

Testing and Certification

The VDE Institute is a worldwide partner for industry customers, business, government authorities, the electrical trade and consumers.



www.vde.com/institute

VDE

Our world is changing.
Everything which might be possible,
will be possible.

The electrical and digital future,
when is it right?
Facing alternatives, requires ideals:

Safety, breaking new ground.
Progress, speaking a common language.
Responsibility, connecting business sectors.
Innovation, for the people.

We develop ideals for a future
emerging here and now.
In an extraordinary network of research,
science, industry, safety and education.

We are shaping a worthwhile future:
electrical, digital – for everyone with ideals.
We are building the **e-dialistic future**.



Safety

The VDE mark is a worldwide symbol for safety and quality in electrical devices, components and systems.

Since 1920, the Association for Electrical, Electronic and Information Technology has issued the VDE mark to give consumers, manufacturers and installers the possibility to identify safe products that meet national and international standards along with legal directives.

The VDE Institute is a company belonging to the VDE Association, one of Europe's largest technical-scientific associations and thus, a part of a unique worldwide platform of experts for science, standardization and product testing – which our customers benefit from as well.

Our experts annually subject more than 100,000 electrical components, devices and systems to comprehensive and neutral testing. They are tested for safety, electromagnetic compatibility and additional product characteristics. We possess worldwide know-how thanks to our decades of experience. We follow technical developments very closely and contribute our experiences to the standardization process.

The VDE Institute's services currently go far beyond pure electrical aspects. In addition to classic tests on electrical safety, we offer environmental simulation tests, performance tests, energy-efficiency measurements and evaluations of functional safety, among other things.

The complex field of digitalization came along over the past several years, with interoperability tests, data and information safety of connected devices and systems for smart home and Industry 4.0.



All these services are available at the VDE Institute from one source, experts that are profoundly knowledgeable in the world of standards and in technical developments. We always continually train our experts and improve our testing and measuring equipment to stay up to date with the latest technology, discover new trends and expand our range of services for you.

The VDE Institute's testing and certification expertise is attested by accreditation from the German Accreditation Body along with recognition and notification by other bodies. The countries' central authority has authorized us to issue the mark for Tested Safety (GS) according to the Product Safety Law. The VDE Institute is notified under registration no. 0366 for the European Union's internal market within the framework of applicable EU directives. We are a recognized certification body at the IECCE. In addition, there are additional recognitions from international market monitoring and certification organizations, such as the Federal Motor Vehicle Transport Authority or the European Heat Pump Association (EHPA – KEYMARK).

We ensure quality – worldwide

Even at an international level, we bring out the best for our customers. Our certifications are the best access to the world's markets. We are close to manufacturers and our customers with laboratories and representatives in Europe, Asia and the USA. Thanks to worldwide recognitions and collaborations, our international service provides support in obtaining market authorizations on all continents.

With **VDE Global Services GmbH**, we have built an international network of laboratories. This makes us accessible to manufacturers in the most important clusters of many different sectors of the electronics industry, and we can offer the most important tests on-site—without long transport routes and communication problems.

This allows us to offer dealers and importers a monitoring service for the entire delivery supply chain, from selecting the raw materials to shipping the finished products, performed by experts that are well-versed locally.

To efficiently and effectively serve existing and future markets, the VDE has consolidated its renewable energy-based business divisions into a strategic unit.

VDE Renewables GmbH's renewable energy services offer quality assurance, certification and bankability worldwide. The global industry for renewable energies is still on the path of sustainable growth. Investors, financiers and other industry players have adapted their expectations and demand a high level of product and system quality that go beyond established international quality standards. In addition to certifying PV modules and power plants, VDE Renewables offers expert consulting for the quality processes of Cleantech projects, technical due-diligence reports to manufacturers or PV projects and customized market research.





Progress

Technological change and the resulting progress have always been an important companion to VDE tests and certifications, if not the reason for which the quality mark was introduced.

Industry, business, and consumers use our VDE test mark as a guide for manufacturing, marketing and selling, since they can rely on the VDE Institute's holistic and neutral testing.

With VDE certifications, manufacturers have the peace of mind that their product meets current normative and legal safety requirements along with generally accepted technology rules. We support manufacturers as early as during the development process, thereby ensuring early error detection and cost savings.

Consumers can rest assured that the product poses no hazard. As such, the VDE mark also ensures legal certainty in liability matters.

Testing for product safety is among the VDE Institute's core tasks. It sets the groundwork for all other tests—and it has done so since 1920. Ever since the VDE Institute was founded, the safety of the tested electric products has been the most important focal point of our tests. Furthermore, tests for energy efficiency and ecodesign are important for us.

New technologies

Due to the electrification of our day-to-day lives and the beginning of a new technological area, more and more new developments and innovative products have captured the market. Furthermore, thanks to online retailers, numerous cheap products with safety flaws are put into circulation, which could have fatal effects on consumers' health and life. We keep pace and always adapt our test spectrum to the technological trends, whether it is the new power production options, as they are supported by VDE Renewables, or how networked devices are making their way into households and industry. Wherever comparable safety standards can be implemented, we are there, and we develop the appropriate norms and

standards for certification and obtain the appropriate recognitions for certification by the authorities.

Developing the company

Not only does technology consistently evolve and undergo constant development, the needs of people also evolve along with it. Consumers are no longer interested in just a well-functioning device. In the era of smart cities, eavesdropping, hacker scandals, and climate change, the aspects of safety and sustainability of products have become more important. With certification by the VDE Institute, manufacturers can review product safety as well as special product characteristics and energy efficiency and have them marked. Producers of electric devices, components and systems can specifically market the added value of the product together with specific safety and precisely satisfy the needs of their clientele.

Responsibility

With the many different offerings on the market, VDE-tested products are products with a special marking that provide peace of mind and guidance when making purchasing and investment decisions and, at the same time, effectively protect against hazards.

After the manufacturing facilities have been inspected and products have been reviewed, the VDE Institute issues many different test marks. After issuing a VDE mark, we conduct regular factory inspections with a subsequent review of random samples from production or the market.

With independent testing and certification by the VDE Institute, a neutral body certifies that the products are state of the art and that they are safe to use. VDE test marks are regarded as a seal of quality and marking and they are the best way to convey the safety and quality of electrical devices, components and systems to consumers, businesses, customers and business partners.

Our goal is to preserve the trustworthiness of the VDE certification mark. This is why our VDE certification registry contains all products that have been reliably and neutrally tested by the VDE Institute. Products that have been found on the market without a valid VDE mark approval or whose mark approval has been revoked due to safety defects on the products or gross infringements against our testing and certification regulation can be found in our database of mark misuse.

VDE certification registry:
www.vdeinfo.com



VDE list of mark misuse:
www.vdemisuse.com



VDE special certificates

In the face of increasing product choice, consumers are yearning for guidance. They are increasingly informing themselves about product characteristics and pay attention to quality marks and evaluations.

The VDE special certificates represent the evaluation of important characteristics in household and electric appliances. It was specially developed for the concerns of manufacturers, retailers and importers and is intended to be a decision-making tool for consumers.



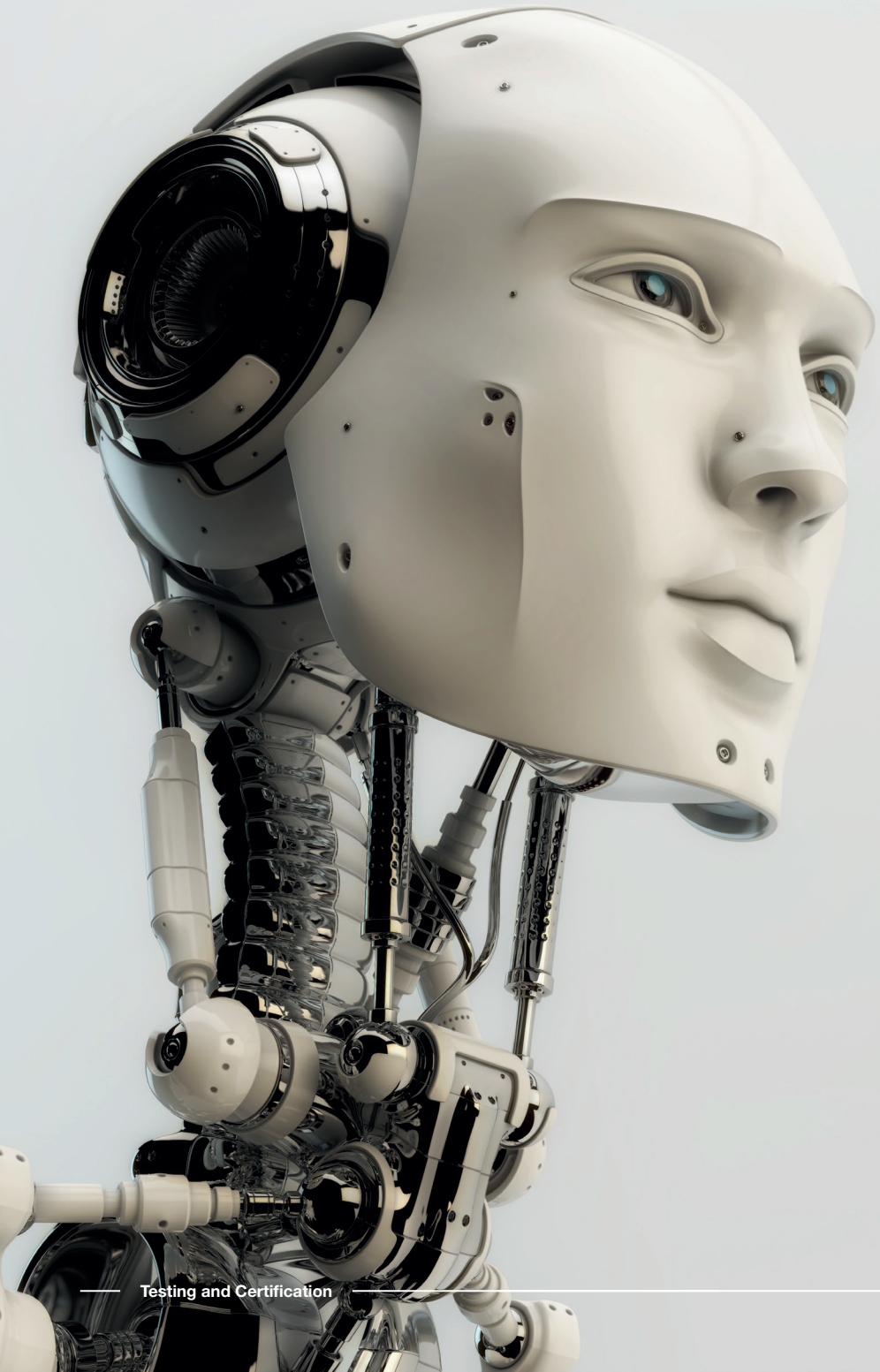
An ID number leads to a product datasheet stored in our online directory, which lists all the evaluated characteristics and the test results. Of course, this datasheet is at your disposal for product advertising.

Consumer protection

Consumer protection and a high level of safety when handling electrical products are important goals for the VDE.

The non-profit, independent, and neutral status along with the statutory focus on consumer protection make the VDE a trustworthy partner of business and consumers.





Innovation

The future is becoming exciting. From our perspective, it will mainly be networked, digital and electric. Our goal is to be significantly involved in this future to develop a world worth living in. Let's head towards this e-dialistic future together.

Great changes with global repercussions are coming to business in the fields of mobility, health and Industry 4.0. Digitalization and robotics will become a major topic in all areas.

The Internet of Things (IoT) is becoming increasingly important in production companies. Under the umbrella of Industry 4.0, solutions for digitalized production are created using cloud services sensors on the production lines, and by networking many different production plants.

Here, too, is this trend becoming unstoppable. This means that security aspects and ensuring data transmission in systems with many different applications must be given specific consideration to protect these systems from external and internal influence.

More and more robots are being used to complete tasks. Production processes should be optimized in a way that achieves maximum flexibility through automation. Furthermore, their use ensures energy and resource efficiency and—due to the lack of professionals because of a lack of trainees—compensates the demographic change. Apart from conventional industrial robots, cooperation between people and robots, i.e. direct collaboration between man and machine, is becoming increasingly important. At the same time, robots assume automated routine activities, while man is responsible for specific abilities, such as implicit knowledge, judgement, skill and creativity.

As the VDE Institute, we always look at upcoming technologies as well. We actively participate in committees to write, develop and keep testing standards up to date. By doing so, we help securely shape the future and make it worth living.

The benefits for you

The VDE Institute offers:

Manufacturers

- Legal certainty when selling your products worldwide
- Assurance that your products and the components used comply with normative and legal requirements
- Customer trust, because the VDE mark is an important attribute for safety and quality

Consumers

- Assurance that the purchased products complies with all the normative and legal requirements and is therefore safe and fit for consumption

Dealers and importers

- Assurance that the sold product meets all requirements
- Monitoring the entire supply chain
- Customer trust
- Legal certainty

Electricians

- Assurance that the products used are safe
- Legal certainty
- Customer trust

Energy suppliers

- Support, from procuring high-quality components to reliable supply quality thanks to technical safety management (TSM)

Authorities

- Assistance with market monitoring

Providers of smart home and IoT-related services

- Confirming secure data transmission and storage
- Cross-manufacturer interoperability of system components

You receive all this and much more from an independent, neutral, globally recognized and customer-oriented institution.

Products and Services

Services:

- Acoustics and Noise Emission
- Chemistry and Sustainability
- Cyber Security
- EMC and Radio
- Energy Efficiency and Ecodesign
- Environmental Simulations and Protection Class Tests
- Functional Safety
- Inspection and Monitoring
- Insulation Material Tests
- International Service
- Interoperability (IOP)
- Management Systems
- Product Safety
- Serviceability
- Supply Chain Services
- Technical Safety Management: (TSM)
- VDE Smart Manual

Industries:

- Automotive and e-Mobility
- Batteries and Fuel Cells
- Building and Supply Technology
- Cables and Wires
- Commercial Devices
- Components and Installation Technology
- Consumer Electronics
- Energy Supply
- Garden Appliances
- Grid Conformity
- Household Appliances
- Industry 4.0
- Information Technology
- Lighting
- Motors
- Power Tools
- Railway, Ships and Offshore
- Retail
- Smart Living
- Smart Metering



Test marks



World-renowned safety mark for electric products



World-renowned EMC mark for electric products



Safety marks for consumer products and technical work equipment according to the European Product Safety Act



Safety marks for electric products according to the European certification procedure



Certification under a VDE register number for an expert opinion with production monitoring



VDE-certified mark for cables, insulated wires, installation pipes and canals



Harmonization mark for cables and insulated wires according to the European certification process



VDE special certificates are proof of special product characteristics



The VDE Quality Tested special certificate is issued for the serviceability of electric products.



The VDE system certificate identifies certifications of systems and processes based on standards, regulations and other provisions



The IECQ-CECC system is an evaluation and acknowledgement service for manufacturers and suppliers of electronics components



The G-Mark is a type examination for electric low-voltage products and devices in the Gulf states

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