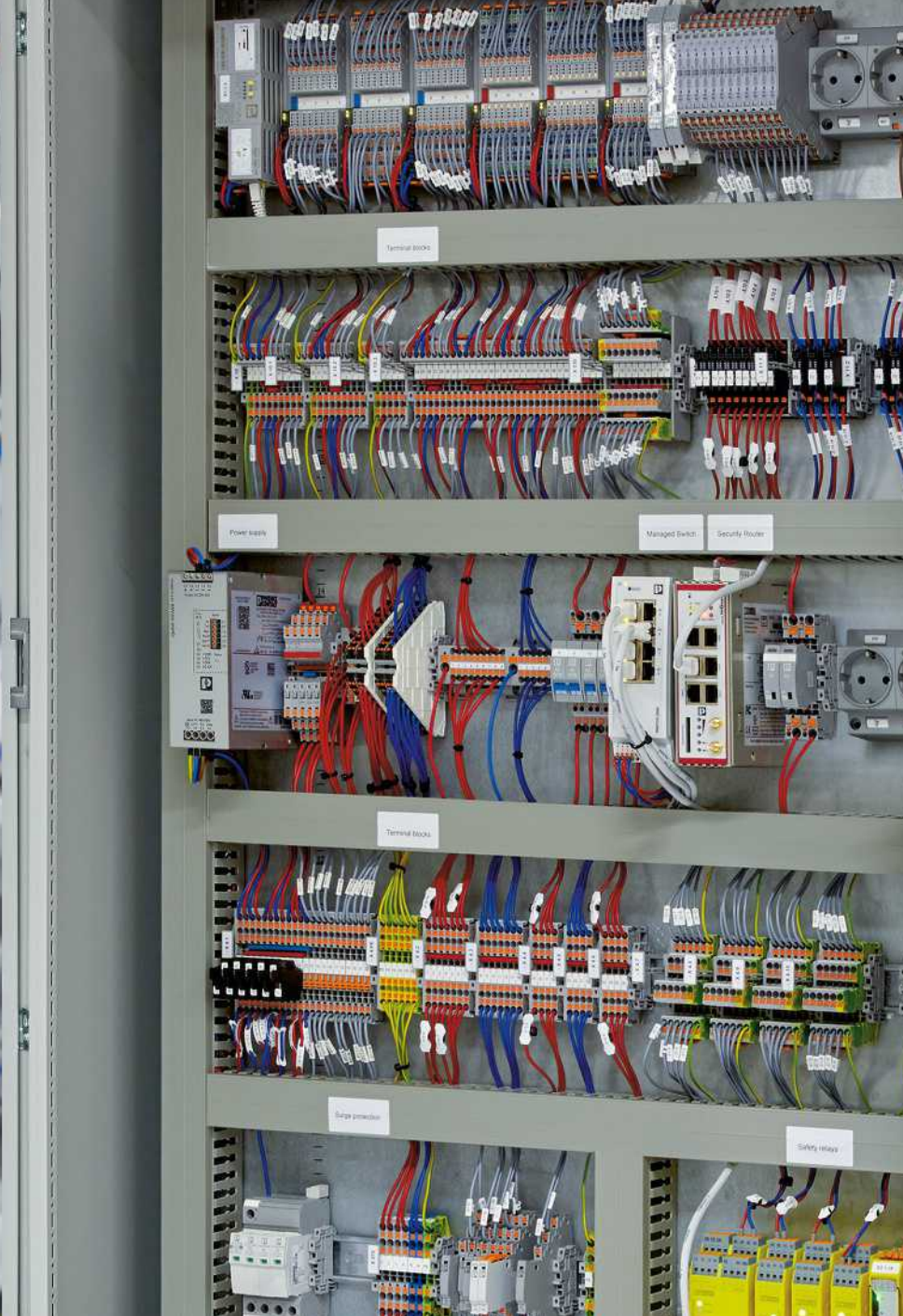


COMPLETE line



# Machine building

Products and solutions for your success



# Your strong partner for machine building

Machine building is a global and highly dynamic market. The competition you face as a provider is tough. It is important that you meet your customers' requirements and develop a range of products and services that allows you to remain competitive for the long term. The focus is on the cost-effectiveness, quality, flexibility, and performance of your machines. Phoenix Contact offers you a comprehensive range of products and services – making a significant contribution to your competitiveness.

 Web code: #1255

## Find out more with the web code

For detailed information, use the web codes provided in this brochure. Simply enter # and the four-digit number in the search field on our website.

 Web code: #1234 (example)

Or use the direct link:  
[phoenixcontact.com/webcode/#1234](https://phoenixcontact.com/webcode/#1234)



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## We have a long tradition of machine building

Phoenix Contact has close ties with the machine building industry. Our in-house machine building department, with 180 employees, provides support for all developmental and manufacturing business units worldwide. Therefore, we are very familiar with your daily challenges. The service portfolio ranges from creating manually operated equipment to complex production systems. Together, we develop high-quality production resources, innovative solutions, and modern production technologies.

 Web code: #1255



### The past

To maintain our independence from service providers, Phoenix Contact has operated an in-house machine building department at the Blomberg location since 1968.



### Today

Today's machine building supports all Phoenix Contact business units around the globe with technologically leading solutions.

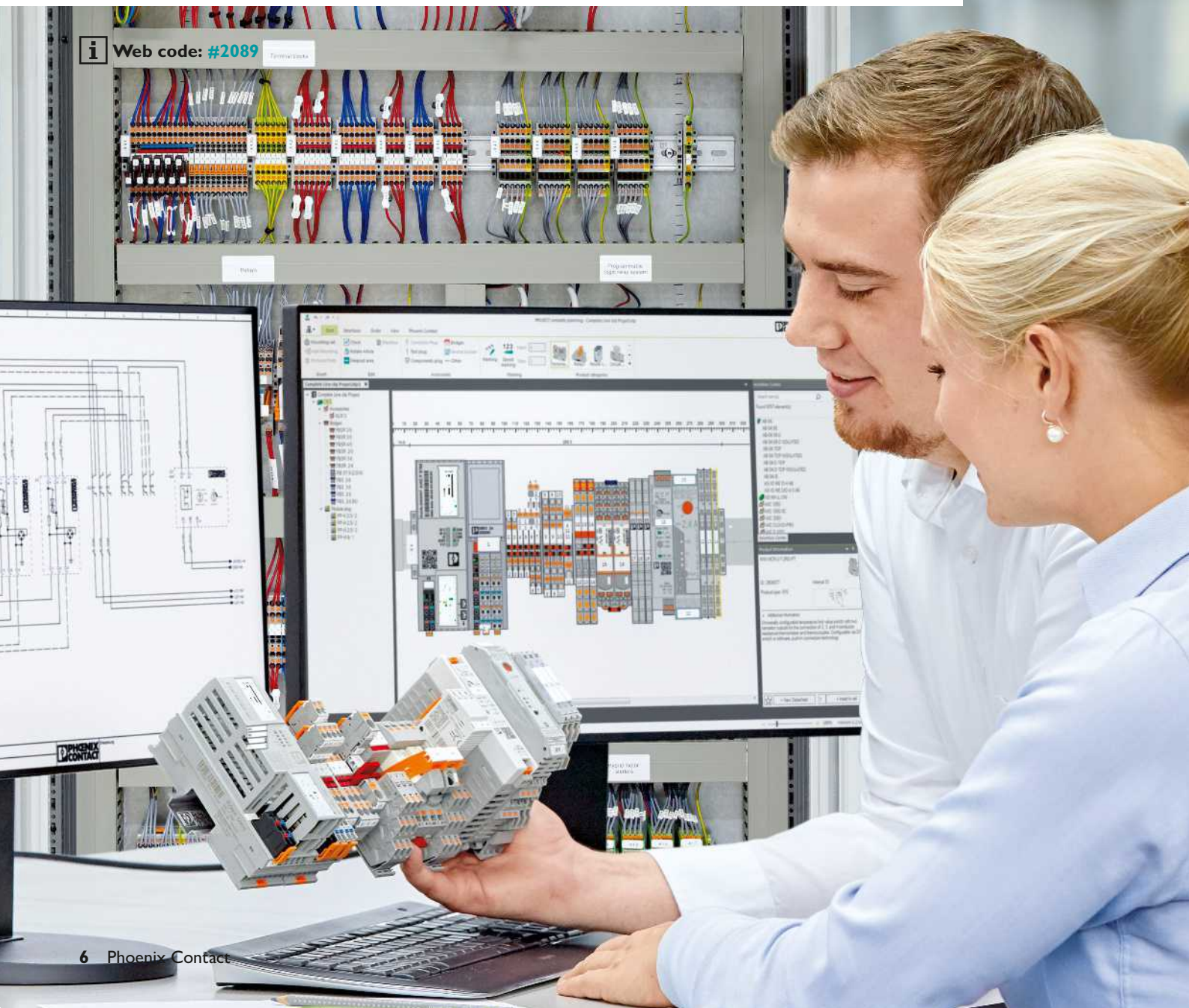


### The future

We will also continue to help shape important trends and developments in machine building in the future.

# COMPLETE line – the comprehensive solution for control cabinets and the field

The COMPLETE line system encompasses technologically leading and coordinated hardware and software products, consulting services, and system solutions that help you optimize your processes in control cabinet building. Engineering, purchasing, installation, and operation become significantly easier for you.



## Your advantages in detail:



### Comprehensive product portfolio

With COMPLETE line, we offer a complete product portfolio of technologically leading products. This includes:

- Controllers and I/O modules
- Power supplies and device circuit breakers
- Terminal blocks and distribution blocks
- Relay modules and motor starters
- Signal conditioners
- Safety technology
- Surge protection
- Heavy-duty connectors



### Intuitive handling

With the simple, intuitive handling of the coordinated hardware components, you will save time during installation, startup, and maintenance. With Push-in connection technology, you can wire applications quickly and without using tools. The broad, technologically leading product portfolio will always provide you with the right product for standard or special applications.



### Save time throughout the entire engineering process

The clipx ENGINEER planning and marking software supports the entire process of control cabinet building. The program features an intuitive user interface that enables the individual planning, automatic checking, and direct ordering of terminal strips.



### Reduced logistics costs

Reduced variety of parts with standardized marking, bridging, and testing accessories. The COMPLETE line system coordinates products, design, and accessories so that you benefit from maximum reusability and thus reduce your logistics costs.



### Optimized processes in control cabinet building

COMPLETE line supports you, from engineering through to manufacturing, in designing your control cabinet production as efficient as possible. This is how your customized concept for optimizing your processes in control cabinet building is created. Our terminal strip production helps you to flexibly manage order peaks or to supply your control cabinet production with fully assembled DIN rails just in time.



### The new standard for the control cabinet

Discover the extensive COMPLETE line product portfolio and find out more about COMPLETE line and the comprehensive solutions for your control cabinet.

Visit our website: [phoenixcontact.com/completeline](https://www.phoenixcontact.com/completeline)

# Technologically leading products for machine building

As the heart of a machine, a suitable control cabinet supplies, controls, protects, and monitors all applications at all times. To build up all necessary applications in machine building so that they are holistic and coordinated with each other, COMPLETE line provides a broad product portfolio. For this purpose, not only are numerous solutions for use in the control cabinet available, but also devices and components with IP67 protection for use in the field.



Control

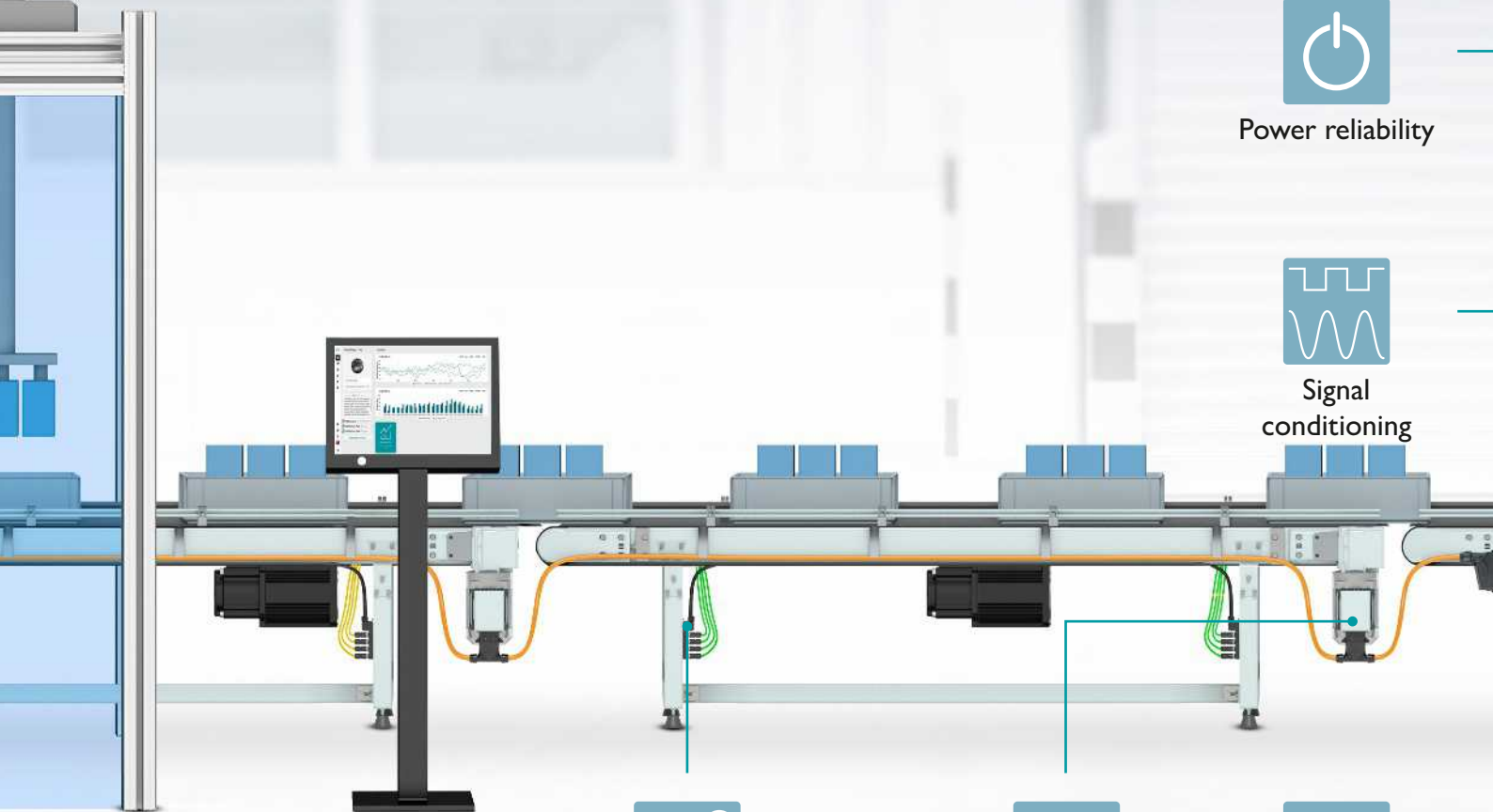


Power reliability



Signal conditioning

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Communication  
in the field

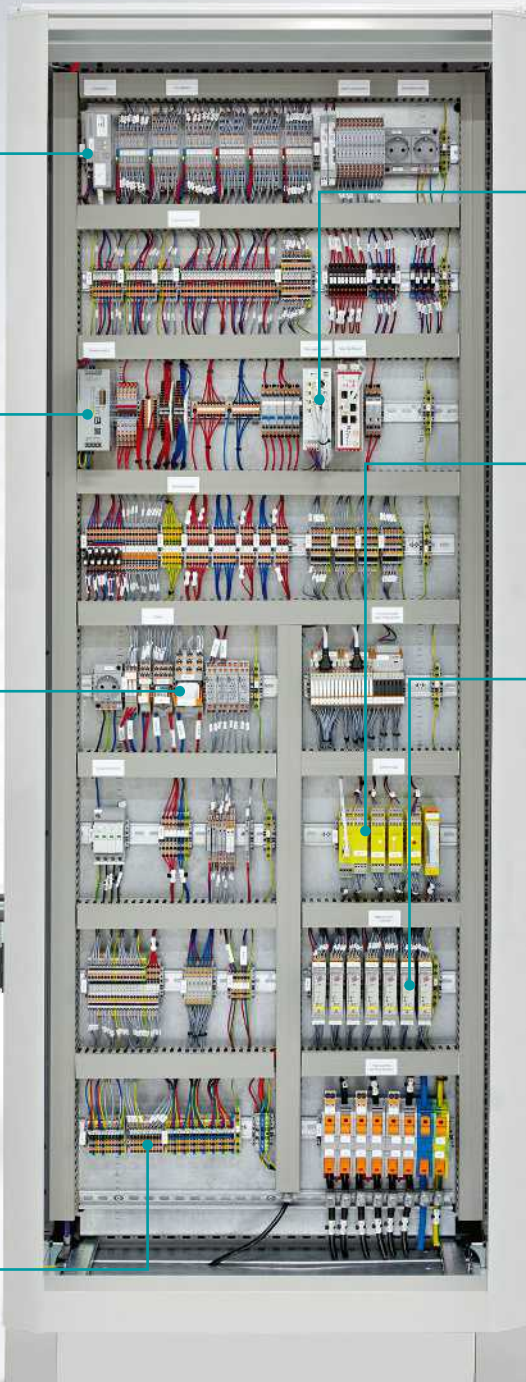


Power reliability  
in the field



Connectivity





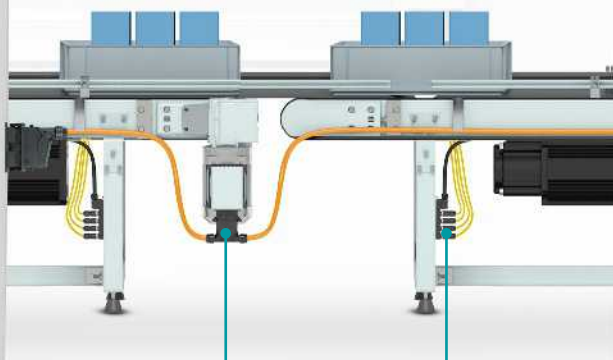
Industrial networking and security



Functional safety



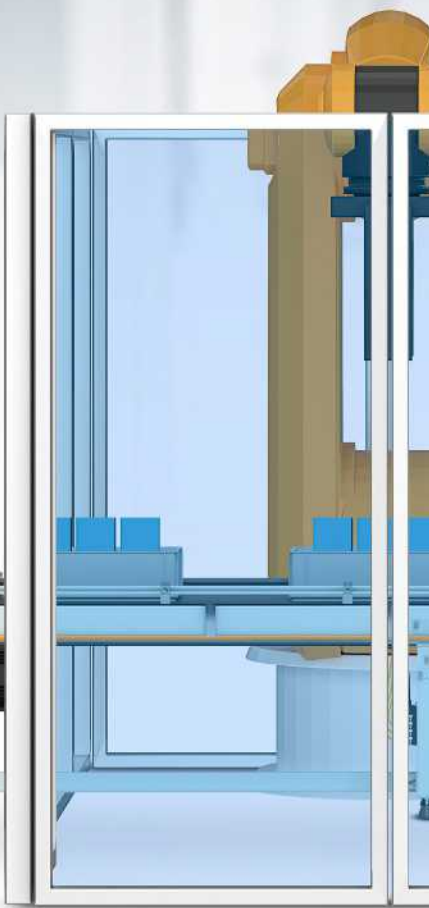
Load switching



Connectivity in the field



Signal transmission in the field



## Functional safety

# Easily integrate safety technology into your machines

Safety technology is paramount in machine building. It prevents operating personnel from being put at risk and damage to the machine. The EN ISO 13849-1 standard on functional safety fulfills the requirements of the Machinery Directive. This results not only in increased requirements for the implementation of safety functions, but also in new opportunities for you as machine builder.

 Web code: #3098

## Services for the safety of machinery

With our comprehensive, certified services, we help you satisfy all the requirements relating to the safety of your machinery.

- Advice on the path to CE marking
- Risk assessment, SISTEMA
- Seminars and workshops
- Safety hotline: +49 5235 3-11000

 Web code: #1075



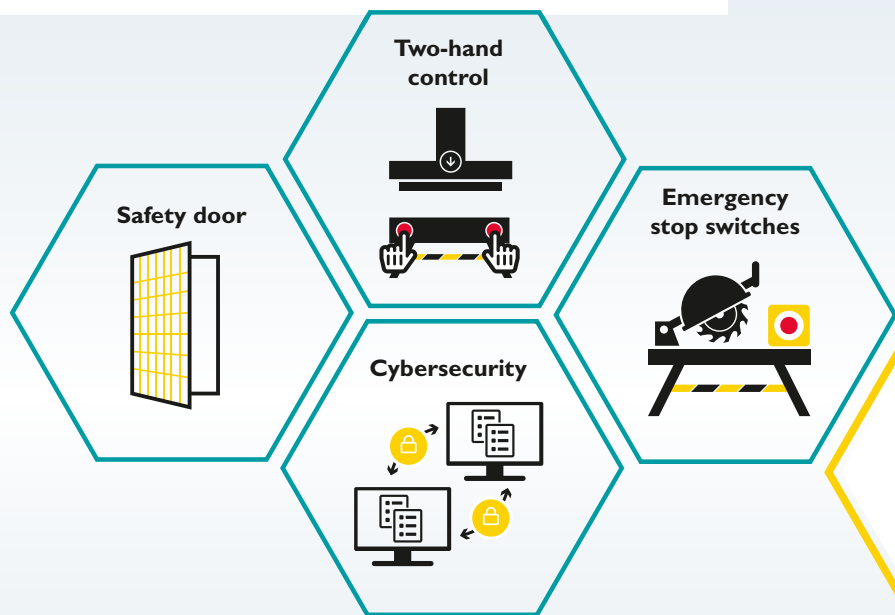


## Functional safety

# Get insights into the world of applications

Dive into the world of applications that involve functional safety in machine building. Get an overview of the important aspects when it comes to designing machines in accordance with safety requirements.

**i** Web code: #3098



### Optimal design of the safety functions

Standard-compliant and economical design of the safety functions for safe operation of the machine.



### Comprehensive support for all aspects of safety

Expert support for the entire machinery safety lifecycle, from planning to operation.



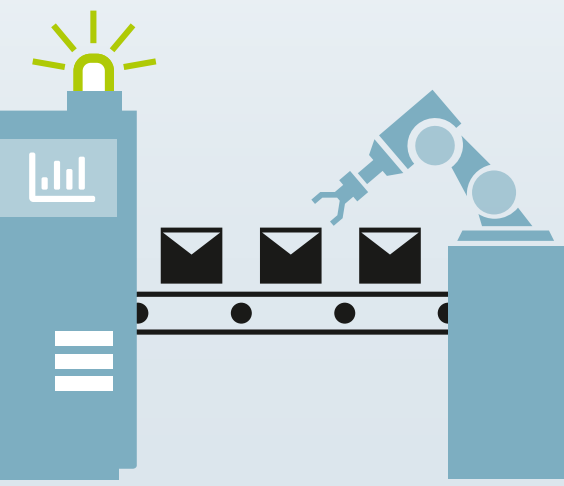
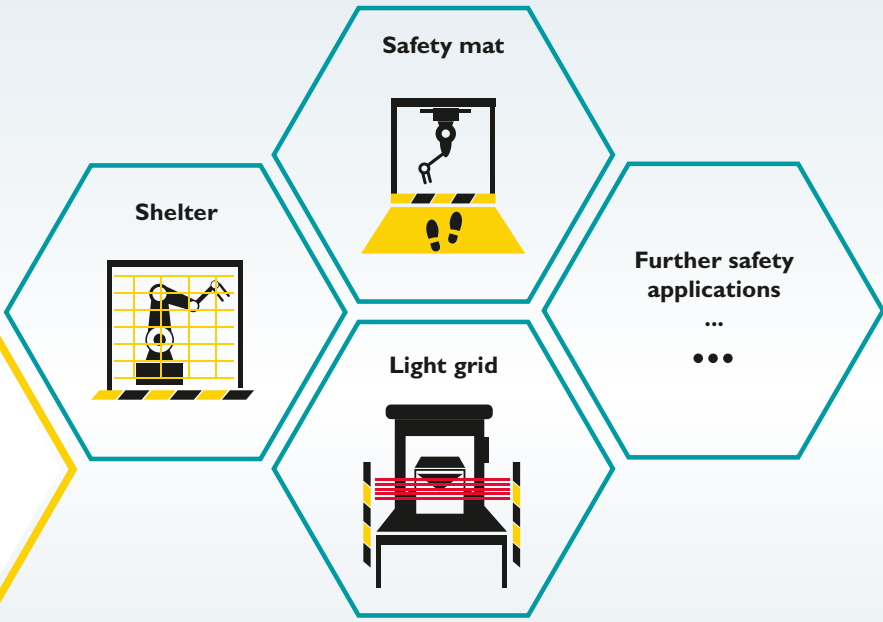


13849-1 | EN IEC 62061  
EN IEC 61508

Designing machines safely and  
compliance with standards



Thorough safety assessment is a  
prerequisite for the optimum design of the  
machine. This significantly reduces the  
effort required for installation  
and commissioning.



**Consistent documentation**

Consistent and standard-compliant documentation is the prerequisite for verifiable legal protection.



**Quick startup and approval**

Optimum design of the safety functions leads to fast commissioning and approval of the machine.

## Functional safety

# Find the right products for your application

For safety applications in machine building, Phoenix Contact offers a comprehensive portfolio of SIL-certified products, from safety switches and safety relay modules to network-capable safety solutions. All of our products are very easy to install and configure. This allows you to benefit from the fast and cost-effective implementation of safety-related applications.

**i** Web code: #3098



### Monitoring for safety doors

Use our non-contact safety switches with RFID technology for intelligent safety door and position monitoring.

**i** Web code: #1940



### Safe stopping

Phoenix Contact provides a large portfolio of emergency stop and emergency switching off switches for standard applications and individual safety solutions. Stop your system safely in the event of an emergency or ensure the safety-oriented shutdown of your system.

**i** Web code: #2859



### Safety for every function

If you require just a small number of safety functions, a large range of safety relays is available. You can use our over-speed and zero-speed safety relay to monitor the speed of rotating parts in your systems and machines.

**i** Web code: #0494

## Acquire and output safe signals

Integrate functional safety in your preferred network.

Our SafetyBridge Technology allows the realization of distributed safety solutions easily and regardless of the network, even without a safety controller.

**i** Web code: #1258



## Monitoring several safety functions

The PSRmodular configurable safety system is a flexible safety solution for monitoring your machine or system, including the monitoring of motion and analog value data.

**i** Web code: #1257

## Acquire and output safe signals in the field

The Axioline E safe IP67 I/O box allows you to process safe inputs and outputs outside of the control cabinet. The PROFI-safe protocol is transmitted to the standard network via IO-Link.

**i** Web code: #2209



## Modular safety control


Extend the functional scope of your PLCnext Control and implement safe applications up to SIL 3 / PL e. Our safe PLC extension module extends your PLCnext Control device to form a PROFI-safe-capable safety controller.

**i** Web code: #1543

Machine availability

## Avoid costly machine downtimes

There is nothing costlier for you or your customers than a machine that is down. Downtimes ultimately lead to production losses and result in extreme costs. This makes machine availability a high priority for you. To prevent downtimes and production losses, reliable components and high machine availability are essential.

 Web code: #3099





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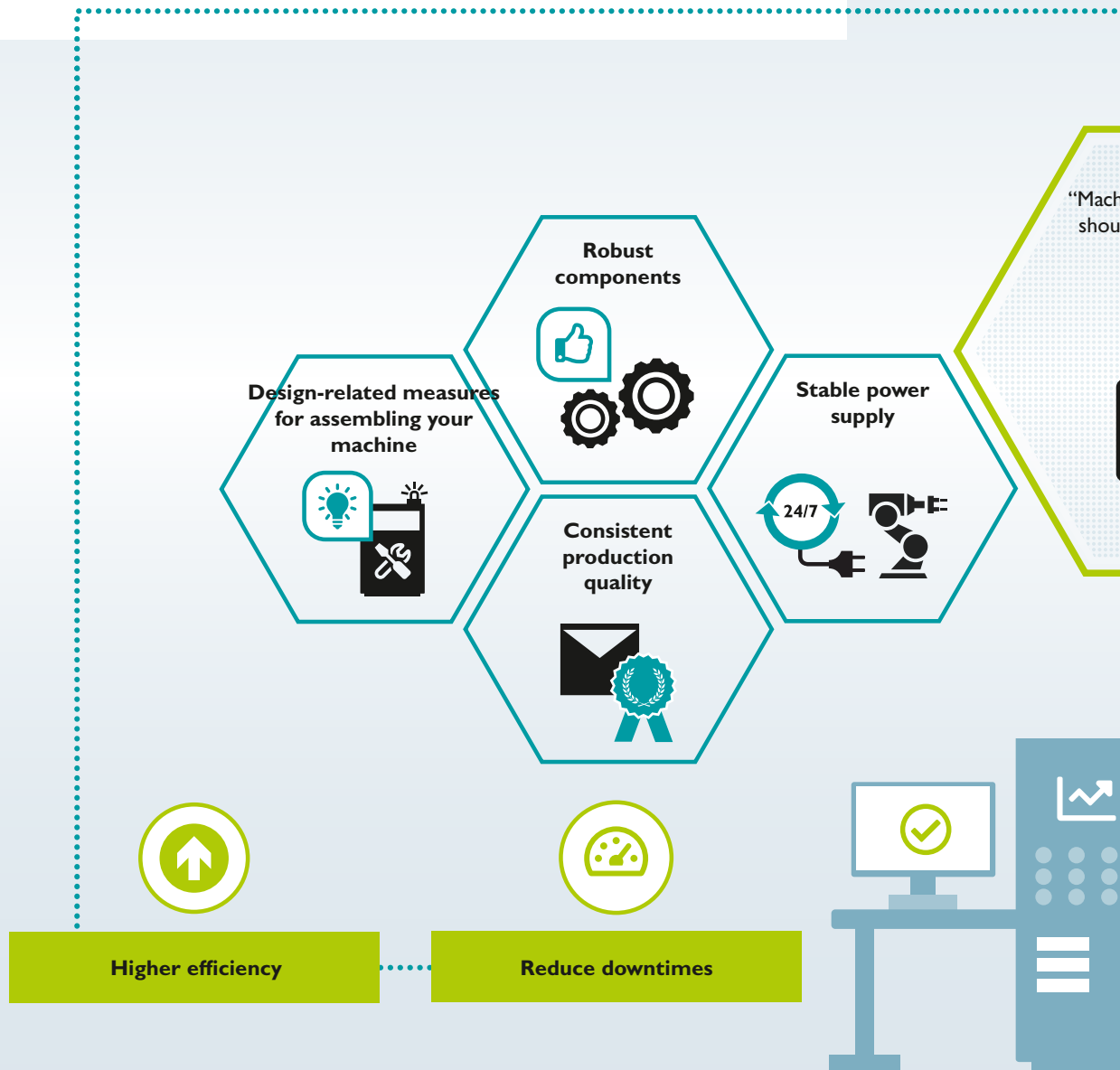
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M094

## Machine availability

# Get insights into the world of applications

Dive into the world of applications that involve machine availability and get an overview of the aspects that are important when it comes to operating machines with reliability.

**i** Web code: #3099



achines are expensive, so they  
ould run reliably and steadily  
**168 hours** a week!"



Clear error  
detection



Transparent  
processes



Resource-oriented  
order planning



Predictive  
maintenance



Reliable technology  
precise to the second



Increase in efficiency



## Machine availability

# Find the right products for your application

We increase your competitiveness as a machine builder with products that support the availability and, in turn, the productivity of your machine. The devices ensure long operating times and round-the-clock production. As a result, your customer can avoid downtimes and costly production losses. We offer surge protection, device circuit breakers, technologically pioneering power supplies, and innovative switching devices.

**i** Web code: #3099



### Protection against surge voltages

Surge voltages put machines at risk and can lead to the destruction of important function groups. Increase safety and availability with effective surge protection in the feed-in, as end device protection and upstream of the signal interfaces.

**i** Web code: #0291

### Selective fuse protection for circuits

Device circuit breakers allow you to provide individual protection for your equipment, whether it involves solenoid valves, servo motors, or industrial PCs. In the event of an error, only the affected actuator or sensor is shut down. All other system parts remain in operation. With various technologies and designs available, we offer the right solution for every application.

**i** Web code: #0156

### Power reliability

Compact, robust, and totally reliable: the new TRIO POWER power supplies feature a compact design, easy handling, and smart diagnostic functions. An optionally integrated circuit breaker and an IO-Link interface for diagnostics and parameterization make TRIO POWER an all-rounder for machine building and systems manufacturing.

**i** Web code: #0497

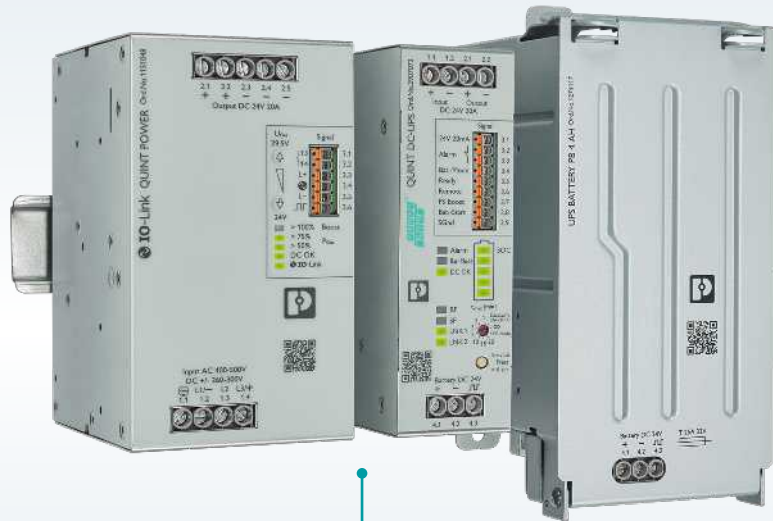
## Reliable supply with SFB Technology

The powerful power supplies with SFB Technology, preventive function monitoring, and configurable settings safeguard your system availability. QUINT POWER is optionally available with an integrated IO-Link interface. As a result, all the relevant operating data of the power supply can be made available to the higher-level automation system.

**i** Web code: #0151

### SFB Technology <sup>3</sup>

Designed by Phoenix Contact



## Solid-state contactors for controlling DC motors

Electronic load relays and reversing load relays enable the fast switching of mechanically commutated DC motors. Our reversing load relays switch and brake DC motors up to 24 V/10 A without wear.

**i** Web code: #3346

### CONTACTRON Hybrid Technology <sup>3</sup>

Designed by Phoenix Contact



## Efficient operation of three-phase asynchronous motors

The CONTACTRON Speed Starter provides simple operation with various speeds, from normal speed, creeping speed, and soft start all the way to energy efficiency and ramp functions.

**i** Web code: #2820

## Uninterruptible supply

Reliable power supply, even when the power supply network fails: Thanks to IQ Technology, the intelligent uninterruptible power supply thinks for itself and provides you with information whenever necessary. It can be incorporated into established networks easily and flexibly with its integrated interface for PROFINET, EtherNet/IP™, EtherCAT®, or USB.

**i** Web code: #0154

## Protect motors cost-effectively

The CONTACTRON motor manager monitors motors for overload and underload, function, contamination, and wear. This allows you to detect all critical load states. In the event of an emergency, the motor manager protects the motor and therefore your machine as well, since the device shuts down the drive in the event of an error.

**i** Web code: #1262

## Intelligent motor switching


Switch and reverse motors quickly and reliably with hybrid motor starters. The CONTACTRON hybrid technology combines wear-free semiconductor technology with robust relay technology, thereby increasing the service life by a factor of ten compared to purely mechanical switching devices. The power distribution board allows you to implement functional solutions quickly and easily.

**i** Web code: #0568

## Worldwide communication

# Communicate with your machines worldwide

The global use of machines makes it increasingly important to be able to communicate with machines all around the world, as this allows you to avoid expensive on-site service visits. Furthermore, modern production requires networks that support data exchange between different processes and machines. Industrial Ethernet is the fast communication standard for integrated communication between the office and the production level.

 Web code: #3100



## Services for security and industrial communication

We offer a comprehensive portfolio of industrial security and industrial communication services. We advise you on an individual basis, provide support during configuration and startup, provide you with the skills you need, and are also there for you in the event of any problems.



> PH1



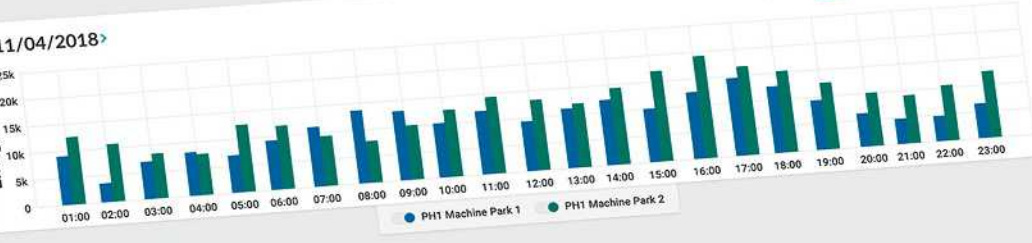
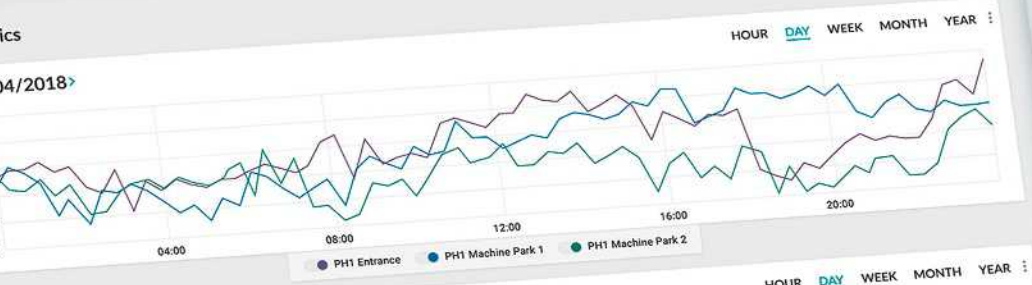
Hall 1

erstr. 34, Bad Pyrm...

**B I U** [List of icons]

In Production Hall 1 the following parts are monitored: The entrance area, the machine park 1 and the machine park 2. Machine park 1 consists of all machinery related to the housing production whereas Machine park 2 contains the electronics and the final assembly of all

- PH1 Entrance Phoenix, Bad Pyrmont
  - PH1 Machine Park 1 Phoenix...
  - PH1 Machine Park 2 Phoenix...
- [ASSIGN NEW DEVICE](#)



**NEW ANALYSIS**  
Create a new Analytics Widget.

## Worldwide communication

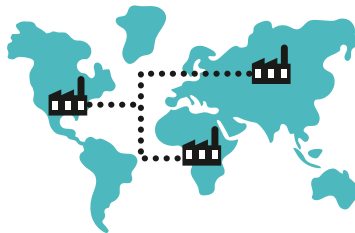
# Get insights into the world of applications

Dive into the world of applications that involve worldwide communication with machines and get an overview of the aspects that are important when it comes to being able to access machines worldwide.

**i** Web code: #3100

### Worldwide networking of machines

Network machines together worldwide. This allows you to acquire and exchange production data regardless of location. This gives you a global overview of production data such as the machine status and machine utilization, allowing you to optimize your production capacities.

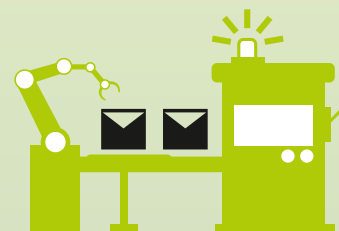


### Secure data exchange

Protect your machines and your network against unauthorized access by people or malware. This prevents machine breakdowns, sabotage, or data loss, which otherwise can cause substantial economic damage.



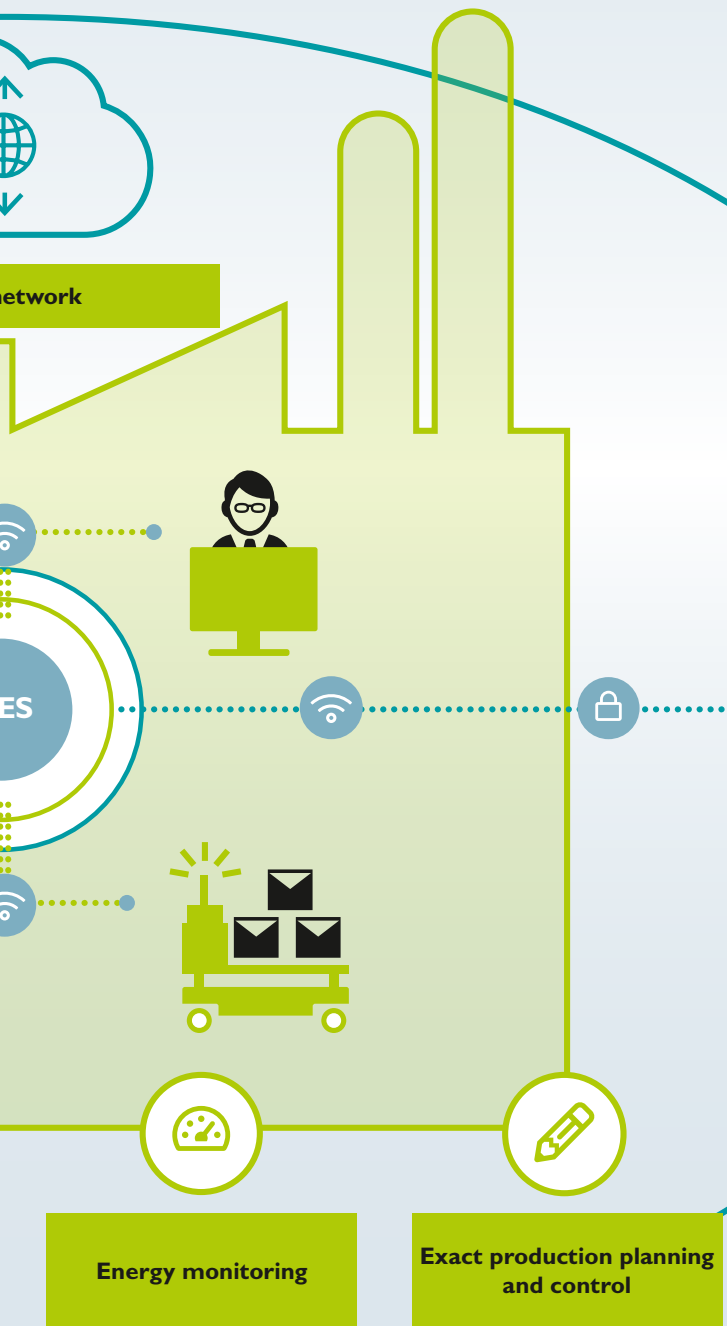
Local n



Predictive maintenance

Networking of all machines and shop floor vehicles





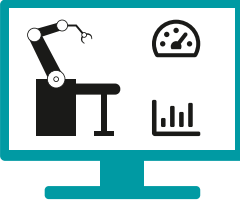
**Remote service**

Reduce expensive downtimes with remote service. This enables you to increase the availability of your machines. Save on worldwide service calls since remote machines and systems can be serviced and reset through remote access. In addition, you can easily schedule and perform maintenance and repair cycles via remote maintenance.



**Data-driven development optimization**

Obtain valuable information on operation, utilization, and malfunctions throughout the machine lifecycle. Use this data to optimize your machines and to drive new machine developments.



## Worldwide communication

# Find the right products for your application

Modems and routers connect you to your machines worldwide for efficient remote maintenance, continuous data acquisition, and automatic early warnings. Switches and access points can be used to build powerful Ethernet networks. Security routers and firewalls guarantee data security and protect your machine against unauthorized access and tampering.

**i** Web code: #3100



### Easy-to-install network infrastructure

Ethernet patch panels allow quick and easy connection in the field. They are available with various connection technologies and in versions with surge protection and a Power over Ethernet injector.

**i** Web code: #1997



### Global access to data

Connect to machines worldwide using routers via a high-performance data connection or cellular communication. With the mGuard Secure Remote Service, you also receive a hosted, ready-to-use, secure portal for cloud-based remote maintenance which you can use with the Cloud Client, the TC Router, or mGuard.

**i** Web code: #0499



### Protecting networks and data

The mGuard security routers protect your machine and network against unauthorized access by people or malware. Due to the high processing speed, a data throughput of almost 1,000 Mbps is achieved. This allows you to avoid unplanned downtimes caused by network failure and harmful exploitation of system vulnerabilities.

**i** Web code: #1270

## Distribute data in the field

The switches in IP65/IP66/IP67 degree of protection are compact and robust for field installation. The innovative M12 connection technology with push-pull fast locking system also ensures that they are easy to mount while providing a high level of robustness against mechanical strain.

**i** Web code: #2258



## Distribute data in the network

Ethernet switches are the communication hubs of your industrial network. They provide reliable, efficient data exchange and can ensure the robustness of your network. Whether managed or unmanaged switches – we offer the right solution.

**i** Web code: #2258



## Connect mobile machine parts via WLAN

The WLAN 1100 wireless module allows you to easily install a fast and stable WLAN network on your machine. Featuring integrated antennas and extreme robustness, the space-saving module has been carefully considered down to the last detail for applications in machine building.

**i** Web code: #1532

## NearFi Technology

Designed by Phoenix Contact



## Contactless power and data transmission

The NearFi couplers transmit power and real-time Ethernet data across an air gap without the need for contact. Therefore, connections subject to wear and slip rings in industrial applications can be replaced easily and costs caused by failures can be minimized.

**i** Web code: #2794

## Process data acquisition

# Reliable acquisition and evaluation of operating data

To maintain your competitive edge in the market, processes must be highly efficient and continuously improved. Decisions regarding the optimization of machines and production processes are made based on machine and system data. The collection and evaluation of values such as flow rates, electrical power or performance data, or temperatures allows predictive maintenance to be carried out, thereby improving machine performance and reducing machine downtimes.

 Web code: #3101



## Process data acquisition

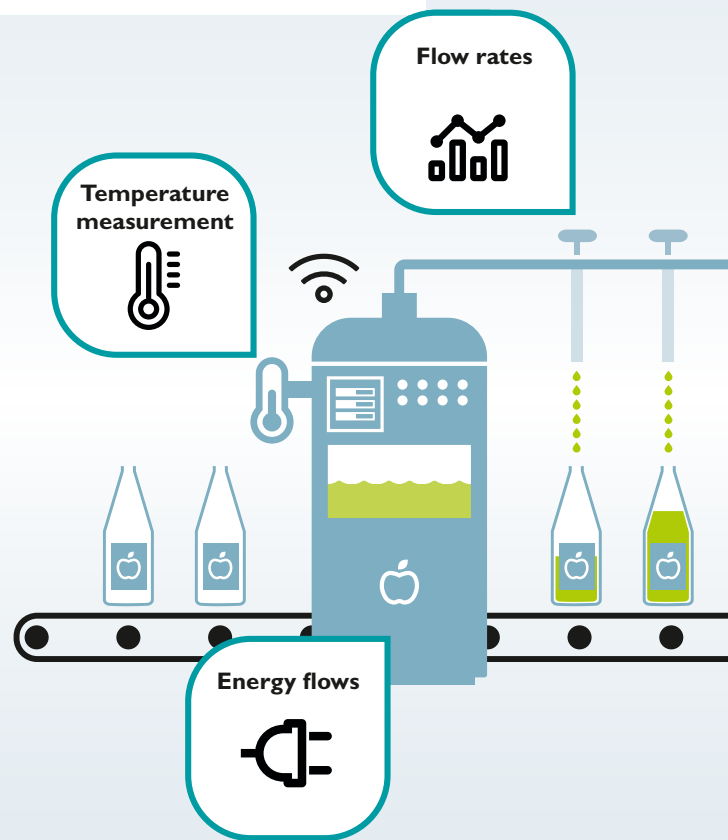
# Get insights into the world of applications

Dive into the world of applications that involve acquiring and evaluating process data with reliability. Get an overview of the important aspects when it comes to having all relevant machine data at a glance whenever you need it.

**i** Web code: #3101

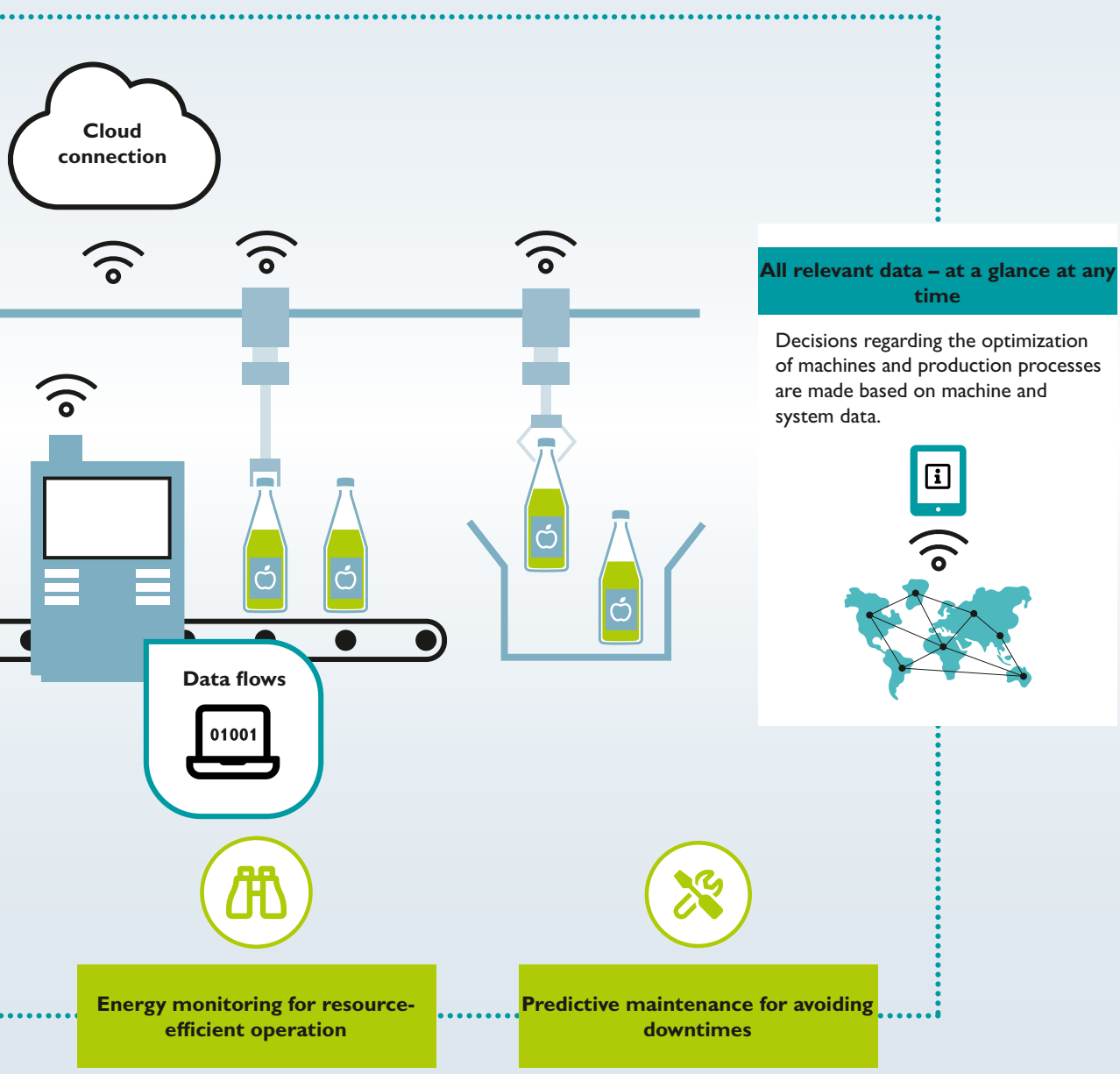
### Smart data – identify and evaluate

It's not about collecting as much machine and production data as possible. Instead, it's important to identify, acquire, and evaluate the right key figures. This is the only way to draw meaningful conclusions about production. This, in turn, makes it possible to optimize machine and production processes.



Process data acquisition  
for optimizing production processes

Machine data acquisition  
for optimizing system efficiency

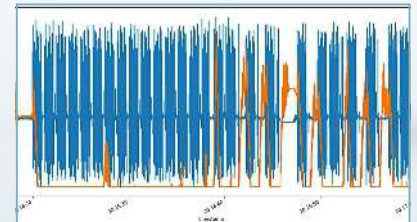
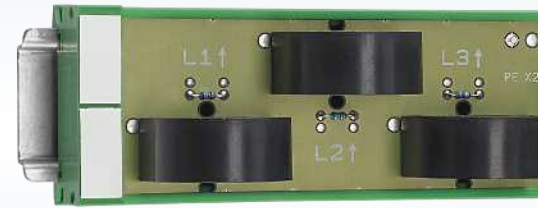
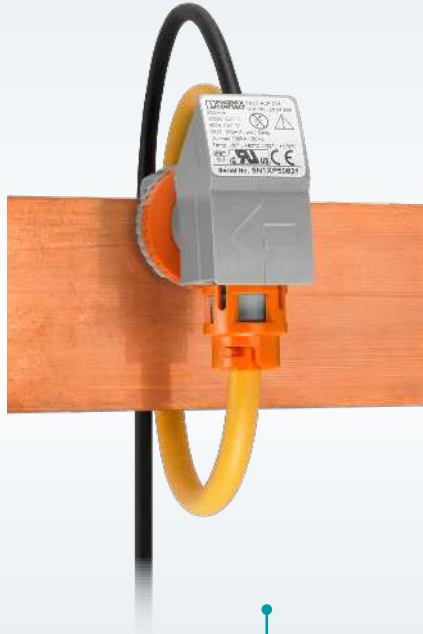


## Process data acquisition

# Find the right products for your application

Acquire data, make predictions, and improve machine performance: Our components for process data acquisition offer everything you need for the precise conversion, measurement, monitoring, display, and logging of consumption values. Furthermore, this data can also be pre-evaluated using a PLCnext Control device and easily transferred to the cloud. This means that you have an overview of your machine data anytime, anywhere. For optimum machine utilization and availability.

**i** Web code: #3101



### Measure currents

Our MCR current transducers can be used to acquire direct, alternating, and distorted currents. The portfolio ranges from configurable devices for precisely mapping low measuring ranges up to 55 A to universal measuring transducers for high currents up to 600 A.

**i** Web code: #1263

### Convert currents

For your current measurements up to 4,000 A, our PACT window-type and winding current transformers are available in a range of transformation ratios, accuracy classes, and rated power values. The PACT current transformers for retrofitting give you the benefit of fast installation that does not require you to remove system parts.

**i** Web code: #1263

### Monitor machines and motors and detect anomalies

The CONTACTRON machine manager combines precise energy measurement with the display and monitoring of important parameters of motors, machines, and other 3-phase loads. When used in combination with the digital service, you benefit from predictive maintenance, early anomaly detection, and comprehensive process documentation.

**i** Web code: #1921



## Global access to data

Proficloud.io provides you with an overview of your machine and system data from anywhere in the world. For example, you can create a custom dashboard as the basis for evaluating and analyzing your operating data. This allows you to continuously improve processes based on the Proficloud.io solution.



**i** Web code: #0949

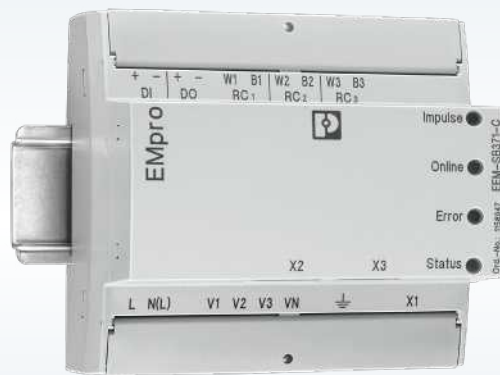
## Digital Factory now

Use your existing machine and process data to design a production system that is flexible, efficient and sustainable. Secure your competitive edge by setting up new, data-centric business models.

**DIGITAL  
FACTORY  
now**

**i** Web code: #3084

PLCnext Technology <sup>®</sup>  
Designed by Phoenix Contact



## Access measurement and component data worldwide

Energy monitoring, management, analytics: With the EMMA Smart Service and the IoT-capable EMpro energy measuring devices, you are ready for your energy management system of the future. Go straight into the IoT with EMpro. Benefit from cloud-based data acquisition, intuitive functions, and informative visualization.

**i** Web code: #2841



## Acquire machine data and transfer it to the cloud

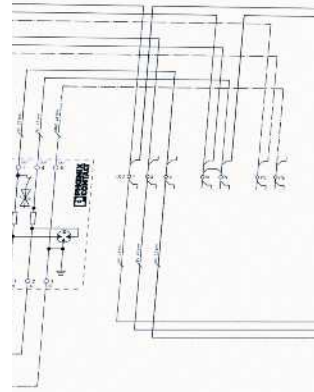
In addition to performing conventional control tasks, the devices from the PLCnext Control family also acquire operating data and transfer the preprocessed data to Proficloud, for example. Along with IEC 61131-3, they can also be programmed in high-level languages or use apps from the PLCnext Store.

**i** Web code: #2108

Shortening production times

## Reduce your production time with fast installation

As a machine builder, you are under increasing competitive pressure. Innovative connection technologies and professional tools shorten the installation process considerably and guarantee fast and error-free wiring. This reduces your production times, and you can deliver your machines to customers faster.

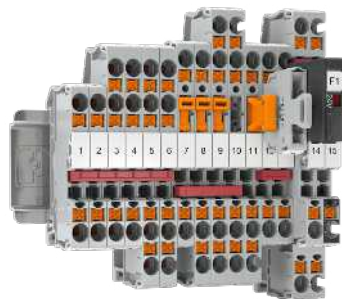


**i** Web code: #3102



### Push-X in 2.5 mm<sup>2</sup> cross-section

The XT 2,5... terminal blocks are the first terminal blocks with front Push-X connection. The portfolio consists of feed-through and multi-conductor terminal blocks as well as function versions for the use of disconnect knives, plug-in fuses, and components.



**i** Web code: #3091

**Push-X Technology** 

Designed by Phoenix Contact





## Shortening production times

# Get insights into the world of applications

Dive into the world of applications that involve shortening production times. Get an overview of the important aspects when it comes to assembling and installing machines quickly and easily.

**i** Web code: #3102

1

### Digital product selection

The reduction of production times already starts with the digital product selection. Therefore, it is important that all products are described digitally in full.

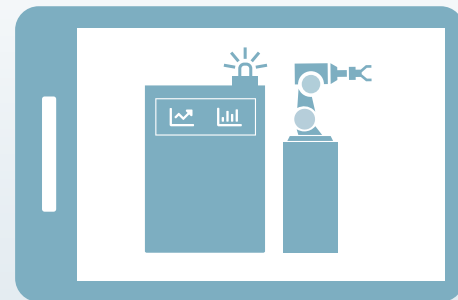


Just-in-time production

2

### Planning and simulation of the machine

With the help of the machine's digital twin, all processes can be tested even before construction. This identifies possible sources of error and danger at an early stage and enables you to eliminate them before the machine is built. This shortens production times and speeds up machine startup.



Minimize production times

3

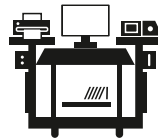
### Construction of the machine

Worker assistance systems, digital installation notes, and innovative connection technologies and professional tools help to shorten machine production times during the assembly of the real machines.

Get digital installation notes via QR code



Worker assistance system



Fast and error-free wiring



Fast installation



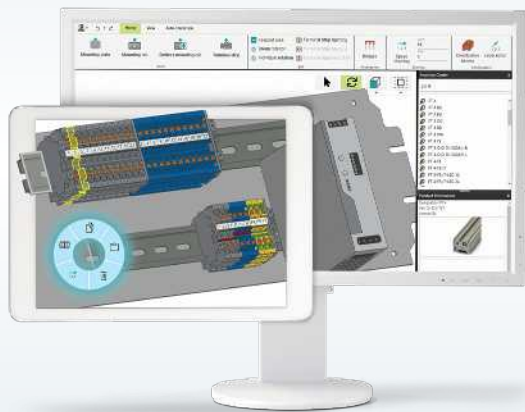
Faster delivery

## Shortening production times

# Find the right products for your application

The clipx ENGINEER engineering software supports the entire control cabinet building process. It imports circuit diagram data from all common CAE programs, transforms it into matching products, and creates comprehensive project documentation. The new printing systems combine the printing and applying of marking materials in just a single step. With the help of worker assistance systems, you can boost your productivity in control cabinet and machine building by using optimized workflows.

**i** Web code: #3102



### Perfect CAE integration

The clipx ENGINEER engineering software makes it possible to plan and procure terminal strips, assembled mounting plates, and junction boxes more efficiently than ever and to seamlessly transfer the data to production – at every workplace.

**i** Web code: #2729



### MARKING system – simply easy!

We simplify your daily work – that's the promise backing every industrial marking and identification solution from Phoenix Contact. The MARKING system portfolio features application-specific marking systems, marking materials for every application, user-friendly desktop software, and the MARKING system app. We are here to assist you at any time with services tailored to your individual needs.

**i** Web code: #2986

## Worker assistance systems

In industrial control cabinet building, processes (still) feature a large number of manual steps. Software-supported worker assistance systems guide users through partially automated process steps, control the relevant output devices and provide the necessary information based on CAE data. This boosts productivity and increases process reliability.

**i** Web code: #3062



## The right tool for every application

Be it cutting, stripping, crimping, screwing, or measuring: Our high-quality tools stand out with an ergonomic design, easy handling, long service life, and excellent results.

**i** Web code: #0290

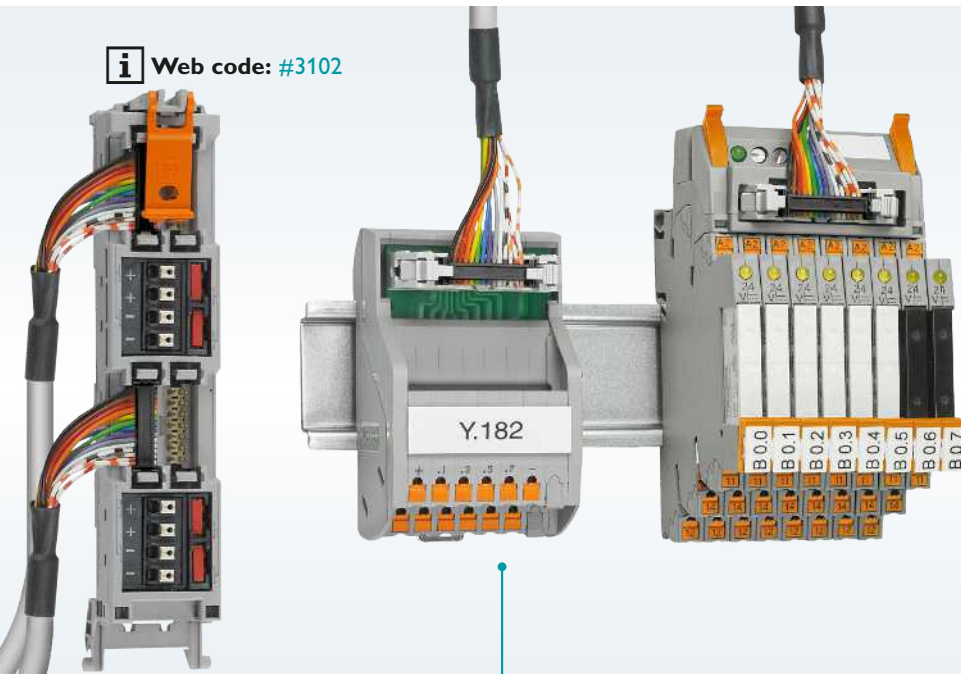


Shortening production times

## Find the right products for your application

Reduce the wiring time and minimize the error rate with connection technologies that are quick and easy to operate, such as Push-in and Push-X connection technology. M12 connectors with the push-pull fast-locking system also enable quick and error-free installation in the field. Machine lights and enclosure lights provide optimal lighting in machines and control cabinets. The system cabling helps you to wire your E/A modules efficiently and without any errors.

**i** Web code: #3102



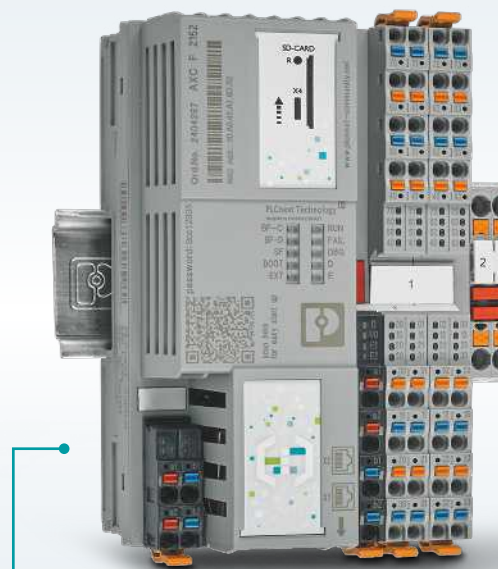
### Push-in Technology

Designed by Phoenix Contact

Connect the field level safely to the controller

VARIOFACE system cabling connects the controller to the field – easily and without any errors. Phoenix Contact offers suitable front adapters, system cables, and interface modules.

**i** Web code: #0702



### Push-in Technology

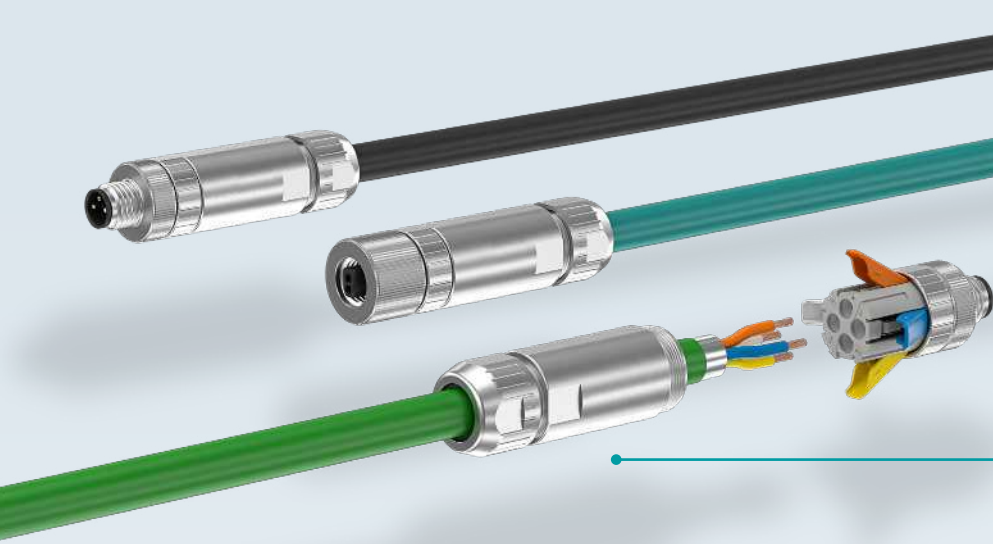
Designed by Phoenix Contact

Tool-free conductor wiring

With Push-in Technology, you can contact conductors from 0.25 mm<sup>2</sup> easily – both directly and without using tools.

**i** Web code: #1534





## Push-Lock connection in M8 design

Forget about the time-consuming and tedious assembly of M8 connectors. With the new compact M8 Push-Lock connectors, all types of copper conductors can now be connected easily and tool-free. Whether for signal cabling or data communication via PROFINET or SPE.

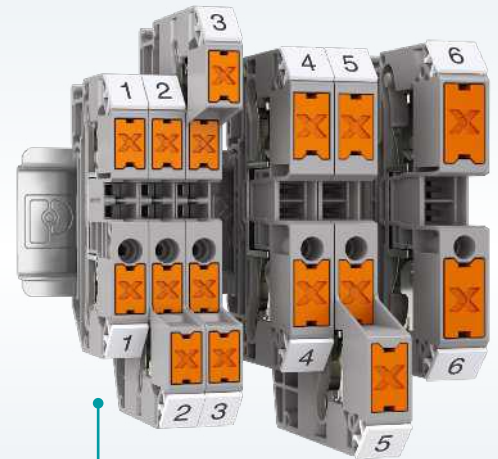
**i** Web code: #3059



## Assemble conductors in under two seconds

With the Crimphandy portable hand-held device, you can strip and crimp the conductors in under two seconds. This cuts the required processing time by up to 75%.

**i** Web code: #1273



## Push-X Technology <sup>®</sup>

Designed by Phoenix Contact

## Push-X: the new connection technology for all types of conductors

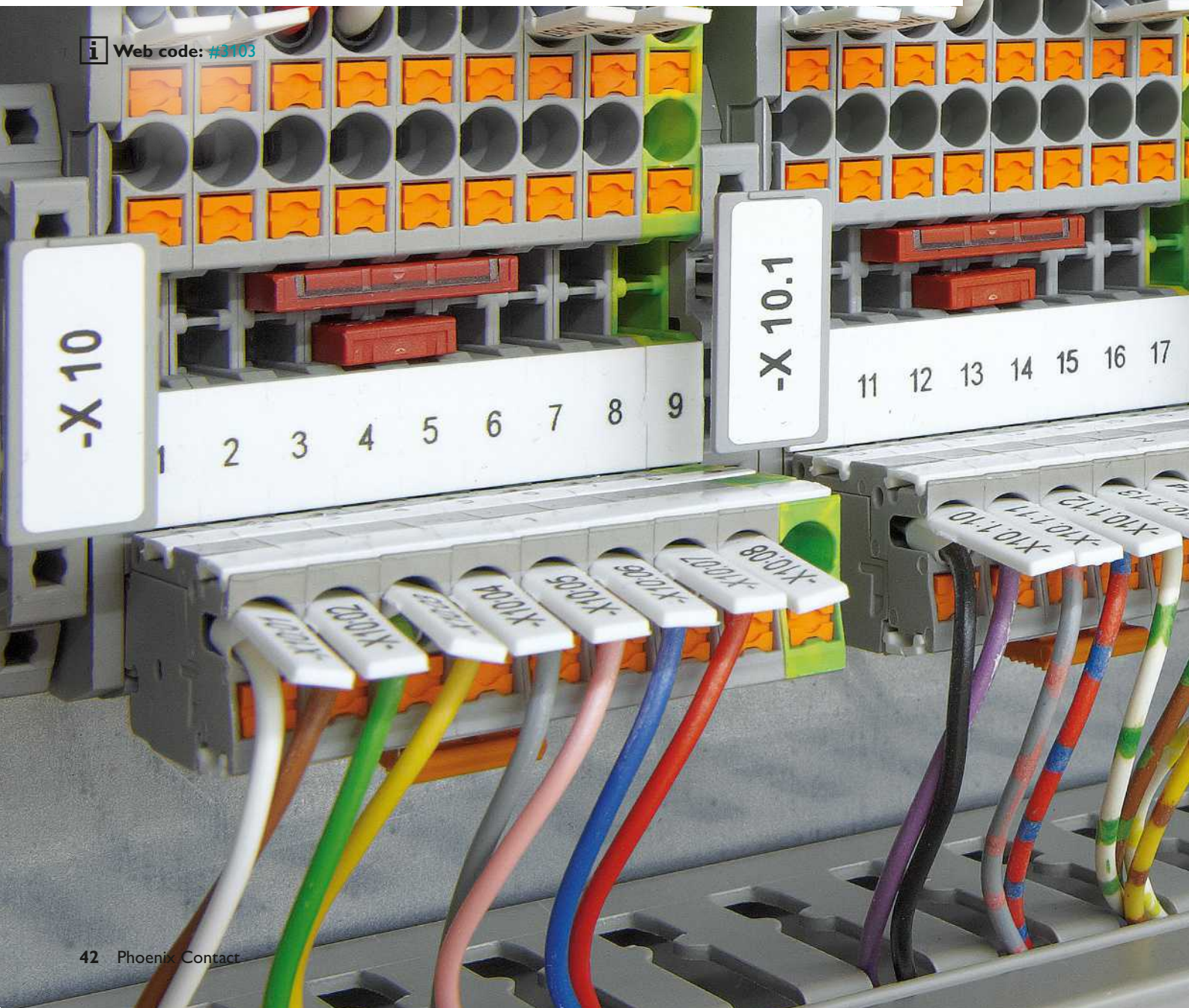
Phoenix Contact, inventor of the Push-in connection, sets a new benchmark in connection technology: Using the new Push-X technology you are able to connect all types of conductors and cross-sections even faster now. The easy and tool-free operation reduces installation times and paves the way for automated wiring.

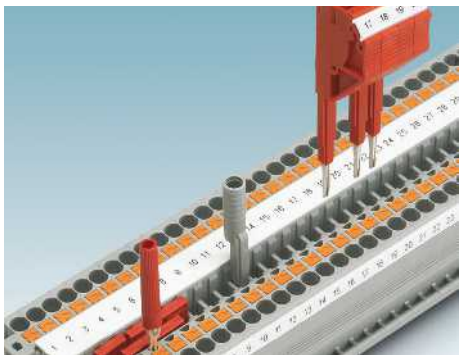
**i** Web code: #3091

Reducing the variety of parts

## Reduce the variety of parts and lower your storage costs

Optimally coordinated product solutions are key to keeping machine manufacturing costs as low as possible. Our universal and standardized accessories can be used in many product groups. This allows you to reduce the variety of parts and lower your storage costs while still remaining flexible. With their uniform design and operating concepts, standardized products simplify startup and maintenance for your technical staff.





### Standardized test system

We provide comprehensive, uniform testing accessories for our products. All test plugs can make contact in the freely accessible function shaft.



### Clear marking

The terminal points of our products support large-surface marking. This creates a clear overview in the control cabinet and facilitates startup, testing, and maintenance work.



### Flexible plug-in bridge system

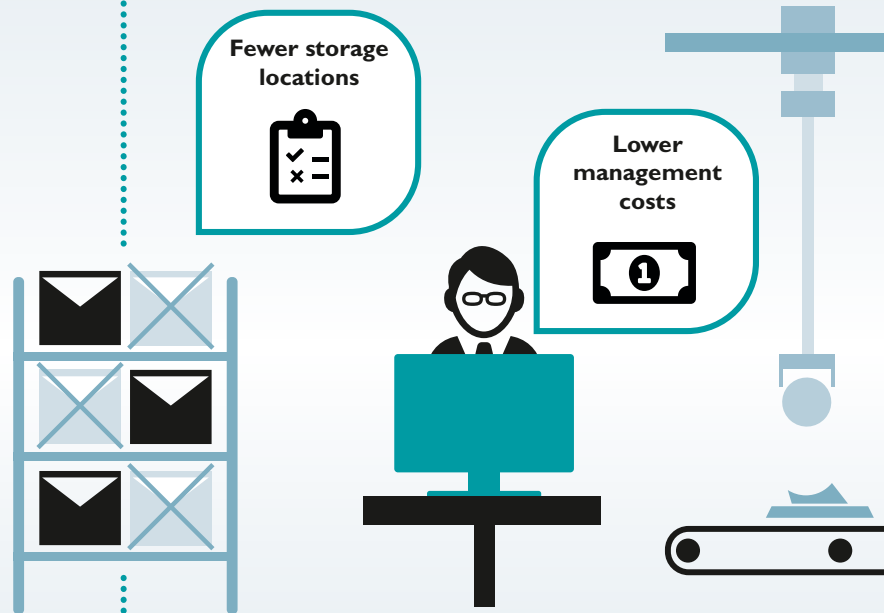
One plug-in bridge system for all connection technologies: The 2- to 50-pos. plug-in bridges allow you to save time when carrying out any potential bridging tasks.

## Reducing the variety of parts

# Get insights into the world of applications

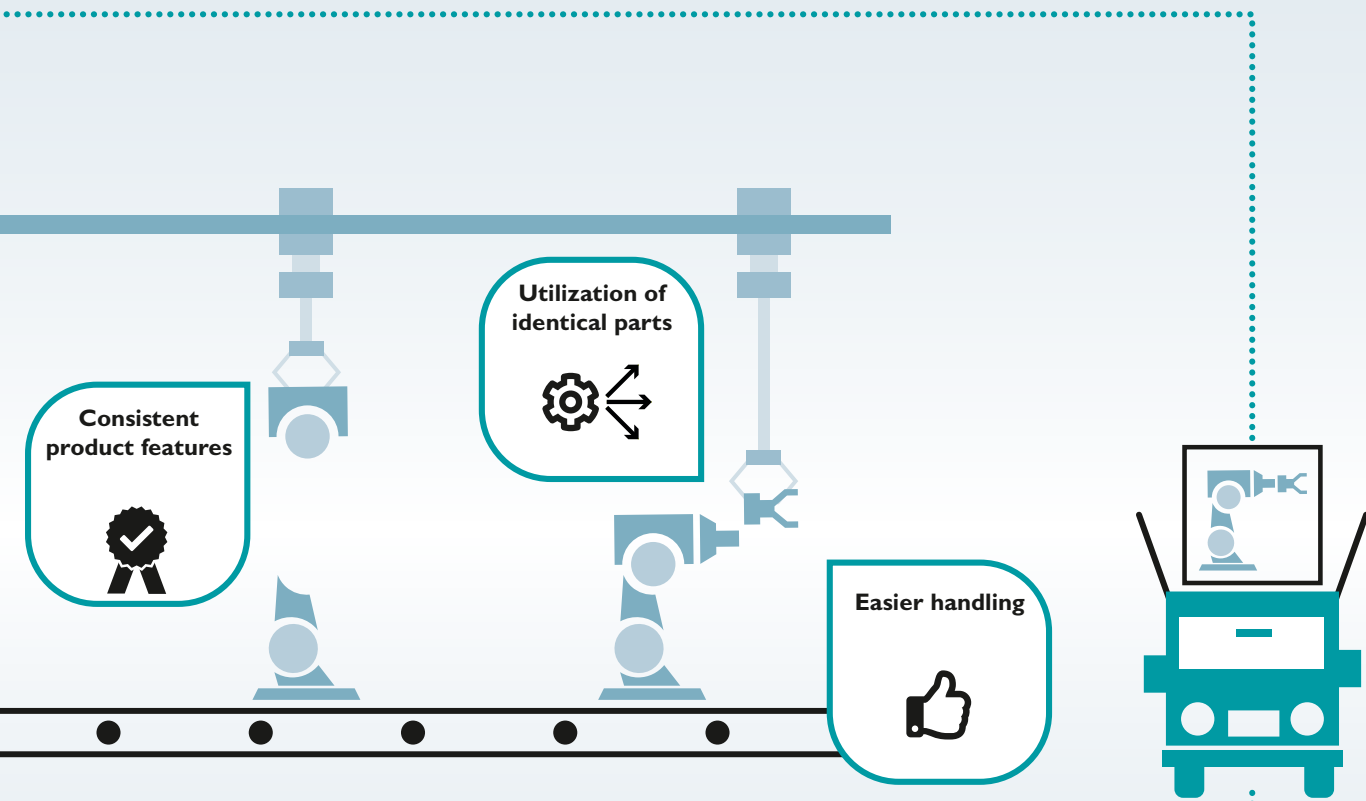
Dive into the world of applications that involve reducing the variety of parts. Get an overview of the important aspects when it comes to reducing storage costs in machine building.

**i** Web code: #3103



### Lean enterprise resource planning system

Using identical parts reduces storage costs and streamlines the enterprise resource planning system. This is because each product requires a storage location and both technical and commercial data must be created in the enterprise resource planning system for each product.



**More cost-effective production**

Optimally coordinated product solutions are key to keeping machine manufacturing costs as low as possible.



**Fast commissioning and maintenance**

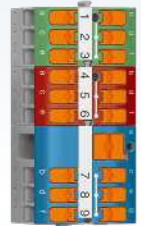
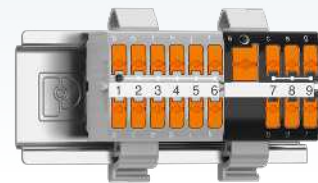
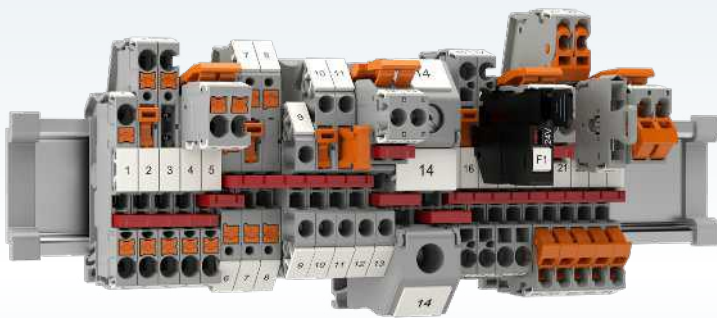
With their uniform design as well as well-planned design and operating concepts, standardized products simplify startup and maintenance for your technical staff.

Reducing the variety of parts

## Find the right products for your application

Simply use the standard accessories in modern terminal block, relay, and automation systems, whether this be for bridging, marking, or testing. CLIPLINE complete provides a terminal block system for all connections. Implement all of your standard relay applications using the RIFLINE complete relay system. Use the Axioline F I/O system for all common networks.

**i** Web code: #3103



Push-in Technology   
Designed by Phoenix Contact

### One terminal block system for all connection technologies

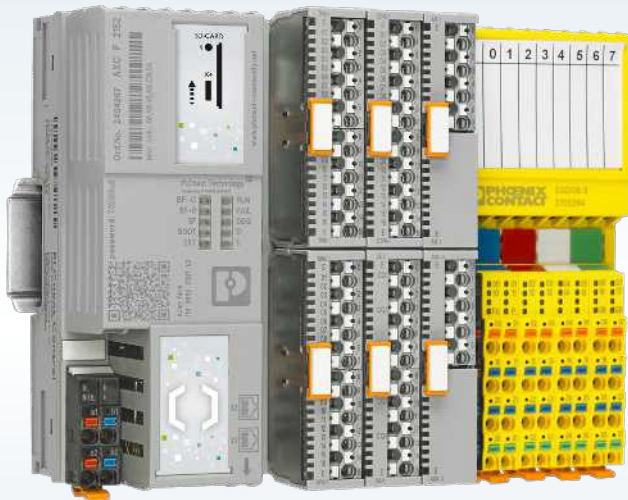
CLIPLINE complete gives you the freedom to choose the appropriate connection technology. Whether Push-in, screw, spring-cage, bolt, or plug-in connection: You can combine all connection methods with the same accessories.

**i** Web code: #0567

### Individual distribution block solutions

Distribution blocks with Push-in and screw connection technology come ready to connect and are available in various numbers of positions, mounting types, and colors. They can be used immediately and can be extended as needed. Create individual PTFIX distribution blocks quickly and easily with the online configurator.

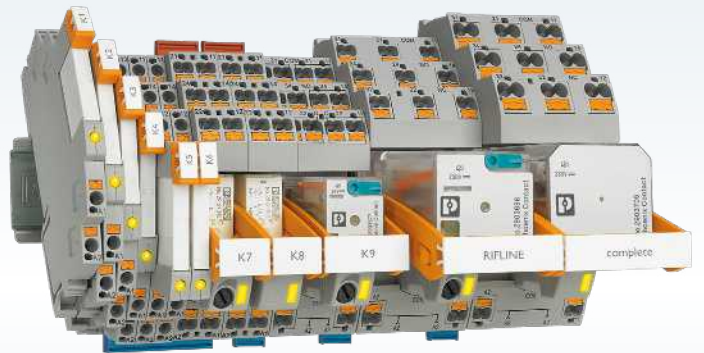
**i** Web code: #1740



## Flexible automation solutions

With the Axioline I/O system, automation solutions can be set up based on the modular principle. A controller such as PLCnext Control can carry out the function of the head of an I/O station, alongside which you can arrange I/O modules from the Axioline F and Axioline Smart Elements product families in any combination.

**i** Web code: #0500



## One relay system for all standard applications

The RIFLINE complete relay system features a universal plug-in design that allows quick, easy, and error-free handling. You can implement all of your standard relay applications with the industrial relay system. The field of application ranges from coupling and timer relays to a replacement for miniature contactors.

**i** Web code: #0695



Modular machine building

## Build machines in a modular and flexible way

Today's machines must be able to quickly adapt to changes in the market. A modular concept guarantees maximum possible flexibility for your customers. The modular design also makes the transport and installation of large and extensive machines at the customer's premises easier.

 Web code: #3104



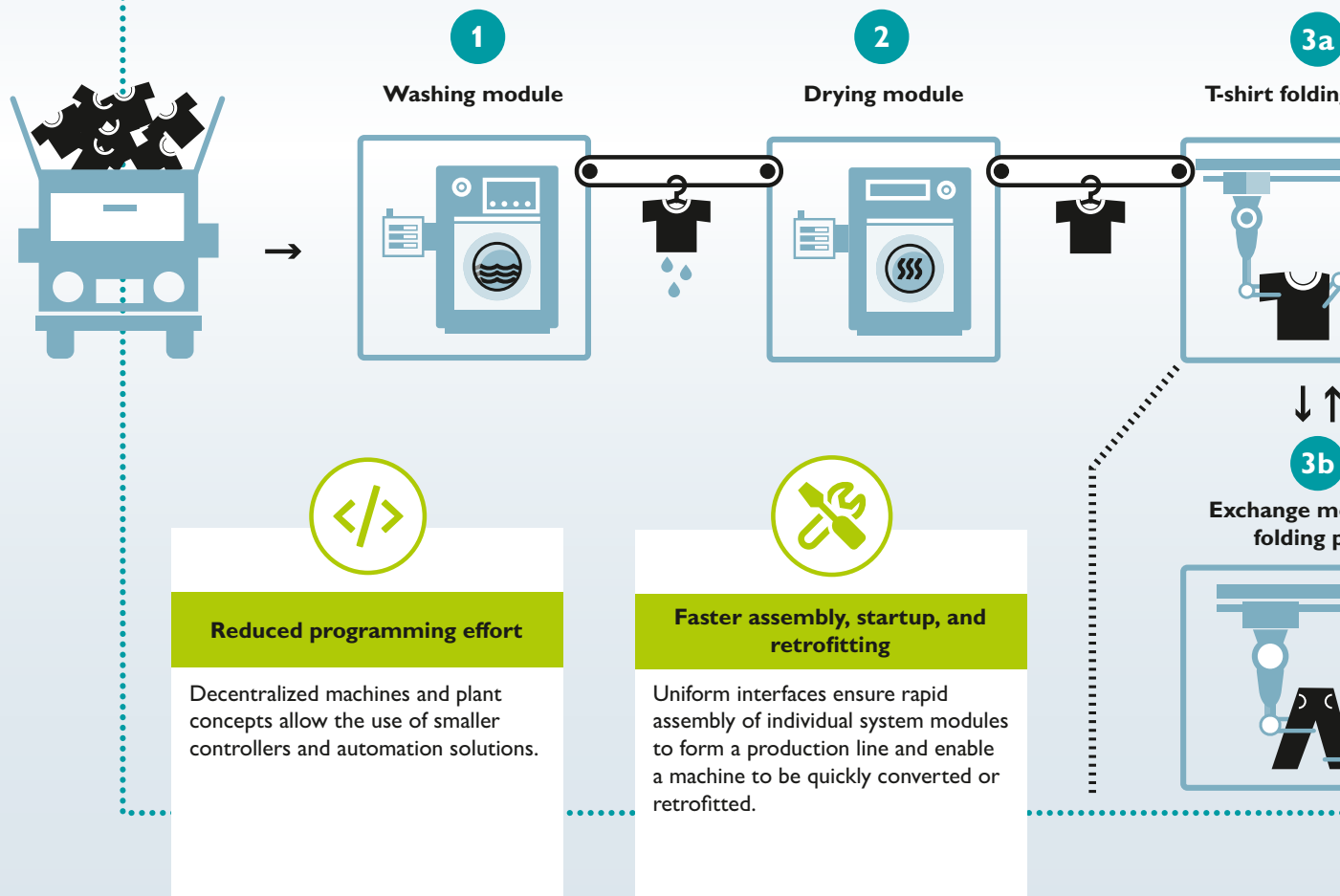


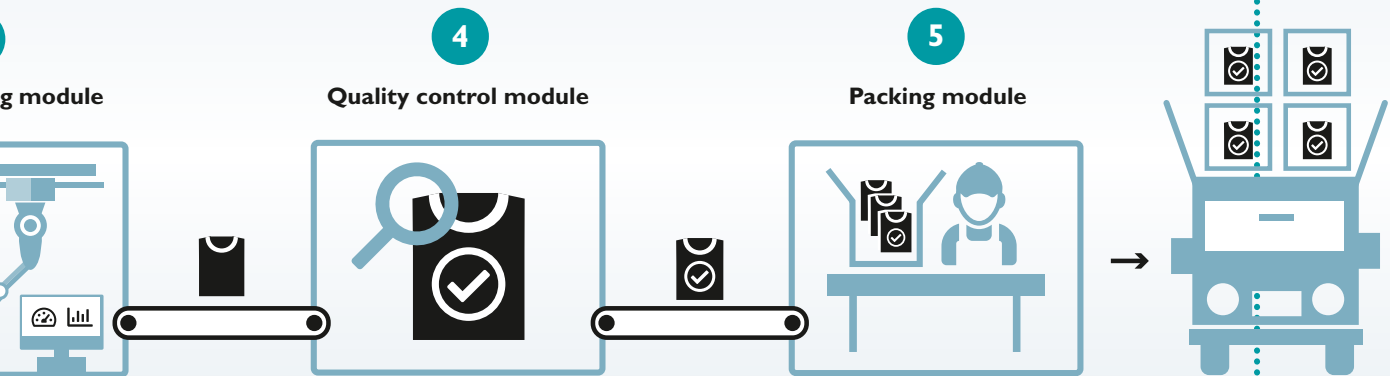
## Modular machine building

# Get insights into the world of applications

Dive into the world of applications that involve modular machine building. Get an overview of the important aspects when it comes to assembling in a modular and flexible way.

**i** Web code: #3104





Module for plants



**Flexible conversion and retrofitting**

The combination of individual manufacturing steps allows flexible production, and production facilities can be adapted to changing market requirements. You can also react flexibly in the event of malfunctions, and production can continue.



**Faster and more flexible delivery**

Compact machine modules are transported more quickly and easily.

## Modular machine building

# Find the right products for your application

Modular machine and switching devices can be set up in parallel and assembled quickly, easily, and safely at the destination. Plug-in systems combined with individually configurable cable feed-throughs help you to achieve this and ensure the necessary level of flexibility. If necessary, you can convert your machine quickly and thus increase its utilization rate.

**i** Web code: #3104



### Power supplies with IP67 degree of protection

The IP67 power supplies are ideally suited for distributed supply in the field. Thanks to the die-cast aluminum housing in a weatherproof design, no dust or water can penetrate the housing. The device ensures high system availability even in harsh ambient conditions. Field installation of the power supply with IP67 degree of protection reduces cable lengths and frees up space in the control cabinet. Different device connections provide a high degree of flexibility during installation.

**i** Web code: #3192



### Robust and flexible I/O modules for distributed signal acquisition

The Axioline E devices have been designed to satisfy both the current and future requirements on field installation and for direct use in a machine under harsh ambient conditions.

**i** Web code: #2551

## Single Pair Ethernet – finally goes the distance

Ethernet through to the field level: Single Pair Ethernet (SPE) enables the transmission of Ethernet via a single wire pair, ensuring the space-saving connection of sensors. The SPE M12 hybrid connector combines data and power for this purpose.

With two circuits of  $2 \times 8 \text{ A}$  and up to  $63 \text{ V}$ , transmission speeds into the Gigabit range are possible. The managed SPE switch covers large distances. With the SPE standard 10 BASE-T1L, the managed switch supports distances of up to 1,000 m.

**i** Web code: #3289



## Advanced Shielding Technology <sup>12</sup>

Designed by Phoenix Contact

### Reliable connection with sensor/actuator cabling

M8 and M12 connectors, cables, and distributor boxes ensure modular and efficient wiring of sensors and actuators. Innovative connection and locking technologies such as Push-Lock and push-pull allow easy, tool-free assembly and installation. Advanced Shielding Technology guarantees the absolutely reliable transmission of signals, data, and power. Liquid metal completely encloses the cable shielding during the manufacturing process and forms a large-area, firmly bonded 360° shield connection.

**i** Web code: #0561



### Robust industrial connectors

Heavy-duty connectors offer a robust Plug and Play solution for the cabling from the control cabinet to the field level. For the first time, HEAVYCON contact inserts with Push-in connection and click-in latching enable consistently easy and tool-free installation and assembly.

**i** Web code: #3090

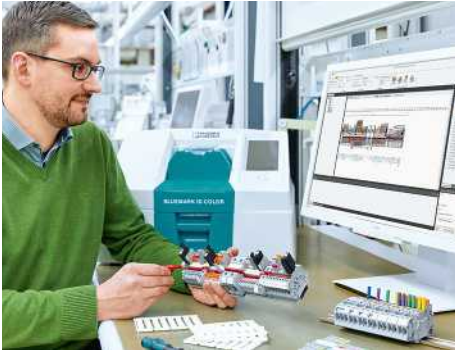
## Worldwide service and support: We are there for you

At Phoenix Contact, the focus is always on you, the customer. With over 50 subsidiaries and more than 30 agencies around the world, we are always close by. As a result, you will receive expert, first-hand advice and benefit from fast and timely delivery of a complete package consisting of high-quality, optimally coordinated components. Our expertise and high level of vertical integration also allow customized solutions tailored to your needs. We also support you after your purchase with our comprehensive after-sales services.

 Web code: #2247



## Your advantages in detail:



### Fast terminal strip production

Our terminal strip production service provides help in managing order peaks flexibly and allows terminal strips to be delivered just in time for series production. The fully assembled and marked terminal strips, already equipped with accessories, just need to be installed and connected.



### Individual set solutions

To reduce the effort of materials and stock management, you can order pre-picked material sets under a single item number.



### Customer-specific solutions

Can't find what you're looking for in our range? No problem: From minor adaptations to completely new product developments, we focus on your specific requirements.



### Global approvals and certificates

Our numerous certificates are proof that you can put your full trust in our products, because quality is essential. We strive to satisfy this requirement in every respect. For this reason, our systems, processes, and products are tested and certified several times over.



### Comprehensive after-sales services

We are there for you – not just before your purchase, but also after with our comprehensive after-sales services. This includes our repair service, exchange service, and replacement parts service.



### Comprehensive training program

From the basics to specialist expertise: we provide you with the skills you need in line with your specific requirements.

