

# Safety module - IB IL 24 PSDO 8-PAC



2985631

<https://www.phoenixcontact.com/us/products/2985631>

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Safety-related digital output module, IP20 degree of protection, for SafetyBridge, INTERBUS-Safety, and PROFIsafe systems. The module has four safe digital outputs for two-channel assignment or eight safe digital outputs for single-channel assignment

## Product Description

The safety module is an output module from the Inline product range designed for use at any point within a SafetyBridge, INTERBUS-Safety or PROFIsafe system. The transmission speed of the safety module can be set to 500 kBaud or 2 Mbaud using a switch. One transmission speed must be used consistently within a station. The module has four safe digital outputs for two-channel assignment or eight digital outputs for single-channel assignment.

## Your advantages

- SIL 3 according to IEC 61508/EN 61508
- SIL 3 in accordance with EN 62061
- PL e in accordance with EN ISO 13849-1

## Commercial Data

Item number	2985631
Packing unit	1 pc
Minimum order quantity	1 pc
Note	Made to Order (non-returnable)
Sales Key	C18
Product Key	DNA431
Catalog Page	Page 267 (C-6-2019)
GTIN	4046356131605
Weight per Piece (including packing)	341 g
Weight per Piece (excluding packing)	245.6 g
Customs tariff number	85389091
Country of origin	DE

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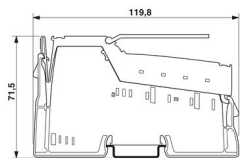
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## Technical Data

### Dimensions

Dimensional drawing	
Width	48.8 mm
Height	119.8 mm
Depth	71.5 mm
Note on dimensions	Housing dimensions

### Material specifications

Color	yellow
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### Interfaces

#### Inline local bus

No. of channels	2
Connection method	Inline data jumper
Transmission speed	500 kbps / 2 Mbps (can be switched)

### System properties

#### Module

ID code (dec.)	167
ID code (hex)	A7
Length code (hex)	04
Length code (dec)	04
Process data channel	8 Byte
Input address area	8 Byte ((Operating mode: SafetyBridge))
Output address area	8 Byte ((Operating mode: SafetyBridge))
Register length	8 Byte
Required parameter data	1 Byte ((Operating mode: SafetyBridge))
Required configuration data	5 Byte ((Operating mode: SafetyBridge))

### Output data

#### Digital

Output name	Digital outputs
Connection method	Spring-cage connection
Connection technology	2-, 3-conductor

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Number of outputs	4 (for 2-channel assignment)
	8 (for 1-channel assignment)
Number of outputs	8
Protective circuit	Overload protection, short-circuit protection of outputs
Output voltage	24 V DC ( $U_S - 1\text{ V}$ )
Output current	max. 6 A (Total current of all outputs, $-25\text{ °C} \dots 50\text{ °C}$ )
	max. 4 A (Total current of all outputs, $>50\text{ °C} \dots 55\text{ °C}$ )
Maximum output current per group	3 A
Maximum output current per channel	2 A
Maximum output current per module	3 A (See technical data)
Nominal output voltage	24 V DC
Nominal load, inductive	see safety data
Nominal load, lamp	see safety data
Nominal load, ohmic	see safety data
Behavior with inductive overload	Output can be destroyed

## Product properties

Type	modular
Product type	I/O component
Application	Functional safety
Diagnostics messages	Short-circuit or overload of the digital outputs Error message in diagnostics code (bus) and display by means of the LED on the motor

## Electrical properties

Maximum power dissipation for nominal condition	144 W
Transmission medium	Copper

### Potentials: Communications power ( $U_L$ )

Supply voltage	7.5 V DC (see safety data)
Current draw	max. 230 mA (see safety data)

### Potentials: Main circuit supply ( $U_M$ )

Supply voltage	24 V DC
Supply voltage range	19.2 V DC ... 30 V DC (including all tolerances, including ripple)
Current draw	max. 6.03 A
	typ. 30 mA (all outputs set including actuator current)

### Supply: Module electronics

Supply voltage	24 V DC (via voltage jumper)
Supply voltage range	19.2 V DC ... 30 V DC

## Connection data

### Connection technology

Connection name	Inline connector
pluggable	yes

## Conductor connection

Connection method	Spring-cage connection
Conductor cross section solid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 16

## Inline connector

Connection method	Spring-cage connection
Conductor cross section, rigid	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section, flexible	0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>
Conductor cross section AWG	24 ... 16

## Ambient conditions

Ambient temperature (operation)	-25 °C ... 55 °C
Degree of protection	IP20
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)
Ambient temperature (storage/transport)	-25 °C ... 70 °C
Permissible humidity (operation)	10 % ... 85 % (Take suitable measures against increased air humidity within the permitted temperature range.)
Permissible humidity (storage/transport)	10 % ... 85 % (Take suitable measures against increased air humidity within the permitted temperature range.)

## Standards and regulations

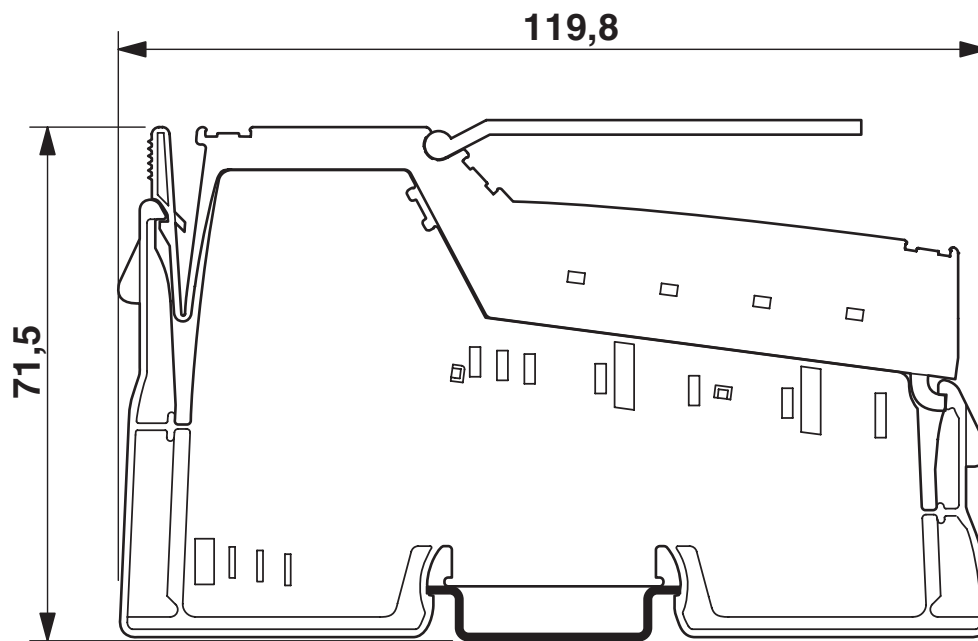
Protection class	III (IEC 61140, EN 61140, VDE 0140-1)
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## Mounting

Mounting type	DIN rail mounting
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## Drawings

Dimensional drawing



Dimensions (in mm)

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## Approvals



### UL Listed

Approval ID: FILE E 140324



### cUL Listed

Approval ID: FILE E 140324



### Functional Safety

Approval ID: 968/FSP 2449.00/22



### Functional Safety

Approval ID: 968/FSP 2449.00/22

### PROFIsafe

Approval ID: Z20081

### PROFIsafe

Approval ID: Z20209



### Functional Safety

Approval ID: 968/EZ 650.02/17



### Functional Safety

Approval ID: 968/EZ 650.04/20



### Functional Safety

Approval ID: 968/EZ 650.04/20

### cULus Listed

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## Classifications

### ECLASS

ECLASS-9.0	27242604
ECLASS-10.0.1	27242604
ECLASS-11.0	27242604

### ETIM

ETIM 8.0	EC001599
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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 = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

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## Accessories

### Connector set

Connector set - IB IL 24 SDO 8-PLSET/CP - 2916927

<https://www.phoenixcontact.com/us/products/2916927>

Connector set (yellow), color coded, for safe SDO boards.



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### Labeling field

Labeling field - IB IL FIELD 2 - 2727501

<https://www.phoenixcontact.com/us/products/2727501>

Labeling field, width: 12.2 mm



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## Labeling field

Labeling field - IB IL FIELD 8 - 2727515

<https://www.phoenixcontact.com/us/products/2727515>

Labeling field, width: 48.8 mm



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## Insert strip

Insert strip - ESL 62X10 - 0809492

<https://www.phoenixcontact.com/us/products/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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## Insert strip

Insert strip - ESL 62X46 - 0809502

<https://www.phoenixcontact.com/us/products/0809502>

Insert strip, Sheet, white, unlabeled, can be labeled with: Office printing systems: Laser printer, mounting type: insert, lettering field size: 62 x 46 mm, Number of individual labels: 15



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## Filter terminal block

Filter terminal block - PSR-FTB/20/86 - 2904477

<https://www.phoenixcontact.com/us/products/2904477>

Terminal block for filtering test pulses from safe semiconductor outputs with adjustable filter values (20  $\mu$ F/86  $\mu$ F), as well as for EMC filtering of 24 V signals up to an amperage of 2 A.



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## Filter terminal block

Filter terminal block - PSR-FTB/1.5/11.5 - 2904476

<https://www.phoenixcontact.com/us/products/2904476>



Terminal block for filtering test pulses from safe semiconductor outputs with adjustable filter values ( $1.5 \mu\text{F}/11.5 \mu\text{F}$ ), as well as for EMC filtering of 24 V signals up to an amperage of 2 A.

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