



► Safety locking devices – for greater safety and productivity

Safety switches with guard locking
for the protection of movable guards

PILZ
THE SPIRIT OF SAFETY



Safe guard locking.
Efficient production.

► Safety switches with guard locking

For safeguard protection we offer a versatile portfolio of safety locking devices. They offer cost-optimised and effective monitoring of gates in safety fences as well as covers and flaps. All our safety locking devices meet the requirements of EN ISO 14119. In combination with the suitable connection technology and corresponding accessories as well as our safe control technology, you receive an economical complete solution for your safety gate.

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▶ The Spirit of Safety
in Digital Automation



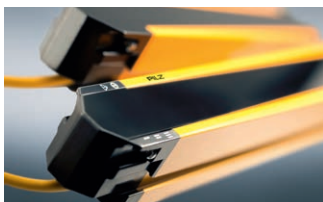
Pilz offers products, services and solutions for safety, security and automation.

With everything we do, we make the world a safer place. This is apparent in every idea, every product and every solution that's developed at Pilz. We always focus on our customers' needs and are passionate about supplying them with cutting-edge technology and the very best quality.

Today, Pilz is a global supplier of automation products, solutions and services with around 2 500 employees. The topics of digitisation and industrial security play an increasingly important role. Our digital business models offer our customers maximum benefits. Interlinked production and industrial plants must be protected against errors,

whether caused intentionally or unintentionally. Pilz believes that only a holistic approach to safety and security can guarantee the comprehensive protection of humans and machinery.

For 75 years, Pilz has been providing inspiration with its innovative product developments and comprehensive services. Our end-to-end, individual concepts for safety, security and automation support our customers around the world in the implementation of their solutions. This is what we, as a family business steeped in tradition, stand for with our employees – each one an “Ambassador for Safety”.



Sensor technology



Relays



Small controllers



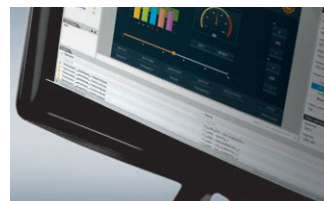
Controllers



Drive technology



Operation and monitoring



Software



Services



► Work safely and productively – protect human and machine

Movable guards can be found in almost every application, such as swing gates and sliding gates, flaps or covers. If there are dangerous overrun movements, protection by means of a safety switch with guard locking is required in accordance with EN ISO 14119.

Whether process guarding or safe guard locking for personnel protection, an accessible safety gate or a small cover – Pilz safety switches with guard locking offer the suitable solution for every application: cost-optimised and effective.



► The most important questions on the journey to the right safety locking device



Type of safeguard

For selection of the safety locking device, it is important to first define whether it is an accessible safeguard or non-accessible safeguard. Accessible safeguards are generally larger swing and sliding gates, while non-accessible safeguards are generally covers or flaps.



Process guarding or safe guard locking

The question regarding the type of guard locking depends on the stopping time. If the time to reach the danger zone is longer than the stopping time, process guarding is sufficient. If the intervention time is shorter than the stopping time, however, safe guard locking – also called personnel protection – is required.

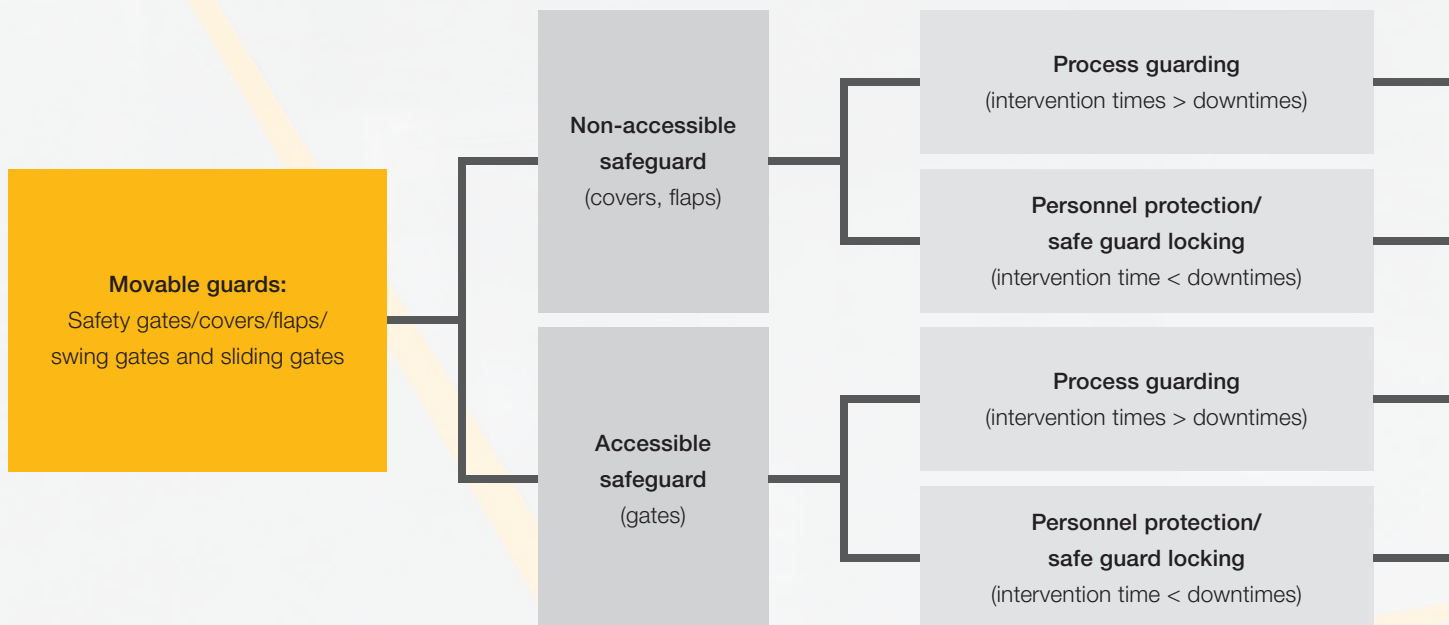


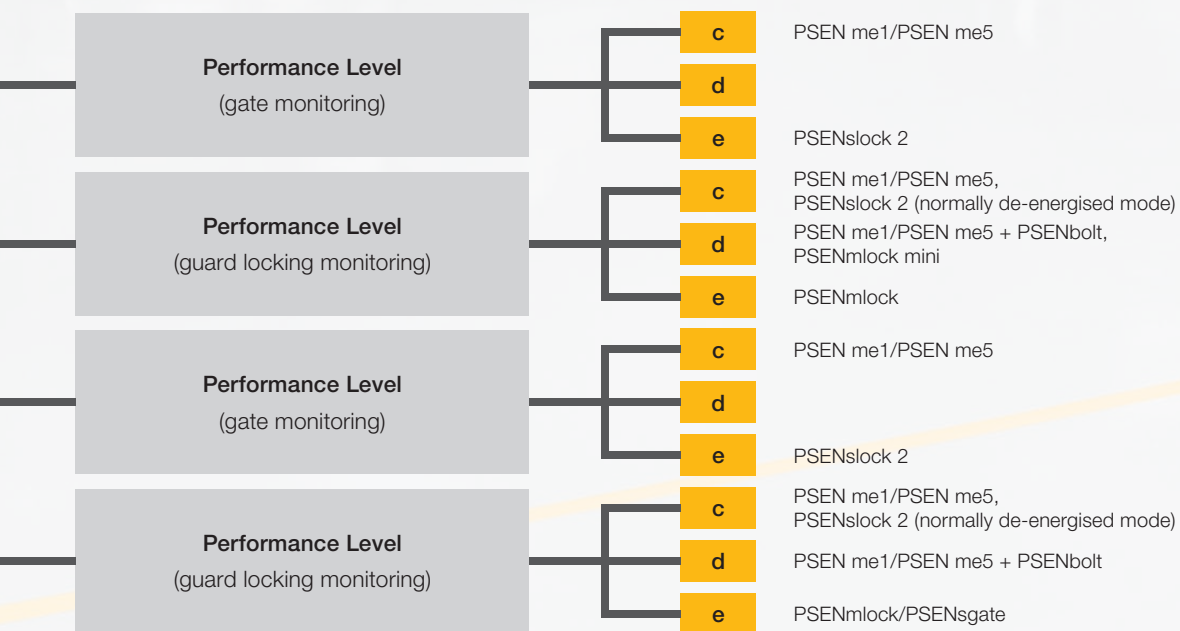
Performance Level

The protection level is defined according to EN ISO 13849-1 or EN 62061.



► The suitable safety locking device for my safety gate





+ Personnel protection: Protecting accessible safeguards with integrated access permission

- ▶ Safety locking device **PSENmlock** for safe guard locking up to PL e, Cat. 4
- ▶ Holding force F_{ZH} up to 7 500 N
- ▶ Can be combined with escape release or handle module
- ▶ Pushbutton unit PITgatebox with integrated access permission system PITreader



+ Process protection: Safety gate guarding under rugged application conditions

- ▶ Safety locking device **PSEnlock 2** for process guarding up to PL e, Cat. 4
- ▶ Magnetic holding force (F_{1max} : 1 000 N and 2 000 N)
- ▶ Flexibly mounted actuator with large contact surfaces compensates tolerances with safety gate misalignment
- ▶ Excellent manipulation protection
- ▶ Variants also available for personnel protection (normal de-energised mode)
- ▶ Optimised design, protection class IP67/IP6K9K as well as variants with stainless steel components for hygiene-critical applications



+ Personnel protection: Protecting accessible safeguards with integrated control elements

- ▶ Safety gate system **PSEnsgate** for safe guard locking up to PL e, Cat. 4
- ▶ Holding force F_{ZH} up to 2000 N
- ▶ Combination of safe guard locking and control element in one system
- ▶ For universal use with gates with left or right-hand hinges



+ Personnel protection: Protection of smaller safeguards

- ▶ Safety locking device **PSEnlock mini** for safe guard locking up to PL d, Cat. 3
- ▶ Holding force F_{ZH} up to 1950 N (F_{1max} : 3900 N)
- ▶ Ideal for small safeguards such as covers, flaps or swing gates and sliding gates
- ▶ Flexible actuator for internal and external installation; attachment is possible at the right, left or front
- ▶ Bistable guard locking principle and dual-channel solenoid actuation



+ Personnel protection: Economic basic solution for safety gate guarding

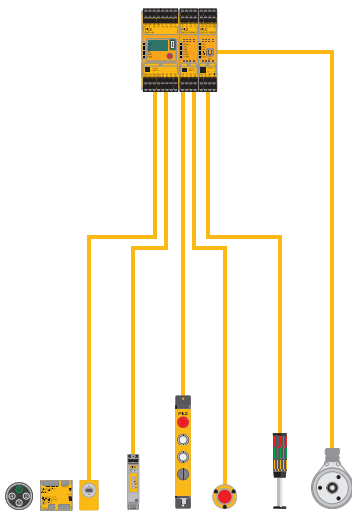
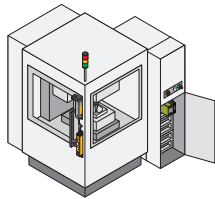
- ▶ Safety locking device **PSEn me5** in combination with safety bolt **PSEnbolt** for safe guard locking up to PL d, Cat. 2
- ▶ Holding force F_{ZH} up to 1500 N
- ▶ Electromechanical safety locking device
- ▶ Integrated escape release and optional emergency unlocking



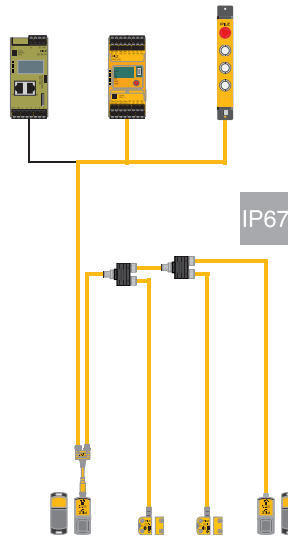
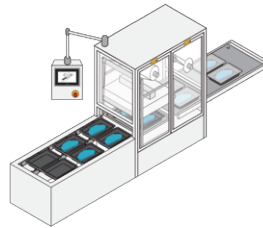
► Safe complete solutions for your safeguard

Reliable and efficient protection of safeguards includes not only the safety locking device but also suitable wiring and control technology. Pilz safety sensors can be connected in series and are compatible with products and interfaces from other manufacturers. They perfectly fit into their plant environment and also enable Pilz components to be retrofitted to your plant.

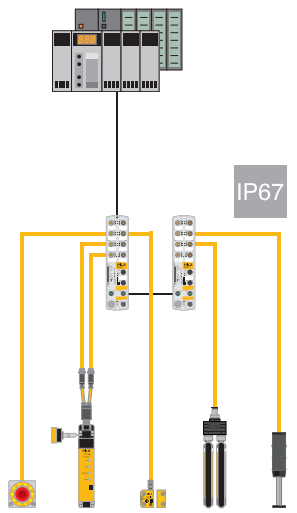
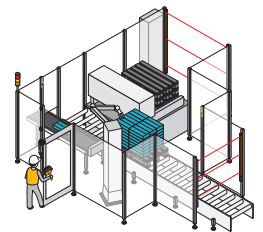
Safety locking device
PSEnlock mini with direct connection to the configurable small controller PNOZmulti 2



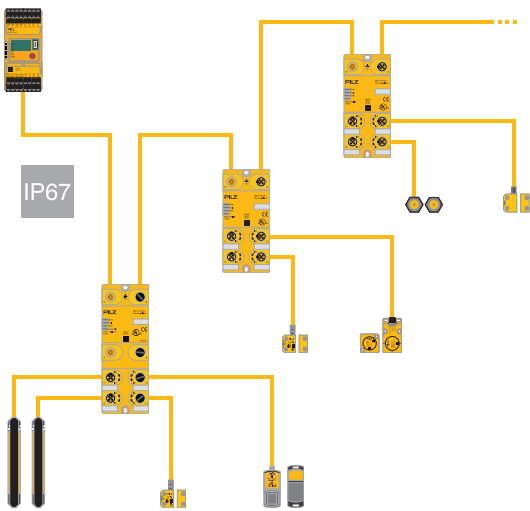
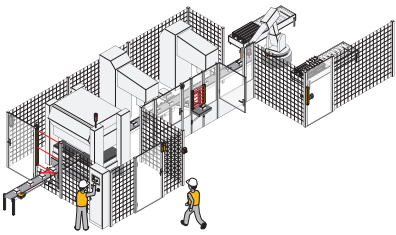
Safety locking device
PSEnlock 2 is connected in series with PSEncode with direct connection to the configurable small controller PNOZmulti 2



Sensor technology, operator and signal devices connected to the decentralised module PDP67 PROFINET/PROFIsafe



Sensor technology with M12, 5-pin connector for PDP67 and PNOZmulti 2



Learn more about our safe small controllers PNOZmulti 2:








You can find the suitable cables and plug-in connectors here:



Online information at www.pilz.com

► The safety locking devices in detail

The safety locking devices in detail					
Type	PSEN me5	PSENslock 2	PSENmlock mini	PSENmlock	PSENsgate
					
Applications	Accessible and non-accessible safeguards	Accessible and non-accessible safeguards	Small non-accessible safeguards	Accessible and non-accessible safeguards	Large accessible safeguards
Operating principle	Electro-mechanical	Transponder	Transponder	Transponder	Transponder
Guard locking principle	Normally de-energised mode, normally energised mode	Normally de-energised mode	Bistable principle	Bistable principle	Bistable principle
Safety functions	Process guarding, safe guard locking (personnel protection)	Process guarding, safe guard locking (personnel protection)	Safe guard locking (personnel protection)	Safe guard locking (personnel protection)	Safe guard locking (personnel protection)
Interlock classification to EN ISO 13849-1 (gate monitoring)	PL c, with fault exclusion PL d	PL e, Category 4	PL d, Category 3	PL e, Category 4	PL e, Category 4
Guard locking classification to EN ISO 13849-1 (guard locking monitoring)	PL c, with fault exclusion PL d	PL c, Category 2	PL d, Category 3	PL e, Category 4	PL e, Category 4
Holding force	F_{ZH} : 1 500 N	<ul style="list-style-type: none"> ▶ F_{1max}: 1 000/2 000 N (process protection) ▶ F_{1max}: 2 000 N (personnel protection) 	1 950 N (F_{1max} : 3 900 N)	F_{ZH} : 7 500 N	F_{ZH} : 2 000 N
Protection against manipulation	Low	Low to high	Low to high	Low to high	Low to high
Auxiliary release	Integrated	-	Integrated	Integrated	Integrated
Escape release	Optional (PSEN me5)	-	-	Optional	Integrated
Emergency unlocking	Optional (PSEN me5)	-	-	Optional	-

Further information on the subject of safety locking devices is available here:



Online information at www.pilz.com

► Modular safety gate system – the complete solution for your safety gate

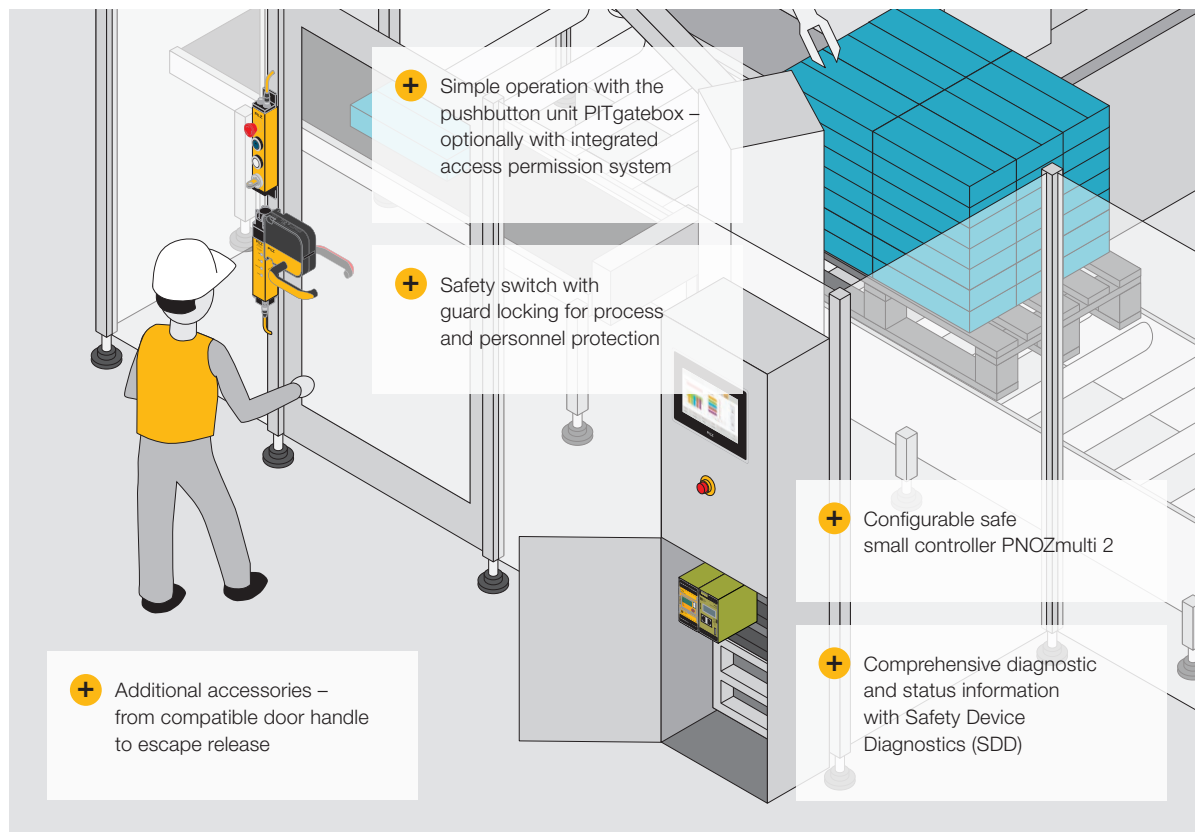
In addition to the safety locking devices we offer you compatible components such as the handle module and escape release through to the diagnostic system and the corresponding evaluation device. You can thus combine the separate components individually – tailored to your application.

Select the appropriate products to meet your requirements and assemble your own solution.

Your benefits at a glance

- Individual safety gate solution, tailored to the application
- Comprehensive modular portfolio with a number of options
- Combination of safety locking device and access control
- Authentication of users with integrated access permission system PITreader
- Fast and flexible integration in your system
- Comprehensive diagnostics of the safety locking devices

Individual safety gate solution with access permission, optimally tailored to your application



Discover more about our modular safety gate system:



Online information at www.pilz.com

Safety gate guarding with safety locking device PSEnmlock, handle module, pushbutton unit PITgatebox with integrated PITreader, diagnostic system SDD and configurable safe small controller PNOZmulti 2.

► Services: Consulting, engineering and training

As a solution supplier, Pilz can help you in the global application of optimum safety strategies that comply with specifications. Our services ensure the highest safety for man and machine worldwide.

Pilz Services for Safety and Automation



Machinery safety

Safety through the whole machine lifecycle

- Risk Assessment
- Safety Concept
- Safety Design
- System Implementation
- Safety Validation

Safe machinery
at any stage



International Compliance and Acceptance

Conformity with international standards and regulations

- CE Marking
- USA
- NR-12
- UKCA Marking
- Machinery Compliance and Acceptance
 - Design Risk Assessment DRA
 - Factory Acceptance Test FAT
 - Site Acceptance Test SAT

Compliant machines
worldwide



Workplace safety

Absolute safety when operating machines

- Machinery Safety Evaluation
- Lockout Tagout System
- Inspection of Safeguarding Devices

The maximum possible
safety for man and machine



Training

International qualification programme and certified courses

Enhancement of professional development

Keep up-to-date
on Services



Training



Online information
at www.pilz.com



Training

Pilz supports you with a comprehensive range of training courses on all topics of machinery safety and automation.



Machinery safety

Risk Assessment

We review your machinery in accordance with the applicable standards and directives and assess the existing hazards.

Safety Concept

We develop detailed technical solutions for the safety of your plant and machinery through mechanical, electronic and organisational measures.

Safety Design

The aim of the safety design is to reduce or eliminate danger points through detailed planning of the necessary protective measures.

System Implementation

The results of the risk analysis and safety design are implemented to suit the particular requirements through selected safety measures.

Safety Validation

In the validation, the risk assessment and safety concept are mirrored and inspected by competent, specialist staff.

And we perform collision measurement for human-robot applications in accordance with the limit values from ISO/TS 15066.



International Compliance and Acceptance

CE Marking

We control all activities and processes for the necessary conformity assessment procedure, including the technical documentation that is required.

USA

With us you'll receive all the necessary documents that are required to have your machine certified through local authorities to achieve US compliance.

NR-12

As a complete supplier we can provide support from risk assessment to validation, technical documentation at the manufacturer's and final acceptance at the operator's in Brazil.

UKCA Marking

We support you in the conformity assessment procedure in the UK so that you can continue to place your machinery on the market there safely.



Workplace safety

Machinery Safety Evaluation

You get an efficient and compact overview of the safety and conformity status of your machines, including a dashboard and recommended actions for risk reduction.

Lockout Tagout System

Our customised lockout tagout (LoTo) measures guarantee that staff can safely control potentially hazardous energies during maintenance and repair.

Inspection of Safeguarding Devices

With our independent, ISO 17020-compliant inspection body, which is accredited by the German Accreditation Body (DAkkS), we can guarantee objectivity and high availability of your machines.



Pilz GmbH & Co. KG, Ostfildern, operates an inspection body for plant and machinery, accredited by DAkkS.

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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