

IL PN BK DI8 DO4 2TX-PAC - Bus coupler



2703994

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Inline, Bus coupler, PROFINET, RJ45 jack, Digital inputs: 8, 24 V DC, connection technology: 3-conductor, Digital outputs: 4, 24 V DC, 500 mA, connection technology: 3-conductor, transmission speed in the local bus: 500 kbps / 2 Mbps, degree of protection: IP20

Product description

The bus coupler with integrated I/Os is intended for use within a PROFINET network and represents the link to the Inline I/O system. Up to 61 Inline devices can be connected to the bus coupler. The bus coupler supports a maximum of 16 PCP devices.

Your advantages

- 2 Ethernet ports (with integrated switch)
- Connection to the PROFINET network via 8-pos. RJ45 jack
- Conformance with PROFINET specification V2.3 (firmware 4.00 or later)
- PROFINET IRT (firmware 4.00 or later)
- Automatic detection of the transmission speed in the local bus (500 kbps or 2 Mbps)
- 8 digital inputs, 4 digital outputs (on-board)
- Approved for PROFIsafe applications

Commercial data

Item number	2703994
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DRI11A
Product key	DRI11A
Catalog page	Page 105 (C-6-2019)
GTIN	4046356041164
Weight per piece (including packing)	347,3 g
Weight per piece (excluding packing)	335,7 g
Customs tariff number	85176200
Country of origin	DE

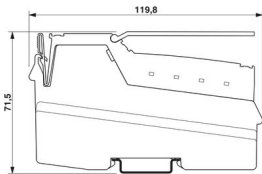
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Technical data

Dimensions

Dimensional drawing	
Width	80 mm
Height	119.8 mm
Depth	71.5 mm
Note on dimensions	Specifications with connectors

Notes

Utilization restriction	
CCCex note	Use in potentially explosive areas is not permitted in China.

Interfaces

PROFINET	
Number of interfaces	2
Connection method	RJ45 jack
Note on the connection method	Auto negotiation and autocrossing
Transmission speed	100 Mbps (acc. to PROFINET standard)
Transmission physics	Ethernet in RJ45 twisted pair
Inline local bus	
Connection method	Inline data jumper
Transmission speed	500 kbps / 2 Mbps (automatic detection, no combined system)

System properties

System limits	
Number of supported devices	max. 63 (per station)
Number of local bus devices that can be connected	max. 61 (The on-board I/Os are two devices)
Number of devices with parameter channel	max. 16
Number of supported branch terminals with remote bus branch	0
PROFINET	
Device function	PROFINET device
Update rate	min. 1 ms (depending on the size of the bus system)
Module	
ID code (hex)	none

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Input address area	8 bit
Output address area	4 bit
Register length	16 bit

Input data

Digital

Input name	Digital inputs
Description of the input	EN 61131-2 type 1
Number of inputs	8
Connection method	Inline connector
Connection technology	3-conductor
Input voltage	24 V DC
Input voltage range "0" signal	-30 V DC ... 5 V DC
Input voltage range "1" signal	15 V DC ... 30 V DC
Nominal input voltage U_{IN}	24 V DC
Nominal input current at U_{IN}	typ. 3 mA
Typical input current per channel	typ. 3 mA
Typical response time	approx. 500 μ s
Filter time	3 ms
Delay at signal change from 0 to 1	5 ms
Delay at signal change from 1 to 0	5 ms

Output data

Digital

Output name	Digital outputs
Connection method	Inline connector
Connection technology	3-conductor
Number of outputs	4
Protective circuit	Short-circuit and overload protection; Freewheeling circuit in the output driver
Output voltage	24 V DC -1 V (At nominal current)
Maximum output current per module	max. 2 A
Nominal output voltage	24 V DC
Output current when switched off	max. 10 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
Reverse voltage resistance to short pulses	Reverse voltage proof
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
Signal delay	typ. 1.2 ms
Overcurrent shut-down	min. 0.7 A

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Product properties

Type	modular
Product type	I/O component
Product family	Inline
No. of channels	12
Diagnostics messages	Short-circuit or overload of the digital outputs yes
	Sensor supply failure yes
	Failure of the actuator supply yes

Insulation characteristics

Overvoltage category	II (IEC 60664-1, EN 60664-1)
Pollution degree	2 (IEC 60664-1, EN 60664-1)

Electrical properties

No. of channels	12
Maximum power dissipation for nominal condition	max. 3.3 W

Potentials

Power consumption	typ. 3 W (entire device)
Protective circuit	Surge protection (segment supply, main supply, bus coupler supply); Suppressor diode, 35 V DC
	Reverse polarity protection (segment supply, main supply, bus coupler supply); Suppressor diode, 35 V DC

Potentials: Bus coupler supply U_{BK} ; Communications power U_L (7.5 V) and the analog supply U_{ANA} (24 V) are generated from the bus coupler supply.

Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 0.91 A (with max. number of connected I/O terminal blocks)
	typ. 138 mA

Potentials: Communications power (U_L)

Supply voltage	7.5 V DC
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Potentials: Supply of analog modules (U_{ANA})

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)

Potentials: Main circuit supply (U_M)

Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 8 A DC
	min. 3 mA (without connected peripherals)

Potentials: Segment circuit supply (U_S)

Supply voltage	24 V DC (via Inline connector)
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)

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Current draw	max. 8 A DC
	min. 3 mA (without connected peripherals)

Electrical isolation/isolation of the voltage ranges

Test voltage: PROFINET interface 1 / PROFINET interface 2	500 V AC, 50 Hz, 1 min.
Test voltage: PROFINET interface 1 / communications power (U_{BK} , U_L , U_{ANA})	500 V AC, 50 Hz, 1 min.
Test voltage: PROFINET interface 1 / I/O (U_M , U_S)	500 V AC, 50 Hz, 1 min.
Test voltage: PROFINET interface 1 / functional ground	500 V AC, 50 Hz, 1 min.
Test voltage: PROFINET interface 2 / communications power (U_{BK} , U_L , U_{ANA})	500 V AC, 50 Hz, 1 min.
Test voltage: PROFINET interface 2 / I/O (U_M , U_S)	500 V AC, 50 Hz, 1 min.
Test voltage: PROFINET interface 2 / functional ground	500 V AC, 50 Hz, 1 min.
Test voltage: Communications power (U_{BK} , U_L , U_{ANA}) / I/O (U_M , U_S)	500 V AC, 50 Hz, 1 min.
Test voltage: Communications power (U_{BK} , U_L , U_{ANA}) / functional ground	500 V AC, 50 Hz, 1 min.
Test voltage: I/O (U_M , U_S) / functional ground	500 V AC, 50 Hz, 1 min.

Connection data

Connection technology

Connection name	Inline connector
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Conductor connection

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

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 ... 55 °C (observe derating)
Degree of protection	IP20
Air pressure (operation)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Air pressure (storage/transport)	70 kPa ... 106 kPa (up to 3000 m above sea level)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

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Standards and regulations

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

Mounting type	DIN rail mounting
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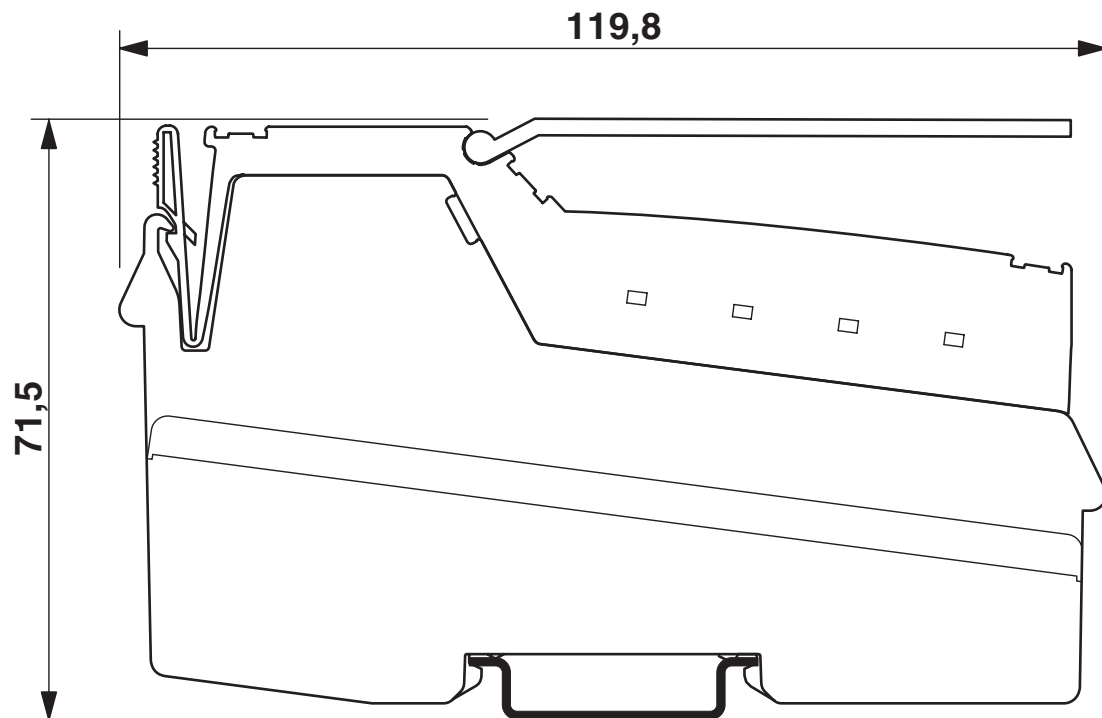


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Drawings

Dimensional drawing



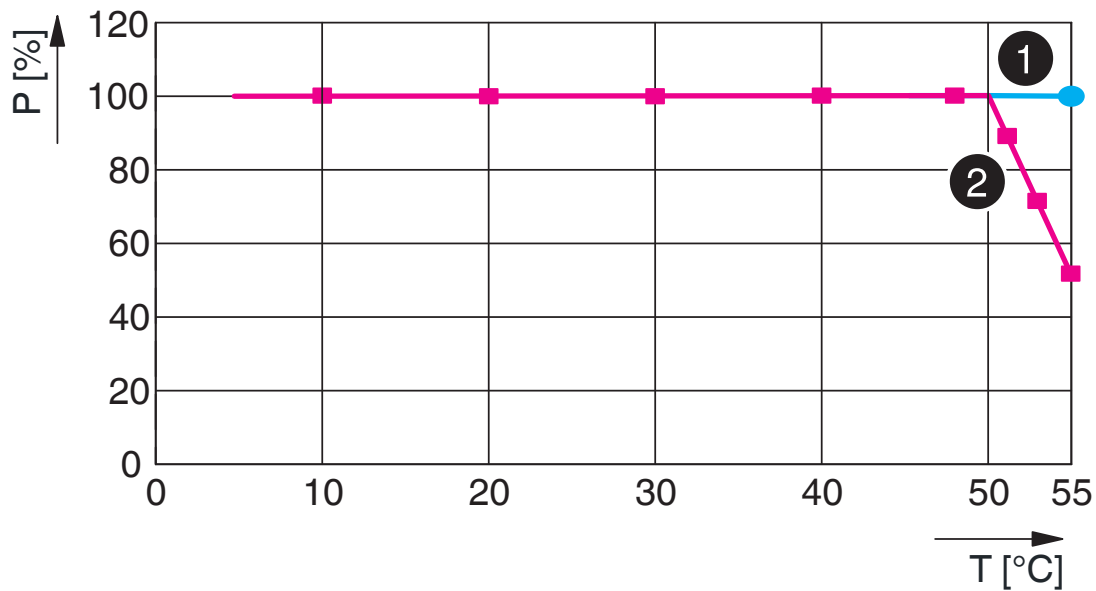
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Diagram



Derating for different mounting positions

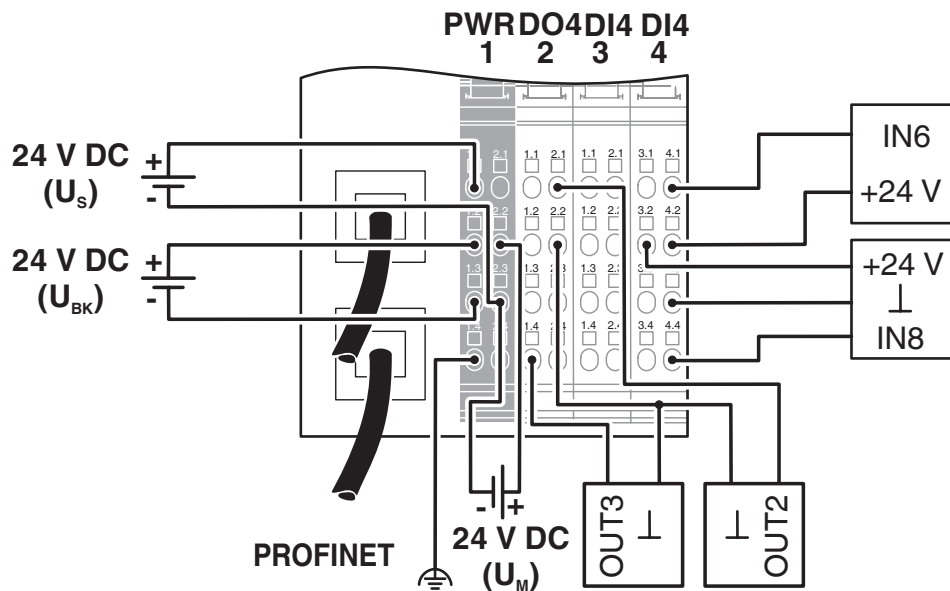
1 - Mounting on a horizontal DIN rail

2 - Other mounting positions

P [%] Power dissipation as a percentage

T [°C] Temperature in °C

Connection diagram



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Approvals

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DNV GL

Approval ID: TAA00000BN



LR

Approval ID: LR22191720TA



UL Listed

Approval ID: FILE E 140324



cUL Listed

Approval ID: FILE E 140324



RINA

Approval ID: ELE121121XG

ABS

Approval ID: 22-2226444-PDA

PROFINET

Approval ID: Z10506

UAE-RoHS

Approval ID: 22-04-13087



cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27242608
ECLASS-12.0	27242608
ECLASS-13.0	27242608

ETIM

ETIM 9.0	EC001604
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UNSPSC

UNSPSC 21.0	32151600
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Environmental product compliance

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

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