



PSEN opll muting box

PILZ
THE SPIRIT OF SAFETY

- ▶ PSEN sensor technology

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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 PSEN opII muting box. 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

The PSEN opII muting box can be used for simple wiring of muting sensors and other devices with a safety light curtain.

Installation can be carried out right at the safety light curtain, a protective column or a suitable installation surface.

PSEN opII muting box is a component of the muting set

- ▶ PSEN opII L-muting set
- ▶ PSEN opII T-muting set
- ▶ PSEN opII X-muting set

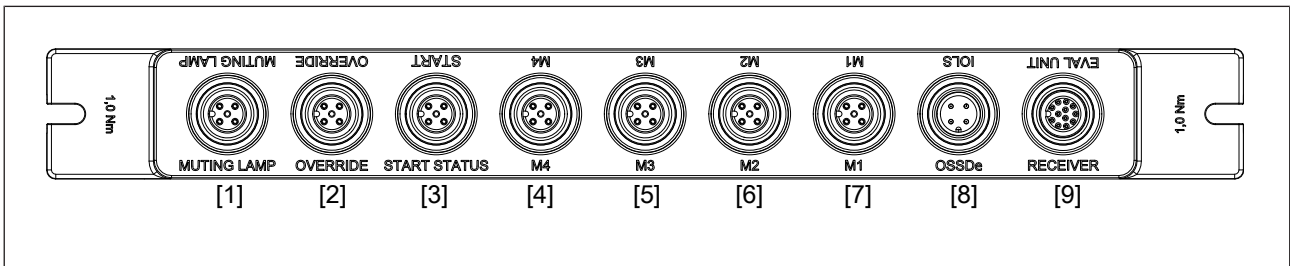
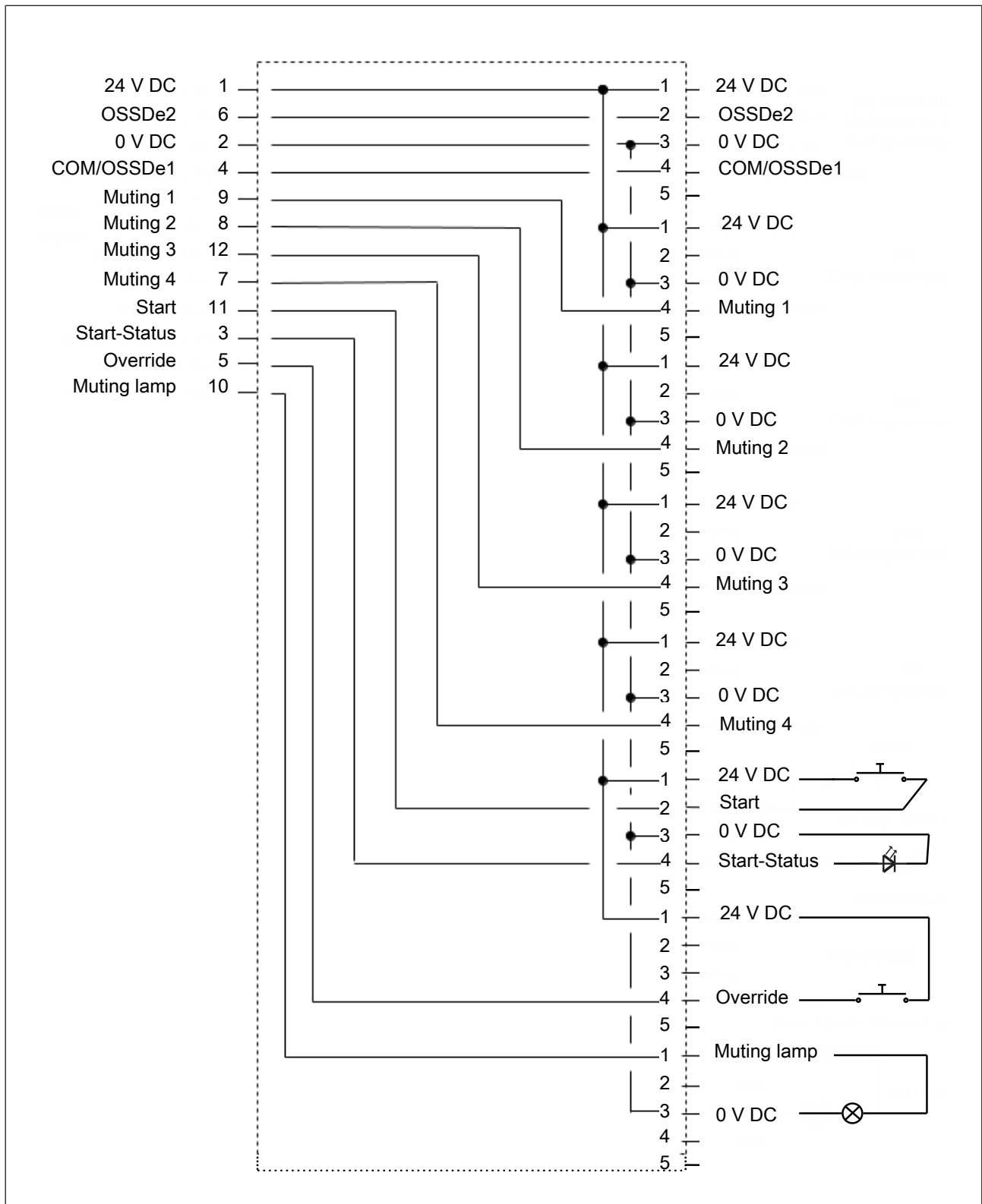


Fig.: PSEN opII muting box (without protective caps on the sockets and the connector pin)

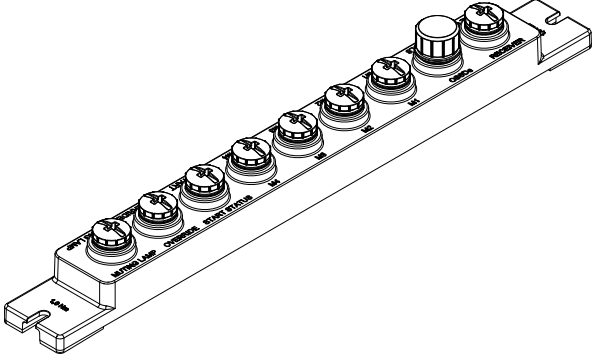
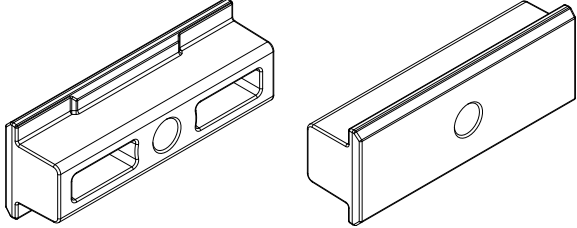
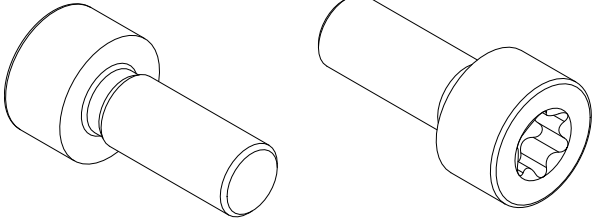
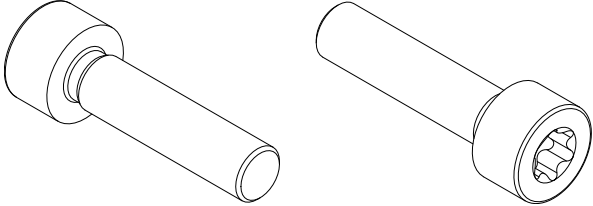
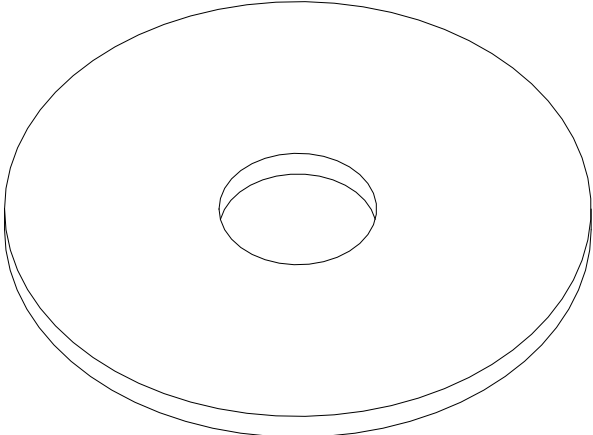
Legend

[1] Muting lamp	M12, 4-pin socket
[2] Override key switch	M12, 4-pin socket
[3] Start button (reset/restart button)/display start status	M12, 4-pin socket
[4] Muting sensor M4	M12, 4-pin socket
[5] Muting sensor M3	M12, 4-pin socket
[6] Muting sensor M2	M12, 4-pin socket
[7] Muting sensor M1	M12, 4-pin socket
[8] Evaluation device/IO-Link safety master	M12, 4-pin connector
[9] Receiver	M12, 12-pin socket

Block diagram



2.1 Scope of supply

Quantity	Description	Illustration
1	PSEN opII muting box with attached protective caps (for IP65) for plugs and sockets	
2	Slot nuts	
2	Cylinder head screws M4x10 ISO14579 for attachment to a safety light curtain	
2	Cylinder head screws M4x10 ISO14579 for attachment to a protective column	
4	Washer $\text{Ø}4.3 / \text{Ø}16 \times 0.8$ ▶ 2 pieces for attachment to a safety light curtain ▶ 4 pieces for attachment to a protective column	

3 Safety


3.1 Intended use

PSEN opII muting box is an add-on module for the electrosensitive protective equipment PSEN opII. The add-on module is a wiring aid for PSEN opII safety light curtains and it offers a connection options for 4 muting sensors, muting lamp and pushbutton for Start and Override.

The product can be used with the following products:

- ▶ PSEN opII series
- ▶ PSEN opII protective column

The following is deemed improper use in particular

- ▶ Any component or technical 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 [Technical details](#)  20]).

3.2 Safety regulations

3.2.1 Use of qualified personnel

The products may only be assembled, installed, programmed, commissioned, operated, maintained and decommissioned 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. To be able to inspect, assess and operate devices, systems and machines, the person has to be informed of 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 information provided in the section entitled Safety
- ▶ Have a good knowledge of the generic and specialist standards applicable to the specific application.

3.2.2 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 or
- ▶ Operating personnel are not suitably trained.

3.2.3 Disposal

- ▶ When decommissioning, please comply with local regulations regarding the disposal of electronic devices (e.g. Electrical and Electronic Equipment Act).

3.3 **For your safety**

- ▶ Ensure that the PSEN opII muting box is not used when components are damaged.
- ▶ Retain the protective caps of these junction box for use with IP65.

4 Installation

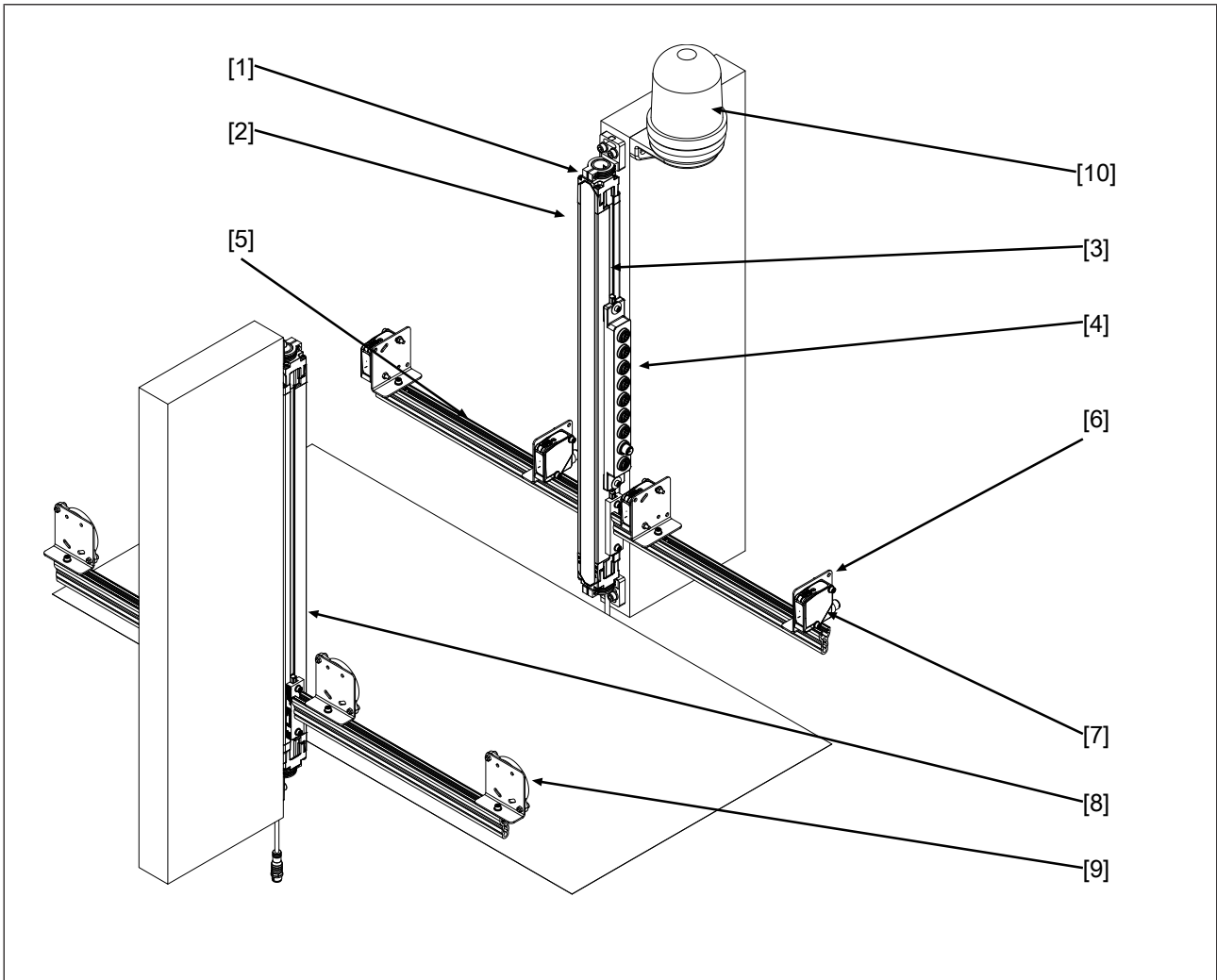


Fig.: Example for use and installation of PSEN opII muting box with muting arms and muting sensors at the safety light curtain (muting accessory is not included in the scope of supply)

Legend

- [1] Swivel mount
- [2] Receiver
- [3] Groove at the safety light curtain
- [4] PSEN opII muting box
- [5] Muting arm PSEN opII muting arm
- [6] Bracket for muting sensor PSEN opII muting arm bracket kit
- [7] Muting sensor PSEN op3.3 attached to the top of the muting arm
- [8] Transmitter
- [9] PSEN op Reflector
- [10] Muting lamp PIT si2.1

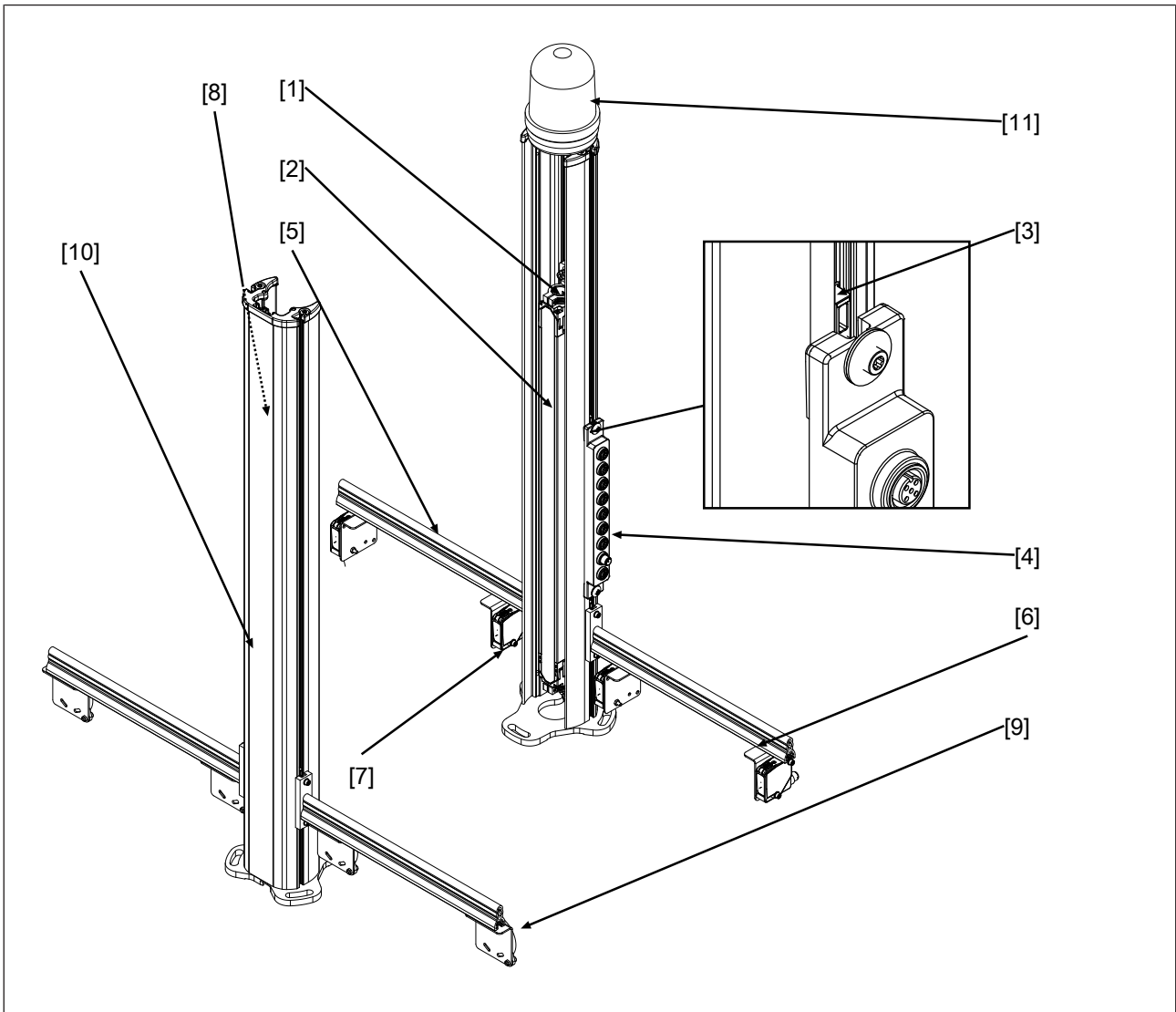


Fig.: Example for use and installation of the junction box with protective column, muting arms and muting sensors at the protective column (muting accessory is not included in the scope of supply)

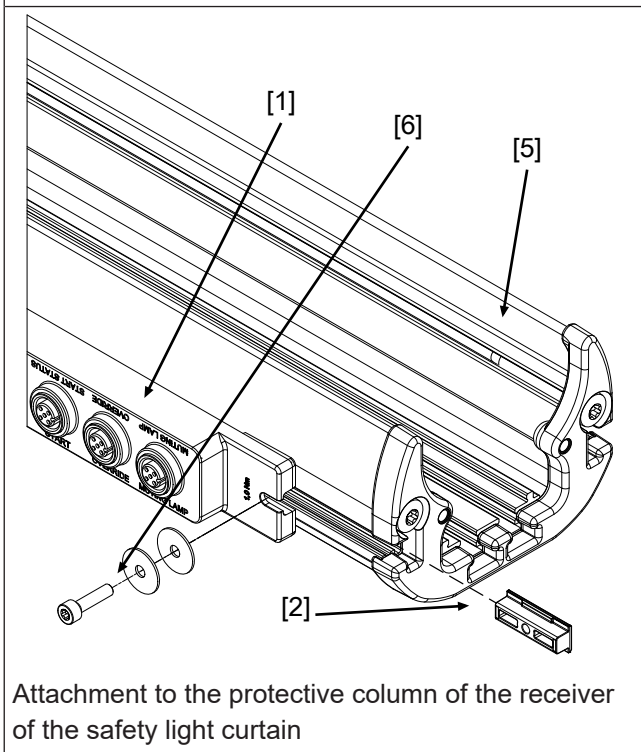
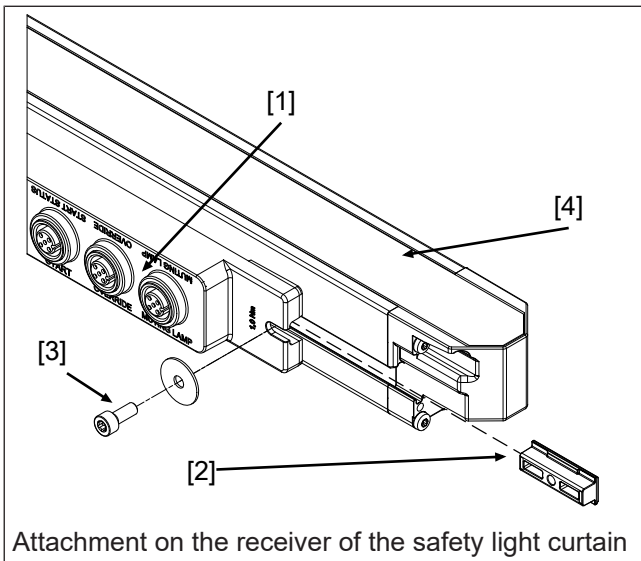
Legend

- [1] Swivel mount
- [2] Receiver
- [3] Groove on the protective column
- [4] PSEN opII muting box
- [5] Muting arm PSEN opII muting arm
- [6] Bracket for muting sensor PSEN opII muting arm bracket kit
- [7] Muting sensor PSEN op3.3 attached to the bottom of the muting arm
- [8] Transmitter
- [9] PSEN op Reflector
- [10] PSEN opII protective column
- [11] Muting lamp PIT si2.1

Prerequisites

- ▶ Make sure that the PSEN opII muting box is installed at a suitable location.
 - Right at a safety light curtain with a protected field height of at least 600 mm
 - At a protective column
 - At a suitable mounting area (on a strut profile, for example)
- ▶ Required tool:
 - Hexalobular internal T20

Procedure:



1. Insert one slot nut each [2] (within the scope of supply) into the groove of the safety light curtain [4] at both ends of the junction box.
2. Insert the junction box [1] in the slot nuts in the groove of the safety light guard (see graphic).
3. Attachment
 - to the receiver of the safety light curtain [4]
Attach the junction box [1] in the slot nuts using the cylinder head screws M4x10 and 1 washer 4.3x0.8 per screw [3]. Tighten the cylinder head screws to 1 Nm.
 - at the protective column of the receiver of the safety light curtain [5].
Attach the junction box [1] in the slot nuts using the cylinder head screws M4x16 and 2 washers 4.3x0.8 per screw [6]. Tighten the cylinder head screws to 1 Nm.

5 Wiring

Note:

- ▶ Remove the protective caps from the connector of the PSEN opII muting box and from the sockets you want to use.

Retain the protective caps of these sockets.

Do **not** remove the protective caps from the sockets that you do **not** want to use.

- ▶ The power supply must meet the regulations for extra low voltages with protective electrical separation (SELV, PELV).

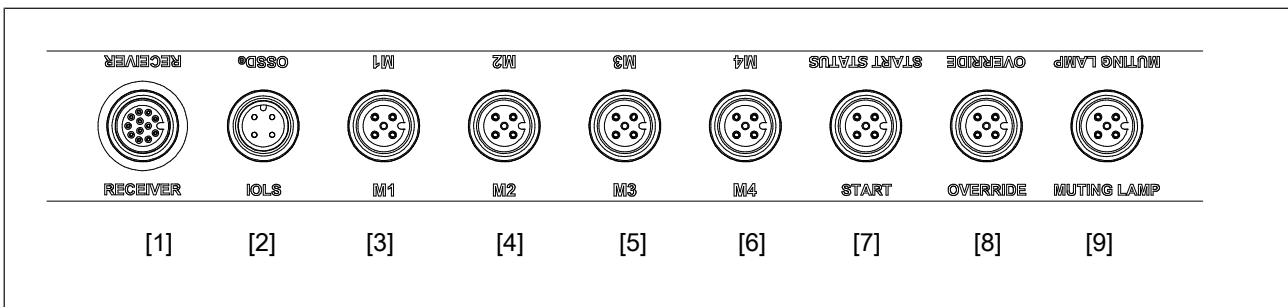


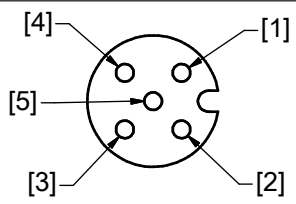
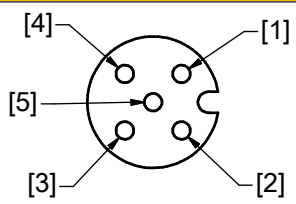
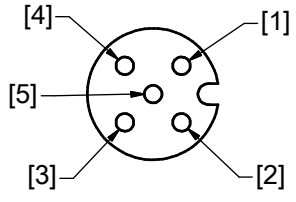
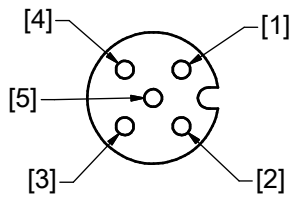
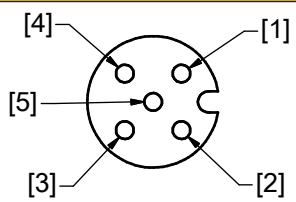
Fig.: Connection assignment at the junction box_

Legend

[1] Receiver	M12, 12-pin socket
[2] Evaluation device/IO-Link safety master	M12, 4-pin connector
[3] Muting sensor M1	M12, 4-pin socket
[4] Muting sensor M2	M12, 4-pin socket
[5] Muting sensor M3	M12, 4-pin socket
[6] Muting sensor M4	M12, 4-pin socket
[7] Start button (reset/restart button)/display start status	M12, 4-pin socket
[8] Override key switch	M12, 4-pin socket
[9] Muting lamp	M12, 4-pin socket

Pin assignment of connections of the PSEN opII muting box

12-pin female connector receiver	Pin/colour	Description
	1	24 V DC
	2	0 V DC
	3	Display start status
	4	OSSDe1/COM
	5	Override
	6	OSSDe2
	7	Muting sensor M4
	8	Muting sensor M2
	9	Muting sensor M1
	10	Muting lamp
	11	Start button (reset/restart button)
	12	Muting sensor M3
4-pin male connector OSSD/evaluation device	Pin	Description
	1	24 V DC
	2	OSSDe 2
	3	24 V DC
	4	OSSDe 1/COM
5-pin female connector M1	Pin	Description
	1	24 V DC
	2	Reserved
	3	0 V DC
	4	Muting sensor M1
	5	Reserved
5-pin female connector M2	Pin	Description
	1	24 V DC
	2	Reserved
	3	0 V DC
	4	Muting sensor M2
	5	Reserved

5-pin female connector M3	Pin	Description
	1	24 V DC
	2	Reserved
	3	0 V DC
	4	Muting sensor M3
	5	Reserved
5-pin female connector M4	Pin	Description
	1	24 V DC
	2	Reserved
	3	0 V DC
	4	Muting sensor M4
	5	Reserved
5-pin female connector start/start status	Pin	Description
	1	24 V DC
	2	Start
	3	0 V DC
	4	Start status
	5	Reserved
5-pin female connector override key switch	Pin	Description
	1	24 V DC
	2	Reserved
	3	Reserved
	4	Override
	5	Reserved
5-pin female connector muting lamp	Pin	Description
	1	Muting lamp
	2	Reserved
	3	0 V DC
	4	Reserved
	5	Reserved

Pilz recommends using the following cables:

Connection to	Product type	Order no.
Muting sensor	PDP67 Cable M12-5sf M12-5sm, 1m	380711
Muting lamp, override key switch, start key	PDP67 cable M12-5sm, 3m	380705
	PDP67 cable M12-5sm, 5m	380709
	PDP67 cable M12-5sm, 10m	380706
	PDP67 cable M12-5sm, 20m	380707
Evaluation device PDP67	PDP67 Cable M12-5sf M12-5sm, 0.5m	380710
	PDP67 Cable M12-5sf M12-5sm, 1m	380711
	PDP67 Cable M12-5sf M12-5sm, 1.5m	380712
	PDP67 Cable M12-5sf M12-5sm, 2m	380713
	PSS67 Cable M12sf M12sm, 3m	380208
	PSS67 Cable M12sf M12sm, 5m	380209
	PSS67 Cable M12sf M12sm, 10m	380210
	PSS67 cable M12-5sf, M12-5sm, 20m	380220
	PSS67 Cable M12sf M12sm, 30m	380211
	PSS67 Cable M12af M12am, 3m	380212
	PSS67 Cable M12af M12am, 5m	380213
	PSS67 Cable M12af M12am, 10m	380214
	PSS67 Cable M12af M12am, 30m	380215

6 Maintenance and testing

The PSEN opII muting box requires no maintenance except for cleaning the surface.



WARNING!

Loss of the safety function due to the use of improper cleaning agents

Improper cleaning agents can cause damages to the product.

- Use only the cleaning agents specified.

Moist cotton cloths should be used for cleaning.

Avoid using

- ▶ Alcohol,
- ▶ Solvents,
- ▶ Cloths made of wool,
- ▶ Cloths made of synthetic material.

When regularly checking the PSEN opII muting box, clean the surface.

Check the correct function of the plant/machine each time it is modified. Changing the safety light curtain or swapping the safety light curtain components should also be regarded as a modification.

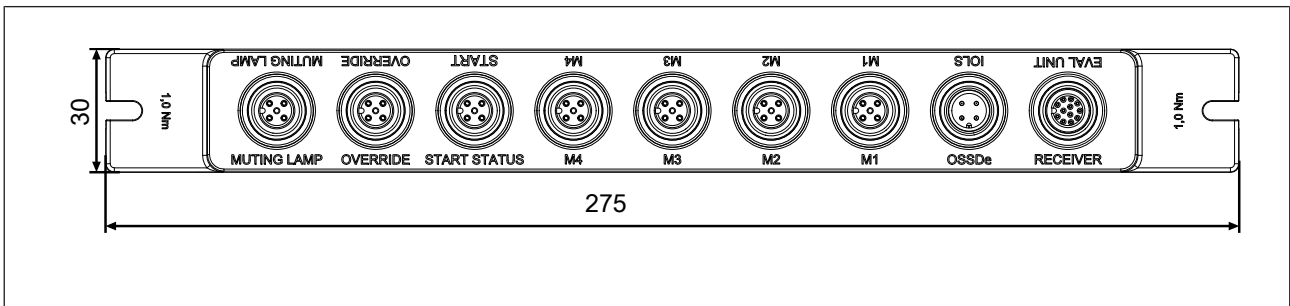
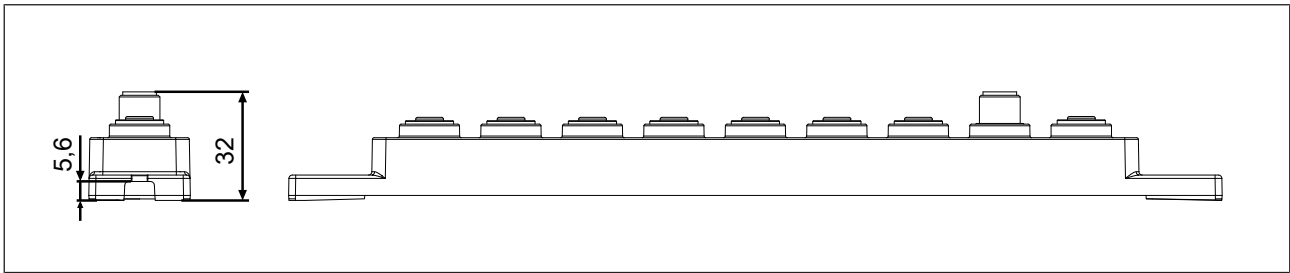
You **must** comply with the requirements of the applicable national regulations.



INFORMATION

This inspection may only be carried out by qualified personnel.

7 Dimensions



8 Technical details

General	
Certifications	cULus Listed
Environmental data	
Ambient temperature	
Temperature range	-25 - 60 °C
Storage temperature	
Temperature range	-40 - 70 °C
Climatic suitability	
Humidity	95 % r. h. at 50 °C
EMC	IEC 61496-1
Vibration	
In accordance with the standard	EN 60068-2-6
Frequency	10 - 150 Hz
Amplitude	0,75 mm
Acceleration	0,2g
Shock stress	
In accordance with the standard	EN 60068-2-27
Number of shocks	1000
Acceleration	10g
Duration	16 ms
Protection type	
Housing	IP65
Mechanical data	
Material	PBT+PET, PUR
Max. torque setting	
Installation screw	1 Nm
Dimensions	
Height	275 mm
Width	30 mm
Depth	32 mm
Weight	215 g

Where standards are undated, the 2020-07 latest editions shall apply.

9 Order reference

Product type	Features	Order no.
PSEN opII muting box	Wiring aid for PSEN opII safety light curtains Connection option for 4 muting sensors, muting lamp and pushbuttons for start and override	6C000181

9.1 Accessories

Product type	Features	Order no.
PSEN opII L-muting set	Muting set for safety light curtains of the PSEN opIIxx series. <ul style="list-style-type: none"> ▶ 2 x muting sensors PSEN op3.3, ▶ 2 x PSEN op Reflector, ▶ 2 x 1 m cable for muting sensors, ▶ 1 x PSEN opII muting box for connecting the muting sensors, ▶ 1 x muting lamp PIT si2.1, ▶ 1 x muting arm PSEN opII muting arm, ▶ 1 x bracket for muting sensor PSEN opII muting arm bracket kit 	6C000182
PSEN opII T-muting set	Muting set for safety light curtains of the PSEN opIIxx-A series. <ul style="list-style-type: none"> ▶ 4 x muting sensors PSEN op3.3, ▶ 4 x PSEN op Reflector, ▶ 4 x 1 m cable for muting sensors, ▶ 1 x PSEN opII muting box for connecting the muting sensors, ▶ 1 x muting lamp PIT si2.1, ▶ 2 x muting arm PSEN opII muting arm, ▶ 2 x bracket for muting sensor PSEN opII muting arm bracket kit 	6C000183

Product type	Features	Order no.
PSEN opII X-muting set	<p>Muting set for safety light curtains of the PSEN opIIxx series.</p> <ul style="list-style-type: none"> ▶ 2 x muting sensors PSEN op3.3, ▶ 2 x PSEN op Reflector, ▶ 2 x 1 m cable for muting sensors, ▶ 1 x PSEN opII muting box for connecting the muting sensors, ▶ 1 x muting lamp PIT si2.1, ▶ 2 x muting arm PSEN opII muting arm, ▶ 1 x bracket for muting sensor PSEN opII muting arm bracket kit 	6C000184
PSEN opII slot nuts	4 slot nuts for installing accessories to the profile of a PSEN opII light curtain or a PSEN opII protective column	632512

9.1.1 Cable

Product type	Features	Connector X1	Connector X2	Connector X3	Order no.
PDP67 Cable M12-5sf M12-5sm, 0.5m	0.5 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380710
PDP67 Cable M12-5sf M12-5sm, 1m	1 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380711
PDP67 Cable M12-5sf M12-5sm, 1.5m	1.5 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380712
PDP67 Cable M12-5sf M12-5sm, 2m	2 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380713
PSS67 Cable M12sf M12sm, 3m	3 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380208
PSS67 Cable M12sf M12sm, 5m	5 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380209
PSS67 Cable M12sf M12sm, 10m	10 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380210
PSS67 cable M12-5sf, M12-5sm, 20m	20 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380220
PSS67 Cable M12sf M12sm, 30m	30 m	M12, 5-pin female connector, straight	M12, 5-pin male connector, straight		380211

Product type	Features	Connector X1	Connector X2	Connector X3	Order no.
PSS67 Cable M12af M12am, 3m	3 m	M12, 5-pin female connector, angled	M12, 5-pin male connector, angled		380212
PSS67 Cable M12af M12am, 5m	5 m	M12, 5-pin female connector, angled	M12, 5-pin male connector, angled		380213
PSS67 Cable M12af M12am, 10m	10 m	M12, 5-pin female connector, angled	M12, 5-pin male connector, angled		380214
PSS67 Cable M12af M12am, 30m	30 m	M12, 5-pin female connector, angled	M12, 5-pin male connector, angled		380215
PDP67 cable M12-5sm, 3m	3 m	M12, 5-pin male connector, straight			380705
PDP67 cable M12-5sm, 5m	5 m	M12, 5-pin male connector, straight			380709
PDP67 cable M12-5sm, 10m	10 m	M12, 5-pin male connector, straight			380706
PDP67 cable M12-5sm, 20m	20 m	M12, 5-pin male connector, straight			380707

