



ESD3000 - MODULAR HANDHELD TESTER

# Electrostatic Discharge 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 ESD TESTING SOLUTION

# POWER AT YOUR FINGER TIPS

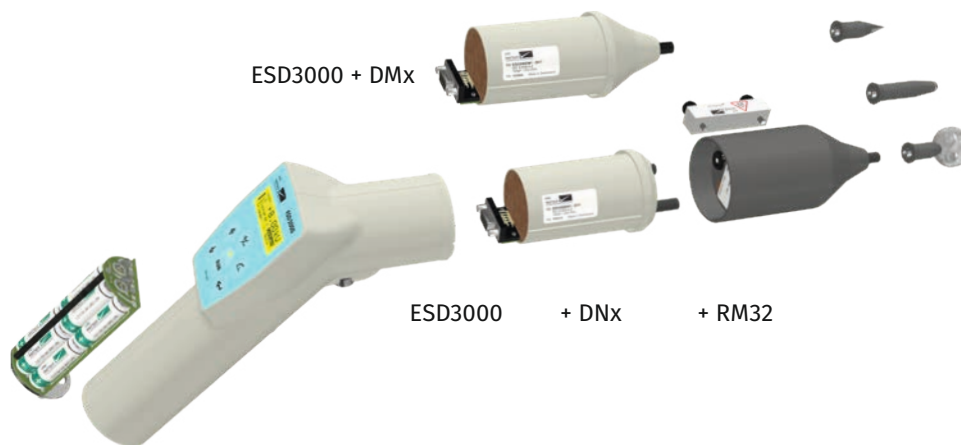
Electrostatic Discharge (ESD) is the most common test procedure applied to any electronic or electrical equipment. Used extensively to test:

- › Commercial products
- › Industrial systems
- › Military electronics
- › Automotive electronics
- › Fuses and detonators
- › Railway electronics
- › Avionic equipment qualification
- › Telecom equipment
- › Electronic components

The easily changeable and fully calibrated discharge networks, quickly adapt ESD3000 to the requirements of any new application.  
Light and easy to use.

# EASILY EXPANDABLE

ESD3000 is designed with the user in mind. The modular design allows configuration according to customer wishes, addition of more networks when adding applications and easy extension from 16kV to 30kV using the same generator. Automatic network recognition means ESD3000 is always ready.



## Discharge Modules (DMx)

up to 16kV Air / 10kV Contact Discharges

- ESD3000 required

### Available Extensions

- DM1 (150pF, 330 Ohm)
- DM4 (100pF / 1500 Ohm)
- DM6 (100pF / 1500 Ohm)

## Discharge Networks (DNx)

up to 30kV Air- and Contact Discharges

- ESD3000 & RM32 required

### Available Extensions

- DN1 (150pF / 330 Ohm)
- DN2 (330 pF, 2000 Ohm)
- DN3 (150 pF, 2000 Ohm)
- DN4 (500 pF, 5000 Ohm)
- DN5 (500 pF, 500 Ohm)
- DN6 (330 pF, 330 Ohm)

## Included

Rechargeable Long-life batteries  
 Up to 3 test tips (Sharp, Round, Corona)  
 Charger & Firmware update cable  
 Handy, robust carrying case



# AVAILABLE MODULES

## Commercial & Industrial

### IEC 61000-4-2

ESD3000DM1 (150pF, 330 Ohm)



## Component Test

### IEC 61340-3-1 / JEDEC 22-A114 / MIL-STD-750D

ESD3000DM6 (100pF / 1500 Ohm)



## Automotive

### ISO 10605 / SAEJSSI-IS/FORD AB/AC /GMW 3097

ESD3000DN1(150pF / 330 Ohm)  
ESD3000DN2 (330pF / 2000 Ohm)  
ESD3000DN3 (150pF / 2000 Ohm)  
ESD3000DN6 (330pF / 330 Ohm)



## Military

### MIL-STD-883 / GR78-CORE

ESD3000DM4 (100pF / 1500 Ohm)

### STANAG 4239 / ISO 14304 / MIL-STD-1512

ESD3000DN4 (500pF / 5000 Ohm)

### MIL-STD-331C / MIL-DTL-23659D / STANAG 4239

ESD3000DN5 (500pF / 500 Ohm)

### MIL-STD-1576

ESD3000DN32-MIL3 (500pF / 0 Ohm)





## UNIQUE FEATURES

The original 30kV battery powered generator with a unique system of changeable modules. Flexibility and power combined.

### AA battery powered



Long life standard battery. Up to 8 hours on full battery charge. Readily available in any store.

### Electronic polarity change



Single key press switches polarity before and during the test.

### Extend testing capability



Add calibrated modules to maintain the system value. Unique modules and accessories for special applications.

### Compact solution



Ergonomic hand held tester without additional base unit. Program directly on generator.

# Tradition meets Technology

Over 25 years devoted to combining  
latest technologies into the best products.

 **100% Swiss made products**



# Technical Specifications



## ESD3000 MODULES

ESD3000	Mainframe	DM1 (16 kV)	DM4	DM6	RM32	DN1 (30 kV)	DN2	DN3	DN4	DN5	DN6	MIL3
IEC 61000-4-2	✓	✓				alt*						
MIL-STD-883	✓		✓									
GR78-CORE	✓		✓									
IEC 61340-3-1	✓			✓								
JEDEC 22-A114	✓			✓								
JS-001	✓			✓								
MIL-STD-750	✓		✓									
ISO 10605	✓				✓	✓	✓	✓			✓	
DO-160 S25	✓	✓			✓	✓						
MIL-STD-461G CS118	✓	✓			✓	✓						
GMW3097	✓				✓		✓	✓			✓	
STANAG4239	✓				✓				✓	✓		
MIL-STD-331	✓				✓				✓	✓		
MIL-STD-1576	✓				✓							✓

\* DN1 as alternative to DM1. Standard requires only 15 kV.

# ACCESSORIES FOR DIFFERENT MODULES

ESD3000	Mainframe	DM1	DM4	DM6	RM32	DN1	DN2	DN3	DN4	DN5	DN6	MIL3
EARTH CABLE	✓	IEC				IEC						
ESD-VCP50	✓	IEC				IEC						
ESD-TARGET2	✓	IEC										
ESD-TARGET2 DN	✓					ISO	ISO	ISO			ISO	
ESD-VERI-V	✓	✓	0		0	✓	0	0	✓	✓	0	✓
ESD-STAND ED2	✓	0	0	0	0	0	0	0	0	0	0	0
ESD-HCP-AUTO	✓					ISO					ISO	
DM-EXT	✓								MIL	MIL		
SAFETY-S	✓								MIL	MIL		
TC-ST ED	✓								MIL	MIL		
WARNING LAMP	✓								MIL	MIL		
EMERGENCY STOP	✓								MIL	MIL		
ESD3000 CNH12	✓					0	0	0	0	0	0	
OPTOLINK	✓	0	0	0	0	0	0	0	0	0	0	0
TEMA	✓	0	0	0	0	0	0	0	0	0	0	0

0 = Optional Accessories, see product details

ESD3000	EARTH CABLE	ESD-VCP50	ESD-TARGET2	ESD-TARGET2 DN	ESD-VERI-V	ESD-STAND ED2	ESD-HCP-AUTO	DM-EXT	ESD-SAFETY-S	TC-ST ED	WARNING LAMP	EMERGENCY STOP	ESD3000 CNH12	ESD-OPTOLINK	TEMA SOFTW.
IEC61000-4-2	✓	✓	opt		opt	opt								opt	opt
MIL-STD-883														opt	opt
GR78-CORE														opt	opt
IEC61340-3-1														opt	opt
JEDEC 22-A114														opt	opt
JS-001															
MIL-STD-750														opt	opt
ISO10605	✓			opt	opt	opt	opt							opt	opt
DO-160 S25					✓									opt	opt
MIL-461G CS118	✓		✓		✓									opt	opt
GMW3097														opt	opt
STANAG4239								✓	✓	✓	✓	✓		opt	opt
MIL-STD-331								✓	✓	✓	✓	✓		opt	opt
MIL-STD-1576														opt	opt

# 1. ESD3000 MAINFRAME AND MODULES

## 1.1. TECHNICAL SPECIFICATIONS

### ESD3000 Mainframe

<b>To be used with modules</b>	all modules from this document are compatible
<b>Construction</b>	fully portable, no additional basic unit
<b>Control</b>	LCD and 6 menu buttons, 1 trigger button
<b>Maximum voltage</b>	16 kV or 30 kV, depending on modules chosen
<b>Voltage steps</b>	100 V - test
<b>Discharge polarity</b>	positive, negative, alternating
<b>Discharge modes</b>	contact discharge (CD) and air discharge (AD)
<b>Discharge frequency CD</b>	max. 20 Hz, (pulse every 0.05, 0.1, 0.2 ... 60 s)
<b>Discharge frequency AD</b>	≥ 30 Hz or more, for ex. with DM1, DN1, other
<b>Counter</b>	pre-selectable, 1 to 29999
<b>Discharge detection</b>	selectable, count pulses or count discharges
<b>Holding time</b>	≥ 5 s
<b>Trigger</b>	manual, automatic, remote
<b>Ramps</b>	voltage, polarity
<b>Reporting with TEMA</b>	automatic report sequence, amplitude, polarity
<b>Dimensions</b>	for ex. with DM1 and tip 340 x 130 x 70 mm
<b>Weight mainframe</b>	730 g, w/o battery pack and module
<b>Weight equipped</b>	1050 g, with battery pack, DM1 and AD tip
<b>Power supply</b>	10 x AA rechargeable batteries or mains
<b>Included</b>	10 batteries, mains adapter, ground cable 2 m, 3 test tips (AD, AD2, CD), carrying case, RS232 cable, E3Loader for remote control
<b>Requires</b>	at least a DM module, or a DN module + RM32



### ESD3000DM1

<b>Standards</b>	IEC 61000-4-2 (latest)
<b>Other standards</b>	MIL-STD-461G CS118, DO-160 Section 25
<b>Storage capacitor</b>	150 pF according to IEC61000-4-2
<b>Discharge resistor</b>	330 $\Omega$ according to IEC61000-4-2
<b>Circuit inductance</b>	< 5 $\mu$ H
<b>Voltage range AD</b>	0.2 – 16 kV $\pm$ 5 %
<b>Voltage range CD</b>	0.2 – 10 kV $\pm$ 5 %
<b>Current rise time into 2 <math>\Omega</math></b>	0.8 $\pm$ 25 %
<b>First I peak into 2 <math>\Omega</math> CD</b>	7.5 A @ 2 kV – 37.5 A @ 10 kV ( $\pm$ 15 %)
<b>Current at 30 ns</b>	4 A @ 2 kV – 20 A @ 10 kV ( $\pm$ 30 %)
<b>Current at 60 ns</b>	2 A @ 2 kV – 10 A @ 10 kV ( $\pm$ 30 %)
<b>Optional</b>	<a href="#">ESD-TARGET2</a>



### ESD3000DM4

<b>Standards</b>	MIL-STD-883, GR78-CORE, MIL-STD-750
<b>Storage capacitor</b>	100 pF $\pm$ 10 %
<b>Discharge resistor</b>	1500 $\Omega$ $\pm$ 10 %
<b>Voltage range AD</b>	0.2 – 16 kV $\pm$ 5 %
<b>Voltage range CD</b>	0.2 – 10 kV $\pm$ 5 %
<b>Current rise time into 2 <math>\Omega</math></b>	< 10 ns @ 0.2 – 8 kV
<b>I peak into 2 <math>\Omega</math> (CD)</b>	2.66 A @ 4 kV, 3.33 A @ 5 kV
<b>RC time constant</b>	150 $\pm$ 20 ns



### ESD3000DM6

<b>Standards</b>	IEC 61340-3-1, JS-001
<b>Storage capacitor</b>	100 pF according to IEC61000-4-2
<b>Discharge resistor</b>	1500 $\Omega$ according to IEC61000-4-2
<b>Voltage range CD</b>	0.25 – 8 kV $\pm$ 10 %
<b>Current rise time into 2 <math>\Omega</math></b>	2 – 10 ns @ 0.25 – 8 kV
<b>RC time constant</b>	150 $\pm$ 20 ns



## 30 KV

These extensions need the module ESD3000RM32

### ESD3000DN1

<b>Standards</b>	IEC 61000-4-2, ISO 10605
<b>Other standards</b>	MIL-STD-461G CS118, DO-160 Section 25
<b>Storage capacitor</b>	150 pF according to IEC61000-4-2
<b>Discharge resistor</b>	330 $\Omega$ according to IEC61000-4-2
<b>Circuit inductance</b>	< 5 $\mu$ H
<b>Voltage range AD</b>	1 – 30 kV
<b>Voltage range CD</b>	1 – 30 kV
<b>Current rise time into 2 <math>\Omega</math></b>	0.8 $\pm$ 25 %
<b>First I peak into 2 <math>\Omega</math> CD</b>	7.5 A @ 2 kV – 112.5 A @ 30 kV
<b>Current at 30 ns</b>	4 A @ 2 kV – 60 A @ 30 kV
<b>Current at 60 ns</b>	2 A @ 2 kV – 30 A @ 30 kV
<b>Requires</b>	<a href="#">ESD3000RM32</a>
<b>Included in ESD3000RM32</b>	detachable module for faster tr (<700ps)
<b>Optional</b>	<a href="#">ESD-TARGET2 DN</a> , <a href="#">ESD-HCP-AUTO</a>

### ESD3000DN2

<b>Standards</b>	ISO 10605, GMW3097
<b>Storage capacitor</b>	330 pF according to IEC61000-4-2
<b>Discharge resistor</b>	2000 $\Omega$ according to IEC61000-4-2
<b>Voltage range AD</b>	2 – 30 kV $\pm$ 5 %
<b>Voltage range CD</b>	2 – 30 kV $\pm$ 5 %
<b>Current rise time into 2 <math>\Omega</math></b>	0.7 – 1 ns
<b>First I peak into 2 <math>\Omega</math> CD</b>	7.5 A @ 2 kV – 112.5 A @ 30 kV (- 0 / + 30 %)
<b>RC time constant</b>	600 $\pm$ 130 ns
<b>Requires</b>	<a href="#">ESD3000RM32</a>
<b>Optional</b>	<a href="#">ESD-TARGET2 DN</a>

### ESD3000DN3

<b>Standards</b>	ISO 10605, GMW3097
<b>Storage capacitor</b>	150 pF according to IEC61000-4-2
<b>Discharge resistor</b>	2000 $\Omega$ according to IEC61000-4-2
<b>Voltage range AD</b>	2 – 30 kV $\pm$ 5 %
<b>Voltage range CD</b>	2 – 30 kV $\pm$ 5 %
<b>Current rise time into 2 <math>\Omega</math></b>	0.7 – 1 ns
<b>First I peak into 2 <math>\Omega</math> CD</b>	7.5 A @ 2 kV – 112.5 A @ 30 kV (- 0 / + 30 %)
<b>RC time constant</b>	300 $\pm$ 60 ns
<b>Requires</b>	<a href="#">ESD3000RM32</a>
<b>Optional</b>	<a href="#">ESD-TARGET2 DN</a>



### ESD3000DN4

<b>Standards</b>	STANAG4239, ISO14304, MIL-STD-1512, MIL-STD-331
<b>Storage capacitor</b>	500 pF ± 10 %
<b>Discharge resistor</b>	5000 Ω ± 10 %
<b>Voltage range CD</b>	2 – 30 kV ± 5 %
<b>I rise time into 2 Ω CD</b>	0.7 – 1 ns
<b>Requires</b>	<a href="#">ESD3000RM32</a>
<b>Optional</b>	<a href="#">ESD3000 SAFETY-S, DM-EXT, TC-ST ED,</a> <a href="#">WARNING-LAMP, EMERGENCY-STOP</a>



### ESD3000DN5

<b>Standards</b>	STANAG4239, MIL-STD-1512, MIL-STD-331
<b>Storage capacitor</b>	500 pF ± 10 %
<b>Discharge resistor</b>	500 Ω ± 10 %
<b>Voltage range CD</b>	2 – 30 kV ± 5 %
<b>I rise time into 2 Ω CD</b>	0.7 – 1 ns
<b>Requires</b>	<a href="#">ESD3000RM32</a>
<b>Optional</b>	<a href="#">ESD3000 SAFETY-S, DM-EXT, TC-ST ED,</a> <a href="#">WARNING-LAMP, EMERGENCY-STOP</a>



### ESD3000DN6

<b>Standards</b>	ISO 10605, GMW3097
<b>Storage capacitor</b>	330 pF according to IEC61000-4-2
<b>Discharge resistor</b>	330 Ω according to IEC61000-4-2
<b>Voltage range AD</b>	2 – 30 kV ± 5 %
<b>Voltage range CD</b>	2 – 30 kV ± 5 %
<b>Current rise time into 2 Ω</b>	0.7 – 1 ns
<b>RC time constant</b>	300 ± 130
<b>Requires</b>	<a href="#">ESD3000RM32</a>
<b>Optional</b>	<a href="#">ESD-TARGET2 DN, ESD-HCP-AUTO</a>



### ESD3000DN32-MIL3

<b>Standard</b>	MIL-STD-1576
<b>Storage capacitor</b>	500 pF
<b>Discharge resistor</b>	0 Ω
<b>Voltage range CD</b>	2 – 30 kV ± 5 %
<b>Requires</b>	<a href="#">ESD3000RM32</a>



## 1.2. POWER, CLIMATIC CONDITIONS, SHIPPING WEIGHT, DIMENSIONS

### ESD3000 mainframe

<b>Mains adapter</b>	95 – 250 V (50/60 Hz)
<b>Power consumption</b>	ON < 20 VA, standby < 5 VA
<b>Temperature range</b>	15 – 35 °C
<b>Humidity</b>	30 – 60 % non-condensing
<b>Air pressure</b>	86 – 106 kPa
<b>Shipping weight</b>	2.4 kg plus selected modules
<b>Carrying case dimensions</b>	46 x 41 x 17 cm
<b>Included in delivery</b>	
<b>User manual</b>	with conformity declaration
<b>Calibration certificate</b>	factory calibration for selected modules

## 2. ACCESSORIES FOR ESD3000

### 2.1. TECHNICAL SPECIFICATIONS

#### EARTH CABLE

<b>Application</b>	connection of HCP or VCP to ground plane
<b>Impedance</b>	2 x 470 k $\Omega$ $\pm$ 1 %
<b>Length</b>	2 m
<b>Connectors</b>	2 x banana plugs

#### ESD-VCP50

<b>Application</b>	indirect ESD application as per IEC 61000-4-2
<b>Spacer in between</b>	10 cm wooden spacer
<b>Coupling plane</b>	50 x 50 cm
<b>Application points</b>	one on each side
<b>Dimensions</b>	50 x 50 x 10 cm
<b>Weight</b>	8 kg
<b>Included</b>	2 m earth cable (with 2 x 470 k $\Omega$ )



#### ESD-TARGET2

<b>Standard</b>	IEC 61000-4-2 latest
<b>Application</b>	current target for calibration of ESD generator
<b>Input impedance</b>	2 $\Omega$
<b>Input voltage</b>	max. 10 kV CD
<b>Frequency range</b>	$\pm$ 0.5 dB up to 1 GHz, $\pm$ 1.2 dB up to 4 GHz
<b>Current range</b>	0 – 50 A standard, could be extended
<b>Transfer function</b>	0.2 V / 1 A with 20 dB
<b>Diameter</b>	70 mm
<b>Thickness</b>	40 mm
<b>Weight</b>	398 g including attenuator
<b>Fixing</b>	8 x M3 screws, included in delivery
<b>Included</b>	20 dB att., 50 $\Omega$ coax. cable (1 m) with SMA out



#### ESD-TARGET2 DN

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





### ESD-VERI-V

<b>Application</b>	adapter for ESD DC voltage measurement
<b>Input impedance</b>	20 GΩ    3 pF
<b>Input voltage range</b>	0 – 32 kV
<b>Output voltage range</b>	0 – 1.6 V in 10MΩ or 1MΩ
<b>Output connector</b>	BNC
<b>Dimensions</b>	17 cm height, 5.5 cm diameter
<b>Weight</b>	433 g
<b>Included</b>	earth conductor, BCN adapter, BNC termination



### ESD-STAND Ed2

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

### ESD-HCP-AUTO

<b>Application</b>	coupling plane as per ISO 10605 annex F
<b>Length</b>	1500 mm
<b>Insulation distance</b>	50 mm
<b>Test level</b>	8 – 20 kV, as per standard
<b>Dimensions</b>	180 x 120 x 5 cm
<b>Weight</b>	2.2 kg
<b>Included</b>	<a href="#">EARTH CABLE</a>



### ESD3000DM-EXT

<b>Application</b>	1 m extension cable for ESD3000 modules
<b>Compatibility</b>	DM and DN modules
<b>Cable length</b>	1 ± 0.05 m
<b>Weight</b>	0.5 kg including accessories
<b>Can be used with</b>	<a href="#">DN modules</a>



### ESD3000 SAFETY-S

<b>Standard</b>	MIL-STD-1512
<b>Application</b>	safety switch for testing explosive devices
<b>Voltage</b>	max. 30 kV CD
<b>Dimensions</b>	20 x 16 x 12 cm
<b>Weight</b>	2 kg including accessories
<b>Included</b>	mains adapter
<b>To be used with</b>	<a href="#">ESD3000DM-EXT</a> , <a href="#">TC-MIG24 ED</a>



### TC-ST ED for testing explosive devices

<b>Application</b>	test cabinet
<b>Voltage insulation</b>	max. 36 kV
<b>EUT dimensions</b>	max. 20 x 30 x 20 cm
<b>EUT weight</b>	max. 5 kg
<b>Safety circuit</b>	door interlock
<b>Signal lamps</b>	red and green lamps built-in
<b>External warning lamps</b>	requires <a href="#">WARNING-LAMP</a> , <a href="#">EMERGENCY-STOP</a>
<b>Dimensions</b>	47 x 43.5 x 25.4 cm
<b>Weight</b>	8.5 kg
<b>Included</b>	connection cable 25pol to <a href="#">ESD3000 SAFETY-S</a>



### 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 10cm
<b>Weight</b>	0.3 kg



### ESD3000 CNH12

<b>Application</b>	Magnetic field loop for ESD3000 test system
<b>Loop diameter</b>	12 cm
<b>Loop current allowed</b>	> 100 A
<b>Discharge mode selection</b>	contact discharge (CD)
<b>Current at 15 kV setting</b>	50 A, with RM32 and DN1
<b>Current at 30 kV setting</b>	108 A, with RM32 and DN1
<b>Dimensions</b>	33 x 13 x 1 cm
<b>Weight</b>	0.2 kg including accessories
<b>Requires</b>	<a href="#">ESD3000RM32</a> , <a href="#">ESD3000DN1</a> or other DN



### ESD3000-OPTOLINK

<b>Application</b>	(insulating) optical cable ESD3000 - computer
<b>Length</b>	10 m
<b>Interface</b>	RS232, requires USB adapter
<b>Baud rate</b>	9600 bps
<b>Weight</b>	0.2 kg
<b>Included</b>	transceiver with mains adapter



### TEMA

<b>Application</b>	control software for ESD3000 system
<b>License</b>	1 license for 1 generator
<b>Capabilities with ESD3000</b>	Sequences, reporting, remote control
<b>Compatibility</b>	Windows XP, 7, 8, 10
<b>Requires</b>	<a href="#">ESD3000-OPTOLINK</a>

# Specific EMC test requirements ?

Search & find your required test equipment with our powerful **QUICK SELECTOR** tool at

[www.emc-partner.com](http://www.emc-partner.com)

The screenshot displays the EMC PARTNER website interface. At the top, there is a search bar and a navigation menu with options: HOME, COMPANY PROFILE, EMC TEST EQUIPMENT (highlighted), EMC TEST SOFTWARE, CONTACT, and SERVICE & CALIBRATION. Below the navigation, there are icons for 'Find your Products by' with sub-options: Categories, Standards, Application, Impulse, Keyword, and Send inquiry. A mouse cursor is pointing at the 'Send inquiry' icon.

### Search product by standard

Find Product by Standard: IEC, ITU, MIL-STD, EN, DO-160, Airbus & more...  
Select one or more checkboxes and press the search button to show the products.

<input type="checkbox"/> ABD0100.1.2	<input type="checkbox"/> IEC 60255-5	<input type="checkbox"/> IEC 61000-4-34	<input type="checkbox"/> IEC 62052-11	<input type="checkbox"/> MIL-STD-461 / CS117
<input type="checkbox"/> ABD0100.1.8.1	<input type="checkbox"/> IEC 60335-1	<input type="checkbox"/> IEC 61000-4-4	<input type="checkbox"/> ISO 10605	<input type="checkbox"/> MIL-STD-461 / CS118
<input type="checkbox"/> ANSI / IEEE 62.45	<input type="checkbox"/> IEC 60384-14	<input type="checkbox"/> IEC 61000-4-5	<input type="checkbox"/> ITU-T K.20	<input type="checkbox"/> MIL-STD-883
<input type="checkbox"/> ANSI C37.90	<input type="checkbox"/> IEC 60571	<input type="checkbox"/> IEC 61000-4-8	<input type="checkbox"/> ITU-T K.21	<input type="checkbox"/> NMI M6 Section A.219
<input type="checkbox"/> ANSI C62.41	<input type="checkbox"/> IEC 60664-1	<input type="checkbox"/> IEC 61000-4-9	<input type="checkbox"/> ITU-T K.22	<input type="checkbox"/> Renault 32-10-001/D
<input type="checkbox"/> ANSI C63.16	<input type="checkbox"/> IEC 60950-1	<input type="checkbox"/> IEC 61008-1	<input type="checkbox"/> ITU-T K.44	<input type="checkbox"/> Renault 32-10-035/A
<input type="checkbox"/> DC 10614	<input type="checkbox"/> IEC 61000-3-2	<input type="checkbox"/> IEC 61009-1	<input type="checkbox"/> ITU-T K.45	<input type="checkbox"/> RTCA DO-160 - Section 17
<input type="checkbox"/> EN 50121-3-2	<input type="checkbox"/> IEC 61000-3-3	<input type="checkbox"/> IEC 61010-1	<input type="checkbox"/> JASO D 001-94	<input type="checkbox"/> RTCA DO-160 - Section 19
<input type="checkbox"/> EN 50121-4	<input type="checkbox"/> IEC 61000-4-10	<input type="checkbox"/> IEC 61051-1	<input type="checkbox"/> JESD22-A114-B	<input type="checkbox"/> RTCA DO-160 - Section 22
<input type="checkbox"/> EN 50155	<input type="checkbox"/> IEC 61000-4-11	<input type="checkbox"/> IEC 61180-1	<input type="checkbox"/> JESD22-A115-A	<input type="checkbox"/> RTCA DO-160 - Section 25
<input type="checkbox"/> EUROCAE/ED-14	<input type="checkbox"/> IEC 61000-4-12	<input type="checkbox"/> IEC 61180-2	<input type="checkbox"/> MIL-DTL-23659D	<input type="checkbox"/> SAE J551-15
<input type="checkbox"/> FAA AC 20 -136	<input type="checkbox"/> IEC 61000-4-16	<input type="checkbox"/> IEC 61340-3-1	<input type="checkbox"/> MIL-STD-1512	<input type="checkbox"/> STANAG 4239
<input type="checkbox"/> IEC 60060-1	<input type="checkbox"/> IEC 61000-4-18	<input type="checkbox"/> IEC 61340-3-2	<input type="checkbox"/> MIL-STD-1541	<input type="checkbox"/> UL 1414
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<input type="checkbox"/> IEC 60255-22-1	<input type="checkbox"/> IEC 61000-4-28	<input type="checkbox"/> IEC 61730-1	<input type="checkbox"/> MIL-STD-461 / CS115	<input type="checkbox"/> VW TL 824-66

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