



What's new in 2020/2021

PILZ
THE SPIRIT OF SAFETY

For your automation solutions



► What's new in 2020/2021 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 2020/2021 for your safe automation. Further information is available on our homepage at www.pilz.us. Simply enter the webcode listed on the following pages.

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► 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. An unintended start-up of the hazardous movement is prevented. 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.



Your benefits at a glance

- 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 decentralized 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



PSEN me5S
NC-NC.NC-NC
1switch



PSEN me5 AS



PSEN me5 AA



PSEN me5 AR



PSEN me5 AF



PSEN me5
escape release



PSEN me5
emergency
release front

Technical features

- ▶ Position monitoring of movable guards in accordance with EN 60947-5-1
- ▶ 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 force, spring force
- ▶ Extraction force: < 10 N
- ▶ Directions of actuation: 5
- ▶ Protection type: IP67
- ▶ Supply voltage: 24 VAC/DC, 110 – 230 VAC, with M12 connection only 24 VDC

Order number

Variants with standard connection (switch only)

- | | |
|---|----------|
| ▶ PSEN me5S NC-NC-NC.NC 1switch, spring force | 6L000010 |
| ▶ PSEN me5M NC-NC-NC.NC 1switch, magnetic | 6L000011 |
| ▶ PSEN me5S NC-NC-NC-NC 1switch, spring force | 6L000012 |
| ▶ PSEN me5M NC-NC-NC-NC 1switch, magnetic | 6L000013 |
| ▶ PSEN me5S NC-NC-NO.NC 1switch, spring force | 6L000014 |
| ▶ PSEN me5M NC-NC-NO.NC 1switch, magnetic | 6L000015 |
| ▶ PSEN me5S NC-NO.NC-NO 1switch, spring force | 6L000016 |
| ▶ PSEN me5M NC-NO.NC-NO 1switch, magnetic | 6L000017 |
| ▶ PSEN me5S NC-NC.NC-NC 1switch, spring force | 6L000018 |

Variants with M12, 8-pin connection (switch only)

- | | |
|--|----------|
| ▶ PSEN me5S NC.NC-NC M12/8 1switch, spring force | 6L000019 |
| ▶ PSEN me5M NC.NC-NC M12/8 1switch, magnetic | 6L000020 |

Variants with M12, 5-pin connection (switch only)

- | | |
|---|----------|
| ▶ PSEN me5M NC.NC n 1switch, magnetic | 6L000021 |
| ▶ PSEN me5S NC.NC n 1switch, spring force | 6L000022 |

Actuator

- | | |
|------------------------------------|----------|
| ▶ PSEN me5 AS, standard actuator | 6L000001 |
| ▶ PSEN me5 AA, transverse actuator | 6L000002 |
| ▶ PSEN me5 AR, radius actuator | 6L000003 |
| ▶ PSEN me5 AF, flexible actuator | 6L000004 |

Expansions

- | | |
|--|----------|
| ▶ PSEN me5 escape release, base set for escape release | 6L000005 |
| ▶ PSEN me5 20mm extension, expansion module length: 20 mm | 6L000006 |
| ▶ PSEN me5 40mm extension, expansion module length: 40 mm | 6L000007 |
| ▶ PSEN me5 emergency release front, front emergency unlocking device | 6L000008 |
| ▶ PSEN me5 emergency release back, rear emergency unlocking device | 6L000009 |

Webcode:
web216048

Online information
at www.pilz.us

► 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.







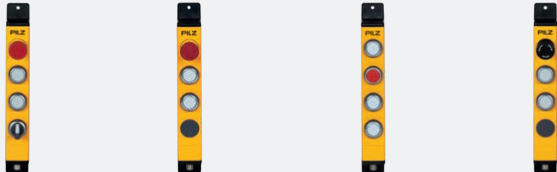



Starting now, two new components are available: the PSEnmlock handle module offers you a handle with integrated actuator and integrated escape release. Together with PSEnmlock, you can optimally safeguard accessible doors. With the new PITgatebox with integrated access permission system PITreader, you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



Your benefits at a glance

- 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 guard locking device) <ul style="list-style-type: none"> ► PSEnmlock base version (with/without auto. reset) ► PSEnmlock series connection (with/without auto. reset) 		
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	PITgatebox¹⁾ 		
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 power reset (page 8)
- 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 10)
- Escape releases and suitable handles
- Pushbutton unit PITgatebox for simple operation of the safety gate system

- New: PITgatebox with integrated access permission system PITreader for the authentication of users (page 14)
- 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.

Webcode:
web194460

Online information
at www.pilz.us

► 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.



Your benefits at a glance

- 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

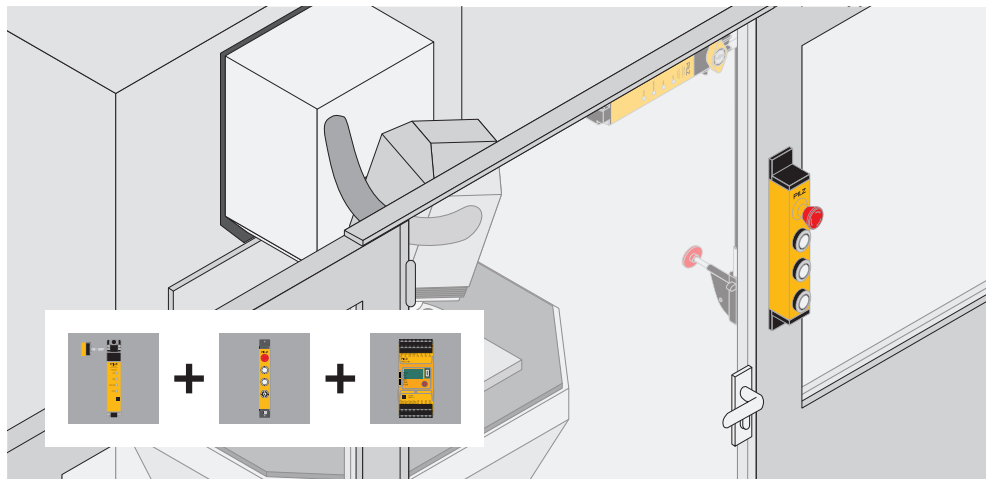


Safety gate system PSENmlock – with automatic reset



PSEN ml ba 1.1 unit

Type	Common features	Order number
	<ul style="list-style-type: none"> ▶ 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 	
PSENmlock base version with automatic reset	<ul style="list-style-type: none"> ▶ Unit (set comprising switch and actuator) <ul style="list-style-type: none"> - PSEN ml ba 1.1 unit Unit, coded 570 424 - PSEN ml ba 2.1 unit Unit, fully coded 570 426 - PSEN ml ba 2.2 unit Unit, unique fully coded 570 428 ▶ Switch <ul style="list-style-type: none"> - PSEN ml ba 1.1 switch Switch, coded 570 425 - PSEN ml ba 2.1 switch Switch, fully coded 570 427 - PSEN ml ba 2.2 switch Switch, unique fully coded 570 429 	
PSENmlock version for series connection with automatic reset	<ul style="list-style-type: none"> ▶ Unit (set comprising switch and actuator) <ul style="list-style-type: none"> - PSEN ml sa 1.1 unit Unit, coded 570 430 - PSEN ml sa 2.1 unit Unit, fully coded 570 432 - PSEN ml sa 2.2 unit Unit, unique fully coded 570 434 ▶ Switch <ul style="list-style-type: none"> - PSEN ml sa 1.1 switch Switch, coded 570 431 - PSEN ml sa 2.1 switch Switch, fully coded 570 433 - PSEN ml sa 2.2 switch Switch, unique fully coded 570 435 	



Webcode:
web150409

Online information
at www.pilz.us

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.

► 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 PSEN ml 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.



Your benefits at a glance

- 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

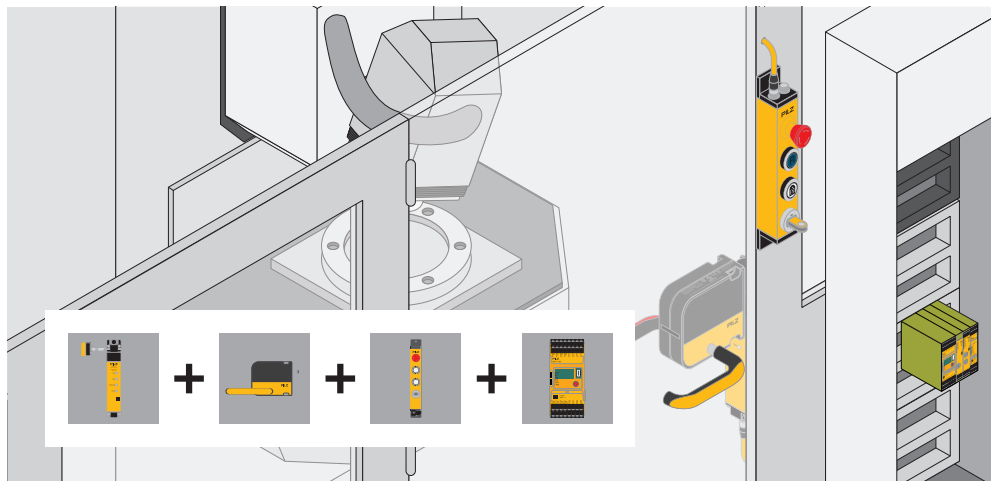


PSEN ml DHM
down I 2.1



PSEN ml DHM
extensions

Type	Common features	Order number
	<ul style="list-style-type: none"> ▶ 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	6O000001
PSEN ml DHM up I 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the top, left hinged gates	6O000002
PSEN ml DHM up r 1.1	Can be used with coded PSENmlock versions and cable outlet toward the top, right hinged gates	6O000003
PSEN ml DHM up r 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the top, right hinged gates	6O000004
PSEN ml DHM down I 1.1	Can be used with coded PSENmlock versions and cable outlet toward the bottom, left hinged gates	6O000005
PSEN ml DHM down I 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the bottom, left hinged gates	6O000006
PSEN ml DHM down r 1.1	Can be used with coded PSENmlock versions and cable outlet toward the bottom, right hinged gates	6O000007
PSEN ml DHM down r 2.1	Can be used with fully coded PSENmlock versions and cable outlet toward the bottom, right hinged gates	6O000008
Accessories		
PSEN ml DHM extensions	Extensions (25 mm each) for the handle, 2 pieces	6O000009
PSEN ml DHM handle yellow	Yellow handle for outside actuation	6O000010
PSEN ml DHM handle red	Red handle for actuation of the escape release	6O000011
PSEN ml DHM extension covers	Covers for 6O000009, 2 pieces	6O000012
PSEN ml mounting plate	Adjusting plate for PSEN ml door handle module when using 10 mm mounting plate 570 490 with PSENmlock	6O000013
PSEN ml mounting flaps	Mounting flaps for installation on sliding gates, 2 pieces	6O000014



Webcode:
web150409

Online information
at www.pilz.us

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 pushbutton unit PITgatebox – Easy operation of your safety gate system

NEW

With the pushbutton unit PITgatebox, you can easily and flexibly control safety gate switches and systems. It also allows you to control commands that activate, stop or acknowledge your machine or system. Thanks to the slimline design, the robust control unit can be installed quickly and easily on standard profile systems. Each preconfigured version with various combinations of pushbuttons, switches and E-STOP pushbuttons gives you maximum flexibility for your individual application. The PITgatebox gives you a modular safety gate solution tailored to your particular needs, especially when combined with the secure safety gate systems PSEnmlock and PSEnSlock.












Your benefits at a glance

- Simple operating function meets premium quality and design
- High quality die cast zinc metal IP65 housing is highly robust to shock, vibration and collision
- Slimline housing for space-saving installation on standard aluminium profile systems
- Fast, simple installation, no wiring thanks to M12 12-pin connection and rotatable end caps
- Cost savings due to reduced wiring work
- Flexible installation thanks to integrated rotatable mounting bracket
- Easy to exchange the control elements thanks to compatible spare parts



Selection guide – Pushbutton unit PITgatebox

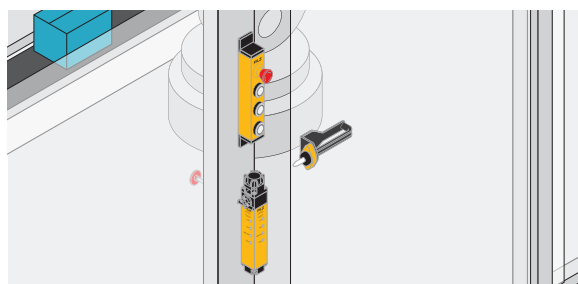
				
	PIT gb LLLL	PIT gb LLUL	PIT gb LLTE	PIT gb CSSE
Position 4	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	E-STOP pushbutton (2 N/C)	E-STOP pushbutton (2 N/C)
Position 3	Illuminated pushbutton (1 N/O)	Non-illuminated pushbutton, red (1 N/O)	Illuminated pushbutton (1 N/C)	Illuminated pushbutton (2 N/O)
Position 2	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (2 N/O)
Position 1	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Blind plug
Order number	G1000026	G1000027	G1000028	G1000029

					
	PIT gb LLLP	PIT gb CLLP y	PIT gb WLL E	PIT gb DLLE y	PIT gb LLME
Position 4	E-STOP pushbutton, black (2 N/C)	E-STOP pushbutton, black (2 N/C / 1 N/O)	E-STOP pushbutton (2 N/C)	E-STOP pushbutton (2 N/C / 1 N/O)	E-STOP pushbutton (2 N/C)
Position 3	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Indicator light
Position 2	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)
Position 1	Illuminated pushbutton (1 N/O)	Blind plug	Selector switch, 2 channels	Non-illuminated pushbutton (1 N/O)	Illuminated pushbutton (1 N/O)
Order number	G1000030	G1000031	G1000032	G1000033	G1000034

Pushbutton unit PITgatebox

Technical features

- ▶ M12, 12-pin connection
- ▶ Robust die cast zinc housing
- ▶ Slimline design, 40 mm profile
- ▶ Rotatable mounting bracket (–90°, +90°, +180°)
- ▶ Protection type: IP65



Webcode:
web194459

Online information
at www.pilz.us

Modular safety gate system including PITgatebox.

► Pushbutton unit PITgatebox with PITreader – operating unit with access permission system

NEW

With the pushbutton unit PITgatebox, you can easily and flexibly control safety gate switches and systems. Thanks to the integration of PITreader, it is possible to authenticate users before operation of the gate via RFID keys. Depending on the qualification and function of the employees, it is possible to ensure that the correct group of people has access to the system. Commands such as activate, stop or reset your plant or machinery can be controlled following successful authentication. Your machinery is thus optimally protected against incorrect operation or even manipulation. Thanks to the slimline design, the robust operating unit is quick and easy to fit to conventional profile systems. The PITgatebox with PITreader is available in two pre-configured versions with cable outlet at the top or bottom and offers maximum flexibility for your individual application.

The PITgatebox gives you a modular safety gate solution tailored to your particular needs, especially when combined with the secure safety gate systems PSENmlock and PSENSlock.



Your benefits at a glance

- Simple operating function meets premium quality and design
- PITreader with RFID keys for activation of the PITgatebox
- High quality die cast zinc metal IP65 housing is highly robust to shock, vibration and collision
- Slimline housing for space-saving installation on standard aluminium profile systems
- Fast, simple installation, no wiring thanks to M12 12-pin connection
- Flexible installation thanks to integrated rotatable mounting bracket



Pushbutton unit PITgatebox with PITreader – operating unit with access permission system

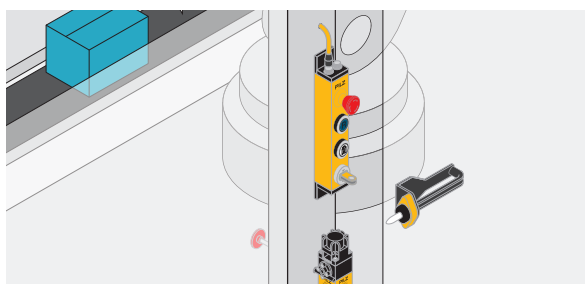


Type	Common features	Order number
	<ul style="list-style-type: none"> ▶ E-STOP pushbuttons: 2 N/C contacts/1 N/O contact ▶ Position 1: Illuminated pushbutton (1 N/O) ▶ Position 2: Illuminated pushbutton (1 N/O) ▶ Position 3: Illuminated PITreader (1 N/O) ▶ 2 x M12 plug-in connectors <ul style="list-style-type: none"> - M12, 4-pin (Ethernet) for PITreader - M12, 12-pin for contacts ▶ Robust die cast zinc housing ▶ Slimline design, 40 mm profile ▶ Rotatable mounting bracket (–90°, +90°, +180°) ▶ Protection type: IP65 	
PIT gb RLLE up ETH	Cable output: top	G1000020
PIT gb RLLE down ETH	Cable output: bottom	G1000021

Accessories – transponder keys



Type	Technical features	Order number
PITreader key ye g	GENERIC transponder key for PITreader, yellow plastic, freely configurable, certifications: CE, UL	402 260
PITreader key ye 1, 2, 3, 4, 5	Transponder key for PITreader, yellow plastic, certifications: CE, UL <ul style="list-style-type: none"> ▶ Permission 1 ▶ Permission 2 ▶ Permission 3 ▶ Permission 4 ▶ Permission 5 	402 261 402 262 402 263 402 264 402 265
PITreader key ye 5 service	Transponder key for PITreader, yellow plastic, authorization 5 = service function, certifications: CE, UL	402 269



Modular safety gate system including PITgatebox with PITreader.

Webcode:
web194459

Online information
at www.pilz.us

► Safety laser scanners PSENscan – new versions for area monitoring

NEW

New versions of the safety laser scanner PSENscan enable even higher productivity for safe area monitoring: with the 17-pin version and the ME version (Host Encoder) of PSENscan, additional digital inputs and outputs are available with which up to 70 switchable configurations can be achieved and up to three separate safety zones can be monitored simultaneously. Thanks to fast, direct evaluation of the encoder inputs in the laser scanner, the wiring effort and costs are reduced considerably. In addition, PSENscan is highly flexible and versatile thanks to its high resolution and resistance to external temperature influences, whether for stationary or even mobile danger zones such as automated guided vehicles. New accessories such as the exchangeable head module and the memory module support fast commissioning and reduce downtimes to a minimum.



Your benefits at a glance

- Higher productivity thanks to additional digital inputs and outputs that enable up to 70 switchable configurations and the simultaneous monitoring of up to 3 safety zones
- Cost savings in cabling and wiring work thanks to fast, direct evaluation of the encoder inputs in the laser scanner
- Simple and flexible handling thanks to the high resolution of 30, 40, 50, 70, 150 mm
- Suitable for a number of applications because PSENscan can be used at an ambient temperature of -10 to $+50$ °C
- Fast commissioning and high availability thanks to comprehensive accessories



Safety laser scanner PSENscan



PSENscan

Type	Safety zones ¹⁾ / warning zones ¹⁾	Max. range	Switchable configurations	Order number
Light versions				
PSEN sc L 3.0 08-12	2/2	3.0 m	3	6D000012
PSEN sc L 5.5 08-12	2/2	5.5 m	3	6D000013
Host versions				
PSEN sc M 3.0 08-12	2/2	3.0 m	3	6D000016
PSEN sc M 5.5 08-12	2/2	5.5 m	3	6D000017
PSEN sc M 5.5 08-17	3/2	5.5 m	70	6D000019
Host Encoder model				
PSEN sc ME 5.5 08-17	3/2	5.5 m	70	6D000034
Guest versions				
PSEN sc S 3.0 08-12	2/2	3.0 m	3	6D000020
PSEN sc S 5.5 08-12	2/2	5.5 m	3	6D000021

¹⁾ With simultaneous monitoring

Common features

- ▶ Compliant and approved in accordance with:
EN/IEC 61496-1: Type 3, EN ISO 13849-1:
PL d/Cat. 3, IEC 61508: SIL 2
- ▶ Opening angle: 275 degrees
- ▶ Resolution: 30, 40, 50, 70, 150 mm
- ▶ 40 m warning zone
- ▶ Reaction time: 62 ms
- ▶ Protection type: IP65
- ▶ Series connection of up to 4 sensors
- ▶ Vertical applications
- ▶ Ambient temperature: -10 ... +50 °C
- ▶ Supply voltage: 24 VDC
- ▶ Reference markers
- ▶ Measurement data output (UDP)
- ▶ Up to 4 encoder inputs (only on ME version)
- ▶ Expanded connection options (I/O)
(17-pin versions)
- ▶ Exchangeable head module
- ▶ Quick exchange of the memory module
- ▶ Dimensions (H x W x D) in mm: 152 x 102 x 112.5



ROS



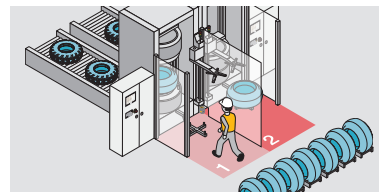
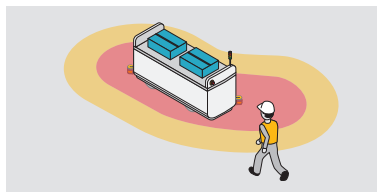
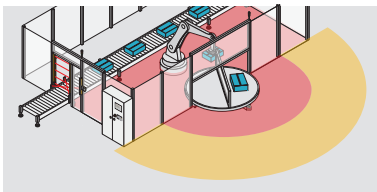
Fast and simple
configuration with
the PSENscan
Configurator.

Accessories – safety laser scanner PSENscan



PSEN sc
memory 08-12

Type	Features	Order number
PSEN sc memory 08-17	Memory module 8 and 17-pin, M12	6D000005
PSEN sc memory 08-12	Memory module 8 or 12-pin, M12	6D000006
PSEN sc head	Head module	6D000007
PSEN sc cleaner	Cleaning agent	6D000008
PSEN sc cloth	Cleaning cloth	6D000009



Keep up-to-date
on safety laser
scanners
PSENscan:

Webcode:
web181395

Online information
at www.pilz.us

A variety of application options: safeguarding of stationary and mobile danger zones,
access guarding, rear access protection and simultaneous monitoring of safety zones.

► Camera-based protection system PSEnvip 2 – now with integrated bending angle measurement

NEW

The camera-based protection system PSEnvip and the automation system PSS 4000, the safest solution for press brakes in accordance with EN ISO 12622, provide maximum productivity with simple handling. With the new module for bending angle measurement, usable image data is forwarded directly from the camera-based protection system to the press control system, thereby guaranteeing an efficient bending process. Both the complicated measurement of the angle by hand as well as expensive distance measuring systems are no longer necessary, resulting in not only time and cost savings but also with less space being used for the attachment of additional devices. In technological terms, PSEnvip is based on LED light that is installed parallel to the press brake tool and guarantees very high availability in rugged application conditions such as vibration, temperature stratification, reflections or external/diffused light.



Your benefits at a glance

- Maximum productivity thanks to integrated bending angle measurement and display on the machine's user interface (HMI)
- High machine availability thanks to the robust housing and innovative LED optics
- Easy to handle: operated directly on the user interface of the press brake control system via a web interface
- Can be flexibly mounted to the right or left of the tool
- Short shutdown time and short overrun of the tool thanks to the integrated Fast Analysis Unit in the automation system PSS 4000
- Flexible to adapt to the respective application: a wide range of I/O modules from the control system PSSuniversal PLC are available



Camera-based protection system PSENvip 2



PSENvip R



PSENvip E

Type	Common features	Order number
	<ul style="list-style-type: none"> ► Detection zone: <ul style="list-style-type: none"> - Length: 0.1 ... 18 m - Height: max. 20 mm - Width: 44 mm ► Reaction time: 4.65 ms (sensor + FAU) ► Compliant and approved in accordance with EN 12622 ► For use in applications up to <ul style="list-style-type: none"> - Type 4 in accordance with EN/IEC 61496-1/-2 - PL e of EN ISO 13849-1 - SIL CL 3 of EN/IEC 61508 ► Certifications: EAC, TÜV, UL 	
PSENvip R	PSENvip 2 receiver, range: 13 m	584 100 ¹⁾
PSENvip R LR	PSENvip 2 receiver, range: 18 m (tandem press)	584 101
PSENvip E	PSENvip 2 transmitter	584 200 ¹⁾
PSENvip IPM Set 1	Module for bending angle measurement for PSENvip E, PSENvip R and PSENvip R LR	584 300

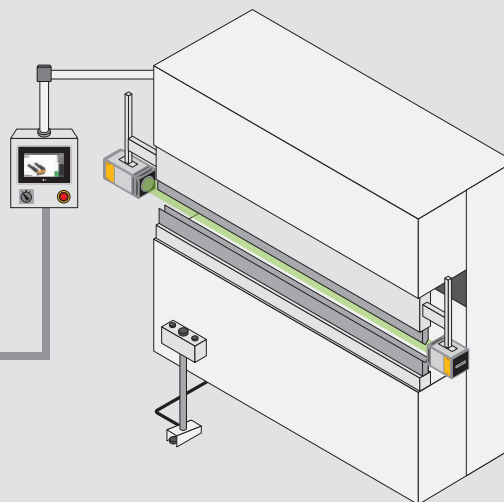
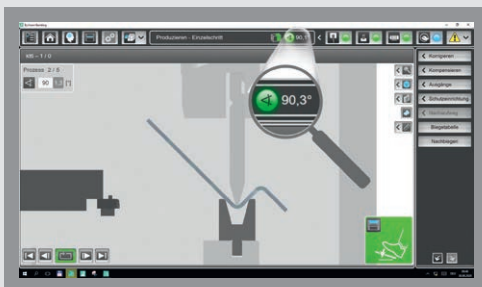
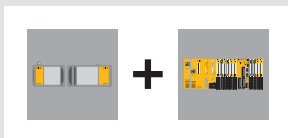
¹⁾ Can be used in combination with the control system PSSuniversal PLC and the Fast Analysis Unit

Analysis unit for camera-based protection system PSENvip 2



PSSu K F FAU P

Type	Technical features	Order number
PSSu K F FAU P	Fast Analysis Unit, productive version <ul style="list-style-type: none"> ► Compact module with failsafe ► 4 digital inputs ► Outputs: <ul style="list-style-type: none"> - 2 digital outputs, 1-pole, 2 A - 2 digital outputs, 2-pole, 2 A ► Certifications: TÜV, UL 	312 421



Keep up-to-date on the camera-based protection system PSENvip 2:

Webcode:
web150415

Online information at www.pilz.us

New: including display of the bending angle value on the machine's user interface (HMI).

► 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. These include various burner types, such as host burners or guest burners, direct or indirect ignition, low or high-temperature operation and much more. The software element has been tested and certified according to the corresponding European standards, including EN 298 and EN 50156. Testing according to international standards is in preparation.



Your benefits at a glance

- Flexible and safe design of your furnace
- 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

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



Configurable safe small controllers PNOZmulti 2 – PNOZ m B1 Burner; PNOZ m EF 4DI4DORD



PNOZ m B1 Burner



PNOZ m EF 4DI4DORD



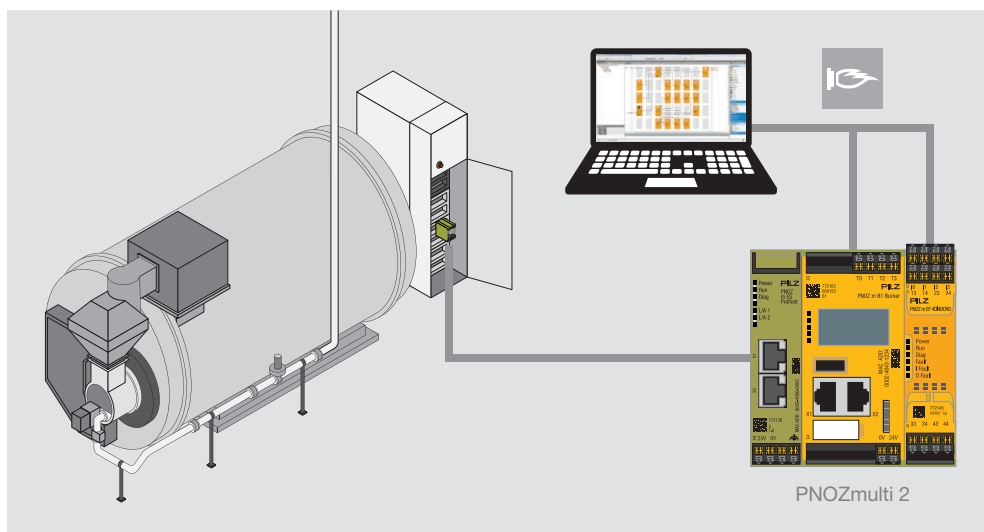
PNOZmulti Configurator

Technical features

- ▶ Base unit PNOZ m B1 Burner – specifically for burner management:
 - Control and monitoring of furnaces, e.g. monitoring of safety sequences, combustion air pressure, ignition, flame, external compound controller and leak-tightness control
 - Control of safety valves, ignition valves, exhaust valves, ignition, external compound controller and combustion air blowers
 - The following oil and gas burner types can be monitored: host burner with direct ignition, host burner with indirect ignition and joint flame monitoring
 - Up to 12 burner function blocks can be configured per base unit
- ▶ Input and output module PNOZ m EF 4DI4DORD:
 - 4 safe inputs; 4 safe positive-guided relay outputs, diverse
 - Suitable for control of a burner's safety valves
- ▶ Safety-related characteristic data: depending on the application up to Performance Level PL e/Cat. 4 of EN ISO 13849-1 and Safety Integrity Level (SIL) CL 3 of EN/IEC 61508
- ▶ Certifications: PNOZ m B1 Burner cULus listed, CE, TÜV, EAC (Eurasian), KOSHA
- ▶ Can be configured using the software tool PNOZmulti Configurator:
 - base unit from version 10.12, module from version 10.13:
 - Wide range of approved elements/blocks for monitoring safety functions such as emergency stop, safety gates, operating mode selector switches and much more
- ▶ Dimensions (H x W x D) in mm:
 - PNOZ m B1 Burner: 100 x 45 x 120.2
 - PNOZ m EF 4DI4DORD: 100 x 22.5 x 120.2

Order number

- | | |
|--|----------|
| ▶ PNOZ m B1 Burner | 772 102 |
| - Plug-in spring-loaded terminals | 751 016 |
| - Plug-in screw terminals | 750 016 |
| ▶ PNOZ m EF 4DI4DORD | 772 145 |
| - Plug-in spring-loaded terminals | 751 004 |
| - Plug-in screw terminals | 750 004 |
|
PNOZmulti Configurator, Basic License | |
| ▶ Full version | 773 010B |



Webcode:
web150399

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.

Online information
at www.pilz.us

► Safe small controllers PNOZmulti Configurator – new functions

NEW



From software version 10.13, the software tool PNOZmulti Configurator offers new elements for simple configuration of safe user programs that are executed by the configurable safe small controller PNOZmulti 2. This allows you to efficiently implement the diverse requirements for monitoring of safety functions. The muting element was expanded to include L-muting for light curtain applications. An additional element is used for the configuration of the signal sequence for locking and unlocking the safety gate system PSENmlock. In the monitoring of analog functions, the mathematics function was expanded to include multiplication and division of analog values. There are two new logic elements, Digital Encoder and Digital Decoder, for coding and decoding input or output signals.

On the hardware side, two new expansion modules are supported from version 10.13: the burner module PNOZ m EF 4DI4DORD with diverse relay outputs and the motion monitoring module PNOZ m EF 1MM2DO with two semiconductor outputs for monitoring one axis (available from Q1/2021).



Your benefits at a glance

- Safe light curtain applications with the software element L-muting
- Configuration of the signal sequence for locking and unlocking the safety gate system PSENmlock in combination with PNOZmulti 2
- Monitoring of analog values expanded to include multiplication and division
- Logic elements Digital Encoder/Digital Decoder
- Safe monitoring of industrial burner management with the burner module with diverse relay outputs
- Safe motion monitoring applications using the module with digital outputs

You as the user benefit from these new or expanded functions when using the small controllers PNOZmulti 2.



Configurable safe small controllers PNOZmulti – PNOZmulti Configurator, version 10.13



PNOZmulti Configurator



PNOZ m EF 4DI4DORD



PNOZ m EF 1MM2DO

Technical features

- ▶ PNOZmulti Configurator: graphical software tool for configuring and programming safe small controllers PNOZmulti
- Muting element: expanded to include L-muting for safe light curtain applications
- PSEnmlck element: configuration of the signal sequence for locking and unlocking the safety gate system PSEnmlck in combination with PNOZmulti 2
- Analog function element: mathematics element expanded to include multiplication and division
- Logic elements Digital Encoder/Digital Decoder
- Safe burner module PNOZ m EF 4DI4DORD with diverse relay outputs for safe monitoring of industrial burner management in combination with the base unit PNOZ m B1 Burner
- Safe motion monitoring module PNOZ m EF 1MM2DO for monitoring one axis with 2 safe semiconductor outputs

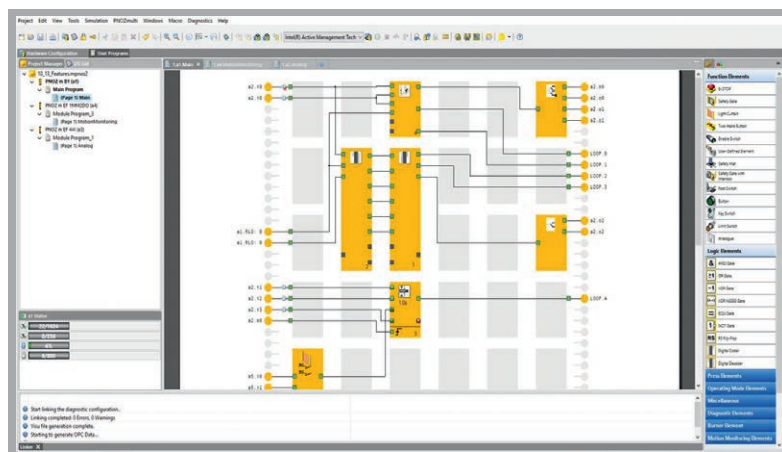
Order number

- ▶ In order to use the full scope of the PNOZmulti Configurator, you will need a valid license in addition to the software package. Purchasing a license converts the demo software with restricted functionality to a full version. Information on the available licenses can be found at www.pilz.us, webcode: web151344
- ▶ Demo software can be downloaded from the Internet (for registered users) at www.pilz.us, webcode: web150399

PNOZmulti Configurator, Basic License

- | | |
|--|---------|
| ▶ Full version | 773010B |
| ▶ Burner module PNOZ m EF 4DI4DORD | 772 145 |
| ▶ Motion monitoring module PNOZ m EF 1MM2DO (available from Q1/2021) | 772 172 |

Watch our What's New videos to gain an overview of the new functions of version 10.13:
www.pilz.us/pnozmulti-tools



Download of the demo software at www.pilz.us

Webcode:
web150399

New functions in the PNOZmulti Configurator V10.13 for simple configuration of small controllers PNOZmulti 2.

► Safe small controllers PNOZmulti Configurator – operating mode selection made easy!

NEW

The PNOZmulti Configurator is a software tool used to configure the safe small controllers PNOZmulti.



For the control of access permissions, the new software version 10.12 allows the connection of up to 4 PITreader devices to the base unit PNOZ m B1. In addition to the access permissions, the functionally safe operating mode selection can be configured on plant and machinery with new operating mode selector elements (function blocks) in the software tool PNOZmulti Configurator. In combination with the operating mode selection and access permission system PITmode, especially the PITreader, you have two convenient solutions for the operating mode selection. The permission for selection is configured in combination with PITreader and the corresponding RFID keys. In PNOZmulti the selected operating mode can be read out.

Operating mode selection via

button: On the one hand, the operating mode can be selected via the Pilz PIT oe4S Buttonbox or also via conventional buttons.



Your benefits at a glance

- Functionally safe operating mode selection up to PL d/SIL CL 2, using the operating mode selection and access permission system PITmode in combination with PITreader
- Configuration of access permissions with high level of manipulation protection in combination with PITreader
- Safe control and monitoring for applications in burner management on the new base unit PNOZmulti 2 with certified function block "Burner"

Operating mode selection via

touch panel: As an alternative, safe selection of the operating mode is possible via a key field on an HMI. The operator and visualization terminal PMLvisu thus enables safe selection of the operating mode.

From version 10.12, a new base unit from the range of small controllers PNOZmulti 2 specifically for applications in burner management is also supported.



Configurable safe small controllers PNOZmulti – PNOZmulti Configurator, version 10.12

PNOZmulti
Configurator

PNOZ m B1 Burner



PITreader base unit

PITreader
key adapter h

PMI v704e



PIT oe4S

**Technical
features**

- ▶ PNOZmulti Configurator: graphical software tool for configuring and programming safe small controllers PNOZmulti
- ▶ Up to 4 PITreaders supported at the base unit PNOZ m B1 (PNOZmulti 2): configuration of the required PITreader permissions with the element/function block "PITreader access"
- ▶ Functionally safe operating mode selection with the operating mode selector elements
 - Element/function block "MSO flex": configuration of buttons or the Pilz PIT oe4S Buttonbox for safe operating mode selection at an input module PNOZmulti 2
 - Element/function block "MSO flex visu": in the visualization software PASvisu variables are defined as inputs for the operating mode buttons and sent to the PNOZmulti 2. The operating mode can then be selected via the software buttons on the operator terminal.
 - Element/function block "Burner": for the configuration of the base unit PNOZ m B1 Burner for the safe control and monitoring of furnaces in accordance with EN 50156 and EN 298

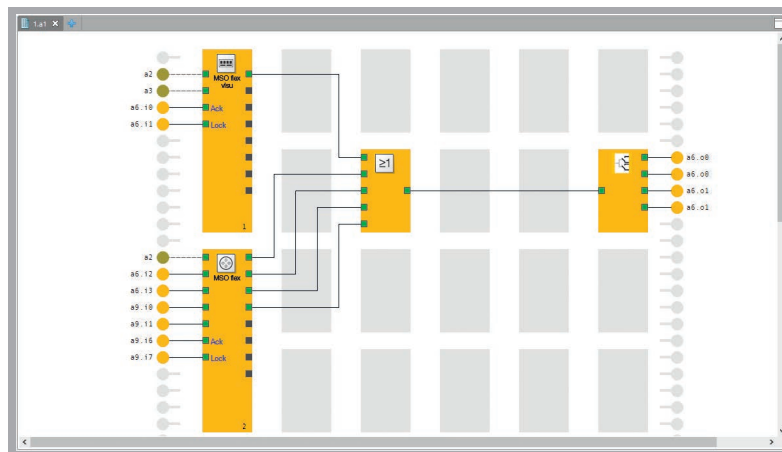
Order number

- ▶ In order to use the full scope of the PNOZmulti Configurator, you will need a valid license in addition to the software package. Purchasing a license converts the demo software with restricted functionality to a full version. Information on the available licenses can be found at www.pilz.us, webcode: web151344
- ▶ Demo software can be downloaded from the Internet (for registered users), information at www.pilz.us, webcode: web150399

PNOZmulti Configurator, Basic License

- | | |
|---------------------------|---------|
| ▶ Full version | 773010B |
| ▶ PNOZ m B1 | 772101 |
| ▶ PNOZ m B1 Burner | 772102 |
| ▶ PITreader base unit | 402255 |
| ▶ PITreader key adapter h | 402308 |
| ▶ PIT oe4S Buttonbox | 402311 |
| ▶ PMI v704e | 266704 |
| ▶ PMI v707e | 266707 |

Watch our What's New videos to gain an overview of the new functions of version 10.12:
www.pilz.us/pnozmulti-tools



Monitor functionally safe operating mode selection in conjunction with small controllers PNOZmulti 2 and PITreader from the operating mode selection and access permission system PITmode! Two new elements/function blocks are available in the PNOZmulti Configurator from version 10.12!

Download of the
demo software at
www.pilz.us

Webcode:
web150399

► Servo amplifier PMC SI6 for multi-axis applications – precise, productive and flexible

NEW

With the compact drive controllers PMC SI6 you save valuable space in the control cabinet, as the width of just 45 mm makes the drive controller one of the most compact solutions on the market.

The drive controllers PMC SI6 are predestined for use in large plant and machinery from 4 axes. PMC SI6 are supplied via the power supply unit PMC PS6 which is available in two different sizes. Thanks to the option of parallel operation of several power supply units, scalability of the central supply module PMC PS6 is achieved. An asymmetrical rated current load is possible when using double-axis modules. It enables a reduction of the variety and therefore the warehousing. The multi-axis system can be scaled to fit every application and thus be combined to form to a powerful multi-axis system with a narrow width – exactly in line with your needs.



Your benefits at a glance

- Single-axis or double-axis controller with an output rated current up to 50 A and 250 % overload capability
- Space and cost-saving single-cable solution
- Integrated EtherCAT or PROFINET communication
- Drive-integrated safety functions up to PL e
- Integrated brake control
- Asymmetrical rated current consumption at double-axis controllers when operating motors of various power



Servo amplifier PMC SI6



PMC SI6

Technical features

- ▶ Dimensions in mm (W x H x D): from 45 x 343 x 265
- ▶ Interfaces: EtherCAT, PROFINET
- ▶ Safety functions: STO, SS1 (terminals, FSoE)
- ▶ Number of digital inputs: 8
- ▶ Supply voltage type: DC 24 V
- ▶ Ambient temperature: 0 ... 45 °C
- ▶ Output stage clock frequency: 4 kHz, 8 kHz
- ▶ Output rated current: 50 A (4 kHz), 40 A (8 kHz)
- ▶ Encoder interfaces: EnDat 2.2, EnDat 2.1 (12 VDC), SSI, incremental TTL, incremental HTL, pulse/direction HTL, Resolver, HIPERFACE DSL

Order number

- ▶ PMC SI6A061
- ▶ PMC SI6A062
- ▶ PMC SI6A161
- ▶ PMC SI6A162
- ▶ PMC SI6A261
- ▶ PMC SI6A262
- ▶ PMC SI6A361

Webcode:
web150508

Online information
at www.pilz.us

Type code PMC SI6

Type/Order number						
PMC SI6A _ 6 _ _ / _						
Size	Axis controller	Rated current at 4 kHz	Safety technology		Fieldbus	
0	1	5 A	Without safety technology	Z	EtherCAT	EC
0	2	2 x 5 A	STO via terminals	R	PROFINET	PN
1	1	1 x 12 A	STO and SS1 via FSoE	Y		
1	2	2 x 12 A				
2	1	1 x 22 A				
2	2	2 x 22 A				
3	1	1 x 50 A				

► Servo amplifier PMC SC6 – the expandable stand-alone solution

NEW

With the compact stand-alone drive controller PMC SC6, you are provided with the most compact solution on the market – which saves valuable space in the control cabinet!

PMC SC6 have an integrated power supply and are available as single-axis and double-axis controllers both for asynchronous and synchronous servo motors. They are ideally suited for use in compact plant and machinery. The motor parametrization is performed automatically from the electronic motor nameplate in combination with the encoder interfaces HIPERFACE DSL or EnDat 2.2 digital

With energy-efficient drive controllers PMC SC6, energy created by a drive as a generator can be used by a different drive as motor energy thanks to the intermediate circuit connection. On machines with more than two axes, the PMC SC6 drive controller can be expanded with axis modules from the PMC SI6 series. This axis module in stacking technology is supplied with energy from the stand-alone drive controller via



Your benefits at a glance

- Single-axis or double-axis controller with an output rated current up to 19 A and 250 % overload capability
- Space and cost-saving single-cable solution HIPERFACE DSL
- Integrated EtherCAT or PROFINET communication
- Drive-integrated safety functions up to PL e
- Integrated brake control
- Asymmetrical rated current consumption at double-axis controllers when operating motors of various power

the intermediate circuit connection, meaning it does not require its own power supply unit. This saves costs and enables the implementation of applications with up to four axes.



Servo amplifier PMC SC6



PMC SC6

Technical features

- ▶ Dimensions in mm (W x H x D): from 45 x 343 x 265
- ▶ Interfaces: EtherCAT, PROFINET
- ▶ Safety functions: STO, SS1 (terminals, FSoE)
- ▶ Number of digital inputs: 8
- ▶ Supply voltage type: DC 24 V
- ▶ Ambient temperature: 0 ... 45 °C
- ▶ Output stage clock frequency: 4 kHz, 8 kHz
- ▶ Output rated current: 19 A (4 kHz), 15 A (8 kHz)
- ▶ Encoder interfaces: EnDat 2.2, EnDat 2.1 (12 VDC), SSI, incremental TTL, incremental HTL, pulse/direction HTL, Resolver, HIPERFACE DSL

Order number

- ▶ PMC SC6A062
- ▶ PMC SC6A162
- ▶ PMC SC6A261

Webcode:
web150508

Online information
at www.pilz.us

Type code PMC SC6

Type/Order number					
PMC SC6A _ 6 _ _ / _					
Size	Axis controller	Rated current at 4 kHz	Safety technology		Fieldbus
0	2	2 x 4.5 A	Without safety technology	Z	EtherCAT EC
1	2	2 x 10 A	STO via terminals	R	PROFINET PN
2	1	1 x 19 A	STO and SS1 via FSoE	Y	

► PMLvisu v8 – HMI panels with visualization software

NEW

Pilz Human Machine Interfaces (PMI) are the link between human and machine. The PMLvisu v807 and v812 supplement and complete the portfolio of visualization panels and offer a comprehensive HMI solution.

The high-performance series comprises the robust PMI v8 panel and the web-based visualization software PASvisu. This is already pre-installed and licensed on the panels with scratch and impact-resistant glass display. PMLvisu v8 panels are equipped with the Windows 10 operating system and are available in both a compact 7-inch version and a 12.1-inch version.

The PMI Assistant is available to you for simple commissioning of the capacitive panel. In combination with the safe small controller PNOZmulti 2 or the automation system PSS 4000, the PMLvisu v8 devices form the ideal system solution. In general, the PMLvisu v8 panels can be used with all controllers that have an OPC UA server and enable the professional visualization and diagnostics of plant and machinery at a glance!



Your benefits at a glance

- Professional visualization of plant and machinery
- PASvisu visualization software preinstalled and licensed
- Equipped with the operating system Windows 10 IoT
- Remote access via web technologies
- Comprehensive library for graphic representation of your automation process
- Integrated alarm triggering, internationalization and user manager
- PMI Assistant allows simple panel start-up and management
- 500 external variables included in the PMI runtime license
- Quality product "Made in Germany"



Visualization terminals PMI v8 series



PMI v807



PMI v812

Technical features

PMI v807

- ▶ Diagonal: 7"
- ▶ Resolution: 800 x 480 pixels
- ▶ Capacitive glass touchscreen

PMI v812

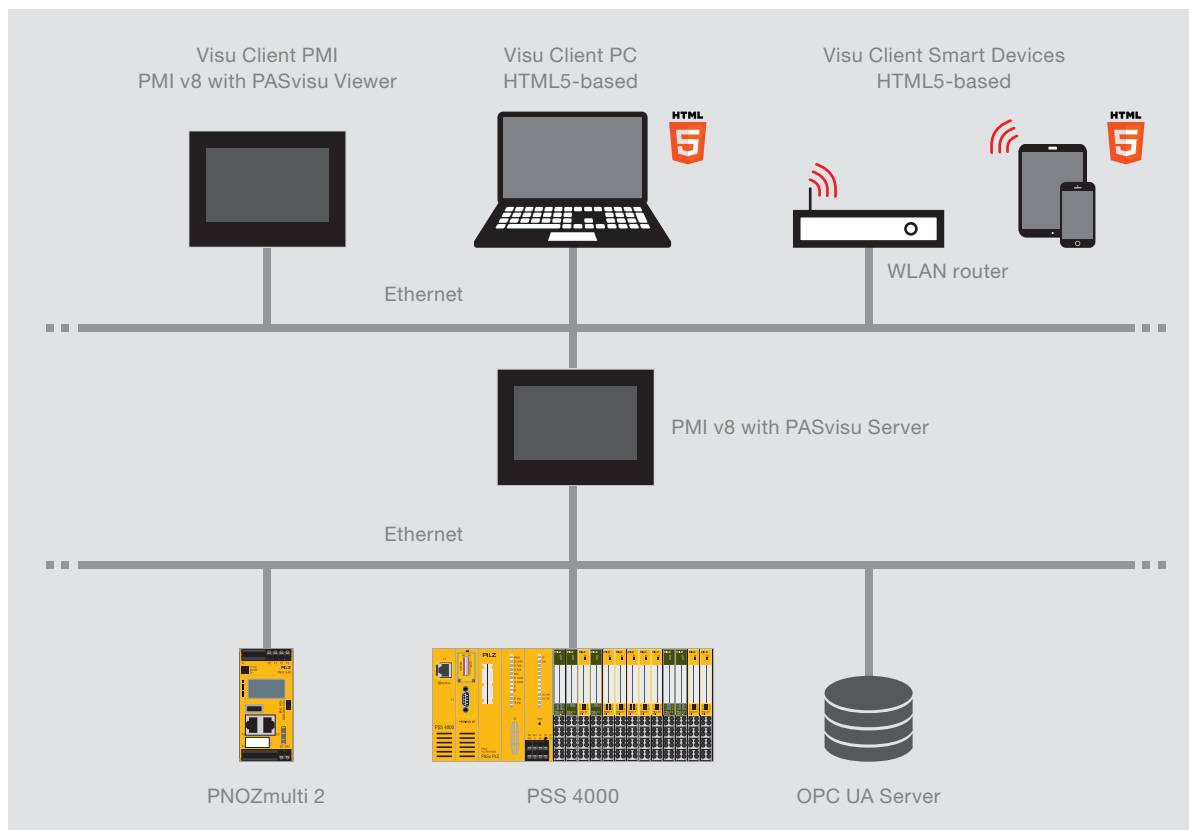
- ▶ Diagonal: 12.1"
- ▶ Resolution: 1 280 x 800 pixels
- ▶ Capacitive glass touchscreen

Common features

- ▶ Processor: Intel Celeron Quad Core™ J1900
- ▶ RAM: 4 GB
- ▶ Memory: 32 GB mSATA SSD
- ▶ Operating system: Windows 10 IoT Enterprise 2019 LTSC Embedded
- ▶ Display: graphic colour TFT, 16.7 million colours, LED backlight
- ▶ Format: 16:9
- ▶ Interfaces: 2 x GbE, 1 x HDMI, 1 x VGA, 1 x USB 3.0, 2 x USB 2.0
- ▶ Supply voltage: 24 VDC
- ▶ Ambient temperature: 0 ... 50 °C
- ▶ Certification: CE, cULus, Design prepared for FCC
- ▶ Protection type: IP65 front, IP20 rear

Order number

- | | |
|------------|---------|
| ▶ PMI v807 | 266 807 |
| ▶ PMI v812 | 266 812 |



Webcode:
web160789

Online information
at www.pilz.us

Networking of visualization terminal PMIvisu.

► Support

Technical support is available from Pilz around the clock.

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Switzerland

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The Netherlands

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Turkey

+90 216 5775552

United Kingdom

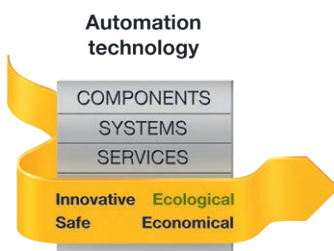
+44 1536 462203

**You can reach our
international hotline on:**

+49 711 3409-222

support@pilz.com

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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In many countries we are represented by sales partners. Please refer to our homepage www.pilz.us for further details or contact our headquarters.



7-8-en-3-022, 2020-11
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PILZ
THE SPIRIT OF SAFETY