



# The narrowest surge protection for MCR applications

The TERMITRAB complete product range

# Surge protection for MCR applications

TERMITRAB complete is the world's narrowest surge protection for MCR technology. The new product range provides you with a complete system offering advantages such as a status indicator and optional remote signaling.

The world's narrowest surge protective devices are just 3.5 mm wide.

## Extremely narrow overall width

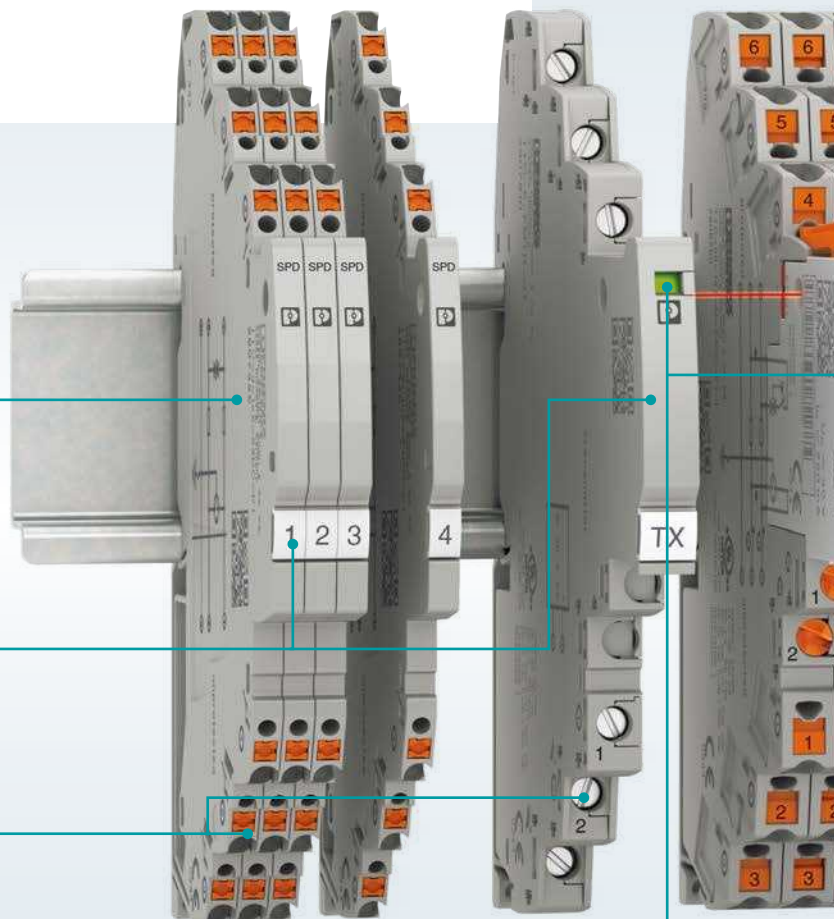
Build smaller systems with the world's narrowest surge protection starting at 3.5 mm.

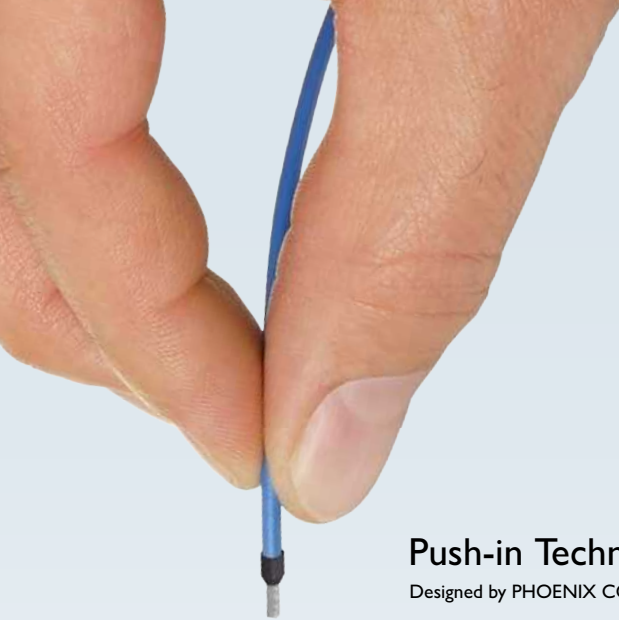
Use the free marking area or Phoenix Contact marking material for customized marking.

The choice is yours: Push-in or screw connection technology.

## Status indicator and optional remote signaling

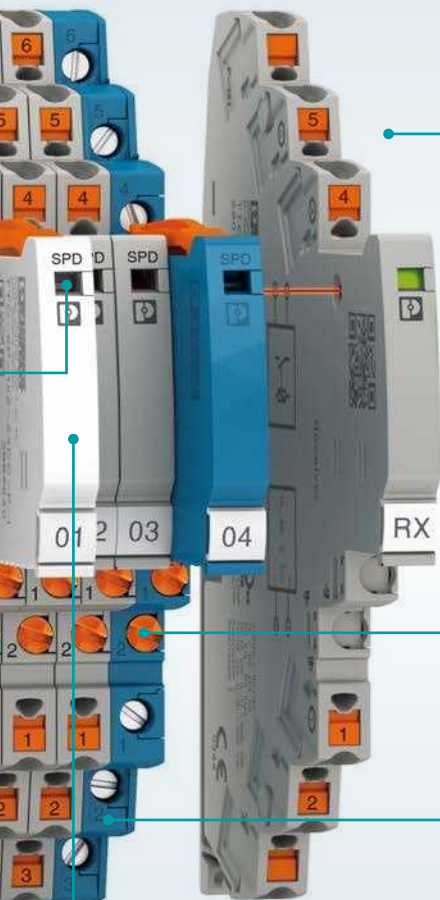
Use the integrated status indicator and simple remote signaling system to detect overloaded surge protective devices.





## Push-in Technology<sup>®</sup>

Designed by PHOENIX CONTACT



### Tailored portfolio

Choose from various circuits and features.

Use the integrated, innovative knife disconnection to simplify maintenance work.

Utilize international certifications and Ex approvals for worldwide use in demanding ambient conditions.

Use the CHECKMASTER 2 to test and document the condition of pluggable surge protection modules.



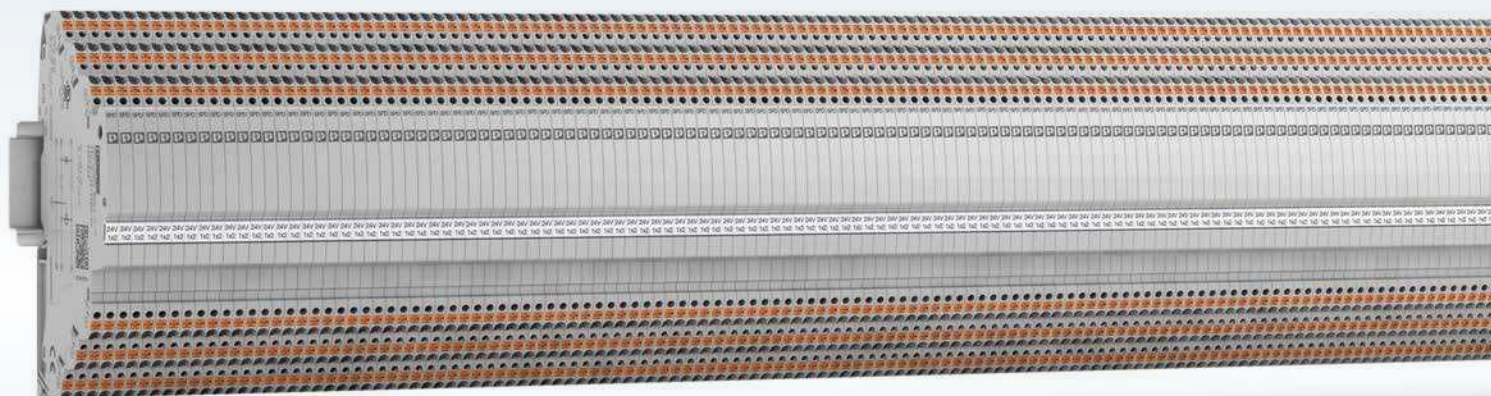
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# Extremely narrow overall width

A wide variety of signals are transmitted using measurement and control technology. This requires an increasingly large packing density. The new TERMITRAB complete product range provides surge protection starting at an overall width of 3.5 mm and fulfills this requirement. This is made possible by the innovative Push-in connection technology and the use of particularly flat components.

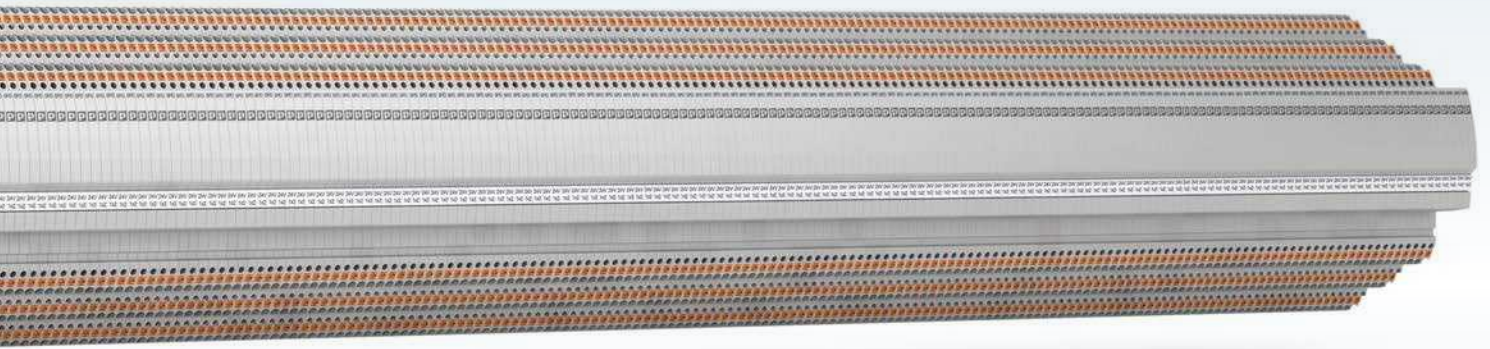
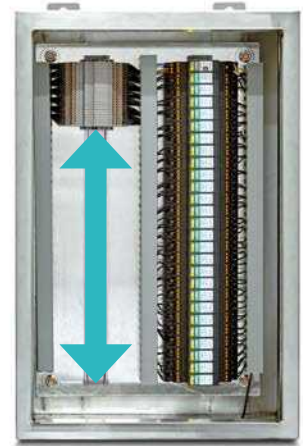
The protective devices with an overall width of 6 mm also offer an unprecedented range of circuit versions and product features. TERMITRAB complete increases the availability of your system and substantially reduces required space.



## Protection for 572

## Significant space savings for 26 modules

This image is a model illustrating the space required to protect 26 current loops with a 1 x 2 circuit. At an overall width of 17.5 mm, protective devices from the PLUGTRAB PT-IQ product range provide multi-stage function monitoring. At an overall width of 6 mm, TERMITRAB complete offers space savings of approx. 24 percent in addition to its remote signaling function. The ultra-narrow versions with an overall width of 3.5 mm provide space savings of over 80 percent.



signals on 1 meter

### Your advantages

- ✓ Cut the space requirements for surge protection in half
- ✓ Save money, thanks to smaller control cabinets
- ✓ Gain valuable installation space for system planning

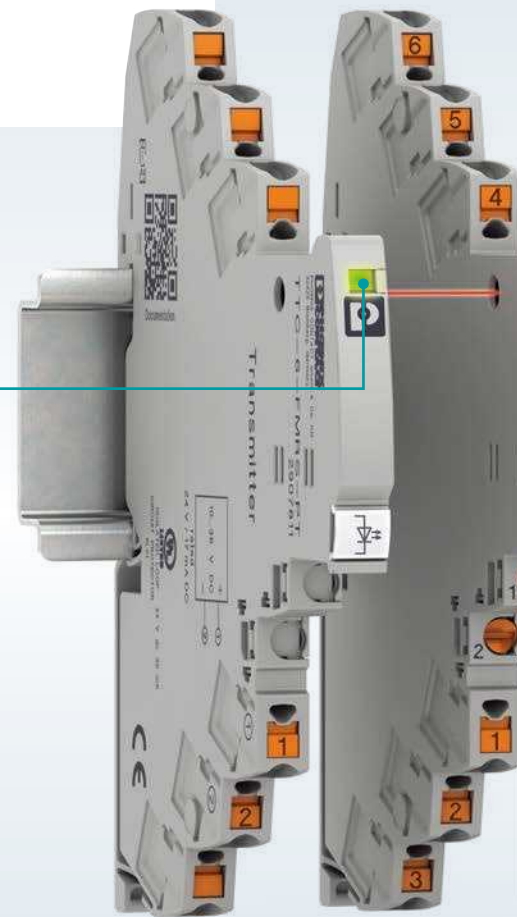
# Status indicator and optional remote signaling

TERMITRAB complete provides mechanical signaling right at the protective device. This is initiated by a disconnect device which ensures that the surge protection solution behaves safely in the event of an overload.

By request, you can utilize optional remote signaling modules to monitor the remote tunnel in each protective module via a photoelectric barrier. If the light beam is interrupted, a floating contact transmits the group message to the control room. Your advantage: You are always notified of the status of your surge protection system and can quickly replace overloaded protective devices.

## Status indicator

Mechanical signaling indicates overloaded protective devices that can be replaced. The indicator on the surge protective device does not require any auxiliary power.

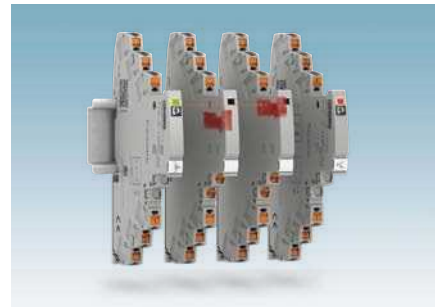


## Your advantages

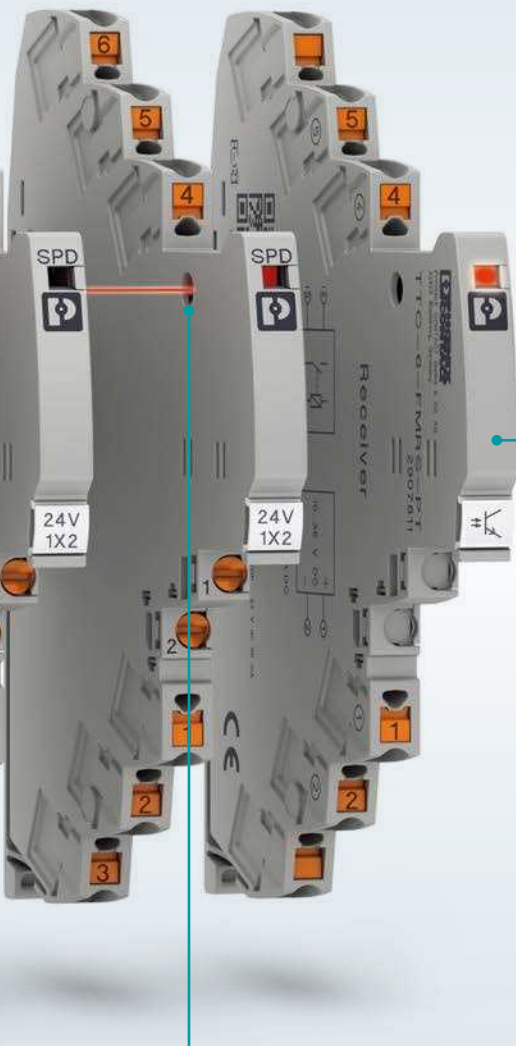
- ✓ Safe disconnection in the event of an overload
- ✓ Mechanical status indicator on the protective device
- ✓ Remote signaling sets are easy to retrofit
- ✓ Remote monitoring of up to 40 protective devices per remote signaling set
- ✓ No configuration of the remote signaling module or protective device required
- ✓ Remote signaling sets with Push-in or screw connection



Function is everything



The last surge protection has been triggered



## Overload protection

The disconnect device ensures safe behavior in the event of an overload. The remote tunnel is closed and a signal is indicated on the protective device. The measuring signal is unaffected by the disconnection process.



## Remote signaling

The optional remote signaling module uses a photoelectric barrier to monitor the status of up to 40 adjacent protective devices. A floating contact transmits the status to the control room. Installation is extremely easy because the protective modules do not require any programming or additional wiring.

# Tailored portfolio

The TERMITRAB complete product range is a tailored product range for all applications in measurement and control technology. You will find the ideal TERMITRAB complete version for your requirements in the portfolio. Choose from simple, ultra-narrow protective devices, products with testable protective plugs, signaling, optional remote signaling modules and more.



## Ultra-narrow

- 3.5 mm overall width
- Push-in connection



## Single-stage protective circuit

- 6 mm overall width
- Push-in or screw connection
- With status indicator

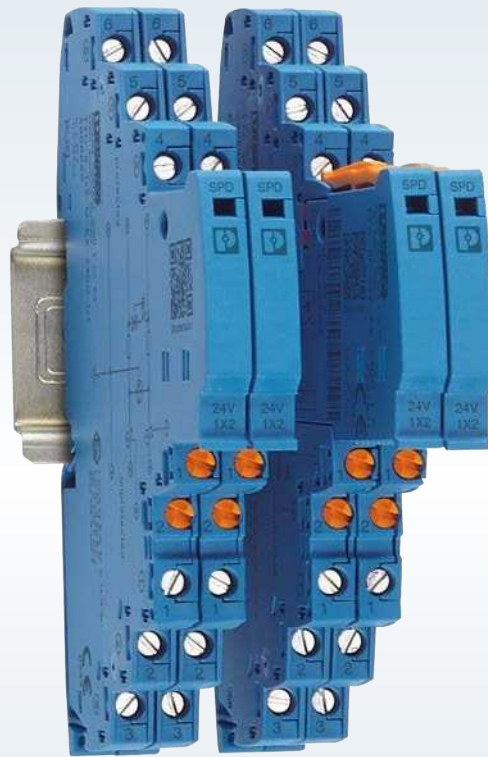


## One-piece

- 6 mm overall width
- Push-in or screw connection
- Multi-stage protective circuit
- With or without status indicator
- With or without knife disconnection

## Possible selection parameters

- 3.5 mm or 6 mm overall width
- Push-in or screw connection
- Multi-stage or single-stage protective circuit
- One-piece or pluggable
- With or without status indicator
- With or without knife disconnection
- Non-Ex areas or Ex areas



### Pluggable

- 6 mm overall width
- Push-in or screw connection
- Multi-stage protective circuit
- With status indicator
- With or without knife disconnection

### Ex versions

- 6 mm overall width
- Screw connection
- Multi-stage protective circuit
- One-piece or pluggable
- With status indicator
- With knife disconnection
- For Ex areas

### Optional remote signaling sets

- 6 mm overall width
- Push-in or screw connection
- Floating contact
- One-piece
- With status indicator
- Transmitter module
- Receiver module

# Integrated knife disconnection

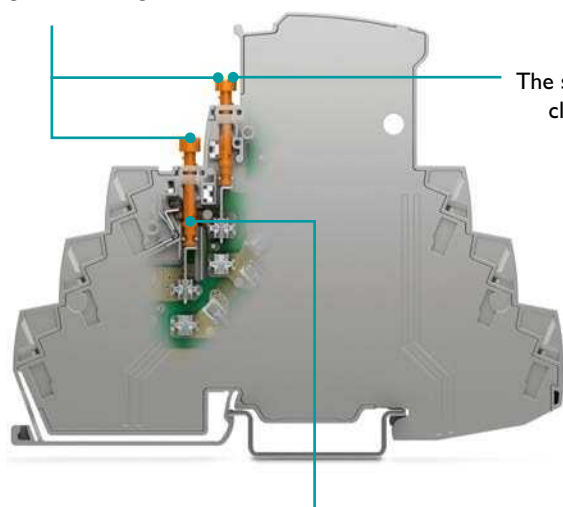
## Opening the signal path at the surge protective device

Disconnect terminal blocks installed between MCR modules and field cabling are often used in sensor/actuator cabling. Interrupting signal circuits is easy, thanks to disconnect terminal blocks. This enables you to conduct measurements in the field. TERMITRAB complete offers versions with integrated knife disconnection.

This saves even more installation space. The disconnection option can be used on both upper terminal levels. Isolation measurements are carried out on the cables without voltage-limiting parts distorting the test results. The function screw for knife disconnection is equipped with overrotation protection in both directions of rotation.

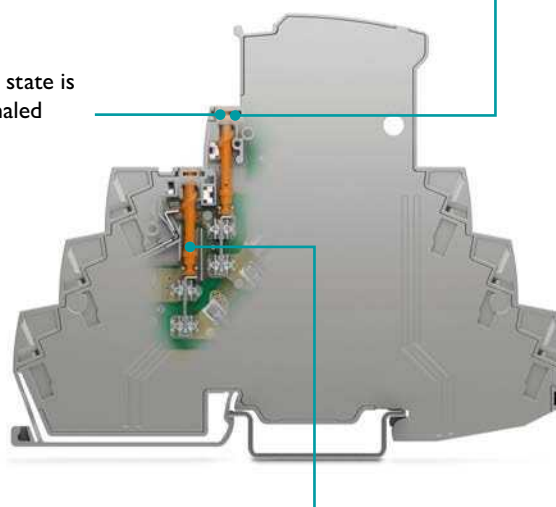
Its position clearly signals the switching state. The innovative, vertical knife disconnection is in closed design in the housing for the protective devices. This minimizes contamination of switching contacts in harsh and dusty ambient conditions.

Two disconnect knives for opening individual signal wires



The switching state is clearly signaled

A closed design protects the disconnect knife from any contamination



It is easy to service function screws at any time

Overrotation protection when opening and closing



## Advantage of knife disconnection

Knife disconnection enables fast and easy troubleshooting and system maintenance (e.g. when measuring loop resistance levels).



## Testing right at the protective device

You can carry out the required measurements or tests right at the protective device without interfering with installation.

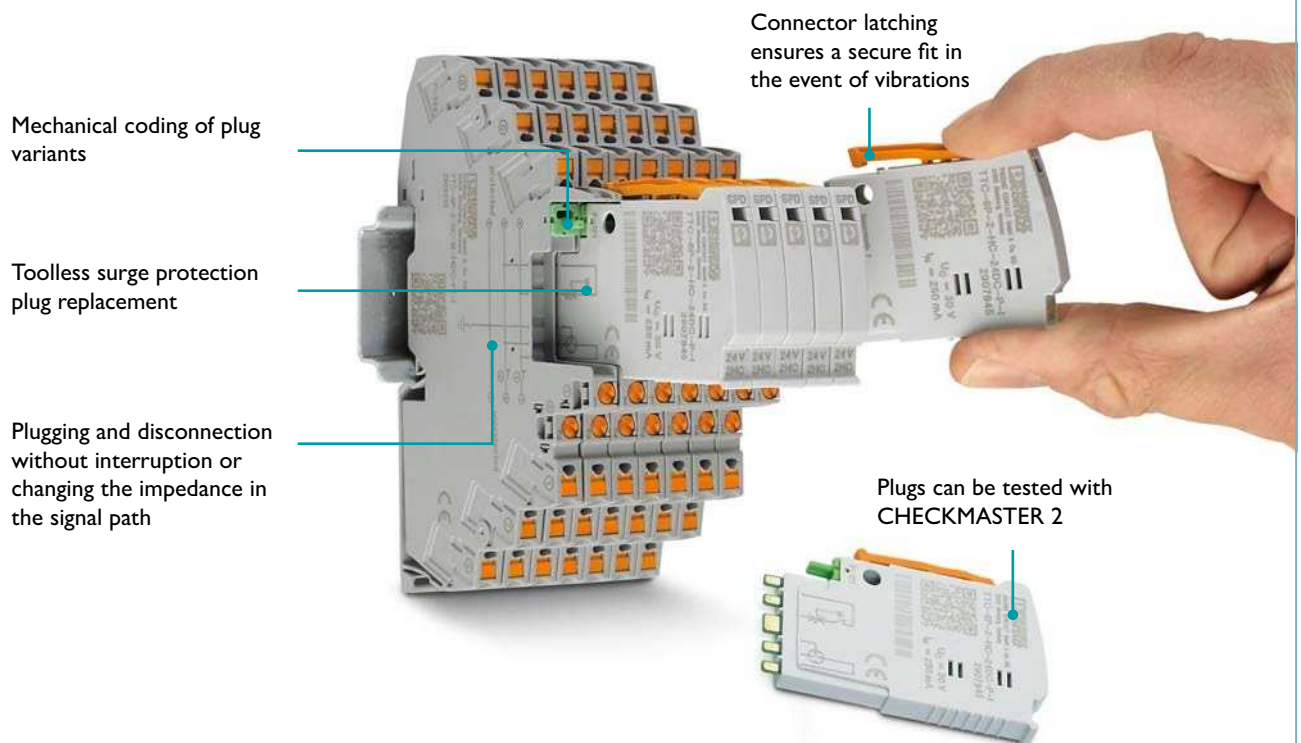
## Pluggable versions

### Testing and replacement without additional wiring

The pluggable surge protective devices can be replaced in the event of maintenance without having to access the wiring. The measuring signal is not interrupted and the measurement results are not falsified. Use the CHECKMASTER 2 to test the plugs quickly and easily using regular lightning protection tests in accordance with

IEC 62305-3. This enables standardized, simple documentation of test results and device preventive maintenance. If a protective plug has reached the tolerance limit, this stressed plug is simply replaced. Mechanical coding prevents protective plugs from being accidentally swapped with plugs with different circuitry or voltage levels.

This guarantees safe use of the pluggable surge protection system.



### Documented test

The CHECKMASTER 2 can be used to test pluggable versions for compliance with standards and to document these results. If the device has reached the performance limit, preventive maintenance can be carried out.



### Toolless replacement

If a protective component is overloaded, the device can be replaced without interfering with installation and its full level of protection can be restored.



### Disconnecting with neutral impedance

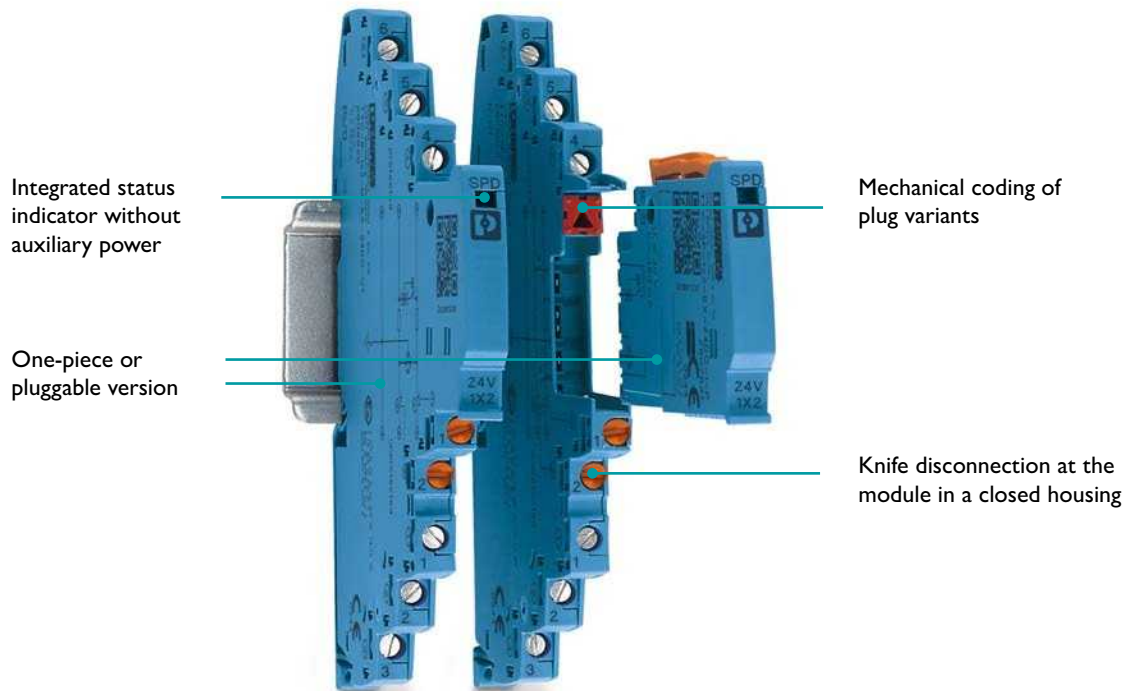
Required decoupling resistance levels are incorporated in the base element. As a result, the loop resistance does not change and the signal remains unchanged when the plug is disconnected.

# Ex modules

## Protection in Ex areas

TERMITRAB complete also offers the ideal solution for protecting signals in intrinsically safe circuits with Ex i type of protection. The properties of the intrinsically safe circuit are not affected by the installation of the surge protection module.

It can be installed in Ex zone 1, Ex zone 2 or in the non-Ex area. The connected signals can be forwarded through to Ex zone 0. The products are permitted in accordance with ATEX and IECEx and fulfill requirements in accordance with DIN EN and IEC 60079-11.



## Wide variety of applications

TERMITRAB complete offers surge protection for central installations and use in the field. Even intrinsically safe fieldbuses (FISCO) can be protected.



## Approvals for Ex areas

TERMITRAB complete has approvals from ATEX, IECEx and other organizations. This permits global use in Ex areas.

# The mobile test lab

## Everything you need for testing: CHECKMASTER 2

CHECKMASTER 2 is a mobile test lab for all Phoenix Contact pluggable surge protective devices. You can use the new test holder for TERMITRAB complete to test all pluggable versions from the new product range quickly, conveniently and safely. The test conforms with requirements

in IEC 62305-3. Recurring tests are documented and saved reliably using the CHECKMASTER 2. The testing program compares the current electrical parameters of the components with the specified reference values. Components subjected to heavy wear are identified as damaged

and recommended for replacement. This prevents unexpected failures, and you avoid unnecessary service calls.



### Identifying the test object

The barcodes on the surge protective devices provide you with a fast, accurate option to enter an item.



### Three-stage test results

The results of these tests are shown on a color display:

1. OK: Test passed
2. Warning: Tolerance limit reached
3. Defect: Replacement required



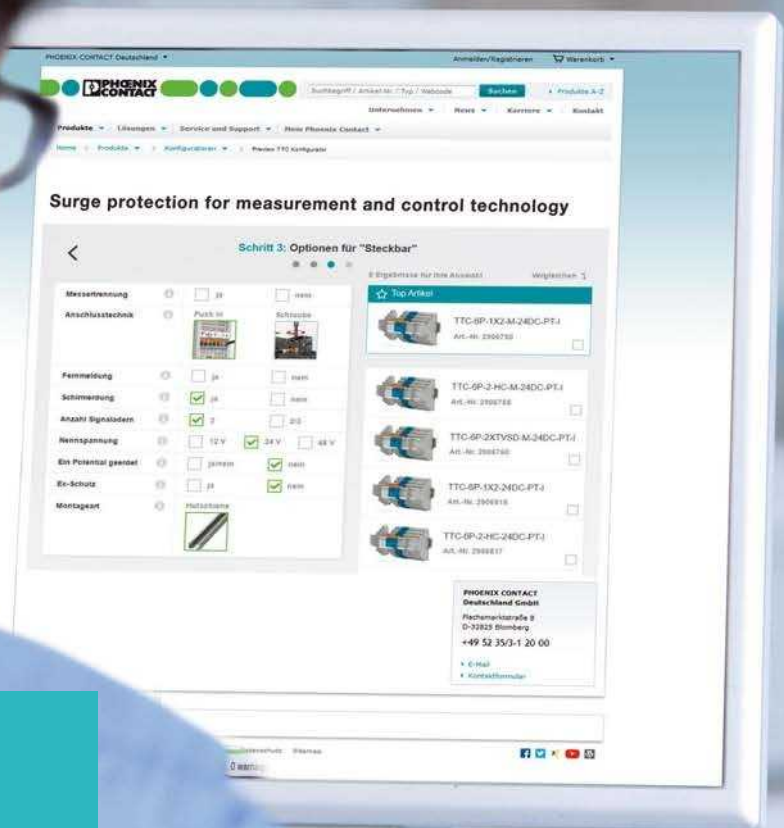
### Documenting tests

The test results can be transferred from an internal buffer to a USB stick. The data can be further processed using standard Office software.

# Easy selection

Thanks to the wide variety of versions, TERMITRAB complete offers a solution for all applications.

Product selection is simple and can be completed in just a few steps using the online configurator. Select the signal type and desired design to receive a tailored suggestion. Then, you can add other product features as you please.



## Online configurator

Simplify planning with the online configurator. Using this tool, you can quickly find the right surge protection solution for the most common MCR technology applications. Images are used to illustrate useful product features, which can be optionally added.

**i** Web code: #1389

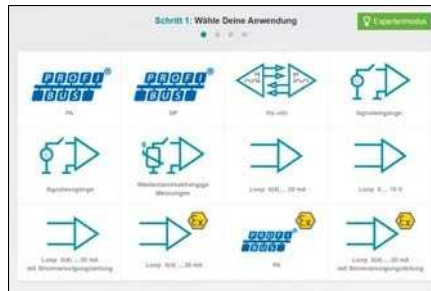
## Surge protection for MCR technology

## Two clicks to the right product

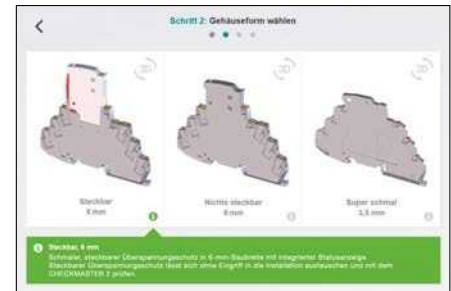
TERMITRAB complete offers over 100 products with different circuit and voltage versions. Various connection technologies and product features complete the portfolio. This variety provides you with a solution for almost all MCR technology applications.

The new configuration tool assists you in keeping track of everything. In just two clicks, you can navigate to a selection of products that offer optimal protection for your application. First, you can select the application or interface that you want to protect. Then, select your desired design. Then, you have the option to define additional features on the selection page.

If none of the available TERMITRAB complete products is suitable for your application, use the advanced search to find more available products.



Step 1:  
Selecting the application or interface



## Step 2: Selecting the design

More information on the online configurator: Simply enter the web code into the search field on our website.

**i** Web code: #1389

## What the order designation reveals

The structure of the order designation indicates the respective product version. This lets you quickly and easily identify products that are in stock.

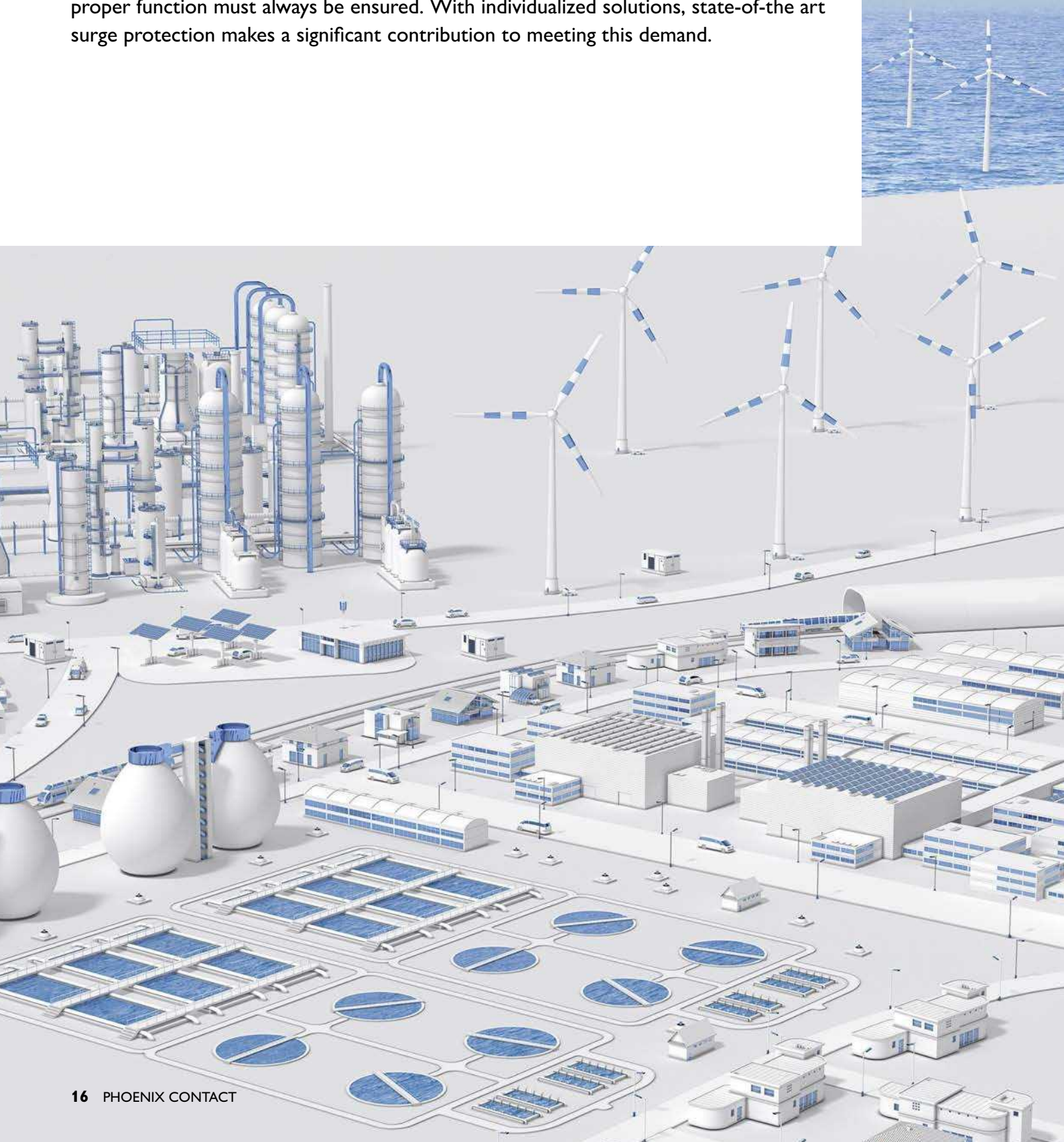
The housing width, protective circuit and nominal voltage can be determined at a glance. Other properties such as knife disconnection, versions for the Ex area and earth connection are indicated by corresponding letters.

For product versions with a single-stage protective circuit, the included components are specified in the order designation.

| Product designation keys   |                                    |                 |
|----------------------------|------------------------------------|-----------------|
| TTC-6P-1X2-F-M-24DC-PT-I   | Example                            | Further options |
| Indicator/status indicator | Without indicator/status indicator |                 |
| Push-in                    | Universal terminal (screw)         |                 |
| 24 V DC                    | 12 V DC / 48 V DC                  |                 |
| Knife disconnection        | Ex applications                    |                 |
| Floating                   | Directly grounded                  |                 |
| 1X2 One pair (isolated)    | 2X1 / 3-HF / 2 / 2-HC              |                 |
| Pluggable                  | One-piece                          |                 |
| 6 mm                       | 3.5 mm                             |                 |
| TERMITRAB complete         |                                    |                 |

# Surge protection for all measurement and control technology applications

Society and industry expect a high degree of availability in all industries. In this respect, automated processes with modern MCR technology are basic components whose proper function must always be ensured. With individualized solutions, state-of-the-art surge protection makes a significant contribution to meeting this demand.



# TERMITRAB complete in operation

## Process technology

Transient overvoltages are often directly coupled into the copper lines (e.g. when lightning strikes in the vicinity). They cause defects in electronic MCR systems in process technology systems. This can lead to system shutdown and costly repair work. TERMITRAB complete offers solutions for protecting your system from damage due to surge voltage. This ensures that your system is in stable condition over the long term. TERMITRAB complete offers optimal space-saving solutions that are ideal for use in large distribution cabinets. TERMITRAB complete also offers a wide variety of auxiliary functions that increase maintenance convenience in large process

systems. Integrated disconnect knives let users disconnect the control system from the field cable. This makes maintenance work and measurements easy. The product range contains products that may be installed in Ex areas up to Ex zone 1.



TERMITRAB complete for process technology

## Wind power

Maximum system availability, safe operation and efficient maintenance are required to optimize the energy yield from wind turbines. TERMITRAB complete assists you in reaching these goals. Wind turbines are installed in exposed locations. They are often the tallest structures in the area. For this reason, they are hit by many lightning strikes. The scalability of TERMITRAB complete enables protection of a wide variety of wind turbine sensors. System availability is optimized. This provides optimum protection of systems for blade load monitoring, wind measurement, speed

measurement and condition monitoring of the machine. In addition to knife disconnection points, state monitoring with a remote signaling option for surge protective devices can be used to ensure efficient maintenance. Even the harsh ambient conditions in which a wind turbine operates cannot impede optimal protection. The TERMITRAB complete can be installed quickly and easily, thanks to an extremely narrow overall width and Push-in technology.



TERMITRAB complete for wind turbines

## Water and wastewater treatment

High system availability and a comprehensive maintenance concept are crucial to modern system operation in water and wastewater treatment. TERMITRAB complete offers surge voltage protection to ensure this high system availability. TERMITRAB complete also boasts a wide variety of additional functions. The surge protection status can be continuously detected in a central control room using remote signaling modules. This ensures that less work is required in the maintenance of outdoor structures such as groundwater wells or wastewater pumping stations. In addition, integrated knife disconnection simplifies maintenance and

diagnostics for connected field devices. Even harsh ambient conditions are no challenge for TERMITRAB. TERMITRAB complete is ideal for cost-effective protection of different interfaces in water and wastewater treatment.

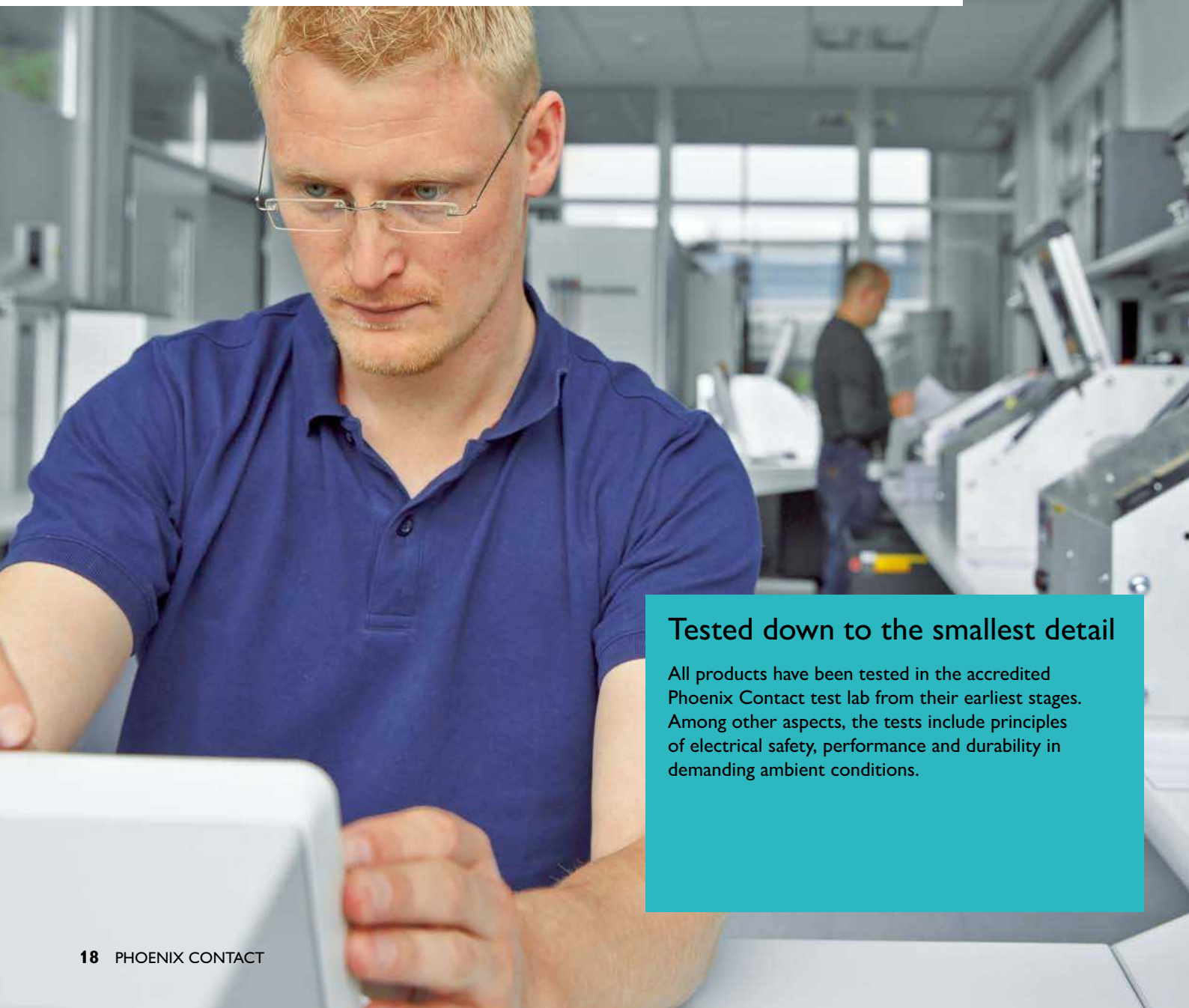


TERMITRAB complete for water and wastewater treatment

## Surge protection with quality

Starting in the product development stage, Phoenix Contact prioritizes the quality and performance of its products. The 1300 m<sup>2</sup> in-house test lab specializes in testing surge protective devices.

The modern testing options for TERMITRAB complete enable comprehensive, standardized test conditions and simulation of demanding ambient conditions.



### Tested down to the smallest detail

All products have been tested in the accredited Phoenix Contact test lab from their earliest stages. Among other aspects, the tests include principles of electrical safety, performance and durability in demanding ambient conditions.

## Tests and inspections



### Surge current tests

The Phoenix Contact surge current testing system generates lightning currents and voltage pulses. This system uses the highest surge current pulses to test protective devices.



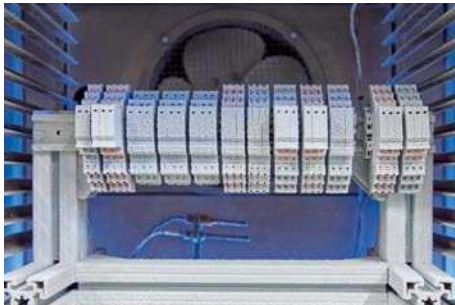
### Installation and operation tests

Mechanically stressed parts such as connection terminal blocks, knife disconnection and protective plugs must pass stringent test cycles in the development phase.



### Vibration test

Despite continuous vibrations, the protective device continues to operate safely. Even the remote signaling system is tested and certified using shock and vibration loads of up to 30g.



### Temperature test

TERMITRAB complete was developed for ambient temperatures from -40°C to +85°C and is ideal for global use.



### Salt spray test/corrosive gas test

The protective devices are tested in saline and corrosive gas environments to demonstrate suitability for maritime and petrochemical applications.



### Material quality

Various material tests such as UV radiation, fire-resistance and mechanical strength tests simulate various installation and operating conditions.

## Accredited in accordance with DIN EN ISO/IEC 17025

The high-current test lab is accredited based on DIN EN ISO/IEC 17025. This standard describes the "General requirements in terms of the competence of testing and calibration laboratories". The Deutsche Akkreditierungsstelle (German accreditation body) has verified and confirmed that the requirements of ISO 17025 have been implemented and adhered to.

The accreditation certifies:

- Specialist and technical competence
- Effective management system for quality assurance
- Independence and impartiality regarding third parties

Test reports from accredited testing laboratories are widely accepted internationally.



Accreditation certificate from DAKKS



## In dialog with customers and partners worldwide

Phoenix Contact is a globally present, Germany-based market leader. Our group is synonym for future-oriented components, systems, and solutions in the fields of electrical engineering, electronics, and automation. A global network across more than 100 countries, and 14,500 employees ensure a close proximity to our customers, which we believe is particularly important.

The wide variety of our innovative products makes it easy for our customers to find future-oriented solutions for different applications and industries. We especially focus on the fields of energy, infrastructure, process and factory automation.



You will find our complete product range at:  
[phoenixcontact.com](http://phoenixcontact.com)

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INSPIRING INNOVATIONS