Light curtain PSENopt cable selection guide

PSENopt, PSENopt Advanced, PSENopt slim, PSENopt II

PILZ

THE SPIRIT OF SAFETY

The safe solution:
Sensor and control technology.

▶ Light curtain PSENopt cable selection guide

Pilz offers an extensive portfolio of light curtains to safeguard interventions in the production process:
light curtains PSENopt are available as Type 2 and Type 4 versions for finger, hand and body protection.
The Advanced light curtains allow extended functionalities such as muting, blanking and cascading.
Slimline light curtain PSENopt slim can be used for space-critical applications.
With their high robustness of 50g, light curtains PSENopt II are ideally suited for rugged industrial environments.
In addition to the first Type 3 version, they are also available for Type 4 applications.

A range of accessories perfectly tailored to our light curtains allows a wide range of applications.
These are set out in detail on the following pages.

Contents

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COMPONENTS

Sensor
Control technology
Drive technology

SYSTEMS

Automation
systems

Automation
technology

Innovative   Safe

Ecologica

ALL IN ONE
SAFETY & AUTOMATION

Pilz is your solution supplier for all automation tasks. Including standard control functions. Pilz developments protect man, machine and the environment.

Pilz has a tradition as a family-run company stretching back over 60 years. Real proximity to customers is visible in all areas, instilling confidence through individual consultation, total flexibility and reliable service. Worldwide, round the clock, in 42 subsidiaries and branches, as well as 27 sales partners on every continent.

More than 2 400 staff, each one of them an ambassador for safety, make sure that your staff – your company's most valuable asset – can work safely and free from injury.

SERVICES

Consulting
Engineering
Training

Economical

PILZ

THE SPIRIT OF SAFETY

Automation
solutions from Pilz –
at home in every
industry.

Visualisation; Diagnostics

Easy to Configure

Pilz automation solutions

Pilz offers everything that you need for the automation of your plant and machinery: Innovative components and systems in which safety and automation are merged within hardware and software.

From sensor and control technology to drive technology, the ease of commissioning, operation and diagnostics plays an important role for all components and systems from Pilz.

You benefit from flexible solutions for machines with an elementary function range through to large interlinked plants. With us you can standardise your safety, implement safety and automation in one periphery or find solutions for complete automation.

Pilz solutions are embedded into the relevant system environment – whether a new structure or a retrofit – and are open for a variety of interfaces and functionalities.

The perfect combination:

Control technology from Pilz offers numerous application options, including monitoring of electrical and functional safety, through to complete machine control.

Safe sensors and decentralised modules from Pilz guarantee the efficient, compliant use of plant and machinery in combination with various control systems.

Programming IEC 61131-3

Rapid Installation

Pilz automation solutions

▸ Simple configuration, programming and visualisation
  through innovative software solutions
▸ High flexibility due to individually expandable solutions
▸ Openness of communication
▸ High availability thanks to extensive diagnostic options
▸ One system for safety and automation

Our turnkey systems and universally compatible solutions offer a high savings potential.

Drive technology from Pilz is characterised by drive-integrated safety functions, safe logic functions and the connection of visualisation, sensor and actuator technology.
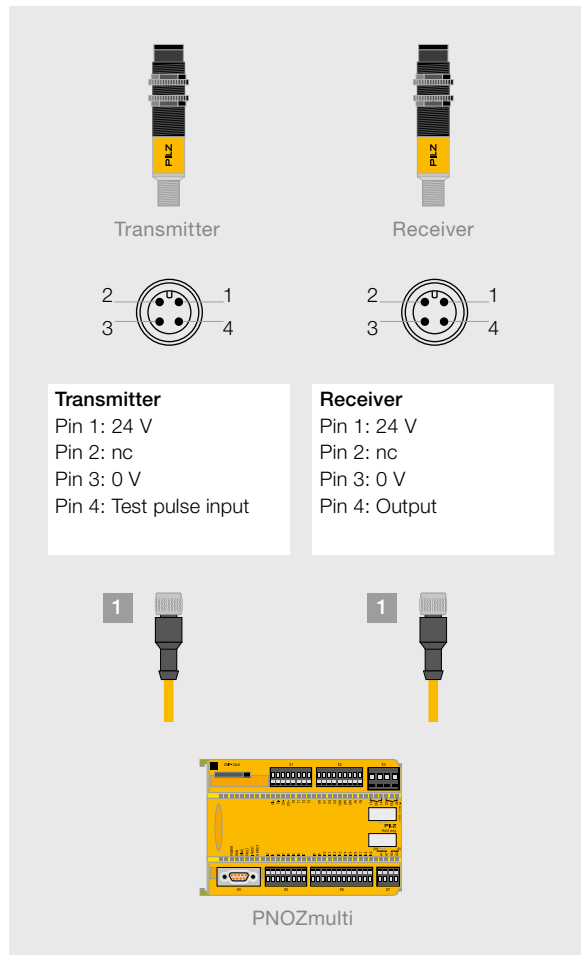
Operator and visualisation systems from Pilz complete your plant and machinery.

Automation software from Pilz allows you to quickly and easily implement your planning, programming, configuration, commissioning, diagnostics and visualisation.

Pilz offers you automation solutions for the safety of man, machine and the environment.

▶ Single-beam safety light barriers Type 2, Type 4

PSEN op2S, PSEN op4S

Transmitter

Receiver

2 ◯ 1
3 ◯ 4

2 ◯ 1
3 ◯ 4

Transmitter
Pin 1: 24 V
Pin 2: nc
Pin 3: 0 V
Pin 4: Test pulse input

Receiver
Pin 1: 24 V
Pin 2: nc
Pin 3: 0 V
Pin 4: Output

1

1

PNOZmulti

▶ Connection:
- Male connector, M12, 4-pin
- Unshielded cables are possible

▶ Test signal:
- The test signal travels from the evaluation device to the transmitter and is forwarded optically to the receiver. It is checked there by the controller.
- The reaction time depends on the safety relay.
- The test signal must not be delayed for longer than 400 µs, so the light barriers cannot be used in conjunction with PSSu.

▶ Combined with the configurable safe small controllers PNOZmulti, for example, you have a safe and economic complete solution.

| 24 V DC | Evaluation |
| 0 V | device |

Test pulse | Safe input

Transmitter (TX) · · ·> Receiver (RX)

24 V DC
0 V
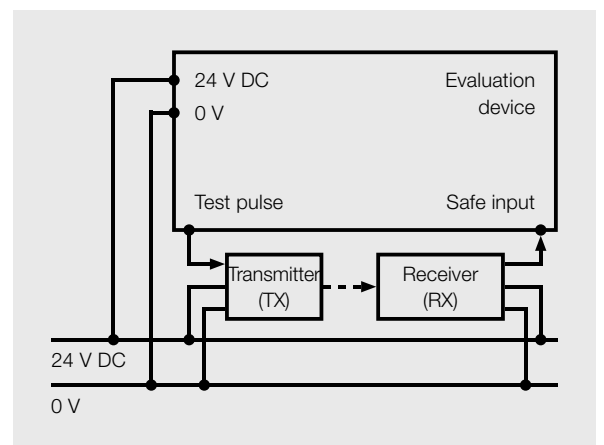
▶ Single-beam safety light barriers Type 2, Type 4

Connection cable M12, 4-pin								
Type	Description	Features	Order number (by length)					
			3 m	5 m	10 m	20 m	30 m	50 m
1 **PSEN op cable M12-4sf**	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 4-pin, female, straight ▶ Connection 2: open cable	630 300	630 301	630 302	-	630 296	630 362
1 **PSEN op cable M12-4sf sh**	Cable for connection to any evaluation device, shielded	▶ Connection 1: shielded, M12, 4-pin, female, straight ▶ Connection 2: open cable	630 303	630 304	630 305	630 270	630 309	630 366

▶ Basic light curtains Type 2, Type 4 for finger and hand protection – standard case

PSEN op2H, PSEN op4F, PSEN op4H [1]
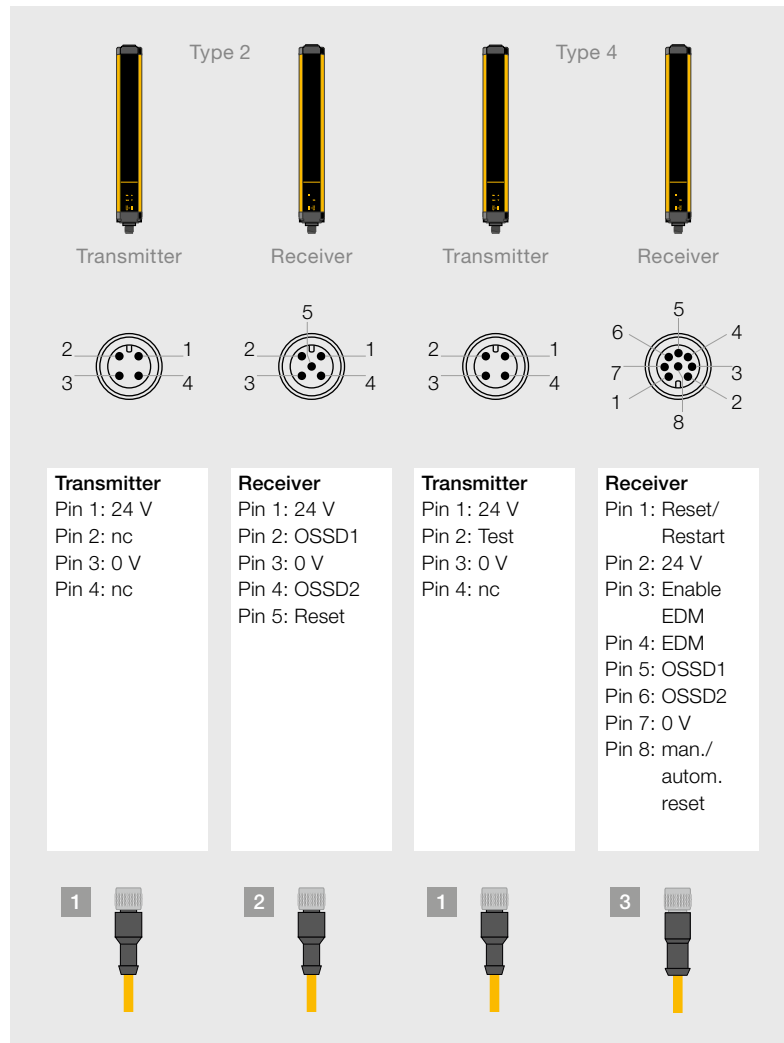
Type 2

Transmitter   Receiver

Type 4

Transmitter   Receiver

Transmitter
Pin 1: 24 V
Pin 2: nc
Pin 3: 0 V
Pin 4: nc

Receiver
Pin 1: 24 V
Pin 2: OSSD1
Pin 3: 0 V
Pin 4: OSSD2
Pin 5: Reset

Transmitter
Pin 1: 24 V
Pin 2: Test
Pin 3: 0 V
Pin 4: nc

Receiver
Pin 1: Reset/
        Restart
Pin 2: 24 V
Pin 3: Enable
        EDM
Pin 4: EDM
Pin 5: OSSD1
Pin 6: OSSD2
Pin 7: 0 V
Pin 8: man./
        autom.
        reset

1   2   1   3

[1] only valid for the series -s…/1

▶ Connection:
  - Transmitter Type 2, 4: M12, 4-pin
  - Receiver Type 2: M12, 5-pin
  - Receiver Type 4: M12, 8-pin
  - Unshielded cables are possible
▶ Type 4: Different operating modes can be activated via jumpers:
  - Automatic start mode: jumper between manual/ automatic reset (pin 8) and OSSD1 (pin 5).
  - The feedback loop must be jumpered via the EDM enable (pin 3), if not used then with pin 2/ 24 V.
▶ Combined with safety relays PNOZsigma, PNOZ X or PNOZ c2 and configurable small controllers PNOZmulti, for example, you have a safe and economic complete solution.

▶ Basic light curtains Type 2, Type 4 for finger and hand protection – standard case

Connection cable M12, 4-pin

Type	Description	Features	Order number (by length)					
			3 m	5 m	10 m	20 m	30 m	50 m
1 **PSEN cable M12-4sf**	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 4-pin, female, straight ▶ Connection 2: open cable	630 300	630 301	630 302	-	630 296	630 362
1 **PSENcable M12-4af**		▶ Connection 1: M12, 4-pin, female, angled ▶ Connection 2: open cable	630 341	630 342	630 343	-	630 344	630 363
1 **PSEN cable M12-4sf sh**	Cable for connection to any evaluation device, shielded	▶ Connection 1: shielded, M12, 4-pin, female, straight ▶ Connection 2: open cable	630 303	630 304	630 305	630 270	630 309	630 366
1 **PSEN cable M12-4af sh**		▶ Connection 1: shielded, M12, 4-pin, female, angled ▶ Connection 2: open cable	630 306	630 307	630 308	-	630 319	630 367

Connection cable M12, 5-pin

Type	Description	Features	3 m	5 m	10 m	20 m	30 m	50 m
2 **PSEN cable M12-5sf**	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 5-pin, female, straight ▶ Connection 2: open cable	630 310	630 311	630 312	630 298	630 297	630 364
2 **PSEN cable M12-5af**		▶ Connection 1: M12, 5-pin, female, angled ▶ Connection 2: open cable	630 347	630 348	630 349	-	630 350	630 365

Connection cable M12, 8-pin

| Type	Description	Features	3 m	5 m	10 m	20 m	30 m	50 m
3 **PSEN cable axial M12-8**	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 8-pin, female, straight ▶ Connection 2: open cable	540 319	540 320	540 321	-	540 326	-
3 **PSEN cable angle M12-8**		▶ Connection 1: M12, 8-pin, female, angled ▶ Connection 2: open cable	540 322	540 323	540 324	-	540 325	-
3 **PSEN cable axial M12-8 sh**	Cable for connection to any evaluation device, shielded	▶ Connection 1: M12, 8-pin, female, straight ▶ Connection 2: open cable	630 313	630 314	630 315	-	630 328	630 368
3 **PSEN cable angle M12-8 sh**		▶ Connection 1: M12, 8-pin, female, angled ▶ Connection 2: open cable	630 316	630 317	630 318	-	630 329	630 369

▶ Basic light curtains Type 2, Type 4 for finger and hand protection – Y-connection

PSEN op2H, PSEN op4F, PSEN op4H [1]
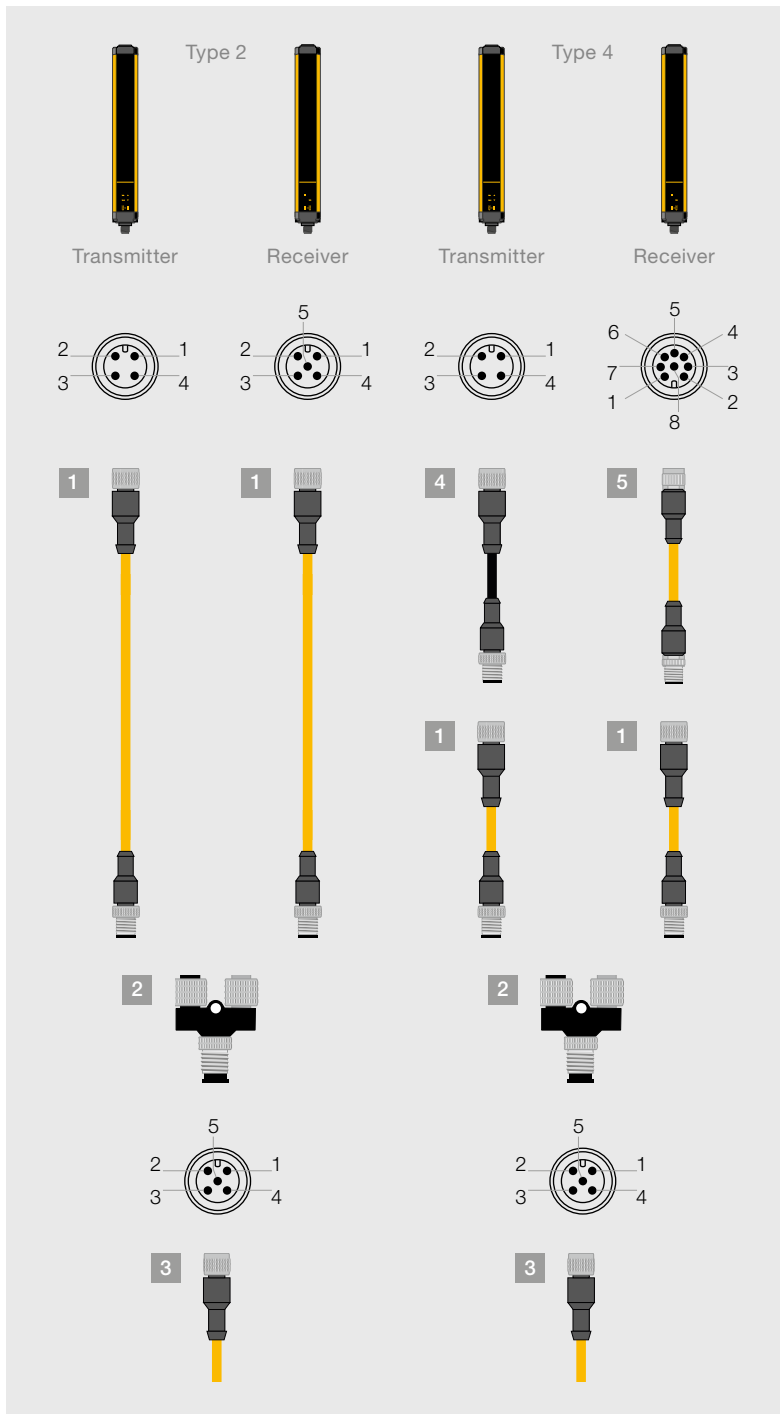
Type 2

Type 4

Transmitter   Receiver   Transmitter   Receiver

▶ Connection:
  - Transmitter Type 2, 4: M12, 4-pin
  - Receiver Type 2: M12, 5-pin
  - Receiver Type 4: M12, 8-pin
  - Unshielded cables are possible
▶ Type 2: The functionality of the transmitter is not affected by the Y-connector.
▶ Type 4: Use of the Y-connector results in the following changes in the wiring:
  - No transmitter test input.
  - The light curtain runs in automatic reset.
  - No feedback loop monitoring.
  - Additional adapters for transmitter and receiver (10 cm long) are required.
▶ Connection cable: M12, 5-pin
▶ Connection cable: M12, 5-pin
▶ Combined with safety relays PNOZsigma, PNOZ X or PNOZ c2 and configurable small controllers PNOZmulti, for example, you have a safe and economic complete solution.

[1] only valid for the series -s…/1

▶ Basic light curtains Type 2, Type 4 for finger and hand protection – Y-connection

Connection cable M12, 5-pin

| Type	Description	Features	Order number (by length)					
			2 m	3 m	5 m	10 m	20 m	30 m
1 **PDP67 cable M12-5sf M12-5sm**	Connection cable, unshielded	▸ Connection 1: M12, 5-pin, female, straight ▸ Connection 2: M12, 5-pin, male, straight	380 713	380 208	380 209	380 210	380 220	380 211
1 **PDP67 cable M12-5af M12-5am**		▸ Connection 1: M12, 5-pin, female, angled ▸ Connection 2: M12, 5-pin, male, angled	-	380 212	380 213	380 214	-	380 215

Connection cable M12, 5-pin

Type	Description	Features	Order number (by length)					
			3 m	5 m	10 m	20 m	30 m	50 m
3 **PSEN cable M12-5sf**	Cable for connection to any evaluation device, unshielded	▸ Connection 1: M12, 5-pin, female, straight ▸ Connection 2: open cable	630 310	630 311	630 312	630 298	630 297	630 364
3 **PSEN cable M12-5af**		▸ Connection 1: M12, 5-pin, female, angled ▸ Connection 2: open cable	630 347	630 348	630 349	-	630 350	630 365

Y-connector/adapter

Type	Description	Order number
2 **PSEN T M12**	Y-connector: adapter for connecting PSEN op2H transmitter and receiver to PSS67/PDP67, 2 x M12 5p female, 1 x M12 5p male	380 350
4 **PSEN opt M12 Transmitter adapter**	Adapter for connecting one PSEN op2H transmitter to Y-connector: (380 350), 1 x M12 4p female, 1 x M12 5p male	380 304
5 **PSEN op4F/H Receiver adapter**	Adapter for connecting the receiver PSEN op4F…/ 1 and PSEN op4H…/1 to Y-connector (380 350)	380 326

▶ Basic light curtains Type 2, Type 4 for finger and hand protection – with PDP67

PSEN op2H, PSEN op4F, PSEN op4H [1]

Type 2

Transmitter   Receiver

Type 4

Transmitter   Receiver

PDP67 F 8DI ION HP

PDP67 F 8DI ION HP
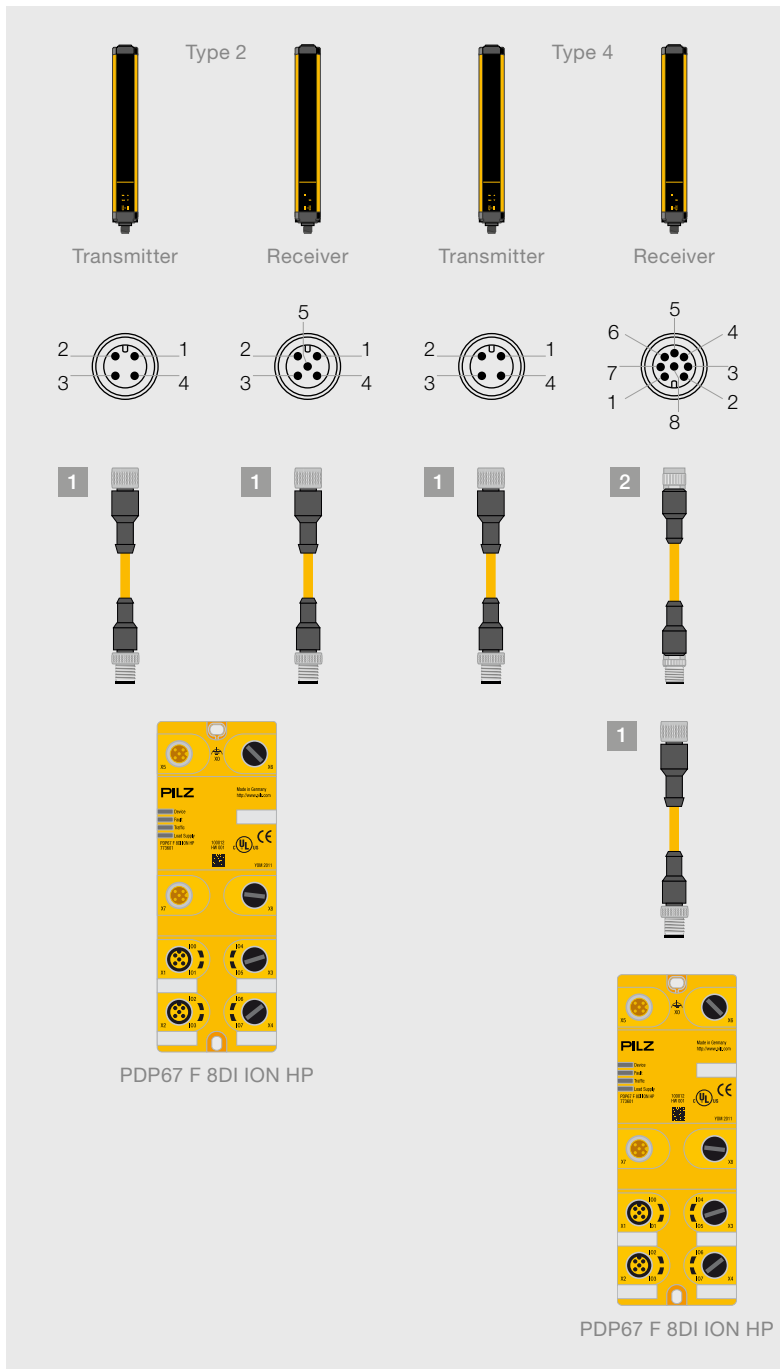
▶ Connection Type 2:
  - No adapter is required for connection to PDP67.
  - Connection cable: M12, 5-pin
▶ Connection Type 4:
  - To connect the receiver to IP67 modules PDP67 (773 601), an adapter (380 326) is required.
  - Connection cable: M12, 5-pin

[1] only valid for the series -s…/1

▶ Basic light curtains Type 2, Type 4 for finger and hand protection – with PDP67

Connection cable M12, 5-pin								
Type	**Description**	**Features**	**Order number (by length)**					
			2 m	**3 m**	**5 m**	**10 m**	**20 m**	**30 m**
1 **PDP67 cable M12-5sf M12-5sm**	Connection cable, unshielded	▶ Connection 1: M12, 5-pin, female, straight ▶ Connection 2: M12, 5-pin, male, straight	380 713	380 208	380 209	380 210	380 220	380 211
1 **PDP67 cable M12-5af M12-5am**		▶ Connection 1: M12, 5-pin, female, angled ▶ Connection 2: M12, 5-pin, male, angled	-	380 212	380 213	380 214	-	380 215

Adapter		
Type	**Description**	**Order number**
2 **PSEN op4F/H Receiver adapter**	Adapter for connecting the receiver PSEN op4F…/ 1 and PSEN op4H…/1 to PDP67	380 326

▶ Basic light curtains Type 2, Type 4 for body protection – without muting

PSEN op2B, PSEN op4B [1)]
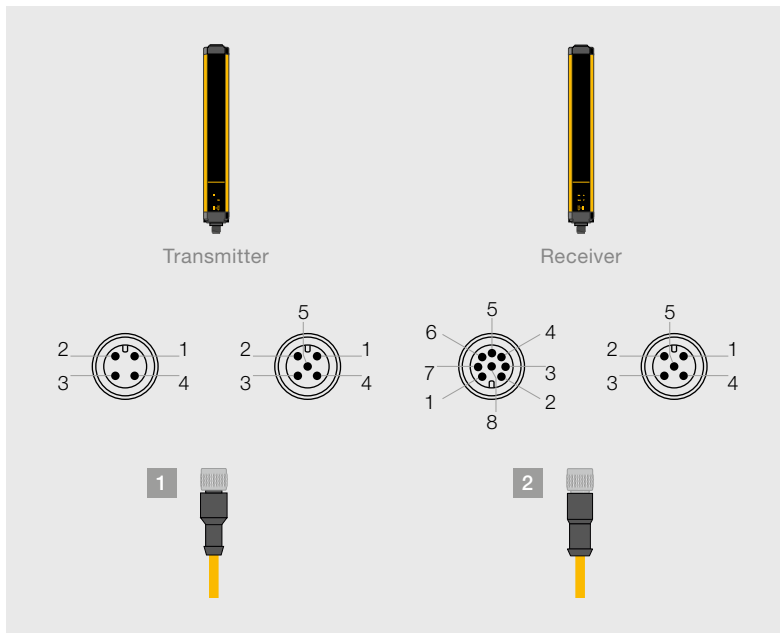
▶ Connection:
  - Receiver: M12, 8-pin, M12, 5-pin
  - Transmitter: M12, 4-pin,
    M12, 5-pin

▶ The 5-pin connections are not required if the muting functionalities are not used. They are only required for the voltage supply and for collecting the muting signals.

▶ Evaluation can only take place in the receiver.

▶ Combined with safety relays PNOZsigma, PNOZ X or PNOZ c2 and configurable small controllers PNOZmulti, for example, you have a safe and economic complete solution.

▶ Basic light curtains Type 2, Type 4 for body protection – without muting

Connection cable M12, 4-pin								
Type	**Description**	**Features**	**Order number (by length)**					
			3 m	**5 m**	**10 m**	**20 m**	**30 m**	**50 m**
1 PSEN op cable M12-4sf	Cable for connection to any evaluation device, unshielded	▸ Connection 1: M12, 4-pin, female, straight ▸ Connection 2: open cable	630 300	630 301	630 302	-	630 296	630 362
1 PSEN op cable M12-4sf sh	Cable for connection to any evaluation device, shielded	▸ Connection 1: shielded, M12, 4-pin, female, straight ▸ Connection 2: open cable	630 303	630 304	630 305	630 270	630 309	630 366

Connection cable M12, 8-pin								
2 PSEN cable axial M12-8	Cable for connection to any evaluation device, unshielded	▸ Connection 1: M12, 8-pin, female, straight ▸ Connection 2: open cable	540 319	540 320	540 321	-	540 326	-
2 PSEN cable angle M12-8		▸ Connection 1: M12, 8-pin, female, angled ▸ Connection 2: open cable	540 322	540 323	540 324	-	540 325	-
2 PSEN cable axial M12-8 sh	Cable for connection to any evaluation device, shielded	▸ Connection 1: shielded, M12, 8-pin, female, straight ▸ Connection 2: open cable	630 313	630 314	630 315	-	630 328	630 368
2 PSEN cable angle M12-8 sh		▸ Connection 1: shielded, M12, 8-pin, female, angled ▸ Connection 2: open cable	630 316	630 317	630 318	-	630 329	630 369

▶ Basic light curtains Type 2, Type 4 for body protection – with integrated muting

PSEN op2B, PSEN op4B[1]

L-muting

Passive

Active

Transmitter

Receiver

T-muting

Transmitter
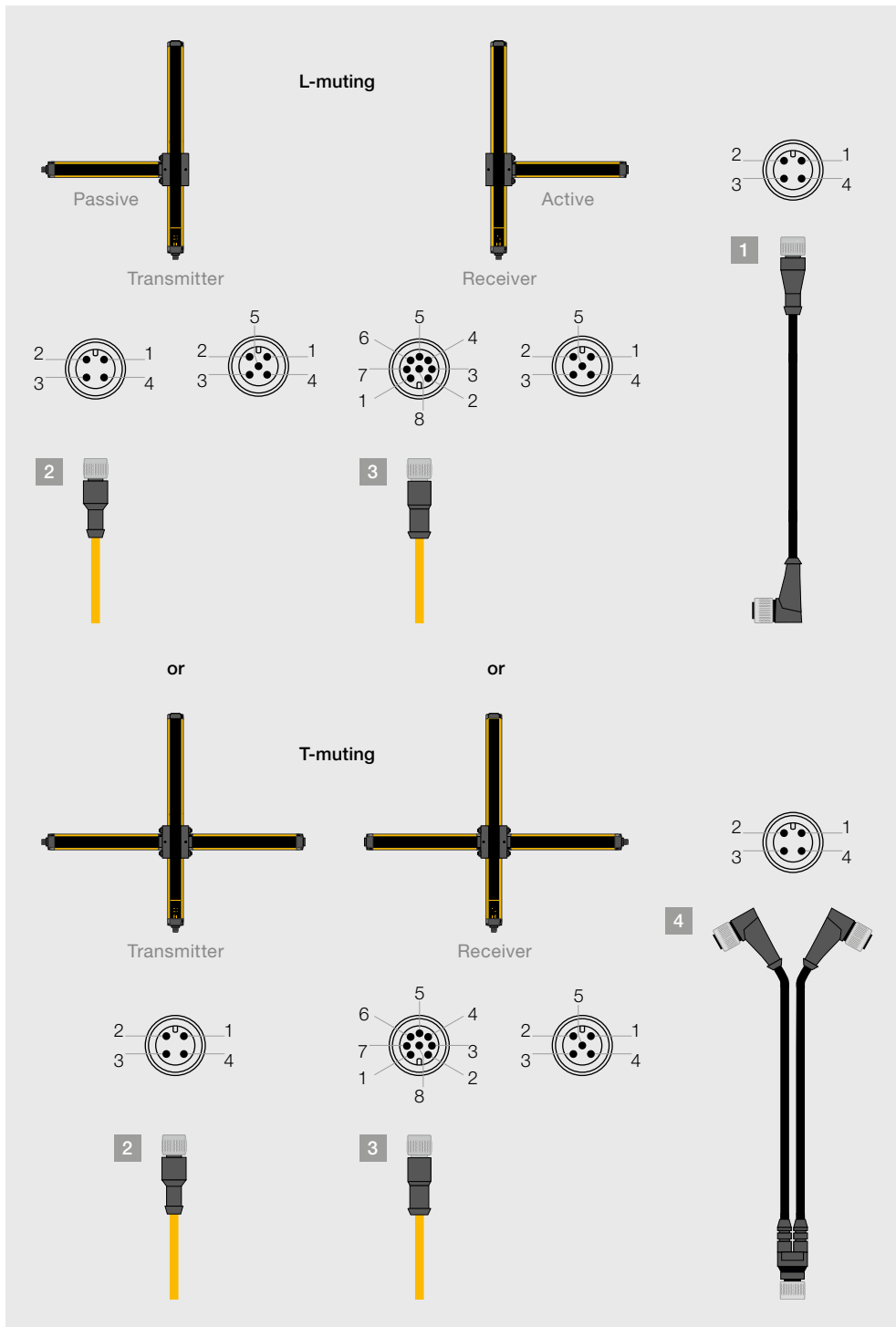
Receiver

▶ Connection:
  - Transmitter: M12, 4-pin
  - Receiver: M12, 8-pin

▶ L-Muting and T-Muting are possible.

▶ Use of the integrated muting arms saves on cabling and configuration work, as the internal wiring and orientation are already provided.

▶ The muting arms are simply connected via a cable (630 282 or 630 295) to the light curtain receiver.

▶ Since the distance between the muting sensors is fixed, there may be too little flexibility for identifying objects, depending on the transport speed.

▶ Combined with safety relays PNOZsigma or PNOZ c2 and configurable small controllers PNOZmulti, for example, you have a safe and economic complete solution.

[1] only valid for the series -s…/1

▶ Basic light curtains Type 2, Type 4 for body protection – with integrated muting

Muting set

Type	Description	Order number
PSEN op2.1 L-Muting Set	Complete muting set for L-muting, incl. cable (630 282) and bracket	630 820
PSEN op2.2 T-Muting Set	Complete muting set for T-muting, incl. cable (630 295) and bracket	630 821

Cable for muting

Type	Description	Features	Order number (by length)	
			0.5 m	**0.75 m**
1 **PSEN op cable M12-4sf sh**	Cable for L-muting, shielded	▶ Connection 1: M12, 4-pin, female, straight ▶ Connection 2: M12, 4-pin, female, angled	-	630 282
4 **PSEN op cableset M12-4sf sh**	Cable for T-muting, shielded	▶ Connection 1: shielded, M12, 4-pin, female, straight ▶ Connection 2: 2 x M12, 4-pin, female, angled	630 295	-

Connection cable M12, 4-pin

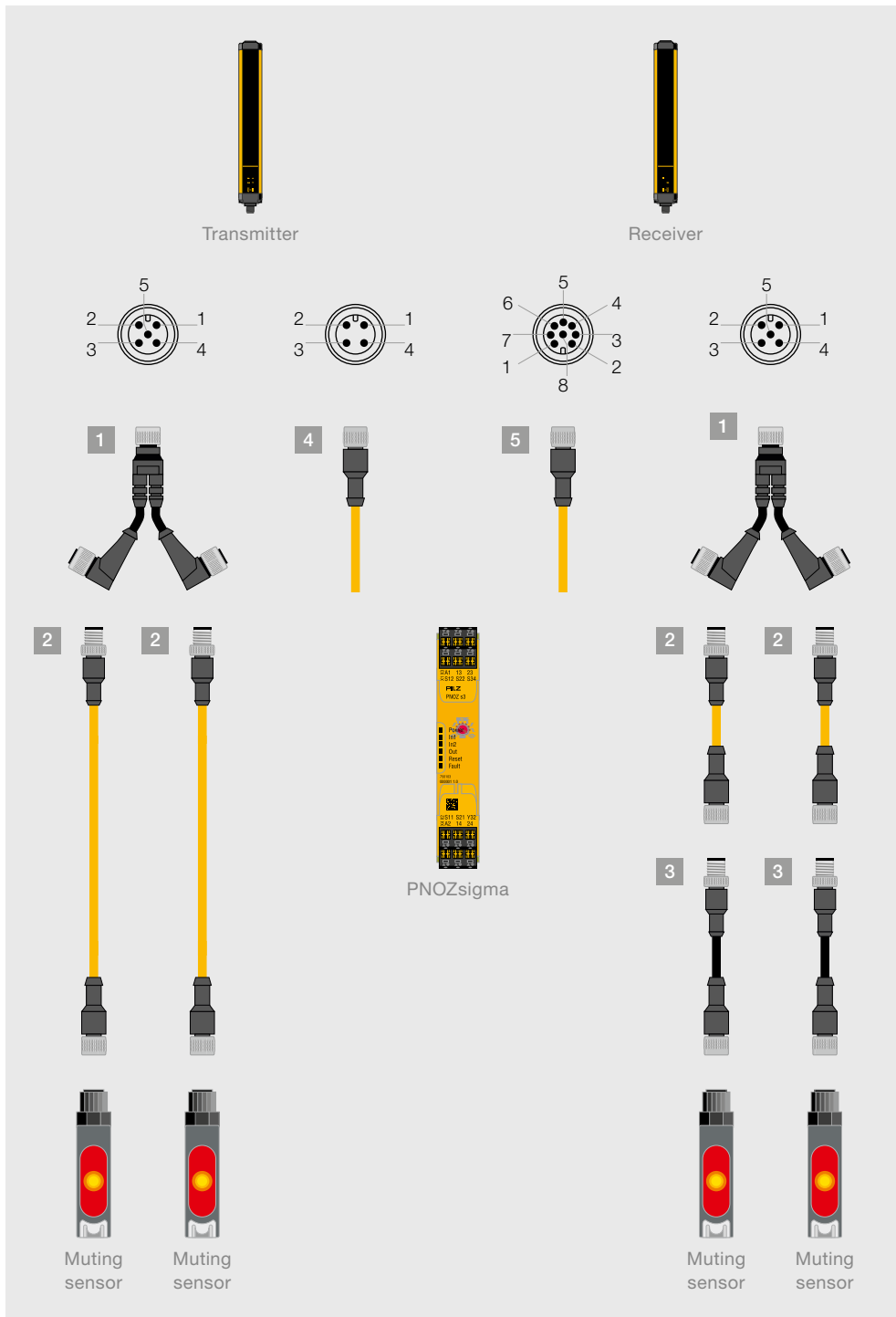| Type	Description	Features	Order number (by length)					
			3 m	**5 m**	**10 m**	**20 m**	**30 m**	**50 m**
2 **PSEN op cable M12-4sf**	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 4-pin, female, straight ▶ Connection 2: open cable	630 300	630 301	630 302	-	630 296	630 362

Shielded cables available (see page 17)

Connection cable M12, 8-pin

Type	Description	Features						
			3 m	**5 m**	**10 m**	**20 m**	**30 m**	**50 m**
3 **PSEN cable axial M12-8**	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 8-pin, female, straight ▶ Connection 2: open cable	540 319	540 320	540 321	-	540 326	-
3 **PSEN cable angle M12-8**		▶ Connection 1: M12, 8-pin, female, angled ▶ Connection 2: open cable	540 322	540 323	540 324	-	540 325	-

Shielded cables available (see page 17)

▶ Basic light curtains Type 2, Type 4 for body protection – with muting via individual sensors

PSEN op2B, PSEN op4B¹⁾

Transmitter

Receiver

PNOZsigma

Muting sensor   Muting sensor

Muting sensor   Muting sensor

▶ Connection:
  - Receiver: Y-cable for connecting the individual sensors and 2 x connection cables M12, 5-pin as well as 2 x adapter cables for connecting the individual sensors
  - Transmitter: Y-cable for connecting the individual sensors and 2 x connection cables M12, 5-pin

▶ The muting sensors have 2 outputs (N/O / N/C).

▶ Use of the adapter cable to connect the individual sensors (380 323) means the N/C contact is not continued. As a result the transmitter only sends a signal when it is triggered.

▶ Reflex light curtains or proximity switches with N/O contact, for example, can also be used.

▶ Combined with safety relays PNOZsigma or PNOZ c2 and configurable small controllers PNOZmulti, for example, you have a safe and economic complete solution.

▶ Note: This type of control relates to the muting functionality directly in the light curtain. Muting can also be realised in the PNOZmulti. This would require all sensors to be connected to the PNOZmulti.

¹⁾ only valid for the series -s…/1

▶Basic light curtains Type 2, Type 4 for body protection – with muting via individual sensors

Connection of the individual muting sensors

Type		Description	Order number
1	PSEN op cableset M12-4sf shielded	Y-cable for connecting the individual sensors, shielded, 0.5 m	630 295
3	PSEN op2/4 M12 Receiver ad	Adapter cable for connecting the individual sensors (only required for receiver), 0.1 m	380 323

Connection cable M12, 5-pin

Type		Description	Features	Order number (by length)					
				2 m	3 m	5 m	10 m	20 m	30 m
2	PDP67 cable M12-5sf M12-5sm	Connection cable, unshielded	▸ Connection 1: M12, 5-pin, female, straight ▸ Connection 2: M12, 5-pin, male, straight	380 713	380 208	380 209	380 210	380 220	380 211
2	PDP67 cable M12-5af M12-5am		▸ Connection 1: M12, 5-pin, female, angled ▸ Connection 2: M12, 5-pin, male, angled	-	380 212	380 213	380 214	-	380 215

Connection cable M12, 4-pin

| Type		Description	Features	Order number (by length)					
				3 m	5 m	10 m	20 m	30 m	50 m
4	PSEN op cable M12-4sf	Cable for connection to any evaluation device, unshielded	▸ Connection 1: M12, 4-pin, female, straight ▸ Connection 2: open cable	630 300	630 301	630 302	-	630 296	630 362

Shielded cables available (see page 17)

Connection cable M12, 8-pin

Type		Description	Features	Order number (by length)					
5	PSEN cable axial M12-8	Cable for connection to any evaluation device, unshielded	▸ Connection 1: M12, 8-pin, female, straight ▸ Connection 2: open cable	540 319	540 320	540 321	-	540 326	-
5	PSEN cable angle M12-8		▸ Connection 1: M12, 8-pin, female, angled ▸ Connection 2: open cable	540 322	540 323	540 324	-	540 325	-

Shielded cables available (see page 17)

▶ Advanced light curtains Type 2, Type 4 for finger and hand protection – basic function or with blanking

PSEN op2H-A, PSEN op4H-A, PSEN op4F-A

Transmitter　　　Receiver　　　or　　　Receiver
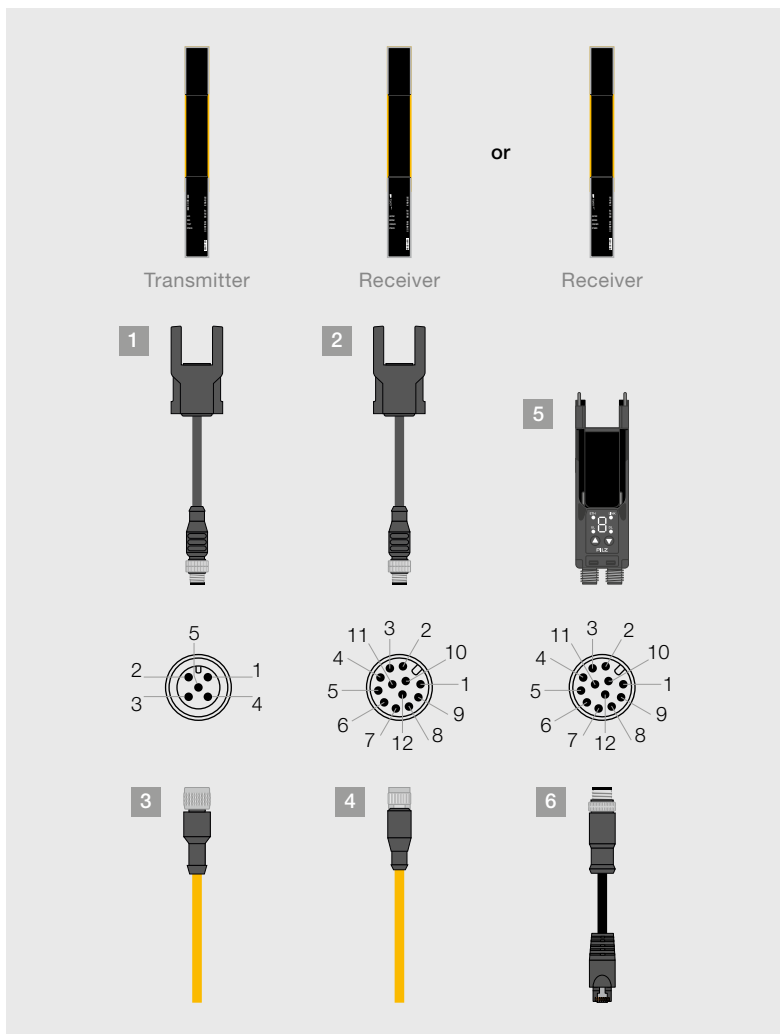
- ▶ The Advanced light curtains each have an 18-pin system connector.
- ▶ The different pigtail cables are not supplied with the device.
- ▶ The blanking cable for the receiver is an option in the case of operation without muting, as there is only one cable outlet here.
- ▶ The programming adapter can only be used with the Type 4 version (software configuration).
- ▶ If the programming adapter is used there is no pigtail cable at the receiver.
- ▶ Combined with safety relays PNOZsigma or PNOZ X and configurable small controllers PNOZmulti, for example, you have a safe and economic complete solution.

▶ Advanced light curtains Type 2, Type 4 for finger and hand protection – basic function or with blanking

Pigtail cables

Type	Description	Features	Order number (by length) 0.2 m
1 PSEN op pigtail emitter	Pigtail cable transmitter	▶ Connection 1: 18-pin, system connector ▶ Connection 2: M12, 5-pin, male	631 055
2 PSEN op pigtail receiver blanking	Pigtail cable receiver blanking	▶ Connection 1: 18-pin, system connector ▶ Connection 2: M12, 5-pin, male	631 056

Connection cable M12, 5-pin

Type	Description	Features	Order number (by length)					
			3 m	5 m	10 m	20 m	30 m	50 m
3 PSEN cable M12-5sf	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 5-pin, female, straight ▶ Connection 2: open cable	630 310	630 311	630 312	630 298	630 297	630 364
3 PSEN cable M12-5af		▶ Connection 1: M12, 5-pin, female, angled ▶ Connection 2: open cable	630 347	630 348	630 349	-	630 350	630 365

Connection cable M12, 12-pin

Type	Description	Features						
4 PSEN op cable axial M12 12-pole	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 12-pin, unshielded, female, straight ▶ Connection 2: open cable	631 080	631 081	631 082	631 083	631 084	631 085

Programming adapter

| Type	Description	Order number
5 PSEN op Advanced Programming Adapter	Programming adapter for PSENopt Configurator	631 070

Ethernet cable

Type	Description	Features	Order number (by length)		
			1 m	3 m	10 m
6 PSEN op Ethernet cable	Ethernet cable for PSEN op Advanced Programming Adapter	▶ Connection 1: RJ45, 4-pin ▶ Connection 2: M12, 4-pin, male, D-coded	631 071	631 072	631 073

▶ Advanced light curtains Type 2, Type 4 for finger and hand protection – with muting

PSEN op2H-A, PSEN op4H-A, PSEN op4F-A

Transmitter   Receiver   or   Receiver

For muting arms/ sensors
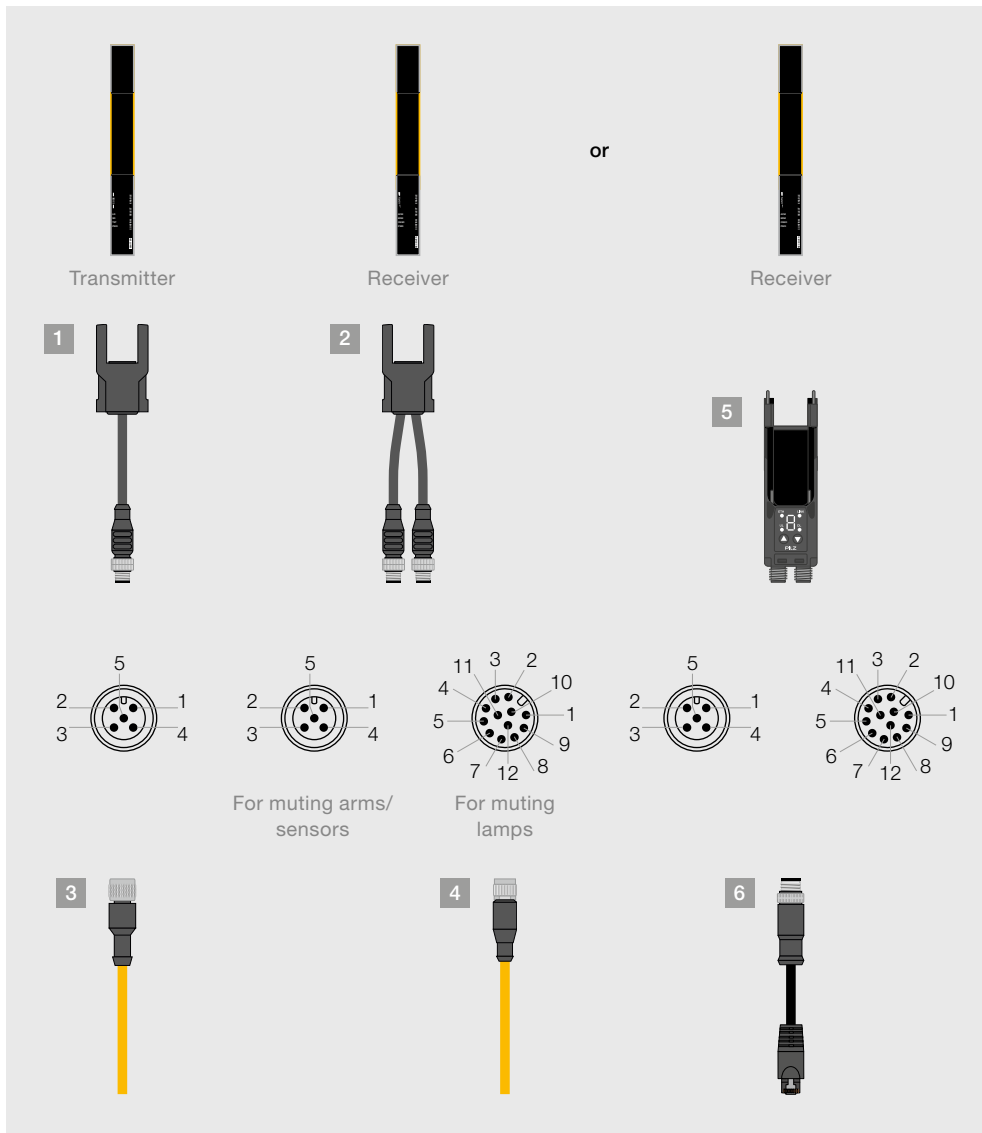
For muting lamps

▶ Muting requires the pigtail cable with 2 outlets totalling 17 pins (12-pin and 5-pin).

▶ The integrated muting functions are addressed in the same way as light curtains with body resolution. The need for a muting lamp must be verified.

▶ The possible programming adapter replaces the pigtail cable on the receiver.

▶ The integrated muting arms can also be used with the Advanced light curtains.

▶ If muting via external sensors with a PNOZmulti, for example, the blanking wiring can be used (see page 23).

▶ Combined with safety relays PNOZsigma or PNOZ X and configurable small controllers PNOZmulti, for example, you have a safe and economic complete solution.

▶ Advanced light curtains Type 2, Type 4 for finger and hand protection – with muting

Pigtail cables

Type		Description	Features	Order number (by length)
				0.2 m
1	PSEN op pigtail emitter	Pigtail cable transmitter	▶ Connection 1: 18-pin, system connector ▶ Connection 2: M12, 5-pin, male	631 055
2	PSEN op pigtail receiver muting	Pigtail cable receiver muting	▶ Connection 1: 18-pin, system connector ▶ Connection 2 (3): M12, 5-pin, male and M12, 12-pin, male	631 057

Connection cable M12, 5-pin

Type		Description	Features	Order number (by length)					
				3 m	5 m	10 m	20 m	30 m	50 m
3	PSEN cable M12-5sf	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 5-pin, female, straight ▶ Connection 2: open cable	630 310	630 311	630 312	630 298	630 297	630 364
3	PSEN cable M12-5af		▶ Connection 1: M12, 5-pin, female, angled ▶ Connection 2: open cable	630 347	630 348	630 349	-	630 350	630 365

Connection cable M12, 12-pin

Type		Description	Features						
4	PSEN op cable axial M12 12-pole	Cable for connection to any evaluation device, unshielded	▶ Connection 1: M12, 12-pin, unshielded, female, straight ▶ Connection 2: open cable	631 080	631 081	631 082	631 083	631 084	631 085

Programming adapter

Type		Description	Order number
5	PSEN op Advanced Programming Adapter	Programming adapter for PSENopt Configurator	631 070

Ethernet cable

Type		Description	Features	Order number (by length)		
				1 m	3 m	10 m
6	PSEN op Ethernet cable	Ethernet cable for PSEN op Advanced Programming Adapter	▶ Connection 1: RJ45, 4-pin ▶ Connection 2: M12, 4-pin, male, D-coded	631 071	631 072	631 073

▶ Slimline light curtains PSENopt slim Type 2, Type 4 for finger and hand protection – standard case

PSEN op2H-SL, PSEN op4F-SL, PSEN op4H-SL

Transmitter   Receiver   or   Transmitter   Receiver

PDP67 F 8DI ION HP

PNOZsigma
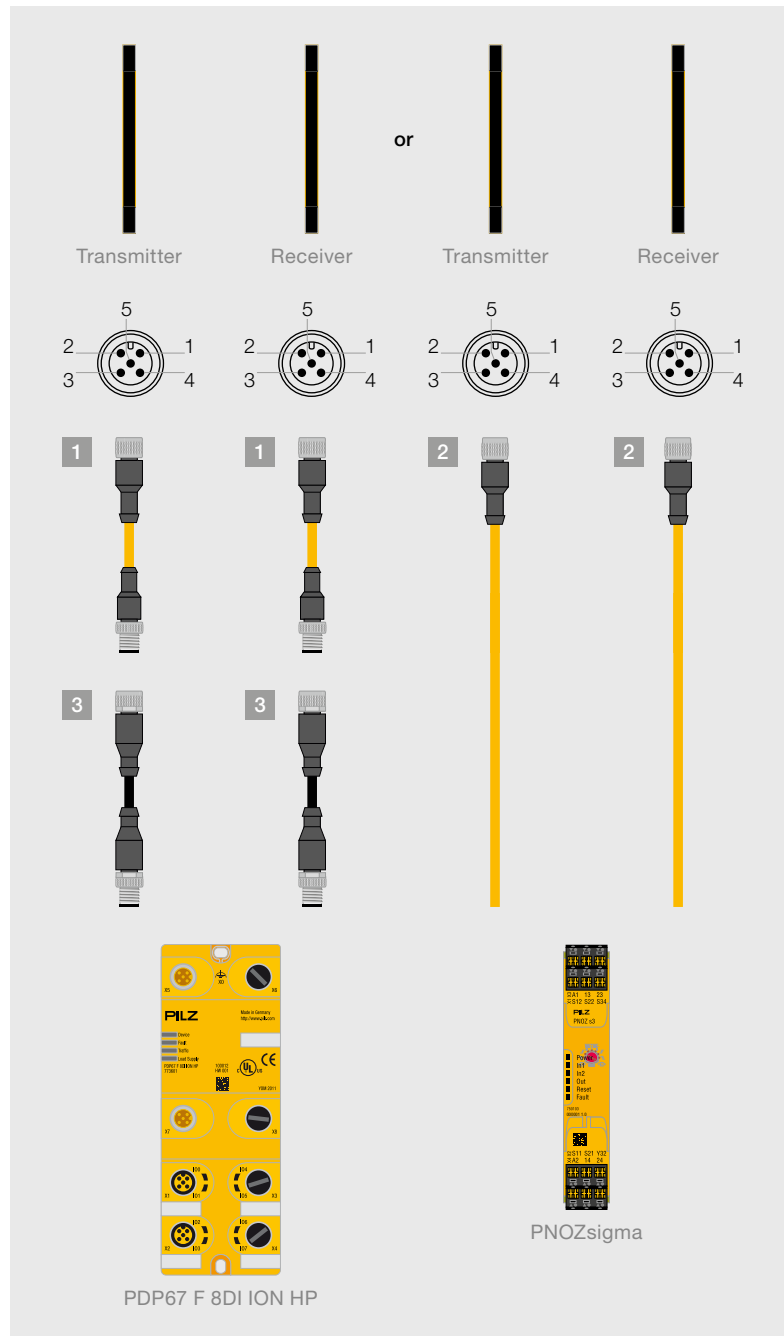
▶ Connection of transmitter and receiver:
  - PSENopt slim light curtains have fixed pigtail outlets with M12, 5-pin male connectors.
  - M12, 5-pin connection cables are required.
  - Direct connection to the IP67 module PDP67 (773 601) is possible.
▶ The following functions are not possible with a direct connection to the PDP67:
  - Automatic start
  - EDM
  - Adjustment mode
▶ Combined with PDP67 and safety relays PNOZsigma, PNOZ X or PNOZ c2, for example, you have a safe and economic complete solution.

▶ Slimline light curtains PSENopt slim Type 2, Type 4 for finger and hand protection – standard case

Connection cable M12, 5-pin

| Type	Description	Features	Order number (by length)					
			2 m	3 m	5 m	10 m	20 m	30 m
1 **PDP67 cable M12-5sf M12-5sm**	Connection cable, unshielded	▸ Connection 1: M12, 5-pin, female, straight ▸ Connection 2: M12, 5-pin, male, straight	380 713	380 208	380 209	380 210	380 220	380 211
1 **PDP67 cable M12-5af M12-5am**		▸ Connection 1: M12, 5-pin, female, angled ▸ Connection 2: M12, 5-pin, male, angled	-	380212	380213	380214	-	380215

Connection cable M12, 5-pin

Type	Description	Features	Order number (by length)					
			3 m	5 m	10 m	20 m	30 m	50 m
2 **PSEN cable M12-5sf**	Cable for connection to any evaluation device, unshielded	▸ Connection 1: M12, 5-pin, female, straight ▸ Connection 2: open cable	630 310	630 311	630 312	630 298	630 297	630 364
2 **PSEN cable M12-5af**		▸ Connection 1: M12, 5-pin, female, angled ▸ Connection 2: open cable	630 347	630 348	630 349	-	630 350	630 365

PDP adapter

Type	Description	Order number
3 **PSEN op SL adapter**	Adapter for connecting PSENopt slim to PDP67	631 187

▶ Basic light curtains PSENopt II Type 3, Type 4 for finger and hand protection – standard case

PSEN opII3F, PSEN opII3H, PSEN op4F, PSEN op4H

Transmitter   Receiver   Transmitter   Receiver

PDP67 F 8DI ION HP

PNOZsigma
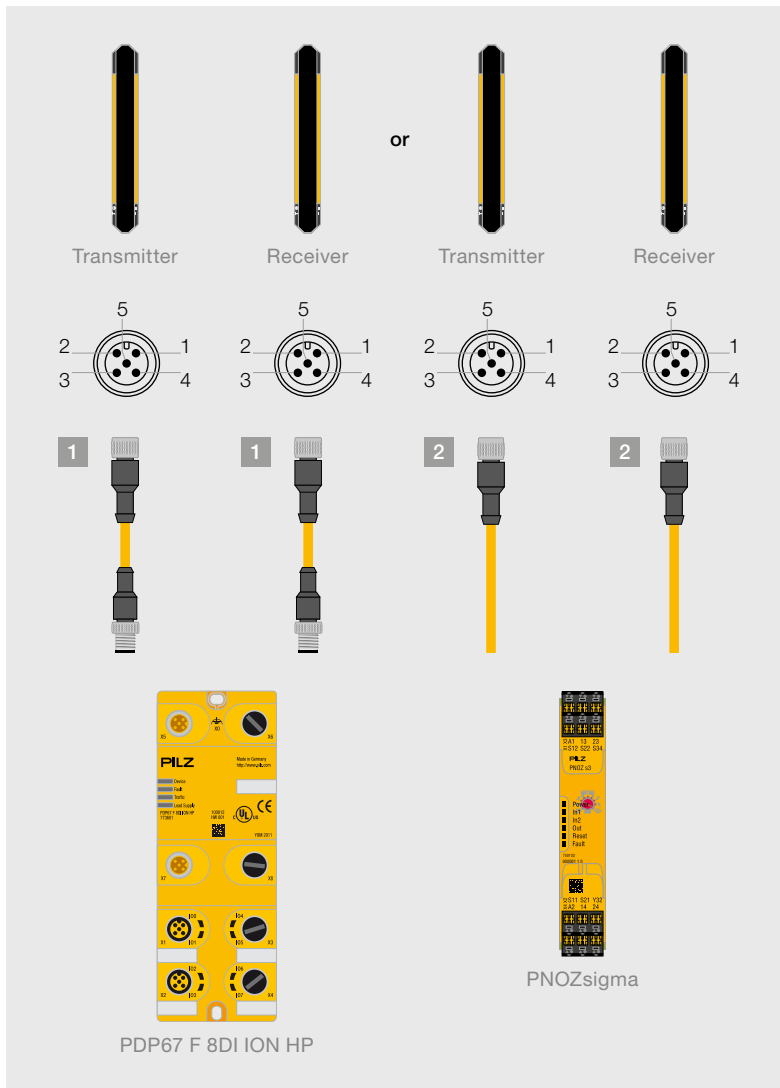
▶ Connection of transmitter and receiver:
  - PSENopt II Type 3 light curtains have fixed pigtail outlets with M12, 5-pin male connectors.
  - M12, 5-pin connection cables are required.
  - Unshielded connection cables can also be used.
  - Connection directly to the IP67 module PDP67 is possible.

▶ Combined with PDP67 and safety relays PNOZsigma, PNOZ X or PNOZ c2, for example, you have a safe and economic complete solution.

▶ Basic light curtains PSENopt II Type 3, Type 4 for finger and hand protection – standard case

Connection cable M12, 5-pin								
Type	**Description**	**Features**	**Order number (by length)**					
			2 m	**3 m**	**5 m**	**10 m**	**20 m**	**30 m**
1 **PDP67 cable M12-5sf M12-5sm**	Connection cable, unshielded	▸ Connection 1: M12, 5-pin, female, straight ▸ Connection 2: M12, 5-pin, male, straight	380 713	380 208	380 209	380 210	380 220	380 211
1 **PDP67 cable M12-5af M12-5am**		▸ Connection 1: M12, 5-pin, female, angled ▸ Connection 2: M12, 5-pin, male, angled	-	380212	380213	380214	-	380215

Connection cable M12, 5-pin								
Type	**Description**	**Features**	**Order number (by length)**					
			3 m	**5 m**	**10 m**	**20 m**	**30 m**	**50 m**
2 **PSEN cable M12-5sf**	Cable for connection to any evaluation device, unshielded	▸ Connection 1: M12, 5-pin, female, straight ▸ Connection 2: open cable	630 310	630 311	630 312	630 298	630 297	630 364
2 **PSEN cable M12-5af**		▸ Connection 1: M12, 5-pin, female, angled ▸ Connection 2: open cable	630 347	630 348	630 349	-	630 350	630 365

▶ Support

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Safe   Economical
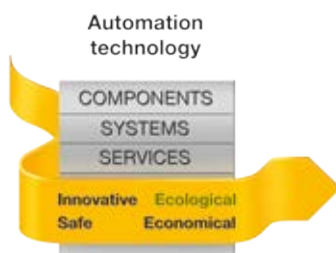
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