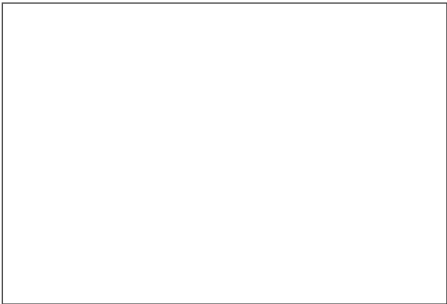
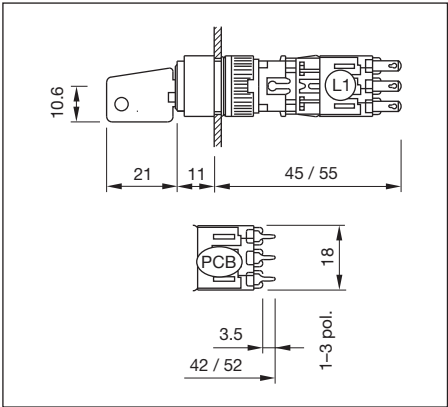




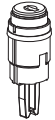
Product can differ from the current configuration.



Dimensions [mm]
L1 = Solder terminal 2.8 x 0.5 mm,
PCB = Print terminal

Equipment consisting of (schematic overview)

**Front cap** *page 36*

**Actuator**

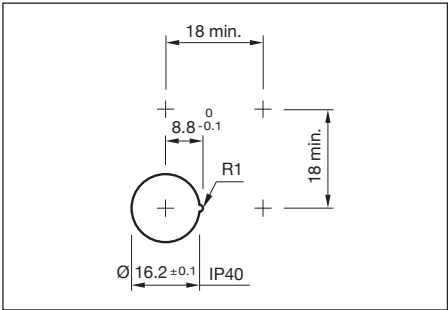
**Fixing nut**

**Switching element**

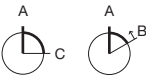
Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the pages shown.

- Additional Information**
- For the flush design please order the additional front bezel set, see chapter «Accessories»
 - Standard lock B2 300
 - Further lock numbers see «Technical data»
 - With IP 65 no anti-rotation device can be placed within the mounting cut-out. For rear-side mounting of the anti-rotation device, please see chapter «Accessories», Part No. 260-0020-00 or 260-0021-00



Mounting cut-outs [mm]



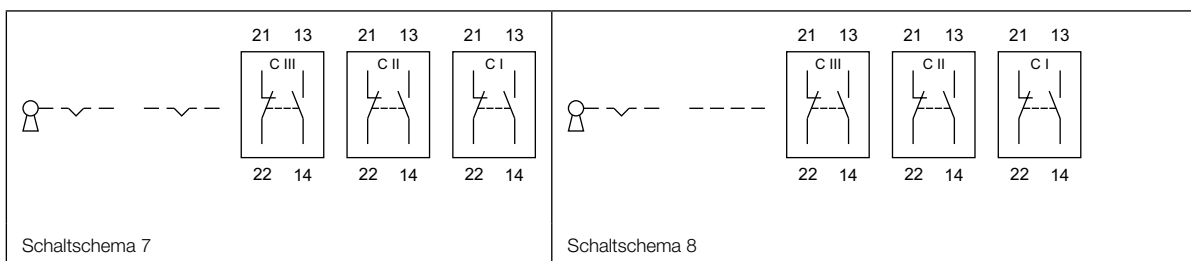
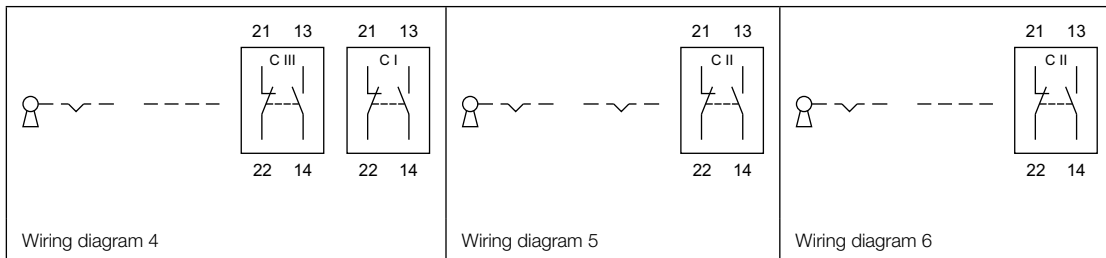
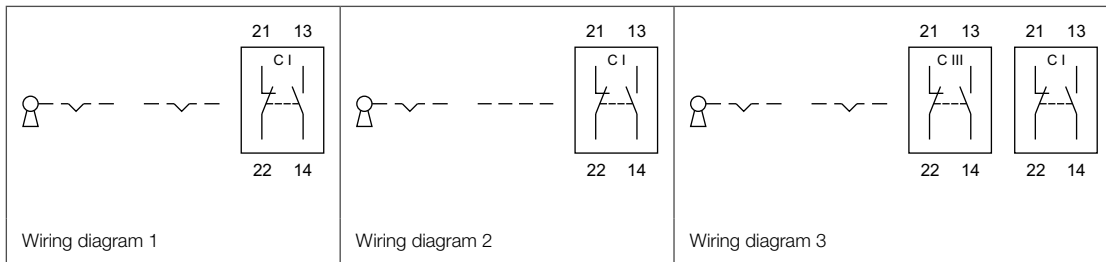
Switching positions (A = Rest, B = Momentary, C = Maintained)

Front protection	Switching system	Behind panel depth	Contacts	Switching action	Switching angle	Key remove	Terminal	Part No.	Component layout	Wiring diagram	Weight
 Keylock switch actuator 2 positions square, Front dimension 18 x 18 mm											
IP 40	Snap-action switching element	42 mm	1 NC + 1 NO	A - C	C = 90°	A + C	PCB	761F.401-0P	1	1	0.022 kg
				A - C	C = 90°	A	PCB	771F.401-0P	1	1	0.022 kg
				A - B	B = 60°	A	PCB	781F.401-0P	1	2	0.022 kg
			2 NC + 2 NO	A - C	C = 90°	A + C	PCB	762F.401-0P	1	3	0.023 kg
		45 mm	1 NC + 1 NO	A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	761F.401-00		1	0.022 kg
				A - C	C = 90°	A	Solder 2.8 x 0.5 mm	771F.401-00		1	0.022 kg
				A - B	B = 60°	A	Solder 2.8 x 0.5 mm	781F.401-00		2	0.022 kg
			2 NC + 2 NO	A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	762F.401-00		3	0.023 kg
				A - C	C = 90°	A	Solder 2.8 x 0.5 mm	772F.401-00		3	0.023 kg
				A - B	B = 60°	A	Solder 2.8 x 0.5 mm	782F.401-00		4	0.023 kg
IP 65	Snap-action switching element	42 mm	1 NC + 1 NO	A - C	C = 90°	A + C	PCB	761F.401-WP	1	1	0.022 kg
				A - C	C = 90°	A	PCB	771F.401-WP	1	1	0.022 kg
				A - B	B = 60°	A	PCB	781F.401-WP	1	2	0.022 kg
		45 mm	1 NC + 1 NO	A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	761F.401-W0		1	0.022 kg
				A - C	C = 90°	A	Solder 2.8 x 0.5 mm	771F.401-W0		1	0.022 kg

IP 65	Snap-action switching element	45 mm	1 NC + 1 NO	A - B	B = 60°	A	Solder 2.8 x 0.5 mm	781-.401-W0		2	0.022 kg	
			2 NC + 2 NO	A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	762-.401-W0		3	0.023 kg	
				A - C	C = 90°	A	Solder 2.8 x 0.5 mm	772-.401-W0		3	0.023 kg	
				A - B	B = 60°	A	Solder 2.8 x 0.5 mm	782-.401-W0		4	0.023 kg	
 Keylock switch actuator 2 positions square, Front dimension 18 x 18 mm												
IP 40	Snap-action switching element	52 mm	1 NC + 1 NO	A - C	C = 90°	A + C	PCB	911F.401-0P	1	5	0.024 kg	
				A - C	C = 90°	A	PCB	921F.401-0P	1	5	0.024 kg	
				A - B	B = 60°	A	PCB	931F.401-0P	1	6	0.024 kg	
			2 NC + 2 NO	A - C	C = 90°	A + C	PCB	912F.401-0P	1	3	0.025 kg	
				A - B	B = 60°	A	PCB	932F.401-0P	1	4	0.025 kg	
				3 NC + 3 NO	A - C	C = 90°	A	PCB	923F.401-0P	1	7	0.026 kg
			55 mm	1 NC + 1 NO	A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	911F.401-00		5	0.024 kg
					A - C	C = 90°	A	Solder 2.8 x 0.5 mm	921F.401-00		5	0.024 kg
					A - B	B = 60°	A	Solder 2.8 x 0.5 mm	931F.401-00		6	0.024 kg
		2 NC + 2 NO			A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	912F.401-00		3	0.025 kg
				A - C	C = 90°	A	Solder 2.8 x 0.5 mm	922F.401-00		3	0.025 kg	
				A - B	B = 60°	A	Solder 2.8 x 0.5 mm	932F.401-00		4	0.025 kg	
		3 NC + 3 NO		A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	913F.401-00		7	0.027 kg	
			A - C	C = 90°	A	Solder 2.8 x 0.5 mm	923F.401-00		7	0.027 kg		
			A - B	B = 60°	A	Solder 2.8 x 0.5 mm	933F.401-00		8	0.027 kg		
		IP 65	Snap-action switching element	52 mm	1 NC + 1 NO	A - C	C = 90°	A	PCB	921F.401-WP	1	5
A - B	B = 60°					A	PCB	931F.401-WP	1	6	0.024 kg	
3 NC + 3 NO	A - C				C = 90°	A	PCB	923F.401-WP	1	7	0.026 kg	
	A - B				B = 60°	A	PCB	933F.401-WP	1	8	0.026 kg	
55 mm	1 NC + 1 NO			A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	911F.401-W0		5	0.024 kg	
	2 NC + 2 NO			A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	912F.401-W0		3	0.025 kg	
				A - C	C = 90°	A	Solder 2.8 x 0.5 mm	922F.401-W0		3	0.025 kg	
				A - B	B = 60°	A	Solder 2.8 x 0.5 mm	932F.401-W0		4	0.025 kg	
	3 NC + 3 NO			A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	913F.401-W0		7	0.027 kg	
A - C		C = 90°	A	Solder 2.8 x 0.5 mm	923F.401-W0		7	0.027 kg				
A - B		B = 60°	A	Solder 2.8 x 0.5 mm	933F.401-W0		8	0.027 kg				

Contacts: NC = Normally closed, NO = Normally open
Switching action: A = Rest, B = Momentary, C = Maintained
The component layouts you will find from page 107

55 Raised design





Product attribute	Marking	Material	Colour	Part No.	Weight
 Front bezel for keylock switch and selector switch 2 positions square, 18 x 18 mm					
fits for all Part No.	without marking	Plastic	grey	200-3004-00	0.002 kg
			black	200-4004-00	0.002 kg
for Part No. 761-xxx ... 772-xxx 911-xxx ... 925-xxx 811-xxx ... 825-xxx	0 - I (90°)	Plastic	grey	200-3001-00	0.002 kg
			black	200-4001-00	0.002 kg
for Part No. 781-xxx 782-xxx 931-xxx ... 935- xxx 831-xxx ... 835-xxx	0 - I (60°)	Plastic	black	200-4001-01	0.002 kg
 Front bezel for keylock switch and selector switch 2 positions rectangular, 18 x 24 mm					
fits for all Part No.	without marking	Plastic	grey	200-5004-00	0.002 kg
			black	200-6004-00	0.002 kg
for Part No. 761-xxx ... 772-xxx 911-xxx ... 925-xxx 811-xxx ... 825-xxx	0 - I (90°)	Plastic	grey	200-5001-00	0.002 kg
			black	200-6001-00	0.002 kg
for Part No. 781-xxx 782-xxx 931-xxx ... 935- xxx 831-xxx ... 835-xxx	0 - I (60°)	Plastic	black	200-6001-01	0.002 kg
 Front bezel for keylock switch and selector switch 2 positions round, 18 mm					
fits for all Part No.	without marking	Plastic	grey	200-1004-00	0.002 kg
			black	200-2004-00	0.002 kg
for Part No. 761-xxx ... 772-xxx 911-xxx ... 925-xxx 811-xxx ... 825-xxx	0 - I (90°)	Plastic	grey	200-1001-00	0.002 kg
			black	200-2001-00	0.002 kg
for Part No. 781-xxx 782-xxx 931-xxx ... 935- xxx 831-xxx ... 835-xxx	0 - I (60°)	Plastic	black	200-2001-01	0.002 kg
 Front bezel for keylock switch and selector switch 2 positions square, 24 x 24 mm					
fits for all Part No.	without marking	Plastic	grey	200-9004-00	0.002 kg
			black	200-0004-00	0.002 kg
for Part No. 761-xxx ... 772-xxx 911-xxx ... 925-xxx 811-xxx ... 825-xxx	0 - I (90°)	Plastic	grey	200-9001-00	0.002 kg
			black	200-0001-00	0.002 kg
for Part No. 781-xxx 782-xxx 931-xxx ... 935- xxx 831-xxx ... 835-xxx	0 - I (60°)	Plastic	black	200-0001-01	0.002 kg
 Front bezel for keylock switch and selector switch 2 positions round, 24 mm					
fits for all Part No.	without marking	Plastic	grey	200-7004-00	0.002 kg
			black	200-8004-00	0.002 kg
for Part No. 761-xxx ... 772-xxx 911-xxx ... 925-xxx 811-xxx ... 825-xxx	0 - I (90°)	Plastic	grey	200-7001-00	0.002 kg
			black	200-8001-00	0.002 kg
for Part No. 781-xxx 782-xxx 931-xxx ... 935- xxx 831-xxx ... 835-xxx	0 - I (60°)	Plastic	black	200-8001-01	0.002 kg

Device

General

Swisstac switches are modularly designed. They are divided in three groups:

1. Front
Interface Human-Switch with state detector.
2. Intermediate section
Set and reset device, lamp holder, latching funktion.
3. Switching element block
Up to 3 switching elements can be integrated in a switching element block.

Each switch is tested fully mounted. Electrical output and service life are determinated by the switching element. Front and intermediate section are designed for maximum service life of the switching element. They determine in what way the switches are protected against external influences. The type approvals relate to the complete switch.

Environmental conditions

Shock resistance

(single impacts, semi-sinusoidal)
500 m/s², puls width 11 ms, as per EN IEC 60068-2-27
max. 150 m/s², pulse width 11 ms, as per EN IEC 60068-2-29

Vibration resistance

(sinusoidal)
max. 100 m/s² at 10 Hz ... 500 Hz, as per EN IEC 60068-2-6

Approvals

Approbations

CSA
ENEC (EN 61058)
UL
VDE

Declaration of conformity

CE

Front

General

The front notifies the switching status, serves for activation of the switch and determines its type of protection. With the exeption of the front 18 mm dia. of the illuminated pushbuttons 55, all front bezel elements have activation protection.

Material

Lens

Polycarbonate (PC)

Front bezel

Polybutylene terephthalate (PBT)

Actuator 35 mm

Polybutylene terephthalate (PBT)

Lock housing

Polybutylene terephthalate (PBT)

Lock cylinder

Polybutylenterephthalat reinforced with carbon fibre (PBT)
sealing bulb IP 65 (Silicone)

Environmental conditions

Protection degree

IP 65 or IP 40, as per EN IEC 60529

Intermediate section

General

The intermediate section integrates characteristics as setting, reset function and click-stop device. Besides all for a switch necessary parts, like front parts, switching block and lamps, are fastened at the intermediate section.

Material

Housing

Polycarbonate (PC)

Lamp terminal

Nickel silver

Mechanical characteristics

Mechanical lifetime

Illuminated pushbutton	> 2 million cycles of operation
Keylock- and Selector switch	> 50 000 cycles of operation
Emergency-stop switch	> 8 000 cycles of operation
Illuminated push-pull switch	> 250 000 cycles of operation

Electrical characteristics

Electric strength

3750 VAC, 50 Hz, 1 min., as per EN IEC 61058-1

Isolation resistance

> 1012 Ω as per DIN IEC 60512-2-10

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

Switching element block

General

Up to five independent switching elements can be integrated in the switching element block as a switching unit. There are four different types of elements available.

1. Snap-action switching element
2. Slow-make Stop switching element
3. Diode element
4. Blind element

Material

Holder for 2 switching elements

Polyamide (PA 6)

Holder for 3 switching elements

Stainless steel

Lamp terminal

CuBe, 2 µm Optalloy

Mechanical characteristics

Terminals

Soldering terminal (also pluggable 2.8 x 0.5 mm) or PCB terminal, Brass gold plated
Wire cross-section 1.0 mm² max.

Electrical characteristics

Electric strength

2500 VAC, 50 Hz, 1 min. (functional isolation)

Isolation resistance

> 10¹² Ω

Snap-action switching element

Switching system

Is equipped with double-break jump contacts. Owing to the large cleaning path, outstanding self-cleaning is possible. The multilayer contacts are designed for universal use. They are gilded with a 2 µm gold coating. Each snap-action switching element comprises a NC (normally closed contact) and a NO (normally open contact).

Material

Housing

Prianyl (PA6)

Contacts

AgNi, 2 µm gold plated

Contact carrier

Brass or CuBe

Rebound time

typically 0.5 µs

Contact opening width

2 x 0.65 mm

Contact cleaning path

2 x 0.6 mm

Mechanical lifetime

2 million cycles of operation

Electrical characteristics

Contact resistance

New state with gold plated contact ≤ 50 mΩ, statically

Electrical life

> 10 000 cycles of operation

EN IEC 60947-5-1, AC-12

Voltage	24 V	48 V	75 V	110 V	250 V
Current	6 A	6 A	5 A	2 A	0.5 A

EN IEC 61058-1 (inductive)

Voltage	250 V
Current	1.5 A

Mechanical characteristics

Terminals

Soldering terminal (also pluggable 2.8 x 0.5 mm) or PCB terminal, Brass gold plated
Wire cross-section 1.0 mm² max.

Actuating force

For each snap-action switching element approx. 2 N

Conventional free air thermal current I_{th}

6A from 1 to 3-poles switching element block

Switch rating

as per EN IEC 61058-1

250V, 5A (non-inductive) up to 3 switching elements

250V, 1.5 A (inductive) up to 3 switching elements

5VAC/DC, 1 mA min.

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

Slow-make switching element Stop switch

Switching system

Is equipped with rigid contact link. The slow-make element opens positively and simply consists of a double-break NC. The multi-layer contacts are designed for universal use and are gilded with a 2 µm gold coating. The Stop slow-make element is designed according to EN IEC 60947-5-1.

Material

Housing

Frianyl (PA6)

Contacts

AgNi, 2 µm gold plated

Contact carrier

Brass or CuBe

Electrical characteristics

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

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

Switch rating

Switch rating AC with silver contact (gold plated), 250 VAC, 1 A, service category AC-15, as per EN IEC 60947-5-1

Short-circuit protection

Series-connected blow-out fuse 5 A gL

Mechanical characteristics

Terminals

Soldering terminal (also pluggable 2.8 x 0.5 mm) or PCB terminal, Brass gold plated

Wire cross-section 1.0 mm² max.

Contact opening width

> 2 x 1.5 mm

Mechanical lifetime

8000 cycles of operation

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

Diode element

General

No switching function. Diodes are soldered into the switching element housing between the contact connections.

Material

Housing

Frianyl (PA6)

Mechanical characteristics

Terminals

Soldering terminal (also pluggable 2.8 x 0.5 mm), Brass gold plated

Wire cross-section 1.0 mm² max.

Electrical characteristics

Diode

1N4007, rated current = 1.0 A, VRRM = 1000 V

Blind element

General

Insert in empty places in the switching element block. Nonconducting and without electrical function.

Material

Housing

Polybutylene terephthalate (PBT)

Buzzer

General

Device with reverse-connect protection.

Electrical characteristics

Operating voltage

6, 12 and 24 V AC/DC $\pm 10\%$

Power consumption

approx. 13 mA

Acoustics

approx. 84 dB at 0.1 m

Frequency (tone)

approx. 2.3 kHz

Mechanical characteristics

Terminals

Soldering terminal (also pluggable 2.8 x 0.5 mm) or PCB terminal, Brass gold plated
Wire cross-section 1.0 mm² max.

Emergency-stop switch foolproof

Switching system

Self cleaning, double-break slow-make element with four-path contacts (contact opening width 2 x 1.5 mm). The slow-make elements are constructed as per EN IEC 60947-5-1.

Tightening torque

for fixing nut max. 50 Ncm

Unlock torque

15 Ncm

Material

Mushroom-head cap

Polyamide (PA6)

Actuating travel

10 mm

Actuator housing

Polyamide (PA66)

Rebound time

≤ 2 ms

Switching element

Polyamide (PA + PA66)

Mechanical lifetime

50 000 cycles of operations

Material of contact

Silver (Ag)

Electrical characteristics

Rated Operational Voltage U_o

250 VAC, as per EN IEC 60947-1

Rated Insulation Voltage U_i

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

Contact resistance

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

Electrical life

6050 cycles of operation

Mechanical characteristics

Terminals

Soldering terminal
max. wire-cross section 2 x 1.0 mm²
max. wire-cross section of stranded cable 1 x 0.75 mm²
also pluggable 2.8 x 0.5 mm

Actuating force

max. 65 N (measured on mushroom-head cap)

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

Switch rating AC (inductive) with silver contact, service category AC-13, as per EN IEC 60947-5-1

Voltage	24 VAC	60 VAC	120 VAC	250 VAC
Current	6 A	6 A	5 A	3 A

Switch rating AC (inductive) with silver contact, service category AC-14, as per EN IEC 60947-5-1

Current	24 VAC	60 VAC	120 VAC	250 VAC
Voltage	5 A	4 A	3 A	2 A

Switch rating (non-inductive) with silver contact

Voltage	24 VDC	60 VDC	110 VDC	240 VDC
Current	6 A	2 A	0.7 A	0.5 A

Switch rating DC with silver contact, service category DC-13, as per EN IEC 60947-5-1

Voltage	24 VDC	60 VDC	110 VDC	240 VDC
Current	2 A	1 A	0.4 A	0.2 A

Recommended minimum operational data

Silver contact (Soldering terminal) 20 VAC/DC, 100 mA

Electric strength

4000 VAC, 50 Hz, 1 min., as per DIN IEC 60512-2 between all terminals and earth

Short-circuit protection

Series-connected blow-out fuse 10 A gL

Overvoltage category

III, as per EN IEC 60947-5-1

Degree of pollution

3, as per EN IEC 60947-1

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

Shock resistance

(single impacts, semi-sinusoidal)

500 m/s²puls width 11 ms, as per EN IEC 60068-2-27

Vibration resistance

(sinusoidal)

max. 100 m/s² at 10 Hz ... 2000 Hz, amplitude 0.75 mm, as per EN IEC 60068-2-6

Protection degree

as per EN IEC 60529

Frontside IP 65, backside IP 40

Approvals

Approbations

CSA

UL

VDE

Declaration of conformity

CE

Keylock switch

Standard lock number is B2 300 (Part No. 240-2001-00).
 Further locks are available.
 By order please use the ordersheet on the website
www.eao.com/downloads

Stop switch with key to release

Standard lock number is B2 390 (Part No. 240-3001-00).
 Further locks are available.
 By order please use the ordersheet on the website
www.eao.com/downloads

Emergency-stop switch, foolproof with key to release

Standard lock number is KABA 1001 (Part No. 240-4001-00),
 other lock numbers on request.
 Spare keys may be ordered under Part No. 240-4001-00 1001.

EAO reserves the right to alter specifications without further notice.