



For your automation solutions





What's new in 2021/2022 for your automation solutions

Pilz provides automation solutions for plant and machinery: complete and simple. From sensor technology to control and drive technology - safety and automation included. Various software tools enable simple operation and make commissioning easier. Benefit from short downtimes and high plant availability due to extensive diagnostic options. Here we present our product innovations for 2021/2022 for your safe automation. Further information is available on our homepage at www.pilz.com. Simply enter the webcode listed on the following pages.

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Safe monitoring of cardboard feed on packaging machines

NEW

With this Pilz solution, you can increase the safety and productivity of your packaging machines! The solution is used in the cardboard feed to prevent an operator from reaching into the machine through the empty material feed opening and being injured. As long as there is enough cardboard in the magazine, the opening is covered by the cardboard and it is not possible to reach into the danger zone while the machine is running. The opening of the movable guard can be safeguarded as follows: if the defined minimum amount of cardboard is reached or undershot in the magazine, the outputs of the programmable safety system shut down the machine. The machine remains stopped until sufficient cardboard is once again filled and production can start up again. You can choose either the safe small controller PNOZmulti 2 or the modular safety relay myPNOZ. Two optical sensors are required for each feed device. You are in safe hands and reduce the downtimes of your machine with this TÜV-certified solution.



- TÜV-certified solution for PL d/Cat. 3 according to EN ISO 13849-1 or SIL CL 2 of EN/IEC 62061: ready-to-use solution saves costs and time
- Higher productivity of the machine: packaging material provides natural protection, fences or the like are not needed
- Cost saving: no costly mechanical devices
- Higher level of personnel safety: minimised risk of accident thanks to use of safe control technology in combination with optical sensors
- Simple integration in existing applications and retrofit possible
- High reliability in the detection of different packaging materials,
 e.g. ultra-black, shiny or reflective objects





Safe monitoring of	of cardboard feed o	n packaging machines	
PNOZ m B0.1	Technical features	 TÜV-certified solution for PL d/Cat. 3 according to EN ISO 138 or SIL CL 2 of EN/IEC 62061 Solution consists of: The safe small controllers PNOZmulti 2 (all base units from the PNOZmulti 2 product range can be used) or Modular safety relay with the type code myPNOZ.91.CKA360AB000XB700 and 2 optical sensors O300.GP.2-11246332 for each cardboard feed/cardboard magazine Pulsed by PNOZmulti 2 or myPNOZ Short response times of the sensors; point/beam shape; background suppression; operating distance 30 – 100 mm; M8 4-pin connector; 12.9 mm wide Further information is available from the solution description ut webcode web0749. 	349-1 nder
PNOZmulti Configurator	Order number	 PNOZ m B0/PNOZ m B0.1 Plug-in spring-loaded terminals Plug-in screw terminals Chip card 8 kByte/32 kByte Mini USB cable, 3 m/5 m Software tool PNOZmulti Configurator, from V11.0 Safety relay myPNOZ, Creator type code 2 optical sensors O300.GP.2-11246332 for each magazine Accessories e.g. straight cable 5 m 	772 100/772 104 751 008 750 008 779 201/779 211 312 992/312 993 Licence-free myPNOZ.91.CKA 360AB000XB700 Z9000039
Sensor 0300.GP.2-11246332	Solution with safe s Economical: all bas Open and flexible: (E-STOP, safety ga Productive: the interval 	small controller PNOZmulti 2 se units PNOZmulti 2 can be used and are certified. all other application-based safety functions can also be monitored tes etc.). egrated diagnostics via PVIS with plain text messages enables the	fast rectification

Solution with modular safety relays myPNOZ

of standstills with clear handling instructions.

Can be ordered, preconfigured, with the myPNOZ Creator type code: myPNOZ.91.CKA360AB000XB700

> Saves costs: monitoring of several cardboard magazines possible with only one base unit,

you configure one function block and use two sensors for each magazine.

- Plug & Play: wired ready for immediate use
- ▶ Simple: Diagnostics via LEDs
- > Flexible: Monitoring of additional safety functions possible.



Solution for safe monitoring of the cardboard feed – a tool to increase the safety and productivity of your packaging machines!

solution: (h) Webcode: web0749

Packaging

PNOZmulti Configurator:

Webcode: web225344

PNOZmulti 2 base units:



PNOZmulti 2 expansion modules:

Webcode: web225352

myPNOZ:



Online information at www.pilz.com

Safe rope pull switch PSENrope mini – greater safety on the production line

NEW

With the new safe rope pull switch PSENrope mini, you have a costefficient solution for the emergency stop function along conveyor belts. With its compact design, the safe rope pull switch PSENrope mini only requires little space in the application. The rope length of up to 30 metres makes safeguarding with only one switch feasible, depending on the length of the conveyor belt. The sturdy metal or plastic housing guarantees robustness. Thanks to versions with straight and angled head, PSENrope mini can be flexibly and easily mounted in a variety of installation situations. The combination of emergency stop and pull-to-release ensures not only optimised costs, but also easy and convenient operation.

In addition to the versions with emergency stop function, versions with integrated reset button are also now available. These are suitable for concealed installation in the application and thereby enable a uniform machine design.



- Economic solution for the emergency stop function along conveyor belts
- Compact design for low space requirement in the application
- Rope length of up to 30 metres: only one switch for the emergency stop function along the conveyor belt
- Highly robust thanks to the sturdy metal or plastic housing
- Versions with straight or angled head for flexible use
- Versions with integrated reset button for concealed installation
- Suitable for indoor and outdoor applications
- Simple installation and convenient operation
- Cost optimisation through the combination of emergency stop and pull-to-release



Sale rope puil switch PSENrope mini						
PSEN rsm	Technical features	 Versions with emergency stop and reset function Material: Metal or plastic Versions with straight and angled head (right, left) Rope length: 30 m Protection type: IP67 Ambient temperatures: -30 °C to +75 °C Contacts: 2 N/C, 2 N/O Dimensions for straight head (H x W x D) in mm: 157.5 x Dimensions for angled head (H x W x D) in mm: 110 x 11 	42.5 x 41 4.5 x 42.5			
2.0-300-1-0-0	Order number	Version with reset function ▶ PSEN rsm 2.0-300-1-0-0 Plastic housing, straight head	570305			
PSEN rsm 2.0-300-0-0-0		 Versions with emergency stop function PSEN rsm 2.0-300-0-0-0 Plastic housing, straight head PSEN rsm 1.0-300-0-0-0 Metal housing, straight head PSEN rsm 1.0-300-0-2-0 Metal housing, angled head, left PSEN rsm 1.0-300-0-1-0 Metal housing, angled head, right 	570306 570304 570307 570308			
		Accessories ¹⁾ PSEN rsm turnbuckle Turnbuckle, M6x60, 1 piece PSEN rsm turnbuckle nut 	570316 570317			
PSEN rsm 1.0-300-0-1-0		 PSEN rsm rope thimble PSEN rsm rope thimble Rope thimble, D4, blue passivated strip steel, RoHs-compliant, 1 piece PSEN rsm rope clamp Rope clamp, nominal size 4, blue passivated strip steel, RoHs-compliant, 1 piece 	570318 570319			

¹⁾ Additional accessories can be used with PSENrope.



Webcode: web150404

at www.pilz.com

The cost-efficient solution for the emergency stop function along conveyor belts: safe rope pull switch PSENrope mini and configurable safe small controller PNOZmulti 2.

Safety bolt PSENbolt – versions with safety gate system PSENmech (PSEN me5)

NEW

The safety bolt PSENbolt comprises a mechanical bolt, a handle and a safety switch that can be flexibly combined.

New PSENbolt versions are now available in combination with the mechanical safety gate system PSENmech (PSEN me5). Thanks to integrated guard locking, they enable an economical safety gate solution for protecting personnel and processes.

You can choose between standard versions and versions with a key. The latter enable locking of the bolt in a specific position thereby preventing unintended restart of the machine, for example during maintenance.

Combining with the safety relay PNOZsigma or the configurable safe small controllers PNOZmulti 2 gives you a cost-effective, complete, one-stop solution.



- Reduced development and installation expense
- Cost-optimised solution comprising safety switch, handle and bolt
- Simple combination of up to 2 switches
- Long-lasting thanks to mechanical protection and robust material
- Locking pin protects the bolt from closing unintentionally
- Versions with key for preventing restart of the machine



and must beordered separately.

Safety bolt PSEN	lbolt		
PSEN b5/me5	Technical features	 Complete solution made up of PSEN me5, mechanical bolt a Designed for applications up to PL e of EN ISO 13849-1 or SIL CL 3 of EN/IEC 62061 with a coded safety switch, e.g. F Escape release available as an accessory Versions with and without key Option of attaching padlocks to mechanically prevent closing Protection type: IP67 Door stop: Right or left Material: anodised aluminium 	and appropriate handle PSENcode g of the gate
PSEN b5/me5 key adv	Order number ¹⁾	 PSEN b5/me5 Safety bolt for combination with PSEN me5 PSEN b5/me5 key adv Safety bolt for combination with PSEN me5, with key PSEN b5/me5/cs Safety bolt for combination with PSEN me5 and PSEN cs PSEN b5/me5 key Safety bolt for combination with PSEN me5, with key, no escape release possible Accessories ¹⁾ PSEN b5/me5 escape pin Escape release for use with 6L000023–25 	6L000023 6L000024 6L000025 6L000027 6L000026
PSEN b5/me5/cs		¹⁾ The safety gate sensor (PSEN me5, P	SEN cs) is not supplied





Webcode: web150411

Online information at www.pilz.com

The economical complete solution for safety gate guarding: PSENbolt in combination with the mechanical safety gate system PSENmech (PSEN me5) and configurable safe small controller PNOZmulti 2.

Mechanical safety gate system PSENmech with guard locking – and the gate stays closed!

NEW

In addition to the standard safety switches PSENmech, we are now also offering mechanical safety gate systems PSENmech with guard locking. They provide an economical basic solution for safe monitoring of movable guards. The safety gate is safely locked until the hazardous machine movement stops. As a result the safety gate system PSENmech with guard locking is suitable for protecting personnel and processes and can be used in numerous industries and applications. It can be supplemented with an escape release or emergency unlocking device. Together with the configurable safe small controllers PNOZmulti 2, it serves as a cost-effective, complete, one-stop solution.



- Economical basic solution for safety gate monitoring with safe guard locking
- Suitable for accessible doors thanks to escape release and emergency unlocking device options
- Flexible and fast installation thanks to various actuators and an M12 connection
- Long product service life thanks to the head and the 3D actuator being made of metal
- Housing is insensitive to dirt and dust and is also waterproof
- Suitable for connection to decentralised modules such as PDP67 or PSS67 thanks to M12, 5-pin product variants
- Safe complete solution, e.g. with configurable safe small controllers PNOZmulti 2



Mechanical safety gate system PSENmech				
	Technical features	 Position monitoring of movable guards in accordance with Designed for applications to PL e of EN ISO 13849-1, SIL CL 3 of EN/IEC 62061 (two devices must be used for the maximum requirements) Holding force: 1 500 N, type of guard locking: magnetic for Extraction force: < 10 N Directions of actuation: 5 Protection type: IP67 Supply voltage: 24 V AC/DC, 110 – 230 VAC, with M12 connection only 24 VDC 	EN 60947-5-1 he ce, spring force	
PSEN me5S NC-NC.NC-NC Iswitch PSEN me5 AS PSEN me5 AA PSEN me5 AR PSEN me5 AF PSEN me5 AF	Order number	 Variants with standard connection (switch only) PSEN me5S NC-NC-NC.NC 1 switch, spring force PSEN me5M NC-NC-NC-NC 1 switch, magnetic PSEN me5S NC.NC-NC-NC 1 switch, spring force PSEN me5S NC-NC-NC-NC 1 switch, magnetic PSEN me5S NC-NC-NO.NC 1 switch, spring force PSEN me5M NC-NC-NO.NC 1 switch, spring force PSEN me5S NC-NO.NC-NO 1 switch, spring force PSEN me5S NC-NC-NC 1 switch, spring force Variants with M12, 8-pin connection (switch only) PSEN me5S NC-NC-NC M12/8 1 switch, spring force PSEN me5M NC.NC-NC M12/8 1 switch, magnetic Variants with M12, 5-pin connection (switch only) PSEN me5M NC.NC n 1 switch, magnetic PSEN me5M NC.NC n 1 switch, spring force PSEN me5M NC.NC n 1 switch, spring force PSEN me5A, standard actuator PSEN me5 AS, standard actuator PSEN me5 AF, flexible actuator PSEN me5 AF, flexible actuator PSEN me5 20mm extension, expansion module length: 20 mm PSEN me5 40mm extension, expansion module length: 40 mm PSEN me5 emergency release front, front emergency unlocking device 	6L000010 6L000011 6L000012 6L000013 6L000014 6L000015 6L000017 6L000019 6L000020 6L000021 6L000021 6L000022 6L000001 6L000002 6L000003 6L000005 6L000005 6L000005	
		rear emergency unlocking device		

PSEN me5 emergency release front



Online information at www.pilz.com

The modular safety gate system – the complete safety gate solution including access control

NEW

The modular safety gate system offers you an individual safety gate solution that is tailored to your application. That means you can combine individual components flexibly to suit your own particular requirements.

Starting now, two new components are available: the PSENmlock handle module offers you a handle with integrated actuator and integrated escape release. Together with PSENmlock, you can optimally safeguard accessible doors. With the new PITgatebox with integrated access permission system PITreader, you are provided with a solution for access control at the safety gate. Thanks to individual transponder keys, only authorised personnel are allowed access to your machine. Machine downtimes are thereby prevented and the productivity increased.



- Individual safety gate solution tailored to the application
- Comprehensive modular portfolio with many different combination options
- Combination of safety gate monitoring and access control
- Authentication of users with integrated access permission system PITreader
- Rapid and flexible integration in your system
- User-friendly operation
- Simple and economical series connection of the safety sensors
- Comprehensive diagnostics of the safety switches
- Safe, complete solution when combined with safe Pilz control technology



Modular safety gate system – components					
Sensor	 PSENmlock (safety gua: PSENmlock base version (with/without auto. reset) PSENmlock series control (with/without auto. reset) 	rd locking device) on it) nection it)			
Handle	Handle module Integrated escape release, for swing/sliding gates	Handles For swing gates	For sliding gates		
Escape release	NEW	Escape releases Classic escape release	Remote escape release		
Pushbutton unit	PITgatebox ¹⁾				
Pushbutton unit with access permission system	PITgatebox with PITreader	NEW			
Evaluation device	Configurable safe small controller PNOZmulti 2				
Diagnostics and control	Safety Device Diagnostics				

¹⁾ Figure shows only a selection. Additional versions are available.

Create your solution for safety gate monitoring using the following components:

- Safety gate sensor PSENmlock for safe interlocking and safe guard locking up to PL e. Different versions are available for series connection and with and without automatic reset (page 12)
- New: PSENmlock handle module with integrated actuator and integrated escape release as well as flexible installation on the inside and outside of the safety gate for accessible safety gates (page 14)
- Escape releases and suitable handles
- Pushbutton unit PITgatebox for simple operation of the safety gate system (page 16)

- New: PITgatebox with integrated access permission system PITreader for the authentication of users (page 18)
- Safety Device Diagnostics for comprehensive diagnostic and status information as well as for the safe series connection of safety sensors and targeted individual control of the guard locking of individual switches in the series

Combining with the configurable safe small controller PNOZmulti 2 gives you a cost-effective, complete, one-stop solution.



Online information at www.pilz.com

Safety gate system PSENmlock – with automatic reset

NEW

The safety gate system PSENmlock offers you safe interlocking and safe guard locking for protection of personnel and process up to the highest safety category PL e. Starting now, versions with automatic reset are also available in addition to versions with power reset. After actuating the escape release, a power reset, meaning switching off of the power supply, is no longer necessary on these versions. The reset is performed by resetting the escape release and closing the safeguard. The emergency unlocking device cannot be used with the versions with automatic reset.

Together with the pushbutton unit PITgatebox for simple operation of the safety gate system and the configurable safe small controller PNOZmulti 2, you achieve a safe complete solution for safety gate monitoring.



- Safe interlock and safe guard locking up to PL e
- ▶ High holding force of 7 500 N
- Versions with power reset and automatic reset
- Easily visible diagnostics thanks to LEDs on three sides of the housings
- Compact design suitable for all 40 mm profiles, among others
- Flexible actuator for high tolerance compensation
- Integrated restart interlock



Oulory gate syste				
	Туре	Common features		Order number
 Safety gate systems for monitoring of movable guards in accordance with EN 60947-5-3 Suitable for applications up to PL e of EN ISO 13849-1, SIL CL 3 of EN/IEC 62061 Type of coding: coded, fully coded, unique fully coded Holding force: 7 500 N Connection type: M12, 8-pin, pigtail 		N 60947-5-3 EN ISO 13849-1, nique fully coded		
	PSENmlock base version with automatic reset	 Unit (set comprising switch and actual - PSEN ml ba 1.1 unit PSEN ml ba 2.1 unit PSEN ml ba 2.2 unit Switch PSEN ml ba 1.1 switch PSEN ml ba 2.1 switch PSEN ml ba 2.2 switch 	tor) Unit, coded Unit, fully coded Unit, unique fully coded Switch, coded Switch, fully coded Switch, unique fully coded	570 424 570 426 570 428 570 425 570 425 570 427 570 429
	PSENmlock version for series connection with automatic reset	 Unit (set comprising switch and actual - PSEN ml sa 1.1 unit - PSEN ml sa 2.1 unit - PSEN ml sa 2.2 unit Switch - PSEN ml sa 1.1 switch - PSEN ml sa 2.1 switch - PSEN ml sa 2.1 switch - PSEN ml sa 2.1 switch 	tor) Unit, coded Unit, fully coded Unit, unique fully coded Switch, coded Switch, fully coded Switch, unique fully coded	570 430 570 432 570 434 570 431 570 433 570 433



The optimum solution: the safety gate system PSENmlock in combination with the remote escape release, the pushbutton unit PITgatebox and the configurable safe small controller PNOZmulti 2.



Online information at www.pilz.com

PSENmlock handle module – with integrated actuator and escape release

NEW

The PSENmlock handle module offers you a handle with integrated actuator and integrated escape release suitable for safety gate system PSENmlock. The yellow handle (outside) enables extension of the actuator to open or close the door. The escape release is actuated with the red handle (inside). The handle module is suitable for installation on the inside and the outside of the door as well as for right and left hinged gates. It has a locking insert for up to five locks to prevent the machine from restarting. The PSENmlock door handle module can be used with coded and fully coded PSENmlock switches.

Together with the pushbutton unit PITgatebox for simple operation of the safety gate system and the configurable safe small controller PNOZmulti 2, you achieve a safe complete solution for safety gate monitoring.



- Handle with integrated actuator and integrated escape release
- Flexible installation on the inside and the outside of the door as well as for right and left hinged gates
- Locking insert for up to 5 locks to prevent restarting
- > Up to 2 extensions for installation through the safety gate



Safety gate system PSENmlock - handle with integrated actuator and escape release



PSEN ml DHM down I 2.1



Туре	Common features	Order number
	 Handle module for use with PSENmlock Yellow handle (outside): extension of the actuator Red handle (inside): actuation of the escape release Flexible installation on the inside or outside of the door For left and right hinged gates For versions with cable outlet from PSENmlock toward the top or bottom For coded and fully coded PSENmlock 	
Handle modules	Technical features	
PSEN ml DHM up I 1.1	Can be used with coded PSENmlock versions and cable outlet toward the top, left hinged gates	6000001
PSEN ml DHM up I 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the top, left hinged gates	6000002
PSEN ml DHM up r 1.1	Can be used with coded PSENmlock versions and cable outlet toward the top, right hinged gates	6000003
PSEN ml DHM up r 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the top, right hinged gates	6000004
PSEN ml DHM down I 1.1	Can be used with coded PSENmlock versions and cable outlet toward the bottom, left hinged gates	6000005
PSEN ml DHM down I 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the bottom, left hinged gates	6000006
PSEN ml DHM down r 1.1	Can be used with coded PSENmlock versions and cable outlet toward the bottom, right hinged gates	6000007
PSEN ml DHM down r 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the bottom, right hinged gates	6000008
Accessories PSEN ml DHM extensions	Extensions (25 mm each) for the handle, 2 pieces	6000009
PSEN mI DHM handle yellow	Yellow handle for outside actuation	6000010
PSEN ml DHM handle red	Red handle for actuation of the escape release	60000011
PSEN ml DHM extension covers	Covers for 6000009, 2 pieces	60000012
PSEN ml mounting plate	Adjusting plate for PSEN ml door handle module when using 10 mm mounting plate 570490 with PSENmlock	60000013
PSEN ml mounting flaps	Mounting flaps for installation on sliding gates, 2 pieces	60000014



Webcode: web150409

Online information at www.pilz.com

The optimum solution: the safety gate system PSENmlock in combination with the PSENmlock handle module, the pushbutton unit PITgatebox with integrated PITreader and the configurable safe small controller PNOZmulti 2.

The world's first UL-certified Type 3 safety light curtains PSENopt II

NEW

The safety light curtains PSENopt II Type 3 are currently the world's first to receive approval from the global test organisation Underwriters Laboratories (UL) based in Northbrook, United States. The certification confirms that the light curtains meet the national safety standards of the United States and Canada. This is beneficial for you as a machine builder, especially if you export to these markets. Furthermore UL certification supports you as a company or user with introducing products and systems into the North American market. This ultimately benefits the end user, as commissioning can take place more quickly.

The safety light curtains PSENopt II Type 3, launched in 2016 as a world first for this safety category, make it straightforward to implement applications with PL d in accordance with EN ISO 13849-1. This saves money because the application does not need to be overdesigned.

Complete one-stop solution

Together with safe control technology from Pilz, and especially the small controllers PNOZmulti 2, PSENopt II units provide a safe and economical



Your benefits at a glance

- Certified safety: safety light curtains Type 3 in accordance with EN/IEC 61496-1/-2 for applications up to PL d with UL and TÜV certificate
- For finger, hand and body protection, available as Type 3 but also Type 4 safety light curtains
- ▶ User-friendly diagnostics via LEDs to reduce downtimes

one-stop solution for your plant. Flexible use, rapid installation, no dead zones and 50 g shock resistance mean PSENopt II are predestined for use in the rugged everyday industrial environment. They can be connected directly to the decentralised input module PDP67 using the 5-pin connector. High-grade accessories such as post protectors, mirror columns and PSENopt II lockout guarantee trouble-free use.



Safety light curtains – the world's first UL-certified Type 3 light curtains PSENopt II					
	Туре	Common feat	ures		Order number
PSEN opII3F- s-14-030 Body protection EXEC Hand protection		 EN/IEC 61508 and EN/IEC 61496-1/-2: Type 3 For applications up to PL d (EN ISO 13849-1) and SIL CL 2 of EN/IEC 62061 Resolution: 14 mm (finger protection) 30 mm (hand protection) 170 or 300 mm (body protection) Operating range: 0.2 8 m (finger protection) 0.2 15 m or 10 55 m (body protection) Height of protected field: 150 1 800 mm (finger and hand protection) 450 1 500 mm (body protection) No dead zones (except with protected field height 150 mm) Supply voltage: 24 VDC Connection: Receiver: 1 x pigtail, M12, 5-pin Transmitter: 1 x pigtail, M12, 5-pin Dimensions: 35 x 40 mm For response times see documentation Coding "Code A", "Code B", "not coded" 			
	Selection ¹⁾	Resolution	Height of	Range	
			protected field		
	PSEN opII3B-s-170-120	170 mm	1 200 mm	0.2 15 m	632104
	PSEN opII3B-s-300-120	300 mm	1 200 mm	10 55 m	632114
	PSEN opII3H-s-30-060	30 mm	600 mm	0.2 18 m	632023
	PSEN opII3H-s-30-090	30 mm	900 mm	0.2 18 m	632 025
	PSEN opII3F-s-14-015	14 mm	150 mm	0.2 8 m	632 040
	PSEN opII3F-s-14-030	14 mm	300 mm	0.2 8 m	632041

¹⁾ Please view the full range online at www.pilz.com, e.g. in the E-Shop.

The light curtains PSENopt II are naturally also available for Type 4 applications.



Resistant to shock, vibration

and collision.



Resistant to cold (down to -10 °C).



Resistant to dust.

High level of robustness to minimise downtimes: shock-resistant to 50 g.



Online information at www.pilz.com

Restart interlock for light curtain – PSENopt II lockout

NEW

With our new accessories PSENopt II lockout for the light curtain range PSENopt II, you prevent the unintentional restart of the machine, for example if maintenance work is to be performed in the danger zone.

PSENopt II lockout is comprised of an assembly unit for lateral mounting on the light curtain as well as a swivel arm. If someone enters the danger zone, the swivel arm can be positioned in front of the light curtain's field of vision and equipped with a lock. The light curtain thus no longer has a free field of vision and a restart is prevented.

Previously the restart could only be prevented by means of additional safety sensors in the danger zone or by means of visual inspection, meaning a look into the danger zone. With our PSENopt II lockout you get a safe and economical solution to prevent the unintended restart of your machine and thus save additional costs for further safety sensors.



- Safe solution for preventing the unintended restart of the machine, for example with maintenance work
- Economical solution as no additional sensors are required
- Quick and easy assembly and operation
- Can be used with the light curtains PSENopt II



Light curtains – PSENopt II lockout Image: Second s



Webcode: web216048

Online information at www.pilz.com

The optimum solution for preventing unintended restart of the machine: light curtains PSENopt II in combination with the restart interlock PSENopt II lockout and the configurable safe small controller PNOZmulti 2.

Safe protection zone monitoring, even for robotics applications: PSENradar and PNOZmulti 2

NEW

The new radar sensor PSEN rd1.2 and the new analysis unit PSEN rd1.x I/O PN are now available for safe protection zone monitoring in rugged application conditions. Thanks to the high safety category Cat. 3/PL d, not only outdoor applications and areas in wood and metal processing are safeguarded, but now also robot applications. With the new self-teaching background function, changes can now be made within the warning or protection zone during operation without requiring a new configuration.

The safe radar system together with

PNOZmulti 2 offers a safe complete

solution for protection zone monitor-

ing - including conformity assess-

ment. Additional interfaces such as

Ethernet and PROFIsafe also enable

simple use, e.g. in retrofit applications.

the configurable safe small controllers







Steam



- High safety category Cat. 3/PL d enables safeguarding of robotic applications
- High flexibility thanks to optimised sensor alignment and individual protection zone configuration
- > Openness for retrofit applications thanks to additional interfaces
- Insensitive to dust, dirt, rain, light, flying sparks, steam and vibrations
- Protection against encroachment from behind: To prevent the machine restarting when there are people in the danger zone



•	0,		
	Туре	Common features	Order number
PSEN rd1.x I/O PN analysing unit	PSEN rd1.x I/O PN analysing unit	 Series connection: up to 6 sensors Zone sets: up to 32 OSSD outputs: up to 4 Reaction time: max. 100 ms Connection type: Ethernet, PROFIsafe Dimensions (H x W x D) in mm: 103 x 105 x 58 	6B000001
PSEN rd1.1 sensor	PSEN rd1.1 sensor	 Opening angle: 110° horizontal, 30° vertical (wide) or 50° horizontal, 15° vertical (narrow) Operating range: 4 m Frequency: 24 GHz Protection type: IP67 Can be used in applications up to SIL 2(IEC 61508), PL d (EN ISO 13849-1), category 3 if 2 sensors are used Dimensions (H x W x D) in mm: 125 x 165 x 53 	6B000002
PSEN rd1.2 sensor	PSEN rd1.2 sensor	 Opening angle: 20 – 100° horizontal, 20° vertical, configurable in 10° steps Operating range: 5 m Frequency: 60 GHz Protection type: IP67 For use in applications up to SIL 2 (IEC 61508) PL d (EN ISO 13849-1) Category 3 Dimensions (H x W x D) in mm: 135 x 158 x 105 	6B000003
PNOZ m B0	Accessories	 PSEN rd1.1 sensor shield kit Cable/CA/M12-5AFX/A/005/XXXX/SH Cable/CA/M12-5AFX/A/010/XXXX/SH Cable/CA/M12-5AFX/A/015/XXXX/SH Cable/CA/M12-5AFX/M12-5AM/A/003/XXXX/SH Cable/CA/M12-5AFX/M12-5AM/A/005/XXXX/SH Cable/CA/M12-5AFX/M12-5AM/A/010/XXXX/SH Cable/CA/M12-5AFX/M12-5AM/A/010/XXXX/SH Cable/CA/M12-5AFX/M12-5AM/A/015/XXXX/SH Cable/CA/M12-5AFX/M12-5AM/A/015/XXXX/SH PNOZ m B0 	6B000004 C1000044 C1000045 C1000046 C1000047 C1000048 C1000049 C1000050 C1000058 772100

Safe protection zone monitoring, even for robotics applications: PSENradar and PNOZmulti 2



Safe complete solution with safeguarding of danger zones and protection against encroachment from behind (restart interlock).

Modular safety relay myPNOZ[®] – create your safety

NEW

myPNOZ is the new modular safety relay that is produced for you, tailored to your individual requirements, in batch size 1. Easy to handle, flexible to use and with versatile features for reliable monitoring of safety functions such as emergency stop, safety gate, light curtains, IIIA/C two-hand controls and enabling switch.

Create your safety – individual, tailor-made, easy. Here's how!

- You create: The user-friendly myPNOZ Creator can be used to easily create your individual myPNOZ safety relay online.
- We build: Based on your personal configuration, every myPNOZ is pre-assembled, adjusted and tested by us.
- You install: You receive your myPNOZ "ready for plug and play", and save time and money thanks to the minimal wiring work and the narrow width.



- Easy-to-use myPNOZ Creator for your personal configuration
- Delivery of your individually manufactured, adjusted and tested myPNOZ
- Reliable monitoring of 2 to 16 safe input functions
- > Option for up to 8 independent safety circuits (zones) within a system
- 2 safety inputs for each input module
- Output modules optionally delayed and with relay or semiconductor outputs
- Enables AND/OR operations for safety inputs
- > Diagnostics via LEDs for each module and safety function
- Minimal wiring effort thanks to power supply via head module and connection of the modules via BUS connector





Module overview of myPNOZ and technical features				
	Туре	Common features		
PNOZ yh1 2DI 24VDC		 Input modules: Single/dual-channel wiring, with/without detection of shorts across contacts Ambient temperature: -10 °C to +55 °C Supply voltage: 24 VDC Safety level up to PL e and SIL CL 3 TÜV, UL certification Protection type: IP20 		
	Head module PNOZ yh1 2DI 24VDC	 Application Inputs: 2 for monitoring a global safety function Outputs: 1 signal output using semiconductor technology, U_B = 24 VDC 	Width 17.5 mm	2A000002
	Input modules PNOZ yi1 4DI	Inputs: 4 for monitoring up to 2 safety functions, AND linked	12.5 mm	2A000004
PNOZ yi1 4DI	PNOZ yi2 4DI or	Inputs: 4 for monitoring 2 safety functions, OR linked	12.5 mm	2A000011
ter en sek	PNOZ yi3 2DI T3a	Inputs: 4 for Type IIIA two-hand monitoring in accordance with EN 574 and an additional safety function, AND linked	12.5 mm	2A000005
	PNOZ yi4 2DI T3C	Inputs: 6 for Type IIIC two-hand monitoring in accordance with EN 574 and an additional safety function, AND linked	12.5 mm	2A000006
	Output modules PNOZ yo1 2SO	Outputs: 2 safe instantaneous switching semiconductor outputs, 1 signal output using semiconductor technology	17.5 mm	2A000012
PNOZ yo1 2SO	PNOZ yo2 3NO	Outputs: 3 N/O safe, instantaneous switching relay contacts, 1 signal output using semiconductor technology	17.5 mm	2A000014
	PNOZ yo3 1SO 1SO t	Outputs: 1 direct and 1 switch-off delay or delay-on energisation safe semiconductor output, 1 signal output using semiconductor technology	17.5 mm	2A000007
	PNOZ yo4 3NO	Outputs: 3 N/O safe switch-off delay or delay-on energisation relay contacts, 1 signal output using semiconductor technology	17.5 mm	2A000009
PNOZ yio1 2DI 2SO	Input/output modules PNOZ yio1 2DI 2SO	 Outputs: 2 safe instantaneous switching semiconductor outputs, 1 signal output using semiconductor technology Inputs: 2 for monitoring a safety function 	17.5 mm	2A000013
	PNOZ yio2 2DI 3NO	 Outputs: 3 N/O safe, instantaneous switching relay contacts, 1 signal output using semiconductor technology Inputs: 2 for monitoring a safety function 	17.5 mm	2A000015
	PNOZ yio3 2DI 1SO 1SO t	 Outputs: 1 direct and 1 switch-off delay or delay-on energisation safe semiconductor output, 1 signal output using semiconductor technology Inputs: 2 for monitoring a safety function 	17.5 mm	2A000008
	PNOZ yio4 2DI 3NO t	 Outputs: 3 N/O safe switch-off delay or delay-on energisation relay contacts, 1 signal output using semiconductor technology Inputs: 2 for monitoring a safety function 	17.5 mm	2A000010
	Accessories Spring-loaded terminals	 1 set of plug-in spring-loaded terminals, 2-pin 1 set of plug-in spring-loaded terminals, 3-pin 	12.5 mm 17.5 mm	751 002 751 003
	Screw terminals	 1 set of plug-in screw terminals, 2-pin 1 set of plug-in screw terminals, 3-pin 	12.5 mm 17.5 mm	750 002 750 003
	myPNOZ connector	Connectors, 10 pcs.	-	2A000202

Safe small controllers PNOZmulti 2 – modular for simple applications

NEW



Do you need to monitor a moderate number of safety functions on your machine? The new base unit PNOZ m B0.1 can be used as a stand-alone or modularly expanded with max. one I/O module. For expansion on the right side, it is possible to select from these I/O modules: PNOZ m EF 16DI or PNOZ m EF 8DI4DO or PNOZ m EF 8DI2DOT or PNOZ m EF 4DI4DOR or PNOZ m EF 4DI4DORD or the new relay output module PNOZ m EF 2DOR. This is a compatible successor to the compact controllers PNOZmulti Mini. Existing PNOZmulti Mini projects can be easily migrated to the PNOZ m B0.1 from Version 11.0 of the software tool PNOZmulti Configurator. To the left, link modules for the connection of decentralised input modules PDP or for the networking of several PNOZmulti 2 systems can be used. Fieldbus modules are used for the connection of a higher level PLC. This results in a cost-optimised system for the safety of your machines.



- Safe operation through certified hardware and convenient, intuitively operated software tool
- Customised costs: exact adaptation to your application, ideal for small and medium-sized machines
- Cost-effective and long-lasting: worldwide safety standard for many automation environments and communication systems
- Just one system from planning to maintenance
- Maximum flexibility: inputs and outputs are freely configurable
- Reduced downtimes thanks to user-friendly diagnostics with plain text display
- > Saves lots of space in the control cabinet due to the compact design



Configurable safe	e small controllers	PNOZmulti 2 – PNOZ m B0.1 and PNO	DZ m EF 2DOR	
PNOZ m B0.1	Technical features	 PNOZ m B0.1: base unit, can be expanded to the right with one module 20 safe inputs, up to 8 can be configured as auxiliary outputs 4 safe semiconductor outputs, depending on the application up to PL e, SIL CL 3 4 test pulse outputs, up to 4 of which can be configured as standard outputs Right side max. 1 safe expansion module: PNOZ m EF 16DI or PNOZ m EF 8DI4DO or PNOZ m EF 8DI2DOT or PNOZ m EF 4DI4DOR or PNOZ m EF 4DI4DORD or PNOZ m EF 2DOR Left side: max. 4 safe link modules PNOZ m EF Multi Link and/or PDP Link: max. 1 fieldbus module; max. 1 communication module PNOZ m EF ETH or RS232 Display with backlighting to indicate the status of the supply voltage and the inputs and outputs Rotary knob for menu control Chip card as storage medium (not supplied with device) Dimensions (H x W x D) in mm: 101.4/98 ¹ x 45 x 120 PNOZ m EF 2DOR: safe relay output module 2 safe relay outputs, depending on the application up to PL e, SIL CL 3 Dimensions (H x W x D) in mm: 101.4 x 22.5 x 120 Certifications: CE, TÜV, cULus Listed, EAC (Eurasia), KOSHA Can be configured using the software tool PNOZmulti Configurator from Version 11.0 		
	Order number	 PNOZ m B0.1 Plug-in spring-loaded terminals Plug-in screw terminals Mini USB cable 3 m 5 m Chip card 8 kByte 1 piece Chip card 32 kByte 1 piece PNOZ m EF 2DOR Plug-in spring-loaded terminals 	772104 751008 750008 312992 312993 779201 779211 772146 751004	
		Plug-in screw terminals	750004	

¹⁾ Height incl. plug-in spring-loaded terminals/screw terminals



By selecting the appropriate expansion modules and thanks to the simple configuration, you can expand your application easily and economically. If your application is larger than planned, it is possible to easily migrate from PNOZ m B0.1 to PNOZ m B0 or B1.

PNOZmulti 2 base units:



PNOZmulti 2 expansion modules

Webcode: web225352

PNOZmulti Configurator:

Webcode: web225344

Accessories PNOZmulti 2:



Online information at www.pilz.com

Configurable safe small controllers PNOZmulti 2 – safe motion monitoring

NEW

The safe motion monitoring modules for the configurable small controllers PNOZmulti 2 ensure safe monitoring of your drives. The module PNOZ m EF 1MM2DO has two safe semiconductor outputs and a cascading input and output. Together with a base unit PNOZ m B0 or PNOZ m B1 the expansion module monitors one axes. You can configure the safe motion monitoring module in the software tool PNOZmulti Configurator. You create one independent module program (mIQ) for each module for direct control of the safe digital outputs. The benefit to you: a fast reaction time to motion events with a shutdown of the outputs below 12 ms. Exceeding of parametrised limit values is signalled and PNOZmulti 2 triggers a safe and reliable reaction in the event of a fault and if detection zones/protected areas are violated. If the overall system switches to the stop condition, a delayed shutdown can be configured. The shutdown can be linked to other modules via the integrated cascading input and output. If a module switches off, modules linked via the cascading are also switched off. This allows you to protect your products and machinery with high flexibility in your application.



- Maximum flexibility thanks to module program technology (mIQ) with fast reaction time < 12 ms: lightens the load on the base unit</p>
- High availability for your application: simple configuration of the motion monitoring safety functions via software blocks in the PNOZmulti Configurator
- Cascading and delayed shutdown protect products and machinery
- Connection to all common incremental encoders via industrycompatible interface Mini I/O









The complete solution for safe motion monitoring: Configurable safe small controllers PNOZmulti 2 with Pilz sensor technology and operator and visualisation systems. An independent module program (mIQ) for direct control of the safe digital outputs can be created for each motion monitoring module in the software tool PNOZmulti Configurator.

PNOZmulti 2 expansion modules:



Accessories PNOZmulti 2:

Webcode: web87010

Online information at www.pilz.com

Safe small controllers PNOZmulti 2 – for applications in burner management

NEW

As a manufacturer of burner and heat-related plant and machinery, you must observe a number of legal and normative requirements. The safety requirements in particular are extremely stringent.



New to the range of safe small controllers PNOZmulti 2 is a base unit for the safe control and monitoring of furnaces. The base unit will be supported from Version 10.12 of the software tool PNOZmulti Configurator and is equipped with a burner element (function block) that reproduces the expanded functionality of a flexibly configurable electronic automatic burner control. You can thus easily configure a number of burner applications. The Burner Management System has been tested and certified in accordance with European standards such as EN 298 and EN 50156. Certification was performed for the USA and Canada according to UL 60730-1 and UL 60730-2-5.

The safe small controllers PNOZmulti 2 have a modular design. An expansion module with four safe, diverse relay outputs is available to suit the base unit. The module controls the safety valves of a burner. When needed you can use additional safe input/output





Your benefits at a glance

- Flexible and safe design of your furnace: control and monitor up to 12 burners with one base unit
- Saves lots of time during design and engineering as you can easily and quickly implement even complex safety applications with just one small controller
- Connection options with numerous automation environments and communication systems
- Maximum safety thanks to tested and certified hardware and software elements
- Complies with standards in accordance with EN 298, EN 50156, NFPA 85/86
- Certified according to UL 60730-1 and UL 60730-2-5 for use in the USA and Canada

modules, e.g. the safe analogue input module. These allow you to safely control and monitor the entire furnace.





Configurable safe small controllers PNOZmulti 2 – PNOZ m B1 Burner and PNOZ m EF 4DI4DORD				
PNOZ m EF PNOZ m EF DIADEC		 Base unit PNOZ m B1 Burner – specification - Control and monitoring of furnaces, e.g. combustion air pressure, ignition, flame leak-tightness control Control of safety valves, ignition valves, compound controller and combustion air master burner with direct ignition, master and joint flame monitoring Up to 12 burner function blocks can be Input and output module PNOZ m EF 4D - 4 safe inputs; 4 safe positive-guided related characteristic data: depending to PL e/Cat. 4 of EN ISO 13849-1 and of EN/IEC 61508 Certifications: PNOZ m B1 Burner cULus The certification to UL 60730-1/2-5 was PNOZ m EF 16DI, PNOZ m EF 8DI4DO, I Currently in progress for other devices Can be configured using the software toot base unit from Version 10.12, module from Wide range of approved elements/blocks emergency stop, safety gates, operating Dimensions (H x W x D) in mm: - PNOZ m EF 4DI4DORD: 100 x 22.5 x 1 	Ily for burner management: . monitoring of safety sequences, , external compound controller and exhaust valves, ignition, external ir blowers burner types possible: er burner with indirect ignition configured per base unit I4DORD: ay outputs, diverse valves ding on the application, d Safety Integrity Level SIL CL 3 listed, CE, TÜV, EAC (Eurasian), KOSHA performed for PNOZ m B1 Burner, PNOZ m ES PROFINET and PROFIBUS. b) PNOZmulti Configurator: m Version 10.13 a for monitoring safety functions such as mode selector switches and much more 20.2	
Configurator	Order number	 PNOZ m B1 Burner Plug-in spring-loaded terminals Plug-in screw terminals PNOZ m EF 4DI4DORD Plug-in spring-loaded terminals Plug-in screw terminals 	772 102 751 016 750 016 772 145 751 004 750 004	



Webcode: web150399

Online information at www.pilz.com

Configurable safe small controllers PNOZmulti 2 for monitoring and controlling your furnace. All plant-dependent safety functions such as emergency stop, limit value monitoring and many others can also be monitored and controlled.

Safe small controllers PNOZmulti Configurator – new full version 11

NEW

Version 11.0 of the software tool PNOZmulti Configurator is the newest full version in a long line from the success story of the small controllers PNOZmulti, in which the software tool played a major role. Version 11 builds upon a new software architecture with higher performance based on the Windows 64-bit system. The software tool thus offers state-of-the-art safety and continues to act as a benchmark for safety software.

The major innovation in Version 11 is the considerable streamlining of the product range: it includes all second generation base units such as PNOZ m B0, PNOZ m B1, PNOZ m B1 Burner as well as the new base unit PNOZ m B0.1. All PNOZmulti 2 expansion modules including the new PNOZ m EF 2DOR can also be found. Version 11 is used to create new PNOZmulti 2 projects and to open and edit existing projects. Powerflow, diagnostics, error stack etc. remain available for commissioning and maintenance. There were also significant changes to the licensing: the Basic version of the software tool is free of licence fees and and can be downloaded and used in automation projects free of charge. Version 11



Your benefits at a glance

- Higher performance due to new software architecture, compatible with Windows 64-bit
- Software tool can be used free of licence fees in the Basic variant
- Equipped for safe automation of the future with the latest PNOZmulti 2 product range

will be continuously updated to include new PNOZmulti 2 hardware and software features. PNOZmulti Configurator thus remains the benchmark for safety software and the success story continues!

For functional safe monitoring of the operating mode, the new "MSO flex LED" element is available for the configuration of button illumination to indicate the operating mode. These can be adapted individually and enable high flexibility in use.





Software tool PNOZmulti Configurator – Version 11.0 and Version 10.14				
PNOZ multi Configurator	Technical features	 Version 11.0 Create, open, edit PNOZmulti 2 projects Contains PNOZmulti 2 hardware New licensing model: Basic Software is fn Advanced functions will be made available will require a licence Element/block MSO flex LED for the confi indicators as a supplement to "MSO flex/ The element can be freely configured Base unit PNOZ m B0.1 and safe relay or for a convenient switchover by means of PNOZmulti 2 Version 10.14, long-term-supported verss Contains hardware from the PNOZmulti 2 PNOZmulti Mini product ranges This version can be used to migrate PNO PNOZmulti 2 Open, edit existing PNOZmulti 2/Classic/ 	ree of licence fees. e in later versions and iguration of operating mode flex visu" elements. utput module PNOZ m EF 2DOR migration from PNOZmulti Mini to sion (released July 2021) 2, PNOZmulti Classic and IZmulti Classic or Mini projects to Mini projects, create new projects	
PNOZ m EF 2DOR	Order number	 PNOZ m B0.1 Plug-in spring-loaded terminals Plug-in screw terminals PNOZ m EF 2DOR Plug-in spring-loaded terminals Plug-in screw terminals 	772 104 751 008 750 008 772 146 751 004 750 004	

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Flexible and easy to use. Version 11 is a slimmed down version with PNOZmulti 2 hardware and is available for download free of licence fees!

PNOZmulti Configurator:



PNOZmulti 2 base units:



PNOZmulti 2 expansion modules:



Online information at www.pilz.com

Safe motion – new motion monitoring functions for drive-integrated safety!

NEW

The new safety card PMCprotego S3 expands the drive-integrated solution to include new motion monitoring functions in accordance with EN 61800-5-2: SDI-M, SLI-M, SLS-M, SOS-M, SLP-M, SSR-M, SRL and SSO. This allows the applicationspecific error response to be adapted so flexibly that the highest productivity of the plant is achieved in each case under the most varied safety requirements.











with real-time Ethernet SafetyNET p RTFL, the safe motion solution is directly connected to safe small controller PNOZmulti 2 and also enables safe cross-communication between the drives. Benefit from short response times and reduce the work and costs related to hardware by switching from I/O components to safe communication.

Using safe and fast communication

For fast commissioning, the engineering tool PASmotion offers not only parametrisation of the safety card but also configuration of the servo amplifiers and motion controller in one tool.



- Higher productivity thanks to new motion monitoring safety functions with flexible adaptation of the error response
- SafetyNET p RTFL enables short response times and reduces the wiring work
- Compact size thanks to drive-integrated solution
- Flexible configuration and fast commissioning thanks to the clear software tool
- > Open drive solution independent of motor types and feedback systems
- Complete engineering and one-stop services: risk assessment, safe motion concept, hardware/software design, setting parameters, programming and commissioning





SafetyNET p RTFL network: Safe motion PMCprotego DS and safe small controller PNOZmulti 2

SecurityBridge protects automation networks

NEW

With its new firmware, the firewall SecurityBridge now offers you comprehensive protection for industrial automation networks. In addition to the tried-and-tested protection of the configurable safe small controllers PNOZmulti and the automation system PSS 4000 on the application level, this now also enables control of the data communication for additional subscribers outside of the Pilz range. SecurityBridge was developed in line with the secure development process in accordance with the standard IEC 62443-4-1 and therefore also addresses the principle of "zones and conduits".

Data transfer between a client PC and SecurityBridge is protected against tapping and manipulation thanks to the VPN function and prevents unauthorised access to the protected network.

With the new "package recording" function, you can record data communication between subscribers from the protected and unprotected network. That saves you valuable time during diagnostics.



- Developed in accordance with IEC 62443-4-1
- Easy installation even for existing plants without adjustment of network parameters
- Safe access to devices in protected networks by means of VPN connection with role-based user management
- Increases the availability of the plant as only data from authorised communication relationships is allowed
- Forwarding of process data at wire speed with low latency for time-critical applications
- Reveals unauthorised changes to the project of Pilz controllers by checking the check sum (CRC)
- Configuration changes can only be made to a control project by authorised users
- Extensive diagnostic functions







SecurityBridge			
PCOM sec br1	Technical features	 Generic firewall Application firewall for PNOZmulti and PSS 4000 Communication of process data at wire speed with low- latency Bridging mode VPN server combined with role-based user management Central authentication of users via RADIUS Integrated digital inputs and outputs, e.g. to activate the VPN tunnel Web-based user interface for easy configuration, diagnostics and maintenance Continuous updates without functional feedback for the protected control system USB port for backing up and restoring the configuration on USB memory LED display for error messages and diagnostics Connection to central diagnostic server by means of SYSLOG 	
	Order number	 PCOM sec br1 Generic firewall as well as module for safe authentication and communication with PNOZmulti 2 PCOM sec br2 Generic firewall as well as module for safe authentication and communication with PNOZmulti and the automation system PSS 4000 1 set of spring-loaded terminals 1 set of screw terminals 	311501 311502 793546 783546



The SecurityBridge prevents unauthorised access to its downstream devices.

at www.pilz.com

Safe operation of automated guided vehicles (AGVs)

NEW

Your requirements

As an operator or manufacturer of automated guided vehicles (AGVs) or systems (several AGVs), you are bound by the specifications of ISO 3691-4. This defines the requirements for safety functions and specifies how the automated functions of the vehicles are to be validated. It specifies the required performance level for the vehicle monitoring functions, various operating modes and the brake control. When using one or several AGVs, you must make sure that your system is not only safely designed but is also safely and above all productively used, taking all local conditions into account.

Our services

We take an overall view of your AGV application. We get involved as early as the development of system concepts in the design phase and support your projects up to commissioning. This helps us to ensure that safety and productivity are guaranteed in the operation of your automated guided vehicle systems.



- You save time and money with us as your safety and automation partner for the complete application.
- We guarantee that your applications meet the requirements of ISO 3691-4. If necessary, we provide confirmation of this through the Conformity Assessment Procedure.
- We check the AGV safety starting in the earliest stages of the procurement process. This helps you to avoid additional costs and save time.
- We ensure the optimum combination of material usage and the highest possible safety.
- Ideal supplement for a safe solution: our safety laser scanner PSENscan detects objects in the vehicle's path and provides maximum safety even at high speeds, without compromising productivity. The perfect solution for the use of automated guided vehicles.





We make your AGV application safe. In every way possible!

Benefit from our complete package:

Design Risk Assessment (DRA)

- Review of the risk assessment from the AGV manufacturer (on-site or remotely)
- Check of key design features with regard to the use of AGV
- Check of compliance with standards and regulations/ guarantee of compliance of the AGV with the legal requirements
- You will receive the following results from us:
- Design Risk Assessment (DRA) for the AGV based on the design drawings as well as your information for the use of the AGV
- AGV Design Review Report
- List of necessary/ recommended measures for increasing safety and productivity

Optional factory acceptance test at the manufacturer's site (FAT)

- Detailed validation of the most important safety functions of an AGV
- You will receive the following documents from us:
 - Detailed report of the factory acceptance test
 - List of necessary/ recommended measures for increasing safety and productivity

This service is also interesting for AGV manufacturers. We offer consultancy on specific safety functions for navigation, control and braking or on speed monitoring and we provide you with the corresponding certificate of compliance for your customers.

Site Acceptance Test (SAT)

- Complete risk assessment of the entire AGV application
- Check of all/selected AGVs that are in use
- Validation of the complete AGV application incl. examination of the environment
- Consultancy on all necessary measures for the users on-site
- You will receive the following documents from us:
 - Risk assessment
 - Site Acceptance Test report
 - List of measures

Training

By means of a training course, we offer a comprehensive insight into the correct operation of AGVs at the workplace. You will receive all the information you need to know about the key requirements regarding the safety of AGVs – also available as an in-house training course.

Pilz Care – individual support for maximum machine availability

NEW

Pilz Care offers high-quality technical support for all Pilz products across your plant and machinery. Components of the Pilz Care packages include a rapid response in the event of technical questions about applications, remote and on-site support or fast repair and express spare part delivery, for example. Our subsidiaries guarantee maximum machine availability around the world with these individual support services. With a support contract tailored to your specific requirements, you can increase the productivity of your plant and machinery and, with our support, ensure the safety of your employees.

Pilz Care consists of three support modules and a number of individual additional services. All services can be individually combined and we will make you an offer that lines up precisely with your requirements. You thus receive a complete support package.



- You can count on maximum machine availability thanks to agreed upon reaction times, e.g. for on-site service or spare part delivery.
- Our around-the-clock support guarantees minimal downtimes.
- Cost optimisation and reliable cost planning thanks to framework contracts individually tailored to your requirements. You only pay for the services that you actually need. No need to stockpile large quantities of spare parts thanks to our express delivery. You save storage costs and only pay for the devices when you actually use them.
- Reduction of your fixed personnel costs. We take on the support activities that you are not capable of performing internally or that you wish to transfer to us for economical reasons.
- Our experienced automation specialists ensure regular and professional maintenance and machine and device updates.
- Our subsidiaries provide uniform support services around the world. Identical ranges of services, and therefore the same safety standards, are thereby guaranteed – no matter where your machinery is located around the world.



Pliz Care support modules			
	Support Basic The solid basis for maximum machine availability	Support Premium For even faster reaction times	Support All-in For support whenever you need us – even remotely
Technical hotline	•	•	•
Technical hotline 24/7			•
On-site support	•	•	•
(Premium) on-site support		•	•
Repair and spare part service	•	•	•
(Express) repair and spare part service		•	•
Remote support			•
Pilz Care units 1)	optional	optional	•

¹⁾16 support hours included, additional hours can be booked at any time

Technical hotline

- Product support: Advice on functionality, properties, application and replacement of products, fault localisation and troubleshooting with intended use
- System support: Advice about the collective application of different Pilz products, advice on topics such as safety, communication, control technology etc.
- Application support: Commissioning of products, system integration and advice for individual customer solutions
- During office hours (or around the clock with the All-in module)

(Premium) on-site support

- Repair service: Fault analysis for Pilz products on-site, immediate replacement of products
- Implementation: Individual support during the installation, assembly and commissioning of devices/ components in machinery
- Application support: Individual consultation on-site/transfer of knowledge
- Contract-based reaction time for meeting your individual needs with Premium and All-in module

(Express) repair and spare part service

- All-round customer care through our internal repair centre
- Fault analysis and troubleshooting for Pilz devices
- ▶ Repair or replacement of faulty products
- Express repair and shipment with Premium and All-in module

Remote support

- Uncomplicated troubleshooting through remote maintenance
- Support with all application questions
- (commissioning of devices, system integration)
- Remote support for individual application questions

The support modules are supplemented with a number of **additional services** (e.g. inspection of safeguards) that we tailor specifically to your needs.





Select a support module for your requirements.



Add the necessary number of





We put together and carry out your individual Pilz Care package.

Would you like an individual offer? Just send an e-mail to support@pilz.com and we will get in touch.

Support

Technical support is available from Pilz round the clock.

Americas

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