

# I/O module - ILB PN 24 DI16 DIO16-EF - 2702289

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Inline, Block IO, PROFINET, RJ45 jack, Digital inputs: 32 (16 fixed and 16 freely selectable), 24 V DC, connection method: 3-wire, Digital outputs: 16, 24 V DC, 500 mA, connection method: 2-wire, PROFINET, - IRT, -MRP, -Fast Startup, degree of protection: IP20, including Inline connector

The figure shows the standard item

## Product Description


The module is designed for use within a PROFINET network. It is used to acquire and output digital signals.

## Your advantages

- 16/32 inputs, 24 V DC
- 16 outputs, 24 V DC, 500 mA
- 2 RJ45 sockets angled 45°



## Key Commercial Data

Packing unit	1 pc
GTIN	 4 0 5 5 6 2 6 0 7 3 3 2 3
GTIN	4055626073323

## Technical data

### Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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### Dimensions

Width	156 mm
Height	141 mm
Depth	57 mm
Note on dimensions	Specifications with connectors

### Ambient conditions

Ambient temperature (operation)	-25 °C ... 60 °C
Ambient temperature (storage/transport)	-25 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

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## Technical data

### Ambient conditions

Air pressure (operation)	80 kPa ... 108 kPa (up to 2000 m above sea level)
Air pressure (storage/transport)	66 kPa ... 108 kPa (up to 3500 m above sea level)
Degree of protection	IP20

### General

Mounting type	DIN rail
Net weight	563.9 g
Note on weight specifications	with connectors
Diagnostics messages	Short-circuit or overload of the digital outputs Message in the diagnostics register
	Short circuit sensor supply $U_{S1}$ or $U_{S2}$ Message in the diagnostics register
	Sensor supply $U_{S1}$ not present Message in the diagnostics register
	Sensor supply $U_{S2}$ not present Message in the diagnostics register

### Interfaces

Designation	PROFINET
No. of channels	2
Connection method	RJ45 jack
Note on the connection method	Autonegotiation and autocrossing, X2: internally crossed to enable "Fast Startup" with patch cable
Designation connection point	X1, X2
Transmission speed	100 Mbps (acc. to PROFINET standard)
Transmission physics	Ethernet in RJ45 twisted pair

### Digital inputs

Input name	Digital inputs
Description of the input	EN 61131-2 types 1 and 3
Connection method	Inline connector
Connection technology	3-wire
Number of inputs	32 (16 fixed and 16 freely selectable)
Typical response time	approx. 500 $\mu$ s
Nominal input voltage $U_{IN}$	24 V DC
Nominal input current at $U_{IN}$	approx. 2.4 mA
Input voltage	24 V DC
Input voltage range "0" signal	-3 V DC ... 5 V DC
Input voltage range "1" signal	11 V DC ... 30 V DC
Typical input current per channel	typ. 5 mA

### Digital outputs

Output name	Digital outputs
Connection method	Inline connector
Connection technology	2-wire
Number of outputs	16

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### Digital outputs

Protective circuit	Short-circuit and overload protection Free-wheeling diode, integrated per channel
Output voltage	24 V DC -1 V (At nominal current)
Nominal output voltage	24 V DC
Maximum output current per channel	500 mA
Maximum output current per module	8 A
Nominal load, inductive	12 VA (1.2 H, 48 Ω)
Nominal load, lamp	12 W
Nominal load, ohmic	12 W (48 Ω)
Output current when switched off	max. 300 µA (When not loaded, a voltage can be measured even at an output that is not set.)
Behavior with overload	Auto restart
Behavior with inductive overload	Output can be destroyed
Reverse voltage resistance to short pulses	limited protection up to 0.5 A for 1 s

### Electrical isolation

Test section	I/Os / logic 500 V AC 50 Hz 1 min.
	I/O/functional ground 500 V AC 50 Hz 1 min.
	Logic/functional ground 500 V AC 50 Hz 1 min.
	Ethernet interface signals / logic 1500 V AC 50 Hz 1 min.

### Standards and Regulations

Mechanical tests	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6 5g
	Shock in acc. with EN 60068-2-27/IEC 60068-2-27 Operation: 25g, 11 ms duration, semi-sinusoidal shock impulse
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
Overvoltage category	II

### Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

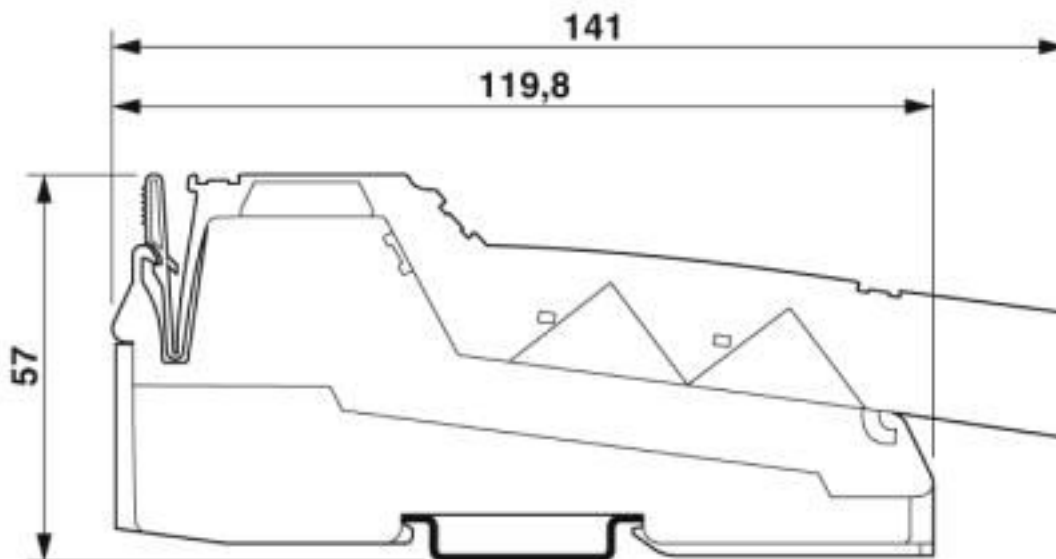
## Drawings

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Connection diagram



Dimensional drawing



## Classifications

eCl@ss

eCl@ss 10.0.1	27242604
eCl@ss 4.0	27250302
eCl@ss 4.1	27250302
eCl@ss 5.0	27250302

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## Classifications

### eCl@ss

eCl@ss 5.1	27242604
eCl@ss 6.0	27242600
eCl@ss 7.0	27242604
eCl@ss 8.0	27242604
eCl@ss 9.0	27242604

### ETIM

ETIM 2.0	EC001430
ETIM 3.0	EC001599
ETIM 4.0	EC001599
ETIM 5.0	EC001599
ETIM 6.0	EC001599
ETIM 7.0	EC001599

### UNSPSC

UNSPSC 6.01	43172015
UNSPSC 7.0901	43201404
UNSPSC 11	43172015
UNSPSC 12.01	43201404
UNSPSC 13.2	32151602
UNSPSC 18.0	32151602
UNSPSC 19.0	32151602
UNSPSC 20.0	32151602
UNSPSC 21.0	32151602

## Approvals

### Approvals

#### Approvals

UL Recognized / cUL Recognized / PROFINET / cULus Recognized

#### Ex Approvals

### Approval details

UL Recognized		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 140324
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## Approvals

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PROFINET	Z11955
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cULus Recognized	
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## Accessories

### Accessories

#### Data cable by the meter

Network cable - FL CAT5 HEAVY - 2744814



CAT5-SF/UTP cable (J-02YS(ST)C HP 2 x 2 x 24 AWG), heavy-duty installation cable, 2 x 2 x 0.22 mm<sup>2</sup>, solid conductor, shielded, outer sheath: 7.8 mm diameter, inner sheath: 5.75 mm ± 0.15 mm diameter

Installation cable - FL CAT5 FLEX - 2744830



By the meter, Installation cable, Ethernet CAT5 (100 Mbps), shielded, PUR halogen-free, water blue RAL 5021, 4-wire (2x2xAWG26/7; SF/UTP), color single wire: white/orange-orange, white/green-green, cable length: Free entry (1.0 ... 1000.0 m)

#### Data plug

Assembly tool - FL CRIMPTOOL - 2744869



Crimping pliers, for assembling the RJ45 plugs FL PLUG RJ45..., for assembly on site

#### End block

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### Accessories

End clamp - CLIPFIX 35-5 - 3022276



Quick mounting end clamp for NS 35/7,5 DIN rail or NS 35/15 DIN rail, with marking option, with parking option for FBS...5, FBS...6, KSS 5, KSS 6, width: 5.15 mm, color: gray

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### Labeling panel

Labeling field - IB IL FIELD 2 - 2727501

Labeling field, width: 12.2 mm



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### Plug

RJ45 connector - FL PLUG RJ45 GR/2 - 2744856



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, gray for straight cables, for assembly on site. For connections that are not crossed, it is recommended that you use the connector set with gray bend protection sleeve.

RJ45 connector - FL PLUG RJ45 GN/2 - 2744571



RJ45 connector, shielded, with bend protection sleeve, 2 pieces, green for crossed cables, for assembly on site. For connections that are crossed, it is recommended that the connector set with green bend protection sleeves is used.

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### Terminal marking

Insert strip - ESL 62X10 - 0809492



Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems: Laser printer, mounting type: insert, lettering field size: 62 x 10 mm, Number of individual labels: 72

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### Accessories

Zack Marker strip, flat - ZBF 6:UNBEDRUCKT - 0808710



Zack Marker strip, flat, Strip, white, unlabeled, can be labeled with: PLOTMARK, CMS-P1-PLOTTER, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5.15 x 6.15 mm, Number of individual labels: 10

Flat zack marker sheet - ZBFM 6/WH:UNBEDRUCKT - 0803618



Flat zack marker sheet, Sheet, white, unlabeled, can be labeled with: CMS-P1-PLOTTER, PLOTMARK, mounting type: snap into flat marker groove, for terminal block width: 6.2 mm, lettering field size: 5 x 5.5 mm, Number of individual labels: 100

### Spare parts

Inline connector - IB IL SCN-PWR IN-CP - 2727637



Connector, colored, for Inline power and segment terminal blocks

Inline connector - IB IL SCN-12-ICP - 2727611



Connector, color coded, for digital 4, or 16-channel Inline input terminals

Inline connector - IB IL SCN-12-OCP - 2727624



Connector, colored identification, for digital 4, or 16-channel Inline output terminal blocks



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