IP67

▶ Coded safety switch PSENcode

The non-contact, coded safety switch PSENcode is used both for monitoring the position of guards in accordance with EN 60947-5-3 and simple position monitoring.

PSEN cs5.1p   PSEN cs4.1p   PSEN cs1.1p

Highest level of manipulation protection in the smallest space
With PSENcode you have the smallest, coded safety switch with integrated evaluation and built-in manipulation protection thanks to RFID technology.

The unique fully coded version of PSENcode has the highest level of manipulation protection: the sensor will only accept a single actuator (key lock principle).

The coded PSENcode is accepted by other PSENcode actuators. The fully coded PSENcode only accepts one actuator. In contrast to the unique, fully coded safety switch, it's possible to teach-in a new actuator on the switch retrospectively.
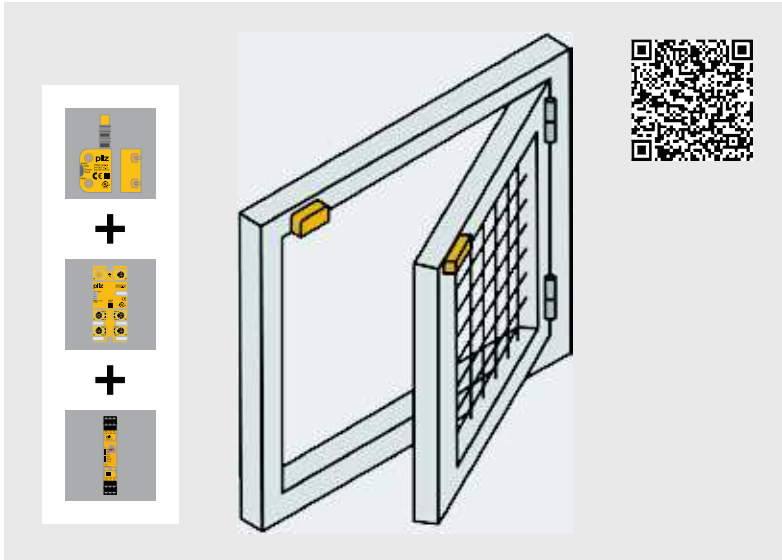
Position monitoring with differentiation
When several positions need to be monitored and also distinguished safely, PSENcode x.19n is the right choice (from page 36).

Type code for PSENcode

PSEN cs2.13p

Product area Pilz SENsors	Coding/design	Additional functions	Connection type	
Product range cs – PSENcode	1.1 Coded, large design	_ Without ATEX	a	▶ Cable, 5 m [1]
	2.1 Fully coded, large design	1 With magnetic latching	b	▶ Cable, 10 m [1]
Operation	2.2 Unique, fully coded, large design	**3 With ATEX**	n	▶ Connector, M12, 5-pin
▶ Non-contact, coded	3.1 Coded, compact design	9 With max. three actuators	**p**	▶ **Connector, M12, 8-pin (large design) [1]**
▶ Transponder (RFID)	4.1 Fully coded, compact design			▶ **Connector, M8, 8-pin (compact, slimline design) [1]**
▶ With safe semiconductor outputs	4.2 Unique, fully coded, compact design		M12	▶ Connector, M12, 8-pin (compact, slimline design) [1]
	5.1 Coded, slimline design			
	6.1 Fully coded, slimline design			
	6.2 Unique, fully coded, slimline design			

[1] Series connection integral in sensor, SDD-capable as of version 2.0

Your benefits at a glance
- Highest level of safety and plant availability
- Highest manipulation protection offers maximum freedom in installation
- Simple project configuration, as the unit is highly versatile:
  - Insensitive to shock and vibration
  - Can be used with heavy soiling and strict cleaning requirements of IP67/IP6K9K
  - Flexible installation
- Economical:
  - Space-saving installation due to the compact housing
  - Highest level of safety even when connected in series with PSENcode, PSENini, PSENslock and PSENsgate

Components for your safe solution	Order number
Sensor: PSEN cs4.2 M12, 8-pin, 0.15 m/PSEN cs4.1	541 209
Connection: PSEN cable, M12, 8-pin, straight, connector, M12, 8-pin, straight, connector, 5 m	540 341
Decentralised periphery: PDP67 F 4 code	773 603
Connection: PDP67 cable, M12, 8-pin, straight, connector, 30 m	380 704
Evaluation device: PNOZ s3	751 103

The optimum solution: Monitoring swing door using the safety switch PSENcode and safety relay PNOZsigma.

Simple implementation saves time and money

Save costs, from project configuration through to commissioning: used in conjunction with Pilz control technology, PSENcode provides a complete, co-ordinated solution that's economical and safe.

Thanks to integrated evaluation and standard interfaces, PSENcode is open to products from other manufacturers. It fits perfectly into your environment and can be used to upgrade your plant.

PSEN cs5   PSEN cs3   PSEN cs1

High flexibility due to multiple actuation directions (PSEN cs1/PSEN cs5), multiple mounting directions (PSEN cs3/PSEN cs5) for the actuators and compact/slimline design (PSEN cs3/PSEN cs5).

Keep up-to-date on coded safety switches PSENcode:

Webcode: web5184

Online information at www.pilz.com

▶ Selection guide – PSENcode

Safety switches (sidebar)

Common features

▶ Safety switch for monitoring the position of movable guards
▶ Approved for applications up to PL e of EN ISO 13849-1, up to SIL CL 3 of EN/IEC 62061
▶ Integrated evaluation and standard interfaces (OSSD) for connection to evaluation devices from Pilz or other manufacturers
▶ Series connection with PSENcode, PSENini, PSENslock and PSENsgate approved up to PL e of EN ISO 13849-1, up to SIL CL 3 of EN/IEC 62061
  - With 8-pin connector via Y junction (cable splitter) or PDP67 F 4 code
  - With 5-pin connector via PDP67 F 8DI ION
▶ Protection type:
  - Cable version: IP6K9K
  - Connector version: IP67
▶ Diagnostic interface with 3 LEDs
▶ Outputs: 2 safety outputs and 1 signal output
▶ Dimensions:
  - PSEN cs1/PSEN cs2: 75 x 40 x 40 mm
  - PSEN cs3/PSEN cs4: 37 x 26 x 18 mm
  - PSEN cs5p/PSEN cs6p: 98 x 26 x 13 mm
  - PSEN cs5n/PSEN cs6n: 98 x 26 x 19 mm
▶ Drill hole spacing:
  - PSEN cs3/PSEN cs4: 22 mm
  - PSEN cs5/PSEN cs6: 22 mm
▶ Sensing faces:
  - PSEN cs1/PSEN cs2: 4
  - PSEN cs3/PSEN cs4: 1
  - PSEN cs5/PSEN cs6: 4
▶ Typical operating distance:
  - PSEN cs1/PSEN cs2: 21 mm
  - PSEN cs3/PSEN cs4: 11 mm
  - PSEN cs5/PSEN cs6: 11 mm, 5 mm, 9 mm (M8 connector) or 6 mm (M12 connector)
▶ Magnetic latching PSEN cs5.11/ PSEN cs6.11/PSEN cs6.21: 30 N

PSEN cs1.1p

PSEN cs4.1a

PSEN cs5.11p

Coded safety switch PSENcode with 8-pin connector and integrated series con

Type (switch/actuator)	Size
PSEN cs1.1p/PSEN cs1.1	Large
PSEN cs1.13p/PSEN cs1.1	Large
PSEN cs2.1p/PSEN cs2.1	Large
PSEN cs2.13p/PSEN cs2.1	Large
PSEN cs2.2p/PSEN cs2.1	Large
PSEN cs3.1 M12/8-0.15m/PSEN cs3.1	Compact
PSEN cs3.1 M12/8-1.5m/PSEN cs3.1	Compact
PSEN cs3.1a/PSEN cs3.1	Compact
PSEN cs3.1p/PSEN cs3.1	Compact
PSEN cs4.1 M12/8-0.15m/PSEN cs4.1	Compact
PSEN cs4.1a/PSEN cs4.1	Compact
PSEN cs4.1p/PSEN cs4.1	Compact
PSEN cs4.2 M12/8-0.15m/PSEN cs4.1	Compact
PSEN cs4.2a/PSEN cs4.1	Compact
PSEN cs4.2p/PSEN cs4.1	Compact
PSEN cs5.1 M12/8/PSEN cs5.1 M12	Slimline
PSEN cs5.1p/PSEN cs5.1	Slimline
PSEN cs5.11 M12/8/PSEN cs5.11 M12	Slimline
PSEN cs6.1 M12/8/PSEN cs6.1 M12	Slimline
PSEN cs6.1p/PSEN cs6.1	Slimline
PSEN cs6.11 M12/8/PSEN cs6.11 M12	Slimline
PSEN cs6.2 M12/8/PSEN cs6.1 M12	Slimline
PSEN cs6.2p/PSEN cs6.1	Slimline
PSEN cs6.21 M12/8/PSEN cs6.11 M12	Slimline

Coded safety switch PSENcode with 5-pin connection for PDP67 F 8DI ION

PSEN cs3.1n

Type (switch/actuator)	Size
PSEN cs1.1n/PSEN cs1.1	Large
PSEN cs2.1n/PSEN cs2.1	Large
PSEN cs2.2n/PSEN cs2.1	Large
PSEN cs3.1n/PSEN cs3.1	Compact
PSEN cs4.1n/PSEN cs4.1	Compact
PSEN cs4.2n/PSEN cs4.1	Compact
PSEN cs5.1n/PSEN cs5.1 M12	Slimline
PSEN cs6.1n/PSEN cs6.1 M12	Slimline
PSEN cs6.2n/PSEN cs6.1 M12	Slimline

nection

Type of coding	Additional functions	Connection type	Certification	Order number (Unit) [1]
Coded [2]	-	Connector, M12, 8-pin	TÜV, EAC, UL [5]	540 000
Coded [2]	With ATEX	Connector, M12, 8-pin	TÜV, EAC, UL [5], ATEX [6]	540 005
Fully coded [3]	-	Connector, M12, 8-pin	TÜV, EAC, UL [5]	540 100
Fully coded [3]	With ATEX	Connector, M12, 8-pin	TÜV, EAC, UL [5], ATEX [6]	540 105
Unique, fully coded [4]	-	Connector, M12, 8-pin	TÜV, EAC, UL [5]	540 200
Coded [2]	-	Connector, M12, 8-pin, pigtail, 16 cm	TÜV, EAC, UL [5]	541 009
Coded [2]	-	Connector, M12, 8-pin, pigtail, 1.5 m	TÜV, EAC, UL [5]	541 014
Coded [2]	-	Cable, 5 m	TÜV, EAC, UL [5]	541 011
Coded [2]	-	Connector, M8, 8-pin	TÜV, EAC, UL [5]	541 010
Fully coded [3]	-	Connector, M12, 8-pin, pigtail, 16 cm	TÜV, EAC, UL [5]	541 109
Fully coded [3]	-	Cable, 5 m	TÜV, EAC, UL [5]	541 111
Fully coded [3]	-	Connector, M8, 8-pin, pigtail, 14 cm	TÜV, EAC, UL [5]	541 110
Unique, fully coded [4]	-	Connector, M12, 8-pin, pigtail, 16 cm	TÜV, EAC, UL [5]	541 209
Unique, fully coded [4]	-	Cable, 5 m	TÜV, EAC, UL [5]	541 211
Unique, fully coded [4]	-	Connector, M8, 8-pin, pigtail, 14 cm	TÜV, EAC, UL [5]	541 210
Coded [2]	-	Connector, M12, 8-pin	TÜV, EAC, UL [5]	542 009
Coded [2]	-	Connector, M8, 8-pin	TÜV, EAC, UL [5]	542 000
Coded [2]	Magnetic latching	Connector, M12, 8-pin	TÜV, EAC, UL [5]	542 011
Fully coded [3]	-	Connector, M12, 8-pin	TÜV, EAC, UL [5]	542 109
Fully coded [3]	-	Connector, M8, 8-pin	TÜV, EAC, UL [5]	542 100
Fully coded [3]	Magnetic latching	Connector, M12, 8-pin	TÜV, EAC, UL [5]	542 111
Unique, fully coded [4]	-	Connector, M12, 8-pin	TÜV, EAC, UL [5]	542 209
Unique, fully coded [4]	-	Connector, M8, 8-pin	TÜV, EAC, UL [5]	542 200
Unique, fully coded [4]	Magnetic latching	Connector, M12, 8-pin	TÜV, EAC, UL [5]	542 211

| Type of coding	Additional functions	Connection type	Certification	Order number (Unit) [1]
Coded [2]	-	Connector, M12, 5-pin	TÜV, EAC, UL [5]	540 003
Fully coded [3]	-	Connector, M12, 5-pin	TÜV, EAC, UL [5]	540 103
Unique, fully coded [4]	-	Connector, M12, 5-pin	TÜV, EAC, UL [5]	540 203
Coded [2]	-	Connector, M12, 5-pin, pigtail, 16 cm	TÜV, EAC, UL [5]	541 003
Fully coded [3]	-	Connector, M12, 5-pin, pigtail, 16 cm	TÜV, EAC, UL [5]	541 103
Unique, fully coded [4]	-	Connector, M12, 5-pin, pigtail, 16 cm	TÜV, EAC, UL [5]	541 203
Coded [2]	-	Connector, M12, 5-pin	TÜV, EAC, UL [5]	542 003
Fully coded [3]	-	Connector, M12, 5-pin	TÜV, EAC, UL [5]	542 103
Unique, fully coded [4]	-	Connector, M12, 5-pin	TÜV, EAC, UL [5]	542 203

[1] Unit comprising Switch and actuator   [2] Coded = switch accepts any PSENcode actuator
[3] Fully coded = Switch accepts only one PSENcode actuator, teach-in up to 8 times
[4] Unique, fully coded = Switch accepts only one PSENcode actuator, no teach-in facility
[5] UL certification applies only to individual components contained within the set
[6] ATEX certification applies only to individual components contained within the set

Safety switches

Cable and other accessories:

From page 108

Keep up-to-date on coded safety switches PSENcode:

Webcode: web5184

Online information at www.pilz.com

▶ Coded safety switch PSENcode for position moni

Three positions – one safe sensor: one coded safety switch type is suitable for monitoring up to three positions safely. In this economical solution, PSENcode also distinguishes safely between positions.

Safety switches

IP67
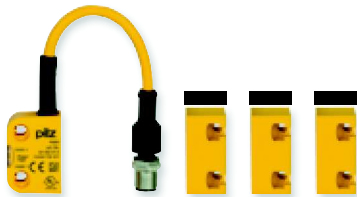
PSEN cs3.19n

PSEN cs1.19n

The coded safety switch PSEN csx.19n enables quick, user-friendly diagnostics via LED display, whether you use the compact or the large design. Thanks to the connection type (M12 connector, 5-pin), the new PSENcode fits perfectly into any system environment.

Solution for standard and safety
Previously, two standard proximity switches and one safe sensor were necessary to monitor three positions within an application. The coded safety switch PSEN csx.19n enables a more efficient solution because it can replace two standard sensors. The coded safety switch PSENcode simplifies the application considerably. Actuator arms, sensor wiring and I/O channels are surplus to requirements, as are proximity switches. As a result you can reduce the costs and effort involved in standard and safety-related position detection.

Fieldbus/Ethernet

OSSD1 OSSD2

A   B   C

Fieldbus/Ethernet

Pos. A
Pos. B
Pos. C

OSSD1 OSSD2

A   C   B
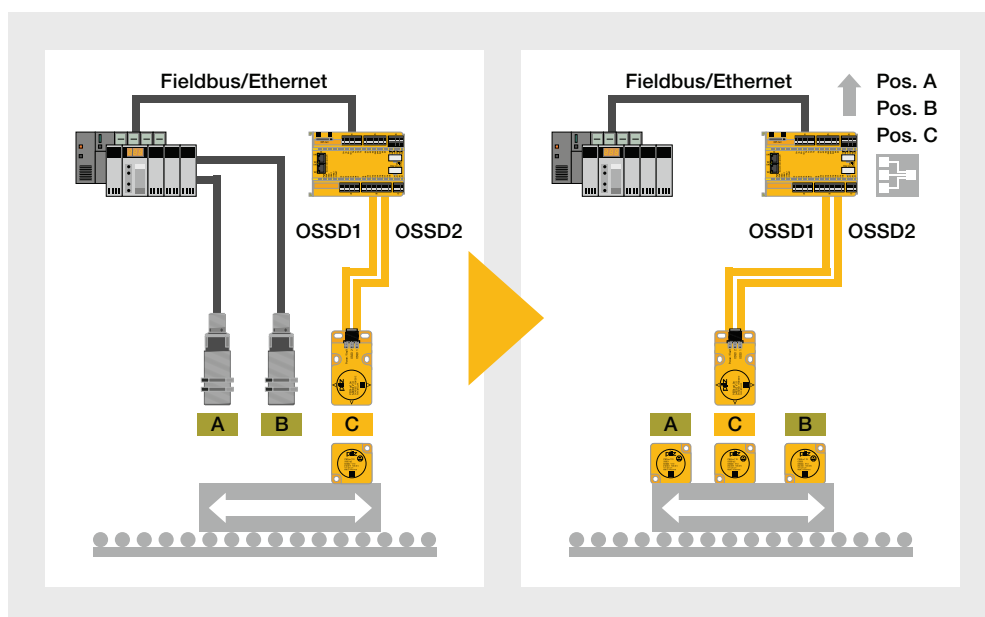
PSENcode offers great potential savings as a solution for safety and automation.

toring

OSSD 2
☒ OSSD 1

☒ OSSD 2
☐ OSSD 1

☒ OSSD 2
☒ OSSD 1

+
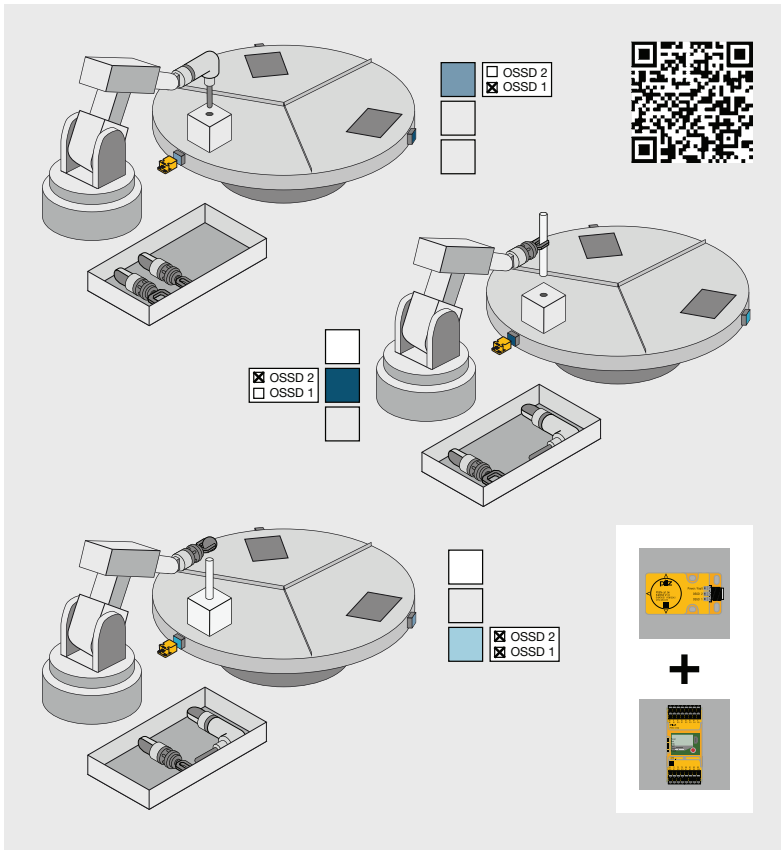
Your benefits at a glance

▸ Economical solution, as
  only one sensor is required to
  monitor three positions safely
▸ Reduced costs thanks to safe
  inputs on the evaluation device
  and cable accessories
▸ Clear LED display enables
  rapid diagnostics
▸ Long product service life thanks
  to non-contact action principle
▸ Safe, complete solution:
  When combined with the
  configurable small control
  system PNOZmulti Mini
▸ Simple configuration with
  the software module in
  the PNOZmulti Configurator

Components for your safe solution	Order number
Sensor: PSEN cs1.19n/PSEN cs1.19	540 303
Connection: PSEN cable, M12, 5-pin, 3 m	630 310
Evaluation device: PNOZ mm0p	772 000
- Spring loaded terminals (1 set)	751 008

The optimum solution: Monitoring positions using the safety switch PSENcode
and configurable compact control system PNOZmulti Mini.

Actuator used	Achievable safety level in accordance with EN ISO 13849-1 (per actuator)		
	OSSD 1&2	OSSD 1	OSSD 2
OSSD 1&2	PL e	-	-
OSSD 1, OSSD 2	-	PL d [1]	PL d [1]
OSSD 1&2, OSSD 1, OSSD 2	PL d [1]	PL c	PL c

[1] With additional diagnostics, stuck-at-faults and wiring errors such as short circuits and shorts across contacts
  are detected (plausibility check).

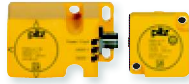Keep up-to-date on
coded safety
switches
PSENcode:

Webcode:
web5184

Online information
at www.pilz.com

▶ Selection guide – PSENcode for position monito

Safety switches

Coded safety switch PSENcode – Sets

	Type (switch/actuator)	Features	Size
PSEN cs1.19n/…			
PSEN cs1.19n/…	**PSEN cs1.19n/PSEN cs1.19**	▶ Mode of operation: RFID transponder technology ▶ Type of coding: Coded ▶ Diagnostic interface: 3 LEDs (active actuator, supply voltage/fault) ▶ Connection: Connector, M12, 5-pin ▶ Design: Compact or large ▶ Outputs: 2 safety outputs ▶ Inputs: 2 safety inputs ▶ Protection type: IP67	Large
PSEN cs3.19n/…	**PSEN cs3.19n/PSEN cs3.19**		Compact

Coded safety switch PSENcode

Type	Certification	Order number
PSEN cs1.19n – 1switch	TÜV, EAC, UL [1]	540 353
PSEN cs1.19 – OSSD 1&2 – 1actuator	TÜV, EAC, UL [1]	540 380
PSEN cs1.19 – OSSD 1 – 1actuator	TÜV, EAC, UL [1]	540 382
PSEN cs1.19 – OSSD 2 – 1actuator	TÜV, EAC, UL [1]	540 383
PSEN cs3.19n – 1switch	TÜV, EAC, UL [1]	541 353
PSEN cs3.19 – OSSD 1&2 – 1actuator	TÜV, EAC, UL [1]	541 380
PSEN cs3.19 – OSSD 1 – 1actuator	TÜV, EAC, UL [1]	541 382
PSEN cs3.19 – OSSD 2 – 1actuator	TÜV, EAC, UL [1]	541 383

PSEN cs3.19n – 1switch

PSEN cs1.19 – OSSD 1 – 1actuator

ring

Actuator minimum distance		Typical operating distance	Certification	Order number (Unit)		
between 2 actuators	between 2 sensors			Sensor with 3 actuators (OSSD 1, OSSD 2, OSSD 1&2)	Sensor with 2 actuators (OSSD 1, OSSD 2)	Sensor with 1 actuator (OSSD 1&2)
40 mm	400 mm	11 mm	TÜV, EAC, UL [1]	540 303	540 305	540 304
20 mm	100 mm	15 mm	TÜV, EAC, UL [1]	541 303	541 305	541 304

[1] UL certification applies only to individual components contained within the set

Cable and other accessories:

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Keep up-to-date on coded safety switches PSENcode:

Webcode: web5184

Online information at www.pilz.com