

## PSEN op3.1/3.2

**PILZ**  
THE SPIRIT OF SAFETY

- PSEN sensor technology
- Accessories

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Source code from third-party manufacturers or open source software has been used for some components. The relevant licence information is available on the Internet on the Pilz homepage.

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SD means Secure Digital

## Introduction

### Validity of documentation

This documentation is valid for the product PSEN op3.1/3.2. It is valid until new documentation is published.

This documentation explains the function and operation of an accessory for a safety light grid. When using the product, please refer to the operating manual for the safety light grid.

### 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.).

### 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.

### 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**

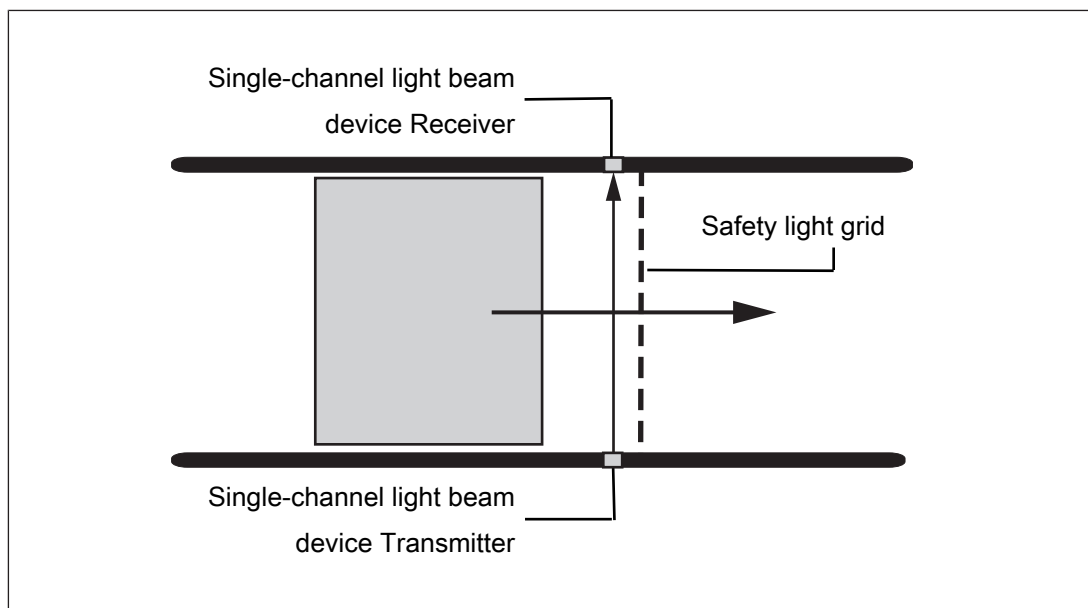
This describes a situation in which the product or devices could be damaged and also provides information on preventive measures that can be taken. It also highlights areas within the text that are of particular importance.

**INFORMATION**

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

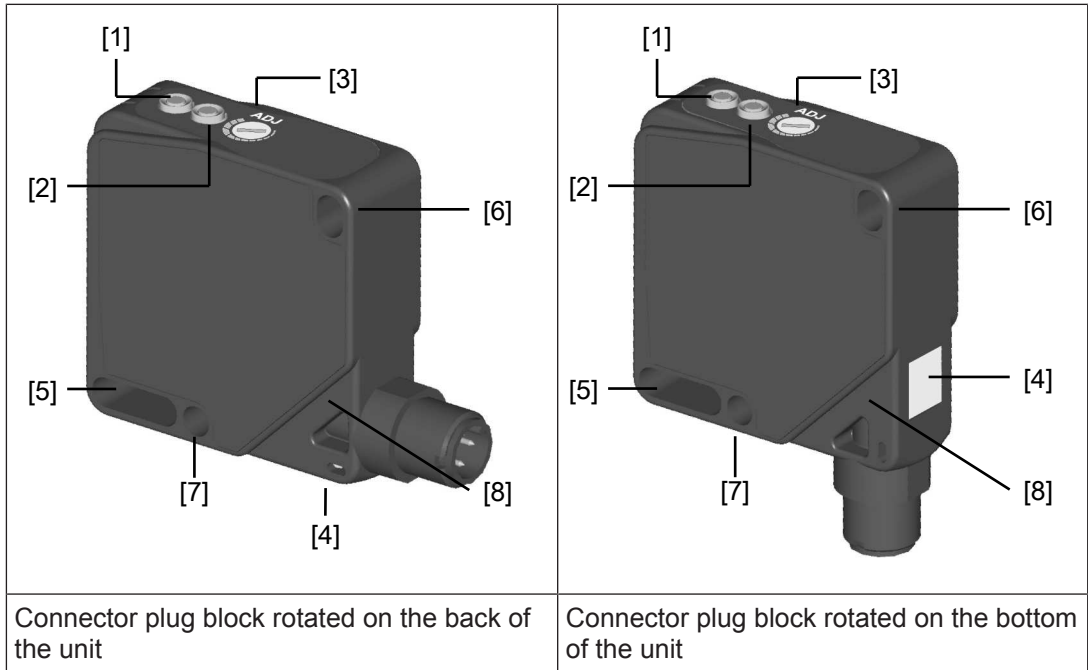
**Overview****Intended use**

The PSEN op3.1/3.2 may only be used to implement the muting function on a safety light grid without muting sensors.

**Use of the single-channel light beam device, transmitter in conjunction with the receiver as muting sensor**

The transmitter emits a light beam, which is reflected by the receiver. If an object interrupts the light beam, the receiver detects this and muting is activated.

**Unit viewer: receiver**



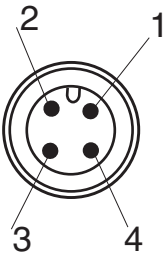
- ▶ [1]: LEDs for status display (on transmitter only)
- ▶ [2]: LED to display operating status
- ▶ [3]: Control for setting the sensitivity
- ▶ [4]: Retention spring for releasing the rotatable connection
- ▶ [5]: Slot (through hole) for attachment and horizontal adjustment
- ▶ [6]: Through hole for attachment
- ▶ [7]: Through hole for attachment
- ▶ [8]: Rotatable connector plug block

**Wiring**

- ▶ Information given in the [Technical details \[8\]](#) must be followed.
  - ▶ Use copper wiring with a temperature stability of 55 °C.
  - ▶ The supply voltage must be provided from a power supply. Use a protection class II power supply in accordance with the regulations for extra low voltages with safe separation.
- ⇒ Wire the outputs from the receiver to the inputs provided on a safety light grid or control system for external muting sensors.

<p><b>Receiver</b> Assignment of the 4-pin M12 male connector</p>		<p><b>PIN</b></p>	<p><b>Function</b></p>	<p><b>Wire colour</b></p>
		<p>1: 2: 3: 4:</p>	<p>+10 ... 30 VDC Output NC 0 V Output NO</p>	<p>brown white blue black</p>

- ⇒ Wire the outputs from the transmitter to the inputs provided on a safety light grid or control system for external muting sensors.

Transmitter		PIN	Function	Wire colour
Assignment of the 4-pin M12 male connector		1: 2: 3: 4:	+10 ... 30 VDC Test + 0 V Test -	brown white blue black

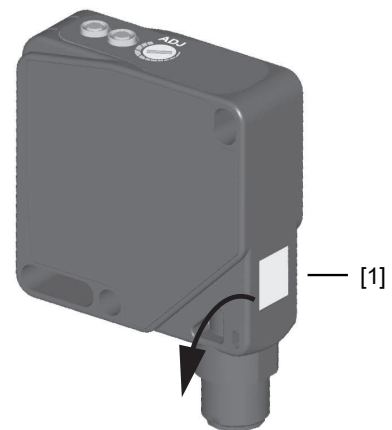
## Installation and setting

### General

- ▶ Torque setting: Please note the information provided under [Technical details](#) [8].

If necessary, the connector plug block can be rotated by 180°.

Pull the retention spring in the direction of the connector (see diagram, [1]) and rotate the connector plug block by 180°.



### Setting



#### INFORMATION

The sensitivity controller can be rotated by a maximum of 240°.

If the trimmer is overwound the product will be destroyed.

- Never rotate the trimmer beyond the maximum position.

1. Set the sensitivity controller on the receiver to the highest level.
  2. Position the transmitter and receiver on the muting sensor opposite each other in parallel, in the required position in relation to the light grid. In both positions, a mounting surface must be available, to which the transmitter and receiver can be attached.
  3. Move the transmitter and receiver horizontally and vertically until the orange LED illuminates and then goes out. Attach the transmitter and receiver in the middle between these points.
- ▶ If the muting sensors are to detect small objects, the sensitivity of the receiver can be reduced.

- ⇒ Reduce the sensitivity and determine the position in which the orange LED illuminates and then goes out.

#### Attach transmitter

1. On the mounting surface, drill three M4 holes in the required position for the transmitter, in accordance with the position of the through holes (see Dimensions).
2. Attach the transmitter to the mounting surface using three screws (M4, minimum length 25 mm).

#### Attach receiver

1. On the mounting surface, drill three M4 holes in the required position for the receiver, in accordance with the position of the through holes (see Dimensions).
2. Attach the receiver to the mounting surface using three screws (M4, minimum length 25 mm).

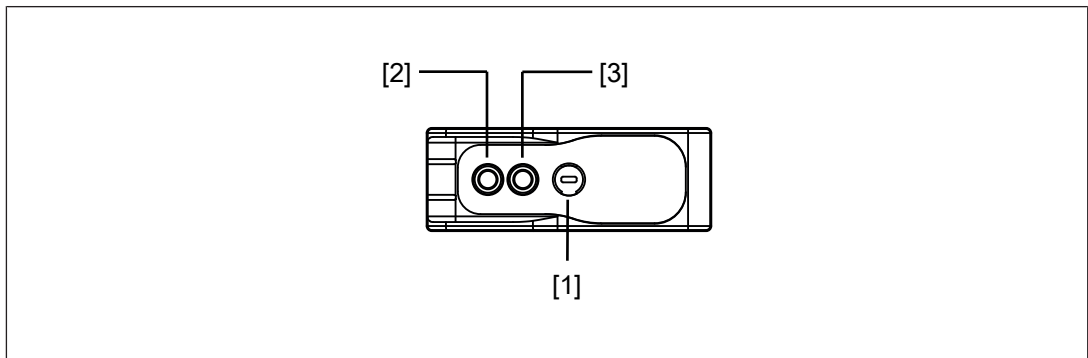
#### Test

The test inputs on the transmitter enable a system test.

If the test inputs are activated and the light beam is not interrupted, the receiver must switch.

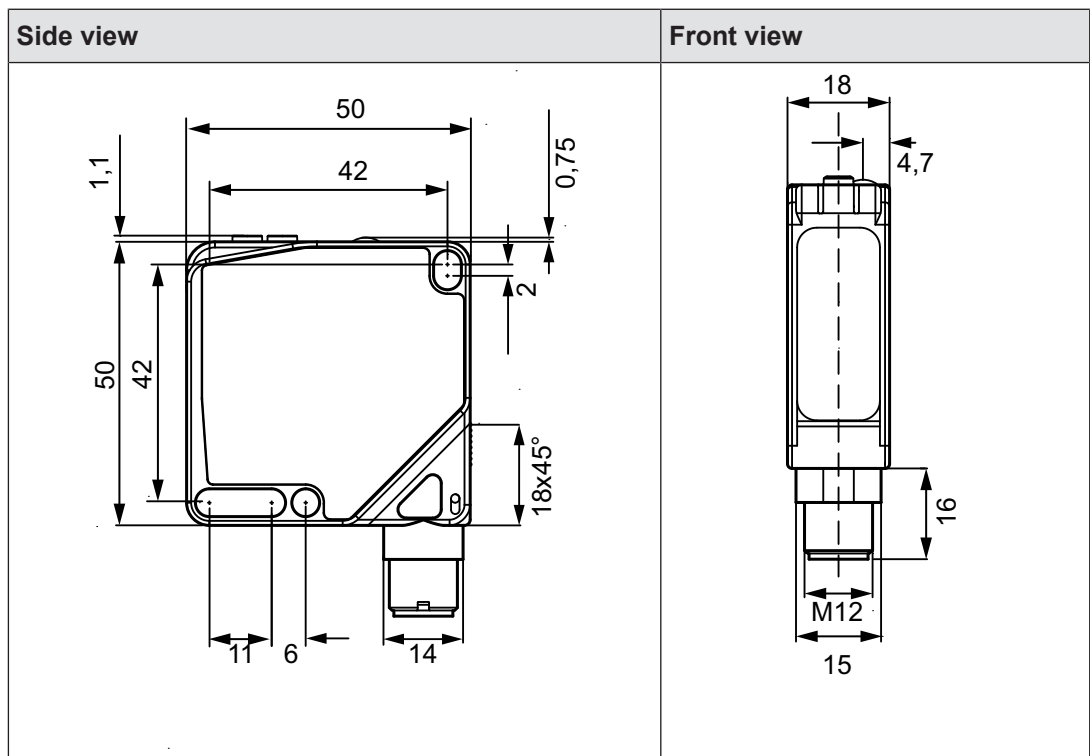
- ⇒ Carry out the test and only put the muting sensors into operation if the test has been successful.

#### Display and operator elements



[1]	Control for setting the sensitivity	To detect smaller objects, set the control to a lower sensitivity (move control to the left). To detect larger objects, set the control to a higher sensitivity (move control to the right).
[2]	Yellow LED: Status indicator	LED on: Light beam is interrupted LED off: Light beam is not interrupted
[3]	Green LED: Operating status and luminosity	LED on: Light beam is detected, device is ready for operation LED off: Light beam is not detected (caused by contaminations, for example), device is not ready for operation LED goes out briefly when an object enters the light beam

**Dimensions in mm**



**Technical details**

<b>General</b>	<b>630831</b>	<b>630832</b>
Approvals	CE, cULus Listed	CE, cULus Listed
<b>Electrical data</b>	<b>630831</b>	<b>630832</b>
Supply voltage		
Voltage	10,0 - 30,0 V	10,0 - 30,0 V



<b>Optical data</b>	<b>630831</b>	<b>630832</b>
Operating range	0,0 - 25,0 m	0,0 - 25,0 m
Used wavelength range	640 nm	640 nm
<b>Semiconductor outputs</b>	<b>630831</b>	<b>630832</b>
Switching current per output	100 mA	100 mA
<b>Times</b>	<b>630831</b>	<b>630832</b>
Response time t1	1,00 ms	1,00 ms
<b>Environmental data</b>	<b>630831</b>	<b>630832</b>
Ambient temperature		
Temperature range	-10 - 55 °C	-10 - 55 °C
Storage temperature		
Temperature range	-20 - 70 °C	-20 - 70 °C
Vibration		
In accordance with the standard	EN 60068-2-6	EN 60068-2-6
Frequency	10,0 - 55,0 Hz	10,0 - 55,0 Hz
Amplitude	0,50 mm	0,50 mm
Shock stress		
In accordance with the standard	EN 60068-2-27	EN 60068-2-27
Number of shocks	6	6
Acceleration	30g	30g
Duration	11 ms	11 ms
Protection type		
Housing	IP67	IP67
<b>Mechanical data</b>	<b>630831</b>	<b>630832</b>
Material		
Housing	ABS	ABS
Max. torque setting for fixing screws	1,50 Nm	1,50 Nm
Dimensions		
Height	50,0 mm	50,0 mm
Width	66,0 mm	66,0 mm
Depth	18,0 mm	18,0 mm
Weight	30 g	30 g

### Order reference

Product type	Features	Order no.
PSEN op3.1 Receiver NO/NC M12	Single-channel light beam device, receiver with NO/NC outputs	630 831
PSEN op3.2 Emitter M12	Single-channel light beam device, transmitter	630 832

# ► Support

Technical support is available from Pilz round the clock.

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Pilz develops environmentally-friendly products using ecological materials and energy-saving technologies. Offices and production facilities are ecologically designed, environmentally-aware and energy-saving. So Pilz offers sustainability, plus the security of using energy-efficient products and environmentally-friendly solutions.



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