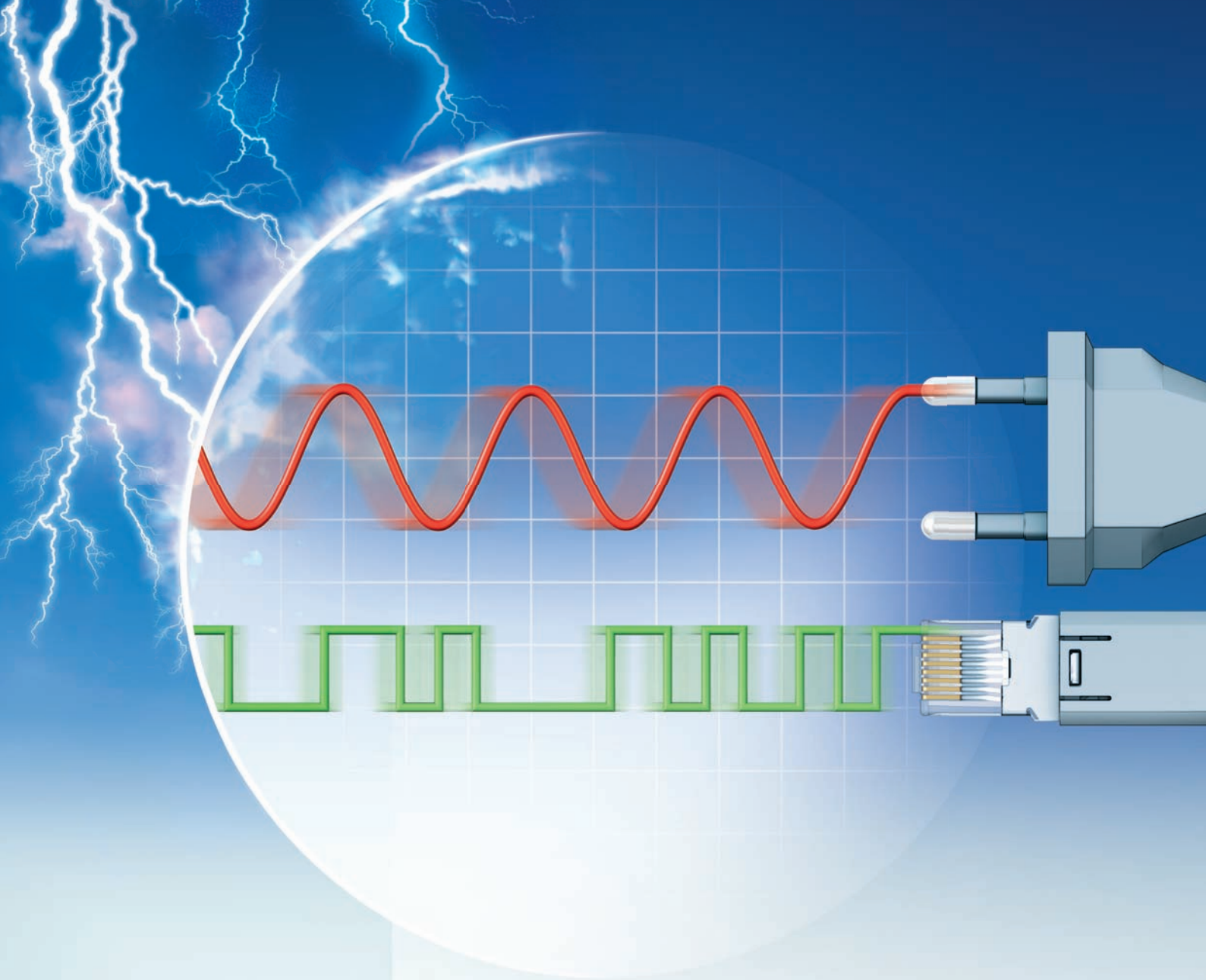


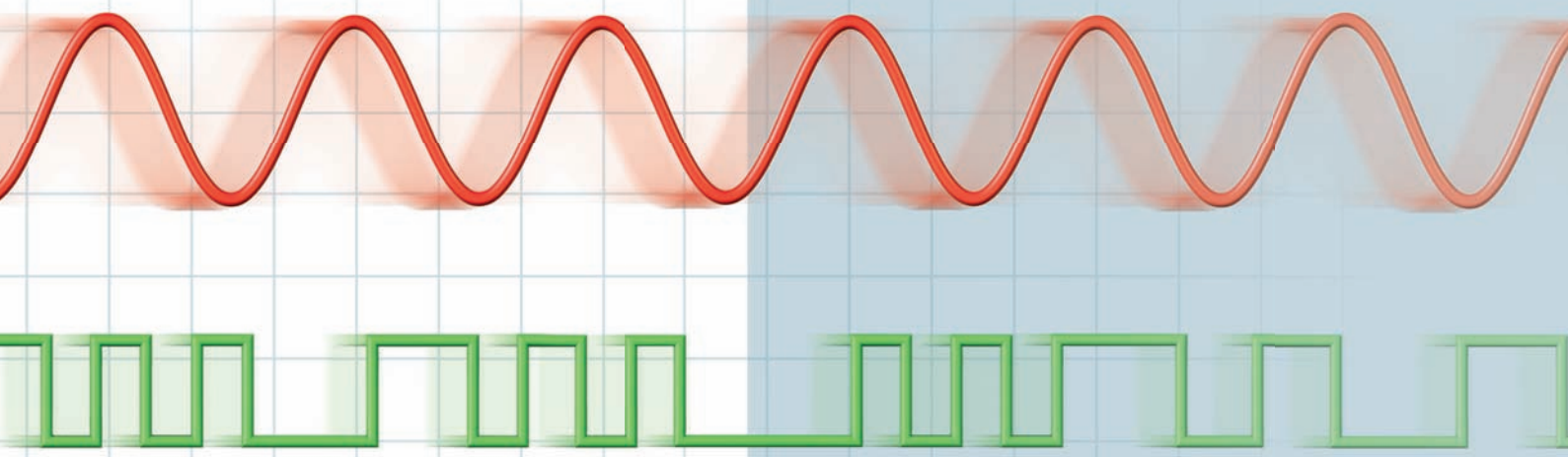
Power & Signal Quality

TRABTECH

Simply greater availability

PHOENIX CONTACT
INSPIRING INNOVATIONS

Keeping the world in motion – Increased availability with high power and signal quality



Increasing market challenges are forcing companies to achieve 100 percent performance 24 hours/day.

Phoenix Contact offers extensive solutions for high power and signal quality with the TRABTECH product range and thus makes an important contribution to interference-free work processes in all sectors.

Chemical, oil, gas industry and water management

Promoting, preparing and supplying are major processes that have an uncompromising demand pertaining to uninterruptible availability.
Error-free operation of sensitive control systems requires a high power and signal quality.

Photovoltaic and wind turbine systems

Meeting the power of nature with the respect it deserves and obtaining ecological-economical balance, is a high demand of our modern society. When a high power and signal quality is created by the regenerative energy, the efficiency is increased considerably.

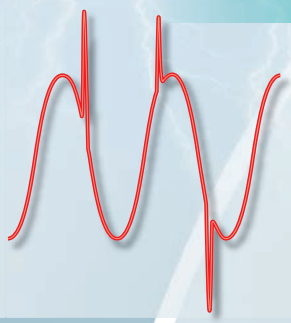
Traffic engineering, building installation and mobile phone

These are the sectors which only come to life with electrical power, measuring data and switching signals. Thanks to TRABTECH, they remain active without disturbance day after day and year after year.

Dangers are numerous – We offer the protection

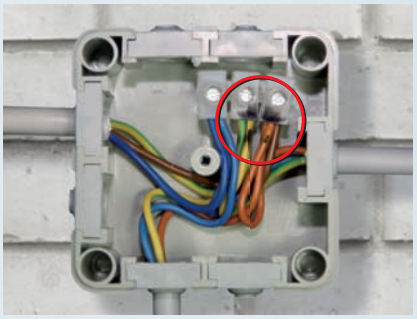
Damage caused by surge voltages

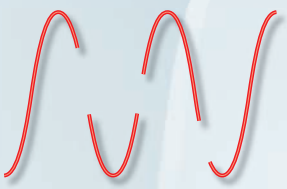
Surge voltages destroy more and more electrical equipment every year. It results in expenses for repairs and downtimes. Not only the systems and devices in industrial applications are at risk. But also the building automation in residential buildings is affected.



Insulation damage and residual currents

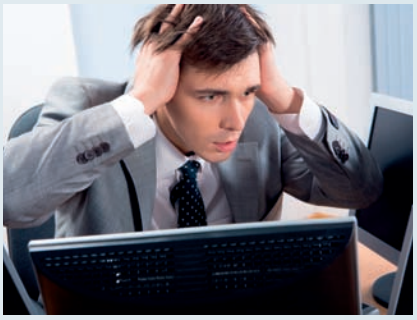
Insulation damage between active conductors and ground cause residual currents, which may cause personal and fire hazards. Various safety devices protect against such effects. They switch off the system immediately in the event of an error.

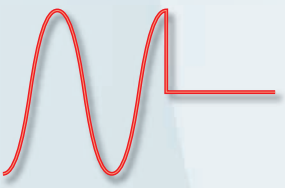




Power failure

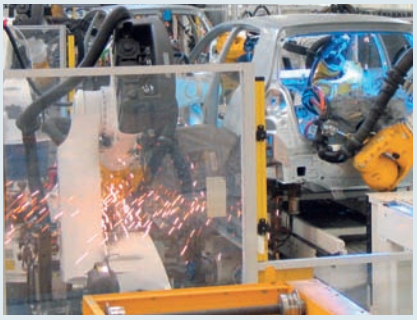
Unexpected interruptions of power supply can damage hardware considerably and may lead to loss of important data. Interruptions of as little as just over 10 ms are so long that they disturb IT operation.

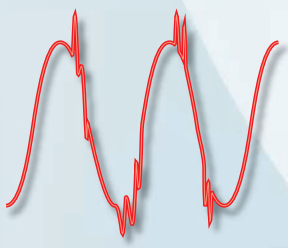




Interference voltages

Pulse-like and high-frequency interference voltages spread unhindered through the wiring system. Data errors, uncontrolled functions and system crashes occur particularly in electronic and data processing devices.





Surge protection

Effective surge protection

Surge protection devices effectively reduce powerful transients. Devices and systems can thus be protected against harmful effects with the help of surge voltage couplings. This considerably increases the operational readiness and availability.

Monitoring

Permanent and reliable system monitoring with early detection of error

Special monitoring and testing devices detect the error before it leads to a system or device shutdown. In this way, necessary repairs or service work can be carried out in a planned manner. The danger is eliminated without disturbing the system operation unnecessarily.

Uninterruptible power supply

Reliable protection against uncontrolled voltage interruptions

Devices supply battery-powered supply voltage for uninterruptible power supply. Downtimes in the power supply unit are jumpered and uninterruptible system operation is ensured.

EMC solutions

Filter technology against interference voltages

Interference suppressor filters reduce conducted high-frequency interference voltages. Devices can operate without any disturbance in the field of data processing and provide reliable results.

Surge protection

Comprehensive effective surge protection is an important prerequisite for uninterrupted system availability.

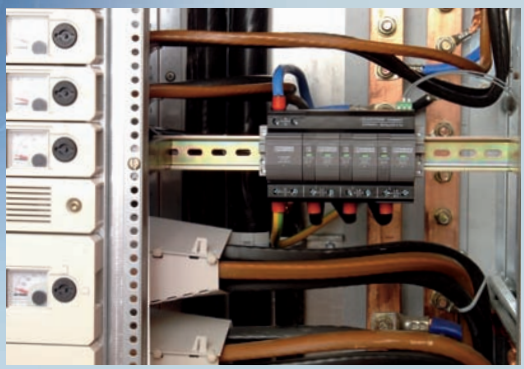
Phoenix Contact offers protection devices for all areas of application, developed on the basis of many years of experience and intensive fundamental research.

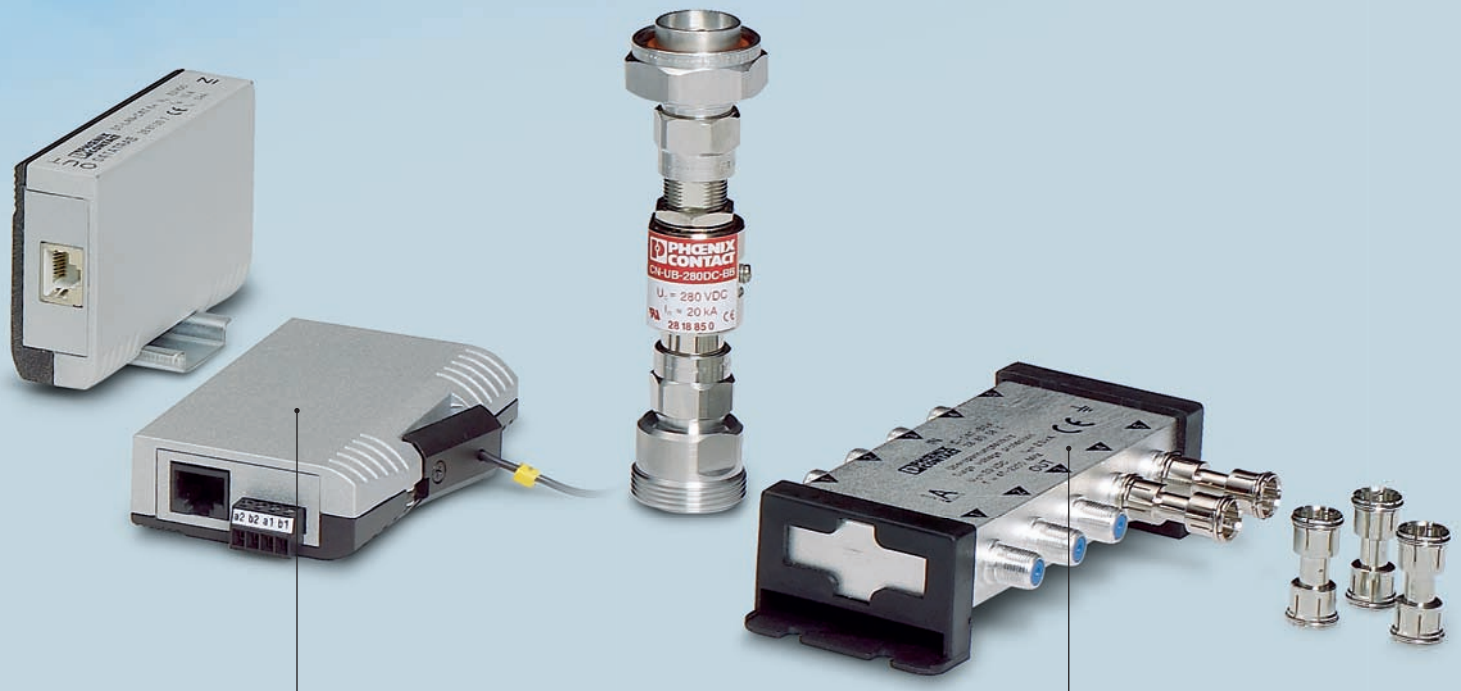
Protection of the power supply

A comprehensive surge protection concept starts in the power supply unit. Here, transients occur with particularly high destructive energy. All devices are affected, from the incoming supply to the load. An effective protection is created in two to three protection stages. This type of protective measures can be implemented with FLASHTRAB, VALVETRAB and PLUGTRAB.

Protection for MCR technology

Signal interfaces are particularly sensitive to surge voltages. Combined protective circuits with high-performance and quick components are used here. The pluggable and testable arresters PLUGTRAB allow a function control, even during system operation.





Protection for information technology and telecommunications

Communication and data processing are indispensable in modern society. The sensitive systems operate with high frequencies and low signal levels. Surge voltages can therefore abruptly slow down large areas of data transmission systems. DATATRAB reduces surge voltages to harmless values without distorting or weakening the data signal.

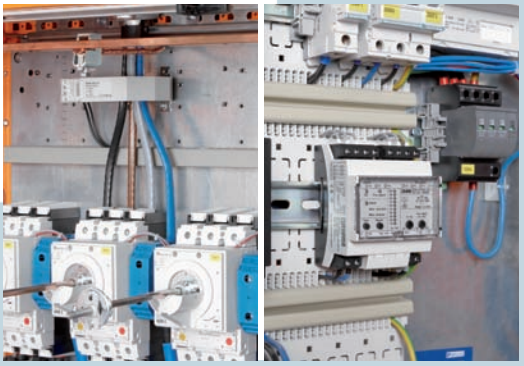
Protection for transceiver systems

The high frequencies of wireless transmission require the use of protective devices with low insertion loss. COAXTRAB fulfills the requirement. This product range provides coaxial surge arresters built for all common transmission systems.

Monitoring

Electrical systems and devices are protected by many different safety devices. In the event of an error, a switch-off occurs immediately. This may lead to undesirable downtimes and data loss.

Errors in the making can be detected with a permanent system monitoring or regular tests, before they cause a switch-off. Troubleshooting and repairing can take place outside normal hours of operation.



Functional testing of surge protection devices

Due to their function, surge protection devices are subjected to high electrical loads. Using CHECKMASTER, the arrester testing system, the function of the devices can be tested in the system. With the replacement of defective arresters, the protective function is quickly restored.

Residual current monitoring

Leakage currents are the result of insulation faults in the system or devices. The residual current monitoring RCM detects and indicates leakage currents in the making. As a result the error can be eliminated before it leads to forced switch-off of the system.

Uninterruptible power supplies

Power interruptions due to short circuit or network overload always occur unexpectedly. The results are loss of data and undefined states in production machines or processes. Such situations can be avoided with UPS devices. System safety is increased considerably with short-term bridging of power supply or controlled stoppage of running programs including data security.

UPS

The devices can be used as tower or even installed in a 19" rack. The rotating display always shows all information in the correct reading order. Separate battery modules extend the bridging time of the UPS devices.

UPS accessories

The UPS can be configured suitably with redundancy and bypass modules as well as socket strips. The SNMP card provides a web-based monitoring of UPS status and restarts on a cell phone in the case of an emergency.

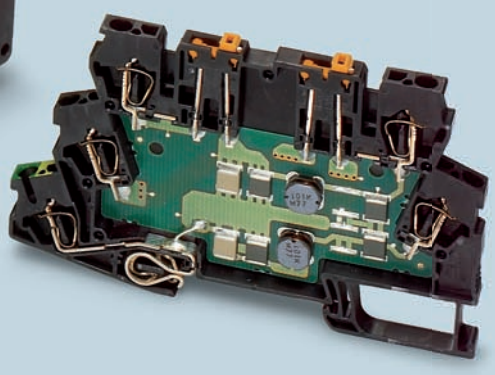
EMC solutions

Mechanically or electronically triggered switching operations generate pulse-like and high frequency interference voltages. These voltages spread unhindered through the wiring system. All devices within this wiring system are affected. Data errors, uncontrolled functions and system crashes occur particularly in data processing devices.

NEF and SFP filter modules

The filter circuits in DIN rail modules can be easily taken into account during the conception of the system.
The products from Phoenix Contact always offer the right EMC solutions for new systems or during upgrades.

Alternatively, there are filters with additional surge protection type 3. In this way, these protection devices control two dangers in a module.



Services

Our special offer for you:

- **Conceptual advice**
  Development of solutions directly into your system.
- **Seminars**
  Competent advanced training on system availability.
- **Rental service**
  Arrester test system for revisions in your system.
- **Solution Center**
  Product development for systems according to your requirements.
- **Planning software**
  Surge protection concepts are easily created with the user-guided TRABTECH select. The software is a component of the CLIP PROJECT DIN rail configurator.

Advice and mutually agreed solutions in personal conversations with our customers.

Planning software for TRABTECH select surge protection concepts

Dynamics and efficiency – From the idea to the application

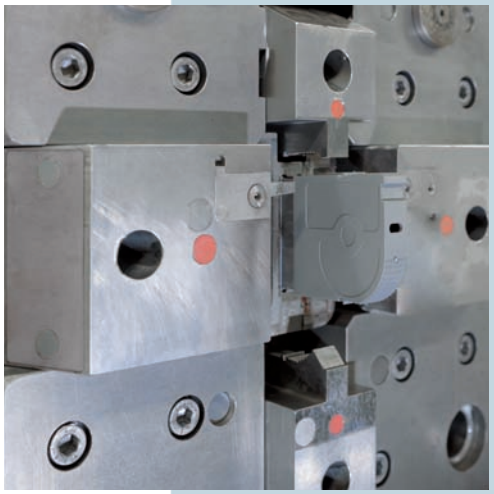
With years of experience we convert our core competencies into modern and high-quality products. Clear processes, from the initial idea through development and production right down to marketing, ensure high quality.

Injection molds, stamping tools and complex assembly machines are produced in our own tool and machine shop according to the latest production standards.

On-time delivery of goods secures our efficient distribution logistics.

Quality control during production

Development

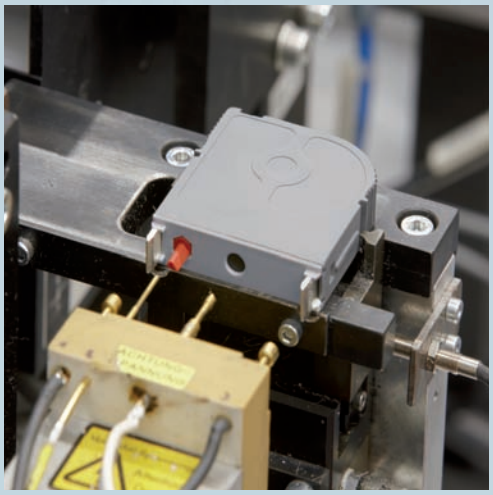


Tool shop

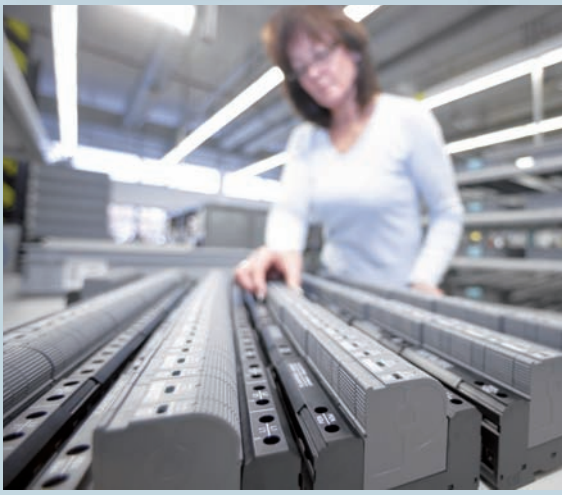
Plastics production

Modern production systems

Metal parts production



Automated test



Final check, packaging, dispatch

Worldwide representation with powerful products

Our employees participate in national and international standard bodies. They shape and thus actively support the future-oriented path of technology. Due to the continuous committee work, the requirements of standards and guidelines are always promptly included in the development process of our products.

The satisfaction of our customers around the world inspires us to continue.

In-house surge current laboratory in accordance with current standards

Fundamental research and performance tests

A key-competence of the development department TRABTECH is the simulation of lightning and surge currents. The TRABTECH test lab fulfils the requirements according to IEC 61643 and UL 1449.

Above that, various environmental simulations and mechanical testings can be performed. All development activities are covered by management systems for QualityISO 9001:2000, Environmental Standards DIN EN ISO 14001:2005 and Occupational Health and Safety OHSAS 18001:1999, which are accredited by DQS.

Transrapid magnetic levitation train

Latest technology in the Transrapid ensures fast, safe and convenient carriage of passengers. A trouble-free operation of the electrical high-tech equipment is a prerequisite for uninterruptible availability of all systems.

A comprehensive protection concept prevents disturbances or damage due to surge voltages. The concept includes power supply unit and signal interfaces of the switch control and the fieldbus system. All exposed interfaces are protected in the Transrapid and on the route. The Hellingrath GmbH headquartered in Mülheim an der Ruhr, Germany has opted for the solution from Phoenix Contact. All required surge protection devices and the connection method fulfill the requirements and are available in the overall concept.

SAP company complex "Campus II"

In March 2007, the new SAP company complex "Campus II" was handed over to the 2,000 employees in Walldorf / Heidelberg, Germany. The architecturally sophisticated building represents the success story of the software company SAP AG.

All main and sub-distribution boards as well as the telephone lines of the building are connected to the surge protection devices from Phoenix Contact.

"We can't prevent the storms that hit Walldorf," explains Lutz Thissen from the SAP facility management, "but with our new surge protection concept, we are certainly on the safe side."

Formula 1 race track Monza

The race track in Monza, Italy is one of the oldest and most interesting sites of Formula 1. Safety is high priority, especially where fast laps are run, as here on Ferrari's home track.

The race track is located in an area where lightning strikes are not unusual. Surge voltages, for example, can halt the entire video monitoring. Therefore, the power supply of all the cameras along the race track was equipped with surge protection from Phoenix Contact. An important point in the whole project that is achieved by the company ECS Elettronica Consulenza Servizi S.r.l.

Power & Signal Quality

"We keep the world in motion"

With this idea, the DVD leads you through the world of Power & Signal Quality from Phoenix Contact. You can expect an insight into the problem with conceptual product solutions, reference projects and much more.

Your personal TRABTECH video DVD on power & signal quality from Phoenix Contact

PHOENIX CONTACT – Communicating with customers and partners worldwide

Phoenix Contact is a leading manufacturer of electrical connection and industrial automation technology. Founded more than 80 years ago, the company now has 10,200 employees, of which more than 5,600 are located in Germany. A sales network of over 46 subsidiaries and more than 30 sales representatives guarantees proximity to the customer.

The product range includes high-grade components, systems and services across a wide variety of applications. The selection ranges from modular terminal blocks to interface technology, PCB connection technology and solutions for surge protection to hardware and software solutions for the automation of industrial systems.

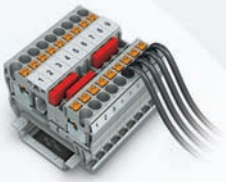
Global Player within close reach of the customer

Phoenix Contact values in-house expertise. The design and development departments continuously implement innovative product ideas and deliver special solutions to meet customer requirements. Numerous patents have resulted from products developed at Phoenix Contact.

Further information on the products presented here and on the world of solutions from Phoenix Contact can be found at

www.phoenixcontact.net/catalog

Or contact us directly.



Industrial Connection Technology,
Marking Systems and Mounting Material

CLIPLINE

Connection Technology for
Field Devices and Field Cabling

PLUSCON

Device Connection Technology
and Electronic Housings

COMBICON

Power and Signal Quality

TRABTECH

Signal Converters, Switching Devices,
Power Supplies

INTERFACE

Components and Systems

AUTOMATION

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