

**ESB2x series, E-Stop button acc. to EN ISO 13850 and EN 60947-5-5**

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**1 Safety and use**

This document is to be adhered to for installation, start-up/use and testing of the ESB2x. It must be provided to the affected personnel. As before, all relevant national and international standards and regulations must be observed, including

- Machinery directive 2006/42/EC
- Low voltage directive 2006/95/EC safety regulations
- Accident-prevention regulations and safety rules
- Ordinance on Industrial Safety and Health and Labor Protection Act
- Device Safety Act

The manufacturer and operator of the machine are responsible for the proper use, monitoring and testing of the ESB2x E-Stop button as well as compliance with all applicable safety regulations, including:

- EN ISO 13850: 2008
- EN 60947-5-1:2004
- EN 60947-5-5:1997 and Annex 2005

**2 Device description and function**

Using the 2NC/1NO contact block, the ESB2x E-Stop buttons enable electrical E-Stop command output up to and including safety category 4 and PL e. They are designed acc. to EN ISO 13850:2008 regarding color, shape and symbols. ESB2x are available with rotary or key release. Connection can be done either via cable or M12 plug.

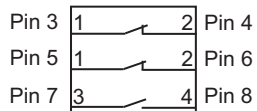
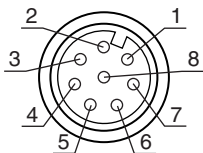
**3 Mounting and connection**



**WARNING**

**The system is to be brought to a standstill safely and safeguarded against re-starting before mounting and connection.**

- ☞ Screw the housing base tightly to the force-fit surface.
- ☞ Break the provided cable bushing free.
- ☞ Lead through the cable gland with the corresponding sealing class and screw it in firmly.
- ☞ Lead the cable in and screw it in firmly with the fixing nut.
- ☞ Connection = E-Stop command output to 2 x NC, signaling to NO.



- ☞ Place the upper housing on the lower part and screw it on firmly.
- ☞ Put the caps on.
- ☞ Observe the technical data.

**4 Tests**



**WARNING**

**Severe accidents may result if tests are not performed properly.**

- ☞ Make certain that there are no people in the danger zone.

**First checks**

The ESB2x is force-fit fastened acc. to specifications. Rotation is therefore not possible.

- ☞ Switch on the machine.
- ☞ Press the button.

- ☞ Check that the machine has stopped.

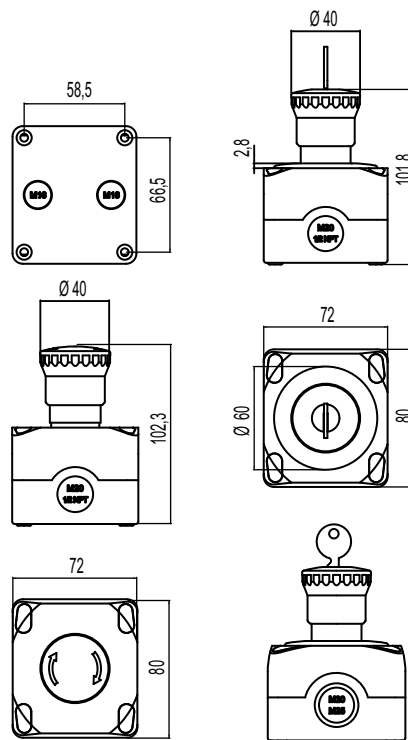
**Recurring checks**

- ☞ Check that the ESB2x and cable fastenings are free from play and manipulation and that they function properly.

**5 EC Declaration of Conformity**

You can find the EC Declaration of Conformity with the standards used at <http://www.leuze.com>.

**6 Dimensional drawings**



**7 Technical data**

Integration in accordance with EN 62061, IEC 61508	up to SIL 3
Integration in accordance with EN ISO 13849-1	up to PL e, up to cat. 4
Number of switching cycles to dangerous failure (B10 <sub>d</sub> )	600,000
Service life (T <sub>M</sub> )	20 years
Temperature range, operation	-25°C to +80°C
Dirt level in accordance with EN 60947-1	3
Safety class	II
Certifications	cULus
Mechanical life time in accordance with EN ISO 13849-1	300,000
Mechanical life time, contact (without load)	20,000,000
Actuation frequency in accordance with IEC 60947-5-1	max. 3600 per hour
Contact allocation	2NC/1NO
Switching principle	Creep contact
Contact opening	Force-fit
Contact material	Silver alloy
"Stop" inscription	60 mm screen
Actuation force, red button	25 N
Mounting	Structure
Head / housing color	red/yellow-black
Button/housing material	PA/PC
Type of fastening	passageway fastening
Protection class	IP67, IP69K

Article	ESB200-4TR-C	ESB200-4KR-C	ESB200-4TR-M12p	ESB200-4KR-M12p
Screw terminal tightening torque	0.6 - 0.8 Nm	0.6 - 0.8 Nm	N.a.	N.a.
Type of unlocking, turning	button	key	button	key
Cable entries	3 x M20, 2 x M16	3 x M20, 2 x M16	1x	1x
Connection system	Screw terminals	Screw terminals	M12 plug	M12 plug
Permissible wire gauge	0.5 mm <sup>2</sup> to 2 x 2.5 mm <sup>2</sup>	0.5 mm <sup>2</sup> to 2 x 2.5 mm <sup>2</sup>	N.a.	N.a.
Conventional thermal current	10 A	10 A	2 A	2 A
Rated insulation voltage Ui	600 V AC/DC	600 V AC/DC	30 V AC, 36 V DC	30 V AC, 36 V DC
Usage category in accordance with EN 60947-5-1, AC15, Ue (V) / Ie (A)	24/6, 48/6, 120/6, 250/6, 400/3	24/6, 48/6, 120/6, 250/6, 400/3	I 24/2	I 24/2
Usage category in accordance with EN 60947-5-1, DC13, Ue (V) / Ie (A)	24/2.5, 48/1.3, 125/0.6, 250/0.3	24/2.5, 48/1.3, 125/0.6, 250/0.3	I 24/2	I 24/2
Short-circuit protection according to IEC 60269-1	500 V, 10 A, type gG	500 V, 10 A, type gG	500 V, 2 A, type gG	500 V, 2 A, type gG
Weight	240 g	240 g	248 g	248 g
Order no.	63000000	63000002	63000004	63000006