



EtherNet/IP™

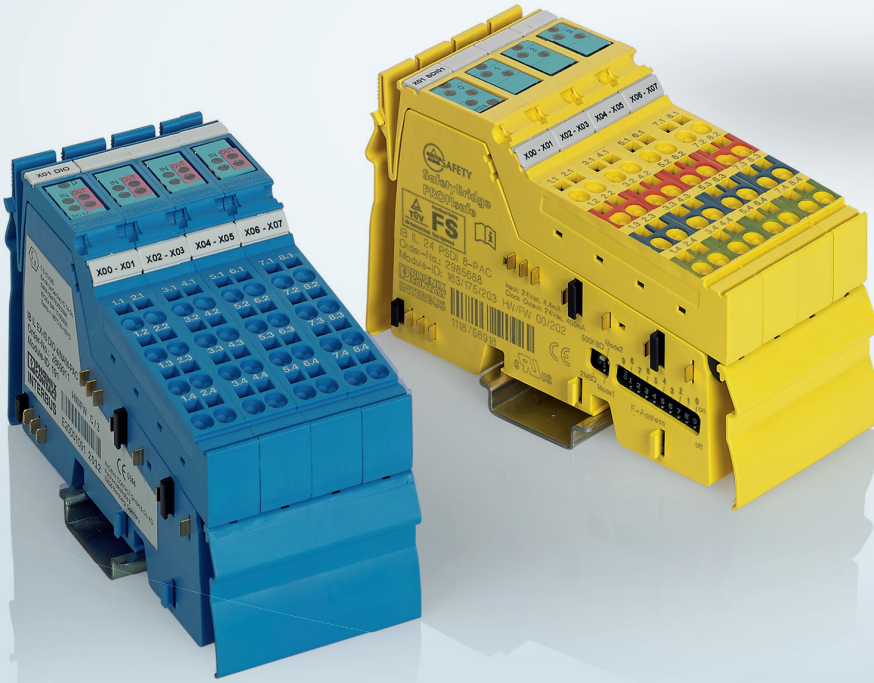
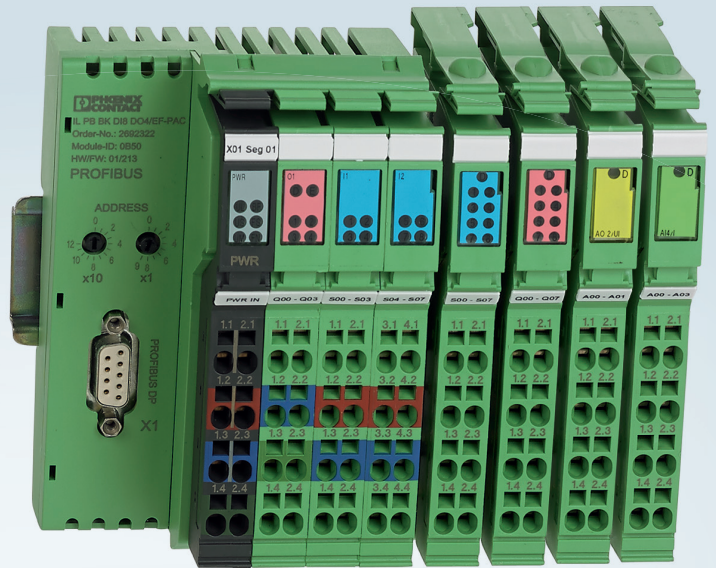


DeviceNet™

SERCOS  
the automation bus



CANopen®



# Inline

The flexible I/O system for the control cabinet

# Inline – the flexible I/O system for the control cabinet

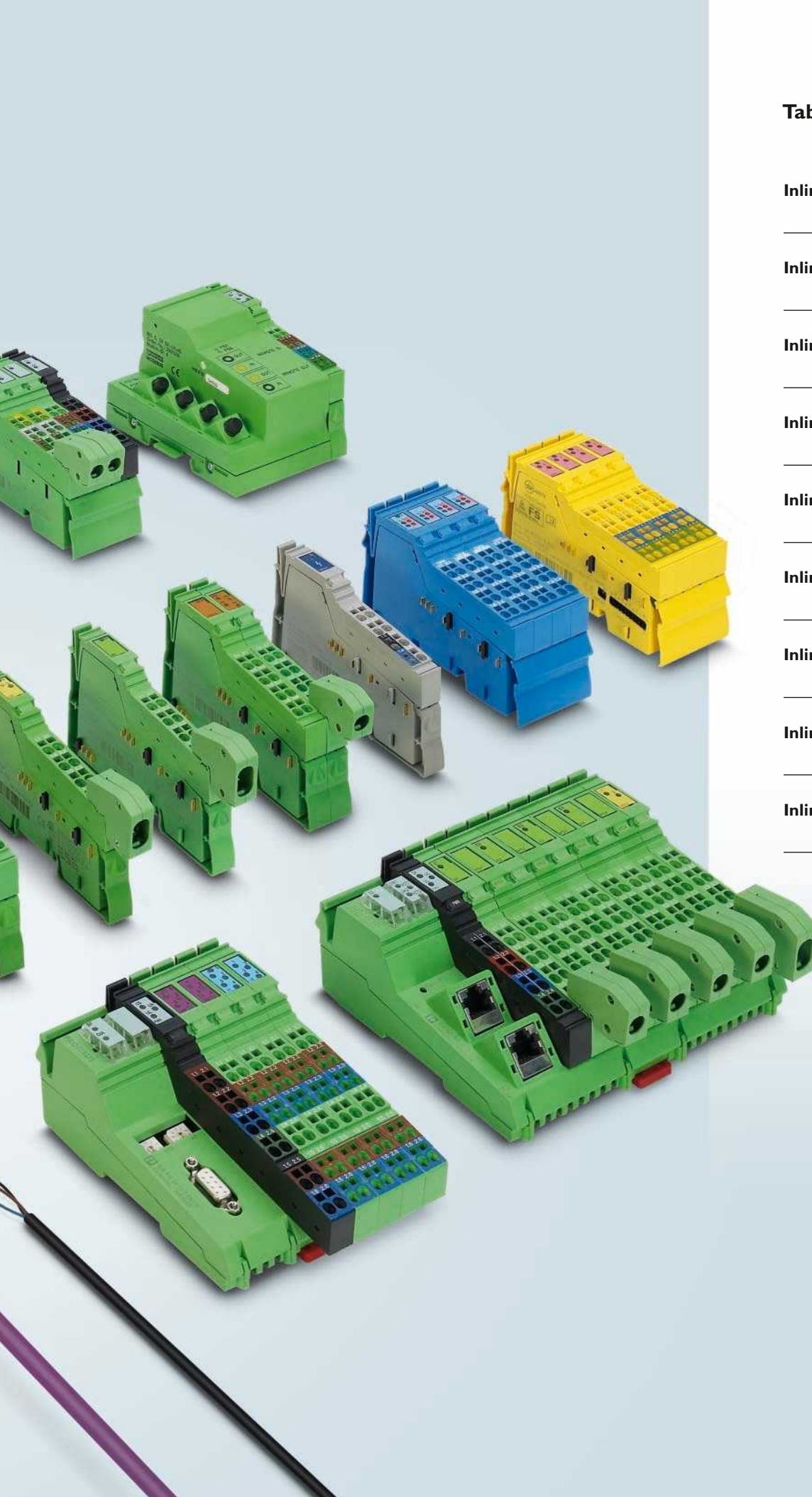
The Inline I/O system from Phoenix Contact is characterized by its large number of I/O and function terminals as well as openness for all popular fieldbus systems and Ethernet networks. Numerous practical features round off the system.

With Inline you have a proven I/O system which excels thanks to its reliability, easy handling, and above all its unrivalled flexibility.

Find out more about the possible applications of the Inline system.







## Table of contents

<b>Inline functions</b>	Pages 4 - 5
<b>Inline features</b>	Pages 6 - 7
<b>Inline bus openness</b>	Pages 8 - 9
<b>Inline field extensions</b>	Pages 10 - 11
<b>Inline safety</b>	Pages 12 - 13
<b>Inline Ex-i</b>	Pages 14 - 15
<b>Inline configuration</b>	Pages 16 - 17
<b>Inline examples of use</b>	Pages 18 - 19
<b>Inline product overview</b>	Pages 20 - 21

# Inline functions – respond flexibly to every requirement

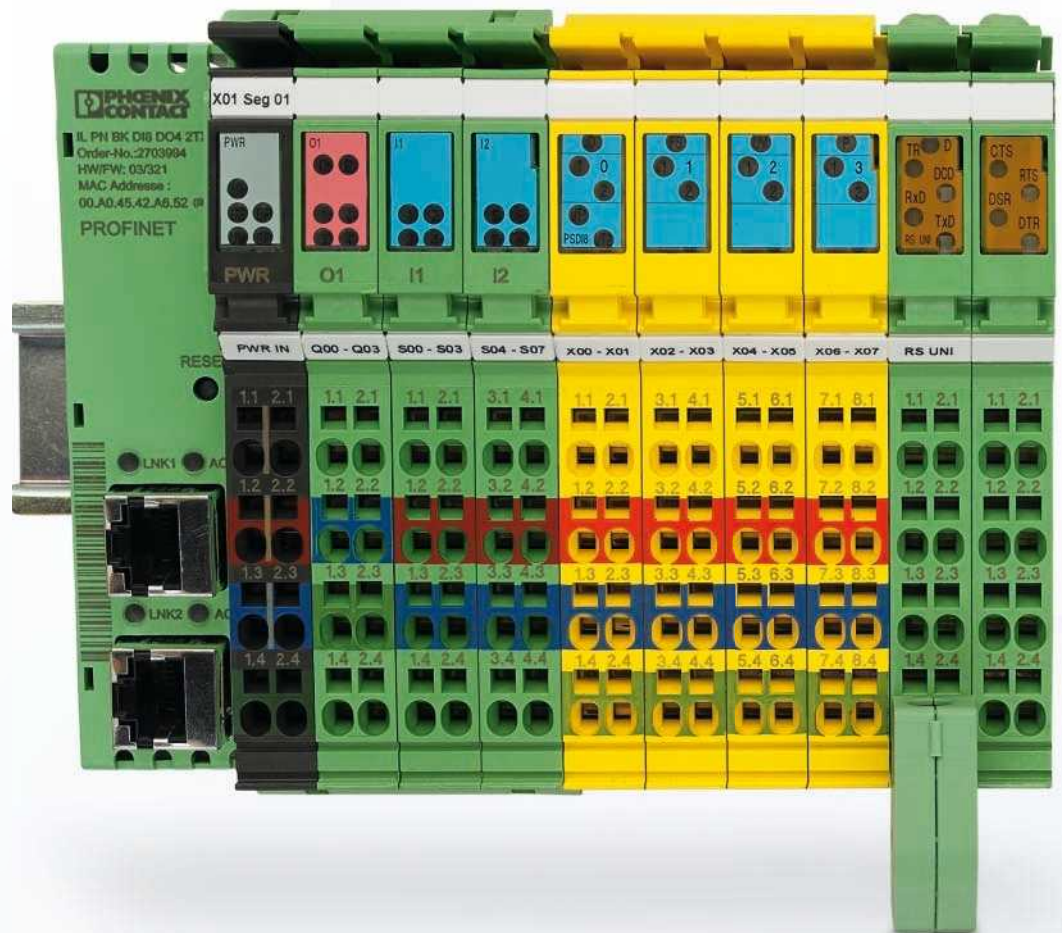
Inline is the versatile I/O system for the control cabinet. A wide range of I/O modules and function terminals are available for all popular fieldbus systems and Ethernet networks. You have the option to extend your system with virtually any function. This makes the Inline system from Phoenix Contact a flexible all-rounder, which you can use to combine your automation functions easily and individually.

Discover the flexibility of the Inline system.

## Flexible thanks to the modular design

The Inline system has a modular design: it can be extended with a range of input and output, communication, and function terminals.

This makes it particularly flexible – always tailored to your requirements.







## Saves space in the control cabinet

The highly modular 12.5 mm modules enable you to extend your station using a minimal amount of space. Safety applications or I/Os for potentially explosive areas can also be connected and integrated easily.

## Wide range of function terminals

Inline enables the flexible and application-specific combination of digital and analog I/O channels including the most popular standard functions:



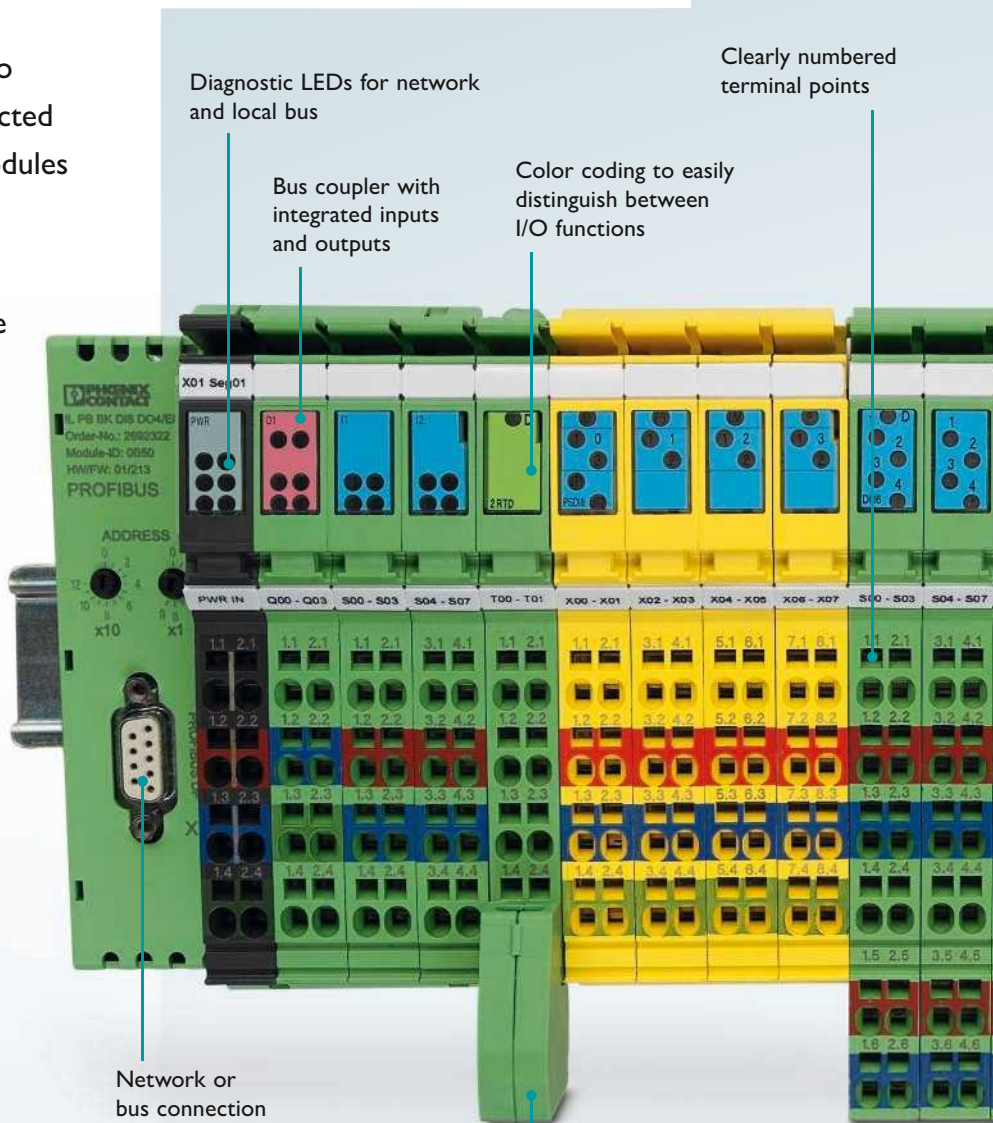
- Digital inputs
- Digital outputs
- Analog inputs
- Analog outputs
- Temperature recording
- Counters
- Pulse encoders
- Position detection
- Energy data acquisition
- Communication

# Inline features – discover advantages in every detail

Discover the practical advantages of Inline: the bus and power supply do not have to be wired, they are connected automatically when the extension modules are plugged in.

COMBICON spring-cage technology ensures fast I/O wiring. Thanks to the wiring level which is separated from the electronics, module replacement can be carried out quickly and easily.

Discover these and other advantages with Inline from Phoenix Contact.



## Integrated shield connection

directly on the terminal saves space in the control cabinet



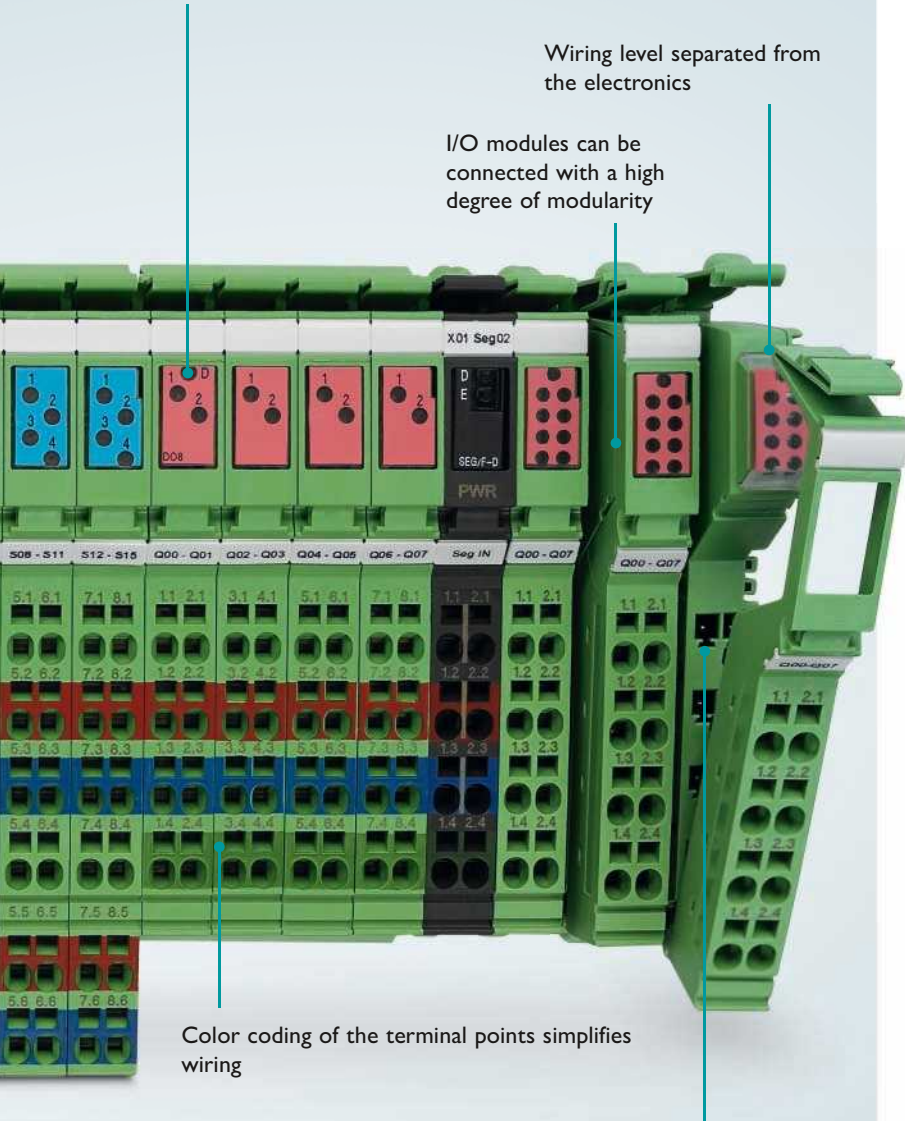
### Inline Block IO

The space-saving extension of the modular Inline I/O system: the compact and flat Inline Block IO integrates a fixed number of I/Os in your network. Significant benefits can be achieved in terms of handling and costs for low numbers of I/Os in particular, as I/O modules and bus couplers are combined in a single device.



# Status and diagnostic LEDs

on every local bus terminal optimally indicate the operating state of the Inline station

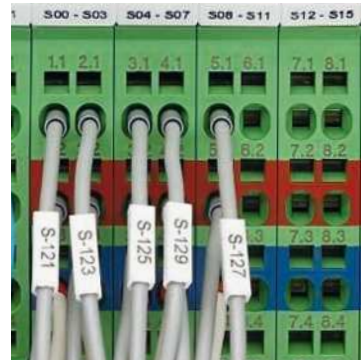


Wiring level separated from the electronics

I/O modules can be connected with a high degree of modularity

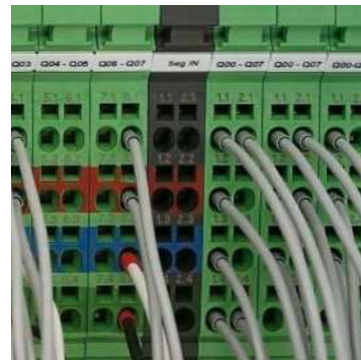
Color coding of the terminal points simplifies wiring

Plug coding (optional) prevents the incorrect connection of plugs



## Individual marking

Terminals, conductors, cables, and devices can be marked quickly and easily using the MARKING system.



## Flexible connection

Whether single, two, three or four-wire technology, and whatever your preferred connection technology for connecting your sensors or actuators: the Inline system always offers the ideal solution.



## Selective segmentation

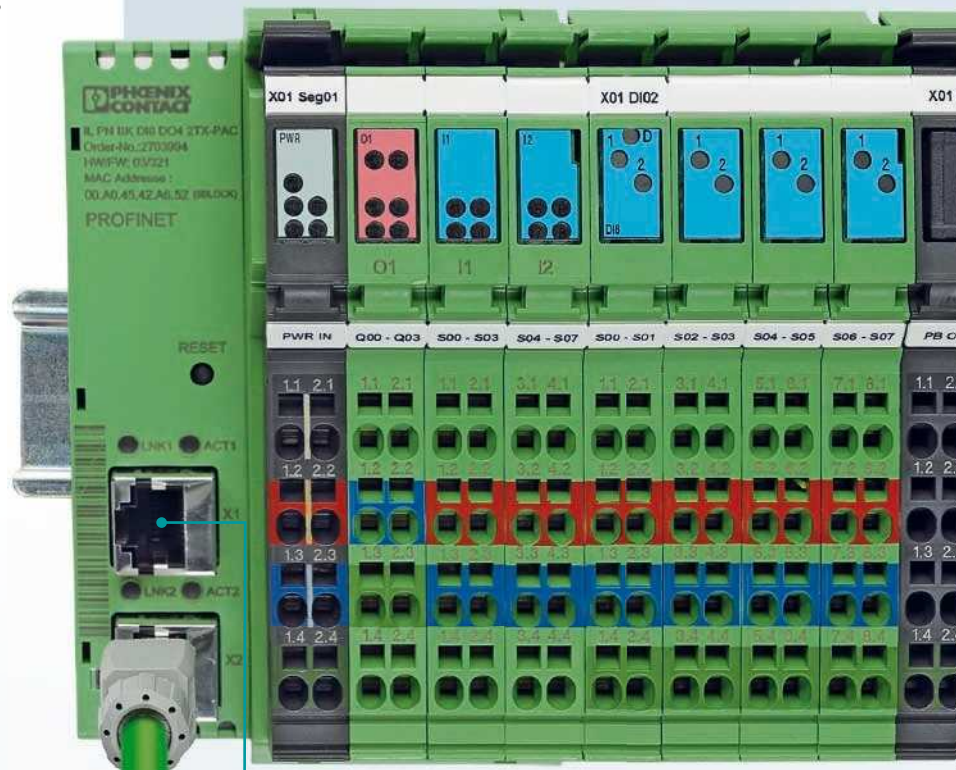
Increased system safety thanks to independently protected and separately switched station segments.

# Inline bus openness – system-independent integration

Thanks to its freely selectable bus coupler, the Inline system can be connected to all popular fieldbus systems and Ethernet networks. The communication terminals enable you to integrate an additional communication system in your Inline station as a subsystem.

For central or distributed control tasks, you can simply replace the bus coupler with a compact Inline controller.

All controllers are parameterized and programmed using the IEC 61131-based PC WORX software.

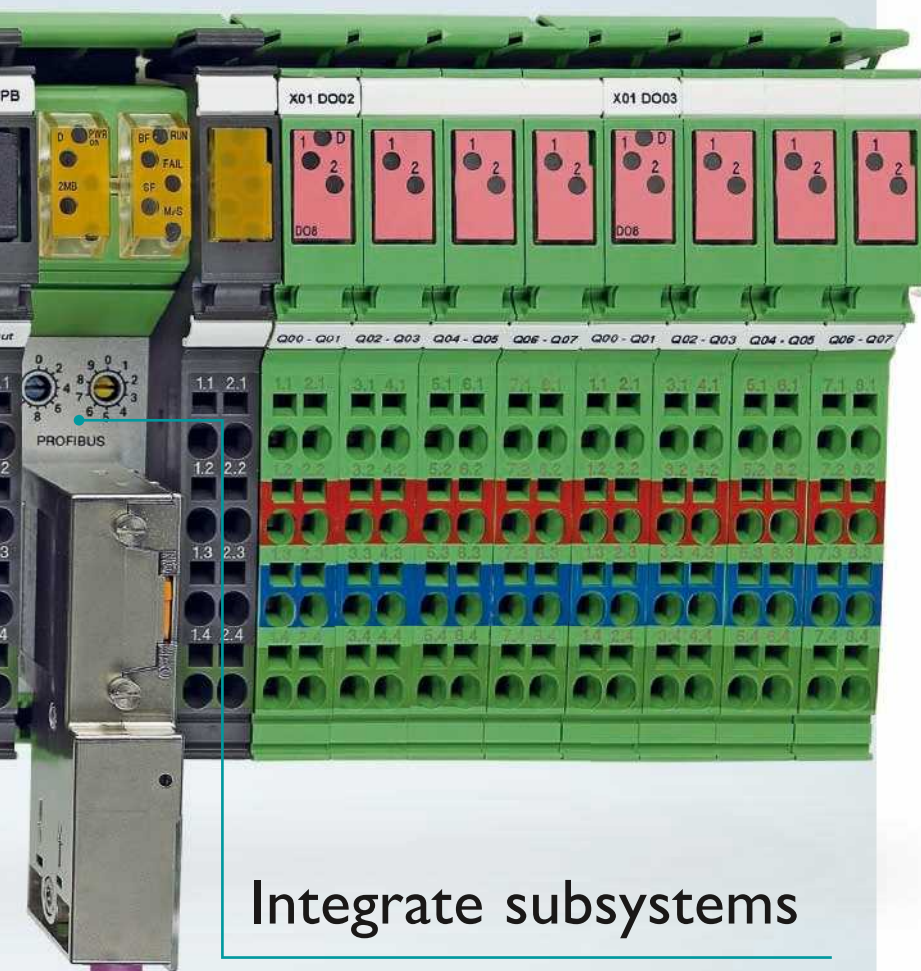


## Bus openness

The Inline system is characterized by its high degree of integration in various fieldbus systems. All popular Ethernet-based networks are, of course, also supported.







## Integrate subsystems

Communication master terminals can be used to integrate various subsystems under an Inline station, without having to use another bus coupler.



## Scalable controllers



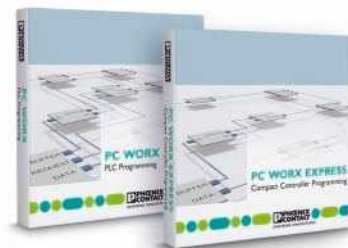
### Compact controllers for simple applications

Programmable class 100 compact controllers can be optimally extended with the Inline function terminals. They offer high function density at a low price: ideal for simple applications, even in distributed automation.



### High-performance controllers for sophisticated applications

PROFINET-compatible class 300 high-performance controllers are used to control average to sophisticated automation tasks. Two Ethernet ports with an integrated switch enable flexible connection to a higher-level control room, a local operating station or I/O modules.



### Easy engineering

PC WORX – the consistent IEC-compliant engineering software for all Phoenix Contact controllers

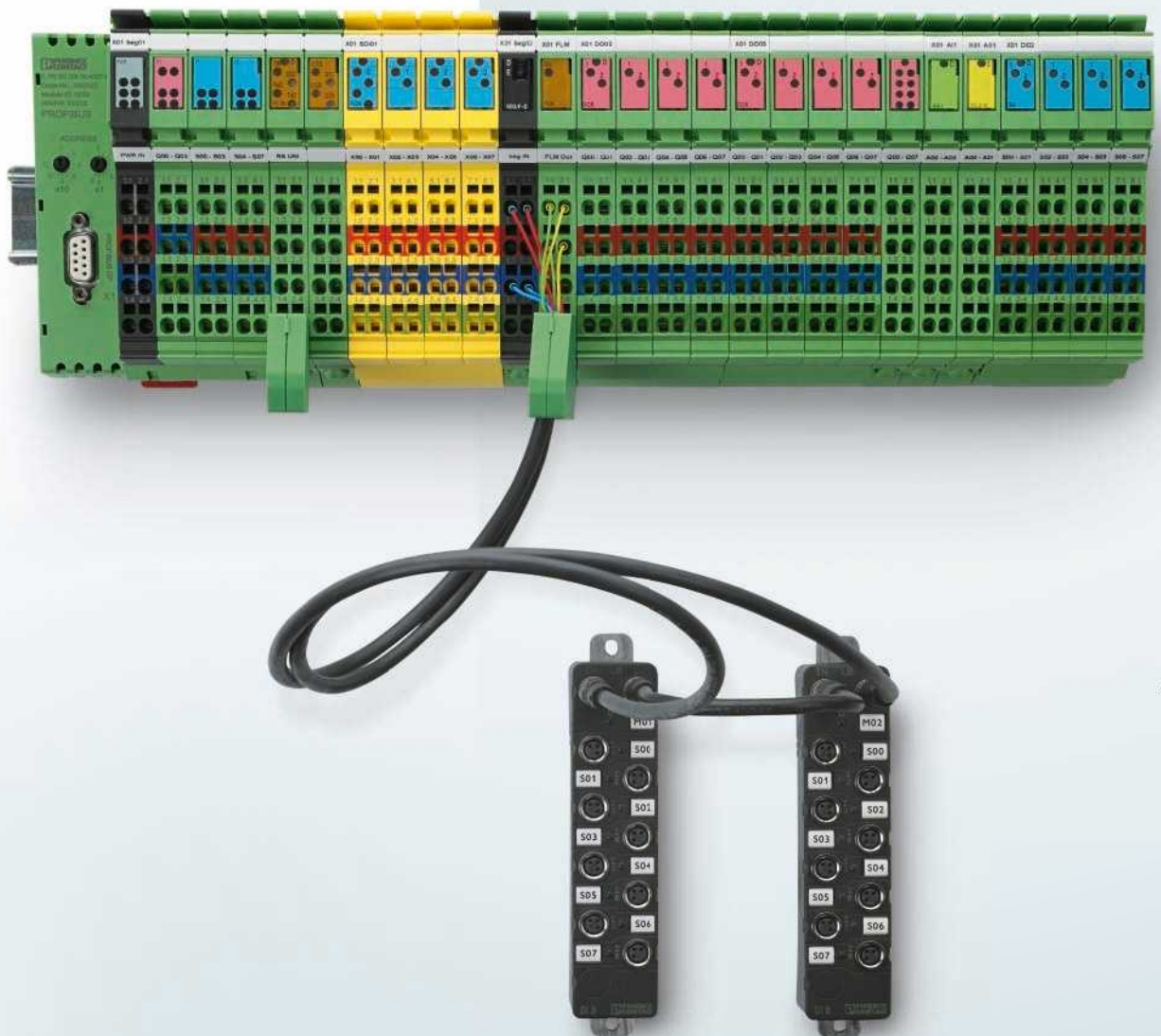
PC WORX EXPRESS – the little brother to PC WORX is free and ideal for the easy programming of compact controllers

# Inline field extension – flexible local bus extensions

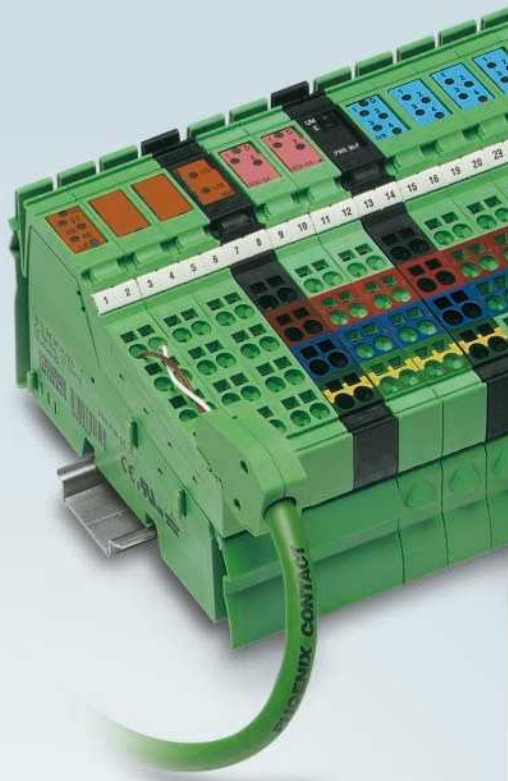
The local bus in your Inline station is very flexible and is tailored to your requirements. When it comes to large distances, limited space in the control cabinet or different degrees of protection, you can always find the right solution among various local bus extensions.

## Local bus extension to the field

Fieldline Modular devices with IP65/IP67 protection can be combined easily and flexibly with an Inline station via the Inline branch terminal – without any additional bus couplers. This saves time as less effort is required thanks to direct connection to the existing station.







## Easy point-to-point communication

Inline field multiplexers transmit industrial signals in pairs, point-to-point – whether via a two-wire copper cable, fiber optic cable, modem or wirelessly. A number of digital and analog Inline I/O terminals can be freely combined – without using any software.



## Communication via Bluetooth

Benefit from the advantages of industrial Bluetooth technology for your I/O communication with Inline Block IO devices. Easy to install and providing reliable transmission, Bluetooth is the ideal solution for data transmission at input and output level.

## Easy data transmission over large distances

### Multiplex mode

The Inline field multiplexer transmits data in the easiest way, even over large distances.

Data transmission via:

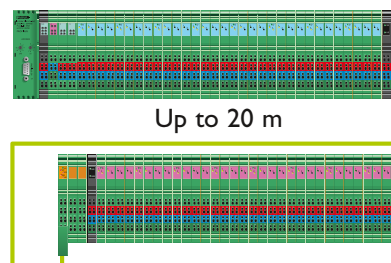
- 2-wire copper cable up to 12 km
- Permanent phone line up to 20 km (with converter)
- Fiber optics up to 45 km (with converter)



## Extension options of the Inline local bus

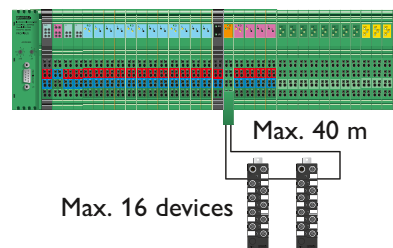
### Local bus extension

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



### Local bus extension to the field

Using the branch terminal, you can connect Fieldline devices with IP65/IP67 protection to the Inline local bus.



# Inline safety – safe I/Os with SafetyBridge technology

Use our SafetyBridge I/Os to integrate functional safety in your Inline I/O level independently of the network.

SafetyBridge technology performs all the safety-related functions in your machine or system. Regardless of which Inline bus coupler you use, the SafetyBridge I/O modules do not require an additional safety controller to operate and are approved for all popular Ethernet networks.

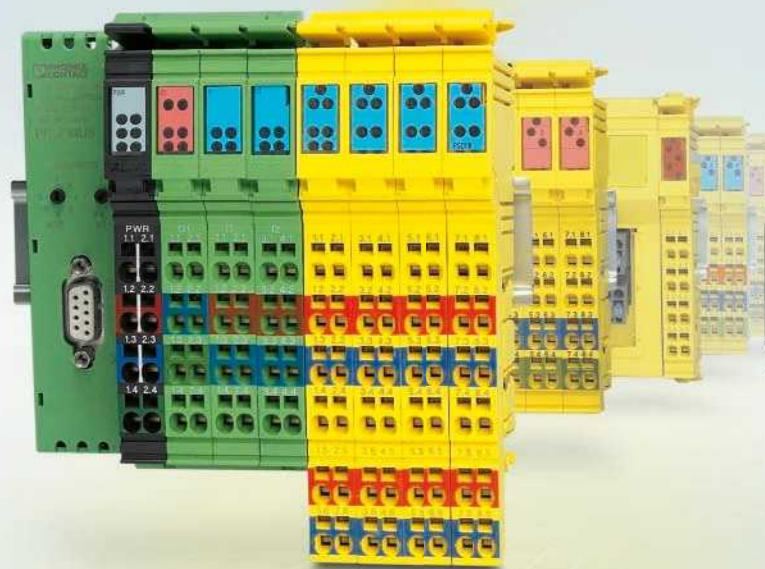
Benefit from the flexibility and cost-saving advantages of SafetyBridge technology.



## What are the advantages of independence from the network?

SafetyBridge technology can be integrated extremely easily into all popular fieldbus and Ethernet-based networks.

Continue to benefit from the advantages of your preferred network solution. No additional safety networks are required, which saves you time and money during the design of your machines and systems.



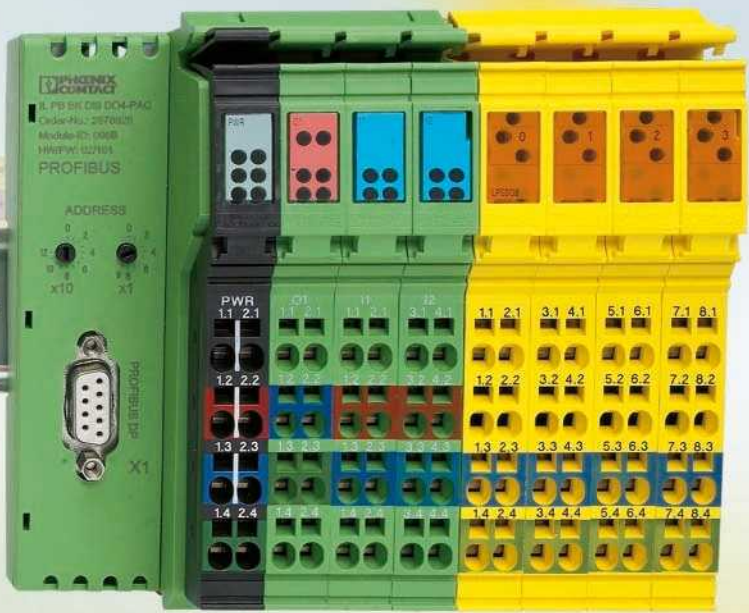
## Various I/O modules

- Maximum of 16 safe inputs
- Maximum of 8 safe outputs
- One relay module



# SafetyBridge Technology

Designed by PHOENIX CONTACT



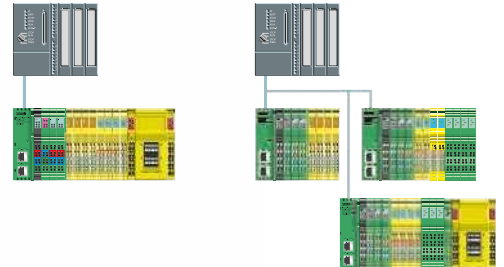
## Intelligent logic module

- 8 safe outputs
- Can be linked to up to 16 additional safe I/O modules

## SafetyBridge technology: extremely easy

### 1 Central or distributed installation

You decide how you want to use the flexible I/O modules.



### 2 No safety controller required

The I/Os with integrated SafetyBridge technology handle the complete processing of safety functions. Your standard control system only handles data exchange between the I/O modules.



### 3 Easy configuration using SAFECONF

After completing the safety configuration, the generated safety logic is transferred to the safe logic module via the standard control system.



As you can see, functional safety is very easy to integrate in your machine or system.

# Inline Ex-i – intrinsically safe I/Os for the Ex area

The intrinsically safe I/Os connect input and output signals to your network or bus system.

A selection of standard I/O terminals is available for use in potentially explosive and non-potentially explosive areas up to zone 2. Additional input and output signals from potentially explosive areas of zones 1 and 0 can be connected to the blue I/O modules. To do this, simply mount the modules on the Inline station. Parameterize the terminals with FDT technology and use channel-specific diagnostics for troubleshooting.



## Ex-i analog input/output

Thanks to two current ranges (0/4 to 20 mA) for input and output, as well as an input voltage range of 0 to 10 V, this 4-channel module can be used universally.



## Ex-i power supply

The power supply indicates the current status via several control displays. The supply terminal can distinguish between the different states: voltage present, high load range, and overload.

The terminal is electronically protected against overload and is very energy efficient.



## Ex-i temperature input

The 4-channel temperature input module supports standard thermocouple sensors and commercially available resistive temperature measuring devices. The shield connection integrated on the terminal enables easy wiring and provides protection against electromagnetic interference.

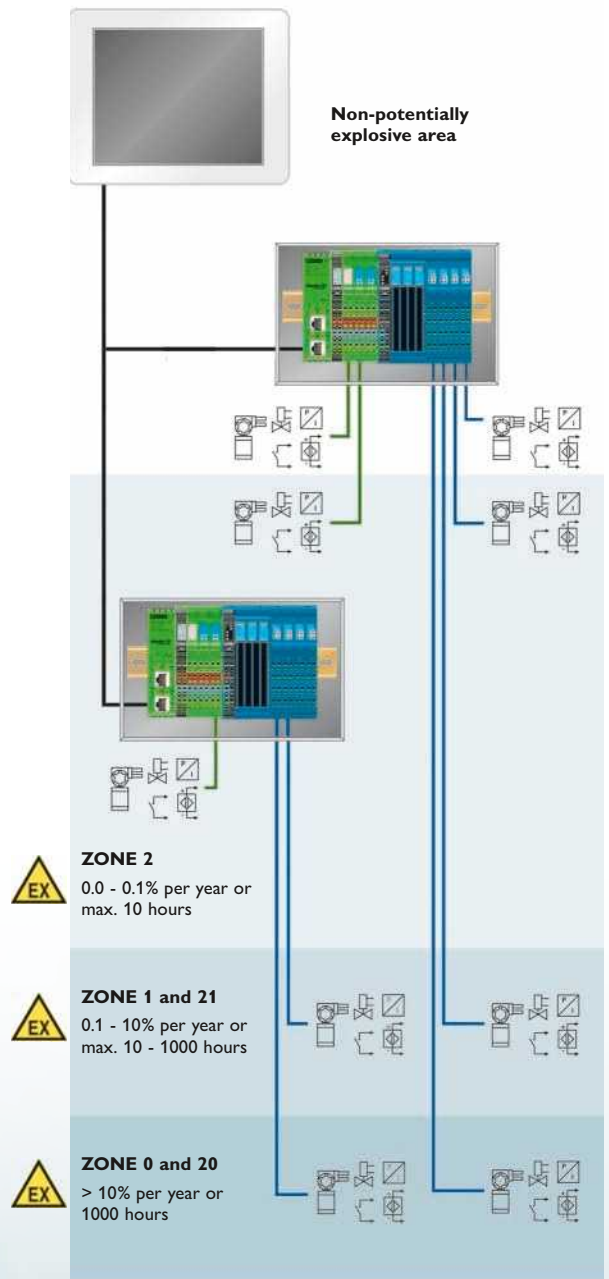


## Ex-i digital input/output

The 4-channel digital I/O module supports inputs for NAMUR initiators and mechanical contacts, outputs for intrinsically safe solenoid valves, acoustic alarm indicators, and signal lamps.



## Operation and installation of I/Os in Ex zones

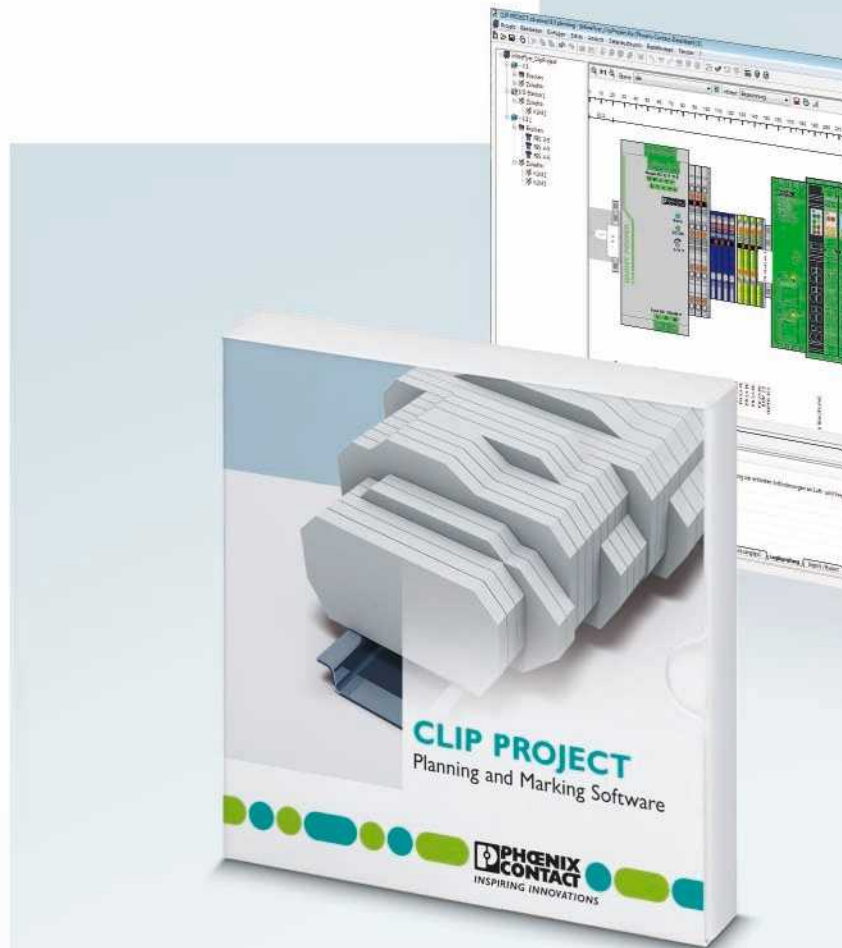


# Inline configuration – software-supported planning and configuration

Plan and configure your I/O station quickly and easily using Project+ and CLIP PROJECT. The created station is based on your requirements. Technical data and specifications are compared and taken into consideration. The end result is an efficient, error-free station structure.

We offer a complete package: support for planning, configuration, startup parameterization, and integration in the application programming, e.g., STEP 7 (TIA portal) from Siemens.

Use these tools to engineer your entire control cabinet!



## Efficient configuration

Transfer your Inline station planned using Project+ to CLIP PROJECT and conveniently complete the configuration of your entire DIN rail. Optimum interaction with CAE systems results in a consistent and efficient process chain.

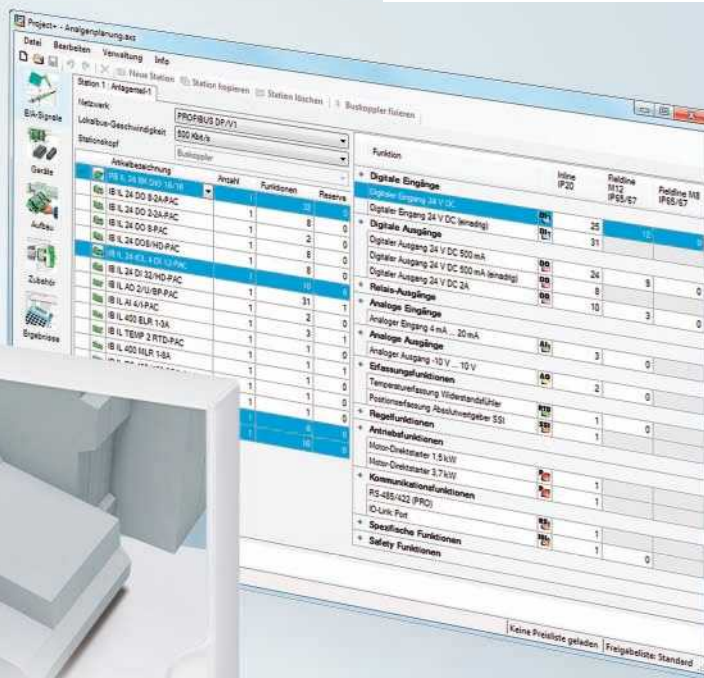
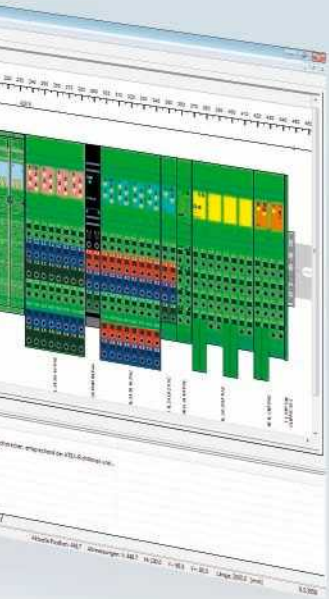
Create the marking for your Inline station quickly and easily with CLIP PROJECT Marking.



Conveniently integrate the signals of the Inline station in your controller. Corresponding device descriptions are available to download for all relevant communication systems.

In addition to standard I/O modules, the Inline system also offers flexible special function modules. These modules can be parameterized in various ways.

Use specially tailored function block libraries for fast startup and error-free parameterization of your I/O components. FDT technology allows Inline modules to be parameterized independently of the controller. Special device DTM's offer tailor-made parameterization windows.



## Easy station planning

Carry out configuration quickly and easily with Project+. With no training required in the use of configuration rules, create the right I/O stations for your application effectively. By comparing all specifications, the software ensures that the modules are optimally coordinated. Errors such as choosing the wrong module are eliminated. Project+ can be downloaded free of charge from our website.

# Inline examples of use – ideal for a wide range of industry solutions

Are you at home in the automotive industry, do you specialize in machine building, planning water and wastewater treatment plants or automating logistics centers?

Whatever the industry for your automation solution, the Inline system provides the right terminals for your specific area of application. It is flexible and future-oriented, meaning investment costs are also secured even if subsequent adaptations are required.



## Intelligent communication

You can perform automation tasks efficiently in warehouse logistics and conveying technology using the various communication terminals, such as the universal, serial communication terminal or the IO-Link master for the Inline system.



## Optimum acquisition

Specific measured values can be optimally acquired in water and wastewater treatment applications using the power measurement terminal from the Inline system.





## Safe networking

A high level of system safety is one of the most important requirements in the automotive industry. With the safe input and output terminals from the Inline system, safety requirements up to PL e (EN ISO 13849-1), SIL 3 (IEC 61508), and SIL CL 3 (EN IEC 62061) are met.



## Cost-effective automation

The Inline ME versions are particularly suitable for space-saving and inexpensive use in applications in the series production of machines.

## Reliability is of paramount importance to us

The Inline system has many industry-specific and country-specific approvals. With these approvals, you can be sure that the requirements of your specific industry are met. New approvals are constantly being added to our Inline product range.



Germanischer Lloyd



## Product overview

### Ethernet



Order No. [2703994](#)

#### IL PN BK DI8 DO4 2TX-PAC

- PROFINET I/O device functionality (stack 2.2)
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- RJ45 connection
- 80 mm design width



Order No. [2878379](#)

#### IL PN BK DI8 DO4 2SCRJ-PAC

- PROFINET I/O device functionality (stack 3.1)
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- SCRJ45 connection
- 80 mm design width



Order No. [2878146](#)

#### ILB PN 24 DI16 DIO16-2TX

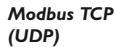
- 16 inputs, 24 V DC
- 16 inputs/outputs, 24 V DC, 500 mA (can be freely selected)
- 2 and 3-wire connection
- Integrated 3-port switch
- RJ45 connection
- 156 mm design width



Order No. [2897758](#)

#### IL EIP BK DI8 DO4 2TX-PAC

- EtherNet/IP™, Version 1.2
- HTTP, BootP
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- RJ45 connection
- 80 mm design width



Order No. [2703981](#)

#### IL ETH BK DI8 DO4 2TX-PAC

- Modbus TCP (UDP)
- HTTP, TFTP, BootP, SNMP
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- RJ45 connection
- 80 mm design width



Order No. [2832962](#)

#### ILB ETH 24 DI16 DIO16-2TX

- 16 inputs, 24 V DC
- 16 inputs/outputs, 24 V DC, 500 mA (can be freely selected)
- 2 and 3-wire connection
- Integrated 3-port switch
- RJ45 connection
- 156 mm design width



Order No. [2692380](#)

#### IL S3 BK DI8 DO4 2TX-PAC

- sercos specification V1.1.2
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- RJ45 connection
- 80 mm design width



Order No. [2897570](#)

#### ILB S3 24 DI16 DIO 16-2TX

- 16 inputs, 24 V DC
- 16 inputs/outputs, 24 V DC, 500 mA (can be freely selected)
- 2 and 3-wire connection
- Integrated 3-port switch
- RJ45 connection
- 156 mm design width



Order No. [2700174](#)

#### ILB S3 24 DI8 DO4 AO2 INC-IN2

- Positioning controller for 2 axes
- 2 analog outputs,  $\pm 10$  V
- 2 inputs for incremental encoder
- 8 digital inputs, 24 V DC
- 4 digital outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- RJ45 connection
- 156 mm design width



Order No. [2692076](#)

#### ILB S3 AI4 AO2-2TX

- 4 inputs, 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA, Pt100, Pt500, Pt1000, etc.
- 2 outputs, 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- 16 bits
- 156 mm design width

## Fieldbuses



Order No. [2861580](#)

### IBS IL 24 BK-T/U-PAC

- INTERBUS
- Incl. branch bus terminal support
- 2 A at  $U_L$
- Bus connection via Inline plug
- 48.8 mm design width



Order No. [2862165](#)

### IBS IL 24 BK-LK/45-PAC

- INTERBUS
- 2 A at  $U_L$
- Fiber optic connection, 45° outlet
- 85 mm design width



Order No. [2861506](#)

### IBS IL 24 BK RB-LK-PAC

- INTERBUS
- With INTERBUS remote bus branch
- 2 A at  $U_L$
- Fiber optic connection
- 85 mm design width



Order No. [2862330](#)

### ILB IB 24 DI16

- 16 inputs, 24 V DC
- 2 and 3-wire connection
- Bus connection via Inline plug
- 95 mm design width



Order No. [2862343](#)

### ILB IB 24 DI32

- 32 inputs, 24 V DC
- 2 and 3-wire connection
- Bus connection via Inline plug
- 156 mm design width



Order No. [2862356](#)

### ILB IB 24 DO16

- 16 outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- Bus connection via Inline plug
- 95 mm design width



Order No. [2862369](#)

### ILB IB 24 DO32

- 32 outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- Bus connection via Inline plug
- 156 mm design width



Order No. [2862372](#)

### ILB IB 24 DI8 DO8

- 8 inputs, 24 V DC
- 8 outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- Bus connection via Inline plug
- 95 mm design width



Order No. [2862385](#)

### ILB IB 24 DI16 DO16

- 16 inputs, 24 V DC
- 16 outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- Bus connection via Inline plug
- 156 mm design width



Order No. [2878777](#)

### ILB IB AI4 AO2

- 4 inputs, 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA, Pt100, Pt500, Pt1000, etc.
- 2 outputs, 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- 16 bits
- 156 mm design width



## Fieldbuses



Order No. [2692322](#)  
**IL PB BK DI8 DO4/EF-PAC**

- PROFIBUS DP and DP/V1
- PROFIsafe-compatible
- IO-Link calls
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- D-SUB connection
- 80 mm design width



Order No. [2862246](#)  
**IL PB BK DP/V1-PAC**

- PROFIBUS DP and DP/V1
- 2 A at  $U_L$
- D-SUB connection
- 85 mm design width



Order No. [2862398](#)  
**ILB PB 24 DI32**

- 32 inputs, 24 V DC
- 2 and 3-wire connection
- D-SUB connection
- 156 mm design width



Order No. [2862408](#)  
**ILB PB 24 DO32**

- 32 inputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- D-SUB connection
- 156 mm design width



Order No. [2862411](#)  
**ILB PB 24 DI16 DO16**

- 16 inputs, 24 V DC
- 16 outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- D-SUB connection
- 156 mm design width



Order No. [2863562](#)  
**ILB PB 24 DI8 DIO8**

- 8 inputs, 24 V DC
- 8 inputs/outputs, 24 V DC, 500 mA (can be freely selected)
- 2 and 3-wire connection
- D-SUB connection
- 95 mm design width



Order No. [2878874](#)  
**ILB PB AI4 AO2**

- 4 inputs, 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA, Pt100, Pt500, Pt1000, etc.
- 2 outputs, 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- 16 bits
- 156 mm design width



Order No. [2897211](#)  
**IL DN BK DI8 DO4-PAC**

- DeviceNet™
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- TWIN-COMBICON connection
- Incl. CLIPFIX 35 end bracket
- 80 mm design width



Order No. [2862602](#)  
**ILB DN 24 DI16 DO16**

- 16 inputs, 24 V DC
- 16 outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- Bus connection via TWIN-COMBICON plug
- 156 mm design width



Order No. [2878696](#)  
**IL MOD BK DI8 DO4-PAC**

- Modbus RTU (ASCII)
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at  $U_L$
- D-SUB connection
- 80 mm design width

## Fieldbuses

CANopen



Order No. [2718701](#)

### IL CAN BK-TC-PAC

- CANopen®
- 2 A at  $U_L$
- TWIN-COMBICON connection
- Incl. CLIPFIX 35 end bracket
- 85 mm design width

CANopen



Order No. [2862592](#)

### ILB CO 24 DI16 DO16

- 16 inputs, 24 V DC
- 16 outputs, 24 V DC, 500 mA
- 2 and 3-wire connection
- D-SUB connection
- 156 mm design width

MUX



Order No. [2861205](#)

### IB IL 24 MUX MA-PAC

- Point-to-point transmission of max. 512 I/O data via 2-wire cables up to max. 12 km
- Max. 512 digital or 32 analog I/Os (or a mixture) can be connected
- Max. transmission length of 12 km via 2-wire copper cable
- 48.8 mm design width

## Wireless IO

Bluetooth



Order No. [2884208](#)

### ILB BT ADIO MUX-OMNI

- Wireless point-to-point transmission
- OMNI omnidirectional antenna
- Bluetooth 1.2 (16 dBm transmission power)
- 16 digital inputs
- 16 digital outputs
- 2 analog inputs
- 2 analog outputs
- 95 mm design width

Bluetooth



Order No. [2884509](#)

### ILB BT ADIO MUX-PANEL

- Wireless point-to-point transmission
- PANEL directional wireless antenna
- Bluetooth 1.2 (12 dBm transmission power)
- 16 digital inputs
- 16 digital outputs
- 2 analog inputs
- 2 analog outputs
- 95 mm design width

Bluetooth



Order No. [2884282](#)






### ILB BT ADIO 2/2/16/16

- Wireless IO device
- Bluetooth 1.2 (16 dBm transmission power, adjustable)
- Wireless access via FL BT MOD IO AP (Order No. [2884758](#)) or FLM BT BS 3 (Order No. [2736770](#))
- 16 digital inputs
- 16 digital outputs
- 2 analog inputs
- 2 analog outputs
- 95 mm design width

## Inline controllers – class 100 high-performance controllers

				
<p>Order No. <a href="#">2700973</a> <b>ILC 131 ETH</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 1.7 ms for 1 K instructions</li> <li>• 192 kB program memory</li> <li>• 192 kB data memory</li> <li>• 8 kB retentive data memory</li> <li>• 1 Ethernet interface</li> <li>• 8 digital inputs</li> <li>• 4 digital outputs</li> <li>• 80 mm design width</li> </ul>	<p>Order No. <a href="#">2700974</a> <b>ILC 151 ETH</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 1.5 ms for 1 K instructions</li> <li>• 256 kB program memory</li> <li>• 256 kB data memory</li> <li>• 8 kB retentive data memory</li> <li>• 1 Ethernet interface</li> <li>• 8 digital inputs</li> <li>• 4 digital outputs</li> <li>• 80 mm design width</li> </ul>	<p>Order No. <a href="#">2700975</a> <b>ILC 171 ETH</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 1.5 ms for 1 K instructions</li> <li>• 512 kB program memory</li> <li>• 512 kB data memory</li> <li>• 48 kB retentive data memory</li> <li>• 2 Ethernet interfaces</li> <li>• 8 digital inputs</li> <li>• 4 digital outputs</li> <li>• 80 mm design width</li> </ul>	<p>Order No. <a href="#">2700976</a> <b>ILC 191 ETH</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 1.3 ms for 1 K instructions</li> <li>• 1 MB program memory</li> <li>• 1 MB data memory</li> <li>• 48 kB retentive data memory</li> <li>• 2 Ethernet interfaces</li> <li>• 8 digital inputs</li> <li>• 4 digital outputs</li> <li>• 80 mm design width</li> </ul>	<p>Order No. <a href="#">2700977</a> <b>ILC 151 GSM/GPRS</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 1.5 ms for 1 K instructions</li> <li>• 512 kB program memory</li> <li>• 512 kB data memory</li> <li>• 48 kB retentive data memory</li> <li>• Integrated GSM/GPRS modem</li> <li>• 1 Ethernet interface</li> <li>• 16 digital inputs</li> <li>• 4 digital outputs</li> <li>• 80 mm design width</li> </ul>

## Inline controllers – class 300 high-performance controllers

				
<p>Order No. <a href="#">2988191</a> <b>ILC 330 PN</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 0.7 ms for 1 K instructions</li> <li>• 750 kB program memory</li> <li>• 1.5 MB data memory</li> <li>• 64 kB retentive data memory</li> <li>• 1 PROFINET interface (10/100)</li> <li>• 12 digital inputs</li> <li>• 4 digital outputs</li> <li>• 182 mm design width</li> </ul>	<p>Order No. <a href="#">2876928</a> <b>ILC 350 PN</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 0.5 ms for 1 K instructions</li> <li>• 1 MB program memory</li> <li>• 2 MB data memory</li> <li>• 64 kB retentive data memory</li> <li>• 1 PROFINET interface (10/100)</li> <li>• 12 digital inputs</li> <li>• 4 digital outputs</li> <li>• 182 mm design width</li> </ul>	<p>Order No. <a href="#">2876915</a> <b>ILC 370 PN 2TX-IB</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 0.3 ms for 1 K instructions</li> <li>• 2 MB program memory</li> <li>• 4 MB data memory</li> <li>• 96 kB retentive data memory</li> <li>• 2 PROFINET interfaces (10/100)</li> <li>• 1 INTERBUS interface (slave)</li> <li>• 12 digital inputs</li> <li>• 4 digital outputs</li> <li>• 182 mm design width</li> </ul>	<p>Order No. <a href="#">2985576</a> <b>ILC 370 PN 2TX-IB/M</b></p> <ul style="list-style-type: none"> <li>• Maritime approval</li> <li>• Typical processing speed of 0.3 ms for 1 K instructions</li> <li>• 2 MB program memory</li> <li>• 4 MB data memory</li> <li>• 96 kB retentive data memory</li> <li>• 2 PROFINET interfaces (10/100)</li> <li>• 1 INTERBUS interface (slave)</li> <li>• 12 digital inputs</li> <li>• 4 digital outputs</li> <li>• 182 mm design width</li> </ul>	<p>Order No. <a href="#">2985314</a> <b>ILC 390 PN 2TX-IB</b></p> <ul style="list-style-type: none"> <li>• Typical processing speed of 0.2 ms for 1 K instructions</li> <li>• 2 MB program memory</li> <li>• 4 MB data memory</li> <li>• 96 kB retentive data memory</li> <li>• 2 PROFINET interfaces (10/100)</li> <li>• 1 INTERBUS interface (slave)</li> <li>• 12 digital inputs</li> <li>• 4 digital outputs</li> <li>• 182 mm design width</li> </ul>



## Power and segment terminals



Order No. [2861331](#)

### IB IL 24 PWR IN-PAC

- Power terminal
- 24 V DC ( $U_M, U_S$ )
  - 8 A power supply (at  $U_M, U_S$ )
  - 12.2 mm design width



Order No. [2862136](#)

### IB IL 24 PWR IN/2-F-PAC

- Power terminal
- 24 V DC ( $U_M, U_S$ )
  - With fuse
  - 6 A power supply (at  $U_M, U_S$ )
  - 12.2 mm design width



Order No. [2862152](#)

### IB IL 24 PWR IN/2-F-D-PAC

- Power terminal
- 24 V DC ( $U_M, U_S$ )
  - With fuse and diagnostics ( $U_M$ , fuse)
  - 4 A power supply (at  $U_M, U_S$ )
  - 12.2 mm design width



Order No. [2863779](#)

### IB IL 24 PWR IN/2-DF-PAC

- Power terminal
- 24 V DC ( $U_M, U_S$ )
  - With fuse and diagnostics (fuse)
  - 4 A power supply (at  $U_M, U_S$ )
  - 12.2 mm design width



Order No. [2861454](#)

### IB IL 120 PWR IN-PAC

- Power terminal
- 120 V AC
  - Incl. distance terminal
  - 8 A power supply (at  $U_M$ )
  - 36.6 mm design width (24.4 mm + 12.2 mm)



Order No. [2861535](#)

### IB IL 230 PWR IN-PAC

- Power terminal
- 230 V AC
  - Incl. distance terminal
  - 8 A power supply (at  $U_M$ )
  - 36.6 mm design width (24.4 mm + 12.2 mm)



Order No. [2878971](#)

### IB IL 230 PWR IN/F-D-PAC

- Power terminal
- 230 V AC
  - With fuse and diagnostics
  - Incl. distance terminal
  - 8 A power supply (at  $U_M$ )
  - 36.6 mm design width (24.4 mm + 12.2 mm)



Order No. [2862987](#)

### IB IL PD 24V-PAC

- Potential distributor terminal
- 24 V DC (from  $U_S$ )
  - 8 contacts
  - 12.2 mm design width



Order No. [2862990](#)

### IB IL 24 PD GND-PAC

- Potential distributor terminal
- GND
  - 8 contacts
  - 12.2 mm design width



Order No. [2861674](#)

### IB IL 24 PWR IN/R-PAC

- Boost terminal for communications power and I/O voltage (logic up to 2 A)
- $U_L, U_{ANA}, U_M, U_S$
  - 8 A power supply (at  $U_M, U_S$ )
  - 48.8 mm design width



Order No. [2693020](#)

### IB IL 24 PWR IN/R/L-0,8A-PAC

- Boost terminal for communications power
- $U_L$
  - 0.8 A power supply (at  $U_L$ )
  - 12.2 mm design width



Order No. [2861344](#)

### IB IL 24 SEG-PAC

- Segment terminal
- 24 V DC
  - 8 A power supply (at  $U_S$ )
  - 12.2 mm design width



Order No. [2861373](#)

### IB IL 24 SEG/F-PAC

- Segment terminal
- 24 V DC
  - With fuse
  - 6 A power supply (at  $U_S$ )
  - 12.2 mm design width



Order No. [2861904](#)

### IB IL 24 SEG/F-D-PAC

- Segment terminal
- 24 V DC
  - With fuse and diagnostics
  - 6 A power supply (at  $U_S$ )
  - 12.2 mm design width



Order No. [2861409](#)

### IB IL 24 SEG-ELF-PAC

- Segment terminal
- 24 V DC
  - With electronic fuse and diagnostics
  - 2.5 A power supply (at  $U_S$ )
  - 12.2 mm design width

## Digital input terminal



Order No. [2861917](#)  
**IB IL 120 DI 1-PAC**

- 1 input
- 120 V AC
- 3-wire connection
- 12.2 mm design width



Order No. [2861548](#)  
**IB IL 230 DI 1-PAC**

- 1 input
- 230 V AC
- 3-wire connection
- 12.2 mm design width



Order No. [2861483](#)  
**IB IL 24 DI 2-NPN-PAC**

- 2 inputs
- 24 V DC
- 4-wire connection
- NPN-wired
- 12.2 mm design width



Order No. [2861234](#)  
**IB IL 24 DI 4-PAC**

- 4 inputs
- 24 V DC
- 3-wire connection
- 12.2 mm design width



Order No. [2700173](#)  
**IB IL 24 DI8/HD-PAC**

- 8 inputs
- 24 V DC
- Single-wire connection
- 12.2 mm design width



Order No. [2861247](#)  
**IB IL 24 DI 8-PAC**

- 8 inputs
- 24 V DC
- 4-wire connection
- 48.8 mm design width



Order No. [2862204](#)  
**IB IL 24 DI 8/T2-PAC**

- 8 inputs
- 24 V DC
- 4-wire connection
- Input according to EN 61131-2/  
type 2
- 48.8 mm design width



Order No. [2861250](#)  
**IB IL 24 DI 16-PAC**

- 16 inputs
- 24 V DC
- 3-wire connection
- 48.8 mm design width



Order No. [2863520](#)  
**IB IL 24 DI 16-NPN-PAC**

- 16 inputs
- 24 V DC
- 3-wire connection
- NPN-wired
- 48.8 mm design width



Order No. [2862835](#)  
**IB IL 24 DI 32/HD-PAC**

- 32 inputs
- 24 V DC
- Single-wire connection
- 48.8 mm design width



Order No. [2878243](#)  
**IB IL 24 DI 32/HD-NPN-PAC**

- 32 inputs
- 24 V DC
- Single-wire connection
- NPN-wired
- 48.8 mm design width

## Digital output terminal



Order No. [2861920](#)  
**IB IL DO 1 AC-PAC**

- 1 output
- 12 - 253 V AC, 500 mA
- 3-wire connection
- 12.2 mm design width



Order No. [2861263](#)  
**IB IL 24 DO 2-2A-PAC**

- 2 outputs
- 24 V DC, 2 A
- 4-wire connection
- 12.2 mm design width



Order No. [2861496](#)  
**IB IL 24 DO 2-NPN-PAC**

- 2 outputs
- 24 V DC, 500 mA
- 4-wire connection
- NPN-wired
- 12.2 mm design width



Order No. [2861616](#)  
**IB IL 24 EDO 2-PAC**

- 2 outputs
- 24 V DC, 500 mA
- Parameterizable output behavior
- 12.2 mm design width



Order No. [2861276](#)  
**IB IL 24 DO 4-PAC**

- 4 outputs
- 24 V DC, 500 mA
- 3-wire connection
- 12.2 mm design width



Order No. [2861658](#)  
**IB IL 24 DO 4 AC-1A-PAC**

- 4 outputs
- 12 - 253 V AC, 1 A
- 3-wire connection
- 48.8 mm design width



Order No. [2700172](#)  
**IB IL 24 DO8/HD-PAC**

- 8 outputs
- 24 V DC, 500 mA
- Single-wire connection
- 12.2 mm design width



Order No. [2861289](#)  
**IB IL 24 DO 8-PAC**

- 8 outputs
- 24 V DC, 500 mA
- 4-wire connection
- 48.8 mm design width



Order No. [2861603](#)  
**IB IL 24 DO 8-2A-PAC**

- 8 outputs
- 24 V DC, 2 A
- 4-wire connection
- 48.8 mm design width



Order No. [2863546](#)  
**IB IL 24 DO 8-NPN-PAC**

- 8 outputs
- 24 V DC, 1 A
- 4-wire connection
- NPN-wired
- 48.8 mm design width



Order No. [2861292](#)  
**IB IL 24 DO 16-PAC**

- 16 outputs
- 24 V DC, 500 mA
- 3-wire connection
- 48.8 mm design width



Order No. [2862822](#)  
**IB IL 24 DO 32/HD-PAC**

- 32 outputs
- 24 V DC, 500 mA
- Single-wire connection
- 48.8 mm design width



Order No. [2878340](#)  
**IB IL 24 DO 32/HD-NPN-PAC**

- 32 outputs
- 24 V DC, 500 mA
- Single-wire connection
- NPN-wired
- 48.8 mm design width



## Relay terminals



Order No. [2861881](#)

### IB IL 24/230 DOR1/W-PAC

- 1 SPDT relay contact
- For switching lamp loads
- 5 - 253 V AC, 3 A
- 12.2 mm design width



Order No. [2862178](#)

### IB IL 24/230 DOR1/W-PC-PAC

- 1 SPDT relay contact
- For switching inductive and capacitive loads
- 5 - 253 V AC, 2.6 A
- 12.2 mm design width



Order No. [2863119](#)

### IB IL 24/48 DOR2/W-PAC

- 2 SPDT relay contacts
- 5 - 50 V AC
- 5 - 120 V DC, 2 A
- 12.2 mm design width



Order No. [2861878](#)

### IB IL 24/230 DOR4/W-PAC

- 4 SPDT relay contacts
- For switching lamp loads
- 5 - 253 V AC, 3 A
- 48.8 mm design width



Order No. [2862181](#)

### IB IL 24/230 DOR4/W-PC-PAC

- 4 SPDT relay contacts
- For switching inductive and capacitive loads
- 5 - 253 V AC, 2.6 A
- 48.8 mm design width



Order No. [2897716](#)

### IB IL 24/230 DOR4/HC-PAC

- 4 relay contacts
- 5 - 253 V AC
- Max. 10 A
- High switch-on current
- 48.8 mm design width



Order No. [2861645](#)

### IB IL DOR LV-SET-PAC

- Distance terminals for use with the relay output terminals
- 12.2 mm design width

## Analog input terminals



Order No. [2861302](#)

### IB IL AI 2/SF-PAC

- 2 inputs
- 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- 16 bits
- 12.2 mm design width



Order No. [2862149](#)

### IB IL AI 2-HART-PAC

- 2 electrically isolated inputs for HART-compatible sensors
- With power supply
- 16 bits
- 48.8 mm design width



Order No. [2700459](#)

### IB IL AI 4/U-PAC

- 4 differential inputs (voltage)
- 0 - 10 V,  $\pm 10$  V
- 12 bits
- 12.2 mm design width



Order No. [2700458](#)

### IB IL AI 4/I-PAC

- 4 differential inputs (current)
- 0 - 20 mA, 4 - 20 mA
- 13 bits
- 12.2 mm design width



Order No. [2878447](#)

### IB IL AI 4/EF-PAC

- 4 differential inputs with initiator supply
- 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- Overload protection (mA)
- Bus synchronous ( $\geq 1$  ms)
- 16 bits
- 48.8 mm design width



Order No. [2861412](#)

### IB IL AI 8/SF-PAC

- 8 inputs
- 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 25 V,  $\pm 25$  V, 0 - 50 V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA, 0 - 40 mA,  $\pm 40$  mA
- Multiplex mode
- 16 bits
- 48.8 mm design width



Order No. [2861661](#)

### IB IL AI 8/IS-PAC

- 8 inputs with initiator supply
- 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA, 0 - 40 mA,  $\pm 40$  mA
- Multiplex mode
- 16 bits
- 48.8 mm design width

## Analog output terminals



Order No. [2861315](#)

### IB IL AO 1/SF-PAC

- 1 output
- 0 - 10 V, 0 - 20 mA, 4 - 20 mA
- 500  $\Omega$  load
- Short-circuit-proof
- 16 bits
- 24.4 mm design width



Order No. [2863083](#)

### IB IL AO 2/SF-PAC

- 2 outputs
- 0 - 10 V, 0 - 20 mA, 4 - 20 mA
- 500  $\Omega$  load
- Short-circuit-proof
- 16 bits
- 48.8 mm design width



Order No. [2861467](#)

### IB IL AO 2/U/BP-PAC

- 2 outputs
- 0 - 10 V,  $\pm 10$  V
- 16 bits
- 12.2 mm design width



Order No. [2700775](#)

### IB IL AO 2/UI-PAC

- 2 outputs
- 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- Short-circuit-proof
- 12 bits
- 12.2 mm design width



Order No. [2878036](#)

### IB IL AO 4/8/U/BP-PAC

- 4 or 8 outputs
- 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V
- Short-circuit-proof
- Defined (fast) shutdown behavior
- 16 bits
- 48.8 mm design width

## Temperature measurement terminals



Order No. [2861360](#)

### IB IL 24 TC-PAC

Thermistor terminal for evaluating motor PTC thermistors

- 1 input
- 1 output
- 12.2 mm design width



Order No. [2861328](#)

### IB IL TEMP 2 RTD-PAC

- 2 inputs for resistance temperature detectors
- 16 bits
- 12.2 mm design width



Order No. [2861386](#)

### IB IL TEMP 2 UTH-PAC

- 2 inputs for thermocouples
- 16 bits
- 12.2 mm design width



Order No. [2863915](#)

### IB IL TEMP 4/8 RTD-PAC

- 4 or 8 inputs for resistance temperature detectors with 2/3-wire connection
- 16 bits
- 48.8 mm design width



Order No. [2897402](#)

### IB IL TEMP 4/8 RTD/EF-PAC

- 4 or 8 inputs for resistance temperature detectors with 4-wire connection
- 16 bits
- High precision
- 48.8 mm design width

## Measurement terminals for strain gauges



Order No. [2875638](#)

### IB IL SGI 2/F-PAC

- 2 inputs for strain gauge
- Very fast ( $\geq 1$  ms)
- Bus-synchronous
- 16 bits
- 48.8 mm design width



Order No. [2884907](#)

### IB IL SGI 2/P-PAC

- 2 inputs for strain gauge
- Very precise
- RS-485 interface for external display
- 48.8 mm design width



Order No. [2700064](#)

### IB IL SGI 1/CAL

- 1 input for strain gauge
- Can be calibrated by EC type approval
- Up to 3000 pitch values
- RS-485 interface for external display
- 48.8 mm design width



Order No. [2700165](#)

### IB IL SGI EU CALSET






- Calibration set, approval-related
- Accessories for IB IL SGI 1/CAL



## Communication terminals

				
<p>Order No. <a href="#">2700893</a> <b>IB IL RS UNI-PAC</b></p> <p>Serial interface</p> <ul style="list-style-type: none"> <li>• 1 configurable serial input and output channel in RS-232 or RS-485/RS-422 format</li> <li>• Only process data communication</li> <li>• Max. transmission speed of 250 kbaud</li> <li>• 24.4 mm design width</li> </ul>	<p>Order No. <a href="#">2861357</a> <b>IB IL RS 232-PAC</b></p> <p>Serial interface</p> <ul style="list-style-type: none"> <li>• 1 serial input and output channel in RS-232 format</li> <li>• Max. transmission speed of 38.4 kbaud</li> <li>• 24.4 mm design width</li> </ul>	<p>Order No. <a href="#">2878722</a> <b>IB IL RS 232-PRO-PAC</b></p> <p>Serial interface</p> <ul style="list-style-type: none"> <li>• 1 serial input and output channel in RS-232 format</li> <li>• Only process data communication</li> <li>• Max. transmission speed of 38.4 kbaud</li> <li>• 24.4 mm design width</li> </ul>	<p>Order No. <a href="#">2861933</a> <b>IB IL RS 485/422-PAC</b></p> <p>Serial interface</p> <ul style="list-style-type: none"> <li>• 1 serial input and output channel in RS-485/RS-422 format</li> <li>• Max. transmission speed of 38.4 kbaud</li> <li>• 24.4 mm design width</li> </ul>	<p>Order No. <a href="#">2863627</a> <b>IB IL RS 485/422-PROPAC</b></p> <p>Serial interface</p> <ul style="list-style-type: none"> <li>• 1 serial input and output channel in RS-485/RS-422 format</li> <li>• Only process data communication</li> <li>• Max. transmission speed of 38.4 kbaud</li> <li>• 24.4 mm design width</li> </ul>
				
<p>Order No. <a href="#">2861441</a> <b>IBS IL 24 RB-T-PAC</b></p> <p>Branch terminal</p> <ul style="list-style-type: none"> <li>• INTERBUS remote bus branch</li> <li>• 12.2 mm design width</li> </ul>	<p>Order No. <a href="#">2878117</a> <b>IB IL 24 RB-LK</b></p> <p>Branch terminal</p> <ul style="list-style-type: none"> <li>• INTERBUS remote bus branch</li> <li>• Fiber optic connection</li> <li>• 24.4 mm design width</li> </ul>	<p>Order No. <a href="#">2736903</a> <b>IB IL 24 FLM-PAC</b></p> <p>Branch terminal for connecting a Fieldline Modular M8 or M12 local bus at the end of an Inline station</p> <ul style="list-style-type: none"> <li>• 12.2 mm design width</li> </ul>	<p>Order No. <a href="#">2737009</a> <b>IB IL 24 FLM MULTI-PAC</b></p> <p>Branch terminal for connecting a Fieldline Modular M8 local bus at any point in an Inline station</p> <ul style="list-style-type: none"> <li>• 12.2 mm design width</li> </ul>	<p>Order No. <a href="#">2897457</a> <b>IB IL 24 LSKIP-PAC</b></p> <p>Inline local bus extension terminal</p> <ul style="list-style-type: none"> <li>• Can be used with IB IL 24 FLM-PAC</li> <li>• 48.8 mm design width</li> </ul>
				
<p>Order No. <a href="#">2897813</a> <b>IB IL DALI/PWR-PAC</b></p> <p>DALI terminals</p> <ul style="list-style-type: none"> <li>• Single-channel DALI master</li> <li>• Integrated DALI power supply unit</li> <li>• Safe electrical isolation</li> <li>• 61 mm design width</li> </ul>	<p>Order No. <a href="#">2897910</a> <b>IB IL DALI/PAC</b></p> <p>DALI terminals</p> <ul style="list-style-type: none"> <li>• Single-channel DALI master</li> <li>• Extension for IB IL DALI/PWR-PAC</li> <li>• 12.2 mm design width</li> </ul>	<p>Order No. <a href="#">2897237</a> <b>SRC-RS485 EVC</b></p> <p>EnOcean wireless receiver for connecting to IB IL RS 485/422-PRO-PAC</p>	<p>Order No. <a href="#">2701927</a> <b>IB IL MBUS-PAC</b></p> <p>M-bus terminal</p> <ul style="list-style-type: none"> <li>• Single-channel M-bus master</li> <li>• Process data communication only</li> <li>• Up to 30 M-bus devices can be connected</li> <li>• Transmission speed of 19.2 kbaud</li> <li>• 24.4 mm design width</li> </ul>	

## Communication master

				
Order No. <a href="#">2700630</a> <b>IB IL PB-MA-PAC</b>	Order No. <a href="#">2700196</a> <b>IB IL CAN-MA-PAC</b>	Order No. <a href="#">2862717</a> <b>IB IL IOL 4 DI 12-PAC</b>	Order No. <a href="#">2736628</a> <b>ASI MA IL UNI</b>	Order No. <a href="#">2692720</a> <b>IB IL IFS-MA-PAC</b>
<p>PROFIBUS master</p> <ul style="list-style-type: none"> <li>• PROFIBUS DP V0 master/slave</li> <li>• Max. transmission speed of 12 Mbps</li> <li>• Serial interface (S port) incl. memory stick</li> <li>• 48.8 mm design width</li> </ul>	<p>CAN master</p> <ul style="list-style-type: none"> <li>• CAN 2.0A and CAN 2.0B</li> <li>• Transmission speed of 10 kbps to 1 Mbps</li> <li>• Serial interface (S port) incl. memory stick</li> <li>• 12.2 mm design width</li> </ul>	<p>IO-Link</p> <ul style="list-style-type: none"> <li>• 4 IO-Link channels</li> <li>• 12 digital inputs, 24 V DC</li> <li>• 48.8 mm design width</li> </ul>	<p>AS-i master</p> <ul style="list-style-type: none"> <li>• Inline/AS-i master, universal for all bus couplers</li> <li>• AS-i specification 2.1</li> <li>• 73.2 mm design width</li> </ul>	<p>IF system bus master</p> <ul style="list-style-type: none"> <li>• Integration of up to 8 EMM and EEM modules</li> <li>• Serial interface (S port) incl. memory stick</li> <li>• Up to 31 measured values and 16 manipulated variables</li> <li>• 24.4 mm design width</li> </ul>

## Terminals for open and closed-loop control

			
Order No. <a href="#">2861865</a> <b>IB IL SSI-PAC</b>	Order No. <a href="#">2861852</a> <b>IB IL CNT-PAC</b>	Order No. <a href="#">2897020</a> <b>IB IL DI 8/S0-PAC</b>	Order No. <a href="#">2861632</a> <b>IB IL PWM/2-PAC</b>
<p>Positioning terminal</p> <ul style="list-style-type: none"> <li>• Single-axis point-to-point control for absolute encoders with SSI interface</li> <li>• Rapid motion/creeping motion principle</li> <li>• 3 digital inputs</li> <li>• 4 digital outputs</li> <li>• 48.8 mm design width</li> </ul>	<p>Counter</p> <ul style="list-style-type: none"> <li>• 1 counter input</li> <li>• 1 control input</li> <li>• 1 output</li> <li>• Max. counting frequency of 100 kHz</li> <li>• 24-bit binary counter</li> <li>• Pulse generator</li> <li>• 24.4 mm design width</li> </ul>	<p>Counter</p> <ul style="list-style-type: none"> <li>• 8 inputs for S0 pulse encoder</li> <li>• 32-bit counter range</li> <li>• 48.8 mm design width</li> </ul>	<p>PWM terminal</p> <ul style="list-style-type: none"> <li>• Pulse width modulation</li> <li>• 2 channels</li> <li>• Pulse/direction interface for controlling step motor power sections</li> <li>• Max. 50 kHz (5 V)</li> <li>• Max. 500 Hz (24 V)</li> <li>• 24.4 mm design width</li> </ul>
			
Order No. <a href="#">2819574</a> <b>IB IL SSI-IN-PAC</b>	Order No. <a href="#">2861755</a> <b>IB IL INC-IN-PAC</b>	Order No. <a href="#">2861768</a> <b>IB IL IMPULSE-IN-PAC</b>	
<p>Position detection terminal</p> <ul style="list-style-type: none"> <li>• Reads positions of absolute encoders with SSI interface</li> <li>• Input resolution max. 25 bits</li> <li>• 12.2 mm design width</li> </ul>	<p>Position detection terminal</p> <ul style="list-style-type: none"> <li>• Reads positions of incremental encoders</li> <li>• 25-bit position actual value</li> <li>• 24.4 mm design width</li> </ul>	<p>Position detection terminal</p> <ul style="list-style-type: none"> <li>• Reads positions from magnetostrictive length measuring systems with start/stop interface</li> <li>• Position resolution of 5 µm</li> <li>• 12.2 mm design width</li> </ul>	

## Energy/power measurement terminal



Order No. [2700965](#)

### IB IL PM 3P/N/EF-PAC

Energy/power measurement terminal

- 3 phases plus neutral conductor connection
- Direct current acquisition (1 A or 5 A)
- Max. outer conductor voltage of 690 V AC (L-L)
- 48.8 mm design width

## Power-level terminals



Order No. [2727365](#)

### IB IL 400 MLR 1-8A

Direct starter

- Electromechanical load relay
- Single-channel direct starter
- Up to 3.7 KW/400 V AC
- 63 mm design width



Order No. [2727352](#)

### IB IL 400 ELR 1-3A

Direct starter

- Electronic load relay
- Single-channel direct starter
- Up to 1.5 KW/400 V AC
- 63 mm design width



Order No. [2727378](#)

### IB IL 400 ELR R-3A

Reversing starter

- Electronic load relay
- Single-channel reversing starter
- Up to 1.5 KW/400 V AC
- 63 mm design width

Corresponding accessories can be found in our online catalog [www.phoenixcontact.net/products](http://www.phoenixcontact.net/products)

## Intrinsically safe Inline terminals (Ex-i)



Order No. [2869910](#)

### IB IL EX-IS PWR IN-PAC

- 24 V DC ( $U_{Ex}$ )
- 1000 mA (max.) at  $U_{Ex}$
- Diagnostic LEDs
- Electronic overload protection
- 48.8 mm design width



Order No. [2869911](#)

### IB IL EX-IS DIO 4/NAM-PAC

- 4 configurable I/O channels
- 2-wire connection
- NAMUR sensors supported (EN 60947-5-6)
- Single-channel diagnostics
- 8.2 V sensor supply
- 48.8 mm design width



Order No. [2869912](#)

### IB IL EX-IS AIO 4/EF-PAC

- 4 configurable I/O channels
- 2/3-wire connection
- Input: 0 - 10 V, 0 - 20 mA, 4 - 20 mA
- Output: 0 - 20 mA, 4 - 20 mA
- Optional passive output
- Module-based electrical isolation
- Single-channel diagnostics
- 48.8 mm design width



Order No. [2869913](#)

### IB IL EX-IS TEMP 4 RTD/TC-PAC

- 4 configurable I/O channels
- 2/3-wire connection
- RTD inputs: Pt, Ni (DIN 100, 200, 500, 1000)
- TC inputs: J, K, E, R, S, T
- Module-based electrical isolation
- Single-channel diagnostics
- 48.8 mm design width



## Safety terminals



Order No. [2700606](#)

### IB IL 24 LPSDO 8 V2-PAC

Safe logic modules for SafetyBridge technology

- Connection to 5 safe I/O modules
- 4 safety-related two-channel outputs each or 8 safety-related single-channel outputs each
- 24 kB logic memory
- 24 V DC, 2 A (per channel)
- Max. PL e acc. to EN ISO 13849-1 and SIL 3 acc. to IEC 61508 (EN IEC 62061)
- 48.8 mm design width



Order No. [2701625](#)

### IB IL 24 LPSDO 8 V3-PAC

Safe logic modules for SafetyBridge technology

- Connection to 16 safe I/O modules
- 4 safety-related two-channel outputs each or 8 safety-related single-channel outputs each
- 60 kB logic memory
- 24 V DC, 2 A (per channel)
- Max. PL e acc. to EN ISO 13849-1 and SIL 3 acc. to IEC 61508 (EN IEC 62061)
- 48.8 mm design width



Order No. [2985688](#)

### IB IL 24 PSDI 8-PAC

Safe input I/O modules for SafetyBridge technology, INTERBUS-Safety, and PROFIsafe

- 4 safety-related two-channel inputs each or 8 safety-related single-channel inputs each
- 2 clock outputs for supplying inputs UT1 and UT2
- Max. PL e acc. to EN ISO 13849-1 and SIL 3 acc. to IEC 61508 (EN IEC 62061)
- 48.8 mm design width



Order No. [2700994](#)

### IB IL 24 PSDI 16-PAC

Safe input I/O modules for PROFIsafe and SafetyBridge technology

- Can be used with IB IL 24 LPSDO 8 V3-PAC
- 4 safety-related two-channel inputs each or 8 safety-related single-channel inputs
- 2 clock outputs for supplying inputs UT1 and UT2
- Max. PL e acc. to EN ISO 13849-1 and SIL 3 acc. to IEC 61508 (EN IEC 62061)
- 48.8 mm design width



Order No. [2985631](#)

### IB IL 24 PSDO 8-PAC

Safe output I/O modules for SafetyBridge technology, INTERBUS-Safety, and PROFIsafe

- 4 safety-related two-channel outputs each or 8 safety-related single-channel outputs each
- 24 V DC, 2 A (per channel)
- Max. PL e acc. to EN ISO 13849-1 and SIL 3 acc. to IEC 61508 (EN IEC 62061)
- 48.8 mm design width



Order No. [2985864](#)

### IB IL 24 PSDOR 4-PAC

Safe output I/O modules for SafetyBridge technology, INTERBUS-Safety, and PROFIsafe

- 2 safety-related two-channel relays or 4 safety-related single-channel relays (2 floating contacts each)
- 2 readback inputs for recording external circuit breakers
- 2 clock outputs for supplying the readback inputs
- Max. PL e acc. to EN ISO 13849-1 and SIL 3 acc. to IEC 61508 (EN IEC 62061)
- 73.2 mm design width



Order No. [2916493](#)

### IB IL 24 PSDO 4/4-PAC

Safe output I/O modules for SafetyBridge technology, INTERBUS-Safety, and PROFIsafe

- 4 safe positive switching and 4 safe negative switching digital outputs
- 24 V DC, 2 A (per channel)
- Max. PL e acc. to EN ISO 13849-1 and SIL 3 acc. to IEC 61508 (EN IEC 62061)
- 48.8 mm design width

Inline controllers – class 100 compact controllers



Order No. [2700075](#)

**ILC 191 ME/INC**

- Typical processing speed of 1.3 ms for 1 K instructions
- 1 MB program memory
- 1 MB data memory
- 48 kB retentive data memory
- 2 Ethernet interfaces
- 1 RS-485/RS-422 interface
- 1 two-channel pulse/direction interface and PWM (before digital)
- 8 digital inputs (event task compatible)
- 4 digital outputs
- 2 inputs for incremental encoder
- 2 fast counter inputs (max. 200 kHz)
- 164 mm design width



Order No. [2700074](#)

**ILC 191 ME/AN**

- Typical processing speed of 1.3 ms for 1 K instructions
- 1 MB program memory
- 1 MB data memory
- 48 kB retentive data memory
- 2 Ethernet interfaces
- 1 RS-485/RS-422 interface
- 1 two-channel pulse/direction interface and PWM (before digital)
- 8 digital inputs (event task compatible)
- 4 digital outputs
- 2 analog inputs
- 2 analog outputs
- 164 mm design width

**DI**

**DO**



Order No. [2863928](#)

**IB IL 24 DI 4-ME**

- 4 inputs
- 24 V DC
- 3-wire connection
- Short plug
- 12.2 mm design width
- Pack of 4



Order No. [2897156](#)

**IB IL 24 DI 16-ME**

- 16 inputs
- 24 V DC
- 3-wire connection
- Short consecutively numbered plugs
- 48.8 mm design width
- Pack of 4



Order No. [2863931](#)

**IB IL 24 DO 4-ME**

- 4 outputs
- 24 V DC, 500 mA
- 3-wire connection
- Short plugs
- 12.2 mm design width
- Pack of 4



Order No. [2897253](#)

**IB IL 24 DO 16-ME**

- 16 outputs
- 24 V DC, 500 mA
- 3-wire connection
- Short consecutively numbered plugs
- 48.8 mm design width
- Pack of 4

**AI**

**AO**



Order No. [2863944](#)

**IB IL AI 2/SF-ME**

- 2 inputs
- 3-wire connection
- 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- 12 bits
- Without shield connection
- 12.2 mm design width



Order No. [2863957](#)

**IB IL AO 2/U/BP-ME**

- 2 outputs
- 2-wire connection
- 0 - 10 V,  $\pm 10$  V
- 12 bits
- Without shield connection
- 12.2 mm design width

**Inline controllers – class 100 high-performance controllers**



Order No. [2701034](#)

**ILC 131 ETH/XC**

- Typical processing speed of 1.7 ms for 1 K instructions
- 192 kB program memory
- 192 kB data memory
- 8 kB retentive data memory
- 1 Ethernet interface
- 8 digital inputs
- 4 digital outputs
- Extended temperature range of -40°C to +60°C
- 80 mm design width



Order No. [2701141](#)

**ILC 151 ETH/XC**

- Typical processing speed of 1.5 ms for 1 K instructions
- 256 kB program memory
- 256 kB data memory
- 8 kB retentive data memory
- 1 Ethernet interface
- 8 digital inputs
- 4 digital outputs
- Extended temperature range of -40°C to +60°C
- 80 mm design width

**Ethernet**

**Fieldbuses**

*Modbus TCP (UDP)*



Order No. [2701388](#)

**IL ETH BK DI8 DO4-2TX-XC-PAC**

- Modbus TCP (UDP)
- HTTP, TFTP, BootP, SNMP
- 8 inputs, 24 V DC
- 4 outputs, 500 mA
- 0.8 A at U<sub>L</sub>
- RJ45 connection
- Extended temperature range of -40°C to +60°C
- 80 mm design width



Order No. [2701150](#)

**IBS IL 24 BK-T/U-XC-PAC**

- INTERBUS
- Incl. branch bus terminal support
- 2 A at U<sub>L</sub>
- Bus connection via Inline plug
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width



Order No. [2701151](#)

**IBS IL 24 RB-T-XC-PAC**

- Branch terminal
- INTERBUS remote bus branch
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width

**Communication master**



Order No. [2701160](#)

**IB IL CAN-MA-XC-PAC**

- CAN master
- CAN 2.0A and CAN 2.0B
- Transmission speed of 10 kbps to 1 Mbps
- Serial interface (S port) incl. memory stick
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



## Power and segment terminals



Order No. [2701162](#)

### IB IL 24 PWR IN/2-F-XC-PAC

Power terminal

- 24 V DC ( $U_M, U_S$ )
- With fuse
- 6 A power supply (at  $U_M, U_S$ )
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701298](#)

### IB IL 24 PWR IN/R-XC-PAC

Boost terminal for communications power and I/O voltage (logic up to 2 A)

- $U_L, U_{ANA}, U_M, U_S$
- 8 A power supply (at  $U_M, U_S$ )
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width



Order No. [2701161](#)

### IB IL 24 PWR IN-XC-PAC

Power terminal

- 24 V DC ( $U_M, U_S$ )
- 8 A power supply (at  $U_M, U_S$ )
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701163](#)

### IB IL 24 SEG/F-XC-PAC

Segment terminal

- 24 V DC
- With fuse
- 6 A power supply (at  $U_S$ )
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width

## Digital input terminals



Order No. [2701152](#)

### IB IL 24 DI 4-XC-PAC

- 4 inputs
- 24 V DC
- 3-wire connection
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701212](#)

### IB IL DI 8/HD-XC-PAC

- 8 inputs
- 24 V DC
- Single-wire connection
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701154](#)

### IB IL DI 16/XC-PAC

- 16 inputs
- 24 V DC
- 3-wire connection
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width

## Digital output terminals



Order No. [2701155](#)

### IB IL DO 4-XC-PAC

- 4 outputs
- 24 V DC, 500 mA
- 3-wire connection
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701213](#)

### IB IL DO 8/HD-XC-PAC

- 8 outputs
- 24 V DC, 500 mA
- Single-wire connection
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701156](#)

### IB IL DO 16/XC-PAC

- 16 outputs
- 24 V DC, 500 mA
- 3-wire connection
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width



Order No. [2701214](#)

### IB IL 24/48 DOR 2/W-XC-PAC

- 2 SPDT relay contacts
- 5 - 50 V AC
- 5 - 120 V DC, 2 A
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width

## Relay terminal

## Analog input terminals



Order No. [2701157](#)

### IB IL AI 2/SF-XC-PAC

- 2 inputs
- 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- 16 bits
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701215](#)

### IB IL AI 4/EF-XC-PAC

- 4 differential inputs with initiator supply
- 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- Overload protection (mA)
- Bus synchronous ( $\geq 1$  ms)
- 16 bits
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width



Order No. [2701159](#)

### IB IL AI 8/SF-XC-PAC

- 8 inputs
- 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V, 0 - 25 V,  $\pm 25$  V, 0 - 50 V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA, 0 - 40 mA,  $\pm 40$  mA
- Multiplex mode
- 16 bits
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width

## Analog output terminals



Order No. [2701219](#)

### IB IL AO 1/SF-XC-PAC

- 1 output
- 0 - 10 V, 0 - 20 mA, 4 - 20 mA
- 500  $\Omega$  load
- Short-circuit-proof
- 16 bits
- Extended temperature range of -40°C to +60°C
- 24.4 mm design width



Order No. [2701389](#)

### IB IL AO 2/UI-XC-PAC

- 2 outputs
- 0 - 10 V,  $\pm 10$  V, 0 - 20 mA,  $\pm 20$  mA, 4 - 20 mA
- Short-circuit-proof
- 12 bits
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701164](#)

### IB IL AO 4/8/U/BP-XC-PAC

- 4 or 8 outputs
- 0 - 5 V,  $\pm 5$  V, 0 - 10 V,  $\pm 10$  V
- Short-circuit-proof
- Defined (fast) shutdown behavior
- 16 bits
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width

## Temperature measurement terminals



Order No. [2701217](#)

### IB IL TEMP 2 RTD-XC-PAC

- 2 inputs for resistance temperature detectors
- 16 bits
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



Order No. [2701216](#)

### IB IL TEMP 2 UTH-XC-PAC

- 2 inputs for thermocouples
- 16 bits
- Extended temperature range of -40°C to +60°C
- 12.2 mm design width



















Order No. [2701218](#)

### IB IL TEMP 4/8 RTD-EF-XC-PAC

- 4 or 8 inputs for resistance temperature detectors with 4-wire connection
- 16 bits
- High precision
- Extended temperature range of -40°C to +60°C
- 48.8 mm design width

## Product overview

## Accessories for the Inline I/O system

			
<p>Order No. <a href="#">2900889</a> <b>FLKM 14-PA-INLINE/DIO 8</b></p> <p>VARIOFACE front adapter for 8-channel Inline HD modules</p>	<p>Order No. <a href="#">2304128</a> <b>FLKM 14-PA-INLINE/IN 8</b></p> <p>Order No. <a href="#">2304131</a> <b>FLKM 14-PA-INLINE/OUT 8</b></p> <p>VARIOFACE front adapter for 8-channel Inline modules</p>	<p>Order No. <a href="#">2302751</a> <b>FLKM 14-PA-INLINE/IN 16</b></p> <p>Order No. <a href="#">2302764</a> <b>FLKM 14-PA-INLINE/OUT 16</b></p> <p>VARIOFACE front adapter for 16-channel Inline modules</p>	<p>Order No. <a href="#">2302777</a> <b>FLKM 14-PA-INLINE 32</b></p> <p>VARIOFACE front adapter for 32-channel Inline modules</p>
			
<p>Order No. <a href="#">2799720</a> <b>PSM-SET-FSMA/4-KT</b></p> <p>Order No. <a href="#">2799487</a> <b>PSM-SET-FSMA/4-HCS</b></p> <p>FSMA plugs for INTERBUS fiber optics</p>	<p>Order No. <a href="#">2758473</a> <b>IBS DSUB 9/L</b></p> <p>Order No. <a href="#">2758486</a> <b>IBS DSUB 9/C</b></p> <p>D-SUB 9 connectors</p>	<p>Order No. <a href="#">2761499</a> <b>SUBCON 9/F-SH</b></p> <p>Order No. <a href="#">2761509</a> <b>SUBCON 9/M-SH</b></p> <p>SUBCON D-SUB plugs for INTERBUS</p>	<p>see INTERFACE catalog <b>SUBCON-PLUS-PROFIB/...</b></p> <p>see INTERFACE catalog <b>SUBCON-PLUS-CAN/...</b></p> <p>SUBCON plugs for PROFIBUS and CAN</p>
			
<p>Order No. <a href="#">3022276</a> <b>CLIPFIX 35-5</b></p> <p>Standard end bracket</p>	<p>Order No. <a href="#">3022218</a> <b>CLIPFIX 35</b></p> <p>End bracket for CANopen® and DeviceNet™ bus couplers</p>	<p>Order No. <a href="#">1201662</a> <b>E/AL-NS 35</b></p> <p>End bracket for use in the event of vibrations</p>	<p>Order No. <a href="#">2740850</a> <b>I-L ATP GN</b></p> <p>End cover plate</p>
			
<p>Order No. <a href="#">2727501</a> <b>IB IL FIELD 2</b></p> <p>Order No. <a href="#">2727515</a> <b>IB IL FIELD 8</b></p> <p>Inline marking fields</p>	<p>Order No. 809492 <b>ESL 62X10</b></p> <p>Order No. 809502 <b>ESL 62X46</b></p> <p>Marking sheets for laser printer</p>	<p>See CLIPLINE catalog <b>ZBFM 6-...</b></p> <p>Zack marker strip marking</p>	<p>Order No. <a href="#">2742683</a> <b>IL CP</b></p> <p>Coding profile unit pack: 100 profiles with pins</p>





Always up-to-date, always available to you. Here you'll find everything on our products, solutions and service:  
[phoenixcontact.com](http://phoenixcontact.com)

## Product range

- Cables and connectors
- Controllers and PLCs
- DIN rail power supplies and UPS
- Electronic reversing contactors and motor control
- Electronics housing
- Ethernet networks
- Fieldbus components and systems
- Functional safety
- HMIs and industrial PCs
- I/O systems
- Industrial communication technology
- Industrial lighting
- Installation and mounting material
- Marking and labeling
- Measurement and control technology
- Monitoring and signaling
- PCB terminal blocks and PCB connectors
- Plug connectors
- Protective devices
- Relays
- Sensor cables and connectors
- Software
- Surge protection devices
- System cabling for DCS and PLC
- Terminal blocks
- Tools
- Wireless data communication

PHOENIX CONTACT GmbH & Co. KG  
Flachsmarktstraße 8  
32825 Blomberg, Germany  
Phone: + 49 5235 3-00  
Fax: + 49 5235 3-41200  
E-mail: [info@phoenixcontact.com](mailto:info@phoenixcontact.com)  
[phoenixcontact.com](http://phoenixcontact.com)