Functional safety

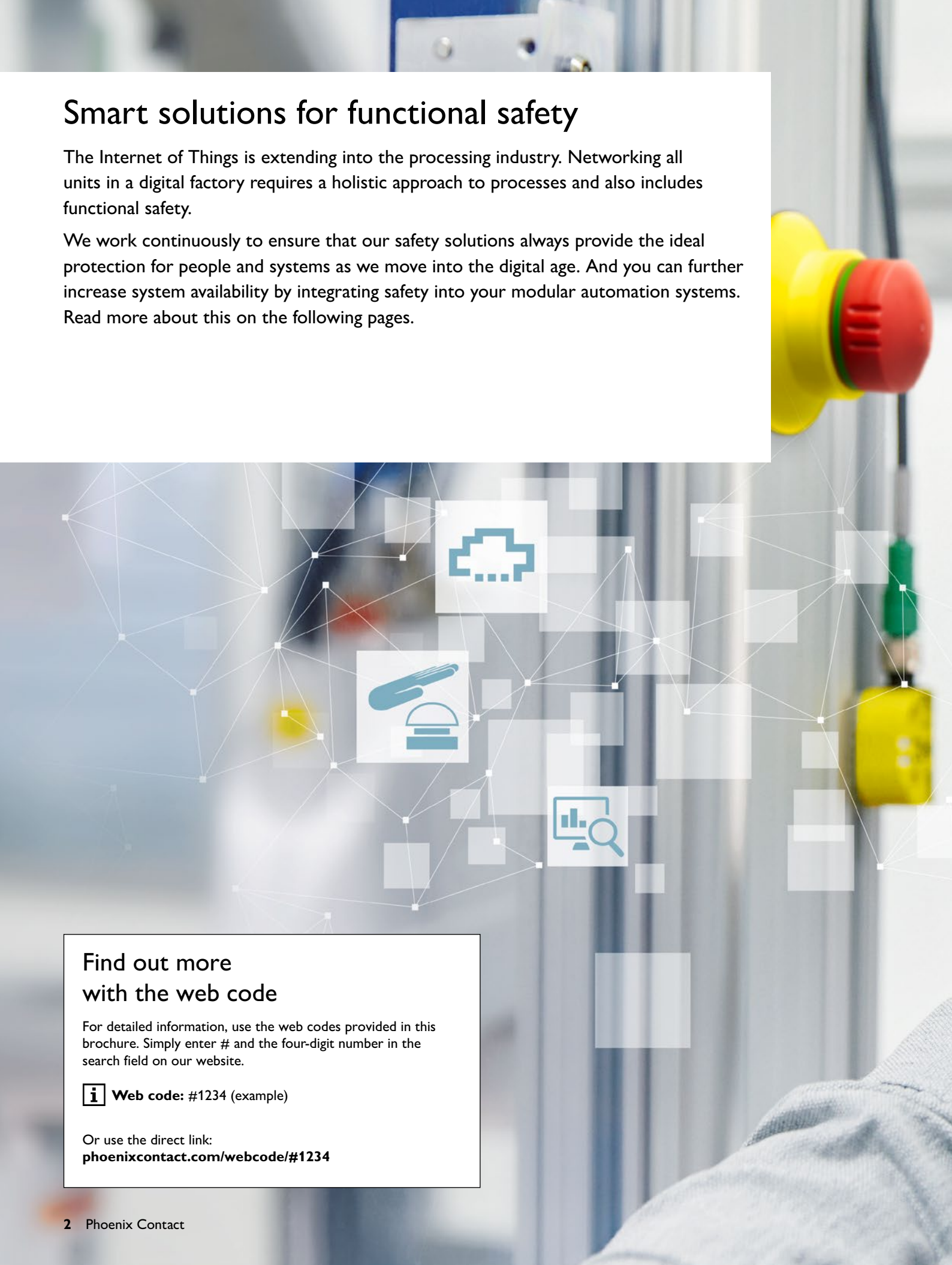
From the safety switch to the safe controller

PHOENIX CONTACT

Smart solutions for functional safety

The Internet of Things is extending into the processing industry. Networking all units in a digital factory requires a holistic approach to processes and also includes functional safety.

We work continuously to ensure that our safety solutions always provide the ideal protection for people and systems as we move into the digital age. And you can further increase system availability by integrating safety into your modular automation systems. Read more about this on the following pages.



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

Contents

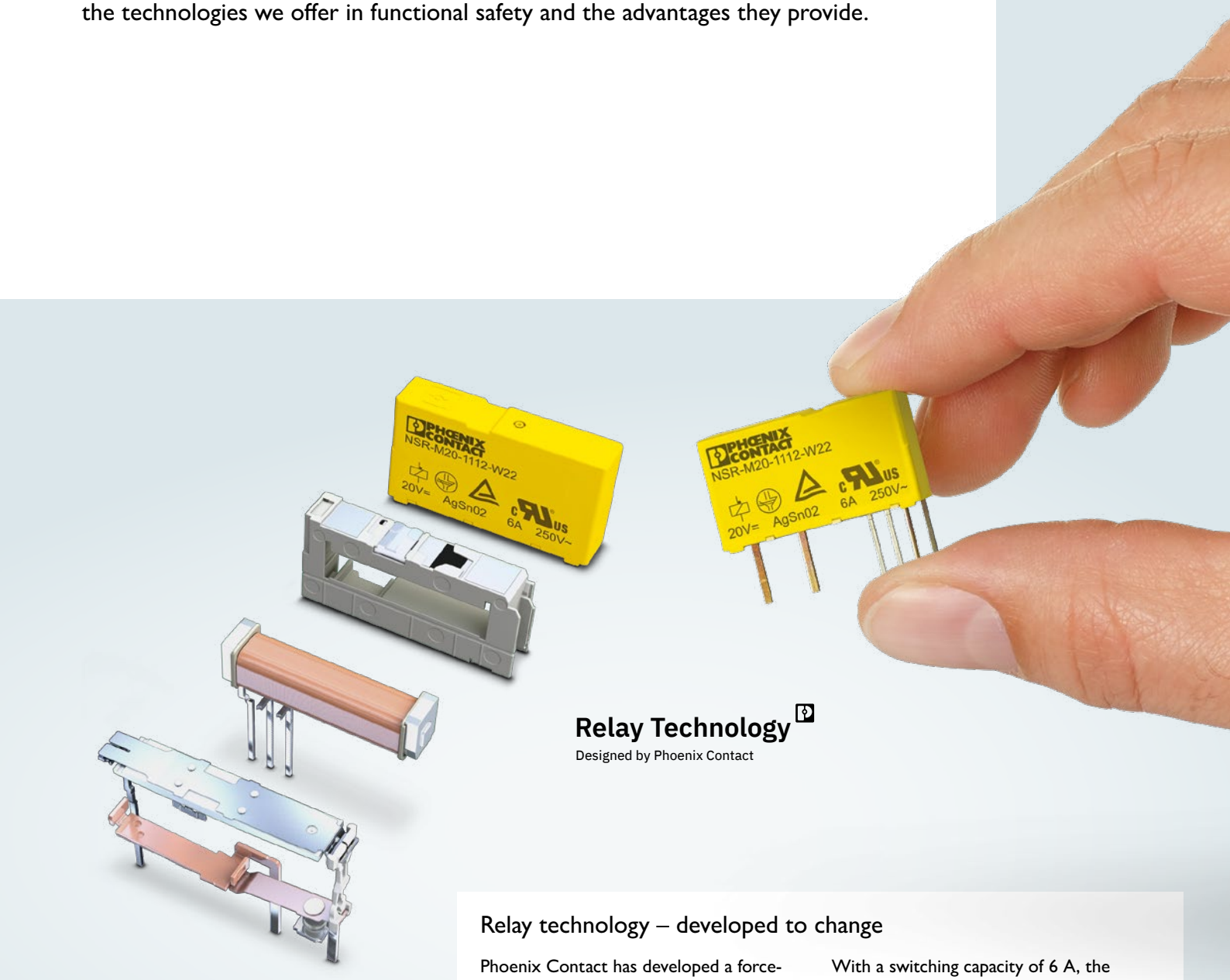
COMPLETE **line**

COMPLETE line is a system comprising coordinated hardware and software products, consulting services, and system solutions that help you optimize your processes in control cabinet building.

Progress through innovative technologies

Those who want to play a leading role in technology must make a decisive contribution to current trends and developments.

For Phoenix Contact, innovations are a pioneering bridge to the future. Take a look at the technologies we offer in functional safety and the advantages they provide.



Relay Technology

Designed by Phoenix Contact

Relay technology – developed to change

Phoenix Contact has developed a force-guided elementary relay that delivers full performance with an overall width of just 6 mm. The miniaturization of mechatronic functions enables modular safety concepts, such as those required for Industry 4.0.

With a switching capacity of 6 A, the relay offers maximum availability with the redundant diagnostic contact and enabled us to develop the PSRmini safety relay in a 6 mm housing.

Web code: #1974

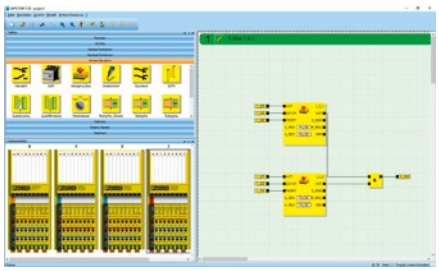
SafetyBridge Technology – safe without a safety controller

What is SafetyBridge Technology?

SafetyBridge Technology enables you to realize decentral safety solutions. You can do this without a safety controller and regardless of the network used. The technology is integrated into the Inline and Axioline I/O systems and is compatible with all bus couplers of these systems. The safe I/Os are installed remotely with the standard I/Os in the equipment.

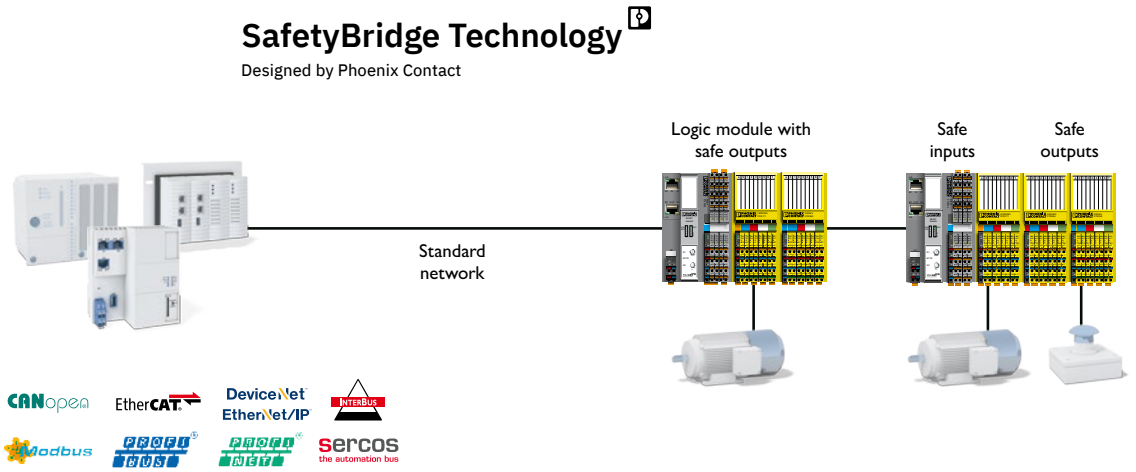
The system consists of safe input modules, safe output modules, and one logic module. The logic module acquires and outputs safe signals. It generates and monitors the safety-related SafetyBridge transmission protocol and processes the logical links of the configured safety logic. The logic module therefore assumes the task of a safe controller.

You create the SafetyBridge safety logic easily by drag and drop with our SAFECONF configuration software. The intuitive operation allows you to configure your safety logic in accordance with the standards, without any need for programming knowledge.



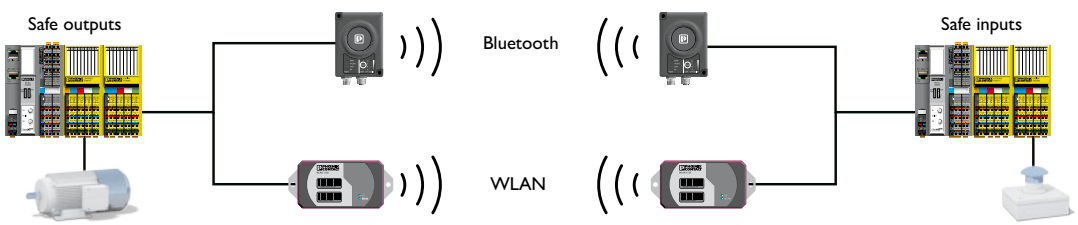
Easy configuration using SAFECONF

SAFECONF
Configuration Software



Transmitting safe data via wireless systems

SafetyBridge Technology makes it possible for you to transmit all safety-relevant data signals wirelessly. You can choose between the two wireless technologies, Bluetooth and WLAN. This lets you replace cable and slip ring transmission systems with wireless paths without altering the safety characteristics of the safety application. The combination of safety and wireless has many advantages. This solution can be easily integrated into existing automation networks and helps save on the costs of a distributed or mobile machine structure. Furthermore, safety signals can be transmitted reliably over large distances.



IO-Link Safety: the new standard

With IO-Link Safety, you can benefit from all the familiar advantages of IO-Link. Now that IO-Link technology has been extended to include safety, you can connect safety technology and automation via a universal interface. This enables you to introduce new, manufacturer-independent machine and system concepts with safety-related sensors and actuators.

Web code: #3256

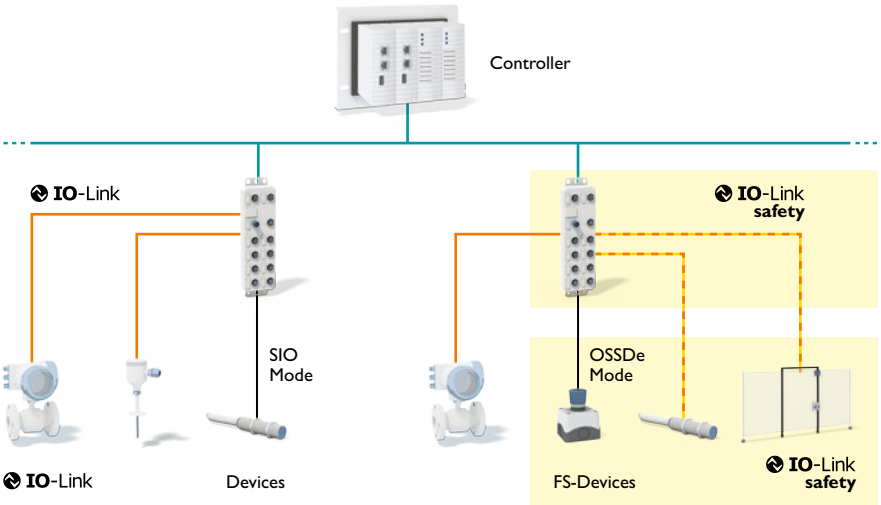
Your advantages

- Increase productivity through detailed condition data
- Simplify installation, maintenance, and replacement processes with implemented standards
- Increase data availability and accuracy through simple A/D conversion
- Fast configuration and troubleshooting with remote diagnostics

Safe communication from start to finish

End-to-end safety from the sensor to the controller

The IO-Link Safety technology enables consistent communication from the control level right through to the connection of safe sensors and actuators. The safety-related system expansion is based on the use of IO-Link Safety masters and IO-Link Safety devices. You can now benefit from all the valued IO-Link advantages, such as the network independence of sensors and actuators, standardized connection technology, the use of an IODD for parameterization, or the simple replacement of devices.



IO-Link Safety master

The IO-Link Safety master is intended as an interface between safe/non-safe IO-Link sensors and actuators and safe PROFINET control systems.

A total of eight safe IO-Link Safety ports are available for integrating IO-Link and IO-Link Safety devices (4 x Class B ports and 4 x Class A ports).

Main features

- PROFINET/PROFIsafe communication
- Easy integration with multifunctional ports
- Connection of actuators of up to 4 A
- Series connection using power supply with standardized L-coded M12 connection technology
- IO-Link specification V1.1.3
- Connection with M12 connectors with push-pull fast connection or screw connection
- 2 Ethernet ports (with integrated switch)
- IP65/IP67/IP69K degree of protection

IO-Link Safety device

The IO-Link Safety I/O box enables the integration of safe sensors and actuators into IO-Link Safety systems. There are eight safe digital inputs and four safe digital outputs available for this purpose. They allow easy connection of sensors and actuators in the field and provide access to extended diagnostic data.

Main features

- 1 IO-Link port Class A
- 8 safe digital inputs
- 4 safe digital outputs
- M12 connectors (A-coded)
- Enables IO-Link Safety communication

Successful in application

Our safety products prove themselves daily in a wide variety of areas.

With 100 years of experience in machine building and automation, we are working on tomorrow's intelligent production today.

Furthermore, with our extensive application expertise, we provide you with a broad product range for applications in the automotive industry and the process industry.

Your advantages

- ☑ Many years of experience, innovative solutions, and the latest technologies
- ☑ Member of all key standardization committees
- ☑ Comprehensive knowledge of legal safety
- ☑ Numerous TÜV-certified employees worldwide
- ☑ Active participation in steering committees and research projects

Safety technology for your needs

At home in machine building

Phoenix Contact has close ties with the machine building industry. Because we have our own machine building facilities in house, we completely understand your daily challenges.

We provide:
- A broad range of safety technology, approved globally in accordance with EN ISO 13849-1 and EN IEC 62061
- A high level of sensor compatibility and easy installation for the fast and economical realization of your safety concepts

Experience in the automotive industry

As a long-term partner of the Automotive Industry, Phoenix Contact provides fully developed automation solutions for robust, open, and consistent automation solutions.

We provide:
- A broad range of safety technology, approved globally in accordance with EN ISO 13849-1 and EN IEC 62061
- Comprehensive diagnostic options
- Reliable automation for high-end applications
- No imperfections on the end product, with the use of PWIS-free components

Partner for the process industry

With pioneering solutions in connection and automation technology, Phoenix Contact is your key partner for ensuring exceptionally high availability in the process industry.

We provide:
- ATEX-certified, robust safety technology
- XC product versions for use under extreme conditions
- Safe components for use in furnaces (in accordance with IEC 61508/61511 and EN 50156) and in the shipping industry (DNV)

Product portfolio

We make functional safety easy. From non-contact safety switches through to complex controllers, all safety products from Phoenix Contact are SIL-certified. You can install and configure the modules easily.

Benefit from the comprehensive service offered by our certified safety experts. With our comprehensive services, we can help you meet all safety of machinery requirements.

Web code: #0299

Safety switches

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

Emergency stop switches

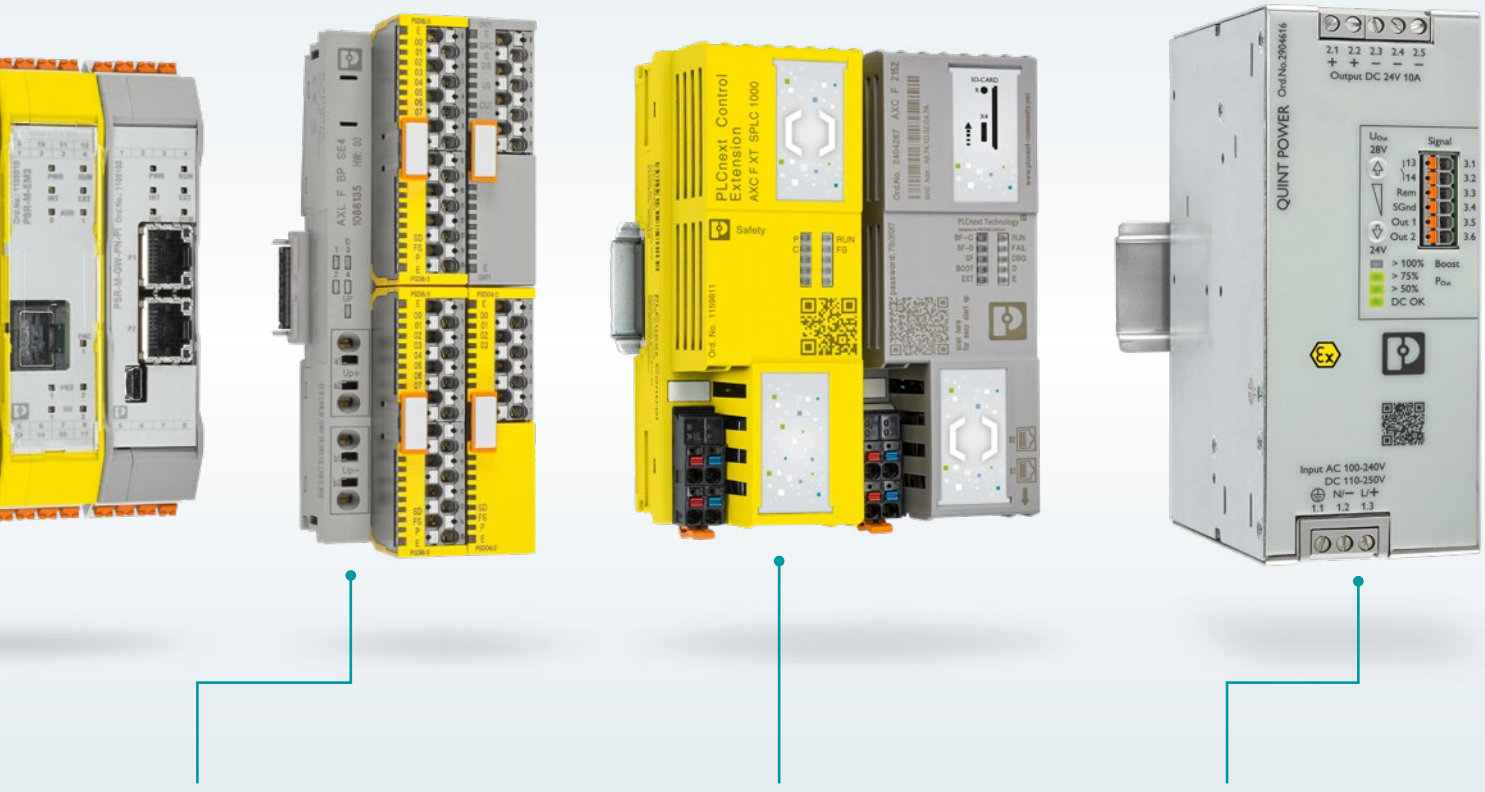
With our TÜV-certified emergency stop switches, you can immediately put your machine or system in a safe state if there is an emergency.

Safety relay modules

If your application demands just a small number of safety functions, there is a large selection of safety relays, safe signal conditioners, and safe motor starters at your disposal.

Configurable safety systems

The configurable PSRmodular safety system is a flexible safety solution for monitoring your machine or system.



Safe I/Os

Integrate functional safety into your existing network, whether in the control cabinet or in the field. With SafetyBridge Technology, the safety function is processed directly in the I/O modules.

Safe control technology

With our safe high-performance controllers, you can integrate reliable functional safety into PROFIsafe networks for applications with special demands on safety and availability.

Safe power supplies

Our high-performance QUINT POWER power supplies ensure the maximum availability of your system and satisfy all of the functional safety requirements.

Non-contact safety switches

The compact PSRswitch is an electronic, coded safety switch for flexible safety door and position monitoring. With the integrated RFID technology and intelligence, it offers maximum protection against manipulation and the highest level of safety in accordance with EN ISO 13849 and EN ISO 14119. You receive a cost-effective complete solution with compatible evaluation units and sensor/actuator cabling.

Web code: #1940

Your advantages

- Compact design for flexible mounting on doors and hatches
- Safe series connection of up to 30 safety switches in a two-channel design
- M12 for easy installation and maintenance
- Three types of RFID coding for maximum manipulation protection
- Restart function locally on the switch saves wiring overlay

Intelligent safety switch system with IO-Link

RFID

PSRswitch

RFID coded, non-contact safety switch

SAC cabling

Easy installation with M12 male connectors and SAC cables

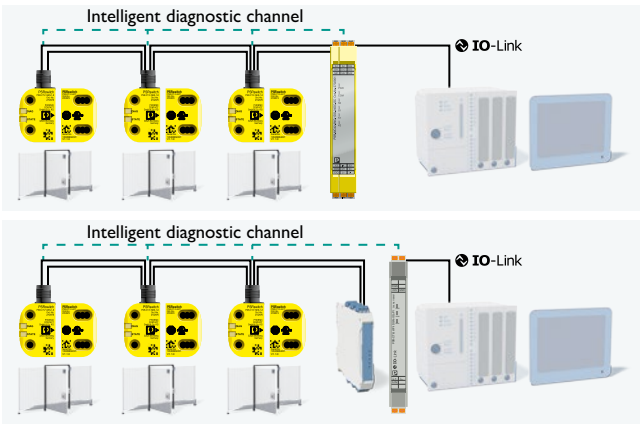
IO-Link

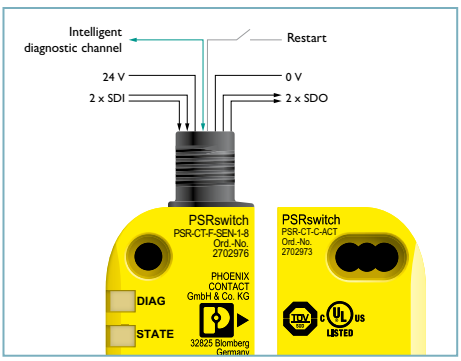
PSRmini

Highly compact safety relay with IO-Link interface

Integrated diagnostic channel

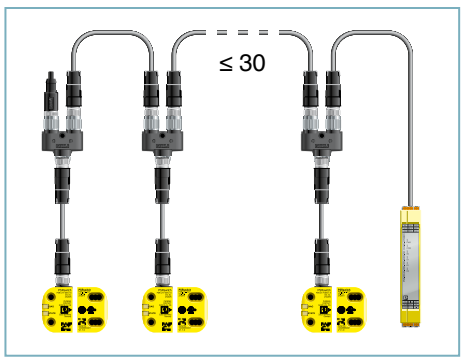
Our safety switch system consists of the PSRmini evaluation unit and the PSRswitch safety switches. The safe series connection is in a two-channel design. Parallel to this, status information from the individual switches is transmitted to the PSRmini PSR-MC42 safety relay via the integrated diagnostics channel. Regardless of the safety concept, the non-safety-relevant diagnostic data of the PSRswitch is transmitted to the controller via the intelligent diagnostics channel and an IO-Link gateway. The data can be evaluated centrally there.





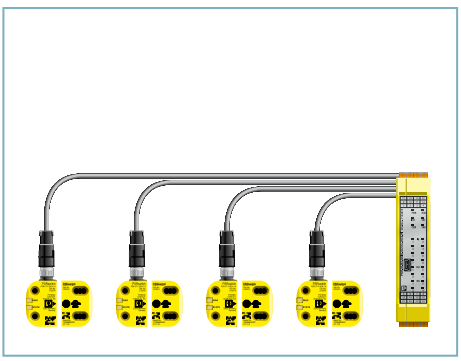
Smart sensor

The sensor has the properties of a safety relay. LEDs constantly display the current state of the sensor.



Series connection up to PL e

Up to 30 safety switches can be connected in series safely with PL e in accordance with EN ISO 13849.



Safe individual wiring

You can wire the safety switches individually. PSRmodular and safe I/Os are also suitable evaluation units.

Emergency stop switches

With our TÜV-certified emergency stop switches, you can immediately put your machine or system in a safe state if there is an emergency. Our control devices with emergency stop function or emergency switching off function are suitable for applications in accordance with EN ISO 13850 and EN 60204-1.

Choose our ready-to-use solutions for your standard application. Create the ideal emergency stop solution to satisfy your requirements.

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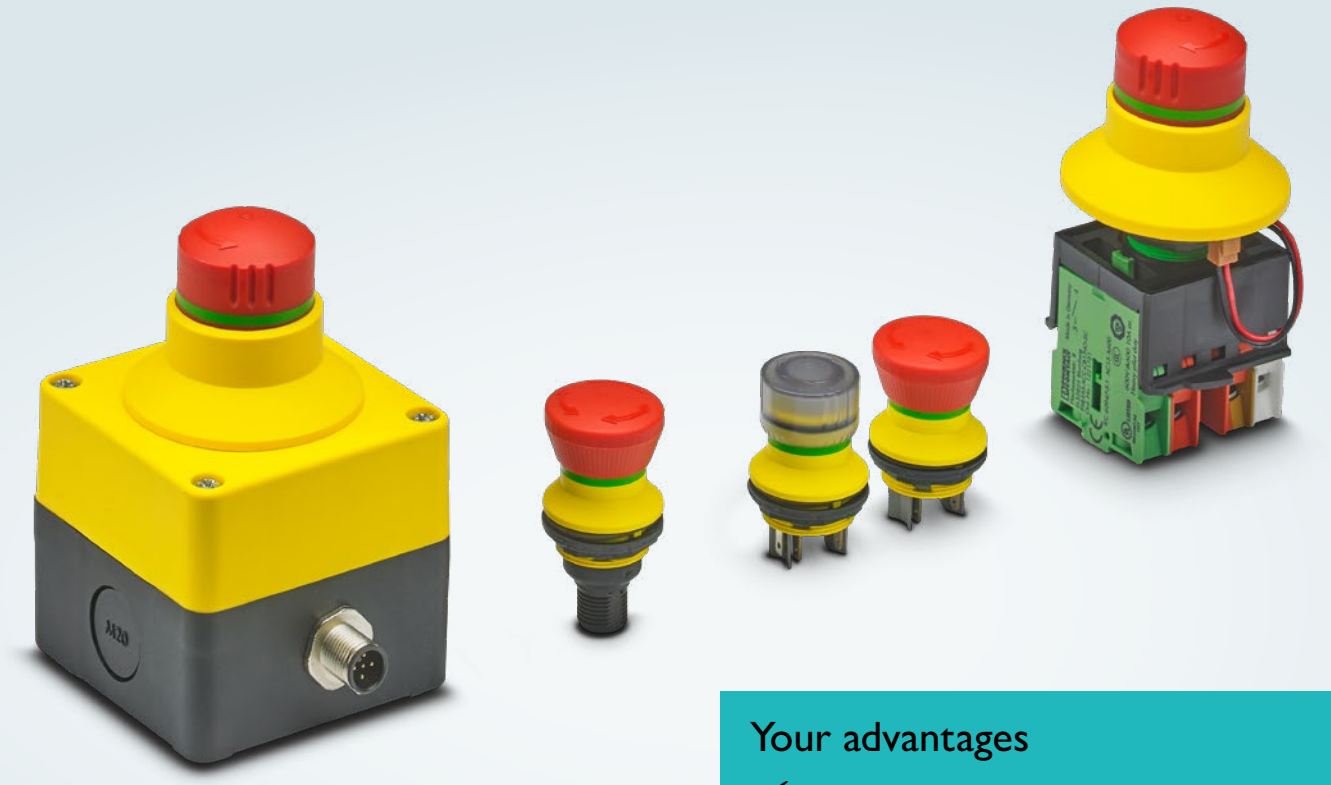


Your advantages

- Increased occupational safety with the illuminated active/inactive status indicator
- Rapid on-site diagnostics with color-coded switching position indicator
- Protection against installation errors with self-monitoring emergency stop contact module

Emergency stop switches for every application

Ready-to-use solutions for your standard application

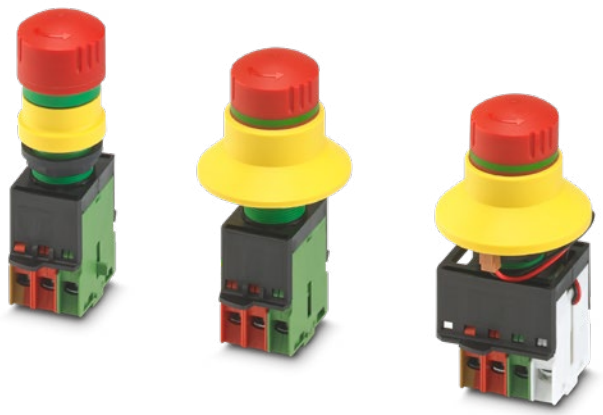
Create your emergency stop equipment quickly and easily by using our preassembled switches.

Our portfolios enable quick and easy installation, whatever the demand: Install the solution directly in the field, in the operator panel, or in the machine control cabinet. As an option, our emergency stop button is available with a 5-pos. M12 connector, enabling plug-and-play installation.

Modular system for customer-specific applications

Our modular emergency stop control devices enable efficient safety solutions tailored to your requirements.

Combine actuators, module holders, and contact modules to meet your needs. Upon request, integrate additional functions such as illuminated anti-lock collars, for a particularly high level of safety.



Increased occupational safety

Illuminated emergency stop switches identify active machine parts in accordance with EN ISO 13850 and provide additional safety.

Rapid on-site diagnostics

All emergency stop control devices are equipped with a colored switching position indicator for time-saving on-site diagnostics.

Protection against installation errors

Self-monitoring emergency stop contact modules automatically switch your machine to a safe state in the event of errors or damage.

Safety relays

With the PSRmini and PSRclassic safety relays from Phoenix Contact, you can implement all safety functions for applications where the motto is one function, one device. The safety relays are compatible with many signal generators such as emergency stop devices, safety door switches, and light grids. The modules are available in various sizes, with multiple connection technologies and a wide range input.

Web code: #1944

Relay Technology

Designed by Phoenix Contact

Your advantages

- Space savings of up to 70% with the compact design
- Relay technology developed in-house features proven safety with force-guided relay contacts
- High level of scalability, starting at just one enable contact
- Compatibility with many safety signal generators

Safety relays for machine building

Highly compact PSRmini safety relays

PSRmini safety relays are the smallest on the market. With overall widths of just 6 and 12 mm, we provide proven safety with our in-house developed relay technology featuring force-guided contacts.
The innovative DIP switch concept enables you to make selected settings directly on the module. In addition, the needs-based structure starting from an enabling path ensures increased flexibility in your application – without performance restrictions.

Main features
- Overall width 6 mm and 12 mm
- Proven safety with force-guided relay contacts
- TÜV certified
- Approvals for all global markets
- PL e in accordance with ISO 13849 and SIL 3 in accordance with EN IEC 62061
- High level of scalability, starting at just one enabling path

PSRclassic conventional safety relays

The PSRclassic safety relays have a long proven track record. With two-channel wiring and force-guided contacts, they reliably switch functions such as two-hand controls and light grids.
Screw or spring connection technology and status LEDs ensure fast wiring of contacts and easy diagnostics.

Main features
- Overall width from 17.5 mm
- Large selection of versions
- Proven safety with force-guided relay contacts
- TÜV certified
- Approvals for all global markets
- PL e in accordance with ISO 13849 and SIL 3 in accordance with EN IEC 62061

Modular safety relay system

Design your safety system exactly as required. Our modular safety relays can be extended easily and flexibly based on the modular principle. The PSR-TBUS DIN rail connector combines the master safety relay with up to ten extension modules directly on the DIN rail. This eliminates the need for the usual cross-wiring and configuration.

Main features
- Overall width of 22.5 mm
- Can be extended to up to 42 contacts
- Proven safety with force-guided relay contacts
- TÜV certified
- Approvals for all global markets
- PL e in accordance with ISO 13849 and SIL 3 in accordance with EN IEC 62061

Safe coupling relays

The safe coupling relays with force-guided contacts are SIL-certified and are used for electrical isolation and power amplification. Choose between PSRclassic, the market-standard version, and the highly compact PSRmini coupling relays. The latter, with overall widths of 6 and 12 mm, are the narrowest coupling relays on the market. Both product families include coupling relays for emergency shutdown and fire and gas applications that are compatible with various safety systems.

Web code: #1945

Relay Technology

Designed by Phoenix Contact

Your advantages

- Space savings of up to 70% with the compact design
- Relay technology developed in-house features proven safety with force-guided relay contacts
- High level of scalability, starting at just one enable contact
- Innovative diagnostics technologies reduce the time needed for the normatively-specified proof test to a minimum

Safe coupling relays for the process industry

PSRmini highly compact safe coupling relays

With the relay technology developed in-house, the PSRmini coupling relays are the narrowest in the world for safe startup and shutdown.
The force-guided contacts enable quick and easy diagnostics. The visual LED diagnostics enable SIL 3-qualified control directly on the module. Furthermore, active error feedback to the controller ensures short downtimes during planned maintenance phases.

Main features
- Overall width 6 mm and 12 mm
- Safe diagnostics and easy proof test in accordance with IEC 61508
- Proven safety with force-guided relay contacts
- TÜV certified
- Approvals for all global markets
- SIL 3 in accordance with IEC 61508 / IEC 61511 / EN 50156

PSRclassic conventional safe coupling relays

In the PSRclassic series, you will find conventional coupling relays with force-guided contacts for safe shut down.
The conventional coupling relays are characterized by a wide range of features and versions. They are compatible with the common safe systems.
With a housing width starting from 17.5 mm, they are in accordance with the market-standard housing dimensions.

Main features
- Overall width from 17.5 mm
- Proven safety with force-guided relay contacts
- Safe diagnostics and easy proof test in accordance with IEC 61508
- Approvals for all global markets
- SIL 3 in accordance with IE 61508 / IEC 61511 / EN 50156

Flexible I/O marshalling system

Smart I/Os, in other words, I/O modules, gives users entirely new possibilities in the process industry, both for new systems and for retrofitting.
The flexible I/O marshalling system from Phoenix Contact helps make Universal I/O truly “universal” on the interface and marshalling level. The system comprises a combination of a standardized basic module and replaceable input-output accessories (IOAs) with various electrical functions.

Main features
- Flexible channel configuration for special functions with replaceable IOAs
- Easy handling and quick replacement of plug-in IOAs
- Error-free wiring with special codings
- Reliable signal protection with integrated shielding in the base element
- SIL 3 in accordance with IEC 61508

Over-speed and zero-speed safety relays

Excessive speeds pose a danger to people and machinery. The compact PSRmotion over-speed and zero-speed safety relays shut down rotating machine parts safely if there is an emergency. The sensor-free PSR-MM35 over-speed safety relay reliably monitors speeds and thus protects against dangerous motion. Connected to a safety door device, the PSR-MM25 sensor-free zero-speed safety relay ensures locking until the dangerous motion comes to a standstill. The PSR-MM30 combined over-speed and zero-speed safety relay combines all functions for safe motion monitoring in one device.

Web code: #1546

Relay Technology

Designed by Phoenix Contact

Your advantages

- Space savings of up to 75% with the compact design
- Relay technology developed in-house features proven safety with force-guided relay contacts
- Easy configuration via button on the device
- Fast configuration and live monitoring with the PSRmotion software
- Efficient motion monitoring in combination with additional sensor technology or sensor-free technology

Over-speed and zero-speed safety relays for motion monitoring

PSRmotion over-speed and zero-speed safety relays

With the PSR-MM30 combined over-speed and zero-speed safety relay, you can monitor up to three different operating modes in addition to zero-speed mode. The PSR-MM30 ensures high system availability with the reliable measuring procedure. The integrated safety door monitoring function makes it compatible with the PSRswitch contact-free safety switches. The device can be commissioned, configured, and monitored conveniently with the free-of-charge PSRmotion configuration software.

Main features

- Overall width of 22.5 mm
- Compatible with modern safety encoders up to SIL 3
- Up to SIL 3 and PL e
- Startup via USB port
- Force-guided relay outputs
- Configurable signal outputs

PSRmotion
Configuration Software

Sensor-free PSRmotion over-speed safety relay

The safe PSR-MM35 over-speed safety relay monitors speeds without additional sensor technology. Based on the rotary field measurement of the drive, the integrated safety functions STO (Safe Torque Off), SLS (Safely Limited Speed), SSM (Safe Speed Monitor), and SSR (Safe Speed Range) are reliably implemented up to SIL 3 or PL e. At only 12.5 mm, the device has an impressively compact design.

Main features

- Overall width of 12.5 mm
- Safe motion monitoring up to SIL 3/PL e
- Force-guided relay outputs

PSRmotion
Configuration Software

Sensor-free PSRmotion zero-speed safety relay

The highly compact PSR-MM25 safety relay module monitors the downtime of single and three-phase AC and DC motors without additional sensor technology. The residual voltage induced by the motor windings is analyzed in order to detect zero speed.

Main features

- Overall width of 12.5 mm
- Safe zero-speed monitoring through SIL 3/PL e
- Easy startup via configuration button
- Can be used for machines with or without frequency converters
- Force-guided relay outputs
- Two signal outputs

Safe signal conditioners and measuring transducers

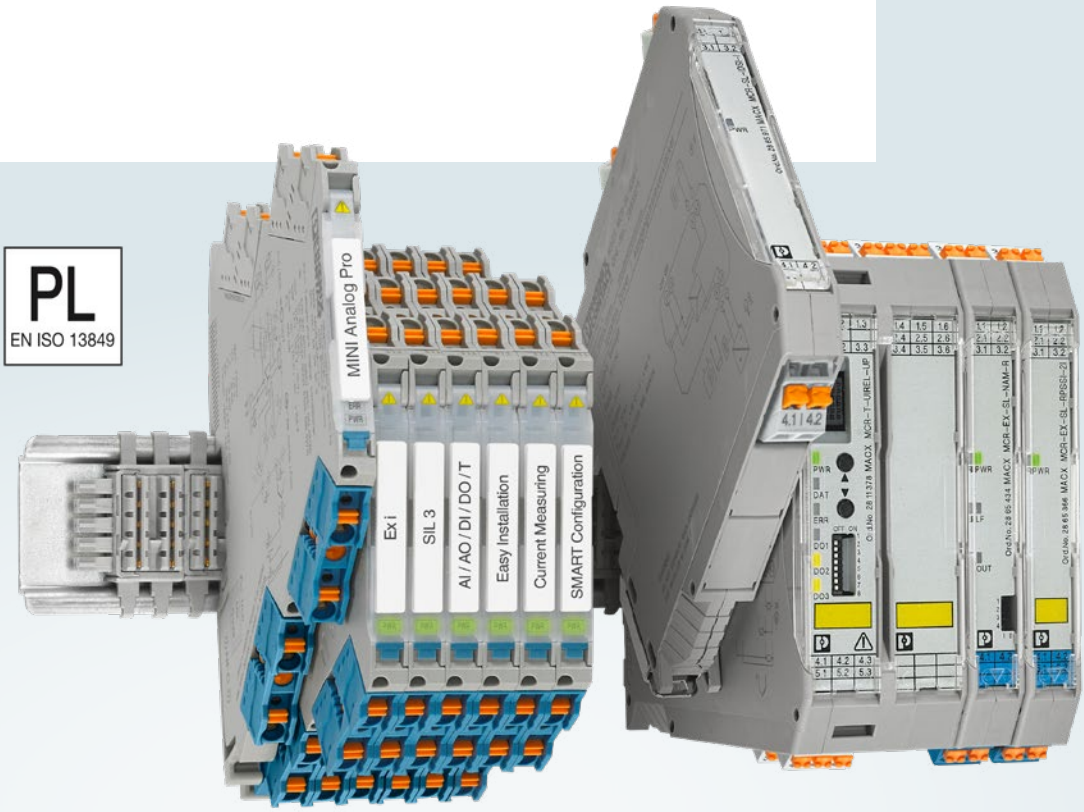
With our signal conditioners and measuring transducers, you can disconnect, convert, filter, and amplify signals and cover any kind of interference-free signal transmission task. Our products, developed consistently for IEC/EN 61508 and PL EN ISO 13849 safety applications, ensure the safety of people, the environment, and the system.
In intrinsically safe circuits, our Ex i signal conditioners and measuring transducers provide you with explosion protection in up to all zones and substance groups.

Web code: #1137

Ex i

SIL IEC 61508

PL EN ISO 13849



Your advantages

- Safe and reliable: international Ex approvals and functional safety in accordance with SIL and PL
- High signal quality with safe electrical isolation and a long service life with low self-heating
- Overall width of just 12.5 mm for single and two-channel standard functions
- Easy 24 V power bridging with group error messaging or wide-range input up to 230 V AC/DC
- Service-friendly connection technology: coded, pluggable terminal blocks

Signal conditioners with functional safety and explosion protection

Functional safety for the process industry and machine building and systems manufacturing

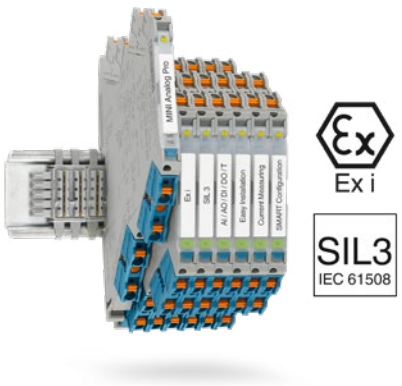
Phoenix Contact implements the requirements of functional safety in accordance with IEC/EN 61508.
The MINI Analog Pro Ex i signal conditioners and measuring transducers have a safety integrity level up to SIL 3 1oo1, the MACX Analog product family up to SIL 2 SC 3 or SIL 3. Selected MACX Analog signal conditioners are also certified in accordance with EN ISO 13849-1 and provide a performance level starting from PL c right up to PL d.

Maximum explosion protection
All signal conditioners and measuring transducers in the MINI Analog Pro and MACX Analog product families are designed for installation in zone 2. Moreover, the Ex i variants are ATEX and IECEx approved. As such, they can be used universally for any Ex zone and all material groups.

Highly compact MINI Analog Pro signal conditioners and measuring transducers

Simple as ever, slim and safe as never before: The highly compact MINI Analog Pro signal conditioners and measuring transducers combine intrinsically safe explosion protection and functional safety up to SIL 3 1oo1 in an overall width of just 6.2 mm. In your application, benefit from the particularly user-friendly design and operating concept, the wide range of configuration options, and end-to-end digitalization.

Main features
- Ex i and SIL 3 in a uniquely compact design
- A safe solution up to SIL 3 1oo1 for every signal type and direction
- Plug-in connection terminal blocks with disconnect function
- User-friendly design and operating concept as well as versatile configuration options
- Pluggable communication gateways and other digital services and features



MACX Analog signal conditioners and measuring transducers

The MACX Analog signal conditioners and measuring transducers offer you a comprehensive range of solutions for safe and reliable signal conditioning. The products, developed consistently for IEC/EN 61508 and PL EN ISO 13849 safety applications, ensure the safety of people, the environment, and the system. In intrinsically safe circuits, the Ex i versions provide you with explosion protection in up to all zones and substance groups.

Main features
- Broad international Ex approval package, including mining and marine approvals
- For all safety-related applications through SIL 2 SC 3 or SIL 3
- Versions with Performance Level certification in accordance with EN ISO 13849
- Overall width of just 12.5 mm for single and two-channel products with standard functions
- Flexible supply: modular 24 V power bridging with group error messaging or wide range input up to 230 V AC/DC

Safe motor starters

The safe CONTACTRON hybrid motor starters combine up to four functions in one device: emergency stop, motor start, reversing function, and motor protection against overload. In addition to standard devices for parallel wiring, network-capable versions are also available that can be integrated into fieldbus environments.

The CONTACTRON Speed Starter, with intuitive operation, is the new device class between motor starters and complex frequency converters. This compact solution provides functions for different speeds, soft start, and safe stopping with the Safe Torque Off (STO) function.

Web code: #0568, #2820

Your advantages

- Less space required with the narrow design
- Cost-effective solution for different speeds and soft start
- Service life up to 10 times longer with CONTACTRON hybrid motor starter technology
- Adjustable motor protection with bimetal function
- Safe shutdown with the integrated safety function up to SIL 3 and PL e

Easy, safe, and efficient

Hybrid motor starters: stand-alone

Hybrid motor starter – standard
Switch motors safely and reliably with the compact hybrid motor starters. Use the devices wherever three-phase asynchronous motors from 50 W to 3 kW need to be reversed and protected. Our product range of hybrid motor starters consists of direct and reversing starters that are available with various functions such as emergency stop and motor protection.

Hybrid motor starters – modular
CONTACTRON pro is the new version from the CONTACTRON family, offering simple safety integration and modular extension options. Everything on the basis of hybrid technology – for an increased level of simplicity in functional safety, high system availability, and easy handling.

Hybrid motor starters: network-capable

Integration into fieldbus systems is realized via the interface system connection. Corresponding gateways are available for all common fieldbus systems. Transfer your process data easily and network your devices within the framework of digitalization and Industry 4.0 quickly, both with the interface system (IFS) and also the available IO-Link versions.

Main features
- Up to 32 devices per gateway possible
- The easy-to-assemble solution for networking, communication, data transmission, and 24 V power supply
- Transfer of status messages to the controller, e.g., overload, underload advance warning, symmetry, etc.
- Safe shutdown possible via enable inputs

Speed starters

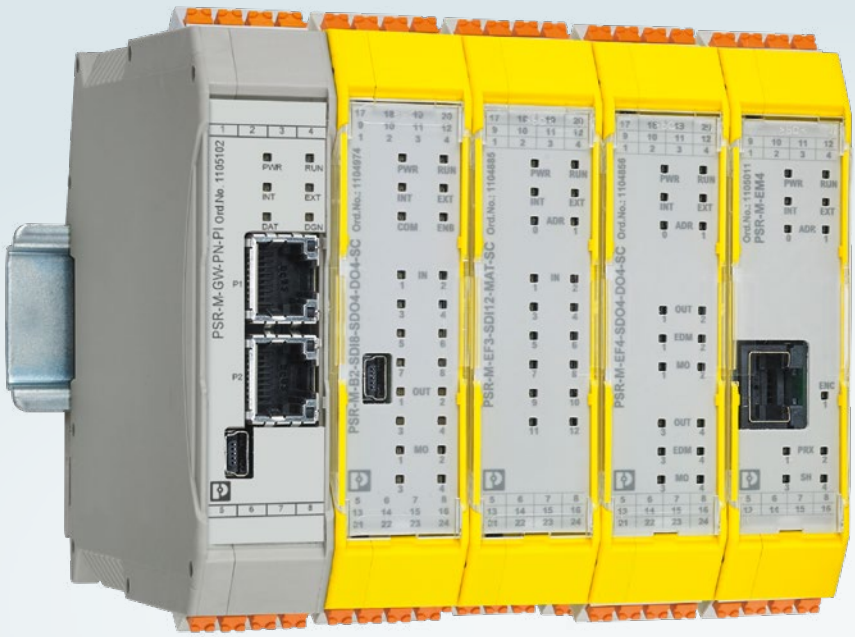
The CONTACTRON Speed Starters are available in a wide range of versions: performance classes between 0.25 and 1.5 kW, with and without EMC filter, and with 1- or 3-phase mains input. Select the appropriate product for your application.

Main features
- Variable speed
- Ramp function
- Analog input
- Safe Torque Off function
- Intuitive operating concept

Configurable safety systems

With configurable safety systems from Phoenix Contact, you can adapt your safety technology so it is tailored to your needs. Use our high-performance basic modules as a stand-alone solution. Or extend the system flexibly with extension modules including motion and analog value data monitoring. Our configurable safety systems combine functionality and flexibility. At the same time, they close the gap between simple safety relays and programmable safety controllers.

Web code: #1257

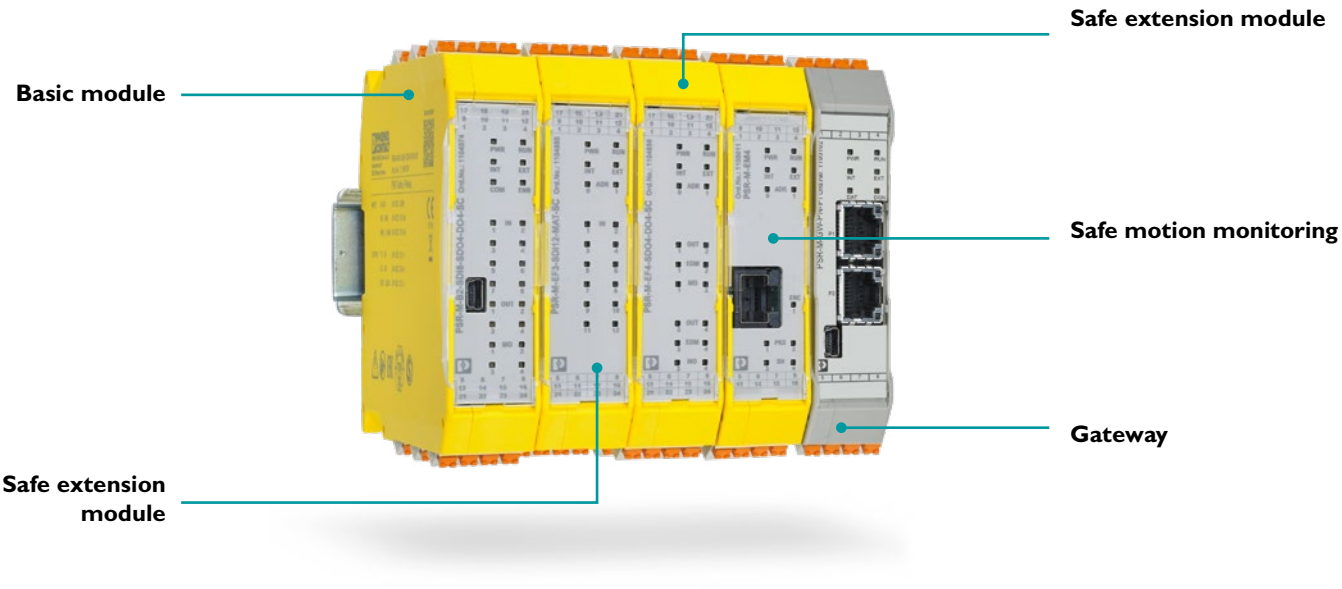


CANopen
EtherCAT
PROFINET
PROFIBUS
CC-Link
DeviceNet
Modbus
EtherNet/IP

Your advantages

- Cost-effective safety solution with a high level of adaptability to individual requirements
- Fast startup with easy hardware and software configuration
- Minimized machine downtimes with comprehensive, easy-to-understand diagnostics

Configurable safety system for your specific application

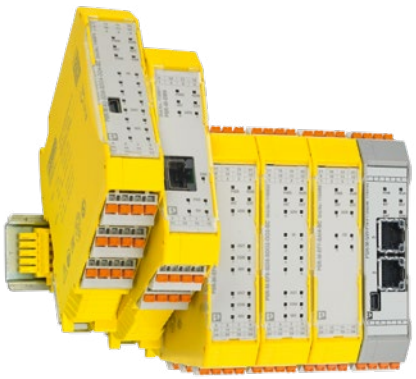


PSRmodular safety system

PSRmodular is a flexible safety solution for monitoring your machine or system. In addition to monitoring classic safety functions such as emergency stop signals, safety door interlocks, light grids, and safety mats, you can also realize safety functions such as speed, zero-speed, direction of rotation, and safe analog value monitoring.

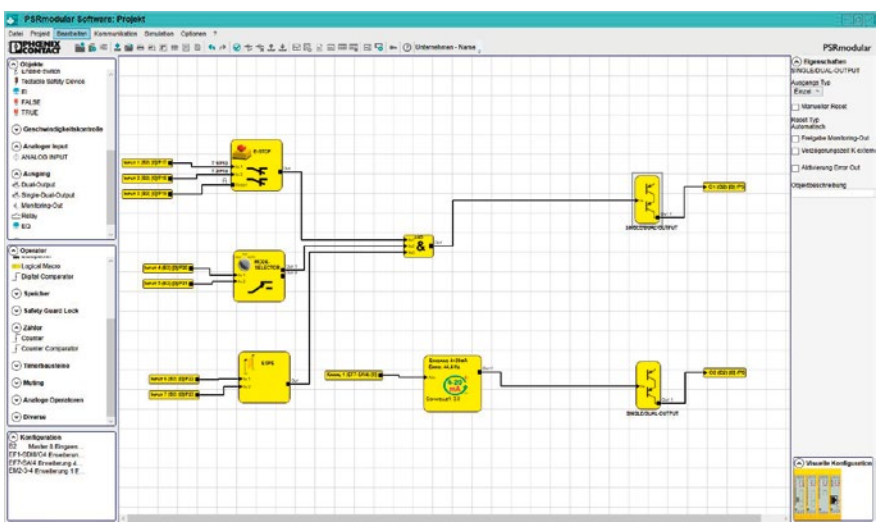
Main features

- Modular extension possible up to 160 I/Os
- Applications up to PL e or SIL 3
- TÜV certified
- Overall width of 22.5 mm
- COMPLETE line standard
- A wide range of extension modules
- XC product versions for use under extreme conditions
- Push-in Technology
- TBUS DIN rail connectors



Comprehensive diagnostic functions that can be configured easily

PSRmodular gives you comprehensive function and diagnostic options and can easily be configured without prior programming knowledge. Use our configuration software comprised of preconfigured and TÜV-certified software blocks. Design your safety system easily by drag and drop. A detailed simulation and a reporting function are available for validation.



PSRmodular
Configuration Software

Safe I/Os

With our I/O systems, integrate functional safety easily and reliably into your favored network, whether in the control cabinet or in the field. Use our safe PROFIsafe I/O modules as normal in combination with your safety controller in a PROFINET or PROFIBUS environment. As an alternative, SafetyBridge Technology enables you to realize simple and network-independent decentral safety solutions, without the need for a safety controller.

Web code: #1544

PROFIsafe

Safety over EtherCAT

SafetyBridge Technology

Designed by Phoenix Contact

EtherCAT

EtherNet/IP

sercos the automation bus

Modbus

PROFINET

PROFIBUS

Your advantages

- Easy integration into all common networks through PROFIsafe or SafetyBridge communication
- Realization of efficient safety solutions without additional safety controllers due to SafetyBridge Technology
- Maximum system availability with real-time access to safety-related status and diagnostic information

Safe I/Os for the control cabinet and field installation

Safe I/Os for the control cabinet: Axioline

Axioline F
Axioline F is the I/O system with a block-based modular design. With its particularly short response times, Axioline F is ideal for fast and synchronous processes. The safe SafetyBridge I/O modules provide the ability to realize safe, decentral communications solutions without a safe PLC. In PROFIBUS and PROFINET networks, the PROFIsafe modules are used to acquire and output safety-related signals.

Axioline Smart Elements
Axioline Smart Elements are compact, plug-in, system-independent I/O elements. Combine safe input and output modules, plus non-safe Smart Elements on a single backplane to save a great deal of space. Satisfy the highest safety requirements up to PL e and SIL 3 with our TÜV-certified and PROFIsafe-enabled I/O modules.

Safe I/Os for the control cabinet: Inline

Inline offers not only an especially large selection of function terminals, but also allows you to use a tailor-made number of channels on modules and has a branch terminal to support local bus extension to the field. You can therefore create your own individual I/O solution.

Main features
- Maximum flexibility with a large selection of I/O terminals, function terminals, bus couplers, and controllers
- Narrow overall width and tailored number of terminal channels save space in the control cabinet
- Local bus extension into the field without an additional bus coupler thanks to the branch terminal

Safe I/Os for field installation

Our safe Axioline E I/O modules are designed for signal processing outside the control cabinet. The extension of the IO-Link technology enables consistent communication from the control level right through to the connection of safety-related sensors and actuators. With IO-Link Safety, you will benefit from the IO-Link advantages you have become accustomed too in the field of functional safety as well, including universal use, data accuracy, and data availability. This enables you to introduce new, manufacturer-independent machine and system concepts.

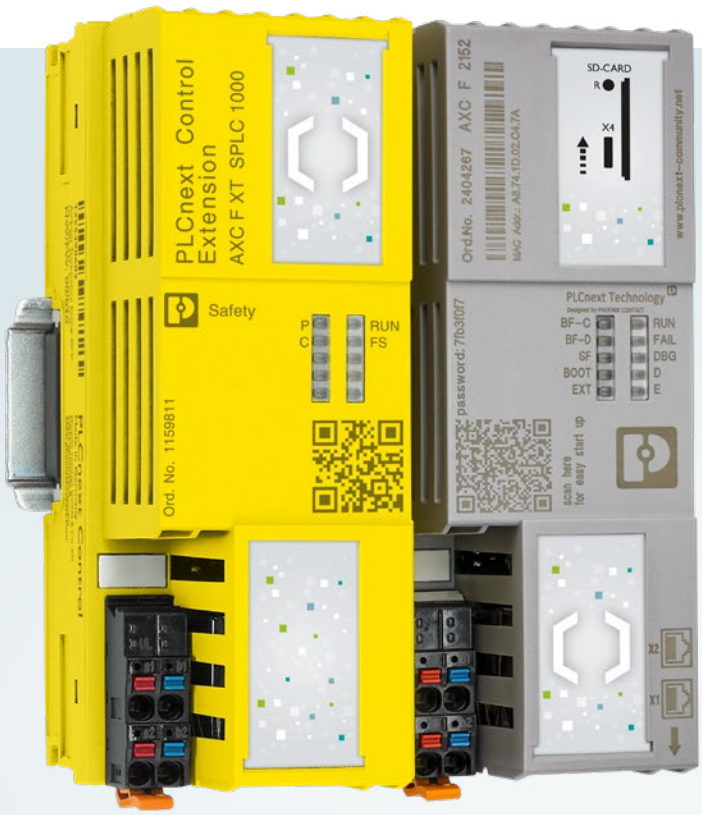
Main features
- IO-Link Safety master for PROFINET/ PROFIsafe communication
- IO-Link Safety device for integrating safe sensors and actuators into IO-Link Safety systems
- Simple connection with the M12 connection technology
- Flexible use with multifunctional ports

IO-Link safety

Safe control technology

Realize your automation applications up to SIL 3 with our high-performance PROFIsafe controllers. Use our safe extension module for your standard PLCnext Control. Or select our high-performance controller for high demands on safety and availability.

Web code: #1543



PROFIsafe

PROFINET

PLCnext Technology

Designed by Phoenix Contact

Your advantages

- Integration of PLCnext Technology
- Standard and safety programming with PLCnext Engineer
- Realization of the highest safety requirements in accordance with SIL 3 or PL e
- Connection to Proficloud and use of apps from the PLCnext Store
- Integration into the modular Axioline system with the PLC extension module

Safe control technology for complex systems

Modular PROFIsafe extension

Take advantage of the individual extension option for the compatible, modular PLCnext Control. With its left-alignable functionality, the PLCnext Control can be extended with a safety-related SPLC for PROFIsafe networks. This transforms the PLC into a fully-fledged safety controller up to SIL 3/PL e that communicates as an F-host via PROFIsafe. At the same time, it can be operated under a superordinate PROFIsafe controller as an F-device.

Main features

- Support of PROFIsafe profile V2.6.1
- PLC extension module for AXC F 2152 and AXC F 3152
- Direct I/O communication
- Integrated PROFIsafe F-Device
- SPLC 1000 safety CPU:
  1 x Arm® Cortex®-M4, 180 MHz,
  1 x Arm® Cortex®-M4, 100 MHz,
  32 F-Devices
- SPLC 3000 safety CPU:
  1 x Arm® Cortex®-A9, 800 MHz,
  1 x Arm® Cortex®-A8, 600 MHz,
  300 F-Devices

Safe PLCnext Control

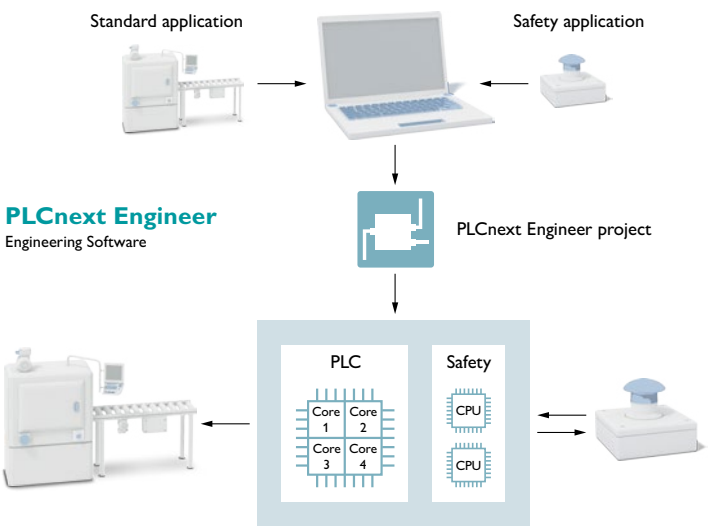
The first PLCnext Control that combines standard and safety-relevant calculations in one device. As a part of the open PLCnext Technology ecosystem, parallel programming based on established software tools is possible. This enables you to combine, for example, functions in accordance with IEC 61131-3 with routines from C/C++, C#, and MATLAB® Simulink® in any way and to merge them into an overall system. You can connect to Proficloud directly and integrate individual cloud services.

Main features

- PROFINET controller and device
- Support of PROFIsafe profile V2.6.1
- Integrated PROFIsafe F-Device
- Safety CPU:
  1 x Arm® Cortex®-A9, 800 MHz,
  1 x Arm® Cortex®-A8, 600 MHz
- Standard CPU:
  Intel® Core™ i5-6300U
  (Dual Core, 2.4 GHz)
- M2M system networking with OPC UA

Safety programming

With PLCnext Engineer, both standard PLC functions and the full range of safety functions can be programmed in just one editor.
The PLC and safety programming are then installed on the PLCnext Control in one project. This automatically unpacks and automates the programs into two parts: the PLC code and the safety code.



Safe power supplies

The high-performance QUINT POWER power supplies ensure superior availability of your system with maximum functionality. QUINT POWER satisfies the requirements in accordance with functional safety (SIL) and ensures maximum operational safety. In parallel operation and connected to different phases, the load is still supplied reliably even when there are problems with the input voltage.

Web code: #1513

Your advantages

- Superior system availability, thanks to SFB Technology and preventive function monitoring
- Safe supply for your application with SIL certification in accordance with IEC 61508 and IEC 61511
- Fully functional monitoring with redundant system

Power supplies with maximum functionality

QUINT POWER for maximum operational safety

The QUINT POWER Plus version satisfies functional safety requirements (SIL 3, HFT = 1 in accordance with IEC 61508 and IEC 61511). They can therefore be used in safety-related applications.

The TÜV-certified double OVP (overvoltage protection) switches the output off in the event of an error in order to protect the load against overvoltage.

With an integrated decoupling MOSFET, this power supply is suitable for 1+1 and n+1 redundancy and increases system availability.

The protective coating and ATEX, IECEx, and HazLoc approvals enables it to also be used within potentially explosive areas.

The solution is completed an approved temperature range of -40°C to +75°C.

Main features

- Strongest output side with static boost, dynamic boost, and SFB Technology
- Exceptionally robust input side with integrated gas discharge tube
- Comprehensive signaling with analog, digital, and relay contact
- 1+1- and n+1 redundancy with integrated decoupling MOSFET
- Double OVP with SIL 3 certification in accordance with IEC 61508 and IEC 61511
- Protective coating and ATEX/IECEx approval
- UL ANSI/ISA-12.12.01 Class I, Division 2, Groups A, B, C, D (Hazardous Location)
- Wide temperature range of -40°C to +75°C

SIL IEC 61508

Redundant system for functional safety

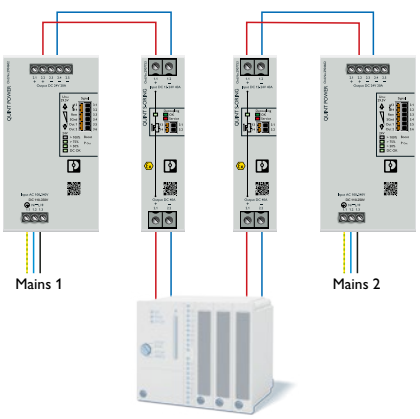
Phoenix Contact gives you two options for designing a safe, redundant power supply system. In both cases, the functional safety requirements are satisfied with a safety integrity level of SIL 3. As such, it is suitable for safety-related applications.

Whether in parallel operation or when connected to different phases, the load is reliably supplied even despite problems with the input voltage. In order to detect errors at an early stage and thus increase system availability, both systems also feature complete, preventive function monitoring.

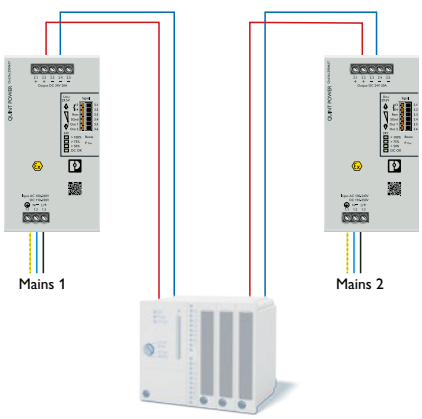
In addition to symmetrical load distribution, the 1+1 redundant power supply system comprising QUINT POWER 20 A and QUINT POWER Single ORING also provides separate cable routing right through to the consumer.

The QUINT POWER Plus version with integrated decoupling MOSFET for 1+1 and n+1 redundancy does not require an additional redundancy module, saving space and installation costs in the control cabinet.

The Plus version is available in 10 A, 20 A, and 40 A versions.



Safe power supply system with QUINT POWER Single ORING



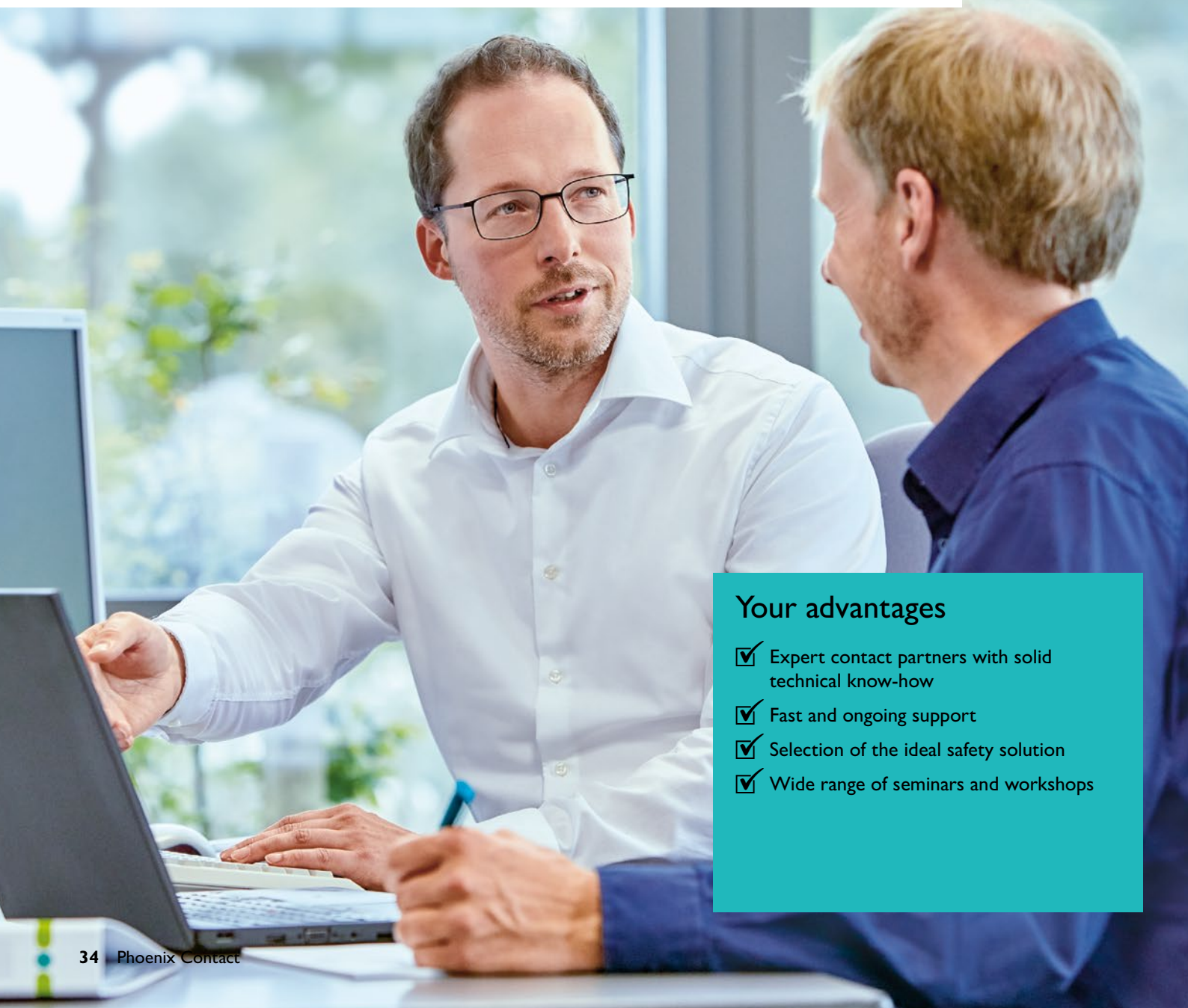
Safe power supply with integrated decoupling MOSFET

Services and support

With our flexible range of services, we support you in all aspects of functional safety. Choose between industry-specific services for machine and system safety or services for safety in the process industry.

Our certified safety experts will be happy to advise you and support you during the necessary work steps and as you create the verification documentation.

Web code: #1075



Your advantages

- Expert contact partners with solid technical know-how
- Fast and ongoing support
- Selection of the ideal safety solution
- Wide range of seminars and workshops

Range of services for machine and system safety

Consulting

We provide advice on various subjects during the planning and implementation of your system:

- Design of the safety lifecycle: standards and their implementation
- Machinery Directive
- Retrofitting machines and systems
- Interlinking machinery

Engineering

To assess safety integrity, we determine the PL or SIL of the safety functions with the help of your technical documentation. This must be sufficiently robust to withstand random errors. In the case of Machinery Directive requirements, we implement the entire safety lifecycle process, from the risk assessment all the way through to the operating instructions.

Product support

We give you support if you have any questions on the safety hardware and software from Phoenix Contact. You can contact our support team about anything, from preliminary technical clarifications, through planning and implementation, right through to full operation.

Seminars

We provide instruction and practical training that is tailored to your individual requirements, e.g.:

Safety application software:

- Requirements on safety-related software
- Specification of safety requirements and software
- Implementation of safety functions
- Development of function blocks

Functional safety in the process industry in accordance with EN 61511:

- Risk analysis
- Safety lifecycle
- Creation of PCE safety functions

Safety requirements in the process industry

Design guidelines relating to functional safety are in place for the requirements on the safe operation of systems in the process industry. The international, harmonized procedure is described in IEC 61511.

A significant component of this is the safety lifecycle in conjunction with functional safety management.

Product overview

Legend for applications, outputs, and safety approvals


Emergency stop


Transponder switch


Safety door switch

Operating modes selector switch


Enabling current path/ N/O contact


Safety door switch, mechanical


Start/restart


Two-hand function


Contactor control


N/C contact


Light grid


Initiators


Muting


Encoder


Changeover contact


Solenoid switch

Extended temperature range


Enable switch


Sensor-free motor monitoring


Off-delayed contact

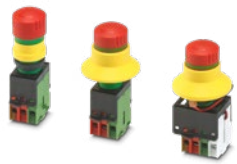

Safety shut-off mats

PSRswitch: non-contact safety switches					
Type	**Description**	**Coding type/function**	**Connection technology**		
			Screw connection	Push-in connection	M12 connection
PSR-CT-F-SEN-1-8	Safety sensor	Fixcode: the sensor accepts a single actuator. This actuator is taught in by the user during commissioning. It is not possible to teach in additional actuators.	–	–	2702976
PSR-CT-C-SEN-1-8		Unicode: the sensor accepts one actuator. The actuator is taught in by the user during commissioning. It is possible to teach in an unlimited number of additional actuators in succession. Previously taught-in actuators are blocked by the sensor. They can no longer be used.	–	–	2702972
PSR-CT-M-SEN-1-8		Multicode: the sensor accepts all actuators. It is not necessary to teach them in during commissioning.	–	–	2702975
PSR-CT-C-ACT	Actuator	Coded, suitable for all sensor coding types	–	–	2702973
PSR-MC42	Safety relay	With integrated IO-Link interface	2702901	2702902	–
PSR-CT-GWY	Gateway	Acquisition of non-safe state and diagnostic data from PSR-CT safety switches and the forwarding of data packets to an IO-Link master.	–	1106407	–
SAC-8PY-M/2XF BK 1-PSR	Y distributor	Type 1 for the series connection of PSR-CT safety switches	–	–	1054338
SAC-8PY-M/2XF BK 2-PSR		Type 2 for manual startup behavior	–	–	1054339
SAC-8PY-M/2XF BK 3-PSR		Type 3 for integrated diagnostics via the signal contact with PSR-CT safety switches	–	–	1054341
SAC-5P-M12MS BK BR 1-2-4	Bridge plug	Dummy plug for every sensor circuit	–	–	1054366

You will find a large selection of SAC cables in our online configurator at phoenixcontact.com:

Web code: #1975

Modular emergency stop system

Actuator	Applications				Safety approvals	Degree of protection	Item no.
	Foolproof	Anti-lock collars	Status indicator	Lighting	In conjunction with suitable evaluation device		
PSR-ESS-M0-H100	●	–	●	–	–	IP65 / IP67 / IP69K	1221758
PSR-ESS-M0-H110	●	●	●	–	–	IP65 / IP67 / IP69K	1221757
PSR-ESS-M0-H120	●	●	●	●	–	IP65 / IP67 / IP69K	1221753

Contact modules and accessories	Applications				Safety approvals	Degree of protection	Item no.
			Number of positive openers	Lighting	In conjunction with suitable evaluation device		
PSR-ESS-ACC-CB1-NC-SC	–	●	1	–	PL e	IP20	1221752
PSR-ESS-ACC-CB1-NC-EF-SC	–	●	1	–	PL e	IP20	1396559
PSR-ESS-ACC-CB1-NO-SC	●	–	–	–	–	IP20	1221751
PSR-ESS-ACC-CB1-SM-SC	●	●	1	–	–	IP20	1221749
PSR-ESS-ACC-CB1-I-SC	–	–	–	●	–	IP20	1221748
PSR-ESS-ACC-CB1-C3	–	–	–	–	–	IP20	1221747
PSR-ESS-ACC-CB1-C5	–	–	–	–	–	IP20	1221745

Preconfigured emergency stop switches

Type	Applications					Safety approvals	Degree of protection	Item no.
	Foolproof	Number of positive openers	Connection	Status indicator	Lighting	In conjunction with suitable evaluation device		
PSR-ESS-M0-H200-2000-C	●	2	FT	●	–	PL e	IP65 / IP67	1221740
PSR-ESS-M0-H220-2001-C	●	2	FT	●	●	PL e	IP65 / IP67	1221739
PSR-ESS-M0-H210-2000-A	●	2	M12	●	–	PL e	IP65 / IP67	1221737
PSR-ESS-M2-H110-2000-A	●	2	M12	●	–	PL e	IP65	1221735

Product overview

PSRmini: highly compact safety relays for machine building																		
Type	**Applications**								**Output contacts**				**Safety approvals**		**Over-all width**	**Connection technology**		
													PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061	In mm	Screw connection	Push-in connection	
PSR-MS20[1] 24 V DC	●	●	–	●	–	–	–	A	1	–	–	1	c[4]	1[4]	6.8	2904950	–	
PSR-MS21 24 V DC	Coupling module for safe controllers						–	A	1	–	–	1	e	3	6.8	2702192	–	
PSR-MS25[1] 24 V DC	●	●	–	●	–	–	–	M	1	–	–	1	c[4]	1[4]	6.8	2904951	–	
PSR-MS30 24 V DC	●	●	–	●	–	●	–	A	1	–	–	–	e	3	6.8	2904952	–	
PSR-MS35 24 V DC	●	●	–	●	–	●	–	M	1	–	–	–	e	3	6.8	2904953	–	
PSR-MS40[3] 24 V DC	●	●	–	–	–	●	–	A	1	–	–	1	e	3	6.8	2904954	–	
PSR-MS45[3] 24 V DC	●	●	–	–	–	●	–	M	1	–	–	1	e	3	6.8	2904955	–	
PSR-MS50[2] 24 V DC	●	●	–	●	–	–	–	A	1	–	–	1	e	3	6.8	2904956	–	
PSR-MS55[2] 24 V DC	●	●	–	●	–	–	–	M	1	–	–	1	e	3	6.8	2904957	–	
PSR-MS60[3] 24 V DC	●	●	●	●	–	●[10]	–	A	2	–	–	–	e	3	6.8	2904958	–	
PSR-MC20[1] 24 V DC	●	●	–	●	–	–	–	A/M	3	–	–	1	c[4]	1[4]	12.5	2700466	2700467	
PSR-MC30 24 V DC	●	●	–	●	–	●	–	A/M	2	–	–	1	e	3	12.5	2700498	2700499	
PSR-MC31 24 V DC	●	●	●	●	–	●	●	A/M	2 (pnp)	–	–	1	e	3	12.5	1015520	1015503	
PSR-MC32 24 … 230 V DC	●	●	●	●	–	●[10]	–	A/M	3	–	1	–	e	3	22.5	2700524	2700525	

[1] Single-channel sensor circuit [2] Antivalent sensor circuit [3] Without cross-circuit detection [4] Up to PL e/SIL 3 possible depending on the application
[5] EN-81 approval [6] In conjunction with suitable evaluation device [7] Non-delayed contacts: Cat. 4/PL e, SIL 3, off-delayed contacts: Cat. 3/PL d, SIL 2
[8] Type IIIA in accordance EN ISO 13851 [9] Type IIIC in accordance with EN ISO 13851 [10] Also compatible with PSRswitch [11] IO-Link device [12] Safety relay for CONTACTRON pro
A = autostart, M = manual, monitored start

PSRmini: highly compact safety relays for machine building

Type	Applications								Output contacts				Safety approvals		Over-all width	Connection technology	
													PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061	In mm	Screw connection	Push-in connection
PSR-MC34 24 V DC	●	●	–	●	–	●	–	A/M	3	–	–	1	e	3	12.5	2700540	2700548
PSR-MC35-Exi 24 V DC	●	●	–	●	–	–	–	A/M	2	–	–	1	e	3	17.5	1332276	1332281
PSR-MC37[5] 24 V DC	●	●	–	●	–	–	–	A	3	–	1	1	e	3	22.5	2702411	2702412
PSR-MC38[12] 24 V DC	●	●	●	●	–	●[10]	–	A/M	2	–	–	1	e	3	22.5	1009831	1009832
PSR-MC40[3] 24 V DC	●	●	●	●	–	●[10]	–	A/M	3	–	–	1	e	3	12.5	2700569	2700570
PSR-MC42[11] 24 V DC	●	●	●	●	–	●[10]	–	A/M	2	–	–	1	e	3	17.5	2702801	2702902
PSR-MC43[11] 24 V DC	●	●	●	●	–	●[10]	–	A/M	2 (pnp)	–	–	1	e	3	17.5	1087561	1087569
PSR-MC45 24 V DC	●	●	●	●	–	●	–	A/M	3	–	–	1	e	3	22.5	1082024	1082029
PSR-MC50[2] 24 V DC	●	●	–	●	–	–	–	A/M	3	–	–	1	e	3	12.5	2700553	2700564
PSR-MC70 24 V DC	●	●	●	●	–	●[10]	–	A/M	1	1	–	1	c[4]	1[4]	12.5	2702094	2702095
PSR-MC72 24 V DC	●	●	●	●	–	●[10]	–	A/M	1	1	–	1	e	3	12.5	2702096	2702097
PSR-MC73 24 V DC	●	●	●	●	–	●[10]	–	A/M	3	2	–	1	e	2	22.5	1015533	1015526
PSR-MC82 24 V DC	Contact extension						–	–	5	–	1	1	e[6]	3[6]	17.5	2702382	2702383

[1] Single-channel sensor circuit [2] Antivalent sensor circuit [3] Without cross-circuit detection [4] Up to PL e/SIL 3 possible depending on the application
[5] EN-81 approval [6] In conjunction with suitable evaluation device [7] Non-delayed contacts: Cat. 4/PL e, SIL 3, off-delayed contacts: Cat. 3/PL d, SIL 2
[8] Type IIIA in accordance EN 574 [9] Type IIIC in accordance with EN 574 [10] Also compatible with PSRswitch [11] IO-Link device [12] Safety relay for CONTACTRON pro
A = autostart, M = manual, monitored start

Product overview

PSRclassic: conventional safety relays for machine building															
Type	**Applications**							**Output contacts**				**Safety approvals**		**Connection technology**	
												PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061	Screw connection	Push-in connection
PSR-ESA2-B 24 V DC	●	●	–	–	–	–	A	4	–	1	–	c[2]	1[2]	2963802	2963954
PSR-ESAM2/3X1-B 230 V AC/DC	●	●	–	–	–	–	A/M	3	–	1	–	c[2]	1[2]	2901430	2901431
PSR-ESAM4/2X1 24 V DC	●	●	–	–	–	–	A/M	2	–	1	–	e	3	2900525	2900526
PSR-ESAM4/8X1 24 V DC	●	●	–	–	–	–	A/M	8	–	1	–	e	3	2963912	2963996
PSR-ESD-30 24 V DC	●	●	●	●	–	●	A/M	2	2	–	–	e	3	2981800	2981813
PSR-ESD-300 24 V DC	●	●	●	–	–	●	A/M	3	2	1	–	e[4]	3[4]	2981428	2981431
PSR-ESL4[1] 24 V DC	●	●	●	–	–	●	A/M	3	–	1	–	e	3	2981059	2981062
PSR-THC4[5] 24 V AC/DC	–	●	–	–	●	–	A	2	–	1	–	e	3	2963721	2963983
PSR-URML4[1] 24 V DC	Contact extension for OSSD signals							3	–	1	–	e	3	2903583	2903584
PSR-URM4 42 ... 230 V AC/DC	Contact extension							4	–	2	–	e[3]	3[3]	2702924	2702925
PSR-URM4 24 V DC	Contact extension							5	–	2	–	e[3]	3[3]	1442021	1442026
PSR-URM4-B 24 V DC	Contact extension							5	–	2	–	e[3]	3[3]	1442344	1442342

[1] Without cross-circuit detection [2] Up to PL e/SIL 3 possible depending on the application [3] In conjunction with suitable evaluation device
[4] Non-delayed contacts: Cat. 4/PL e, SIL 3, off-delayed contacts: Cat. 3/PL d, SIL 2 [5] Type IIIC in accordance with EN 574
A = autostart, M = manual, monitored start

Modular safety relay system

Type	Applications							Output contacts				Safety approvals		Connection technology	
												PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061	Screw connection	Push-in connection
PSR-SDC4 24 V DC	●	●	●	●	–	●	A/M	2	–	–	1	e	3	2981486	2981499
PSR-URM4/B 24 V DC	Contact extension							4	–	2	–	e	3	2981677	2981680
PSR-URD3/3 24 V DC	Contact extension							–	4	2[1)]	–	e	3	2981732	2981745
PSR-URD3/30 24 V DC	Contact extension							–	4	2[1)]	–	e	3	2981512	2981525
PSR-SIM4	IP20 input extension – interface module for up to four safety sensors													2981936	2981949

[1)] Delayed, A = autostart, M = manual, monitored start

Product overview

PSRmini: highly compact, safe coupling relays for the process industry																		
Type	**Applications**	**Output contacts**			**Diagnostics/ proof test**				**Safety approvals**					**Over-all width**	**Connection technology**	
	Highly compact, safe coupling relays for failsafe controllers:				Visual via LED	Active error feedback via A1[2]	Measurement on the device	Self-monitoring with interlocking	SIL in accordance with IEC 61508 / 61511	SIL in accordance with IEC 50156	ATEX / IECEx / Class I Zone 2	G3 in accordance with ANSI / ISA-S71.04	DNV	In mm	Screw connection	Push-in connection
PSR-PS20 24 V DC	For safety-related switch off (ESD)	1	1	1	●	●	●	–	3	3	●	●	●	6.8	2700356	–
PSR-PS21 24 V DC		1	1	1	●	●	●	–	2	2	●	●	●	6.8	2700357	–
PSR-PS22 24 V DC		1	1	–	●	●	●	–	3	3	●	●	●	6.8	2702524	–
PSR-PS23 24 V DC		1	1	–	●	–	●	–	3	3	●	●	●	6.8	2702663	–
PSR-PS40 24 V DC		1	–	1	●	–	–	●	3	3	●	●	●	6.8	2700398	–
PSR-PC20 24 V DC		1	1	1	●	●	●	–	3	3	●	●	●	12.5	2700577	2700578
PSR-PC21 24 V DC		2	2	–	●	–	●	–	3	–	●	●	–	12.5	1086945	1086946
PSR-PC32 24 ... 230 V		2	1	–	●	–	●	–	3	3	●	●	●	17.5	2700581	2700582
PSR-PC40 24 V DC		2	–	1	●	●	–	●	3	3	●	●	●	12.5	2700588	2700589
PSR-PC50 24 V DC	For safety-related Switch on (F&G)	1	–	1	–	●	●	–	3[1]	–	●	–	●	17.5	2904664	2904665
PSR-PC51 24 V DC		1	1	–	–	●	●	–	3	3	●	●	●	17.5	2702522	2702523
PSR-PC52 24 V DC		1	1	–	–	●	●	–	3	3	●	●	●	17.5	1017062	1017064

[1] Low demand mode [2] With suitable controller

PSRclassic: conventional safe coupling relays for the process industry

Type	Applications	Output contacts			Diagnostics/ proof test				Safety approvals					Over-all width	Connection technology	
	Classic, safe coupling relays for failsafe controllers:				Visual via LED	Active error feedback via A1	Measurement on the device	Self-monitoring with interlocking	SIL in accordance with IEC 61508 / 61511	SIL in accordance with IEC 50156	ATEX / IECEx / Class I Zone 2	G3 in accordance with ANSI / ISA-S71.04	DNV	In mm	Screw connection	Push-in connection
PSR-FSP 24 V DC	For safety-related switch off (ESD)	1	1	–	–	–	●	–	3	3	–	–	●	17.5	2981978	2981981
PSR-FSP/2x1 24 V DC		2	1	–	–	–	●	–	3	3	–	–	●	17.5	2986960	2986957
PSR-FSP2/2x1 24 V DC		2	1	–	–	–	●	–	2	2	–	–	●	17.5	2986575	2986588
PSR-ESP4 24 V DC		2	1	–	–	–	–	●	1[1)]	–	–	–	●	22.5	2981020	2981017

[1)] Up to PL e/SIL 3 possible depending on the application

PSRclassic: classic safe coupling relays for universal applications

Type	Applications	Output contacts			Safety approvals		Input voltage	Connection technology			
					PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061		Screw connection	Spring-cage connection	Screw connection, fixed	Push-in connection
PSR-URM	Coupling relays for universal applications	5	2	–	c	1	24 V AC/DC	2963747	2963970	–	–
							120 V AC/DC	2981402	2981415	–	–
PSR-URM/3X1		3	3	–	c	1	24 V AC/DC	2981839	2981842	–	–
PSR-URM/5X1		5	1	–	c	1	24 V AC/DC	2981952	2981965	–	–
PSR-URM/2X21		–	–	2	c	1	24 V AC/DC	–	–	2981363	–
							120 V AC/DC	–	–	2981376	–
PSR-URM/4X1		4	2	–	c	1	24 V AC/DC	–	–	2981444	2981457
PSR-PLC21		–	–	2	c	2	24 V DC	–	–	1480226	1480212

Product overview

PSRmotion: zero-speed and over-speed safety relays

Type	Applications					Output contacts		Safety approvals			Connection technology	
				n=0	$n<n_{max}$			Category in accordance with EN ISO 13849-1	PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061	Screw connection	Push-in connection
PSR-MM25 24 V DC	●	–	–	●	–	1	2	3	e	3	2702355	2702356
PSR-MM30 24 V DC	–	●	●	●	●	2	2	4	e	3	2702357	2702358
PSR-MM35 24 V DC	●	–	–	–	●	1	1	4	e	3	1249515	1249516

PSRmotion: configuration software

Type	Applications	Item no.
PSRmotion	Free configuration software for PSRmotion PSR-MM30 over-speed and zero-speed safety relay and PSR-MM35 sensor-free over-speed safety relay. Download at phoenixcontact.com	–

MACX Analog: safe signal conditioners

Type	Signal direction	Product description	Functional safety		Item no.	
			SIL in accordance with IEC 61508	PL in accordance with EN ISO 13849-1	Ex i in accordance with IEC 60079-11	No Ex i
MACX MCR-SL-I-I-ILP	AI	Input-loop-powered 2-way isolator	3	–	–	2905279
MACX MCR-SL-2I-2I-ILP	AI	Input-loop-powered 2-way isolator, two-channel	3	–	–	2905281
MACX MCR-SL-I-I-HV-ILP	AI	Input-loop-powered 2-way isolator with increased isolating voltage	3	–	–	2907705
MACX MCR-SL-2I-2I-HV-ILP	AI	Input-loop-powered 2-way isolator with increased isolating voltage, two-channel	3	–	–	2907707
MACX MCR(-EX)-SL-UI-REL	AI	Limit value switch, configurable	2 (SC3)	c	2906165	2906170

The item numbers refer to the Push-in versions without pre-configuration.
Other versions of the MACX Analog product family can be found on our website or in the "Signal conditioning and explosion protection" Selection Guide.

MACX Analog: safe signal conditioners

Type	Signal direction	Product description	Functional safety		Item no.	
			SIL in accordance with IEC 61508	PL in accordance with EN ISO 13849-1	Ex i in accordance with IEC 60079-11	No Ex i
MACX MCR Analog						
MACX MCR(-EX)-SL-RPSSI-I	AI	Repeater power supply and input signal conditioner	2 (SC3)	–	2924016	2924207
MACX MCR(-EX)-SL-RPSS-2I-2I	AI	Repeater power supply, two-channel	3	d	2924676	2904090
MACX MCR(-EX)-SL-RPSSI-2I	AI	Repeater power supply and input signal conditioner, signal duplicator	2 (SC3)	d	2924236	2924838
MACX MCR(-EX)-SL-RPSSI-I-UP	AI	Repeater power supply and input signal conditioner with wide-range power supply	2 (SC3)	d	2924029	2924210
MACX MCR-UI-UI[1)]	AI/AO	Universal signal conditioner	2 (SC3)	–	–	2811572
MACX MCR-UI-UI-UP[1)]	AI/AO	Universal signal conditioner with wide-range power supply	2 (SC3)	–	–	2811585
MACX MCR(-EX)-IDS-I-I	AO	Output signal conditioners	2 (SC3)	–	2908062	2908064
MACX MCR(-EX)-IDS-2I-2I	AO	Output signal conditioner, two-channel	2 (SC3)	–	2904931	2908066
MACX MCR(-EX)-SL-NAM-R	DI	NAMUR signal conditioner, relay output (changeover contact)	2 (SC3)	–	2924045	2924252
MACX MCR(-EX)-SL-NAM-2RO	DI	NAMUR signal conditioner, signal duplicator with relay output	2 (SC3)	–	2924061	2924265
MACX MCR(-EX)-SL-2NAM-RO	DI	NAMUR signal conditioner, two-channel, relay output (N/O contact)	2 (SC3)	–	2924087	2924294
MACX MCR(-EX)-SL-2NAM-R-UP	DI	NAMUR signal conditioner, two-channel, wide-range power supply, relay output (changeover contact)	2 (SC3)	–	2924249	2924304
MACX MCR(-EX)-SL-NAM-2T	DI	NAMUR signal conditioner, signal duplicator with transistor output	2 (SC3)	–	2924074	2924278
MACX MCR(-EX)-SL-2NAM-T	DI	NAMUR signal conditioner, two-channel with transistor output	2 (SC3)	–	2924090	2924281
MACX MCR(-EX)-SL-NAM-NAM	DI	NAMUR signal conditioner, NAMUR output	2 (SC3)	–	2924883	–
MACX MCR-EX-SL-SD-21-25-LP	DO	Solenoid driver, current limitation 25 mA, loop-powered	3	–	2924113	–
MACX MCR-EX-SL-SD-21-40-LP	DO	Solenoid driver, current limitation 40 mA, loop-powered	3	–	2924139	–
MACX MCR-EX-SL-SD-24-48-LP	DO	Solenoid driver, current limitation 48 mA, loop-powered	3	–	2924126	–
MACX MCR-EX-SL-SD-21-60-LP	DO	Solenoid driver, current limitation 58 mA, loop-powered	3	–	2924100	–
MACX MCR-EX-SL-SD-21-25-LFD	DO	Solenoid driver, current limitation 25 mA, line fault detection	3	–	2905674	–
MACX MCR-EX-SL-SD-23-48-LFD	DO	Solenoid driver, current limitation 48 mA, line fault detection	3	–	2924867	–
MACX MCR-EX-SL-SD-24-48-LFD	DO	Solenoid driver, current limitation 48 mA, line fault detection	3	–	2906156	–

The item numbers refer to the Push-in versions without pre-configuration.

[1)] Other versions of the MACX Analog product family can be found on our website or in the "Signal conditioning and explosion protection" Selection Guide.

Product overview

MACX Analog: safe signal conditioners						
Type	**Signal direction**	**Product description**	**Functional safety**		**Item no.**	
			SIL in accordance with IEC 61508	PL in accordance with EN ISO 13849-1	Ex i in accordance with IEC 60079-11	No Ex i
MACX MCR(-EX)-RTD-I[1)]	Temp IN	Temperature measuring transducer, resistance thermometer	2	–	1050252	1050201
MACX MCR(-EX)-TC-I[1)]	Temp IN	Temperature measuring transducer, thermocouple	2	–	1050233	1050228
MACX MCR(-EX)-T-UI-UP[1)]	Temp IN	Temperature measuring transducer, universal, with analog output and 1 limit value relay, with wide-range power supply	2	d	2924689	2811860
MACX MCR(-EX)-T-UIREL-UP[1)]	Temp IN	Temperature measuring transducer, universal, with analog output and 3 limit value relays, with wide-range power supply	2	d	2924799	2811828
MACX MCR-EX-AP-RPSS-I-I	AI	Supply and input signal conditioner, feeds 2 or 3-conductor measuring transducers	3	–	1291191	–
MACX MCR-EX-AP-2REL-2DI-LP	DI	Relay module for intrinsically safe control of Ex i field circuits	2	–	1292331	–
MACX MCR-EX-AP-IDS-2I-2I-LP	AO	Output isolating transformer, loop-powered	3	–	1291963	–
MACX MCR-EX-AP-2SD-25-35-LP	DO	Solenoid driver, two-channel, current limitation 35 mA, loop-powered	3	–	1291176	–
MACX MCR-EX-AP-RPSS-I-IR	AI	Supply and input signal conditioner with 2 limit value relays, feeds 2- or 3-conductor measuring transducers	2	–	1290774	–
MINI Analog Pro Ex i						
MINI MCR-EX-SD-16-50-LP	DO	Solenoid driver, current limitation 50 mA, loop-powered	3	–	1157869	–
MINI MCR-EX-SD-20-25-LP	DO	Solenoid driver, current limitation 25 mA, loop-powered	3	–	1157867	–
MINI MCR-EX-SD-21-48-LP	DO	Solenoid driver, current limitation 48 mA, loop-powered	3	–	2908810	–
MINI MCR-EX-SD-23-38-LP	DO	Solenoid driver, current limitation 38 mA, loop-powered	3	–	1277111	–
MINI MCR-EX-SD-21-48-LFD	DO	Solenoid driver, current limitation 48 mA, line fault detection	3	–	1175877	–
MINI MCR-EX-SD-20-25-LFD	DO	Solenoid driver, current limitation 25 mA, line fault detection	3	–	1175891	–
MINI MCR-EX-SD-16-50-LFD	DO	Solenoid driver, current limitation 50 mA, line fault detection	3	–	1175902	–
MINI MCR-EX-SD-23-38-LFD	DO	Solenoid driver, current limitation 38 mA, line fault detection	3	–	1277116	–
MINI MCR-EX-NAM-T	DI	NAMUR signal conditioner with transistor output	3	–	2908807	–
MINI MCR-EX-NAM-2T	DI	NAMUR signal conditioner, signal duplicator with transistor output	3	–	1157852	–
MINI MCR-EX-NAM-RO	DI	NAMUR signal conditioners with solid state relay output	3	–	1157862	–
MINI MCR-EX-RPSS-I-I	AI	Repeater power supplies	3	–	2908803	–
MINI MCR-EX-IDS-I-I	AO	Output signal conditioners	3	–	2908805	–
MINI MCR-EX-T-I	Temp IN	Temperature measuring transducer, universal, with analog output	2 (SC3)	–	2908813	–

The item numbers refer to the Push-in versions without pre-configuration.

[1)] Other versions of the MACX Analog product family can be found on our website or in the "Signal conditioning and explosion protection" Selection Guide.

CONTACTRON: safe motor starters

Type	Functions															Maximum load current				Connection technology	
	Direct starter	Reversing starter	Motor protection	Emergency stop	Modular	Can be networked	Cannot be networked	Short-circuit-proof	>1 cm busbar width	Classic adapter set	Compact adapter set	DIN rail adapter set	Category in accordance with EN ISO 13849-1	PL in accordance with EN ISO 13849-1	SIL in accordance with IEC 61508	0.6 A 24 V DC	2.4 A 24 V DC	3 A 24 V DC	9 A 24 V DC	Screw connection	Push-in connection
ELR H3-IES	●	–	●	●	–	●	–	–	–	–	–	–	3	e	3	●	–	–	–	2905154	2905141
ELR H5-IES	●	●	●	●	–	●	–	–	–	–	–	–	3	e	3	●	–	–	–	2905151	2905138
ELR H3-IES	●	–	●	●	–	●	–	–	–	–	–	–	3	e	3	–	–	●	–	2905155	2905142
ELR H5-IES	●	●	●	●	–	●	–	–	–	–	–	–	3	e	3	–	–	●	–	2905152	2905139
ELR H3-IES	●	–	●	●	–	●	–	–	–	–	–	–	3	e	3	–	–	–	●	2905156	2905143
ELR H5-IES	●	●	●	●	–	●	–	–	–	–	–	–	3	e	3	–	–	–	●	2905153	2905140
ELR H3-IS	●	–	●	●	●	–	●	–	–	–	–	–	3	e	3	–	–	●	–	2908700	2909570
ELR H5-IS	●	●	●	●	●	–	●	–	–	–	–	–	3	e	3	–	–	●	–	2908699	2909569
ELR H3-IS	●	–	●	●	●	–	●	–	–	–	–	–	3	e	3	–	–	–	●	2908698	2909568
ELR H5-IS	●	●	●	●	●	–	●	–	–	–	–	–	3	e	3	–	–	–	●	2908697	2909567
ELR H3-IES	●	–	●	●	–	–	●	–	–	–	–	–	3	e	3	●	–	–	–	2900566	2903914
ELR H5-IES	●	●	●	●	–	–	●	–	–	–	–	–	3	e	3	●	–	–	–	2900582	2903902
ELR H3-IES	●	–	●	●	–	–	●	–	–	–	–	–	3	e	3	–	●	–	–	2900567	2903916
ELR H5-IES	●	●	●	●	–	–	●	–	–	–	–	–	3	e	3	–	●	–	–	2900414	2903904
ELR H3-IES	●	–	●	●	–	–	●	–	–	–	–	–	3	e	3	–	–	–	●	2900569	2903918
ELR H5-IES	●	●	●	●	–	–	●	–	–	–	–	–	3	e	3	–	–	–	●	2900421	2903906
ELR-H51	●	●	●	●	–	–	●	●	●	●	–	–	3	e	3	●	–	–	–	2904334	–
ELR-H51	●	●	●	●	–	–	●	●	●	●	–	–	3	e	3	–	●	–	–	2904336	–
ELR-H51	●	●	●	●	–	–	●	●	●	●	–	–	3	e	3	–	–	–	●	2904338	–
ELR-H51	●	●	●	●	–	–	●	●	●	–	●	–	3	e	3	●	–	–	–	2904333	–
ELR-H51	●	●	●	●	–	–	●	●	●	–	●	–	3	e	3	–	●	–	–	2904335	–
ELR-H51	●	●	●	●	–	–	●	●	●	–	●	–	3	e	3	–	–	–	●	2904337	–
ELR-H51	●	●	●	●	–	–	●	●	–	–	–	●	3	e	3	●	–	–	–	2902952	–
ELR-H51	●	●	●	●	–	–	●	●	–	–	–	●	3	e	3	–	●	–	–	2902953	–
ELR-H51	●	●	●	●	–	–	●	●	–	–	–	●	3	e	3	–	–	–	●	2902954	–

Product overview

PSRmodular: configurable safety system									
Type	**Description**	**Inputs/outputs**				**Safety approvals**		**Connection technology**	
		Inputs/ EDM reset inputs	Outputs	Clock outputs	Signal outputs	PL in accordance with EN ISO 13849	SIL in accordance with EN IEC 62061/IEC 61508	Screw connection	Push-in connection
Basic modules									
PSR-M-B1	Basic module	8/2	2 (pairs)	4	2	e	3	1104981	1104972
PSR-M-B2	Basic module (with large program memory)	8/4[1)]	2 (pair) or 4 (single)	4	4[1)]	e	3	1104974	1104975
Safe extension modules									
PSR-M-EF1	Failsafe extension module	8/4[1)]	2 (pair) or 4 (single)	4	4[1)]	e	3	1104890	1104889
PSR-M-EF2	Failsafe extension module	16	–	4	–	e	3	1104888	1104887
PSR-M-EF3	Failsafe extension module for safety shut-off mats	12	–	8	–	e	3	1104885	1104884
PSR-M-EF4	Failsafe extension module	-/4	4 pairs	–	4	e	3	1104856	1104868
PSR-M-EF5	Failsafe extension module	-/4	2 (pair) or 4 (single), each 2 A	–	8	e	3	1104976	1104977
PSR-M-EF6	Failsafe extension module	-/4	4 relays	–	–	e	3	1104982	1104983
PSR-M-EF7	Failsafe extension module	4 analog	–	–	–	e	3	1104985	1104986
PSR-M-EF8	Failsafe extension module	8/2	2 (pairs)	4	2	e	3	1105522	1105523
PSR-M-E1	Non-safe extension module	–	–	–	8	–	–	1105132	1105133
PSR-M-E2	Non-safe extension module	–	–	–	16	–	–	1105134	1105136
PSR-M-TBUS1	TBUS extension module	1 connection channel for local bus extension (up to 50 m per segment)				e	3	1105095	1105096
PSR-M-TBUS2	TBUS extension module	2 connection channels for local bus extension (up to 50 m per segment)				e	3	1105097	1105098

[1)] Configurable

PSRmodular: configurable safety system

Type	Description	Safety function in accordance with EN 61800-5-2				Sensor type				Encoder interfaces	Safety approval		Connection technology	
		SOS	SLS	SSR	SDI	Proximity switch	TTL	HTL	Sin/Cos		PL in accordance with EN ISO 13849	SIL in accordance with EN IEC 62061/IEC 61508	Screw connection	Push-in connection
Safe motion monitoring														
PSR-M-EM1	Motion – PROXIMITY extension module	●	●	●	–	●	–	–	–	–	e	3	1104987	1104988
PSR-M-EM2	Motion – TTL extension module	●	●	●	●	●	●	–	–	1	e	3	1104989	1104990
PSR-M-EM3	Motion – HTL extension module	●	●	●	●	●	–	●	–	1	e	3	1105009	1105010
PSR-M-EM4	Motion – SINCOS extension module	●	●	●	●	●	–	–	●	1	e	3	1105011	1105012
PSR-M-EM5	Motion – TTL extension module	●	●	●	●	●	●	–	–	2	e	3	1105014	1105015
PSR-M-EM5.1	Extension module Motion – TTL without voltage monitoring	●	●	●	●	●	●	–	–	2	e	3	1300906	1300905
PSR-M-EM6	Motion – HTL extension module	●	●	●	●	●	–	●	–	2	e	3	1105016	1105017
PSR-M-EM7	Motion – SINCOS extension module	●	●	●	●	●	–	–	●	2	e	3	1105018	1105093
Gateways[1)]														
PSR-M-GW-PB	Gateway – PROFIBUS												1105099	1105100
PSR-M-GW-PN	Gateway – PROFINET												1105101	1105102
PSR-M-GW-DNET	Gateway – DeviceNet™												1105103	1105473
PSR-M-GW-CAN	Gateway – CANopen®												1105104	1105105
PSR-M-GW-ETH	Gateway – EtherNet/IP™												1105106	1105107
PSR-M-GW-MODTCP	Gateway – Modbus/TCP												1105108	1105127
PSR-M-GW-CCLINK	Gateway – CC-Link												1105128	1105129
PSR-M-GW-ECAT	Gateway – EtherCAT®												1105130	1105131

[1)] Configurable

Product overview

PSRmodular: configurable safety system												
Type	**Description**	**Inputs/outputs**				**Safety approvals**						**Connection technology**
		Inputs/ EDM reset inputs	Outputs	Clock outputs	Signal outputs	PL in accordance with EN ISO 13849	SIL in accordance with EN IEC 62061/IEC 61508	ATEX, Class I Zone 2	G3 in accordance with ANSI/ISA-S71.04	DNV	Thermal processing systems	Push-in connection
Safe motion monitoring												
PSR-M-B2-XC	Basic module (with large program memory)	8/4[1)]	2 (pair) or 4 (single)	4	2	e	3	In preparation	●	●	In preparation	1337849
PSR-M-B3-XC	Basic module (B2) with integrated gateway function (PROFINET, EtherNet/IP™, Modbus/TCP, EtherCAT®)	8/4[1)]	2 (pair) or 4 (single)	4	4[1)]	e	3		●	–		1337855
PSR-M-EF1-XC	Failsafe extension module	8/4[1)]	2 (pair) or 4 (single)	4	4[1)]	e	3		●	–		1337850
PSR-M-EF7-XC	Failsafe extension module	4 analog	–	–	–	e	3		●	–		1337851
PSR-M-GW-CAN-XC	Gateway – CANopen	–	–	–	–	–	–	–	●	–		1337853

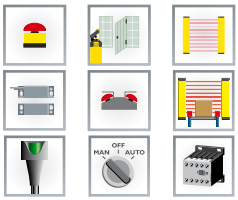
All XC modules have an extended temperature range and a painted printed circuit board.
[1)] Configurable

PSRmodular: accessories		
Type	**Description**	**Item no.**
PSR-M-MEMORY	Optional external memory	1105142
TBUS	DIN rail connector for basic module	1225375 (1 piece)
		2200244 (50 pieces)
PSR-M-CABLE50	Cable for TBUS extension module	1104841
CABLE-25/8/250/ PSR-M/001	Cable adapter for PSRmodular (PSR-M-EM...)	1571214 or 1574602

PSRmodular: configuration software		
Type	**Applications**	**Item no.**
PSRmodular	Free configuration software for the configurable PSRmodular safety system. Download at phoenixcontact.com	–

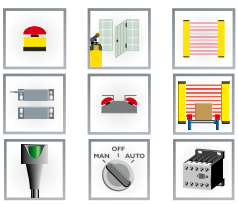
Product overview

Axioline F: safe I/Os

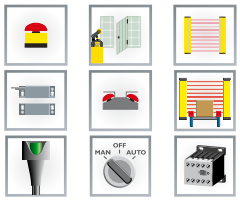
Type	Applications	Inputs/outputs					Protocol		Safety approvals		Item no.
		Safe digital inputs	Safe digital outputs	Clock outputs	Relay outputs	Safe analog inputs	SafetyBridge Technology	PROFIsafe	Category/PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061/ IEC 61508	
AXL F SSDI8/4 1F	Input module	8	–	8	–	–	●	–	4/e	3	2702263
AXL F PSDOR4/2 1F	Relay module	–	–	–	4	–	–	●	4/e	3	2702858
AXL F SSDOR4/2 1F	Relay module	–	–	–	4	–	●	–	4/e	3	2702589
AXL F SSDO8/3 1F	Output module	–	8	–	–	–	●	–	4/e	3	2702264
AXL F PSDI8/4 1F	Input module	8	–	8	–	–	–	●	4/e	3	2701559
AXL F PSDO8/3 1F	Output module	–	8	–	–	–	–	●	4/e	3	2701560
AXL F LPSDO8/3 IF	Logic module with SafetyBridge Technology V3	–	8	–	–	–	●	–	4/e	3	2702171
AXL F PSAI8/2 1F	Input module for current measurement	–	–	–	–	8	–	●	4/e	3	1061424
AXL F PSRTD8 1F[1)]	Input module for temperature measurement	–	–	–	–	8	–	●	4/e	3	1374265
AXL F PSDI8/4 XC 1F	Input module	8	–	8	–	–	–	●	4/e	3	1369866
AXL F PSDO8/3 XC 1F	Output module	–	8	–	–	–	–	●	4/e	3	1369867

[1)] Available from April 2024

Axioline Smart Elements: safe I/Os

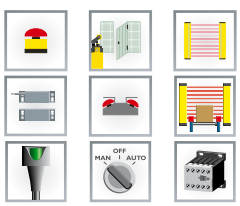
Type	Applications	Inputs/outputs				Protocol			Safety approvals		Item no.
		Safe inputs	Safe outputs	Clock outputs	Relay outputs	SafetyBridge Technology	PROFIsafe	FSoE	Category/PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061/ IEC 61508	
AXL SE PSDI8/3	Input module	8	–	2	–	–	●	–	4/e	3	1079241
AXL SE PSDO4/2 2A	Output module	–	4	–	–	–	●	–	4/e	3	1079231
AXL SE SSDI8/3	Input module	8	–	2	–	●	–	–	4/e	3	1190012
AXL SE SSDO4/2 2A	Output module	–	4	–	–	●	–	–	4/e	3	1190017
AXL SE FSDI8/3	Input module	8	–	2	–	–	–	●	4/e	3	1090203
AXL SE FSDO4/2	Output module	–	4	–	–	–	–	●	4/e	3	1090205

Inline: safe I/Os

Type	Applications	Inputs/outputs				Protocol		Safety approvals		Item no.
		Safe inputs	Safe outputs	Clock outputs	Relay outputs	SafetyBridge Technology	PROFIsafe	Category/PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061/ IEC 61508	
IB IL 24 PSDI 8-PAC 24 V DC	Input module	8	–	8	–	●	●	4/e	3	2985688
IB IL 24 PSDI 16-PAC 24 V DC	Input module[1)]	16	–	16	–	●	●	4/e	3	2700994
IB IL 24 PSDO 8-PAC 24 V DC	Output module	–	8	–	–	●	●	4/e	3	2985631
IB IL 24 PSDO 4/4-PAC 24 V DC	Output module (positive and negative switching)	–	4	–	–	●	●	4/e	3	2916493
IB IL 24 PSDOR 4-PAC 24 V DC / 230 V DC	Relay module	–	–	–	4	●	●	4/e	3	2985864
IB IL 24 LPSDO 8 V2-PAC 24 V DC	Logic module with SafetyBridge Technology V2	–	8	–	–	●	–	4/e	3	2700606
IB IL 24 LPSDO 8 V3-PAC 24 V DC	Logic module with SafetyBridge Technology V3	–	8	–	–	●	–	4/e	3	2701625

[1)] Only compatible with IB IL 24 LPSDO V3-PAC.

Axioline E: safe I/Os

Type	Applications	Inputs/outputs				Protocol		Safety approvals		Item no.
		Safe inputs	Safe outputs	Clock outputs	Relay outputs	IO-Link Safety	PROFIsafe	Category/PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061/ IEC 61508	
AXL E IOL SDI8 SDO4 2A M12 L	Input and output module for PROFIsafe over IO-Link	8	4	8	–	–	●	4/e	3	1185380
AXL E PS IOLS4/4 EF M12 6M-L	IO-Link Safety master	8	4	8	–	●	●	4/e	3	1379164
AXL E IOLS SDI8 SDO4 2A M12 L	IO-Link Safety device	8	4	8	–	●	–	4/e	3	1379166

Product overview

Software		
Type	**Applications**	**Item no.**
SAFECONF	Free configuration software for SafetyBridge modules. Download at phoenixcontact.com	–
PLCnext Engineer	Free engineering software platform for automation controllers from Phoenix Contact. Extension with add-ins at a charge, for example, safety programming in accordance with IEC 61508. Download at phoenixcontact.com	1046008

PLCnext Control: safe control technology								
Type	**Applications**	**Inputs/outputs**	**Protocol**	**Safety approvals**				**Item no.**
				Category in accordance with EN ISO 13849-1	PL in accordance with EN ISO 13849-1	SIL in accordance with EN IEC 62061	SIL in accordance with IEC 61508	
AXC F XT SPLC 1000[1)]	Safety controller freely programmable via LD and FBD with PLCnext Engineer	Up to 32 safe devices	PROFIsafe via PROFINET	4	e	3	3	1159811
AXC F XT SPLC 3000[1)]	Safety controller that can be freely programmable via LD and FBD with PLCnext Engineer	Up to 300 safe devices	PROFIsafe via PROFINET	4	e	3	3	1160159
RFC 4072S	Safety controller that can be freely programmable via LD and FBD with PLCnext Engineer	Up to 300 safe devices	PROFIsafe via PROFINET	4	e	3	3	1051328
FL PN/PN SDIO-2TX/2TX	Safe PROFINET gateway	–	PROFIsafe via PROFINET	4	e	3	3	2700651

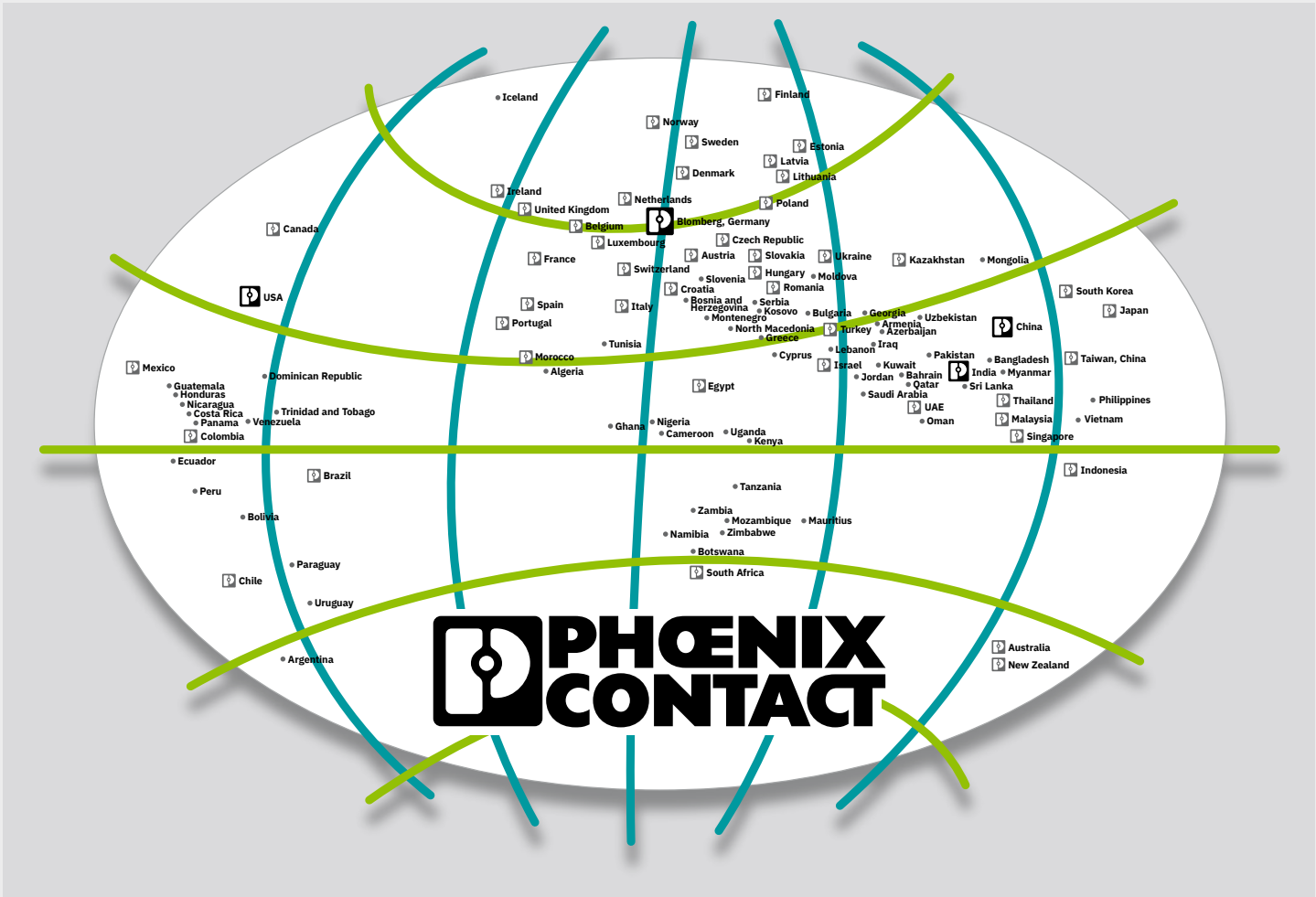
[1)] Extension module for the modular AXC F 2152 and AXC F 3152 controllers from the PLCnext Control series

SD cards		
Type	**Applications**	**Item no.**
SD FLASH 2GB EASY SAFE BASIC	Programming and configuration memory, plug-in, 2 GB, with license key and user program for easy web-based configuration and commissioning of a SafetyBridge solution.	2403297
SD FLASH 2GB EASY SAFE PRO	Like SD FLASH 2GB EASY SAFE BASIC, including communication via Modbus/TCP, PROFINET, and email.	2403298

QUINT POWER: safe power supplies

Type	Applications	Output current				Safety approvals					Dimensions W x H x D	Item no.
		Nominal output current	Static boost	Dynamic boost	SFB Technology	IEC 61010-1	SIL in accordance with IEC 61508	ATEX / IECEx / Class I Zone 2	UL ANSI / ISA-12.12.01 Class I Division 2	DNV	[mm]	
High-performance power supplies, single phase												
Input voltage: 85 V AC … 264 V AC, 90 V DC … 350 V DC Output voltage: 24 V DC … 29.5 V DC, 24 V DC … 28 V DC (Plus version)												
QUINT4-PS/1AC/24DC/10/+	For the safe supply of your systems	10 A	12.5 A	20 A (5 s)	60 A (15 ms)	●	SIL 3	●	●	●	50 x 130 x 125	2904616
QUINT4-PS/1AC/24DC/20	For the safe supply of your systems	20 A	25 A	30 A (5 s)	120 A (15 ms)	●	SIL 2	–	●	●	70 x 130 x 125	2904602
QUINT4-PS/1AC/24DC/20/+	For the safe supply of your systems	20 A	25 A	30 A (5 s)	120 A (15 ms)	●	SIL 3	●	●	●	70 x 130 x 125	2904617
QUINT4-PS/1AC/24DC/40/+	For the safe supply of your systems	40 A	45 A	60 A (5 s)	215 A (15 s)	●	SIL 3	●	●	●	120 x 130 x 140	2904618
High-performance DC/DC converter												
Input voltage: 18 V DC … 33.6 V DC Output voltage: 24 V DC … 28 V DC												
QUINT4-PS/24DC/24DC/20/SC/+	For the safe supply of your systems	20 A	25 A	30 A (5 s)	60 A (15 ms)	●	SIL 2	●	●	●	70 x 130 x 125	1046881
Active redundancy module, Plus version												
Input voltage: 8 V DC … 26 V DC Output voltage: U_{in} – 0.1 V DC												
QUINT4-S-ORING/12-24DC/1X40/+	For decoupling	40 A	45 A	60 A (5 s)	240 A (15 ms)	●	SIL 3[1)]	●	●	●	32 x 130 x 125	2907753

[1)] In combination with QUINT4-PS/1AC/24DC/20 or QUINT4-PS/24DC/24DC/20/SC/+



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