



## ▶ PNOZ m EF 8DI4DO

**PILZ**  
THE SPIRIT OF SAFETY

Operating Manual-1002661-EN-08

- Configurable, safe small controllers PNOZmulti 2



This document is a translation of the original document.

Where unavoidable, for reasons of readability, the masculine form has been selected when formulating this document. We do assure you that all persons are regarded without discrimination and on an equal basis.

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SD means Secure Digital

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# 1 Introduction

## 1.1 Validity of documentation

This documentation is valid for the product PNOZ m EF 8DI4DO. It is valid until new documentation is published.

This operating manual explains the function and operation, describes the installation and provides guidelines on how to connect the product.

## 1.2 Using the documentation

This document is intended for instruction. Only install and commission the product if you have read and understood this document. The document should be retained for future reference.

## 1.3 Definition of symbols

Information that is particularly important is identified as follows:



### **DANGER!**

This warning must be heeded! It warns of a hazardous situation that poses an immediate threat of serious injury and death and indicates preventive measures that can be taken.



### **WARNING!**

This warning must be heeded! It warns of a hazardous situation that could lead to serious injury and death and indicates preventive measures that can be taken.



### **CAUTION!**

This refers to a hazard that can lead to a less serious or minor injury plus material damage, and also provides information on preventive measures that can be taken.



### **NOTICE**

This describes a situation in which the product or devices could be damaged and also provides information on preventive measures that can be taken. It also highlights areas within the text that are of particular importance.



**INFORMATION**

This gives advice on applications and provides information on special features.

## 2 Overview

### 2.1 Scope of supply

- ▶ Expansion module PNOZ m EF 8DI4DO
- ▶ Jumper

### 2.2 Product features

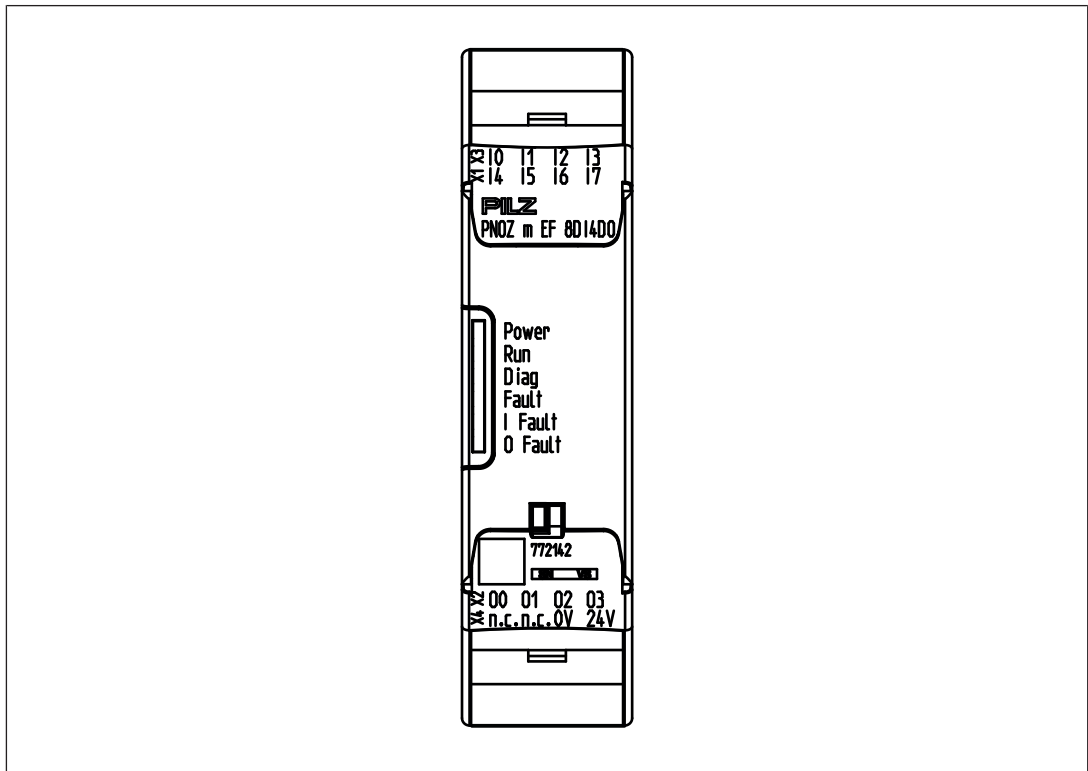
Application of the product PNOZ m EF 8DI4DO:

Expansion module for connection to a base unit from the PNOZmulti 2 system.

The product has the following features:

- ▶ Can be configured in the PNOZmulti Configurator
- ▶ Semiconductor outputs:
  - 4 safety outputs  
depending on the application, up to PL e of EN ISO 13849-1 and up to SIL 3 of EN IEC 62061
- ▶ 8 inputs for connecting, for example:
  - Emergency stop pushbuttons
  - Two-hand pushbuttons
  - Safety gate limit switches
  - Start buttons
  - Light barriers
  - Scanner
  - Enabling switches
  - PSEN
  - Operating mode selector switches
- ▶ LED display for:
  - Error messages
  - Diagnostics
  - Supply voltage
  - Output circuits
  - Input circuits
- ▶ Test pulse outputs used to monitor shorts across the inputs
- ▶ Monitoring of shorts between the safety outputs
- ▶ Plug-in connection terminals:
  - Either spring-loaded terminal or screw terminal available as accessories (see Order references)
- ▶ Please refer to the document "PNOZmulti System Expansion" for details of the base units PNOZmulti 2 that can be connected.

## 2.3 Front view



Key:

- ▶ 0 V, 24 V: Supply connections
- ▶ Inputs I0 – I7
- ▶ Outputs O0 – O3
- ▶ LEDs:
  - POWER
  - Run
  - Diag
  - Fault
  - I Fault
  - O Fault

## 3 Safety and Security

### 3.1 Intended use

#### 3.1.1 Product

The expansion module may only be connected to a base unit from the configurable system PNOZmulti 2 (please refer to the document "PNOZmulti System Expansion" for details of the base units that can be connected).

#### 3.1.2 Application ranges

The configurable system PNOZmulti 2 is used for the safety-related interruption of safety circuits and is designed for use in:

- ▶ Emergency stop equipment
- ▶ Safety circuits in accordance with VDE 0113 Part 1 and EN 60204-1

##### Lifts Directive

The product can be used as a PESSRAL (programmable electronic system in safety-related applications for lifts) in accordance with the Lifts Directive 2014/33/EU. It meets the requirements for passenger and goods lifts in accordance with EN 81-1/2, EN 81-20, EN 81-22 and EN 81-50, as well as the requirements for escalators and moving walks in accordance with EN 115-1.

The safety controller should be installed in a protected environment that meets at least the requirements of pollution degree 2.

Example: a protected indoor space or control cabinet with a protection type of IP54 and appropriate climate control.

##### Use in furnaces

The product PNOZ m EF 8DI4DO can be used in furnaces in accordance with EN 298. Please note:

- ▶ To protect against transient power failures (EN 61000-4-11) the AC power supply used for the system must meet a secondary buffering for 20 ms.
- ▶ If the system is used in a DC network, sufficient surge voltage protection must be ensured.  
To limit surge voltage, use external protection elements with the following minimum properties:  
Installation class 4 / test level 4 in accordance with EN 61000-4-5 (4kV 1.2/50 µs)

##### Regulation on appliances burning gaseous fuels (EU) 2016/426

The product PNOZ m EF 8DI4DO fulfils the requirements of the Regulation on appliances burning gaseous fuels (EU) 2016/426 and it can be used as an equipment under the terms of the directive.

### 3.1.3 Application conditions



#### NOTICE

##### EMC-compliant electrical installation

The product is designed for use in an industrial environment. The product may cause interference if installed in other environments. If installed in other environments, measures should be taken to comply with the applicable standards and directives for the respective installation site with regard to interference.



#### CAUTION!

Inputs and outputs for standard functions must not be used for safety-related applications.

### 3.1.4 Use of qualified personnel

The products may only be assembled, installed, programmed, commissioned, operated, de-commissioned and maintained by persons who are competent to do so.

A competent person is a qualified and knowledgeable person who, because of their training, experience and current professional activity, has the specialist knowledge required. In order to inspect, assess and handle products, devices, systems, plant and machinery, this person must be familiar with the state of the art and the applicable national, European and international laws, directives and standards.

It is the company's responsibility only to employ personnel who

- ▶ Are familiar with the basic regulations concerning health and safety / accident prevention,
- ▶ Have read and understood the section on "Safety" in this description and
- ▶ Have a good knowledge of the generic and specialist standards applicable to the specific application.

### 3.1.5 Prerequisites for operation

This document is intended for instruction. Only install and commission the product if you have read and understood this document.

Only approved accessories and approved consumables may be used.

### 3.1.6 Specific measures for intended use




#### NOTICE

The safety functions should be checked after initial commissioning and each time the plant/machine is changed. The safety functions may only be checked by qualified personnel.

### 3.1.7 Improper use

The following is deemed improper use in particular:

- ▶ Any component, technical or electrical modification to the product,
- ▶ Use of the product outside the areas described in this operating manual,
- ▶ Use of the product outside the technical details (see chapter entitled [Technical Details](#) [ 24]).

### 3.1.8 Security environment

The product must be located in an environment in which physical access to the product and data cables is adequately prevented by mechanical and organisational measures. For example, this can be achieved by installing the product in a lockable control cabinet or in a sufficiently secure machine enclosure.

If the product is operated outside a machine enclosure or control cabinet or if wired communication connections run outside, organisational measures must be taken to ensure that only authorised personnel have physical access to the product. This can be achieved, for example, by controlling access to the workshop.

Further information on Security can be found under General security information and Security measures.

### 3.1.9 Third-party manufacturer licence information

This product includes Open Source software with various licenses.

Further information is available in the document "Third-party manufacturer licence information PNOZ m EF 8DI4DO" (document number 1006353) at [www.pilz.com](http://www.pilz.com).

## 3.2 System requirements

Please refer to the "Product Modifications PNOZmulti" document in the "Version overview" section for details of which versions of the base unit and PNOZmulti Configurator can be used for this product.

## 3.3 Safety regulations

### 3.3.1 Applicable documentation

This document includes only part of the information required for the use of the product. To understand and correctly use the product you must read further documents.

Please read the following documents:

- ▶ "PNOZmulti Safety Manual" (document number 21103)
- ▶ "PNOZmulti Installation Manual" (document number 1002265)
- ▶ The advanced functions of the device are described in the online help for the PNOZmulti Configurator, in the document "PNOZmulti 2 Communication Interfaces" and in the document "PNOZmulti Special Applications". Only use these functions once you have read and understood the documentation.

- ▶ The connectable PNOZmulti base units, the max. number of connectable modules and the system reaction times can be taken from the document "PNOZmulti System Expansion" (document number 1002217).

### 3.3.2 Safety assessment

Before using the product, a risk assessment is required in accordance with the Machinery Regulation.

Connecting additional units may result in further risks. Take the necessary measures to protect against corruption.

The product as an individual component fulfils the functional safety requirements in accordance with EN/IEC 61508, EN ISO 13849-1/2 and EN IEC 62061. However, this does not guarantee the functional safety of the overall plant/machine. To achieve the relevant safety level of the overall plant/machine's required safety functions, each safety function needs to be considered separately.

It is the responsibility of the user/operator to carry out a risk assessment for their application, in which they consider the impact of assumed errors in the wiring and take appropriate measures to control or avoid these errors.

### 3.3.3 Warranty and liability

All claims to warranty and liability will be rendered invalid if

- ▶ The product was used contrary to the purpose for which it is intended,
- ▶ Damage can be attributed to not having followed the guidelines in the manual,
- ▶ Operating personnel are not suitably qualified,
- ▶ Any type of modification has been made (e.g. exchanging components on the PCB boards, soldering work etc.).

### 3.3.4 For your safety

The unit meets all the necessary conditions for safe operation. However, you should always ensure that the following safety requirements are met:

- ▶ This operating manual only describes the basic functions of the unit. The expanded functions are described in the PNOZmulti Configurator's online help. Only use these functions once you have read and understood the documentations.
- ▶ Do not open the housing or make any unauthorised modifications.
- ▶ Please make sure you shut down the supply voltage when performing maintenance work (e.g. exchanging contactors).

## 3.4 General security information

To protect plants, systems, machines and networks against cyberthreats it is necessary to implement (and continuously maintain) an overall Industrial Security concept that is state of the art.

Carry out a risk assessment in accordance with VDI/VDE 2182 or IEC 62443-3-2 and plan the security measures with care.

If you have any questions about implementation, please contact technical support at [support@pilz.com](mailto:support@pilz.com).

You can reach the Pilz Product Security Incident Response Team (PSIRT) at <https://www.pilz.com/psirt>.

With regard to a Pilz product, this is where you can:

- ▶ Report security vulnerabilities and security incidents
- ▶ Ask questions about security vulnerabilities and security incidents
- ▶ View Security Advisories

## **3.5 Security measures**

### **3.5.1 Required security measures**

- ▶ The product is not protected from physical manipulation or from reading of memory contents during physical access. Use appropriate measures to ensure that there is no physical access by unauthorised persons. You should also use security seals so that you can detect any manipulation of the product or interfaces. Installation inside a lockable control cabinet is recommended as a minimum measure.

## 4 Function description

### 4.1 Integrated protection mechanisms

The relay meets the following safety requirements:

- ▶ The circuit is redundant with built-in self-monitoring.
- ▶ The safety device remains effective in the case of a component failure.
- ▶ The safety outputs are tested periodically using a disconnection test.

### 4.2 Functions

The expansion module provides additional inputs and additional semiconductor outputs.

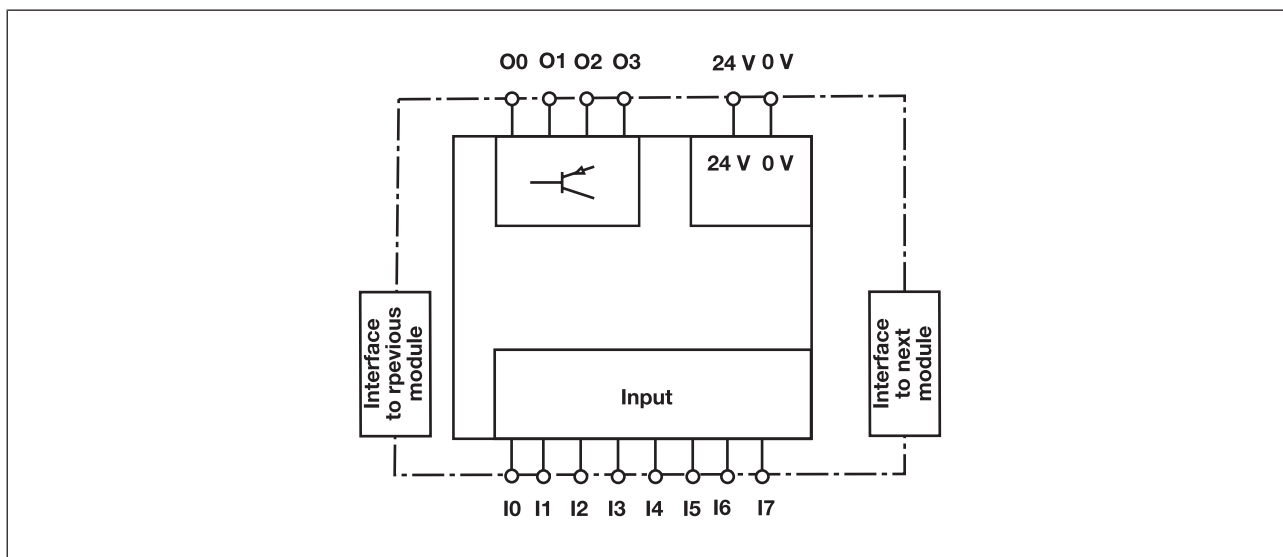
The function of the inputs and outputs on the control system depends on the safety circuit created using the PNOZmulti Configurator. A removable data medium is used to download the safety circuit to the base unit. The base unit has 2 microcontrollers that monitor each other. They evaluate the input circuits on the base unit and expansion modules and switch the outputs on the base unit and expansion modules accordingly.

The online help on the PNOZmulti Configurator contains descriptions of the operating modes and all the functions of the PNOZmulti control system, plus connection examples.

### 4.3 System reaction time

Calculation of the maximum reaction time between an input switching off and a linked output in the system switching off is described in the document "PNOZmulti System Expansion".

### 4.4 Block diagram



## 5 Installation

### 5.1 General installation guidelines

- ▶ The unit should be installed in a control cabinet with a protection type of at least IP54.
- ▶ Install the system vertically on to a horizontal mounting rail. The venting slots must face upward and downward. Other mounting positions could damage the safety system.
- ▶ Use the locking elements on the rear of the unit to attach it to a mounting rail.
- ▶ In environments exposed to heavy vibration, the unit should be secured using a fixing element (e.g. retaining bracket or end angle).
- ▶ Open the locking slide before lifting the unit from the mounting rail.
- ▶ To comply with EMC requirements, the mounting rail must have a low impedance connection to the control cabinet housing.
- ▶ The ambient temperature in the control cabinet must not exceed the figure stated in the technical details. otherwise air conditioning may be required.

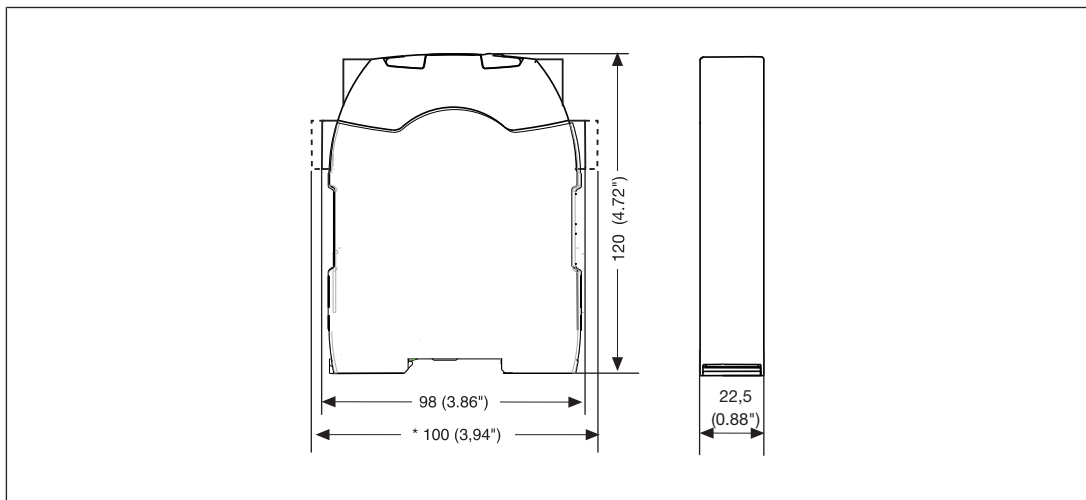


#### NOTICE

#### Damage due to electrostatic discharge!

Electrostatic discharge can damage components. Ensure against discharge before touching the product, e.g. by touching an earthed, conductive surface or by wearing an earthed armband.

### 5.2 Dimensions in mm



### 5.3 Connecting the base unit and expansion modules

Connect the base unit and the expansion modules as described in the operating manuals for the base modules.

- ▶ The terminator must be fitted to the last expansion module
- ▶ Install the expansion module in the position configured in the PNOZmulti Configurator.

The position of the expansion modules is defined in the PNOZmulti Configurator. The expansion modules are connected to the left or right of the base unit, depending on the type. Please refer to the document "PNOZmulti System Expansion" for details of the number of modules that can be connected to the base unit and the module types.



**CAUTION!**

**Please note:**

Only connect the expansion modules on the slot stated in the document "System expansion", otherwise the expansion module may be destroyed as a result.

## 6 Commissioning

### 6.1 General wiring guidelines

The wiring is defined in the circuit diagram of the PNOZmulti Configurator.

Please note:

- ▶ Information given in the [Technical details \[24\]](#) must be followed.
- ▶ The position of the expansion module is specified in the Hardware configuration of the PNOZmulti Configurator.
- ▶ Use copper wiring with a temperature stability of 75 °C.
- ▶ The power supply must meet the regulations for extra low voltages with protective separation (SELV/PELV).

### 6.2 Connection

Supply voltage	DC

Supply voltage

Input circuit	Single-channel	Dual-channel
Example: Emergency stop without detection of shorts across contacts		
Example: Emergency stop with detection of shorts across contacts		

Connection examples for the input circuit

<p>Redundant output</p>		
<p>Single output</p>		
<p>Single output with advanced fault detection*</p>		

Connection examples for semiconductor outputs

\*Two loads may be connected to each safety output with advanced fault detection, even on applications in accordance with EN IEC 62061, SIL 3. Prerequisite: Feedback loop is connected, shorts across contacts and external power sources are excluded (e.g. through separate multicore cables). Please note that, in the event of an error in the feedback loop, the safety system switches to a safe state and shuts down **all** outputs.

<p>Feedback loop</p>	<p>Redundant output</p>
<p>Contacts from external contactors</p>	

Connection examples for feedback loop

### 6.3 Download modified project to the PNOZmulti system

As soon as an additional expansion module has been connected to the system, the project must be amended in the PNOZmulti Configurator and downloaded back into the base unit. Proceed as described in the operating manual for the base unit.



**NOTICE**

For the commissioning and after every user program change, you must check whether the safety devices are functioning correctly.

# 7 Operation

## Prerequisites

- ▶ The product is configured in the PNOZmulti 2 project.
- ▶ The product is installed and wired correctly.
- ▶ You have read the chapter on Safety and Security and complied with the requirements.




## Procedure


















- ▶ Switch off the supply voltage on the base unit.




The PNOZmulti system is ready for operation when the "POWER" and "RUN" LEDs on the base unit are lit continuously.

## 7.1 LED indicators

### Legend

-  LED on
-  LED flashes
-  LED off

LED						Error
POWER	Run	Diag	Fault	IFault	OFault	
						No supply voltage
						Expansion module PNOZ m EF 8DI4DO running without error.
						Expansion module PNOZ m EF 8DI4DO is in a STOP condition.
						Internal error on the expansion module PNOZ m EF 8DI4DO or on the overall system. Expansion module is in a safe condition.
						External error on the expansion module PNOZ m EF 8DI4DO or on the overall system. Expansion module is in a safe condition.
						Internal error on the inputs of the expansion module PNOZ m EF 8DI4DO. Expansion module is in a safe condition, e.g. pulse error.
						Internal error on the outputs of the expansion module PNOZ m EF 8DI4DO. Expansion module is in a safe condition.
						External error on the inputs of the expansion module PNOZ m EF 8DI4DO. Expansion module is in a safe condition.
						External error on the outputs of the expansion module PNOZ m EF 8DI4DO. Expansion module is in a safe condition, e.g. defective feedback loop.

LED						Error
						External error on the outputs of the expansion module PNOZ m EF 8DI4DO. Expansion module is in a safe condition, e.g. short across contacts.

## 8 Maintenance and testing

It is not necessary to perform maintenance work on the product in normal operation.

- ▶ Please return any faulty product to Pilz.

## 9 Decommissioning



### INFORMATION

If you take the product PNOZ m EF 8DI4DO out of operation, no further security measures are required. There is no need to delete user data, remove passwords or restore factory settings.

### 9.1 Disposal

- ▶ In safety-related applications, please comply with the mission time  $T_M$  stated in the safety-related characteristic data.
- ▶ When decommissioning, please comply with local regulations regarding the disposal of electronic devices (e.g. Electrical and Electronic Equipment Act).

## 10 Technical details

Where standards are undated, the 2026-01 valid editions apply.

<b>General</b>	
Certifications	<b>CE, EAC, KOSHA, TÜV, UKCA, cULus Listed</b>
Application range	<b>Failsafe</b>
Module's device code	<b>00E0h</b>
<b>Electrical data</b>	
Supply voltage	
for	<b>Supply to the SC outputs</b>
Voltage	<b>24 V</b>
Kind	<b>DC</b>
Voltage tolerance	<b>-20 %/+25 %</b>
Max. continuous current that the external power supply must provide	<b>8 A</b>
External unit fuse protection F2	<b>10 A, circuit breaker 24 VDC, characteristic B/C / 10 A, 60 VDC, SCCR: 10 kA, [UL 498/CSA C22.2 No. 5, DIVQ/7]</b>
Potential isolation	<b>Yes</b>
Supply voltage	
for	<b>Module supply</b>
internal	<b>Via base unit</b>
Voltage	<b>24 V</b>
Kind	<b>DC</b>
Max. current consumption	<b>39 mA</b>
Power consumption	<b>1 W</b>
Max. power dissipation of module	<b>4,5 W</b>
Status indicator	<b>LED</b>
Permitted loads	<b>inductive, capacitive, resistive</b>
<b>Inputs</b>	
Quantity	<b>8</b>
Input voltage in accordance with EN 61131-2 Type 1	<b>24 V DC</b>
Input current at rated voltage	<b>5 mA</b>
Input current range	<b>2,5 - 5,3 mA</b>
Pulse suppression	<b>0,5 ms</b>
Maximum input delay	<b>8 ms</b>
Potential isolation	<b>No</b>
<b>Semiconductor outputs</b>	
Number of positive-switching single-pole semiconductor outputs	<b>4</b>
Switching capability	
Voltage	<b>24 V</b>
Typ. output current at "1" signal and rated voltage of semiconductor output	<b>2 A</b>
Permitted current range	<b>0,000 - 2,500 A</b>

### Semiconductor outputs

Residual current at "0" signal	<b>0,05 mA</b>
Max. transient pulsed current	<b>12 A</b>
Max. capacitive load	<b>1 µF</b>
Max. internal voltage drop	<b>500 mV</b>
Max. duration of off time during self test	<b>330 µs</b>
Switch-off delay	<b>3 ms</b>
Potential isolation	<b>Yes</b>
Short circuit-proof	<b>Yes</b>

### Environmental data

Ambient temperature	
in accordance with the standard	<b>EN 60068-2-14</b>
Temperature range	<b>0 - 60 °C</b>
Forced convection in control cabinet off	<b>55 °C</b>
Storage temperature	
in accordance with the standard	<b>EN 60068-2-1/-2</b>
Temperature range	<b>-25 - 70 °C</b>
Climatic suitability	
in accordance with the standard	<b>EN 60068-2-30, EN 60068-2-78</b>
Condensation during operation	<b>Not permitted</b>
Max. operating height above SL	<b>2000 m</b>
EMC	<b>EN 61131-2</b>
Vibration	
in accordance with the standard	<b>EN 60068-2-6</b>
Frequency	<b>5 - 150 Hz</b>
Acceleration	<b>1g</b>
Shock stress	
in accordance with the standard	<b>EN 60068-2-27</b>
Acceleration	<b>15g</b>
Duration	<b>11 ms</b>
Airgap creepage	
in accordance with the standard	<b>EN 61131-2</b>
Overvoltage category	<b>II</b>
Pollution degree	<b>2</b>
Protection type	
in accordance with the standard	<b>EN 60529</b>
Housing	<b>IP20</b>
Terminals	<b>IP20</b>
Mounting area (e.g. control cabinet)	<b>IP54</b>

### Potential isolation

Potential isolation between	<b>SC output and system voltage</b>
Type of potential isolation	<b>Basic insulation</b>
Rated insulation voltage	<b>30 V</b>
Rated surge voltage	<b>2500 V</b>

<b>Mechanical data</b>	
Mounting position	<b>horizontally on mounting rail</b>
DIN rail	
Top hat rail	<b>35 x 15 EN/IEC 60715, 35 x 7,5 EN/IEC 60715</b>
Recess width	<b>27 mm</b>
Cable length	
Max. cable length per input	<b>1 km</b>
Material	
Bottom	<b>PC</b>
Front	<b>PC</b>
Top	<b>PC</b>
Connection type	<b>Spring-loaded terminal, screw terminal</b>
Mounting type	<b>plug-in</b>
Conductor cross section with screw terminals	
1 core flexible	<b>0,25 - 2,5 mm<sup>2</sup>, 24 - 12 AWG</b>
2 core with the same cross section, flexible without crimp connectors or with TWIN crimp connectors	<b>0,2 - 1,5 mm<sup>2</sup>, 24 - 16 AWG</b>
Torque setting with screw terminals	<b>0,5 Nm</b>
Conductor cross section with spring-loaded terminals:	
Flexible with/without crimp connector	<b>0,2 - 2,5 mm<sup>2</sup>, 24 - 12 AWG</b>
Spring-loaded terminals: Terminal points per connection	<b>2</b>
Stripping length with spring-loaded terminals	<b>9 mm</b>
Dimensions	
Height	<b>101,4 mm</b>
Width	<b>22,5 mm</b>
Depth	<b>120 mm</b>
Weight	<b>105 g</b>

#### **Year of manufacture**

The year of manufacture is specified on the product after the reference YOM (Year of Manufacturing).

## 10.1 Safety characteristic data



### NOTICE

You must comply with the safety characteristic data in order to achieve the required safety level for your plant/machine.

Unit	Operating mode	EN ISO 13849-1: 2023 PL	EN ISO 13849-1: 2023 Category	EN IEC 62061 SIL CL/ max. SIL	EN IEC 62061 61508 PFH [1/h]	EN/IEC 61511 61508 SIL	EN/IEC 61511 61508 PFD	EN ISO 13849-1: 2023 $T_M$ [year]
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Logic								
CPU	2-channel	PL e	Cat. 4	SIL 3	2,84E-10	SIL 3	2,44E-05	20
Input								
Inputs	1-channel	PL d	Cat. 2	SIL 2	2,10E-09	SIL 2	1,84E-04	20
Inputs	2-channel	PL e	Cat. 4	SIL 3	4,27E-11	SIL 3	3,73E-06	20
Inputs	Short circuit-forming safety mats	PL d	Cat. 3	SIL 2	1,80E-10	SIL 2	1,54E-05	20
Inputs	1-ch., pulsed light barrier	PL e	Cat. 4	SIL 3	2,10E-10	SIL 3	1,86E-05	20
Output								
SC outputs	1-channel with advanced fault detection	PL e	Cat. 4	SIL 3	2,12E-11	SIL 3	1,86E-06	20
SC outputs	1-channel	PL d	Cat. 2	SIL 2	2,29E-10	SIL 2	1,95E-05	20
SC outputs	2-channel	PL e	Cat. 4	SIL 3	1,64E-10	SIL 3	1,41E-05	20

Explanatory notes for the safety-related characteristic data:

- ▶  $T_M$  is the maximum mission time in accordance with EN ISO 13849-1. The value also applies as the retest interval in accordance with EN IEC 61508-6 and EN IEC 61511 and as the proof test interval and mission time in accordance with EN IEC 62061.

All the units used within a safety function must be considered when calculating the safety characteristic data.



**INFORMATION**

A safety function's SIL/PL values are **not** identical to the SIL/PL values of the units that are used and may differ from these.

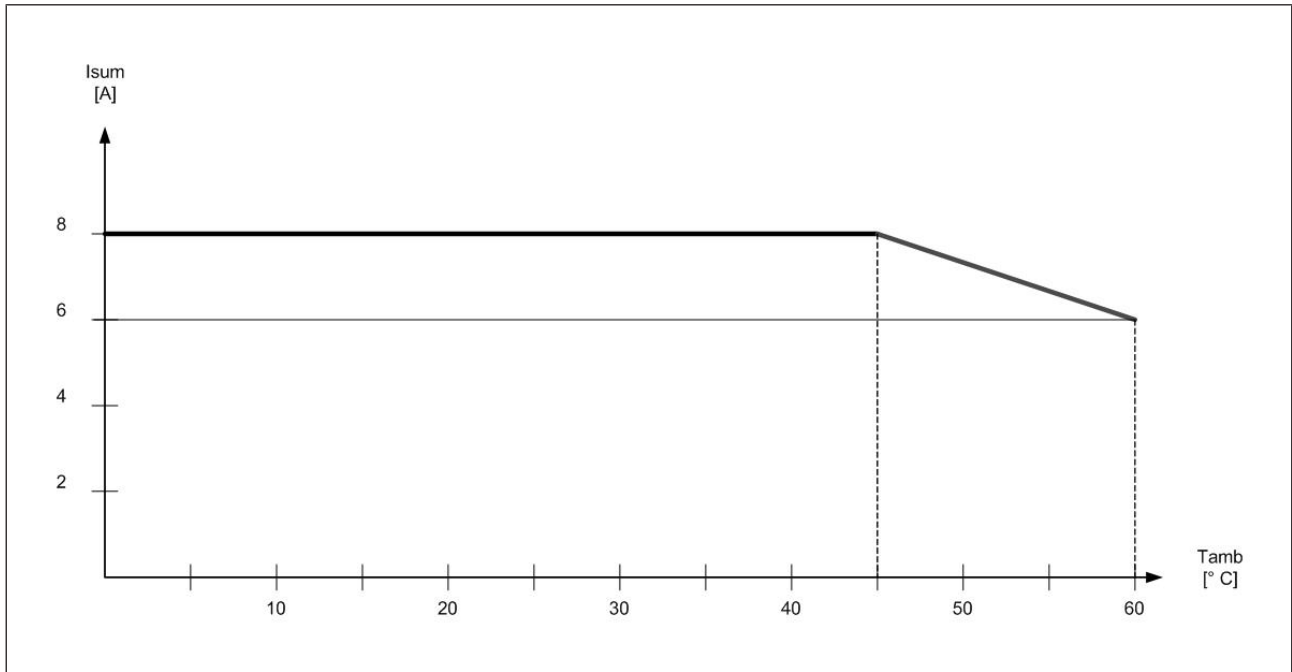
## 10.2 Classification in accordance with ZVEI, CB24I

The following tables describe the classes and specific values of the product interface and the classes of interfaces compatible with it. The classification is described in the ZVEI position paper "Classification of Binary 24 V Interfaces - Functional Safety aspects covered by dynamic testing".

<b>Input</b>	
<b>Interfaces</b>	
Drain	
Interface	<b>Module</b>
Class	<b>C2</b>
Source	
Interface	<b>Sensor</b>
Class	<b>C2, C3</b>
<b>Drain parameters</b>	
Max. test pulse duration	<b>500 µs</b>
Min. input resistance	<b>5,6 kOhm</b>
Max. capacitive load	<b>126 nF</b>
<b>Single-pole output</b>	
<b>Interfaces</b>	
Source	
Interface	<b>Module</b>
Class	<b>C2</b>
Drain	
Interface	<b>Actuator</b>
Class	<b>C1, C2</b>
<b>Source parameters</b>	
Max. test pulse duration	<b>330 µs</b>
Max. rated current	<b>2 A</b>
Max. capacitive load	<b>1 µF</b>

## 11 Supplementary data

### 11.1 Permitted ambient temperature $T_{amb}$ dependent on the total current $I_{sum}$



## 12 Order reference

### 12.1 Product

Product type	Features	Order no.
PNOZ m EF 8DI4DO	Configurable safe small controllers PNOZmulti 2, expansion module, 8 safe digital inputs, 4 safe semiconductor outputs.	772142

### 12.2 Accessories

#### 12.2.1 Replacement terminals

Product type	Features	Order no.
PNOZ s Setscrew terminals 22.5mm	Set of plug-in replacement terminals 4-pin of screw type, PU = 1 piece each X1, X2, X3, X4.	750004
PNOZ s Setspring-loaded terminals 22.5mm	Set of plug-in replacement terminals 4-pin of spring-loaded type, PU = 1 piece each X1, X2, X3, X4.	751004

#### 12.2.2 Connector plug

Product type	Features	Order no.
PNOZ mm0.xp connector left (10 pcs)	Connector plug to connect the modules to the left-hand side of the PNOZmulti base unit, yellow/black (10 pieces).	779260

## 13 EU/EC declaration of conformity

These products meet the requirements of the directive 2006/42/EC on machinery up to and including 19 January 2027, and the EU regulation 2023/1230 of the European Parliament and of the Council from 20 January 2027. The full EU and EC declaration of conformity is available to download at [www.pilz.com/manuals](http://www.pilz.com/manuals).

Authorised representative: Pilz GmbH & Co. KG, Felix-Wankel-Str. 2, 73760 Ostfildern, Germany

## 14 UKCA-Declaration of Conformity

These products comply with following UK legislation: Supply of Machinery (Safety) Regulation 2008.

The complete UKCA Declaration of Conformity is available on the Internet at [www.pilz.com/manuals](http://www.pilz.com/manuals).

Representative: Pilz Automation Technology, Pilz House, Little Colliers Field, Corby, Northamptonshire, NN18 8TJ United Kingdom, eMail: [mail@pilz.co.uk](mailto:mail@pilz.co.uk)

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## Reporting security vulnerabilities or security incidents

If you would like to report a security vulnerability or a security incident in connection with a Pilz product, please contact our **Pilz Product Security Incident Response Team (PSIRT)**.

You can reach us at: [www.pilz.com/psirt](http://www.pilz.com/psirt)

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