

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

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The figure shows the standard item

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

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 jacks at a 45° angle



Key Commercial Data

Packing unit	1 pc
GTIN	 4 055626 073323
GTIN	4055626073323
Weight per Piece (excluding packing)	560.000 g
Custom tariff number	85389091
Country of origin	Germany

Technical data

Note

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

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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)
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
Number	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

Power supply for module electronics

Designation	Logic (U_L)
Supply voltage	24 V DC
Protective circuit	Surge protection

Digital inputs

Input name	Digital inputs
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Digital inputs

Description of the input	EN 61131-2 types 1 and 3
Connection method	Inline connector
Connection technology	3-conductor
Number of inputs	32 (16 fixed and 16 freely selectable)
Typical response time	approx. 500 µs
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
Number of outputs	16
Connection method	Inline connector
Connection technology	2-conductor
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
Output current per channel	500 mA
Output current of the device	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

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Standards and Regulations

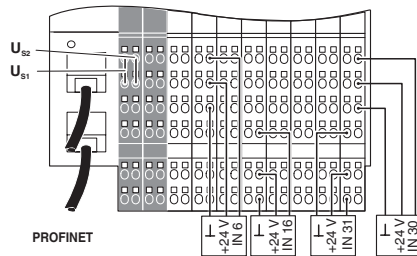
Immunity to ESD	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electrostatic discharge (ESD) EN 61000-4-2/IEC 61000-4-2 Criterion B, 4 kV contact discharge, 8 kV air discharge
Immunity to EF	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Electromagnetic fields EN 61000-4-3/IEC 61000-4-3 Criterion A, Field intensity: 10 V/m
Immunity to burst	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Fast transients (burst) EN 61000-4-4/IEC 61000-4-4 Criterion A, all interfaces 1 kV Criterion B, all interfaces 2 kV
Immunity to surge	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Transient overvoltage (surge) EN 61000-4-5/IEC 61000-4-5 Criterion B, DC supply lines: ± 0.5 kV/ ± 1 kV (symmetrical/asymmetrical), signal lines: ± 1 kV/ ± 1 kV (symmetrical/asymmetrical)
Immunity to conducted interference	Immunity test in accordance with EN 61000-6-2/IEC 61000-6-2 Conducted interference EN 61000-4-6/IEC 61000-4-6 Criterion A, Test voltage 10 V
Interference emission	Noise emission test in accordance with EN 61000-6-4/IEC 61000-6-4 EN 55011 Class A
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

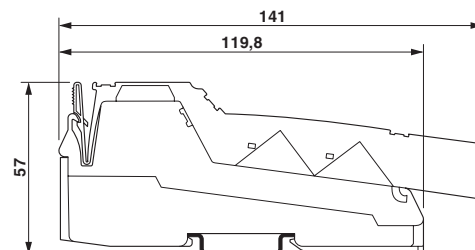
REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally friendly use period: unlimited = EFUP-e
	No hazardous substances above threshold values

Drawings

Connection diagram



Dimensional drawing



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Classifications

eCl@ss

eCl@ss 10.0.1	27242604
eCl@ss 11.0	27242604
eCl@ss 4.0	27250302
eCl@ss 4.1	27250302
eCl@ss 5.0	27250302
eCl@ss 5.1	27242604
eCl@ss 6.0	27242600
eCl@ss 7.0	27242604
eCl@ss 9.0	27242604

ETIM

ETIM 2.0	EC001430
ETIM 3.0	EC001599
ETIM 4.0	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

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UL Recognized / cUL Recognized / PROFINET / cULus Recognized

Ex Approvals

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Approvals

Approval details

UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 140324
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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 mm², 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

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Accessories

Assembly tool - FL CRIMPTOOL - 2744869



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

End block

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

Labeling panel

Labeling field - IB IL FIELD 2 - 2727501

Labeling field, width: 12.2 mm



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.



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Accessories

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.

Terminal marking

Insert strip - ESL 62X10 - 0809492



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

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: snapped, 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: snapped, 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

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Accessories

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
