Machine building

Products and solutions for your success

PHŒNIX CONTACT

INSPIRING INNOVATIONS

Your strong partner for machine building

Machine building is a global and very dynamic market. The competition you face as a supplier is tough. It is important that you meet the requirements of your customers and develop a range of products and services that allow 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.

|i| **Web code:** #1255

Find out more
with the web code

You can find web codes in this brochure: a pound sign followed by a four-digit number combination.

|i| **Web code:** #1234 (example)

This allows you to access information on our website quickly.

It could not be easier:
1. Go to the Phoenix Contact website
2. Enter # and the number combination in the search field
3. Get more information and product versions

| #1234 | **Search** |

Or use the direct link:
phoenixcontact.net/webcode/#1234

Contents

We have a long tradition of machine building

Phoenix Contact has close ties with the machine building industry. Our in-house machine building department supports all developing and producing business units with 180 employees. As a result, 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 means of production, innovative solutions and state-of-the-art manufacturing technologies.

[i] **Web code:** #1255

The past

From as early as 1968, Phoenix Contact operated an in-house machine building department at the Blomberg site to be independent from service providers.

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 future machine building.

Integrate safety technology
easily in your machines

Safety technology is paramount in machine building. It prevents operating staff from being put at risk or damage caused to the machine. Standard EN ISO 13849-1 directed at meeting the Machinery Directive results not only in increased requirements for the implementation of safety functions, but also in new opportunities for you as a machine builder.

Integrate safety technology easily in your machines

With safety components from Phoenix Contact, you are always on the safe side. We provide a comprehensive portfolio for machine building, from traditional safety relays to network-compatible safety solutions. All products are particularly easy to install and configure – as a result, you benefit from a faster and more effective implementation of safety-relevant applications.

Relay Technology℗
Designed by PHOENIX CONTACT

Safety for every function

Use PSR safety relays where your machine requires just a few safety functions. The range includes elements such as highly compact, multifunctional, and classic safety relays. Thanks to two-channel wiring and force-guided contacts, the devices switch particularly reliably.

Web code: #0494

Monitoring several safety functions

With the TRISAFE configurable safety module, you can monitor various safety functions in your machine with a single device. The system can be flexibly enhanced using I/Os and fieldbus couplers.
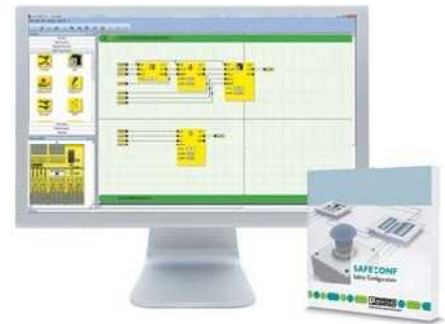
Web code: #1257

Easy safety configuration

The SAFECONF software, which is available free of charge, can be used to conveniently configure your safety logic in accordance with standards with just a few clicks of the mouse. You can easily create the safety logic for PSR-TRISAFE and SafetyBridge Technology using drag and drop.

Use the web code to download the software free of charge.

ℹ **Web code:** #1259
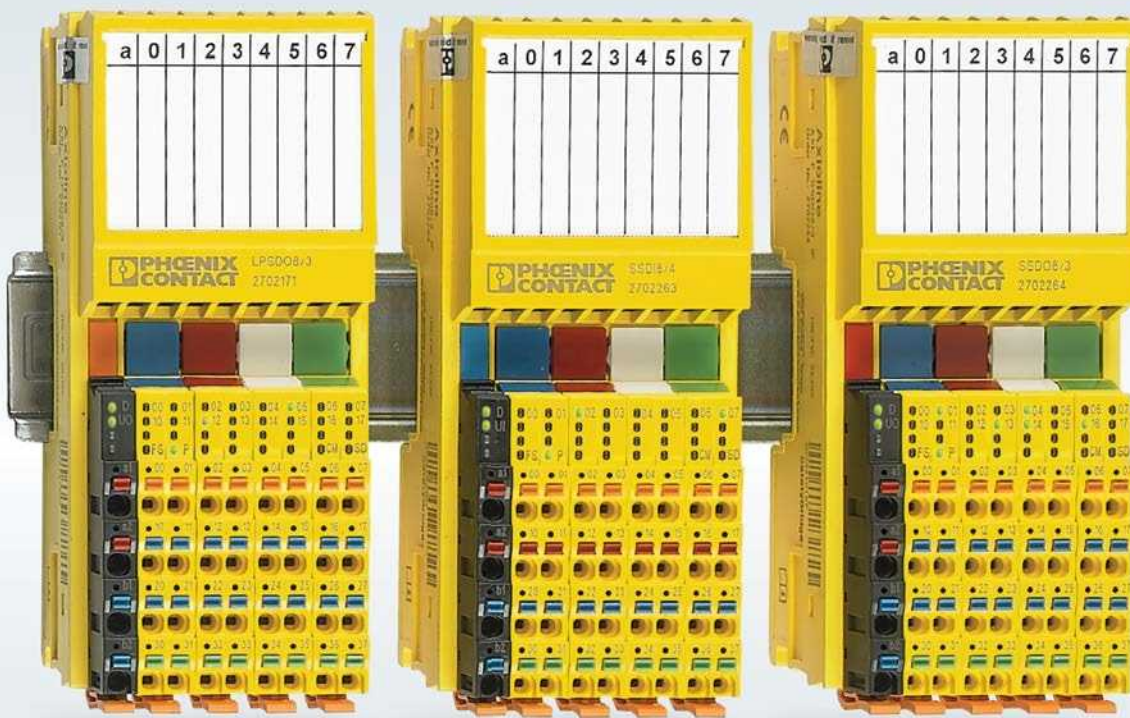
SafetyBridge Technology

Designed by PHOENIX CONTACT

Safe without a safety controller

Regardless of whether you operate a compact machine with simple safety functions or ample, modular machine solutions: thanks to our safe I/Os for Inline und Axioline F and SafetyBridge Technology, you require neither a safety controller, nor a safe field bus system.

ℹ **Web code:** #1258

Avoid expensive machine downtimes

For you and your customers there is nothing costlier than a machine that is down. Downtimes ultimately lead to production losses and result in extremely high costs. This makes machine availability your top priority. Reliable components and high levels of machine availability are paramount in preventing downtimes and production losses.

Avoid expensive machine downtimes

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 production around the clock. 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.

Safe Energy Control Technology
Designed by PHOENIX CONTACT

IO-Link

Protection against surge voltages

Surge voltages put machines at risk and can lead to the destruction of important functional groups. Increase safety and availability with effective surge protection in the supply and upstream of signal interfaces. In this process, Safe Energy Control technology prevents any line follow current.

Selective fuse protection for circuits

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

ℹ **Web code:** #1260

ℹ **Web code:** #0156

Reliable supply

Reliably support your control cabinet components with energy: our durable power supplies have been ideally geared towards strict machine building requirements. The integrated SFB technology switches off faulty current paths to maintain the operation of important machine parts.

[i] **Web code:** #0151

Clever motor switching

Switch and reverse motors quickly and reliably with compact hybrid motor starters. CONTACTRON Hybrid technology merges wear-free semiconductor technology with durable relay technology and thus increases the service life by a factor of 10 compared with purely mechanical switching devices.

[i] **Web code:** #0568

SFB TECHNOLOGY

CONTACTRON HYBRID TECHNOLOGY

IO-Link

Uninterruptible supply

IQ TECHNOLOGY

If even the most transient mains faults could have serious consequences for you, you should implement an appropriate uninterruptible power supply. IQ technology means the intelligent UPS thinks for itself, advising you whenever necessary.

Clever motor protection

The CONTACTRON motor manager monitors motors for overload and underload, function, contamination and wear. It 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 event of an error.

[i] **Web code:** #0154

[i] **Web code:** #1262

Communicate with your machines worldwide

Due to the global use of machines, being able to communicate with machines around the world is becoming more important, as this allows you to avoid expensive servicing on site. Furthermore, modern production requires networks that support data exchange between a wide range of different processes and machines. Industrial Ethernet is the fast communication standard for integrated communication between office and production level.

Communicate with your machines worldwide

Modems and routers connect you to your machines and systems 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 manipulation.

Global access to data

Using modems and routers, you can access remote machines or mobile devices anywhere in the world. The device offers all options to remotely control, maintain, or alarm. Be it by analog dial-in connection, DSL high speed line, or 4G mobile phone connection.

Web code: #0499

Integrating fiberglass technology into machines

For particularly high degrees of immunity to interference and electrical isolation in Ethernet networks, media converters convert the data to be transmitted from copper to fiber optics. Fiber optic cable technology facilitates bridging great distances at high data rates.

Web code: #1269

Protecting networks and data

FL MGUARD security appliances protect your machine and network against unauthorized access by users or malware. This enables you to avoid breakdowns or disturbances caused by network overload or unexpectedly high data traffic as well as the harmful exploitation of weak points in the system.

Web code: #1270

Distribute data in the network

Switches are the data distributors in your Ethernet networks. Unmanaged switches are used at field level in order to connect multiple end devices to the network. For this purpose, we provide models with different numbers of ports, protective ratings and for different transfer media.

Simply stabilizing networks

Use managed switches as central communication hubs. They distribute all data between the automation devices in the Ethernet network. An ideally adapted functional scope also improves the stability and robust character of your machine networks.

Connecting mobile machine parts via WLAN

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

Measure your machines'
energy consumption reliably

Integrating energy and performance measurement into your machines brings about many benefits: for instance, long-term values help in creating and optimizing machine project plans. In the event of customer complaints, you also have documentation of how severely the machine was actually used by customers. Your customers, on the other hand, will benefit from a transparent settlement of energy costs, optimized machine runtimes, improved peak load management, and preventive maintenance that identifies suspicious values at an early stage.

Energy consumption

ergy consumption

Energy consumption in production hall 3

Machine tool
Cleaning unit
Preservation and packaging

Measurement   Settings   Alarming   Trend   System   Exit

1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 11:00 12:00 13:00 14:00 15:00 16:00 17:00 18:00 19:00 20:00 21:00

Measure your machines' energy consumption reliably

Phoenix Contact offers you an ample product portfolio for energy and performance measurement. We provide anything within the context of transducers, measuring and monitoring units, as well as display and logging units for consumption values. An output of standardized signals and the use of standard protocols result in many options to reuse the data. Thanks to fieldbus and network connections using PROFIBUS, PROFINET, Modbus, and Ethernet even superordinate controllers can use measured data, for instance for the purpose of visualization.

Converting current

Use PACT current transformers to convert high alternating currents up to 4000 A to low currents of 1 or 5 A. Current transformers for retrofitting can be installed even in confined spaces into which no split core current transformers would fit. There is no need to disassemble system parts.

ℹ️ **Web code:** #1263

Measuring currents

Thanks to our MCR current transducers, you can measure DC, AC, and distorted currents. The portfolio ranges from adjustable devices to precisely illustrate low measuring ranges up to 55 A to universal measuring transducers for high currents up to 600 A.
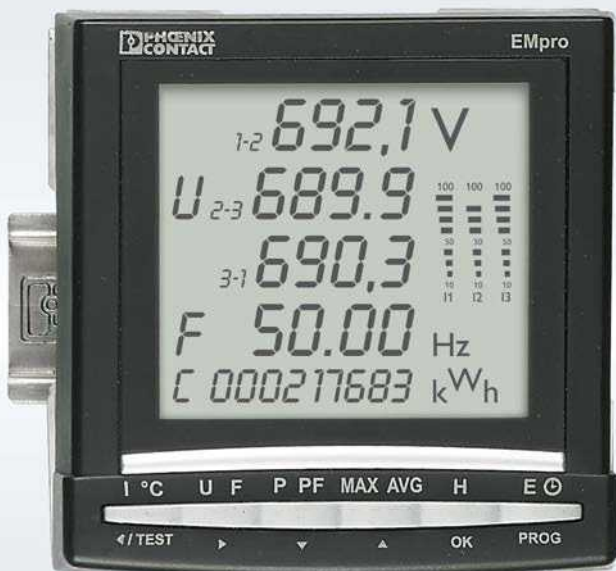
ℹ️ **Web code:** #1263

Monitoring machines and motors

The CONTACTRON motor and machine manager merges precise energy measurement with the display and monitoring of important parameters of motors, machines, or other three-phase consumers. Freely configure its switching and signaling thresholds.

ℹ️ **Web code:** #1537

Recording and monitoring energy data

The network-capable EMpro energy meters detect and monitor the electrical characteristics of your machines. Flexibly enhance devices with communication and function modules. Directly read out measured values on the device or master computer.

Logging energy data

EMlog software in conjunction with a modular controller is the efficient solution to accurately record and log consumption data. If energy usage is well documented and evidence is provided, companies can apply for government funding.

# One system for consistent configuration and marking

Project management and planning takes up a large part of the time in switch cabinet engineering. For this reason, optimizing these processes brings about a significant, competitive edge. This requires software that guarantees consistent data flow, from creating the circuit diagram to planning components and outputting the matching markings.
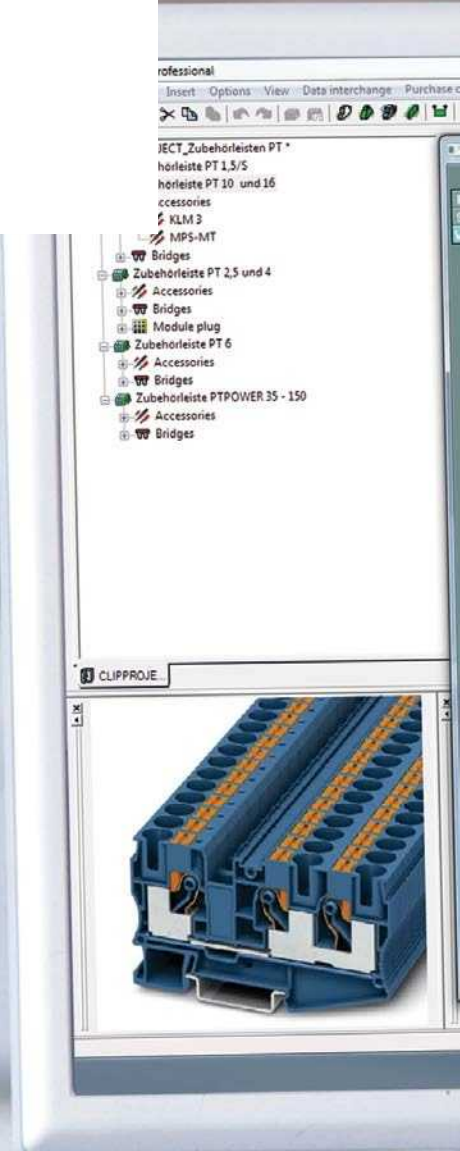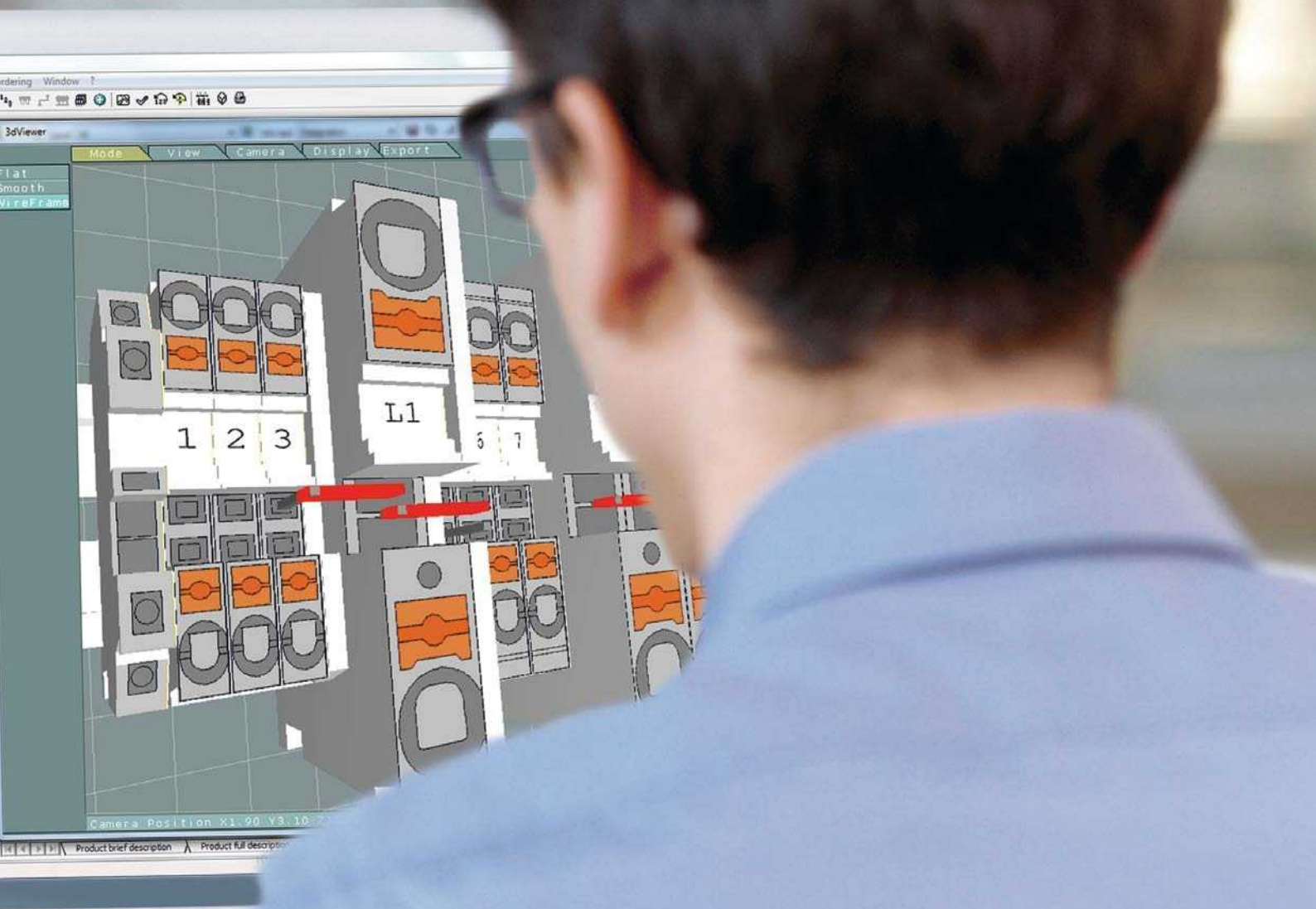
One system for consistent configuration and marking

CLIP PROJECT planning and marking software supports you throughout terminal strip production. It takes over the circuit diagram data from all conventional CAE programs, transforms them into matching products and creates comprehensive product documentation. The marking tool generates print data for the matching markings.
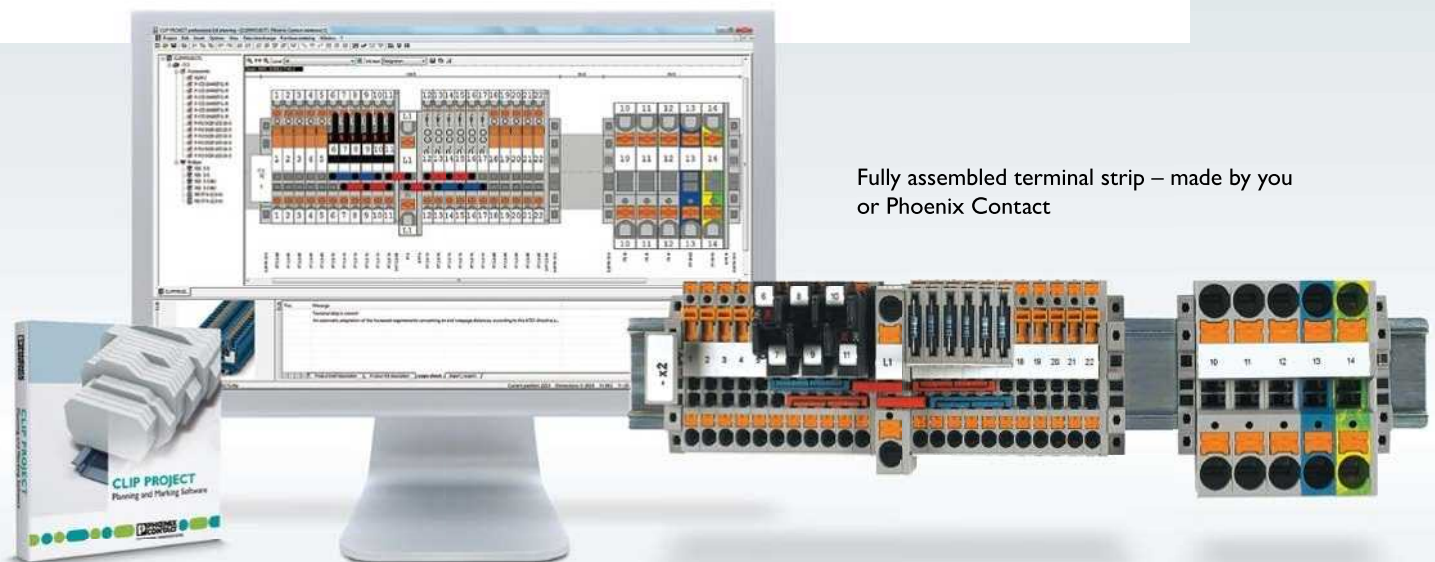
Fully assembled terminal strip – made by you or Phoenix Contact

Configuration and marking with a single piece of software

- Project planning for Phoenix Contact products and those by other manufacturers
- Data exchange with CAE programs
- Auto-correct feature for error-free projects
- Compatible with all Phoenix Contact marking systems and materials

Mobile marking with the marking app

Use the MARKING system app to quickly and easily find the matching marking solution, label materials on the go and print labels directly on site, once they are required.

Android app   iOS app

[i] **Web code:** #1093

The matching print system for any demands

We offer printing systems with different marking technologies. Robust laser direct marking is suitable for challenging, industrial environments. Environmentally friendly UV LED printing marks particularly quickly. Thermal transfer printing is the universal solution for plastic labels and labels in general.

i **Web code:** #0849

The right marking material for your application

The ample product portfolio covers all application cases for terminal, cable, conductor, devices, and system marking. Thanks to quality labels on plastic markers, labels, and metal tags, you can also meet the requirements of challenging applications.

i **Web code:** #0575

Reduce your production times with fast installation

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

Assemble conductors in under two seconds

You can strip and crimp your conductors in under two seconds using the Crimphandy portable hand-held device. Consequently, you can cut the time required for this process by up to 75%.

i **Web code:** #1273

Reduce your production times with fast installation

Connection technologies that are quick and easy to operate, such as Push-in connection technology and the SPEEDCON fast locking system, reduce the wiring time and minimize the error rate. Additionally use these reliable and easy-to-handle tools to guarantee quick installation.
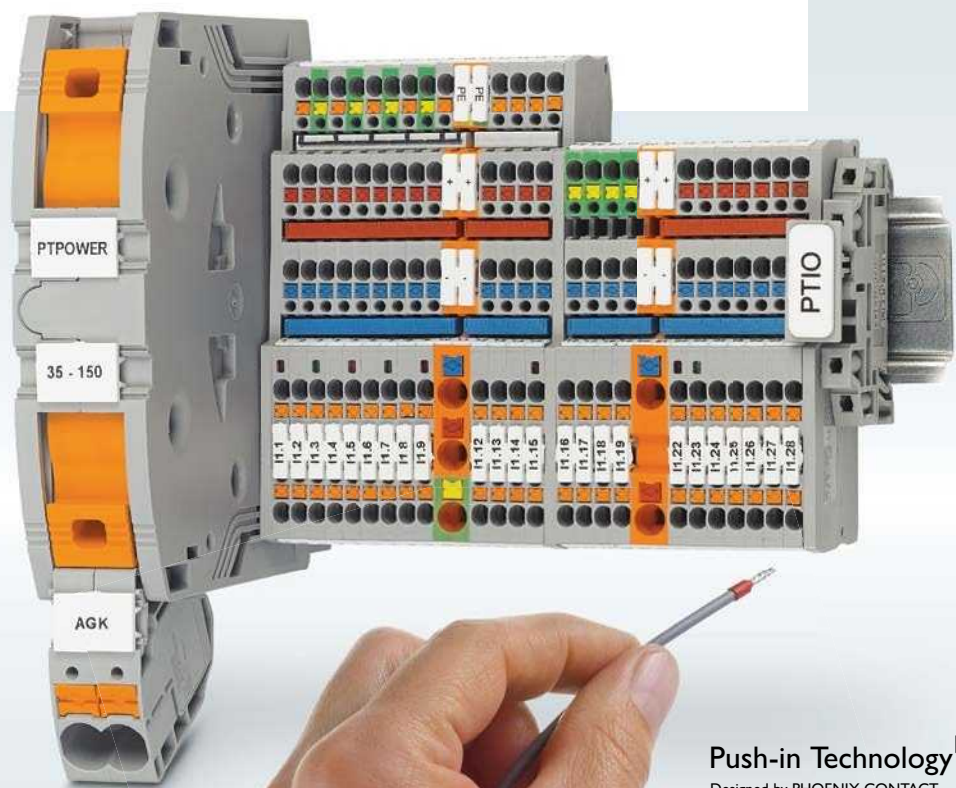
Power-Turn Technology[P]

Designed by PHOENIX CONTACT

Quick and easy wiring of large conductors

Power-Turn technology enables user-friendly and quick contacting of conductors from 35 to 150 mm².

[i] **Web code:** #1533

Push-in Technology[P]

Designed by PHOENIX CONTACT

Tool-free conductor wiring

With Push-in technology, you can connect conductors from 0.25 mm² easily – both directly and without tools.

[i] **Web code:** #1534

The right tool for every application

Be it cutting, stripping, crimping, screwing or measuring: our high-grade tools impress with ergonomic designs, simple handling, long service life and excellent operative results.

[i] **Web code:** #0290

⊘ IO-Link

Acquire I/O signals in the field

Axioline E is the I/O system for field installation that is open to all Ethernet-based communication protocols. Thanks to SPEEDCON connection technology and the M12 connectors for signals, data, and power, the system is quick to install and easy to use.

i **Web code:** #1274

Fast locking of M12 connectors

The SPEEDCON fast locking system is based on the principle of plug and turn. With just a half turn, you can create the perfect plug-in connection. This reduces your assembly time by 90%.

i **Web code:** #1535

### 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 corresponding front adapters, system cables, and interface modules.
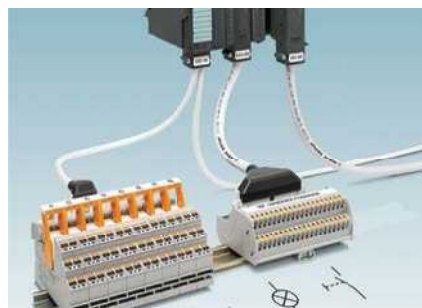
i **Web code:** #0702

Reduce your part count and lower your storage costs

Optimally coordinated product solutions are a decisive factor in keeping your machine manufacturing costs as low as possible. Our universal and standardized accessories can be used in many product groups. This allows you to reduce your part count and lower your storage costs while still remaining flexible. Standardized products simplify startup and maintenance for your installation engineers and service technicians, thanks to uniform design and operating concepts.
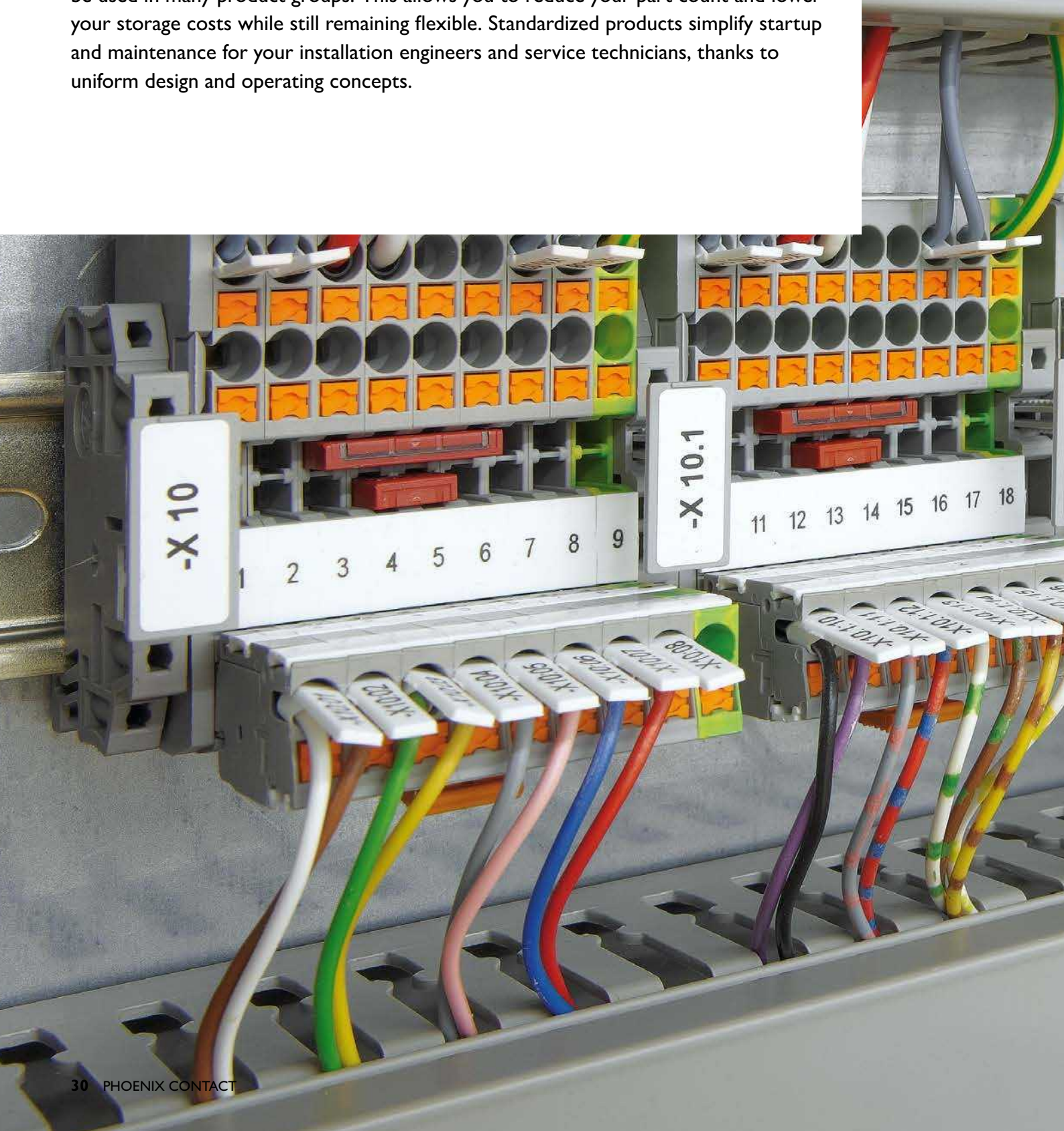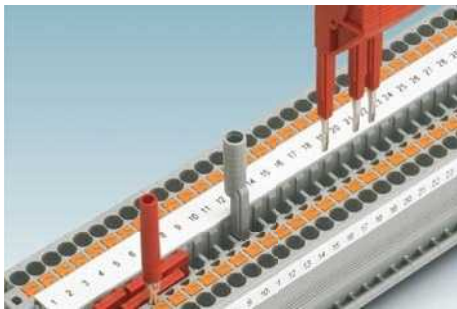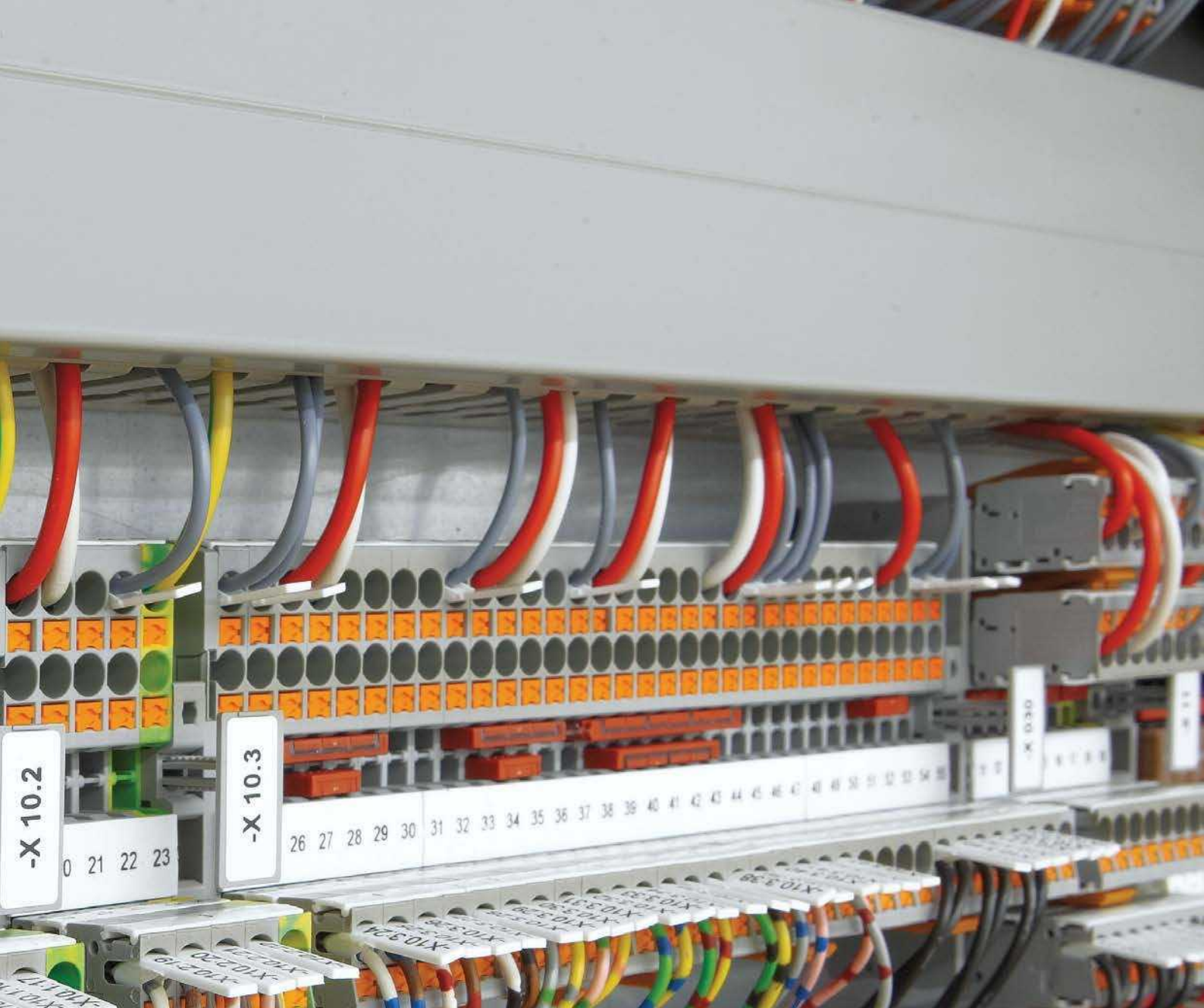
Standardized test system

We provide comprehensive, universal testing accessories for our products. In this process, all test plugs can be connected in the freely accessible function shaft.

Clear marking

The terminal points of our products can be labeled across large surfaces. This creates transparency in the switch cabinet and facilitates commissioning, testing and maintenance work.

Flexible jumper system

One jumper system for all connection technologies: thanks to the 2- to 50-pos. plug-in bridges, you can save time during any potential bridge tasks.

Reduce your part count and lower your storage costs

Simply use the standardized accessories in modern terminal block, relay, and automation systems, whether as a jumper, for marking or testing. CLIPLINE complete provides a terminal block system for all connections. Implement all standard relay applications using the RIFLINE complete relay system and use the Axioline F I/O system for all common networks.
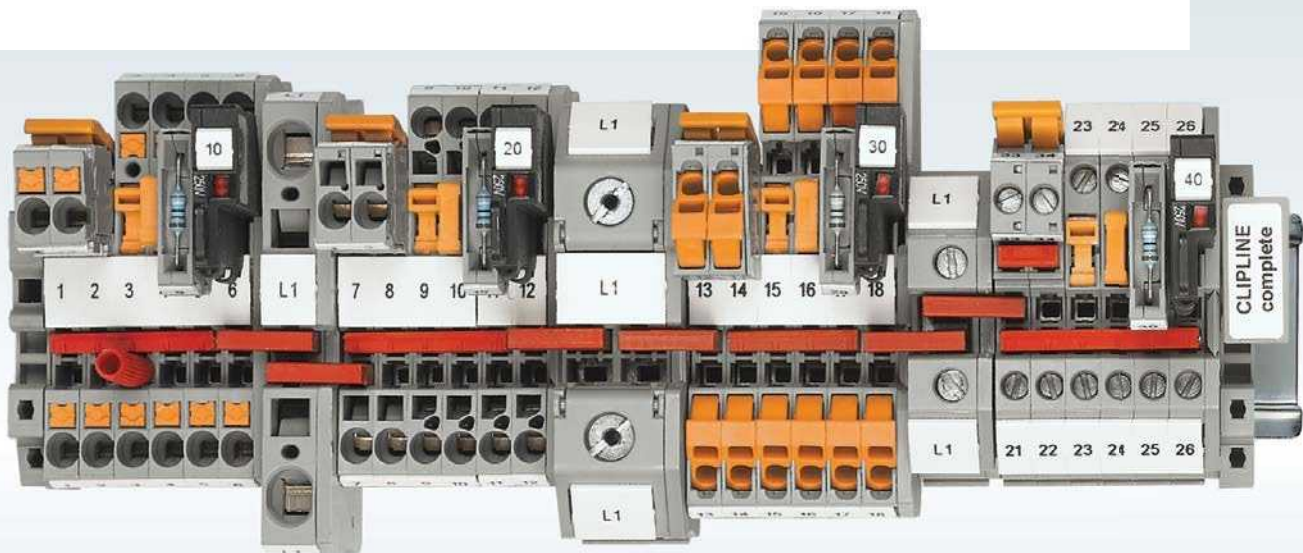
Push-in Technology[P]
Designed by PHOENIX CONTACT

One terminal block system for all connection technologies

CLIPLINE complete lets you choose the right connection technology. Whether screw, Push-in, spring-cage, bolt or plug-in connection: you can combine all connection methods with the same accessories.

[i] **Web code:** #0567

One relay system for all standard applications

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

[i] **Web code:** #0695

One I/O system for all common networks

Use the Axiocontrol controller and the Axioline F I/O system for a consistent automation solution. Axioline F gives you a particularly high degree of flexibility, as the I/O system is open to all common networks. The devices are also particularly robust, thanks to the EMC design and stable mechanical construction.

[i] **Web code:** #0500

Heavy-duty connectors with variable cable outlet

The HEAVYCON EVO connector system features a standardized mount for cable glands in sizes ranging from M20 to M40. The cable outlet direction can then be easily determined on site. This reduces procurement costs and storage costs.

[i] **Web code:** #0518

Build machines in a modular and flexible way

Today's machines must provide the option to quickly adapt to changes on the market. A modular concept guarantees your customers maximum levels of flexibility. The modular design also facilitates transport and installation of large and ample machines at customer premises.

Build machines in a modular and flexible way

Modular machine and control gear designs can be set up in parallel and assembled quickly and safely at the destination. Plug-in systems combined with individually configurable cable feed-through assemblies help you to achieve this and ensure the level of flexibility required. If required, you can convert your machine quickly and thus increase its efficiency.

Robust industrial connectors

HEAVYCON complete heavy-duty connectors can be combined flexibly with one another and are compatible with the market standard. The housings are easy to handle and offer a high degree of protection. The contact inserts can be wired easily using fast connection technologies such as Push-in. Modular contact inserts can be used to transmit data, signals, power, and compressed air via a single plug-in connection.
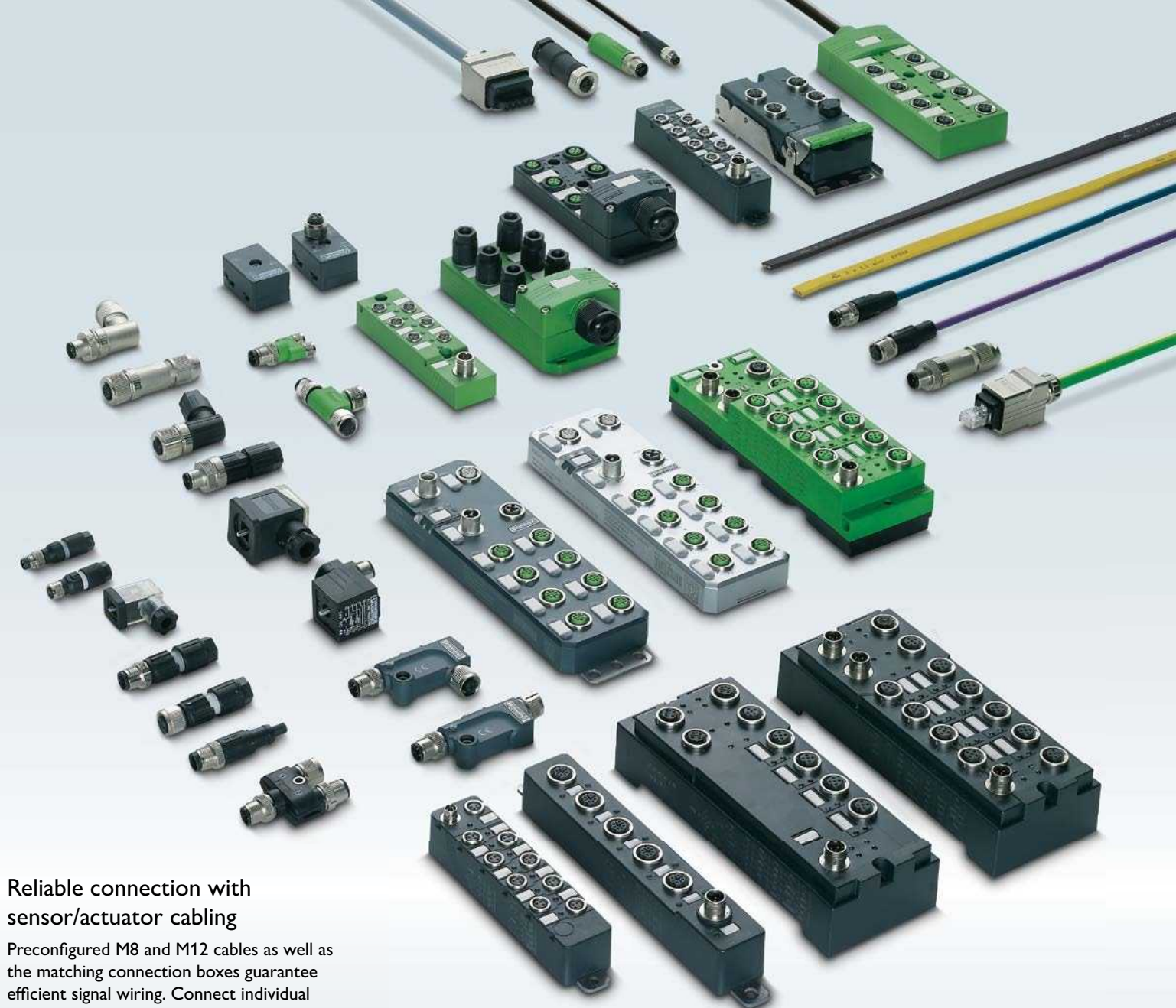
Reliable connection with sensor/actuator cabling

Preconfigured M8 and M12 cables as well as the matching connection boxes guarantee efficient signal wiring. Connect individual sensors and actuators as quickly and securely as modular system parts. With our connectors for assembly, you can flexibly adapt the cable length to your requirements.
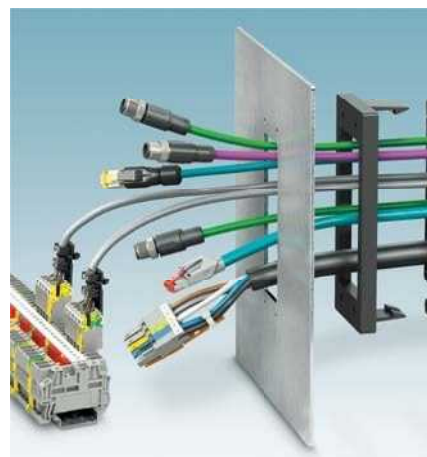
i **Web code:** #0564

Space-saving cable routing and plug-in terminal blocks

Thanks to the modular CES cable entry system, you can route cables and lines for assembly in the field as part of a space-saving process.

i **Web code:** #0570

COMBI plug-in terminal blocks enable a modular structure as part of signal and output wiring up to 41 A and 1000 V.

i **Web code:** #1276

Worldwide service and support:
we are there for you

At Phoenix Contact, the focus is always on you, the customer. With over
50 subsidiaries across the world and more than 30 agencies, we are always close by.
As a result, you receive verified, first-hand advice and benefit from fast and timely
delivery of a complete package consisting of high-grade, adapted components. Our
expertise and the high levels of production depth also enable customized solutions as
per your demands. We will also support you after the purchase with comprehensive
after-sales services.

i **Web code:** #1256

Commercial services

We offer comprehensive electronic product
information and master data, individual
logistics and order processing as well as
full-fledged after-sales services.

Comprehensive training program

From the basics to specialist know-how: we will give you the skills you need to the extent and configuration you require.

Product sets and terminal boxes

We pre-assemble product sets, equip and wire up terminal strips as per your specifications, and integrate these into the matching terminal box.

Cable assembly

We assemble your specific cable solutions according to your specifications. For this purpose, use our online configurators or get in touch with your local contact person.

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 15,000 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

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