



# Welcome

## **Safety New Products 2021**

**- From E-stops to PROFIsafe controllers**

Antonio Gordillo / 4 Mayo 2021 / IMA Marketing

Safety Product Line News

**Review Safety**

# HIGHLIGHTS

Modular Safety Solutions

# Safety Product Line News



Modular Safety Solutions - From E-stops to PROFIsafe controllers

## Agenda

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- Safety Product Line News
  - SPLC1000 PROFIsafe extension for PLCnext Controls
  - Axioline Smart Elements PROFIsafe and SafetyBridge Technology
  - Axioline F Analog PROFIsafe
  - PSR-ESS – Emergency Stop switches
  - AIO 65 Push-button Box
  - VIP I/O Safety Modules
- 



## Safety Product Line News

# Review 2020



# IEC 61508



## Certified Functional Safety Management

Modular Safety Solutions - From E-stops to PROFIsafe controllers

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Modular Safety Solutions - From E-stops to PROFI-safe controllers

## SPLC1000 PROFI-safe extension for PLCnext Controls





# SPLC1000 PROFIsafe extension for PLCnext Controls

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- PROFIsafe Portfolio of Safety PLCs
  - AXC F XT SPLC 1000
  - Product Combinations with PLCnext Axiocontrol
  - Competition
  - Use cases and applications
  - Live Demo with Engineering
- 





# PROFIsafe Portfolio of SPLCs

## RFC 4072S – Highperformance Solution

- Highperformance for PLCnext and Safety
  - Intel i5 Skylake Dual Core 2 x 2.4 MHz
  - ARM A8/A9 for Safety with 600/800 MHz
  - 300 F-Devices



# SPLC 1000



AXC F XT SPLC 1000

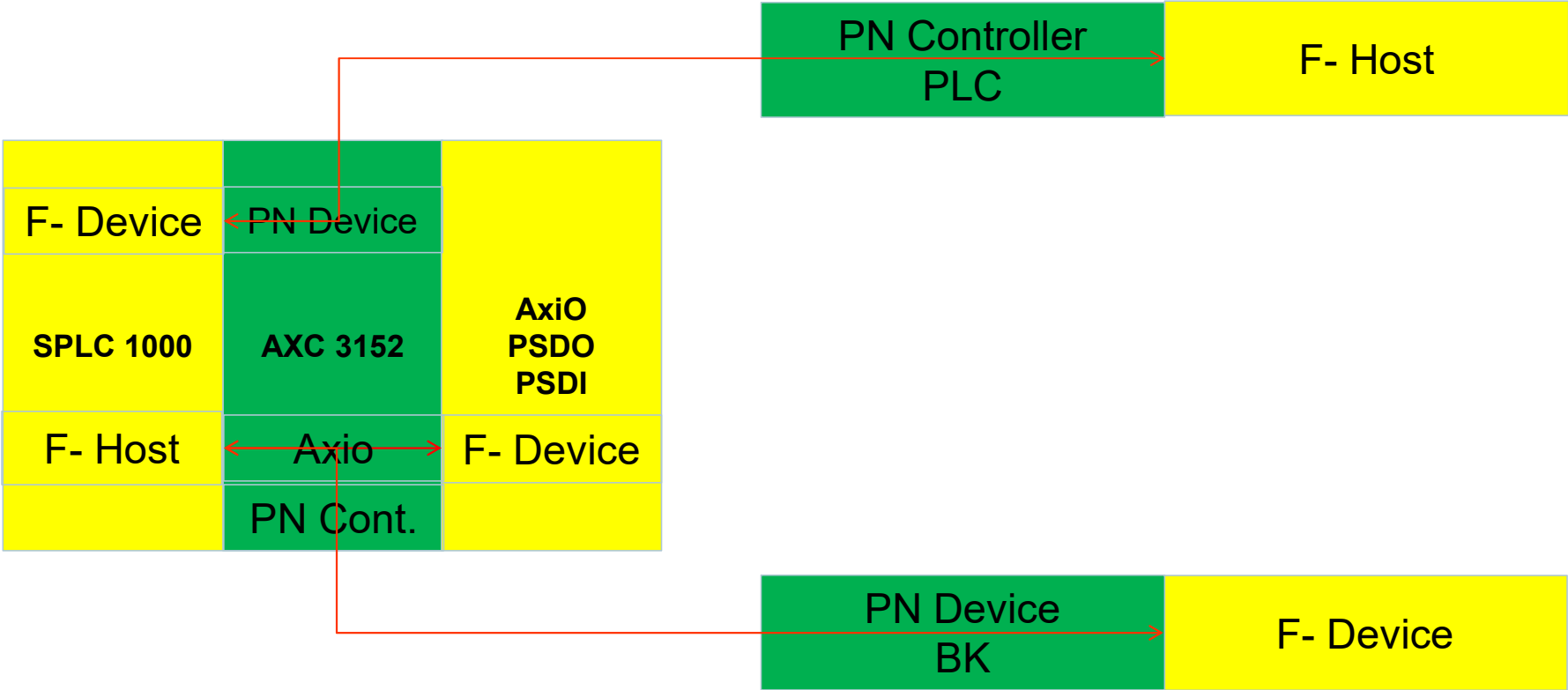
The infographic displays six features of the Profisafe device, arranged in a 2x3 grid. Each feature is represented by an icon, a title, and a value.

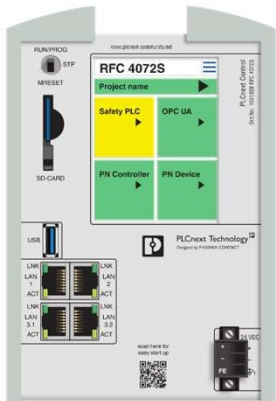
Feature	Value
Core	2 x Cortex M4
# of Profisafe devices	32
Temperature	-25°C - 60°C
Width	45mm
Approvals	UL, CUL, etc
C Functions	Reloadable

# Possibilities of left sided combination with AXC F 2152 & 3152

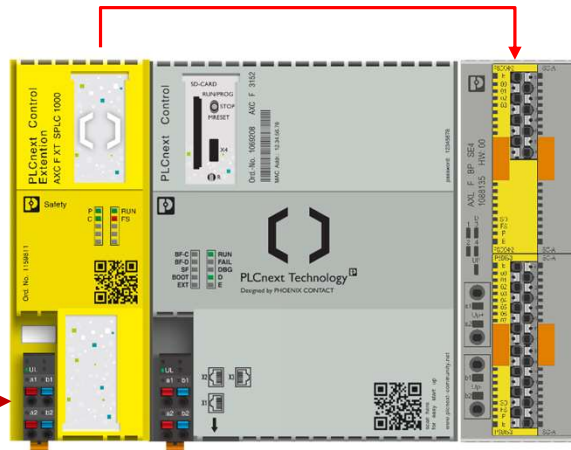


USE Case(s)



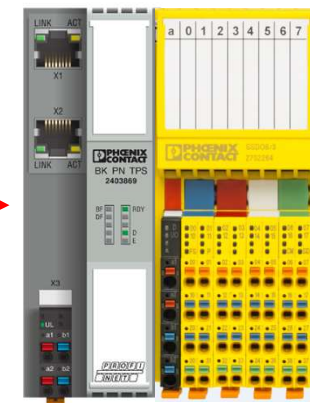


F-Host via Axiobus



F-Device via PROFINET

F-Host via PROFINET

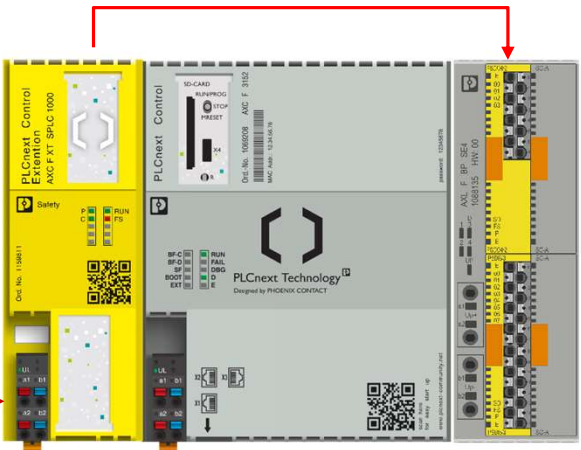




PROFIsafe PLC  
3<sup>rd</sup> Party



F-Host via Axiobus



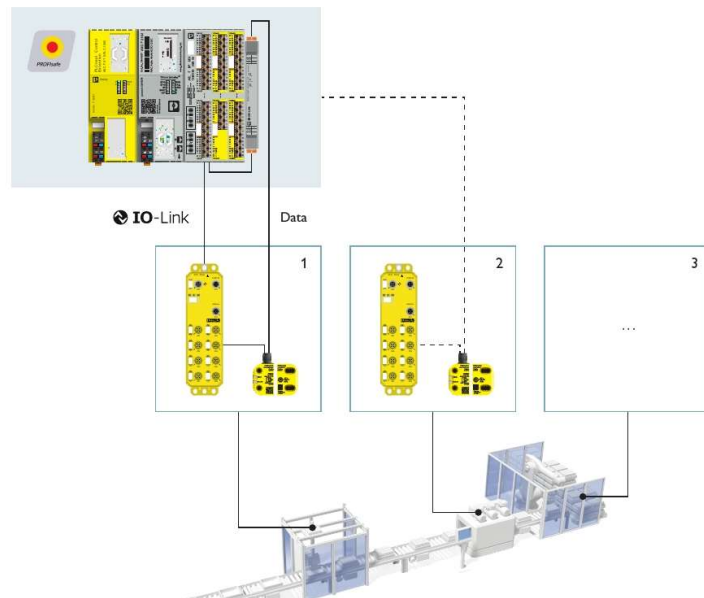
F-Device via PROFINET

F-Host via PROFINET



PROFIsafe Device  
3<sup>rd</sup> Party

# Applications



Modular Design



Compact Design

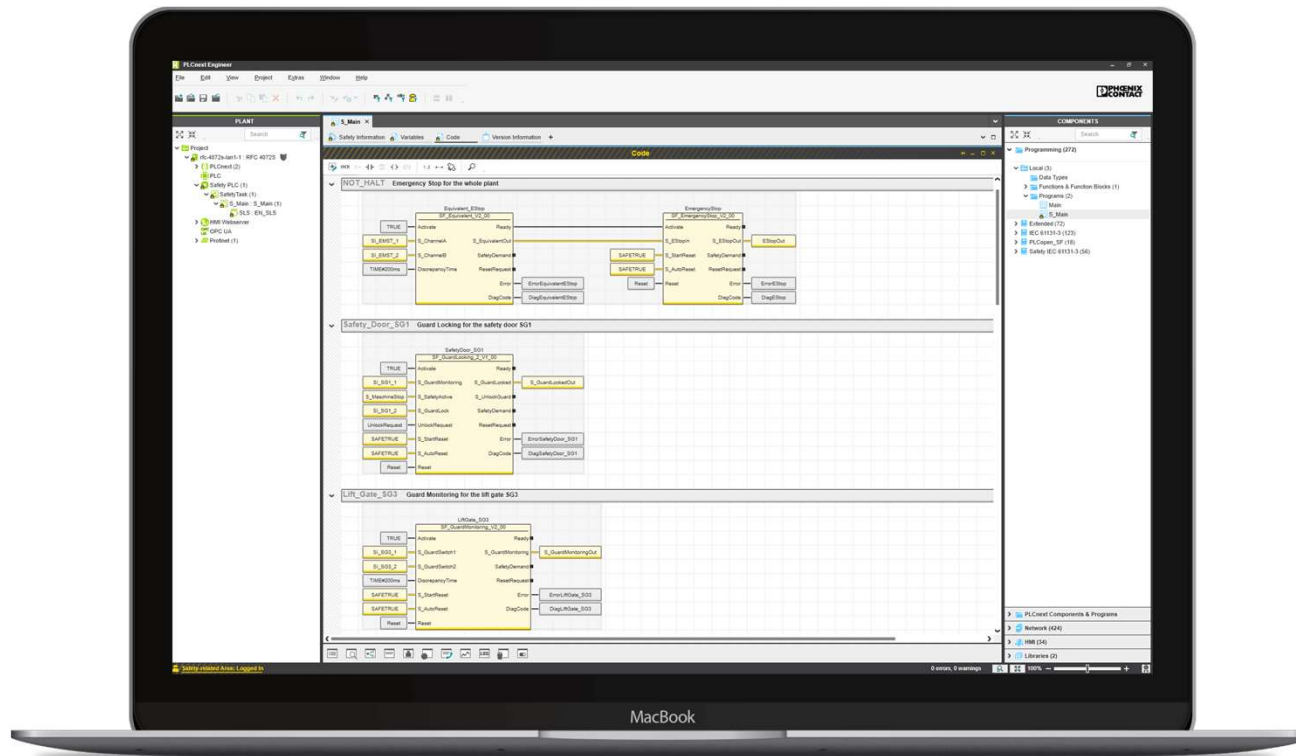


# AXC XC SPLC 1000 Release Roadmap



Release date 30<sup>th</sup> September 2021

# Integration of standard and safety programming in PLCnext Engineer



Modular Safety Solutions - From E-stops to PROFI-safe controllers

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Axioline Smart Elements

## Axioline Smart Elements



Axioline Smart Elements

MORE SPACE FOR  
YOUR CREATIVITY



Axioline Smart Elements

## Axioline Smart Elements

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



AXC F XT SPLC 1000 and Safety IO's

## Remember: PROFI-safe Axioline Smart Elements

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



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





What is new?

## AXL SE SSDO4/2 2A

- SafetyBridge Satellite module
- **Compatible with the AXL F Logicmodule AXL F LPSSDO8/3 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

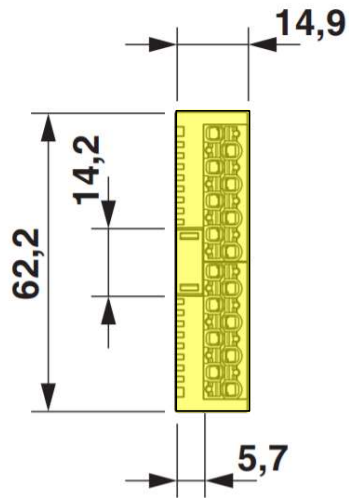
Available  
from stock



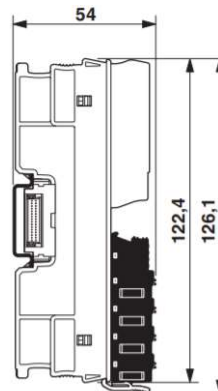
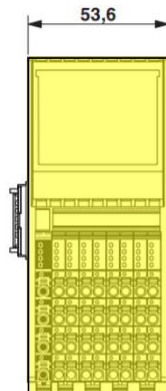
What is the difference?

## The main difference

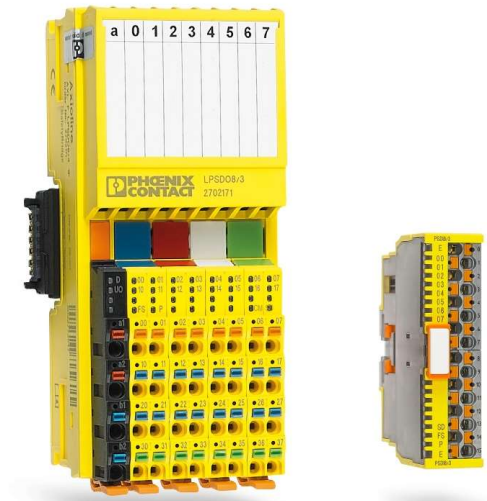
- Space requirement in the control cabinet (here for the PSDI8)



8 Signals on 927mm<sup>2</sup>



8 Signals on 6759mm<sup>2</sup>



Axioline F PSAl

## Axioline F PSAl



- ✓ 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

# Agenda

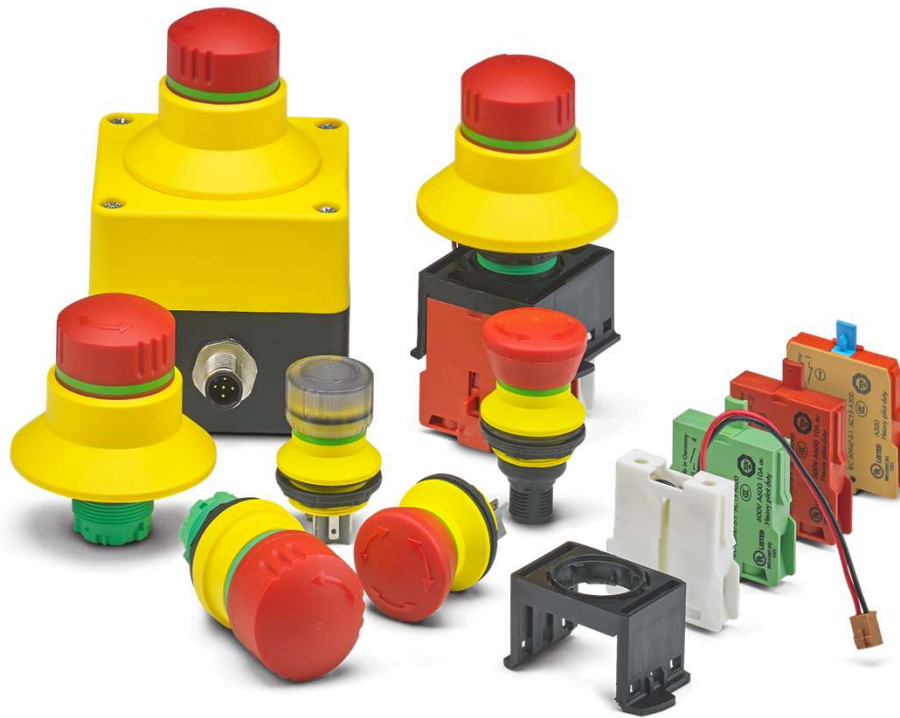
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- ✓ Safety Product Line News
  - ✓ SPLC1000 PROFIsafe extension for PLCnext Controls
  - ✓ Axioline Smart Elements PROFIsafe and SafetyBridge Technology
  - **PSR-ESS – Emergency Stop switches**
  - AIO 65 Push-button Box
- 



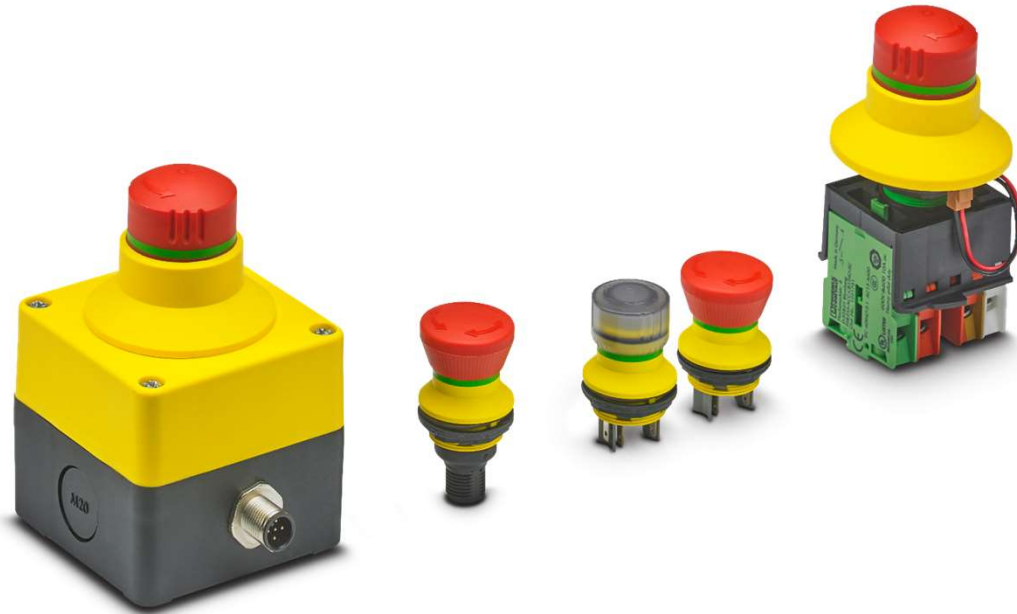
PSR-ESS Emergency Stop Switches

## PSR-ESS Emergency Stop Switches



PSR-ESS Emergency Stop Switches

## Why we need a E-Stop in our Portfolio?



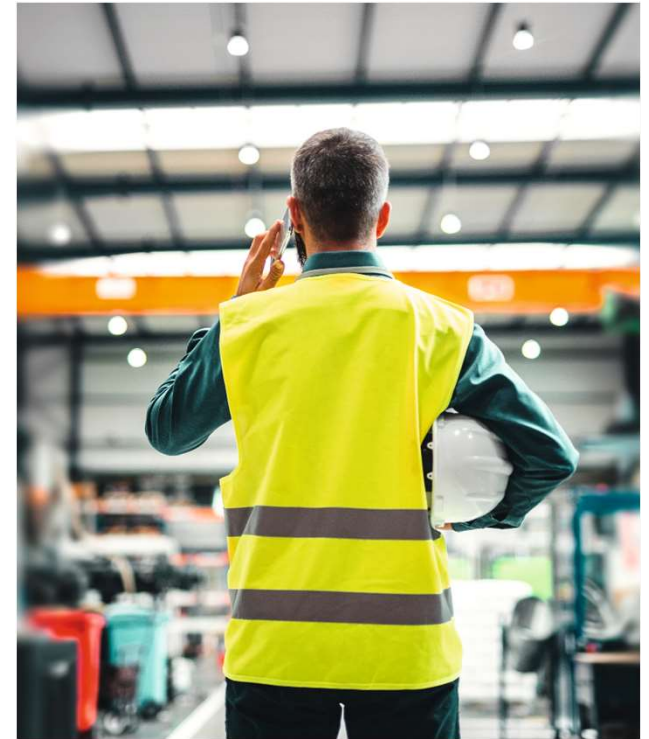
“An Emergency Stop in every machine”.

PSR-ESS Emergency Stop Switches

## Agenda – PSR-ESS

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- Product Overview
  - Modular System Hands on
  - Applications
- 





PSR-ESS Emergency Stop Switches

## Portfolio Overview

Modular  
System



Surface  
Installation



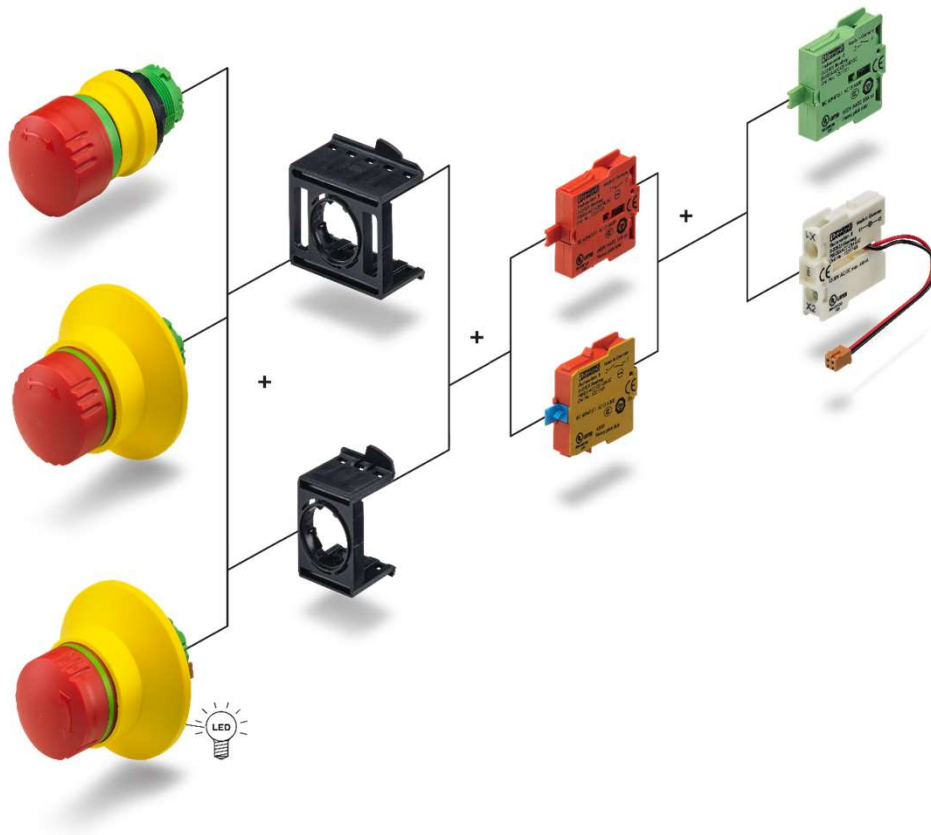
Spade  
Connection



13 new articles

PSR-ESS Emergency Stop Switches

## Overview modular system



### Find the right solution for your application

Choose between:

- 3 different actuators
- 2 module holders
- 2 different safety contact blocks for safe shutdown
- 2 optional contact blocks for feedback function or illumination

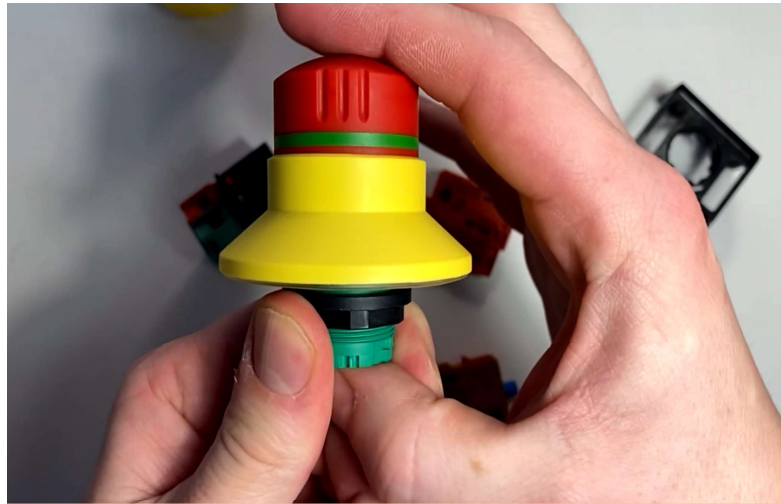
Supports 240V /3A

### Approvals



PSR-ESS Emergency Stop Switches

## Hands On



## PSR-ESS Emergency Stop Switches

### Portfolio overview



- For surface installation in an IP65 housing with M12 connection
- 2 force guided contact (NC)



- For panel installation, IP65/IP67 protection with M12 connection
- 2 force guided contact (NC)



- For panel installation, IP65/IP67 protection with fast terminals
- 2 force guided contact (NC)












- For panel installation, IP65/IP67 protection with fast terminals
- 2 force guided contact (NC)
- Lighting to indicate the ready state

## Applications

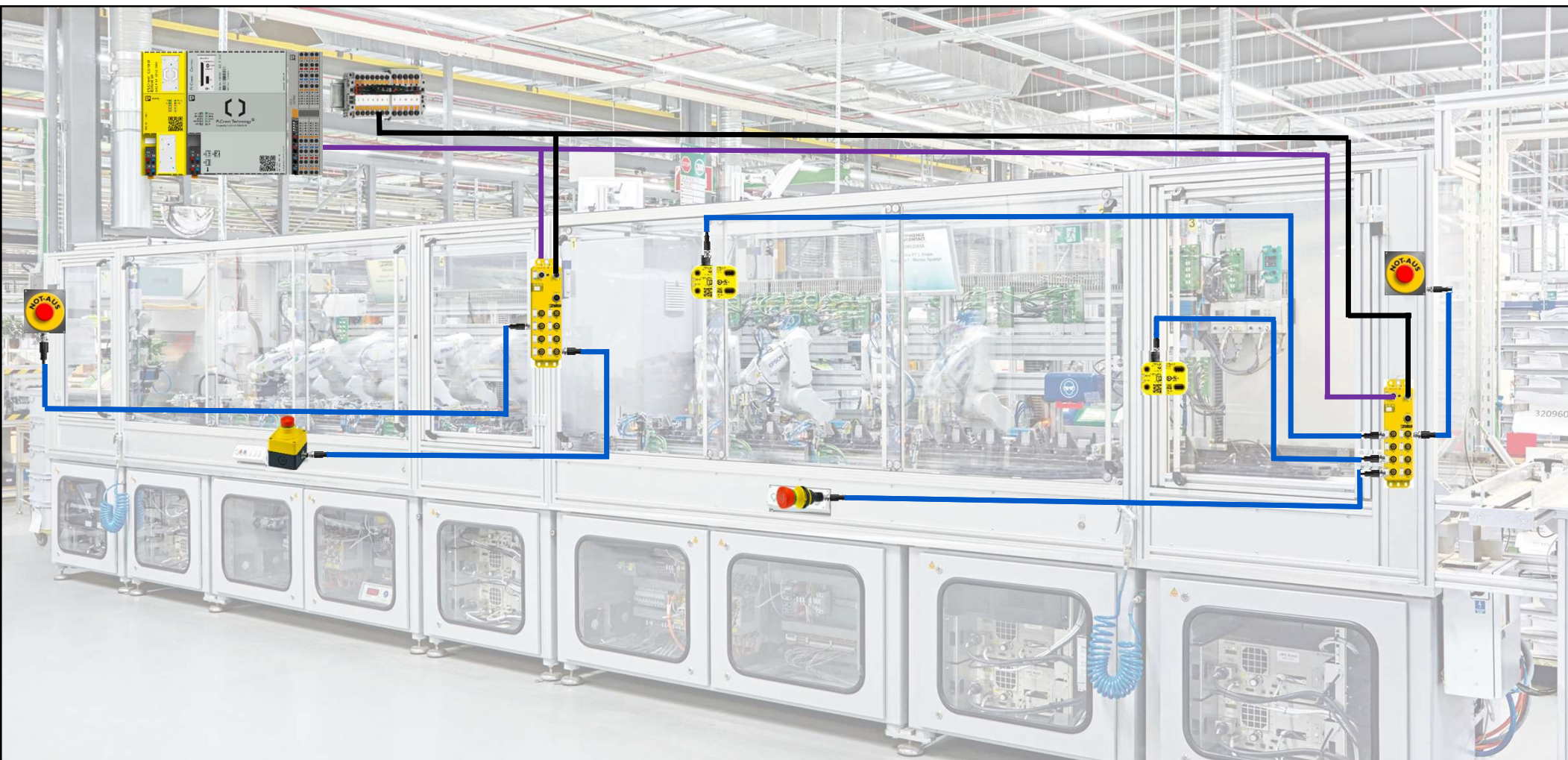
# Applications for Safety Relays

- Use our functional safety E-Paper ([Link](#))
- You can also use the manual of a product

**PSRmini: Highly compact safety relays for machine**

Type	Applications							circuit
								ILCL 3 in
PSR-MS20 <sup>1)</sup> 24 V DC	•	•	—	•	—	—	—	
PSR-MS21 24 V DC	Coupling module for safe controllers							— 361)
PSR-MS25 <sup>1)</sup> 24 V DC	•	•	—	•	—	—	—	
PSR-MS30 24 V DC	•	•	—	•	—	•	—	
PSR-MS35 24 V DC	•	•	—	•	—	•	—	
PSR-MS40 <sup>1)</sup> 24 V DC	•	•	—	—	—	•	—	

PSR-ESAM4/2x1/1x2



M12 Connection

PROFINET

IO-Link

Supply voltage





PSR-ESS Emergency Stop Switches

## Portfolio Overview

Modular  
System



Surface  
Installation



Spade  
Connection



13 new articles



PSR-ESS Emergency Stop Switches

## PSR-ESS Emergency Stop Switches

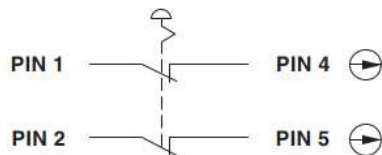
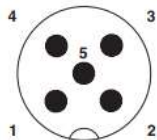


Confidential – For internal use only

Surface Installation

## Product overview

PSR-ESS-M2-H110-2000-A



Surface installation with M12

- Emergency Stop Switch in IP65 housing
- 2 positive opening contact
- M12 Connection 5-pos.
- 35V / 3A

Ambient temperature (operation)

- -25 °C ... 60 °C

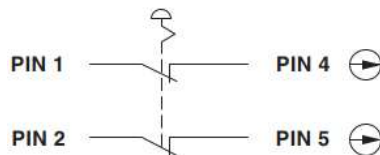
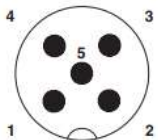
Approvals



Surface Installation

## Product overview

PSR-ESS-M0-H210-2000-A



Front panel E-Stop via M12

- IP65/IP67
- 2 positive opening contact
- 35V / 3A

Ambient temperature (operation)

- -25 °C ... 70 °C

Approvals



Surface Installation

## Product overview

**PSR-ESS-M0-H200-2000-C**



### E-Stop with Fast Terminals

- IP65/ IP67
- 2 positive opening contact
- 240V / 1.5A

Ambient temperature (operation)

- -25 °C ... 70 °C

### Approvals



Surface Installation

## Product overview

PSR-ESS-M2-H110-2000-A



Inactive / active

- IP65/ IP67
- 2 positive opening contact
- 35V / 3A

Ambient temperature (operation)

- -25 °C ...70 °C

Approvals



Confidential – For internal use only

Competitive

## Pricing and availability soon

Article Nr.	Description	
1221758	PSR-ESS-M0-H100	
1221757	PSR-ESS-M0-H110	
1221753	PSR-ESS-M0-H120	
1221752	PSR-ESS-ACC-CB1-NC-SC	
1221751	PSR-ESS-ACC-CB1-NO-SC	
1221749	PSR-ESS-ACC-CB1-SM-SC	
1221748	PSR-ESS-ACC-CB1-I-SC	

Article Nr.	Description	
1221747	PSR-ESS-ACC-CB1-C3	
1221745	PSR-ESS-ACC-CB1-C5	
1221740	PSR-ESS-M0-H200-2000-C	
1221739	PSR-ESS-M0-H220-2001-C	
1221737	PSR-ESS-M0-H210-2000-A	
1221735	PSR-ESS-M2-H110-2000-A	

Modular Safety Solutions - From E-stops to PROFIsafe controllers

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  - VIP IO Safety Modules
- 



**AIO65 Standalone  
Panel PCs**

**&**

**Push-button Box with  
SE Safety Module**





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

# Agenda

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- Overview – Modular Operator Station
  - Push-button Box - Options
  - Push-button Box with SE Safety Module
  - How to configure & order your Modular Operator Station
- 



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

### Overview



BL2 AIO65 is a new customer configurable All-In-One panel PC family that comes in two performance classes and in screen sizes ranging from 15.6" to 21.5" (FULL HD). The BL2 AIO65 is available with different mounting options and can be expanded with push-button box and stack light.

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

# Push-button Box

- Ideal extension for the IPC
- It enables you to use more functions & more operating possibilities
- Available versions
  - Empty box  
(15,6" & 18,5")
  - Parallel wired box  
(15,6" + 8 slots + E-STOP or 18,5" + 10 slots + E-STOP, individual configuration)
  - PROFINET box  
(18,5" + 10 slots + E-STOP, individual configuration)

Slots can be filled with functions like USB 3.0 Ports, buttons for various functions, key switches, ...



Reduced downtime: IPC can be replaced quickly



More operating possibilities by physical buttons



Easy box maintenance by removable front & IPC replacement without downtime\*



Front



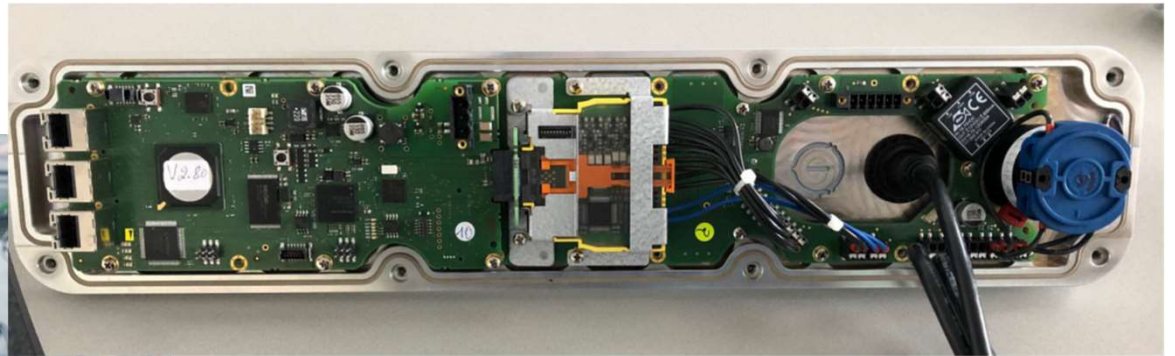
Side



Back

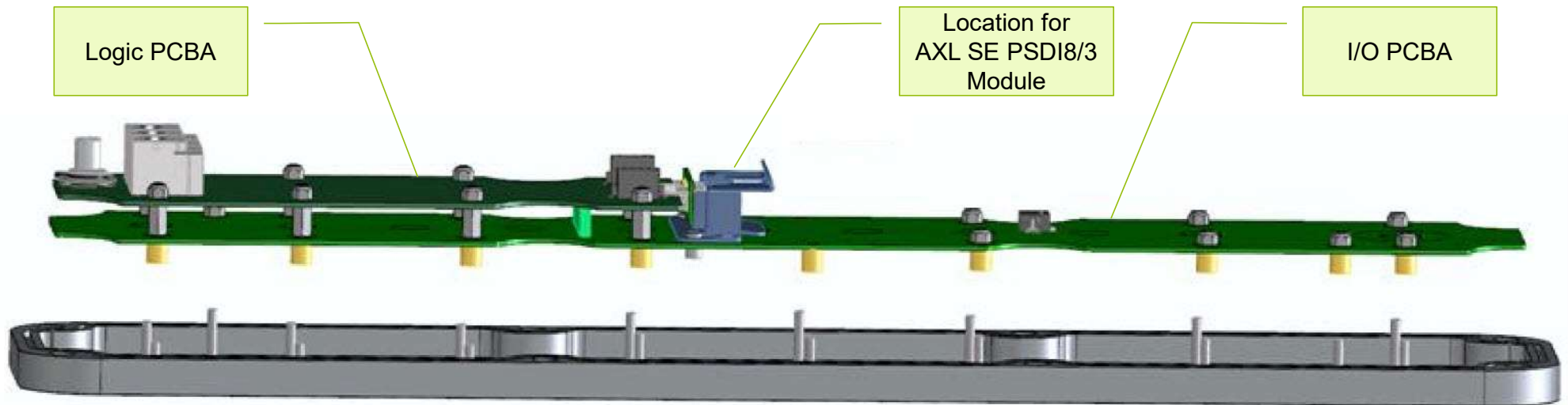
Push-button Box for Modular Operator Station with SE Safety Module

## Push-button Box with SE Safety Module



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

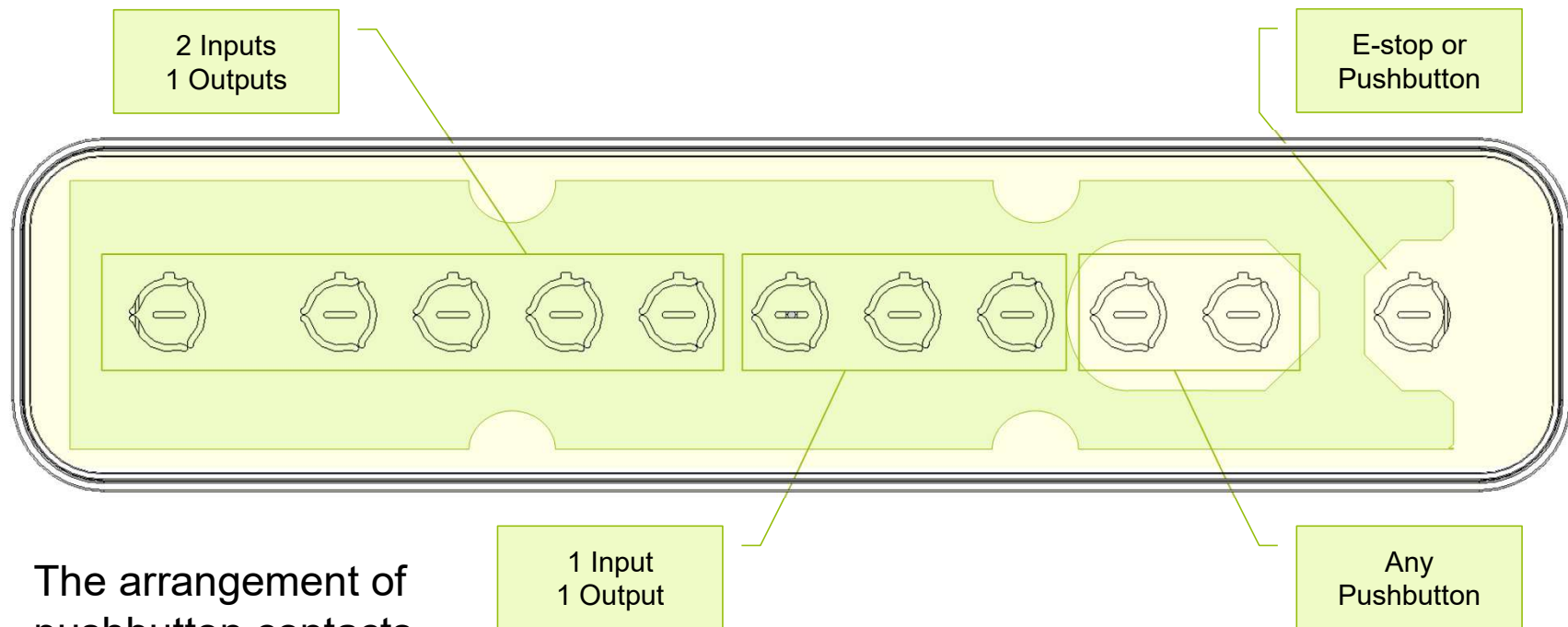
# Push-button Box with SE Safety Module



PCBA Arrangement

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

# 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

Options	No ProfiSafe & Changes only to pushbuttons	No ProfiSafe & Layout changes to the I/O PCBA	ProfiSafe & Changes to the mix of pushbuttons, but no PCBA layout change	ProfiSafe & Changes to the I/O PCBA layout
Minimum Order Quantity	30	200	200	400
Requires recertification	NO	NO	YES	YES





## How to configure & order your Modular Operator Station





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

# How to configure & order your Modular Operator Station

- Our brand-new configurator assists you in configuring your favorite solution quickly and easily
- Only 6 steps are necessary
  - [Download](#) & open the configurator
  - Select your favorite components
  - Check your configuration
  - Copy the order key & press "Send request"
  - Wait for your personal offer
  - Order your desired article

The screenshot shows the 'Modular Operator Station - Configurator' web interface. It features a sidebar on the left with selection categories: Industry PC, Push-Button Box, Keyboard / Mouse, Keyboard language, Mounting device, Signal tower, and Software. The main area displays the 'Currently selected configuration of the Modular Operator Station' with corresponding selection prompts for each category. At the bottom, there are two 'Send request' buttons (one for Phoenix Contact Employees, one for Customers), contact information for technical and commercial inquiries, and links to PC World, Salesnet, and E-Shop.

Welcome page at the Modular Operator Station – Configurator

If you need a Push-button Box that is not yet available,  
please contact the HMI/IPC team!

Modular Safety Solutions - From E-stops to PROFIsafe controllers

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  - **VIP IO Safety Modules**
- 



## BU Interface Components

# VIP I/O-Marshalling



VIP I/O-Marshalling

## Traditional Process Automation Project

- Extremely unflexible when it comes to changes (e.g. signal types)
- High planning efforts necessary
- Exact number and types of IOAs need to be known at a very early stage

**Delays in project execution time very likely**

VIP I/O-Marshalling

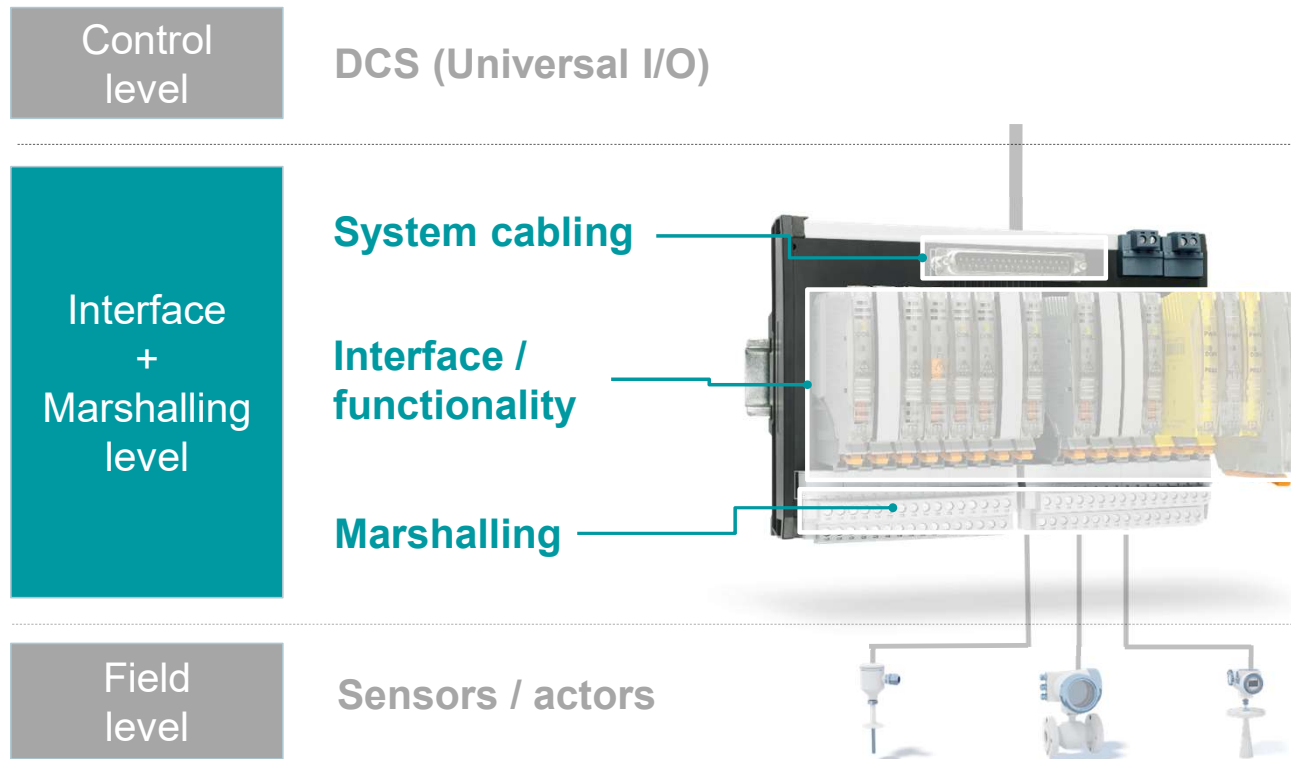
## Process Automation Project with Universal I/O

- High flexibility due to adaptable I/O channels
- Reduced planning effort
  - Only overall I/O number needed, not I/O types
- Reduce commissioning efforts
  - By using standard adaptable UIO cabinets

**Approx. 30% savings in project execution times**

VIP I/O-Marshalling

## Product Overview



**The most compact adaptive I/O marshalling system for Universal I/O, combining system cabling, interface and marshalling level in one single solution.**

## Utilize the full potential of Universal I/O

Complex process automation projects contain many challenges in planning and implementation. Improvements have already been achieved with the universal I/O approach. However, planners and users also need an equally flexible solution at the marshalling and interface level.

VIP I/O Marshalling makes Universal I/O systems truly universal also on the marshalling and interface level.

Learn more about the Universal I/O approach and the VIP I/O Marshalling product portfolio in this webinar

### Topics:

- What is Universal I/O?
- What role does VIP I/O Marshalling play for Universal I/O Systems?
  - What does the product portfolio look like today?
  - Which extensions are planned?
  - What is the sales approach?

## Products VIP IO Safety

Pluggable SIL coupling relay as an input/output accessory for VIP base module, SIL 3 high and low-demand applications, safe-state-off, couples digital output signals to the periphery, 1 enabling current path, 1 confirmation current path, test pulse filter



### IOA-PSR-PS22

Pluggable SIL coupling relay for use on a VIP base module

Data sheet  
108235\_en\_02

© PHOENIX CONTACT 2019-07-04

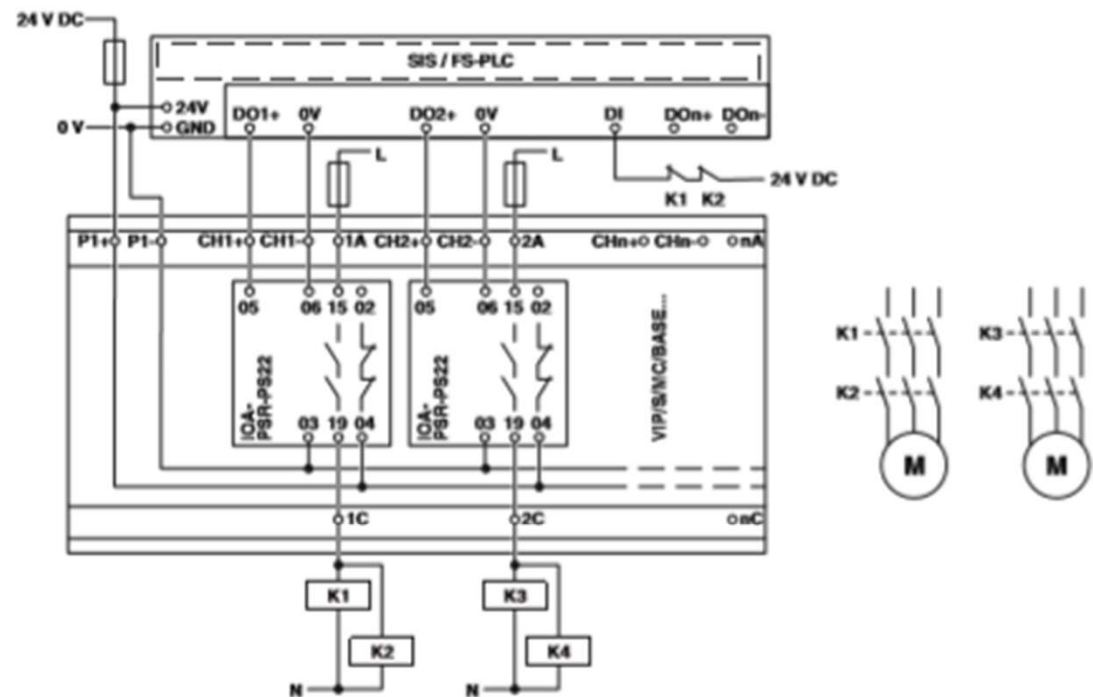


IOA-PSR-PS22-1NO-1NC-24DC - 2702971



# IOA-PSR-PS22

The application example illustrates the safe switch-off of a load in high-demand operation. The safe coupling relay is controlled via a single channel using a failsafe controller. The device starts automatically.

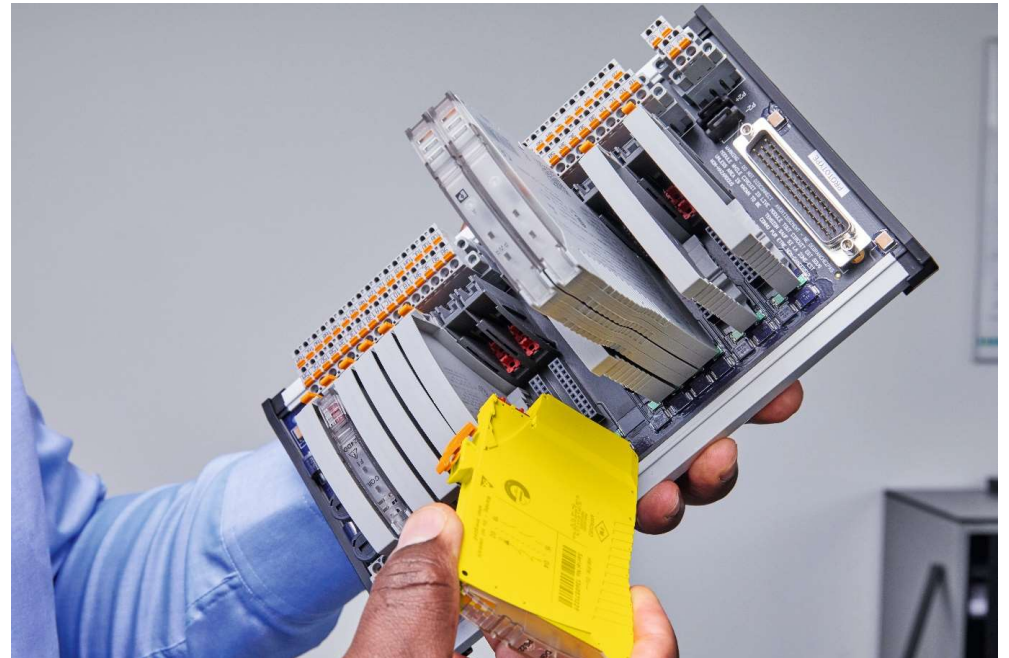


### High-demand application with failsafe controller

# VIP I/O-Marshalling



# VIP I/O-Marshalling





Thanks for joining us!