

ESD-®
PROTECT



The system house
for ESD complete solutions

Protection against electrostatics



Michael Böhm
Owner / Management



Marcel Böhm
Management

We should get to know each other
before the spark ignites!

ESD-PROTECT GmbH

The system house for ESD complete solutions

ESD-PROTECT GmbH offers systems to prevent rapid electrostatic discharge or static charging in electronics processing productions.

As a system house for complete ESD solutions, ESD-PROTECT supplies:

- Customer-oriented in-house developments
- Innovative industry solutions
- Individual advice
- High-quality ESD products

We develop needs-based ESD products (hardware as well as software) and design effective ESD concepts. This is how our products and solutions are created, which offer the customised solution to your requirements.

As an owner-managed company, we have been operating successfully nationally and internationally for over 20 years.

Anyone can do standard,
but not everyone can set the standard

Owner-managed

International

Innovative





ESD Competence

Professional protection against electrostatics

Protection against electrostatic discharge (ESD) in electronic components is cross-cutting within the production chain and the supply chain.

As a **long-standing, reliable partner** to the electronics industry, the automotive sector, aerospace companies, mechanical engineering and medical technology, ESD-PROTECT

carries an extensive portfolio of the highest quality products for protection against electrostatics.

We know what we are talking about when it comes to effective ESD protection in accordance with ESD standard 64340-5-1. **Your requirement is our strength.**

Development



Future-oriented development of hardware and software.

Consulting



Best advice for sustainable ESD protection in your company.

Sales



Distribution of high-quality ESD products in our own online shop!

Service

ESD - the invisible danger

What is ESD?

ESD is the abbreviation for **electrostatic discharge** and is caused by the exchange of charge between two bodies with different voltage potentials.

ESD damage is **primarily caused by humans**, who can absorb and hold high electrostatic charges. Humans only feel an electrostatic discharge from about 3,500 volts and higher. A person walking across a carpet carries about 7,000 volts. Pre-damage of sensitive electronic components already begins at 35 volts.



Electrostatic discharge is not felt, you do not see, you don't hear it.

Why is ESD protection necessary?

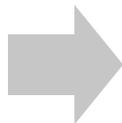
The progressive development and miniaturization of electronic components leads to an ever-increasing sensitivity and thus to a greater risk of preliminary damage and failure if ESD protection is neglected.

According to ESD standard 61340-5-1, the charge in an ESD zone must not exceed 100 volts.

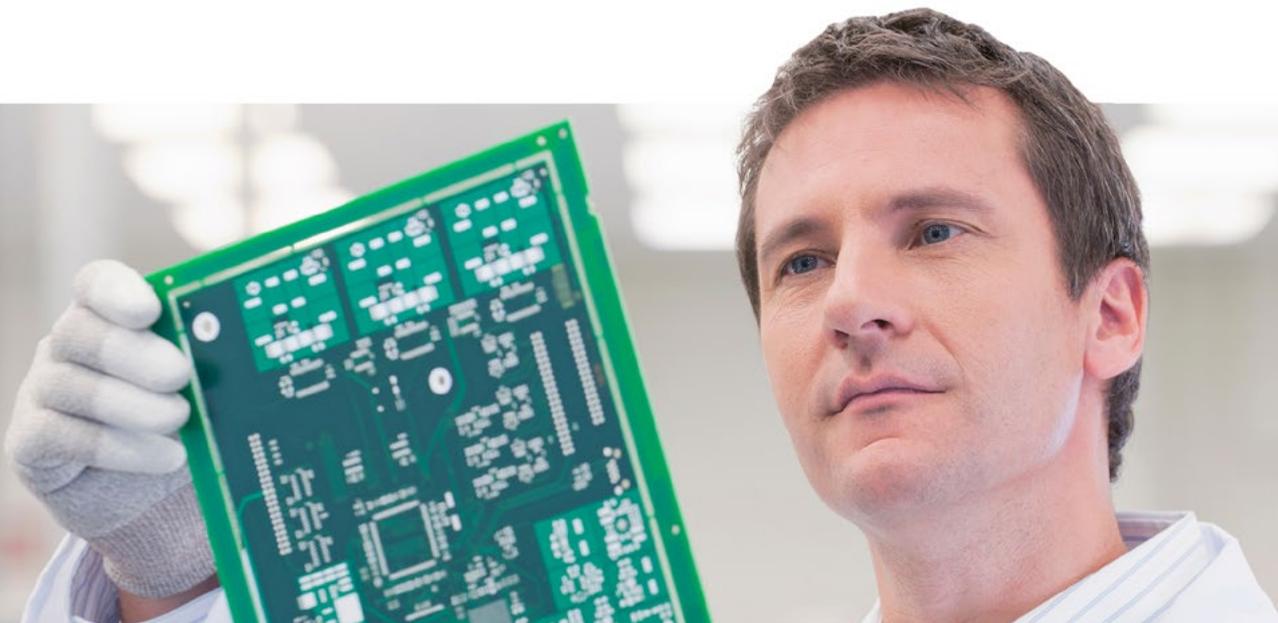
Component failure

Equipment failure

Sustainable quality problems



High scrap and repair costs, damage to quality image, warranty claims, product liability damage.



Own ESD product development

We set standards in ESD measurement

Video
EPA-RESIST 8000



An investment in the future! Go to a new level with us, into the next generation of ESD personnel testers.



ESD-personnel tester
EPA-RESIST 8000.

handling and the potential to grow with your needs.

The **BGT Visio 600** enables walking tests according to IEC 61340-4-5 with display and storage of the measurements in a real-time measurement curve on the display of the tablet.



Walking test
BGT Visio 600.

Video
BGT Visio 600



The **EPA-RESIST 6000, 7000 and 8000 personal testers** combine state-of-the-art technology with user-friendliness, rapid

Testing of risk groups!

Digital & smart

History of personnel grounding tester

The „evolution“ of ESD personnel tester

Test:



ESD personnel tester
Combo-Tester X3



ESD personnel tester
PD 400



ESD personnel tester
EPA-RESIST 6000



ESD personnel tester
EPA-RESIST 7000



ESD personnel tester
EPA-RESIST 8000

Test result with LEDs, no data storage

Test result in the LCD screen, no data storage

Control via touch display, data storage in the device, extensive additional tests

Control via touch display, data storage in the device, extensive additional tests, RFID

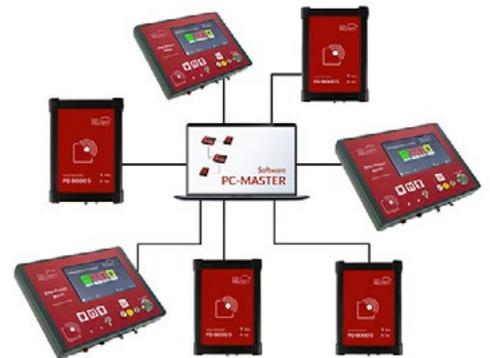
Control via touch display, data storage in the device or externally, extensive additional tests, RFID, networking

ESD software development

We set new standards for the future!

Our development work includes our own programming of device software, where the focus is on user-friendliness and future-proofing.

- Fastest measurements
- Simplest data handling through **data logger software**
- Networking through **PC master software**
- Accurate tracking
- ESD standard compliant



Networking with the PC master software

The smart solution for ESD inventory management

PD-60 RFID Mobile Terminal with **eLOGG APP** for easy ESD inventory management:

- mobile RFID reader and writer
- NFC and barcode reader (scanner)
- easy to use with eLOGG-APP and touch display
- integrated 8 mega pixel camera



PD-60 RFID-Mobile terminal

Made in Germany: Development and production by **ESD-PROTECT**



EPA planning

The special protection zone in production



We plan your electrostatic protected area (EPA)

A standard-compliant ESD protection zone (EPA) is an area in which electrostatic charges, often caused by frictional electricity, are prevented by the use of ESD products.

This serves to protect against electrostatic discharge, which can damage or destroy sensitive electronic components.

To illustrate your ideas, we offer you the possibility of software-supported, three-dimensional and individual EPA planning.

An EPA equipped according to DIN EN IEC 61340-5-1 includes, for example, conductive floor coverings, table coverings, tables and chairs, as well as internal transport systems.

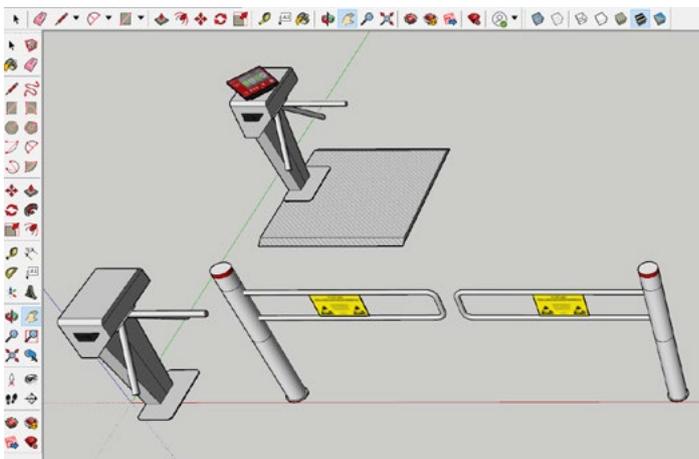
Regular measurements and checks of ESD properties and discharge values in accordance with standards ensure permanent protection against electrostatic discharge. We offer a wide range of test and measurement equipment for this purpose.

We will be happy to support and advise you in your individual EPA planning.

Software-supported

3D models

Individual



Screenshot of an individual EPA planning.

ESD special solutions

Example: EPA acces-system / Access control systems

Simply twice as good: The EPA Combi-Gate

Every production and manufacturing area is different, many factors determine the design and layout of your EPA zone.



Our entrance systems with bracket arm or turnstile can be positioned on the right or left.

By combining two systems, the goods entrance can be controlled in addition to the personnel entrance.

Customized solution EPA-RESIST 8000 mit Euchner-Key-System.

Video Combi gate



Euchner-Key special solution

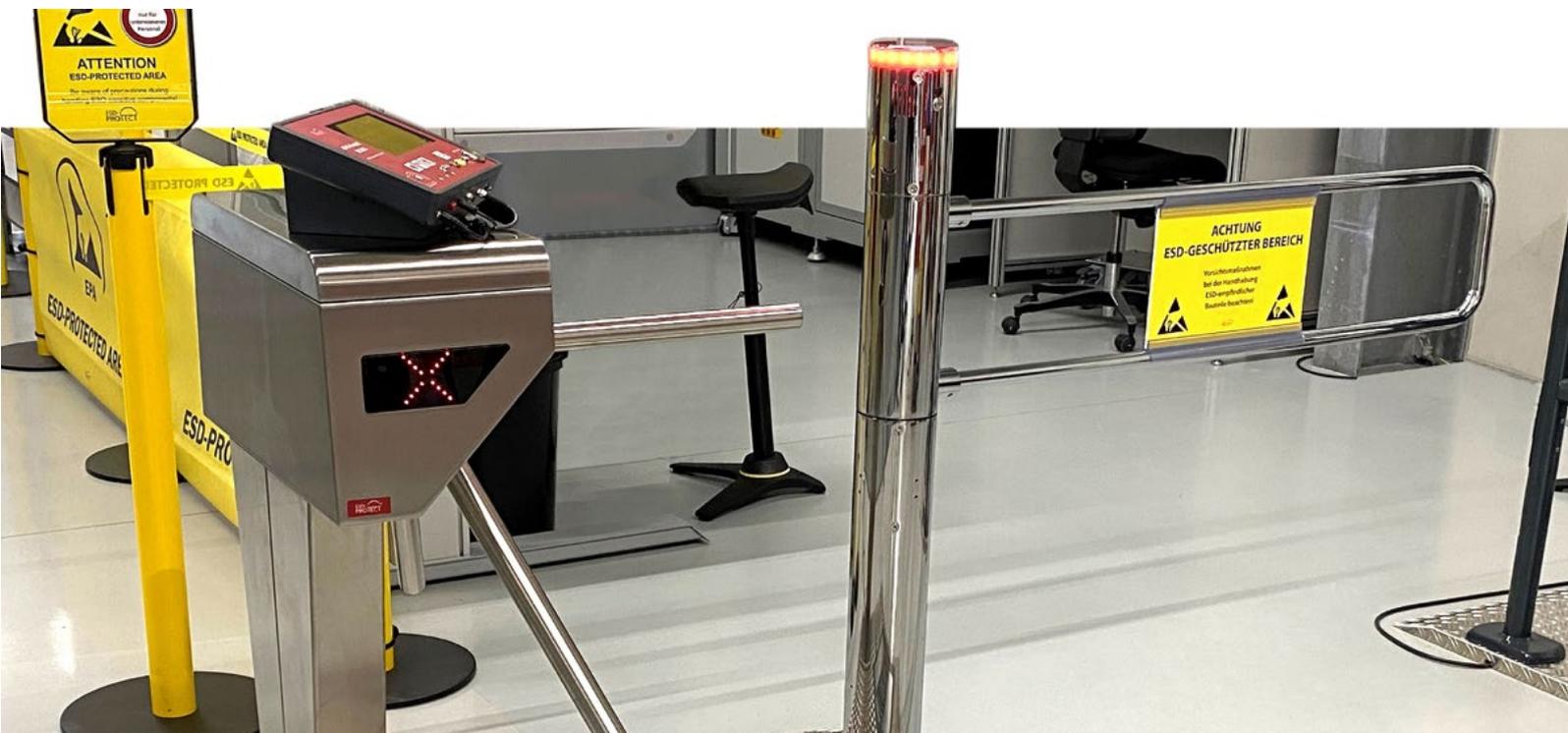
After a successful ESD personnel test, the test result is written on the Euchner-Key.

machine control at his or her workplace.

The tested person can then use the Euchner key to enable the

This ensures that only correctly ESD-tested persons can operate the machine control. In addition, activation times can be programmed.

Video special solution Euchner-Key



Electrostatic sensitive devices (ESDS) protect safely against ESD in the EPA

▼ EPA access control

- access systems
- personnel tester
- warning signs



Ele

<p style="text-align: center;"></p> <p>Correct personal grounding and trained personnel is a basic requirement for entering the EPA</p> <p style="text-align: center;">Human</p>		

Personnel grounding

- ESD clothing
- ESD shoes
- Wrist band

Complete EPA equipment in highest quality!



Electrostatic Protected Area (EPA)



EPA equipment

◀ EPA inventory

- conductive furniture
- workplace equipment
- conductive flooring



EPA measurement technology

◀ ESD measurement

- ESD metering devices
- ionizer
- rental devices, calibration



EPA logistics

◀ ESD transport and shipping

- ESD packaging
- ESD shipping boxes
- ESD transport equipment

▲ ESD storage

- ESD storage boxes
- ESD storing systems
- ESD transport equipment

ESD consulting

Professional and individual

We are **your qualified partner** if you are looking for professional and individual ESD consulting.

Together with you, we analyze all ESD-relevant areas and processes in your company and develop customized solutions for effective and comprehensive ESD protection. All measures are based on the relevant

ESD standards and guidelines such as IEC 61340-5-1.

Our ESD consulting includes, among other things, the preparation of ESD reports and support in planning and implementing an ESD protection management system in your company.



ESD logistics

Storage, transport and shipping

As soon as electronic and thus ESD-sensitive components (ESDS) are transported, the **safety precautions of ESD protection** must be observed.

This includes the processes of **procurement logistics**, intralogistics and goods dispatch as well as the focus on the correct protective packaging in compliance with standards.

In addition to the expertise in the field of ESD that has grown over many years and is established on the market, our team has a high level of expertise in the field of logistics process optimization.

ESD added value

Subsequent ESD coating

Subsequent coating of materials or parts in order to transfer ESD properties to them.



ESD plastics technology

Production of special ESD plastic parts by injection molding according to your requirements and specifications.



Cut to size service

Custom cutting of table and floor mats according to your dimensional specifications.



Customized ESD workbenches and ESD transport systems

Electrically height-adjustable ESD work tables made of tubular clamping systems or aluminum.

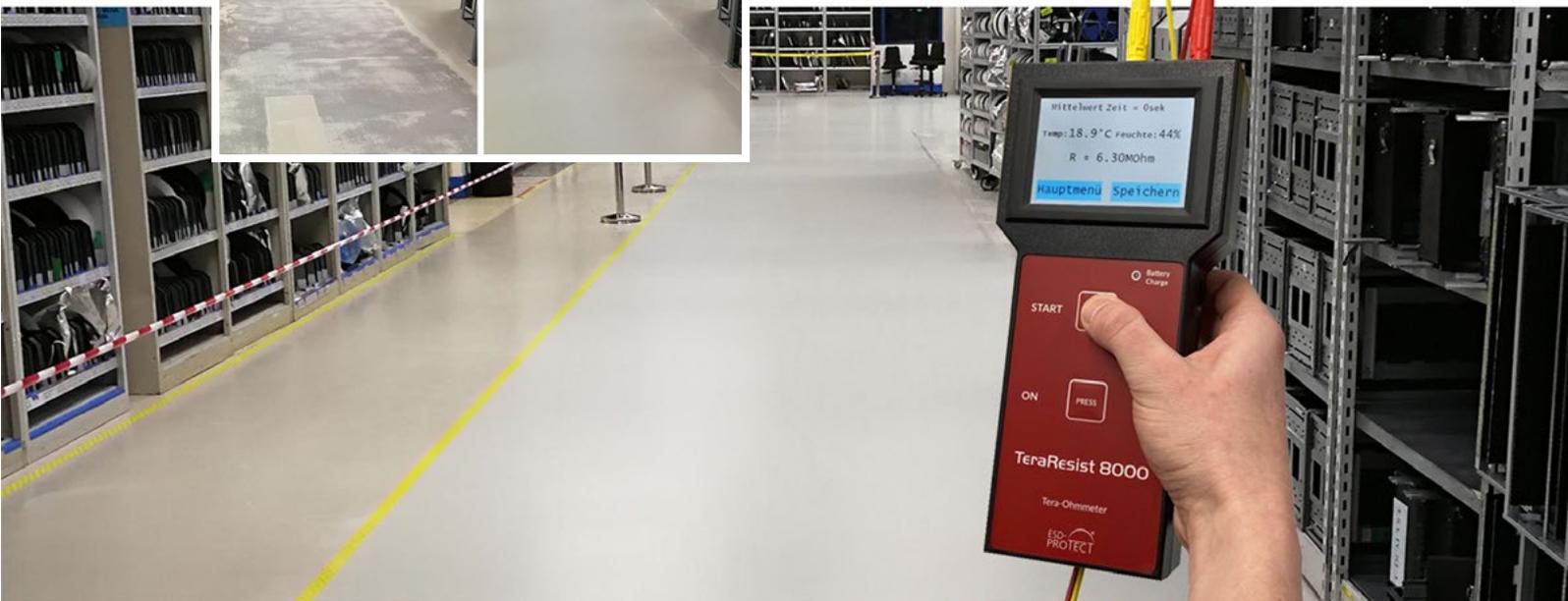
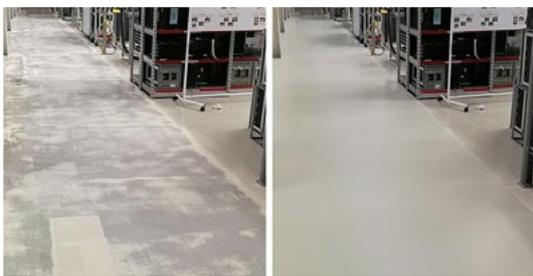


ESD floor measurements

Performing standardized control measurements to confirm the conductivity of your ESD floor.

ProFloor ESD floor renovation

Reconditioning of damaged ESD floors to restore their conductivity.





ESD-PROTECT online-shop

Informative - intuitive - always available!

One-Stop-Shop

Multilingual

Purchasing portal

The ESD-PROTECT webshop offers you everything you need to equip an EPA protection zone in compliance with the standards.

The products are divided into four main categories.

1. Personnel grounding HUMAN

ESD textiles and products that people wear on their bodies.



Mensch

2. EPA Workstation Equipment

ESD furniture, ESD flooring and workplace accessories to set up an EPA protection zone according to standards.



EPA

3. ESD TECHNOLOGY

All relevant measuring instruments, test stations, test equipment, ionizers and other measuring accessories.



Technik

4. ESD LOGISTICS

Storage systems for warehousing, transport equipment, packaging materials and shipping boxes.



Logistik

5. INNOVATIONS

New product developments, previews, special solutions



Innovation

The advantages of the ESD-PROTECT store at a glance:

- Request for quotation instead of direct purchase
- Product advice with one click
- Online catalog
- Purchasing portal / corporate account
- Manufacturer premium shopping worlds
- PRORENT rental equipment service



Now in the shop!

Corporate account for companies

Distribute budgets in your purchasing portal

The **business customer portal** in the web store offers the possibility of granting purchasing authorizations to several employees within the framework of allocated budgets.

In the „My account“ area, you have a daily overview of purchases and budget utilization. This is also where you can easily create and manage employees with purchasing rights.

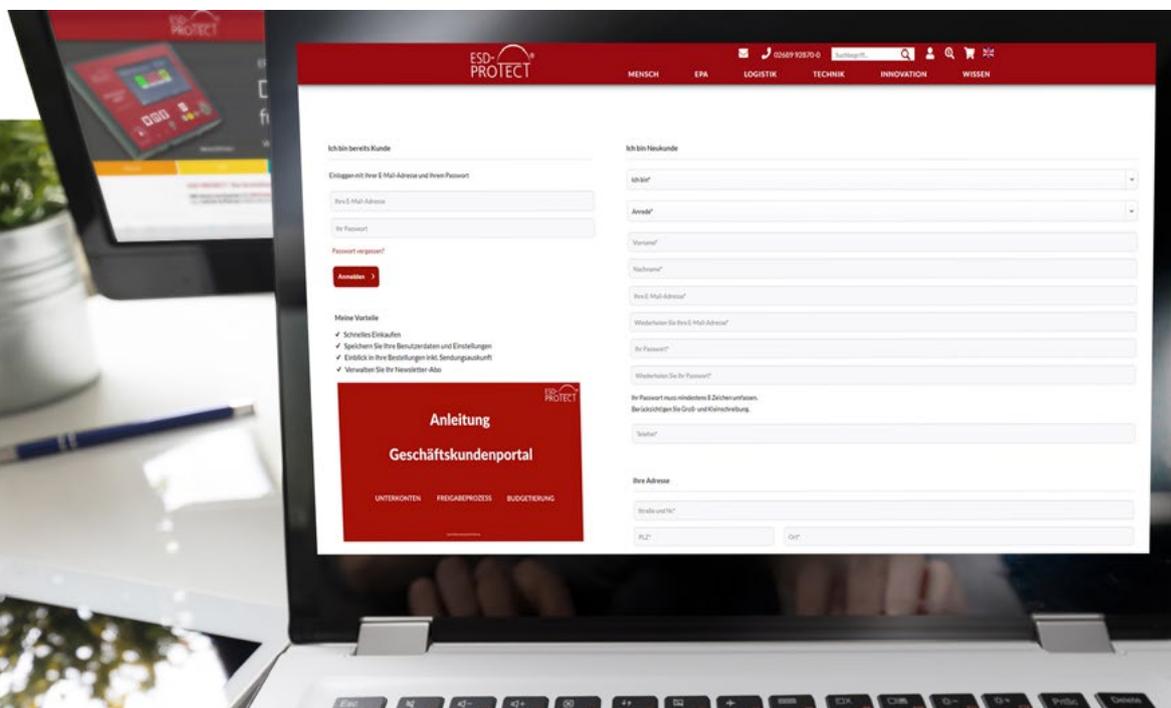
Budgets

Release process

Multi user

Your advantages:

- Purchasing control through budget management
- Budgets can be set per employee or for different cycles (per purchase/day/month/quarter/year).
- Purchase order control through defined approval process
- Cost center management
- Simple administration in the „My Account“ area



Service

Calibration of measuring



Wherever measuring instruments are used in quality-relevant areas, regular and professional calibration of these measuring instruments is required. Even the smallest measurement errors can have drastic effects on the safety of production processes or on the quality of products.

We check and calibrate your ESD-relevant measuring and testing devices according to manufacturer specifications.

Calibration is an integral part of quality assurance in the production process.

PRORENT rental service

Rent first instead of buying!

If you need a Tera ohmmeter, a field strength meter or another ESD measuring device only occasionally or simply want to test it, take advantage of the short-term rental option.

Or if no new purchase is currently planned in your budget, you do

not have to do without high-quality ESD test equipment.

We offer the new EPA-RESIST 6000 / 8000 personnel testers for long-term rental.

Together we will find the optimal solution for you.

Next generation ESD fashion

Work clothes that are a pleasure to wear!

Fashionable, comfortable ESD clothing contributes to greater well-being in the workplace. With us you get high quality workwear with safe ESD protection!

- With logo printing or embroidery
- High stock availability in sizes XS - 5XL
- Colors in your corporate design

Be cool - stay active!

The new **PROTEX Active-Line** offers even greater comfort with the renowned ESD safety of ESD-PROTECT clothing.

Highly elastic refined stretch cotton blend fabric with modal, lycra, and conductive fiber makes the new Active-Line so comfortable that you will even want to wear your ESD workwear in your free time!

PROTEX Active



High elastic

With modal & lycra

High wearing comfort





ESD-Norms

In the public standards and regulations, the specifications, limit values and test methods for generally valid facts of ESD protection are defined.

The ESD standard IEC (DIN EN) 61340-5-1 provides the necessary administrative and technical requirements (creation, implementation and maintenance) of a control program against electrostatic discharge

They are important for the development of an ESD control program plan and the Establishment of Electrostatic Protected Areas (EPA).

Standardized ESD protection is a technical standard and is required by companies that produce or handle electronic assemblies as part of quality assurance. quality assurance.

DIN EN 61340-5-1

Electrostatic - Part 5-1: Protection of electronic components against electrostatic phenomena - General requirements.

DIN EN 61340-5-1 Supplement 1

Electrostatic - Part 5-2: Protection of electronic components against electrostatic phenomena - User's guide.

DIN EN 61340-5-3

Elektrostatic - Part 5-3: Protection of electronic components against electrostatic phenomena - Characteristics and requirements for the classification of packaging used for components sensitive to electrostatic discharges.

DIN IEC/TR 61340-5-5

Elektrostatic- Part 5-5: Packaging systems in electronics manufacturing.

DIN EN 61340-4-1

Elektrostatic - Part 4-1: Standard test method for special applications (electrical resistance of floor coverings and installed flooring).

DIN EN 61340-4-2

Elektrostatic - Part 4-2: Standard test methods for special applications - Method for determining the electrostatic properties of textiles.

DIN EN 61340-4-3

Elektrostatic - Part 4-3: Standard test method for special applications (footwear).

ESD-Norms



DIN EN 61340-4-4

Elektrostatic – Part 4-4: Standard test methods for special applications - classification of flexible debris containers in electrostatic terms.

DIN EN 61340-4-5

Elektrostatic – Part 4-5: Standard test method for special applications (method for characterizing the electrostatic protective effect of footwear and floor in combination with a person).

DIN EN 61340-4-6

Elektrostatic – Part 4-6: Standard test methods for special applications - HGB.

DIN EN 61340-4-7

Elektrostatic – Part 4-7: Standard test methods for special applications - Ionization.

DIN EN 61340-4-8

Elektrostatic – Part 4-8: Standard test methods for special applications - Shielding effects against electrostatic discharge - Bags.

DIN EN 61340-4-9

Elektrostatic – Part 4-9: Standard test methods for special applications - clothing.

DIN EN 61340-2-1

Elektrostatic – Part 2-1: Measurement method - ability of materials and articles to dissipate electrostatic charges.

DIN EN 61340-2-3

Elektrostatic – Part 2-3: Test method for determining the resistance and resistivity of solid, planar materials used to prevent electrostatic charging.

DIN EN 61340-3-1

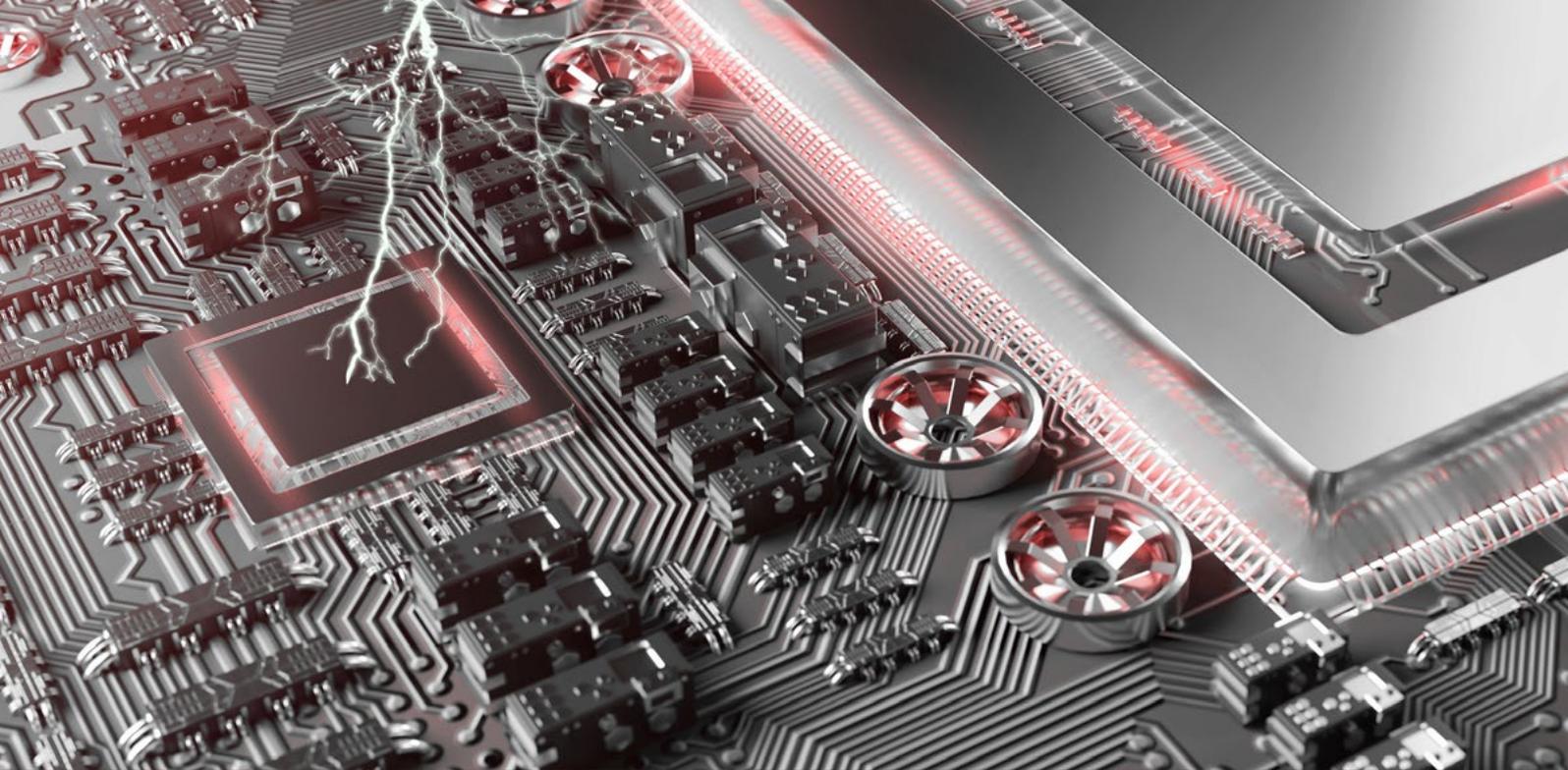
Elektrostatic – Part 3-1: Methods for simulating electrostatic effects - Test pulse shapes of the electrostatic discharge for the Human Body Model (HBM).

DIN EN 61340-3-2

Elektrostatic – Part 3-2: VMethod for simulation of electrostatic effects. Test pulse shapes of electrostatic discharge for the Machine Model (MM).

ANSI/ESD S20.20 with subgroups

ESD Association Standard for the Development of an Electrostatic Discharge Control Program. Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices).



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