Model PRO-BASE	EMCPro PLUS Base Unit
System Voltage	90-240VAC, 50/60Hz
Control Interface	RS232 Fiber-optic
Safety Features	External Interlock for users, Interlock for CCL connector, External stop input
Dimensions	22.9 cm (8.7 in) x 43.4 cm (17.1 in) x 64.8 cm (25.5 in)
Weight	39 kg (85 lb)
CE Marking	Safety and EMC Directives

Integrated EUT Mains Coupler/Decoupler

AC Voltage	1 phase, 50 - 277 VAC
AC Current	16 A maximum
DC Voltage	100 VDC maximum
DC Current	10 A maximum
Frequency	50/60 Hz
EUT Connectors	Nema, British, Schuko

Environmental Operating Conditions

Temperature	+15°C to +40°C
Humidity	10-75%, non-condensing
Altitude	8000 ft. maximum

Model PRO-SURGE	Surge for compliant testing per IEC 61000-4-5, EN 61000-4-5, and ANSI C62.41 Category B
Voltage Waveform	1.2/50 μ s
Peak Voltage	250V - 6.0 kV, 12 mode; 250V - 6.0 kV, 2 mode
Peak Current	125 A - 3.0k A \pm 10%
Additional 10 Resistor	Software selectable
Repetition Rate	Up to 4 per minute
Open-circuit Voltage	Front time: 1.2 μ s \pm 30%; Duration: 50 μ s \pm 20%; Undershoot: 30% at "DIRECT" output
Short-circuit Current	Front time: 8.0 μ s \pm 20%; Duration* 20 μ s \pm 20%; Undershoot 30% at "DIRECT" output
Line Sync Accuracy	\pm 10%

Options

Model CM-I/OCD	External 8-line coupler/decoupler for I/O signal lines
Model CM-I/OCD-HS	High speed I/OCD option for testing data rates to 100 kHz

* Durations are reduced in 12 mode and when coupling multiple lines to PE

Model PRO-EFT	EFT per IEC 61000-4-4, EN 61000-4-4 and ANSI C62.41
Voltage Waveform	5/50 ns \pm 30%
Peak Voltage	250 V - 4.4 kV
Burst Period	300 ms \pm 10%
Burst Duration	15 ms \pm 20%, for pulse frequencies up to 5 kHz, 0.75 ms above 5 kHz
Frequency	1-100 kHz, in 0.5k Hz steps, \pm 10%
DC Blocking Capacitor	10 nF (internal)

Options

Model CCL	Capacitive coupling clamp
Model CCLC	Coupling clamp cover
Model EFT-ATTN	EFT attenuator for oscilloscope monitoring

Model PRO-TELECOM*	Surge Telecom compliant testing per IEC 61000-4-5, EN 61000-4-5, TIA-968-B (FCC Part 68), ITU K20, K21, K44, K45
Voltage Waveform	10/700 μ s (9/720 μ s FCC Part 68)
Peak Voltage	250 V - 6.0 kV
Peak Current	6.25 - 150 A +10/-0%, 40 mode
Repetition Rate	Up to 4 per minute
Open-circuit Voltage	Front time: 7.0 μ s to 11.7 μ s; Duration: 576 μ s to 840 μ s
Short-circuit Current	Front time: 4 μ s to 6 μ s; Duration: 256 μ s to 384 μ s

Options

Model CM-TELCD	External coupler for telecom lines
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Model PRO-RING*	Ring Wave Surge per ANSI C62.41 Cat. A, B, UL 864, IEC 61000-4-12 and EN 61000-4-12
Voltage Waveform	100 kHz damped cosine
Peak Voltage	250 - 6.0 kV
Repetition Rate	Fewer than 4 per minute at 6.0 kV, faster at lower voltages
Open-circuit Voltage	Rise Time: 0.5 μ s \pm 30%
Short-circuit Current	200 A & 500 A ranges Vp/Ip: 12 \pm 3 or 30 \pm 8; software selectable

* PRO-TELECOM and PRO-RING can not be installed simultaneously.

Surge Waveform Monitoring

Lines Monitored	Monitors are automatically switched to match generator coupling mode
Open-circuit Voltage	1000:1 \pm 10% of actual output
Short-circuit Current Attenuation	200:1 \pm 5% of actual output

Model PRO-HPOWER	Power Frequency Magnetic Field for compliant testing per IEC, @1000-4-8 and EN 61000-4-8
Field Frequency	50 Hz/60 Hz
Field Amplitude	0.5 - 4 A/m, in 0.25 A steps, \pm 10% (with CM-HCOIL) up to 100 A/m with optional external HPOWER-EXT
Internal Resolution	0.25 A minimum
Coil Factor	0.65 to 1.00
Coil Resistance	0.05 maximum

Options

Model CM-TELCD	Measurement probe for power frequency magnetic fields
Model CM-HCOIL	1 m x 1 m magnetic field coil
Model HPOWER-EXT	External generator for power frequency magnetic field to 30 A/m

Model PRO-HPULSE	Pulse Magnetic Field for compliant testing per IEC 61000-4-9 and EN 61000-4-9
Field Pulse	8/20 μ s
Field Amplitude	100 A/m - 1000 A/m, \pm 10%
Resolution	5 A/m
Coil Factor	0.65 to 1.00

Options

Model CM-HMON	Measurement probe for power frequency magnetic fields
Model CM-HCOIL	Model CM-HCOIL

Model PRO-PQF	Dips and Interrupts for compliant testing IEC 61000-4-11, and EN 61000-4-11
Dips	40%, 70%, 80%
Interrupts	0% (short and open)
Transition Time	1 μ s - 5 μ s
Inrush	Minimum 250 Amps @ 100 - 120 V, Minimum 500 Amps @ 220 - 240 V
AC Voltage	50 - 277 VAC, 50/60 Hz
AC Current	16A max.
PQFSyncOutput	5 V signal occurs at each dip, or interrupt transition

Options

Model PQF-QUAL	Circuit per IEC 61000-4-11 for testing, PQF generator inrush capability
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Model PQF Waveform Monitoring

Voltage Input Connection	Fixed, L1 to L2
Voltage Attenuation	100:1 \pm 5%
Current Input Connection	Fixed, L1
Peak Current	Minimum 500 A inrush into 1700 μ F
Current Attenuation	200:1 \pm 5%

Model CM-TELCD	Optional telecom line coupler/decoupler provides the ability to couple both the telecom wave and combination wave per IEC 61000-4-5
Waveforms	Designed to couple 1.2/50 μ s combination or 10/700 μ s telecom waves
Telecom Line Frequency	To 100kHz without significant degradation
Number of Lines	Up to four lines – one or two pairs of balanced telecom lines
Maximum Surge Voltage	4.4 kV
Maximum Signal Line Voltage	200 V
Maximum Signal Line Current	1AAC or DC
Clamping	Selectable built-in clamps of 20V and 225V; external bias input for other clamp levels

Model CM-I/OCD	Optional I/O coupler/decoupler provides the ability to couple surges from EMCPro PLUS or any surge simulator, to I/O or data lines per IEC 61000-4-5
Waveforms	Designed to couple combination waves of 1.2/50 μ s open-circuit voltage, 8/20 μ s short-circuit current supplied by option PRO-SURGE with the EMCPro PLUS
Repetition Rate	Up to 5 per minute at 4.4 kV
Data Line Frequency	To greater than 100 kHz without significant degradation when CM-I/OCD-HS is installed. Option CM-I/OCD-HS is recommended for data line frequencies greater than 1 kHz
Number of Lines	Eight lines – any line can be surged to any other line or ground
Maximum Surge Voltage	4.4 kV
Maximum Signal Line Voltage	200 V
Maximum Signal Line Current	1AAC or DC
Clamping	Selectable built-in clamps of 20V and 220V; external bias input for other clamp levels

Options

CM-I/OCD-HS	Internally-installed option provides selectable parallel resistors (400s, 200s, 100s) highly recommended for data line frequencies greater than 1 kHz up to 100kHz.
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