

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



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, 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

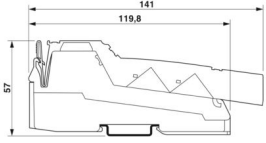
- 16/32 inputs, 24 V DC
- 16 outputs, 24 V DC, 500 mA
- 2 RJ45 jacks at a 45° angle

Commercial data

| | |
|--------------------------------------|---------------|
| Item number | 2702289 |
| Packing unit | 1 pc |
| Minimum order quantity | 1 pc |
| Sales key | DR01 |
| Product key | DR11AA |
| GTIN | 4055626073323 |
| Weight per piece (including packing) | 563.9 g |
| Weight per piece (excluding packing) | 563.9 g |
| Customs tariff number | 85389091 |
| Country of origin | DE |

Technical data

Dimensions

| | |
|---------------------|--|
| Dimensional drawing |  |
| Width | 156 mm |
| Height | 141 mm |
| Depth | 57 mm |
| Note on dimensions | Specifications with connectors |

Interfaces

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 |

System properties

PROFINET

| | |
|-------------------|---|
| Device function | PROFINET device |
| Specification | Version 2.3 |
| Update rate | min. 1 ms (up to max. 512 ms, adjustable) |
| Conformance Class | C |

Input data

Digital:

| | |
|--------------------------------|--|
| Input name | Digital inputs |
| Description of the input | IEC 61131-2 types 1 and 3 |
| Number of inputs | 32 (16 fixed and 16 freely selectable) |
| Connection method | Inline connector |
| Connection technology | 3-conductor |
| 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 |
| Nominal input voltage U_{IN} | 24 V DC |

| | |
|-----------------------------------|---------------------|
| Nominal input current at U_{IN} | approx. 2.4 mA |
| Typical input current per channel | typ. 5 mA |
| Typical response time | approx. 500 μ s |

Output data

Digital:

| | |
|---|--|
| Output name | Digital outputs |
| Connection method | Inline connector |
| Connection technology | 2-conductor |
| Number of outputs | 16 |
| Protective circuit | Short-circuit and overload protection; Free-wheeling diode, integrated per channel |
| Output voltage | 24 V DC -1 V (At nominal current) |
| Limitation of the voltage induced on circuit interruption | -25.8 V ... -15 V |
| Maximum output current per channel | 500 mA |
| Maximum output current per module | 8 A |
| Nominal output voltage | 24 V DC |
| Output current when switched off | max. 300 μ A (When not loaded, a voltage can be measured even at an output that is not set.) |
| Nominal load, inductive | 12 VA (1.2 H, 48 Ω) |
| Nominal load, lamp | 12 W |
| Nominal load, ohmic | 12 W (48 Ω) |
| Reverse voltage resistance to short pulses | limited protection up to 0.5 A for 1 s |
| Behavior with overload | Auto restart |
| Behavior with inductive overload | Output can be destroyed |
| Behavior at voltage switch-off | The output follows the power supply without delay |
| Overcurrent shut-down | as of 0.7 A |

Product properties

| | |
|----------------------|--|
| Product type | I/O component |
| Product family | Inline |
| Type | Block design |
| Scope of supply | including Inline connector |
| Special properties | PROFINET, -IRT, -MRP, -Fast Startup |
| 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 |

Insulation characteristics

| | |
|----------------------|----|
| Overvoltage category | II |
|----------------------|----|

Electrical properties

Supply:

| | |
|----------------------|--|
| Designation | Logic (U_L) |
| Connection method | Inline connector |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current consumption | max. 75 mA |

Supply:

| | |
|----------------------|--|
| Designation | Sensor supply (U_{S1} , U_{S2}) |
| Connection method | Inline connector |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current consumption | max. 4 A (max. 2 A from U_{S1} and 2 A from U_{S2}) |

Supply:

| | |
|----------------------|--|
| Designation | Actuator supply (U_{A1} , U_{A2}) |
| Connection method | Inline connector |
| Supply voltage | 24 V DC |
| Supply voltage range | 19.2 V DC ... 30 V DC (including all tolerances, including ripple) |
| Current consumption | max. 8 A (max. 4 A from U_{A1} and 4 A from U_{A2}) |

Electrical isolation/isolation of the voltage ranges

| | |
|--|-------------------------|
| Test voltage: I/Os / logic | 500 V AC, 50 Hz, 1 min |
| Test voltage: I/O/functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: Logic/functional ground | 500 V AC, 50 Hz, 1 min |
| Test voltage: Ethernet interface signals / logic | 1500 V AC, 50 Hz, 1 min |

Connection data

Connection technology

| | |
|-----------------|------------------|
| Connection name | Inline connector |
|-----------------|------------------|

Inline connector

| | |
|-----------------------------------|--|
| Connection method | Spring-cage connection |
| Conductor cross-section, rigid | 0.08 mm ² ... 1.5 mm ² |
| Conductor cross-section, flexible | 0.08 mm ² ... 1.5 mm ² |
| Conductor cross-section AWG | 28 ... 16 |
| Stripping length | 8 mm |

Environmental and real-life conditions

Ambient conditions

| | |
|---------------------------------|---|
| Ambient temperature (operation) | -25 °C ... 60 °C |
| Degree of protection | IP20 |
| Air pressure (operation) | 80 kPa ... 108 kPa (up to 2000 m above sea level) |

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| | |
|--|---|
| Air pressure (storage/transport) | 66 kPa ... 108 kPa (up to 3500 m above sea level) |
| Ambient temperature (storage/transport) | -25 °C ... 85 °C |
| Permissible humidity (operation) | 10 % ... 95 % (non-condensing) |
| Permissible humidity (storage/transport) | 10 % ... 95 % (non-condensing) |

Standards and regulations

| | |
|------------------|---------------------------------------|
| Protection class | III (IEC 61140, EN 61140, VDE 0140-1) |
|------------------|---------------------------------------|

Mounting

| | |
|---------------|-------------------|
| Mounting type | DIN rail mounting |
|---------------|-------------------|

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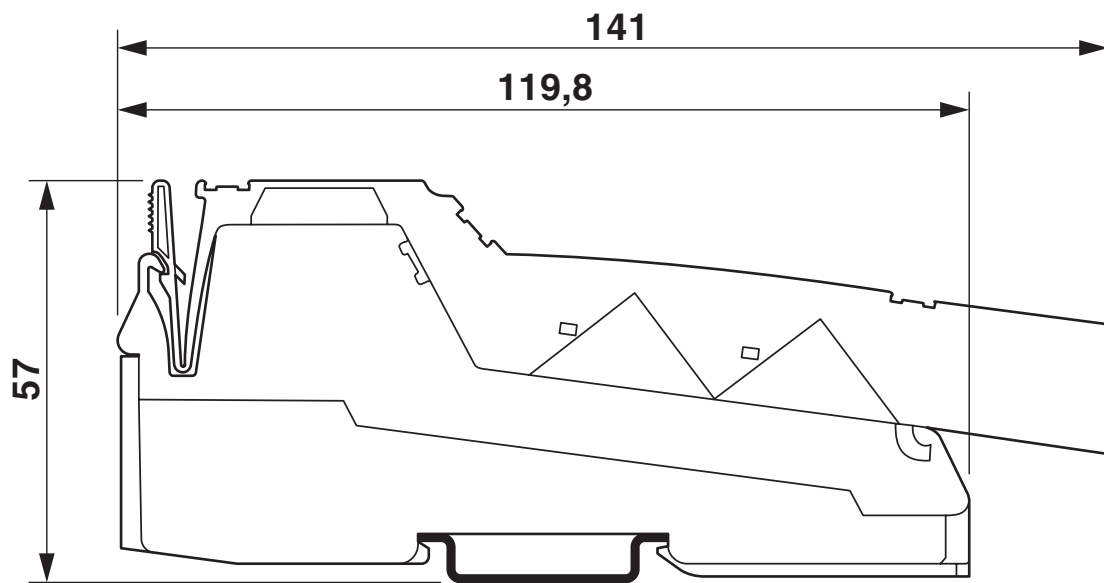


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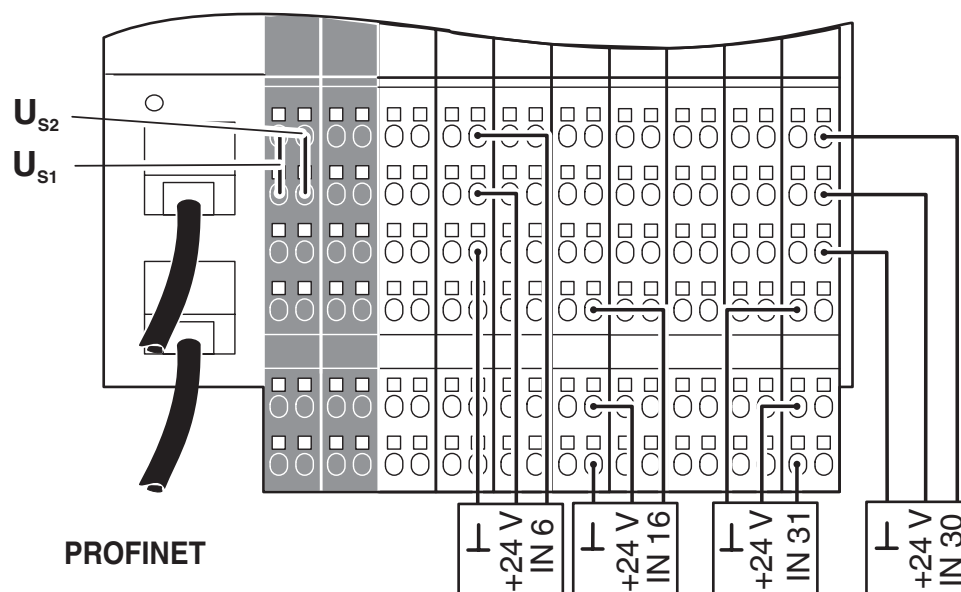
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Drawings

Dimensional drawing



Connection diagram



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Classifications

UNSPSC

| | |
|-------------|----------|
| UNSPSC 21.0 | 32151600 |
|-------------|----------|

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Environmental product compliance

EU RoHS

| | |
|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

| | |
|--|--|
| Environment friendly use period (EFUP) | EFUP-E |
| | No hazardous substances above the limits |

EU REACH SVHC

| | |
|-------------------------------------|----------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
|-------------------------------------|----------------------|

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