



PIT es6/PIT esb6

PILZ
THE SPIRIT OF SAFETY

► 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 PIT es6/PIT esb6. 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 E-STOP pushbutton is intended for use in safety circuits in accordance with:

- ▶ EN 60204-1
- ▶ EN ISO 13849-1

**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 \[10\]](#)").

Safety regulations**Safety assessment**

Before using a unit it is necessary to perform a safety assessment in accordance with the Machinery Directive.

Functional safety is guaranteed for the product as a single component. However, this does not guarantee the functional safety of the overall plant/machine. In order to achieve the required safety level for the overall plant/machine, define the safety requirements for the plant/machine and then define how these must be implemented from a technical and organisational standpoint.

Use of qualified personnel

The products may only be assembled, installed, programmed, commissioned, operated, maintained and decommissioned by competent persons.

A competent person is someone who, because of their training, experience and current professional activity, has the specialist knowledge required to test, assess and operate the work equipment, devices, systems, plant and machinery in accordance with the general standards and guidelines for safety technology.

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 this description under "Safety"
- ▶ And 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).

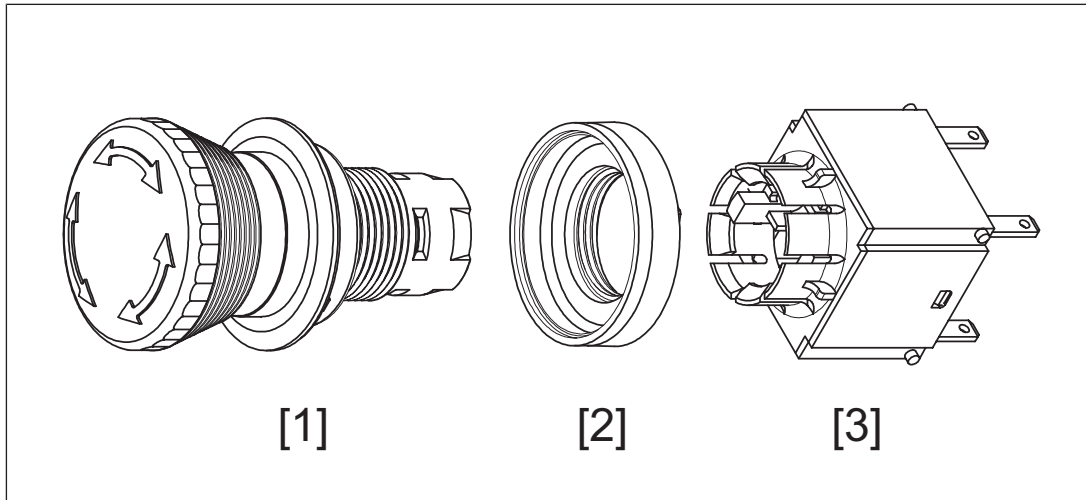
Unit features

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

Features:

- ▶ Turn in either direction to release the E-STOP pushbutton
- ▶ Contact blocks for panel mounting with screw connection or flat connector
- ▶ Safety contact block with flat connector

Surface mount housing



Legend:

- ▶ [1]: Actuator
- ▶ [2]: Plastic nut
- ▶ [3]: Contact block with flat connector

Installation



CAUTION!

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

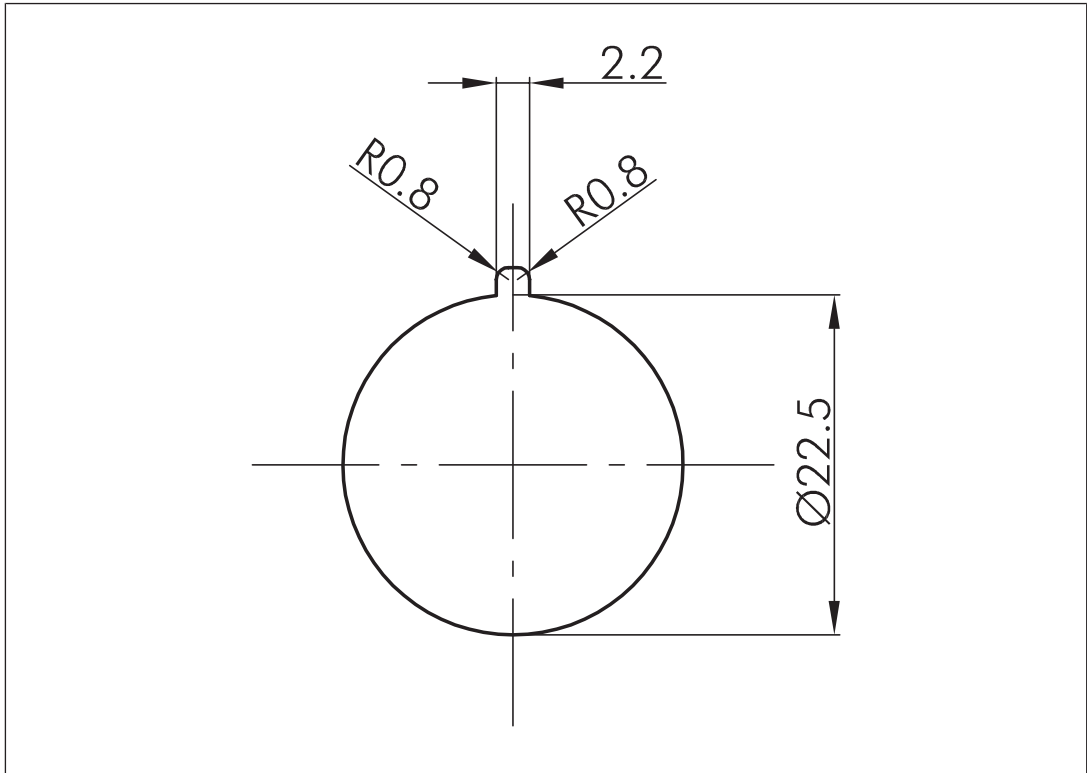
Panel mount version



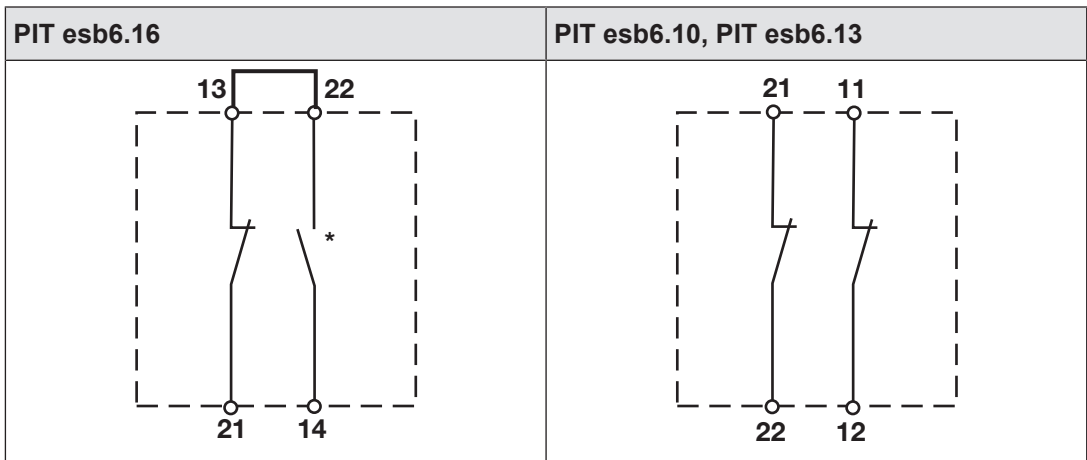
NOTICE

Use a mounting plate with a smooth surface to ensure a tight seal.

- ▶ Prepare another opening in the mounting plate (see diagram).
- ▶ Guide the thread of the E-STOP pushbutton into the mounting plate opening and secure it using the plastic nut (size 24 spanner). Note the max. torque setting of 1.5 Nm.



Wiring



*The contact is closed when the actuator is snapped in place.

Attach the contact block to the actuator neck.



NOTICE

Always twist to insert and remove the contact block. Otherwise you may damage the mounting ring.

Operation

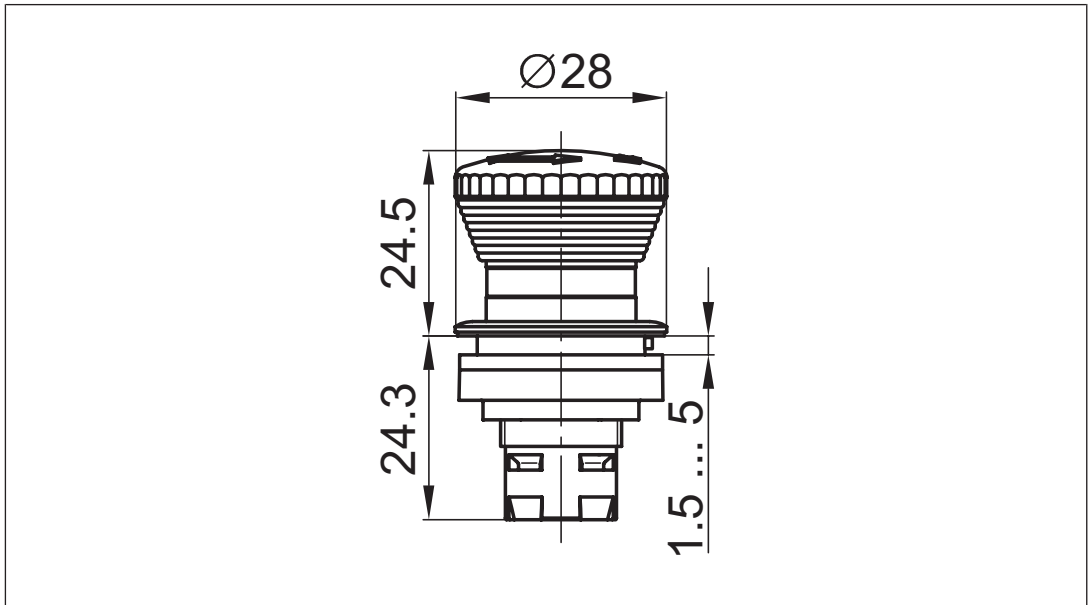


NOTICE

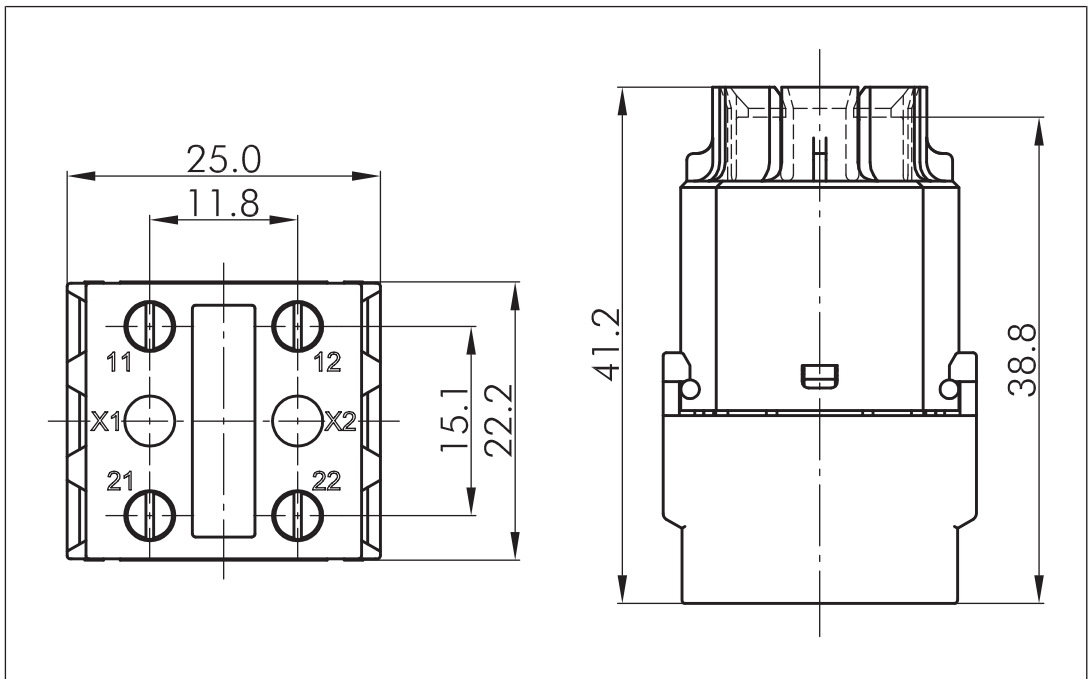
Check the function of the emergency stop device before commissioning for the first time and then at regular intervals (at least annually).

Dimensions

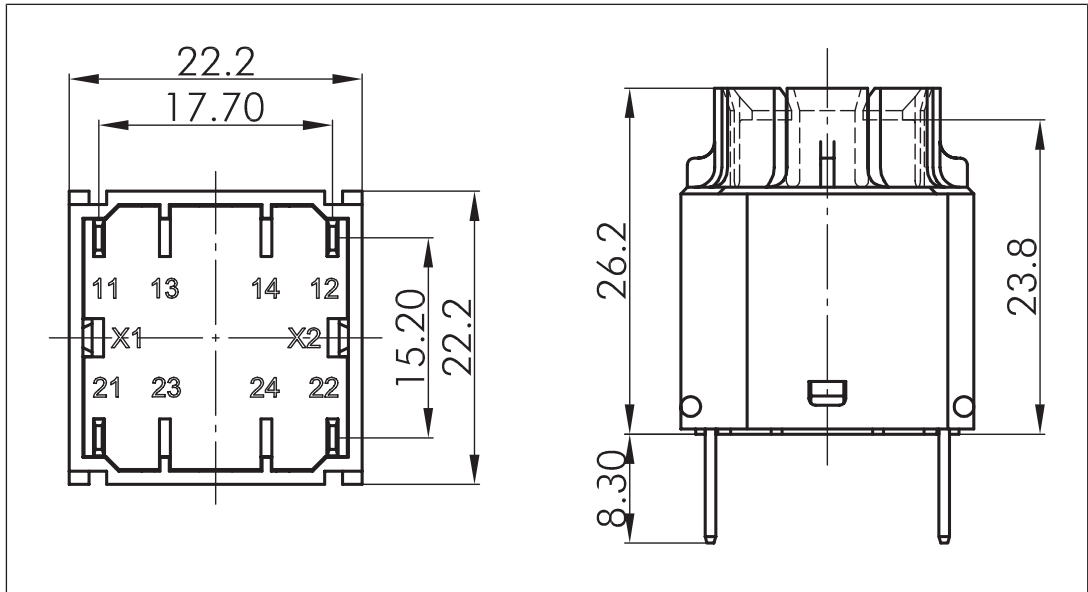
PIT es6.10



PIT esb6.10



PIT esb6.13, PIT esb6.16



Technical details

General	
Approvals	CE, TÜV, cCSAus
Self-monitored	No
Electrical data	
Volume resistance	20 mOhm
Min. contact current	1 mA
E-STOP	
Utilisation category	
In accordance with the standard	EN 60947-5-1
Contacts, AC15 at	250 V
Current	1,5 A
Contacts, DC13 at	24 V
Current	2 A
Conventional thermal current	6 A
Contact material	AgNi
Times	
Bounce time	10 ms
Environmental data	
Ambient temperature	
Temperature range	-30 - 70 °C
Storage temperature	
Temperature range	-50 - 85 °C
Rated insulation voltage	250 V
Protection type	
Housing	IP65

Mechanical data	
Mechanical life	15,000 cycles
Connection type	Screw terminal
Dimensions	
Height	80 mm
Width	28 mm
Depth	28 mm
Weight	33 g

Where standards are undated, the 2016-05 latest editions shall apply.

Safety characteristic data



NOTICE

You must comply with the safety-related 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	127.500
λ_d/λ in accordance with EN 62061	0,20

Order reference

Sets

Product type	Features	Order No.
PIT es Set6.1	E-STOP pushbutton and PIT esb6.10	400 620

E-STOP pushbutton

Product type	Features	Order no.
PIT es6.10	E-STOP pushbutton	400 610

Contact blocks

Product type	Features	Order no.
PIT esb6.10	2 N/C, screw terminal	400 360
PIT esb6.13	2 N/C, flat connector	400 363
PIT esb6.16	Safety contact block, 1 N/C, 1 N/O, flat connector	400 366

EC declaration of conformity

This product/these products meet the requirements of the directive 2006/42/EC for 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.

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