

ES11

Emergency stop pushbutton

PM-ES11

SICK
Sensor Intelligence.



Contents

1	Ordering information.....	3
2	About this document.....	4
	2.1 Scope.....	4
3	On safety.....	5
	3.1 Application.....	5
4	Product description.....	6
	4.1 Items supplied.....	6
	4.2 Function.....	6
5	Mounting.....	7
6	Connection.....	8
7	Tests before the initial commissioning.....	9
8	Periodic technical inspections.....	10
9	What to do in case of a malfunction.....	11
10	Uninstalling.....	12
11	Compliance with EU directives.....	13
12	Technical specifications.....	14
	12.1 Data sheet.....	14
	12.2 Dimensional drawings.....	14

1 Ordering information

Table 1: Part numbers and type codes

Controls	Connection type	Type	Part number
Emergency stop button reset button, illuminable,	Plug, M12, 8-pin	PM-ES11	6044629

Table 2: Spare parts

Retaining clips, 10 pieces	5326274
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2 About this document

These operating instructions are original operating instructions.

2.1 Scope

This operating instruction is valid for the emergency stop pushbutton ES11 with part number 6044629.

This document is included with the following SICK part numbers (this document in all available language versions):

8022327

3 On safety

Read these operating instructions carefully and keep them in a safe place.

The operating instructions are to be provided to the person who is installing the emergency stop pushbutton.



DANGER

Always note and follow the warnings below!

- Before starting the installation, electrically isolate system and device!
- Emergency stop pushbuttons provide a personnel protection function. Incorrect installation or manipulation can result in serious injuries!
- Emergency stop pushbuttons are not allowed to be bypassed, removed or rendered ineffective in any other manner!
- Incorrect installation or tampering can result in damage to the machine and work-piece!
- The emergency stop function is not allowed to be used as a replacement for protective measures or other safety functions, instead it should be designed as an additional protective measure.
- The emergency stop function is not allowed to degrade the effectiveness of protective devices or other devices with safety functions.
- Based on a risk analysis, the designer must ensure that the emergency stop achieves the required level of safety (SIL, SILCL or PL) in combination with control system.

3.1 Application

The national/international rules and regulations apply to the installation, commissioning, use and periodic technical inspections of the emergency stop pushbuttons, in particular:

- Machinery Directive 2006/42/EC
- safety regulations
- work safety regulations and safety rules

Manufacturers and operators of the machine on which the protective devices are used are responsible for obtaining and observing all applicable safety regulations and rules.

Correct use includes observance of the applicable requirements on installation and operation, in particular:

- EN 60947-5-1
- EN 60947-5-5
- EN ISO 13849-1
- EN ISO 13850
- EN 61508-1
- EN 60204-1

Correct use also includes the regular monitoring of the protective device by specialist personnel.

4 Product description

The emergency stop pushbutton has the following product characteristics:

- Emergency stop button, not illuminable
- Reset button, illuminable
- Plug, M12, 8-pin
- Compact housing

4.1 Items supplied

- Emergency stop pushbutton
- Retaining clip
- Blue “RESET” cover (Note: Only press on after mounting!)

Other mounting material (screws, dowels, sliding nut) not included.

4.2 Function

- actuate: pressing the emergency stop button
- unlock: turning the emergency stop button
- reset: pressing the reset button

5 Mounting



DANGER

Mount the emergency stop pushbutton such that it can be reached easily!

The emergency stop pushbutton is intended to be mounted so it is vertical (connecting cable down or up).

How to mount the emergency stop pushbutton (see figure 1):

- ▶ Mounting on profile rail: Insert sliding nut in profile (sliding nut not included).
- Or
- Wall mounting: Drill two mounting holes in the mounting plate.
- ▶ Fasten retaining clip.
- ▶ Fit housing to the side of the retaining spring, pull against spring pressure and press on. The emergency stop pushbutton engages.
- ▶ Press "RESET" cover onto reset button, with label correctly positioned so it is legible, until it engages.
- ▶ Connect connecting cable to the connection plug. Pay attention to the permissible electrical and mechanical data (see "Technical specifications", page 14):

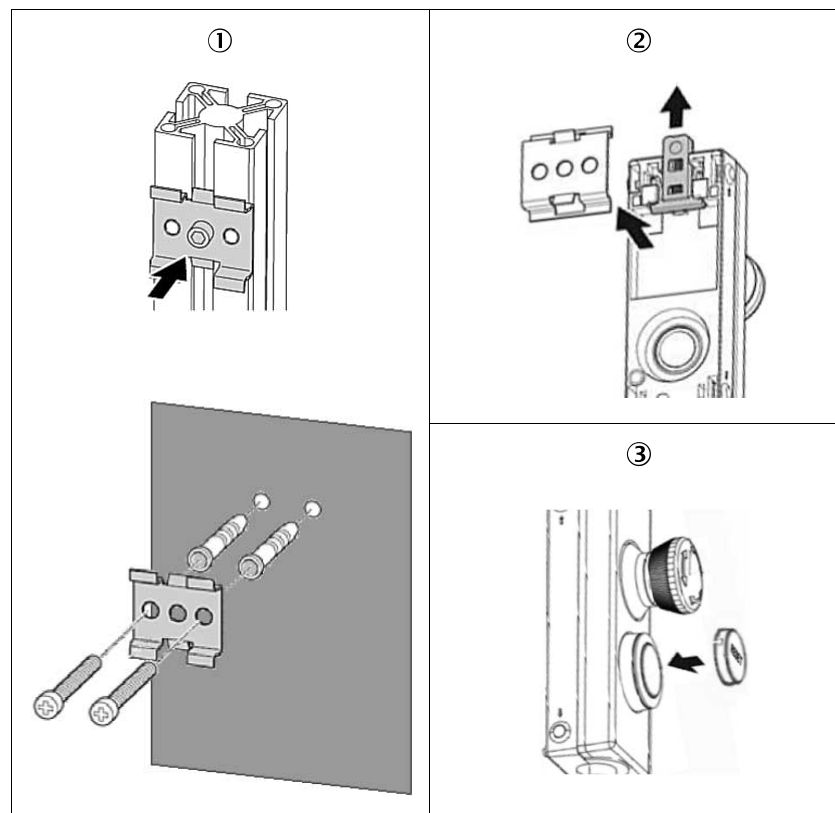
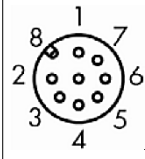


Figure 1: Mounting of the emergency stop pushbutton (screws and sliding nut not included)

6 Connection

Table 3: Pin assignment ES11 emergency stop pushbutton

	Pin	Assignment
	3/4	Normally closed contact 1
	7/8	Normally closed contact 2
	5	LED+ (reset)
	6	LED- (reset)
	1/2	Normally open contact (reset)

7 Tests before the initial commissioning

Mechanical functional check

- Are there any signs of damage to the exterior of the emergency stop pushbutton?
- Is the emergency stop pushbutton's housing securely engaged on the retaining clip?
- Is the connecting cable securely fastened?
- Does the emergency stop button engage on actuation and can it be released again by turning?

Electrical functional check:

- ▶ Start the machine.
- ▶ Actuate the emergency stop button.



DANGER

Thoroughly check machine stop!

- ▶ Check whether the machine stops on the actuation of the emergency stop button.

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- ▶ Unlock emergency stop button.
 - ▶ Actuate reset button.

Check whether the protective device has been reset.

8 Periodic technical inspections

Make regular checks to ensure correct, long-term function. The inspection interval is to be defined by the machine designer based on the risk assessment. However, it is recommended the responsible safety officer triggers the emergency stop pushbutton at least once a year for test purposes and to check for correct function:

- mechanical and electrical function check as per chapter ["Tests before the initial commissioning", page 9](#)
- no tampering or damage apparent
- no loose connections

9 What to do in case of a malfunction

**DANGER**

In case of mechanical overload or the action of external forces, the emergency stop pushbutton may be damaged and its function degraded.

1. Remove the cause.
 2. In this case undertake a function check as per chapter "[Tests before the initial commissioning](#)", page 9 .
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10 Uninstalling

**DANGER**

Electrically isolate the system and device prior to uninstalling!

1. Disconnect connecting cable from the plug connector.
2. Using a screwdriver pull up the slide (see figure 1, ②).
3. Release housing from retaining clip.

11 Compliance with EU directives

EU declaration of conformity (excerpt)

The undersigned, who represents the manufacturer below, hereby declares that the product complies with the regulations of the EU directive(s) below (including all relevant changes), and that it is based on the relevant standards and/or technical specifications.

- MACHINERY DIRECTIVE 2006/42/EC
- LV DIRECTIVE 2014/35/EU
- ROHS DIRECTIVE 2011/65/EU

2017-10-13

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(GBC Safety Systems)

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Vice President Operations
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authorized for technical documentation

Complete EU declaration of conformity for download

You can call up the EU declaration of conformity and the current operating instructions for the protective device by entering the part number in the search field at www.sick.com (part number: see the type label entry in the "Ident. no." field).

12 Technical specifications

12.1 Data sheet

Table 4: Technical specifications emergency stop pushbutton PM-ES11

Enclosure rating (EN 60529)	IP 65
Protection class (EN 61140)	III
Ambient operating temperature	-25 ... +70 °C
Storage temperature	-25 ... +80 °C
Switching elements (EN 6094751)	2 positive opening normally closed contacts, 1 normally open contact (reset)
B _{10d} value (EN ISO 138491)	250000 switching operations
MTTFd (Mean time to failure, EN ISO 138491)	6849 (at switching frequency C = 1/d)
Electrical/mechanical service life (at +20 °C)	
Emergency stop button	50000 switching operations (at rated load)
Reset button	1 × 10 ⁶ switching operations
Max. bounce time	10 ms
Min. positive opening travel	3 mm
Operating voltage	1 ... 30 V DC
Operating current	1 ... 100 mA
Maximum switching capacity	250 mW
Housing material	PBT (polybutylene terephthalate)
Contact material	AgNi, gold plated 5 µm
Reset button illumination connection	
Operating voltage	30 V AC/DC
Operating current	14 mA (at 24 V)

12.2 Dimensional drawings

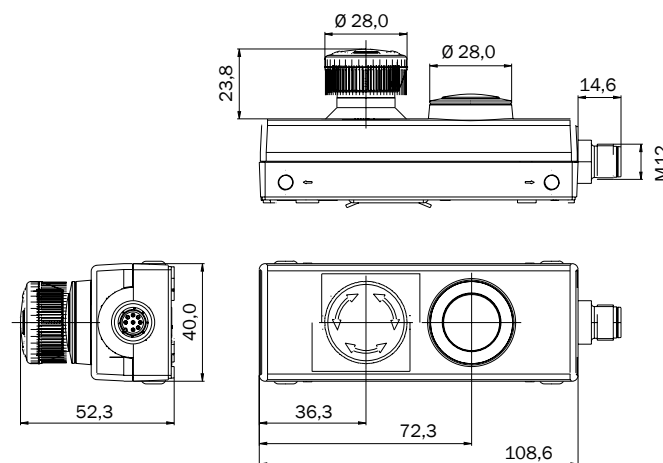


Figure 2: Dimensional drawings PM-ES11 (mm)

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