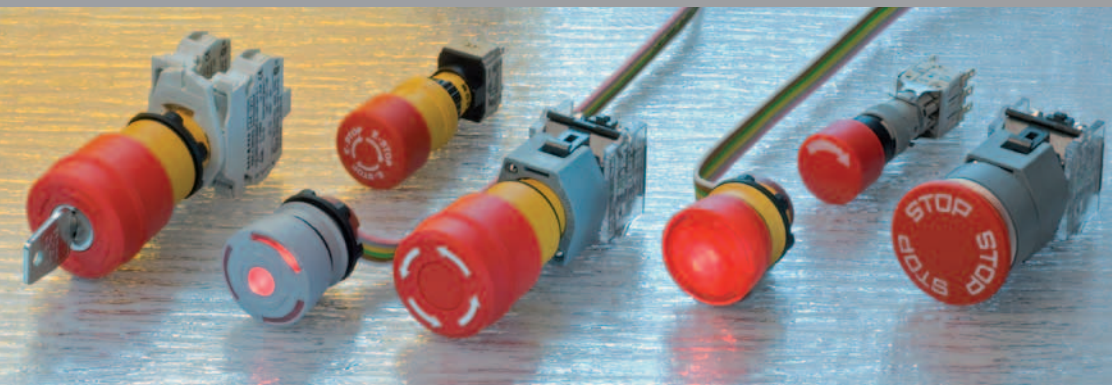


EAO – Your Expert Partner for
Human Machine Interfaces



Emergency-Stop & Stop Switches

Emergency-stop and Stop switches by comparison

EAO, the experts for Human Machine Interfaces, offers a complete range of E-stops (Emergency-stops) and stop switches, as part of their comprehensive choice of actuators and indicators.

Put simply, the difference between an “E-stop” and a “stop” is that E-stops are foolproof and conform to the relevant norms and standards.

1. Emergency-stop switches, foolproof

E-stop equipment incorporates positive opening action and is tested according to the pre-determined standards EN 60947-5-1 and EN 60947-5-5. They are also suitable for applications complying with DIN EN ISO 13850 and EN 60204. This is why they must be equipped with a red lens with a clearly marked unlocking symbol and must have a yellow background.

E-stop switches are always foolproof. This means that no contact may open before the mechanical interlocking has taken place. The norms and specifications read as follows: “It shall not be possible for the emergency stop device to latch-in without generating the emergency stop signal (EN 60947-5-5 chapter 6.2.1 / 1)”.

2. Stop switches, non-foolproof

Stop switches do not have to comply with the above mentioned norms and specifications. This is why they are of less demanding design. They do not have to be foolproof and the contact may open before the mechanical interlocking has taken place. In addition, neither the lens colour has to be red nor the background has to be yellow. Positive opening contacts may be used with stop switches, even though this is not a binding requirement.

3. Stop switches, foolproof (customer specific)

As an exception to the rule, stop switches can be ordered that correspond technically and norm-wise with an E-stop switch but use a different colour code – the red lens and the yellow background are not allowed to be used. In addition to being foolproof, special stop switches can be equipped with positive opening contacts also. This type of stop switch is especially suited for wireless handheld control panels.

These three types of switch enable original equipment manufacturers and designers to exactly select the type of product that best suits their requirements. For example, the emergency-call switch on page 18, even though not being of the forced opening type, fulfils all the required functions.

Of special interest are the illuminated Series 84 E-stops on page 24. They are of mono-block design with an especially low behind-panel depth which renders them especially suitable for compact, space-restricted applications.

If you have any questions regarding E-stop or stop switches, or for information regarding HMI applications, please do not hesitate to contact your local EAO subsidiary, or visit our website at www.eao.com.

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Emergency-Stop Switches, foolproof



5 to 11

Stop Switches, non-foolproof



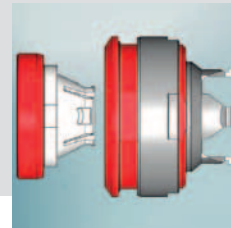
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Stop Switches, foolproof



21 to 24

Technical Data and Technical Drawings



25 to 40

IP & IK Ratings



41

Colour Coding



Switches, Pushbuttons,
Actuators



Switching Elements,
Adapters



Accessories

Easy configuration

To simplify the ordering of these switches and indicators, only one type of switch is shown per page. To configure a complete unit, just select the red, green and/or yellow coded components.

Product Overview

EAO Emergency-stop switches and stop switches may be equipped with up to four contacts. The opening contacts are forced opening. EAO offers different series with 16 mm, 22.5 mm or 30.5 mm mounting diameter. Accessories such as surface-mounted enclosures, labels and protective shrouds complement the product range. The low 13.5 mm mounting depth of the Series 84 Emergency stop makes it especially useful for small control panels.

Emergency-Stop Switches, foolproof

Foolproof to EN IEC 60947-5-5, EN ISO 13850 and EN 60947-5-1

Features	Series 04	Series 44	Series 61	Series 84
Mounting	22.5 mm	22.5 mm	16 mm	22.5 mm
Minimal mounting depth	53 mm, 2 contacts	53/64 mm, 3 contacts	44/46 mm, 2 contacts	13.5/18 mm, 2 contacts
Degree of protection	IP65	IP65	IP65	IP65
Screw terminal	x	x	x	–
Plug-in terminal	2 × 6.3 × 0.8 mm	–	2.8 × 0.5 mm	2.8 × 0.5 mm
Soldering terminal	–	–	x	x
Ribbon cable	–	–	–	x
Illuminated	–	–	–	x
Max. current I _n	10 A	10 A	5 A	5 A
Max. voltage	500 VAC/600 VDC	600 VAC/250 VDC	250 VAC	250 VAC/DC
Min. current/voltage	10 mA, 24 VDC	20 mA, 6 V	100 mA, 20 VAC/DC	1 mA, 1 VAC/DC
Silver contacts	x	x	x	–
Gold-plated contacts	x	x	–	x
Number of contacts	max. 4	max. 3	max. 2	max. 2
Twist release	x	x	x	x
Key release	x	x	x	–
Head cap colour	red	red	red	red
Head cap diameter	37 mm	37 mm	27 mm	32 mm
Head cap height	47 mm	47 mm	33.5 mm	26 mm

Stop Switches, non-foolproof

Features	Series 04	Series 44	Swisstac
Mounting	22.5/30.5 mm	22.5 mm	16 mm
Minimal mounting depth	53 mm, 2 contacts	53/64 mm, 3 contacts	52/70 mm, 3 contacts
Degree of protection	IP65	IP65	IP40/IP65
Screw terminal	x	x	–
Plug-in terminal	2 × 6.3 × 0.8 mm	–	2.8 × 0.5 mm
Soldering terminal	–	–	x
PCB terminal	–	–	x
Ribbon cable	–	–	–
Illuminated	–	–	–
Max. current I _n	10 A	10 A	5 A
Max. voltage	500 VAC/600 VDC	600 VAC/250 VDC	250 VAC/DC
Min. current/voltage	10 mA, 24 VDC	20 mA, 6 V	20 mA, 20 VAC/DC
Silver contacts	x	x	–
Gold-plated contacts	x	x	x
Number of contacts	max. 4	max. 3	max. 3
Twist release	x	x	x
Key release	x	–	x
Head cap colour	red	red	red
Head cap diameter	40 mm	50 mm	24 mm
Head cap height	25/14 mm	38 mm	25 mm

Stop Switches, foolproof


Series 61	Series 84
16 mm	22.5 mm
44/46 mm, 2 contacts	13.5/18 mm, 2 contacts
IP65	IP65
x	–
2.8 × 0.5 mm	2.8 × 0.5 mm
x	x
–	–
–	x
–	x
5 A	5 A
250 VAC	250 VAC/DC
2 mA, 10 VAC/DC	1 mA, 1 VAC/DC
x	–
x	x
max. 2	max. 2
x	x
x	–
grey/black	grey/black
27 mm	32 mm
33.5 mm	26 mm




EAO Emergency-Stop Switches



Foolproof




16 mm Ø, Series 61, IP65, non-illuminated




Emergency-stop actuator				Emergency-stop actuator				Switching element		
										
Twist release; head cap red 27 mm Ø; foolproof				Key release; head cap red 27 mm Ø; foolproof				Slow make; silver contacts; forced opening		
Part No.	Marking	Indication ring	Fixing nut	Part No.	Labelling	Indication ring	Fixing nut	Part No.	Contacts	Terminals
61-3440.4/1	Arrows	Black	Plastic	61-5441.4/K	Stop	Black	Plastic	61-8755.11	2NC	Screw
61-3440.4/2	Stop+Arrows	Black	Plastic					61-8755.17	2NC	Soldering-/Plug-in
61-344.4/D	Arrows	Black	Metal					61-8775.11	1NO/1NC	Screw
								61-8775.17	1NO/1NC	Soldering-/Plug-in
								61-8745.11	1NC	Screw
								61-8745.17	1NC	Soldering-/Plug-in
Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1				Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1						
For complete unit also order switching element				For complete unit also order switching element				Conforming to IEC 60947-5-1		

Label		Enclosure			Mounting tool		
							
Yellow 43 mm Ø; labelling in German, English and French		Bottom grey; cover yellow, lead-sealable; IP66; cable gland with traction relief; IP68			1) For tightening or loosening of the fixing nut 2) For dismantling of the switching element		
Part No.	Labelling	Part No.	Reference	Dimensions l × w × h	Image	Part No.	Reference
61-9970.0	None	61-9480.5	Housing	65 × 65 × 57 mm	1	01-907	Mounting tool
61-9970.1	NOT AUS	61-9481.6	Cable gland M16		2	61-9711.0	Dismantling tool
61-9970.2	EMERGENCY STOP	704.945.6	Cable gland M20				
61-9970.3	ARRÊT D'URGENCE						
61-9970.6	NOT HALT						

- Technical data and technical drawings available on pages 26 to 28
- For 3D downloads, please refer to the EAO website



22.5 mm Ø, Series 84, IP65, non-illuminated




Emergency-stop switch			Emergency-stop switch			Label		
								
Twist release; head cap red 32 mm Ø; gold-silver contacts; forced opening; foolproof; soldering-/plug-in terminals			Twist release; head cap red 32 mm Ø; gold-silver contacts; forced opening; foolproof; ribbon cable			Yellow; labelling in German, English and French		
Part No.	Contacts	Indication ring	Part No.	Contacts	Indication ring	Part No.	Labelling	Outer diameter
84-5020.0020	1NC	Black	84-5020.0040	1NC	Black	704.963.0	NOT AUS	90 mm
84-5030.0020	1NC/1NO	Black	84-5030.0040	1NC/1NO	Black	704.963.1	EMERGENCY STOP	90 mm
84-5040.0020	2NC	Black	84-5040.0040	2NC	Black	704.963.3	NOT HALT	90 mm
84-5120.0020	1NC	Green	84-5120.0040	1NC	Green	704.963.5	NOT AUS	60 mm
84-5130.0020	1NC/1NO	Green	84-5130.0040	1NC/1NO	Green	704.963.6	EMERGENCY STOP	60 mm
84-5140.0020	2NC	Green	84-5140.0040	2NC	Green	704.963.7	ARRET D'URGENCE	60 mm
						704.963.8	NOT HALT	60 mm
Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1			Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1					

Protective shroud		Enclosure			Mounting tool	
						
Yellow; labelling in German and English; outer diameter 50 mm, height 11 mm		Bottom grey, cover yellow, lead-sealable; IP66; cable gland for sealing and strain relief, IP68			For tightening (or loosening) of the emergency-stop fixing nut	
Part No.	Labelling	Part No.	Reference	Dimensions l × w × h	Part No.	Reference
84-902	None	84-910	Housing	65 × 65 × 57 mm	84-996	Mounting tool
84-902A	NOT AUS	61-9481.6	Cable gland M16			
84-902B	EMERGENCY STOP	704.945.6	Cable gland M20			
84-902D	NOT HALT					

- Technical data and technical drawings available on pages 31 to 33
- For 3D downloads, please refer to the EAO website


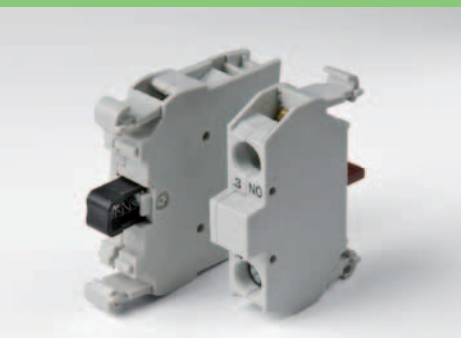

22.5 mm Ø, Series 84, IP65, illuminated




Emergency-stop switch			Emergency-stop switch			Label		
								
Twist release; head cap red 32 mm Ø; gold-silver contacts; forced opening; foolproof; soldering- /plug-in terminals			Twist release; head cap red 32 mm Ø; gold-silver contacts; forced opening; foolproof; ribbon cable			Yellow; labelling in German, English and French		
Part No.	Contacts	Indication ring	Part No.	Contacts	Indication ring	Part No.	Labelling	Outer diameter
84-5021.2B20	1NC	Black	84-5021.2B40	1NC	Black	704.963.0	NOT AUS	90 mm
84-5041.2B20	1NC/1NO	Black	84-5041.2B40	1NC/1NO	Black	704.963.1	EMERGENCY STOP	90 mm
84-5031.2B20	2NC	Black	84-5031.2B40	2NC	Black	704.963.3	NOT HALT	90 mm
84-5121.2B20	1NC	Green	84-5121.2B40	1NC	Green	704.963.5	NOT AUS	60 mm
84-5131.2B20	1NC/1NO	Green	84-5131.2B40	1NC/1NO	Green	704.963.6	EMERGENCY STOP	60 mm
84-5141.2B20	2NC	Green	84-5141.2B40	2NC	Green	704.963.7	ARRET D'URGENCE	60 mm
						704.963.8	NOT HALT	60 mm
Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1			Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1					

Protective shroud		Enclosure			Mounting tool	
						
Yellow; labelling in German and English; outer diameter 50 mm, height 11 mm		Bottom grey, cover yellow lead-sealable; IP66; cable gland with traction relief, IP68			For tightening (or loosening) of the emergency-stop fixing nut	
Part No.	Labelling	Part No.	Reference	Dimensions l × w × h	Part No.	Reference
84-902	None	84-910	Housing	65 × 65 × 57 mm	84-996	Mounting tool
84-902A	NOT AUS	61-9481.6	Cable gland M16			
84-902B	EMERGENCY STOP	704.945.6	Cable gland M20			
84-902D	NOT HALT					

- Technical data and technical drawings available on pages 31 to 33
- For 3D downloads, please refer to the EAO website



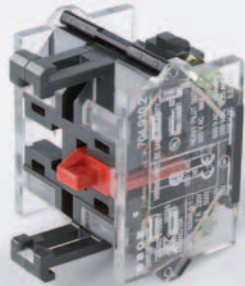
22.5 mm Ø, Series 44, IP65, non-illuminated

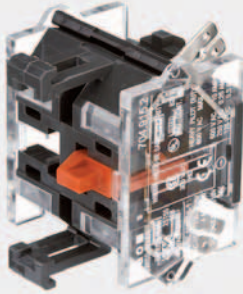

Emergency-stop switch		Switching element				Front adapter	
							
Twist- or Key release; mushroom head red 37 mm Ø; foolproof		Slow make; forced opening; front mounting; screw terminals				For switching element	
Part No.	Reference	Part No.	Contacts	Contact material	Front mounting	Part No.	Labelling
44-712	Twist release	44-131	1NC/NO	Hard Silver	Stackable	44-900	without
44-713	Key release	44-151	1NC	Hard Silver	Stackable	44-901	1 3 2
		44-161	1NO	Hard Silver	Stackable	44-902	1/2 5/6 4/3
		44-132	1NC/NO	Gold-Silver	Stackable	44-903	1/2/3 7/8/9 6/5/4
		44-152	1NC	Gold-Silver	Stackable		
		44-162	1NO	Gold-Silver	Stackable		
		44-111	1NC	Hard Silver	Non-stackable		
		44-121	1NC	Hard Silver	Non-stackable		
Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1		Conforming to IEC 60947-5-1				Please refer to main catalogue	

Label			Label			Enclosure		
								
Yellow; adhesive; labelling in German, English and French			Yellow; adhesive; labelling in German, English and French			Yellow; with adapter for base-mounting		
Part No.	Labelling	Outer diameter	Part No.	Labelling	Outer diameter	Part No.	Reference	Dimensions l × w × h
44-950	None	60 mm	44-949	None	90 mm	44-001.4	Housing	84 × 72 × 64 mm
44-950.1	NOT AUS	60 mm	44-949.1	NOT AUS	90 mm	44-956	Cable gland M20	
44-950.2	EMERGENCY STOP	60 mm	44-949.2	EMERGENCY STOP	90 mm			
44-950.3	ARRET D'URGENCE	60 mm	44-949.3	ARRET D'URGENCE	90 mm			
44-950.4	NOT HALT	60 mm	44-949.4	NOT HALT	90 mm			
44-951	None	45 mm						
44-951.1	NOT AUS	45 mm						
44-951.2	EMERGENCY STOP	45 mm						
44-951.3	ARRET D'URGENCE	45 mm						
44-951.4	NOT HALT	45 mm						

- Technical data and technical drawings available on pages 38 to 40
- For 3D downloads, please refer to the EAO website



22.5 mm Ø, Series 04, IP65, non-illuminated



Emergency-stop actuator			Emergency-stop actuator			Switching element		
								
Twist release; head cap red 37 mm Ø; foolproof			Key release; head cap red 37 mm Ø; foolproof			Slow make; forced opening; screw terminals		
Part No. Marking			Part No. Marking			Part No. Contacts Contact material		
704.064.2 Arrows			704.066.2 Arrows			704.910.1 1NO Hard Silver		
						704.910.2 1NC Hard Silver		
						704.910.3 2NO Hard Silver		
						704.910.4 2NC Hard Silver		
						704.910.5 1NC/1NO Hard Silver		
						704.911.1 1NO Gold-Silver		
						704.911.2 1NC Gold-Silver		
Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1			Foolproof according to EN IEC 60947-5-5, EN ISO 13850 and EN 60204-1			704.911.3 2NO Gold-Silver		
For complete unit also order switching element			For complete unit also order switching element			704.911.4 2NC Gold-Silver		
						704.911.5 1NC/1NO Gold-Silver		

Switching element			Switching element		
					
Slow make; forced opening; plug-in terminal			Slow make; forced opening; double plug-in terminal		
Part No.	Contacts	Contact material	Part No.	Contacts	Contact material
704.915.1	1NO	Hard Silver	704.915.1/D	1NO	Hard Silver
704.915.2	1NC	Hard Silver	704.915.2/D	1NC	Hard Silver
704.915.3	2NO	Hard Silver	704.915.3/D	2NO	Hard Silver
704.915.4	2NC	Hard Silver	704.915.4/D	2NC	Hard Silver
704.915.5	1NC/1NO	Hard Silver	704.915.5/D	1NC/1NO	Hard Silver
Conforming to IEC 60947-5-1			Conforming to IEC 60947-5-1		

- Technical data and technical drawings available on pages 34 to 37
- For 3D downloads, please refer to the EAO website

22.5 mm Ø, Series 04, IP65, non-illuminated

Label			Enclosure		
					
Yellow; labelling in German, English and French			Bottom grey; cover yellow lead-sealable; IP66; cable gland with traction relief; IP68		
Part No.	Labelling	Outer diameter	Part No.	Reference	Dimensions l × w × h
704.963.0	NOT AUS	90 mm	704.945.7	Housing	65 × 65 × 81 mm
704.963.1	EMERGENCY STOP	90 mm	704.945.8	Housing	94 × 65 × 81 mm
704.963.3	NOT HALT	90 mm	704.945.0	Housing	94 × 94 × 81 mm
704.963.5	NOT AUS	60 mm	61-9481.6	Cable gland	M16
704.963.6	EMERGENCY STOP	60 mm	704.945.6	Cable gland	M20
704.963.7	ARRET D'URGENCE	60 mm			
704.963.8	NOT HALT	60 mm			

Protective shroud		Protective shroud	
			
For E-stop and stop switch applications; IP65; with anti-rotation pin; material: plastic		For E-stop and stop switch applications only; material plastic	
Part No.	Dimensions	Part No.	Dimensions
704.927.9	82 mm	704.927.8	50 mm
Available: spring 2010		Available: spring 2010	
Conforms to SEMI S2-93 12.4 in combination with E-stop switches		The protective shroud 704.927.8 can obstruct sudden operation	



- Technical data and technical drawings available on pages 34 to 37
- For 3D downloads, please refer to the EAO website



EAO Stop Switches



Non-Foolproof



16 mm Ø, Series Swisstac, IP65, non-illuminated



Stop switch				Stop switch			
							
Twist release; head cap red 24 mm Ø; gold contacts; forced opening; non-foolproof; incl. switching element				Key release; head cap red 24 mm Ø; gold contacts; forced opening; non-foolproof; incl. switching element			
Part No.	Mounting depth	Contacts	Terminals	Part No.	Mounting depth	Contacts	Terminals
951+2000-WP	52 mm	1NC	PCB	961+2401-WP	52 mm	1NC	PCB
952+2000-WP	52 mm	2NC	PCB	962+2401-WP	52 mm	2NC	PCB
953+2000-WP	52 mm	3NC	PCB	963+2401-WP	52 mm	3NC	PCB
951+2000-WO	55 mm	1NC	Soldering- / plug-in	961+2401-WO	55 mm	1NC	Soldering- / plug-in
952+2000-WO	55 mm	2NC	Soldering- / plug-in	962+2401-WO	55 mm	2NC	Soldering- / plug-in
953+2000-WO	55 mm	3NC	Soldering- / plug-in	963+2401-WO	55 mm	3NC	Soldering- / plug-in
851+2000-WP	67 mm	1NC	PCB	861+2401-WP	67 mm	1NC	PCB
852+2000-WP	67 mm	2NC	PCB	862+2401-WP	67 mm	2NC	PCB
853+2000-WP	67 mm	3NC	PCB	863+2401-WP	67 mm	3NC	PCB
851+2000-WO	70 mm	1NC	Soldering- / plug-in	861+2401-WO	70 mm	1NC	Soldering- / plug-in
852+2000-WO	70 mm	2NC	Soldering- / plug-in	862+2401-WO	70 mm	2NC	Soldering- / plug-in
853+2000-WO	70 mm	3NC	Soldering- / plug-in	863+2401-WO	70 mm	3NC	Soldering- / plug-in

Mounting tool		Jaw spanner	
			
For tightening (or loosening) of the fixing nut		For tightening (or loosening) of the fixing nut and dismantling of the switching element block	
Part No.	Reference	Part No.	Reference
300-0003-00	Mounting tool	300-0004-00	Jaw spanner

- Technical data and technical drawings available on pages 29 to 30
- For 3D downloads, please refer to the EAO website



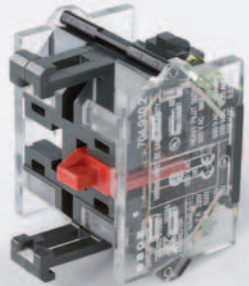
16 mm Ø, Series Swisstac, IP40, non-illuminated

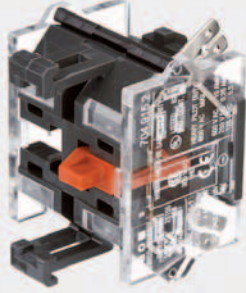


Stop switch				Stop switch			
							
Twist release; head cap red 24 mm Ø; gold contacts; forced opening; non-foolproof; incl. switching element				Key release; head cap red 24 mm Ø; gold contacts; forced opening; non-foolproof; incl. switching element			
Part No.	Mounting depth	Contacts	Terminals	Part No.	Mounting depth	Contacts	Terminals
951+2000-0P	52 mm	1NC	PCB	961+2401-0P	52 mm	1NC	PCB
952+2000-0P	52 mm	2NC	PCB	962+2401-0P	52 mm	2NC	PCB
953+2000-0P	52 mm	3NC	PCB	963+2401-0P	52 mm	3NC	PCB
951+2000-00	55 mm	1NC	Soldering- / plug-in	961+2401-00	55 mm	1NC	Soldering- / plug-in
952+2000-00	55 mm	2NC	Soldering- / plug-in	962+2401-00	55 mm	2NC	Soldering- / plug-in
953+2000-00	55 mm	3NC	Soldering- / plug-in	963+2401-00	55 mm	3NC	Soldering- / plug-in
851+2000-0P	67 mm	1NC	PCB	861+2401-0P	67 mm	1NC	PCB
852+2000-0P	67 mm	2NC	PCB	862+2401-0P	67 mm	2NC	PCB
853+2000-0P	67 mm	3NC	PCB	863+2401-0P	67 mm	3NC	PCB
851+2000-00	70 mm	1NC	Soldering- / plug-in	861+2401-00	70 mm	1NC	Soldering- / plug-in
852+2000-00	70 mm	2NC	Soldering- / plug-in	862+2401-00	70 mm	2NC	Soldering- / plug-in
853+2000-00	70 mm	3NC	Soldering- / plug-in	863+2401-00	70 mm	3NC	Soldering- / plug-in

Mounting tool		Jaw spanner	
			
For tightening (or loosening) of the fixing nut		For tightening (or loosening) of the fixing nut and dismantling of the switching element block	
Part No.	Reference	Part No.	Reference
300-0003-00	Mounting tool	300-0004-00	Jaw spanner

- Technical data and technical drawings available on pages 29 to 30
- For 3D downloads, please refer to the EAO website

22.5 mm Ø, Series 04, IP65, non-illuminated


Stop switch actuator			Stop switch actuator		Switching element		
							
Twist release; mushroom head red 40 mm Ø; non-foolproof; raised mounting			Key release; mushroom head red 40 mm Ø; non-foolproof; raised mounting		Slow make; forced opening; screw terminals		
Conforming to IEC 60947-5-1					Conforming to IEC 60947-5-1		
Part No.	Marking	Front ring	Part No.	Front ring	Part No.	Contacts	Contact material
704.075.2	Arrows	Aluminium nature	704.078.0	Aluminium nature	704.910.1	1NO	Hard Silver
704.075.3	Stop	Aluminium nature	704.076.0	Plastic grey	704.910.2	1NC	Hard Silver
704.074.2	Arrows	Plastic grey			704.910.3	2NO	Hard Silver
704.074.3	Stop	Plastic grey			704.910.4	2NC	Hard Silver
					704.910.5	1NC/1NO	Hard Silver
					704.911.1	1NO	Gold-Silver
					704.911.2	1NC	Gold-Silver
					704.911.3	2NO	Gold-Silver
					704.911.4	2NC	Gold-Silver
					704.911.5	1NC/1NO	Gold-Silver
For complete unit also order switching element			For complete unit also order switching element				

Switching element			Switching element			Enclosure			
									
Slow make; forced opening; plug-in terminal			Slow make; forced opening; double plug-in terminal			Grey; cover lead-sealable, IP66; cable gland with traction relief, IP68			
Part No.	Contacts	Contact material	Part No.	Contacts	Contact material	Part No.	Reference	Holes	Dimensions l × w × h
704.915.1	1NO	Hard Silver	704.915.1/D	1NO	Hard Silver	704.945.1	Housing	1 x	94 × 94 × 81 mm
704.915.2	1NC	Hard Silver	704.915.2/D	1NC	Hard Silver	704.945.2	Housing	2 x	130 × 94 × 81 mm
704.915.3	2NO	Hard Silver	704.915.3/D	2NO	Hard Silver	704.945.3	Housing	3 x	180 × 94 × 81 mm
704.915.4	2NC	Hard Silver	704.915.4/D	2NC	Hard Silver	704.945.4	Housing	4 x	180 × 182 × 110 mm
704.915.5	1NC/1NO	Hard Silver	704.915.5/D	1NC/1NO	Hard Silver	704.945.5	Housing	6 x	180 × 182 × 110 mm
						61-9481.4	Cable gland M16		
						704.945.6	Cable gland M20		
Conforming to IEC 60947-5-1			Conforming to IEC 60947-5-1						

- Technical data and technical drawings available on pages 34 to 37
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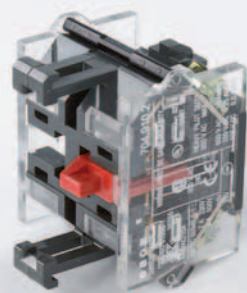
22.5 mm Ø, Series 04, IP67, non-illuminated

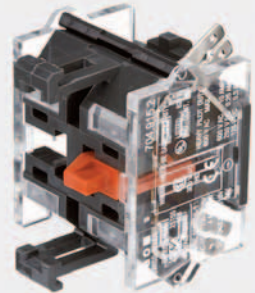

Emergency call actuator	Switching element	Switching element																																																							
																																																									
Twist release; mushroom head red 60 mm Ø; metal powder coated; slipping clutch included; non-foolproof; raised mounting	Snap action; screw terminals	Snap action; plug-in terminals																																																							
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For complete unit also order switching element																																																									

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- Technical data and technical drawings available on pages 34 to 37
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30.5 mm Ø, Series 04, IP65, non-illuminated

Stop switch actuator			Switching element		
					
Twist release; mushroom head red 40 mm Ø; non-foolproof; flush mounting			Slow make; forced opening; screw terminals		
			Conforming to IEC 60947-5-1		
Part No.	Labelling	Front ring	Part No.	Contacts	Contact material
704.075.218	Arrows	Aluminium nature	704.910.1	1NO	Hard Silver
704.075.210	Arrows	Aluminium black	704.910.2	1NC	Hard Silver
704.075.318	Stop	Aluminium nature	704.910.3	2NO	Hard Silver
704.075.310	Stop	Aluminium black	704.910.4	2NC	Hard Silver
			704.910.5	1NC/1NO	Hard Silver
			704.911.1	1NO	Gold-Silver
			704.911.2	1NC	Gold-Silver
			704.911.3	2NO	Gold-Silver
			704.911.4	2NC	Gold-Silver
For complete unit also order switching element			704.911.5	1NC/1NO	Gold-Silver

Switching element			Switching element		
					
Slow make; forced opening; plug-in terminal			Slow make; forced opening; double plug-in terminal		
Part No.	Contacts	Contact material	Part No.	Contacts	Contact material
704.915.1	1NO	Hard Silver	704.915.1/D	1NO	Hard Silver
704.915.2	1NC	Hard Silver	704.915.2/D	1NC	Hard Silver
704.915.3	2NO	Hard Silver	704.915.3/D	2NO	Hard Silver
704.915.4	2NC	Hard Silver	704.915.4/D	2NC	Hard Silver
704.915.5	1NC/1NO	Hard Silver	704.915.5/D	1NC/1NO	Hard Silver
Conforming to IEC 60947-5-1			Conforming to IEC 60947-5-1		




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EAO Stop Switches

Foolproof




22.5 mm Ø, Series 84, IP65, non-illuminated

Stop switch			Stop switch			Enclosure			
									
Twist release; head cap grey 32 mm Ø; gold-silver contacts; forced opening; foolproof; soldering- /plug-in terminals			Twist release; head cap grey 32 mm Ø; gold-silver contacts; forced opening; foolproof; ribbon cable			Grey; cover lead-sealable; IP66; cable gland with traction relief; IP68			
Part No.	Contacts	Indication ring	Part No.	Contacts	Indication ring	Part No.	Reference	Holes	Dimensions l × w × h
84-6020.0020	1NC	Black	84-6020.0040	1NC	Black	704.945.1	Housing	1 x	94 × 94 × 81 mm
84-6030.0020	1NC/NO	Black	84-6030.0040	1NC/NO	Black	704.945.2	Housing	2 x	130 × 94 × 81 mm
84-6040.0020	2NC	Black	84-6040.0040	2NC	Black	704.945.3	Housing	3 x	180 × 94 × 81 mm
						704.945.4	Housing	4 x	180 × 182 × 110 mm
						704.945.5	Housing	6 x	180 × 182 × 110 mm
						61-9481.4	Cable gland M16		
						704.945.6	Cable gland M20		
Conforming to IEC 60947-5-1			Conforming to IEC 60947-5-1						

Protective shroud		Fixing nut	
			
Yellow painted aluminium; outside diameter 48 mm; height 35 mm		Plastic, black	
Part No.	Reference	Part No.	Reference
84-909	Protective shroud	84-905	28 mm Ø, for limited space application
		84-908	30 mm Ø, standard delivery
The protective shroud 84-909 is not suitable for proper use of the emergency-stop switch. It can obstruct spontaneous operation.			

- Technical data and technical drawings available on pages 31 to 33
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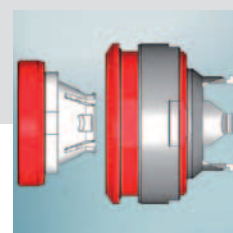
22.5 mm Ø, Series 84, IP65, illuminated

Stop switch			Stop switch			Enclosure			
									
Twist release; head cap grey 32 mm Ø; gold-silver contacts; forced opening; foolproof; soldering- / plug-in terminals			Twist release; head cap grey 32 mm Ø; gold-silver contacts; forced opening; foolproof; ribbon cable			Grey; cover lead-sealable; IP66; cable gland with traction relief; IP68			
Part No.	Contacts	Indication ring	Part No.	Contacts	Indication ring	Part No.	Reference	Holes	Dimensions l × w × h
84-6021.2B20	1NC	Black	84-6021.2B40	1NC	Black	704.945.1	Housing	1 x	94 × 94 × 81 mm
84-6031.2B20	1NC/NO	Black	84-6031.2B40	1NC/NO	Black	704.945.2	Housing	2 x	130 × 94 × 81 mm
84-6041.2B20	2NC	Black	84-6041.2B40	2NC	Black	704.945.3	Housing	3 x	180 × 94 × 81 mm
						704.945.4	Housing	4 x	180 × 182 × 110 mm
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Technical Data and Technical Drawings



Series 61
Series Swisstac
Series 84
Series 04
Series 44

Emergency-stop switch and Stop switch

Switching system

Double-break slow-make system, contact opening width 2×1.5 mm, with 2×2 contact points per switching element.

NC-contact elements fulfill requirements of switches with forced opening as per EN IEC 60947-5-1.

The slow-make elements are optionally obtainable with the following switching functions: 1 NO or 2 NO, 1 NC or 2 NC, 1 NO + 1 NC.

Material

Head cap

Polyamide (PA 6), as per UL 94 HB

Actuator housing

Polyamide (PA 6.6), as per UL 94 HB

Material of contact

Silver contact: Ag-Ni alloy, silver plated

Gold contact: Cu-Ni alloy, gold plated

Switching element

Solder housing: Polyamide (PA), as per UL 94 V0

Screw housing: Polyamide (PA) and (PA 6.6), as per UL 94 V0 and

Polycarbonate (PC), as per UL 94 V2

Mechanical characteristics

Terminals

	rigid	flexible	superflexible
– Solder			
1 wire	0.5 ... 1.5 mm ²	0.5 ... 0.75 mm ²	0.5 mm ²
2 wires	0.75 mm ²	0.5 mm ²	
– Screw			
1 wire	0.5 ... 1.5 mm ²	0.5 ... 0.75 mm ²	0.5 mm ²
2 wires	0.75 mm ²	0.5 mm ²	0.5 mm ²

Actuating force

max. 65 N

Actuating travel

10 mm

Rebound time

2 ms, contact making and contact breaking

The rebound times apply to normal manual activation

Mechanical lifetime

Switching element: $\leq 50\,000$ cycles of operation

Emergency-stop switch: 6050 cycles of operation

Electrical characteristics

Standards

The devices comply with: EN IEC 61058-1 and EN IEC 60947-5-1, EN IEC 60947-5-5 (Emergency-stop)

Electrical lifetime

Switching element: $\leq 50\,000$ cycles of operation

at 250 VAC, 5 A, $\cos\phi$ 0.85, as per EN IEC 60947-5-1

Emergency-stop switch: 6050 cycles of operation

as per EN IEC 60947-5-5

Electric strength

4000 VAC, 50 Hz, 1 min., as per DIN IEC 60512-2

between all terminals and earth

Overvoltage category

III, as per EN IEC 60947-5-1

Protection class

Class II, as per EN IEC 61058-1

Degree of pollution

3, as per EN IEC 60947-1

Electrical characteristics for silver contacts

Rated operational voltage U_e

250 VAC/DC as per EN IEC 60947-1

Rated insulation voltage U_i

320 VAC, as per EN IEC 60947-5-1

Rated impulse withstand voltage U_{imp}

4 kV, as per EN IEC 60947-5-1

Contact resistance

New state ≤ 50 m Ω , as per DIN IEC 60512-2-4, measured at 100 mA, 10 V

Conventional free air thermal current I_{th}

5 A, as per EN IEC 60947-5-1

The maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

Switch rating

AC with silver contact and screw terminal, service category AC-15, as per EN IEC 60947-5-1

Voltage	125 VAC	250 VAC
---------	---------	---------

Current	3 A	2 A
---------	-----	-----

DC with silver contact and screw terminal, service category DC-13, as per EN IEC 60947-5-1

Voltage	250 VDC
---------	---------

Current	0.2 A
---------	-------

Recommended minimal operational data

20 VAC/DC, 100 mA

Electrical characteristics for gold contacts

Rated operational voltage U_e

50 AC/DC, as per EN IEC 60947-1

Rated insulation voltage U_i

320 VAC, as per EN IEC 60947-5-1

Rated impulse withstand voltage U_{imp}

EN IEC 60947-5-1

Contact resistance

New state $\leq 50 \text{ m}\Omega$, as per DIN IEC 60512-2-4, measured at 20 mV, 10 mA

Conventional free air thermal current I_{th}

3 A, as per EN IEC 60947-5-1

The maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

Switch rating

AC with gold contact, service category AC-15, as per EN IEC 60947-5-1

Voltage 50 VAC

Current 0.5 A

DC with gold contact, service category DC-13, as per EN IEC 60947-5-1

Voltage 50 VAC

Current 0.1 A

Recommended minimal operational data

10 mVAC/DC, 2 mA

Environmental conditions

Storage temperature

$-40^\circ\text{C} \dots +85^\circ\text{C}$

Operating temperature

$-25^\circ\text{C} \dots +55^\circ\text{C}$

Protection degree

as per EN IEC 60529

Frontside IP65 | rear side IP40

Shock resistance

(semi-sinusoidal)

max. 100 m/s^2 , pulse width 11 ms, 3-axis, as per EN IEC 60068-2-27

Vibration resistance

(sinusoidal)

max. 100 m/s^2 at 10 Hz ... 500 Hz, as per EN IEC 60068-2-6

Climate resistance

Damp heat, cyclic

96 hours, $+25^\circ\text{C} / 97\%$, $+55^\circ\text{C} / 93\%$ relative humidity, as per EN IEC 60068-2-30

Damp heat, state

56 days, $+40^\circ\text{C} / 93\%$ relative humidity, as per EN IEC 60068-2-78

Rapid change of temperature

100 cycles, $-40^\circ\text{C} \dots +80^\circ\text{C}$, as per EN IEC 60068-2-14

Approvals

Approbations

CB (IEC 60947)

CB (IEC 61058)

CSA

ENEC (EN 61058)

Germanischer Lloyd

GOST

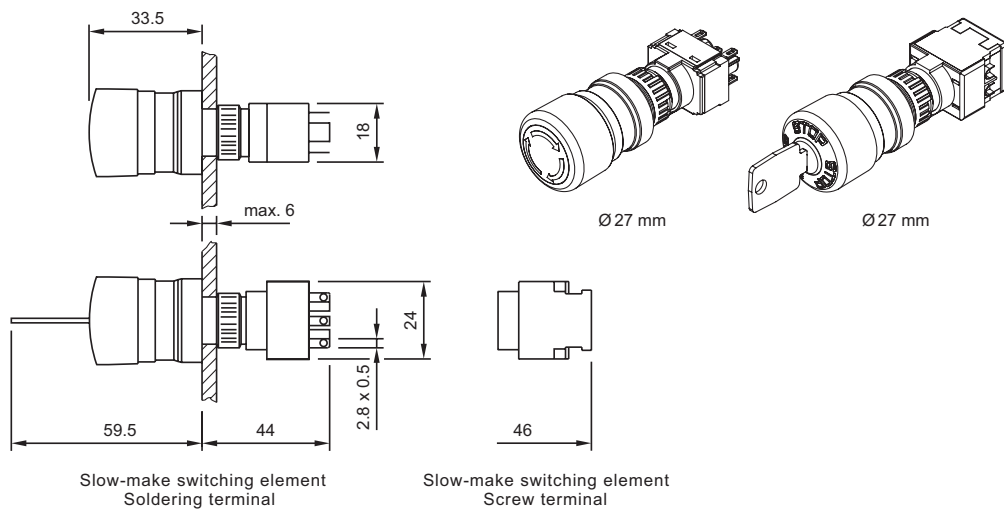
UL

VDE

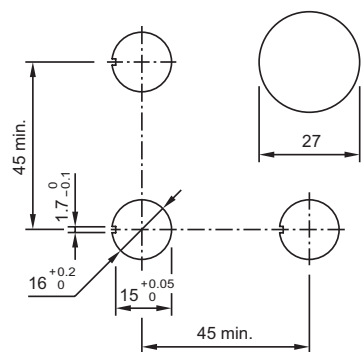
Declaration of conformity

CE

61 Emergency-stop switch and Stop switch



61 Cut-outs



Stop switch

Switching system

Is equipped with rigid contact link. The slow-make element opens positively and simply consists of a double-break NC, contact opening width 2 × 1.5 mm. The multi-layer contacts are designed according to EN IEC 60947-5-1.

Material

Head cap

Polyamide (PA)

Actuator housing

Polycarbonate (PC), as per UL 94 V0

Switching element

Rynite (PET), as per UL 94 V0

Material of contact

Ag-Ni, 2 µm gold plated

Mechanical characteristics

Terminals

Soldering terminal (also pluggable 2.8 × 0.5 mm) or PCB terminal,

Brass gold plated

Wire cross-section 1.0 mm² max.

Mechanical lifetime

8000 cycles of operation

Electrical characteristics

Rated operational voltage U_e

250 VAC, as per EN IEC 60947-1

Rated insulation voltage U_i

250 V, as per EN IEC 60947-5-1

Contact resistance

New state ≤ 50 m Ω , as per DIN IEC 60512-2-5

Electrical life

8000 cycles of operation at 250 VAC, 1 A

Conventional free air thermal current I_{th}

5 A, as per EN IEC 60947-5-1

The maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

Switch rating

AC (inductive) with silver contact (gold plated), service category AC-15, as per EN IEC 60947-5-1

Voltage 250 VAC

Current 1 A

Electric strength

Switching element 2000 VAC, 50 Hz, 1 min. (functional isolation)

Short-circuit protection

Series-connected blow-out fuse 5 A gL

Environmental conditions

Storage temperature

-40 °C ... +85 °C, as per EN IEC 60068

Operating temperature

-25 °C ... +55 °C, as per EN IEC 60068-2

Protection degree

Frontside IP65 and IP40, as per EN IEC 60529

Approvals

Approbations

CSA

UL

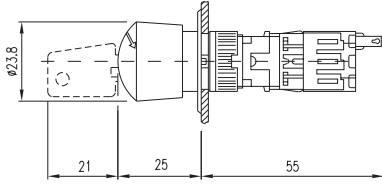
VDE

Declaration of conformity

CE

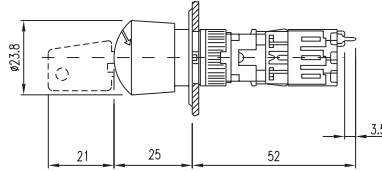
Swisstac Stop switch

55 mm; soldering-/plug-in terminal; IP40 and IP65; non-foolproof



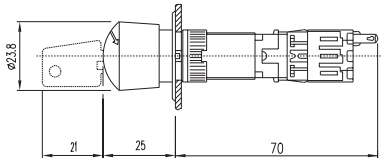
Swisstac Stop switch

52 mm; PCB terminal; IP40 and IP65; non-foolproof



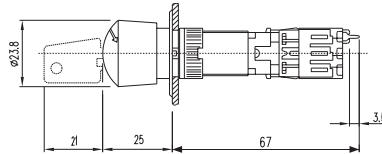
Swisstac Stop switch

70 mm; soldering-/plug-in terminal; IP40 and IP65; non-foolproof



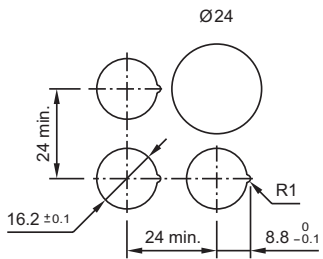
Swisstac Stop switch

67 mm; PCB terminal; IP40 and IP65; non-foolproof



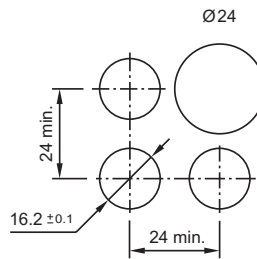
Swisstac Cut-outs

Stop switch; IP40; non-foolproof



Swisstac Cut-outs

Stop switch; IP65; non-foolproof



Emergency-stop switch and Stop switch

Switching system

The double-break switching system can be supplied for the following switching functions: 1 NC, 2NC, 1 NC + 1 NO.
The NC contacts have forced opening according to EN IEC 60947-5-1.

Material

Connection cable

Polyvinylchloride (PVC) flame retardant, operating temp. +65 °C

Mushroom-head cap

Polybutylenterephthalate (PBT), as per UL 94 V0 (red items)

Actuator housing

Polyamide (PA 66), as per UL 94 V0, flat ribbon cable-cover
Polyamide (PA 6.6), as per UL 94 V0

Material of contact

Silver alloy gold plated

Mechanical characteristics

Front panel thickness

Standard 1 ... 4 mm
With emergency-stop protective shroud part-no. 84-902, 1 ... 3 mm

Mounting hole

22.5 mm \varnothing as per EN IEC 60947-5-1 with anti-twist device

Terminals

Plug-in terminals 2.8 x 0.5 mm (solderable), CuSn6 tin-plated,
flat ribbon cable 2-, 4-, or 6-conductors 0.35 mm² (AWG 22)

Tightening torque

Fixing nut 80 Ncm

Actuating force

22 N \pm 4 N

Actuating travel

Approx. 4 mm to release the internal operation part

Mechanical lifetime

\geq 50 000 cycles of operations

Electrical characteristics

Standards

The devices comply with: EN IEC 60947-5-1, EN IEC 60947-5-5
(Emergency-stop), EN ISO 13850, EN 60947-5-1

Illumination

LED red with pole reversal, constant current source
Operation Voltage 5 VDC ... 30 VDC
Current consumption 9.7 mA ... 12.4 mA

Rated operational voltage U_o

250 VAC, as per EN IEC 60947-1

Rated insulation voltage U_i

250 V, as per EN IEC 60947-1

Rated impulse withstand voltage U_{imp}

2.5 kV, as per EN IEC 60947-1

Contact resistance

New state \leq 50 m Ω , as per DIN IEC 60512-2-3

Isolation resistance

$>$ 10¹¹ Ω between the open contacts at 500 VDC, as per
DIN IEC 60512-2-10

Electrical life

\geq 50 000 cycles of operations (inductive $\cos\phi$ 0.4),
as per EN IEC 60947-5-1

Voltage	120 VAC	240 VAC	125 VDC	250 VDC
Current	3 A	1.5 A	0.55 A	0.27 A

Reduced load \geq 50 000 cycles of operations (resistive)

Voltage	1 VAC/DC	42 VAC/DC
Current	100 mA	200 mA

Conventional free air thermal current I_{th}

5 A, as per EN IEC 60947-5-1

The maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

Switch rating

AC with silver contact (gold plated), service category AC-15,
as per EN IEC 60947-5-1

Voltage	120 VAC	240 VAC
Current	3 A	1.5 A

DC for silver contact (gold plated), service category DC-13,
as per EN IEC 60947-5-1 (inductive)

Voltage	12 VDC	24 VDC	48 VDC	60 VDC	125 VDC	250 VDC
Current _{plug}	5 A	4 A	2.1 A	1.7 A	0.55 A	0.27 A
Current _{cable}	3 A	3 A	2.1 A	1.7 A	0.55 A	0.27 A

Recommended minimal operational data

Silver contacts (gold plated)

Voltage	1 VAC/DC
Current	1 mA

Electric strength

500 VAC, 50 Hz, 1 min. as per DIN IEC 60512-2

Rated conditional short-circuit current

1000 A, type of short-circuit unit 6 A gG, as per EN IEC 60947-5-1

Protection class

Class II, as per EN IEC 60947-5

Overvoltage category

II, as per EN IEC 60947-1

Degree of pollution

3, as per EN IEC 60947-1

Environmental conditions

Operating temperature

-25 °C ... +65 °C

Storage temperature

-25 °C ... +80 °C

Front protection

IP65, as per EN IEC 60529

Shock resistance

(semi-sinusoidal)
max. 150 m/s², pulse width 11 ms, 3-axis, as per EN IEC 60068-2-27

Vibration resistance

(sinusoidal)
max. 50 m/s² at 10 Hz ... 500 Hz, 10 cycles, 3-axis,
as per EN IEC 60068-2-6

Approvals

Approbations

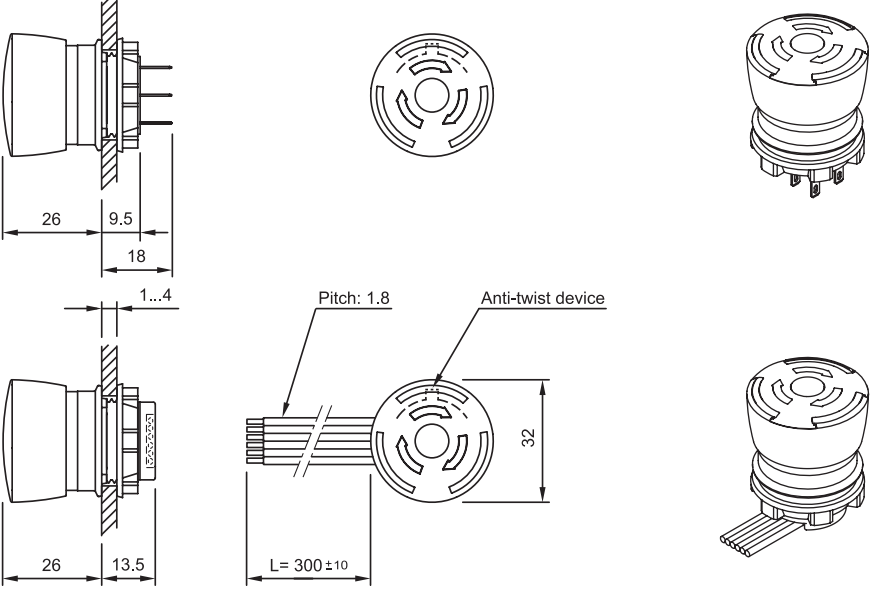
SEV
UL

Declaration of conformity

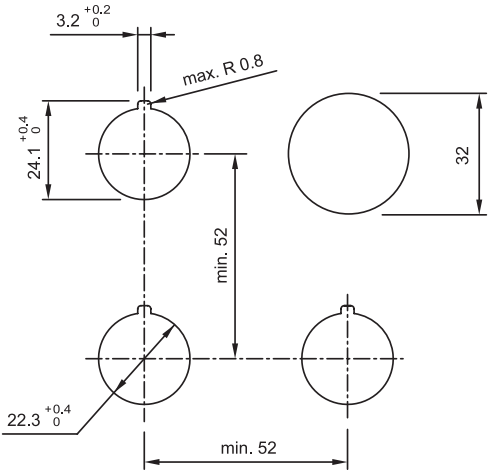
CE

84 Emergency-stop switch and Stop switch

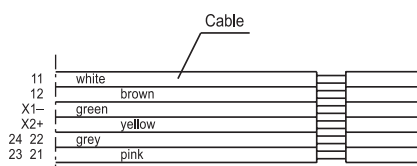
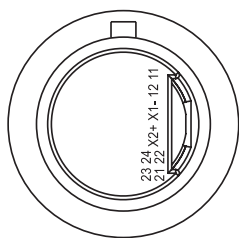
Illuminated and non-illuminated; plug-in and ribbon cable



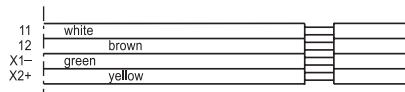
84 Cut-outs



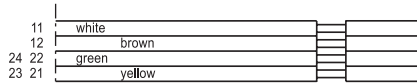
84 Flat ribbon cable



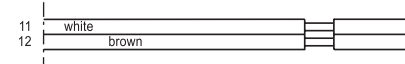
	Terminals
1 NC + 1 NO	11 / 12 + 23 / 24
2 NC	11 / 12 + 21 / 22
Illumination	X1- / X2+



	Terminals
1 NC	11 / 12
Illumination	X1- / X2+



	Terminals
1 NC + 1 NO	11 / 12 + 23 / 24
2 NC	11 / 12 + 21 / 22



	Terminals
1 NC	11 / 12

Emergency-stop switch and Stop switch

Switching system

The double-break, slow-make switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact. The normally closed contact has forced opening. Slow-make contacts with forced action are ideal for high switch ratings. Up to three switching elements can be snapped onto the actuator. For the emergency-stop switch use max. two slow make switching elements.

Material

Material of contact

Hard Silver, Gold-Silver

Switch housing

Polycarbonate (PC), as per UL 94 V0

Actuator housing

Polyamide (PA), as per UL 94 HB

Head cap

Polyamide (PA), as per UL 94 V2

Bayonet flange

Polyethylene terephthalate (PETP), as per UL 94 V0

Mechanical characteristics

Terminals

Screw terminals

Plug-in terminals 6.3×0.8 mm

Max. wire cross-section 2×2.5 mm²

Max. wire cross-section of stranded cable 2×1.5 mm²

For switches with plug-in terminals it is necessary to provide insulation sleeves and to maintain a spacing of 65 mm between rows (mounting dimensions)

Tightening torque

Screws at the mounting flange max. 25 Ncm

Screws at switching element max. 50 Ncm

Actuating force

1 normally closed 2 N

1 normally open 3.1 N

Actuating travel

5.8 mm ±0.2 mm

Rebound time

≤3 ms

Mechanical lifetime

(with 1 switching element)

Switching element > 50 000 Cycles of operation

Emergency-stop switch > 6 050 Cycles of operation

Electrical characteristics, slow make contacts

Standards

The switches comply with the "Standards for low-voltage switching devices" EN IEC 60947-5-1

Rated insulation voltage U_i

500 VAC/600 VDC, as per EN IEC 60947-5-1

Contact resistance

New state ≤50 mΩ as per DIN IEC 60512-2-4

Isolation resistance

≥10 MΩ between open contacts at 500 VDC, as per DIN IEC 60512-2-10

Conventional free air thermal current I_{th}

10 A, as per EN IEC 60947-5-1

The maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

Switch rating

AC for Gold-Silver and Hard Silver contacts, service category AC-15, as per EN IEC 60947-5-1 (cosφ 0.3)

Voltage	230 VAC	400 VAC	500 VAC
Current	7 A	5 A	4 A

DC for Gold-Silver and Hard Silver contacts, service category DC-13, as per EN IEC 60947-5-1

Voltage	24 VDC	60 VDC	110 VDC	250 VDC
Current	10 A	5 A	2.5 A	0.6 A

Recommended minimal operational data

Gold-Silver contacts:

Voltage	24 VDC	110 VDC
Current	10 mA	2 mA

Hard Silver contacts:

Voltage	24 VDC	110 VDC
Current	50 mA	10 mA

Protection class

Class II

Environmental conditions

Storage temperature

-40°C ... +85°C

Operating temperature

-40°C ... +55°C

Protection degree

Frontside IP65, as per EN IEC 60529

Shock resistance

(single impacts, semi-sinusoidal)

300 m/s² puls width 11 ms, as per EN IEC 60068-2-27

Vibration resistance

(sinusoidal)

100 m/s² at 10 Hz ... 500 Hz, amplitude 0.75 mm, as per

EN IEC 60068-2-6

Approvals

Approbations

CB (IEC 60947)

CCC

CSA

Germanischer Lloyd

GOST

SEV

UL

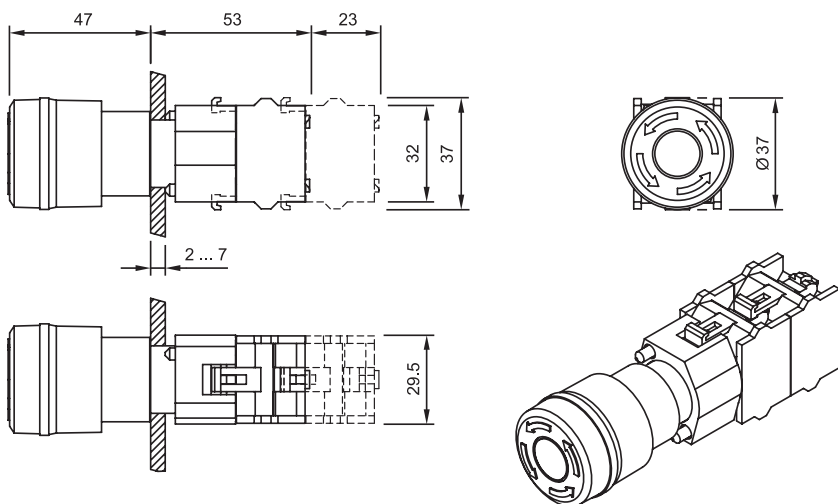
Declaration of conformity

CE

NF F16-102

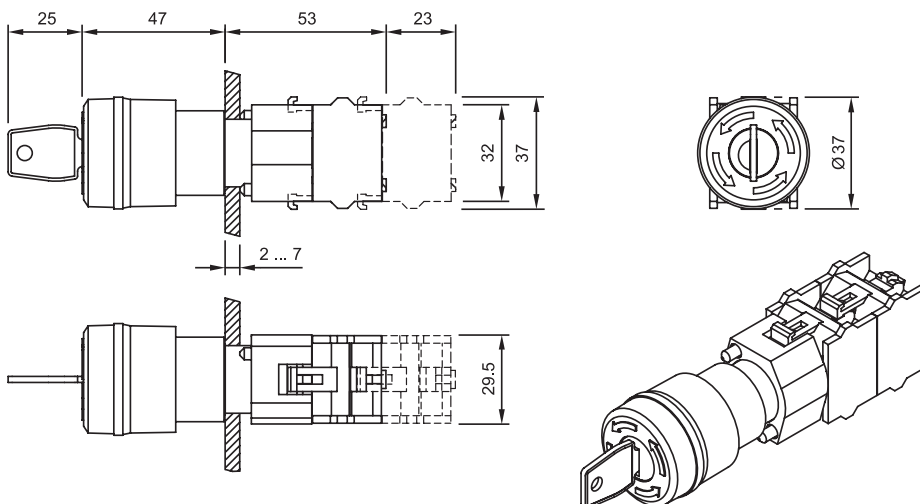
04 Emergency-stop switch

Twist release; foolproof



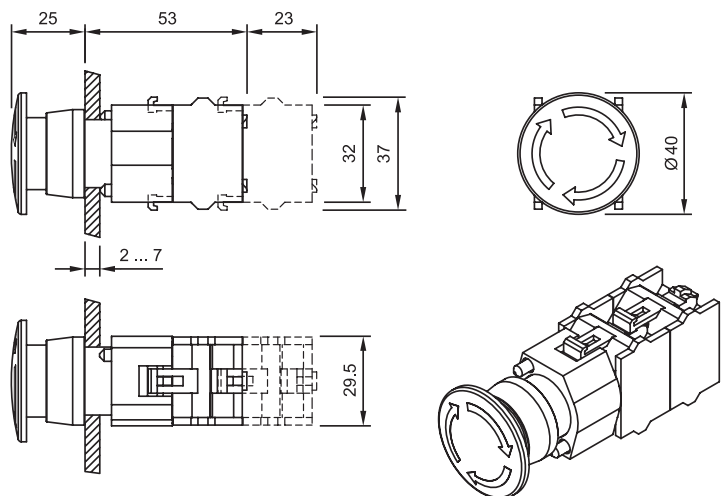
04 Emergency-stop switch

Key release; foolproof



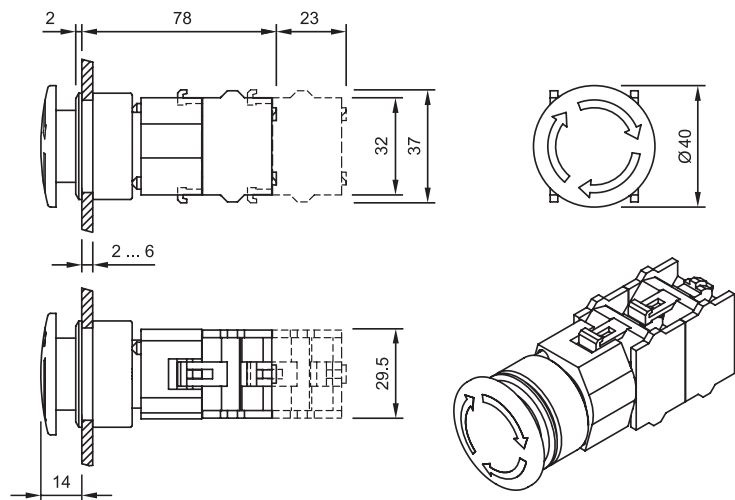
04 Stop switch

Raised mounting; non-foolproof



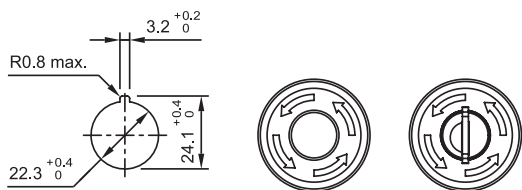
04 Stop switch

Flush mounting; non-foolproof



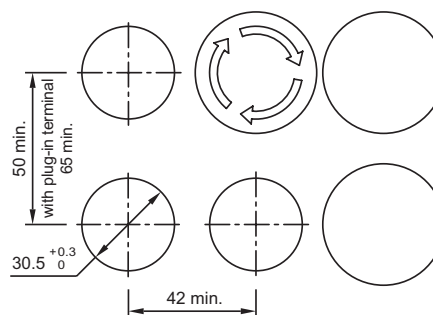
04 Cut-outs

Emergency-stop switch; foolproof



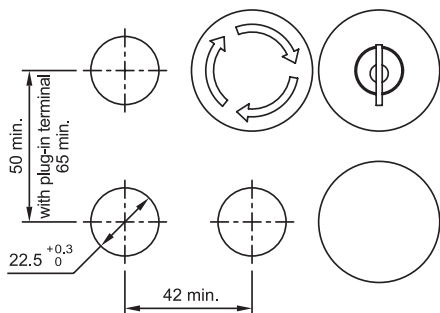
04 Cut-outs

Stop switch; flush mounting; non-foolproof



04 Cut-outs

Stop switch; raised mounting; non-foolproof



Emergency-stop switch and Stop switch

Switching system

The double-break switching system can be supplied for the following switching functions: 1 normally closed, 1 normally open or 1 changeover contact with or without overlap.

The normally closed contacts have forced opening according to EN IEC 60947-5-1.

The switching element offers high reliability due to its H-contact system with relative friction. The normally open and normally closed contacts can be used electrically separated.

The standard version is ideal for high breaking capacities. For lower capacities a special version can be supplied.

Material

Material of contact

Standard version: Ag-Ni alloy

Special version: Gold-Silver

Plastics

UL listed, Cd-free

Switching element

PC, PA 6.6 self-extinguishing

Front parts

PA 6, PA 12, PC

Adapter and enclosure

PC

Mechanical characteristics

Actuating force

Actuator foolproof ≤ 70 N

Actuating travel

Approx. 6 mm

Mechanical lifetime

Slow-make switching element 10×10^6 switching operations

Emergency-stop foolproof > 6050 cycles of operation

Electrical characteristics

Rated insulation voltage U_i

Slow-make switching element 660 V

Rated operational voltage U_e

AC 15 (inductive)

120 V, ~6 A

230 V, ~6 A

400 V, ~4 A

500 V, ~3 A

600 V, ~1.2 A

DC 13

24 V, 3 A

60 V, 1.3 A

120 V, 0.6 A

250 V, 0.3 A

Rated impulse withstand voltage U_{imp}

Slow-make switching element 6 kV*

*between the electrically separated normally closed contacts and normally open contacts for slow-make switching elements.

1 NC + 1 NO without overlap

$U_e > 400$ V, same polarity

$U_{imp} = 4000$ V

1 NC + 1 NO with overlap

$U_e > 250$ V, same polarity

$U_{imp} = 4000$ V

Rated Operational Current I_e

AC-12 (resistive)

500 V, ~5 A

DC-12

24 V, 10 A

60 V, 8 A

125 V, 3 A

250 V, 1 A

Contact resistance

Starting value (initial) ≤ 50 m Ω

Electrical life

AC-15

400 V, ~2 A, 1×10^6 switching operations

Conventional free air thermal current I_{th2}

10 A

Short-circuit protection

Max. series fuse to be provided 10 A gL

Switch rating

Ag-Ni alloy

minimal 6 V, 20 mA

(Standard version)

maximum 12 V, 10 mA

Gold-Silver

minimal 5 V, 1 mA

(Special version)

maximum 42 V, 100 mA

Degree of pollution

3, as per EN IEC 60947-1

Environmental conditions

Storage temperature

-40 °C ... +70 °C

Operating temperature

-25 °C, as per EN IEC 60068-2-1

+60 °C, as per EN IEC 60068-2-2

Protection degree

Actuators at front and enclosure IP65, as per EN IEC 60529

Shock resistance

40 g (duration 6 ms), as per EN IEC 60068-2-27

Vibration resistance

Sinusoidal, 5 g at 10-500 Hz, as per EN IEC 60068-2-6

Climate resistance

Humidity and heat constant, as per EN IEC 60068-2-3

Humidity and heat cyclic, as per EN IEC 60068-2-30

Approvals

Approbations

CSA

Germanischer Lloyd

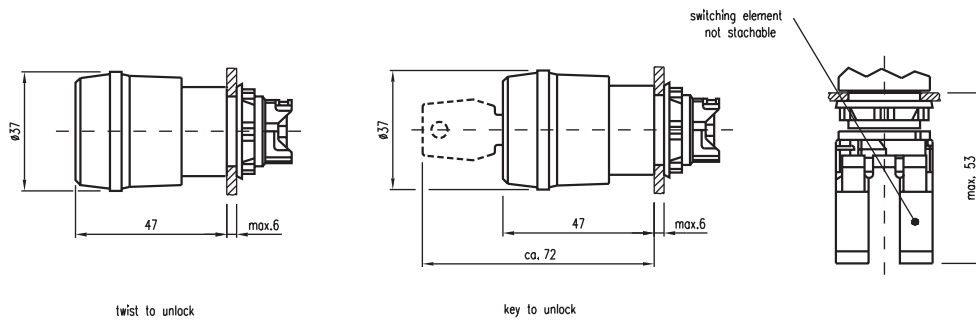
UL

VDE

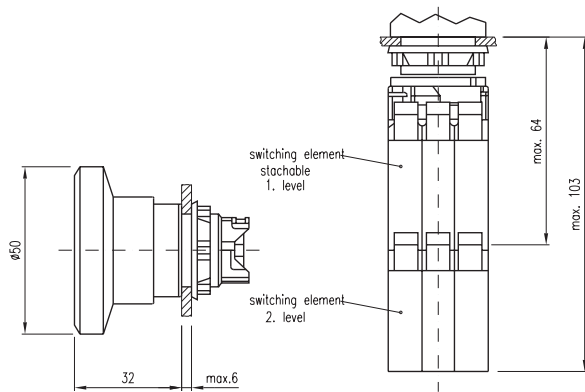
Declaration of conformity

CE

44 Emergency-stop switch

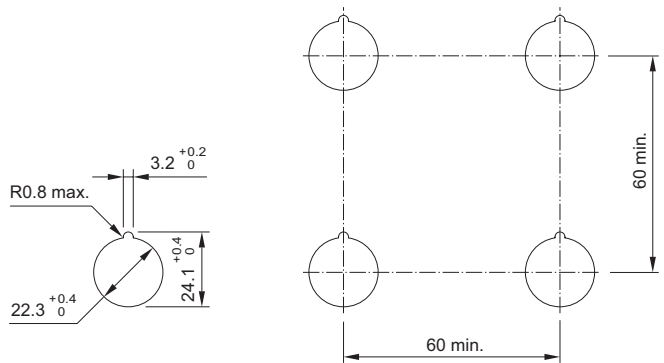


44 Stop switch

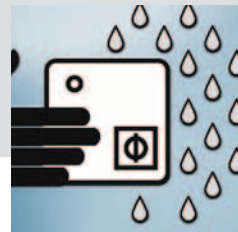


44 Cut-outs




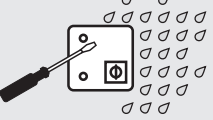
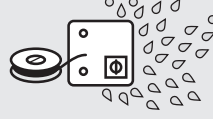
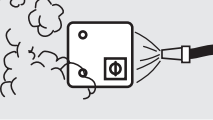
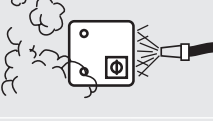
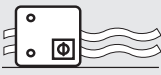
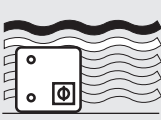
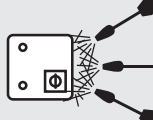
Emergency-stop switch and Stop switch









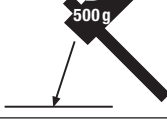
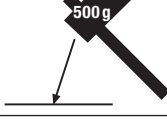
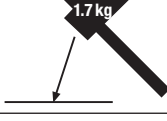
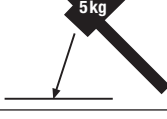
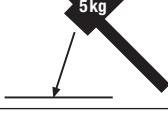
IP & IK Ratings



Degrees of protection to EN 60529

Protection against ingress of solid objects		Protection against water	
IP	First Figure	Second Figure	IP
No Protection	0		0 No Protection
Solid object Ø ≥50.0 mm	1		1 Vertical drops of water
Solid object Ø ≥12.5 mm	2		2 Water droplets (at 15° from the vertical)
Solid object Ø ≥2.5 mm	3		3 Sprinkled water
Solid object Ø ≥1.0 mm	4		4 Water sprayed from any direction
Protection against dust: limited ingress	5		5 Water jets from any direction
Total protection against dust	6		6 Strong jets of water
			7 Temporary immersion
			8 Long periods of immersion
			9k* High pressure/ high-temperature jets of water * DIN 40050-9

Degrees of protection to EN 50102

Protection against external mechanical impacts		
IK		
	00	No Protection
	01	Impact energy 0.15 joule
	02	Impact energy 0.2 joule
	03	Impact energy 0.35 joule
	04	Impact energy 0.5 joule
	05	Impact energy 0.7 joule
	06	Impact energy 1 joule
	07	Impact energy 2 joule
	08	Impact energy 5 joule
	09	Impact energy 10 joule
	10	Impact energy 20 joule

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