



Control and signal devices PIT®

pitz
the spirit of safety

- ▶ E-STOP pushbutton PITestop ▶ Operating mode selector switch PITmode
- ▶ Manually operated control device PITjog ▶ Enabling switch PITenable
- ▶ Muting lamp PITsign





Pilz is your solution supplier for all automation tasks. Including standard control functions. Pilz developments protect man, machine and the environment.

Pilz has a tradition as a family-run company stretching back over 60 years. Real proximity to customers is visible in all areas, instilling confidence through individual consultation, total flexibility and reliable service. Worldwide, round the clock, in 28 subsidiaries and branches, as well as 15 sales partners on every continent.

More than 1 500 staff, each one of them an ambassador for safety, make sure that your company's most valuable asset – your staff – can work safely and free from injury.

S
ems

ical
ergy-efficient
and environmentally-
lications

SERVICES

Consulting, engineering
and training

Economical

Count on efficient production and
the security of investment provided
by our system solutions

pilz
the spirit of safety

Automation
solutions from Pilz –
at home in every
industry.





Everything – simply – safely –
the complete solution!

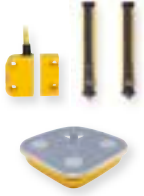
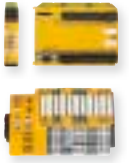







► Safety for man and machine

Selection of the correct control and signal devices is a key factor for the safety of man and machine. E-STOP pushbuttons, muting lamps and manually operated control devices enable short reaction times and are therefore essential for a safe solution. As the ideal supplement for other Pilz products, your plant is completed reliably and in compliance with the standards.

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► Business activities

COMPONENTS		
Sensor technology	<ul style="list-style-type: none"> ▶ Position monitoring devices ▶ Safety switches ▶ Safety gate systems ▶ Optoelectronic protective devices ▶ Safe camera systems 	
Control technology	<ul style="list-style-type: none"> ▶ Line inspection devices ▶ Relays for electrical safety ▶ Relays for functional safety ▶ Configurable control systems ▶ Compact programmable control systems ▶ Modular programmable control systems ▶ Decentralised periphery 	
Networks	<ul style="list-style-type: none"> ▶ Safe fieldbus systems ▶ Ethernet systems ▶ Wireless systems 	
Drive technology	<ul style="list-style-type: none"> ▶ Motion control systems ▶ Servo amplifiers ▶ Motors ▶ Gears 	
Operator and visualisation systems	<ul style="list-style-type: none"> ▶ Control and signal devices ▶ Operator terminals 	
Software	<ul style="list-style-type: none"> ▶ Product and system tools ▶ Application software ▶ Product-independent tools 	
SYSTEMS		
Automation system PSS 4000	<ul style="list-style-type: none"> ▶ Control systems ▶ Real-time Ethernet ▶ Software platform 	
SERVICES		
Consulting and engineering	<ul style="list-style-type: none"> ▶ Risk Assessment ▶ Safety Concept ▶ Safety Design ▶ System Implementation ▶ Safety Validation ▶ CE Marking ▶ International Compliance Services ▶ Plant Assessment ▶ Inspection of ESPE 	
Training	<ul style="list-style-type: none"> ▶ Product-neutral seminars ▶ Product courses 	


► Solution supplier for safety and standard


As market and technology leader, Pilz offers a comprehensive portfolio of products, systems and solutions for use across a range of industries. Safety or standard, plant or machine, single product or total solution – Pilz has the right answer, guaranteed. Economical, technical, personal and ecological safety are a matter of course, just as much as overall, flexible solutions.

The wide-ranging **sensor technology** portfolio provides the right sensor for each application. In conjunction with safe control technology, the result is a safe, economical, approved and complete solution.

Control technology enables numerous application options, including monitoring of electrical and functional safety, through to complete machine control: from a simple machine through to a distributed plant with a wide range of standard and safety functions.

Networks are clear and powerful due to compatible communication systems and network components. Diverse technologies enable a variety of solution approaches, including wireless, fieldbus and Ethernet systems.

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
 Webcode 5213


 Webcode 5528

Drive technology ranges from drive-integrated safety functions to safe logic functions, through to connection of visualisation, sensor and actuator technology for every system environment.

Operator and visualisation systems enable short reaction times through control and signal devices, as well as rapid diagnostics via visualisation systems. As the ideal supplement for other Pilz products, your plant is completed reliably and in compliance with the standards.

Whatever the task, our **software** has the right tool. This includes application software, such as function blocks, product and system tools, as well as product-independent tools. The focus is on intuitive operation.


 Webcode 5261


 Webcode 5292

 Webcode 5435

The **automation system PSS 4000** for standard and safety is ideal for automation solutions in every industry. Interaction between the most diverse components, the software platform PAS4000 and the real-time Ethernet SafetyNET p are the system's distinguishing features.

Our **services** include consulting, technical implementation and training in the field of machinery safety. Our experts will guide you through the whole machine lifecycle, through to CE certification.

 Webcode 5092

 Webcode 7792

► Everything – simply – safely – the complete solution!

Selection of the correct control and signal devices is a key factor for the safety of man and machine. Rely on a safe solution with Pilz emergency stop pushbuttons, muting lamps and manually operated control devices.



E-STOP pushbutton PITestop

The emergency stop pushbuttons have a practical, industrial design and ensure safety for man and machine on emergency stop equipment.



Operating mode selector switch PITmode

The operating mode selector switch PITmode provides two functions in one compact unit. Selection of operating mode and authorisation control for machine access.



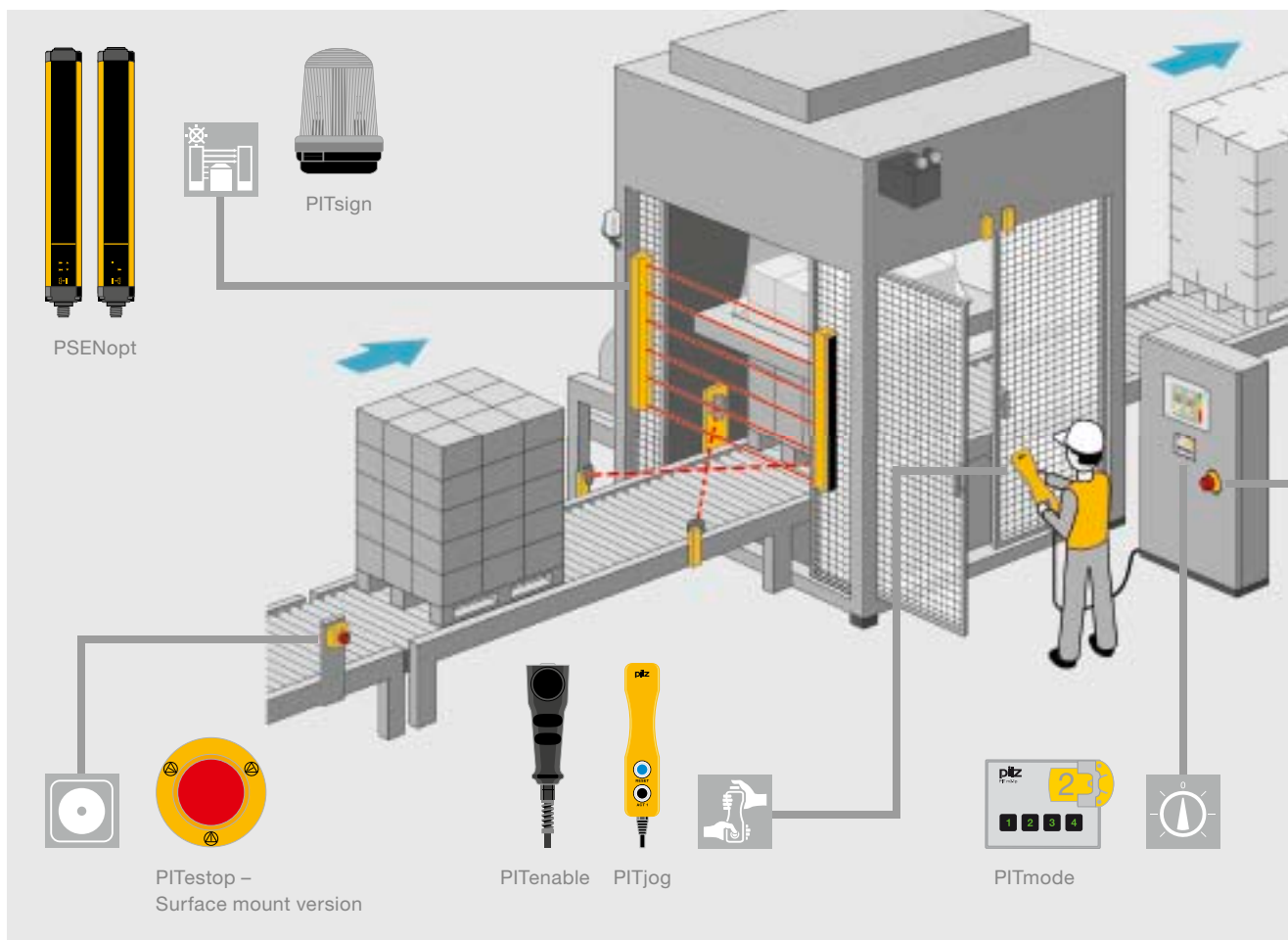
Manually operated control devices PITjog/PITenable

The manually operated control devices PITjog and PITenable are used to protect personnel when the effect of safety equipment on machinery has to be partially or fully overridden.



Muting lamps PITsign

Muting lamps PITsign indicate that an electrosensitive protective device is suspended. They are suitable for all muting applications in accordance with EN/IEC 61496-1.



Solution suppliers for safety and standard

Pilz is your solution supplier for safe automation. Control and signal devices can be used with the whole range of Pilz control technology. Sensor technology, drive technology, operator and visualisation systems plus software products complement these solutions.

Services from the safety professionals

Pilz is there beside you, acting as your competent partner during all phases of the machine's lifecycle: from identification of the danger zones through to implementation of safety concepts and holistic solutions. Pilz training courses cover all issues of machinery safety.

Your benefits at a glance

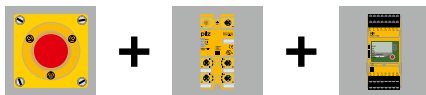
- ▶ Reliable, high-quality products and maximum compatibility
- ▶ Complies with all relevant standards and approvals
- ▶ Worldwide availability from a reliable supplier with comprehensive safety expertise
- ▶ Save costs thanks to simple, fast installation
- ▶ Long service life thanks to functional, robust design
- ▶ Industry-wide applications

The safe, complete solution:

Control and signal devices PIT combined with safe control technology.



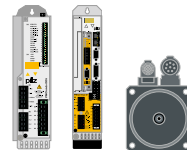
PIT es Set1s-5c + PNOZ X2.8Pc



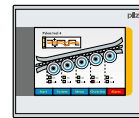
PIT es Set1s-5ns + PDP67 + PNOZmulti Mini



PIT m3.1p + PSS 4000



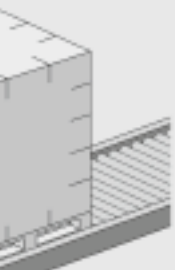
Drive technology



Visualisation systems



Software



PITestop – Panel mount version

Keep up-to-date on control and signal devices PIT:

Webcode 5293

Online information at www.pilz.com

► E-STOP pushbutton PITestop

In accordance with the Machinery Directive, plant and machinery must be fitted with emergency stop equipment so that a hazard can be averted or reduced in the case of an emergency. That's why you should use the standard-compliant E-STOP pushbuttons PITestop to shut down your plant in a hazardous situation.



PIT es1s



PIT es3s



PIT es6.10



PIT es8s

Enhanced protection from the safety professionals

In a dangerous situation, emergency stop control devices are operated manually, triggering a signal to halt a potentially hazardous movement. By generating the emergency stop command the emergency stop control device is latched in. This must be maintained until the control device is released manually.

Safe all over the world

For worldwide use, the E-STOP pushbuttons PITestop meet all the relevant international standards and regulations, such as EN/IEC 60947-5-1, EN/IEC 60947-5-5 and EN/ISO 13850. Suitable for applications up to SIL CL 3 of EN/IEC 62061 and PL e of EN ISO 13849-1, they also meet UL and CE requirements. Designed to protection type IP65, the pushbutton is released by turning it to the left or right. A black stripe around the shaft is covered when the mushroom-type pushbutton is operated, thereby indicating the switch position.

Type code for PITestop

PIT es Set1s-5cs

Product area	Pushbutton	Inscription	Contacts	Connection type	Mounting
Pilz pushbuttons					
Product range	1 Standard	s Symbol and logo	– Unpopulated	– Screw connection	– Panel mounting
es E-STOP pushbutton	2 Large	u Uninscribed	1 NC with monitoring	c Spring-loaded terminal	s Surface mounting
esc E-STOP contact block	3 Illuminated		2 NC	n Connector, M12, 5-pin	r Rail mounting
es Set E-STOP Sets	4 Illuminated with protective collar		3 NO		
	5 Protective collar		4 NC/NC/NC/NC ¹⁾		
	6 Small		5 NC with monitoring/NC		
	7 Protection type IP69K		6 NC with monitoring/NC/NO		
	8 Key				

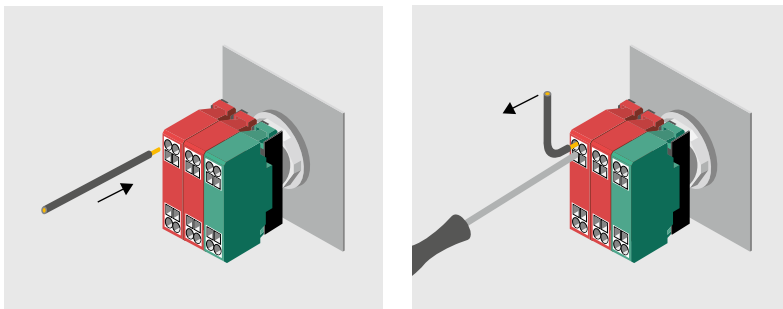
1) Use for parallel operation of two machines

Contact block with monitoring

Pilz supplies contact blocks with monitoring. “Self monitoring” is in the form of a N/O contact connected in series, which breaks the circuit in the event of an error. This additional function provides a fast, safe solution for panel mount applications, at no extra cost.

Push-in technology

Thanks to push-in spring terminals (push-in technology), PITestop are easy to install and are resistant to vibration.



Reduce installation work with quick-connect technology (push-in technology).

Your benefits at a glance





- ▶ Standard-compliant mushroom-type pushbutton for emergency stop
- ▶ A variety of E-STOP pushbuttons provide the highest level of safety in every situation: illuminated, with key, for hygiene environments (IP 69K)
- ▶ Simple, flexible installation thanks to panel and surface mount versions
- ▶ Thanks to the E-STOP symbol, there is no need for additional labelling in the operator language
- ▶ Integrated monitoring function due to quick-connect technology (push-in technology)




PITestop are available with and without an inscribed E-STOP symbol. Where the E-STOP is inscribed, the standardised E-STOP symbol is required in accordance with IEC 5638.



You can assemble E-STOP pushbuttons in modular fashion – Example:

	PIT pushbutton	Contact block bracket	Contact block	Optional: Surface mount housing
				
Type	PIT es1s	PIT MHR 3	PIT esc1	PIT es box
Order number	400 131	400 330	400 315	400 200

Keep up-to-date on E-STOP pushbuttons PITestop:

 Webcode 5294

Online information at www.pilz.com

► Selection guide – PITestop

The choice is yours: pre-assembled sets or modular assembly.

Sets for panel mounting



PIT es Set1s-5



PIT es Set3s-5c

Type	Components
PIT es Set1s-1	PIT es1s, PIT MHR3, PIT esc1
PIT es Set1s-1c	PIT es1s, PIT es holder3c, PIT esc1c
★ PIT es Set1s-5	PIT es1s, PIT MHR3, PIT esc1, PIT esc2
PIT es Set1s-5c	PIT es1s, PIT es holder3c, PIT esc1c, PIT esc2c
PIT es Set2s-5	PIT es2s, PIT MHR3, PIT esc1, PIT esc2
PIT es Set2s-5c	PIT es2s, PIT es holder3c, PIT esc1c, PIT esc2c
PIT es Set3s-5	PIT es3s, PIT MHR3, PIT esc1, PIT esc2
★ PIT es Set3s-5c	PIT es3s, PIT es holder3c, PIT esc1c, PIT esc2c
PIT es Set5s-5	PIT es5s, PIT MHR3, PIT esc1, PIT esc2
PIT es Set5s-5c	PIT es5s, PIT es holder3c, PIT esc1c, PIT esc2c
PIT es Set6.1	PIT es6.10, PIT esb6.10, without monitoring
PIT es Set7u-5	PIT es7u, PIT MHR3, PIT esc1, PIT esc2
PIT es Set7u-5c	PIT es7u, PIT es holder3c, PIT esc1c, PIT esc2c
PIT es Set8s-5	PIT es8s, PIT MHR3, PIT esc1, PIT esc2
PIT es Set8s-5c	PIT es8s, PIT es holder3c, PIT esc1c, PIT esc2c
PIT es Set1s-6	PIT es1s, PIT MHR3, PITesc1, PIT esc2, PIT esc3
PIT es Set1s-6c	PIT es1s, PIT es holder3c, PIT esc1c, PIT esc2c, PIT esc3c

Sets for surface mounting



PIT es Set1s-5s



PIT es Set6u-5nr

Type	Components
★ PIT es Set1s-5s	PIT es1s, PIT MHR3, PIT esc1, PIT esc2, PIT es box
PIT es Set1s-5cs	PIT es1s, PIT es holder3c, PIT esc1c, PIT esc2c, PIT es box
PIT es Set3s-5s	PIT es3s, PIT MHR3, PIT esc1, PIT esc2, PIT es box
PIT es Set5s-5s	PIT es5s, PIT MHR3, PIT esc1, PIT esc2, PIT es box
PIT es Set6u-5cr	E-STOP, narrow surface mount housing for rail mounting
PIT es Set1s-6s	PIT es1s, PIT MHR3, PIT esc1, PIT esc2, PIT esc3, PIT es box
PIT es Set1s-5ns	PIT es1s, PIT MHR3, PIT esc1, PIT esc2, PIT es box
PIT es Set3s-5ns	PIT es3s, PIT MHR3, PIT esc1, PIT esc2, PIT es box
PIT es Set6u-5nr	E-STOP, narrow surface mount housing for rail mounting

Contacts	Inscription of E-STOP symbol and logo		Combinable with surface mount housing	Order number	
	With	Without		Screw terminal	Spring-loaded terminal
	◆		◆	400 430	
	◆		◆		400 431
	◆		◆	400 432	
	◆		◆		400 433
	◆		◆	400 434	
	◆		◆		400 435
	◆		◆	400 436	
	◆		◆		400 437
	◆		◆	400 438	
	◆		◆		400 439
		◆		400 620	
		◆	◆	400 441	
		◆	◆		400 442
	◆		◆	400 443	
	◆		◆		400 444
	◆		◆	400 445	
	◆		◆		400 446

Contacts	Inscription of E-STOP symbol and logo		Order number		
	With	Without	Screw terminal	Spring-loaded terminal	5-pin M12 connection
	◆		400 447		
	◆			400 448	
	◆		400 449		
	◆		400 450		
		◆		400 451 ¹⁾	
	◆		400 452		
	◆				400 453
	◆				400 454
		◆			400 455

N/C, positive-opening
 N/O, signal contact

★ Type recommended by Pilz
¹⁾ Rugged clamp terminal

► Technical details – PITestop

E-STOP pushbuttons

Common features

- Scope: EN/IEC 60947-5-1 and EN/IEC 60947-5-5
- Protection type: IP65; PIT es7u: IP69K
- Mounting hole: 22.3 mm
- B_{10d} pushbutton and contact blocks: 127 500 operations
- Connection options: connection to contact blocks type PIT esc
- Dimensions: see dimensioned drawings
- Pushbutton colour: red
- Twist to release: right or left; PIT es8s and PIT es8u: right only



PIT es1s



PIT es2s



PIT es3s



PIT es5s



PIT es6.10

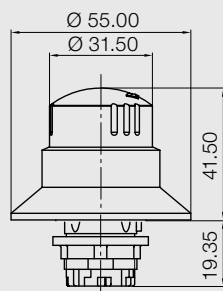


PIT es8s

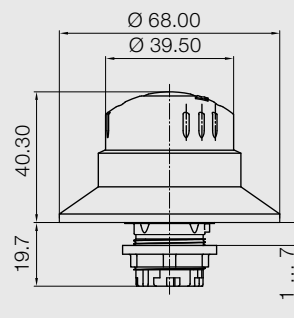
Type

★ PIT es1s
PIT es1u
PIT es2s
PIT es2u
PIT es3s
PIT es3u
PIT es4s
PIT es4u
PIT es5s
PIT es5u
PIT es6.10
PIT es7u
PIT es8s
PIT es8u

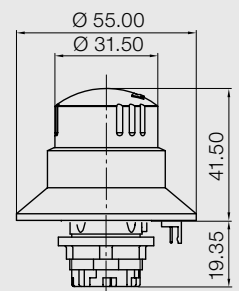
Dimensions



PIT es1s/PIT es1u



PIT es2s/PIT es2u

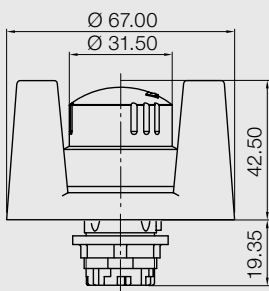


PIT es3s/PIT es3u

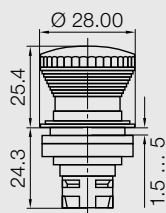


Pushbutton	Order number	
	Inscription of E-STOP symbol and logo	
	With	Without
Standard	400 131	
Standard		400 531
Large	400 132	
Large		400 532
Illuminated, incl. contact block (screw terminal)	400 133	
Illuminated, incl. contact block (screw terminal)		400 533
Illuminated with protective collar, incl. contact block (screw terminal)	400 134	
Illuminated with protective collar, incl. contact block (screw terminal)		400 534
With protective collar	400 135	
With protective collar		400 535
Small		400 536
Protection type IP69K		400 537
Key	400 138	
Key		400 538

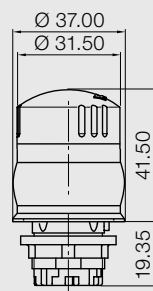
★ Type recommended by Pilz



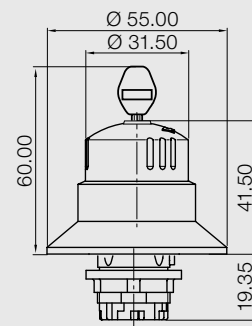
PIT es5s/PIT es5u



PIT es6.10



PIT es7u



PIT es8s/PIT es8u

► Technical details – PITestop

Contact blocks for panel and surface mounting

Common features

- ▶ Scope:
 - SIL CL 1, 2 or 3 of EN/IEC 62061,
 - PL c, d or e of EN ISO 13849-1,
 - EN/IEC 60947-5-1
- ▶ Rated operating voltage U_o :
 - 250 V AC (3 A), 24 V DC (2 A)
- ▶ Connection:
 - Screw connections $2 \times 2.5 \text{ mm}^2$,
 - finger-proof in accordance with VBG 4
- ▶ Contact material: Hard silver Ag/Ni
- ▶ Min. current: 1 mA
- ▶ Min. voltage: 5 V
- ▶ Mounting type: Panel mount
- ▶ Modular depth:
 - Screw terminals: 59 mm
 - Spring-loaded terminals: 52 mm



PIT esc1



PIT esc2c



PIT esc3



PIT esb6.10

Type

★ PIT esc1
PIT esc2
PIT esc3
PIT esc4
★ PIT esc1c
PIT esc2c
PIT esc3c
PIT esb6.10

Accessories



PIT es box



PIT MHR3



PIT MHR5



PIT es holder3c

Type

PIT es box
PIT MHR3
PIT MHR5
PIT es holder3c
PIT es backplate symbol
PIT es backplate language

PIT in connection with safe control technology















PSEN ix1



PNOZ mm0p

Type

PSEN ix1
PNOZ mm0p

Method	Contacts	Order number	
		Screw terminal	Spring-loaded terminal
Contact block with monitoring		400315	
Contact block		400320	
Contact block		400310	
4 contact blocks for operation of 2 parallel machines	   	400324	
Contact block with monitoring			400316
Contact block			400321
Contact block			400311
Contact block	 		400360

 N/C, positive opening

 Type recommended by Pilz

 N/O, signal contact

Method	Features	Order number
Surface mount housing for use in combination with PITestop pushbuttons and contact blocks	Protection type: IP65, protection class: II, 2 perforated openings for the stuffing box connection, cable entry ISO 20 mm (PG13.5), dimensions (H x W x D) in mm: 61.5 x 72 x 72, also available in a pre-assembled set, see page 13	400200
Contact block bracket for screw connections	3 slots	400330
Contact block bracket for screw connections	5 slots, max. 3 (safety) contact blocks may be fitted to ensure that the unit is guaranteed to be tamper-proof (one safety contact block occupies two slots, one contact block occupies one slot)	400340
Contact block bracket for spring loaded connections	3 slots	400331
Backplate with 3 E-STOP symbols	Suitable for all pushbuttons except PIT es2 and PIT es5 – not suitable for PIT es box and narrow surface mount housing	400334
Backplate with E-STOP legend in 3 languages: English, French, German	Suitable for all pushbuttons except PIT es2 and PIT es5 – not suitable for PIT es box and narrow surface mount housing	400335

Method	Features	Order number
Multiple interface, e.g. for PIT es Set1s-5 (400432)	<ul style="list-style-type: none"> ▶ Connection of several E-STOP pushbuttons or safety switches to safety relays PNOZ ▶ Max. 13 PSEN ix1 units can be connected in series ▶ Connection of max. 50 E-STOP pushbuttons ▶ Volt-free signal outputs to evaluate the switch status ▶ Connection via spring-loaded terminals 	535120
Configurable control system PNOZmulti Mini e.g. for monitoring E-STOP pushbutton PIT es Set3s-5 (400436)	Configurable with PNOZmulti Configurator, exchangeable program memory, 20 inputs, 4 safe semiconductor outputs (SIL CL 3), 4 test pulse outputs, supply voltage 24 V DC, voltage/current/rating: 24 V DC/2 A/48 W, outputs using semiconductor technology, dimensions H x W x D in mm: 102/98 x 45 x 120	772000

► Safe rope pull switch PSENrope

Whether on the assembly line or machine – where safety in the production area is concerned, the safe rope pull switch PSENrope is a proven, reliable solution. PSENrope switches off functional processes through manual operation. It offers maximum safety: the emergency stop function can be triggered at any point along the rope.

Optimum safety solution is as simple as that

PSENrope is flexible to use, easy to install and simple to operate. Whether it's a first-time installation or upgrade: the safe rope pull switch PSENrope simplifies installation with its sophisticated technical details.

Durable – even under extreme conditions

As the operating range of rope pull switches is limited only by the length of the rope, even large plants can be safeguarded using PSENrope. Due to its rugged finish, PSENrope is reliable even under extreme environmental conditions.



PSEN rs1.0

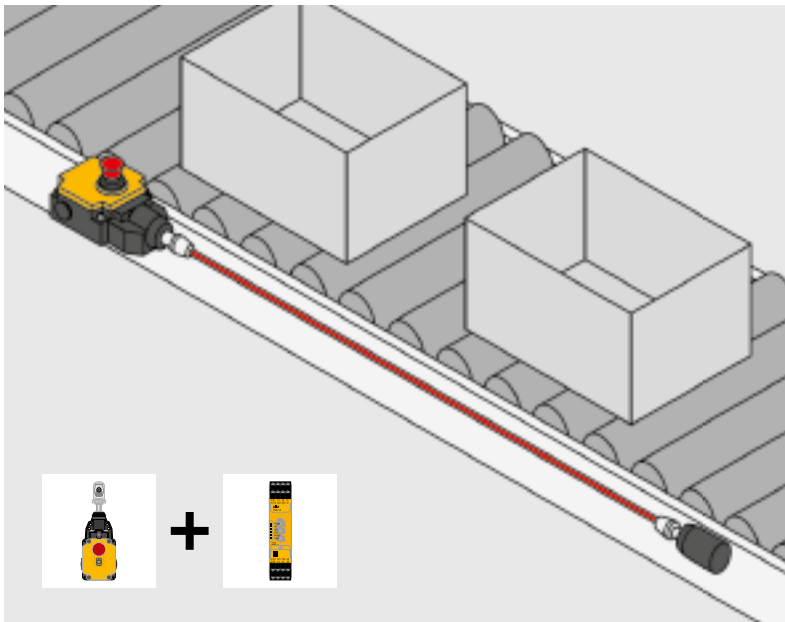
PSEN rs2.0



Type code for PSENrope

PSEN rs1.0-300

Product area Pilz SENSors	Housing material	Contacts	Max. spring force to tension the rope
Product range rs – PSENrope	1 Al die cast 2 Plastic	0 2 NC, 2 NO	175 175 N 300 300 N
Operation Mechanical			



Your benefits at a glance

- ▶ High level of safety:
 - Safe from manipulation
 - Wiring space physically separate from mechanics
 - Dual function: E-STOP and pull-to-release in one
- ▶ Whether it's a first-time installation or upgrade: PSENrope simplify installation
- ▶ Suitable for indoor and outdoor use thanks to rugged, hard-wearing metal or plastic housing



Greater safety on the production line: Rapid emergency stop with rope pull switch PSENrope in conjunction with safety relay PNOZsigma.

Selection guide – Safe rope pull switch PSENrope



PSEN rs1.0-175

Type	Housing material	Maximum rigging length	Order number
PSEN rs1.0-175	Al die cast	37.5 m	570301
PSEN rs1.0-300	Al die cast	75.0 m	570300
PSEN rs2.0-175	Plastic	37.5 m	570303
PSEN rs2.0-300	Plastic	75.0 m	570302

Common features

- ▶ Suitable for applications up to:
 - PL e of EN ISO 13849-1
 - SIL CL 3 of EN/IEC 62061
- ▶ Integrated E-STOP pushbutton
- ▶ Contacts: 2 NC, 2 NO
- ▶ Protection type: IP67
- ▶ Ambient temperature:
 - PSEN rs1.0: -30 ... +80 °C
 - PSEN rs2.0: -25 ... +70 °C
- ▶ Dimensions (H x W x D) in mm
 - PSEN rs1.0: 237 x 90.0 x 88
 - PSEN rs2.0: 294 x 42.5 x 88

Accessories

Type	Features	Order number
PSEN rs spring 175	Return spring, 175 N	570310
PSEN rs spring 300	Return spring, 300 N	570311
PSEN rs pulley 75	Return pulley, diameter: 75 mm	570312
PSEN rs pulley flex	Pulley flex, rotary	570313
PSEN rs rope d3/d4 50 m	▶ Rope diameter: 3 mm	570314
PSEN rs rope d3/d4 100 m	▶ Insulation diameter: 4 mm ▶ PVC-coated, red	570315

Technical documentation on the safe rope pull switch PSENrope:

Webcode 6568

Online information at www.pilz.com

▶ Operating mode selector switch PITmode

The operating mode selector switch PITmode provides two functions in one compact unit: selection of operating mode and authorisation control for machine access.



PIT m3.1p



PIT m3 key mode 2

Excellent manipulation protection

As an operating mode selector switch it enables you to switch between defined operating modes. Each operator uses the coded key to access the machine enables that match his abilities. Identification numbers can be used to assign authorisations in the machine control system; these serve as access authorisations or password levels. The PITmode can be used on plant and machinery in which a range of control sequences and operating modes are used.

The safe, complete solution

The evaluation device safely identifies and evaluates the selected operating mode. Pilz supplies a series of evaluation devices that are suitable for use with PITmode:

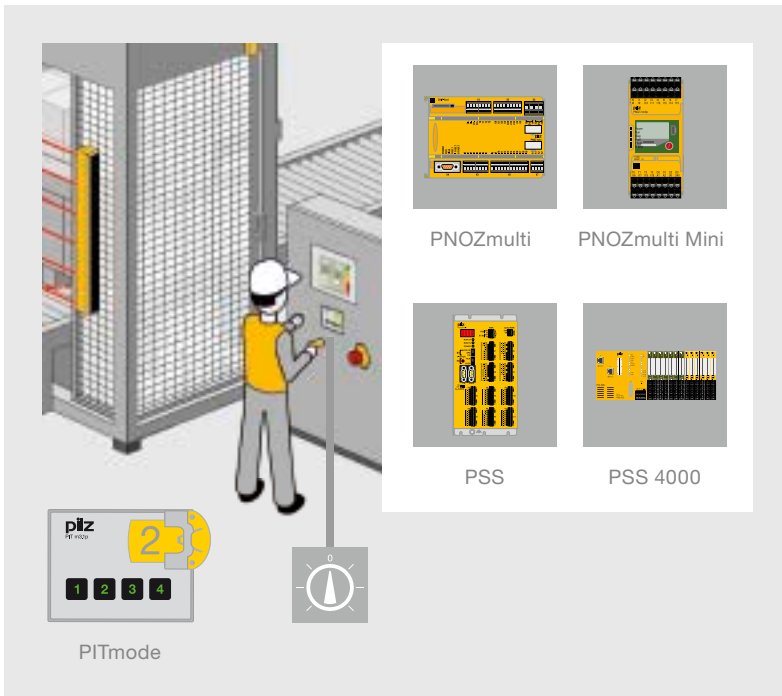
- ▶ Configurable control system PNOZmulti and configurable safety relay PNOZmulti Mini
- ▶ Programmable control systems PSS
- ▶ Control systems from the automation system PSS 4000

Selection guide – Operating mode selector switch PITmode



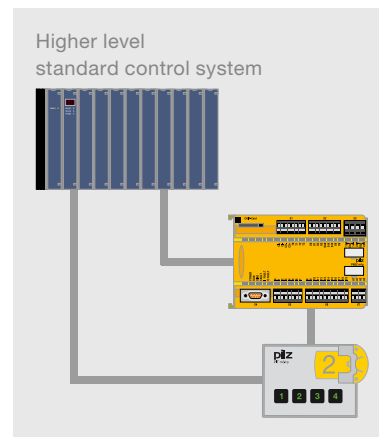
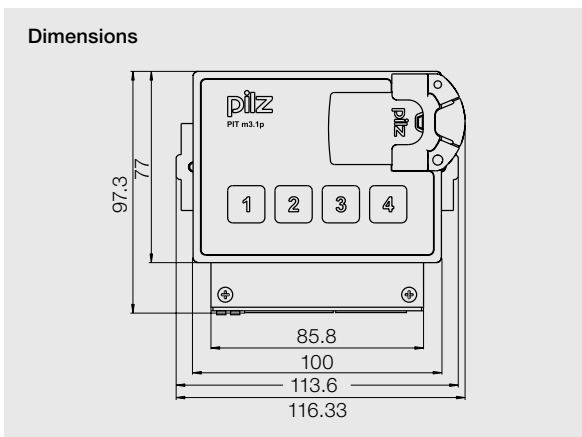
PIT m3.1p

Type	Technical features
PIT m3.1p	<ul style="list-style-type: none"> ▶ Number of selectable operating modes: 5 ▶ Operating mode selected via operator keys ▶ The evaluation device safely identifies and evaluates the selected operating mode (non-contact with key via RFID technology) ▶ Evaluation with safe evaluation devices PNOZmulti, PSS and control systems from the automation system PSS 4000 ▶ Identification management, i.e. access and task authorisations can be assigned in the higher level standard control system



Your benefits at a glance

- ▶ Safe switching of operating mode through self-monitoring
- ▶ Saves space, as operating mode selector switch and access authorisation are combined in one unit
- ▶ High level of manipulation protection through universal coding
- ▶ Saves time because there is less administration work; several mechanical keys are combined within one transponder key



- ▶ Mode of operation: Transponder technology
- ▶ Supply voltage: 24 V DC -15 % ... 10 %
- ▶ Ambient temperature: 0 ... +55°C
- ▶ Protection type: IP54 (installed)
- ▶ Safety-related characteristic data:
 - PL d of EN ISO 13849-1
 - SIL CL 2 of EN/IEC 62061
- ▶ Dimensions (H x W x D) in mm: 97 x 116 x 46

Order number

- ▶ PIT m3.1p evaluation device _____ 402220
- ▶ PIT m3 key mode 1 _____ 402211
- ▶ PIT m3 key mode 2 _____ 402212
- ▶ PIT m3 key mode 3 _____ 402213
- ▶ PIT m3 key mode 4 _____ 402214
- ▶ PIT m3 key service _____ 402215
- ▶ Spring-loaded terminals (1 set) ____ 402301

Keep up-to-date on operating mode selector switches PITmode:

Webcode 6422

Online information at www.pilz.com

▶ Manually operated control device PITjog

The manually operated control device PITjog can be used as an enable switch. For example it is used when processes within the plant or machine's danger zone are being monitored while the safety gate is open.



PIT js2

Safe within the danger zone

In contrast to a conventional enabling switch, with the PITjog you need both hands to issue the command. Access to the danger zone using one hand, whether by carelessness or accident, is prevented. Additional protection measures may be required depending on the result of the hazard analysis.

The complete solution

Add the final touch to your solution! Allow staff to work safely within the danger zone of your plant or machine in conjunction with approved evaluation devices from Pilz:

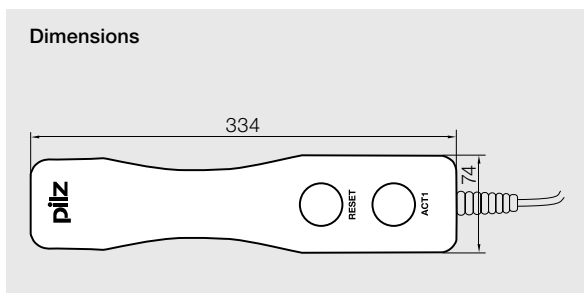
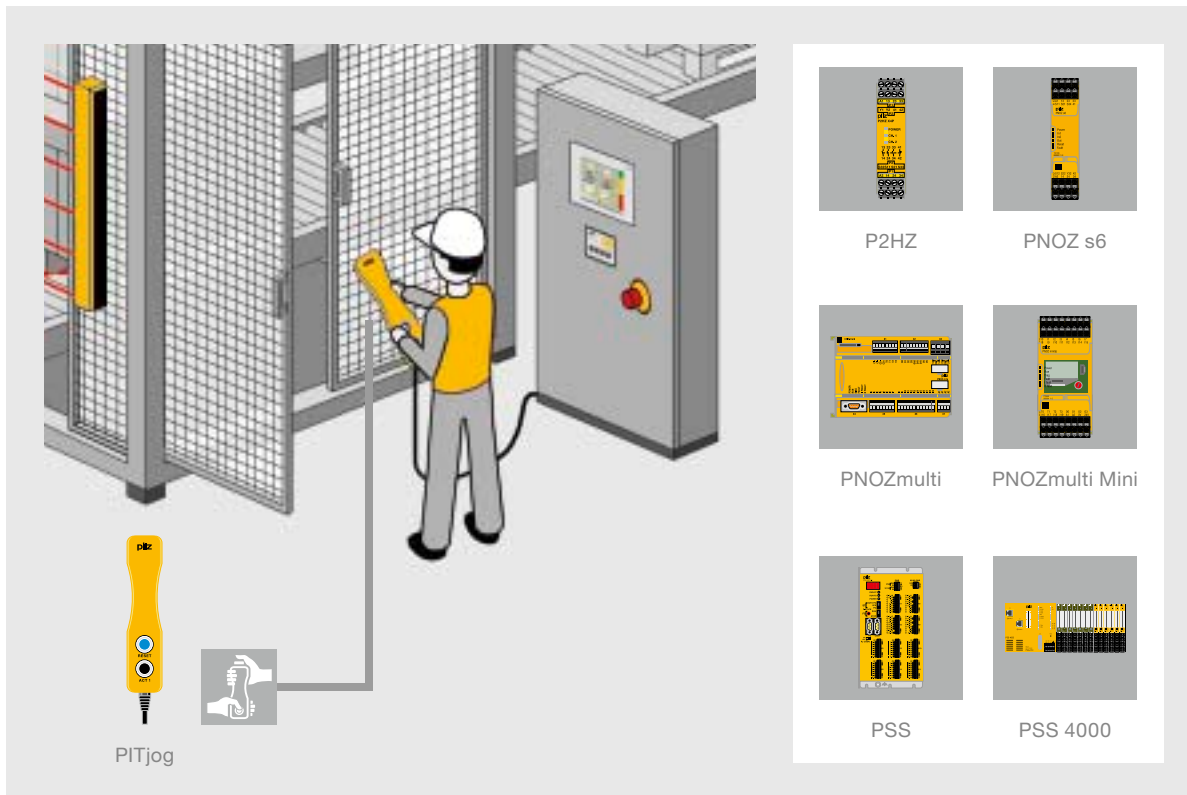
- ▶ Two-hand control devices P2HZ
- ▶ Safety relays PNOZ s6
- ▶ Safety relays PNOZ e2.1p
- ▶ Two-hand module from the modular safety system PNOZmulti
- ▶ Programmable control systems PSS with standard function block SB059
- ▶ Control systems from the automation system PSS 4000

Selection guide – Manually operated control device PITjog



PIT js holder

Type	Method	Operating voltage	Ambient temperature	Protection type
PIT js2	Manually operated control device	24 V AC/DC	-10°C ... +55°C	IP50
PIT js holder	Wall holder for PIT js2	-	-	-



Dimensions (H x W x D) in mm	Housing material	Coiled cable		Order number
		Length	Length, stretched	
334 x 74 x 60	PC-ABS blend UL 94V0	1 m	4 m	401 100
310 x 83 x 71.5	Rust-proof steel	-	-	401 200

Keep up-to-date on the manually operated control device PITjog:

Webcode 5302

Online information at www.pilz.com

▶ Enabling switch PITenable

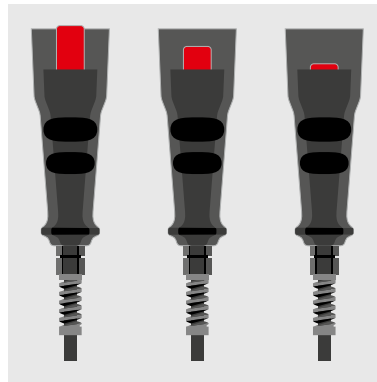
Safe one-handed set-up and maintenance – the enabling switch PITenable is a manually operated control device. It is used when working inside the danger zone of a plant or machine, when the effect of safety equipment has to be suspended (e.g. during setup or maintenance). PITenable can be operated with one hand thanks to the three-stage switch.



PIT en1.0p-5m-s

3x safe enable, off-on-off

Operation is in three stages: In stage 1, the switch is not operated. The machine runs with the safety functions activated. Stage 2 activates the enabling function; the switch is in its middle setting. The machine runs while the protective effect of the movable guards is suspended. Stage 3 is a protective function which brings the machine to a standstill if the switch is suddenly released or fully depressed. This function protects the operator, should he overreact in a shock situation.



3-stage enabling switch: off-on-off.



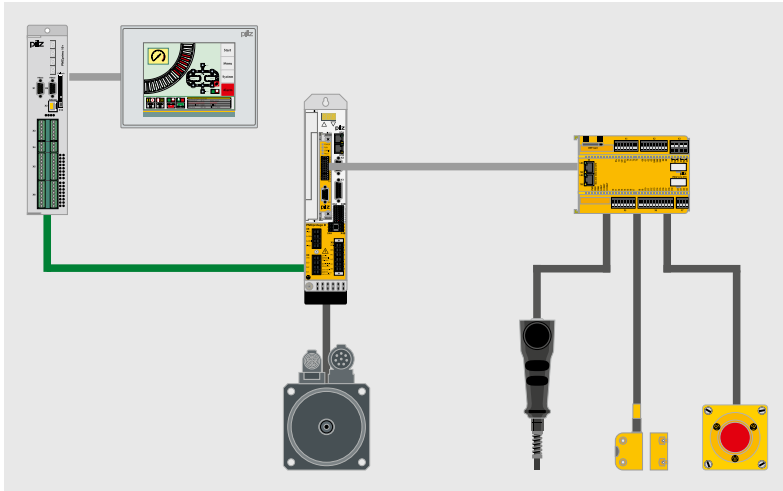
Selection guide – Enabling switch PITenable



PIT en1.0

Type	Method	Connection
PIT en1.0p-5m-s	Enabling switch, 3-stage	Connector, M12, 5-pin
PIT en1.0a-5m-s	Enabling switch, 3-stage	Open cable
PIT en1.0 holder	Wall holder for PIT en	

Safety with the approved, complete solution: to evaluate PITenable Pilz offers the safe evaluation devices PNOZmulti, PSS and control systems from the automation system PSS 4000.

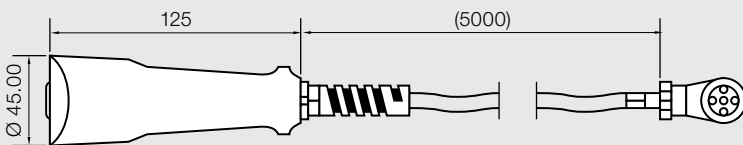


The safe, complete solution with safe control and drive technology

Your benefits at a glance

- ▶ Ability to work safely inside a plant or machine's danger zone
- ▶ Easy to monitor processes with the safety gate open
- ▶ Flexible one-handed operation thanks to 3-stage enabling switch
- ▶ Operator is protected should he overreact with shock or panic
- ▶ Ergonomically moulded housing for comfortable operation
- ▶ Maintenance-free
- ▶ Excellent manipulation protection

Dimensions




Technical features

- ▶ Colour: black
- ▶ Operating temperature: 0°C ... 50°C
- ▶ Front protection type: IP65
- ▶ Electrical service life: min. 100 000 cycles
- ▶ Operating voltage/operating current: 125 V AC/0.3 A or 30 V DC/0.7 A
- ▶ Housing material: Polypropylene
- ▶ Length of connection cable: 4m
- ▶ Safety-related characteristic data: B_{100} 100 000 operations

Order number

401 110
401 111
401 201

Keep up-to-date on the manually operated enabling switch PITenable:

 Webcode 6676

Online information at www.pilz.com

▶ Muting lamp PITsign

Muting is the safe, automatic and temporary suspension of an electrosensitive protective device in accordance with the standard EN/IEC 61496-1. It is mostly required when transporting material into or out of a danger zone. PITsign muting lamps signal that an optoelectronic protective device is suspended. This in turn will increase safety for the plant or machine operator.



PIT si1.2

Safe, complete solution

In conjunction with approved evaluation devices, Pilz offers a safe, complete solution for monitoring muting.

- ▶ Muting lamp PIT si1.1 in conjunction with
 - Optoelectronic protective devices PSENOpt
 - Programmable control systems PSS
 - Dual-pole outputs (PSS, PNOZmulti)
 - Muting controller PMUT X1P
- ▶ Monitored muting lamp PIT si1.2 in conjunction with all safety relays PNOZ that do not have a muting lamp monitoring function
- ▶ LED muting lamp PIT si2.1 in conjunction with all Pilz evaluation devices
- ▶ LED indicator light unit PIT si3.1 in conjunction with the safe camera system SafetyEYE

Selection guide – Muting lamps PITsign



PIT si1.1

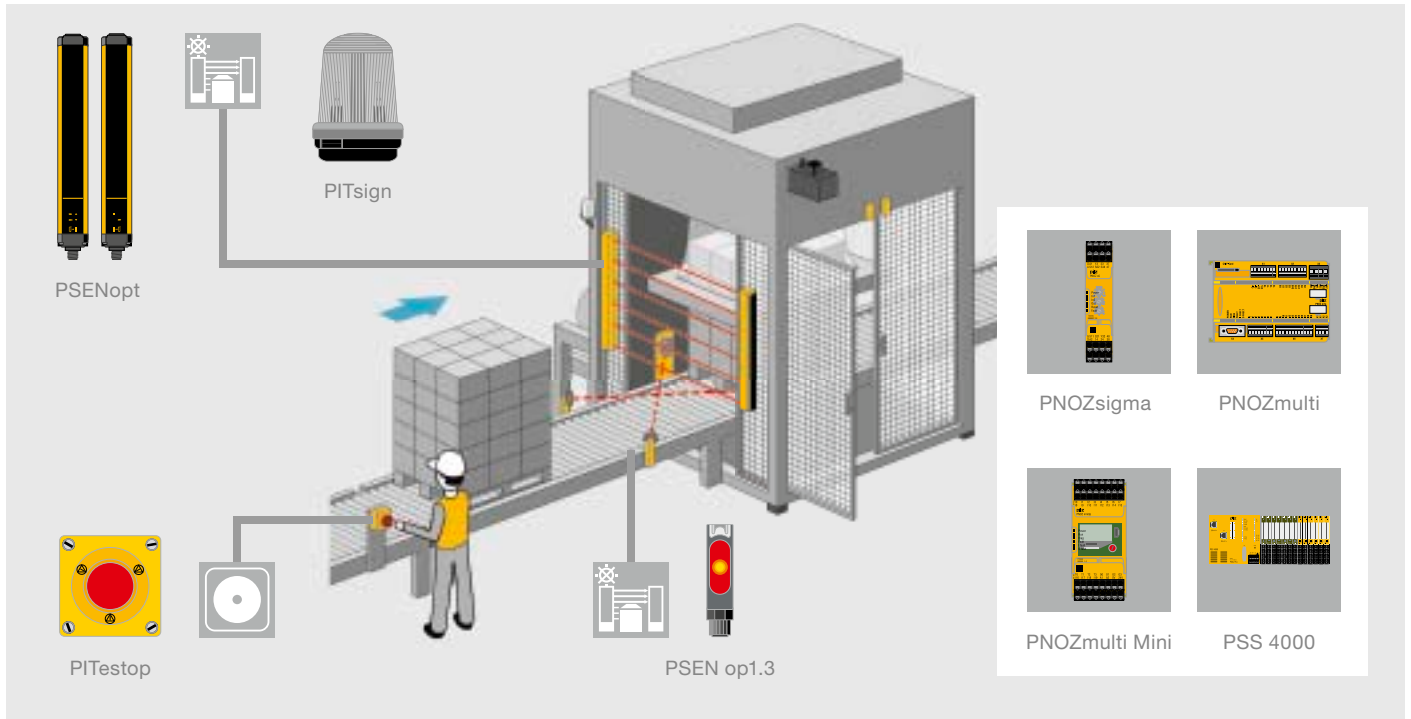


PIT si3.1

Type	Application
PIT si1.1	<ul style="list-style-type: none"> ▶ Unmonitored muting lamp in accordance with EN/IEC 61496-1 and VDE 0113-201 ▶ Suitable for use with light curtains and light grids PSENOpt, with programmable control systems PSS, units with dual-pole outputs (PSS DIO Z/PSS DI20 Z, PNOZmulti), safety relay PMUT X1P
★ PIT si1.2	<ul style="list-style-type: none"> ▶ Monitored muting lamp in accordance with EN/IEC 61496-1 and VDE 0113-201 ▶ For applications in accordance with SIL CL 3 of EN/IEC 62061, PL e of EN ISO 13849-1 ▶ For universal use thanks to integrated lamp monitoring in accordance with the ESPE standard 61496-1/-2
PIT si2.1	<ul style="list-style-type: none"> ▶ Unmonitored LED muting lamp in accordance with EN/IEC 61496-1 and VDE 0113-201 ▶ Suitable for use with PSENOpt, with programmable control systems PSS (PSS DI20 Z), PNOZmulti, safety relay PMUT X1P
PIT si3.1	<ul style="list-style-type: none"> ▶ Indicator light unit, unmonitored ▶ Signals various operating and plant statuses (red and green light element) ▶ Signals process errors and warning zone violations (amber light element) ▶ Suitable for use with the safe camera system SafetyEYE

Common features

- ▶ Supply voltage: 24 V DC
- ▶ Protection type: IP65



Lamp/ power consumption	Dimensions (diameter/ height) in mm	Scope of supply	Spare lamp	Order number
Bulb/5 W	100/138.5	PIT si1.1 incl. bulb, mounting bracket and 2 screws	PITsign replacement bulb 5 W bulb Order number: 620080	620010
Bulb/7 W	100/138.5	PIT si1.2 incl. bulb, mounting bracket and 2 screws	PITsign replacement bulb 7 W bulb Order number: 620100	620020
LED/4 W	100/138.5	PIT si2.1 incl. LED, mounting bracket and 2 screws	-	620015
LED/5 W	70/265.0	PIT si3.1 red, amber and green incl. LED, conduit (250 mm), gasket, O-ring gasket, safety screw (3.5 x 16)	-	581190

★ Type recommended by Pilz



Keep up-to-date
on muting lamps
PITsign:

Webcode 5298

Online information
at www.pilz.com

► Consulting, engineering and training

As a solution supplier, Pilz can help you to apply optimum safety strategies worldwide. Services encompass the whole machine lifecycle. Our training package with practical, up-to-date course content completes the offering.



Safety services: Consulting and engineering

Your projects belong in safe hands.



Risk Assessment

We inspect your machines in accordance with the applicable standards and/or international standards and directives and assess the existing hazards.



Safety Concept

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



Safety Design

The aim of the Safety Design is to reduce or eliminate danger points through detailed planning of the necessary safeguards.




System Implementation

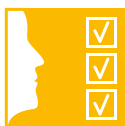
The results from the Risk Assessment and Safety Design are implemented through selected, tailor-made safety measures



Services related to machinery safety:

 Webcode 7792

Online information at www.pilz.com



Safety Validation

The Risk Assessment and the Safety Concept are mirrored and examined by competent specialist staff in the Safety Validation.





CE Marking

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



International Compliance Services

We perform the assessment procedure and develop the necessary strategies to enable compliance with the respective ISO, IEC, ANSI, EN or other national or international standards.



Plant Assessment

We develop an overview of your entire plant in the shortest possible time. We use an on-site inspection to expose the risks and calculate the cost of optimising your safeguards.

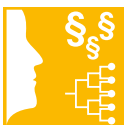


Inspection of Safeguarding Devices

With our independent, DAkkS accredited inspection body in accordance with ISO 17020, we guarantee objectivity and high availability for your machinery.



Pilz GmbH & Co. KG, Ostfildern, operates an independent inspection body in accordance with DIN EN ISO/IEC 17020:2004 for the plant and machinery sector, accredited by the German Accreditation Body (DAkkS).




Machinery Safety in the Workplace

We offer additional tailor-made services to assure compliance and safety in the workplace in accordance with local standards and regulations.



Knowledge gives you a competitive edge – Training from Pilz:

 Webcode 0218



Safety services: Training

Pilz offers two types of training: product-neutral seminars on machinery safety and specific product courses. We pass on professional expertise in a practical, understandable format.



Online information at www.pilz.com

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► Support

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Pilz develops environmentally-friendly products using ecological materials and energy-saving technologies. Offices and production facilities are ecologically designed, environmentally-aware and energy-saving. So Pilz offers sustainability, plus the security of using energy-efficient products and environmentally-friendly solutions.



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