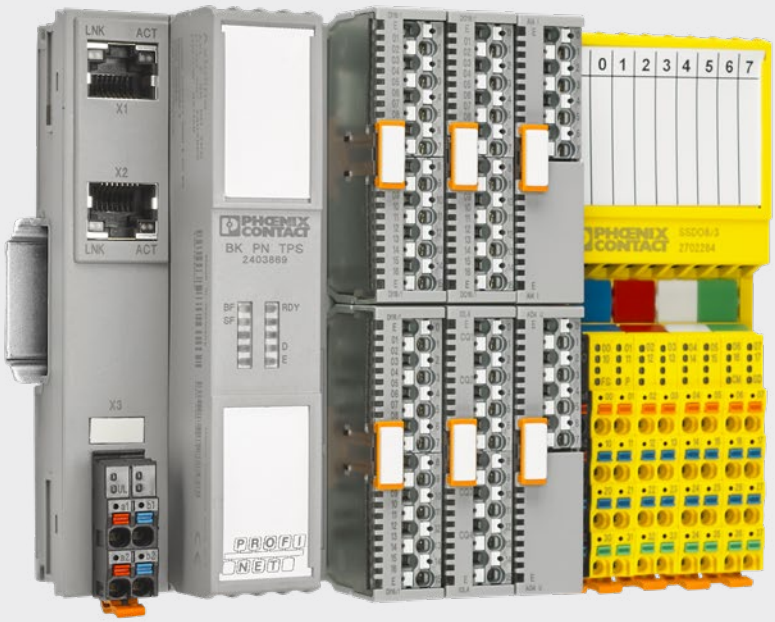
COMPLETE line

2024



Remote I/O systems

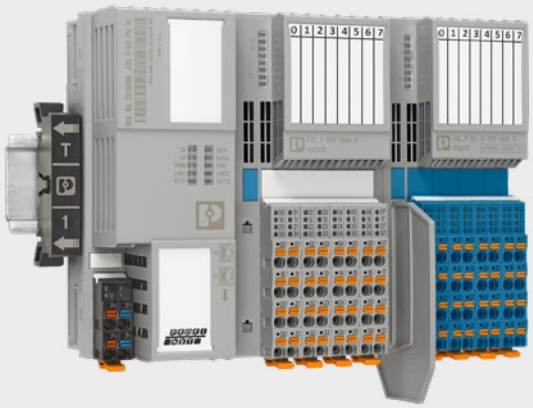
IP20 and IP65/IP67

Remote I/O systems

For the control cabinet and for field installation

The remote I/O systems from Phoenix Contact with IP20 and IP65/IP67 degrees of protection are suitable for all common Ethernet-based networks and fieldbus systems. Acquire input and output signals directly in the control cabinet or in your systems and machines.

Your data and signal traffic will be transmitted reliably – optimized for different areas of application. Use products with diverse mechanical properties and functions for this.



1 Axioline F

Block-modular I/O system

› More information starting on page 6

2 Axioline Smart Elements

Plug-in I/O modules

› More information starting on page 24

3 Axioline P

High-availability I/O system for zone 2 installation

› More information starting on page 32

4 Inline

Highly modular I/O system

› More information starting on page 42

5 Axioline E

I/O system for field installation

› More information starting on page 62

Contents

Systemic remote I/O solutions

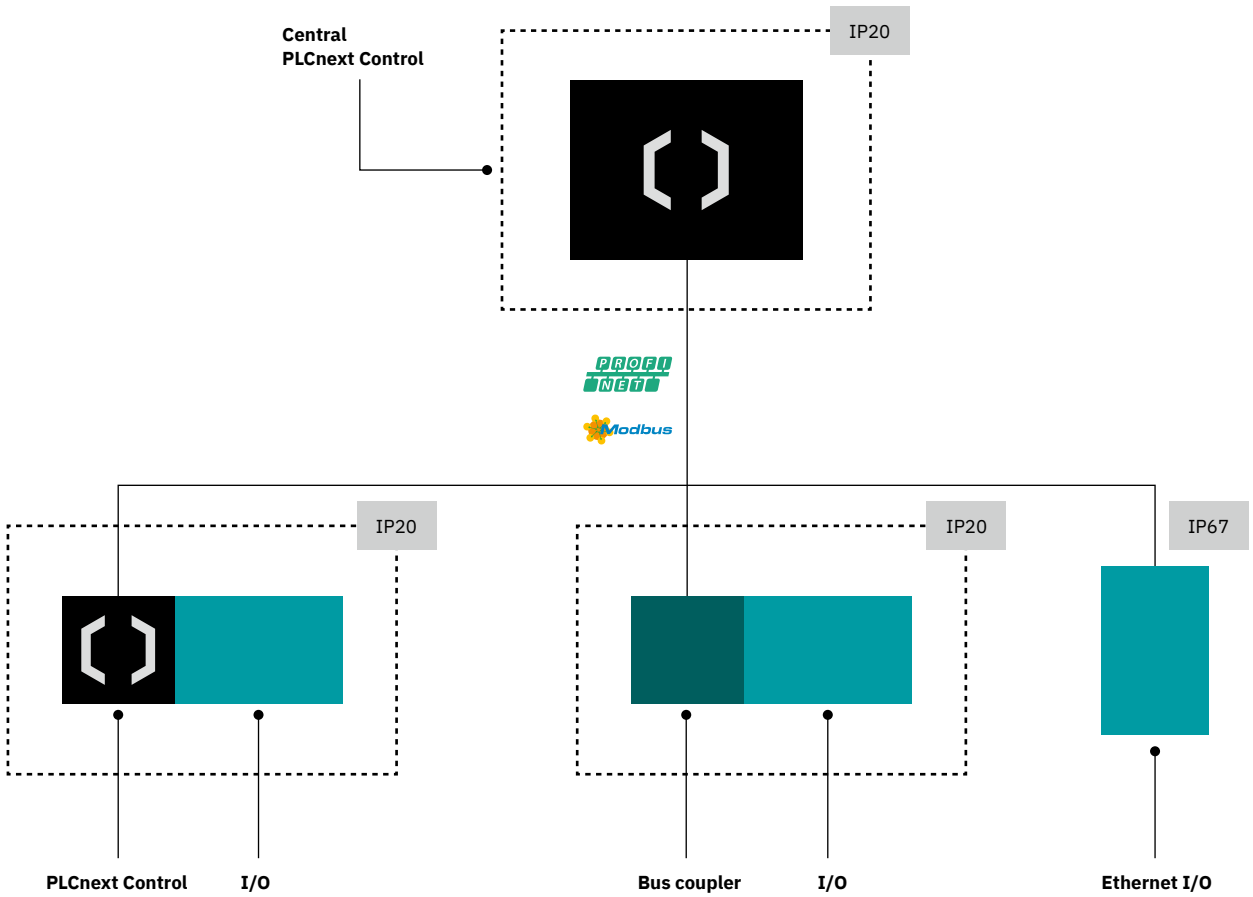
Phoenix Contact offers end-to-end solutions from the controller to the I/O. The various systems can be conveniently configured and integrated in the PLCnext Engineer engineering software platform.

You can then connect the block-modular I/O modules from the Axioline F product family as well as the Axioline Smart Elements, which can be assembled flexibly in a confined space, to an Axiocontrol series PLCnext Control.

You can even combine both I/O systems with up to 63 I/O modules. Alternatively, remote I/O stations can also be set up with bus couplers. PROFINET and Modbus/TCP are available for communication with a central PLC.

PLCnext Technology

Designed by Phoenix Contact

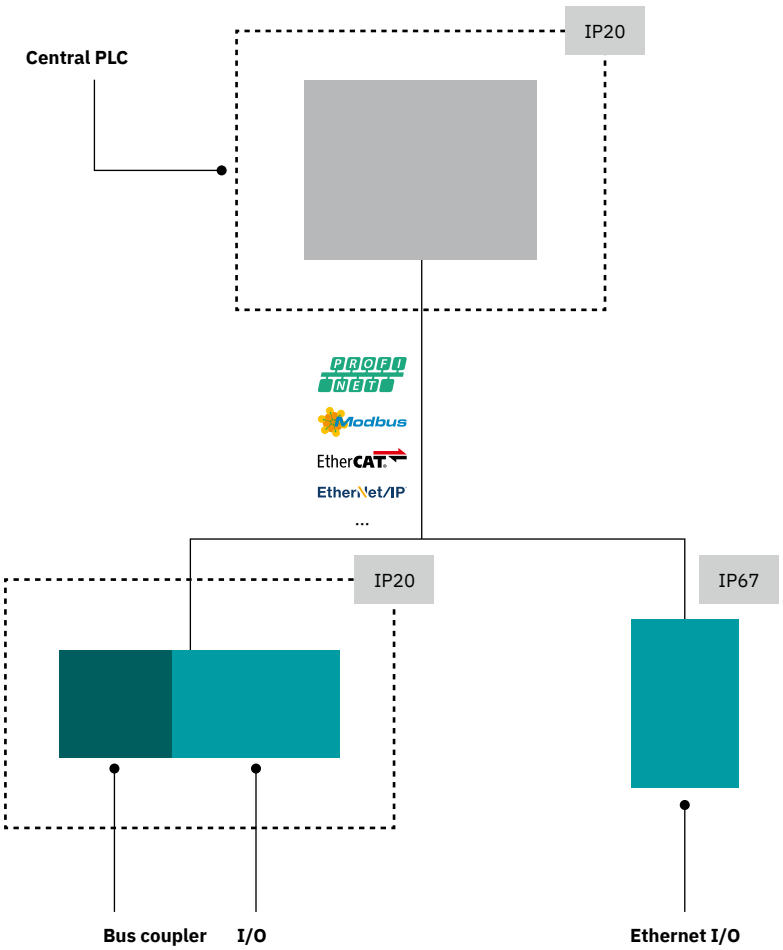


Remote I/Os subordinate to PLCnext Control or directly connected to a PLCnext Control

Integration of remote I/O systems in other control environments

The remote I/O systems can also be integrated into other control environments. For this application, the modular I/O systems are integrated into the respective control systems via bus couplers and the associated description files.

Ethernet I/Os for field installation, such as Axioline E, are integrated as a compact I/O unit, also using a description file. This allows you to easily integrate Phoenix Contact I/O systems into a wide variety of control environments.



Distributed integration of IP20 and IP65/IP67 remote I/Os into other control environments via Ethernet

Axioline F

The block-modular I/O system

1

Axioline F is the I/O system with a block-modular design for the control cabinet. Open to all Ethernet-based network protocols and available in various designs, Axioline F offers a particularly high degree of flexibility.

Bus couplers

Open to many common Ethernet-based network protocols

› More information starting on page 10

I/Os

Modules with digital and analog inputs and outputs as well as functions

› More information starting on page 14

I/Os for extreme conditions

Modules with digital and analog inputs and outputs as well as functions for special applications

› More information starting on page 20

The Axioline F I/O system at a glance

Whether using any common bus system and network or a system-integrated controller – with advanced I/Os, you can communicate quickly and cost-effectively. The versatile range with IP20 degree of protection, which can be combined flexibly, provides reliable protection for your data and signal traffic, allowing you to design your systems for every possible area of application. Configure the transmission speed, functions, and structure in accordance with your requirements. Combine standard I/Os or use versions for extreme conditions as well as intrinsically safe modules. With the Axioline F I/O system with IP20 degree of protection, automation solutions which optimally satisfy the relevant application requirements can be set up based on the modular principle. A bus coupler, which is available for various Ethernet networks, or a distributed controller, such as a PLCnext Control from the Axiocontrol series, acts as the head of the I/O station. At the station head, you then connect the block-modular I/O modules from the Axioline F product family as well as the Axioline Smart Elements, which can be assembled flexibly in a confined space. In addition to digital and analog modules, the I/O portfolio also includes various function modules. Some Axioline F modules are also available in versions for very harsh ambient conditions.

Approvals

Approvals from all major maritime classification societies

Integration

Easy integration of Axioline Smart Elements

Performance

Optimum performance due to the fast local bus speed

Push-in Technology

Designed by Phoenix Contact

Connection options

Easy connection of sensors or actuators with color-coded contact points – even in the case of multi-conductor connection

Configuration for I/Os

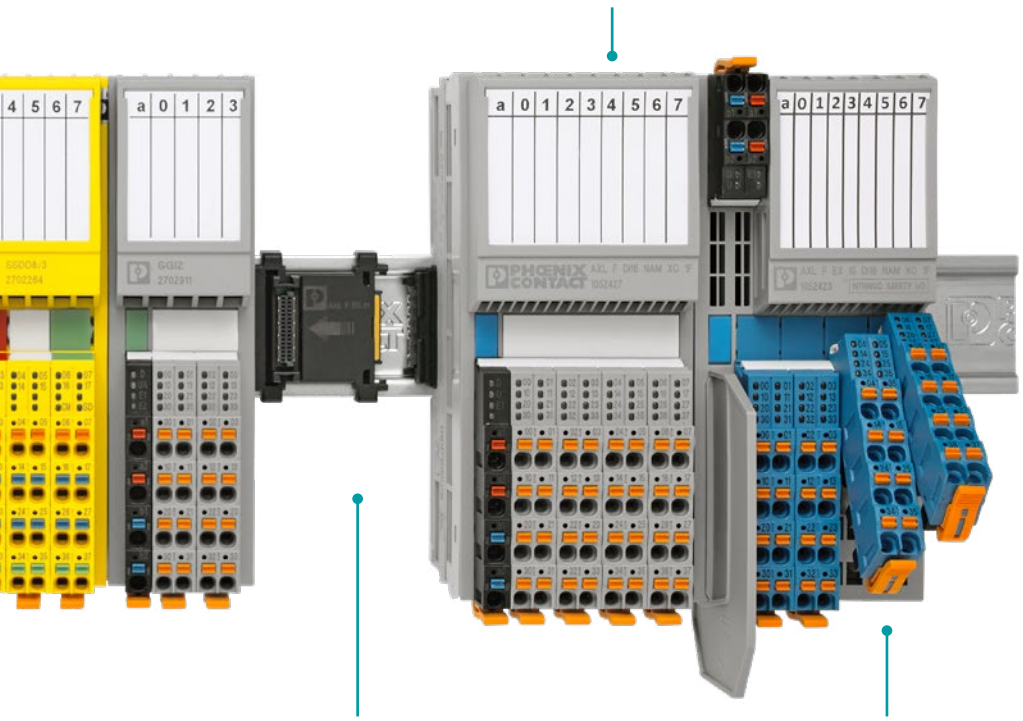
When it comes to configuring electrotechnical equipment for an automation application, Project+, the expert solution, is there to help. With no training required, you can create a functional station in accordance with your specifications very quickly with Project+. In addition, you can generate information for subsequent steps in the automation process.

Push-in

Reduced installation time due to fast wiring

Equipment marking

Individual and fast marking with MARKING system printing systems



Robustness

Increased system availability is ensured by the particularly robust mechanical design as well as shock and vibration resistance

Module replacement

Fast module replacement with existing wiring

Bus couplers

Connection to various networks

With the free choice of bus coupler, the Axioline F I/O system can be integrated into many common Ethernet networks. The Axioline bus couplers are the link between the system and the higher-level network.

- Optimum system connection
- Up to 63 I/Os can be aligned
- Web-based management

Properties and possible applications

Optimum system connection

Axioline F is the Ethernet specialist for control cabinet installation. Alongside PROFIBUS DP, bus couplers are also available for today's leading Ethernet systems.

PROFINET system redundancy

The PROFINET bus coupler (AXL F BK PN TPS) supports the specification for the implementation of S2 system redundancy using a single bus coupler. This means that the bus coupler can communicate with two redundant PROFINET controllers, thereby ensuring high systemic failsafe performance.

Integrated web server

You can use web-based management to access static or dynamic information. Examples of static information include technical data or the MAC address. Examples of dynamic information include IP addresses, status information, and local bus structure and diagnostics.

Greater variance with PLCnext Control and PLC extensions

The robust Phoenix Contact Axiocontrol series features several PLCs in various performance classes for PLCnext Technology. They are designed for programming with high-level languages, as well as classic IEC 61131-3 languages.

The PLCs can be extended with modules for the Axioline F and Axioline Smart Elements IP20 I/O systems. Furthermore, you can also add further hardware functions, such as an additional Ethernet port or safety and AI functions, to the left of the PLCnext Control (AXC F 2152 and AXC F 3152).

PLCnext Technology
Designed by Phoenix Contact

Axioline F – product overview

Bus couplers			
	Description	**Item no.**	**Type**
Bus couplers, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Bus coupler, PROFINET, RJ45 jack, extreme conditions version	1068857	AXL F BK PN TPS XC
	Bus coupler, PROFINET, RJ45 jack	2403869	AXL F BK PN TPS
	Bus coupler, EtherNet/IP™, RJ45 jack, extreme conditions version	1167192	AXL F BK EIP XC
	Bus coupler, EtherNet/IP™, RJ45 jack	2688394	AXL F BK EIP
	Bus coupler, EtherNet/IP™, RJ45 jack, extended function	2702782	AXL F BK EIP EF
	Bus coupler, Modbus/TCP (UDP), RJ45 jack, extreme conditions version	2701949	AXL F BK ETH XC
	Bus coupler, Modbus/TCP (UDP), RJ45 jack	2688459	AXL F BK ETH
	Bus coupler, EtherCAT®, RJ45 jack	2688899	AXL F BK EC
	Bus coupler, Sercos, RJ45 jack	2701686	AXL F BK S3
	Bus coupler, PROFIBUS DP, D-SUB 9 female connector, extreme conditions version	2702463	AXL F BK PB XC
	Bus coupler, PROFIBUS DP, D-SUB 9 female connector	2688530	AXL F BK PB

Axioline F – product overview

Controllers			
	Description	**Item no.**	**Type**
PLCnext Control			
	PLCnext Control for the direct control of Axioline F I/Os. With three independent Ethernet interfaces. Complete with connector and bus base module.	1069208	AXC F 3152
	PLCnext Control for the direct control of Axioline F I/Os. With two Ethernet interfaces. Complete with connector and bus base module.	2404267	AXC F 2152
PLC extension module			
	Left-alignable PROFIBUS master, for connecting PROFIBUS components to a compatible modular controller from the PLCnext Control series.	1091657	AXC F XT PB
	Left-alignable INTERBUS master, for connecting INTERBUS remote bus components to a compatible modular controller from the PLCnext Control series.	2403018	AXC F XT IB
	Left-alignable PCIe extension interface, for connection to a compatible modular controller from the PLCnext Control series.	1139999	AXC F XT EXP
	Left-alignable extension module (machine learning module), for connection to an AXC F 3152 PLCnext controller	1259849	AXC F XT ML 1000
	Left-alignable Ethernet interface, for connection to a compatible modular controller from the PLCnext Control series.	2403115	AXC F XT ETH 1TX
	The AXC F XT SPLC 1000 is a left-alignable, safety-oriented controller for operating PROFIsafe devices. The SPLC 1000 is connected to the AXC F 2152 or AXC F 3152 modular controllers from the PLCnext Control series.	1159811	AXC F XT SPLC 1000
	The AXC F XT SPLC 3000 is a left-alignable, safety-oriented controller for operating PROFIsafe devices. The SPLC 3000 is connected to the AXC F 2152 or AXC F 3152 modular controllers from the PLCnext Control series.	NEW 1160157	AXC F XT SPLC 3000
	Left-alignable extension module equipped with a mini PCIe slot for connection to an AXC F 2152 or AXC F 3152 PLCnext controller	1383116	AXC F XT KIT

I/Os

The right I/Os for every requirement

Axioline F offers a large portfolio of I/O modules with digital and analog inputs and outputs, with functions, or for special applications. Implement safety applications with PROFIsafe or SafetyBridge Technology. The versatile I/O modules ensure flexibility in your station structure.

- Short installation times with Push-in connection technology
- Robust mechanical design
- Functions for every application (e.g., IO-Link and safety)

Properties and possible applications

Numerous I/O functions

Axioline F offers I/Os in single- and multi-conductor connection technology, temperature measurement modules, power measurement modules, and many other function modules.

Various I/O modules are also available with maritime approvals, specifically for use in shipbuilding.

Wide range of modules for functional safety

SafetyBridge Technology enables you to implement safety applications very easily with Axioline F – without a safety controller and regardless of the network used. In PROFIBUS and PROFINET networks in particular, the PROFIsafe modules are used to acquire and output safety-related signals.

Easy IO-Link integration

With the Axioline F IO-Link master and the PLCnext Engineer engineering software, you can implement IO-Link applications easily and consistently from the controller to the device. In this case, there are eight ports available per master. If more ports are required, simply add another master to the local bus.

PLCnext Engineer
Engineering Software

IO-Link

Axioline F – product overview

I/Os			
	Description	**Item no.**	**Type**
Digital input/output modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Digital input module, digital inputs: 8, 24 V DC, connection technology: 2-conductor, conforms to standard IEC 61850-3	2702783	AXL F DI8/2 24DC 1F
	Digital input module, digital inputs: 8, 48 V DC / 60 V DC, connection technology: 2-conductor, conforms to standard IEC 61850-3	2702654	AXL F DI8/2 48/60DC 1F
	Digital input module, digital inputs: 8, 110 V DC / 220 V DC, connection technology: 2-conductor, conforms to standard IEC 61850-3	2700684	AXL F DI8/2 110/220DC 1F
	Digital input module, digital inputs: 16, 24 V DC, connection technology: 1-conductor	2688310	AXL F DI16/1 1H
	Digital input module, digital inputs: 16, 24 V DC, connection technology: 1-conductor, input filter time <5 µs	2701722	AXL F DI16/1 HS 1H
	Digital input module, digital inputs: 16, 24 V DC, connection technology: 4-conductor	2688022	AXL F DI16/4 2F
	Digital input module, digital inputs: 32, 24 V DC, connection technology: 1-conductor	2702052	AXL F DI32/1 2H
	Digital input module, digital inputs: 32, 24 V DC, connection technology: 1-conductor	2688035	AXL F DI32/1 1F
	Digital input module, digital inputs: 64, 24 V DC, connection technology: 1-conductor	2701450	AXL F DI64/1 2F
	Digital input/output module, digital inputs: 8, 24 V DC, connection technology: 1-conductor, digital outputs: 8, 24 V DC, 500 mA, connection technology: 1-conductor	2701916	AXL F DI8/1 DO8/1 1H
	Digital input/output module, digital inputs: 8, 24 V DC, connection technology: 3-conductor, digital outputs: 8, 24 V DC, 500 mA, connection technology: 3-conductor	2702071	AXL F DI8/3 DO8/3 2H
	Digital input/output module, digital inputs: 16, 24 V DC, connection technology: 1-conductor, digital outputs: 8, 24 V DC, 2 A, connection technology: 2-conductor	2702291	AXL F DI16/1 DO8/2-2A 2H
	Digital input/output module, digital inputs: 16, 24 V DC, connection technology: 1-conductor, digital outputs: 16, 24 V DC, 500 mA, connection technology: 1-conductor	2702106	AXL F DI16/1 DO16/1 2H
	Digital output module, digital outputs: 4 (Triac outputs with zero voltage switch), 230 V AC, 2 A, connection technology: 3-conductor	2702068	AXL F DO4/3 AC 1F
	Digital output module, digital outputs: 8, 24 V DC, 2 A, connection technology: 2-conductor	2688381	AXL F DO8/2 2A 1H
	Digital output module, digital outputs: 16, 24 V DC, 500 mA, Connection technology: FLK connector (20-pos.)	2701813	AXL F DO16 FLK 1H

Axioline F – product overview

I/Os			
	Description	**Item no.**	**Type**
Digital input/output modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Digital output module, digital outputs: 16, 24 V DC, 500 mA, connection technology: 1-conductor	2688349	AXL F DO16/1 1H
	Digital output module, digital outputs: 16, 24 V DC, 500 mA, connection technology: 2-conductor	1027904	AXL F DO16/2 2H
	Digital output module, digital outputs: 16, 24 V DC, 500 mA, connection technology: 3-conductor	2688048	AXL F DO16/3 2F
	Digital output module, digital outputs: 32, 24 V DC, 500 mA, connection technology: 1-conductor	2688051	AXL F DO32/1 1F
	Digital output module, digital outputs: 32, 24 V DC, 500 mA, connection technology: 1-conductor	1004925	AXL F DO32/1 2H
	Digital output module, digital outputs: 64, 24 V DC, 500 mA, connection technology: 1-conductor	2702053	AXL F DO64/1 2F
	Relay module, relay outputs: 4 (floating), N/O contact, 220 V DC, 230 V AC	2700608	AXL F DOR4/2 AC/220DC 1F
	Digital output module, functional safety, SafetyBridge solution, digital outputs: 4 (2-channel assignment), 8 (1-channel assignment), 2 A	2702171	AXL F LPSDO8/3 1F
	Digital input module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controller, digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 2-, 3-, 4-conductor	2701559	AXL F PSDI8/4 1F
	Digital input module, functional safety, SafetyBridge Technology, digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 2-, 3-, 4-conductor	2702263	AXL F SSDI8/4 1F
	Digital output module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controller, digital outputs: 4 (2-channel assignment), 8 (1-channel assignment), 2 A, connection technology: 2-, 3-conductor	2701560	AXL F PSDO8/3 1F
	Digital output module, functional safety, SafetyBridge Technology, digital outputs: 4 (2-channel assignment), 8 (1-channel assignment), 2 A, connection technology: 2-, 3-conductor	2702264	AXL F SSDO8/3 1F
	Relay module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controller, signal inputs: 2, outputs OUT24V_0 and OUT24V_1: 2, safe relay outputs: 4 (floating), N/O contact	2702858	AXL F PSDOR4/2 1F
	Functional safety, signal inputs: 2, outputs OUT24V_0 and OUT24V_1: 2, safe relay outputs: 4 (floating), N/O contact	2702859	AXL F SSDOR4/2 1F

Axioline F – product overview

I/Os			
	Description	**Item no.**	**Type**
Analog input/output modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Analog input module, analog inputs: 4, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-, 3-, 4-conductor, integrated sensor supply	2688491	AXL F AI4 I 1H
	Analog input module, analog inputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, connection technology: 2-, 3-, 4-conductor, integrated sensor supply	2688501	AXL F AI4 U 1H
	Analog input module, analog inputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor	2688064	AXL F AI8 1F
	Analog input module, analog inputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, for SAFE AI applications with service-free continuous operation	2702525	AXL F AI8 W 1F
	Analog input/output module, analog inputs: 2, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, analog outputs: 2, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor	2702072	AXL F AI2 AO2 1H
	Analog output module, analog outputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor	2688527	AXL F AO4 1H
	Analog output module, analog outputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor	2688080	AXL F AO8 1F
	Temperature measurement module, analog inputs: 4 (for resistance temperature detectors), connection technology: 2-, 3-, 4-conductor (shielded)	2688556	AXL F RTD4 1H
	Temperature measurement module, analog inputs: 8 (for resistance temperature detectors), connection technology: 2-, 3-, 4-conductor (shielded)	2688077	AXL F RTD8 1F
	Temperature measurement module, analog inputs: 4 (4 inputs for thermocouples or linear voltage, plus 1 input -5 V to +5 V), connection technology: 2-conductor (shielded, twisted pair)	2688598	AXL F UTH4 1H
	Temperature measurement module, analog inputs: 8 (8 inputs for thermocouples or linear voltage, plus 1 input -5 V to +5 V), connection technology: 2-conductor (shielded, twisted pair)	2688417	AXL F UTH8 1F
	Strain gauge capture module	2702911	AXL F SGI2 1H
	Analog input module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controllers in PROFINET systems, safe analog inputs: 8 (1-channel assignment), 4 (2-channel assignment), 4 mA ... 20 mA, connection technology: 2-conductor (shielded, twisted pair)	1061424	AXL F PSAI8 I 1F

Axioline F – product overview

I/Os			
	Description	**Item no.**	**Type**
Function and communication modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Function module, counter inputs: 2, digital inputs: 6, 24 V DC, digital outputs: 4, 24 V DC	NEW 1028066	AXL F CNT2 1H
	Function module, counter inputs: 2, incremental encoder input: 2, symmetrical and asymmetrical encoders, digital inputs: 8, 24 V DC, digital outputs: 2, 24 V DC	2688093	AXL F CNT2 INC2 1F
	Function module, 1 SSI interface for absolute encoder, 1 analog output: 0 - 10 V, ±10 V, 0 - 5 V, ±5 V, 0 - 20 mA, 4 - 20 mA, ±20 mA, 2-conductor connection technology	2688433	AXL F SSI1 AO1 1H
	Power measurement module, voltage input: up to 400 V AC (phase/neutral conductor) or 690 V AC (phase/phase), current input: up to 5 A AC	2702671	AXL F PM EF 1F
	Communication module, RS-232, RS-485, RS-422 interface: 1	2688666	AXL F RS UNI 1H
	M-Bus master, M-Bus interface, for connecting M-Bus devices	1104545	AXL F MA MBUS 1H
	DALI master, single master, two channels, integrated DALI power supply unit	2702864	AXL F MA DALI2 1H
	IO-Link master, IO-Link ports class A: 8, connection method: Push-in connection, connection technology: 3-conductor	1027843	AXL F IOL8 2H
	Interface module, CAN, transparent protocol, max. transmission speed of 1 Mbps	2702668	AXL F IF CAN 1H
	Power module for the communications power UBus, max. 4 A	2688297	AXL F PWR 1H

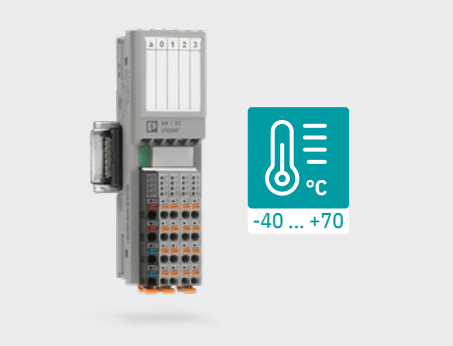
I/Os for extreme environments

Robust up to zone 2

In harsh environments, reliable communication is essential. Axioline F features a particularly robust mechanical design. The system also offers increased immunity to electromagnetic radiation. In addition, I/O modules are available for the Ex area.

- Extended temperature range
- Intrinsically safe I/Os
- HART communication and NAMUR functionality

Properties and possible applications



Extended temperature range

The XC versions with an extended operating temperature range from -40°C to +70°C and coated printed circuit boards are ideal for use under extreme conditions.

I/Os for the process industry

Modules with HART communication and NAMUR functionality are particularly suitable for process automation applications.

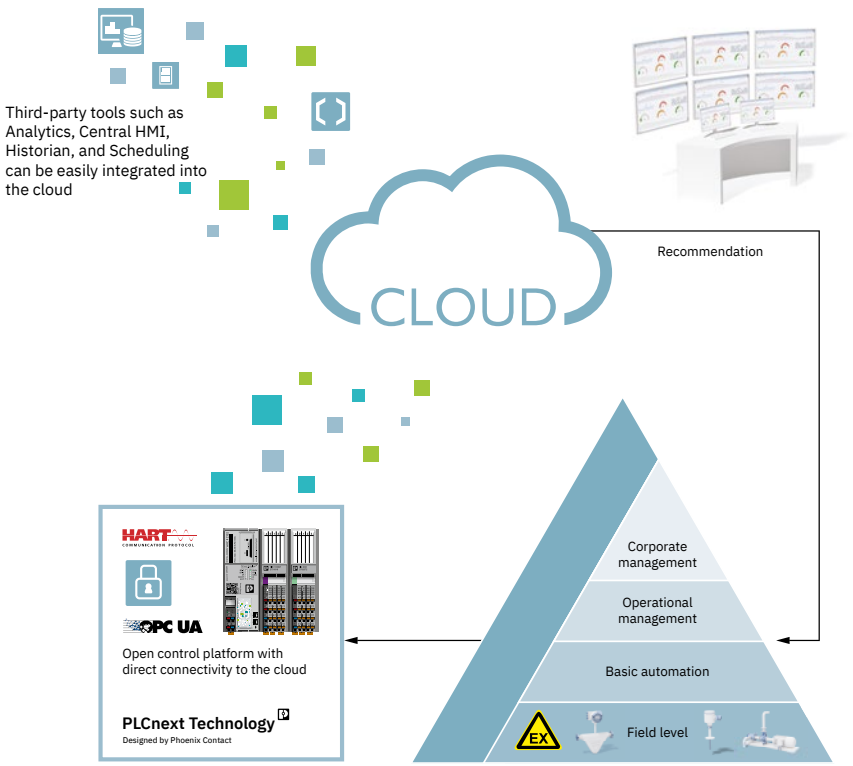
Intrinsically safe I/Os

The intrinsically safe I/O modules can be installed in zone 2 and are suitable for the use of sensors and actuators up to zone 0.

NAMUR Open Architecture

The NOA concept opens up new possibilities, enabling the data already available in process engineering systems to be used to optimize processes. Phoenix Contact has therefore also developed an I/O solution for the intrinsically safe area that allows the relevant information to be easily read by means of HART communication.

You can transfer this data to a cloud solution (such as Proficloud.io from Phoenix Contact or Azure from Microsoft) as raw data or preprocessed by the PLCnext Technology ecosystem via the OPC UA server. When used in combination with PLCnext Technology, the Ex i modules of the Axioline F I/O system are the ideal solution for NOA applications for the impact-free automation of ancillary processes.



Axioline F – product overview

I/Os for extreme conditions (XC = eXtreme Conditions)			
	Description	**Item no.**	**Type**
Digital input/output modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Digital input module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controller, digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 2-, 3-, 4-conductor	1369866	AXL F PSDI8/4 XC 1F
	Digital input module, digital inputs: 16, 24 V DC, connection technology: 4-conductor	2701224	AXL F DI16/4 XC 2F
	Digital input module, digital inputs: 32, 24 V DC, connection technology: 1-conductor	2701226	AXL F DI32/1 XC 1F
	Digital input module, digital inputs: 16 (NAMUR), 8 V DC, connection technology: 2-conductor	1052427	AXL F DI16 NAM XC 1F
	Digital input module, digital inputs: 16 (NAMUR), 8 V DC, connection technology: 2-conductor, intrinsically safe	1052423	AXL F EX IS DI16 NAM XC 1F
	Digital input/output module, digital inputs: 8, 24 V DC, connection technology: 1-conductor, digital outputs: 8, 24 V DC, 500 mA, connection technology: 1-conductor	2702017	AXL F DI8/1 DO8/1 XC 1H
	Digital output module, digital outputs: 8, 24 V DC, 2 A, connection technology: 2-conductor	1035427	AXL F DO8/2 2A XC 1H
	Digital output module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controller, digital outputs: 4 (2-channel assignment), 8 (1-channel assignment), 2 A, connection technology: 2-, 3-conductor	1369867	AXL F PSDO8/3 XC 1F
	Digital output module, digital outputs: 16, 24 V DC, 500 mA, connection technology: 3-conductor	2701228	AXL F DO16/3 XC 2F
	Digital output module, digital outputs: 32, 24 V DC, 500 mA, connection technology: 1-conductor	2701230	AXL F DO32/1 XC 1F
	Digital output module, digital outputs: 4, 24 V, connection technology: 2-conductor, intrinsically safe, solenoid drive	1086901	AXL F EX IS DO4 SD 24-48 XC 1F
	Digital output module, digital outputs: 4, 21 V, connection technology: 2-conductor, intrinsically safe, solenoid drive	1086902	AXL F EX IS DO4 SD 21-60 XC 1F
Function and communication modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Function module, counter inputs: 2, incremental encoder input: 2, symmetrical and asymmetrical encoders, digital inputs: 8, 24 V DC, digital outputs: 2, 24 V DC	2701239	AXL F CNT2 INC2 XC 1F
	Function module, 2 digital pulse interfaces for evaluating magnetostrictive position sensors with start/stop interface	2702655	AXL F IMPULSE2 XC 1H
	Communication module, RS-232, RS-485, RS-422 interface: 1	2702006	AXL F RS UNI XC 1H

Axioline F – product overview

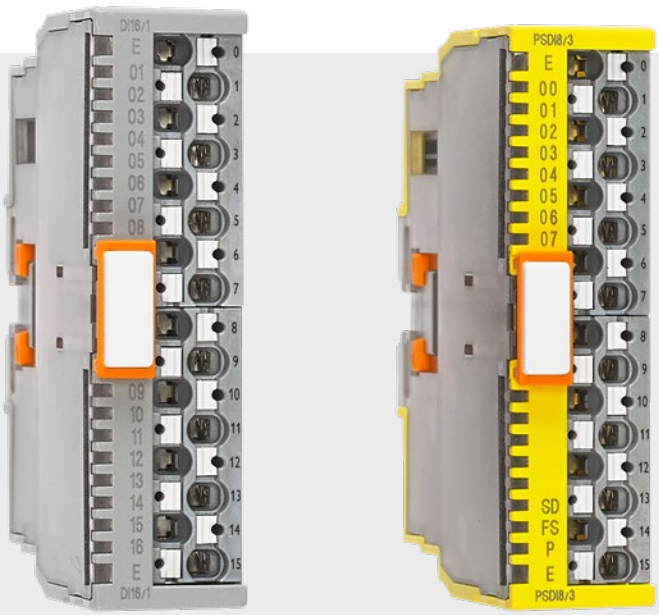
I/Os for extreme conditions (XC = eXtreme Conditions)			
	Description	**Item no.**	**Type**
Analog input/output modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and Axioline F connector			
	Analog input module, analog inputs: 4, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-, 3-, 4-conductor, integrated sensor supply	2702007	AXL F AI4 I XC 1H
	Analog input module, analog inputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, connection technology: 2-, 3-, 4-conductor, integrated sensor supply	2702008	AXL F AI4 U XC 1H
	Analog input module, analog inputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor	2701232	AXL F AI8 XC 1F
	Analog input module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controllers in PROFINET systems, safe analog inputs: 8 (1-channel assignment), 4 (2-channel assignment), 4 mA ... 20 mA, connection technology: 2-conductor (shielded, twisted pair)	1369869	AXL F PSAI8 I XC 1F
	Analog input module, active analog inputs: 8 (HART), 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality	1052434	AXL F AI8 HART XC 1F
	Analog input module, passive analog inputs: 8 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality	NEW 1215394	AXL F AI8 P HART XC 1F
	Analog input module, active analog inputs: 8 (HART), 4 mA ... 20 mA, connection technology: 2-conductor, intrinsically safe, HART functionality	1052432	AXL F EX IS AI8 HART XC 1F
	Analog input module, passive analog inputs: 8 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality, intrinsically safe	NEW 1215393	AXL F EX IS AI8 P HART XC 1F
	Analog input/output module, analog inputs: 2, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, analog outputs: 2, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor	1035429	AXL F AI2 AO2 XC 1H
	Analog output module, analog outputs: 4 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality	1087080	AXL F AO4 HART XC 1F
	Analog output module, analog outputs: 4 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, intrinsically safe, HART functionality	1087081	AXL F EX IS AO4 HART XC 1F
	Analog output module, analog outputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor	2702153	AXL F AO4 XC 1H
	Analog output module, analog outputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor	2701237	AXL F AO8 XC 1F
	Temperature measurement module, analog inputs: 4 (for resistance temperature detectors), connection technology: 2-, 3-, 4-conductor (shielded)	1035430	AXL F RTD4 XC 1H
	Temperature measurement module, analog inputs: 8 (for resistance temperature detectors), connection technology: 2-, 3-, 4-conductor (shielded)	2701235	AXL F RTD8 XC 1F
	Temperature measurement module, analog inputs: 8 (8 inputs for thermocouples or linear voltage, plus 1 input -5 V to +5 V), connection technology: 2-conductor (shielded, twisted pair)	2702464	AXL F UTH8 XC 1F

Axioline Smart Elements

Plug-in I/O modules

2

The plug-in Axioline Smart Elements are system-independent I/O modules without bus communication. The individual element only supports the I/O function. Bus communication for the relevant I/O system is only realized in conjunction with a backplane, which functions similarly to an adapter. The Axioline Smart Elements are therefore universal and flexible to use.



I/Os

Modules with digital and analog inputs and outputs, functions, or for special applications

› More information starting on page 28

Backplanes

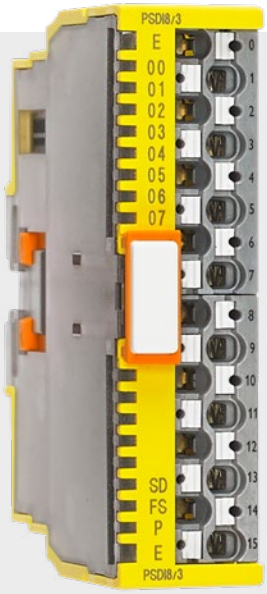
Module carriers for integration into an Axioline F station

› More information starting on page 30

I/Os

Compact and high degree of flexibility

Axioline Smart Elements are compact, plug-in, system-independent I/O elements.
The Axioline Smart Elements feature very easy handling when it comes to configuration, installation, and startup.



- Up to 16 channels
- Easy release
- Various safety protocols

Properties and possible applications

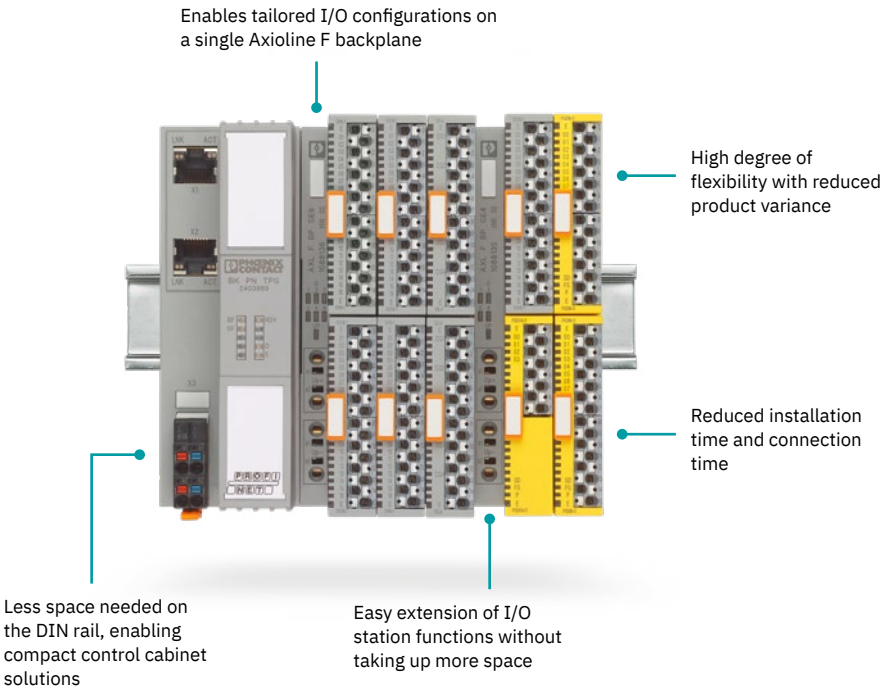
Smart and cost-effective automation

The portfolio includes an IO-Link master, digital and analog input and output modules, safety modules for SafetyBridge Technology, PROFIsafe, or FSoE, and other function modules.

All Axioline Smart Elements feature Push-in connection technology throughout for the particularly fast connection of signals.

32 channels within 15 mm in the Axioline F system

First and foremost, you can use the Axioline Smart Elements within an Axioline F station. Axioline F backplanes with four or six slots are available for this. You can insert the Axioline Smart Elements at any position in the backplane. The two-row design of the backplane reduces the overall width of the I/O station considerably. This means that up to 32 channels and two different I/O functions can be implemented within 15 mm of space.



Axioline Smart Elements – product overview

I/Os			
	Description	**Item no.**	**Type**
Digital input/output modules, degree of protection: IP20			
	Digital input module, digital inputs: 8, (floating) 48 V DC, connection technology: 2-conductor	NEW 1438680	AXL SE DI8/2 48
	Digital input module, digital inputs: 16, 24 V DC, connection technology: 1-conductor	1088127	AXL SE DI16/1
	Digital input module, digital inputs: 16 (NPN), 24 V DC, connection technology: 1-conductor	1105559	AXL SE DI16/1 NPN
	Digital output module, digital outputs: 4, 24 V DC, 2 A, connection technology: 2-conductor	1181790	AXL SE DO4/2 2A EF
	Digital output module, digital outputs: 16, 24 V DC, 500 mA, connection technology: 1-conductor	1088129	AXL SE DO16/1
	Digital output module, digital outputs: 16 (NPN), 24 V DC, 500 mA, connection technology: 1-conductor	1105560	AXL SE DO16/1 NPN
	Relay module, relay outputs: 2 (floating), changeover contact, 220 V DC, 230 V AC	1105562	AXL SE DOR2 W 230
	Digital input module, functional safety, PROFIsafe, exclusively for connection to Phoenix Contact or Siemens controller, safe digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 3-conductor	1079241	AXL SE PSDI8/3
	Digital input module, functional safety, FSoE, safe digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 3-conductor	NEW 1090203	AXL SE FSDI8/3
	Digital input module, functional safety, SafetyBridge Technology, safe digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 3-conductor	1190012	AXL SE SSDI8/3
	Digital output module, functional safety, PROFIsafe, only for Connection to Phoenix Contact or Siemens controller, safe digital outputs: 2 (2-channel assignment), 4 (1-channel assignment), 24 V DC, 2 A, connection technology: 2-conductor	1079231	AXL SE PSDO4/2 2A
	Digital output module, functional safety, FSoE, safe digital outputs: 2 (2-channel assignment), 4 (1-channel assignment), 24 V DC, 2 A, connection technology: 2-conductor	NEW 1090205	AXL SE FSDO4/2 2A
	Digital output module, functional safety, SafetyBridge Technology, safe digital outputs: 2 (2-channel assignment), 4 (1-channel assignment), 24 V DC, 2 A, connection technology: 2-conductor	1190017	AXL SE SSDO4/2 2A

Axioline Smart Elements – product overview

I/Os			
	Description	**Item no.**	**Type**
Analog input/output modules, degree of protection: IP20			
	Analog input module, analog inputs: 4, 0 mA ... 20 mA, connection technology: 2-conductor	1296378	AXL SE AI4 I 0-20
	Analog input module, analog inputs: 4, 4 mA ... 20 mA, connection technology: 2-conductor	1088062	AXL SE AI4 I 4-20
	Analog input module, analog inputs: 4, 0 V ... 10 V, connection technology: 2-conductor	1088104	AXL SE AI4 U 0-10
	Analog input module, analog inputs: 4, -10 V ... 10 V, connection technology: 2-conductor	NEW 1487836	AXL SE AI4 U -10-10
	Analog output module, analog outputs: 4, 0 mA ... 20 mA, connection technology: 2-conductor	1296372	AXL SE AO4 I 0-20
	Analog output module, analog outputs: 4, 4 mA ... 20 mA, connection technology: 2-conductor	1088123	AXL SE AO4 I 4-20
	Analog output module, analog outputs: 4, 0 V ... 10 V, connection technology: 2-conductor	1088126	AXL SE AO4 U 0-10
	Analog output module, analog outputs: 4, -10 V ... 10 V, connection technology: 2-conductor	NEW 1487835	AXL SE AO4 U -10-10
	Temperature measurement module, analog RTD inputs: 4 (Pt 100), connection technology: 3-conductor	1088106	AXL SE RTD4 PT100
	Temperature measurement module, analog RTD inputs: 4 (Pt 1000), connection technology: 3-conductor	1182190	AXL SE RTD4 PT1000
	Temperature measurement module, analog inputs: 4 (inputs for thermocouples or linear voltage), connection technology: 2-conductor (shielded, twisted pair), external cold junction (can also be used as additional Pt 100 sensor input): 1, connection technology: 4-conductor	1182068	AXL SE UTH4 EF
Function and communication modules, degree of protection: IP20			
	Communication module, RS-232 interface: 1, process data width: 20 bytes, transparent protocol	1181787	AXL SE RS232
	Communication module, RS-485 interface: 1, process data width: 20 bytes, transparent protocol	1088128	AXL SE RS485
	Function module, counter input: 1, control input: 1, counting direction input: 1, digital output: 1, 24 V DC, 100 mA	1088131	AXL SE CNT1
	IO-Link master, IO-Link ports class A: 4, connection method: Push-in connection, connection technology: 3-conductor	1088132	AXL SE IOL4
	Position detection module, incremental encoder input: 1, symmetrical encoders, in accordance with EIA-422, digital inputs: 2, 24 V DC	1088130	AXL SE INC1 SYM
	Position detection module, incremental encoder input: 1, asymmetrical encoders, digital inputs: 2, 24 V DC	1182185	AXL SE INC1 ASYM
	Potential distribution module, 24 V DC, GND	NEW 1337225	AXL SE PD8/8 24V/GND
	Potential distribution module, GND	1337224	AXL SE PD16 GND
	Potential distribution module, 24 V DC	1337223	AXL SE PD16 24V
	Slot cover	1167159	AXL SE SC
	Slot cover, diagnostic function	1088134	AXL SE SC-A

Backplanes

Easy integration

Backplanes are part of the Axioline F local bus and integrate four or six Axioline Smart Elements into an Axioline F remote I/O station. A backplane supplies all plugged-in Axioline Smart Elements with the necessary communications power and I/O voltage.

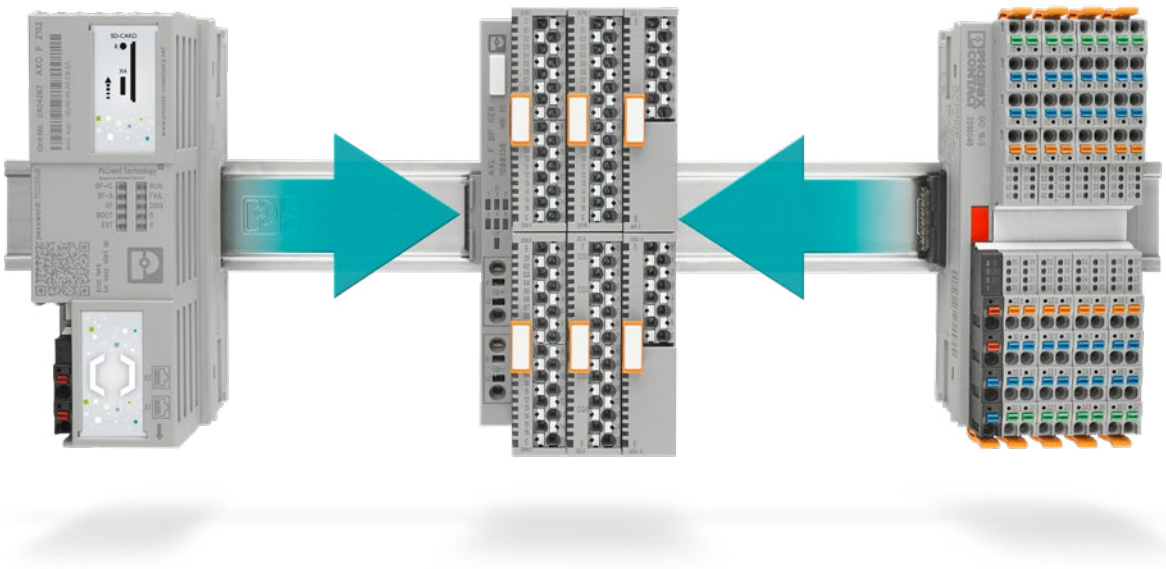
- Four or six slots
- Integration into the Axioline F I/O system
- Push-in connection technology

Properties and possible applications

Integration into an Axioline F station

Axioline F modules and Axioline Smart Elements can be freely combined within an I/O station. They can be operated on existing Axioline F bus couplers or a PLCnext Control.

Choose from a portfolio that includes more than 80 I/Os, bus couplers, and control components.



Bus coupler or PLC | Axioline Smart Elements | Axioline F

Backplanes			
	Description	**Item no.**	**Type**
Module carriers			
	Axioline F, backplane, 4 slots for Axioline Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20	1088135	AXL F BP SE4
	Axioline F, backplane, 6 slots for Axioline Smart Elements, transmission speed in the local bus: 100 Mbps, degree of protection: IP20	1088136	AXL F BP SE6

Axioline P

3

The high-availability I/O system

The high-availability remote I/O system consists of redundant bus couplers for PROFINET and Modbus/TCP as well as digital and analog I/O modules. Axioline P meets the demands of the process industry for extended temperature ranges and hot-swappable intrinsically safe I/O modules. As a PROFINET proxy, PROFIBUS PA devices can be easily integrated into a PROFINET system.

Remote I/O system

Modules with digital and analog inputs and outputs, functions, or for special applications

› More information starting on page 34

PROFINET proxy

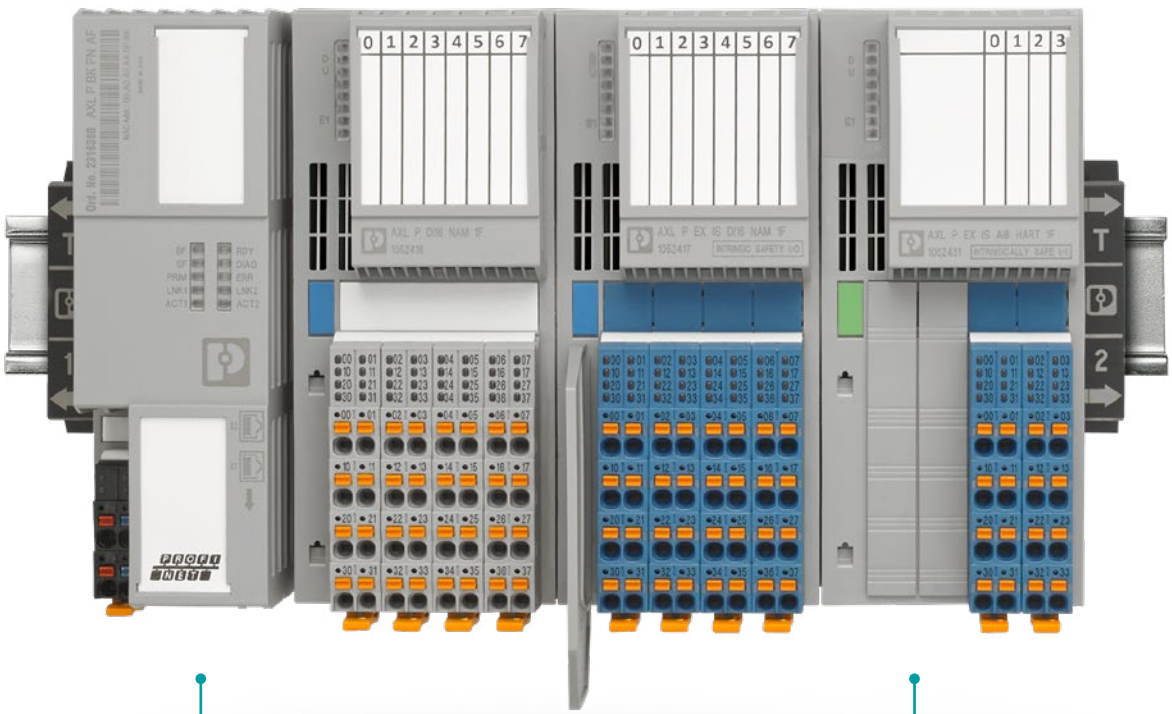
For integrating PROFIBUS PA devices into PROFINET networks

› More information starting on page 40

The Axioline P I/O system at a glance

Hot-swappable and certified

When compared to an Axioline F solution, the Axioline P station can be recognized by the pair of termination blocks at either side. These terminal blocks terminate a redundant communication loop on the DIN rail and thus enable the hot-swap and hot-plug capability of the local bus. The extended operating temperature range as well as ATEX and IECEx certifications allow a wide range of applications in process engineering systems.



Robustness

Extended operating temperature range from -40°C to +70°C

Hot-swap capability

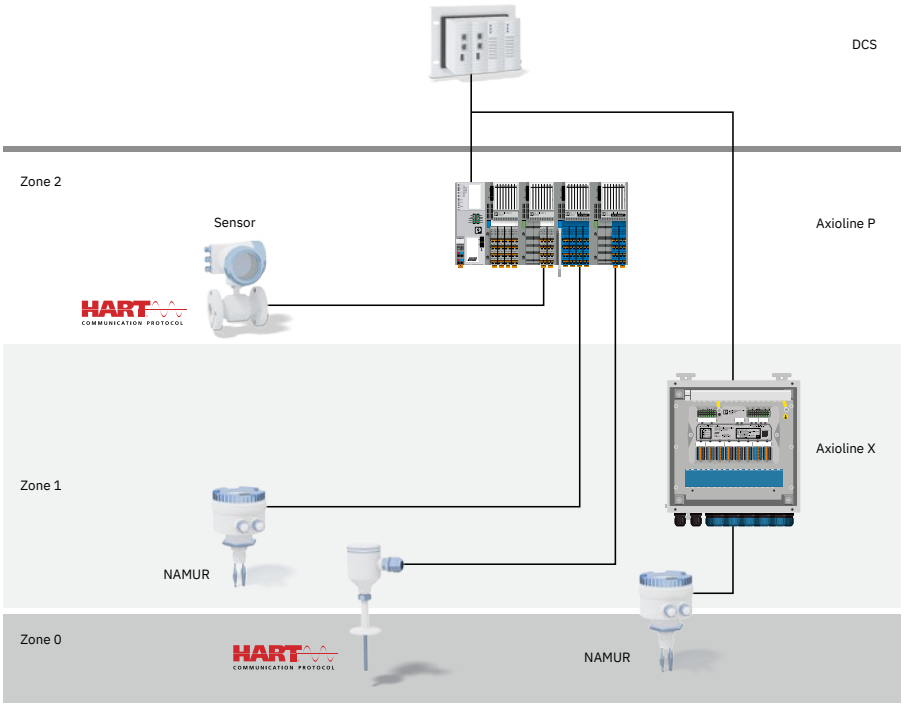
Replacement of existing modules without having to switch off the system

Possible applications in zones 1 and 2

Connection up to zone 0

The Axioline P system can be installed directly in zone 2 and allows the direct connection of sensor and actuator signals from zones 2, 1, and 0.

The Axioline X PROFINET solution is even approved for installation in zone 1.



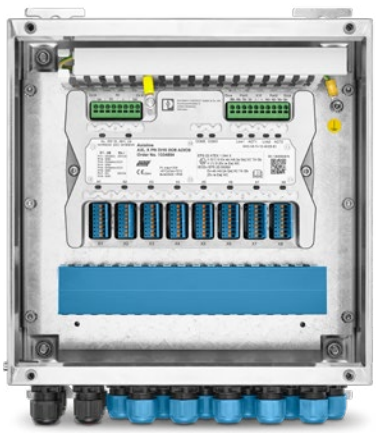
Axioline X

Collect intrinsically safe input/output signals from zone 0/20 or 1/21 directly in zone 1/21 and connect them to the control level in the safe area via network cables. This is made possible by the compact remote I/O modules for PROFINET from the Axioline X product family.

The modules combine bus nodes, signal conditioners, and 32 intrinsically safe (Ex i) digital and analog I/O channels in a minimum amount of space. For system manufacturers and machine builders, this is the first time that a distributed and compact solution is available directly in the zone 1/21 potentially explosive area. This enables very short cable lengths to the solenoid valves and sensors, resulting in significant cost and time savings for installation and maintenance.

Main features

- Integrated web server
- 32 intrinsically safe I/O channels
- Two PROFINET ports
- Built into a stainless steel housing with full ATEX and IECEx certification



Axioline X, installation in a certified housing

Remote I/O system

Intrinsic safety and redundancy

The high-availability remote I/O system consists of redundant PROFINET bus couplers as well as digital and analog I/O modules. Axioline P meets the demands of the process industry for extended temperature ranges and hot-swappable intrinsically safe I/O modules.

- Redundant system connection
- Hot-swap capability
- Installation in zone 2

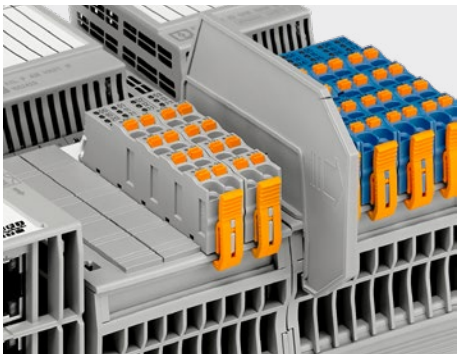
Properties and possible applications

Intrinsically safe I/Os

The intrinsically safe I/O modules can be installed in zone 2 and are suitable for the use of sensors and actuators up to zone 0.

I/O functions for the process industry

Modules with HART communication and NAMUR functionality are thus particularly suitable for process automation applications.

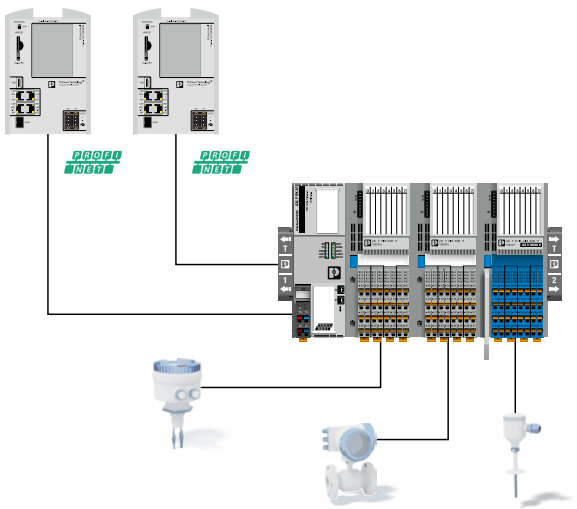


Combination of standard and intrinsically safe I/Os

In the Axioline P I/O system, standard modules can be combined with intrinsically safe modules very easily. By positioning a partition plate, the blue intrinsically safe modules can be added to the end of a station.

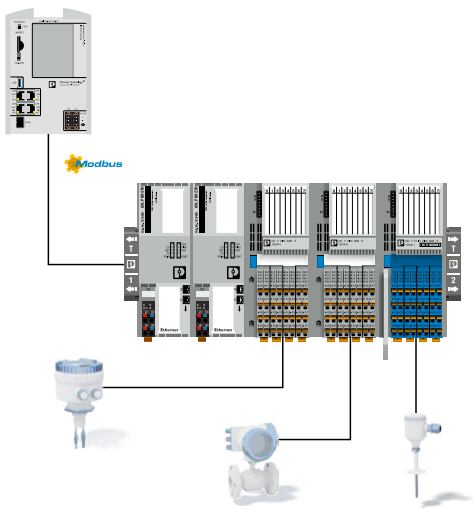
PROFINET S2 system redundancy

In PROFINET networks, the bus coupler of an Axioline P station can be operated with two redundant controllers. PROFINET S2 system redundancy is supported, which ensures very reliable communication between the I/O station and the controllers.



Redundancy with two bus couplers in Modbus/TCP networks

In Ethernet networks for Modbus/TCP, an Axioline P I/O station can be set up with two redundant bus couplers. Redundant operation does not require any special configuration of the Axioline P I/O station. The controller manages the switchover between the primary and secondary bus coupler. The PLCnext Engineer engineering software platform offers a function block for easy configuration of redundant operation in conjunction with a PLCnext Control.



Axioline P – product overview

I/Os

	Description	Item no.	Type
Bus couplers, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and connector			
	Bus coupler for PROFINET. Connects to Axioline P I/O modules along the Axioline P local bus.	1132800	AXL P BK PN
	Bus coupler for Modbus/TCP. Connects to Axioline P I/O modules along the Axioline P local bus.	NEW 1213488	AXL P BK ETH
Digital input/output modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and connector			
	Digital input module, digital inputs: 16, 24 V DC, connection technology: 2-conductor	1213483	AXL P DI16/2 1F
	Digital input module, digital inputs: 16 (NAMUR), 8 V DC, connection technology: 2-conductor, NAMUR functionality	1052416	AXL P DI16 NAM 1F
	Digital input module, digital inputs: 16 (NAMUR), 8 V DC, connection technology: 2-conductor, NAMUR functionality, intrinsically safe	1052417	AXL P EX IS DI16 NAM 1F
	Digital output module, digital outputs: 4, 24 V DC, 48 mA, connection technology: 2-conductor, solenoid drive, intrinsically safe	1087077	AXL P EX IS DO4 SD 24-48 1F
	Digital output module, digital outputs: 4, 21 V, 60 mA, connection technology: 2-conductor, solenoid drive, intrinsically safe	1087078	AXL P EX IS DO4 SD 21-60 1F
Analog input/output modules, transmission speed in the local bus: 100 Mbps, degree of protection: IP20, including bus base module and connector			
	Analog input module, active analog inputs: 8 (HART), 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality	1052429	AXL P AI8 HART 1F
	Analog input module, passive analog inputs: 8 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality	NEW 1215392	AXL P AI8 P HART 1F
	Analog input module, active analog inputs: 8 (HART), 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality, intrinsically safe	1052431	AXL P EX IS AI8 HART 1F
	Analog input module, passive analog inputs: 8 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality, intrinsically safe	NEW 1215391	AXL P EX IS AI8 P HART 1F
	Analog output module, analog outputs: 4 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality	1087079	AXL P AO4 HART 1F
	Analog output module, analog outputs: 4 (HART), 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, HART functionality, intrinsically safe	1087082	AXL P EX IS AO4 HART 1F

Axioline P – product overview

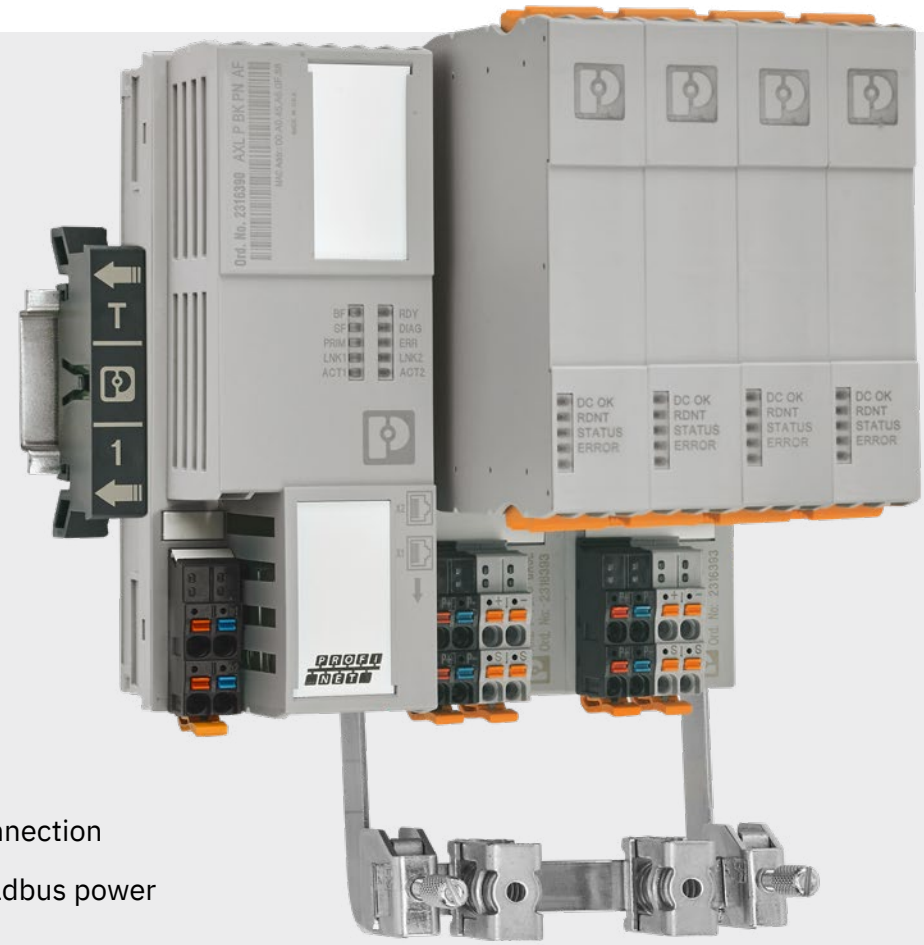
I/Os			
	Description	**Item no.**	**Type**
Accessories			
	Axioline P terminator pair	2316402	AXL P TERM PAIR
	Axioline F/P partition plate for intrinsically safe modules	1100201	AXL F/P IO EX PP

I/Os				
Axioline X				
	Description	Degree of protection	Item no.	**Type**
	Axioline X remote I/O module for installation in zone 1. PROFINET communication with analog and digital inputs and outputs.	IP20	NEW 1334854	AXL X PN DI16 DO8 ADIO8
	Axioline X remote I/O module, preassembled in a certified housing, for installation in zone 1. PROFINET communication with analog and digital inputs and outputs.	IP65	NEW 1371410	AXL X PN DI16 DO8 ADIO8 ENC

PROFINET proxy

PROFIBUS PA on PROFINET networks

The modular Axioline P proxy connects PROFIBUS PA segments directly to a PROFINET network. The modular station communicates with a PROFINET controller, e.g., a distributed control system (DCS), via a bus coupler. As an option, you can connect up to eight PROFIBUS PA segments to the individual proxy outlets in a compact way. To ensure the individual segments are immune to interference, appropriate shield connection technology is available.



- PROFINET connection
- Redundant fieldbus power supply
- Eight PROFIBUS PA outlets

Possible applications and product details

Integration of PROFIBUS PA segments

A PROFINET/PROFIBUS PA proxy can be configured from the Axioline P portfolio by combining a bus coupler (AXL P BK PN AF), fieldbus power supply socket, and corresponding fieldbus power supplies. You can connect up to eight PROFIBUS PA segments to a fieldbus power supply socket.

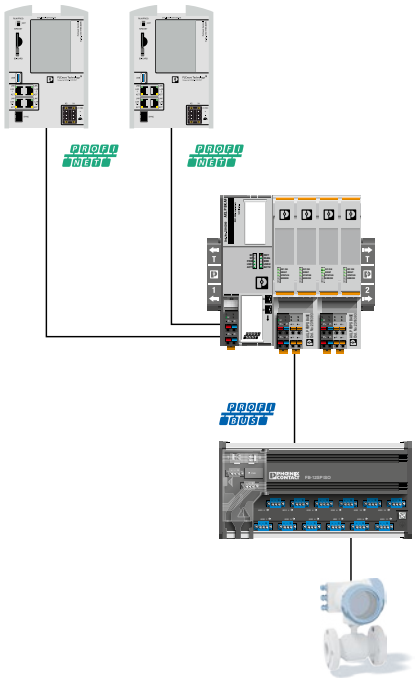
Due to the modular design of the system, additional fieldbus power supply sockets can be added to connect further PROFIBUS PA segments. To ensure the individual segments are immune to interference, appropriate shield connection technology is available.

FDT/DTM technology simplifies the startup and device management of both the proxy station, which is fully integrated into higher-level control systems, and the connected PROFIBUS PA devices.

The PROFINET bus coupler (AXL P BK PN AF) supports the specification for the implementation of S2 system redundancy using a single bus coupler. The hot-swap capability integrated in the bus coupler ensures high system availability.

You can supply the PROFIBUS PA segment with power using a single fieldbus power supply module. High failsafe performance and process reliability can be achieved by installing two power supply modules in a single base and thus supplying a PROFIBUS PA segment redundantly. The local LED display on the power supply module indicates the status of the module and redundancy.

The PROFIBUS PA sensor technology can be connected directly to the modular Axioline P proxy or via a device coupler. Proven fieldbus technology, such as HART or Modbus/RTU, can therefore be integrated into PROFINET networks via PROFIBUS PA gateways that are connected to the modular Axioline P proxy. In this way, existing system concepts can be modernized easily and efficiently.



PROFINET proxy

Components for use as a PROFINET proxy

	Description	Item no.	Type
	Axioline P bus coupler for PROFINET. Connects to PROFIBUS PA power supplies and Axioline P I/O modules along the Axioline P local bus (includes power supply connector and bus base module).	2316390	AXL P BK PN AF
	Axioline P base for PROFIBUS PA power supply plugs. Provides fieldbus power supply redundancy when two plugs are installed.	2316393	AXL P FBPS BASE
	Axioline P redundant power supply plug for the PROFIBUS PA power supply base. Supplies fieldbus couplers along the trunk line with 500 mA at 28 V DC.	2316394	AXL P FBPS 28DC/0.5A
	Axioline P terminator pair	2316402	AXL P TERM PAIR
	Axioline shield connection set (contains 2 shield bus holders and 2 SK 5 shield clamps)	2700518	AXL SHIELD SET

Inline

The highly modular I/O system

4

Automate applications easily and cost-effectively with the Inline system consisting of bus couplers and I/Os for the control cabinet. Due to its flexibility, the remote I/O system can be used in many different projects. The open bus concept means that the system offers a number of options in various networks and can also be adapted to PLCnext Technology automation systems.

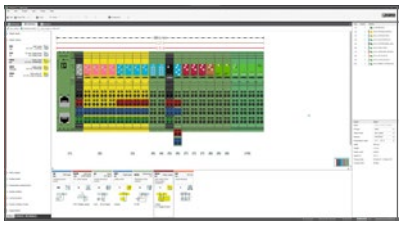
Bus couplers

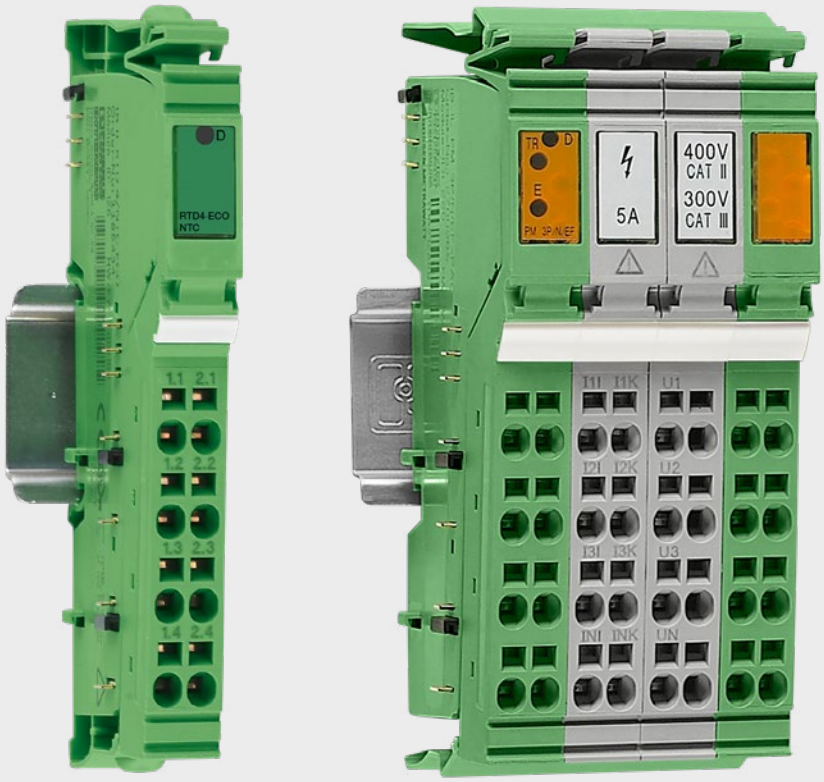
Open to many common fieldbus and network protocols

› More information starting on page 46

Configuration for I/Os

When it comes to configuring electro-technical equipment for an automation application, Project+, the expert solution, is there to help. With no training required, you can create a functional station in accordance with your specifications very quickly with Project+. In addition, you can generate information for subsequent steps in the automation process.





I/Os

Modules with digital and analog inputs and outputs as well as functions

› More information starting on page 50

The Inline I/O system at a glance

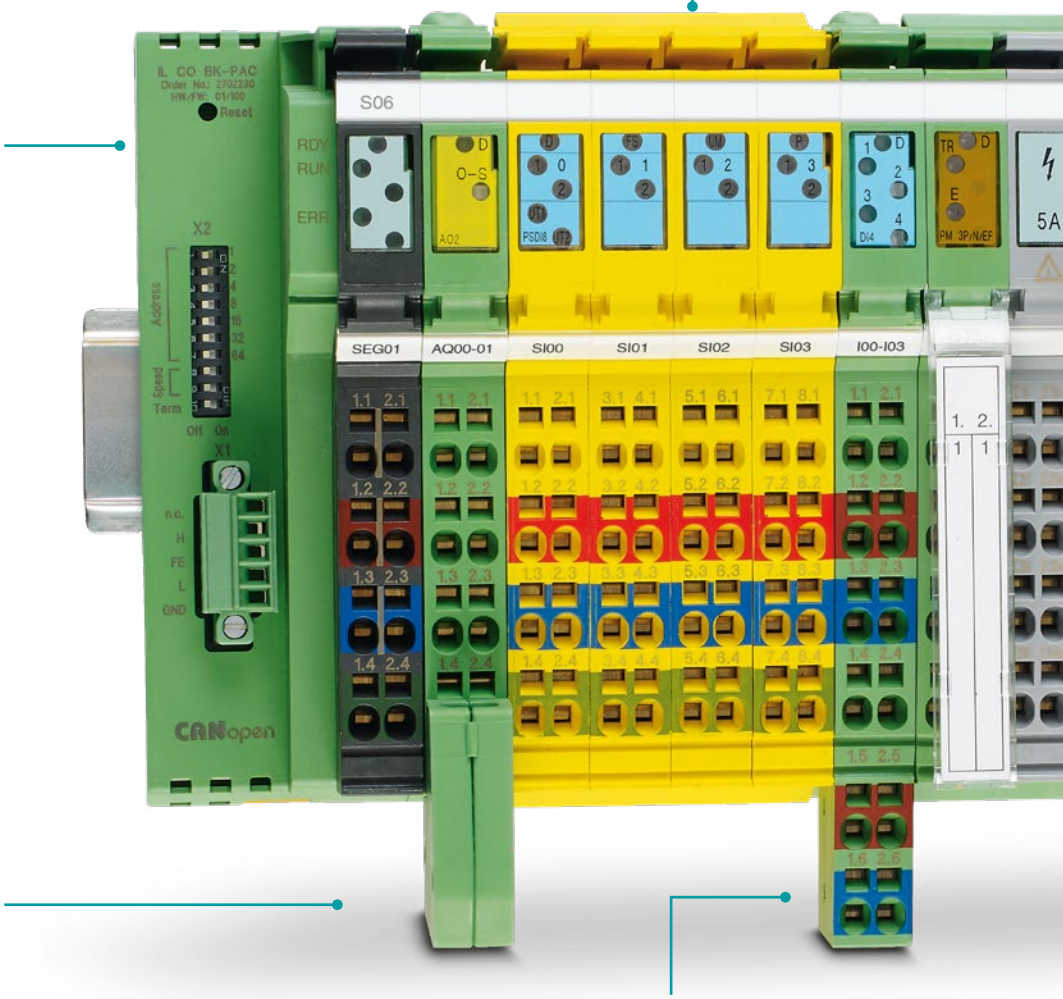
Inline offers a wide range of practical and innovative features. For example, the bus and power supply do not have to be wired; they are connected automatically when the extension modules are plugged in. The wiring level is separated from the electronics, which means that you can replace terminals quickly and easily.

Diagnostics

Diagnostic LEDs for the network and local bus for quick status detection

Communication

Network or bus connection for many common communication protocols



Shield connection

The integrated shield connection on the terminal block means that shielded cables can be connected without additional accessories

Identification

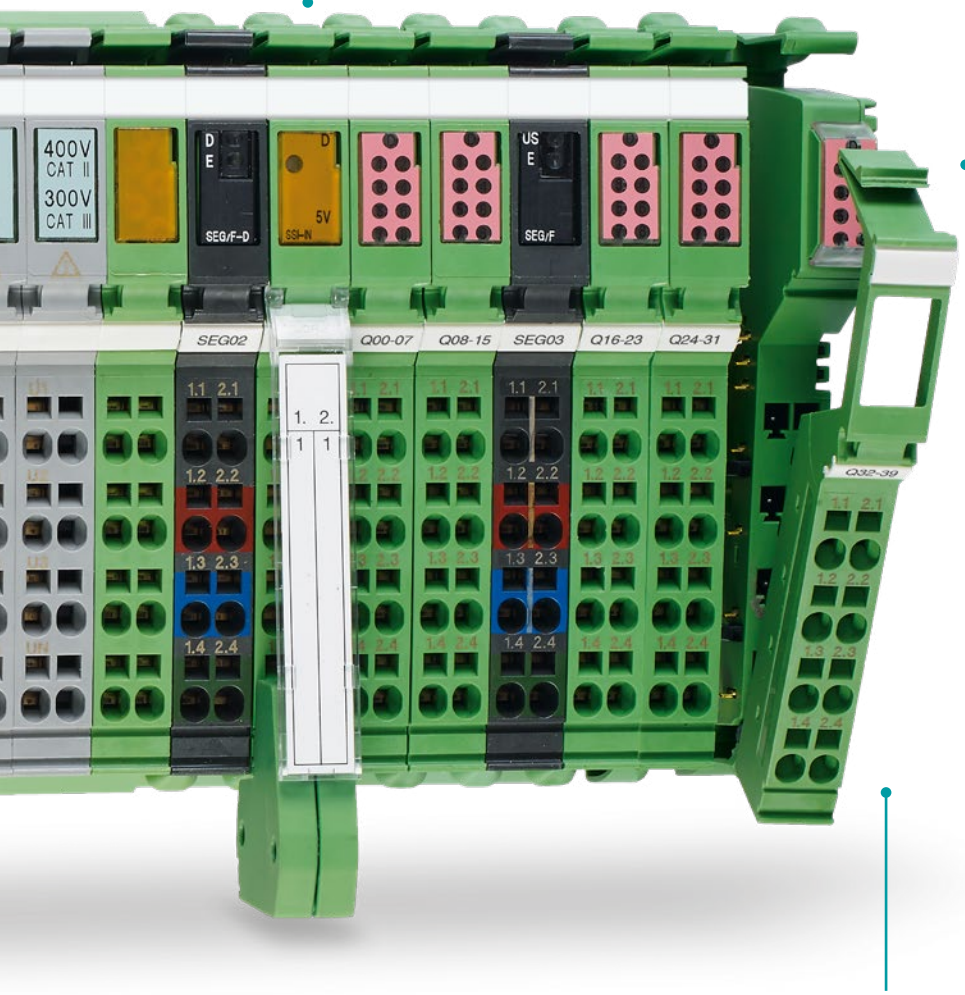
Color coding of the terminal points simplifies wiring

Space-saving

The 12.5 mm blocks enable compact I/O stations

Handling

Color coding to easily distinguish between I/O functions



Module replacement

Wiring level separated from the electronics simplifies module replacement

Station structure

I/Os that can be aligned in a highly modular way create a high degree of flexibility in the station structure

Bus couplers

From INTERBUS to PROFINET

With the free choice of bus coupler, the Inline I/O system can be integrated into many common fieldbus systems and Ethernet networks. The Inline bus couplers are the link between the Inline system and the higher-level network.

- Support for various network protocols
- Compact design
- High product variety

Properties and possible applications

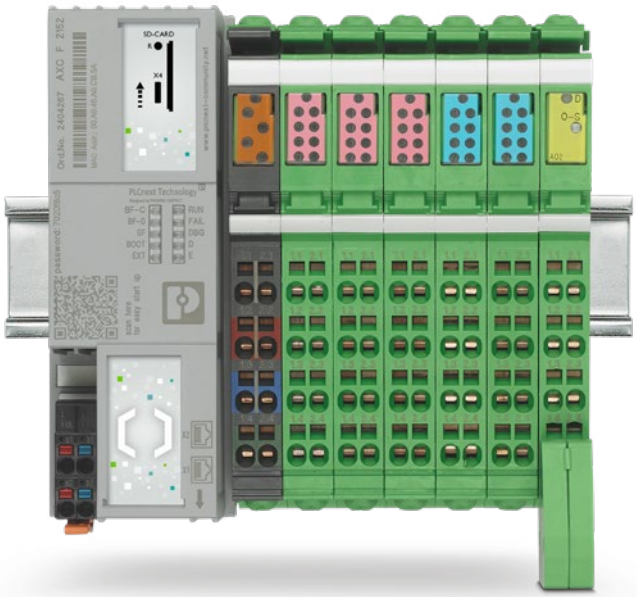
Easy retrofitting

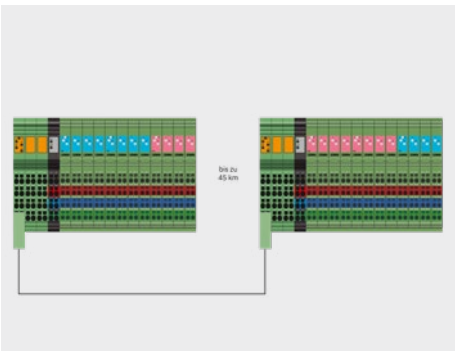
Inline and PLCnext Technology go together. Inline I/Os can be easily connected to a modular PLCnext Control via an adapter terminal.

The Inline adapter terminal (AXC F IL ADAPT) can be used to set up an Inline station for PLCnext Technology and to integrate up to 63 devices. This means that a high-performance PLCnext Control can replace a bus coupler.

PLCnext Technology

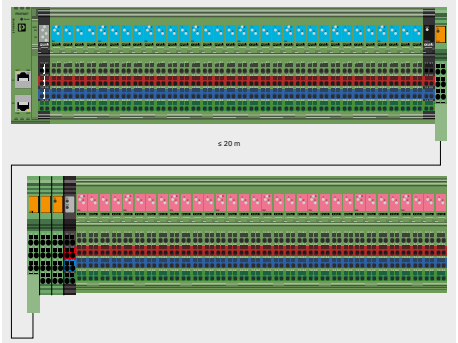
Designed by Phoenix Contact





Multiplex mode

The Inline field multiplexer transmits data in the easiest way, even over large distances. Data is transmitted via a 2-wire copper cable, permanent telephone line, or via FO using a converter.



Local bus extension

Using a local bus extension terminal, you can extend your Inline station in the control cabinet by one or more rows.

Variety of protocols

The inline system is characterized by its high degree of integration into current Ethernet-based communication protocols and classic fieldbus systems.

Inline – product overview

Bus couplers			
	Description	**Item no.**	**Type**
Bus couplers, transmission speed in the local bus: 500 kbps / 2 Mbps, degree of protection: IP20, including connector and marking field			
	Bus coupler, PROFIBUS DP, D-SUB 9 female connector, transmission speed in the local bus: 500 kbps	2862246	IL PB BK DP/V1-PAC
	Bus coupler, PROFINET, RJ45 jack	2403696	IL PN BK-PAC
	Bus coupler, Modbus/TCP (UDP), RJ45 jack	2702372	IL ETH BK-PAC
	Bus coupler, EtherCAT®, RJ45 jack	2702507	IL EC BK-PAC
	Bus coupler, CANopen®, MINI COMBICON	2702230	IL CO BK-PAC
	Bus coupler, PROFIBUS DP, D-SUB 9 female connector, digital inputs: 8, 24 V DC, connection technology: 3-conductor, digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor	2692322	IL PB BK DI8 DO4/EF-PAC
	Bus coupler, Modbus/TCP (UDP), RJ45 jack, digital inputs: 8, 24 V DC, connection technology: 3-conductor, digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor	2703981	IL ETH BK DI8 DO4 2TX-PAC
	Bus coupler, PROFINET, RJ45 jack, digital inputs: 8, 24 V DC, connection technology: 3-conductor, digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor	2703994	IL PN BK DI8 DO4 2TX-PAC
	Bus coupler, EtherNet/IP™, RJ45 jack, digital inputs: 8, 24 V DC, connection technology: 3-conductor, digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor	2897758	IL EIP BK DI8 DO4 2TX-PAC
	Bus coupler, Sercos, RJ45 jack, digital inputs: 8, 24 V DC, connection technology: 3-conductor, digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor	2692380	IL S3 BK DI8 DO4 2TX-PAC
	Field multiplexer, configuration-free signal transmission of remote signals	2861205	IB IL 24 MUX MA-PAC
	Bus coupler, INTERBUS, Inline shield plug, transmission speed in the local bus: 500 kbps	2861580	IBS IL 24 BK-T/U-PAC
	Bus coupler, INTERBUS, Inline shield plug, transmission speed in the local bus: 2 Mbps	2862000	IBS IL 24 BK-T/U-2MBD-PAC
	Bus coupler, INTERBUS, D-SUB 9 female connector/male connector, transmission speed in the local bus: 500 kbps	2861593	IBS IL 24 BK-DSUB-PAC
	Bus coupler, INTERBUS, F-SMA connector, transmission speed in the local bus: 500 kbps	2861218	IBS IL 24 BK-LK-PAC
	Bus coupler, INTERBUS, F-SMA connector, transmission speed in the local bus: 2 Mbps	2862068	IBS IL 24 BK-LK-2MBD-PAC
	Bus coupler, INTERBUS, F-SMA connector, 45° FO connection, transmission speed in the local bus: 500 kbps	2862165	IBS IL 24 BK-LK/45-PAC

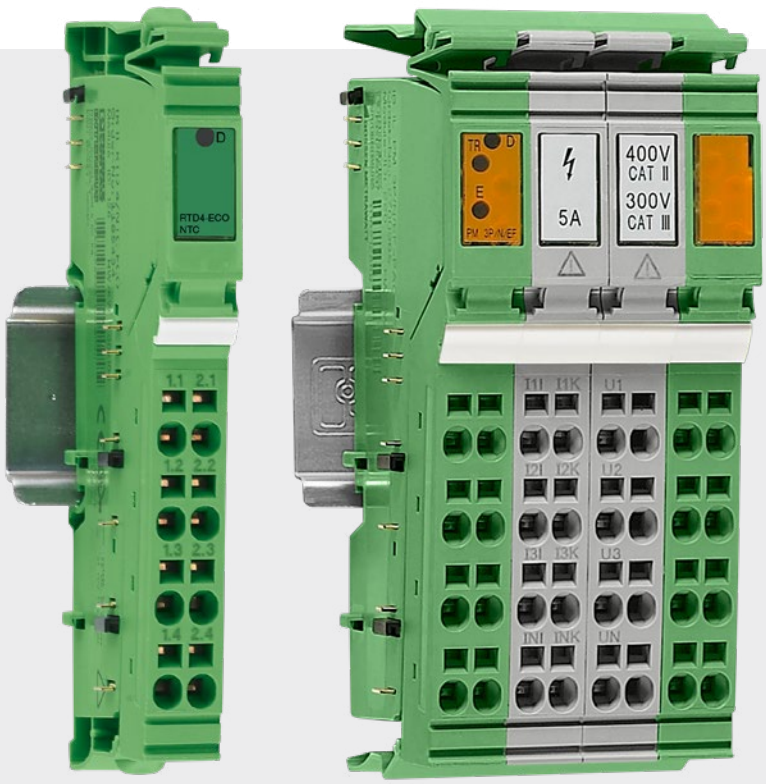
Inline – product overview

Bus couplers			
	Description	**Item no.**	**Type**
PLC extension module			
	Right-alignable Inline adapter terminal (INTERBUS master) for a PLCnext Control for setting up an Inline station for PLCnext Technology	1020304	AXC F IL ADAPT
System components, degree of protection: IP20, including connector and marking field			
	Feed-in terminal, without fuse, 120 V AC	2861454	IB IL 120 PWR IN-PAC
	Feed-in terminal, without fuse, 230 V AC	2861535	IB IL 230 PWR IN-PAC
	Branch terminal, for extending the Inline local bus	2736903	IB IL 24 FLM-PAC
	Coupler terminal, for extending the Inline local bus	2897457	IB IL 24 LSKIP-PAC
	Feed-in terminal, 24 V DC, with fuse (main and segment voltage) and diagnostics, transmission speed: 2 Mbps	2863834	IB IL 24 PWR IN/2F-DF-2MBD-PAC
	Feed-in terminal, 24 V DC, with fuse (main and segment voltage) and diagnostics	2862152	IB IL 24 PWR IN/2-F-D-PAC
	Feed-in terminal, 24 V DC, with fuse (main and segment voltage)	2862136	IB IL 24 PWR IN/2-F-PAC
	Feed-in terminal, 24 V DC, with fuse (main voltage)	2861438	IB IL 24 PWR IN/F-PAC
	Feed-in terminal, 24 V DC, without fuse	2861331	IB IL 24 PWR IN-PAC
	Feed-in terminal and boost terminal, 24 V DC, without fuse	2861674	IB IL 24 PWR IN/R-PAC
	Boost terminal for the communications power UL of 0.8 A	2693020	IB IL 24 PWR IN/R/L-0.8A-PAC
	Segment terminal, 24 V DC, with fuse and diagnostics	2861904	IB IL 24 SEG/F-D-PAC
	Segment terminal, 24 V DC, with fuse	2861373	IB IL 24 SEG/F-PAC
	Segment terminal, 24 V DC, circuit breaker	2861409	IB IL 24 SEG-ELF-PAC
	Segment terminal, 24 V DC, without fuse	2861344	IB IL 24 SEG-PAC
	Inline terminal for potential distribution (24 V), 24 V supply voltage is supplied from the segment circuit (US)	2862987	IB IL PD 24V-PAC
	Inline terminal for potential distribution (GND), connections for GND	2862990	IB IL PD GND-PAC

I/Os

Fine granular station structure

A wide range of I/Os with diverse functions gives you the freedom to choose any topology for your automation application. The fine granularity serves as the basis for the design. Complex safety solutions can also be implemented with I/Os for SafetyBridge Technology or PROFIsafe.



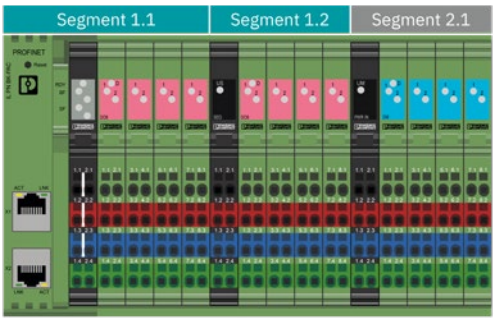
- Large portfolio of I/Os
- One to multiple functions per I/O
- High system safety

Properties and possible applications

Selective segmentation

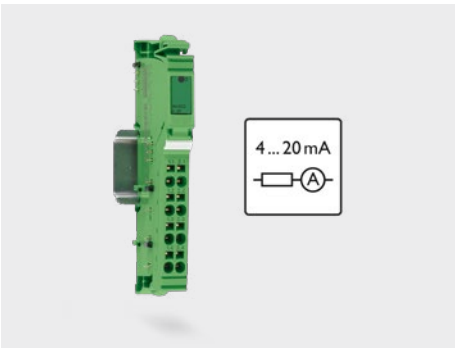
Power and segment terminals can be used to set up different segment circuits within a 24 V area of an Inline station.

Using segment terminals with integrated fuses increases system safety by means of independently protected station segments.



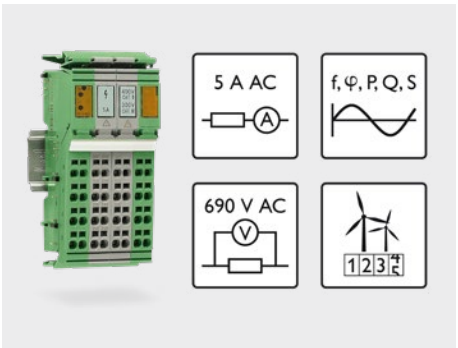
Safe I/Os

With Inline, functional safety can be easily and reliably integrated into your preferred network. Safe PROFIsafe I/O modules can be integrated into PROFINET or PROFIBUS environments, as usual in combination with a safety controller. As an alternative, SafetyBridge Technology enables the easy and network-independent realization of distributed safety solutions, without the need for a safety controller.



One I/O, one function

Every Inline ECO terminal is particularly easy to handle, as no parameters need to be preset.



One I/O, multiple functions

The standard function and analog terminals offer a wide range of options for setting parameters and operating modes.

Flexible combination

The Inline ECO terminals can be combined with all Inline terminals and other Inline components.

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Digital input/output modules, degree of protection: IP20, including connector and marking field			
	Digital input terminal, digital inputs: 1, 120 V AC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2861917	IB IL 120 DI 1-PAC
	Digital input terminal, digital inputs: 2, 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2861221	IB IL 24 DI 2-PAC
	Digital input terminal, digital inputs: 4, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 2 Mbps	2692306	IB IL 24 DI 4-2MBD-PAC
	Digital input terminal, digital inputs: 4, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2861234	IB IL 24 DI 4-PAC
	Digital input terminal, digital inputs: 4, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2863928	IB IL 24 DI 4-ME
	Digital input terminal, digital inputs: 8, 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 2 Mbps	2861690	IB IL 24 DI 8-2MBD-PAC
	Digital input terminal, digital inputs: 8, 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2861247	IB IL 24 DI 8-PAC
	Digital input terminal, digital inputs: 8, 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2862204	IB IL 24 DI 8/T2-PAC
	Digital input terminal, digital inputs: 8, 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2700173	IB IL 24 DI8/HD-PAC
	Digital input terminal, digital inputs: 8, 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2702792	IB IL 24 DI 8/HD-ECO
	Digital input terminal, digital inputs: 8 (S0 counter inputs), 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2897020	IB IL DI 8/S0-PAC
	Digital input terminal, digital inputs: 16, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 2 Mbps	2861959	IB IL 24 DI16-2MBD-PAC
	Digital input terminal, digital inputs: 16, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2861250	IB IL 24 DI 16-PAC
	Digital input terminal, digital inputs: 16, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps, connectors individually numbered	2862958	IB IL 24 DI 16-PAC/SN
	Digital input terminal, digital inputs: 16 (NPN), 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2863520	IB IL 24 DI 16-NPN-PAC
	Digital input terminal, digital inputs: 16, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2897156	IB IL 24 DI 16-ME

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Digital input/output modules, degree of protection: IP20, including connector and marking field			
	Digital input terminal, digital inputs: 32, 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 2 Mbps	2692885	IB IL 24 DI 32/HD-2MBD-PAC
	Digital input terminal, digital inputs: 32, 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2862835	IB IL 24 DI 32/HD-PAC
	Digital input terminal, digital inputs: 32 (NPN), 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2878243	IB IL 24 DI 32/HD-NPN-PAC
	Digital output terminal, digital outputs: 2, 24 V DC, 2 A, connection technology: 4-conductor, transmission speed in the local bus: 2 Mbps	2861700	IB IL 24 DO 2-2A-2MBD-PAC
	Digital output terminal, digital outputs: 2, 24 V DC, 2 A, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2861263	IB IL 24 DO 2-2A-PAC
	Digital output terminal, digital outputs: 2, 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2861470	IB IL 24 DO 2-PAC
	Digital output terminal, digital outputs: 2 (NPN), 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2861496	IB IL 24 DO 2-NPN-PAC
	Digital output terminal, digital outputs: 4, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 2 Mbps	2861988	IB IL 24 DO 4-2MBD-PAC
	Digital output terminal, digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2861276	IB IL 24 DO 4-PAC
	Digital output terminal, digital outputs: 4, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2863931	IB IL 24 DO 4-ME
	Digital output terminal, digital outputs: 4, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2702825	IB IL 24 DO 4/EF-ECO
	Digital output terminal, digital outputs: 4, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2701009	IB IL 24 DO 4/EF-PAC
	Digital output terminal, digital outputs: 8, 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 2 Mbps	2861687	IB IL 24 DO 8-2MBD-PAC
	Digital output terminal, digital outputs: 8, 24 V DC, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2861289	IB IL 24 DO 8-PAC
	Digital output terminal, digital outputs: 8, 24 V DC, 2 A, connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2861603	IB IL 24 DO 8-2A-PAC
	Digital output terminal, digital outputs: 8, 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2700172	IB IL 24 DO8/HD-PAC
	Digital output terminal, digital outputs: 8, 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2702793	IB IL 24 DO 8/HD-ECO

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Digital input/output modules, degree of protection: IP20, including connector and marking field			
	Digital output terminal, digital outputs: 16, 24 V DC, 500 mA, connection technology: 3-conductor, transmission speed in the local bus: 2 Mbps	2862013	IB IL 24 DO16-2MBD-PAC
	Digital output terminal, digital outputs: 16, 24 V DC, 500 mA, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2861292	IB IL 24 DO 16-PAC
	Digital output terminal, digital outputs: 16, 24 V DC, 500 mA, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps, connectors individually numbered	2862961	IB IL 24 DO 16-PAC/SN
	Digital output terminal, digital outputs: 16, 24 V DC, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps	2897253	IB IL 24 DO 16-ME
	Digital output terminal, digital outputs: 32, 24 V DC, 500 mA, connection technology: 1-conductor, transmission speed in the local bus: 2 Mbps	2692898	IB IL 24 DO 32/HD-2MBD-PAC
	Digital output terminal, digital outputs: 32, 24 V DC, 500 mA, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2862822	IB IL 24 DO 32/HD-PAC
	Digital output terminal, digital outputs: 32 (NPN), 24 V DC, connection technology: 1-conductor, transmission speed in the local bus: 500 kbps	2878340	IB IL 24 DO 32/HD-NPN-PAC
	Relay terminal, relay outputs: 2 (floating), changeover contact, 24 V AC, 48 V DC, for switching ohmic loads, transmission speed in the local bus: 500 kbps	2863119	IB IL 24/48 DOR 2/W-PAC
	Relay terminal, relay output: 1 (floating), changeover contact, 24 V AC, 230 V AC, for switching ohmic loads, transmission speed in the local bus: 500 kbps	2861881	IB IL 24/230 DOR1/W-PAC
	Relay terminal, relay outputs: 4 (floating), changeover contact, 24 V DC, 230 V AC, for switching ohmic loads, transmission speed in the local bus: 500 kbps	2861878	IB IL 24/230 DOR4/W-PAC
	Relay terminal, relay outputs: 4 (floating), changeover contact, 24 V DC, 230 V AC, for switching inductive and capacitive loads, transmission speed in the local bus: 500 kbps	2862181	IB IL 24/230 DOR4/W-PC-PAC
	Relay terminal, relay outputs: 4 (floating), N/O contact, 24 V DC, 230 V AC, high inrush current, transmission speed in the local bus: 500 kbps	2897716	IB IL 24/230 DOR4/HC-PAC

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Digital input/output modules, degree of protection: IP20			
	Safety-related digital output module, for the SafetyBridge system. The module has 4 safe digital outputs for two-channel assignment or 8 safe digital outputs for single-channel assignment.	2700606	IB IL 24 LPSDO 8 V2-PAC
	Safety-related digital output module, for the SafetyBridge system. The module has 4 safe digital outputs for two-channel assignment or 8 safe digital outputs for single-channel assignment.	2701625	IB IL 24 LPSDO 8 V3-PAC
	Safety-related digital input module, for the SafetyBridge, INTERBUS-Safety, and PROFIsafe system. The module has 4 safe digital inputs for two-channel assignment or 8 safe digital inputs for single-channel assignment.	2985688	IB IL 24 PSDI 8-PAC
	Safety-related digital input module, for the SafetyBridge V3 and PROFIsafe system. The module has 8 safe digital inputs for two-channel assignment or 16 safe digital inputs for single-channel assignment.	2700994	IB IL 24 PSDI 16-PAC
	Safety-related digital output module, for SafetyBridge, INTERBUS-Safety, and PROFIsafe systems, has 4 safe digital outputs, each containing one positive and one negative switching output depending on the parameterization	2916493	IB IL 24 PSDO 4/4-PAC
	I/O component, safety-related, digital output module with 4 safe outputs, positive and negative switching; for the SafetyBridge system, PROFIsafe, and INTERBUS-Safety; up to SIL 3, Cat. 4/PL e, plug-in spring-cage connection with discharge plugs	2700804	IB IL 24 PSDO 4/4-R-PAC
	Safety-related digital output module, for SafetyBridge, INTERBUS-Safety, and PROFIsafe systems. The module has 4 safe digital outputs for two-channel assignment or 8 safe digital outputs for single-channel assignment.	2985631	IB IL 24 PSDO 8-PAC
	Safety-related distributed relay output module, for the PROFIsafe system. The module has 4 safe relay outputs, each with two contacts. The output states are mirrored for diagnostic purposes.	2700563	IB IL 24 PSDOR 4-F-PAC
	Safety-related distributed relay output module, for SafetyBridge, INTERBUS-Safety, and PROFIsafe systems. The module has 4 safe relay outputs, each with two contacts.	2985864	IB IL 24 PSDOR 4-PAC

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Analog input/output modules, degree of protection: IP20, including connector and marking field			
	Thermistor terminal, 2-conductor connection technology	2861360	IB IL 24 TC-PAC
	Analog input terminal, analog inputs: 2, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2862217	IB IL AI 2/4-20-PAC
	Analog input terminal, analog inputs: 2, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2861302	IB IL AI 2/SF-PAC
	Analog input terminal, analog inputs: 2, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps, 3 dB cut-off frequency at 230 Hz	2861577	IB IL AI 2/SF-230-PAC
	Analog input terminal, analog inputs: 2, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2863944	IB IL AI 2/SF-ME
	Analog input terminal, analog inputs: 2, 4 mA ... 20 mA, 0 mA ... 25 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps, HART functionality, HART protocol transmission	2862149	IB IL AI 2-HART-PAC
	Analog input terminal, analog inputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-, 3-, 4-conductor, transmission speed in the local bus: 2 Mbps	2878641	IB IL AI 4/EF-2MBD-PAC
	Analog input terminal, analog inputs: 4, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-, 3-, 4-conductor, transmission speed in the local bus: 500 kbps	2878447	IB IL AI 4/EF-PAC
	Analog input terminal, analog inputs: 4, 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2700458	IB IL AI 4/I-PAC
	Analog input terminal, analog inputs: 4, 0 V ... 10 V, -10 V ... 10 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2700459	IB IL AI 4/U-PAC
	Analog input terminal, analog inputs: 4, 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702495	IB IL AI 4/I/4-20-ECO
	Analog input terminal, analog inputs: 4, 0 V ... 10 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702496	IB IL AI 4/U/0-10-ECO
	Analog input terminal, analog inputs: 8, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, 0 mA ... 40 mA, -40 mA ... 40 mA, connection technology: 2-, 3-conductor, transmission speed in the local bus: 500 kbps, integrated sensor supply	2861661	IB IL AI 8/IS-PAC
	Analog input terminal, analog inputs: 8, 0 V ... 5 V, -5 V ... 5 V, 0 V ... 10 V, -10 V ... 10 V, 0 V ... 25 V, -25 V ... 25 V, 0 V ... 50 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, 0 mA ... 40 mA, -40 mA ... 40 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2861412	IB IL AI 8/SF-PAC
	Analog input terminal, 0 V ... 10 V	2897952	IB IL AI/TEMP 4 RTD-PAC

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Analog input/output modules, degree of protection: IP20, including connector and marking field			
	Analog output terminal, analog output: 1, 0 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2861315	IB IL AO 1/SF-PAC
	Analog output terminal, analog output: 1, 0 V ... 10 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2861399	IB IL AO 1/U/SF-PAC
	Analog output terminal, analog outputs: 2, 0 V ... 10 V, -10 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, -20 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2700775	IB IL AO 2/UI-PAC
	Analog output terminal, analog outputs: 2, 0 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 2 Mbps	2862194	IB IL AO 2/SF-2MBD-PAC
	Analog output terminal, analog outputs: 2, 0 V ... 10 V, 0 mA ... 20 mA, 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2863083	IB IL AO 2/SF-PAC
	Analog output terminal, analog outputs: 2, 0 V ... 10 V, -10 V ... 10 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2863957	IB IL AO 2/U/BP-ME
	Analog output terminal, analog outputs: 2, 0 V ... 10 V, -10 V ... 10 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2861467	IB IL AO 2/U/BP-PAC
	Analog output terminal, analog outputs: 8, 0 V ... 10 V, -10 V ... 10 V, 0 V ... 5 V, -5 V ... 5 V, connection technology: 2-conductor, transmission speed in the local bus: 2 Mbps	2878052	IB IL AO 4/8/U/BP-2MBD-PAC
	Analog output terminal, analog outputs: 8, 0 V ... 10 V, -10 V ... 10 V, 0 V ... 5 V, -5 V ... 5 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2878036	IB IL AO 4/8/U/BP-PAC
	Analog output terminal, analog outputs: 4, 4 mA ... 20 mA, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702497	IB IL AO 4/I/4-20-ECO
	Analog output terminal, analog outputs: 4, 0 V ... 10 V, connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702498	IB IL AO 4/U/0-10-ECO

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Analog input/output modules, degree of protection: IP20, including connector and marking field			
	Temperature measurement terminal, analog RTD inputs: 4 (NTC, linear resistors), connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	1185434	IB IL RTD 4/NTC-ECO
	Temperature measurement terminal, analog RTD inputs: 4 (Pt 1000), connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702501	IB IL RTD 4/PT1000-ECO
	Temperature measurement terminal, analog RTD inputs: 4 (Pt 100), connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702499	IB IL RTD 4/PT100-ECO
	Temperature measurement terminal, analog RTD inputs: 2, connection technology: 2-, 3-, 4-conductor, transmission speed in the local bus: 500 kbps	2861328	IB IL TEMP 2 RTD-PAC
	Temperature measurement terminal, analog UTH inputs: 2 (thermocouples or linear voltage), connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2861386	IB IL TEMP 2 UTH-PAC
	Temperature measurement terminal, analog RTD inputs: 8 (for resistance temperature detectors), connection technology: 4-conductor, transmission speed in the local bus: 500 kbps	2897402	IB IL TEMP 4/8 RTD/EF-PAC
	Input terminal, 8 channels, RTD (resistance temperature detector), 2-, 3-conductor connection technology	2863915	IB IL TEMP 4/8 RTD-PAC
	Input terminal, 8 channels, TC (thermocouple), RTD (resistance temperature detector), 2-, 3-conductor connection technology	2701000	IB IL TEMP 8 UTH/RTD-PAC
	Temperature measurement terminal, analog UTH inputs: 4 (type J), connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702502	IB IL UTH 4/J-ECO
	Temperature measurement terminal, analog UTH inputs: 4 (type K), connection technology: 2-conductor, transmission speed in the local bus: 500 kbps	2702503	IB IL UTH 4/K-ECO
	Strain gauge measurement terminal, transmission speed in the local bus: 2 Mbps, 2 fast inputs, 4-, 6-conductor connection technology	2878735	IB IL SGI 2/F-2MBD-PAC
	Strain gauge measurement terminal, transmission speed in the local bus: 500 kbps, 2 fast inputs, 4-, 6-conductor connection technology	2878638	IB IL SGI 2/F-PAC
	Strain gauge measurement terminal, transmission speed in the local bus: 500 kbps, 2 precise and fast inputs, 4-, 6-conductor connection technology	2702373	IB IL SGI 2/P/EF-PAC

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Function and communication modules, degree of protection: IP20, including connector and marking field			
	CAN master, for connecting a CAN bus system	2700196	IB IL CAN-MA-PAC
	System bus master, for connecting the Interface system bus	2692720	IB IL IFS-MA-PAC
	PROFIBUS master/slave, for connecting a PROFIBUS system, use only with PC Worx	2700630	IB IL PB MA-PAC
	M-Bus master, M-Bus interface, for connecting M-Bus devices, transmission speed in the local bus: 500 kbps	2701927	IB IL MBUS-PAC
	M-Bus master, MP-Bus interface, for connecting MP-Bus devices, transmission speed in the local bus: 500 kbps	2702921	IB IL MP-BUS-PAC
	DALI master, multi-master-capable, integrated DALI power supply unit, transmission speed in the local bus: 500 kbps	1199811	IB IL DALI MM-V2-PAC
	DALI master, integrated DALI power supply unit, safe electrical isolation, transmission speed in the local bus: 500 kbps	2897813	IB IL DALI/PWR-PAC
	DALI master, extension to IB IL DALI/PWR-PAC, transmission speed in the local bus: 500 kbps	2897910	IB IL DALI-PAC

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Function and communication modules, degree of protection: IP20, including connector and marking field			
	Counter terminal, 1 counter input, 1 control input, 1 output, 24 V DC, 500 mA, 3-conductor connection technology	2861852	IB IL CNT-PAC
	Measurement terminal for position encoders, 1 input for inductive length gauges with the pulse interface (P interface)	2861768	IB IL IMPULSE-IN-PAC
	Position detection terminal, incremental encoder input: 1, symmetrical and asymmetrical encoders, digital inputs: 3, 24 V DC, digital outputs: 1, 0.5 A, transmission speed in the local bus: 2 Mbps	2819765	IB IL INC-IN-2MBD-PAC
	Position detection terminal, incremental encoder input: 1, symmetrical and asymmetrical encoders, digital inputs: 3, 24 V DC, digital outputs: 1, 0.5 A, transmission speed in the local bus: 500 kbps	2861755	IB IL INC-IN-PAC
	Power measurement terminal for direct measurement of AC currents up to 5 A, including neutral conductor current and phase-to-phase voltages up to 400 V AC (phase/neutral conductor) or 690 V AC (phase/phase)	2700965	IB IL PM 3P/N/EF-PAC
	Function terminal for pulse width and frequency modulation or activation of impulse-driven motor control parts with pulse/direction interface, 2 outputs for 5 V or 24 V	2861632	IB IL PWM/2-PAC
	Communication terminal, RS-232 interface: 1, communication via PCP, transmission speed in the local bus: 2 Mbps	2862084	IB IL RS 232-2MBD-PAC
	Communication terminal, RS-232 interface: 1, communication via PCP, transmission speed in the local bus: 500 kbps	2861357	IB IL RS 232-PAC
	Communication terminal, RS-232 interface: 1, communication via process data, transmission speed in the local bus: 500 kbps	2878722	IB IL RS 232-PRO-PAC
	Communication terminal, RS-232 interface: 1, communication via process data, transmission speed in the local bus: 500 kbps	2702795	IB IL RS 232-ECO

Inline – product overview

I/Os			
	Description	**Item no.**	**Type**
Function and communication modules, degree of protection: IP20, including connector and marking field			
	Communication terminal, RS-485, RS-422 interface: 1 (alternative operation possible), communication via PCP, transmission speed in the local bus: 2 Mbps	2862097	IB IL RS 485/422-2MBD-PAC
	Communication terminal, RS-485, RS-422 interface: 1 (alternative operation possible), communication via PCP, transmission speed in the local bus: 500 kbps	2861933	IB IL RS 485/422-PAC
	Communication terminal, RS-485, RS-422 interface: 1 (alternative operation possible), communication via process data, transmission speed in the local bus: 500 kbps	2863627	IB IL RS 485/422-PRO-PAC
	Communication terminal, RS-485 interface: 1, communication via process data, transmission speed in the local bus: 500 kbps	2702141	IB IL RS 485-ECO
	Communication terminal, RS-232, RS-485, RS-422 interface: 1 (alternative operation possible), transmission speed in the local bus: 500 kbps	2700893	IB IL RS UNI-PAC
	Measurement terminal for absolute encoders, 1 input for absolute rotation or position measurement systems with SSI interface	2819574	IB IL SSI-IN-PAC
	Positioning terminal, 1 absolute encoder input, 4 digital inputs 24 V DC, 4 digital outputs 24 V DC, 500 mA, 3-conductor connection technology	2861865	IB IL SSI-PAC
	Branch terminal, INTERBUS, F-SMA shield plug, with remote bus branch, transmission speed in the local bus: 2 Mbps, without accessories	2878159	IBS IL 24 RB-LK-2MBD
	Branch terminal, INTERBUS, Inline shield plug, with remote bus branch, transmission speed in the local bus: 2 Mbps	2861962	IBS IL 24 RB-T-2MBD-PAC
	Branch terminal, INTERBUS, Inline shield plug, with remote bus branch, transmission speed in the local bus: 500 kbps	2861441	IBS IL 24 RB-T-PAC

Axioline E

The I/O system for field installation

The new Axioline E generation is the remote I/O system with a block design for distributed automation without a control cabinet. The devices have been designed to satisfy both the current and future field installation requirements and for direct use in a machine under particularly harsh ambient conditions.

Ethernet I/Os

Various digital I/Os and IO-Link masters

› More information starting on page 66

IO-Link devices

For connection to an IO-Link master

› More information starting on page 68

The Axioline E I/O system at a glance

The system properties of the Axioline E Ethernet I/Os and IO-Link devices enable them to be used in many different applications with very simple device installation.

M12 PUSH-PULL

Flexible field wiring with M12 screw connectors or M12 push-pull fast-connection technology.

Secure by design

Secure product development according to TÜV-certified process in accordance with IEC 62443-4-1

Robustness

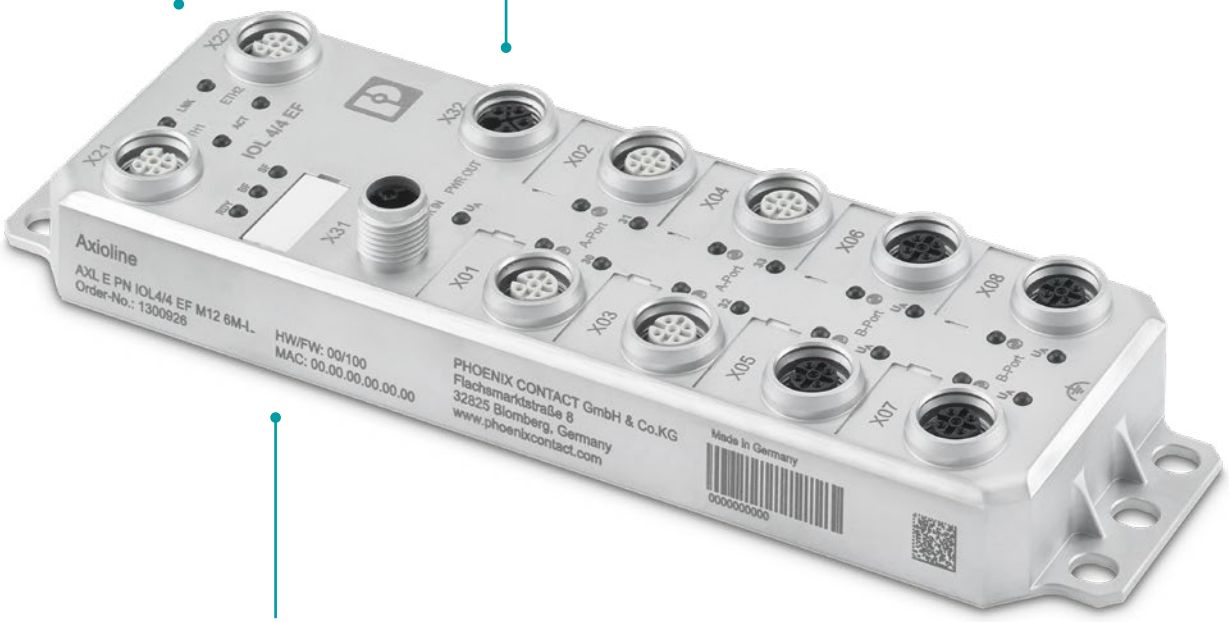
Fully encapsulated zinc die-cast housing with IP65/IP67/IP69 degree of protection and high resistance to environmental influences, common coolants and lubricants, and welding beads

Daisy chain

Integrated 2-port switch and Power In and Power Out connection

Power supply

Powerful L-coded power supply with 2 x 16 A



Marking

Individual device marking with module markers and adhesive labels

Optical diagnostics

Local diagnostic and status indicators with LED signaling on the device

Ethernet I/Os

Digital I/Os and IO-Link masters

The Ethernet I/Os are characterized by their openness to all market-relevant Industrial Ethernet communication protocols. With the innovative device architecture, the devices adapt flexibly to new technology standards.

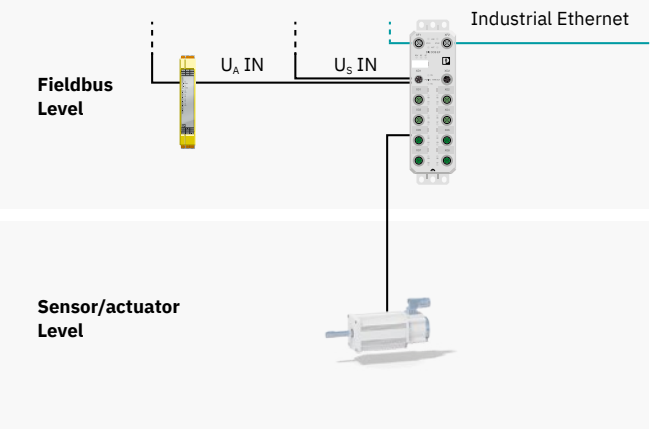
- Digital input and output
- IO-Link master
- IO-Link Safety master

Properties and possible applications

Digital I/Os

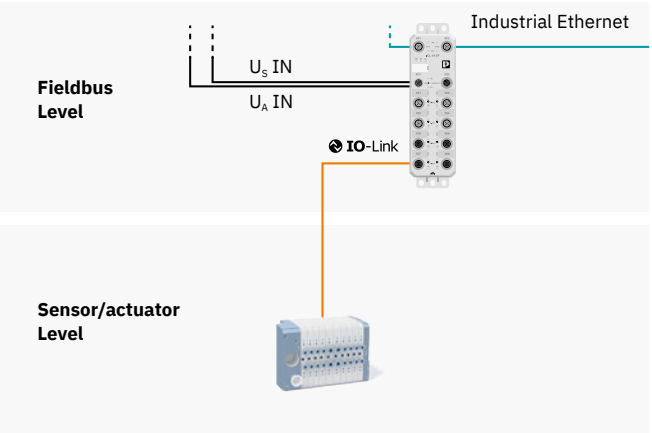
The digital I/Os are used to connect sensors and actuators for the input and output of signals. The portfolio includes device versions with freely configurable digital inputs and outputs for particularly customized applications.

Safety applications with safety-related shutdown of the supply voltage of the digital outputs can be realized by using specific output devices. The connection to the higher-level controller is established via Industrial Ethernet protocols.



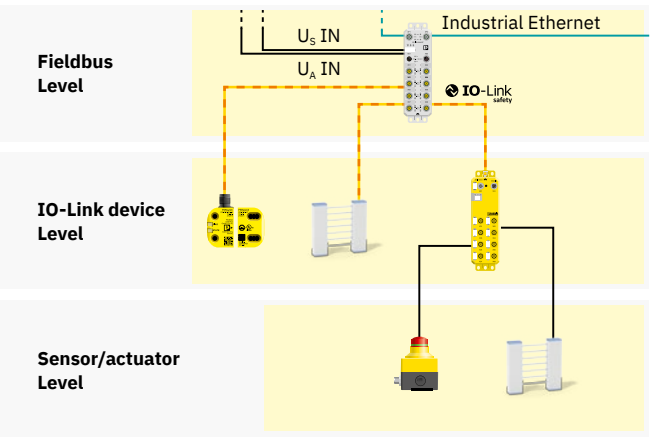
IO-Link master

The IO-Link master is the interface to the higher-level controller. It controls communication with the connected IO-Link devices. Containing device information and parameter information, the IODD (IO Device Description) file of an IO-Link device enables simple parameterization down to the sensor/actuator level.



Safe IO-Link master

The IO-Link Safety master enables safe communication. In addition to classic standard IO-Link devices, safety-related IO-Link devices can be connected, such as safety sensors, safe sensors via OSSDs, safe actuators, or even mixed safety devices (e.g., mechatronic devices). With IO-Link Safety, you also benefit from the typical IO-Link advantages in the field of functional safety, such as simple parameterization with IODD files.



IO-Link devices

Analog, digital, and safe

You can extend the scope of functions in the application by using the Axioline E IO-Link devices. Digital and analog functions can be implemented cost-effectively in the field. Extend your distributed signal acquisition by connecting different IO-Link devices.

- M12 push-pull fast-connection technology
- Analog and digital input and output
- Safe input and output with IO-Link Safety device

IO-Link portfolio and possible applications

IO-Link portfolio

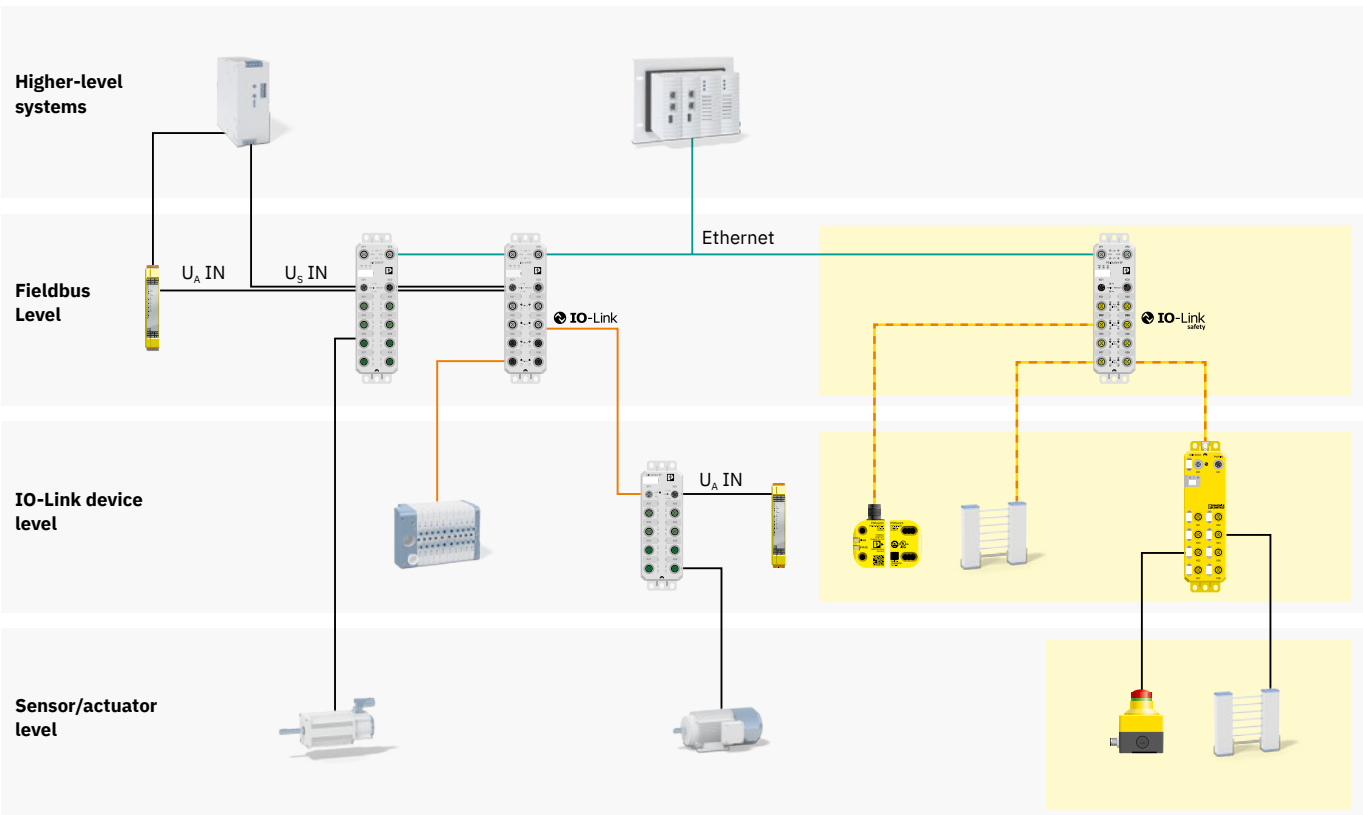
Along with the IO-Link masters, the IO-Link I/O boxes enable the simple and economical expansion of the number of channels in the field for analog and digital signals. In addition to the 60 mm overall width, the versions with 30 mm overall width can also be installed in the tightest of spaces.

The IO-Link Safety I/O boxes can be used to integrate safe sensors and actuators into IO-Link systems. In addition, analog functions can be implemented as required using IO-Link analog converters.

IO-Link application

The architecture of an IO-Link system consists of a controller, an IO-Link master or IO-Link Safety master, and one or more IO-Link devices or IO-Link Safety devices. They are connected by simple 3-wire, unshielded cables, which makes installation easier and more cost-effective.

The IO-Link technology enables consistent communication and parameterization from the control level right through to the sensor/actuator level.



Axioline E – product overview

Industrial Ethernet devices for field installation, IP65/IP67

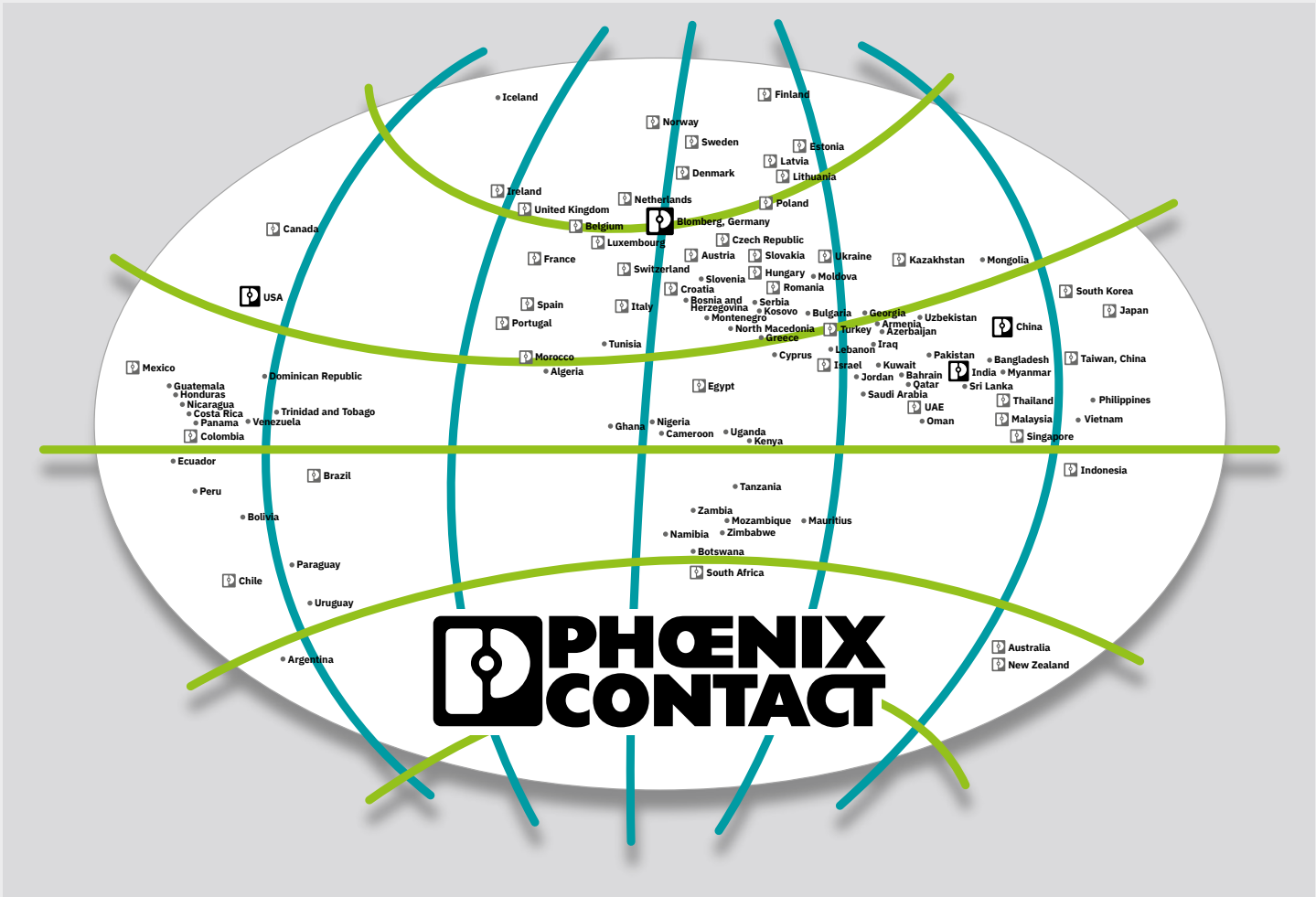
	Description	Item no.	Type
Digital input/output modules			
	Digital input device, PROFINET, M12 connector (D-coded), digital inputs: 16, 24 V DC, connection technology: 4-conductor, degree of protection: IP65/IP67/IP69	1300834	AXL E PN DI16 M12 6M-L
	Digital input/output device, PROFINET, M12 connector (D-coded), digital inputs: 16, 24 V DC, connection technology: 4-conductor, digital outputs: 16, 24 V DC, 500 mA, connection technology: 3-conductor, degree of protection: IP65/IP67/IP69	1300915	AXL E PN DIO16 M12 6M-L
	Digital input/output device, PROFINET, M12 connector (D-coded), digital inputs: 8, 24 V DC, connection technology: 4-conductor, digital outputs: 8, 24 V DC, 2 A, connection technology: 3-conductor, degree of protection: IP65/IP67/IP69	1300921	AXL E PN DI8 DO8 EF M12 6M-L
IO-Link master			
	IO-Link master and digital input/output device, PROFINET, M12 connector (D-coded), IO-Link ports class A: 4, connection method: M12 connector (A-coded), connection technology: 3-conductor, digital inputs at pin 2 for class A ports: 4, 24 V DC, connection technology: 3-conductor, digital inputs: 8, 24 V DC, connection technology: 4-conductor, digital outputs: 8, 24 V DC, 500 mA, connection technology: 3-conductor, degree of protection: IP65/IP67/IP69	1300923	AXL E PN IOL4/0 DIO8 M12 6M-L
	IO-Link master, PROFINET, M12 connector (D-coded), IO-Link ports class A: 4, connection method: M12 connector (A-coded), connection technology: 3-conductor, IO-Link ports class B: 4, connection method: M12 connector (A-coded), connection technology: 5-conductor, digital inputs at pin 2 for class A ports: 4, 24 V DC, connection technology: 3-conductor, digital outputs at pin 2 for class A ports: 4, 24 V DC, 2 A, connection technology: 2-conductor, degree of protection: IP65/IP67/IP69	1300926	AXL E PN IOL4/4 EF M12 6M-L
IO-Link Safety master			
	IO-Link master, functional safety, safe digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 3-conductor, safe digital outputs: 4 (2-channel assignment, +/- switching), 4 (1-channel assignment, + switching), connection technology: 2-conductor	1379164	AXL E PS IOLS4/4 EF M12 6M-L

IO-Link devices

Digital input/output modules			
	Digital input device via IO-Link in plastic housing with one IO-Link A port and eight inputs, 24 V DC, 4-conductor technology, M12 fast-connection technology	2702658	AXL E IOL DI8 M12 6P
	Digital input device via IO-Link in plastic housing with one IO-Link A port and 16 inputs, 24 V DC, 4-conductor technology, M12 fast-connection technology	2702660	AXL E IOL DI16 M12 6P
	Digital input device, IO-Link ports Class A: 1, connection method: M12 connector (A-coded), connection technology: 3-conductor, digital inputs: 16, 24 V DC, connection technology: 4-conductor, IO-Link, degree of protection: IP65/IP67/IP69	NEW 1480998	AXL E IOL DI16 M12 6M
	Digital output device, IO-Link ports class B: 1, connection method: M12 connector, A-coded, connection technology: 5-conductor, digital outputs: 8, 24 V DC, 500 mA, connection technology: 3-conductor, plastic housing, degree of protection: IP65/IP67	2702659	AXL E IOL DO8 M12 6P
	Digital input/output device, IO-Link ports class A: 1, connection method: M12 connector (A-coded), connection technology: 3-conductor, digital inputs: 8, 24 V DC, connection technology: 4-conductor, digital outputs: 8, 24 V DC, 2 A, connection technology: 3-conductor, IO-Link, degree of protection: IP65/IP67/IP69	1293246	AXL E IOL DI8 DO4/4 EF M12 6M

Axioline E – product overview

IO-Link devices			
	Description	**Item no.**	**Type**
Safe digital input/output modules			
	Safety module, 4 safe digital inputs for 2-channel assignment, 8 safe digital inputs for 1-channel assignment, 4 safe digital +/- switching outputs, IO-Link interface, IP65/IP67 degree of protection, for PROFIsafe systems	1185380	AXL E IOL SDI8 SDO4 2A M12 L
	Functional safety, IO-Link ports class A: 1, connection method: M12 connector, A-coded, connection technology: 3-conductor, safe digital inputs: 4 (2-channel assignment), 8 (1-channel assignment), 24 V DC, connection technology: 3-conductor, safe digital outputs: 4 (2-channel assignment, +/- switching), 4 (1-channel assignment, + switching), 24 V DC, 2 A, connection technology: 2-conductor, degree of protection: IP65/IP67	1379166	AXL E IOLS SDI8 SDO4 2A M12 6P-L
Analog input/output modules			
	Temperature measurement device, analog inputs: 4, connection technology: 2-, 3-, 4-conductor (shielded), IO-Link, degree of protection: IP65/IP67/IP69	1293247	AXL E IOL RTD4 M12 3M
	IO-Link/analog converter for connecting an analog sensor, 0 V ... 10 V, M12 fast-connection technology, angled version	2700273	AXL E IOL AI1 U M12 R
	IO-Link/analog converter for connecting an analog sensor, 4 mA ... 20 mA, M12 fast-connection technology, angled version	2700275	AXL E IOL AI1 I M12 R
	IO-Link/analog converter for connecting an analog actuator, 0 V ... 10 V, M12 fast-connection technology, angled version	2700278	AXL E IOL AO1 U M12 R
	IO-Link/analog converter for connecting an analog actuator, 4 mA ... 20 mA, M12 fast-connection technology, angled version	2700282	AXL E IOL AO1 I M12 R
	IO-Link/analog converter for connecting an RTD, M12 fast-connection technology, angled version	2700305	AXL E IOL RTD1 M12 R
	IO-Link/analog converter for connecting an analog sensor, 0 V ... 10 V, M12 fast-connection technology, straight version	2700336	AXL E IOL AI1 U M12 S
	IO-Link/analog converter for connecting an analog sensor, 4 mA ... 20 mA, M12 fast-connection technology, straight version	2700338	AXL E IOL AI1 I M12 S
	IO-Link/analog converter for connecting an analog actuator, 0 V ... 10 V, M12 fast-connection technology, straight version	2700350	AXL E IOL AO1 U M12 S
	IO-Link/analog converter for connecting an analog actuator, 4 mA ... 20 mA, M12 fast-connection technology, straight version	2700351	AXL E IOL AO1 I M12 S
	IO-Link/analog converter for connecting an RTD, M12 fast-connection technology, straight version	2700352	AXL E IOL RTD1 M12 S
	IO-Link/analog converter with 4 analog TC inputs (type K/J), 2-conductor connection technology, 1 IO-Link A port, 24 V DC, IP65 degree of protection	2702983	AXL E IOL TC4/K M12



Open communication with customers and partners worldwide

Phoenix Contact is a global market leader based in Germany. We are known for producing future-oriented products and solutions for the electrification, networking, and automation of all sectors of the economy and infrastructure. With a global network reaching across more than 100 countries with over 21,000 employees, we maintain close relationships with our customers, something we believe is essential for our common success.

Our wide range of innovative products makes it easy for our customers to implement the latest technology in a variety of applications and industries. This especially applies to the target markets of energy, infrastructure, industry, and mobility.

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