



► PITestop

PILZ
THE SPIRIT OF SAFETY

Operating Manual-21136-EN-12
- Control and signal devices



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SD means Secure Digital

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Introduction

Validity of documentation

This documentation is valid for the product PITestop. It is valid until new documentation is published.

This operating manual explains the function and operation, describes the installation and provides guidelines on how to connect the product.

Using the documentation

This document is intended for instruction. Only install and commission the product if you have read and understood this document. The document should be retained for future reference.

Definition of symbols

Information that is particularly important is identified as follows:



DANGER!

This warning must be heeded! It warns of a hazardous situation that poses an immediate threat of serious injury and death and indicates preventive measures that can be taken.



WARNING!

This warning must be heeded! It warns of a hazardous situation that could lead to serious injury and death and indicates preventive measures that can be taken.



CAUTION!

This refers to a hazard that can lead to a less serious or minor injury plus material damage, and also provides information on preventive measures that can be taken.



NOTICE

This describes a situation in which the product or devices could be damaged and also provides information on preventive measures that can be taken. It also highlights areas within the text that are of particular importance.

**INFORMATION**

This gives advice on applications and provides information on special features.

Safety**Intended use**

The device PITestop is intended for use in safety circuits in accordance with IEC/EN 60947-5-1, IEC/EN 60947-5-5, EN 60204-1, EN ISO 13849-1. Before using the device, a safety assessment of the overall system must be performed in accordance with the Machinery Directive.

**CAUTION!**

It must not be possible to defeat the E-STOP pushbuttons. Otherwise material damage and severe injuries may result, depending on the application. The E-STOP pushbutton may **not** be used in place of other safety measures.

E-STOP pushbutton with key-release:

The key must be removed immediately after release and must be kept safely.

The following is deemed improper use in particular:

- ▶ Any component, technical or electrical modification to the product
- ▶ Use of the product outside the areas described in this manual
- ▶ Use of the product outside the technical details (see chapter entitled "[Technical details](#) [ 21]").

Safety regulations**Safety assessment**

Before using a device, a safety assessment in accordance with the Machinery Directive is required.

The product as an individual component fulfils the functional safety requirements in accordance with EN ISO 13849 and EN IEC 62061. However, this does not guarantee the functional safety of the overall plant/machine. To achieve the relevant safety level of the overall plant/machine's required safety functions, each safety function needs to be considered separately.

Use of qualified personnel

The products may only be assembled, installed, programmed, commissioned, operated, maintained and decommissioned by persons who are competent to do so.

A competent person is a qualified and knowledgeable person who, because of their training, experience and current professional activity, has the specialist knowledge required. In order to inspect, assess and handle products, devices, systems, plant and machinery, this person must be familiar with the state of the art and the applicable national, European and international laws, directives and standards.

It is the company's responsibility only to employ personnel who

- ▶ Are familiar with the basic regulations concerning health and safety / accident prevention,
- ▶ Have read and understood the information provided in the section entitled Safety
- ▶ Have a good knowledge of the generic and specialist standards applicable to the specific application.

Warranty and liability

All claims to warranty and liability will be rendered invalid if

- ▶ The product was used contrary to the purpose for which it is intended,
- ▶ Damage can be attributed to not having followed the guidelines in the manual,
- ▶ Operating personnel are not suitably qualified,
- ▶ Any type of modification has been made (e.g. exchanging components on the PCB boards, soldering work etc.).

Disposal

- ▶ In safety-related applications, please comply with the mission time T_M in the safety-related characteristic data.
- ▶ When decommissioning, please comply with local regulations regarding the disposal of electronic devices (e.g. Electrical and Electronic Equipment Act).

For your safety

The unit meets all the necessary conditions for safe operation. However, please note the following:

- ▶ Check the function of the pushbutton before commissioning for the first time and then at regular intervals (at least annually).
- ▶ E-STOP pushbutton with protective collar: check that the E-STOP pushbutton is accessible and can be reached.

Unit features

The device consists of an actuator PIT es and a contact block PIT esc. Various types are available; these can be ordered as sets or can be put together as modular assemblies.

Features:

- ▶ Panel mount version or surface mount version with two-part enclosure (box)
- ▶ Turn in either direction to release or turn right for key-release
- ▶ various actuators
 - Standard actuator
 - Actuator with key-release
 - Illuminated actuator
 - Black stop actuators or red E-STOP actuators
- ▶ Contact blocks for applications up to PL e of EN ISO 13849-1 and SIL CL 3 of EN IEC 62061

Function description

The **PIT es** units are E-STOP and Stop pushbuttons.

The **PIT es E-STOP pushbuttons** are used to shut down plant and machine sections in order to reduce or avert imminent or existing hazards to people and damage to machinery or materials.

The **PIT es STOP pushbuttons** are used to shut down plant and machine sections, e.g. for maintenance work.

Modules

Actuator:

- ▶ E-STOP actuator (red)
 - PIT es5.12 (actuator with key-release and protective collar)
- ▶ STOP actuator (black, for area shutdown)
 - PIT es2.11 (standard actuator)
 - PIT es2.12 (actuator with key-release)
 - PIT es2.13 (illuminated actuator)

E-STOP box:

- ▶ PIT es box

Individual contact blocks:

- ▶ PIT es safe contact block for panel mount version
 - PIT esc1 (1 N/C / N/O contact*)
- ▶ PIT es safe contact block for surface mount version
 - PIT esc2 (1 N/C contact)
 - PIT esc3 (1 N/O contact)

Contact block bracket:

- ▶ PIT MHR3 (3 slots)
- ▶ PIT MHR5 (5 slots)



NOTICE

The illuminating contact block for the illuminated actuator requires a slot.

Contact block sets, pre-assembled with bracket:

- ▶ PIT es safe contact block for panel mount version
 - PIT esb1.1 (1 N/C / N/O contact*)
 - PIT esb1.2 (1 N/C / N/O contact*, 1 N/C contact)
 - PIT esb1.3 (1 N/C / N/O contact*, 1 N/C contact, 1 N/O contact)
 - PIT esb1.4 (1 N/C / N/O contact*, 1 N/O contact)
- ▶ PIT es safe contact block for surface mount version
 - PIT esb2.1 (1 N/C contact)
 - PIT esb2.2 (2 N/C contact)
 - PIT esb2.3 (2 N/C contacts, 1 N/O contact)
 - PIT esb2.4 (1 N/C contacts, 1 N/O contact)

* safe contact block, see [Connection diagrams](#)  13]

Pre-assembled E-STOP sets:

- ▶ PIT es Set3.1:
 - E-STOP actuator PIT es3.11
 - Contact block set PIT esb1.2
- ▶ PIT es Set3.2:
 - E-STOP actuator PIT es3.11
 - Contact block set PIT esb1.3
- ▶ PIT es Set4.1:
 - E-STOP actuator PIT es3.11
 - E-STOP box PIT es box
 - Contact block set PIT esb2.2
- ▶ PIT es Set4.2:
 - E-STOP actuator PIT es3.11
 - E-STOP box PIT es box
 - Contact block set PIT esb 2.3

Installation



CAUTION!

The pushbutton should always be installed with the supply voltage switched off.

Panel mount version

- ▶ Insert the actuator into an opening in the panel (see [Opening in the panel in the panel mount version](#) [ 10])
- ▶ Use the plastic nut to secure it (24 mm spanner)
- ▶ only with illuminated actuators:
 - Attach "illuminating contact block" to the contact block bracket
 - Feed the cable through an opening in the panel (see [Opening in the panel in the panel mount version](#) [ 10]) and attach to the actuator
- ▶ Push the contact block onto the actuator and turn it clockwise to engage

Surface mount version

- ▶ only with illuminated actuators:
 - Break out one of the holes indicated on the upper part of the surface mount housing
 - Attach "illuminating contact block" to the contact block bracket
 - Guide the cable through the opening in the upper part of the surface mount housing and connect it to the actuator
- ▶ Break out the stuffing box connection on the lower part of the surface mount housing
- ▶ Secure the lower part of the surface mount housing with two screws (see [Attachment of the enclosure for a surface mount version](#) [ 11])
- ▶ After connecting the wiring to the contact block, screw the upper part of the surface mount housing with actuator and contact block to the lower part of the enclosure

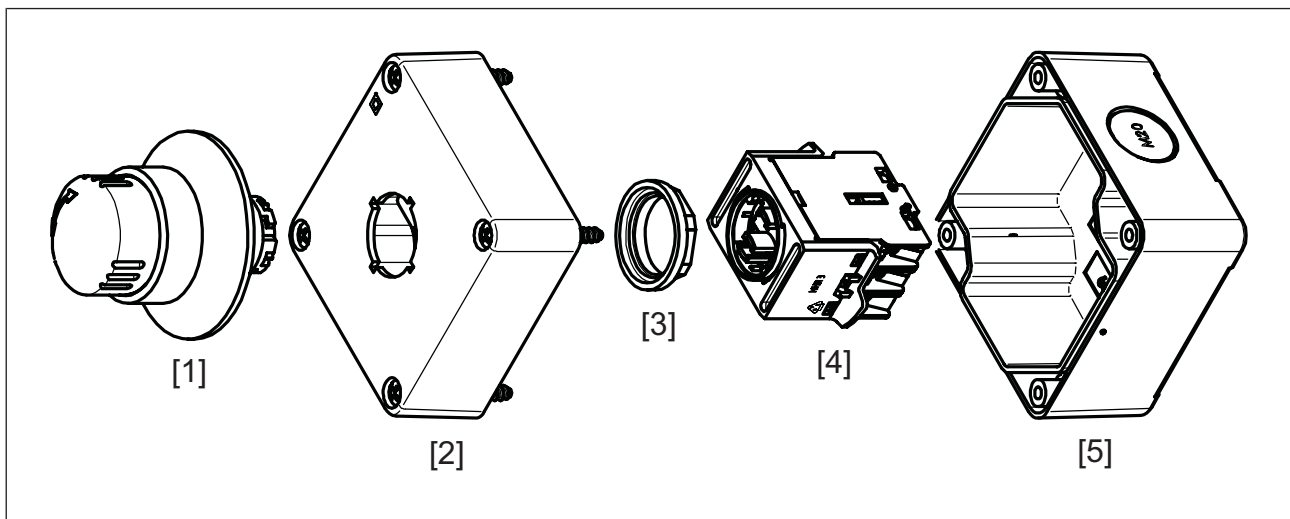


Fig.: Installing PITestop

Legend

- [1] Actuator
- [2] Upper part of the surface mount housing
- [3] Plastic nut
- [4] Contact block
- [5] Lower part of the surface mount housing

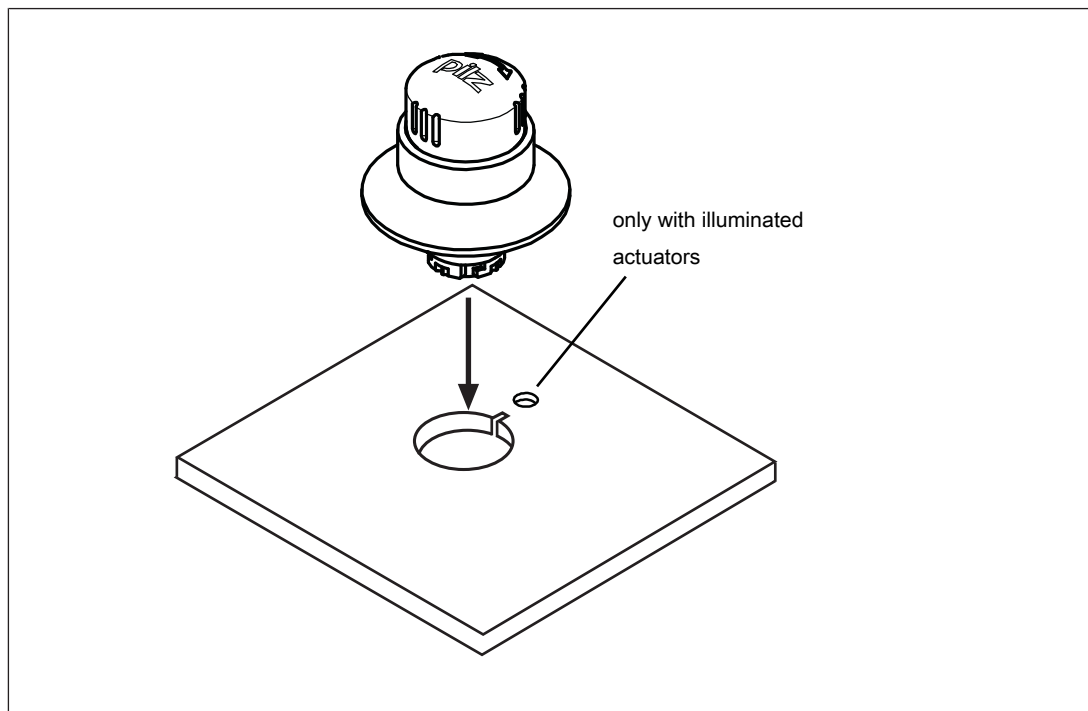


Fig.: Opening in the panel in the panel mount version

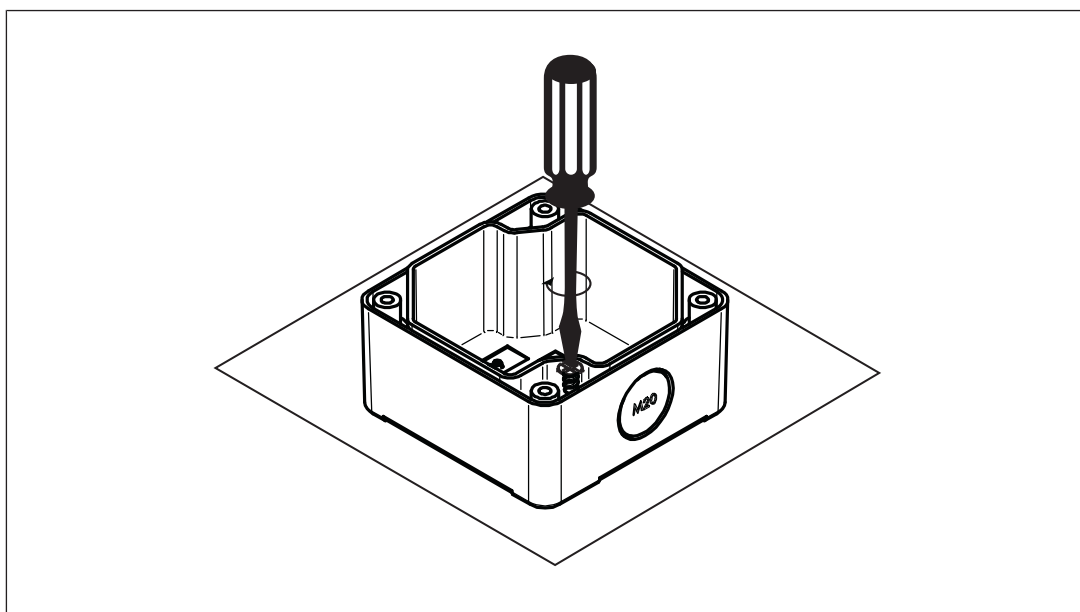


Fig.: Attachment of the enclosure for a surface mount version

Preparing for operation



NOTICE

Check the function of the pushbutton before commissioning for the first time and then at regular intervals (at least annually).

- ▶ The wiring is connected to the contact block via fixed terminals with a screw connection

Version with surface mount housing

- ▶ only with illuminated actuators: Break out one of the openings indicated on the upper part of the surface mount housing
- ▶ To route the cable, break out one of the pre-prepared openings on the lower part of the surface mount housing
- ▶ Use a plastic M20 stuffing box connection for sealing and strain relief
- ▶ Make sure that the contact blocks which are installed in the enclosure are properly connected, so that - when the unit is used correctly - the requirements with regard to airgap creepage are satisfied for an enclosure with protective insulation.

Contact blocks

The contact blocks are supplied pre-assembled in a bracket.

With the illuminated actuators the illuminating contact block must also be attached to the bracket.



NOTICE

Please note the following when dismantling and reconnecting the individual contact blocks: The slides of the outer contact blocks must be pointing inwards, so that all of the slides are within the ring when the bracket is attached (see drawing below).

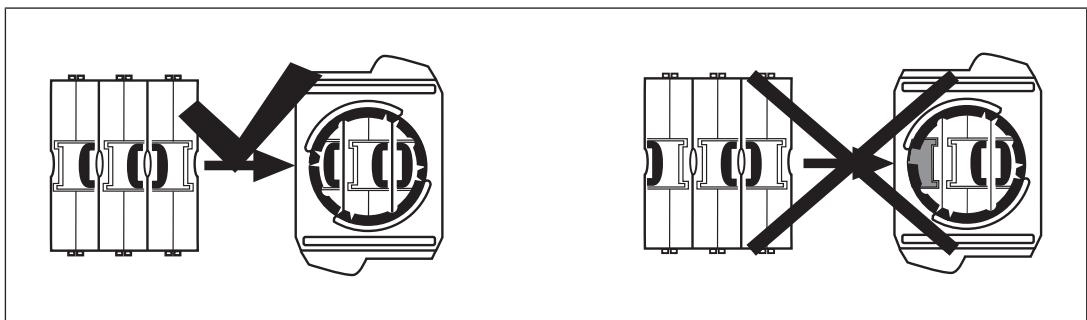
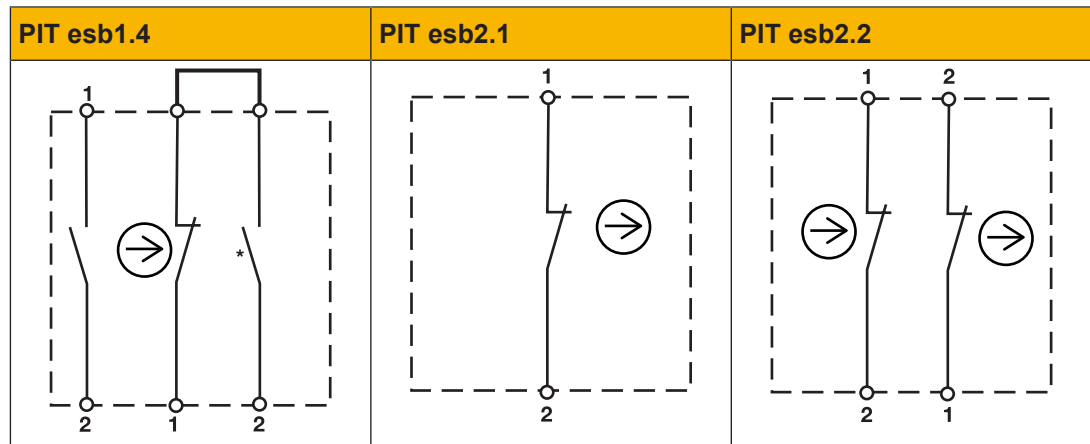
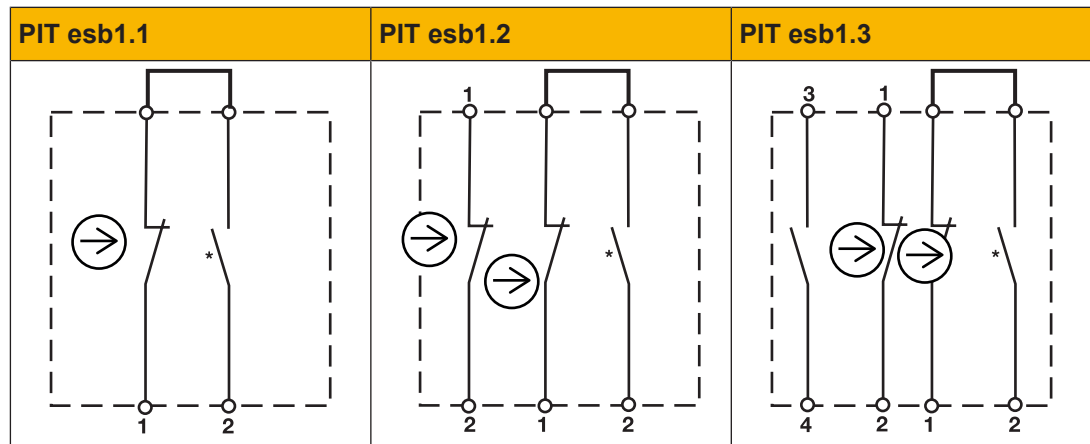
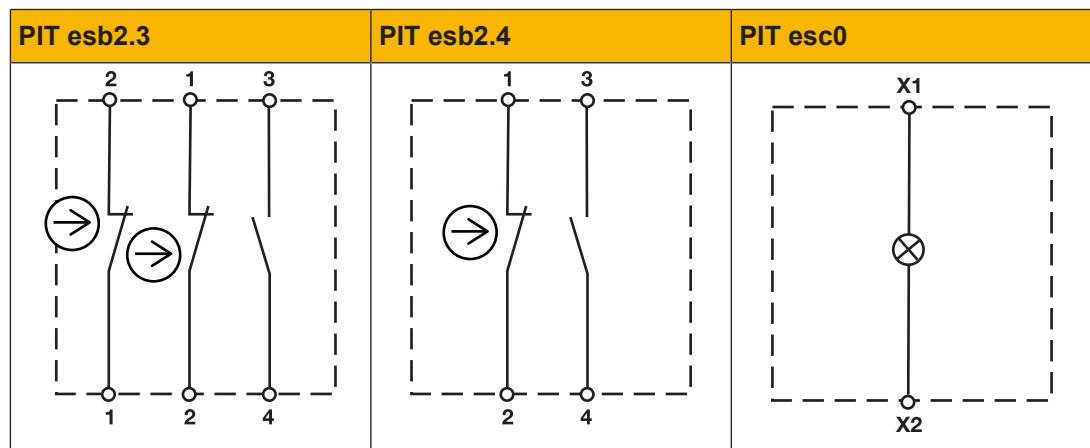


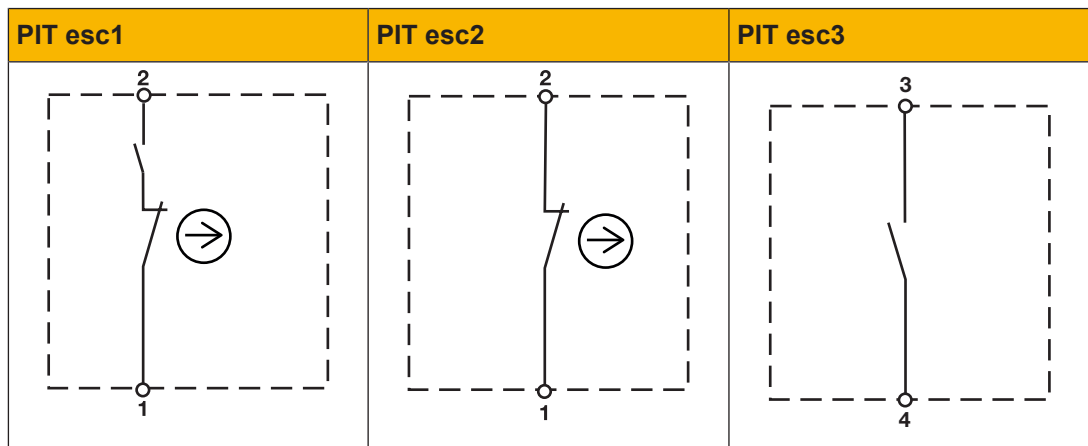
Fig.: Attachment of the enclosure

Connection diagrams



*The contacts are closed when the actuator is snapped in place



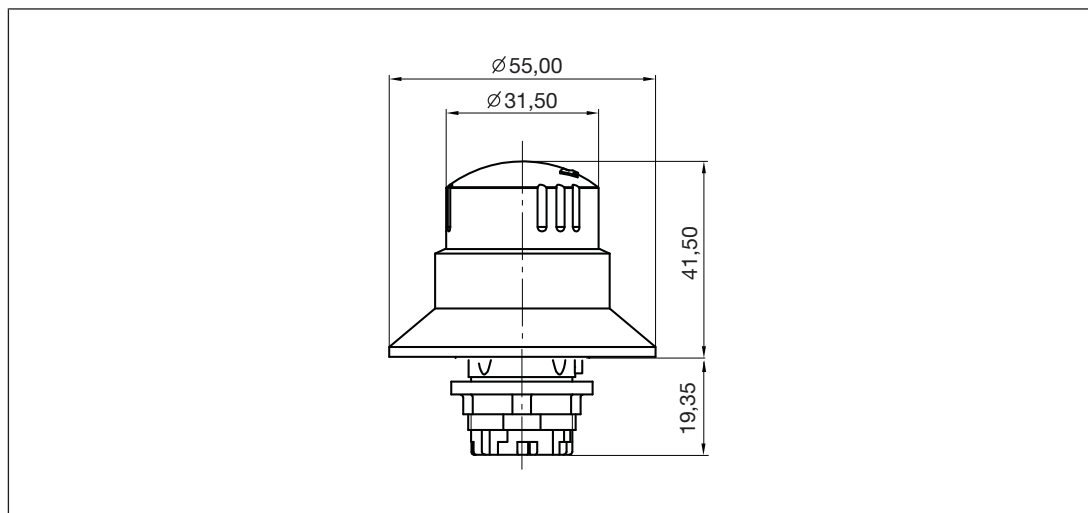


NOTICE

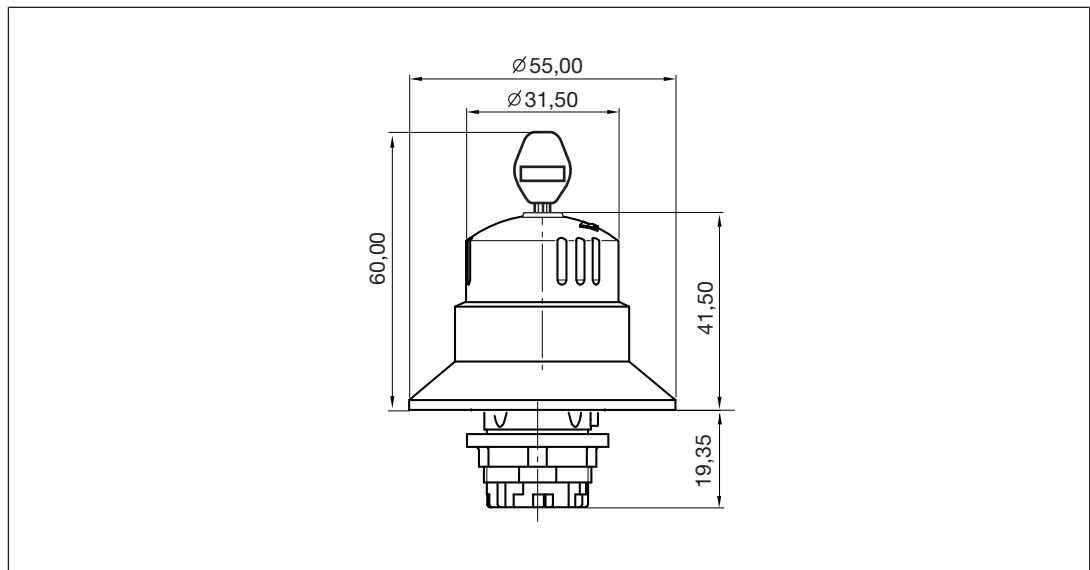
Contact block sets PIT esb1.2, PIT esb1.4 and PIT esb2.3 cannot be used with an illuminated actuator!

Dimensions

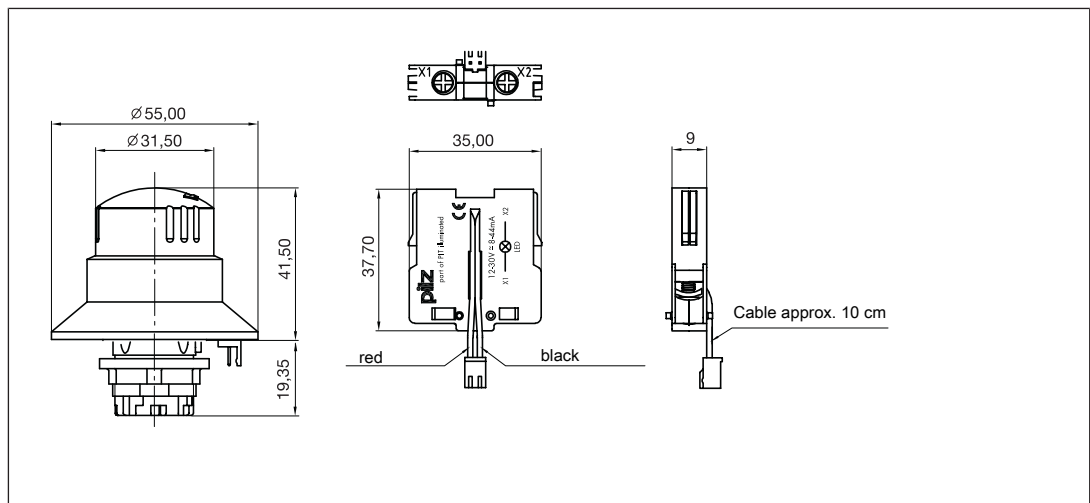
Standard actuator (PIT es2.11, PIT es1u)



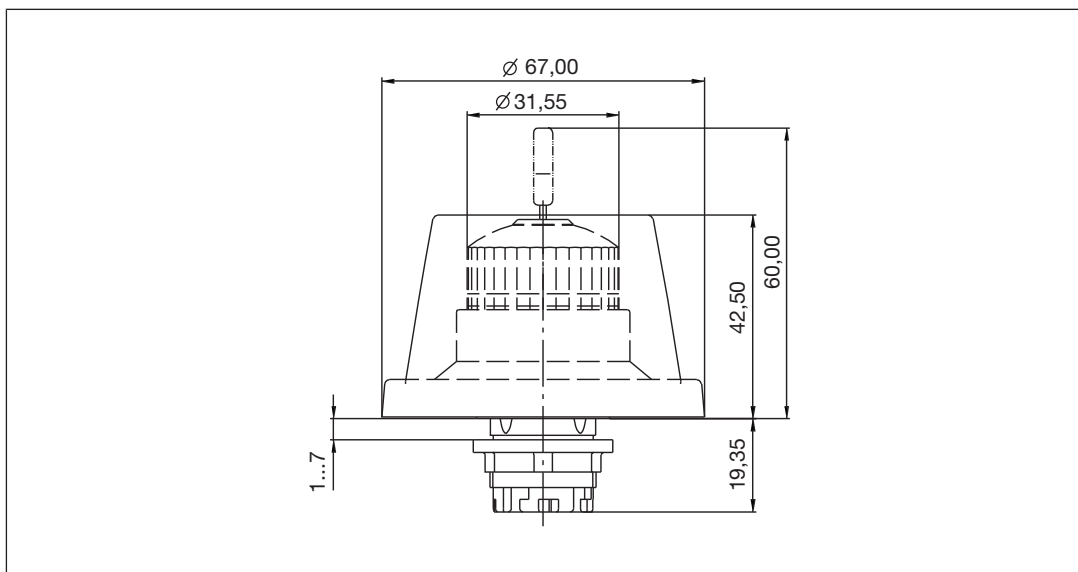
Actuator with key-release (PIT es2.12)



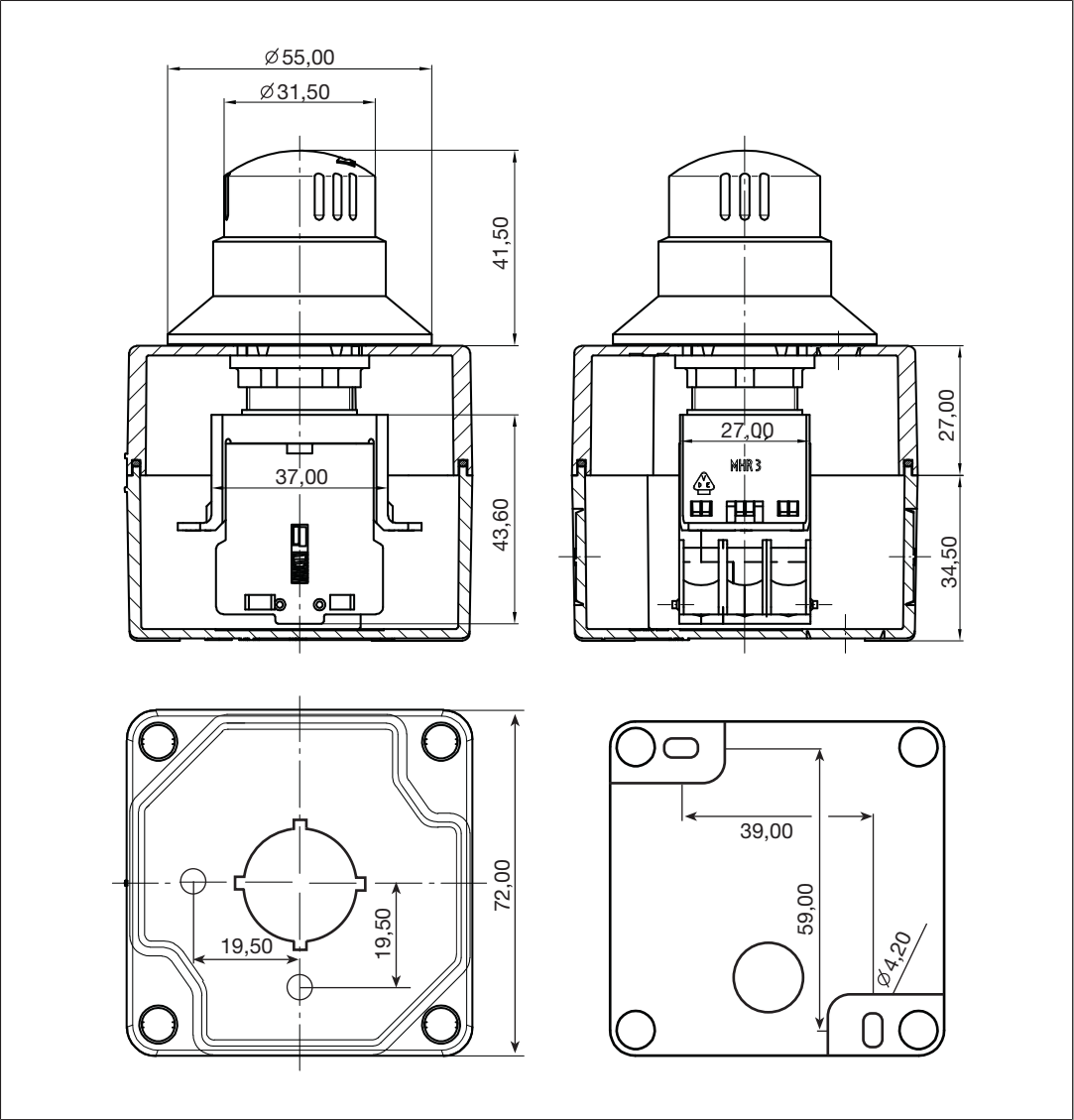
Actuator with illumination (PIT es2.13)



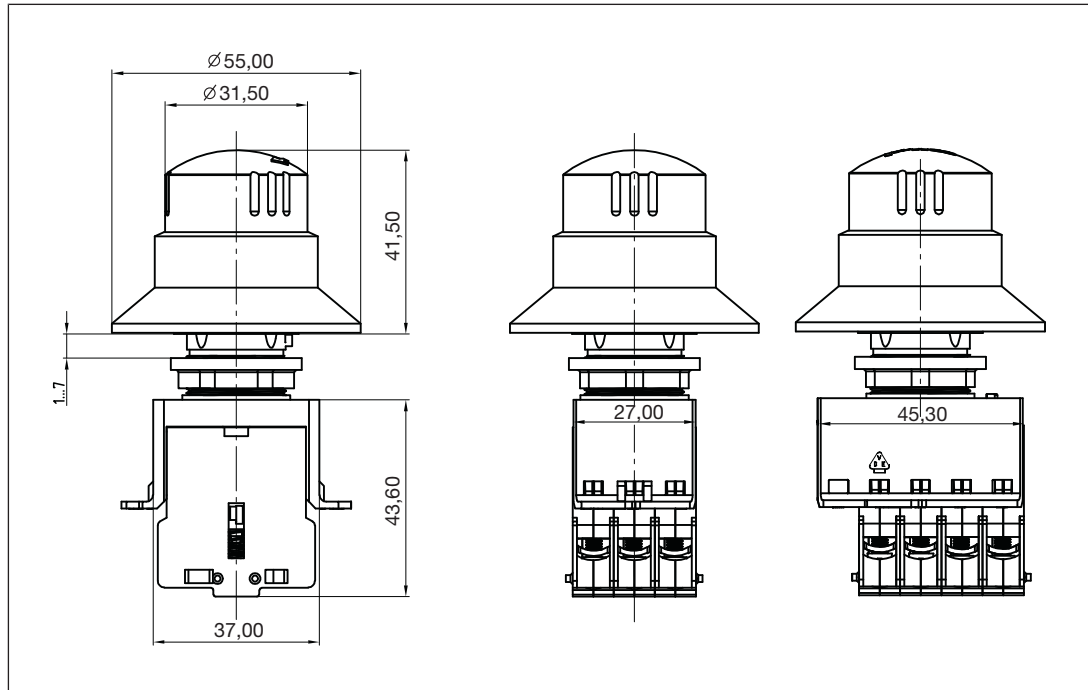
Actuator with key-release and protective collar (PIT es5.12)



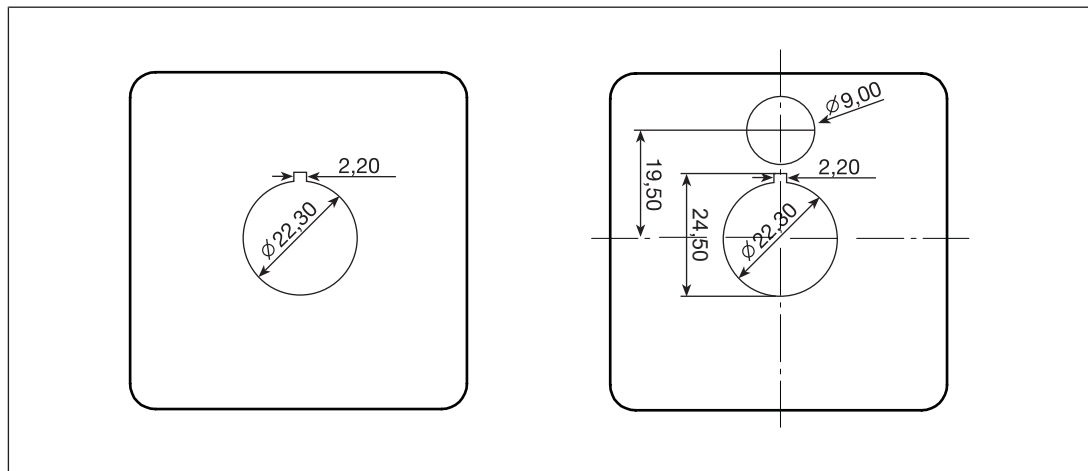
Surface mount version with standard actuator (PIT es2.11)



Panel mount version with standard actuator (PIT es2.11)



Opening(s) in the panel



Drawing on the right: only for illuminated actuators PIT es2.13

Technical details Actuators

Order no. 400110, 400111, 400112

General	400110	400111	400112
Certifications	CE, EAC, TÜV, UKCA, cULus Listed	CE, EAC, TÜV, UKCA, cULus Listed	CE, EAC, TÜV, UKCA, cULus Listed
Lighting	No	No	Yes
Lamp			
Kind	–	–	LED
Colour	–	–	Yellow
Electrical data	400110	400111	400112
Supply voltage			
Voltage	–	–	12 - 30 V
Kind	–	–	AC/DC
Max. inrush current at UB	–	–	44 mA
Environmental data	400110	400111	400112
Ambient temperature			
Temperature range	-30 - 70 °C	-30 - 70 °C	-30 - 70 °C
Storage temperature			
Temperature range	-50 - 85 °C	-50 - 85 °C	-50 - 85 °C
Protection type			
Housing	IP65	IP65	IP65
Mechanical data	400110	400111	400112
Mounting position	Any	Any	Any
Mechanical life	50,000 cycles	50,000 cycles	50,000 cycles
Connection type	–	–	Screw terminal
Torque setting, mounting nut	max. 2,5 Nm	max. 2,5 Nm	max. 2,5 Nm
Dimensions			
Height	41,5 mm	41,5 mm	41,5 mm
Diameter of pushbutton	55 mm	55 mm	55 mm
Weight	36 g	47 g	53 g

Order no. 400531, 400601

General	400531	400601
Certifications	CE, EAC, TÜV, UKCA, UL Recognized Component, cULus Listed	CE, EAC, TÜV, UKCA, UL Recognized Component, cULus Listed
Lighting	No	No
Environmental data	400531	400601
Ambient temperature		
Temperature range	-30 - 70 °C	-30 - 70 °C
Storage temperature		
Temperature range	-50 - 85 °C	-50 - 85 °C
Protection type		
Housing	IP65	IP65
Mechanical data	400531	400601
Mounting position	Any	Any
Mechanical life	50,000 cycles	50,000 cycles
Torque setting, mounting nut	max. 2,5 Nm	max. 2,5 Nm
Dimensions		
Height	41,5 mm	42,5 mm
Diameter of pushbutton	55 mm	67 mm
Weight	36 g	64 g

Where standards are undated, the 2017-08 latest editions shall apply.

Technical details Individual contact blocks

Order no. 400310, 400315, 400320

General	400310	400315	400320
Certifications	CE, CSA, EAC, TÜV, UKCA, UL Listed	CE, EAC, TÜV, UKCA, cULus Listed	CE, CSA, EAC, TÜV, UKCA, UL Listed
Self-monitored	No	Yes	No
Electrical data	400310	400315	400320
Short circuit protection (SCPD)	16 A Char. C	16 A Char. C	16 A Char. C
Conditional short circuit current	1.000 A	1.000 A	1.000 A
Volume resistance	20 mOhm	100 mOhm	20 mOhm
Min. contact current	1 mA	1 mA	1 mA
Emergency stop	400310	400315	400320
Utilisation category			
in accordance with the standard	EN 60947-5-1	EN 60947-5-1	EN 60947-5-1
AC15 at	240 V, 440 V	240 V	240 V, 440 V
Current	1,6 A, 3 A	3 A	1,6 A, 3 A
DC13 at	60 V, 125 V, 250 V, 440 V	24 V, 60 V, 125 V, 250 V	24 V, 60 V, 125 V, 250 V, 440 V
Current	0,12 A, 0,2 A, 0,4 A, 1 A	0,2 A, 0,4 A, 1 A, 2 A	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A
Conventional thermal current	16 A	16 A	16 A
Contact material	AgNi	AgNi	AgNi
Pushbutton	400310	400315	400320
Electrical life	1,000,000 cycles	100,000 cycles	1,000,000 cycles
Times	400310	400315	400320
Bounce time	10 ms	10 ms	10 ms
Environmental data	400310	400315	400320
Ambient temperature			
Temperature range	-30 - 85 °C	-30 - 70 °C	-30 - 85 °C
Storage temperature			
Temperature range	-50 - 85 °C	-50 - 85 °C	-50 - 85 °C
Airgap creepage			
Pollution degree	3	3	3
Rated insulation voltage	600 V	250 V	600 V
Rated impulse withstand voltage	4 kV	2,5 kV	4 kV
Protection type			
Component parts	IP20	IP20	IP20
Mechanical data	400310	400315	400320
Mechanical life	1,000,000 cycles	100,000 cycles	1,000,000 cycles
Connection type	Screw terminal	Screw terminal	Screw terminal

Mechanical data	400310	400315	400320
Stripping length with screw terminals	9 mm	9 mm	9 mm
Dimensions			
Height	–	43 mm	–
Width	–	36 mm	–
Depth	–	7 mm	–
Weight	11 g	24 g	12 g

Order no. 400325**General**

Certifications	CE, EAC, TÜV, UKCA, cULus Listed
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Environmental data

Ambient temperature	
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Temperature range	-30 - 70 °C
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Storage temperature	
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Temperature range	-50 - 85 °C
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Protection type	
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Component parts	IP20
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Mechanical data

Connection type	Screw terminal
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Stripping length with screw terminals	9 mm
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Where standards are undated, the 2017-08 latest editions shall apply.

Technical details Contact block sets

Order no. 400300, 400301, 400302

General	400300	400301	400302
Certifications	CE, EAC, TÜV, UKCA, cULus Listed	CE, EAC, TÜV, UKCA, cULus Listed	CE, EAC, TÜV, UKCA, cULus Listed
Self-monitored	No	Yes	No
Electrical data	400300	400301	400302
Short circuit protection (SCPD)	16 A Char. C	16 A Char. C	16 A Char. C
Conditional short circuit current	1.000 A	1.000 A	1.000 A
Volume resistance	20 mOhm	100 mOhm	20 mOhm
Min. contact current	1 mA	1 mA	1 mA
Emergency stop	400300	400301	400302
Utilisation category			
in accordance with the standard	EN 60947-5-1	EN 60947-5-1	EN 60947-5-1
AC15 at	240 V, 440 V	240 V	240 V, 440 V
Current	1,6 A, 3 A	3 A	1,6 A, 3 A
DC13 at	24 V, 60 V, 125 V, 250 V, 440 V	24 V, 60 V, 125 V, 250 V	24 V, 60 V, 125 V, 250 V, 440 V
Current	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A	0,2 A, 0,4 A, 1 A, 2 A	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A
Conventional thermal current	16 A	16 A	16 A
Contact material	AgNi	AgNi	AgNi
Pushbutton	400300	400301	400302
Electrical life	1,000,000 cycles	100,000 cycles	1,000,000 cycles
Times	400300	400301	400302
Bounce time	10 ms	10 ms	10 ms
Environmental data	400300	400301	400302
Ambient temperature			
Temperature range	-30 - 85 °C	-30 - 85 °C	-30 - 85 °C
Storage temperature			
Temperature range	-50 - 85 °C	-50 - 85 °C	-50 - 85 °C
Airgap creepage			
Pollution degree	3	3	3
Rated insulation voltage	600 V	600 V	600 V
Rated impulse withstand voltage	4 kV	4 kV	4 kV
Protection type			
Component parts	IP20	IP20	IP20
Mechanical data	400300	400301	400302
Mechanical life	1,000,000 cycles	100,000 cycles	1,000,000 cycles
Connection type	Screw terminal	Screw terminal	Screw terminal

Mechanical data	400300	400301	400302
Stripping length with screw terminals	9 mm	9 mm	9 mm
Dimensions			
Height	37 mm	37 mm	37 mm
Width	27 mm	27 mm	27 mm
Depth	43,6 mm	43,6 mm	43,6 mm
Weight	17 g	42 g	30 g

Order no. 400303, 400304, 400305

General	400303	400304	400305
Certifications	CE, EAC, TÜV, UKCA, cULus Listed	CE, EAC, TÜV, UKCA, cULus Listed	CE, EAC, TÜV, UKCA, cULus Listed
Self-monitored	No	Yes	Yes
Electrical data	400303	400304	400305
Short circuit protection (SCPD)	16 A Char. C	16 A Char. C	16 A Char. C
Conditional short circuit current	1.000 A	1.000 A	1.000 A
Volume resistance	20 mOhm	100 mOhm	100 mOhm
Min. contact current	1 mA	1 mA	1 mA
Emergency stop	400303	400304	400305
Utilisation category			
in accordance with the standard	EN 60947-5-1	EN 60947-5-1	EN 60947-5-1
AC15 at	240 V, 440 V	240 V	240 V
Current	1,6 A, 3 A	3 A	3 A
DC13 at	24 V, 60 V, 125 V, 250 V, 440 V	24 V, 60 V, 125 V, 250 V	24 V, 60 V, 125 V, 250 V
Current	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A	0,2 A, 0,4 A, 1 A, 2 A	0,2 A, 0,4 A, 1 A, 2 A
Conventional thermal current	16 A	16 A	16 A
Contact material	AgNi	AgNi	AgNi
Pushbutton	400303	400304	400305
Electrical life	1,000,000 cycles	100,000 cycles	100,000 cycles
Times	400303	400304	400305
Bounce time	10 ms	10 ms	10 ms
Environmental data	400303	400304	400305
Ambient temperature			
Temperature range	-30 - 85 °C	-30 - 85 °C	-30 - 85 °C
Storage temperature			
Temperature range	-50 - 85 °C	-50 - 85 °C	-50 - 85 °C
Airgap creepage			
Pollution degree	3	3	3
Rated insulation voltage	600 V	600 V	600 V
Rated impulse withstand voltage	4 kV	2,5 kV	2,5 kV
Protection type			
Component parts	IP20	IP20	IP20
Mechanical data	400303	400304	400305
Mechanical life	1,000,000 cycles	100,000 cycles	100,000 cycles
Connection type	Screw terminal	Screw terminal	Screw terminal
Stripping length with screw terminals	9 mm	9 mm	9 mm

Mechanical data	400303	400304	400305
Dimensions			
Height	37 mm	37 mm	37 mm
Width	27 mm	45,3 mm	27 mm
Depth	43,6 mm	43,6 mm	43,6 mm
Weight	41 g	56 g	29 g

Order no. 400306, 400307

General	400306	400307
Certifications	CE, EAC, TÜV, UKCA, cULus Listed	CE, EAC, TÜV, UKCA, cULus Listed
Self-monitored	No	Yes
Electrical data	400306	400307
Short circuit protection (SCPD)	16 A Char. C	16 A Char. C
Conditional short circuit current	1.000 A	1.000 A
Volume resistance	20 mOhm	100 mOhm
Min. contact current	1 mA	1 mA
Emergency stop	400306	400307
Utilisation category		
in accordance with the standard	EN 60947-5-1	EN 60947-5-1
AC15 at	240 V, 440 V	240 V
Current	1,6 A, 3 A	3 A
DC13 at	24 V, 60 V, 125 V, 250 V, 440 V	24 V, 60 V, 125 V, 250 V
Current	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A	0,2 A, 0,4 A, 1 A, 2 A
Conventional thermal current	16 A	16 A
Contact material	AgNi	AgNi
Pushbutton	400306	400307
Electrical life	1,000,000 cycles	100,000 cycles
Times	400306	400307
Bounce time	10 ms	10 ms
Environmental data	400306	400307
Ambient temperature		
Temperature range	-30 - 85 °C	-30 - 85 °C
Storage temperature		
Temperature range	-50 - 85 °C	-50 - 85 °C
Airgap creepage		
Pollution degree	3	3
Rated insulation voltage	600 V	600 V
Rated impulse withstand voltage	4 kV	2,5 kV
Protection type		
Component parts	IP20	IP20
Mechanical data	400306	400307
Mechanical life	1,000,000 cycles	100,000 cycles
Connection type	Screw terminal	Screw terminal
Stripping length with screw terminals	9 mm	9 mm
Dimensions		
Height	37 mm	37 mm
Width	27 mm	27 mm
Depth	43,6 mm	43,6 mm
Weight	29 g	40 g

Where standards are undated, the 2017-08 latest editions shall apply.

Technical details Sets

Order no. 400510, 400511

General	400510	400511
Certifications	CE, EAC, TÜV, UKCA	CE, EAC, TÜV, UKCA
Self-monitored	Yes	Yes
Lighting	No	No
Electrical data	400510	400511
Short circuit protection (SCPD)	16 A Char. C	16 A Char. C
Conditional short circuit current	1.000 A	1.000 A
Volume resistance	100 mOhm	100 mOhm
Min. contact current	1 mA	1 mA
Emergency stop	400510	400511
Utilisation category		
in accordance with the standard	EN 60947-5-1	EN 60947-5-1
AC15 at	240 V, 440 V	240 V, 440 V
Current	1,6 A, 3 A	1,6 A, 3 A
DC13 at	24 V, 60 V, 125 V, 250 V, 440 V	24 V, 60 V, 125 V, 250 V, 440 V
Current	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A
Conventional thermal current	16 A	16 A
Contact material	AgNi	AgNi
Times	400510	400511
Bounce time	10 ms	10 ms
Environmental data	400510	400511
Ambient temperature		
Temperature range	-30 - 70 °C	-30 - 70 °C
Storage temperature		
Temperature range	-50 - 85 °C	-50 - 85 °C
Airgap creepage		
Pollution degree	3	3
Rated insulation voltage	600 V	600 V
Rated impulse withstand voltage	4 kV	4 kV
Protection type		
Housing	IP65	IP65
Component parts	IP20	IP20
Mechanical data	400510	400511
Mechanical life	50,000 cycles	50,000 cycles
Connection type	Screw terminal	Screw terminal
Stripping length with screw terminals	9 mm	9 mm

Mechanical data	400510	400511
Dimensions		
Height	41,5 mm	41,5 mm
Width	27 mm	45,3 mm
Depth	43,6 mm	43,6 mm
Diameter of pushbutton	55 mm	55 mm
Weight	77 g	93 g

Order no. 400520, 400521, 400531

General	400520	400521
Certifications	CE, EAC, TÜV, UKCA	CE, EAC, TÜV, UKCA
Self-monitored	No	No
Lighting	No	No
Electrical data	400520	400521
Short circuit protection (SCPD)	16 A Char. C	16 A Char. C
Conditional short circuit current	1.000 A	1.000 A
Volume resistance	20 mOhm	20 mOhm
Min. contact current	1 mA	1 mA
Emergency stop	400520	400521
Utilisation category		
in accordance with the standard	EN 60947-5-1	EN 60947-5-1
AC15 at	240 V, 440 V	240 V, 440 V
Current	1,6 A, 3 A	1,6 A, 3 A
DC13 at	24 V, 60 V, 125 V, 250 V, 440 V	24 V, 60 V, 125 V, 250 V, 440 V
Current	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A	0,12 A, 0,2 A, 0,4 A, 1 A, 2 A
Conventional thermal current	16 A	16 A
Contact material	AgNi	AgNi
Times	400520	400521
Bounce time	10 ms	10 ms
Environmental data	400520	400521
Ambient temperature		
Temperature range	-30 - 70 °C	-30 - 70 °C
Storage temperature		
Temperature range	-50 - 85 °C	-50 - 85 °C
Airgap creepage		
Pollution degree	3	3
Rated insulation voltage	600 V	600 V
Rated impulse withstand voltage	4 kV	4 kV
Protection type		
Housing	IP65	IP65
Component parts	IP20	IP20
Mechanical data	400520	400521
Mechanical life	50,000 cycles	50,000 cycles
Connection type	Screw terminal	Screw terminal
Stripping length with screw terminals	9 mm	9 mm
Dimensions		
Height	72 mm	72 mm
Width	72 mm	72 mm
Depth	103 mm	103 mm
Diameter of pushbutton	55 mm	55 mm
Weight	162 g	172 g

Where standards are undated, the 2017-08 latest editions shall apply.

Please note that the ambient temperature is reduced when using illuminated E-STOP push-buttons.

Safety characteristic data



NOTICE

You must comply with the safety characteristic data in order to achieve the required safety level for your plant/machine.

Safety characteristic data	
B10d in accordance with EN ISO 13849-1:2015 and EN 62061	181.500
Lambda _d /Lambda in accordance with EN 62061	0,20

The safety characteristic data only apply when using the product with contact block and E-STOP pushbutton.

Order reference

Product

E-STOP sets

Product type	Features	Order no.
PIT es Set3.1	PIT es1u + PIT esb1.2	400510
PIT es Set3.2	PIT es1u + PIT esb1.3	400511
PIT es Set4.1	PIT es1u + PIT es box + PIT esb2.2	400520
PIT es Set4.2	PIT es1u + PIT es box + PIT esb2.3	400521

Individual contact blocks

Product type	Features	Order no.
PIT esc0	Module connection element	400325
PIT esc1	1 monitored N/C, screw terminal	400315
PIT esc2	1 N/C, screw terminal	400320
PIT esc3	1 N/O, screw terminal	400310

Contact block sets

Product type	Features	Order no.
PIT esb1.1	1 monitored N/C, screw terminal	400305
PIT esb1.2	1 N/C monitored, 1 N/C, screw terminal	400301
PIT esb1.3	1 N/C monitored, 1 N/C, 1 N/O, screw terminal	400304
PIT esb1.4	1 N/C monitored, 1 N/O, screw terminal	400307
PIT esb2.1	1 N/C, screw terminal	400300
PIT esb2.2	2 N/C, screw terminal	400302
PIT esb2.3	2 N/C, 1 N/O, screw terminal	400303
PIT esb2.4	1 N/C, 1 N/O, screw terminal	400306

Actuator

Product type	Features	Order no.
PIT es2.11	Standard actuator, black	400110
PIT es2.12	Actuator with key-release, black	400111
PIT es2.13	Illuminated actuator, black	400112
PIT es1u	Standard actuator, red	400531
PIT es5.12	Actuator with key-release and protective collar, red, no Pilz inscription on the actuator	400601

Accessories**Contact block brackets**

Product type	Features	Order no.
PIT MHR3	Bracket for containing 3 contact blocks	400330
PIT MHR5	Bracket for containing 5 contact blocks	400340

E-STOP box

Product type	Features	Order no.
PIT es box 72 x 72 x 61 mm	Surface mount housing IP67, protection class II, cable gland 2 x M16	400200

EC declaration of conformity

This product/these products meet the requirements of the directive 2006/42/EC on machinery of the European Parliament and of the Council. The complete EC Declaration of Conformity is available on the Internet at www.pilz.com/downloads.

Representative: Pilz GmbH & Co. KG, Felix-Wankel-Str. 2, 73760 Ostfildern, Germany

UKCA-Declaration of Conformity

This product(s) complies with following UK legislation: Supply of Machinery (Safety) Regulation 2008.

The complete UKCA Declaration of Conformity is available on the Internet at www.pilz.com/downloads.

Representative: Pilz Automation Technology, Pilz House, Little Colliers Field, Corby, Northamptonshire, NN18 8TJ United Kingdom, eMail: mail@pilz.co.uk

