



► Safety gate system PSENmlock

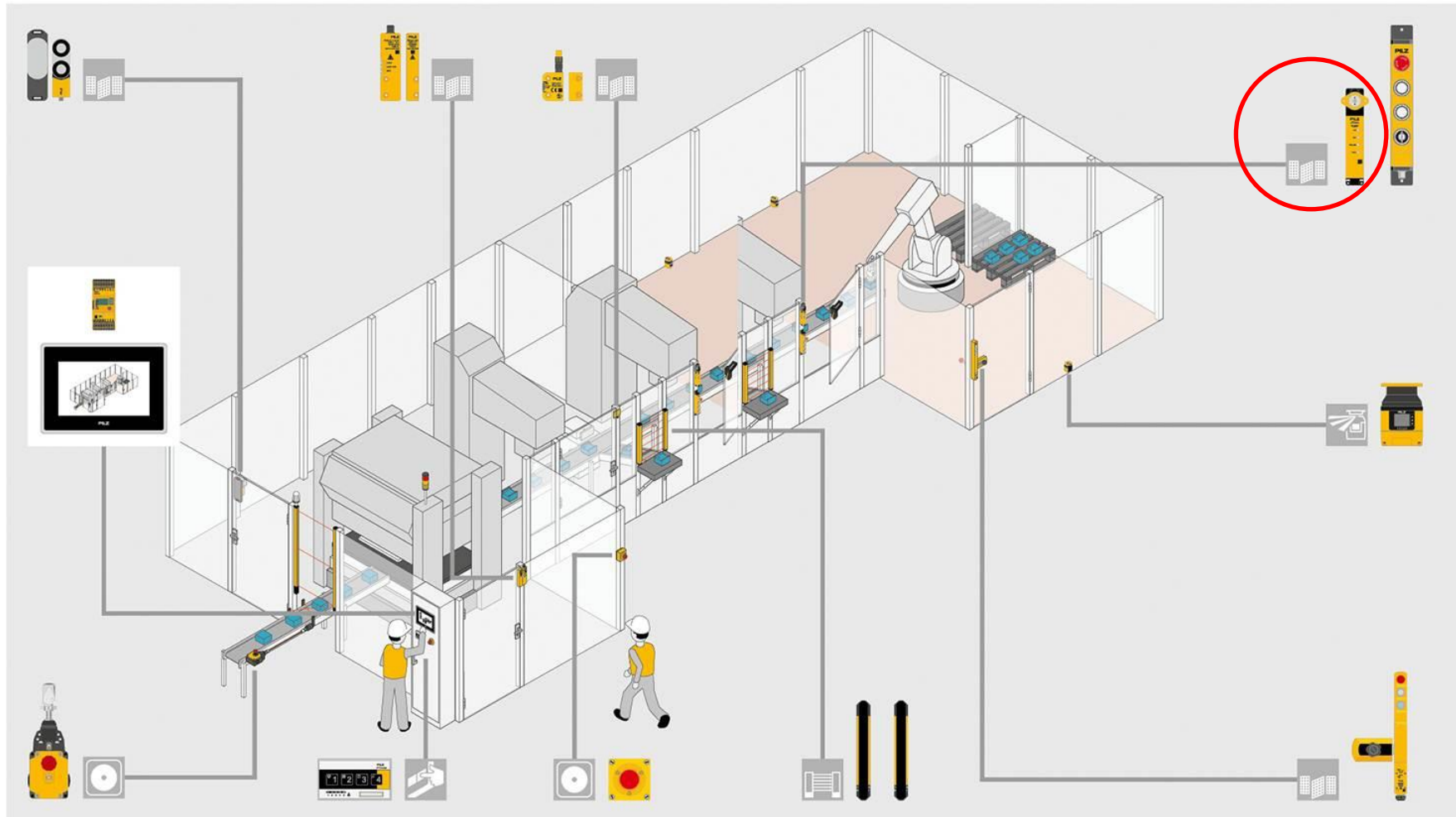
Safe interlocking and safe guard locking in one product!
Customer presentation

PILZ
THE SPIRIT OF SAFETY

► Contents

1. The safe solution for your application: sensor and control technology
2. Product description
3. Benefits at a glance
4. Type code
5. Product in detail
6. Application examples

► The safe solution for your application: Sensor and control technology



► Product description



Safety gate system PSENmlock

Safety gate system PSENmlock

- Meets all the requirements of EN/ISO 14119
- Safe interlocking up to PL e / SIL 3, safe guard locking up to PL e / SIL 3
- Product versions: Base version and series connection with/without power reset
- Coding versions: coded, fully coded, unique fully coded
- LEDs on three sides of the housing
- Safe holding force up to 7500 N, integrated latching force 30 N
- Protection type IP67
- Connection: M12 8-pin, M12 12-pin, pigtail
- Auxiliary release on 3 sides
- Compatible handle module with integrated escape release and actuator
- Compatible with diagnostic system Safety Device Diagnostics (SDD)
- Emergency release (cannot be used on versions with automatic reset)

► Product description



PSENmlock (switch, actuator, units)

- Base version with power reset (coded, fully coded, unique fully coded)
- Base version with automatic reset (coded, fully coded, unique fully coded)
- Series connection with power reset (coded, fully coded, unique fully coded)
- Series connection with automatic reset (coded, fully coded, unique fully coded)

Handle module

- For swing gates/sliding gates
- With upward/downward cable outlet on PSENmlock
- Coded, fully coded

Accessories

- Handles
- Escape releases
- Installation accessories
- Cables, plug-in connectors, adapters

► Benefits at a glance



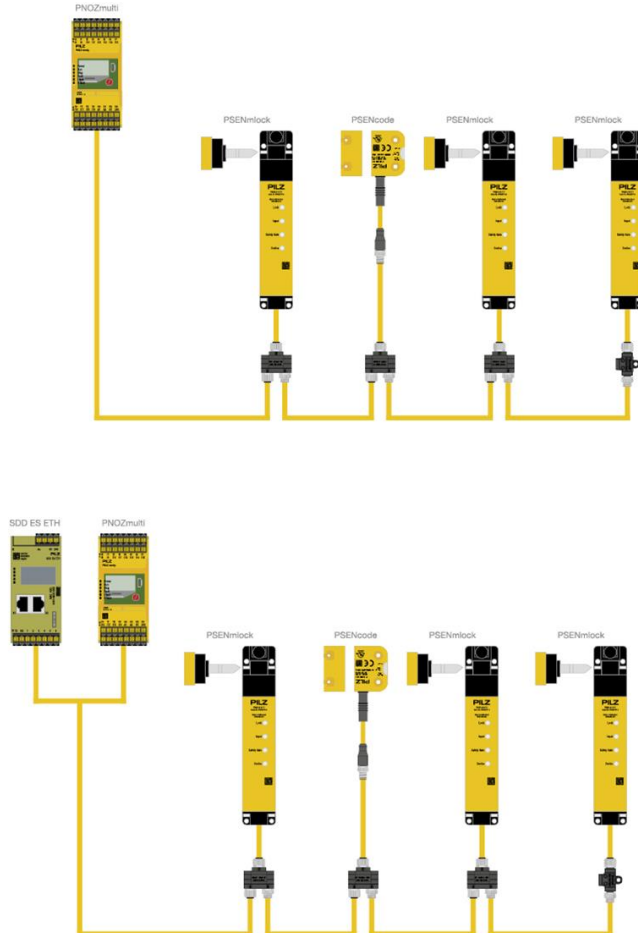
Safety gate system PSENmlock

Safe interlocking and safe guard locking in one product!

- Maximum safety: safe interlocking and safe guard locking up to PL e
- High holding force: up to 7500 N
- Easily visible diagnostics when installed: LEDs on 3 sides of the housing
- Compact design: Suitable, amongst other things, for all 40 mm profile designs
- Long service life: robust housing and mechanical robustness
- Flexible actuator: for a high tolerance compensation – even with sagging gates
- No inadvertent activation of the guard locking by the integral restart interlock
- Energy-saving due to volt-free guard locking through bistable magnet
- Modular, complete solution that's individual to you: can be combined with optional accessories such as escape releases and handles, the pushbutton unit PITgatebox and the configurable safe small controller PNOZmulti 2

► Benefits at a glance

Series connection



Safety gate system PSENmlock

Series connection without SDD

- Cost-effective installation possible thanks to reduced wiring work and reduction of the safe inputs and outputs at the controller

Series connection with SDD

- Simple and comprehensive diagnostics with the SDD
- Targeted control of individual gates despite series connection of the lock signals and the OSSD evaluation (vs. joint control with classic series connection)
- Less wiring needed
- Economical series connection: both the safety outputs and the safety inputs can be connected in series

► Benefits at a glance

Versions with power reset, versions with automatic reset



Safety gate system PSENmlock

PSENmlock versions with power reset

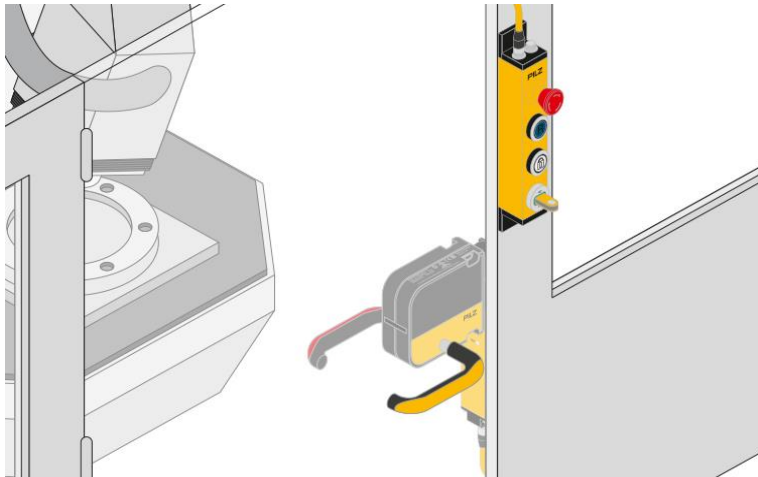
- Switch needs to be reset after the escape release has been operated → simplified plant monitoring

PSENmlock versions with automatic reset

- A power reset is not required after the escape release has been operated, so there's no need to shut down the power supply
- The reset occurs by resetting the escape release and closing the protective device
- External emergency release can't be used on versions with automatic reset. That's because, in accordance with EN ISO 14119, the emergency release must always be reset using a tool or through some other measure (e.g. power reset).

► Benefits at a glance

PSENmlock door handle module



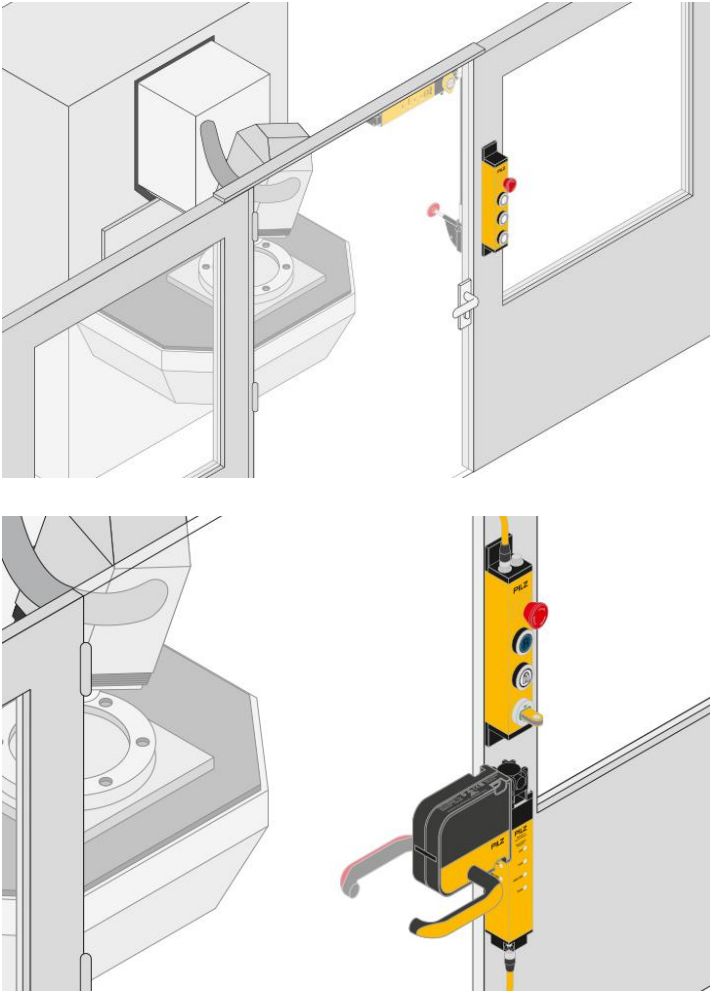
Safety gate system PSENmlock

Complete safety gate solution with the PSENmlock door handle module

- Safe holding force 3000 N (swing gates), 2000 N (sliding gates)
- Handle with integrated actuator and integrated escape release
- Yellow handle (externally): Extension of the actuator
- Red handle (internally): Operation of the escape release
- Flexible assembly inside or outside the gate and on right and left-hinged gates
- Lockout bar for up to 5 locks to prevent restart
- Up to two extensions for installation through the safety gate
- For types with upward or downward cable outlet on PSENmlock
- For coded and fully coded PSENmlock

► Benefits at a glance

PSENmlock in combination with the pushbutton unit PITgatebox

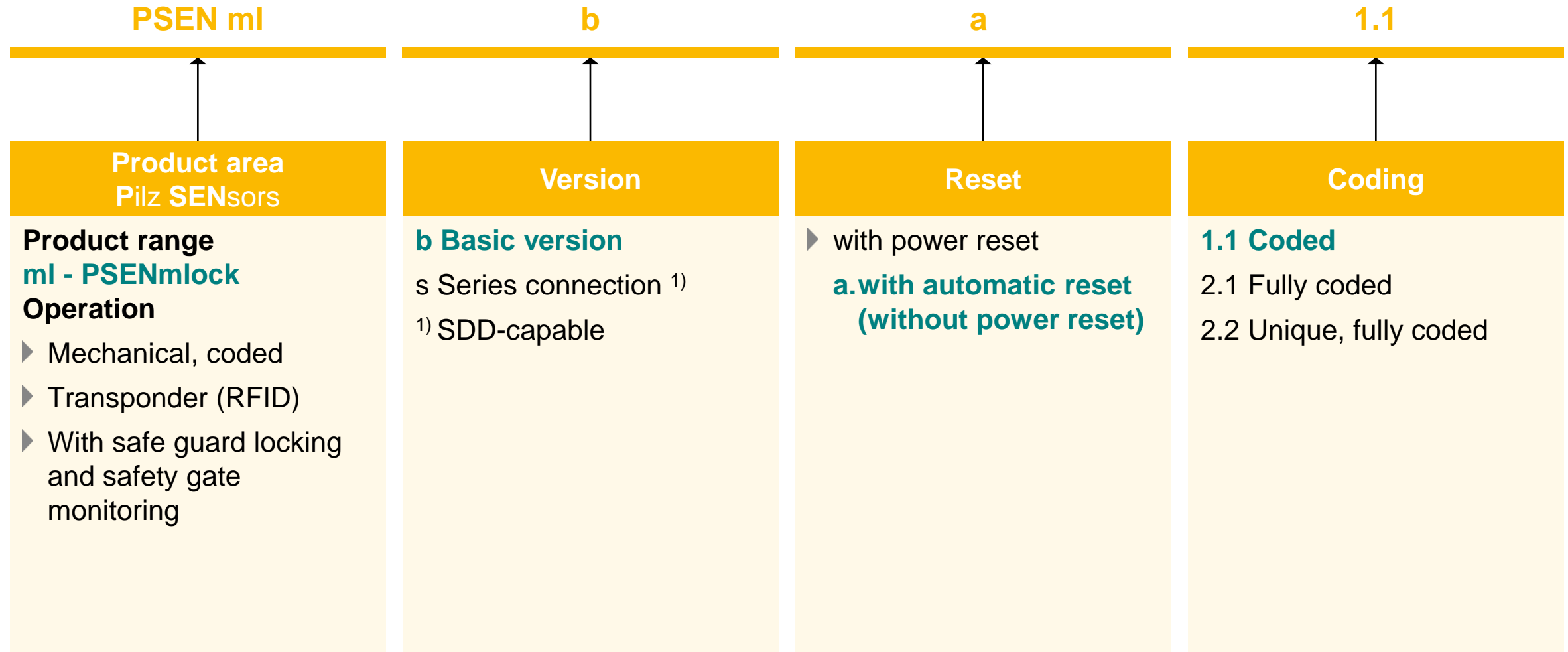


Simple operation of your safety gate system and integrated access control – with the pushbutton unit PITgatebox!

- Additional control and pushbutton elements thanks to separate pushbutton unit
- Select from a number of different product versions for an individual solution
- Versions with integrated PITreader for access permission on the safety gate
- Robust die cast zinc housing: great protection against shock, vibration and collision
- Slimline housing for space-saving installation on standard aluminium profile systems
- Flexible installation thanks to integrated, rotatable mounting bracket
- Fast, simple installation with M12 connection (12-pin)
- Easy to exchange the control elements thanks to appropriate spare parts

► Type code

PSENmlock



► Type code

PSENmlock door handle module

PSEN ml DHM	up	I	1.1
Product area Pilz SENSors	Version	Reset	Coding
Product range ml DHM – PSENmlock Door Handle Module	Up Upward cable outlet on PSENml Down Downward cable outlet on PSENml	I Left-hinged gate r Right-hinged gate	1.1 coded 2.1 fully coded

▶ Product in detail

Technical data



Mechanical data

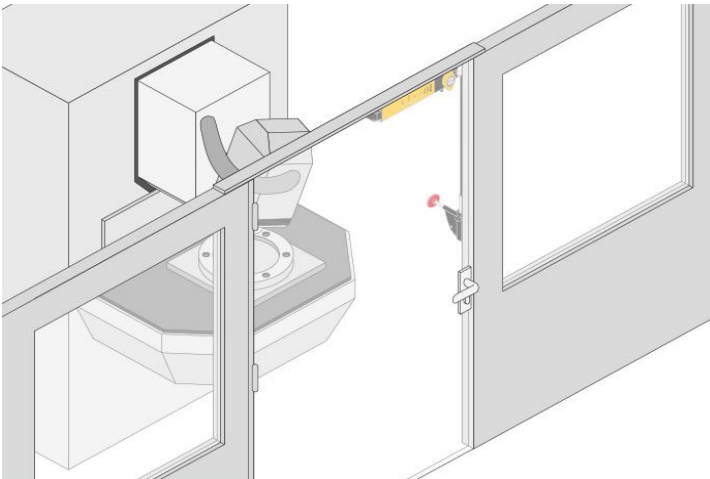
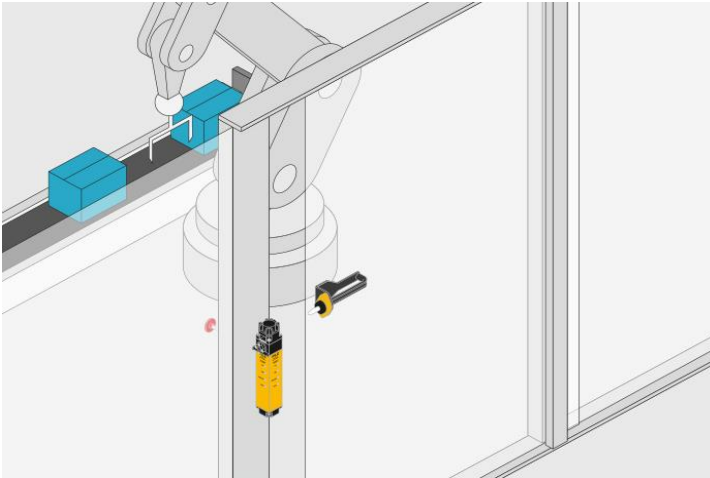
- ▶ Holding force:
 - with actuator: 7500 N
 - With door handle module: 3000 N (swing doors) or 2000 N (sliding doors)
- ▶ Integrated latching force: 30 N
- ▶ Connection: M12, 8-pin/ 12-pin, Pigtail
- ▶ Protection type: IP67
- ▶ Max. vertical offset: +/- 3mm
- ▶ Operating temperature: 0 to 55°C

Electrical data

- ▶ Supply voltage: 24 VDC
- ▶ Voltage tolerance: -15 ... +20%
- ▶ 2 outputs:
 - semiconductor, max. 100 mA each
 - signal output: 100 mA
- ▶ 2 inputs: 0.5 A, 150 ms

► Product in detail

Accessories – escape releases



Escape releases

- High modularity: escape release can be purchased as an accessory
- A retrofit assembly is possible
- Reduced storage and handling work (only one base unit plus escape release)

1. Escape release installed directly

- Switch (PSENmlock) is installed in the centre of the door and the escape release is connected directly to the switch via a bar.

2. Remote escape release:

- Switch (PSENmlock) and escape release can be installed separately from one another
- Easy installation, low-maintenance solution: because it is not necessary for the push-pull rope to be under tension

► Product in detail

Accessories – escape releases

PSEN ml escape release



PSEN ml escape release extension



PSEN ml escape release cordset









Type	Order number
PSEN ml escape release	570460
PSEN ml escape release extension	570462
PSEN ml escape release cordset 0.5m	570466
PSEN ml escape release cordset 0.75m	570467
PSEN ml escape release cordset 1.0m	570468
PSEN ml escape release cordset 1.25m	570469
PSEN ml escape release cordset 1.5m	570470
PSEN ml escape release cordset 2.0m	570471
PSEN ml escape release cordset 2.5m	570472
PSEN ml escape release cordset 3.0m	570473
PSEN ml escape release cordset 3.5m	570474
PSEN ml escape release cordset 4.0m	570475

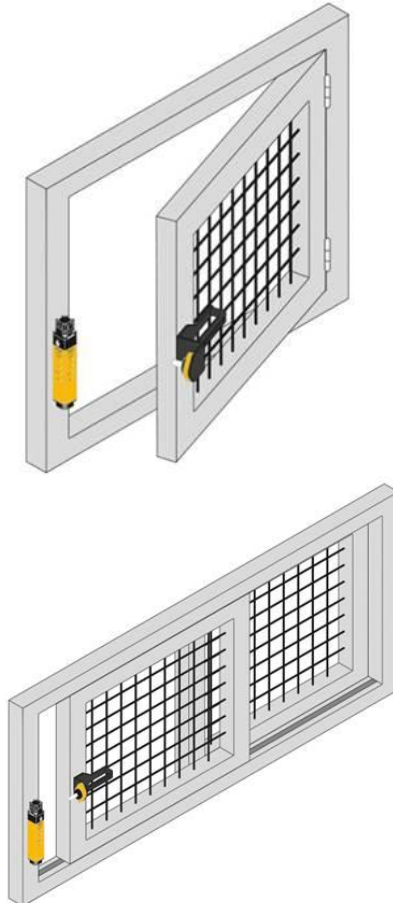
► Product in detail

Accessories – door handles

Handle for swing gates and sliding gates, perfectly compatible with PSENmlock

Type of gate	Handle	Use of the mounting plate for standard profiles (570 490)		Order number
Swinging door	No	No		PSEN ml bracket swinging door 70 _____ 570 493 ¹⁾
		Yes		PSEN ml bracket swinging door 80 _____ 570 494 ¹⁾
	Yes	No		PSEN ml door handle swinging door 70 _____ 570 496 ¹⁾
		Yes		PSEN ml door handle swinging door 80 _____ 570 497 ¹⁾
Sliding gates	No	No		PSEN ml bracket sliding door _____ 570 492 ¹⁾
	Yes	No		PSEN ml door handle sliding door _____ 570 495 ¹⁾

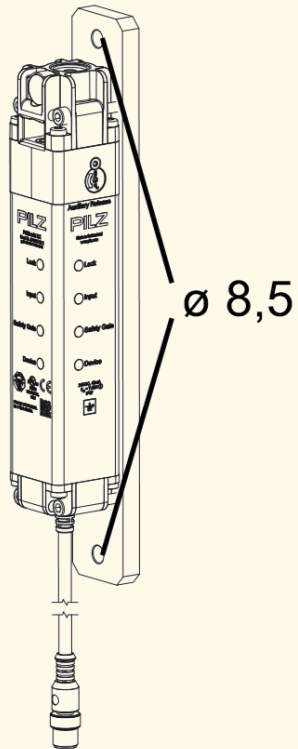
¹⁾ Actuators are not supplied with the device



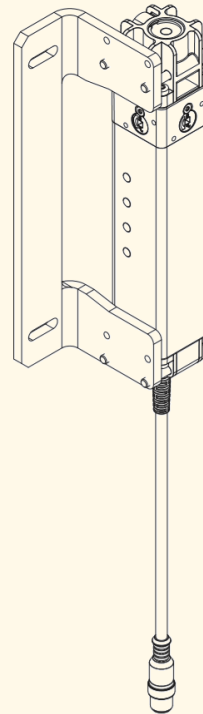
► Product in detail

Accessories – mounting

Switch

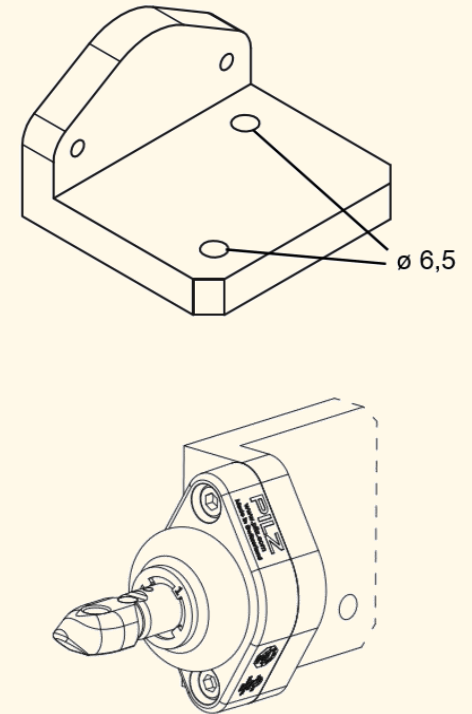


PSEN ml mounting plate (570490)
Mounting plate for 40 mm standard profile



PSEN ml mounting plate angled (570476)
Mounting plate angles for 40 mm standard profile

Actuator

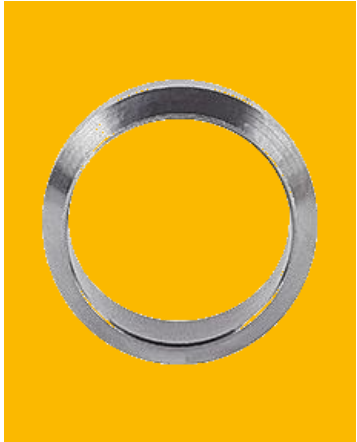


PSEN ml bracket sliding door (570492)
Bracket for sliding doors

► Product in detail

Accessories – mounting

Actuator – small door applications



PSEN ml actuator center ring (570485)

Centering ring for PSENmlock actuator. Fits especially for small door applications

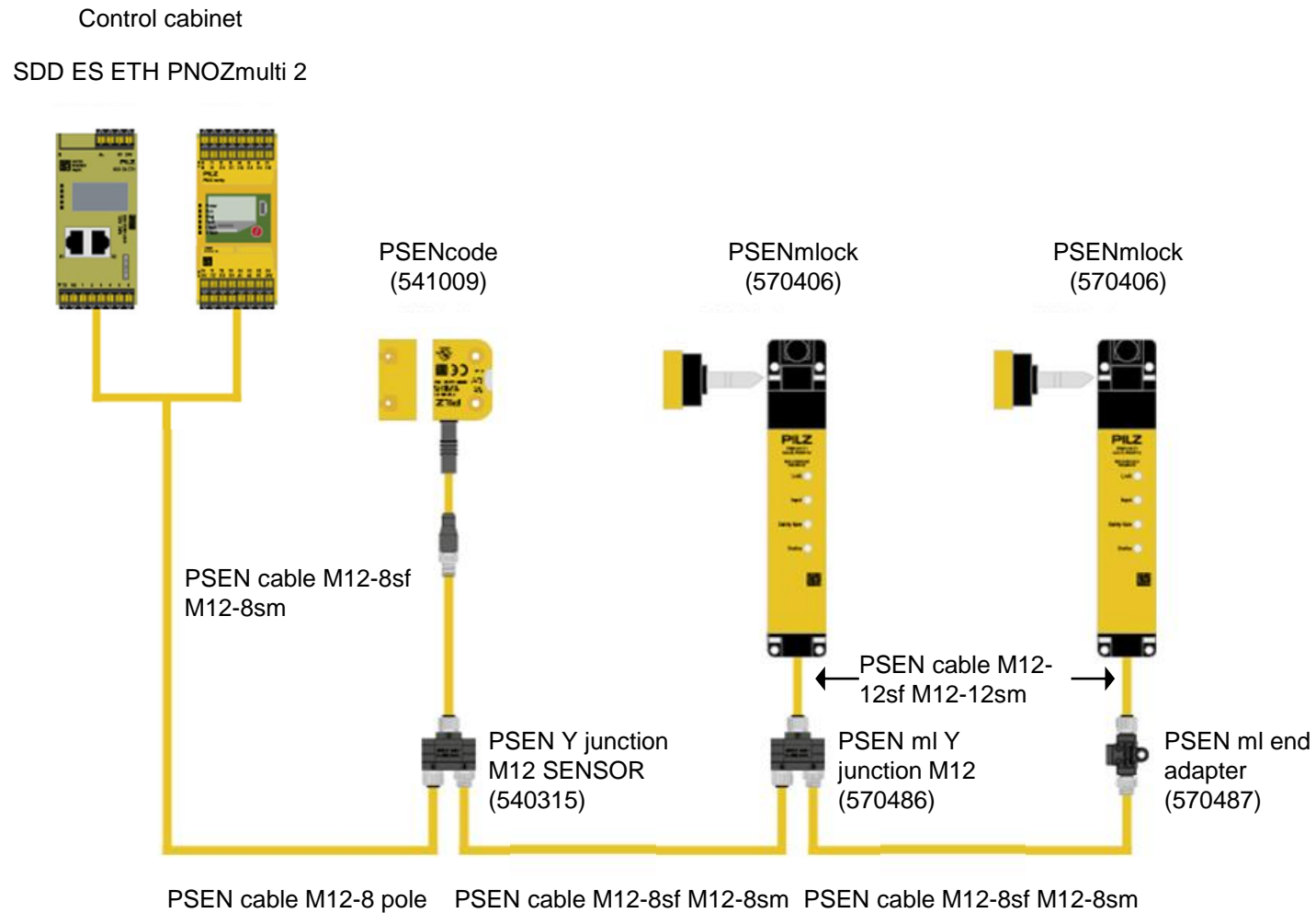


PSEN ml actuator 10° adapter (570484)

Adapter for alignment of PSENmlock actuators for small doors: 300-500mm

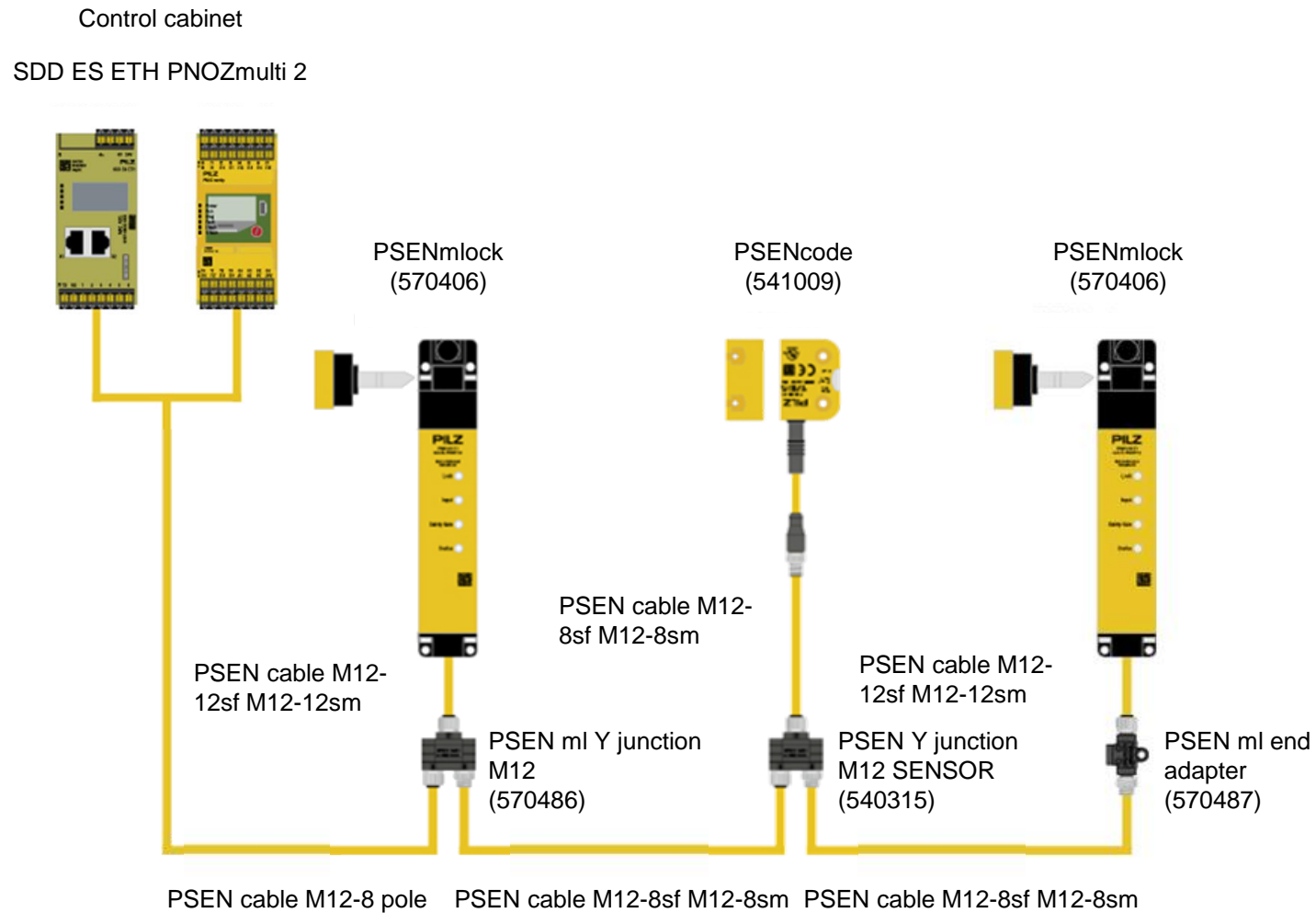
► Product in detail

Series connection (examples)



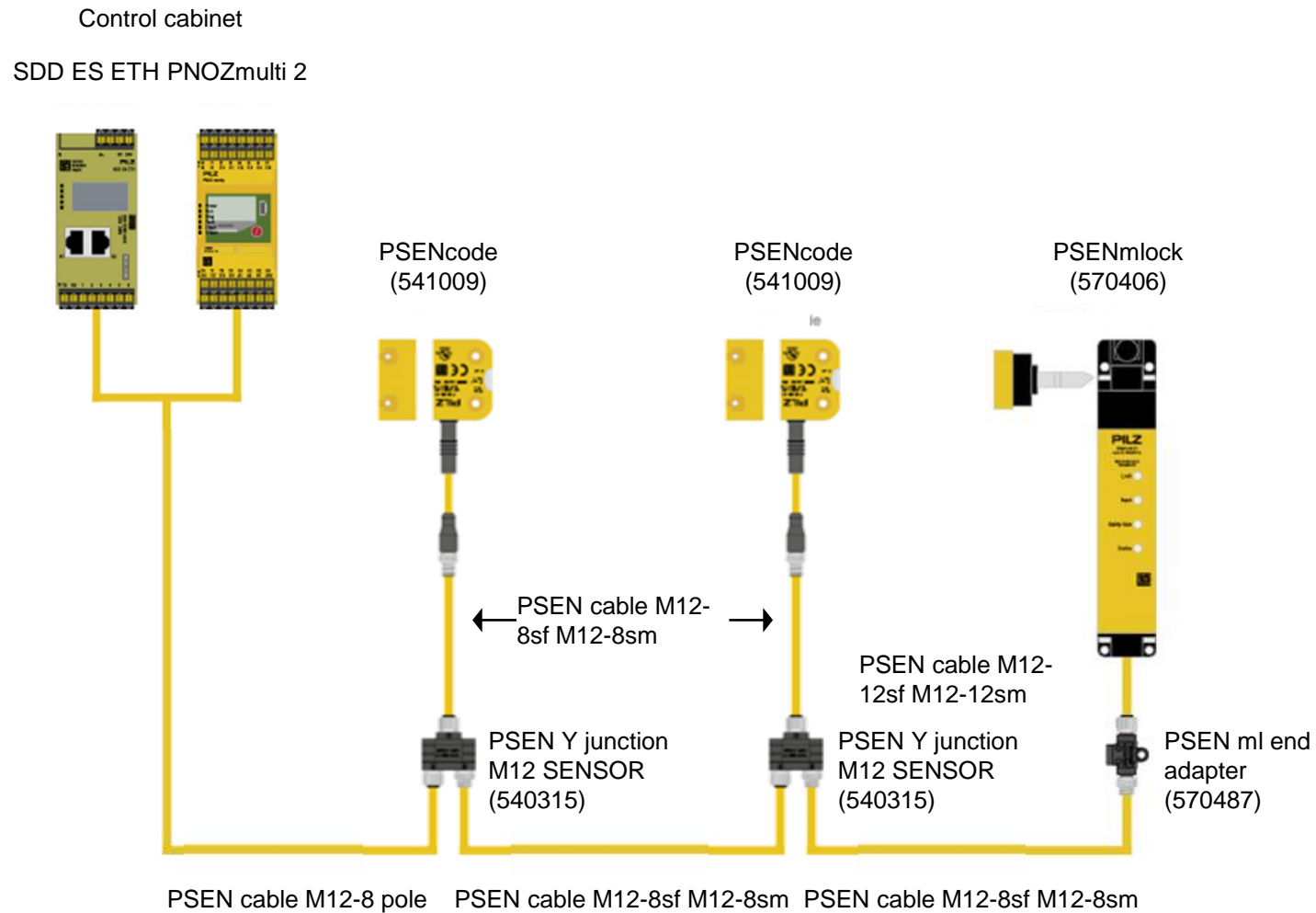
► Product in detail

Series connection (examples)



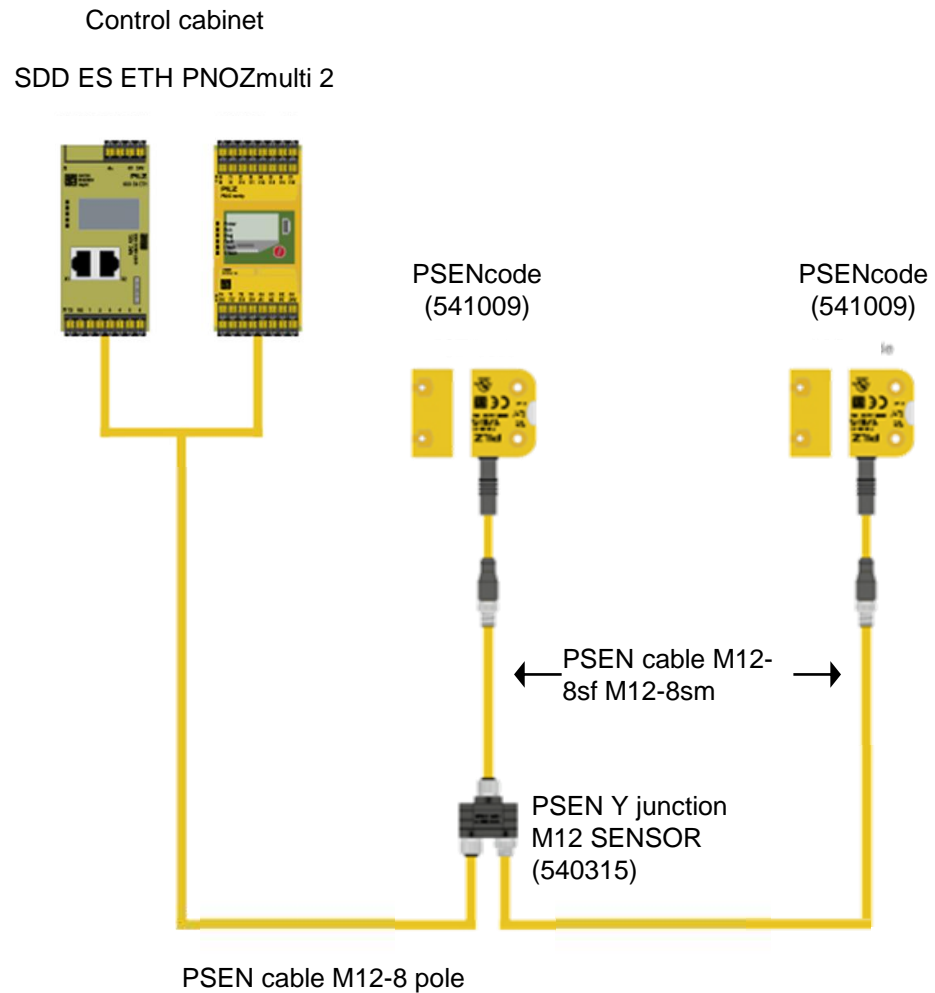
► Product in detail

Series connection (examples)



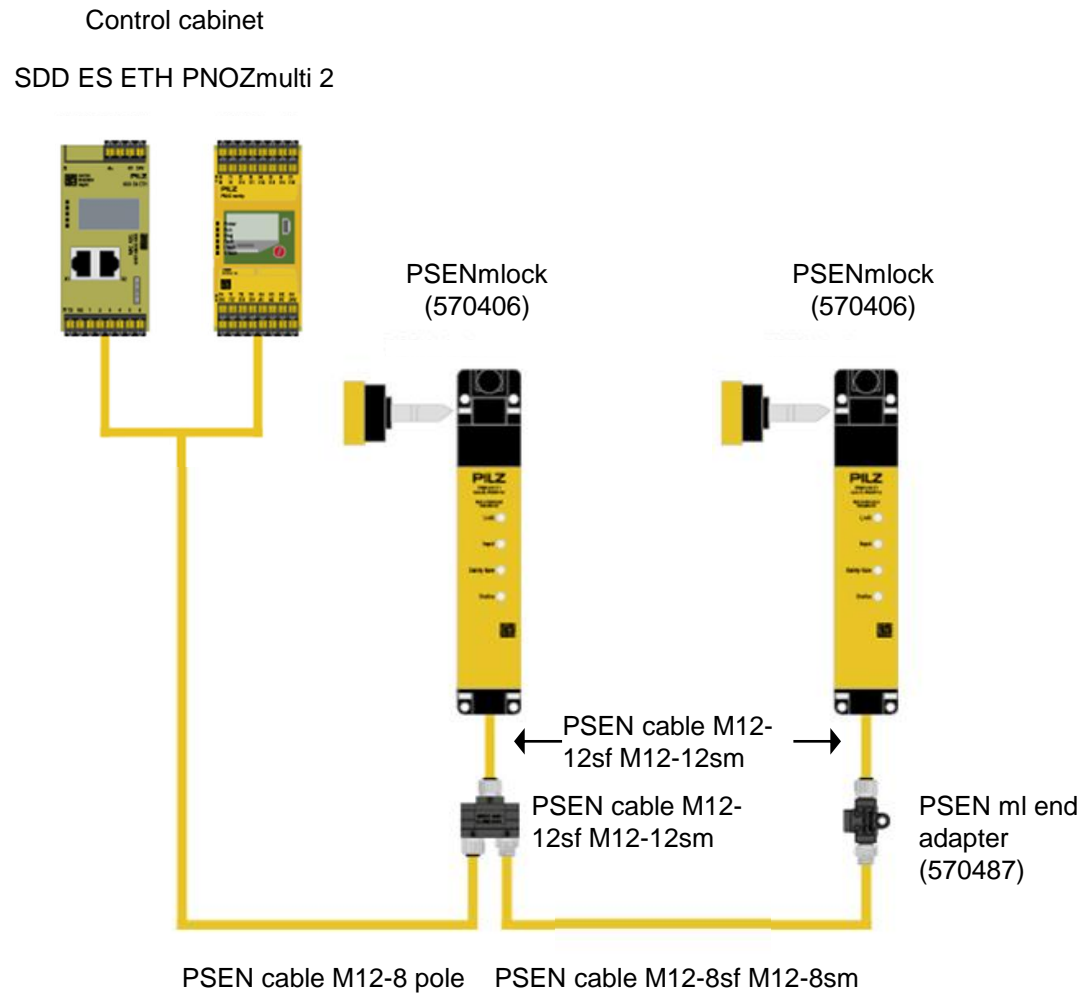
► Product in detail

Series connection (examples)



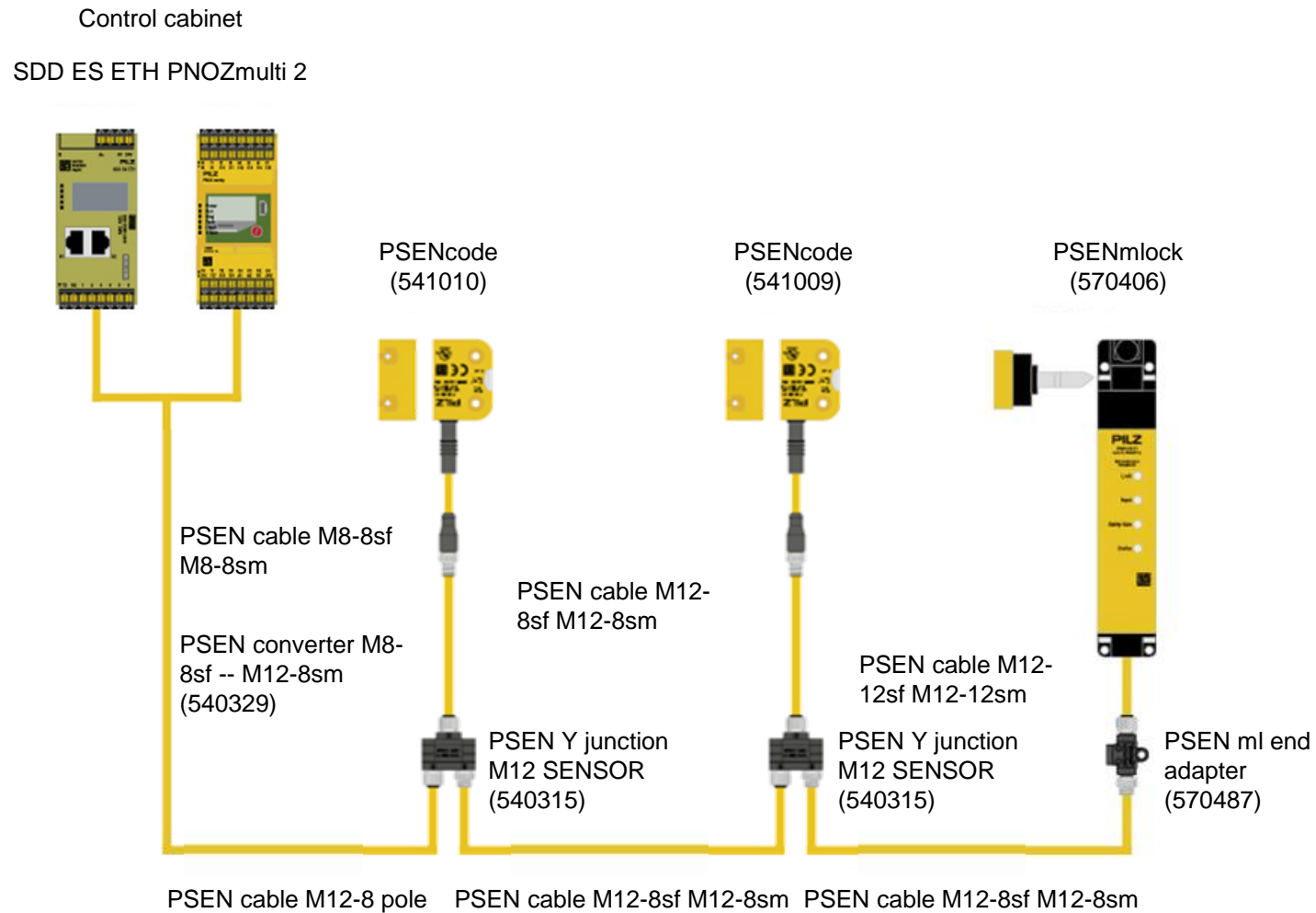
► Product in detail

Series connection (examples)



► Product in detail

Series connection (examples)



► Product in detail

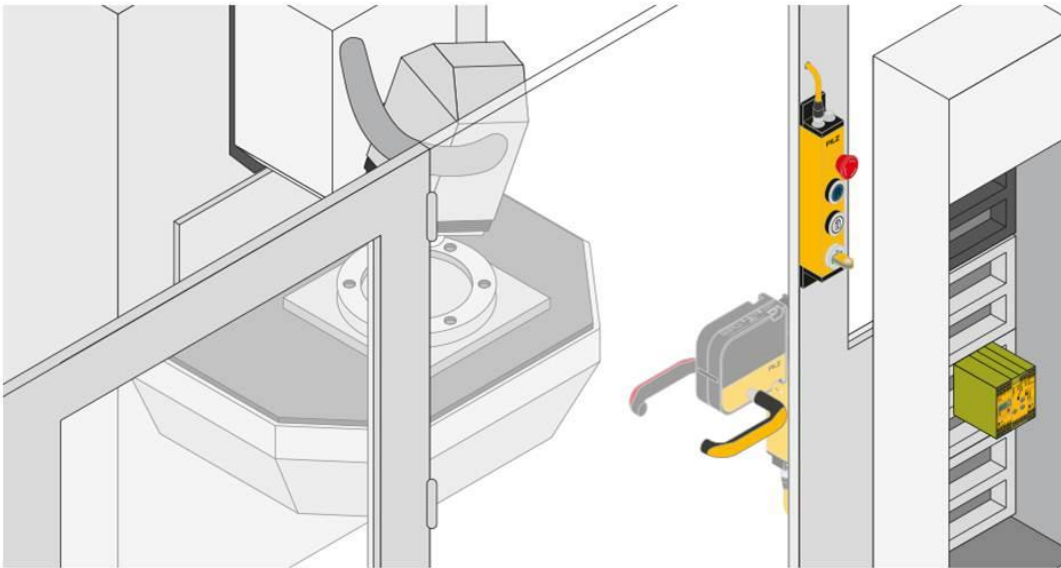
Distinction between safety gate systems

	PSENmech with guard locking function	PSENslock	PSENmlock	PSENsgate
Applications	Covers, flaps, swing and sliding gates	Covers, flaps, swing and sliding gates	Covers, flaps, swing and sliding gates	Swing and sliding gates
Operating principle	Electromechanical	Transponder technology	Transponder technology	Transponder technology
Guard locking principle	Normally de-energised mode, normally energised mode	Normally de-energised mode	Bistable principle ¹	Bistable principle ¹
Safety functions	Personnel protection, process protection	Process protection	Personnel protection process protection	Personnel protection, process protection
Interlock classification in accordance with EN ISO 13849-1 (gate monitoring)	PL c, with fault exclusion PL d	PL e	PL e	PL e
Guard locking classification in accordance with EN ISO 13849-1 (guard locking monitoring)	PL c, with fault exclusion PL d	-	PL e	PL e
Holding force	1500 N	500 or 1000 N	7500 N	2000 N
Manipulation protection	Low	Up to high	Up to high	Up to high
Auxiliary release	Integrated	-	Integrated	Integrated ²
Escape release	Optional (only PSEN me5)	-	Optional When used with integrated handle module	Integrated ²
Emergency release	Optional (only PSEN me5)	-	Optional (only for versions with power reset)	-

¹ Bistable principle: Power-ON applied for guard locking and power-ON released for guard locking

² Auxiliary release or escape release is mandatory on PSENsgate and must also be ordered.

► Application examples



Safety gate monitoring of

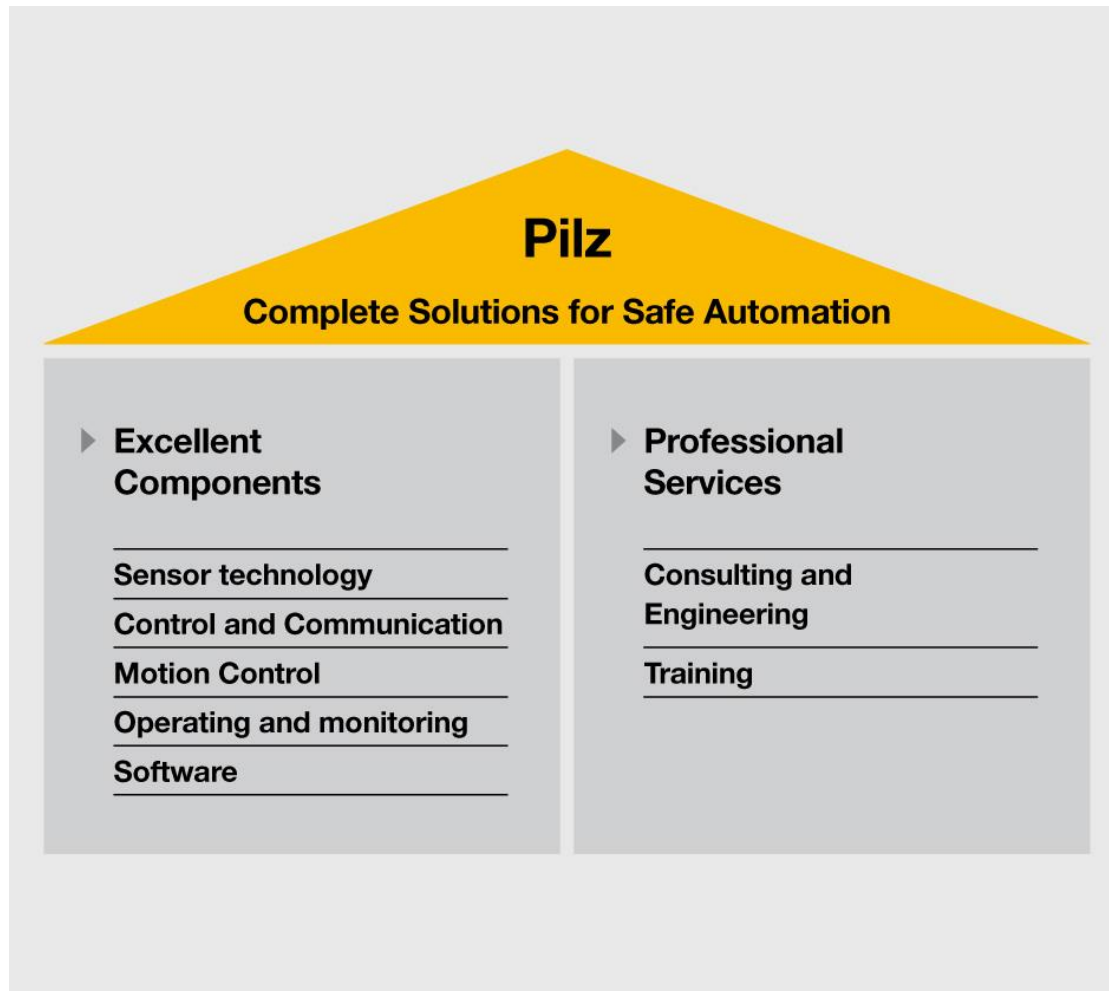
- Swing gates
- Sliding gates
- Flaps
- Covers

Industries

- Packaging
- Machine tools

The safe, complete solution: sensor and control technology from Pilz!

► Complete solutions for safe automation



► Terminology

Auxiliary release, escape release, emergency release

Distinction between the additional guard locking release options, based on EN ISO 14119:2013: Safety of machinery – Interlocking devices associated with guards – Principles for design and selection.

	Auxiliary release	Escape release	Emergency release
Application area	<ul style="list-style-type: none"> ▶ On safety guard locking devices with normally energised mode or bistable principle 	<ul style="list-style-type: none"> ▶ When a person can become trapped within the danger zone 	<ul style="list-style-type: none"> ▶ Only in an emergency
Benefit	<ul style="list-style-type: none"> ▶ When there is no power, the auxiliary release enables the safety guard locking device to be released and the safeguard to be opened 	<ul style="list-style-type: none"> ▶ If a person becomes trapped within the danger zone, the escape release enables the safety guard locking device to be released; a stop command is triggered and the safeguard can be opened immediately from the inside 	<ul style="list-style-type: none"> ▶ In the event of an emergency, the emergency release enables the safety guard locking device to be released; a stop command is triggered and the safeguard can be opened immediately
Installation	<ul style="list-style-type: none"> ▶ Any ▶ Auxiliary release must be accessible from outside the danger zone 	<ul style="list-style-type: none"> ▶ Inside the danger zone 	<ul style="list-style-type: none"> ▶ Outside the danger zone
Operation	<ul style="list-style-type: none"> ▶ By means of a tool or key ▶ The auxiliary release must be protected against unintended operation (e.g. using seals or protective coatings), as it is only to be operated in exceptional cases 	<ul style="list-style-type: none"> ▶ Manually, without aids 	<ul style="list-style-type: none"> ▶ Manually, without aids ▶ The emergency release must be clearly labelled and must be protected against unintended operation.
Reset specification	<ul style="list-style-type: none"> ▶ Only by means of a tool ▶ By means of another measure, with similar effort to a repair, e.g. replacing a component ▶ By means of a request upon the safety-related control level; clear instructions must be provided in the operating manual for the guard locking device 	<ul style="list-style-type: none"> ▶ None 	<ul style="list-style-type: none"> ▶ Only by means of a tool ▶ By means of another measure, with similar effort to a repair, e.g. replacing a component ▶ By means of a request upon the safety-related control level; clear instructions must be provided in the operating manual for the guard locking device

► Order numbers

Basic version with powerreset

Type	Type of reset	Connection type	Type of coding	Order number
PSEN ml b 1.1 unit	Powerreset	M12, 8-pin, pigtail	Coded	570400
PSEN ml b 1.1 switch			Coded	570401
PSEN ml b 2.1 unit			Fully coded	570402
PSEN ml b 2.1 switch			Fully coded	570403
PSEN ml b 2.2 unit			Unique, fully coded	570404
PSEN ml b 1.1 actuator			Coded	570480
PSEN ml b 2.1 actuator			Fully coded	570481
PSEN ml 1.1 round actuator			Coded	570482
PSEN ml 2.1 round actuator			Fully coded	570483

► Order numbers

Series connection with powerreset

Type	Type of reset	Connection type	Type of coding	Order number
PSEN ml s 1.1 unit	Powerreset	M12, 12-pin, pigtail	Coded	570406
PSEN ml s 1.1 switch			Coded	570407
PSEN ml s 2.1 unit			Fully coded	570408
PSEN ml s 2.1 switch			Fully coded	570409
PSEN ml s 2.2 unit			Unique, fully coded	570410
PSEN ml s 2.2 switch			Unique, fully coded	570411
PSEN ml s 1.1 unit r (mit 1.1. round actuator)			Coded	570436

► Order numbers

Basic version with automatic reset

Type	Type of reset	Connection type	Type of coding	Order number
PSEN ml ba 1.1 unit	Automatic reset	M12, 8-pin, Pigtail	Coded	570424
PSEN ml ba 1.1 switch			Coded	570425
PSEN ml ba 2.1 unit			Fully coded	570426
PSEN ml ba 2.1 switch			Fully coded	570427
PSEN ml ba 2.2 unit			Unique, fully coded	570428
PSEN ml ba 2.2 switch			Unique, fully coded	570429

► Order numbers

Series connection with automatic reset

Type	Type of reset	Connection type	Type of coding	Order number
PSEN ml sa 1.1 unit	Automatic reset	M12, 12-pin, Pigtail	Coded	570430
PSEN ml sa 1.1 switch			Coded	570431
PSEN ml sa 2.1 unit			Fully coded	570432
PSEN ml sa 2.1 switch			Fully coded	570433
PSEN ml sa 2.2 unit			Unique, fully coded	570434
PSEN ml sa 2.2 switch			Unique, fully coded	570435

► Order numbers

PSENmlock door handle module

Type	Description	Order number
PSEN ml DHM up l 1.1	Can be used with coded PSENmlock versions, upward cable outlet, left-hinged gates	6O000001
PSEN ml DHM up l 2.1	Can be used with fully coded PSENmlock versions, upward cable outlet, left-hinged gates	6O000002
PSEN ml DHM up r 1.1	Can be used with coded PSENmlock versions, upward cable outlet, right-hinged gates	6O000003
PSEN ml DHM up r 2.1	Can be used with fully coded PSENmlock versions, upward cable outlet, right-hinged gates	6O000004
PSEN ml DHM down l 1.1	Can be used with coded PSENmlock versions, downward cable outlet, left-hinged gates	6O000005
PSEN ml DHM down l 2.1	Can be used with fully coded PSENmlock versions, downward cable outlet, left-hinged gates	6O000006
PSEN ml DHM down r 1.1	Can be used with coded PSENmlock versions, downward cable outlet, right-hinged gates	6O000007
PSEN ml DHM down r 2.1	Can be used with fully coded PSENmlock versions, downward cable outlet, right-hinged gates	6O000008

► Order numbers

PSENmlock door handle module

Type	Description	Order number
PSEN ml DHM extensions	Extensions (25 mm each) for the handle, 2 pieces	6O000009
PSEN ml DHM handle yellow	Yellow handle for external operation	6O000010
PSEN ml DHM handle red	Red handle for operation of the escape release	6O000011
PSEN ml DHM extension covers	Covers for the 6O000009, 2 pieces	6O000012
PSEN ml mounting plate	Adjustment plate for PSEN ml door handle module when using the 10 mm mounting plate 570490 with PSENmlock	6O000013
PSEN ml mounting flaps	Mounting flaps for installation on sliding gates, 2 pieces	6O000014

► Order numbers

Series connection (examples slides 18-23)

PSEN cable M12-8sf M12-8sm		PSEN cable M12-12sf M12-12sm		Adapters, connectors	
0.5 m	540345	1 m	570357	PSEN Y junction M12 SENSOR	540315
1 m	540346	2 m	540358	PSEN ml Y junction M12	570486
1.5 m	540347	3 m	540359	PSEN ml end adapter	570487
2 m	540340	5 m	540360	PSEN converter M8-8sf – M12-8sm	540329
5 m	540341	10 m	540361		
10 m	540342	20 m	540362		
20 m	540343				
30 m	540344				
PSEN cable M8-8sf M8-8sm		PSEN cable M12-8 pole			
0.5 m	533155	3 m	540319		
1 m	533156	5 m	540320		
2 m	533157	10 m	540321		
		20 m	540333		
		30 m	540326		

Keep up-to-date on Pilz



Pilz Automation Safety, L.P.; 7150 Commerce Blvd., Canton, MI 49187

Tel.: +1 734 354-0272, Fax: +1 734 354-3355, info@pilzusa.com

www.pilz.us



© Pilz GmbH & Co. KG 2021



PILZ
THE SPIRIT OF SAFETY

Wir
automatisieren.
Sicher.

PILZ
THE SPIRIT OF SAFETY

Wir
automatisieren.
Sicher.

PILZ

THE SPIRIT OF SAFETY

PILZ