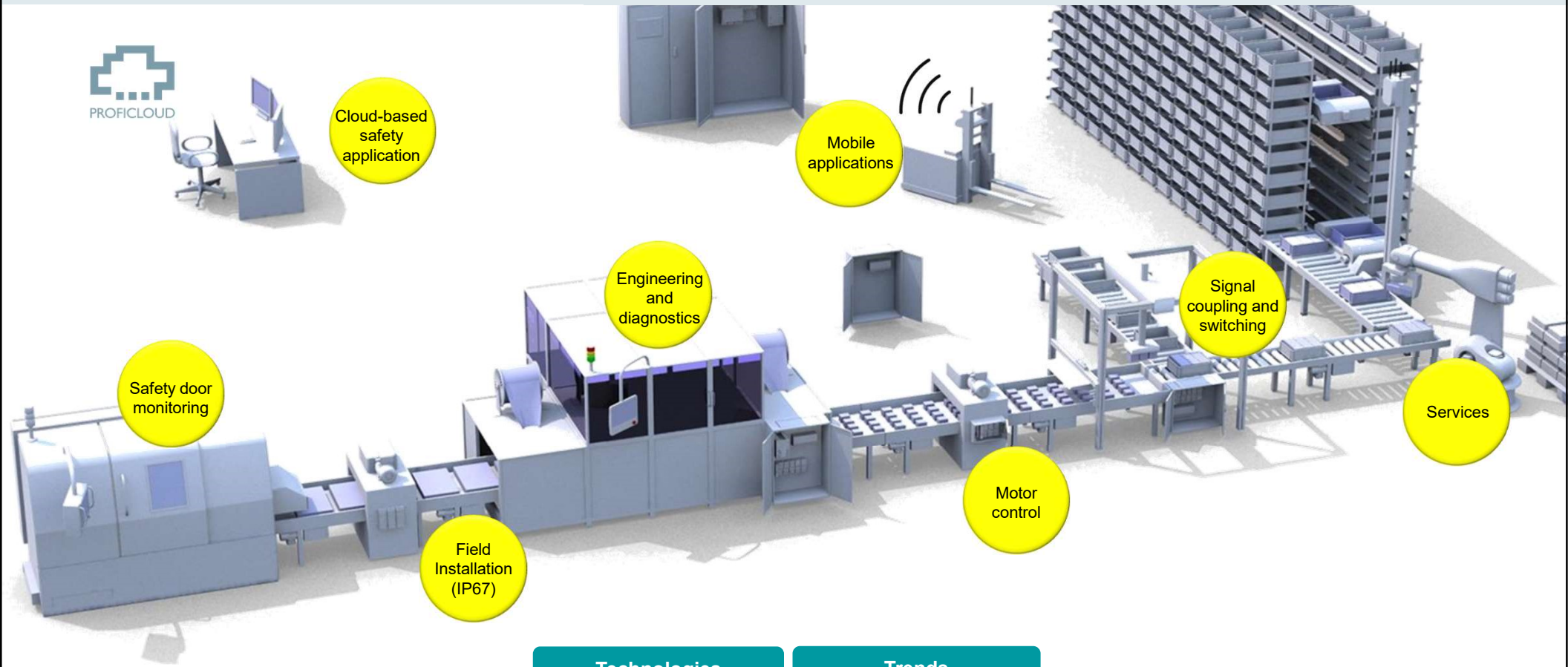

Start
PL
Functional Safety
EN ISO 12100
PL e
SIL

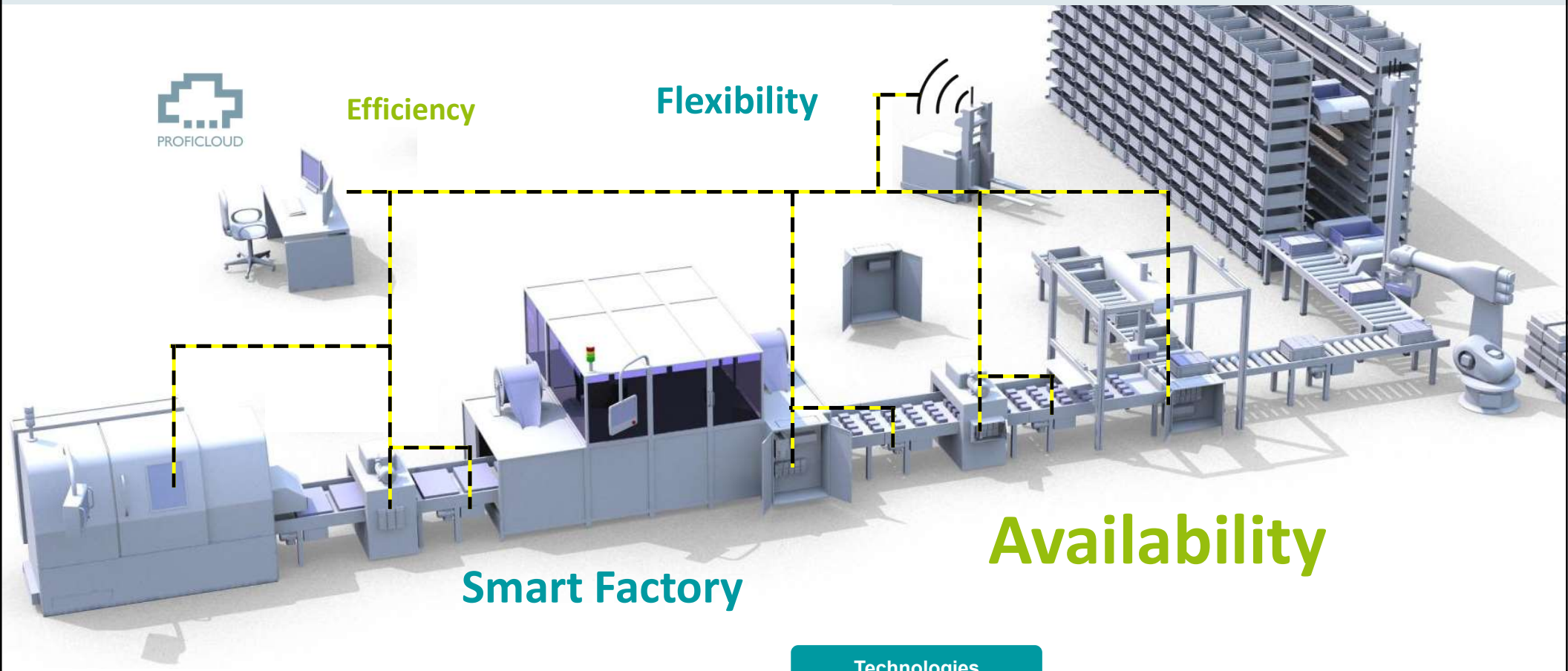
Smart safety solutions
Best fit for market needs



PHOENIX CONTACT
INSPIRING INNOVATIONS

Trends

Inspiring safety technologies



Safety product portfolio

From safety switches to safe controllers

Configuration software

PSRmotion



PSRmodular



SAFECONF



Programming software

PLCnext Engineer



Signal processing

Safety relay modules
PSRmini, PSRclassic, PSRmotion and PSRmultifunction



Configurable safety system
PSRmodular



Safe I/O's
Axioline and Inline



Performance controllers
RFC



Sensors

Safety switches
PSRswitch



Signal conditioning

Safe signal conditioners
MACX Safety



Actuators

Safe motor starters
CONTACTRON



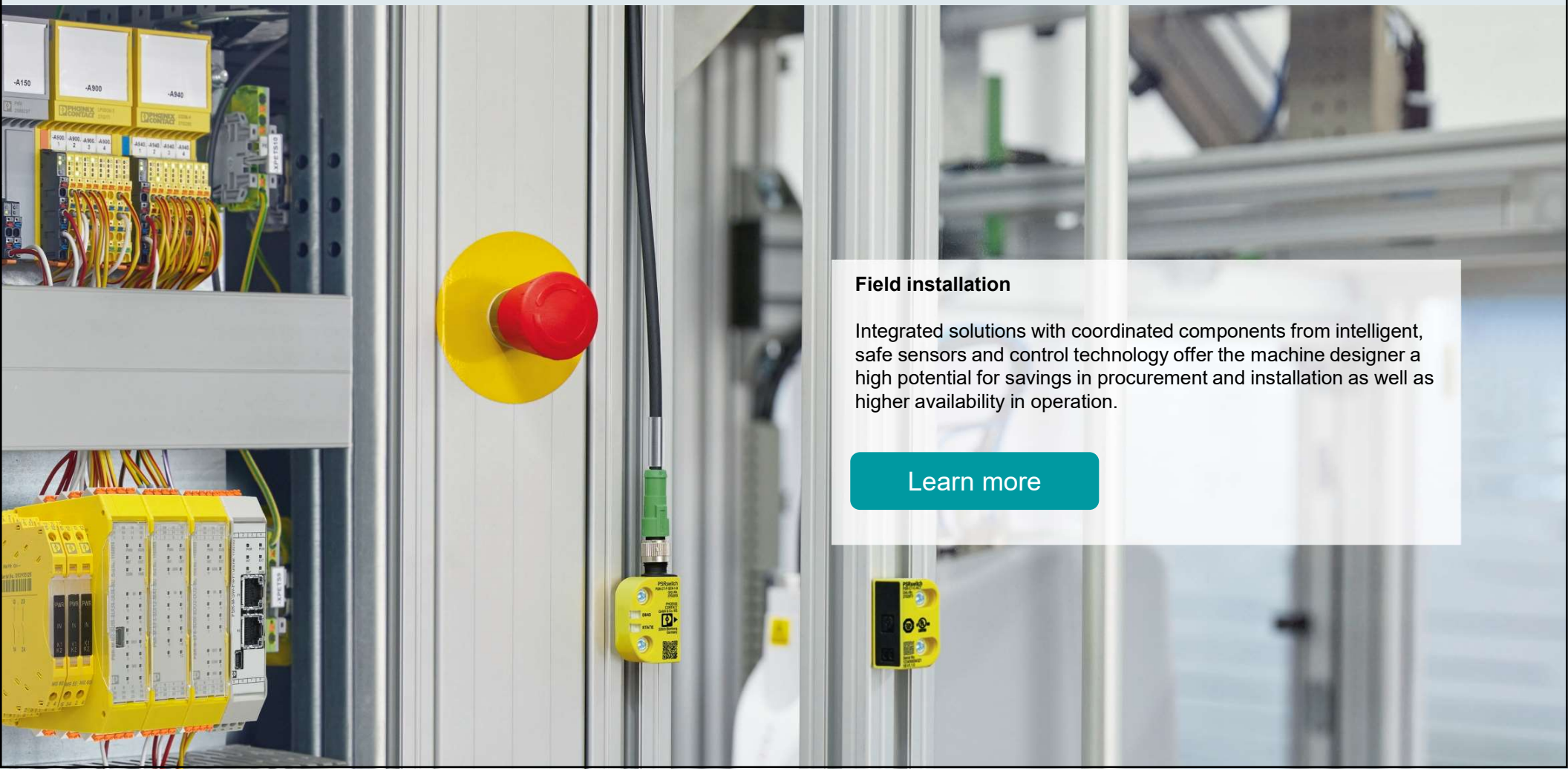
Power

Safe power supplies
QUINT POWER



Smart safety solutions

Field installation (IP67)

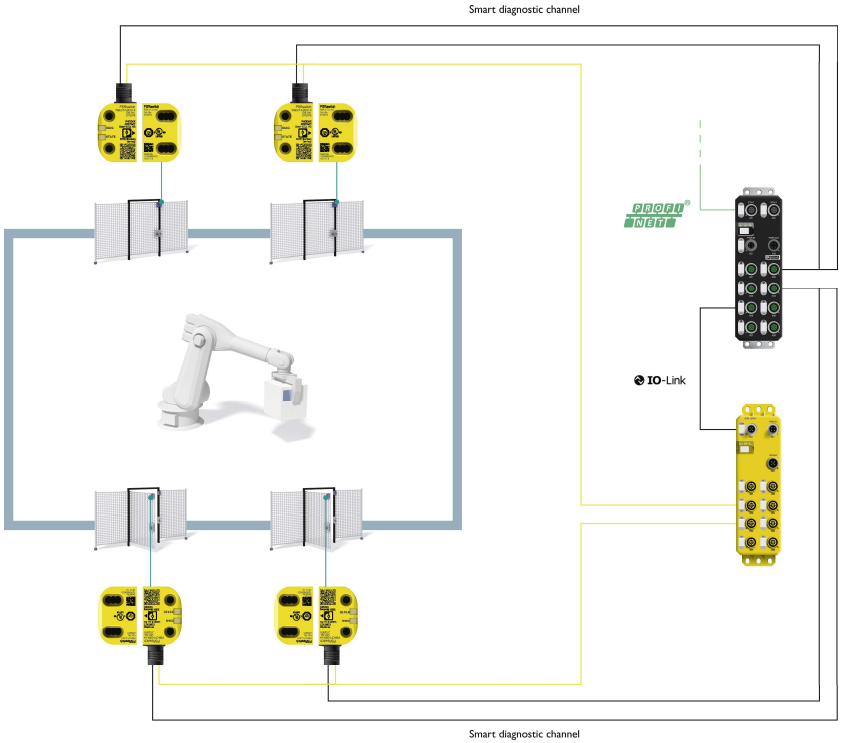


Field installation

Integrated solutions with coordinated components from intelligent, safe sensors and control technology offer the machine designer a high potential for savings in procurement and installation as well as higher availability in operation.

Learn more

Smart safety solutions
Field installation (IP67)



Safety door monitoring
with safety switch PSRswitch

Safety-related signals in the field level

Acquire safety-related signals directly on site without a control cabinet. By mounting the safe IP67 I/O box directly on the machine, near the sensors or actuators, the wiring effort is significantly reduced. The safe I/O box can be coupled to the superior network via an IO-Link interface. Depending on the parameterization, the safe I/O box can work in a PROFIsafe system with a safety controller or in SafetyBridge Technology mode with a standard controller in the installed network.

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Smart safety solutions
Field installation (IP67)

Non-contact safety switches
PSRswitch





SafetyBridge Technology
Designed by PHOENIX CONTACT

PROFIsafe

IO-Link

Safe IP67 I/O box
Axioline E Safe
with IO-Link

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Products

Safe IP67 I/O box



IO-Link

PROFIsafe

SafetyBridge Technology
Designed by PHOENIX CONTACT

Safe IP67 I/O box Axioline E Safe with IO-Link

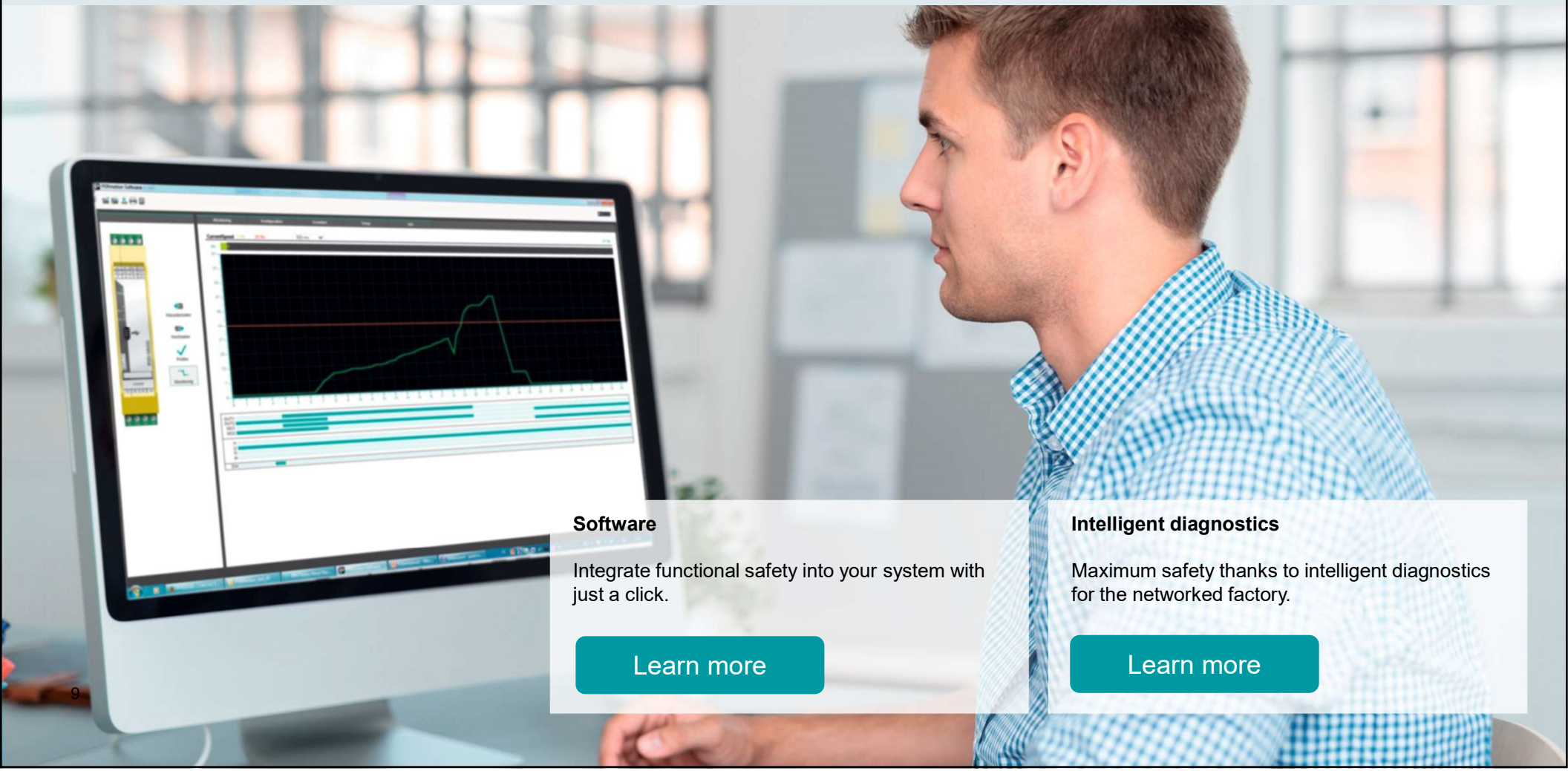
With the Axioline E Safe IP67 I/O box, safe inputs and outputs are processed outside the control cabinet. The safety protocol is transferred to the standard network via IO-Link.

- ✓ Can be used in SafetyBridge technology and PROFIsafe applications
- ✓ 8 safe inputs and 4 safe outputs, plus and minus switching
- ✓ SIL 3 to IEC 61508 / EN 61508, SILCL 3 to EN 62061
- ✓ UL und cUL
- ✓ PL e according to EN ISO 13849-1
- ✓ SPEEDCON quick locking system

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INSPIRING INNOVATIONS

Smart safety solutions

Engineering and diagnostics



Software

Integrate functional safety into your system with just a click.

Learn more

Intelligent diagnostics

Maximum safety thanks to intelligent diagnostics for the networked factory.

Learn more

Smart safety solutions

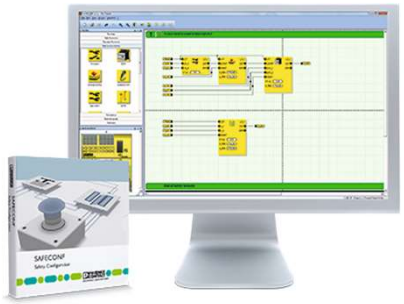
Safety software



Configuration software
PSRmotion



Configuration software
PSRmodular



Configuration software
SAFECONF

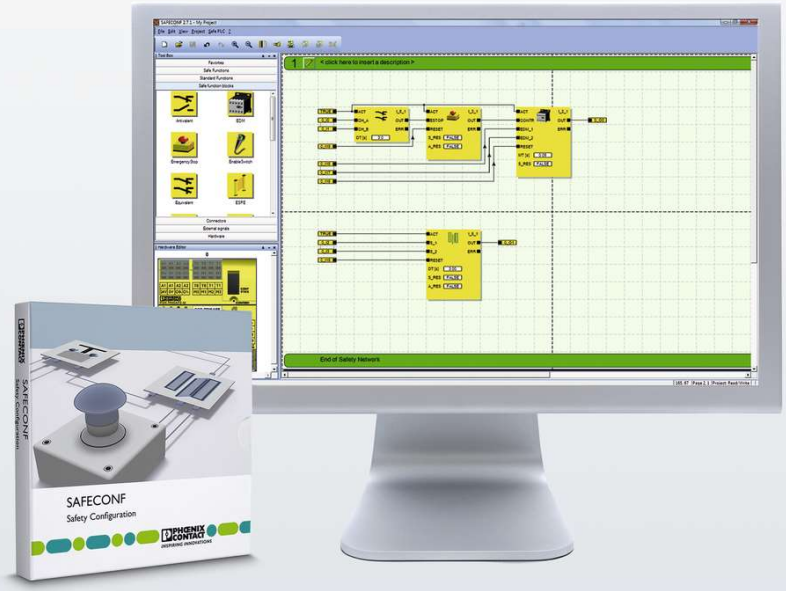


Programming software
PLCnext Engineer

PHOENIX CONTACT
INSPIRING INNOVATIONS

Smart safety solutions

Easy configuration with software SAFECONF



Configuration software SAFECONF

- Easily create the safety logic for TRISAFE and SafetyBridge I/O modules using drag-and-drop
- Intuitive operation and certified blocks
- Simulation and diagnostics
- Application help
- Integrated e-learnings

Free download

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INSPIRING INNOVATIONS

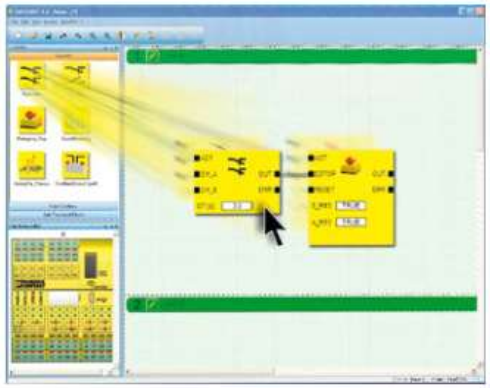
Smart safety solutions

Easy configuration with software SAFECONF

Easy configuration in three steps and with TÜV certified functions blocks

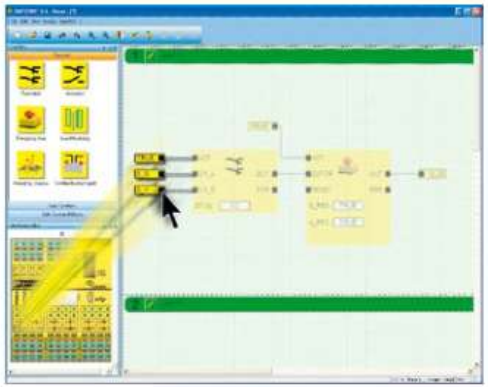
1

Select and drag and drop security features to configure.



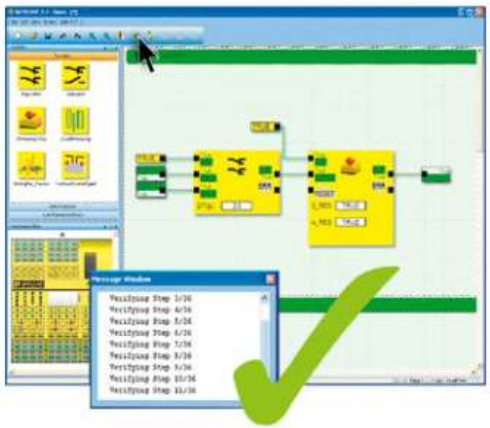
2

Connect the inputs and outputs of the modules to the safety functions.



3

Check and save safety functions. Done!



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INSPIRING INNOVATIONS

Smart safety solutions

Programming with software PLCnext Engineer



Programming software PLCnext Engineer

- Develop safe applications with safety controllers
- PROFIsafe networks can be used

TÜV-certified programming tool guides help to go through development phases of a safety application:

- Compiling the project and sending it to the safety controller
- Controlling the safety controller, e.g., start, stop or reset
- Performing function tests and monitoring the safety controller
- Project documentation

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INSPIRING INNOVATIONS

PROFIsafe

- PROFIsafe (PROFINET safety) es una tecnología de comunicación de seguridad para sistemas discretos de fabricación y automatización de procesos. ...

- El papel de **PROFIsafe** en el universo de seguridad es minimizar la posibilidad de un funcionamiento incorrecto del sistema de control.



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Controladores de seguridad



RFC 470S PN 3TX



RFC 4072S

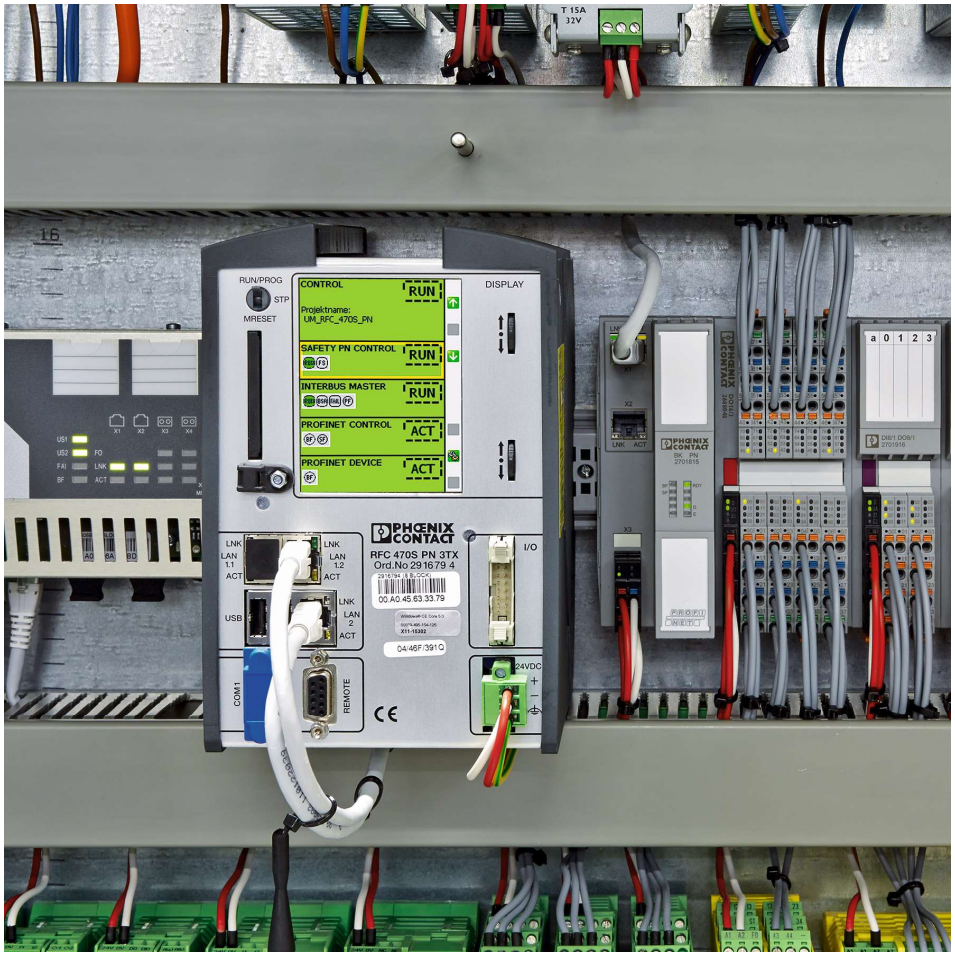


AXC F XT SPLC 1000

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RFC 470S PN 3TX

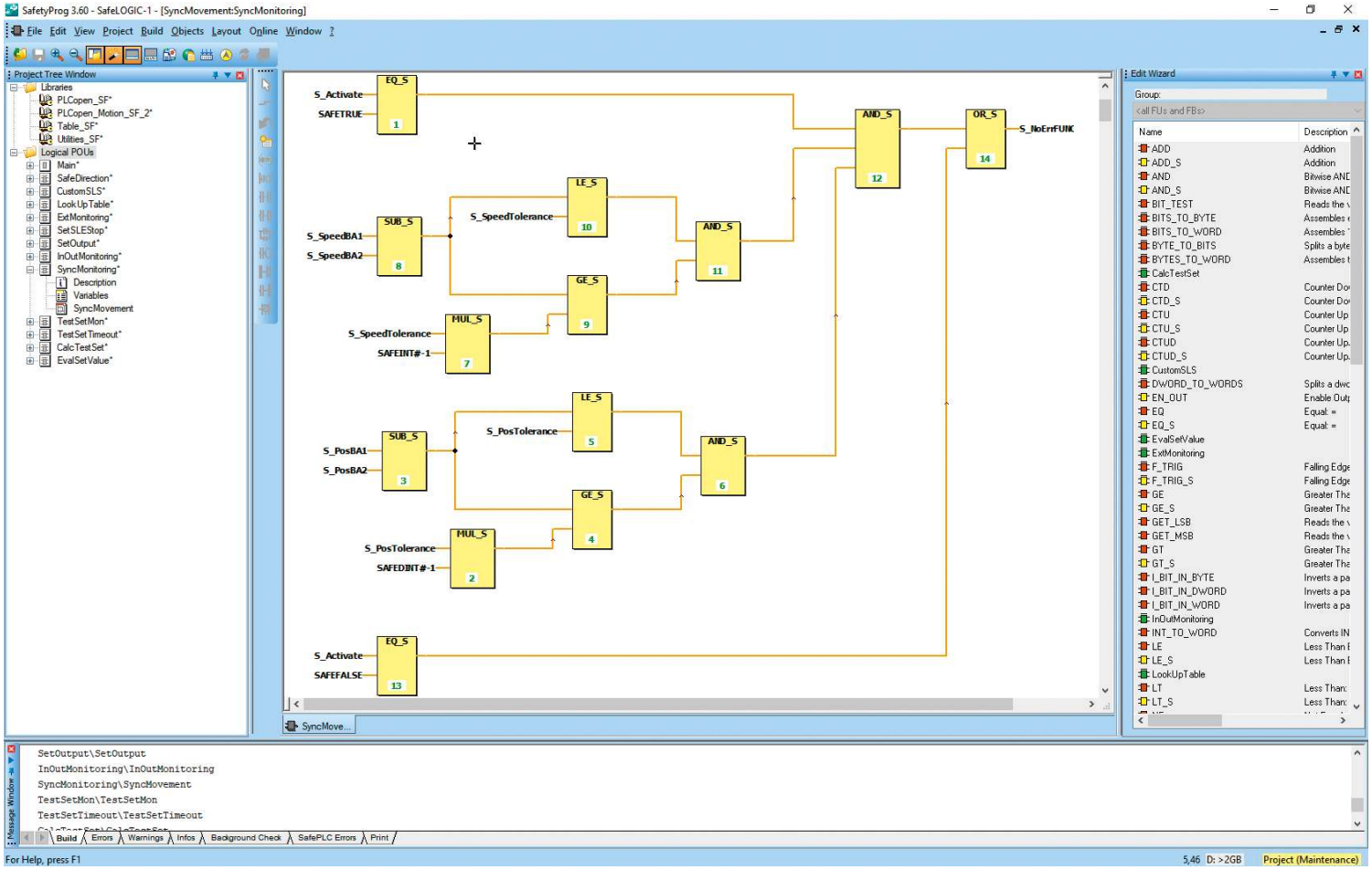




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RFC 470S PN 3TX

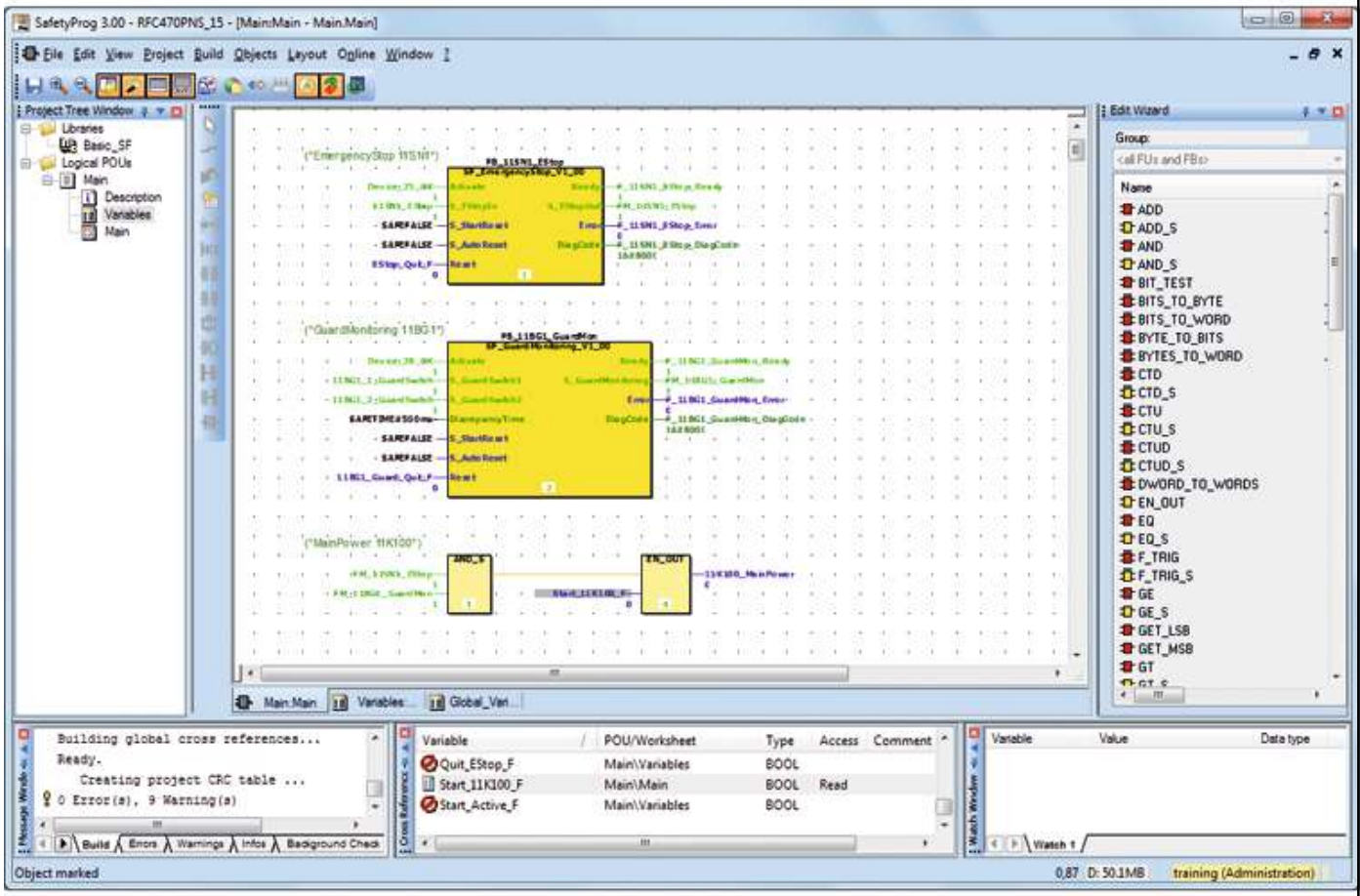
SafetyProg



PHOENIX CONTACT
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RFC 470S PN 3TX

SafetyProg



RFC 4072S





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PLCnext Technology
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License Structure

Free of charge

PLCnext Engineer

Configuration
Programming
Visualization

Licensed AddIns

…	Code Analysis	Reporting	SAFE	FL Config	IEC 61850	ACI	Safety Extended
SFC	HMI Alarm	Safety Basic	HMI Trending	MV	Source Code Management	….	Vis. Wizard

Icon = available AddIn

No icon = Idea about future AddIns

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PLCnext Control

PLCnext Control RFC 4072S



Core

Intel i5 6300U 2 x 2,4 GHz processor

Working memory

4 GB DDR 4 dual channel RAM

Temperature

0°C up to 55°C with fan

control tasks (IEC 61131)

32

Min. cycle time (IEC 61131)

500 µs

Security

TPM integrated

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PLCnext Control RFC 4072S

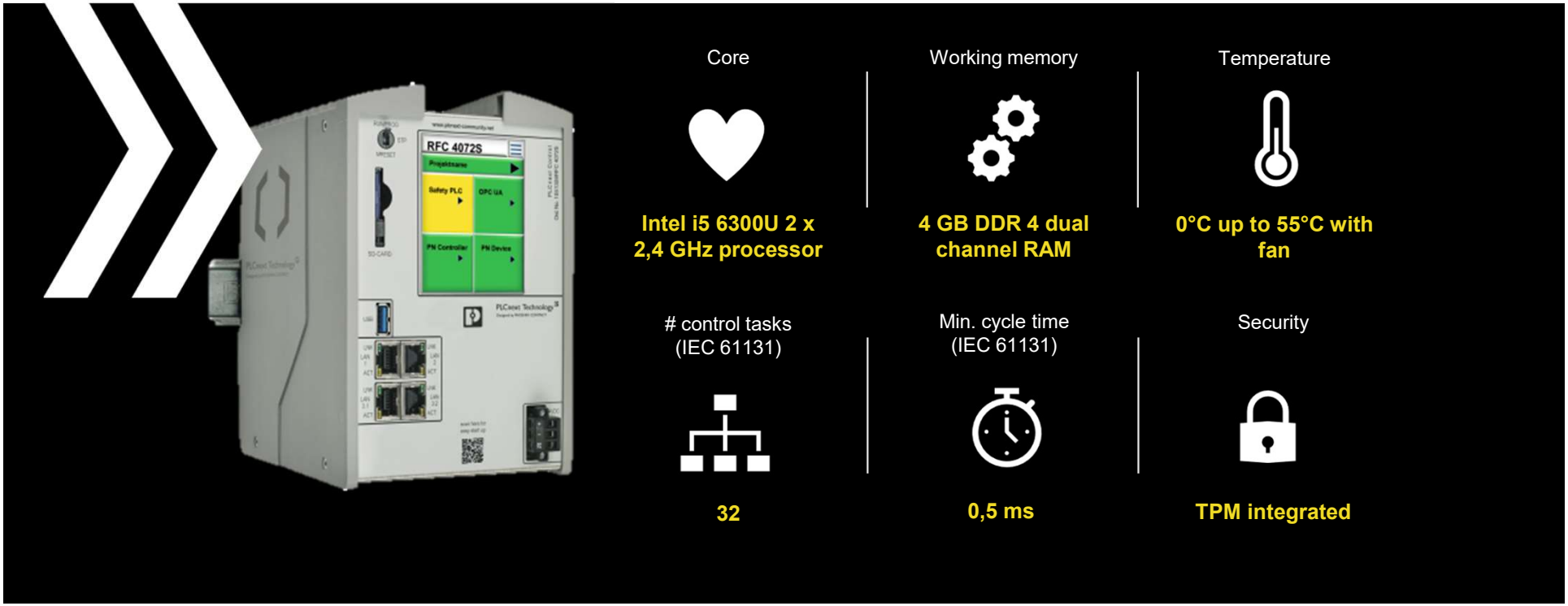
- Intel i5 6300U 2 x 2,4 GHz processor
- 4 GB DDR 4 dual channel RAM
- Profisafe integrated (up to 300 F-Devices)
- Operation Mode Switch
- Touch display
- SD Flash card slot
- 3 ETH-MAC interfaces
  (2 x 1 Gbit, 1 x 100 Mbit switched)
- Real-time clock
- Trusted platform module (TPM) for security
- Temperature range: 0°C up to 55°C with fan



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PLCnext Control

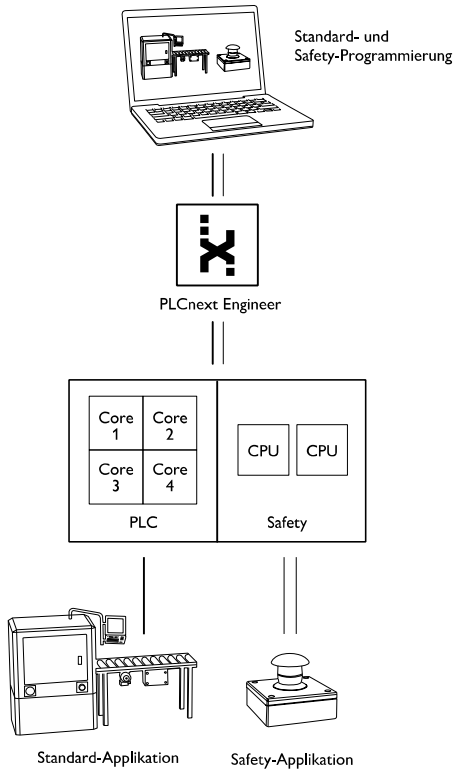
PLCnext Control RFC 4072S



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PLCnext Technology
Designed by PHOENIX CONTACT

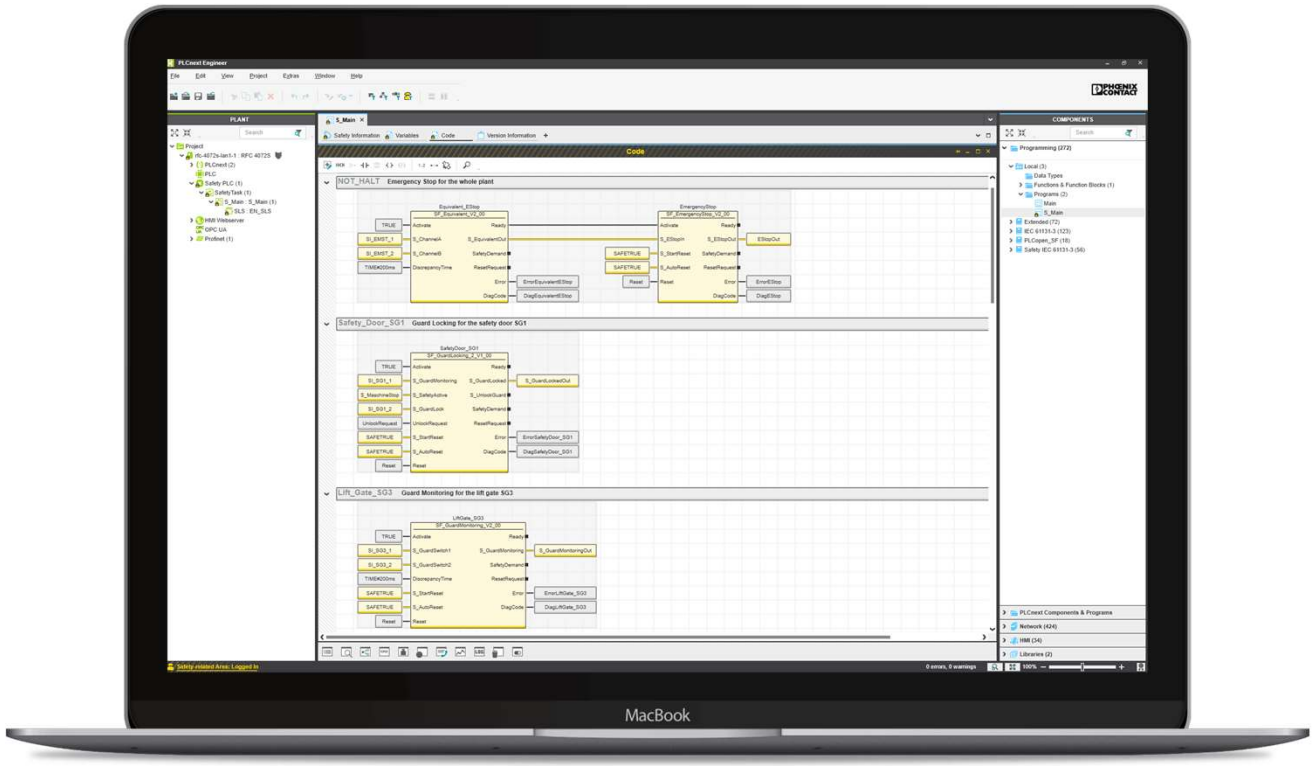
Functional Safety Integration





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INSPIRING INNOVATIONS

Integration of standard and safety programming in PLCnext Engineer



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INSPIRING INNOVATIONS

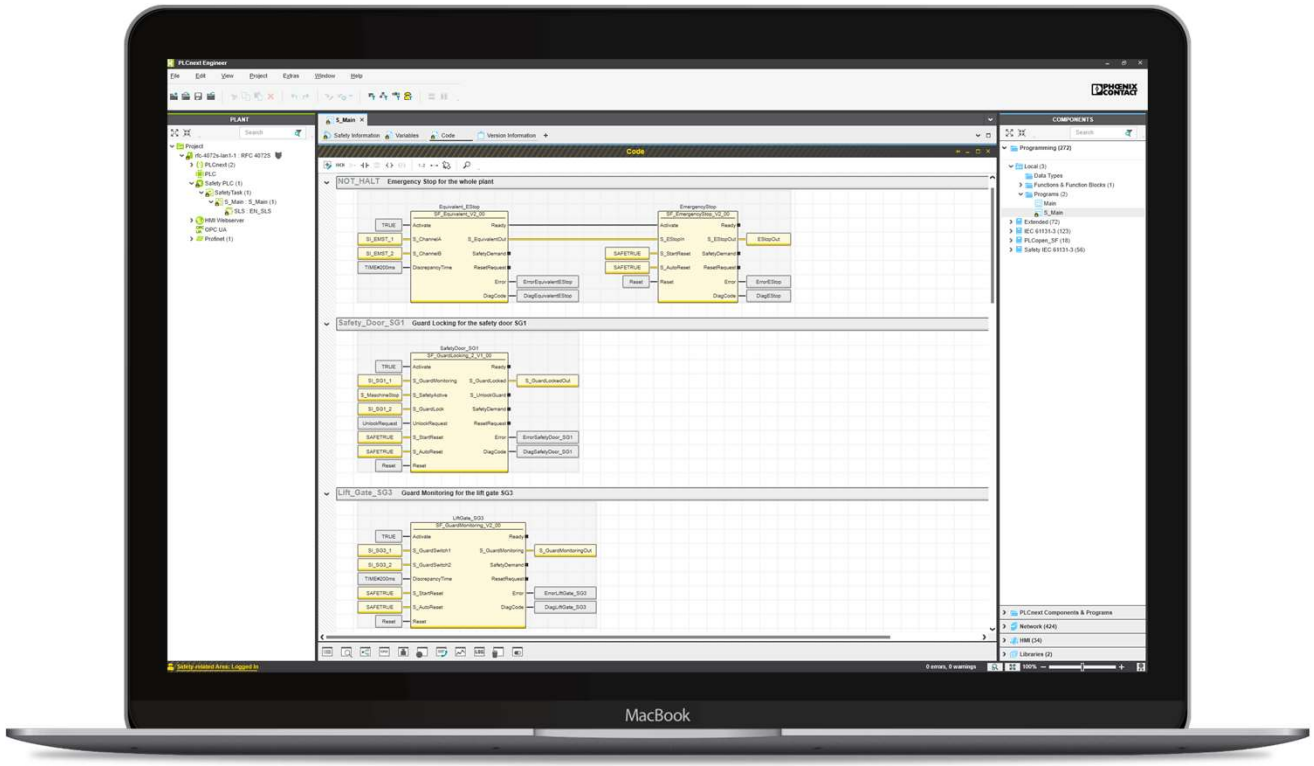
SPLC 1000





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Integration of standard and safety programming in PLCnext Engineer

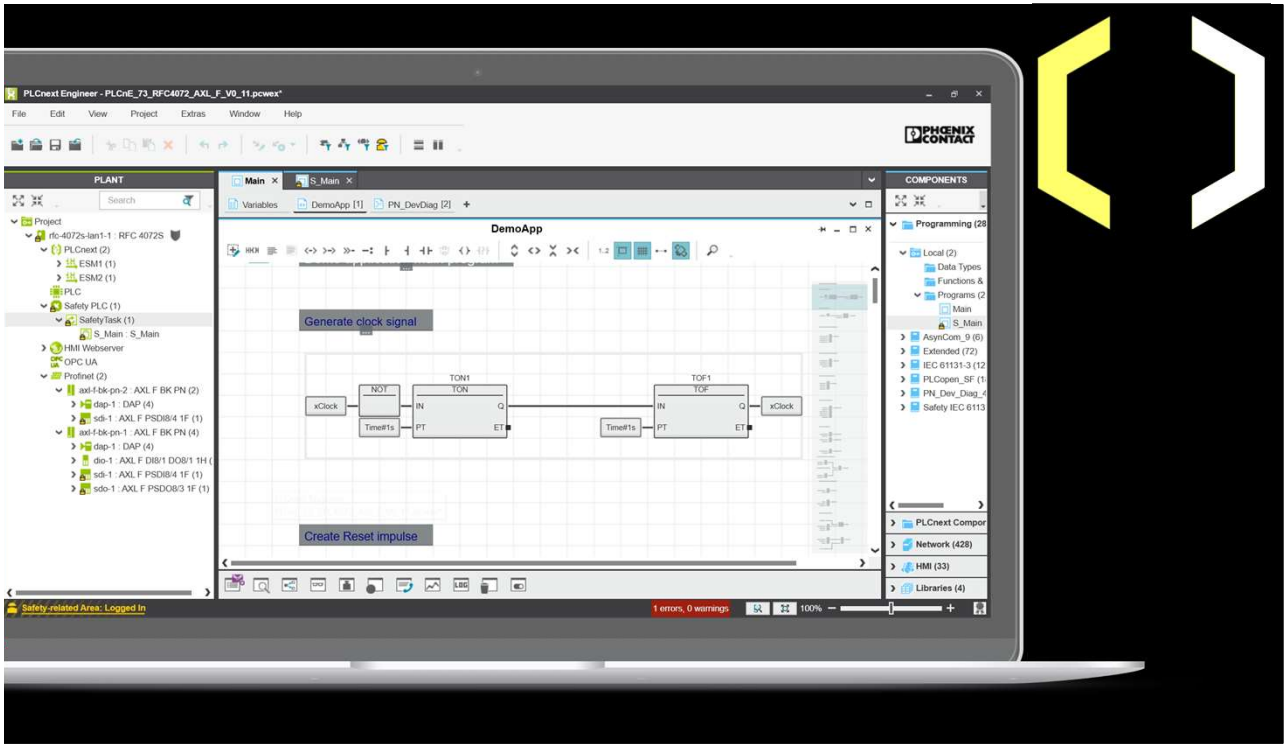


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PLCnext Technology
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Standard and safety programming in one engineering software

PLCnext Engineer



Fully integrated Safety programming

- TÜV Rheinland certified according to IEC 61508
- Editor with common behavior as known from standard FBD or LD editors
- Low Variability Language support
- Networkt granular CRC checksums
- PROFIsafe Support

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PLCnext Technology
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Standard and safety programming in one engineering software

PLCnext Engineer



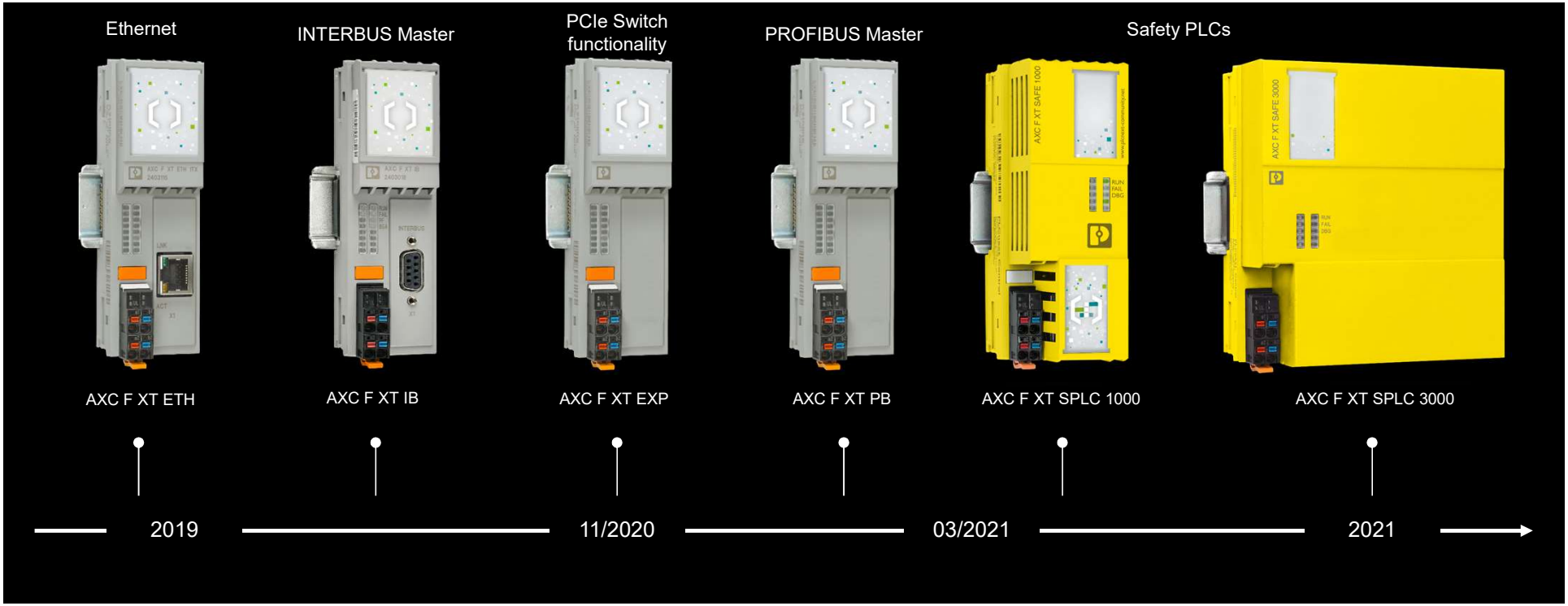
Fully integrated Safety programming

- Individual safety functions can be protected by a verification function
- Background signal path analysis
- Background safe semantic analysis
- Diversely-redundant code generator

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INSPIRING INNOVATIONS

PLCnext Ecosystem – PLCnext Control

Portfolio PLCnext Control Extensions



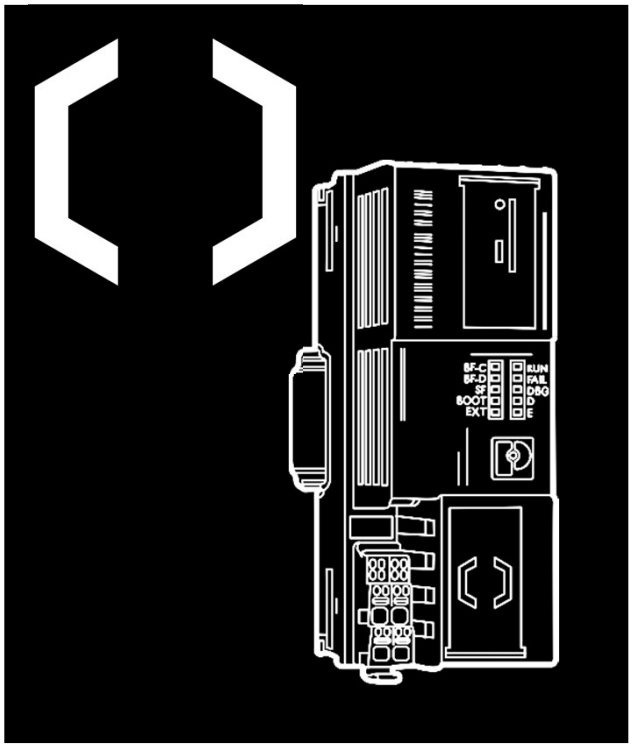
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PLCnext Technology
Designed by PHOENIX CONTACT

PLCnext Extension AXC F XT SPLC 1000



- Profisafe Extension
  - Specification 2.6.1
- Simultaneous operating as F-Host and F-Device
- 45 mm width (AXC F 2152 housing)
- Supports up to 32 Profisafe devices
- Reloadable C-Functions
- Temperature range: -25°C up to 60°C
- Approvals
  - UL (Hazloc), CUL
  - DNV/GL, LR, BV, ABS, …
  - IEC Ex, ATEX

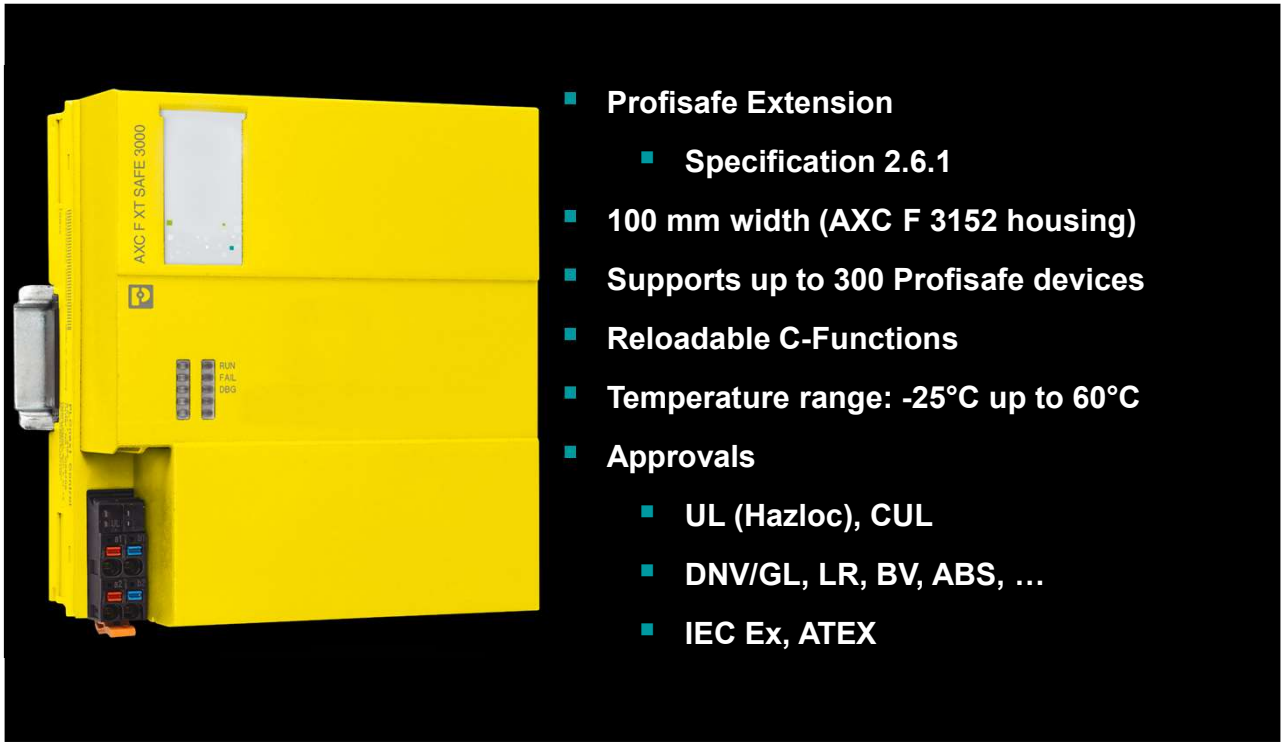


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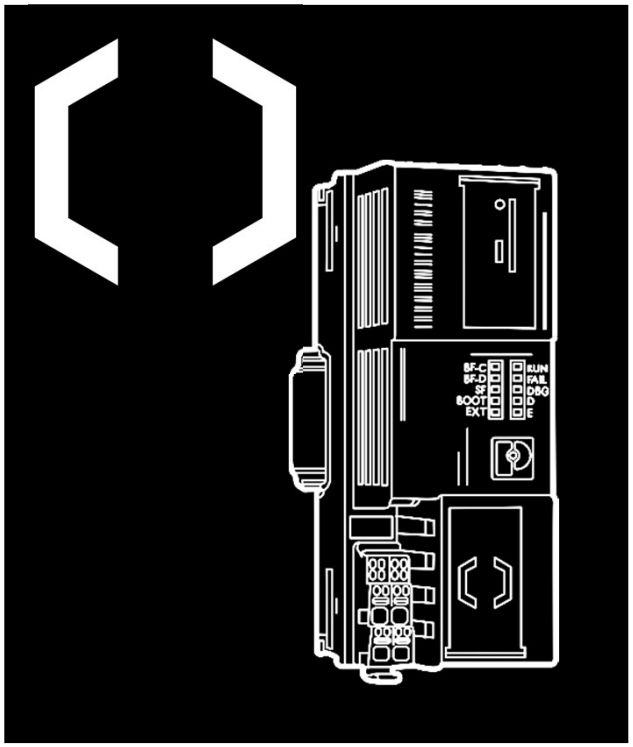
PLCnext Control

PLCnext Technology
Designed by PHOENIX CONTACT

PLCnext Extension AXC F XT SPLC 3000



- Profisafe Extension
  - Specification 2.6.1
- 100 mm width (AXC F 3152 housing)
- Supports up to 300 Profisafe devices
- Reloadable C-Functions
- Temperature range: -25°C up to 60°C
- Approvals
  - UL (Hazloc), CUL
  - DNV/GL, LR, BV, ABS, …
  - IEC Ex, ATEX



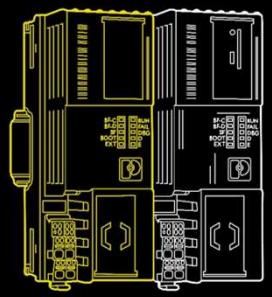
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PLCnext Technology

The open ecosystem for limitless automation

Safety

with PLCnext Control



PLCnext Control

Discover flexible automation

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Functional Safety Portfolio with PLCnext Technology



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PLCnext Technology

PLCnext Control Extension SPLC 1000



PLCnext Extension AXC F XT SPLC 1000

Core	# of Profisafe devices	Temperature
2 x Cortex M4	32	-25°C - 60°C

Width	Approvals	C Functions
45mm	UL, CUL, etc	Reloadable

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PLCnext Technology

PLCnext Control Extension SPLC 3000



PLCnext Extension AXC F XT SPLC 3000

Core	# of Profisafe devices	Temperature
ARM A8 & A9	300	-25°C - 60°C

Width	Approvals	C Functions
100mm	UL, CUL, etc	Reloadable

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PCIe SPLC 3000



Highest performance for any automation application

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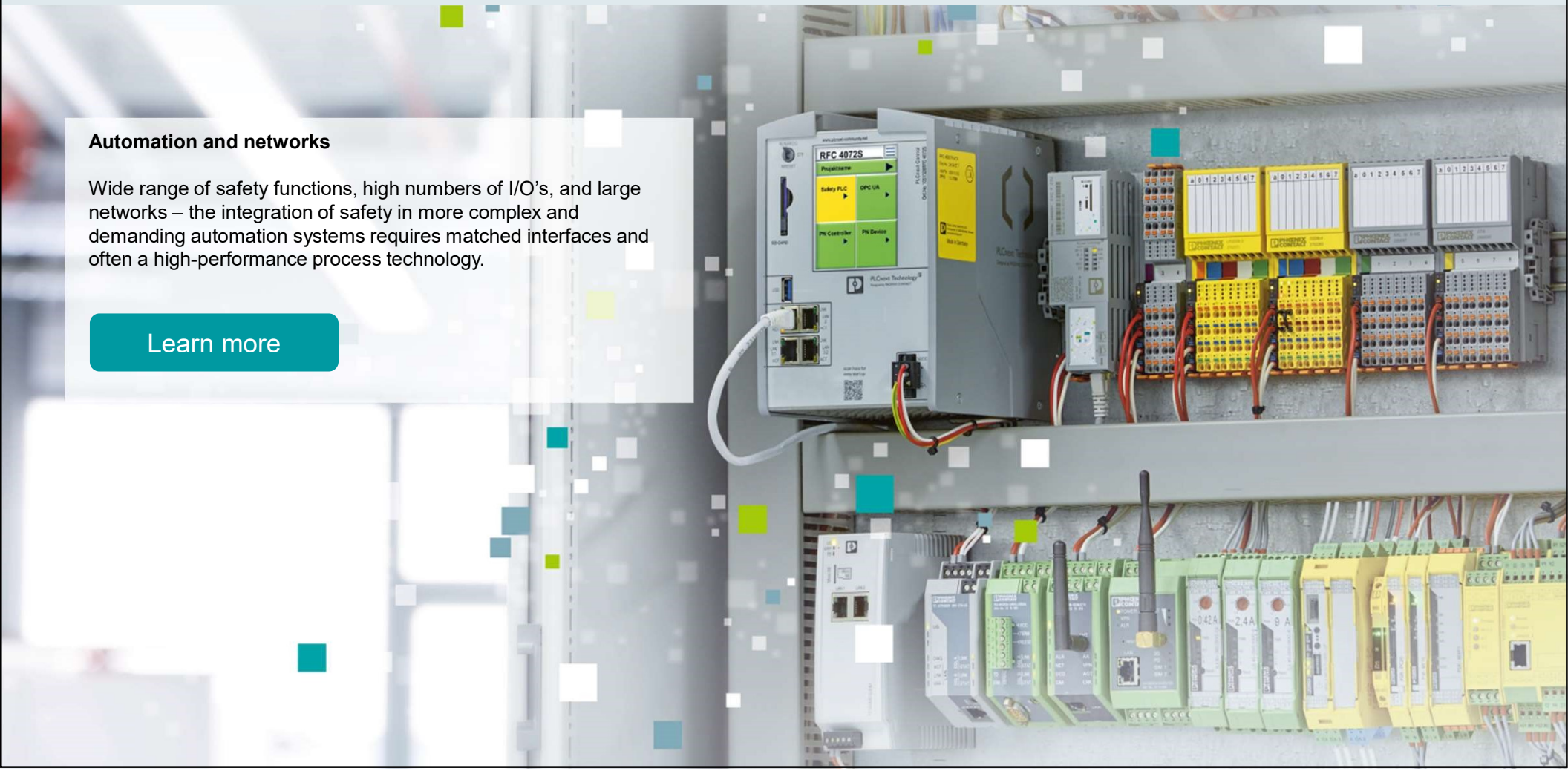


Demostración en vivo de PROFIsafe

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Smart safety solutions

Automation and networks

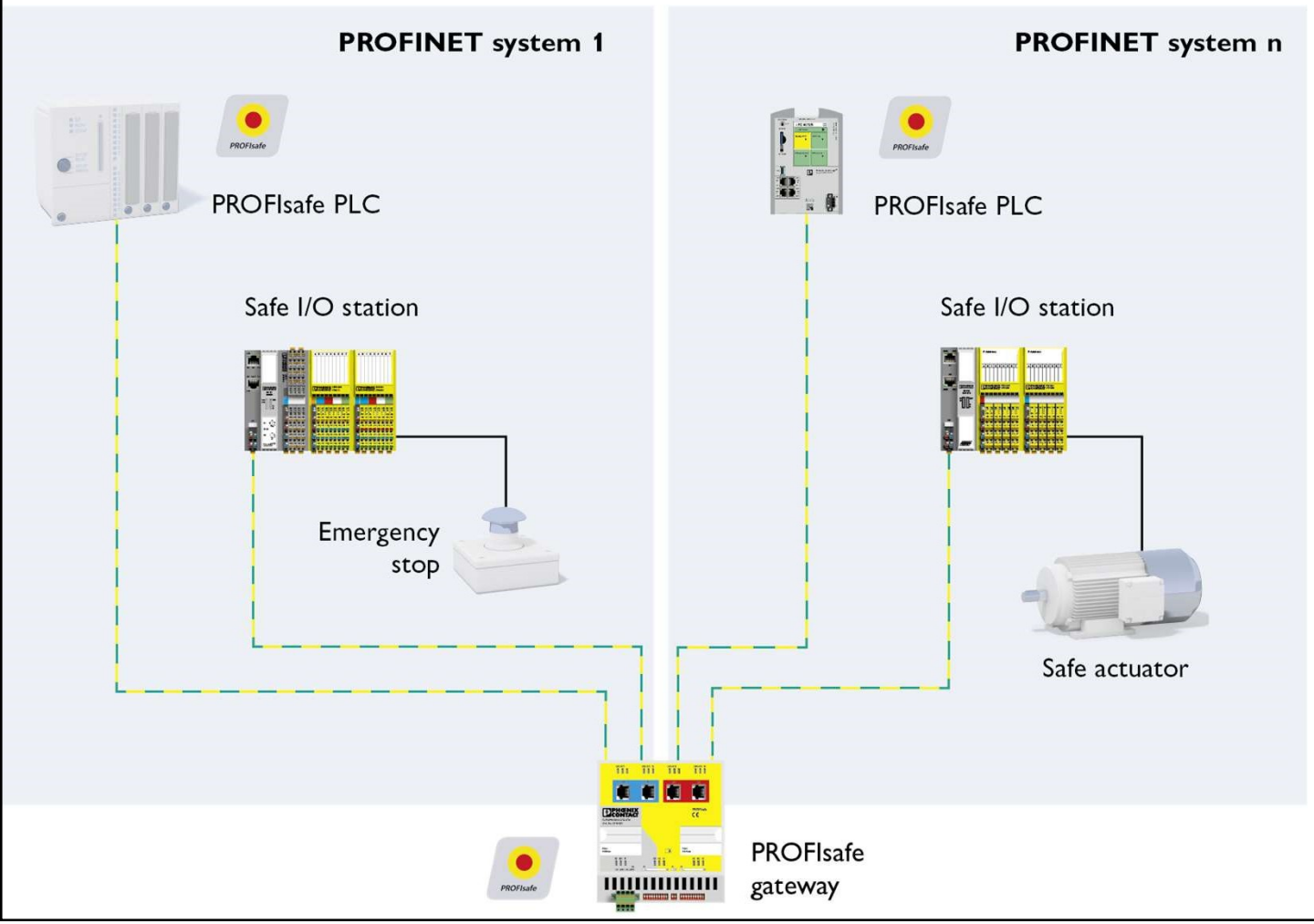


Automation and networks

Wide range of safety functions, high numbers of I/O’s, and large networks – the integration of safety in more complex and demanding automation systems requires matched interfaces and often a high-performance process technology.

Learn more

Smart safety solutions
Automation and networks

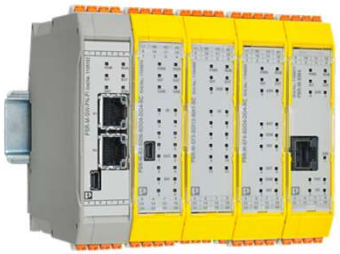


Safe control technology for complex applications

With the powerful safety controllers from Phoenix Contact, functional safety can be reliably integrated into PROFIsafe or PROFINET networks. Both systems can be coupled. This enables you to implement manufacturer-independent functional safety, such as emergency stop concepts, across systems.

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INSPIRING INNOVATIONS

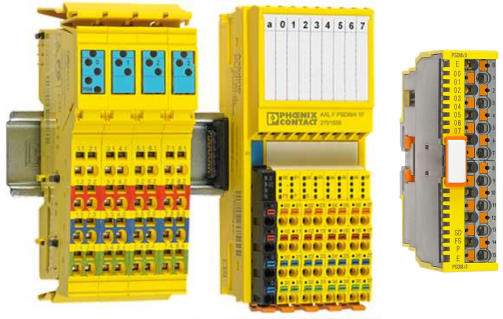
Smart safety solutions
Automation and networks



Modular safety system
PSRmodular



Safe I/O‘s for IP67
Axioline E



Safe I/O‘s for IP20
Axioline F and Inline

Safe I/O‘s for IP20
Axioline Smart Elements



Performance controllers
RFC

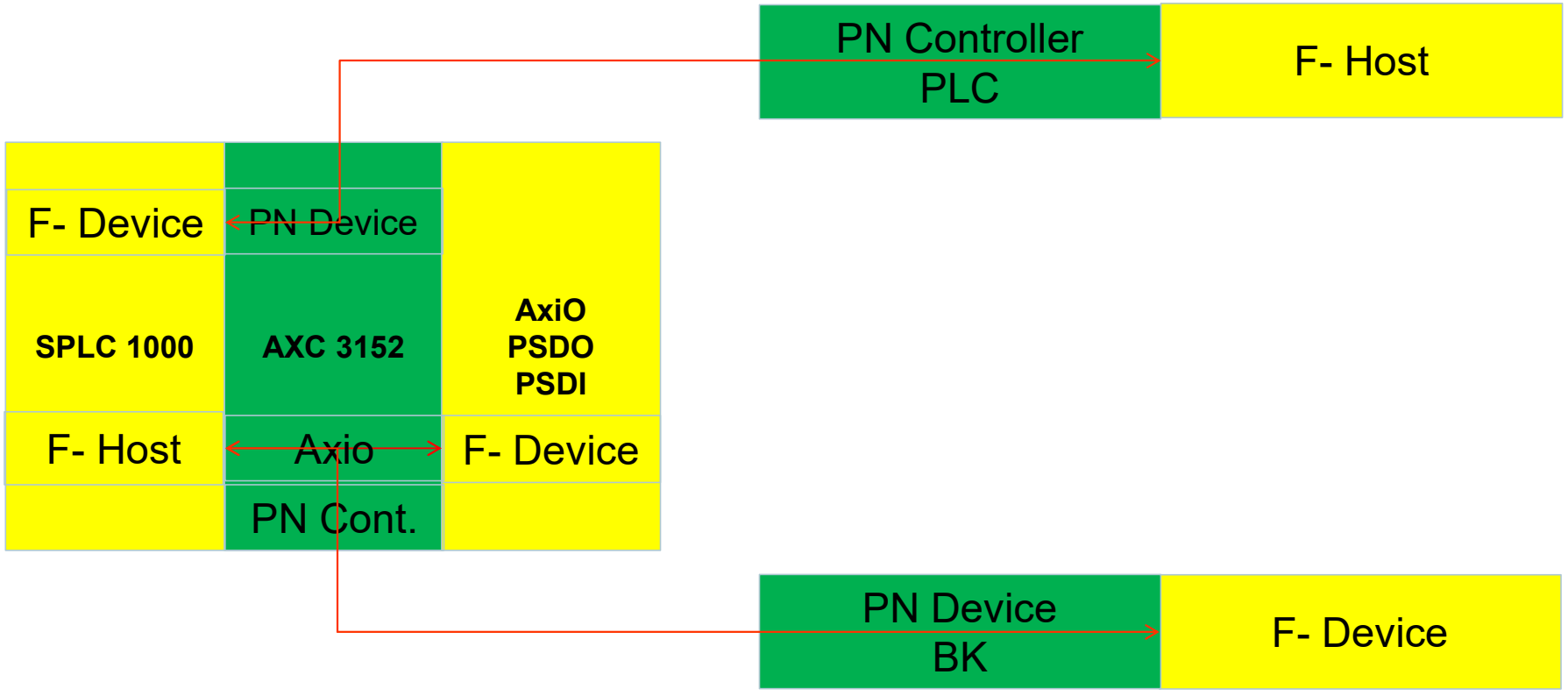
PHOENIX CONTACT
INSPIRING INNOVATIONS

Possibilities of left sided combination with AXC F 2152 & 3152

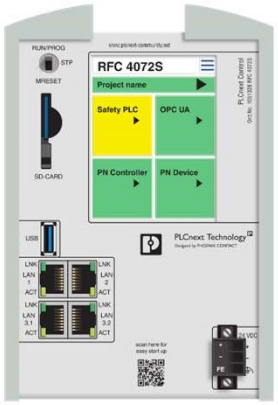


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INSPIRING INNOVATIONS

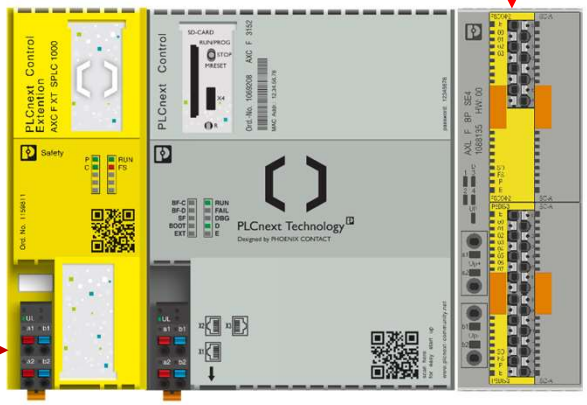
USE Case(s)



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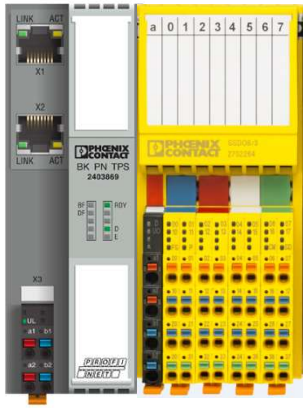


F-Host via Axiobus



F-Device via PROFINET

F-Host via PROFINET

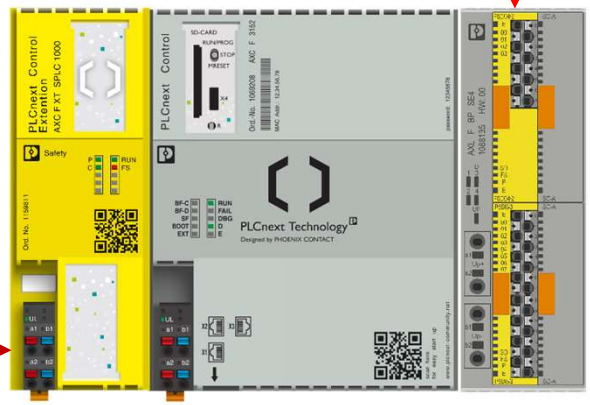


PHOENIX CONTACT
INSPIRING INNOVATIONS

PROFIsafe PLC
3rd Party



F-Host via Axiobus



F-Device via PROFINET

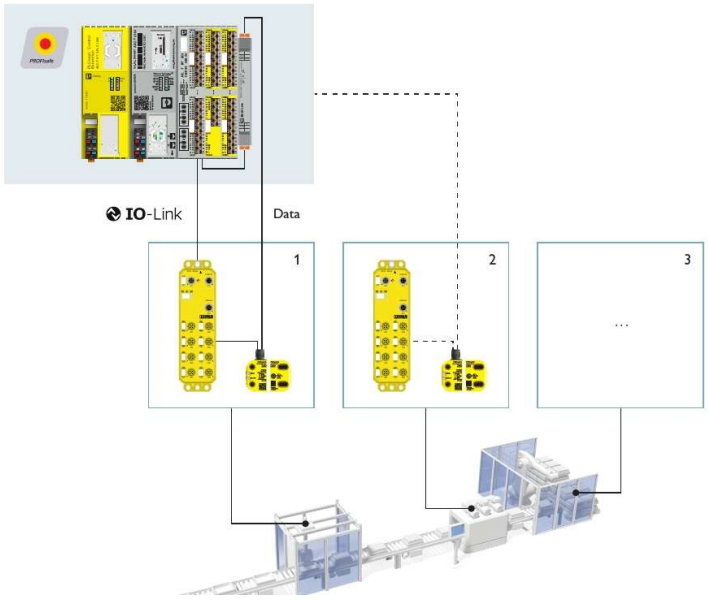
F-Host via PROFINET



PROFIsafe Device
3rd Party

PHOENIX CONTACT
INSPIRING INNOVATIONS

Applications



Modular Design



Compact Design

PHOENIX CONTACT
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AXC XC SPLC 1000 Release Roadmap

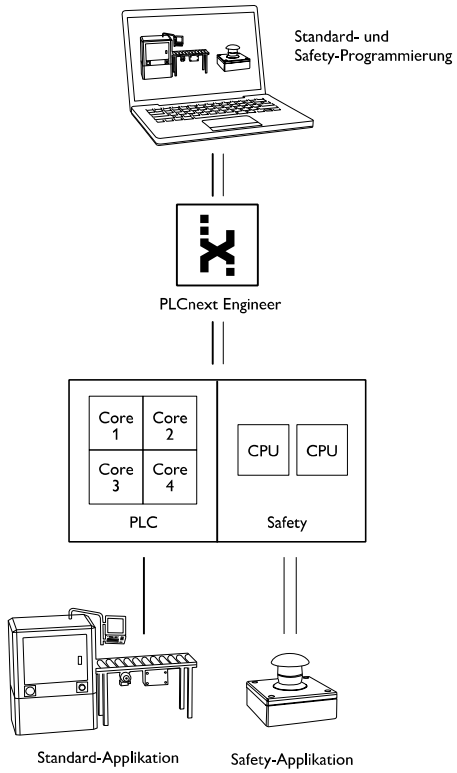


Release date 30th September 2021

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PLCnext Technology
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Functional Safety Integration

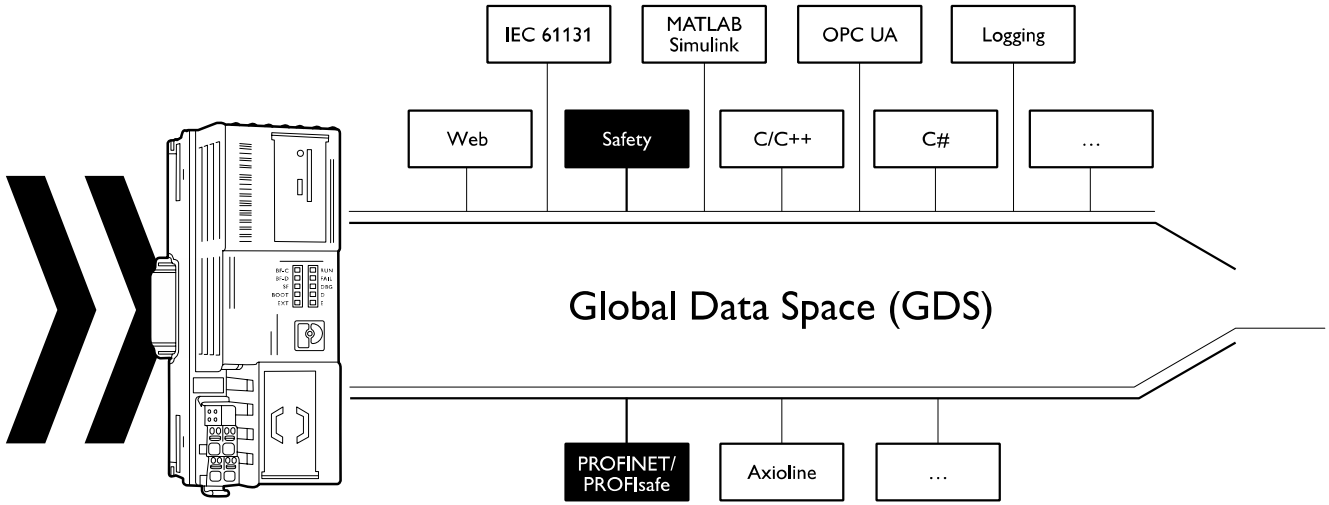




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INSPIRING INNOVATIONS

Safety integrated

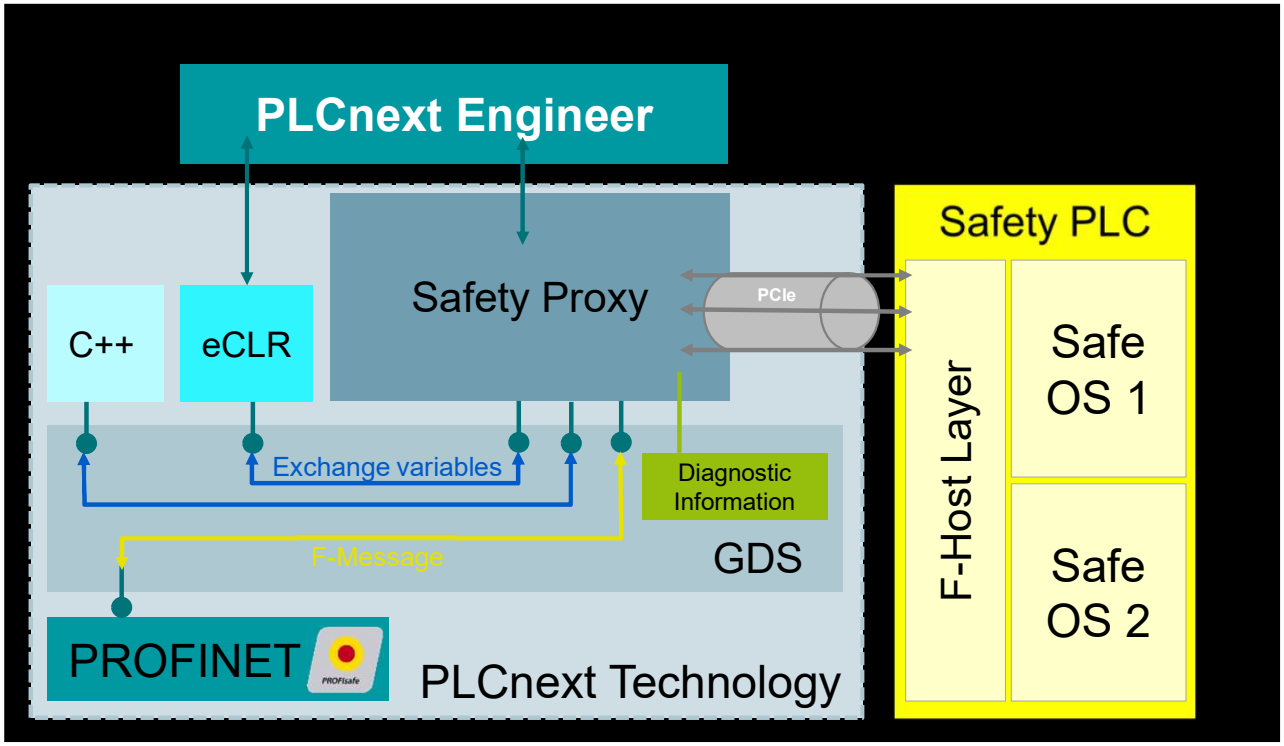
PROFIsafe



PHOENIX CONTACT
INSPIRING INNOVATIONS

PLCnext Technology
Designed by PHOENIX CONTACT

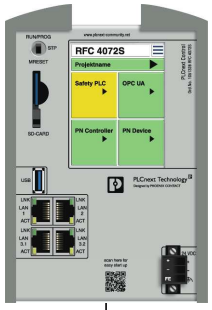
Safety integrated



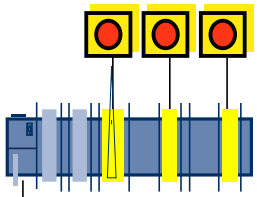
- Safety integrated (programming, hardware configuration)
- Consistent usability
- SIL 3
- Separate Safety PLC
  - 2 different cores

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INSPIRING INNOVATIONS

RFC 4072S
(F-Host)



Emergency Stop



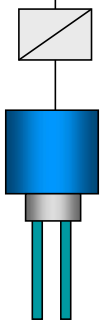
Safety I/Os

Standard I/Os

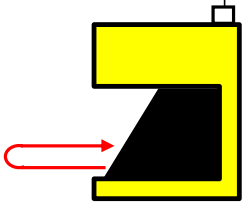


Standard and safety devices in common ethernet network

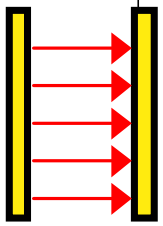
DP/PA



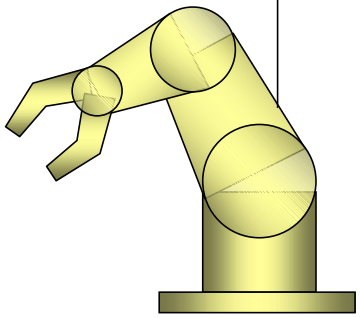
Limit switch



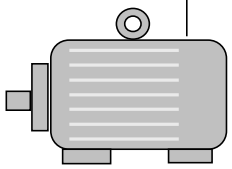
Sick
Safety
Scanner



Light curtain



Kuka Robot



E Motors

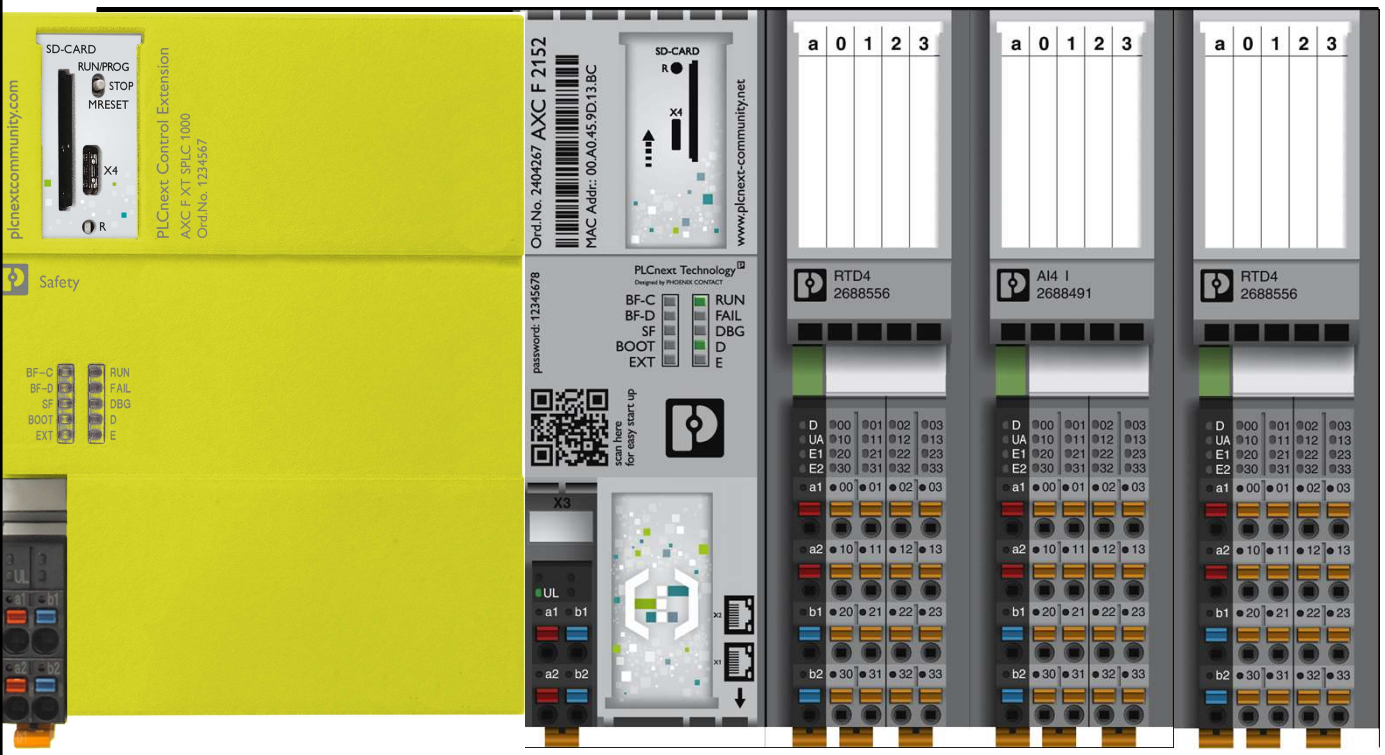
PHOENIX CONTACT
INSPIRING INNOVATIONS

Scalable Safe PLCs

PLCnext Technology
Designed by PHOENIX CONTACT

AXC F XT SPLC 3000 – High-Scale Modular Safe PLC

Outlook: Mid 2021

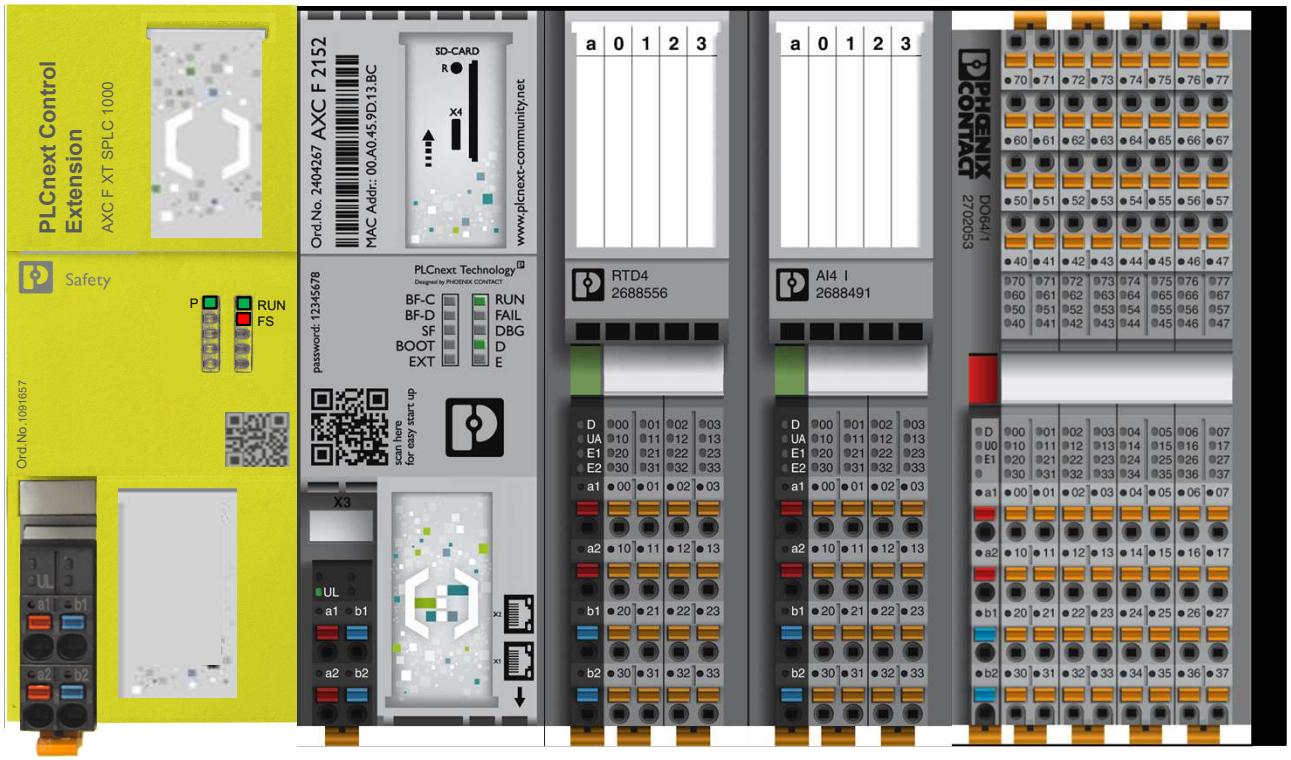


- Centralized Safe PLC
- Left-hand side connectable to PLCnext Controls
- Supported Safety Protocols:
  - PROFIsafe V2.61 (300 instances)
- Connectable to higher-layer SPLC
  - as F-Device
  - via new OPC UA Safety Protocol

PHOENIX CONTACT
INSPIRING INNOVATIONS

PLCnext Technology
Designed by PHOENIX CONTACT

AXC F XT SPLC 1000 – Low-Scale Modular Safe PLC



- Decentralized Small Safe PLC
- Left-hand side connectable to PLCnext Controls
- Supported Safety Protocols:
  - PROFIsafe V2.61 (32 instances)
- Connectable to higher-layer SPLC
  - as F-Device
  - via new OPC UA Safety Protocol

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INSPIRING INNOVATIONS

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AXC F XT SPLC 1000 Categorization

Centralized Safe PLC

- e.g. SPLC 3000 @ AXC F 3152, alternatively RFC 480S / RFC 4072S
- Higher-layer plant control

Higher-layer network

- Step 1: PROFIsafe via PROFINET
- Step 2: Safety via OPC UA

Decentralized small-scale Safe PLC

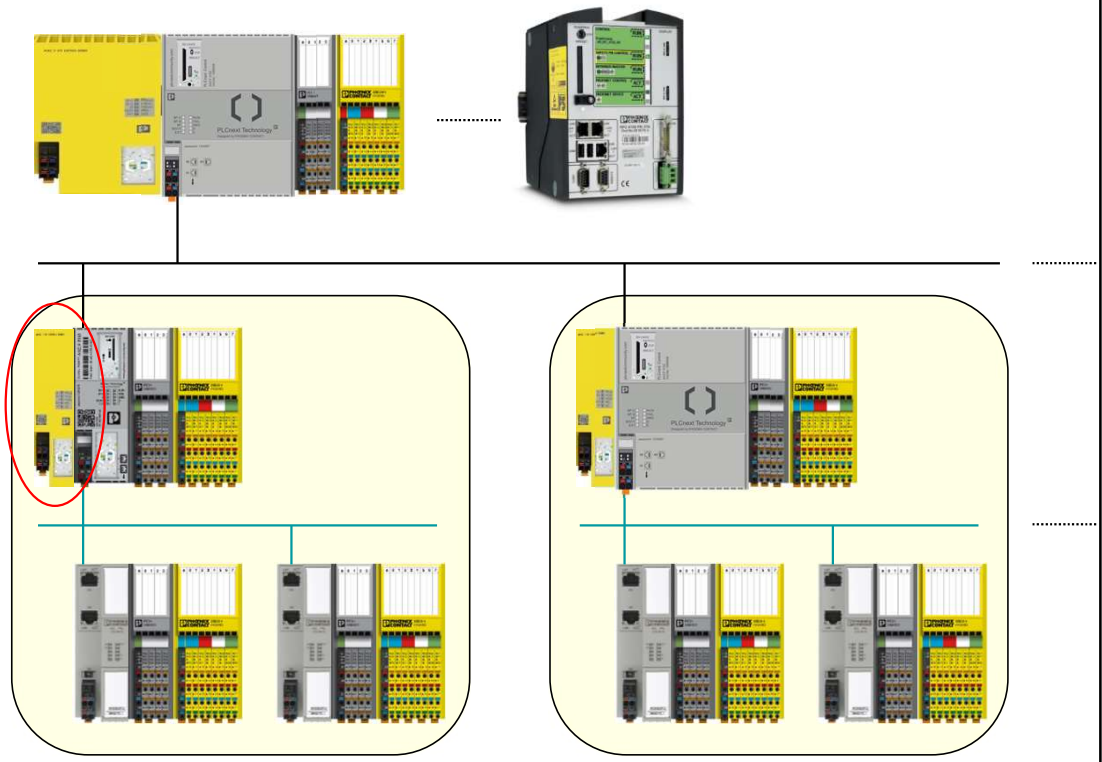
- **AXC F XT SPLC 1000** @ AXC F 2152 (or 3152)
- decentralized machine control incl. Safety

Machine network

- PROFIsafe via PROFINET

Field layer

- PROFIsafe IO + intelligent field devices

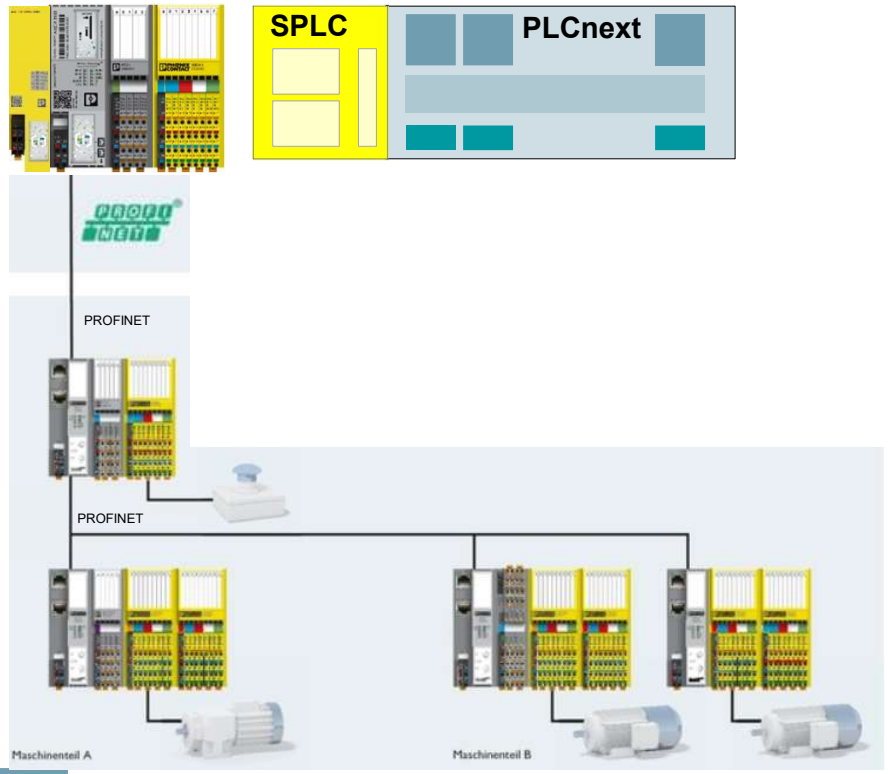


PHOENIX CONTACT
INSPIRING INNOVATIONS

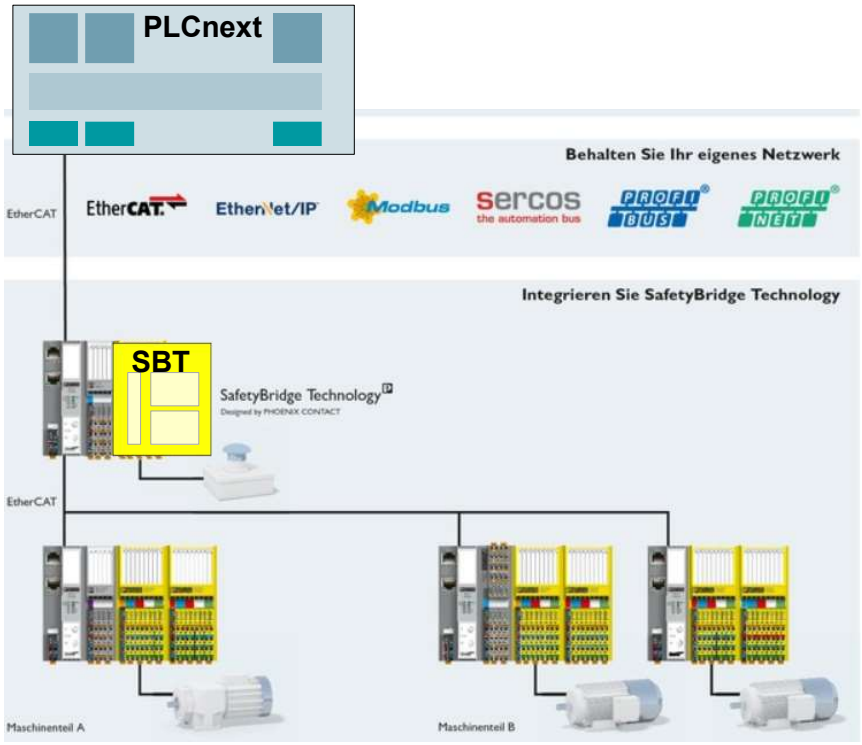
PLCnext Safety / SafetyBridge Categorization

PLCnext Technology
Designed by PHOENIX CONTACT

PLCnext Safety



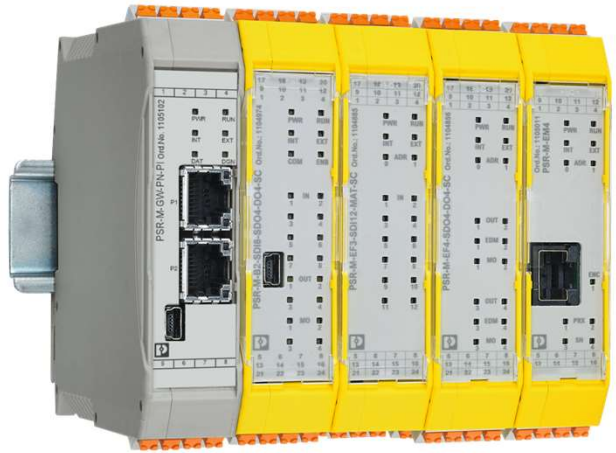
SafetyBridge Technology



PHOENIX CONTACT
INSPIRING INNOVATIONS

Products

Detailed diagnostics



Diagnostics on HMI:

- Device information
- Safety function status information
- Consistently available in all common automation networks

Diagnostics on device:

- LED status information
  - Channel information
  - Module status

Bidirectional communication for machine control functions

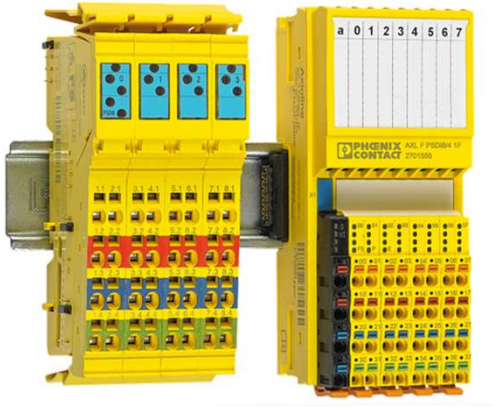
PHOENIX CONTACT
INSPIRING INNOVATIONS

Smart safety solutions

Safe I/O‘s for field installation (IP67) and control cabinet (IP20)



Safe I/O‘s for IP67
Axioline E



Safe I/O‘s for IP20
Inline and Axioline F



Safe I/O‘s for IP20
Axioline Smart Elements

PHOENIX CONTACT
INSPIRING INNOVATIONS

Products

Safe I/O‘s for control cabinet (IP20)



Inline I/O system

Axioline F I/O system

SafetyBridge Technology
Designed by PHOENIX CONTACT

Safe I/O’s for the I/O systems Axioline F and Inline

Inline comprises safe I/O terminals for easy, central integration of safety functions into compact machines.
Axioline offers safe I/O modules with SafetyBridge Technology to implement complex, distributed safety solutions in an existing network solution.

- ✓ Cost-effective system configuration, because safety PLCs and safe fieldbus systems are not required
- ✓ Compatibility with all common bus systems
- ✓ Safe data transmission via **wireless systems** and into the cloud possible
- ✓ Easy configuration with the **SAFECONF software**

PHOENIX CONTACT
INSPIRING INNOVATIONS

Products

Safe I/O‘s for control cabinet (IP20)



Relay Technology
Designed by PHOENIX CONTACT

Safe I/O terminal Inline ECO Safe

Deactivate connected standard output terminals safely with the safe Inline I/O terminal. The standard output terminals are mounted to the right of the safe I/O terminal. When a sensor is activated, e.g. emergency stop, the actuator voltage supply for the output terminals is switched off.

- ✓ Safe I/O terminal with two two-channel sensor circuits
- ✓ Cascadable switch-off of segment circuits
- ✓ Diagnostic and status messages in the controller
- ✓ Reduced wiring effort, thanks to the enable principle
- ✓ Up to SILCL 3 in accordance with IEC 62061and up to PL e in accordance with ISO 13849, UL and cUL

PHOENIX CONTACT
INSPIRING INNOVATIONS

Safe I/O‘s for control cabinet (IP20)

Decentralised approach with Inline ECO Safe

Safe I/O terminal with the function of two safety relays

With the safe I/O terminal, safety functions can be integrated into the Inline I/O station. Digital output terminals are mounted to the right of the safe I/O terminal. In the event of a fault, the actuator voltage for the I/O terminals arranged in a block is safely switched off. Up to two two-channel sensor circuits can be connected to one Inline ECO Safe. Status and error messages are forwarded to the controller.



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INSPIRING INNOVATIONS

Products

Safe I/O‘s for control cabinet (IP20)





Push-in Technology
Designed by PHOENIX CONTACT

COMPLETE line

Compact and flexible I/O’s Axioline Smart Elements

- ✓ Compact, plug-in, and system-independent I/O elements
- ✓ Very easy handling when it comes to configuration, installation, and startup
- ✓ Portfolio includes an IO-Link master, digital/analog input and output modules, safety modules for PROFIsafe, and further function modules

PHOENIX CONTACT
INSPIRING INNOVATIONS

Safe I/O‘s for control cabinet (IP20)
Intelligent and cost-effective automation

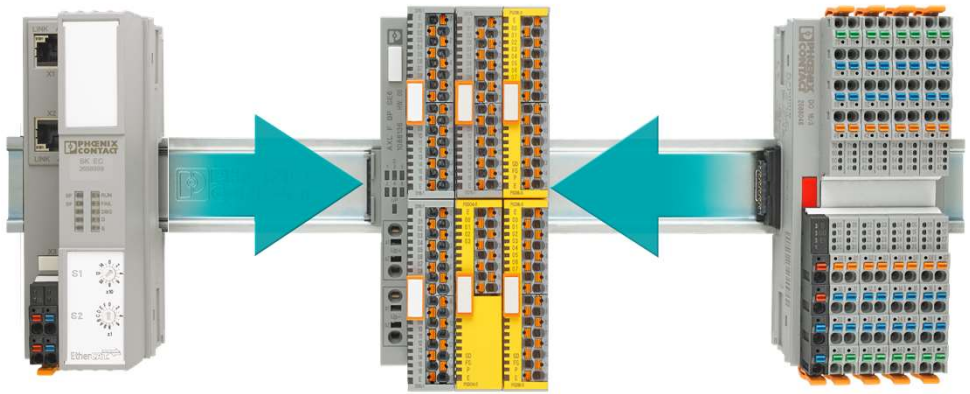


Compact, System-independent, Easy handling

- ✓ 32 channels within 15 mm in the Axioline F system
- ✓ Tailored I/O configuration on a single Axioline F backplane
- ✓ High degree of flexibility with reduced product variance
- ✓ Less space needed on the DIN rail enables compact control cabinet solutions
- ✓ Reduced installation time and connection time thanks to Push-in Technology

PHOENIX CONTACT
INSPIRING INNOVATIONS

Safe I/O‘s for control cabinet (IP20)
Compatibility of the Axioline Smart Elements



Axioline Smart Elements in a modular automation system

Within an I/O station, Axioline F modules and Axioline Smart Elements can be freely combined as desired. They can therefore be operated on existing Axioline F bus couplers or Axiocontrol devices (PLCnext Control devices and conventional PLCs).
Choose from a range of more than 80 I/O’s, bus couplers, and control components.

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Axioline Smart Elements



Axioline Smart Elements

MORE SPACE FOR
YOUR CREATIVITY

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INSPIRING INNOVATIONS

Axioline Smart Elements

- AXC F XT SPLC 1000 and Safety IO‘s
- The SafetyBridge Smart Elements
- What is the difference between AXL F and AXL SE



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INSPIRING INNOVATIONS

AXC F XT SPLC 1000 and Safety IO‘s

Remember: PROFIsafe Axioline Smart Elements

- PROFIsafe modules available from stock
- Slim solution together with SPLC 1000
- Space saving in the control cabinet



PHOENIX CONTACT
INSPIRING INNOVATIONS

What is new?

AXL SE SSDI8/3

- SafetyBridge Satellite module
- **Compatible with the AXL F Logicmodule AXL F LPSDO8/3 1F**
- Same parameters like Axioline F
- 8 inputs single channel use, 4 inputs two-channel use
- Connection method: 3-conductor
- Up to SILCL 3 and cat. 4/PL e

Available from stock



PHOENIX CONTACT
INSPIRING INNOVATIONS

What is new?

AXL SE SSDO4/2 2A

- SafetyBridge Satellite module
- **Compatible with the AXL F Logicmodule AXL F LPSDO8/3 1F**
- Same parameters like Axioline F
- 4 outputs single channel use, 2 outputs two-channel use
- Connection method: 2-conductor
- Up to SILCL 3 and cat. 4/PL e

Available from stock

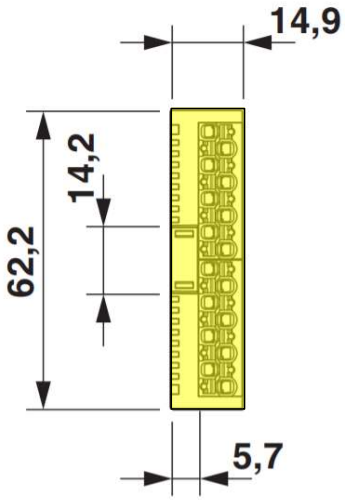


PHOENIX CONTACT
INSPIRING INNOVATIONS

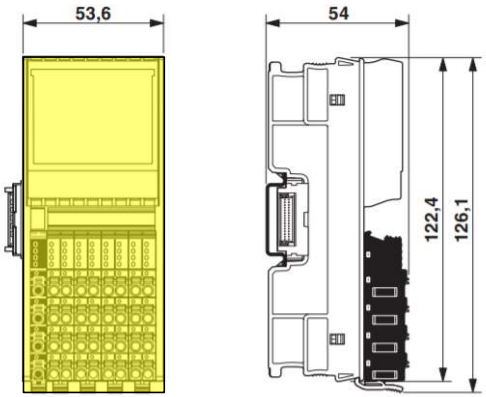
What is the difference?

The main difference

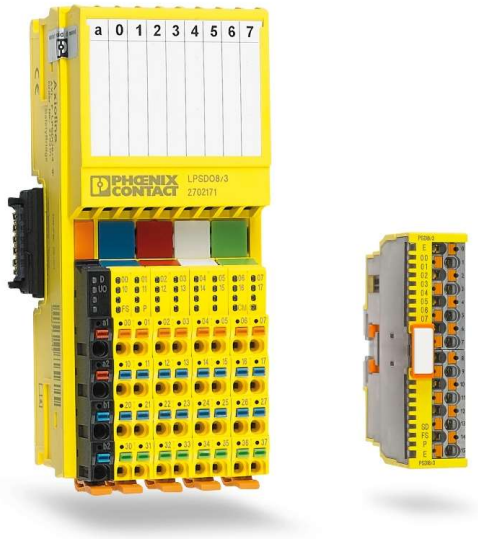
- Space requirement in the control cabinet (here for the PSDI8)



8 Signals on 927mm²



8 Signals on 6759mm²



PHOENIX CONTACT
INSPIRING INNOVATIONS

Axioline F PSAI



- ✓ Safe analog current signals directly in the Safety PLC
- ✓ 8 analog input channels for the connection of current signals using the PROFIsafe protocol.
- ✓ Can be used with safety controllers from Phoenix Contact and Siemens
- ✓ Fast connection of the sensors to the module, thanks to the Push-in Technology

PHOENIX CONTACT
INSPIRING INNOVATIONS

Products

High-performance safety controller



PLCnext Technology
Designed by PHOENIX CONTACT

High-performance safety controller RFC 4072S

The performance safety controller for high-level languages is ideal for PROFIsafe applications with the highest safety demands.

- ✓ Based on PLCnext Technology with independent CPUs for safety calculations
- ✓ Standard and safety programming codes can be realized in just one engineering tool with PLCnext Engineer
- ✓ Extended networks with up to 300 safety-relevant devices
- ✓ Connection to Proficloud and the potential integration of open source software

PHOENIX CONTACT
INSPIRING INNOVATIONS

Products
PROFIsafe gateway



PROFIsafe gateway

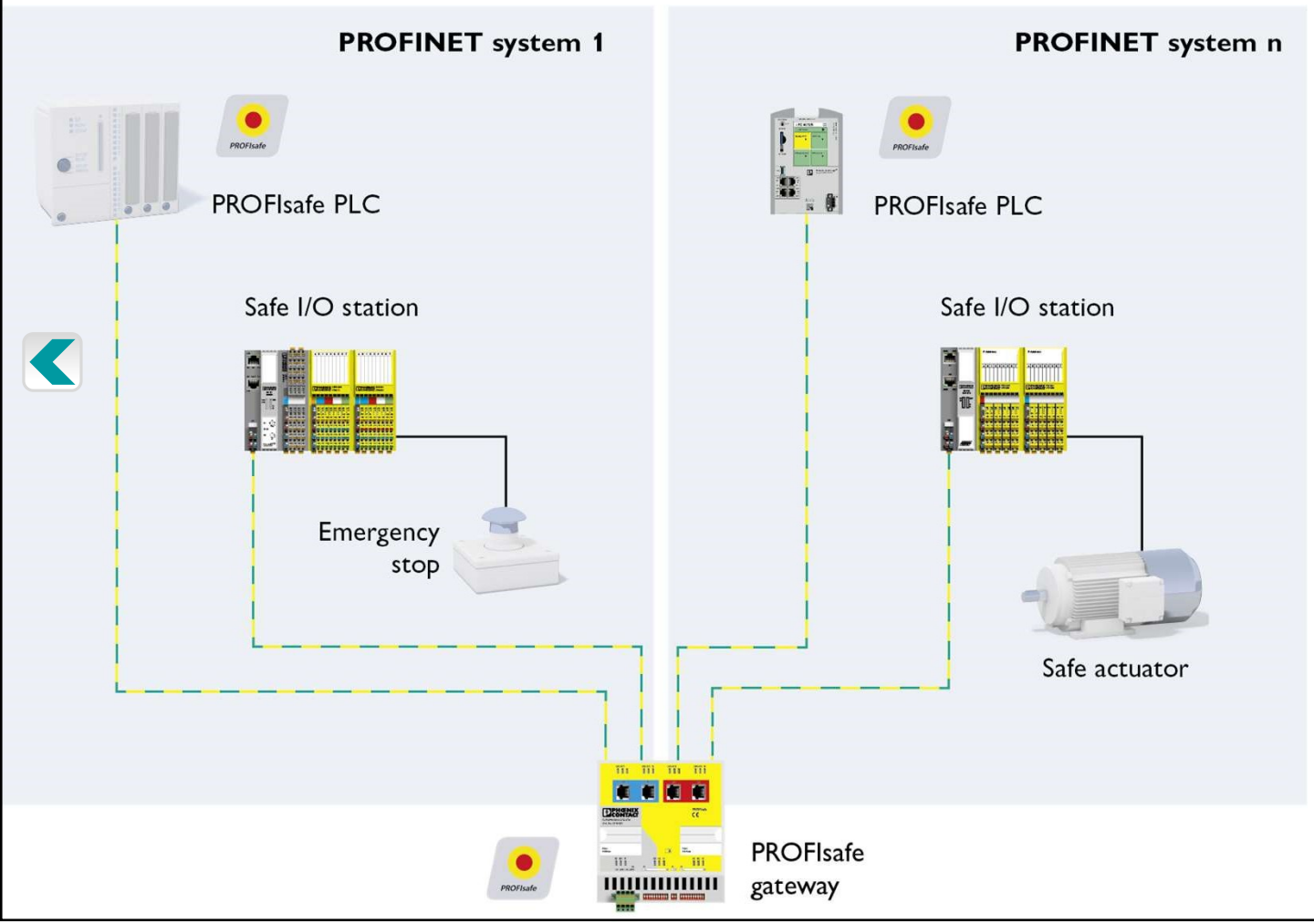
The PROFIsafe gateway is made for PLC-PLC-communication and network insulation

- ✓ Two PROFINET and PROFIsafe-devices in one housing
- ✓ Redundant insulated power supply concept
- ✓ Makes different PLC-types compatible to each other:
  Phoenix, Siemens, ABB,…
- ✓ Simple in parameterization and handling,
  good in transmission time and diagnostics
- ✓ 2..11 bytes safety exchange data
- ✓ 2..128 bytes standard exchange data

PHOENIX CONTACT
INSPIRING INNOVATIONS

High-performance safety controller

Reliably integrated into PROFIsafe or PROFINET networks

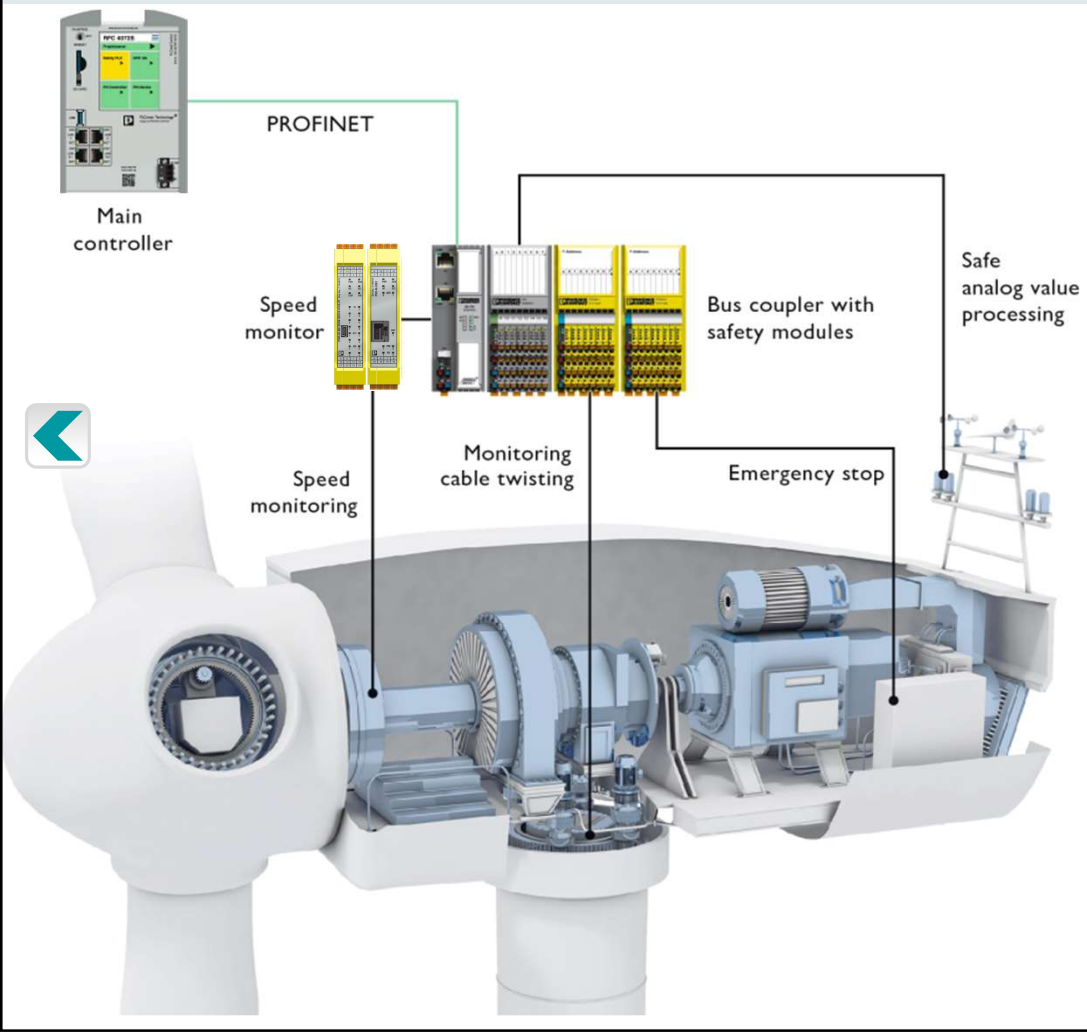


Safe control technology for complex applications

With the powerful safety controllers from Phoenix Contact, functional safety can be reliably integrated into PROFIsafe or PROFINET networks. Both systems can be coupled. This enables you to implement manufacturer-independent functional safety, such as emergency stop concepts, across systems.

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INSPIRING INNOVATIONS

High-performance safety controller
Performance controllers for wind applications



Safe monitoring of the wind turbine generators

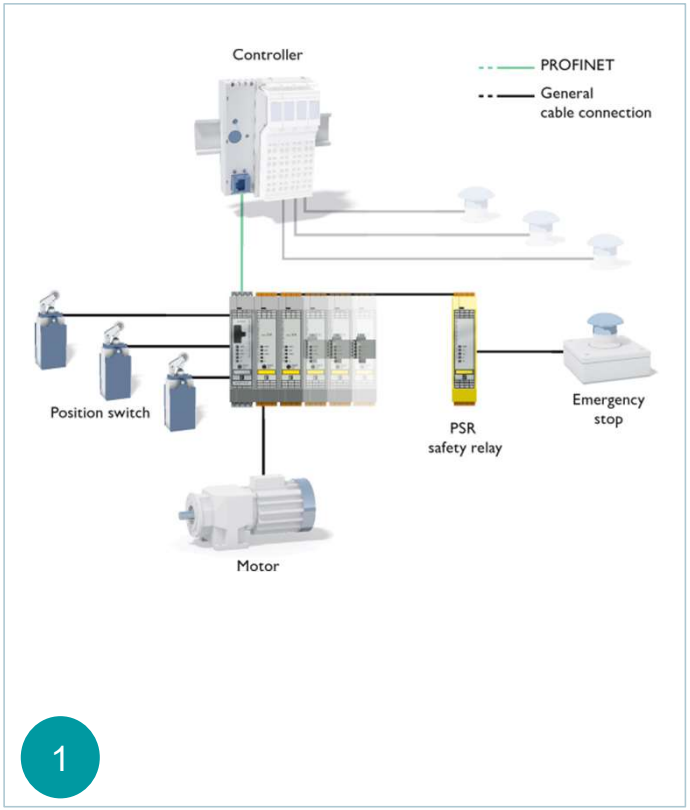
Safe monitoring of a wide range of signals is a challenge when controlling WTGs.
With the SAFE AI solution package, for example, safety-related analog I/O modules are no longer required in order to process safe signals from wind measurement. This takes place using TÜV-certified software and enables you to implement safety functions up to SIL 3 and PL e in your WTG.

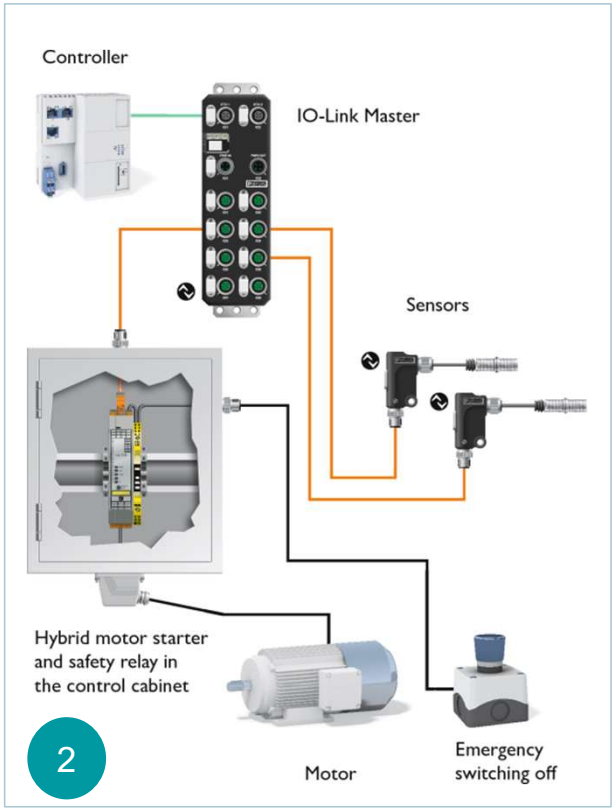
The consultation service provided by our safety experts for the wind industry completes the package.

PHOENIX CONTACT
INSPIRING INNOVATIONS

Hybrid motor starters

Consistent networking via the interface system IO-Link





Network-capable motor starters

In addition to standard devices for parallel wiring, network-capable versions are also available.

The network-capable versions enable consistent communication between the field and control level. The integration into all common fieldbus systems is realized via the interface system or IO-Link.

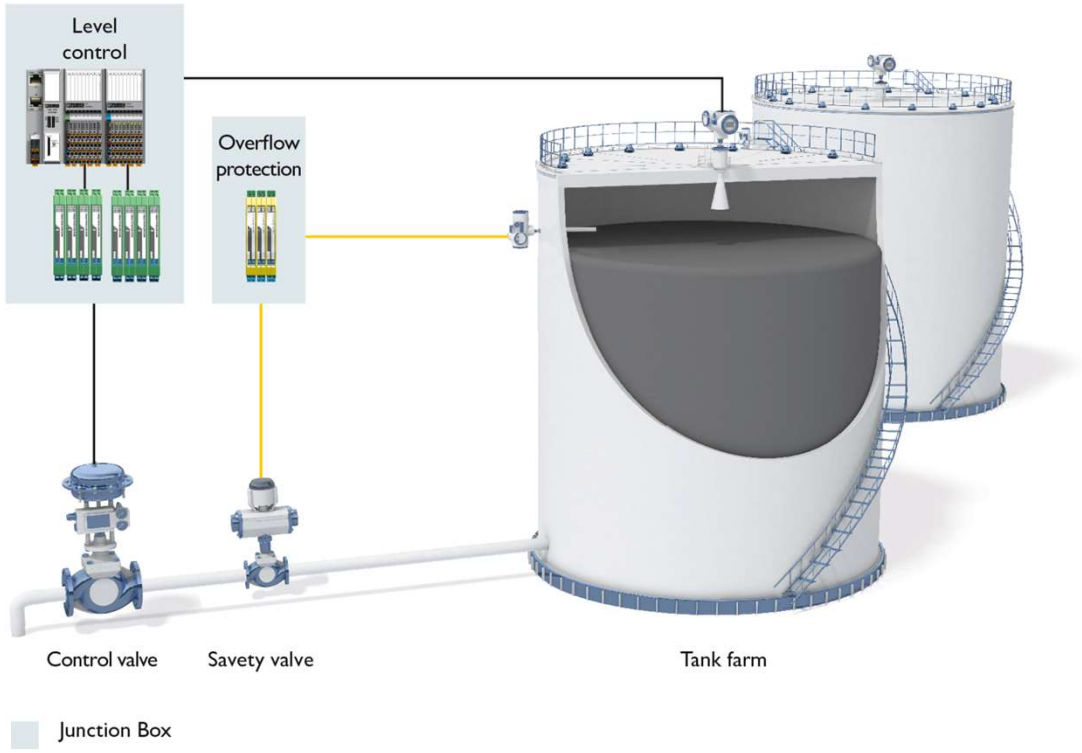
1. Fieldbus connection via interface system (IFS)
2. Hybrid motor starters for networking with IO-Link

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INSPIRING INNOVATIONS

Safe coupling relays
Tank monitoring

Complete solutions for automated tank farm management

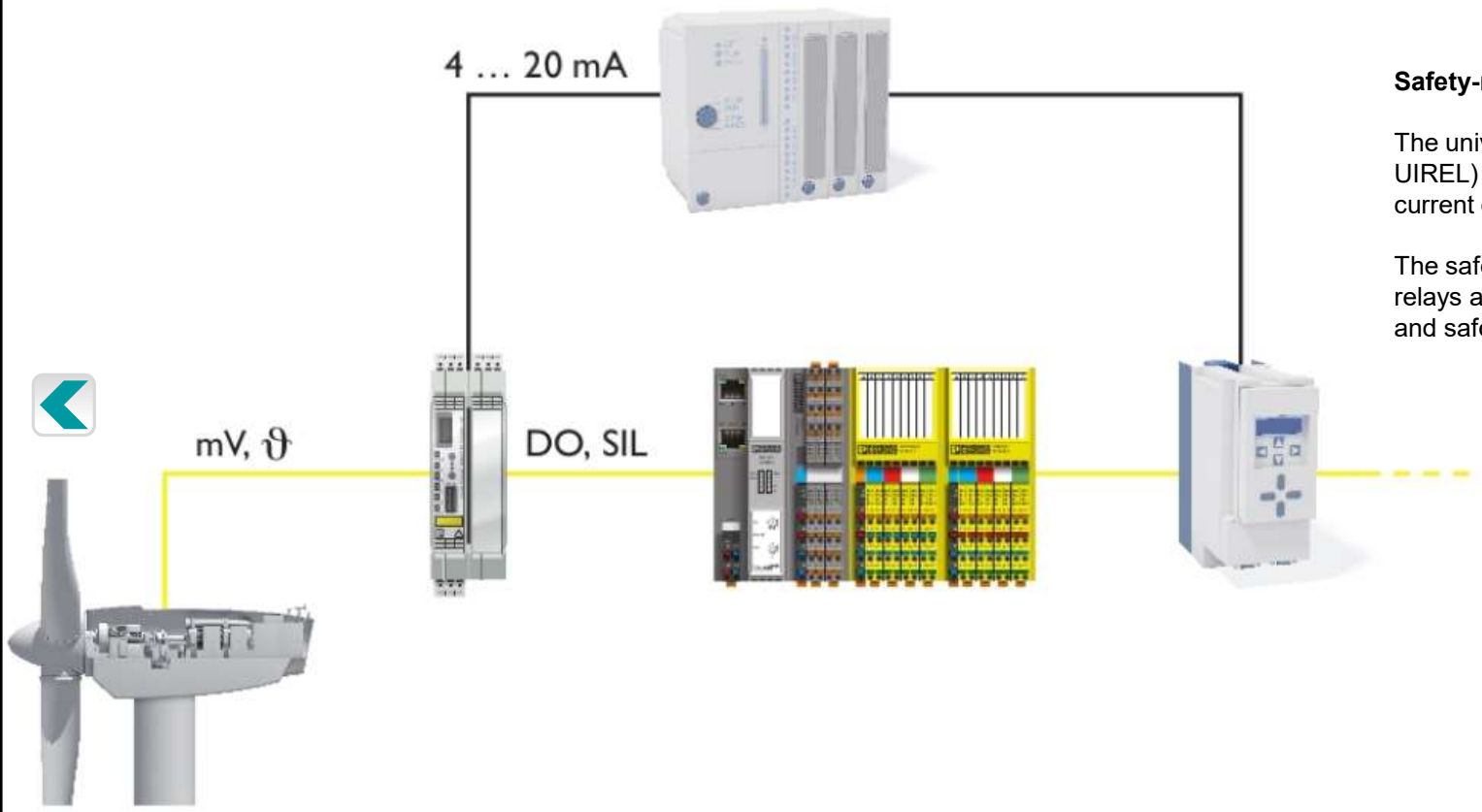
With a broad portfolio of SIL-certified technology for functional safety, Ex-i signal conditioners and modular control systems, you can design efficient level control. An overflow protection is installed parallel to the level control, which activates a safety valve in an emergency and immediately stops the flow of the conveyed material.



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INSPIRING INNOVATIONS

Safe signal conditioners

Safe signal conditioning with functional safety



Safety-relevant temperature monitoring

The universal temperature transducer (MACX TTT-UIREL) has two switching outputs, in addition to a current output.

The safety-relevant switching output, to which two relays are connected, switches limit values directly and safely without an additional safety controller.

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INSPIRING INNOVATIONS

Products
Safe power supply



Safe power supplies QUINT POWER

The high-performance power supplies QUINT POWER ensure superior availability of your system. It satisfies the requirements in accordance with functional safety (SIL) and ensures maximum operational safety.

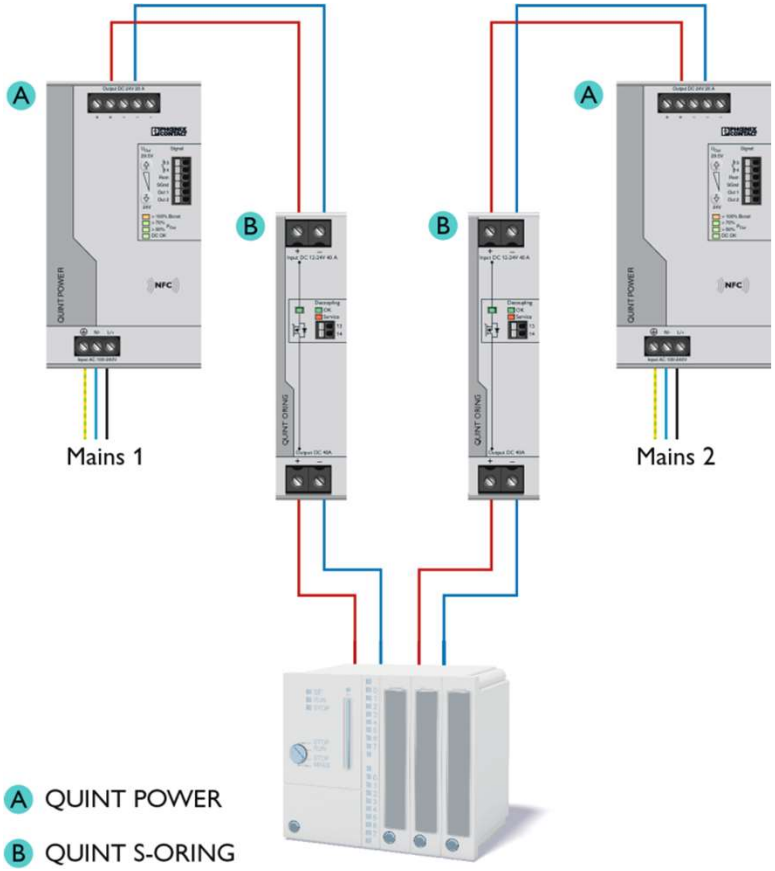
- ✓ Superior system availability, thanks to SFB Technology and preventive function monitoring
- ✓ Safe supply for your application, thanks to SIL certification in accordance with IEC 61508
- ✓ Fully functional monitoring, thanks to redundant system

Product overview

PHOENIX CONTACT
INSPIRING INNOVATIONS

Safe power supply

Increased demands on functional safety



Redundant system for functional safety

The 1+1 redundant power supply system provides symmetrical load distribution and increases system availability. Thanks to isolated conductor routing, consistent redundancy through to the load is assured.

Thanks to the SIL 3 certification in accordance with IEC 61508, the system can be integrated into redundant applications with the greatest demands on functional safety and superior system availability.

PHOENIX CONTACT
INSPIRING INNOVATIONS

Safe power supplies
Product overview

Product overview

Type	Applications	Output current				Safety approvals						Dimensions W x H x D	Order No.
		Nominal output current	Static boost	Dynamic boost	SFB Technology	IEC 60950-1	SIL in accordance with IEC 61508	ATEX / IECEx / Class I zone 2	UL ANSI / ISA-12.12.01 Class I Division 2	DNV GL	HART-compatible	[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													
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 (5 ms)	•	SIL 3	•	•	•	•	70 x 130 x 125	2904617
Active redundancy module, Plus version													
Input voltage: 8 V DC ... 26 V DC Output voltage: U_B – 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

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INSPIRING INNOVATIONS

Smart safety solutions

Mobile applications



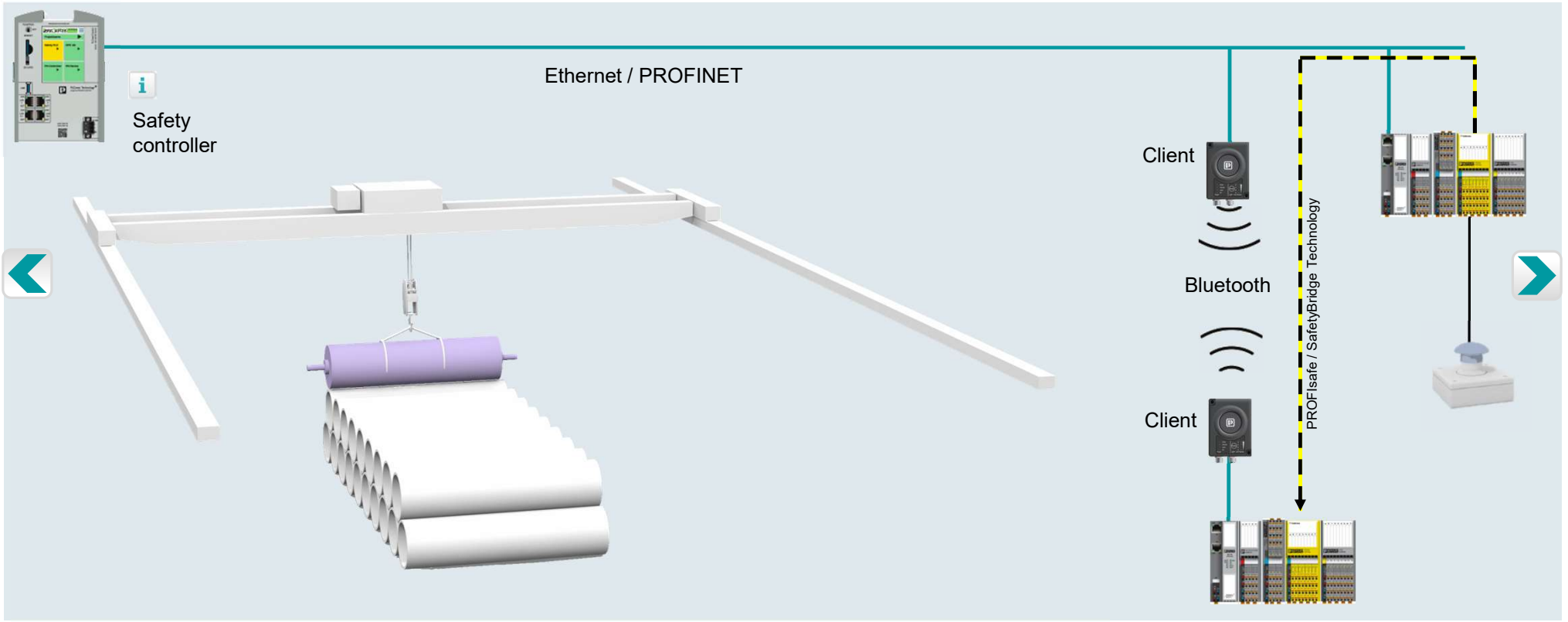
Mobile applications

With regard to passengerless transport systems, airport bridges or the like, functional safety is also becoming increasingly important. In addition, the combination of safety and wireless has many advantages.

Learn more

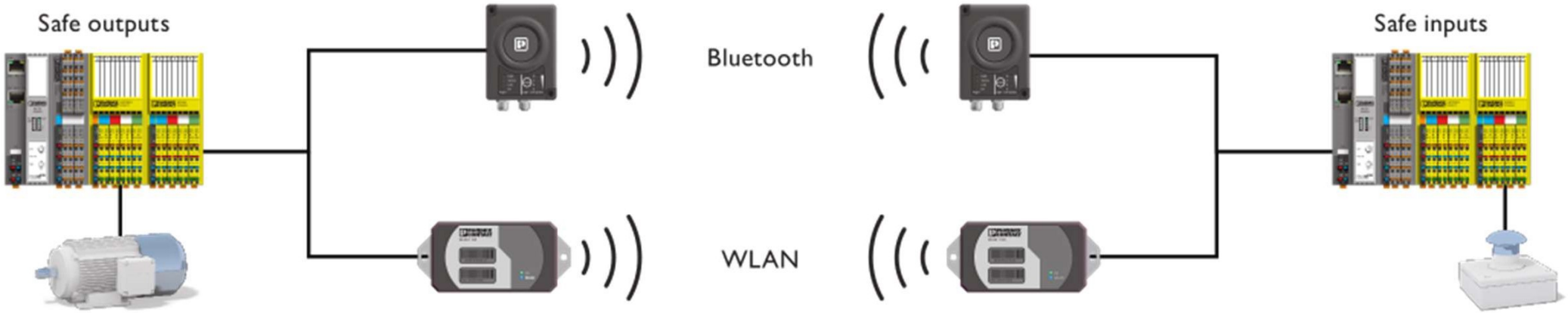
Smart safety solutions

Transmitting safe data via wireless systems



PHOENIX CONTACT
INSPIRING INNOVATIONS

Smart safety solutions
Transmitting safe data via wireless systems



SafetyBridge Technology enables the safe and reliable wireless transmission of safety-related data signals. You can choose between the two wireless technologies, WLAN and Bluetooth. Cable and slip ring transmission systems can thus be replaced, with the wireless paths, without having to change the security passwords for the safety application.

SafetyBridge Technology
Designed by PHOENIX CONTACT

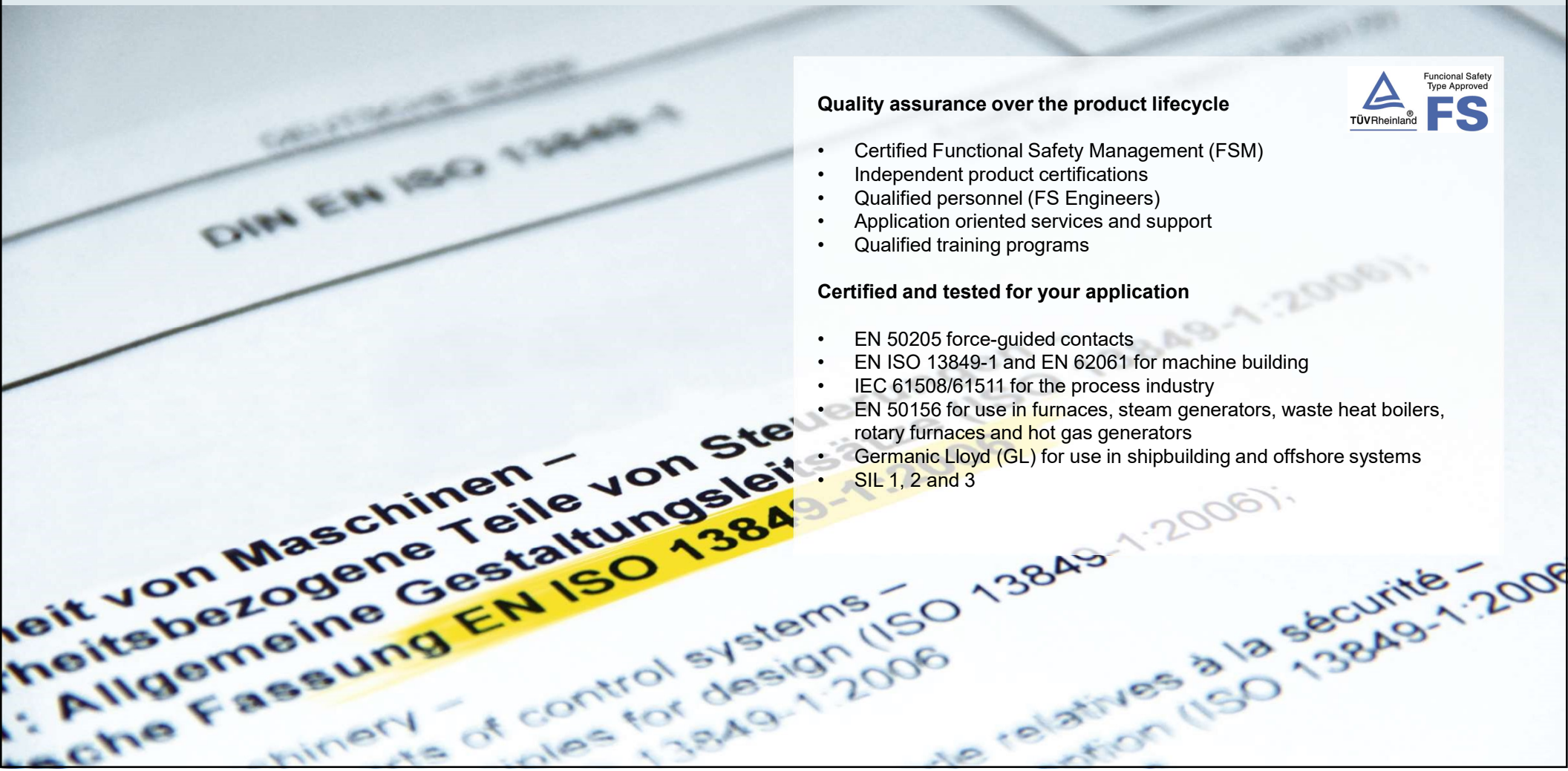
Advantages of combing safety and wireless:

- ✓ Easy integration in existing automation networks
- ✓ Transmission of safety signals over long distances
- ✓ Cost savings with a decentralised or mobile machine design

PHOENIX CONTACT
INSPIRING INNOVATIONS

Quality assurance

Certified products and processes



Quality assurance over the product lifecycle

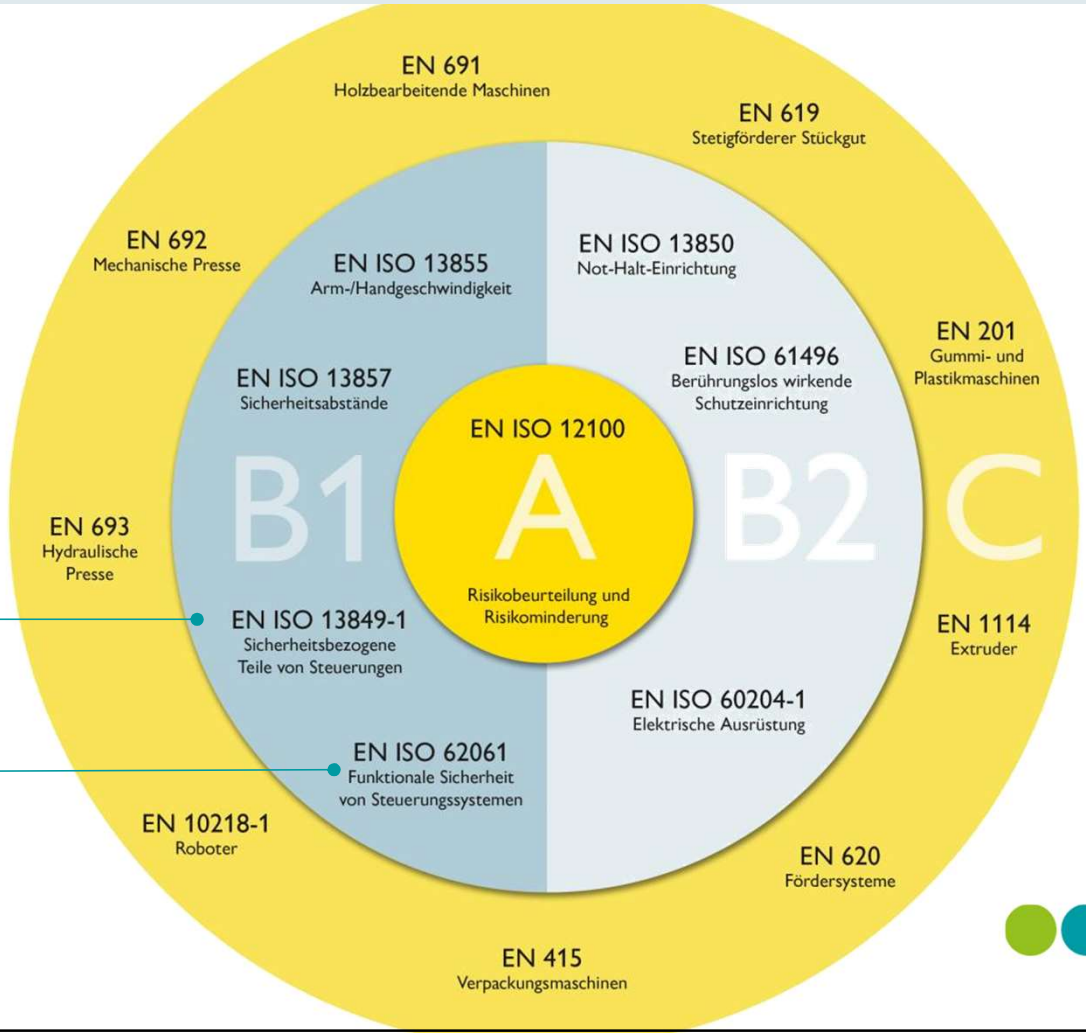
- Certified Functional Safety Management (FSM)
- Independent product certifications
- Qualified personnel (FS Engineers)
- Application oriented services and support
- Qualified training programs

Certified and tested for your application

- EN 50205 force-guided contacts
- EN ISO 13849-1 and EN 62061 for machine building
- IEC 61508/61511 for the process industry
- EN 50156 for use in furnaces, steam generators, waste heat boilers, rotary furnaces and hot gas generators
- Germanic Lloyd (GL) for use in shipbuilding and offshore systems
- SIL 1, 2 and 3

Safety standards and regulations

to better control your safety critical processes



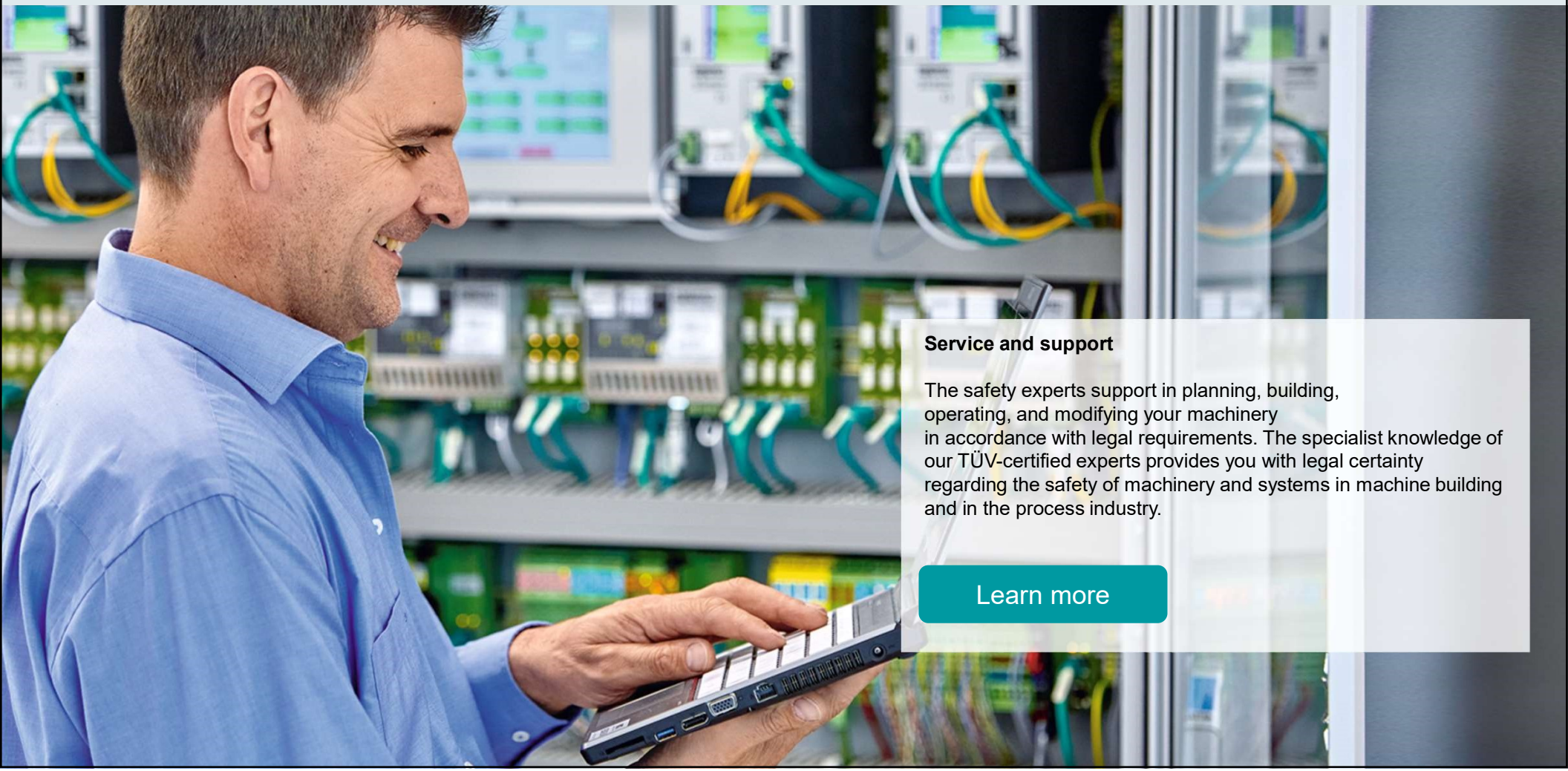
EN ISO 13849-1 describes the design of safety-related parts of control systems. An important parameter for the reliability of safety-related functions is the Performance Level (PL).

DIN EN 62061 describes the functional safety aspects of safety-related electrical, electronic and programmable control systems.

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Safety service and support

Worldwide support from TÜV certified experts



Service and support

The safety experts support in planning, building, operating, and modifying your machinery in accordance with legal requirements. The specialist knowledge of our TÜV-certified experts provides you with legal certainty regarding the safety of machinery and systems in machine building and in the process industry.

Learn more

Safety service and support

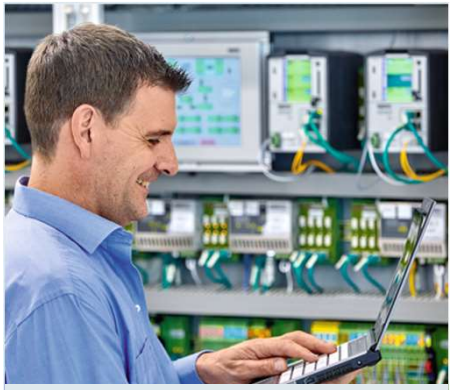
Services for machine and system safety



Consulting

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

- Design of the safety lifecycle: standards and their implementation
- Machinery Directive
- Changes to machinery and systems



Engineering

To assess the safety integrity, we determine the SIL of the safety functions with the help of your technical documentation. These must be sufficiently robust to withstand random errors. In the case of Machinery Directive requirements, we implement the entire **safety lifecycle process**.



Product support

We provide support regarding any Phoenix Contact safety hardware and software questions. You can contact our support team regarding anything – from the preliminary technical clarification, through planning and implementation, right through to operation



Seminars and trainings

We offer instruction and practical training that is tailored to your individual requirements, e.g. safety application software:

- Demands on safety-related software
- Specification of safety requirements and software
- Realization of safety functions

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Safety service and support

Services for safety in the process industry



Demands on safety 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 internationally harmonized procedure is described in IEC 61511.
A significant component of this is the safety lifecycle in conjunction with functional safety management.

Seminars for functional safety in the process industry in accordance with EN 61511:

- Risk analysis
- Safety lifecycle
- Creation of process control technology

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Successful in use
Industries







Industries
Machine building



- ✓ Wide product portfolio with compatibility to a large number of sensors
- ✓ In-house mechanical engineering supports all business fields of Phoenix Contact as well as the developing and producing sites worldwide
- ✓ Approvals for markets around the world such as EN ISO 13849-1 and EN 62061

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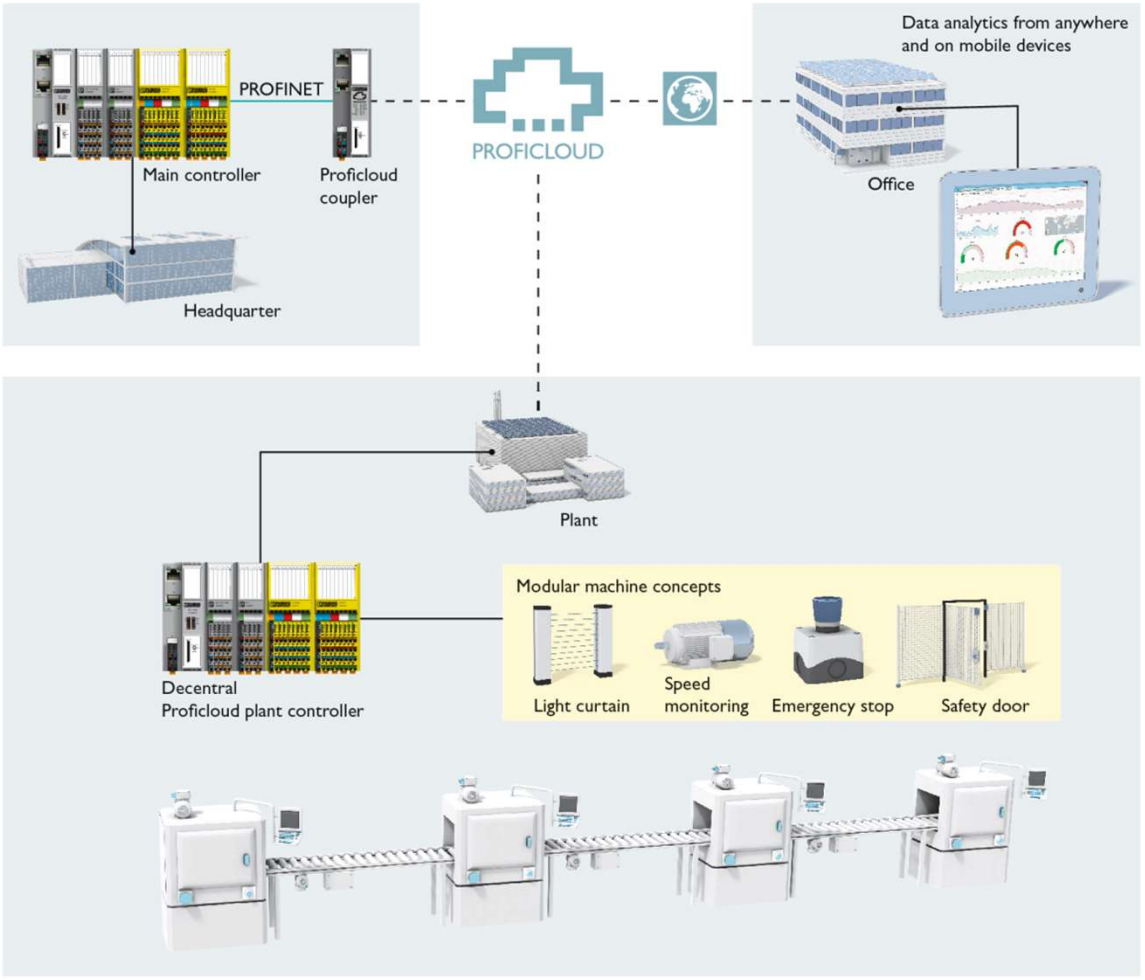
Industries
Automotive



- ✓ Reliable automation developed specially for high-end applications with efficient PROFIsafe safety controllers
- ✓ EN ISO 13849-1 and EN 62061
- ✓ Labs-free components to prevent defects on the end product (substances which interfere the lacquering process)

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Safety trends
Safety in the cloud



Safety in the Cloud

Transmit safety-related data via the Internet to the PROFICLOUD to further increase your operational performance.

- Transfer safety-related data to the cloud with cloud devices
- Combine and monitor process and safety data in the cloud continuously
- Evaluate collected information on mobile end devices from anywhere and at any time

Learn more

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PLCnext Technology
Designed by PHOENIX CONTACT

Phoenix Contact 360 Grad Security concept



- Secure Development processes according IEC 62443-4-1
- Security certified products according IEC 62443-4-2
- Security certified Services according IEC 62443-2-4
- Blueprints and customer specific solutions certified according IEC 62443-3-3
- Product Security Incident Response Team
  Market Vulnerabilities scans and publishing updates and advisories

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Security nach IEC 62443

Cyber Security





ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Product Service

CERTIFICATE

No. Q4B 029429 0008 Rev. 00

Holder of Certificate: PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
GERMANY

Certification Mark:

Scope of Certificate: ICS Security Service Provider

The Certification Body of TÜV SÜD Product Service GmbH certifies that the company mentioned above has established and is maintaining a management system which meets the requirements of the listed standards. The results are documented in a report. See also notes overleaf.

Report No.: 19CR11S007

Valid until: 2022-03-17

Date, 2019-03-18

Andreas Bärwolff

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PHOENIX CONTACT
INSPIRING INNOVATIONS

Security nach IEC 62443

Cyber Security




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PHOENIX CONTACT
INSPIRING INNOVATIONS

Security Certifications

Certifications according to IEC 62443



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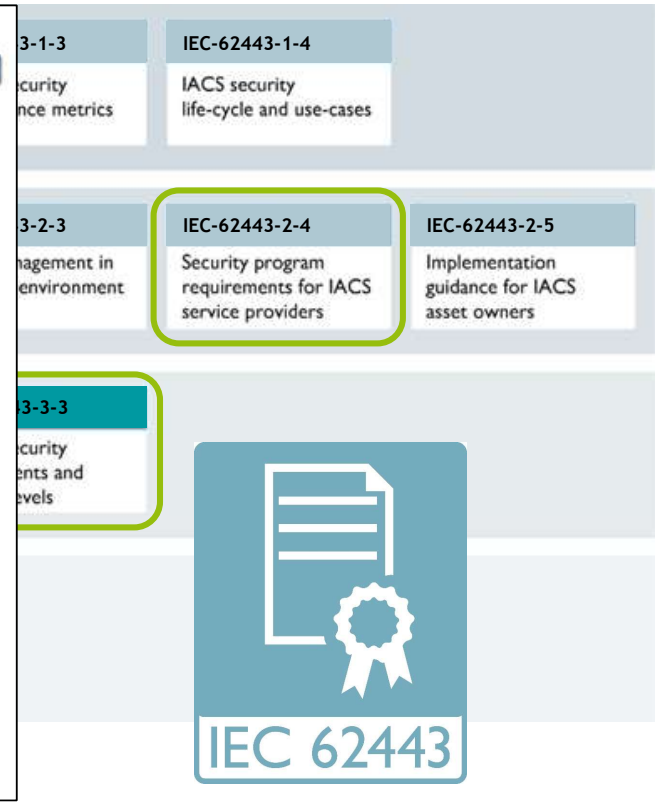
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Report No.: 19CR11S007

Valid until: 2022-03-17

Date, 2019-03-18

(Andreas Bärwald)





CERTIFICATE

No. Q4B 029429 0007 Rev. 00

Holder of Certificate: PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstr. 8
32825 Blomberg
GERMANY

Factory(ies): PHOENIX CONTACT Electronics GmbH
Industry Management and Automation
Business Unit Control Systems
Dringenauer Strasse 30, 31812 Bad Pyrmont, GERMANY

PHOENIX CONTACT Software GmbH
Langenbruch 6, 32657 Lemgo, GERMANY

Certification Mark:

Scope of Certificate: Secure Product Development Lifecycle

Applied Standard(s): IEC 62443-4-1:2018
PPP 15002A:2018 *(IEC 62443-4-1 Full Process Profile)*

The Certification Body of TÜV SÜD Product Service GmbH certifies that the company mentioned above has established and is maintaining a management system which meets the requirements of the listed standards. The results are documented in a report. See also notes overleaf.

Report No.: 18CR01S007

Valid until: 2021-07-29

Date, 2018-08-01

(Andreas Bärwald)

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IEC 62443-2-4 – ICS-Security Service Provider Certificate



As an ICS service provider we are offering

- Security services
- Design and commissioning of an automation system for acceptance as system integrator



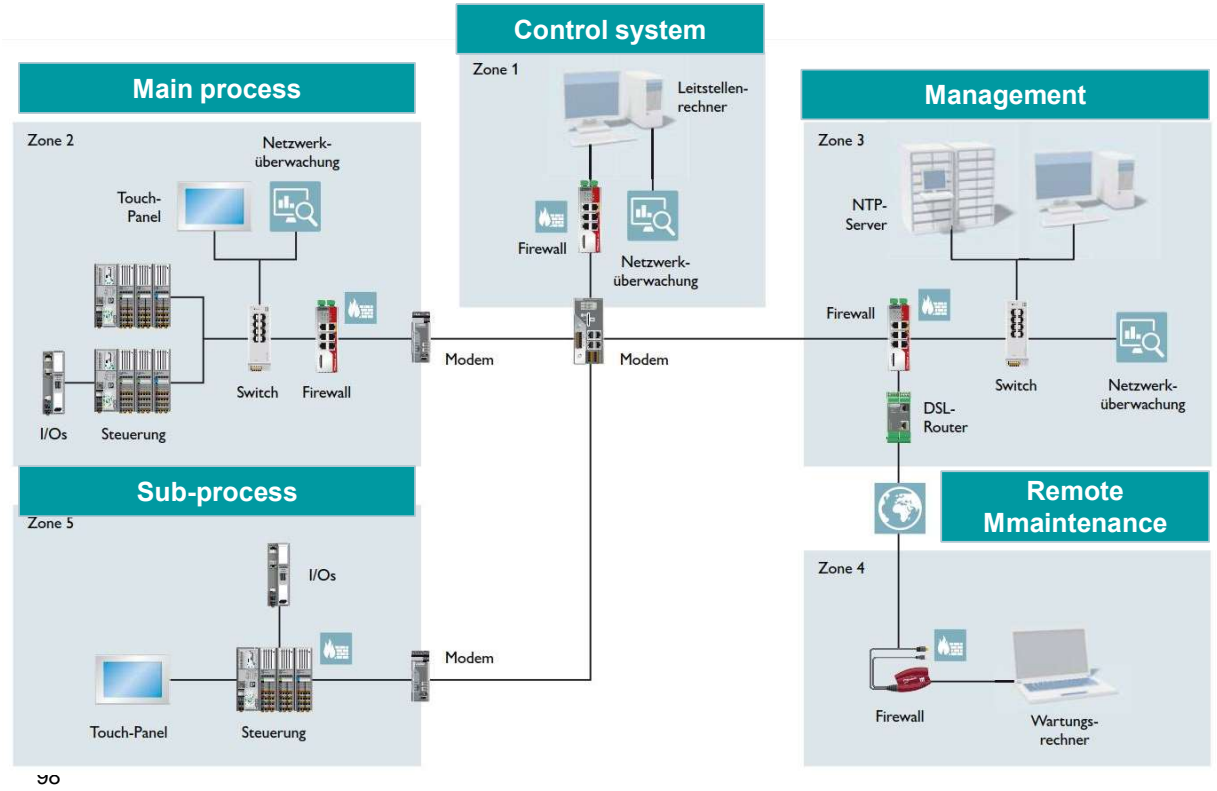
ICS = Industrial Control System



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Security Context: Security Blueprint Certification



Security Context:

- describes the environment
- describes the operating conditions
- defines the data criticality
- defines the zones and communication relationships
- assumptions the environment must fulfill.
- threat evaluation and priorities

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AIO65 Standalone Panel PCs

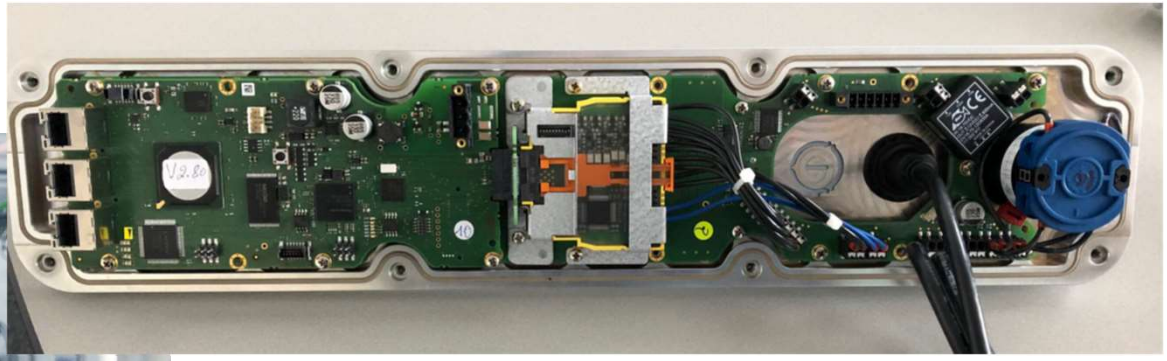
&

Push-button Box with SE Safety Module



Push-button Box for Modular Operator Station with SE Safety Module

Push-button Box with SE Safety Module





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