# Condensed Catalog

Your Expert Partner for Human Machine Interfaces

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How to use this catalog

The objective of this catalog is to provide engineers and purchasers with a quick and easy search facility for the selection and purchase of EAO's most popular product ranges. Included within this catalog are details of EAO's latest state of the art, ergonomically designed ranges of keyboards, keypads, switches and pushbuttons that have been stringently tested to meet international standards.

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR	BUZZER

BLOCK	LED	ACCESSORIES
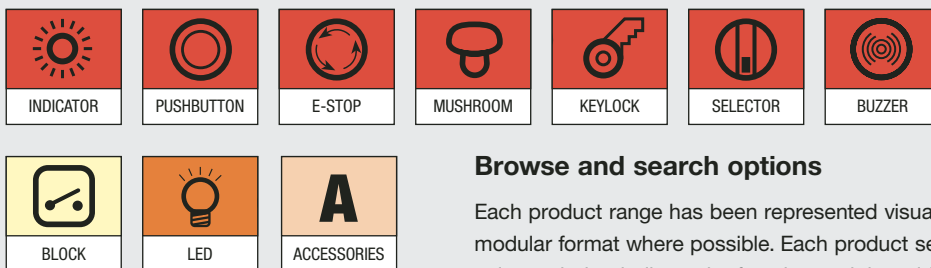
Browse and search options

Each product range has been represented visually and in a modular format where possible. Each product series has been color coded to indicate the function and the additional elements that need to be purchased to complete an order. Additional elements may be actuators, illumination, contact blocks, accessories, and so on.

EAO Switch not responsible for clerical errors.

On the page opposite is located a simple index, sorted by product type. Additionally, at the rear of the catalog you will find a product selector, that enables search criteria to be defined by:

- **Mounting hole size**
- **Contact terminals**
- **Number of keys**
- **Illumination**
- **Front protection (IP Rating)**
- **Lens cap**
- **Mounting style**
- **Marking**
- **Switch rating**
- **Application**
- **Product function**
- **Approvals**

For further information about our complete product range either contact your local sales office, distributor, or alternatively visit our website at **www.eaoswitch.com**

Index

Company Overview

The Company EAO is a global manufacturer of high-quality Human Machine Interface products, from switches, keypads and keyboards to complete, custom-built control panels. Founded in 1947, EAO has established a global reputation for being an expert partner for Human Machine Interfaces across a range of target industries - transportation, machinery, process control, lifting and moving, and instrumentation.

Our products have been developed by world-class industrial specialists and tested to international standards. They are synonymous with creativity, innovation and excellence - the hallmarks of EAO. Our 10 specialized Sales and Customer Service Centers around the world and a network of trained specialized agents and representatives in more than 50 countries will bring experience, skill and dedication to your projects.

EAO *Your Approved Partner*
EAO is certified and managed according to ISO 9001, ISO 9002, ISO 14001 and VDA6.1 (Automotive) standards.

It is an approved A-supplier to leading automotive manufacturers and guarantees worldwide approvals by ENEC, CB, UL/UR, CSA, VDE, SEV and Germanischer Lloyd.
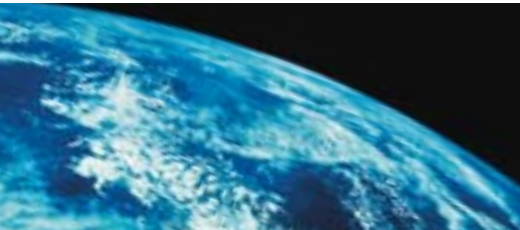
Global EAO Argentina Australia Austria Belgium Brazil Bulgaria Canada Chile China Columbia Croatia Czech Republic Denmark Finland France Germany Great Britain Greece Hungary Iceland India Ireland Israel Italy Japan Korea Latvia Luxembourg Malaysia Mexico Netherlands New Zealand Norway Oman Peru Poland Portugal Romania Russia Saudi Arabia Singapore Slovakia Slovenia South Africa Spain Sweden Switzerland Taiwan Turkey USA

Key Markets

Transportation Stringent regulations within the public transportation industry requires a special range of Human Machine Interface components that meet the highest standards of safety, durability and functionality. EAO has developed products to meet these standards, including the latest regulations on access for the disabled.
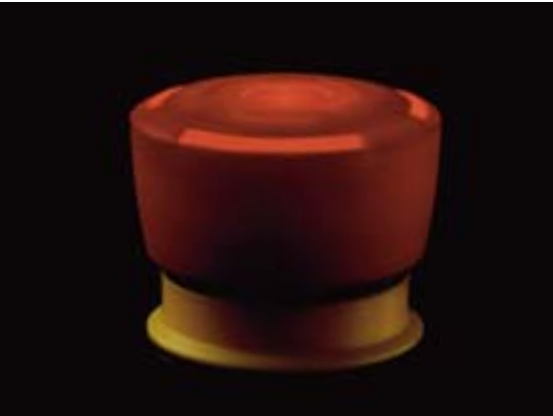
Solutions EAO is the expert partner for Human Machine Interfaces with a reputation built on our success in developing innovative, ready-to-use solutions for our customers which add significant value to their end products.

Our customers value EAO's skill in selecting the best components and services in terms of cost-effectiveness, quality and reliability. In our search for a solution, we make use of our network of plastics specialists, toolmakers, electrical and electronics engineers, industrial designers and ergonomics experts.

EAO trims development times with rapid prototyping using modern technologies including stereolithography and urethane casting. We also plan the production sequence while developing the solution to help bring your products to market faster.

Machinery EAO manufactures a broad range of industrial switches including foolproof Emergency-stops and high-illumination pushbuttons. They offer unparalleled reliability with the benefit of EAO's unique, tactile 'click' that is reassuring for the user.

Instrumentation Instrument controls require precision and sophistication, both in function and design. EAO has a range of specialized Human Machine Interface components for every instrument application, whether it is medical electronics, measuring instruments or test equipment.

Lifting and Moving Lifting and moving controls must be highly responsive and tactile to answer the operator's every touch, yet tough enough to survive the harshest of environments. EAO's range of controls are ideal for these applications, whether it's industrial, hydraulic lifting equipment or a personal stair-lift in the home.

When it comes to Human Machine Interfaces

you'll go further
& faster with EAO

21.2mm x 41.2mm   IP40/IP65   10A   380VAC

| INDICATOR | PUSHBUTTON | BUZZER |

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 03 is a high quality switch range that includes pushbuttons, indicators, mushroom headed switches and key switches.

Options include self cleaning snap-action switching elements.

Technical drawings see page 9

- IP40 or IP65 Protection (with cover)
- Switch Rating, 10A, 380VAC
- Mounting into 21.2 x 41.2mm cut out
- Illumination using T-6.8 Lamps or LED's
- The standard lenses are available in many different versions, transparent, opaque or translucent
- Screw terminal or plug-in connections

Indicator

Indicator body single with two independent lamp bases, raised, rectangular, black plastic, screw terminals, without bezel

Part No.
03-021.001

For complete switch also order 💡 **A**

Illuminated pushbutton

Illuminated single pushbutton actuator, raised, rectangular, black plastic, screw terminals, without bezel

Part No.	Action	Contact type
03-616.011	Momentary	1 pole, form C
03-617.011	Momentary	2 pole, form C
03-618.011	Maintained	1 pole, form C
03-619.011	Maintained	2 pole, form C
03-620.011	Momentary/Maintained	2 pole, form C

For complete switch also order 💡 **A**

Illuminated pushbutton

Illuminated double pushbutton actuator with independent contacts, raised, rectangular, black plastic, screw terminals, without bezel

Part No.	Action	Contact type
03-624.011	Momentary	2 pole, form C
03-625.011	Maintained	2 pole, form C
03-626.011	Momentary/Maintained	2 pole, form C
03-627.011	Momentary/Indicator	1 pole, form C
03-628.011	Maintained/Indicator	1 pole, form C

For complete switch also order 💡 **A**

Illuminated double pushbutton actuator, mechanically interlocked, raised, rectangular, black plastic, screw terminals, without bezel

Part No.	Action	Contact type
03-630.011	Momentary/Blocking	2 pole, form C
03-631.011	Maintained/Block release	2 pole, form C
03-632.011	Momentary/Maintained	2 pole, form C

For complete switch also order 💡 **A**

Buzzer

Buzzer, plastic bezel, raised, rectangular, 10-50VAC/10-75VDC, screw terminals, 85dB ± 10 at a distance of 0.1m, without bezel

Part No.
03-810.001

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

LED

ACCESSORIES

💡 LED

LED, T-6.8, single chip, 12 Volt and 28 Volt.
Also available in 6 Volt, 24 Volt and 48 Volt

Color	Part No.	Voltage
🔴 Red	10-2K09.1072	12VAC/DC, 9/17mA
🟡 Yellow	10-2K09.1074	12VAC/DC, 9/17mA
🟢 Green	10-2K09.1075	12VAC/DC, 4/7mA
🔵 Blue	10-2K09.1076	12VAC/DC, 9/17mA
⚪ White	10-2K09.1079	12VAC/DC, 9/17mA
🔴 Red	10-2K13.1072	28VAC/DC, 9/17mA
🟡 Yellow	10-2K13.1074	28VAC/DC, 9/17mA
🟢 Green	10-2K13.1075	28VAC/DC, 4/7mA
🔵 Blue	10-2K13.1076	28VAC/DC, 9/17mA
⚪ White	10-2K13.1079	28VAC/DC, 9/17mA

A Accessories

Lens, translucent or opaque/ribbed, one color
for single indicator and pushbutton bodies

Color	Part No.	Lens
🔴 Red	03-901.2	Translucent
🟡 Yellow	03-901.4	Translucent
🟢 Green	03-901.5	Translucent
🔵 Blue	03-901.6	Translucent
⚪ White	03-901.9	Opaque/ribbed
⚫ Black	03-901.0	Opaque/ribbed

Lens, translucent/ribbed, two colors for single
indicator and pushbutton bodies

Color	Part No.
Red/Green	03-902.2/5
Red/Red	03-902.2/2
White/White	03-902.9/9

Other color options available, please inquire

A Accessories

Lens, translucent or opaque/ribbed,
halved for double pushbutton bodies

Color	Part No.	Lens
🔴 Red	03-921.2	Translucent
🟡 Yellow	03-921.4	Translucent
🟢 Green	03-921.5	Translucent
🔵 Blue	03-921.6	Translucent
⚪ White	03-921.9	Opaque/ribbed
⚫ Black	03-921.0	Opaque/ribbed

Lens, translucent or opaque/ribbed,
halved for mechanically interlocked double
pushbutton bodies

Color	Part No.	Lens
🔴 Red	03-923.2	Translucent
🟡 Yellow	03-923.4	Translucent
🟢 Green	03-923.5	Translucent
🔵 Blue	03-923.6	Translucent
⚪ White	03-923.9	Opaque/ribbed
⚫ Black	03-923.0	Opaque/ribbed

Front bezel flat and raised, black plastic

Image	Part No.	Product description
1	03-965.0	Front bezel flat
2	03-967.0	Front bezel raised
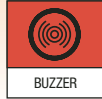
| INDICATOR | PUSHBUTTON | BUZZER |

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories

Sprayproof cover for IP65 sealing and flap guard for pushbutton switch

Blanking plate

Lens remover for flat bezel, lens remover for raised bezel and LED and lamp remover

Image	Part No.	Product description
1	03-924	Sprayproof cover
2	03-925	Flap guard

Part No.
03-949.0

Image	Part No.	Product description
1	02-905	Lens remover for flat/2 sided bezel
2	98-968	Lens remover for raised/4 sided bezel
3	51-996	LED remover
4	02-906	Lamp remover raised/4 sided

03 Indicator
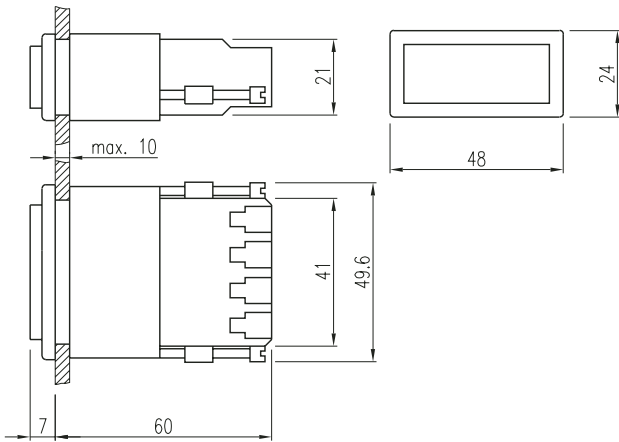
Single

03 Pushbutton

Illuminated, Raised, Single

screw terminal

plug-in terminal
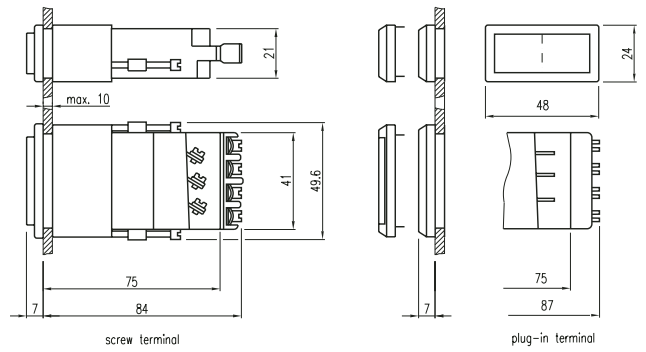
03 Pushbutton

Illuminated, Raised, Double
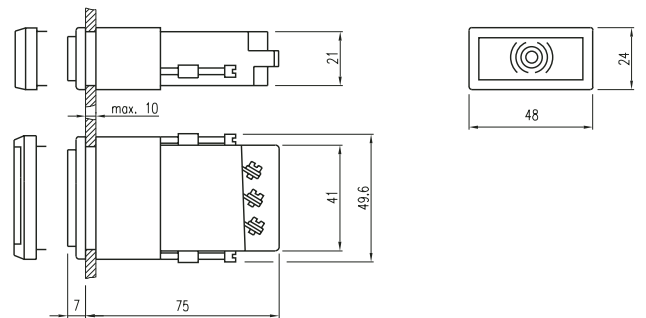
screw terminal

plug-in terminal

03 Buzzer

Raised

03 Cut-outs, Raised Mounting

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR	BUZZER
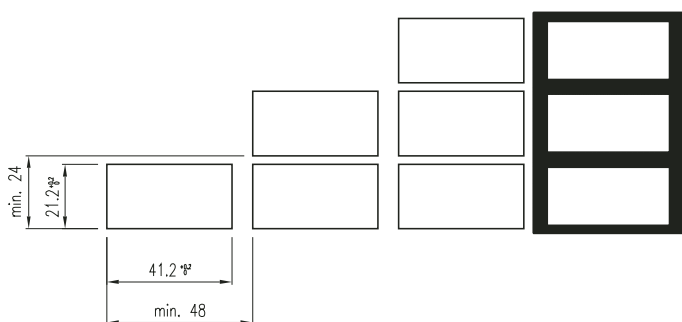
Choose one component from each of the colored sections to assemble a complete switch.

Product Profile

The Series 04 is a high quality switch range that includes pushbuttons, indicators, selectors, mushroom headed switches, key switches, and Emergency-stops.

Options include self cleaning, slow-make and snap-action switching elements.

Technical drawings see pages 18-21

- IP65 Protection
- Switch Rating:
  Maximum Voltage, 600VAC
  Maximum Thermal Current, $I_{th} = 10A$
  230VAC/6A, 24VDC/10A
- Raised Mounting into 22.5mm cut out
- Flush Mounting into 30.5mm cut out
- Illumination using Ba9s (T-3¼ bayonet base) Lamps or LED's
- All standard lenses are transparent with translucent diffuser
- Screw terminal or plug-in connections

Indicator

Indicator, round, full face, 22.5mm mounting

Color	Part No.
● Red	704.000.2
● Yellow	704.000.4
● Green	704.000.5
● Blue	704.000.6
○ Clear	704.000.7

For complete switch also order 💡

Indicator, flush mount, aluminum bezel, 30.5mm mounting

Color	Part No.
● Red	704.006.218
● Yellow	704.006.418
● Green	704.006.518
● Blue	704.006.618
○ Clear	704.006.718

For complete switch also order 💡

Non-illuminated pushbutton

Non illuminated raised pushbutton, gray plastic bezel, 22.5mm mounting

Non illuminated raised pushbutton, aluminum bezel, 22.5mm mounting

Non illuminated flush mount pushbutton, aluminum bezel, 30.5mm mounting

Part Ordering System 704.02 - ( ) ( ) ( ) ( )

Pushbutton Action	Lens/Cap Style	Front Ring Style	Material	Diffuser Type	Lens/Cap Color
1-Momentary	Standard-plastic	0-Standard	Black plastic	0-Black	0-Black
2-Momentary	Standard-metal	1-Standard	Anodized Al	1-No diffuser	2-Red
3-Momentary	Extended-plastic	2-Sealed	Ni plated brass	(Mushroom or	3-Orange*
4-Momentary	Mushroom-plastic		Silicone cover	opaque lens)	4-Yellow
5-Maintained	Standard-plastic	3-Sealed	Anodized Al	7-Clear	5-Green
6-Maintained	Standard-metal		Silicon cover	9-White	6-Blue**
7-Maintained	Extended-plastic	4-Standard	Chrome plastic		7-White ***
8-Maintained	Mushroom-plastic	6-Standard	Gray plastic		8-Aluminum**
		7-Extended	Gray plastic		9-Steel**
		9-Standard	Steel		

Color	Part No., Momentary	Part No., Maintained
● Red	704.012.218	704.042.218
● Yellow	704.012.418	704.042.418
● Green	704.012.518	704.042.518
● Blue	704.012.618	704.042.618
○ Clear	704.012.718	704.042.718
● Black	704.012.018	704.042.218

For complete switch also order ☑ A

* Only available in standard plastic   ** Not available with mushroom cap   *** Combination of clear lens and white diffuser

For complete switch also order ☑ A

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | A ACCESSORIES |

◎ Illuminated pushbutton

Illuminated raised pushbutton,
gray plastic bezel, 22.5mm mounting

Illuminated raised pushbutton,
aluminum bezel, 22.5mm mounting

Illuminated flush mount pushbutton,
aluminum bezel, 30.5mm mounting

Part Ordering System 704.01 - ( ) ( ) ( ) ( )

Pushbutton Action	Lens Style	Termination Style	Front Ring	Material	Diffuser* Type	Lens Color
1-Momentary	Standard	Screw	0-Standard	Black plastic	7-Clear	2-Transparent red
2-Momentary	Standard	0.250" Q.C.	1-Standard	Anodized Al	9-White	3-Transparent orange
3-Momentary	Extended	Screw	2-Sealed	Ni plated brass		4-Transparent yellow
4-Momentary	Extended	0.250" Q.C.		Silicon cover		5-Transparent green
5-Maintained	Standard	Screw	3-Sealed	Anodized Al		6-Transparent blue
6-Maintained	Standard	0.250" Q.C.		Silicon cover		7-White (uses clear
7-Maintained	Extended	Screw	4-Standard	Chrome plastic		lens/white diffuser)
8-Maintained	Extended	0.250" Q.C.	6-Standard	Gray plastic		
9-Momentary	Mushroom	Screw	7-Extended	Gray plastic		
10-Momentary	Mushroom	0.250" Q.C.	9-Standard	Steel		
11-Maintained	Mushroom	Screw				
12-Maintained	Mushroom	0.250" Q.C.				

Color	Part No., Momentary	Part No., Maintained
● Red	704.032.218	704.062.218
● Yellow	704.032.418	704.062.418
● Green	704.032.518	704.062.518
● Blue	704.032.618	704.062.618
○ Clear	704.032.718	704.062.718

For complete switch also order ☑ ☼ **A**   *White translucent for incandescent lamps and clear knurled for neon

For complete switch also order ☑ ☼ **A**

◎ Illuminated pushbutton

Illuminated raised pushbutton,
gray plastic bezel, 22.5mm mounting

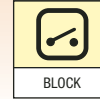Illuminated raised pushbutton,
aluminum bezel, 22.5mm mounting

Part Ordering System 704.03 - ( ) ( ) ( ) ( )

Pushbutton Action	Lighted or Unlighted	Film Insert	Lamp Holder	Bezel Color	Lens Color
0-Momentary	Lighted	With	0-No lamp holder	0-Black	0-Black
1-Momentary	Lighted	Without	1-Lamp holder screw terminals	4-Chrome	2-Red
2-Momentary	Unlighted	With	2-Lamp holder 0.250" Q.C. terminals	6-Light gray	3-Orange
3-Momentary	Unlighted	Without			4-Yellow
4-Maintained	Lighted	With			5-Green
5-Maintained	Lighted	Without			6-Blue
6-Maintained	Unlighted	With			7-White*
7-Maintained	Unlighted	Without			

For complete switch also order ☑ ☼ **A**   *Combination of clear lens and white diffuser

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR	BUZZER

Choose one component from each of the colored sections to assemble a complete switch.

Emergency-stop switch

Emergency-stop, twist release, 37mm diameter, foolproof to EN 60947-5-1 and EN 418, use slow-make switching elements

Part No.
704.064.2

For emergency stop applications, a maximum of 2 switching elements can be used

For complete switch also order ☑ A

Emergency-stop, key release, 37mm diameter, foolproof to EN 60947-5-1 and EN 418, use slow-make switching elements

Part No.
704.066.2

For emergency stop applications, a maximum of 2 switching elements can be used

For complete switch also order ☑ A

Emergency-stop, twist release, mushroom head, 40mm diameter, use slow-make switching elements

Part No.	Front Ring	Markings
704.074.2	Gray plastic	Directional arrows
704.075.2	Anodized aluminum	Directional arrows

Mushroom headed pushbutton

Mushroom headed pushbutton, plastic bezel and aluminum bezel, 22.5mm mounting, function momentary

Color	Part No., Plastic	Part No., Aluminum
● Red	704.070.2	704.071.2
● Yellow	704.070.4	704.071.4
● Green	704.070.5	704.071.5
● Black	704.070.0	704.071.0

Maintained versions available as well

For complete switch also order ☑ A

Keylock switch

Keylock switch 2 position, raised, 22.5mm mounting

1 (A B / Mom 42°)   2 (C B / Maint 90°)

Drawing	Part No.	Action	Key rem.
1	704.123.0	Momentary	A
2	704.121.0	Maintained	C

For complete switch also order ☑ A

Keylock switch 2 position, flush mount, 30.5mm mounting

3 (A B / Mom 42°)   4 (C B / Maint 90°)

Drawing	Part No.	Action	Key rem.
3	704.123.018	Momentary	A
4	704.121.018	Maintained	C

For complete switch also order ☑ A

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | **A** ACCESSORIES |

🔑 Keylock switch

Keylock switch 3 position, raised, 22.5mm mounting

5 (Mom 42°) **6** (Maint 90°)

Drawing	Part No.	Action	Key rem.
5	704.115.0	Momentary/Momentary	A
6	704.114.0	Maintained/Maintained	A

For complete switch also order A

Keylock switch 3 position, flush mount, 30.5mm mounting

7 (Maint/Mom 42°)

Drawing	Part No.	Action	Key rem.
7	704.115.018	Momentary/Momentary	A
7	704.114.018	Maintained/Maintained	A

For complete switch also order A

🎚 Selector switch

Selector switch short lever 2 position, raised, 22.5mm mounting

8 (Mom 42°) **9** (Maint 90°)

Drawing	Part No.	Action	Bezel
8	704.412.0	Momentary	Gray plastic
8	704.413.0	Momentary	Aluminum
9	704.410.0	Maintained	Gray plastic
9	704.411.0	Maintained	Aluminum

For complete switch also order A

🎚 Selector switch

Selector switch short lever 2 position, flush mount, 30.5mm mounting

10 (Mom 42°) **11** (Maint 90°)

Drawing	Part No.	Action	Bezel
10	704.413.018	Momentary	Aluminum
11	704.411.018	Maintained	Aluminum

For complete switch also order A

Selector switch short lever 3 position, raised, 22.5mm mounting

12 (Maint/Mom 42°)

Drawing	Part No.	Action	Bezel
12	704.404.0	Momentary/Momentary	Gray plastic
12	704.405.0	Momentary/Momentary	Aluminum
12	704.402.0	Maintained/Maintained	Gray plastic
12	704.403.0	Maintained/Maintained	Aluminum

For complete switch also order A

Selector switch short lever 3 position, flush mount, 30.5mm mounting

13 (Maint/Mom 42°)

Drawing	Part No.	Action	Bezel
13	704.405.018	Momentary	Aluminum
13	704.403.018	Maintained	Aluminum

For complete switch also order A

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR	BUZZER

Choose one component from each of the colored sections to assemble a complete switch.

Selector switch

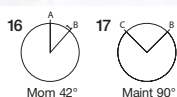**Selector switch long lever 2 position, raised, 22.5mm mounting**

14 Mom 42°   15 Maint 90°
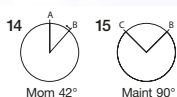
Drawing	Part No.	Action	Bezel
14	704.102.0	Momentary	Gray plastic
14	704.103.0	Momentary	Aluminum
15	704.100.0	Maintained	Gray plastic
15	704.101.0	Maintained	Aluminum

For complete switch also order ☑ **A**

Selector switch long lever 2 position, flush mount, 30.5mm mounting

16 Mom 42°   17 Maint 90°

Drawing	Part No.	Action	Bezel
16	704.103.018	Momentary	Aluminum
17	704.101.018	Maintained	Aluminum

For complete switch also order ☑ **A**

Selector switch long lever 3 position, raised, 22.5mm mounting

18 Maint/Mom 42°
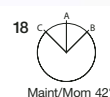
Drawing	Part No.	Action	Bezel
18	704.094.0	Momentary	Gray plastic
18	704.095.0	Momentary	Aluminum
18	704.092.0	Maintained	Gray plastic
18	704.093.0	Maintained	Aluminum

For complete switch also order ☑ **A**

Selector switch

Selector switch long lever 3 position, flush mount, 30.5mm mounting

19 Maint/Mom 42°
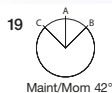
Drawing	Part No.	Action	Bezel
19	704.095.018	Momentary	Aluminum
19	704.093.018	Maintained	Aluminum

For complete switch also order ☑ **A**

Buzzer

Buzzer, plastic bezel, raised, 22.5mm mounting, 24VDC, 95dB ± 8 at a distance of 0.1m

Part No.	Front finish
14-810.002	Black plastic
14-810.902	Chromium-plated

Buzzer, plastic bezel, flush mount, 30.5mm mounting, 24VDC, IP40, 95dB ± 8 at a distance of 0.1m

Part No.	Front finish
14-810.910	Black plastic
14-810.918	Chromium-plated

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

BLOCK   LED   ACCESSORIES A

Contact block

Contact block, screw terminal, snap-action with silver self-cleaning contacts

Part No.	Contact type
704.900.1	1NO
704.900.2	1NC
704.900.3	2NO
704.900.4	2NC
704.900.5	1NO/1NC
Not recommended for	
Emergency-stop applications	

For complete switch also order ◎ ◎ ♀ ♂ ⬚

Contact block, screw terminal, slow-make (positive-break) with silver forced opening contacts

Part No.	Contact type
704.910.2	1NC
704.910.4	2NC
704.910.5	1NO/1NC
704.910.1	1NO
704.910.2	2NO

For complete switch also order ◎ ◎ ♀ ♂ ⬚

LED

LED, Ba9s (T-3¼ bayonet base), single chip, 6 Volt and 12 Volt

Color	Part No.	Voltage
● Red	10-2506.1082	6VDC, 17mA
● Yellow	10-2506.1084	6VDC, 17mA
● Green	10-2506.1085	6VDC, 17mA
● Blue	10-2506.1086	6VDC, 17mA
○ White	10-2506.1089	6VDC, 17mA
● Red	10-2509.1142	12VAC/DC, 16mA
● Yellow	10-2509.1144	12VAC/DC, 16mA
● Green	10-2509.1145	12VAC/DC, 7mA
● Blue	10-2509.1146	12VAC/DC, 16mA
○ White	10-2509.1149	12VAC/DC, 16mA

LED

LED, Ba9s, single chip, (T-3¼ bayonet base) 24 Volt and 28 Volt

Color	Part No.	Voltage
● Red	10-2512.1142	24VAC/DC, 15mA
● Yellow	10-2512.1144	24VAC/DC, 15mA
● Green	10-2512.1145	24VAC/DC, 7mA
● Blue	10-2512.1146	24VAC/DC, 15mA
○ White	10-2512.1149	24VAC/DC, 15mA
● Red	10-2513.1142	28VAC/DC, 13mA
● Yellow	10-2513.1144	28VAC/DC, 13mA
● Green	10-2513.1145	28VAC/DC, 7mA
● Blue	10-2513.1146	28VAC/DC, 13mA
○ White	10-2513.1149	28VAC/DC, 13mA

LED, Ba9s, (T-3¼ bayonet base) single chip, 48 Volt

Color	Part No.	Voltage
● Red	10-2519.1052	48VAC/DC, 8mA
● Yellow	10-2519.1054	48VAC/DC, 8mA
● Green	10-2519.1055	48VAC/DC, 4mA
● Blue	10-2519.1056	48VAC/DC, 8mA
○ White	10-2519.1059	48VAC/DC, 8mA

LED, Ba9s, (T-3¼ bayonet base) single chip, 130 Volt and 230 Volt

Color	Part No.	Voltage
● Red	10-2H24.2052	130VAC / 5mA
● Yellow	10-2H24.2054	130VAC / 5mA
● Green	10-2H24.2055	130VAC / 3mA
● Blue	10-2H24.2056	130VAC / 5mA
○ White	10-2H24.2059	130VAC / 5mA
● Red	10-2H25.2042	230VAC / 3mA
● Yellow	10-2H25.2044	230VAC / 3mA
● Green	10-2H25.2045	230VAC / 2mA
● Blue	10-2H25.2046	230VAC / 3mA
○ White	10-2H25.2049	230VAC / 3mA

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR	BUZZER

Choose one component from each of the colored sections to assemble a complete switch.

A Accessories

Lens cap, round, transparent, plastic for raised and flush indicators with bezel and pushbutton actuators

Color	Part No.
🔴 Red	704.602.2
🟡 Yellow	704.602.4
🟢 Green	704.602.5
🔵 Blue	704.602.6
⚪ Clear	704.602.7
	For complete lens also order diffuser
	704.609.9 (see page 21)

Protective cover, raised pushbutton

Part No.	Comment
704.925.0	for pushbuttons
704.925.3	for selector with short
	lever with "self return"

Protective front ring with silicon membrane for raised or flush mount pushbutton, natural anodized aluminum

Part No.	Size
704.600.3	29mm Ø for raised pushbutton
704.955.3	35mm Ø for flush mount pushbutton

A Accessories

Emergency-stop protective shroud, yellow painted aluminum with 22.5mm mounting hole

Part No.
Contact EAO Switch directly

Emergency-stop switch label, 60mm diameter, English, French and German with adhesive backing

Part No.	Markings
704.963.6	Emergency stop
704.963.5	Not Aus
704.963.7	Arret D'urgence
44-950	Blank
	90mm versions also available

Emergency-stop switch enclosure with 22.5mm mounting hole

Image	Part No.
1	704.945.0
2	704.945.6

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | A ACCESSORIES |
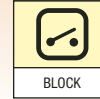
A Accessories

Blanking plate

Lens, LED and lamp remover

Part No.	Mounting hole
704.960.7	22.5mm Ø
704.964.8	30.5mm Ø

Part No.
704.955.0
704.955.1

Part No.
700.006.0

A Accessories

1   2

Legend plate, adhesive, natural anodized aluminum finish for raised and flush mount pushbuttons

1   2
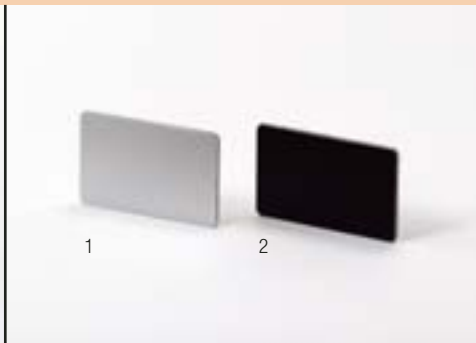
Label for front bezel set for 22.5 and 30.5mm flush mount with label support, self adhesive

Image	Part No.	Mounting hole	Image	Part No.
1	704.968.2	22.5mm Ø	1	704.968.0
2	704.968.3	30.5mm Ø	2	704.968.1

04 Indicator

Raised
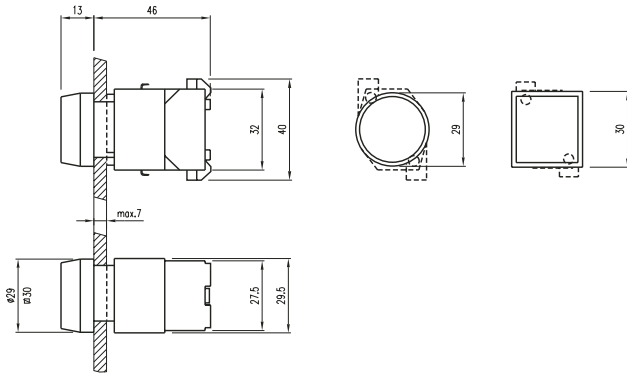
04 Indicator

Flush
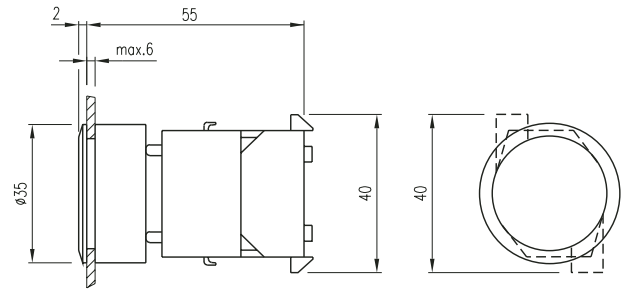
04 Pushbutton

Non-Illuminated, Raised
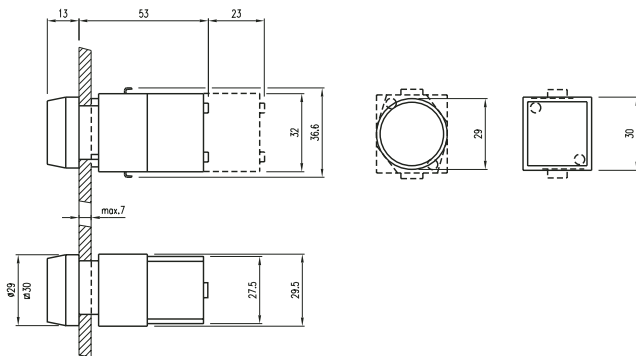
04 Pushbutton

Non-Illuminated, Flush
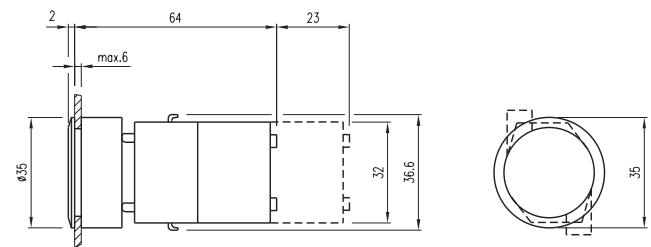
04 Pushbutton

Illuminated, Raised
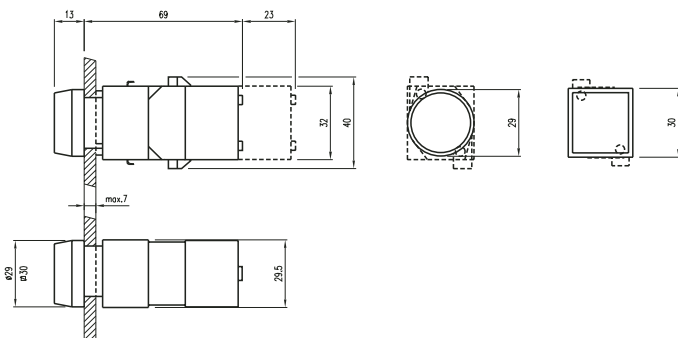
04 Pushbutton

Illuminated, Flush
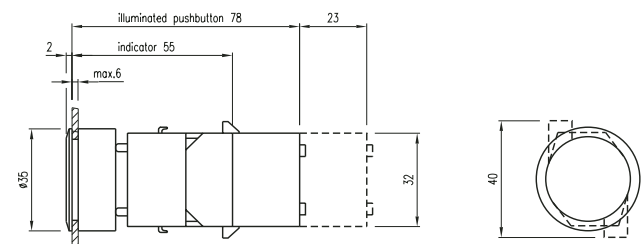
04 E-Stop

EN 418
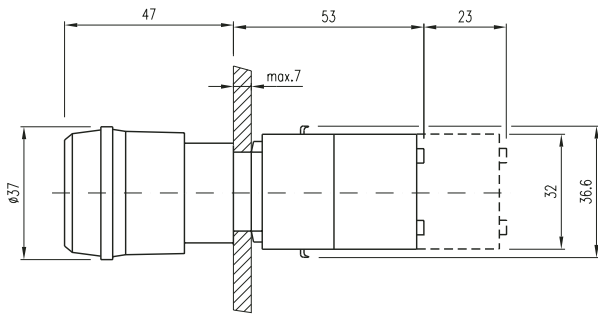
twist to release

04 E-Stop

EN 418 with optional key
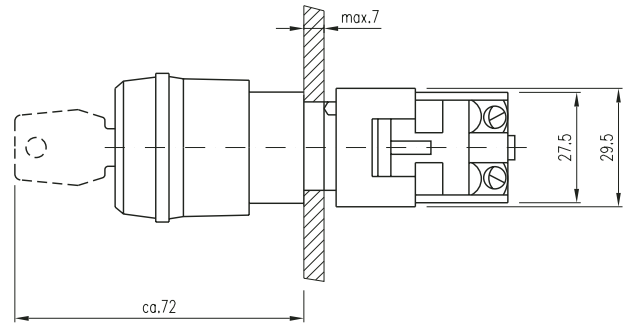
key to unlock

04 E-Stop Mushroom

Pushbutton Mushroom
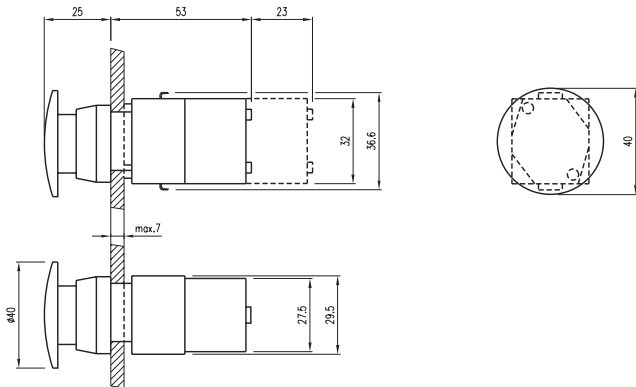
04 Keylock
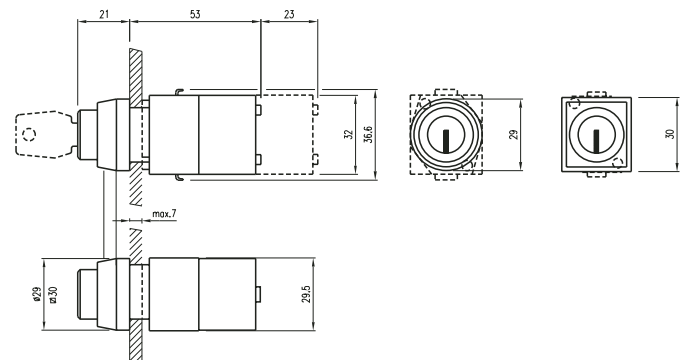
2-Position, 3-Position, Raised

04 Keylock
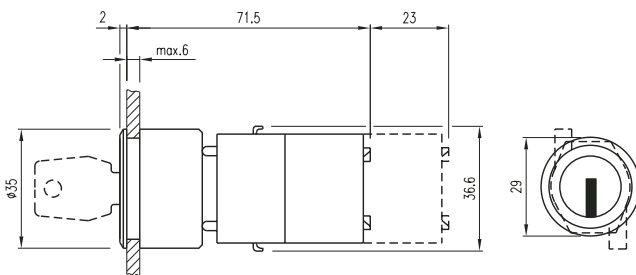
2-Position, 3-Position, Flush

04 Selector

2-Position, 3-Position, Short and Long, Flush
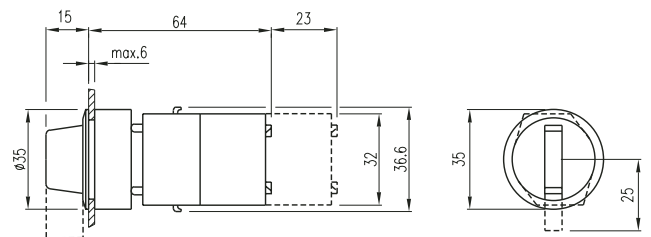
04 Selector, Short Lever

2-Position, 3-Position, Raised
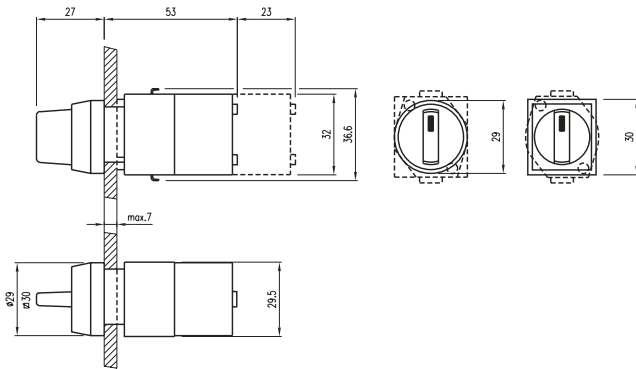
04 Selector, Long Lever

2-Position, 3-Position, Raised
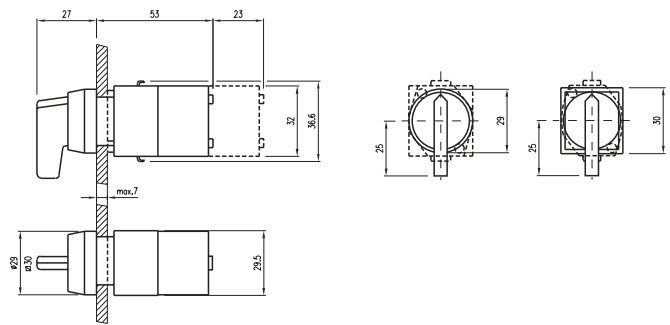
04 Buzzer

Raised
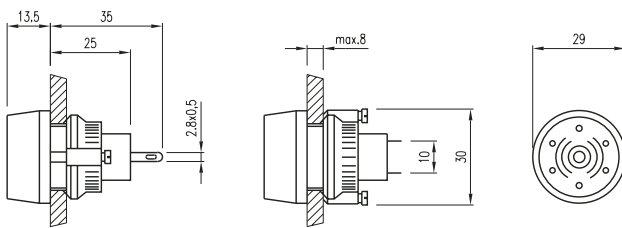
04 Buzzer

Flush
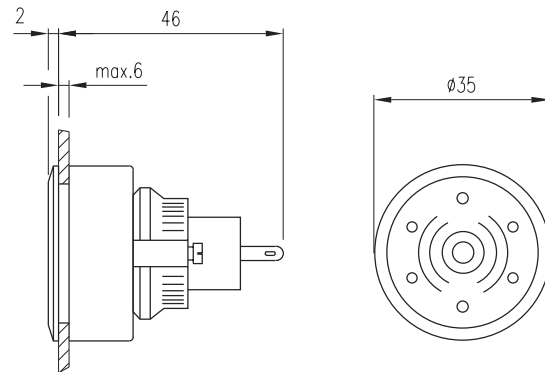
04 Cut-outs, Raised Mounting

(All but long lever)
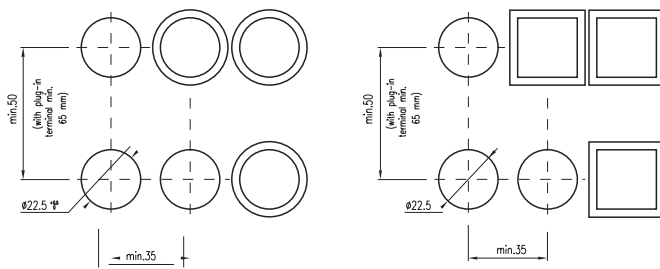
04 Cut-outs, Flush Mounting

(All but long lever)
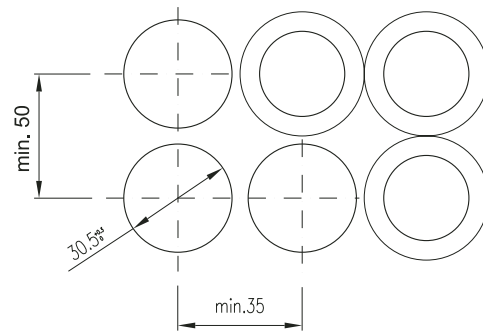
04 Long Lever Cut-outs, Raised Mounting
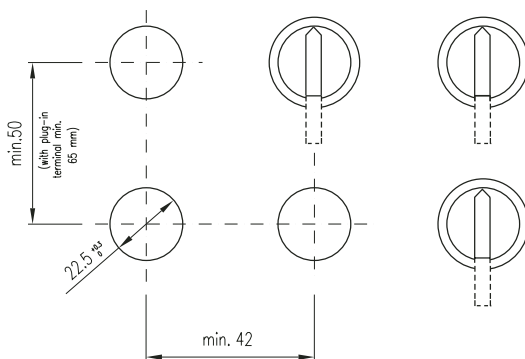
04 Long Lever Cut-outs, Flush Mounting
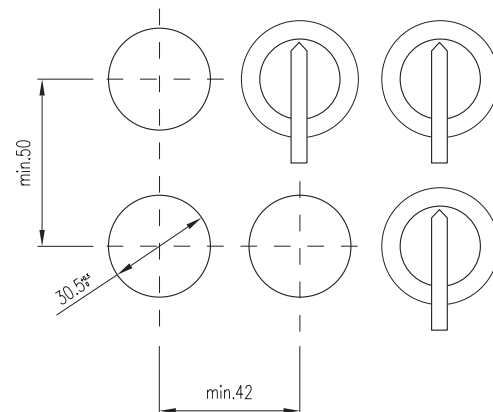
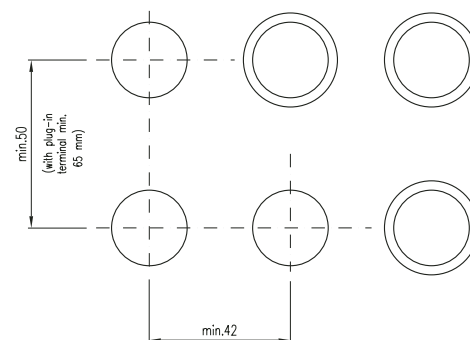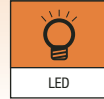
04 E-Stop EN418 Cut-outs
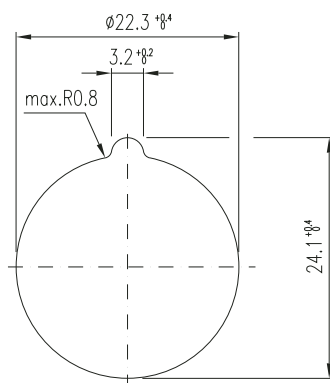
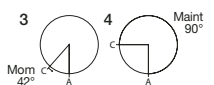## 04 E-Stop Mushroom Cut-outs

Pushbutton Mushroom

INDICATOR	PUSHBUTTON	KEYLOCK	SELECTOR	BUZZER

Choose one component from each of the colored sections to assemble a complete switch.
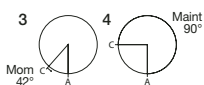For other options or further information please contact EAO Switch directly.

Product Profile

☼ Indicator

The Series 14 is a high quality switch range that includes pushbuttons, indicators, mushroom headed switches, selector switches and 2 position key switches.

Options include self cleaning, snap-action or low level switching elements.

Technical drawings see pages 26-27

- IP67 Protection
- Switch Rating:
  Maximum Voltage, 250VAC
  Maximum Thermal Current, I_{th} = 5A
  24VDC/2A, 250VAC/5A
- Raised Mounting into 22.5mm cut out
- Flush Mounting into 30.5mm cut out
- Illumination using T5.5 Lamps or LED's
- All standard lenses are transparent with translucent diffuser
- Solder, plug-in or PCB connections
- Low lever versions available

Indicator body round for raised full face, black plastic, 22.5mm mounting, solder terminals

Part No.
14-030.005

For complete switch also order ☼ A

Indicator body for raised and flush mount, black plastic for use with 22.5mm and 30.5mm mounting, solder terminals

Part No.
14-040.005
For flush mount (30.5mm mounting)
order bezel 704.955.0 or 704.955.1

For complete switch also order ☼ A

◎ Illuminated pushbutton

Illuminated pushbutton actuator for raised and flush mount, black plastic, solder terminal, snap-action, gold over silver contacts

Part No.	Action	Contact type
14-131.025	Momentary	1NO/1NC
14-132.025	Momentary	2NO/2NC
14-271.025	Maintained	1NO/1NC
14-272.025	Maintained	2NO/2NC
For flush mount order bezel		
704.955.0 or 704.955.1		

For complete switch also order ☼ A

Illuminated pushbutton actuator for raised and flush mount, black plastic, plug-in terminal, snap-action, gold over silver contacts

Part No.	Action	Contact type
14-131.022	Momentary	1NO/1NC
14-271.022	Maintained	1NO/1NC
14-132.022	Momentary	2NO/2NC
14-272.022	Maintained	2NO/2NC
For flush mount order bezel		
704.955.0 or 704.955.1		

For complete switch also order ☼ A

⚷ Keylock switch

Keylock switch, 2 position, raised, gold over silver contacts, solder terminals, snap-action

Drawing	Part No.	Action	Key rem.	Contact type
1	14-141.025K	Momentary	A	1NO/1NC
2	14-235.025K	Maintained	A	1NO/1NC
For flush mount order bezel				
704.955.0 or 704.955.1				

For complete switch also order A

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

LED	ACCESSORIES
	A

Selector switch

Selector switch short lever 2 position, raised, snap-action, solder terminals

3 4 Maint 90° Mom 42° C A A

Drawing	Part No.	Action	Contact type
3	14-501.025	Momentary	1NC/1NO
4	14-506.025	Maintained	1NC/1NO
	For flush mount order bezel		
	704.955.0 or 704.955.1		

For complete switch also order A

Selector switch long lever 2 position, raised, snap-action, solder terminals

3 4 Maint 90° Mom 42° C A A

Drawing	Part No.	Action	Contact type
3	14-551.025	Momentary	1NO/1NC
4	14-556.025	Maintained	1NO/1NC

For complete switch also order A

Buzzer

Buzzer, plastic bezel, raised, 22.5mm mounting, 24VDC, IP65, 95dB ± 8 at a distance of 0.1m

Part No.	Product description
14-810.002	Black plastic
14-810.902	Chromium-plate

Buzzer

Buzzer, plastic bezel, flush mount, 30.5mm mounting, 24VDC, IP40, 95dB ± 8 at a distance of 0.1m

	Part No.	Front finish
	14-810.910	Black plastic
	14-810.918	Chromium-plated

LED

LED, T-5.5, single chip, 6 Volt and 12 Volt

Color	Part No.	Voltage
● Red	10-2106.3142	6VDC/15mA
● Yellow	10-2106.3144	6VDC/15mA
● Green	10-2106.3145	6VDC/7mA
● Blue	10-2106.3146	6VDC/15mA
○ White	10-2106.3149	6VDC/15mA
● Red	10-2109.1062	12VAC/DC, 7/14mA
● Yellow	10-2109.1064	12VAC/DC, 7/14mA
● Green	10-2109.1065	12VAC/DC, 4/7mA
● Blue	10-2109.1066	12VAC/DC, 7/14mA
○ White	10-2109.1069	12VAC/DC, 7/14mA

LED, T-5.5, single chip, 24 Volt and 28 Volt

Color	Part No.	Voltage
● Red	10-2112.1062	24VAC/DC, 7/14mA
● Yellow	10-2112.1064	24VAC/DC, 7/14mA
● Green	10-2112.1065	24VAC/DC, 4/7mA
● Blue	10-2112.1066	24VAC/DC, 7/14mA
○ White	10-2112.1069	24VAC/DC, 7/14mA
● Red	10-2113.1062	28VAC/DC, 7/14mA
● Yellow	10-2113.1064	28VAC/DC, 7/14mA
● Green	10-2113.1065	28VAC/DC, 4/7mA
● Blue	10-2113.1066	28VAC/DC, 7/14mA
○ White	10-2113.1069	28VAC/DC, 7/14mA

| INDICATOR | PUSHBUTTON | KEYLOCK | SELECTOR | BUZZER |

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

LED

LED, T-5.5, single chip, 48 Volt

Color	Part No.	Voltage
● Red	10-2119.1042	48VAC/DC, 4/8mA
○ Yellow	10-2119.1044	48VAC/DC, 4/8mA
● Green	10-2119.1045	48VAC/DC, 2/4mA
● Blue	10-2119.1046	48VAC/DC, 4/8mA
○ White	10-2119.1049	48VAC/DC, 4/8mA

A Accessories

Lens, plastic for raised, round indicator body, full face

Color	Part No.
● Red	704.603.2
○ Yellow	704.603.4
● Green	704.603.5
● Blue	704.603.6
○ Clear	704.603.7

For complete lens also order diffuser 704.608.9

Lens cap, round, transparent, plastic for raised and flush indicators with bezel and pushbutton actuators

Color	Part No.
● Red	704.602.2
○ Yellow	704.602.4
● Green	704.602.5
● Blue	704.602.6
○ Clear	704.602.7
● Black	704.602.0

For complete lens also order diffuser 704.609.9

A Accessories

1   2   3   4

Aluminum raised bezel, grey plastic raised bezel and flush mount aluminum bezel

Image	Part No.	Product description
1	704.600.1	Aluminum raised bezel
2	704.600.6	Grey plastic bezel
3	704.955.1	Flush mount aluminum bezel
4	704.955.0	Flush mount bezel black

Protective cover, raised pushbutton

Part No.
704.925.0

Protective front ring with silicon membrane for raised or flush mount pushbutton, natural anodized aluminum

Part No.	Size
704.600.3	29mm diameter for raised pushbutton
704.955.3	35mm diameter for flush mount pushbutton

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| LED | ACCESSORIES |

A Accessories

Blanking plate

LED and lens/lamp remover

Marking plate for full face indicator and marking plate

	Part No.	Mounting hole
	704.960.7	22.5mm Ø
	704.964.8	30.5mm Ø

Image	Part No.	Product description
1	51-996	LED remover
2	700.006.0	Lens and lamp remover

Image	Part No.	Product description
1	704.608.9	Diffuser full face (white)
2	704.609.9	Diffuser (white)

A Accessories

Legend plate, adhesive, natural anodized aluminum finish for raised and flush mount pushbuttons

Label for front bezel set for 22.5 and 30.5mm flush mount with label support, self adhesive

Image	Part No.	Mounting hole
1	704.968.2	22.5mm Ø
2	704.968.3	30.5mm Ø

Image	Part No.
1	704.968.0
2	704.968.1

14 Indicator
Raised

soldering terminal   plug–in terminal   universal terminal

14 Indicator
Flush

soldering terminal   plug–in terminal   universal terminal

14 Pushbutton
Illuminated, Raised Solder

soldering terminal   plug–in terminal

	L1	L2
1nc+1no	37.5	44.5
2nc+2no	45.0	–
3nc+3no	42.5	–
4nc+4no	60.0	–

14 Pushbutton
Illuminated, Flush Solder, QC Terminals

soldering terminal   plug–in terminal   universal terminal

soldering terminal   plug–in terminal   universal terminal

	L1	L2	L3
1nc+1no	48.5	56.0	55.5
2nc+2no	56.0	–	–
3nc+3no	63.5	–	–
4nc+4no	71.0	–	–

14 Keylock
2-Position

	L1	L2
1NC + 1NO	34.5	44.5
2NC + 2NO	42	-
3NC + 3NO	49.5	-
4NC + 4NO	57	-

14 Selector, Short Lever
2-Position

soldering terminal   plug–in terminal

	L1	L2
1nc+1no	34.5	44.5
2no+2no	42.0	–
3nc+3no	49.5	–
4nc+4no	57.0	–

14 Selector, Long Lever

2-Position

	L1	L2
1nc+1no	34.5	44.5
2nc+2no	42.0	–
3nc+3no	49.5	–
4nc+4no	57.0	–
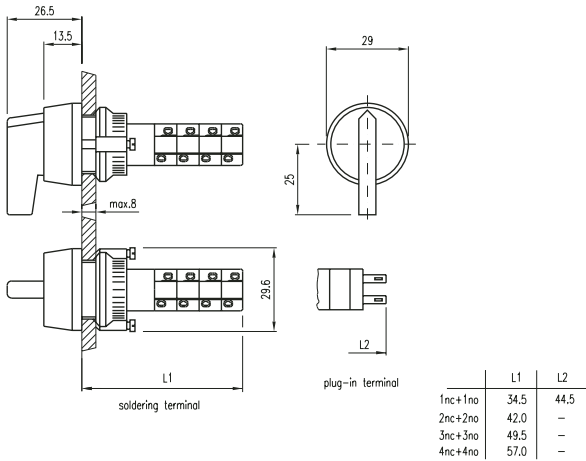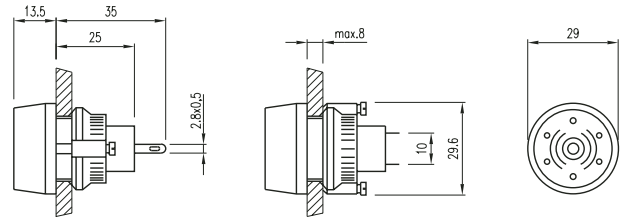
14 Buzzer

Raised

14 Buzzer

Flush
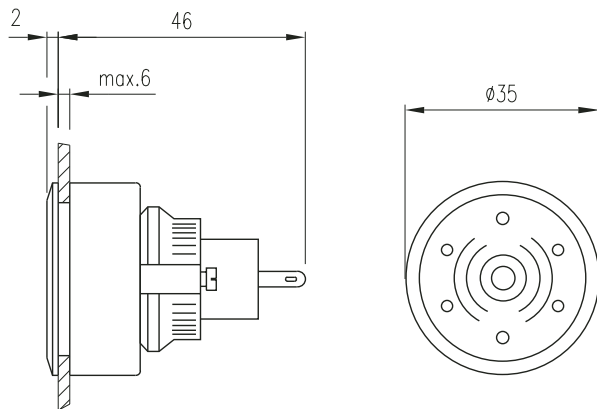
14 Cut-outs

Raised, Pushbuttons, Indicators, Keylocks, Short Lever

for pushbuttons
without anti-twisting device

for pushbuttons
with anti-twisting device (short lever)
recommended for keylock switch
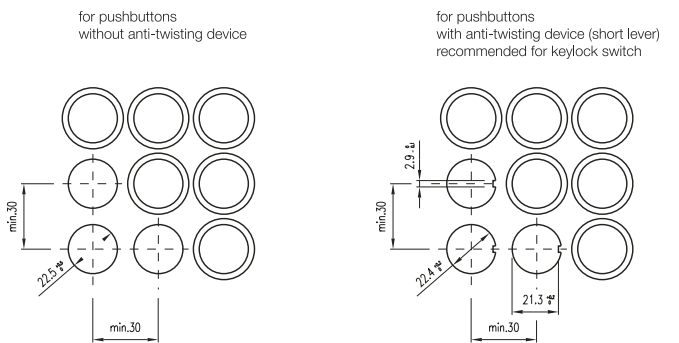
14 Cut-outs

Flush, Buzzer, Pushbutton, Indicator
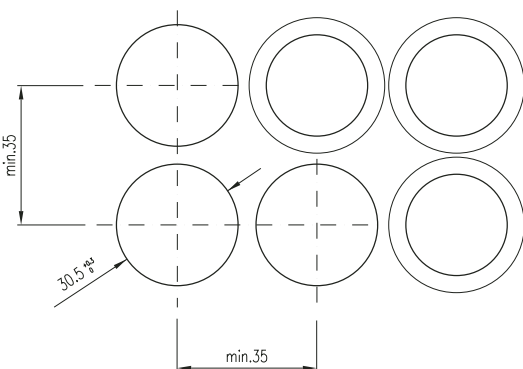
14 Cut-outs

2-Position, Long, Lever Raised
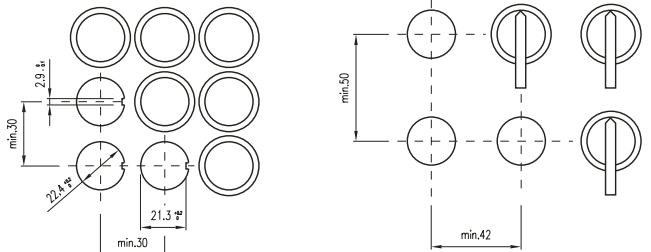
INDICATOR

For other options or further information please contact EAO Switch directly.

Product Profile

The Series 17 panel mount indicators are available in red, yellow, green or multi color illumination options. They can be mounted in 6, 8 or 14mm diameter holes. The integral series resistor allows direct connection to 24VDC or up to 230VAC.

- 6mm sealed to IP40, all other sizes to IP67
- Plug-in terminals 2.0 x 0.5mm or 2.8 x 0.8mm
- Internal or external reflector
- Front available in chromium-plated, silver or black
- Sizes up to 22.5mm available

Indicator

Indicator, flat reflector, 3mm LED, 24VDC, 6mm mounting

Color	Part No.
Red	17-000350
Yellow	17-000352
Green	17-000351

Indicator, external reflector, 3mm LED, 24VDC, 6mm mounting

Color	Part No.
Red	17-020350
Yellow	17-020352
Green	17-020351

Indicator

Indicator, internal reflector, 3mm LED, 24VDC, 6mm mounting

Color	Part No.
Red	17-030350
Yellow	17-030352
Green	17-030351
Yellow/Green	17-030356

Indicator, flat, internal reflector, 5mm LED, 24VDC, 8mm mounting

Color	Part No.
Red	17-010350
Yellow	17-010352
Green	17-010351

Indicator, external reflector, 5mm LED, 24VDC, 8mm mounting

Color	Part No.
Red	17-040350
Yellow	17-040352
Green	17-040351

For other options or further information please contact EAO Switch directly.

☼ Indicator

Indicator, external reflector, 5mm LED, 24VDC, 8mm mounting

Color	Part No.
🔴 Red	17-041350
🟡 Yellow	17-041352
🟢 Green	17-041351

Indicator, internal reflector, 5mm LED, 24VDC, 8mm mounting

Color	Part No.
🔴 Red	17-050350
🟡 Yellow	17-050352
🟢 Green	17-050351

Indicator, flat reflector, 5mm LED, 24VDC, 8mm mounting, tri-color

Color	Part No.
Red/Yellow /Green	17-100354

☼ Indicator

Indicator, external reflector, 5mm LED, 24VDC, 8mm mounting, bi-color

Color	Part No.
Red/ Green	17-120354

Indicator, internal reflector, 5mm LED, 24VDC, 8mm mounting, bi-color

Color	Part No.
Red/ Green	17-130354

Indicator, internal reflector, 5mm LED, 230VAC, 8mm mounting

Color	Part No.
🔴 Red	17-500430
🟡 Yellow	17-500432
🟢 Green	17-500431

INDICATOR

For other options or further information please contact EAO Switch directly.

☼ Indicator

Indicator, external reflector, 5mm LED, 230VAC, 8mm mounting

Indicator, internal/external reflector, 10mm LED, 24VDC, 14mm mounting

Indicator, internal/external reflector, 10mm LED, 230VAC, 14mm mounting

Color	Part No.
🔴 Red	17-510430
🟡 Yellow	17-510432
🟢 Green	17-510431

Color	Part No.
🔴 Red	17-210350
🟡 Yellow	17-210352
🟢 Green	17-210351
🔴🟢🟡 Red/Green /Yellow	17-240354

Color	Part No.
🔴 Red	17-350230
🟡 Yellow	17-350232
🟢 Green	17-350231

EAO has developed teams of Human Machine Interface application specialists with an in-depth knowledge of various industry sectors.

By understanding the requirements of our customers' projects, we are able to add value from concept (providing advice and ergonomic design) through to production.

EAO operates a 6 step project development process. The benefit to you, our customers, is the ability for you to focus on core business, save costs and achieve maximum efficiency in the implementation of product development without having to worry about creating concepts for complex Human Machine Interface systems.

T0 Partnership
EAO adds expert knowledge, creativity and innovative flair to its customer projects.

T1 Challenge
EAO analyzes the task with its customers and works out possible solutions.

T2 Concept
EAO examines all the technical, ergonomic and commercial specifications involved in the solution. Re-engineering using CAD, circuit diagrams and prototypes based on application-oriented tests.

T3 Development
EAO takes care of the detailed development of the solution while at the same time exchanging information with its customers.

T4 Production
Reliable processes and results - EAO coordinates implementation of the solution to suit its customer's end product.

T5 Customer service
EAO has a global presence and can always be contacted. Wherever our customers and their customers are, EAO stays in touch.

INDICATOR
PUSHBUTTON

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 18 is a range of small switches with low back panel depth profile and includes pushbuttons and indicators.

Options include round, square and rectangular front shape.

Technical drawings see pages 34-35

- IP40 Protection
- Switch Rating, 100mA, 42VAC/DC
- Raised Mounting into 8mm cut out
- Flush Mounting into 16mm or 15.8mm x 15.8mm cut out
- Illumination using Integral LED's
- Solder/Plug-in terminals
- Low back Panel depth
- Adapters available for PCB mounting
- Raised panel mount version also available

Indicator

Indicator, square, flush mount, black plastic bezel, 15.8mm x 15.8mm mounting

Color	Part No.	Voltage
● Red	18-080.0052	2.2VDC, 20mA
○ Yellow	18-080.0054	2.2VDC, 20mA
● Green	18-080.0055	2.2VDC, 20mA
● Red	18-081.0052	12VDC, 20mA
○ Yellow	18-081.0054	12VDC, 20mA
● Green	18-081.0055	12VDC, 20mA
● Red	18-082.0052	24VDC, 20mA
○ Yellow	18-082.0054	24VDC, 20mA
● Green	18-082.0055	24VDC, 20mA
	Need flush bezel set to complete switch	

For complete switch also order A

Indicator, round, flush mount, black plastic bezel, 15.8mm x 15.8mm or 16mm mounting

Color	Part No.	Voltage
● Red	18-060.0052	2.2VDC, 20mA
○ Yellow	18-060.0054	2.2VDC, 20mA
● Green	18-060.0055	2.2VDC, 20mA
● Red	18-061.0052	12VDC, 20mA
○ Yellow	18-061.0054	12VDC, 20mA
● Green	18-061.0055	12VDC, 20mA
● Red	18-062.0052	24VDC, 20mA
○ Yellow	18-062.0054	24VDC, 20mA
● Green	18-062.0055	24VDC, 20mA
	Need flush bezel set to complete switch	

For complete switch also order A

Illuminated pushbutton

Illuminated pushbutton actuator, square for flush mount, black plastic bezel, 15.8mm x 15.8mm mounting

	Part No.	Action	Contact type
	18-187.035	Momentary	1NO
	18-287.035	Maintained	1NO
	18-188.035	Momentary	1NC
	18-288.035	Maintained	1NC
	Need lens, flush bezel set to complete switch		

For complete switch also order A

Illuminated pushbutton actuator, round for flush mount, black plastic bezel, 15.8mm x 15.8mm or 16mm mounting

	Part No.	Action	Contact type
	18-167.035	Momentary	1NO
	18-267.035	Maintained	1NO
	18-168.035	Momentary	1NC
	18-268.035	Maintained	1NC
	Need lens, flush bezel set to complete switch		

For complete switch also order A

A Accessories

Lens, square, plastic, overhanging with 2.2VDC LED for flush mount, without built in resistor, flat, translucent/matt

Color	Part No.
● Red	18-981.2
○ Yellow	18-981.4
● Green	18-981.5
	Non-illuminated lenses:
● Red	18-982.2
○ Yellow	18-982.4
● Green	18-982.5

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A
ACCESSORIES

A Accessories

Lens, round, plastic, overhanging with 2.2VDC LED for flush mount, without built in resistor, flat, translucent/matt

Color	Part No.
● Red	18-961.2
● Yellow	18-961.4
● Green	18-961.5
	Non-illuminated lenses:
● Red	18-962.2
● Yellow	18-962.4
● Green	18-962.5

Front bezel-set flush mount for overhanging lenses, black plastic

Part No.	Size	Product desciption
18-920.1	19 x 19mm	For lens square
18-920.2	19 x 19mm	For lens round
18-920.3	19mm Ø	For lens round

PCB plug-in base for solder terminal

Part No.	Orientated
18-946	Right-angled
18-945	Axial

A Accessories

Mounting tool for tightening (or loosening) fixing nuts, starting torque fixing nut max. 20 Ncm and flush lens remover

Part No.	Product description
19-905	Mounting tool
18-910	Mounting tool, lens remover for flush

18 Indicator

Square or Round, Flush

max.4

1   29

⌀19   ⌀19   ⌀19
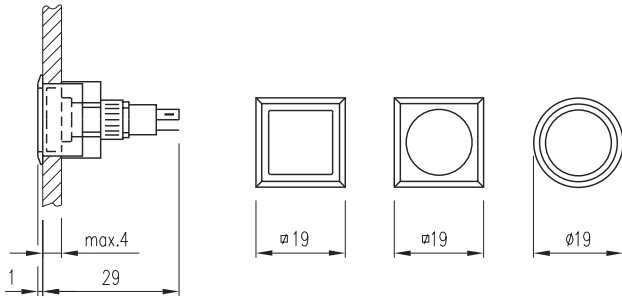
18 Pushbutton

Illuminated, Square or Round, Flush

max.4

1   30.5

⌀19   ⌀19   ⌀19
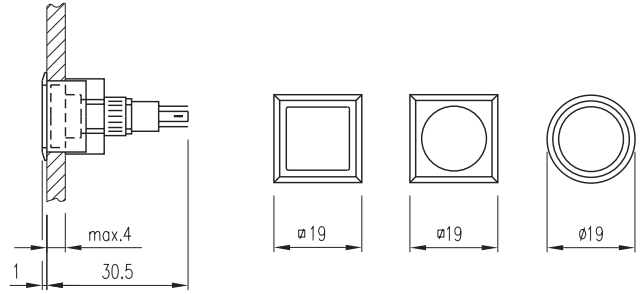
18 PCB

Plug-in base, right angle

9.2

5.8

11.7   3.2

18 PCB

Plug-in base

8.9

11.7   3.2
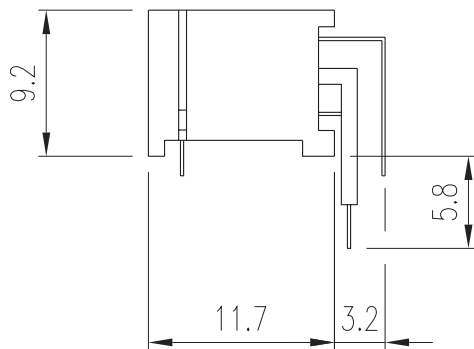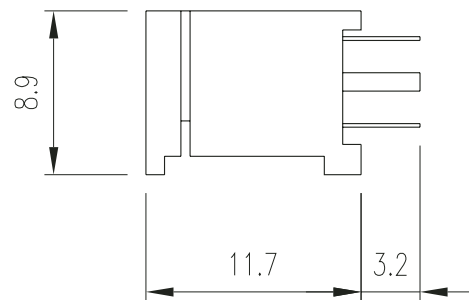
18 Indicator and Pushbutton Cut-outs

Square or round, Illuminated, Flush
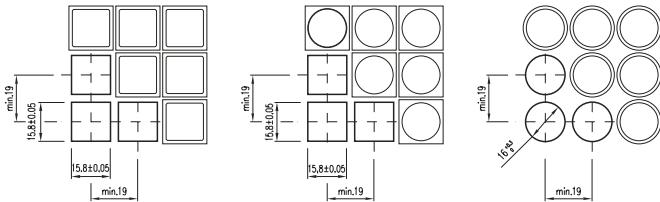
18 Front Bezel Set Cut-outs
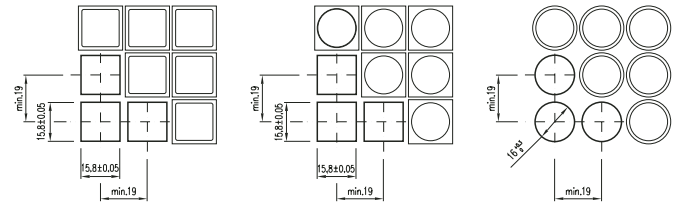
18 PCB Cut-outs

Plug-in base, right angle

18 PCB Cut-outs

All holes 1.1 dia.
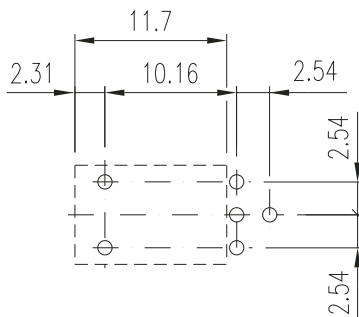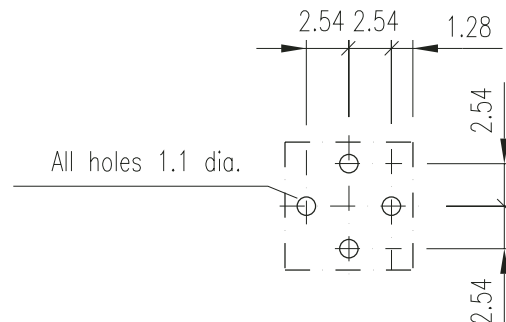
18 Indicator Terminal-layouts

Square or round, Flush
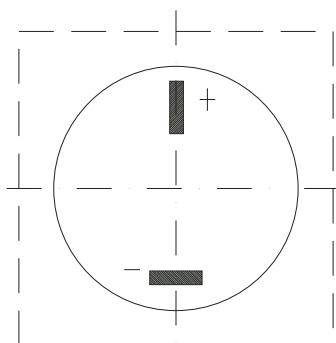
18 Pushbutton Terminal-layouts
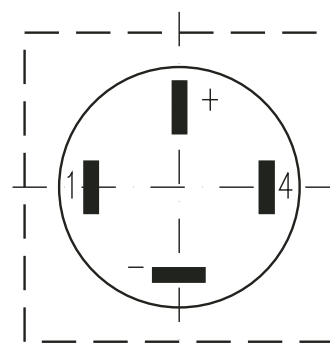
Square or round, Illuminated, Flush

INDICATOR	PUSHBUTTON	MUSHROOM	KEYLOCK

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 22 is a high quality switch range that includes pushbuttons, indicators, mushroom headed switches and key switches.

Options include:

Technical drawings see page 39

- IP65 Protection
- Switch Rating, 10A, 400VAC/DC
- Self cleaning snap-action switching elements.
- Mounting into 22 x 30mm cut out
- Illumination using T-1$\frac{3}{4}$ Lamps or LED's
- The standard lenses are available in many different versions, transparent, opaque or translucent
- Screw terminal or plug-in connections

Indicator

Indicator body raised, rectangular, black plastic

Part No.
22-040.001

For complete switch also order ☼ **A**

Illuminated pushbutton

Illuminated pushbutton actuator, raised, rectangular, black plastic, screw terminals

Part No.	Action	Contact type
22-211.011	Momentary	1NO
22-212.011	Momentary	1NC
22-213.011	Momentary	2NO
22-214.011	Momentary	2NC
22-215.011	Momentary	1NO/1NC
22-221.011	Maintained	1NO
22-222.011	Maintained	1NC
22-223.011	Maintained	2NO
22-224.011	Maintained	2NC
22-225.011	Maintained	1NO/1NC

For complete switch also order ☼ **A**

Keylock switch

Keylock switch actuator, 2 position raised, rectangular, screw terminals
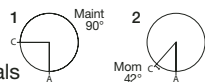
Drawing	Part No.	Contact type	Key rem.
1	22-331.111D	1NO	A
1	22-331.311D	1NO	C
1	22-331.511D	1NO	A+C
1	22-333.111D	2NO	A
1	22-333.311D	2NO	C
1	22-333.511D	2NO	A+C
1	22-335.111D	1NC/1NO	A
1	22-335.311D	1NC/1NO	C
1	22-335.511D	1NC/1NO	A+C
2	22-351.111D	1NO	A
2	22-353.111D	2NO	A
2	22-355.111D	1NC/1NO	A

For complete switch also order A

LED

LED, T-1 $\frac{3}{4}$ MG, single chip, 12 Volt and 28 Volt. Also available in 6 Volt, 24 Volt and 48 Volt.

Color	Part No.	Voltage
⬤ Red	10-2J09.1062	12VAC/DC, 7/14mA
⬤ Yellow	10-2J09.1064	12VAC/DC, 7/14mA
⬤ Green	10-2J09.1065	12VAC/DC, 4/7mA
⬤ Blue	10-2J09.1066	12VAC/DC, 7/14mA
⚪ White	10-2J09.1069	12VAC/DC, 7/14mA
⬤ Red	10-2J13.1062	28VAC/DC, 7/14mA
⬤ Yellow	10-2J13.1064	28VAC/DC, 7/14mA
⬤ Green	10-2J13.1065	28VAC/DC, 4/7mA
⬤ Blue	10-2J13.1066	28VAC/DC, 7/14mA
⚪ White	10-2J13.1069	28VAC/DC, 7/14mA

A   Accessories

Translucent lens, flat with white translucent diffuser for rectangular indicator and pushbutton actuators

Color	Part No.
⬤ Red	22-901.2
⬤ Yellow	22-901.4
⬤ Green	22-901.5
⬤ Blue	22-901.6
⚪ White	22-901.9

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories

Lens, opaque for rectangular pushbutton actuators, not for illumination

Color	Part No.
Grey	22-901.8

Transparent lens, flat with white translucent diffuser for rectangular indicator and pushbutton actuators

Color	Part No.
Red	22-903.2
Yellow	22-903.4
Green	22-903.5
Blue	22-903.6
Clear	22-903.7

Transparent lens, flat with white translucent diffuser for rectangular indicator and pushbutton actuators

Color	Part No.
Red	22-905.2
Yellow	22-905.4
Green	22-905.5
Clear	22-905.7

A Accessories

Mushroom head cap, not for illumination, opaque, red

Part No.
22-930.2
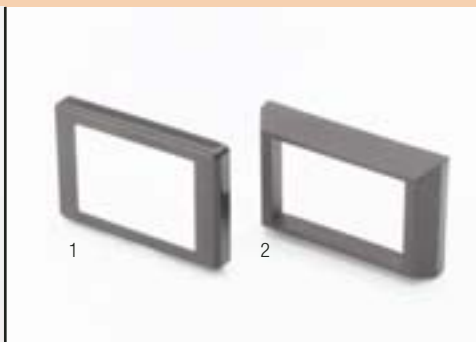
Front bezel flat and raised, black plastic

Image	Part No.	Product description
1	02-965.0	Front bezel flat
2	02-967.0	Front bezel raised
		Must be ordered to complete switch/indicator

Flap guard, raised, rectangular

Part No.
22-925

Series 22

22mm x 30mm   IP65   10A   400VAC

| INDICATOR | PUSHBUTTON | MUSHROOM | KEYLOCK |

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories

Blanking plate

Lens remover for flat bezel, lens remover
for raised bezel and LED and lamp remover

Part No.
22-949.0

Image	Part No.	Product description
1	02-905	Lens remover for flat bezel
2	98-968	Lens remover for raised bezel
3	51-996	LED remover
4	02-906	Lamp remover

22 Indicator

Raised
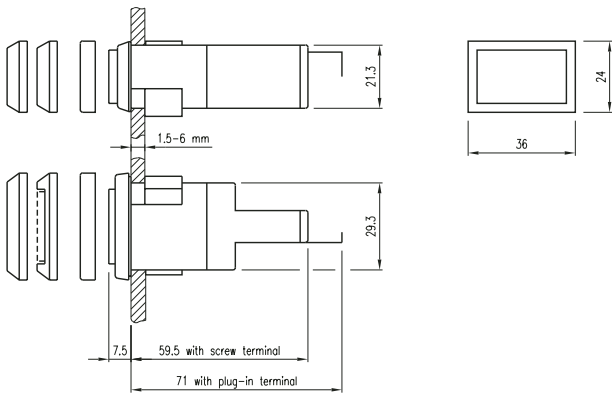
22 Pushbutton

Illuminated, Raised
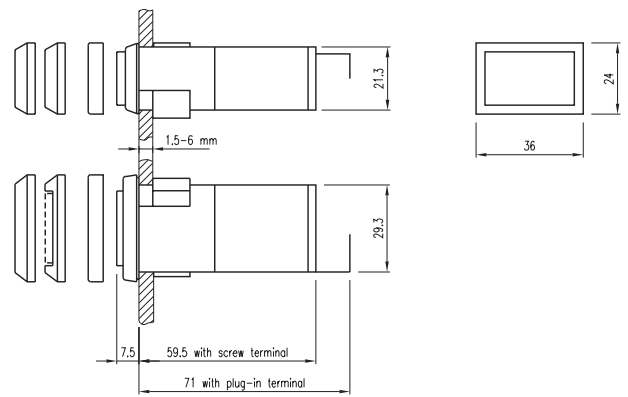
22 Keylock

2-Position, Raised
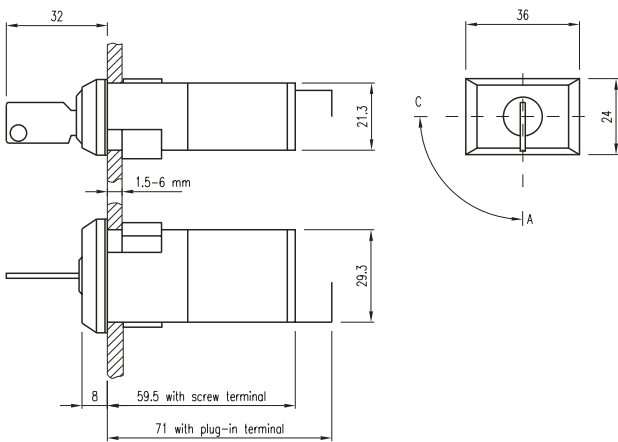
22 Cut-outs

For all Series 22
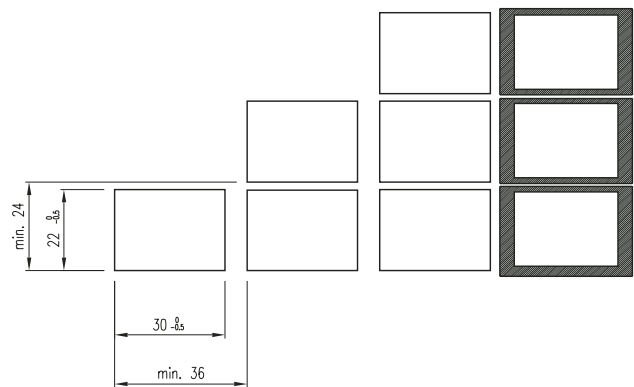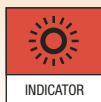
INDICATOR PUSHBUTTON BUZZER

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 31 is a high quality switch range that includes pushbuttons, indicators and buzzers. It is possible to choose up to 4NO/4NC snap-action switching elements per switch. Low level switching elements are also available.

Technical drawings see page 43

- IP40 Protection
- Switch Rating, 5A, 250VAC
- Raised Mounting into 16mm cut out
- Illumination using midget-grooved T-1¾ lamps or single chip LED's
- All standard lenses are transparent with translucent white diffuser and are available in different colors
- Buzzers voltage from 10 to 75VDC

Indicator

Indicator bodies, raised in round, square and rectangular, black plastic, 16mm mounting, solder terminals

Image	Part No.	Size
1	31-040.005	18 x 24mm
2	31-050.005	18 x 18mm
3	31-030.005	18mm Ø
	QC terminal versions also available	

For complete switch also order ☿ A

Illuminated pushbutton

Illuminated pushbutton actuator, snap-action, raised, rectangular, black plastic, 16mm mounting, solder terminals, gold over silver contacts

Part No.	Action	Contact Type	Size
31-121.025	Momentary	1NO/1NC	18 x 24mm
31-122.025	Momentary	2NO/2NC	18 x 24mm
31-261.025	Maintained	1NO/1NC	18 x 24mm
31-262.025	Maintained	2NO/2NC	18 x 24mm
QC terminal versions also available			

For complete switch also order ☿ A

Illuminated pushbutton

Illuminated pushbutton actuator, snap-action, raised, square, black plastic, 16mm mounting, solder terminals, gold over silver contacts

Part No.	Action	Contact type	Size
31-151.025	Momentary	1NO/1NC	18 x 18mm
31-152.025	Momentary	2NO/2NC	18 x 18mm
31-281.025	Maintained	1NO/1NC	18 x 18mm
31-282.025	Maintained	2NO/2NC	18 x 18mm
QC terminal versions also available			

For complete switch also order ☿ A

Illuminated pushbutton actuator, snap-action, raised, round, black plastic, 16mm mounting, solder terminals, gold over silver contacts

Part No.	Action	Contact type	Size
31-131.025	Momentary	1NO/1NC	18mm Ø
31-132.025	Momentary	2NO/2NC	18mm Ø
31-271.025	Maintained	1NO/1NC	18mm Ø
31-272.025	Maintained	2NO/2NC	18mm Ø
QC terminal versions also available			

For complete switch also order ☿ A

Buzzer

Buzzer, plastic bezel, raised, rectangular, 16mm mounting, continuous or intermittant tone, 88dB ± 8 at a distance of 0.1m

Image	Part No.	Voltage	Connection
1	31-810.005	10 - 55VAC/10 - 75VDC	PCB
2	31-801.002	10 - 26VDC	QC terminals

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

LED

ACCESSORIES

LED

LED, T-1³/₄ MG, single chip, 12 Volt and 28 Volt. Also available in 6 Volt, 24 Volt and 48 Volt.

Color	Part No.	Contact type
● Red	10-2J09.1062	12VAC/DC, 7/14mA
● Yellow	10-2J09.1064	12VAC/DC, 7/14mA
● Green	10-2J09.1065	12VAC/DC, 4/7mA
● Blue	10-2J09.1066	12VAC/DC, 7/14mA
○ White	10-2J09.1069	12VAC/DC, 7/14mA
● Red	10-2J13.1062	28VAC/DC, 7/14mA
● Yellow	10-2J13.1064	28VAC/DC, 7/14mA
● Green	10-2J13.1065	28VAC/DC, 4/7mA
● Blue	10-2J13.1066	28VAC/DC, 7/14mA
○ White	10-2J13.1069	28VAC/DC, 7/14mA

A Accessories

Lens, opaque for rectangular pushbutton actuators, not for illumination

Color	Part No.	Size
● Black	31-901.0	18 x 24mm

Lens, front transparent with white diffuser for rectangular indicator and pushbutton actuator

Color	Part No.	Size
● Red	31-903.2	18 x 24mm
● Yellow	31-903.4	18 x 24mm
● Green	31-903.5	18 x 24mm
● Blue	31-903.6	18 x 24mm
○ Clear	31-903.7	18 x 24mm

A Accessories

Lens, opaque for square pushbutton actuators, not for illumination

Color	Part No.	Size
● Black	31-951.0	18 x 18mm

Lens, front transparent with white diffuser for square indicator and pushbutton actuator

Color	Part No.	Size
● Red	31-953.2	18 x 18mm
● Yellow	31-953.4	18 x 18mm
● Green	31-953.5	18 x 18mm
● Blue	31-953.6	18 x 18mm
○ Clear	31-953.7	18 x 18mm

Lens, opaque for round pushbutton actuators, not for illumination

Color	Part No.	Size
● Black	31-931.0	18mm Ø

INDICATOR	PUSHBUTTON	BUZZER

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories

Lens, front transparent with white diffuser for round indicator and pushbutton actuator

Color	Part No.	Size
● Red	31-933.2	18mm Ø
● Yellow	31-933.4	18mm Ø
● Green	31-933.5	18mm Ø
● Blue	31-933.6	18mm Ø
○ Clear	31-933.7	18mm Ø

Flap guard, raised, square, round and rectangular

Image	Part No.	Size
1	31-925	18 x 24mm
2*	31-920	18 x 18mm
		*Can be used with round pushbuttons

Sprayproof cover, square and rectangular, IP65

Image	Part No.	Comment	Size
1	31-924.2	PVC rear, silicon front	18 x 24mm
2	31-923	Both PVC	18 x 18mm

A Accessories

Blanking plate

Image	Part No.	Size
1	01-947.0	18 x 24mm
2	01-948.0	18 x 18mm
3	01-949.0	18mm Ø

Mounting tool, lens and LED remover

Image	Part No.	Product description
1	01-907	Mounting tool
2	02-905	Lens remover
3	61-9740.0	LED remover
4	02-906	Lamp remover

31 Indicator

Raised, Round, Square, Rectangular
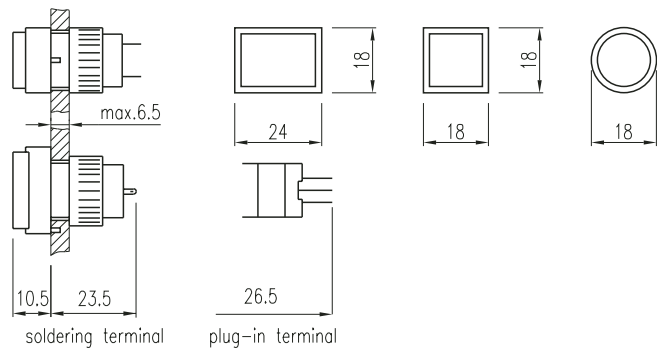
max.6.5

24

18

18

18

18

18

10.5 23.5

26.5

soldering terminal   plug-in terminal

31 Pushbutton

Illuminated, Raised, Round, Square, Rectangular

max.6.5

24

18

18

18

18

10.5   L1

L2

soldering terminal   plug-in terminal
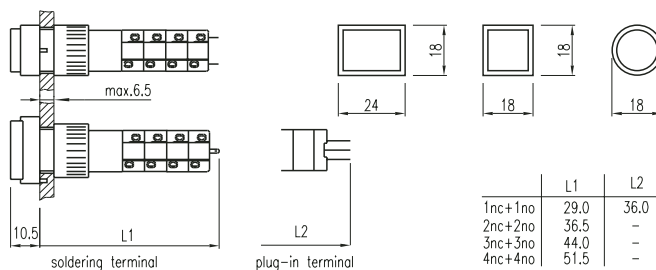
	L1	L2
1nc+1no	29.0	36.0
2nc+2no	36.5	–
3nc+3no	44.0	–
4nc+4no	51.5	–

31 Buzzer

Raised

max.6.5

18

24

10.5   67

31 Indicator Cut-outs

Raised, Round, Square, Rectangular

min.18

16²⁺

2

min.24   10.4

min.18

16²⁺

min.18

min.18

16²⁺

min.18
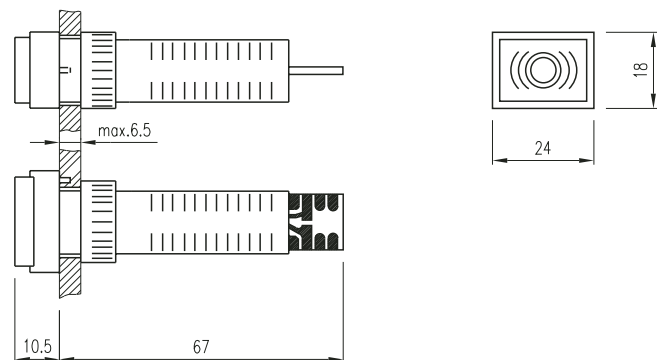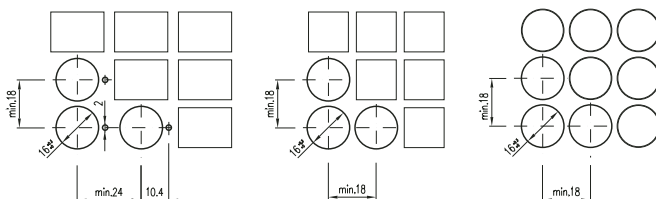
31 Pushbutton Cut-outs

Raised, Round, Square, Rectangular
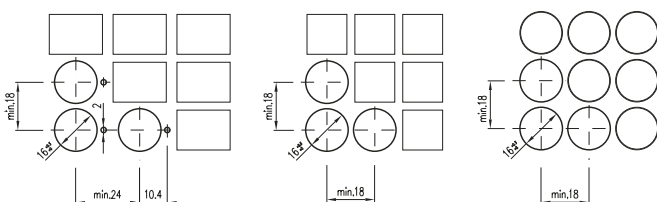
min.18

16²⁺

2

min.24   10.4

min.18

16²⁺

min.18

min.18

16²⁺

min.18

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 44 is a high quality switch range that includes pushbuttons, indicators, selectors, mushroom headed switches, key switches, joysticks, double pushbutton switches, potentiometer drives and Emergency-stops.

The switches utilize self cleaning slow-make switching elements.

Technical drawings see pages 49-51

- IP65 Protection
- Switch Rating, 10A , 660VAC
- Raised Mounting into 22.5mm cut out
- Flush Mounting into 30.5mm cut out
- Illumination using Ba9s (T-3$\frac{1}{4}$ bayonet base) Lamps or LED's
- Screw terminal connections
- Available as components

Indicator

Indicator, round, raised, full face with plastic matt chrome bezel, 22.5mm mounting, lamp element included

Color	Part No.
● Red	44-750.22.000
◯ Yellow	44-750.24.000
● Green	44-750.25.000
◯ Clear	44-750.27.000

For complete switch also order 💡

Indicator, round, raised with plastic matt chrome bezel, 22.5mm mounting, lamp element included

Color	Part No.
● Red	44-751.22.000
◯ Yellow	44-751.24.000
● Green	44-751.25.000
◯ Clear	44-751.29.000

For complete switch also order 💡

Non-illuminated pushbutton

Non-illuminated raised pushbutton with plastic matt chrome bezel, switch element included, 22.5mm mounting

Color	Part No.	Action	Contact type
● Red	44-701.22.001	Momentary	1NC
● Green	44-701.25.010	Momentary	1NO
◯ White	44-701.29.010	Momentary	1NO
● Black	44-701.20.100	Momentary	1NO/NC
● Green	44-702.25.010	Maintained	1NO
● Black	44-702.20.100	Maintained	1NO/1NC

Illuminated pushbutton

Illuminated raised pushbutton with plastic matt chrome bezel, switch and lamp element included, 22.5mm mounting

Color	Part No.	Action	Contact type
● Red	44-746.22.001	Momentary	1NC
◯ Yellow	44-746.24.010	Momentary	1NO
● Green	44-746.25.010	Momentary	1NO
◯ White	44-746.29.100	Momentary	1NO/1NC
● Green	44-747.25.010	Maintained	1NO
◯ White	44-747.29.100	Maintained	1NO/1NC

For complete switch also order 💡

Double pushbutton actuator

Double pushbutton actuator with plastic matt chrome bezel, without switch element or contact block holder

Color	Part No.	Markings	Action
● Red/Green	44-770.2	No markings	Momentary
● Red/Green	44-771.2	I + 0	Momentary

Pushbuttons are not interlocked

Requires contact/lamp element holder

For complete switch also order ▱ 💡 **A**

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | A ACCESSORIES |

Emergency-stop switch

Emergency-stop, twist release,
37mm diameter, foolproof to EN 60947-5-1
and EN 418

Part No.	Contact type
44-712.001	1NC
44-712.100	1NO/1NC

For complete switch also order **A**

Emergency-stop, key release, 37mm diameter,
foolproof to EN 60947-5-1 and EN 418

Part No.	Contact type
44-713.001	1NC
44-713.100	1NO/1NC

For complete switch also order **A**

Keylock switch

Keylock switch, raised, 2 and 3
position plastic matt chrome bezel,
switch element included, maintained

Drawing	Part No.	Positions	Contact type	Key Rem.
1	44-730.21.100	2	1NO/1NC	0
1	44-730.22.100	2	1NO/1NC	0-1
2	44-734.25.020	3	2NO	1-0-2

Selector switch

Selector switch, raised, black lever,
2 and 3 position with plastic matt
chrome bezel, switch element included

Drawing	Part No.	Action	Contact type	Position
1	44-720.20.100	Maintained	1NO/1NC	2
2	44-724.20.020	Maintained	2NO	3

Mushroom headed pushbutton

Mushroom headed pushbutton, 50mm
diameter, plastic matt chrome bezel, without
switching element or contact block holder

Color	Part No.	Action
🔴 Red	44-707.22	Momentary
🟢 Green	44-707.25	Momentary
⚫ Black	44-707.20	Momentary

Requires contact/lamp element holder

For complete switch also order ☐ **A**

Joystick

Joystick, raised with switch element,
2, 4 or 8 positions, IP65

Part No.	Contact type	Positions
44-800.2	2x 1NO/1NC	2 positions
44-800.4	4x 1NO/1NC	4 positions
44-800.8	4x 1NO/1NC	8 positions

Ratings:
- 6A/250VAC, 0.5A/250VAC, 2A/110VDC, 5A/75VDC
- QC terminals (0.110 x 0.020"), push-on/solder
- -25°C to 70°C (-13°F to 158°F)
- >2 million operations in each direction

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Potentiometer drive

Potentiometer drive (without potentiometer),
plastic matt chrome bezel, marked 1-5,
for potentiometers with 6mm shafts, IP65

Part No.
44-744.20

Switching element

Contact block, screw terminal, slow-make
forced opening contacts, stackable

Part No.	Contact type	Contact material
44-161	1NO	Hard silver
44-151	1NC	Hard silver
44-131	1NO/1NC	Hard silver

For complete switch also order ◎ ◎ ◔ ♀ ⬭

Contact block, screw terminal, slow-make
forced opening contacts, non-stackable

Part No.	Contact type	Contact material
44-121	1NO	Hard silver
44-111	1NC	Hard silver

For complete switch also order ◎ ◎ ◔ ♀ ⬭

LED

LED, BA9s (T-3¾ bayonet base), single chip,
28 Volt and 230 Volt. Also available in 6 Volt,
12 Volt, 24 Volt, 48 Volt and 230 Volt

Color	Part No.	Voltage
● Red	10-2513.1142	28VAC/DC, 13mA
● Yellow	10-2513.1144	28VAC/DC, 13mA
● Green	10-2513.1145	28VAC/DC, 7mA
● Blue	10-2513.1146	28VAC/DC, 13mA
○ White	10-2513.1149	28VAC/DC, 13mA
● Red	10-2H24.2052	130VAC / 5mA
● Yellow	10-2H24.2054	130VAC / 5mA
● Green	10-2H24.2055	130VAC / 3mA
● Blue	10-2H24.2056	130VAC / 5mA
○ White	10-2H24.2059	130VAC / 5mA

A Accessories

Lamp element for Ba9s (T-3¾ bayonet base)
LED/Lamp

Part No.
44-524

Contact/Lamp element holder for double
pushbutton actuator and mushroom
headed pushbutton

Part No.
44-902

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | A ACCESSORIES |

A Accessories

Front bezel set for 30.5mm flush mount, black plastic, for illuminated pushbutton, selector and keylock

Part No.	Product description
44-946.03-A	
44-946.01-A	For potentiometer and indicator only

Front bezel set for 30.5mm flush mount with label support, black plastic, for illuminated pushbutton, selector and keylock

Part No.	Product description
44-946.04	
44-946.02	For potentiometer and indicator only

Label for front bezel set for 30.5mm flush mount with label support, self adhesive

Color	Part No.
○ Aluminum	44-946
● Black	44-946.0

A Accessories

Protective cover for raised pushbutton only

Part No.
44-922

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories

Emergency-stop switch label,
60mm and 45mm diameter,
English, French, German and no markings

Part No.	Markings	Diameter
44-950	No markings	60mm
44-950.1	Not Aus	60mm
44-950.2	Emergency Stop	60mm
44-950.3	Arret D'urgence	60mm
44-951	No markings	45mm
44-951.1	Not Aus	45mm
44-951.2	Emergency Stop	45mm
44-951.3	Arret D'urgence	45mm
90mm versions also available		

Emergency-stop protective shroud, yellow
painted alluminium with 22.5mm mounting hole

Part No.
Contact EAO Switch directly

Mounting tool

Part No.
44-935

44 Indicator

Raised and Flush
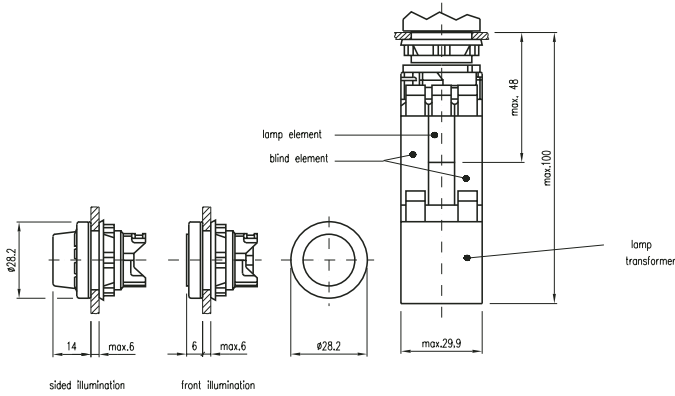
44 Pushbutton

Non-Illuminated, Raised
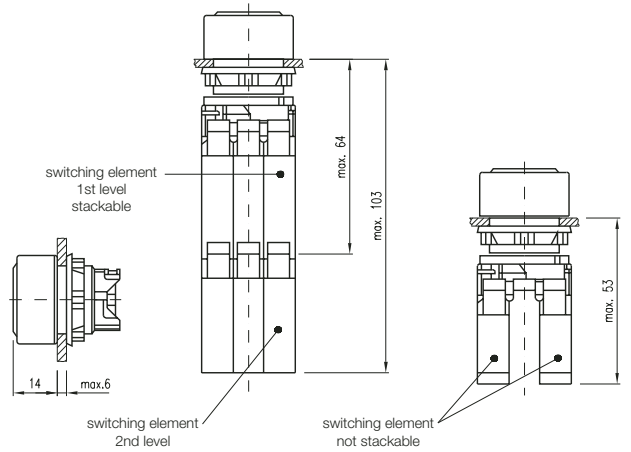
44 Pushbutton

Illuminated, Raised

44 Double Pushbutton

mounting-depth x	1. level	2. level
max. 53mm	44-111/44-121	–
max. 64mm	44-111-44-162	–
max. 92mm	44-131-44-162	44-111/44-121
max. 100mm	44-131-44-162	44-970-44-977
max. 103mm	44-131-44-162	44-131-44-162
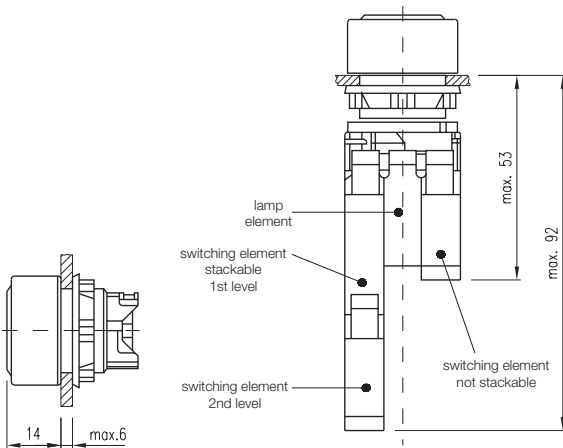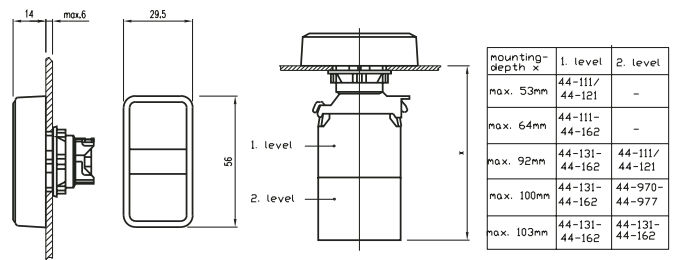
44 Pushbutton Mushroom, Double Pushbutton
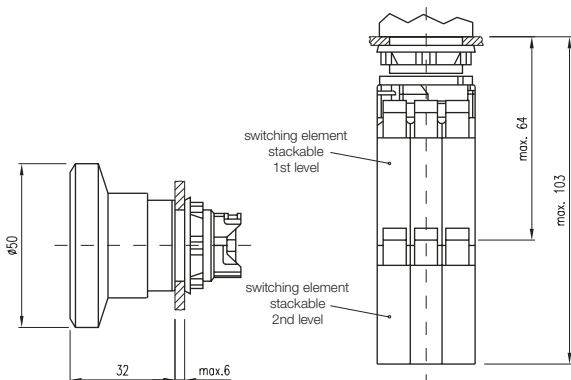
44 E-Stop

EN 418, EN 418 with Key
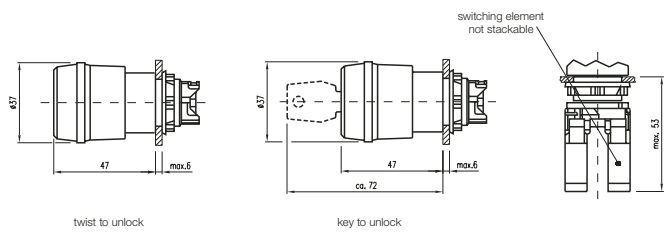
44 Keylock

Raised, 2-Position
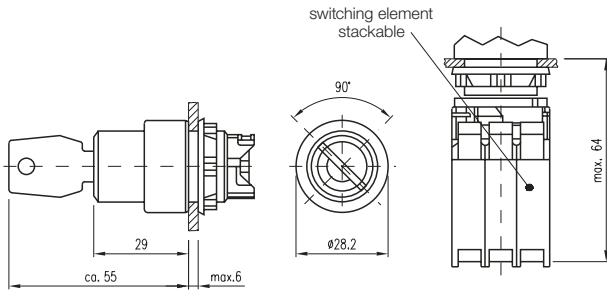
44 Selector

Raised, 2-Position, 3-Position
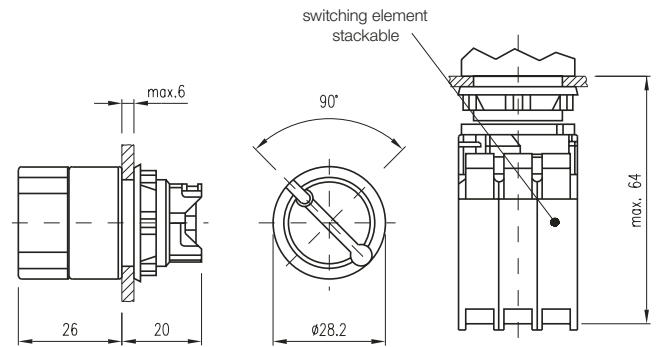
44 Joystick

Contact EAO Switch directly

44 Potentiometer
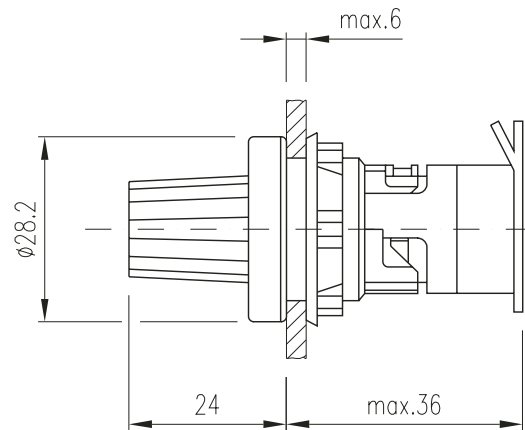
for potentiometer No. 44-745

44 Indicator Cut-outs

Raised, Pushbutton Non-Illuminated & Illuminated, 2-Position Keylock, 2 & 3-Position Selector, Potentiometer
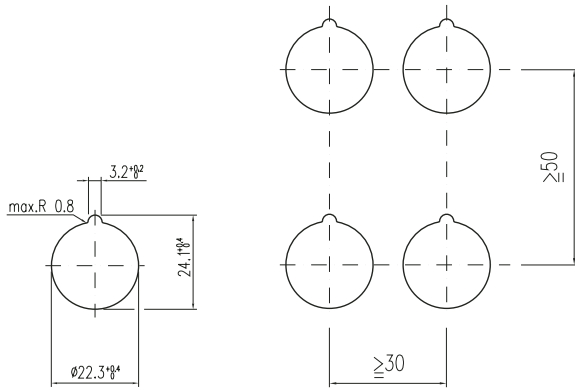
44 Double Pushbutton Cut-outs
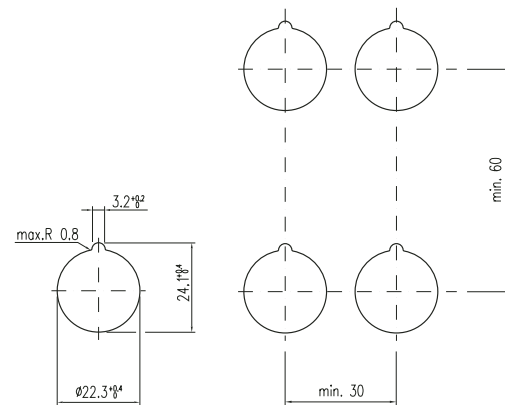
44 E-Stop Cut-outs

EN 418, EN 418 with Key, Pushbutton Mushroom
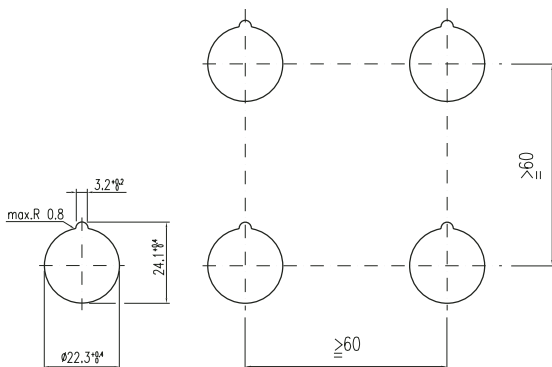
44 Joystick Cut-outs

Contact EAO Switch directly

44 Cut-outs, Flush Mounting
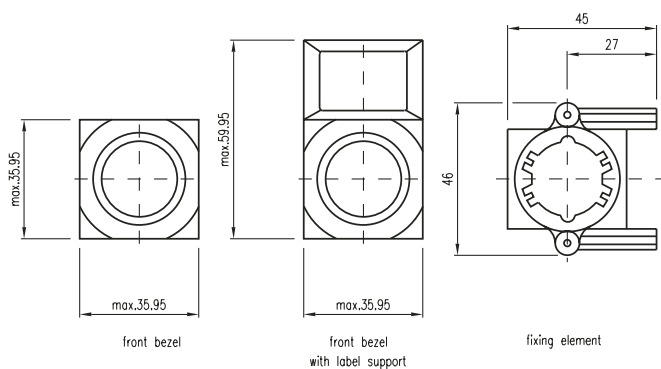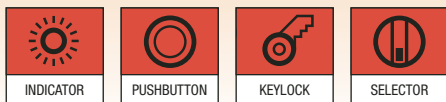
INDICATOR	PUSHBUTTON	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 51 is a high quality switch range that includes pushbuttons, indicators, illuminated selector switches and keylock switches. It is possible to choose up to 4NO/4NC snap-action switching elements per switch. Low level switching elements are also available.

Technical drawings see pages 56-57

- IP65 Protection
- Switch Rating, 5A, 250VAC
- Raised Mounting into 16mm cut out
- Illumination using midget-grooved T-1$\frac{1}{3}$ lamps or single chip LED's
- All standard lenses are transparent with translucent white diffusers, and are available in different colors
- For keylock switches 2 key systems and 145 different key codes are available
- QC versions also available

Indicator

Indicator bodies, raised in round, square and rectangular, black plastic, 16mm mounting, solder terminals

Image	Part No.	Size
1	51-040.005	18 x 24mm
2	51-050.005	18 x 18mm
3	51-030.005	18mm Ø

For complete switch also order A

Illuminated pushbutton

Illuminated pushbutton, snap-action, raised, rectangular, black plastic, 16mm mounting, solder terminals, gold over silver contacts

Part No.	Action	Contact type	Size
51-121.025	Momentary	1NO/1NC	18 x 24mm
51-122.025	Momentary	2NO/2NC	18 x 24mm
51-261.025	Maintained	1NO/1NC	18 x 24mm
51-262.025	Maintained	2NO/2NC	18 x 24mm

For complete switch also order A

Illuminated pushbutton

Illuminated pushbutton, snap-action, raised, square, black plastic, 16mm mounting, solder terminals, gold over silver contacts

Part No.	Action	Contact type	Size
51-151.025	Momentary	1NO/1NC	18 x 18mm
51-152.025	Momentary	2NO/2NC	18 x 18mm
51-281.025	Maintained	1NO/1NC	18 x 18mm
51-282.025	Maintained	2NO/2NC	18 x 18mm

For complete switch also order A

Illuminated pushbutton

Illuminated pushbutton, snap-action, raised, round, black plastic, 16mm mounting, solder terminals, gold over silver contacts
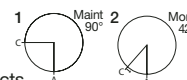
Part No.	Action	Contact type	Size
51-131.025	Momentary	1NO/1NC	18mm Ø
51-132.025	Momentary	2NO/2NC	18mm Ø
51-271.025	Maintained	1NO/1NO	18mm Ø
51-272.025	Maintained	2NO/2NC	18mm Ø

For complete switch also order A

Keylock switch

Keylock switch, 2 position, raised, snap-action, round, black plastic, 18mm Ø, solder terminals, gold over silver contacts

1 Maint 90° 2 Mom 42°

Drawing	Part No.	Contact type	Key rem.
1	51-135.025D	1NO/1NC	A+C
1	51-136.025D	2NO/2NC	A+C
1	51-235.025D	1NO/1NC	A
1	51-335.025D	1NO/1NC	C
2	51-141.025D	1NO/1NC	A

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

LED	ACCESSORIES

🔑 Keylock switch

Keylock switch, 2 position, raised, snap-action, square, black plastic, 18 x 18mm, solder terminals, gold over silver contacts

Drawing	Part No.	Contact type	Key rem.
2	51-145.025D	1NO/1NC	A
2	51-146.025D	2NO/2NC	A
1	51-155.025D	1NO/1NC	A+C
1	51-255.025D	1NO/1NC	A
1	51-355.025D	1NO/1NC	C

Keylock switch, 2 position, raised, snap-action, rectangular, black plastic, 18 x 24mm, solder terminals, gold over silver contacts

Drawing	Part No.	Contact type	Key rem.
1	51-195.025D	1NO/1NC	A+C
1	51-196.025D	2NO/2NC	A+C
1	51-295.025D	1NO/1NC	A
1	51-296.025D	2NO/2NC	A
1	51-395.025D	1NO/1NC	C
1	51-396.025D	2NO/2NC	C
2	51-495.025D	1NO/1NC	A
2	51-496.025D	2NO/2NC	A

Keylock switch, 3 position, raised, snap-action, rectangular, black plastic, 18 x 24mm, solder terminals, gold over silver contacts

Drawing	Part No.	Contact type	Key rem.
3	51-361.022D	2x 1NO/1NC	A
3	51-362.022D	2x 2NO/2NC	C + A + B
4	51-364.022D	2x 1NO/1NC	A

⊟ Selector switch

Selector switch, 2 position, raised, snap-action, round, black plastic, 18mm Ø, solder terminals, gold over silver contacts

Drawing	Part No.	Contact type
5	52-131.025	1NO/1NC
5	52-132.025	2NO/2NC
6	52-271.025	1NO/1NC
6	52-272.025	2NO/2NC

Selector switch, 3 position, raised, snap-action, round, black plastic, 18mm Ø, solder terminals, gold over silver contacts

Drawing	Part No.	Contact type
7	52-571.022A	2x 1NO/1NC
8	52-572.022A	2x 1NO/1NC

💡 LED

LED, T-1 3/4 MG, single chip, 12 Volt and 28 Volt. Also available in 6 Volt, 24 Volt and 48 Volt

Color	Part No.	Voltage
🔴 Red	10-2J09.1062	12VAC/DC, 7/14mA
🟡 Yellow	10-2J09.1064	12VAC/DC, 7/14mA
🟢 Green	10-2J09.1065	12VAC/DC, 4/7mA
🔵 Blue	10-2J09.1066	12VAC/DC, 7/14mA
⚪ White	10-2J09.1069	12VAC/DC, 7/14mA
🔴 Red	10-2J13.1062	28VAC/DC, 7/14mA
🟡 Yellow	10-2J13.1064	28VAC/DC, 7/14mA
🟢 Green	10-2J13.1065	28VAC/DC, 4/7mA
🔵 Blue	10-2J13.1066	28VAC/DC, 7/14mA
⚪ White	10-2J13.1069	28VAC/DC, 7/14mA

For complete switch also order 💡 **A**

For complete switch also order 💡 **A**
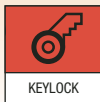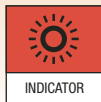
INDICATOR	PUSHBUTTON	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories

Lens, opaque for rectangular pushbutton actuators, not for illumination

Color	Part No.	Size
● Black	51-901.0	18 x 24mm

Lens, front transparent with white diffuser for rectangular indicator and pushbutton actuators

Color	Part No.	Size
● Red	51-903.2	18 x 24mm
● Yellow	51-903.4	18 x 24mm
● Green	51-903.5	18 x 24mm
● Blue	51-903.6	18 x 24mm
○ Clear	51-903.7	18 x 24mm

Lens, opaque for square pushbutton actuators, not for illumination

Color	Part No.	Size
● Black	51-951.0	18 x 18mm

A Accessories

Lens, front transparent with white diffuser for square indicator and pushbutton actuators

Color	Part No.	Size
● Red	51-953.2	18 x 18mm
● Yellow	51-953.4	18 x 18mm
● Green	51-953.5	18 x 18mm
● Blue	51-953.6	18 x 18mm
○ Clear	51-953.7	18 x 18mm

Lens, opaque for round pushbutton actuators, not for illumination

Color	Part No.	Size
● Black	51-931.0	18mm Ø

Lens, front transparent with white diffuser for round indicator and pushbutton actuators

Color	Part No.	Size
● Red	51-933.2	18mm Ø
● Yellow	51-933.4	18mm Ø
● Green	51-933.5	18mm Ø
● Blue	51-933.6	18mm Ø
○ Clear	51-933.7	18mm Ø

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

LED

A
ACCESSORIES

A Accessories

Lever for selector switch, colored lever bar options available as indicated

Color	Part No.	Window
● Black	52-928.0	Opaque
● Red	52-928.20	Transparent
● Yellow	52-928.40	Transparent
● Green	52-928.50	Transparent
● Blue	52-928.60	Transparent

Flap guard, raised in square, round and rectangular

Image	Part No.	Size
1	51-925	18 x 24mm
2*	51-920	18 x 18mm
	*Can be used with round pushbuttons	

Blanking plate

Image	Part No.	Size
1	51-947.0	18 x 24mm
2	51-948.0	18 x 18mm
3	51-949.0	18mm Ø

A Accessories

Mounting tool, lens and LED remover

Image	Part No.	Product description
1	01-907	Mounting tool
2	02-905	Lens remover
3	61-9740.0	LED remover
4	02-906	Lamp remover

51 Indicator

Raised

soldering terminal   plug-in terminal

51 Pushbutton

Raised, Round, Square, Rectangular

soldering terminal   plug-in terminal
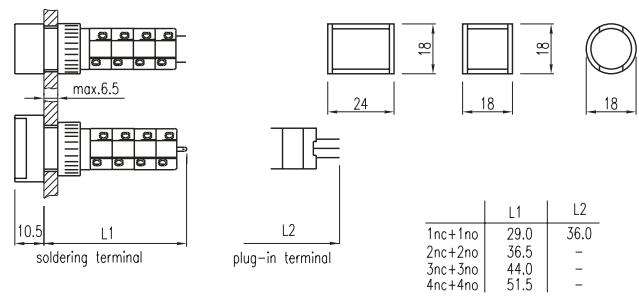
	L1	L2
1nc+1no	29.0	36.0
2nc+2no	36.5	–
3nc+3no	44.0	–
4nc+4no	51.5	–

51 Keylock

Raised, 2-Position, Round, Square, Rectangular

soldering terminal   plug-in terminal
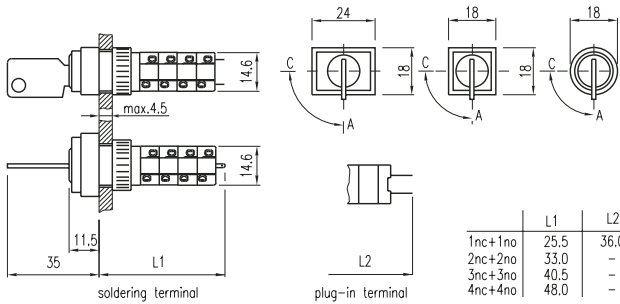
	L1	L2
1nc+1no	25.5	36.0
2nc+2no	33.0	–
3nc+3no	40.5	–
4nc+4no	48.0	–

52 Selector

Raised, 2-Position, Round

soldering terminal   plug-in terminal
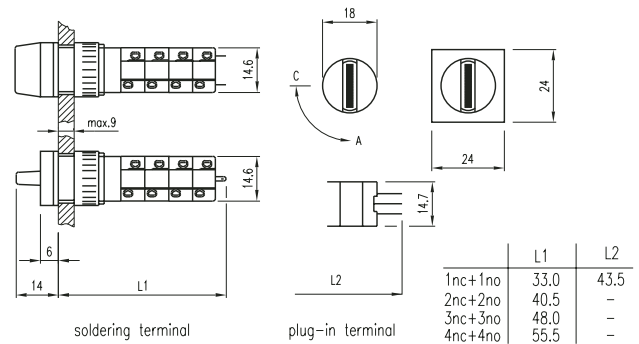
	L1	L2
1nc+1no	33.0	43.5
2nc+2no	40.5	–
3nc+3no	48.0	–
4nc+4no	55.5	–

52 Selector

Raised, 3-Position, Round

soldering-/plug-in terminal
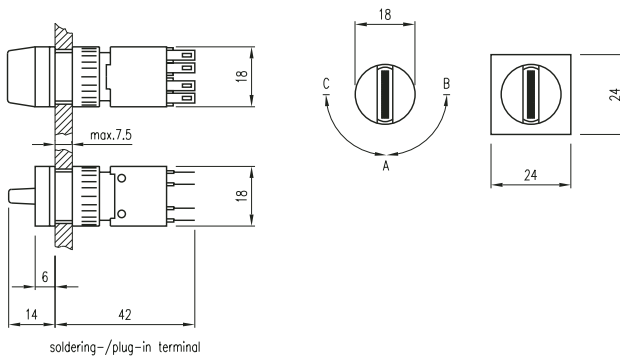
51 Cut-outs

Indicator, Pushbutton, Round, Square, Rectangular
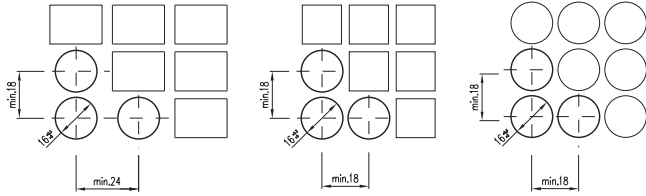
51 Cut-outs

Keylock 2-Position Round, Keylock 2-Position Square,
Keylock 2-Position Rectangular, 2 & 3-Position Selector Round
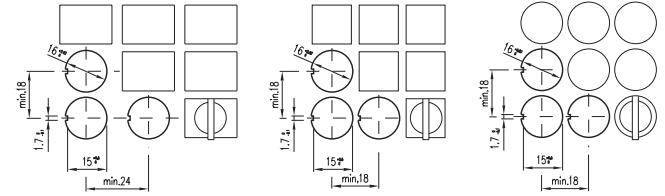
The Series 56 range is mainly used as a door pushbutton for public transport applications. The range includes single and double-sided pushbuttons and indicators; a pushbutton that mounts without the need for fixing screws; a glass-mounting pushbutton; hidden indication until lit; pushbuttons with braille and engraved symbols.

Screwless mounting

The Series 56 internal and external fast mounting, screwless pushbutton works by pressing the switch into a 59mm cut-out and letting the rubber flange seal it into the panel. This screwless model is vandal-resistant and can be used for numerous applications including door controls, toilet controls (Door Open, Lock, Flush), emergency HELP! access control.

The actuation area can be supplied with raised symbols or engraved to customer requirements.

Key features

- Maximum IP protection
- Operates within temperatures between -40ºC to +80ºC
- Bright LED illumination resists shock and vibration
- Thermoplastic housing available in different colors*
- Permanent legend printing
- Meets CE standards
- Raised / flush mounting
- Excellent tactile feedback

subject to order volume
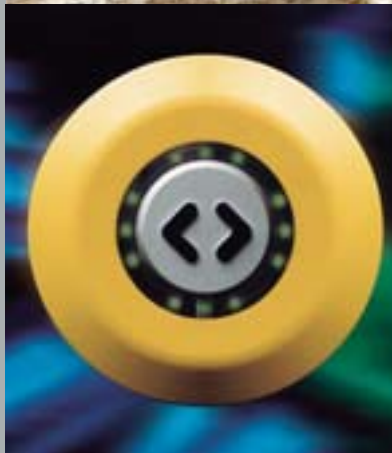
Raised Indicator

The Series 56 raised indicator allows for side view illumination. Visible in all weather conditions, the LED illumination provides a lifetime of up to 100,000 hours continuous use. It is available in a choice of red, green, yellow, blue and white. The switch bezel can be supplied in a choice of contrasting colors. Simple to mount with fixing screws, the indicator can be quickly integrated within existing electrical systems with a cable and AMP plug-in connection.

The Series 56 internal and external indicator can be used in applications where it is important to quickly assess the status of a system. These include door controls on public transport vehicles where a driver or guard may need to determine from a distance whether all doors are closed.

EAO's Series 58 range shares the same quality of build and design with EAO's acclaimed Series 56 mechanical switch. The Series 58 range is the world's first touch sensitive switch that operates through double-glazing up to 16mm thick and is designed as a door opener for new generation public transport vehicles constructed with large expanses of glass.

The Series 58 is designed with an electronic switching element containing no moving parts. This makes it incredibly durable and offers a long life service.

Key features

- Maximum external IP protection against washing
- Operates within temperatures between -40ºC to +80ºC
- Bright LED illumination resists shock and vibration
- Thermoplastic housing available in different colors*
- Permanent legend printing Meets CE and e1 standards

  subject to order volume

| INDICATOR | PUSHBUTTON | E-STOP | KEYLOCK | SELECTOR |

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 61 is a high quality, modular switch range that includes pushbuttons, indicators, selector switches, keylock switches and Emergency-stops. Available in raised or flush mount.

Self cleaning snap-action and slow-make switching elements available.

Technical drawings see pages 67-68

- IP65 Protection
- Switch Rating, 5A, 250VAC
- Raised Mounting into 16mm cut out
- Flush Mounting into 22.5mm, 21x21mm and 21x27mm cut out
- Illumination using midget-grooved T-1¾ lamps or single chip LED's
- All standard lenses are transparent with translucent white diffusers and are available in different colors
- For keylock switches 135 different key codes are available

| ☼ Indicator | ☼ LED | A Accessories | A Accessories |

A guide to ordering parts - choice of front bezel determines front shape for flush mount versions.

Accessories are optional.

For a complete indicator you will need to order the appropriate indicator, LED, lens and bezel (for flush mount only)

| ◎ Illuminated pushbutton | ☑ Contact block | ☼ LED (optional) | A Accessories | A Accessories |

For a complete illuminated pushbutton you will need to order the appropriate actuator, contact block, LED, lens and bezel (for flush mount only)

| ⚷ Keylock switch | ☑ Contact block | ☑ Contact block | A Accessories | A Accessories | A Accessories |

OR   OR

For a complete keylock switch you will need to order the appropriate actuator, contact block and bezel (for flush mount only)

| ⫝ Selector switch | ☑ Contact block | ☑ Contact block | ☼ LED (optional) | A Accessories | A Accessories |

OR

For a complete selector switch you will need to order the appropriate actuator, contact block, LED, lever and bezel (for flush mount only)

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | ACCESSORIES |

Indicator

1   2   3   4

Indicator bodies, raised, round, square
and rectangular, black plastic, 16mm mounting

Image	Part No.	Size
1	61-0050.02	24 x 24mm
2	61-0030.02	18 x 24mm
3	61-0020.02	18 x 18mm
4	61-0010.02	18mm Ø

For complete switch also order ☼ **A**

Universal indicator body for flush mount,
black plastic

Part No.
61-0000.02
Flush mount adapter determines round,
square or rectangular

For complete switch also order ☼ **A**

Illuminated pushbutton

1   2   3   4

Illuminated pushbutton actuator, raised,
round, square and rectangular, black plastic,
16mm mounting

Image	Part No.	Action	Size
1	61-1150.0	Momentary	24 x 24mm
1	61-1250.0	Maintained	24 x 24mm
2	61-1130.0	Momentary	18 x 24mm
2	61-1230.0	Maintained	18 x 24mm
3	61-1120-0	Momentary	18 x 18mm
3	61-1220.0	Maintained	18 x 18mm
4	61-1110.0	Momentary	18mm Ø
4	61-1210.0	Maintained	18mm Ø

For complete switch also order ▱ ☼ **A**

Illuminated pushbutton

Universal illuminated flush mount pushbutton
actuator, round, black plastic

Part No.	Action
61-1100.0	Momentary
61-1200.0	Maintained
Flush mount adapter determines round,	
square or rectangular	

For complete switch also order ▱ ☼ **A**

INDICATOR	PUSHBUTTON	E-STOP	KEYLOCK	SELECTOR
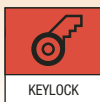
Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Emergency-stop switch

Emergency-stop, twist release and key release, 27mm diameter for 16mm mounting, foolproof to EN 60947-5-5 and EN 418

	Part No.	Product reference
	61-3440.4/1	Twist release
	61-5441.4/K	Key release
	Must use Emergency-stop contact blocks	

For complete switch also order ☑ **A**

Keylock switch

Universal keylock switch, actuator, 2 position for raised and flush mount

1 — Mom 42° 2 — Maint 90°

Drawing	Part No.	Action	Key rem.
1	61-2101.0/D	Momentary	A
2	61-2201.0/D	Maintained	A
2	61-2203.0/D	Maintained	C
2	61-2205.0/D	Maintained	C+A

For flush mount order flush front bezel and front bezel adapter

For complete switch also order ☑ **A**

Keylock switch

Universal keylock switch, actuator, 3 position for raised and flush mount

3 — Mom 42° 4 — Maint 90°

Drawing	Part No.	Action	Key rem.
3	61-2501.0/D	Momentary/Momentary	A
4	61-2601.0/D	Maintained/Maintained	A
4	61-2602.0/D	Maintained/Maintained	B
4	61-2603.0/D	Maintained/Maintained	C
4	61-2604.0/D	Maintained/Maintained	A+B
4	61-2605.0/D	Maintained/Maintained	C+A
4	61-2606.0/D	Maintained/Maintained	C+B
4	61-2607.0/D	Maintained/Maintained	C+A+B

For flush mount order flush front bezel and front bezel adapter

For complete switch also order ☑ **A**

Keylock switch

Universal keylock switch, actuator, 3 position for raised and flush mount

5 — Maint 90° / Mom 42° 6 — Maint 90° / Mom 42°

Drawing	Part No.	Action	Key rem.
5	61-2701.0/D	Maintained/Momentary	A
5	61-2703.0/D	Maintained/Momentary	C
5	61-2705.0/D	Maintained/Momentary	C+A
6	61-2801.0/D	Momentary/Maintained	A
6	61-2802.0/D	Momentary/Maintained	B
6	61-2804.0/D	Momentary/Maintained	A+B
	For flush mount order flush front bezel and front bezel adapter		

For complete switch also order ☑ **A**

Selector switch

Universal selector switch, actuator, 2 and 3 position for raised and flush mount

7 — Mom 42° 8 — Maint 90° 9 — Mom 42° 10 — Maint 90° 11 — Mom 42° 12 — Mom 42° / Maint 90°

Drawing	Part No.	Action
7	61-4110.0	Momentary
8	61-4210.0	Maintained
9	61-4510.0	Momentary/Momentary
10	61-4610.0	Maintained/Maintained
11	61-4710.0	Maintained/Momentary
12	61-4810.0	Momentary/Maintained
Flush mount adapter determines round, square or rectangular		

For complete switch also order ☑ 💡 **A**

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

BLOCK   LED   ACCESSORIES

Contact block

Contact block for pushbuttons and 2 position keylock and selector switches, snap-action, QC/solder terminals

	Part No.	Contact type	Contact material
	61-8410.12	1NO	Silver
	61-8410.22	1NO	Gold
	61-8420.12	2NO	Silver
	61-8420.22	2NO	Gold
	61-8470.12	1NO/1NC	Silver
	61-8470.22	1NO/1NC	Gold

For complete switch also order ◎ ⚿ ⑪

Emergency-stop contact block, slow make

Image	Part No.	Contact type	Contact material	Terminal
1	61-8755.11	2NC	Silver	Screw
2	61-8755.17	2NC	Silver	QC/solder
1	61-8775.11	1NO/1NC	Silver	Screw
2	61-8775.17	1NO/1NC	Silver	QC/solder

For complete switch also order ◎

Contact block, 3 position keylock and selector switch, snap-action, QC/solder terminals

	Part No.	Contact type	Contact material
	61-8520.12	2NO	Silver
	61-8520.22	2NO	Gold

For complete switch also order ⚿ ⑪

LED

LED, T-1³/₄ MG, single chip, 12 Volt and 28 Volt. Also available in 6 Volt, 24 Volt and 48 Volt

Color	Part No.	Voltage
● Red	10-2J09.1062	12VAC/DC, 7/14mA
● Yellow	10-2J09.1064	12VAC/DC, 7/14mA
● Green	10-2J09.1065	12VAC/DC, 4/7mA
● Blue	10-2J09.1066	12VAC/DC, 7/14mA
○ White	10-2J09.1069	12VAC/DC, 7/14mA
● Red	10-2J13.1062	28VAC/DC, 7/14mA
● Yellow	10-2J13.1064	28VAC/DC, 7/14mA
● Green	10-2J13.1065	28VAC/DC, 4/7mA
● Blue	10-2J13.1066	28VAC/DC, 7/14mA
○ White	10-2J13.1069	28VAC/DC, 7/14mA

A Accessories

Lens, transparent with white diffuser, plastic for raised, rectangular indicator and pushbutton actuators

Color	Part No.	Size
● Red	61-9331.2	18 x 24mm
● Yellow	61-9331.4	18 x 24mm
● Green	61-9331.5	18 x 24mm
● Blue	61-9331.6	18 x 24mm
○ Clear	61-9331.7	18 x 24mm

Lens, transparent with white diffuser, plastic for raised, square indicator and pushbutton actuators

Color	Part No.	Size
● Red	61-9351.2	24 x 24mm
● Yellow	61-9351.4	24 x 24mm
● Green	61-9351.5	24 x 24mm
● Blue	61-9351.6	24 x 24mm
○ Clear	61-9351.7	24 x 24mm

| INDICATOR | PUSHBUTTON | E-STOP | KEYLOCK | SELECTOR |
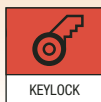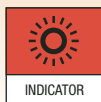
Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories

Lens, transparent with white diffuser, plastic for raised, square indicator and pushbutton actuators

Color	Part No.	Size
● Red	61-9321.2	18 x 18mm
○ Yellow	61-9321.4	18 x 18mm
● Green	61-9321.5	18 x 18mm
● Blue	61-9321.6	18 x 18mm
○ Clear	61-9321.7	18 x 18mm

Lens, transparent with white diffuser, plastic for raised, round indicator and pushbutton actuators

Color	Part No.	Size
● Red	61-9311.2	18mm Ø
○ Yellow	61-9311.4	18mm Ø
● Green	61-9311.5	18mm Ø
● Blue	61-9311.6	18mm Ø
○ Clear	61-9311.7	18mm Ø

Lens, transparent with white diffuser, plastic for flush mount, rectangular indicator and pushbutton actuators

Color	Part No.	Size
● Red	61-9681.2	24 x 30mm
○ Yellow	61-9681.4	24 x 30mm
● Green	61-9681.5	24 x 30mm
● Blue	61-9681.6	24 x 30mm
○ Clear	61-9681.7	24 x 30mm

A Accessories

Lens, transparent with white diffuser, plastic for flush mount, round indicator and pushbutton actuators

Color	Part No.	Size
● Red	61-9642.2	25mm Ø
○ Yellow	61-9642.4	25mm Ø
● Green	61-9642.5	25mm Ø
● Blue	61-9642.6	25mm Ø
○ Clear	61-9642.7	25mm Ø

Lens, transparent with white diffuser, plastic for flush mount, square indicator and pushbutton actuators

Color	Part No.	Size
● Red	61-9671.2	24 x 24mm
○ Yellow	61-9671.4	24 x 24mm
● Green	61-9671.5	24 x 24mm
● Blue	61-9671.6	24 x 24mm
○ Clear	61-9671.7	24 x 24mm

Lever for selector switch, raised and flush mount, colored lever bar options available as indicated

Color	Part No., Raised	Part No., Flush mount	Window
● Red	52-928.20	61-9028.20	Transparent
○ Yellow	52-928.40	61-9028.40	Transparent
● Green	52-928.50	61-9028.50	Transparent
● Blue	52-928.60	61-9028.60	Transparent
○ White	52-928.9	61-9028.9	Opaque
● Black	52-928.0	61-9028.0	Opaque

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | ACCESSORIES |

A Accessories

1   2   3   4

Keylock switch front bezel, raised black plastic

Image	Part No.	Size
1	61-9250.0	24 x 24mm
2	61-9130.0	18 x 24mm
3	61-9120.0	18 x 18mm
4	61-9110.0	18mm Ø

1   2   3   4

Flush front bezel for keylocks, black plastic

Image	Part No.	Size
1	61-9230.0	18 x 24mm
2	61-9220.0	18 x 18mm
3	61-9210.0	18mm Ø
4	61-9250.0	24 x 24mm
	Flush bezel must be ordered/used	
	with keylock flush mount adapter	

2   3   1   4   5

Flush mount adapter for indicators and pushbuttons

Image	Part No.	Material	Size
1	61-9933.10	Plastic	25mm Ø
2	61-9933.0	Aluminum	25mm Ø
3	61-9931.0	Plastic	24 x 30mm
4	61-9930.0	Plastic	24 x 24mm
5	61-9933.1	Aluminum	25mm Ø

A Accessories

4   5   6   1   2   3

Flush mount adapter for keylocks and selectors

Image	Part No.	Material	Size
1	61-9932.10	Plastic	25mm Ø
2*	61-9936.0	Plastic	24 x 24mm
3	61-9932.0	Aluminum	25mm Ø
4	61-9932.1	Black aluminum	25mm Ø
5**	61-9930.0	Plastic	24 x 24mm
6**	61-9931.0	Plastic	24 x 30mm
	For keylocks must also order flush front		
	bezel for keylock		
	* For selectors only ** For keylocks only		

1   2   3   4   5   6

Flap guard, raised and flush mount

Image	Part No.	Size	Raised/Flush mount
1	61-9922.0	24 x 30mm	Flush
2	61-9921.0	24 x 24mm	Flush
3	61-9924.0	25mm Ø	Flush
4	61-9920.0	24 x 24mm	Raised
5	51-925	18 x 24mm	Raised
6	51-920	18 x 18mm	Raised

4   5   6   1   2   3

Blanking plate

Image	Part No.	Size	Mounting hole
1	61-9450.0	24 x 24mm	16mm Ø
2	61-9452.0	24 x 30mm	21 x 27mm
3	61-9451.0	24 x 24mm	21 x 21mm
4	51-947.0	18 x 24mm	16mm Ø
5	51-948.0	18 x 18mm	16mm Ø
6	51-949.0	18mm Ø	16mm Ø
	61-9453.0	25mm Ø	22.5mm Ø
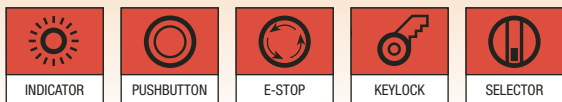
INDICATOR	PUSHBUTTON	E-STOP	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

A Accessories
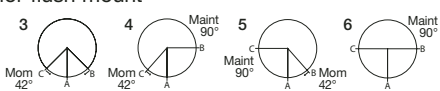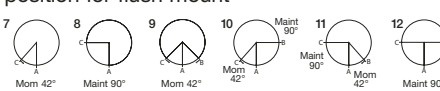

Cable shoe for plug-in terminal size 2.8 x 0.5mm and insulation socket

Emergency-stop protective shroud, yellow painted aluminum with 16mm mounting hole

Emergency-stop label, 43mm diameter, English, German, French and no markings, maintains IP65 sealing

Image	Part No.
1	31-929
2	31-946

Part No.
Contact EAO Switch directly

Part No.	Markings
61-9970.0	No markings
61-9970.2	Emergency Stop
61-9970.1	Not Aus
61-9970.3	Arret D'urgence

A Accessories

Emergency-stop switch enclosure with 16mm mounting hole, 65mm (w) x 65mm (h) x 57mm (d) and cable gland M16, front protected to IP65

Lens remover for flush mount, mounting tool, lens remover for raised, contact block remover and LED/lamp remover

Legend plate, adhesive, natural anodized aluminum finish for flush mount round pushbuttons, 22.5mm mounting hole

Image	Part No.
1	61-9480.5
2	61-9481.6

Image	Part No.	Product description
1	61-9730.0	Lens remover for flush mount
2	01-907	Mounting tool
3	02-905	Lens remover for raised
4	61-9711.0	Contact block remover
5	61-9740.0	LED/lamp remover

Image	Part No.
1	61-9980.0
2	704.968.0
3	704.968.1

61 Indicator

Raised, Round, Square, Rectangular
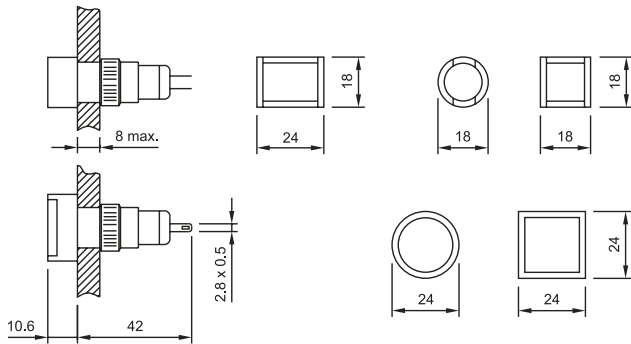
61 Indicator
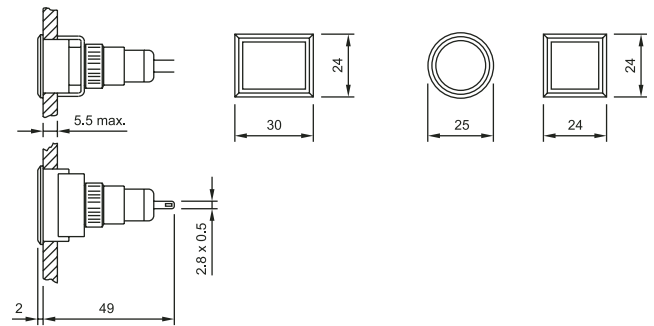
Flush, Round, Square, Rectangular

61 Pushbutton

Illuminated, Raised, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal
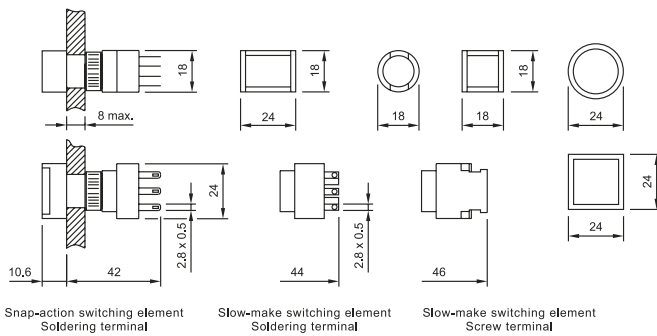
61 Pushbutton

Illuminated, Flush, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal
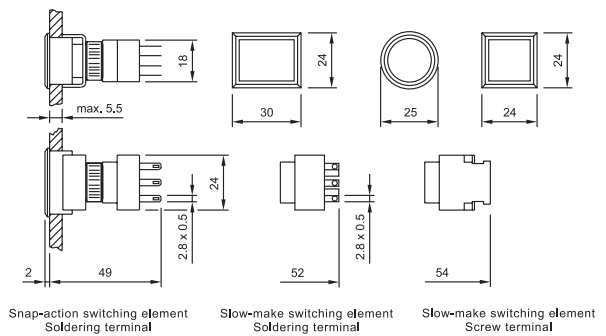
61 Keylock

2 & 3-Position, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal
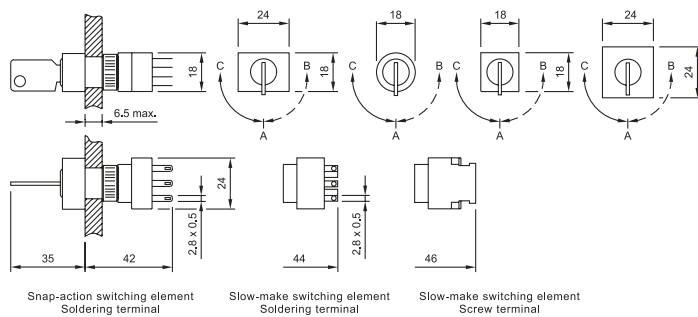
61 Selector

2 & 3-Position, Round, Square, Rectangular

Snap-action switching element
Soldering terminal

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal

61 E-Stop

EN 418, EN 418 with Key

Slow-make switching element
Soldering terminal

Slow-make switching element
Screw terminal
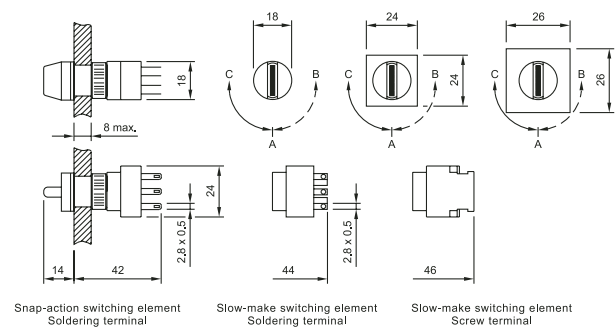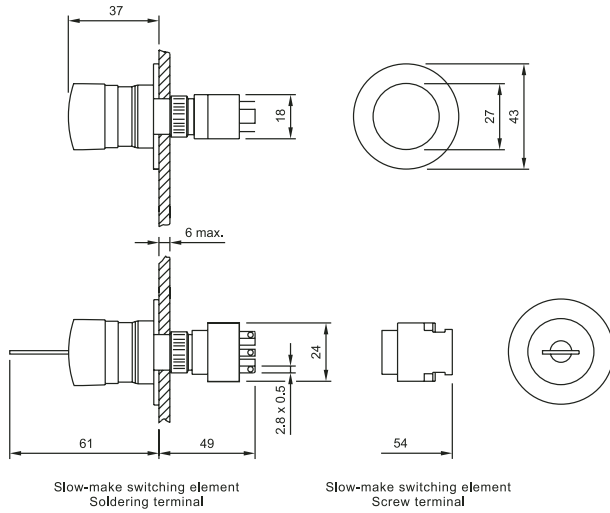
61 Cut-outs

Raised Indicators, Pushbuttons, Keylocks and Selectors

Ø18 mm   18 x 18 mm   18 x 24 mm   Ø24 mm   24 x 24 mm
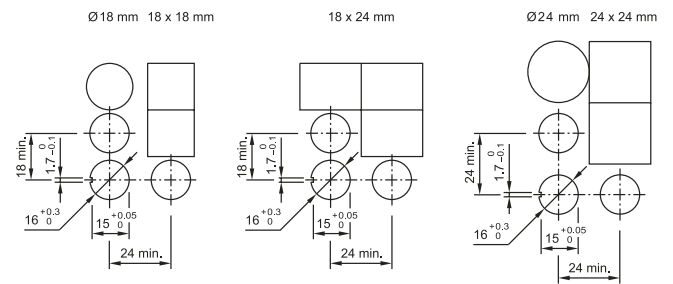
61 Cut-outs

Indicator Flush, Pushbutton Flush

Ø25 mm   24 x 30 mm   24 x 24 mm
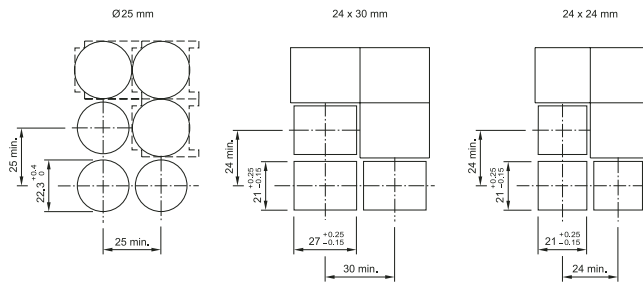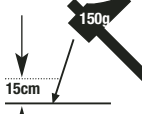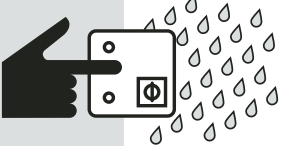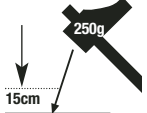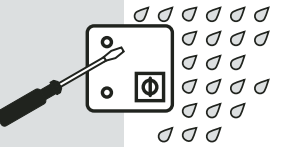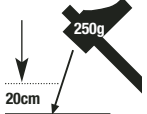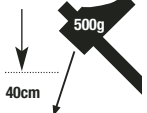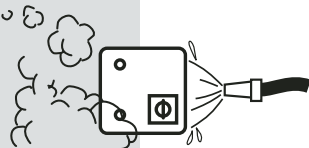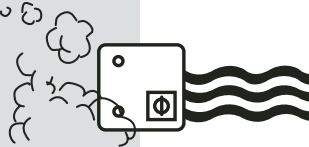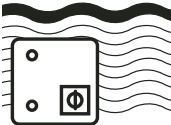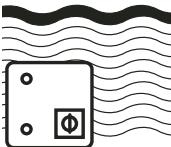
61 E-Stop Cut-outs

EN 418, EN 418 with Key

IP Ratings
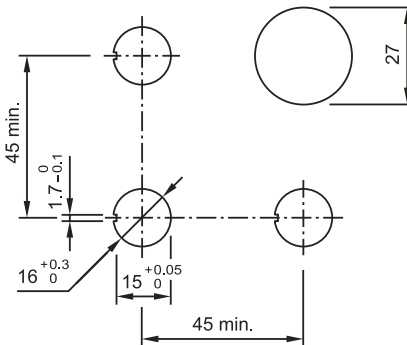
Degrees of protection to IEC 144 (BS 5420)

Protection against touching live parts or ingress of solid objects			Protection against ingress of liquids		Protection against mechanical impacts	
IP	First Figure		Second Figure	IP	Third Figure	IK
No Protection.	0		0	No Protection.		0	No Protection.
Touching by hand or 50mm dia objects.	1		1	Vertical water droplets. No harmful ingress.	150g 15cm	1	Impact 0.225 joule.
Touching by finger or 12mm dia objects.	2		2	Showering at 15° from the vertical. No harmful ingress.	250g 15cm	2	Impact 0.375 joule.
Touching by tools or wire 2.5mm dia or 2.5mm dia objects.	3		3	Showering at 60° from the vertical. No harmful ingress.	250g 20cm	3	Impact 0.50 joule.
Touching by tools or wire 1mm dia or 1mm dia objects.	4		4	Splashing from any direction. No harmful ingress.	500g 40cm	4	Impact 2.00 joule.
Total touch protection or no harmful ingress of dust.	5		5	Water jets from any direction 12.5 l/min. No harmful ingress.	1.5kg 40cm	5	Impact 6.00 joule.
Total touch protection or no ingress of dust.	6		6	Large volumes of water 100 l/min. No ingress.	5kg 40cm	6	Impact 20.00 joule.
			7	Immersion up to 1 metre deep. No ingress.		
			8	Submersion at specified depths exceeding 1 metre. No ingress.		

Please contact EAO Switch directly for details of products conforming to country specific standards.

Series 71

22.5mm   21 x 21mm   21 x 27mm   IP65   3A   250VAC
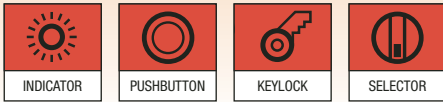
INDICATOR	PUSHBUTTON	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 71 is a high quality, modular switch range that includes flush mounted pushbuttons, indicators, selector switches and keylock switches with self cleaning snap-action switching elements. The switching elements may be soldered directly onto the PCB and the actuators are lockable with an interlocking pin, no spacing pins required.

Technical drawings see page 74

- IP65 Protection
- Switch Rating, 3A, 250VAC
- Flush Mounting into 22.5mm, 21x21mm and 21x27mm cut out
- Illumination using midget-grooved T-1¾ lamps or single chip LED's
- All standard lenses are transparent with translucent white diffusers and are available in different colors
- For keylock switches 135 different key codes are available

A guide to ordering parts - choice of front bezel determines front shape

☼ Indicator	☑ Contact block	☼ LED	A Accessories	A Accessories

For a complete indicator you will need to order the appropriate indicator, contact block, LED, lens and bezel

◎ Illuminated pushbutton	☑ Contact block	☼ LED (optional)	A Accessories	A Accessories

For a complete illuminated pushbutton you will need to order the appropriate actuator, contact block, LED, lens and bezel

⚷ Keylock switch	☑ Contact block	A Accessories	A Accessories

For a complete keylock switch you will need to order the appropriate actuator, contact block and bezel

⧲ Selector switch	☑ Contact block	☼ LED (optional)	A Accessories	A Accessories

For a complete selector switch you will need to order the appropriate actuator, contact block, LED, lever and bezel

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

BLOCK	LED	A ACCESSORIES

☼ Indicator

Universal indicator body for flush mount, black plastic

Part No.
71-600.0
Requires flush mount bezel and adapter

For complete switch also order ⊡ ☼ **A**

◎ Illuminated pushbutton

Universal illuminated flush mount pushbutton actuator, round, black plastic

Part No.	Action
71-611.0	Momentary
71-612.0	Maintained
Requires flush mount bezel and adapter	

For complete switch also order ⊡ ☼ **A**

⚷ Keylock switch

Universal keylock switch actuator, 2 position for flush mount

1 Mom 42°   **2** Maint 90°

Drawing	Part No.	Action	Key rem.
1	71-621.0/D	Momentary	A
2	71-622.0/D	Maintained	A
2	71-623.0/D	Maintained	C
2	71-624.0/D	Maintained	A+C
	Requires flush mount bezel and adapter		

For complete switch also order ⊡ **A**

⚷ Keylock switch

Universal keylock switch actuator, 3 position for flush mount

3 Mom 42°   **4** Mom 42° Maint 90°   **5** Maint 90°   **6** Mom 42° Maint 90°

Drawing	Part No.	Action	Key rem.
3	71-631.0/D	Momentary/Momentary	A
4	71-638.0/D	Momentary/Maintained	A
4	71-639.0/D	Momentary/Maintained	A+B
5	71-636.0/D	Maintained/Momentary	A
5	71-637.0/D	Maintained/Momentary	A/C
6	71-632.0/D	Maintained/Maintained	A
6	71-635.0/D	Maintained/Maintained	A+B+C
6	71-634.0/D	Maintained/Maintained	B+C
6	71-633.0/D	Maintained/Maintained	C
Requires flush mount bezel and adapter			

For complete switch also order ⊡ **A**

⬛ Selector switch

Universal selector switch actuator, 2 and 3 position for flush mount

7 Mom 42°   **8** Maint 90°   **9** Mom 42°   **10** Mom 42° Maint 90°   **11** Maint 90° Mom 42°   **12** Maint 90°

Drawing	Part No.	Action	Positions
7	71-641.0	Momentary	2
8	71-642.0	Maintained	2
9	71-651.0	Momentary/Momentary	3
10	71-658.0	Momentary/Maintained	3
11	71-656.0	Maintained/Momentary	3
12	71-652.0	Maintained/Maintained	3
Requires flush mount bezel and adapter			

For complete switch also order ⊡ ☼ **A**

INDICATOR	PUSHBUTTON	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Contact block

Indicator Element and Switching Element. Interlocking pin for PCB assembly supplied with each element

Image	Part No.	Contact type	Product description
1	71-670.006		Indicator element
2	71-671.026	1NO/1NC	Switching element
3	71-672.026	2NO/2NC	Switching element

LED

LED, T-1 ³/₄ MG, 12 Volt and 28 Volt.
Also available in 6 Volt, 24 Volt and 48 Volt

Color	Part No.	Voltage
Red	10-2J09.1062	12VAC/DC, 7/14mA
Yellow	10-2J09.1064	12VAC/DC, 7/14mA
Green	10-2J09.1065	12VAC/DC, 4/7mA
Blue	10-2J09.1066	12VAC/DC, 7/14mA
White	10-2J09.1069	12VAC/DC, 7/14mA
Red	10-2J13.1062	28VAC/DC, 7/14mA
Yellow	10-2J13.1064	28VAC/DC, 7/14mA
Green	10-2J13.1065	28VAC/DC, 4/7mA
Blue	10-2J13.1066	28VAC/DC, 7/14mA
White	10-2J13.1069	28VAC/DC, 7/14mA

A Accessories

Lens, transparent with white diffuser, plastic for flush mount rectangular indicator and pushbutton actuators

Color	Part No.	Size
Red	61-9681.2	24 x 30mm
Yellow	61-9681.4	24 x 30mm
Green	61-9681.5	24 x 30mm
Blue	61-9681.6	24 x 30mm
Clear	61-9681.7	24 x 30mm

For complete switch also order ☼ ◎ ⚷ ◫ ♀ **A**

A Accessories

Lens, transparent with white diffuser, plastic for flush mount round indicator and pushbutton actuators

Color	Part No.	Size
Red	61-9642.2	25mm Ø
Yellow	61-9642.4	25mm Ø
Green	61-9642.5	25mm Ø
Blue	61-9642.6	25mm Ø
Clear	61-9642.7	25mm Ø

Lens, transparent with white diffuser, plastic for flush mount square indicator and pushbutton actuators

Color	Part No.	Size
Red	61-9671.2	24 x 24mm
Yellow	61-9671.4	24 x 24mm
Green	61-9671.5	24 x 24mm
Blue	61-9671.6	24 x 24mm
Clear	61-9671.7	24 x 24mm

Lever for selector switch, flush mount, colored lever bar options available as indicated

Color	Part No.	Window
Red	61-9028.20	Transparent
Yellow	61-9028.40	Transparent
Green	61-9028.50	Transparent
Blue	61-9028.60	Transparent
White	61-9028.9	Opaque
Black	61-9028.0	Opaque

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | A ACCESSORIES |
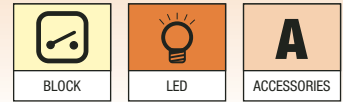
A Accessories

Flush front bezel for keylocks, black plastic

Image	Part No.	Size
1	61-9230.0	24 x 30mm
2	61-9220.0	24 x 24mm
3	61-9210.0	25mm Ø
	Flush bezel must be ordered/used	
	with keylock flush mount adapter	

Front bezel set for flush mount indicator, illuminated pushbutton and square and rectangular keylock switch

Image	Part No.	Material	Size
1	61-9933.10	Plastic	25mm Ø
2	61-9933.0	Aluminum	25mm Ø
3	61-9931.0	Plastic	24 x 30mm
4	61-9930.0	Plastic	24 x 24mm
5	61-9933.1	Black aluminum	25mm Ø

Flush mount adapter for keylocks and selectors

Image	Part No.	Material	Size
1	61-9932.10	Plastic	25mm Ø
2*	61-9936.0	Plastic	24 x 24mm
3	61-9932.0	Aluminum	25mm Ø
4	61-9932.1	Black aluminum	25mm Ø
5**	61-9930.0	Plastic	24 x 24mm
6**	61-9931.0	Plastic	24 x 30mm
	For keylocks must also order flush		
	keylock front bezel to work properly		
	* For selectors only		
	** For keylocks only		

A Accessories

Flap guard, flush mount

Image	Part No.	Size
1	61-9922.0	24 x 30mm
2	61-9921.0	24 x 24mm
3	61-9924.0	25mm Ø

Blanking plate

Image	Part No.	Size
1	61-9453.0	25mm Ø
2	61-9452.0	24 x 30mm
3	61-9451.0	24 x 24mm

Lens remover for flush mount, mounting tool and LED/Lamp remover

Image	Part No.	Product description
1	61-9730.0	Lens remover for flush mount
2	01-907	Mounting tool
3	61-9740.0	LED/Lamp remover

71 Indicator, Pushbutton

Flush, Round, Square, Rectangular

71 Keylock

Flush, Round, Square, Rectangular

71 Selector

Flush, Round, Square, Rectangular

71 Cut-outs

Indicator, Pushbutton Flush, Keylock Flush, Selector Flush

Note:
Pitch of the front plate mounting holes must agree with the printed circuit board holes Ø 3.5

71 PCB Layout

30 min.	Devices 30 x 24
24 min.	24 x 24
25 min.	Ø 25

Drilling plan (Elementside)
Through-connection recommended

Position interlocking pin

Note:
Pitch of the print circuit board hole Ø 3.5 must agree with the mounting holes on the front plate

Throughout EAO's customer solutions processes, EAO takes care of the detailed development of the HMI system, while at the same time continually exchanging information with you.

Electromechanical switch products	EAO standard and customer-specified products, integrated into a simple or complex solution product, fully wired and functional, with multi-layer PCB, screening and connectors, front panel recesses and lettering.
Front panel	Anodized aluminum, stainless steel, lacquered or powder-coated sheet metal, steel, plastic, plastic foils.
Lettering	Silk-screen printing, laser marking engraving, labeling strips.
Overlay foil	Hard or soft membrane material, customized shapes and styles, using logos and multi-color technology.
Touch sensitive technology	Customized keypads and keyboards and single switches, installation behind all non-conductive materials up to 10mm thick.
Low level input technology	Stainless steel or polydomes, conductive rubber and silver contacts.
Interfaces and specialities	Integration with special components or switching elements, EMC- and RFI-protected, electronic sealing technology, anti-bounce components, RS232, RS-485, CAN-BUS, Interbus, Profibus and other industrial bus systems, IPC or MIL spec.
Industrial design	Functional flow, intuitive layout, selection of colors, international symbols and pictograms, wall mounted, hand held, bench-top, plastic or metal housing, IP/NEMA protected, customized tactile feel, solutions for hand, elbow and foot operation designed to meet the requirements of the disabled, various tactile feel designs.
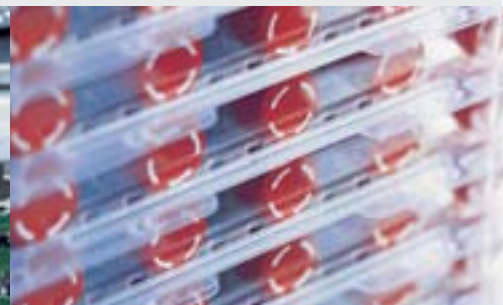
INDICATOR	PUSHBUTTON	E-STOP

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 84 consists of indicators, momentary pushbuttons and low depth monoblock Emergency-stop switches. The indicators and pushbuttons are a modular system of lens, actuator and switching element with connections using plug-in terminals.

Within the many different colors, the lenses are available either in plastic or anodized aluminum.

Technical drawings see pages 78-79

- IP67 Protection
  (Switches and Indicators)

- IP65 Protection
  (Emergency-stop switches)

- Flush Mounting into 22.5mm cut out

- Illumination using Single or
  Multi-LED's in red, orange, yellow,
  green, blue or white

- Switching elements with solder or
  plug-in terminals or ribbon cable
  with 300mm length

- Switch Rating for indicator and
  pushbutton: 10mA - 100mA,
  50mVAC/VDC - 42VAC/VDC

- Switch Rating for Emergency-stop
  switch: 3A/120VAC, 1.5A/240VAC

- LED Voltage for Emergency-stop
  switch: 5-30VDC

- All standard plastic lenses with the
  exception of black are transparent
  with translucent white diffuser

- Compact Emergency-stop meets
  EN 60947-5-1, EN 60947-5-5
  and EN 418

Indicator

Indicator body for flush mount, black plastic, IP67 front protection, 22.5mm mounting

Part No.
84-0100.0

For complete switch also order 💡 **A**

Illuminated pushbutton

Pushbutton actuator for flush mount, black plastic, IP67 front protection, 22.5mm mounting

Part No.	Action	Size
84-1101.0	Momentary	25mm Ø

For complete switch also order 🔲 **A**

Illuminated Emergency-stop switch

Emergency-stop red LED illuminated, plug-in terminals, twist release, 32mm diameter for 22.5mm mounting, foolproof to EN 60947-5-5, EN418

Part No.	Contact type
84-5021.2B20	1NC
84-5041.2B20	2NC
84-5031.2B20	1NC/1NO
See Series 04 for available legend plates	

Emergency-stop red LED illuminated, ribbon cable, twist release, 32mm diameter for 22.5mm mounting, foolproof to EN 60947-5-5, EN418

Part No.	Contact type
84-5021.2B40	1NC
84-5041.2B40	2NC
84-5031.2B40	1NC/1NO
See Series 04 for available legend plates	

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

| BLOCK | LED | ACCESSORIES |

Emergency-stop switch

Emergency-stop non illuminated, plug-in terminals, twist release, 32mm diameter for 22.5mm mounting, foolproof to EN 60947-5-5, EN 418

	Part No.	Contact type
	84-5020.0020	1NC
	84-5040.0020	2NC
	84-5030.0020	1NC/1NO
	See Series 04 for available legend plates	

Emergency-stop non illuminated, ribbon cable, twist release, 32mm diameter for 22.5mm mounting, foolproof to EN 60947-5-5, EN 418

	Part No.	Contact Type
	84-5020.0040	1NC
	84-5040.0040	2NC
	84-5030.0040	1NC/1NO
	See Series 04 for available legend plates	
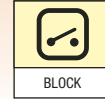
Indicator element

Indicator element, 24VDC LED, plug-in terminals, IP67

Color	Part No.	Comment
● Red	84-8002.2620	Multi-chip LED
● Yellow	84-8002.4620	Multi-chip LED
● Green	84-8002.5620	Multi-chip LED
● Blue	84-8001.6620	Single-chip LED
○ White	84-8001.9620	Single-chip LED

For complete switch also order ☼ A

Switch element

Switching element, 24VDC LED, plug-in terminals, 1NO, IP67

Color	Part No.	Comment
● Red	84-8512.2620	Multi-chip LED
● Yellow	84-8512.4620	Multi-chip LED
● Green	84-8512.5620	Multi-chip LED
● Blue	84-8511.6620	Single-chip LED
○ White	84-8511.9620	Single-chip LED
	84-8510.0020	No LED - switching element only

A   Accessories

Lens with white diffuser, plastic for flush mount, round indicator and pushbutton bodies

Color	Part No.	Comment
● Red	84-7111.200	
● Yellow	84-7111.400	
● Green	84-7111.500	
● Blue	84-7111.600	
○ Clear	84-7111.700	
● Black	84-7121.000	Not for illumination

Lens remover for flush mount, mounting tool and switch element remover

Image	Part No.	Product description
1	61-9730.0	Lens remover for flush mount
2	84-997	Mounting tool
3	84-998	Switch element remover

For complete switch also order ◎ A

84 Complete Indicator, Complete Pushbutton

Flush, plug-in terminals

84 E-Stop

31

25

max. 7

23   L = 300 ±10

max. 4

2   18   3.6

PCB version

26   9.5

18

1...4

Pitch: 1.8   Anti-twist device

32

26   13.5   L= 300 ±10
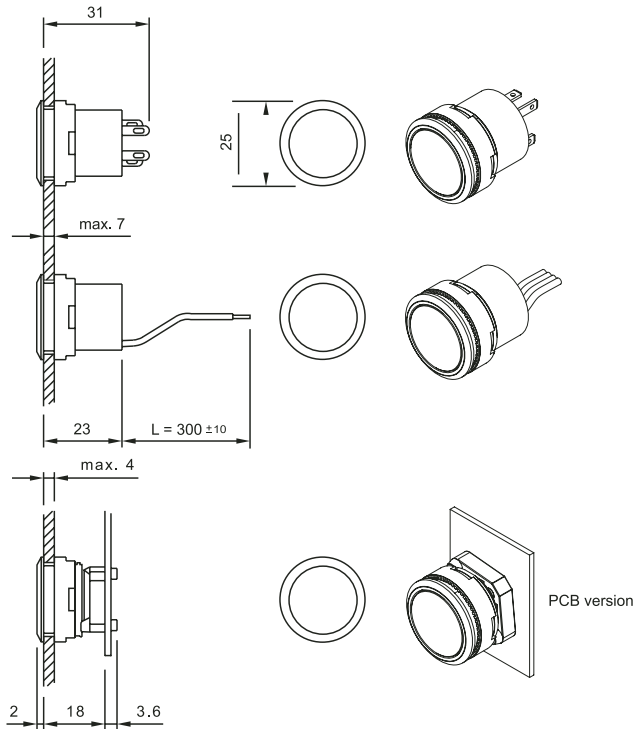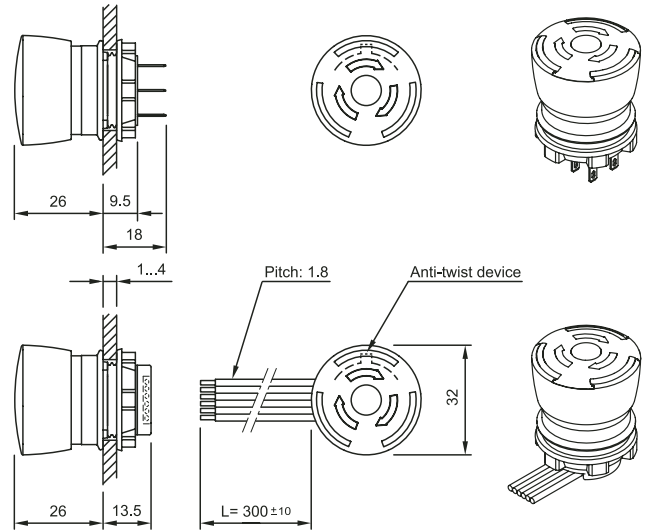
84 Cut-outs

Indicator Housing, Pushbutton Actuator
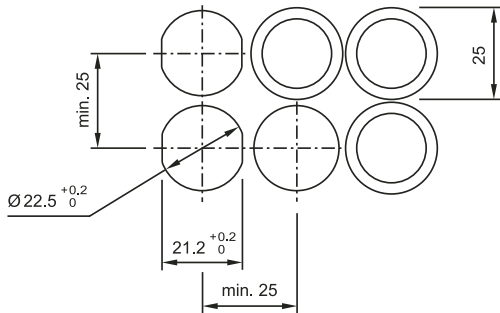
84 Cut-outs

E-Stop, EN 418 Illuminated Ribbon Cable, E-Stop EN 418 Non-Illuminated Ribbon Cable
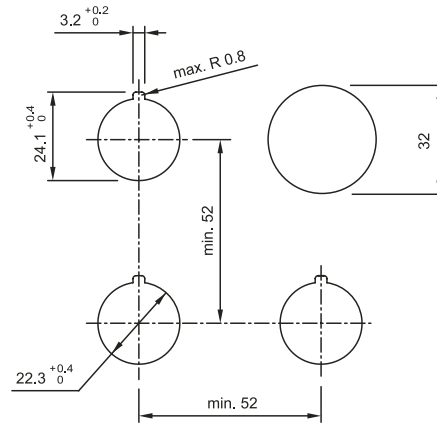
84 E-Stop

Ribbon cable wiring
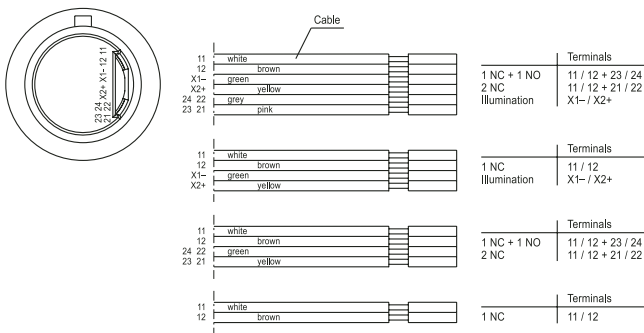
84 E-Stop

Solder wiring
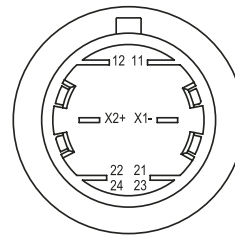
INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 92 is an interesting alternative to membrane switching systems. This Series consists of sealed PCB indicators and pushbuttons rugged enough to last for more than 1 million operations.

Technical drawings see pages 83-84

- 1NO (SPST) contacts rated at 42VAC/DC, 50mA
- Standard IP40 and sealed IP67 actuators
- Excellent tactile feel
- Actuators mount in standard 16mm diameter front panel hole
- Optional LED illumination
- Flexible to mount underneath overlay (contact EAO Switch direct for Series 70)

Indicator

Indicator actuator, white bezel, IP40 front protection, 16mm mounting - Indicator element, mounting flange and LED needed for complete unit

Color	Part No.	Comment
🔴 Red	92-058.200	
🟡 Yellow	92-058.400	
🟢 Green	92-058.500	
⚪ Clear	92-058.700	With white diffuser

For complete switch also order ☼ ♀ **A**

Indicator actuator, black bezel, IP40 front protection, 16mm mounting - Indicator element, mounting flange and LED needed for complete unit

Color	Part No.	Comment
🔴 Red	92-158.200	
🟡 Yellow	92-158.400	
🟢 Green	92-158.500	
⚪ Clear	92-158.700	With white diffuser

For complete switch also order ☼ ♀ **A**

Indicator

Indicator actuator, white bezel, IP67 front protection, 16mm mounting - Indicator element, mounting flange and LED needed for complete unit

Color	Part No.	Comment
🔴 Red	92-043.200	
🟡 Yellow	92-043.400	
🟢 Green	92-043.500	
⚪ Clear	92-043.700	With white diffuser

For complete switch also order ☼ ♀ **A**

Indicator actuator, black bezel, IP67 front protection, 16mm mounting - Indicator element, mounting flange and LED needed for complete unit

Color	Part No.	Comment
🔴 Red	92-143.200	
🟡 Yellow	92-143.400	
🟢 Green	92-143.500	
⚪ Clear	92-143.700	With white diffuser

For complete switch also order ☼ ♀ **A**

Illuminated pushbutton

Pushbutton actuator, white bezel, IP40 front protection, 16mm mounting - Switch element, mounting flange, and optional LED, needed for complete unit

Color	Part No.	Action	Comment
🔴 Red	92-358.200	Momentary	
🟡 Yellow	92-358.400	Momentary	
🟢 Green	92-358.500	Momentary	
⚪ Clear	92-358.700	Momentary	With white diffuser

For complete switch also order ☼ ♀ **A**

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.
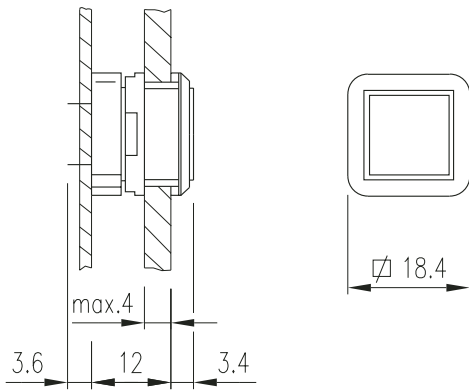
| BUZZER | BLOCK | LED | A ACCESSORIES |

◎ Illuminated pushbutton

Pushbutton actuator, black bezel, IP40 front protection, 16mm mounting - Switch element, mounting flange, and optional LED, needed for complete unit

Color	Part No.	Action	Comment
● Red	92-458.200	Momentary	
● Yellow	92-458.400	Momentary	
● Green	92-458.500	Momentary	
○ Clear	92-458.700	Momentary	With white diffuser

For complete switch also order ☼ ♀ A

Pushbutton actuator, white bezel, IP67 front protection, 16mm mounting - Switch element, mounting flange, and optional LED, needed for complete unit

Color	Part No.	Action	Comment
● Red	92-343.200	Momentary	
● Yellow	92-343.400	Momentary	
● Green	92-343.500	Momentary	
○ Clear	92-343.700	Momentary	With white diffuser

For complete switch also order ☼ ♀ A

Pushbutton actuator, black bezel, IP67 front protection, 16mm mounting - Switch element, mounting flange, and optional LED, needed for complete unit

Color	Part No.	Action	Comment
● Red	92-443.200	Momentary	
● Yellow	92-443.400	Momentary	
● Green	92-443.500	Momentary	
○ Clear	92-443.700	Momentary	With white diffuser

For complete switch also order ☼ ♀ A

☼ Indicator element

Switching element

Mounting flange

Indicator element

	Part No.
	92-800.042

For complete switch also order ☼ ♀ A

Switching element, 42VAC/DC, 50mA

	Part No.	Action	Contact
	92-851.342	Momentary	1NO

For complete switch also order ◎ ♀ A

Mounting flange required for PCB adaptation

	Part No.
	92-960.0

Series 92

INDICATOR	PUSHBUTTON	E-STOP	MUSHROOM	KEYLOCK	SELECTOR

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

LED

T-1 Bi-Pin LED

A Accessories

1   2   3

Spacer, PC board and dismantling tool

Color	Part No.	Voltage	Comment
🔴 Red	10-2602.3172D	2.2VDC / 20mA	Single-chip
🟠 Orange	10-2602.3173D	2.2VDC / 20mA	Single-chip
🟡 Yellow	10-2602.3174D	2.2VDC / 20mA	Single-chip
🟢 Green	10-2602.3175D	2.2VDC / 20mA	Single-chip
🔴 Red	10-5609.3172D	12.0VDC / 20mA	Multi-chip
🟠 Orange	10-5609.3173D	12.0VDC / 20mA	Multi-chip
🟡 Yellow	10-5609.3174D	12.0VDC / 20mA	Multi-chip
🟢 Green	10-5609.3175D	12.0VDC / 20mA	Multi-chip

Drawing	Part No.	Product description
1	92-965.0	Spacer
2	92-989.0	PC board
3	92-971.0	Dismantling tool

92 Pushbutton, Indicator

Illuminated, flush mounting, IP40

⊿ 18.4

max.4
3.6   12   3.4

92 Pushbutton, Indicator

Illuminated, flush mounting, IP67

⊿ 18.8

max.4
3.6   12   4
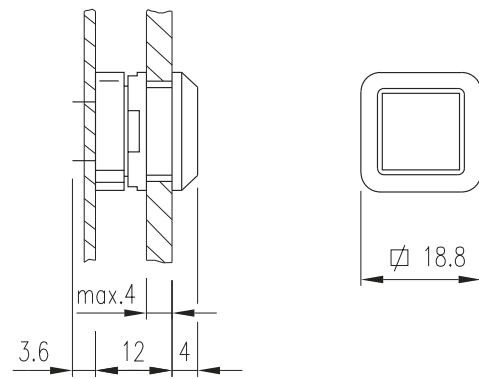
92 Switch Element

PCB terminal

Ø 8

5.7
4
9.3
3.6
12.5
1

3   4
1   2
5.08
10.16
12.5
16.8

92 Indicator Element

1.6
4
5.7
16.8
0.8 x 0.8
6.35
12.5
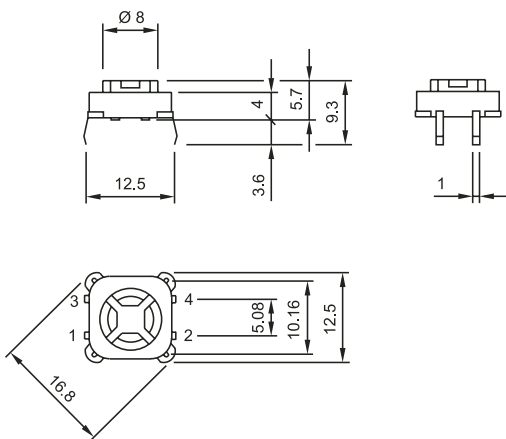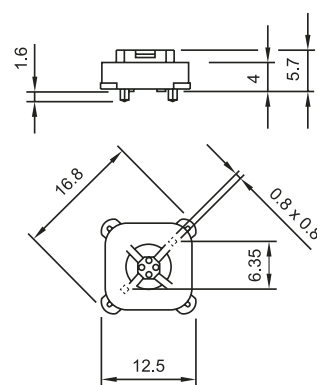
92 Mounting Flange

25.95
4
7.1
20
R2.2
21.55 ±0.1
4.9
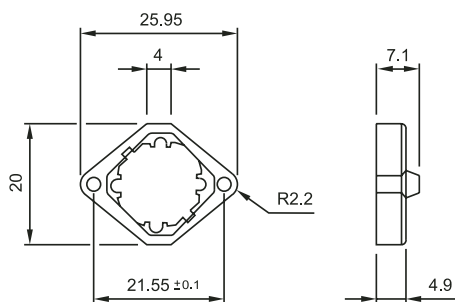
92 Cut-outs

Pushbutton, Indicator, IP40 and IP67
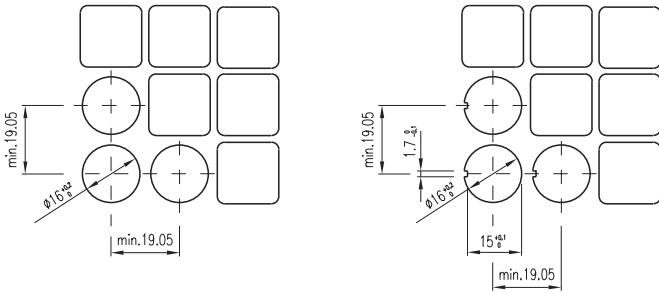
92 Switch Element Cut-outs

Drilling plan (Elementside)

A Fixing holes for mounting flange
B Fixing holes for LED
C Holes for contact pins
   pad max. 2.5 mm dia.
   through-connection recommended
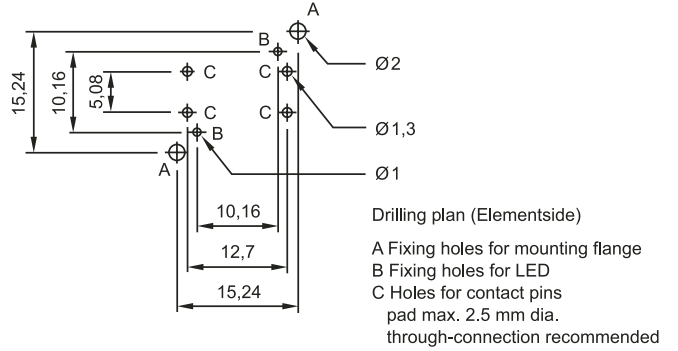
92 Indicator Element Cut-outs

Drilling plan (Elementside)

A Fixing holes for mounting flange
B Holes for LED
C Holes for centering pins
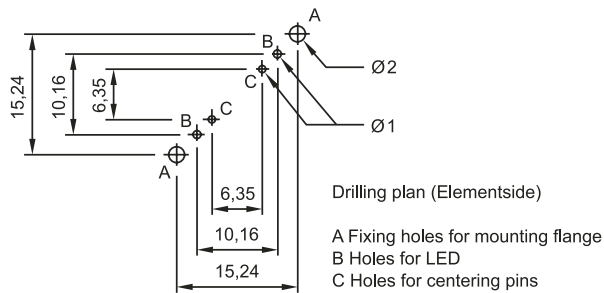
92 Array

The positioning and number of mounting flanges is determined by the size of the front panel and PCB. For a consistent tactile operation, position mounting flanges as shown below. Suitable for PCBs of 1.6mm thickness
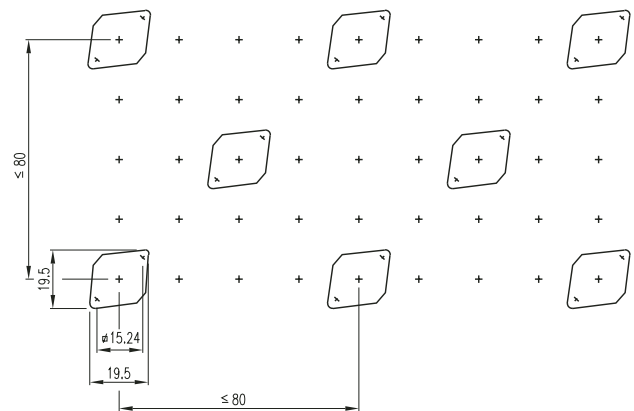
EAO offers a comprehensive range of sealed, heavy-duty, illuminated indicator pushbuttons and keypads which benefit the end user in terms of visibility in all kinds of lighting and weather conditions.
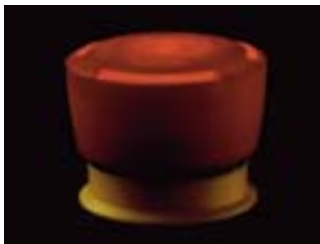
LED technology

Operating at relatively low current levels, our high intensity LEDs are robust, have a virtually limitless service life and are fast replacing unreliable filament lamp light sources in various applications. LEDs are available in a variety of colors including red, green, yellow, blue and white with a choice of continuous or flashing light elements.

We are confident that once you have experienced the benefit of our LED assemblies you will not return to an alternative. Full details of EAO illuminated products can be found within the appropriate sections of the catalog.

PUSHBUTTON

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.

Product Profile

The Series 95 is a high quality switch range containing illuminated and non-illuminated momentary pushbuttons.

Technical drawings see pages 88-89

- IP40 Protection
- Switch Rating, 50mA, 48VDC
- Suitable for mounting on PCB's with thickness of 1.5 to 2.5mm
- Switch held during the soldering process by the spring clip contacts
- Illumination using independent SMD LED's with PLCC housing (height 2.1mm) and a radiation angle of approx. 120°
- Lenses available: matt translucent or clear transparent in flat, concave or convex
- Available sizes are: 12.1mm, 15.2mm and 18.4mm square
- Greater than 5 million switch cycles
- Independent illumination allows for flexibility
- Silent operation as required in some audio/video applications

Illuminated pushbutton

Diffuser, 12.1mm x 12.1mm (small)

Color	Part No.
● Red	95-803.220
● Yellow	95-803.420
● Orange	95-803.320
● Green	95-803.520
● Blue	95-803.620
○ White	95-803.920

For complete switch also order 🔘 💡 **A**

Diffuser, 15.2mm x 15.2mm (medium)

Color	Part No.
● Red	95-805.220
● Yellow	95-805.420
● Orange	95-805.320
● Green	95-805.520
● Blue	95-805.620
○ White	95-805.920

For complete switch also order 🔘 💡 **A**

Illuminated pushbutton

Diffuser, 18.4mm x 18.4mm (large)

Color	Part No.
● Red	95-804.220
● Yellow	95-804.420
● Orange	95-804.320
● Green	95-804.520
● Blue	95-804.620
○ White	95-804.920

For complete switch also order 🔘 💡 **A**

Switching element

Switching element, 12.1mm x 12.1mm (small)

Part No.
95-313.000

For complete switch also order ◎ **A**

Switching element, 15.2mm x 15.2mm (medium)

Part No.
95-515.000

For complete switch also order ◎ **A**

Choose one component from each of the colored sections to assemble a complete switch.
For other options or further information please contact EAO Switch directly.
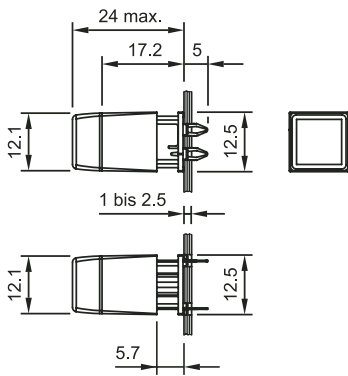
| BLOCK | LED | ACCESSORIES |

Switching element

Switching element, 18.4mm x 18.4mm (large)

Part No.
95-414.000

For complete switch also order ◎ A

LED

Independent illumination with the Series 95 allows for end user flexibility. EAO recommends the following:

SMD-LED type:
P-LCC2 package or similar, radiation angle approx. 120° use of smaller SMD-LED is possible.

SMD-LED configurations:
max. 2 SMD-LED's (switch size 12.7mm)
max. 3 SMD-LED's (switch size 15.88mm or 19.05mm)
single color or multi color

Height of SMD-LED:
max.2.1mm

A   Accessories

Lens flat, matt translucent or clear transparent, 12.1mm x 12.1mm (small)

Color	Part No.	Lens shape	Lens material
◯ Neutral	95-703.720	Flat	Matt translucent
◯ Neutral	95-703.750	Flat	Clear transparent

A   Accessories

Lens flat, matt translucent or clear transparent, 15.2mm x 15.2mm (medium)

Color	Part No.	Lens shape	Lens material
◯ Neutral	95-705.720	Flat	Matt translucent
◯ Neutral	95-705.750	Flat	Clear transparent
◯ Neutral	95-705.740	Concave	Matt translucent
◯ Neutral	95-705.770	Concave	Clear transparent

Lens flat, matt translucent or clear transparent, 18.4mm x 18.4mm (large)

Color	Part No.	Lens shape	Lens material
◯ Neutral	95-704.720	Flat	Matt translucent
◯ Neutral	95-704.750	Flat	Clear transparent
◯ Neutral	95-704.740	Concave	Matt translucent
◯ Neutral	95-704.770	Concave	Clear transparent
◯ Neutral	95-704.730	Convex	Matt translucent
◯ Neutral	95-704.760	Convex	Clear transparent

Lens remover and mounting tool for use with all three switch sizes

Image	Part No.	Product description
1	95-900.009	Mounting tool
2	95-900.005	Lens remover

95 Pushbutton

Small

95 Pushbutton

Medium
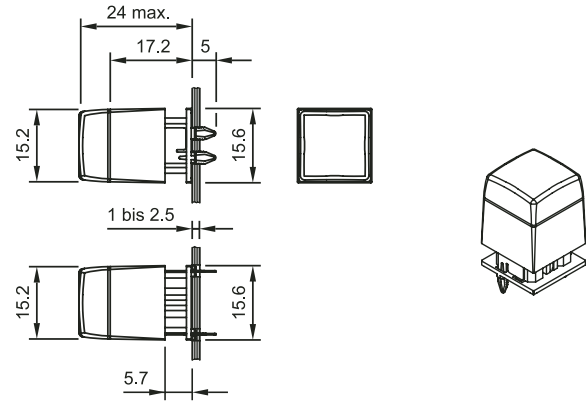
95 Pushbutton

Large

95 Pushbutton Cut-outs

Small

Layout (Elementside)

Pushbutton base

10.2   1.4
1.4
10.2
12.7 min.
10.2 ±0.03
3.5 ±0.2
5.1 ±0.03
12.7 min.

A

4 support areas of pushbutton base on same level

LED equiped

2 holes "A" for contact pins
Final dimension Ø 2.45 ±0.07
Through-connection recommended
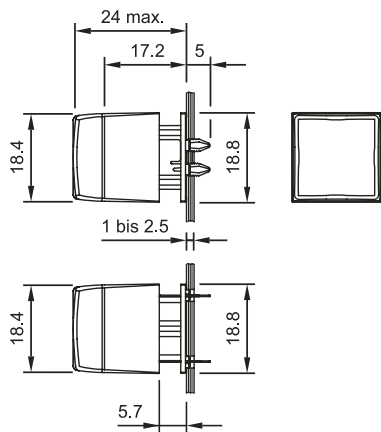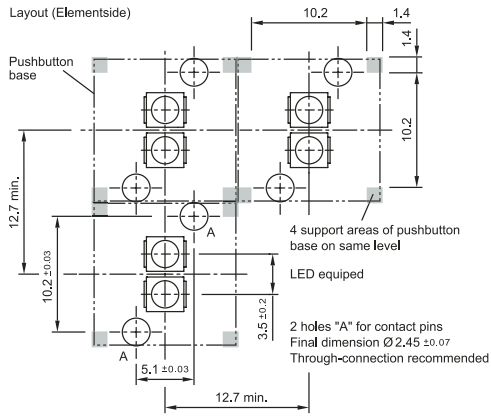
95 Pushbutton Cut-outs

Medium
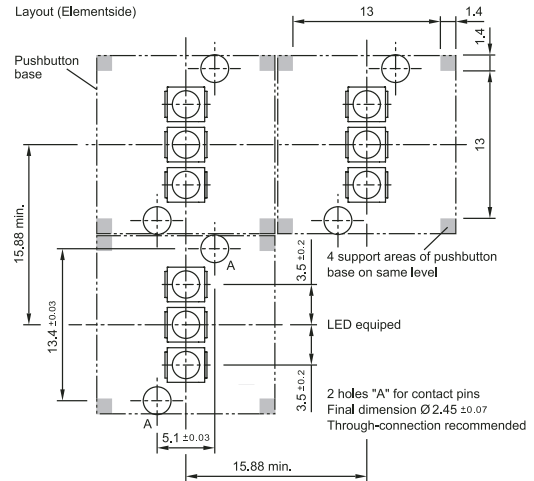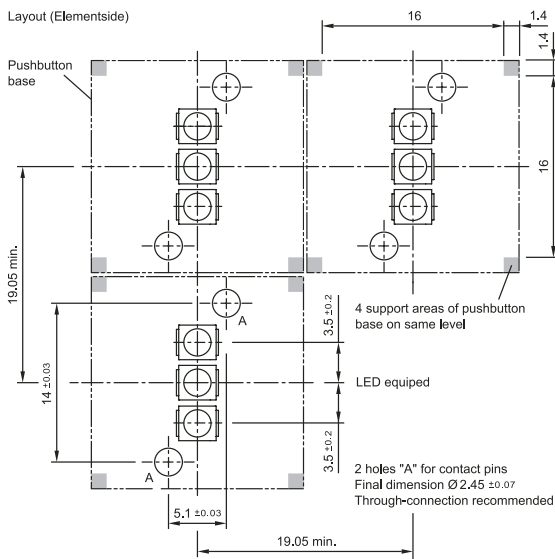
Layout (Elementside)

Pushbutton base

13   1.4
1.4
13
15.88 min.
13.4 ±0.03
3.5 ±0.2
3.5 ±0.2
5.1 ±0.03
15.88 min.

A

4 support areas of pushbutton base on same level

LED equiped

2 holes "A" for contact pins
Final dimension Ø 2.45 ±0.07
Through-connection recommended

95 Pushbutton Cut-outs

Large

Layout (Elementside)

Pushbutton base

16   1.4
1.4
16
19.05 min.
14 ±0.03
3.5 ±0.2
3.5 ±0.2
5.1 ±0.03
19.05 min.

A

4 support areas of pushbutton base on same level

LED equiped

2 holes "A" for contact pins
Final dimension Ø 2.45 ±0.07
Through-connection recommended

KEYPADS

For other options, keypads or custom configurations please contact EAO Switch directly.

Product Profile

The **AVME Series is a high quality, vandal resistant keypad range especially designed to meet the needs of public environment applications, vending machines, ticket machines and access systems.**

Technical drawings see page 91

- Anti pull-off keys
- Alternative concave or flat profile keys
- Positive tactile feel using click dome technology
- IP67 front face sealing behind panel
- 12 or 16 key versions

Keypad

Non-illuminated keypad, 3x4 keys, pin header connection, concave keys

Part No.	Output type	Key shape
A.12150.C01	Matrix	Concave
A.12100.C01	Common point	Concave

Non-illuminated keypad, 4x4 keys, pin header connection, concave keys

Part No.	Output type	Key shape
A.16350.C01	Matrix	Concave
A.16300.C01	Common point	Concave

Keypad

Non-illuminated keypad, 3x4 keys, pin header connection, flat keys

Part No.	Output type	Key shape
A.12150.P01	Matrix	Flat
A.12100.P01	Common point	Flat

Non-illuminated keypad, 4x4 keys, pin header connection, flat keys

Part No.	Output type	Key shape
A.16350.P01	Matrix	Flat
A.16300.P01	Common point	Flat

AVME Keypad

Concave key
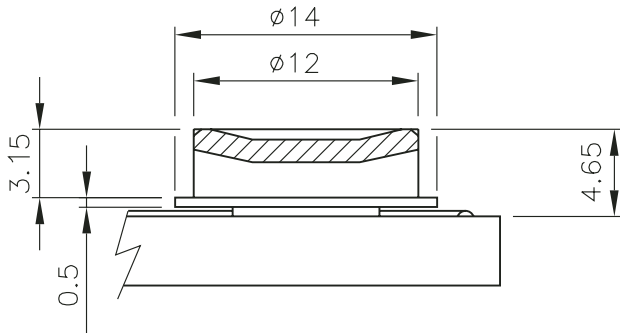
AVME Keypad

Flat key
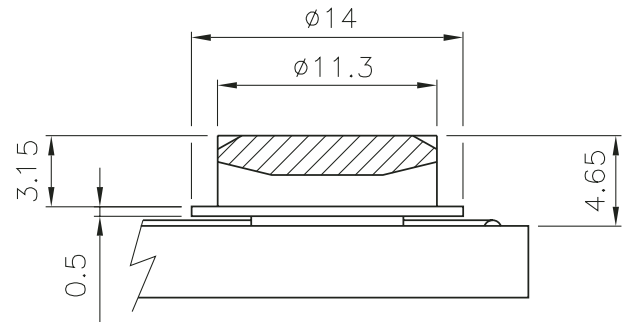
AVME Cut-outs

3x4 keypads

telephone
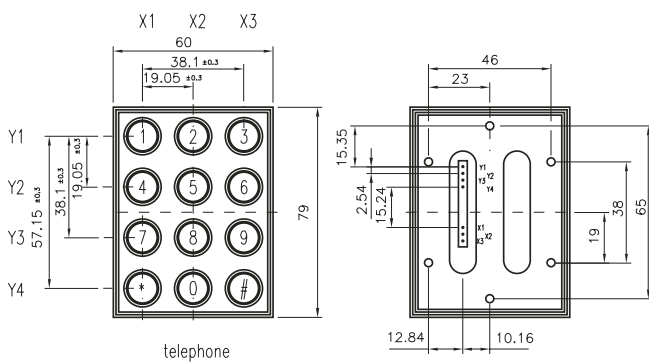
AVME Cut-outs

4x4 keypads

hexadecimal
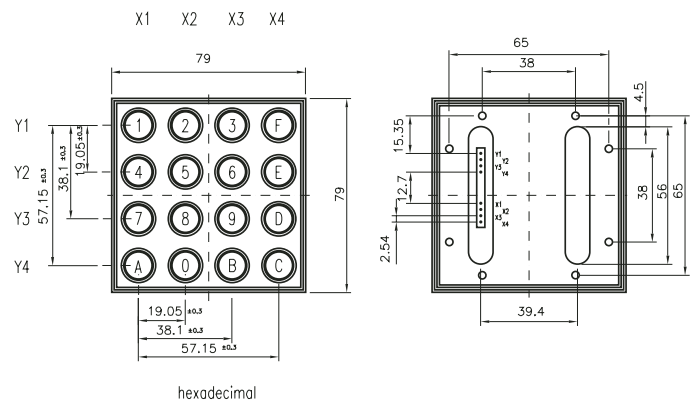
AVME Cut-outs

Contact EAO Switch directly

For other options, keypads or custom configurations please contact EAO Switch directly.
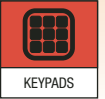
KEYPADS

Product Profile

The S.series is a high quality, vandal resistant keypad range especially designed to meet the needs of public environment applications, vending machines, ticket machines, door entry systems, banking/ATM, telephones and industrial machinery.

Technical drawings see pages 93-94

- Illuminated or non illuminated options
- Anti pull-off keys
- High impact resistance
- All metal construction (chromed Zamak keys and housing)
- IP67 front face sealing with gasket supplied
- Front or rear panel mounting
- 12 or 16 key versions

Non illuminated keypad

Non-illuminated keypad, 3x4 keys, pin header connection

Part No.	Output type
S.12150.001	Matrix
S.12100.001	Common point

Non-illuminated keypad, 4x4 keys, pin header connection

Part No.	Output type
S.16350.001	Matrix
S.16300.001	Common point

Illuminated keypad

Illuminated keypad, 3x4 keys, pin header connection

Part No.	Output type
S.12150.241	Matrix
S.12100.241	Common point

Illuminated keypad, 4x4 keys, pin header connection

Part No.	Output type
S.16350.241	Matrix
S.16300.241	Common point

S.series Keypad

3x4 Keypads
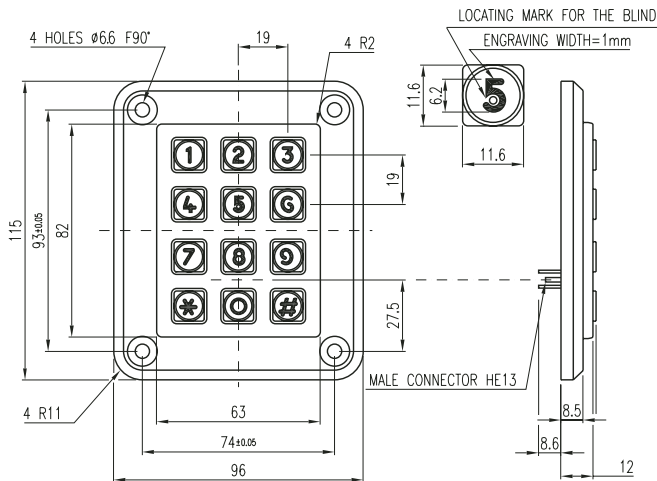
S.series Keypad

4x4 keypads
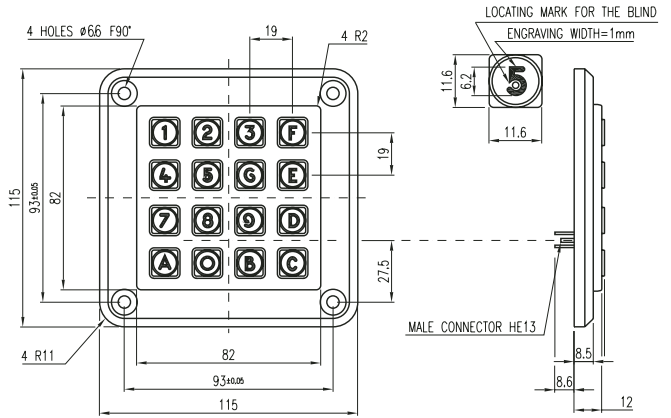
S.series Keypad Cut-outs

3x4 Keypads
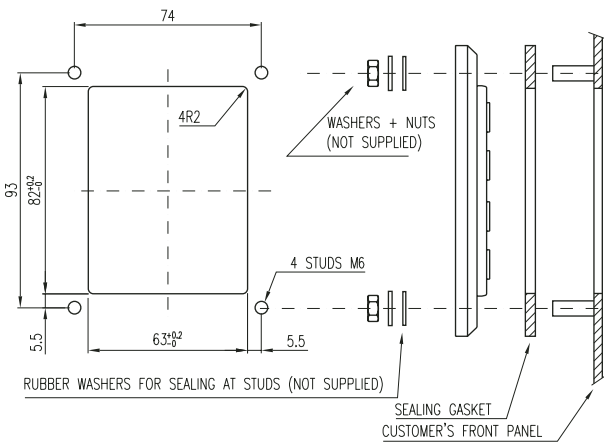
S.series Keypad Cut-outs

4x4 keypads
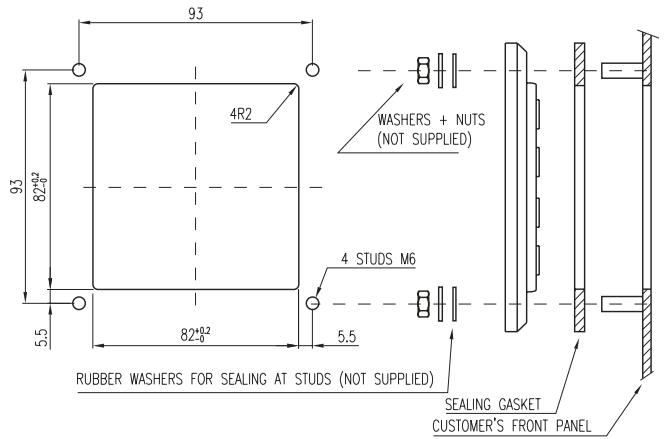
S.series 3x4 Illuminated Matrix

S.series 4x4 Illuminated Matrix

S.series 3x4 Non-Illuminated Matrix

S.series 4x4 Non-Illuminated Matrix

S.series 3x4 Illuminated and Non-Illuminated Common Point

S.series 4x4 Illuminated and Non-Illuminated Common Point
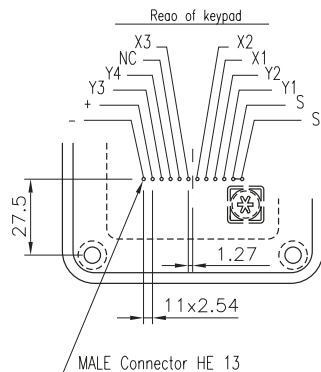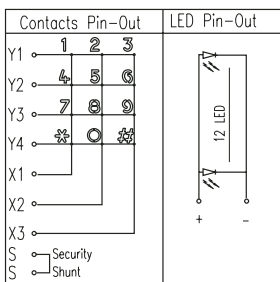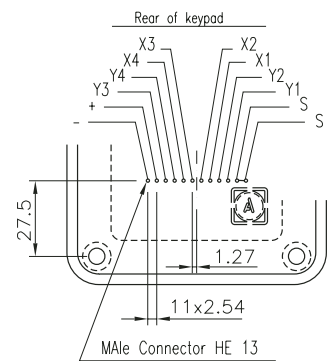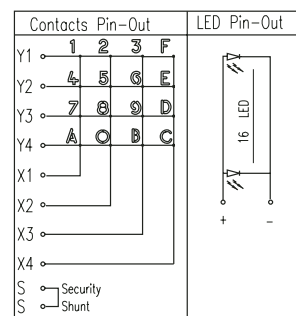
Transportation

Application   Lift to help disabled persons to board trains

Product description Series 14, Series 61, both with front bezel set for mushroom-head button

Customer priorities Customized for use by disabled people, quality of engraving, positive tactile feedback

Communications

Application   Internet/Product browser

Product description W.series keyboard

Customer priorities Stainless steel finish
Smooth key action
Beautiful design

Machinery

Application   Central-control room for chemical process plants

Product description Series 04 illuminated pushbuttons
Series 04 key switches
Series 04 protective covers

Customer priorities Quality and reliability, cosmetic appearance, range of options and accessories

Instrumentation

Application
Control desk for marine propellers

Product description
Series 61 flush, rectangular

Customer priorities
Good design competence
Quality seal
Approvals
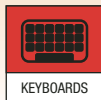
KEYBOARDS

For other options, keypads, keyboards or custom configurations please contact EAO Switch directly.

Product Profile

The Touch Sensitive Keyboard range operates from under a transparent protective screen, designed to resist cleaning agents and fluids, moisture, dirt ingress and damage from shock and impact, making it ideally suitable for a wide range of applications in industrial and public areas.

Technical drawings see page 98

- IP65
- Works under polycarbonate or glass up to 10mm thick for certain models
- Adjustable sensitivity
- With or without touchpad
- PS2 or USB connection
- Environment: PS2, Win NT4, 98 SE, ME, 2000 PRO Pack II, XP
- Available in several language layouts
- SCB software included with 74 key unit for design of keyboard and touchpad overlay
- Customization of key functions on 74 key unit using SCB software
- 105 key OEM version supplied with mounting kit
- Custom layouts possible
- Desktop or behind-panel mounting styles

Rugged touch sensitive touchpad

Touchpad without overlay available with 1 or 2 buttons

Part No.	Output type	Comment
75.00100.U02	USB	1 click
75.00200.U03	USB	2 clicks

Rugged touch sensitive keyboard

Alphanumeric programmable keyboard, 74 keys on PCB without overlay, cable output, layouts in English, German, French and US English

Part No.	Layout	Output type
75.074K0.S01	English	PS2
75.074D0.S01	German	PS2
75.074F0.S01	French	PS2
75.074U0.S01	US English	PS2
75.074K0.U01	English	USB
75.074D0.U01	German	USB
75.074F0.U01	French	USB
75.074U0.U01	US English	USB
Keyboard mounting kit, part no. 75.00005.K01 is available on request		

Rugged touch sensitive keyboard

Alphanumeric keyboard, OEM version, 105 keys on PCB with overlay, cable output, layouts in English, German, French and US English

Part No.	Layout	Output type
75.105K1.S01	English	PS2
75.105D1.S01	German	PS2
75.105F1.S01	French	PS2
75.105U1.S01	US English	PS2
75.105K1.U01	English	USB
75.105D1.U01	German	USB
75.105F1.U01	French	USB
75.105U1.U01	US English	USB

Alphanumeric keyboard, desktop housing version, 105 keys, cable output, layouts in English, German, French and US English

Part No.	Layout	Output type
75.105K1.S06	English	PS2
75.105D1.S06	German	PS2
75.105F1.S06	French	PS2
75.105U1.S06	US English	PS2
75.105K1.U06	English	USB
75.105D1.U06	German	USB
75.105F1.U06	French	USB
75.105U1.U06	US English	USB

For other options, keypads, keyboards or custom configurations please contact EAO Switch directly.
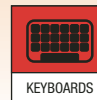
KEYBOARDS

Rugged touch sensitive keyboard with touchpad

Alphanumeric keyboards, integrated touchpad, OEM version, 105 keys on PCB with overlay, cable output, layouts in English, German, French and US English

Part No.	Layout	Output type
75.105K2.S01	English	PS2
75.105D2.S01	German	PS2
75.105F2.S01	French	PS2
75.105U2.S01	US English	PS2
75.105K2.U01	English	USB
75.105D2.U01	German	USB
75.105F2.U01	French	USB
75.105U2.U01	US English	USB

Alphanumeric keyboard with integrated touchpad, desktop housing version, 105 keys, cable output, layouts in English, German, French and US English

Part No.	Layout	Output type
75.105K2.S06	English	PS2
75.105D2.S06	German	PS2
75.105F2.S06	French	PS2
75.105U2.S06	US English	PS2
75.105K2.U06	English	USB
75.105D2.U06	German	USB
75.105F2.U06	French	USB
75.105U2.U06	US English	USB

Touch-Sensitive Keyboards Overview

The Technology

Touch-sensitive technology involves the use of high-frequency signals whose amplitude is modified when a key is activated, i.e. when it is touched or skimmed by the user's finger.

A touch-sensitive keyboard consists of three elements:

• a set of keys, on a printed circuit board;
• an interface card;
• a non-conductive front panel (glass, polycarbonate, etc).

Each key circuit features a detector circuit or cell. The detector circuit is protected by an EAO patent. An HF generator sends the HF signal to the keys.

An interface card based around a micro-controller controls all the keys. The keyboard's output signal is transmitted to the PC via a standard PS2 or USB port.

Principle

Each key on the keyboard consists of a copper area linked to a HF-emitting detector cell. This copper area may be

considered as the armature of a capacitor, with the front panel of the keyboard acting as the dielectric (the non-conductive isolating material).

When a human finger touches the contact area, it acts as the second armature of the capacitor, grounded through the user's body. The body's electrical properties then act as a serial RLC (Resistor–Self–Capacitor) network, diverting part of the HF voltage generated on the key. This drop in voltage constitutes a change in the output state and is detected as such by the micro-controller.

TSK.series touchpad

With overlay
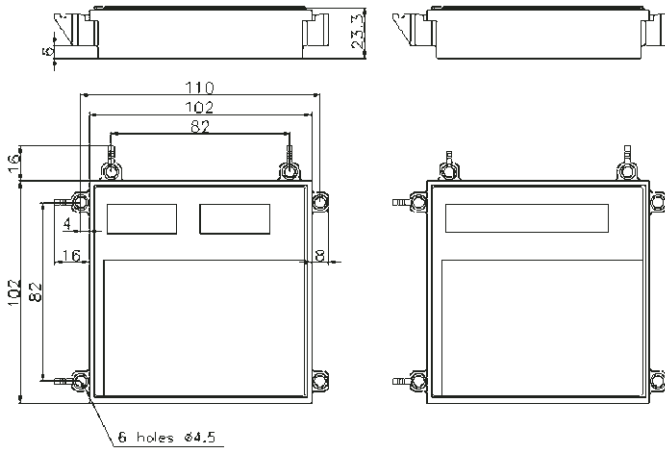
TSK.series keyboard

Alphanumeric programmable keyboard, 74 keys

TSK 74 keyboard

Mouse below

2 Countersunk screws
M3 x 25

Keyboard

2 Nuts M3

Touch Pad
housing

Interface card

2 Washers 3 mm dia.

2 Nuts M3
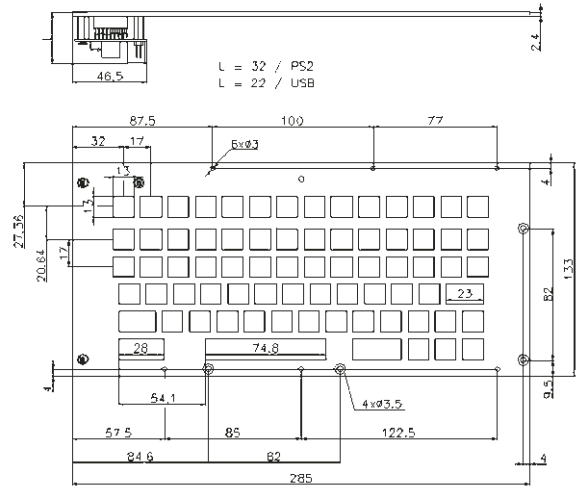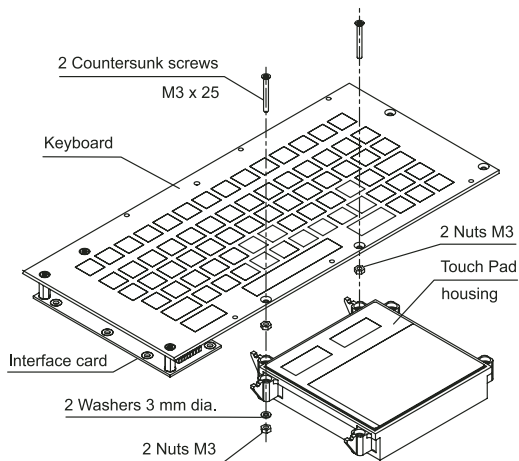
TSK 74 keyboard

Mouse on side

Keyboard

2 Countersunk
screws M3 x 25

Interface card

2 Nuts M3

Touch Pad housing

2 Washers 3 mm dia.

2 Nuts M3
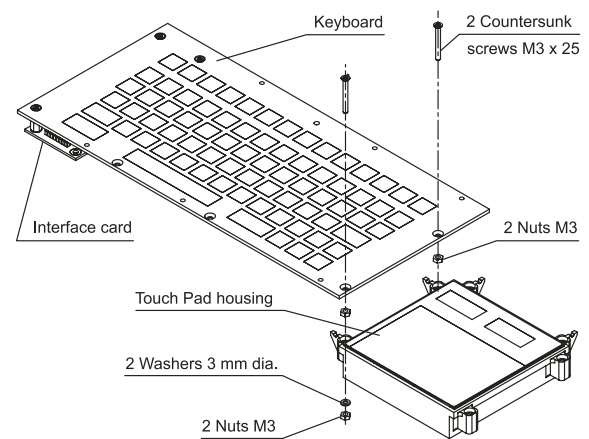
TSK 105 OEM dimensions

TSK 105 Desktop dimensions

EAO offers fully-customized keypads and keyboards with function keys that can be engraved to exact needs. Customers can specify the engraving that they need from a wide range of characters and symbols, including upper and lower case lettering, graphics and engineering characters – Roman and Greek – and superscripts and subscripts. Original graphics may also be introduced.

Where appropriate, metal keys can be marked using high-tech, computer-controlled laser engraving machines. These markings are effectively burned into the keys so they are far more wear-resistant than conventional engraving. EAO also offers a conventional engraving service on plastic keys.

LED illumination is available on certain products as an alternative to engraving.

EAO's range of customizable products are suited to most applications, including payment terminals, access control.
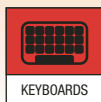
W.series

KEYBOARDS

For other options, keypads, keyboards or custom configurations please contact EAO Switch directly.

Product Profile

The W.series mechanical tactile keyboards are designed to operate in hostile environments, making them ideal for applications in industrial and public areas.

Technical drawings see pages 102-103

- All metal construction (chromed Zamak keys and brushed stainless steel for the front plate)
- Laser engraving ensuring good and long term legibility
- High resistance to vandalism: up to 10J
- Anti pull-off keys
- Sealed against liquid penetration to IP67
- Top or back mounting
- PS2 or USB connection
- Environment: PS2, Win NT4, 98 SE, ME, 2000 PRO Pack II, XP Pro
- With or without pointing device: Standard or optical trackball and touchpad
- Available in different language layouts with standard or customized markings
- Possible internet dedicated keys - "www" and ".com"
- Internet and standard industrial versions available

Rugged mechanical keyboard

Alphanumeric keyboard, back mounting, 63 keys, layouts in English, German, French and US English internet version

Part No.	Layout	Output type
W.630KW.S10	English	PS2
W.630DW.S10	German	PS2
W.630FW.S10	French	PS2
W.630UW.S10	US English	PS2
W.630KW.U10	English	USB
W.630DW.U10	German	USB
W.630FW.U10	French	USB
W.630UW.U10	US English	USB
Contact EAO for industrial version		

Alphanumeric keyboard, top mounting, 63 keys, layouts in English, German, French and US English internet version

Part No.	Layout	Output type
W.630KW.S11	English	PS2
W.630DW.S11	German	PS2
W.630FW.S11	French	PS2
W.630UW.S11	US English	PS2
W.630KW.U11	English	USB
W.630DW.U11	German	USB
W.630FW.U11	French	USB
W.630UW.U11	US English	USB
Contact EAO for industrial version		

Rugged mechanical keyboard

Alphanumeric keyboard, stainless steel trackball, 2 clicks, back mounting, 65 keys, layouts English, German, French and US English internet version

Part No.	Layout	Output type
W65BKW.S10	English	PS2
W65BDW.S10	German	PS2
W65BFW.S10	French	PS2
W65BUW.S10	US English	PS2
W.65BKW.U10	English	USB
W.65BDW.U10	German	USB
W.65BFW.U10	French	USB
W.65BUW.U10	US English	USB
Contact EAO for industrial version		

Alphanumeric keyboard, stainless steel trackball, 2 clicks, top mounting, 65 keys, layouts English, German, French and US English internet version

Part No.	Layout	Output type
W.65BKW.S11	English	PS2
W.65BDW.S11	German	PS2
W.65BFW.S11	French	PS2
W.65BUW.S11	US English	PS2
W.65BKW.U11	English	USB
W.65BDW.U11	German	USB
W.65BFW.U11	French	USB
W.65BUW.U11	US English	USB
Contact EAO for industrial version		

For other options, keypads or custom configurations please contact EAO Switch directly.

KEYPADS

Product Profile

The W.series is a high quality, vandal resistant keypad range especially designed to meet the needs of banking markets, POS terminals, public environment applications and other industrial applications.

Technical drawings see pages 102-103

• High impact resistance up to 10J

• All metal construction (chromed Zamak keys and brushed stainless steel for the front plate)

• Anti pull-off keys

• IP67 sealing when mounted

• 4, 16 or 20 key versions

• Illuminated versions available

• Custom configurations, layouts, legends and illumination available

• Double-width keys available

Rugged keypad

Keypad with 4 blank keys

Part No.	Contact terminals
W.04000.P01	Pin Header

Keypad, 4 keys engraved with arrows and filled with black paint

Part No.	Contact terminals
W.0400X.038	Pin Header

Rugged keypad

Keypad, 4 yellow illuminated keys, A-D

Part No.	Contact terminals
W.0400X.016	Pin Header

Customized keypad capabilities. Customization possible for layouts and key markings. For further details please contact your local sales office.

Contact EAO Switch directly	

W.series Keypad

Keypad 4 Keys Blank, 4 Keys Arrows, 4 Keys Illuminated A-D
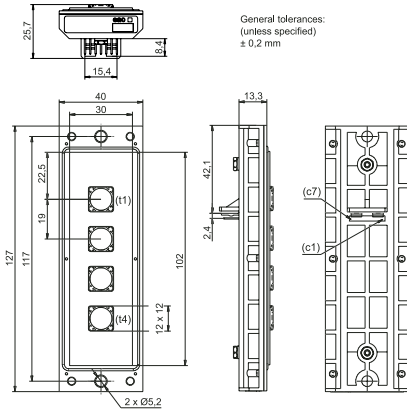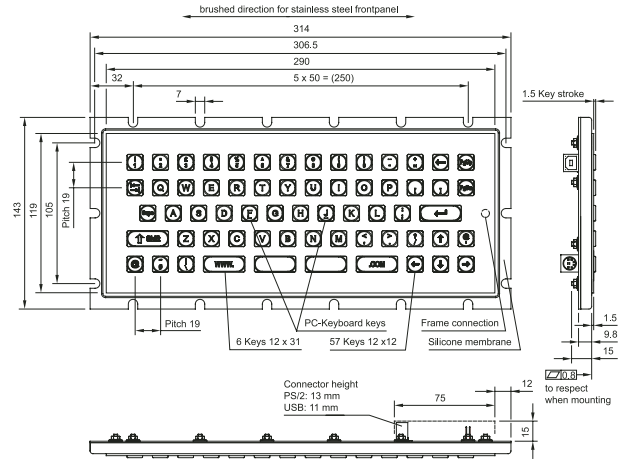
General tolerances:
(unless specified)
± 0,2 mm

W.series Keyboard

Alphanumeric Mechanical 63 Keys Back Mount

W.series Keyboard

Alphanumeric Mechanical 63 Keys Top Mount
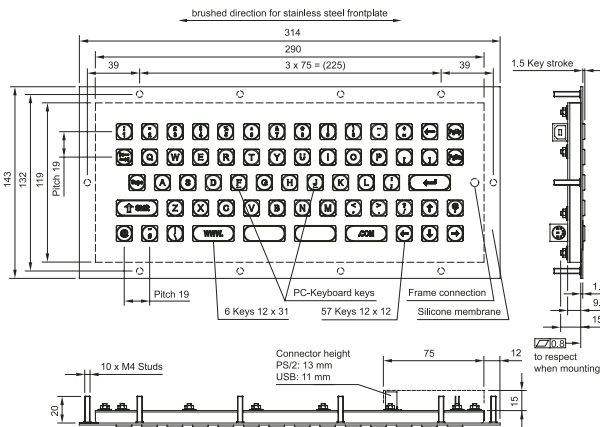
W.series Keyboard

Alphanumeric Mechanical 65 Keys Back Mount
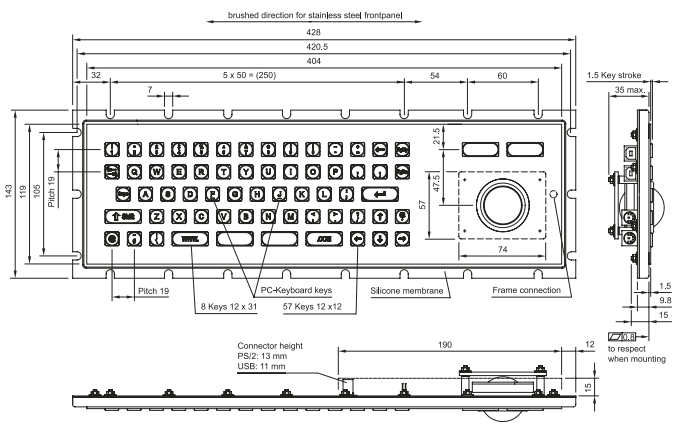
W.series Keyboard

Alphanumeric Mechanical 65 Keys Top Mount
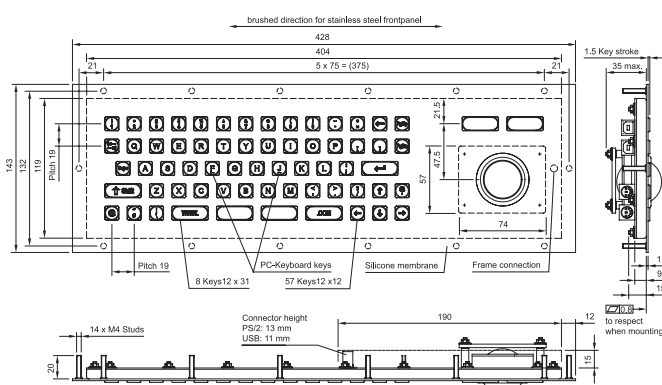
W.series Keypad Cut-outs

1x4 keypad
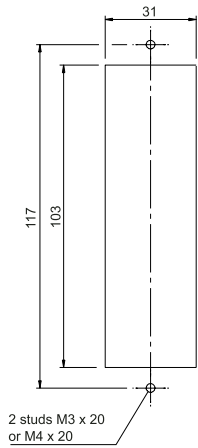
W.series Keypad Cut-outs
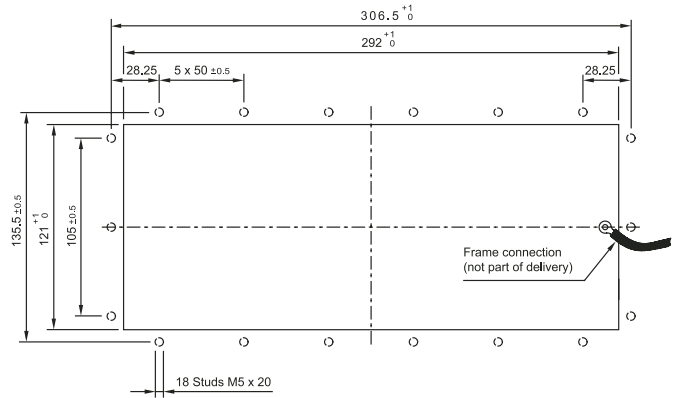
Alphanumeric Mechanical 63 Keys Back Mount

W.series Keypad Cut-outs

Alphanumeric Mechanical 63 Keys Top Mount
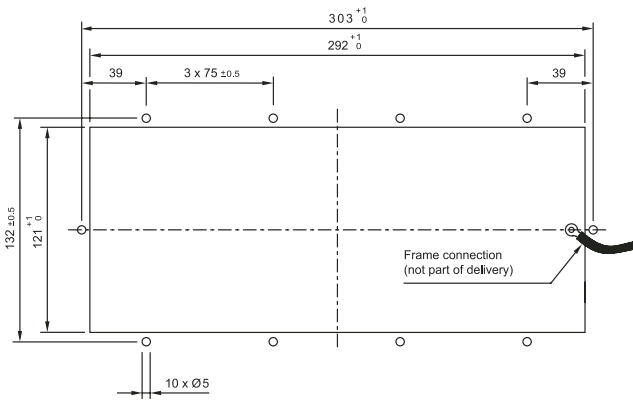
W.series Keypad Cut-outs

Alphanumeric Mechanical 65 keys Back Mount
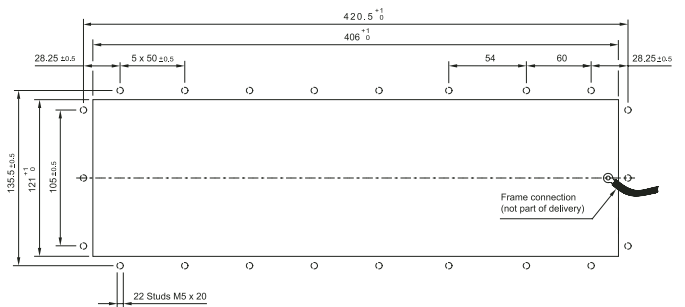
W.series Keypad Cut-outs

Alphanumeric Mechanical 65 keys Top Mount

1K2

For other options, keypads or custom configurations please contact EAO Switch directly.

Product Profile

Changeover switch

1K2 changeover switch, PCB mount
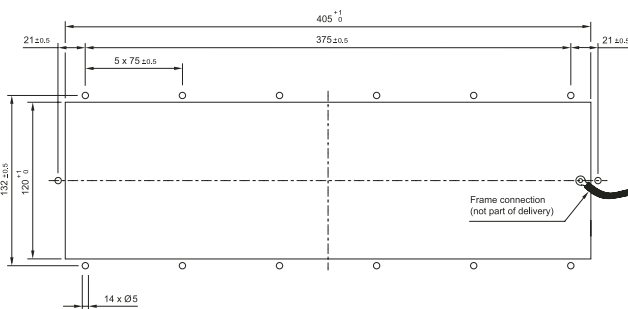
The 1K2 Series is recommended for all PCB applications and is the most compact changeover switch on the market.

Technical drawings see page 105

- Miniature single-pole changeover slide switch
- Ideal as a jumper replacement
- Highly compact with 2.54mm pitch pins
- Straight and right angled versions
- High reliability
- Gold contact as standard
- Fully sealed base suitable for solvent cleaning. Contact EAO Switch for details
- Raised actuator version suitable for through-panel operation

Part No.	Actuator	Orientation	Contact Material
09.03290.01	Extended (black)	Straight	Standard Gold plated
09.10290.01	Extended (black)	Right Angled	Standard Gold plated
09.03201.02	Low Profile (red)	Straight	Standard Gold plated
09.10201.02	Low Profile (red)	Right Angled	Standard Gold plated
19.03201.01	Low Profile (red)	Straight	Tropicalised Gold plated

Actuator position is opposite of switch contact

1K2

Low Profile Straight
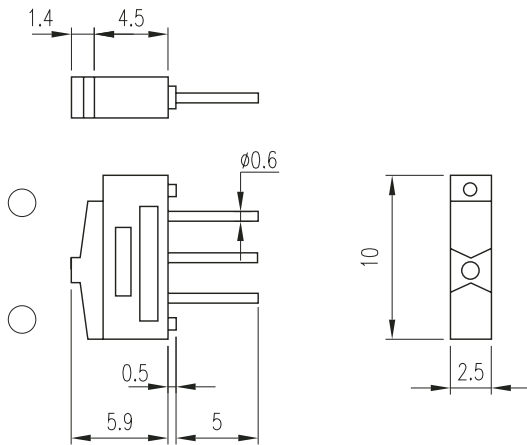
1K2

Low Profile Right Angle
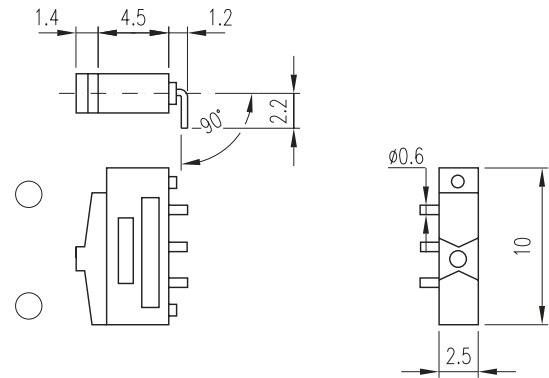
1K2

Extended Straight
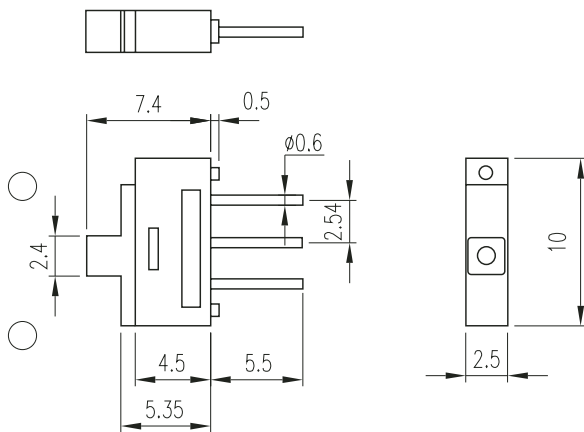
1K2

Extended Right Angle
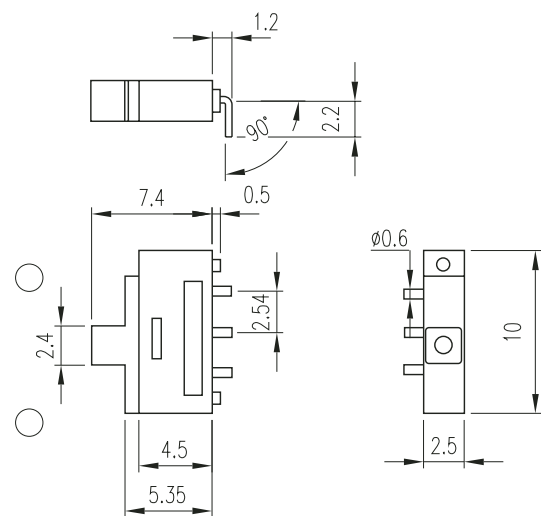
Glossary

This glossary contains short explanations of terms used in this catalog. Definitions are given for these terms and, for some, regulations relating to them.

Actuating force
Force (N) exerted on an Operation part that is necessary for the execution of the required activation

Actuating torque
Torque (Nm) exerted on an Operation part that is necessary for the execution of the required activation

Actuating travel
Path travelled by Operation part in mm

Actuation Point
Position of actuator at which contact operation occurs

Actuator
The part of a switch assembly used by the operator that causes switch contacts to engage or disengage. Actuators include pushbuttons, levers, slides, keylocks, toggles, emergency stop caps, etc.

Alternations
DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.4.8 => Consequence of the changing of one switch position into another and back into the first, via all other switch positions, if such switch positions are present

Ambient temperature, enclosed
Temperature (°C) at which a switchgear in a closed housing can be operated. The power loss of the Switchgear (filament lamp operation also) has to be taken into consideration as it can lead to heating up in the interior of the housing.

Ambient temperature, open
Temperature (°C) of the space in which the Switchgear is being operated.

Application class (climatic)
Specification in code letters for the climatic stress (DIN 40040)

Arcing
A discharge of electricity (a spark) that can occur when contacts are opened or closed. Arcing can degrade or burn contacts, reducing useful life

AWG
Abbreviation for American wire gauge, a system of indicating wire sizes and dimensions

Behind Panel Depth
Distance from the rear surface of a panel to the far end of the switch mounted on the panel

Bifurcated Contacts
Two part contacts for longer life and higher reliability

Blind plug
For covering unused mounting holes

Bounce
Rebounding of contacts as they come together. Can prolong arcing or may open and close rapidly before stabilizing

Break
Interruption of a circuit. Double-break occurs when two contacts are opened simultaneously

Break-Before-Make
When moving contacts interrupt one circuit before completing another. Also called non-shorting

Breakdown Voltage
The voltage at which an insulating material fails electrically

Break-make contact
Contact made of a combination of NO (Normally Open) and NC (Normally Closed) contacts, with 3 Connections (Changeover switch contact)

Butt Contacts
One movable and one fixed contact which lay against each other when closing a circuit. Used in slow-make/break A.C. switching applications

Buzzer
Acoustic buzzer, piezo technology

Buzzer element
Acoustic indicator (Swisstac)

CE designation
The CE designation used on a product declares that it complies with the relevant fundamental requirements of all applicable guidelines of the EU and that the stipulated conformity evaluation procedure has been executed

Chatter
Rapid opening and closing of contacts, usually exhibited during extreme vibration and/or shock. (See also Bounce)

Clearance
IEC 947-1 para. 2.5.19, DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.1.7 => Shortest distance (mm) through the air between two electrically conducting parts or between an electrically conducting part and a metal foil on the touchable surface made of insulating material

Climatic resistance
Specifies the permissible temperature range and relative humidity of the switchgear

Connection, connection method (functional designation)
Electrical connection to the external circuit i.e:. Soldering/Plug-in terminal, Screw terminal

Contact (of mechanical switchgear)
Conductive part that opens or closes a circuit by being activated

Contact connection (technical component designation)
Designation of the Connection method i.e:. Screw terminal

Contact Gap
Open distance between contacts

Contact resistance
Resistance value which arises in a switchgear between the Contact parts of the circuit being switched

Contacts
A pair of devices that touch or come apart at the point where the switch throw makes or breaks the circuit. Silver contacts are common because of their low conductivity and low electrical resistance. Gold contacts are used for low level (signal level) switching (100mA/42V)

Conventional thermal current Ith
IEC 947-1 para. 4.3.2.1 => Highest current (A) that a Switchgear can conduct for at least 8 hours without thermal overload, generally corresponds to the maximum Rated higher current

CSA
Abbreviation for Canadian Standards Association, a Canadian rating organization

Current consumption
Current, expressed in mA, which flows in an illumination device subject to electric tension

Current max.
Usually refers to the current handling capability or rating of a switch

Cycle of operation
Consequence of the changing of one switch position into another and back into the first, via all other switch positions, if such switch positions are present

Degree of pollution
IEC 947-1 para. 5.5.58 / 6.1.3.2 => Reference number for the expected quantity of conductive dirt and air humidity which can lead to the reduction of the electric strength of a switchgear. The degree of pollution is described in 4 different grades

Detent, Tactile point
Feature that indicates actuation point has been reached. Also referred to as tactile feel because of construction element in a switch which provides a tactile response to the activation

Dielectric Strength
DIN EN 61058 T.1 (VDE 0630 T.1) para. 15.1 => Resistance (kOhm, MOhm) between the different poles of a switch (base insulation) and between all parts

which are under electric tension and are associated with each other and a metal foil which is superimposed on the touchable metal parts which are in contact with the base insulation. Quality of nonconducting material to withstand a maximum voltage

Differential
Distance (or angle) from the operating position to the release position

Diode element with 1 diode
1 blocking diode for free connection i.e: for lamp testing in an element block

Diode element with 2 diodes
2 blocking diodes for free connection i.e: for lamp testing in an element block

Double break
Contact, in which the two disconnection points of the circuit are present

Double pushbutton
2 independent pushbuttons in a single switchgear device

Double pushbutton actuator
Front part of a Double pushbutton, without Switching element

Double-Break
A mechanism which breaks the circuit at two points simultaneously

Double-Throw/Changeover switch contact
Contact arrangement that alternately transfers normally open and normally closed circuits. Contact made of a combination of NO (Normally Open) and NC (Normally Closed) contacts, with 3 connections (Break-make contact)

Electrical Life
Wear-resistant property of a switch under a specified electrical load, expressed in numbers of actuations. Expected cycle life when switch is operated at full rated load

Element block
Unit with integrated function parts i.e: Lamp transformer

EMC
Abbreviation for electromagnetic compatibility

Emergency stop pushbutton actuator
Front parts of an Emergency stop button, without switching element

Emergency stop pushbutton with key-release
For the switching off of current consumers, which could endanger persons, animals and property. Generally the activation surface is mushroom-shaped. Unlocking occurs by means of an insertable key into the Operation part

Emergency stop pushbutton with twist-release
For the switching off of current consumers, which could endanger persons, animals and property. Generally the activation surface is mushroom-shaped. Unlocking occurs by twisting the Operation part. The Contact must automatically open the circuit

Emergency switching element
Switching element with a guided NC contact

EMI
Abbreviation for electromagnetic interference

ESD strength
Static electric strength (kV) between operation part and conducting material of the Switchgear (contact, terminal)

Fixing nut
For fastening the device in the front panel

Flashing frequency
Pulses per time unit in Hz

Flashing indicator
Indicator with integrated flashing device

Flush mounting
Almost flush installation of the pushbutton in a front panel

Foolproof (emergency stop pushbutton)
Protection against accidental actuation. Chance or intentional manipulation (inching operation) is impossible

Forced opening
IEC 947-1 para. 2.4.10 => Opening movement which ensures that the contacts of a Switchgear have reached the "open position" if the operation part is in the OFF position

Free Position
Initial position of an actuator when there is no external force applied on the actuator and the contacts are in the unoperated condition

Frequency (sound)
Amplitude of oscillation of the sound of an acoustic signaller, expressed in Hz

Front bezel set for flush mounting
Accessory part for "Flush mounting"

Guided motion
Connection between Operation part and Contact, which has the effect of directly transmitting (without spring parts) the force exerted on the operation part on to the contact

High Inrush
Loads that require more current when first turned on than needed to continue operation. Light bulbs exhibit high resistive inrush and may draw up to 10 times or more the normal operating current when first turned on. Motors may show high inductive inrush currents when started

Illuminant
Light source for the illumination of the Lens or Indicator cap i.e: filament lamp, LED, neon lamp

Illuminated pushbutton actuator
Front part of an illuminated pushbutton, without contacts

Illuminated pushbutton maintained action
Pushbutton (maintained action) with integrated lampholder

Illumination
The illumination of an indicator area or of the operating part of an illuminated pushbutton by means of an illuminating device (filament lamp, LED, neon lamp)

Indicator
Light signal indicating a state by being illuminated or extinguished

Indicator actuator
Front part of an Indicator without integrated lampholder

Indicator cap
Transparent, also colored, cover for an Indicator

Indicator element
Unit with integrated lampholder for mounting an Illuminant

Insulation resistance
DIN EN 61058 T.1 (VDE 0630 T.1) para. 15.1 => Resistance (kOhm, MOhm) between the different poles of a switch (base insulation) and between all parts which are under electric tension and are associated with each other and a metal foil which is superimposed on the touchable metal parts which are in contact with the base insulation. Quality of nonconducting material to withstand a maximum voltage

Insulation socket
Protection against contact of the live part of the blade terminal socket

Interval frequency
Oscillations per time unit in Hz

Keylock switch
Switch with a key as operation part

Keylock switch actuator
Switch actuator (without contact) with a key as operation part

Knob
Operation part for the activation of the Selector switch

Lamp connection (technical component designation)
Designation of the Connection method (i.e: Screw terminal)

Lamp element
Unit with integrated lampholder for the mounting of an illuminant

Lamp transformer
Voltage reduction of a control voltage to a lower voltage for the supply of an Illuminant (i.e: 230 VAC to 24 VAC)

Leakage path
IEC 947-1 para. 2.5.51, DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.1.8 => Shortest distance (mm) along the surface of the insulation material between conducting parts or between an electrically conducting part and metal foil on the touchable surface made of insulating material

Lens
Operation part for the activation of the electrical Contact of a pushbutton

Locking pushbutton actuator
Pushbutton actuator (without contact), which is locked into a position by an additional pushing (i.e: maintained action)

Low Level Switching element
4-fold contact (slow-make element) for the switching of low currents and voltages with very high certainty of switching

Maintained Action
The circuit stays open or closed after switch actuation until the next time the switch is actuated

Make-Before-Break
When moving contacts complete one circuit before interrupting another. Also called shorting

Mechanical service life
Wear-resistant property of a switch without electrical load, expressed in number of actuations

Membrane switching
Switching system with one or more Contacts under a common foil (also designated as membrane keyboard)

Momentary Action
The circuit is opened or closed only as long as the switch is actuated (pulse)

Mounting tool
For simple mounting of a Switchgear or Indicator

Mushroom-head cap
Mushroom-shaped Operation part for the activation of an electrical contact

NC - Normally Closed
Contact, which is closed in the non-activated position, opens a circuit upon activation

NO - Normally Open
Contact, which is open in the non-activated position, closes a circuit upon activation

Oil & Watertight Switches
Switches with mechanisms that are sealed to withstand exposure to liquids. Usually are rated to indicate degree of sealing, i.e: NEMA or IP classifications

Opaque
Light-impervious, i.e: black or grey lens

Open circuit
Open circuit is contact lift-off or a result of low contact pressure

Operating Position
Position of the actuator at which the contact operates

Operating temperature
Permissible temperature range for the operation of a device

Operating part
DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.4.3 => The part (lens, knob, etc.) of a hand-activated switchgear which is used for effecting the contact

Overtravel
Distance from operating position (actuation point) to the end of the actuator's travel

Overvoltage category
IEC 947-1 para. 2.5.19 => Reference number for overvoltages, i.e: by lightning effects or switching processes which can occur at the installation site. There is a classification into 4 grades

Plug-in connection
Connection of the electrical circuit by means of a plugging-in device (connector)

Poles
The number of separate circuits that can be active through a switch at any one time

Pretravel
Distance from free position to operating position

Protection classes
Measure for the protection of the electrical operating material against the penetration of solid bodies and of water, is expressed in IP and figures (DIN VDE 0470 T.1 / EN 60529). The 1st figure defines the solid-body protection, the 2nd figure the water protection

Pushbutton
Switchgear, that is generally activated by the finger and which initiates a switching

Pushbutton actuator
Front part of a Pushbutton without Switching element

Pushbutton maintained action
Switch with maintained action and spring resetting on renewed activation as well as a lens, which is generally activated with the finger

Pushbutton momentary action
Switch with spring resetting and a lens, which is generally activated with the finger

Push-Pull illuminated button
Switch with an Operation part, which is activated by pressing and returns to its initial position by pulling, or vice-versa

Quick Make/Break contacts
Used with D.C. circuits to suppress arcing

Rated constant current
IEC 947-1 para. 4.3.2.4 => Current (A) which a device can conduct in continuous operation (weeks, months, years)

Rated higher current
IEC 947-1 para. 4.3.2.3 => The current (A) which a switchgear can conduct, taking into consideration Rated higher voltage, operating period, service category and Ambient temperature

Rated higher voltage
IEC 947-1 para. 4.3.1.1 => Voltage (V) to which the characteristic value of a switchgear is associated. The highest rated higher voltage may not be higher than the Rated insulation voltage

Rated insulation voltage
IEC 947-1 para. 4.3.1.2 => The voltage, (V, kV), to which insulation tests and Leakage paths are related. The highest Rated higher voltage may not be greater than the rated insulation voltage

Rated surge voltage resistance
IEC 947-1 para. 4.3.1.3 => Measurement for the strength in the interior of switchgear with regard to rated surge voltage resistance (kV)

Rebound time
The rebound time for a Contact, which closes/opens its circuit, is the time interval between the first closing/opening and the final closing/opening

Release Position
Position of momentary actuator at which contact resumes normal position

Resistance element
Ohmic resistor in an element block

Resistance to vibration
Property of a Switchgear to withstand undulating movements without a change of operating state and without damage

Resistor-diode element
Combination of blocking diodes and resistor in an element block

Safety class
DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.7.6 ff => Designates a classification of Switchgear, in which protection against electric shock is based on the base insulation (i.e: Safety class 0)

Safety low-voltage
DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.2.2 => A voltage (V) not greater than 50 V (effective) between the electrical conductors or between any conductor and earth in a circuit isolated from the main supply

Screw terminal
Connection of the electrical circuit by means of a screw device

Selector switch
Switch with a knob as operation part

Selector switch actuator
Front part of a Selector switch, without Contacts

Selector switch long lever
Switch with a long lever as operation part

Service category
IEC 947-1 para. 2.1.18 / 4.4 => Combination of fixed requirements which have been chosen, when taking into consideration the operating conditions of a Switchgear, in order to meet the needs of a fundamental group of practical cases of application (i.e: AC 15)

Shock resistance
Property of a switchgear to withstand impetus-type movements without change of operational state and without damage

Short-circuit protection
Current value (A) of the fuse to be installed on the switchgear to protect it from short-circuit damage

Short-travel switch
Pushbutton with small actuating travel (mm)

Single-Break
Contact, in which a disconnection of the circuit is present. Mechanism that transfers one contact

Slow Make/Break Contacts
Usually used with A.C. circuits, especially emergency stop switches

Slow-make element
Switching element, in which the speed of the moving contacts is dependent on the activation speed

Small contact opening width
DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.4.6 => Minimum contact opening that is sufficient for reliable operation

SMD, SMT
Abbreviations for surface mount device and surface mount technology, respectively

Snap-action switching element
The rapid transfer of contacts from one spring loaded position to another. This action is essentially independent of actuator speed. Switching element, in which the speed of the moving contacts is essentially independent of the activation speed

Solder heat resistance
Time and temperature unit for the connection of conductors to a solder connection of the Switchgear

Soldering terminal (and similar)
DIN EN 61058 T.1 (VDE 0630 T.1) para. 3.6.14 => Electrically conducting part of a Switch, which has been provided to make a connection with the help of solder

Soldering/Plug-in terminal (and similar)
Electrical connection of a circuit by means of soldered or plug-in terminals

Sound pressure
Measure (dBA) for the volume, in relation to the distance of an acoustic signaller

Spacer
For uniform clearance between front panel and PCB (Series 92)

Spacing
Distance between electrically active parts of opposite polarity or to ground

Spacing cap
For expansion of the clearance between Switching element (on PCBs) and front panel (series 70)

Standard
Contains a number of stipulations for the definition i.e: of a regulation such as VDE

Starting torque
Measurement (Nm) for the turning effect of a force (N) being applied to a turnable body (i.e: mounting nut)

Stipulations
Components of a standard

Storage temperature
Permissible temperature range (°C) for the storage of a device

Switch
Device for the closing and opening of one or more circuits by activation of contacts

Switch rating
Specification regarding Rated higher currents in dependency on a rated higher voltage

Switch with small contact separation
Switch with a contact disconnection for small contact opening width

Switchgear
Generic term for all Pushbuttons and Switches

Switching element
Contains one or more Contacts, which are necessary for the opening or closing of a circuit (i.e: screw, spade, etc...)

Switching element and diodes
Combination of Switching element and Diode element

Tactile Feel
An indication, usually by touch, that indicates the operating position (actuation point) has been reached

Terminal
The conductive part of a device, that has been provided for electrical connection to an external circuit (i.e: screw, spade, etc...)

Terminal strip
Unit with several screw-type terminals for device connection i.e: with resistors

Throw
Throw is a single movement, controlling one or more contacts

Tool
Aid for assembling, disassembly of Switchgear or Indicators and their individual parts or accessories

Translucent
Light-transmitting, diffuse material structure for uniform illumination by means of filament lamps

Transparent
Light-transmitting, clear structure - recommended for the use of a film insert in a lens or for illumination by means of an LED

Travel
Travel path of the Operation part until activation of the Contact, expressed in mm

UL
Abbreviation for Underwriters Laboratories, a U.S. rating organization

VDE
Abbreviation for the German Testing Agency, a German rating organization

Volume resistivity
Resistance value (mostly in mOhm) between two connections, whose related Contacts in the closed state complete a circuit

Wiping Contacts
Wiping action contacts slide against each other when opening or closing a circuit. This action helps clean the contacts of contamination and keeps contact resistance low

Technical Information

Series Number:	14/31	51	03	04	18	22	61 snap-action
Switch configuration	1 Form Z double break element per contact block	1 Form Z double break element per contact block	1 or 2 double throw contacts 1 or 2 self cleaning snap action	Form A or Form B double break element	1 N.O or 1 N.C.	Max. 2 PST N.O or N.C.	Max. 3 PST N.O. or N.C.
Mode	Momentary or maintained, 1 to 4 poles	Momentary or maintained, 1 to 4 poles	Momentary or maintained, 1 or 2 poles	Momentary or maintained, 1 or 2 poles	Momentary or maintained	Momentary or maintained, 1 or 2 poles	Momentary or maintained, 1,2 or 3 poles
Contact Material	10 microns gold over silver or silver contacts	10 microns gold over silver or silver contacts	Silver standard, gold over silver or silver over palladium(opt.)	Silver standard, gold over silver or silver over palladium(opt.)	Gold on nickel plating	Hard silver	Silver or gold over silver
Contact Resistance	<50 mO	<50 mO		<50 mO in new state	<100 mO in new state	<=50 mO in new state	<=50 mO in new state
Contact Bounce	<5 ms	<50 ms		<=3 msec	<=2.5 msec	<=3 msec	<=1 msec
Lens Travel	0.118"(3mm)	0.118"(3mm)	0.196"(5mm)	0.228"(5.8mm)	0.087"(2.2mm)	0.216"(5.5mm)	0.118"(3mm)
Operating Force (on lens) Force may vary depending on number of contacts	Series 14: (3,5 to 5,5N) 350 to 550 grams Series 01/31 (2 to 5,5N) 200 to 550 grams	200-600 grams (4-6N)	600-1200 grams (6-12N)	1100-2000 grams (11-20N) snap action 1300-3600 grams (13-35N) slow make	140 grams (1.4N)	1 Pole: 360g± 30g (3.6N±0.3N) 2 Pole: 680 g± 30g (6.8N±0.3N)	270-360 grams (2.7-3.6N)
Rating, AC	250 V/5 A P.F.=1 250 V/3 A P.F.=0.3	250 V/5 A P.F.=1 250 V/3 A P.F. =0.3	380 V/10 A P.F.=0.3 UL listed: 250 V/10A	UL Listed: 600 V/10A HD SEV listed: 500 V/10A	100uV/10uA to 42 V/100 mA	400 VAC/10A P.F.=1 minimum 12 V AC/50mA	See Note (2)
Rating, DC	230 V/0.1A 24 V/2 A	230 V/0.1A 24 V/2 A	230 V/0.2A 24 V/6 A	230 V/0.5A 24 V/10A	100 uV/10uA to 42 V/100mA	380 V/10A 24 V/6 A inductive (L/R=30ms)	230 V/0.5A 24 V/6 A resistive
Continuous Current	5A	5A	10A	10A	100mA	10A	6A
Mechanical Life	Momentary: 2 million operations, Maintained: 1 million operations	Momentary: 5-million operations, Maintained: 1-million operations, Keylock: 50,000 operations	2-million, momentary, 1-million maintained	See Note (1)	momentary: >2million maintained: >1 million	2 million pushbutton, 40,000 keylock	2 million pushbutton, 50K keylock, 100K selector
Maximum Insulation Voltage	2500 VAC 50 Hz, 1 min.	2500 VAC 50 Hz, 1 min.	2500 VAC 50 Hz, 1min	5000 VAC 50 Hz, 1 min	2500 VAC 50 Hz, 1 min	2000 VAC 50 Hz, 1 min	2000 VAC 50 Hz, 1 min
Terminals	Solder terminals, gold plated and 0.110"Q.C. (solderable)	Solder terminals, gold plated and 0.110"Q.C. (solderable)	Screw terminals, silver plated. Option: Q.C. (solderable)	Screw terminals, silver plated, Option: Q.C.	Connector or solderable 1.6 x 0.4mm	Screw terminals, 0.250"Q.C.	Solder terminals, 0.110" Q.C. and universal plug-in (solderable)
Operating Temperature	-13 to 131°F (-25 to 55°C)	No lamp: -13 to 131°F(-25 to 55°C) Lamp: -13 to 113°F (-25 to 45°C)	No lamp: -13 to 122°F(-25 to 50°C) Lamp: -13 to 113°F (-25 to 45°C)	-13 to 185°F (-25 to 85°C)	-13 to 149°F (-25 to 65°C)	-13 to 185°F (-25 to 85°C)	-13 to 131°F (-25 to 55°C)
Storage Temperature	-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)	-40 to 176°F (-40 to 80°C)	-40 to 203°F (-40 to 95°C)	-40 to 185°F (-40 to 85°C)
Vibration	10g @ 10-2000 Hz amplitude 1.5 mm	10g @ 10-2000 Hz amplitude 1.5 mm	10g @ 10-500 Hz amplitude 1.0 mm	10g @ 10-2000 Hz amplitude 0.75 mm	10g @ 10-500 Hz amplitude .75 mm	10g @ 10-500 Hz amplitude .75 mm	10g @ 10-2000 to 10 Hz amplitude 0.75 mm
Shock	>15g @ 11 msec	>15g @ 11 msec	>15g @ 11 msec	>30g @ 11 msec	50g @ 11 msec	50g @ 11 msec	50g @ 11 msec

1 **Mechanical life:**
Pushbutton: ≥3 x 10⁶
Lever: ≥2.5 x10⁶
Emergency stop: ≥5 x 10⁴
Keylock: ≥5 x 10⁴

2 **Gold over silver contacts**
minimum: 5 VAC/10mA
maximum: 250 VAC/6 A
Silver contacts
minimum: 20 VAC/500mA
maximum: 250 VAC/6 A

3 **Gold contacts**
minimum: 100 micro V/10 milli A
maximum: 42 V/100mA
Silver contacts
minimum: 20 VAC/10mA
maximum: 250 VAC/5 A

Silver contacts (screw terminals)
minimum: 20 VAC/10mA
maximum: 250VAC/6 A

61 slow make	14/31/51	84	92	44	71	95	56	58	1K2
Max 2 PST N.O or N.C.	Max. 2 PST N.O or N.C. 4 bifurcated contacts	1 NO	1 NO	1NO/1NC or 2NO/2NC. One to 6 contacts can be used with front mount switches, 1 to 3 with rear mount	Self-cleaning, double-break, snap-action,	SPST			SPDT, change-over
Momentary or maintained 1,2,or 3 poles	Momentary or maintained	Momentary	Momentary	Momentary or maintained, 1 or 2 poles	Momentary or maintained supplied with one or two 1NO, 1NC contacts	Momentary			Maintained
Silver or gold	Gold-plated	Gold	Gold	Silver-nickel alloy	Gold-plated silver contacts	CuSn, Gold-plated, soldering terminal tinned			0.4 microns gold over nickle
<=50 mO in new state	<=50 mO in new state	<=100 mO in new state	<=100 mO in new state	<50 mO in new state	<50 mO				<22 mO
<=2 msec	<=100 usec	<=1 msec	<=1 msec		<1 ms				
Illuminated pushbutton: 3mm Emergency stop:10mm	0.118"(3mm)	See Note (4)	See Note (4)	0.236"(6mm)	0.118"(3mm)	0.177"(4.5mm)			
350-1100 grams (3.5-11 N) Emergency stop: 3000-5000 grams (30-50N)	300-350 grams (3-3.5N)	See Note (5)	See Note (5)	<=5N per switching element, pushbutton actuator,<=10N, e-stop actuator,<=20N, fool-proof e-stop actuator, <=70N, double pushbutton, <=12N per contact	200-300 grams (2-3N), depending on number of contact elements	300 grams (3N) to end position			
See Note (3)	100 uA/10 uA to 42 V/100 mA	42 V/50mA maximum 50mV/10uA minimum	42 V/50mA maximum 50mV/10uA minimum	10A/660VAC	min: 5VAC/10mA, max: 250VAC/3A				
240 V/0.5A 24 V/6A resistive	100 uV/10uA to 42 V/100mA	42 V/50mA maximum 50mV/10 uA minimum	42 V/50mA maximum 50mV/10 uA minimum	24VDC/10A	250VDC/0.5A, 24VDC/3A	min1mVDC/100mA, max 48VDC/50mA			Nominal: 12V, Maximum: 24V, Minimum: 10mV
5A, screw terminals	100mA	50mA	50mA	10A					
Same as snap acting except 50000 emergency stop	Momentary: 5 million operations, Maintained: 1 million operations, Keylock: 50,000 operations	>=1-million operations	>=1-million operations	10-million operations, switching element 3-million operations, momentary actuator 1-million operations, maintained actuator	Illuminated pushbutton: 2-million cycles, keylock: 50000 cycles, Selector: 100000 cycles	>5-million operations			1000 operations
4000 VAC, 50 Hz, 1min	2500 VAC 50 Hz, 1 min	500 VAC 50 Hz, 1 min	500 VAC 50 Hz, 1 min		2500 VAC 50 Hz, 1min		Contact factory	Contact factory	
Universal (PCB, solder, quick connect, or screw)	Printed circuit board	Printed circuit board	Printed circuit board	Screw (recessed for saftey)	PCB	PCB			PCB
-13 to 131°F (-25 to 55°C)	No lamp: -13 to 149°F (-25 to 65°C) Lamp: -13 to 113°F (-25 to 85°C)	-13 to 158°F (-25 to 70°C)	-13 to 158°F (-25 to 70°C)	-12 to 140°F (-25 to 60°C)	-12 to 131°F (-25 to 55°C)	-13 to 158°F (-25 to +70°C)			-40 to 185°F (-40 to +85°C)
-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)	-40 to 185°F (-40 to 85°C)	-40 to 158°F (-40 to 70°C)	-40 to 185°F (-40 to 85°C)	-22 to 176°F (-40 to 80°C)			
10g @ 10-2000 to 10 Hz amplitude 0.75 mm		10g @ 10-500 Hz amplitude .75 mm	10g @ 10-2000 to 10 Hz amplitude 0.75 mm	5g @ 10-500 Hz	according to IEC 68-2-29 und 27, Eb 6-250-3000/3, Ea 18-300-18/3	10g @ 10-2000 Hz amplitude 0.75 mm			10g @ 10-500 Hz
50g @ 11 msec	15g @ 11 msec	max 100m/s2 @ 11msec	15g @ 11 msec	40g @ 6ms	according IEC 68-2-6, Ec 10/500-0.35/50-30/3	50g @ 11 msec			50g @ 11 msec

4 Lens travel
switch element: 0.020" (0.5mm)
with actuator: 0.032" (0.8mm)

5 Operating force
switch element: 200 grams (2 N)
with actuator: 350 grams (3.5 N)

Legends & Soldering

Legend & Engraving Information

Engraved Legends

Legends are engraved on the front surface of the lens cap and ink filled. Red, blue, green, black, and gray colored lens caps are filled with white ink. All other colors are filled with black ink.

Engraving type is condensed gothic, with standard 0.125" by 0.020" stroke.

How to order Engraved Legends

Clearly identify legends requirement, as a separate item, using the following instructions:

Commas* denote a separate line of engraving.

A slash* denotes a separate lens section or division.

(*When comma/slash are part of engraving, indicate by separate note.)

Example 1: Lens Part No. 01-901 Engraving: READ, OUT

| READ |
| OUT |

Example 2: Lens Part No. 03-902 Engraving: BRIDGE, LIGHTS, ON/BRIDGE, LIGHTS, OFF

| BRIDGE LIGHTS ON | BRIDGE LIGHTS OFF |

Legend Arrangements

Series	Rectangular			Vertical			Round			Square			Split Rect. (R) Vert. (V) Sections		
	Lens Part No.	Max. No. of Lines	Max No. of Letters	Lens Part No.	Max. No. of Lines	Max No. of Letters	Lens Part No.	Max. No. of Lines	Max No. of Letters	Lens Part No.	Max. No. of Lines	Max No. of Letters	Lens Part No.	Max. No. of Lines	Max No. of Letters
01	01-901	2	7	01-901	4	4	01-931	2	5	01-951	2	4			
02/22	02-901	3	10	02-901 02-902	4	7									
03	03-901 03-941	4	16	03-901 03-941	8	6							03-902 03-943	3	6
04							704-608.9 704-609.9	3 3	9 7	704-708.9 704-709.9	4 4	9 8			
14	See Series 04														
18, 19	Pushbuttons and indicators can be engraved. Please contact factory														
30	See Series 31														
31	31-901	3	8	31-901	4	5	31-931	2	5	31-951	3	5			
41	See Series 31												41-903 41-907	4 2	3(R) 5(V)
51	51-901	3	8	51-901	4	5	51-931	2	5	51-951	3	5			
61 Std. Overhang Lens	61-923.1 61-928.1	3 3	8 9	61-923.1 61-928.1	4 4	5 6	61-9211	2	5	61-922.1	3 3	5 (Large Sq, 61-925.1, 3 lines, 7 letters) 6			
92										See Note 1	2	6			
99	99-963 99-968	3 3	16 25							99-908	3	6			

Note 1: Use part number 92-956 or 92-958 with standard IP 40 units; part number 92-941 with IP 67 sealed units.

Soldering Instructions

Correct soldering techniques are important to the reliable operation of EAO switches.

Hand Soldering

Soldering Temperature

A soldering iron with a temperature controlled tip is recommended, if not available, do not use a soldering iron that is rated more than 15-20 watts. In any circumstance, the iron must never exceed 662°F (350°C). Soldering of a terminal should not exceed 3 seconds. Excess heat or time will damage switch contacts or draw flux into contact area.

Use of flux

EAO recommends elimination of flux entirely. However, if flux is preferred, use only a small amount. Terminals are gold plated or have Optalloy, assuring easy soldering.

Caution

Use of solvents to clean flux from solder joints may cause contact contamination by leaving flux residues on the contact. The switch element plastic material will not be affected by leaving resides of flux. If a solvent must be used, isopropyl alcohol is recommended.

The EAO standard product range features 8, 16, 22.5 and 30mm illuminated pushbuttons, indicators, rotary switches, keylocks, selector switches, emergency stops and buzzers, keyboards and keypads, plus PCB-mounted switches.

EAO's mission is to deliver quality and reliability to its people, products and processes. With this objective in mind, EAO has developed a 5 step customer solution management process delivering full consultation, application-engineering, production, logistics and after sales service.

On the next two pages you will find a product selector, that enables search criteria to be defined by:

• **Mounting hole size**	• **Mounting style**
• **Contact terminals**	• **Marking**
• **Number of keys**	• **Switch Rating**
• **Illumination**	• **Application**
• **Front protection (IP Rating)**	• **Product function**
• **Lens cap**	• **Approvals**

Product Selector

Product Series	6mm	8mm	16mm	22.5mm	30.5mm	Rectangular, square, other sizes	1 x 4	3 x 4	4 x 4	63 keys	65 keys	74 keys	105 keys	IP40	IP65	IP67	Panel mounting, with bezel	Flush mounting	PCB	Other	42VAC (100mA)	250VAC (5A)	400VAC (10A)	500VAC (10A)	For DC value see series technical data	Indicator / Pilot Light	Pushbuttons	Illuminated pushbuttons	Double illuminated pushbuttons	Door-operating pushbuttons	Double sided door-operating pushbuttons	Emergency pushbuttons, twist to unlock	Emergency pushbuttons, key to unlock	Emergency pushbuttons, illuminated	Mushroom-head pushbuttons	Illuminated mushroom-head pushbuttons	Keylock switches 2 positions
1K2																			■						■												
AVME Keypads								■	■							■				■					■												
S.series Keypads								■	■							■				■					■												
TSK.series Keyboards												■	■		■					■					■												
W.series Keypads							■		■							■				■					■												
W.series Keyboards										■	■				■				■	■					■												
Series 95						■									■				■		■				■			■	■								
Series 84				■										■	■	■	■	■	■			■			■			■	■					■	■		
Series 71			■	■		■									■		■	■	■				■		■	■		■	■								■
Series 61			■	■		■									■		■	■			■	■			■	■		■	■			■	■		■		■
Series 58																■				■					■					■	■	■	■				
Series 56						■									■		■	■							■	■	■	■				■	■				
Series 51			■												■		■		■		■	■			■	■	■	■									■
Series 44			■	■	■	■									■		■	■						■	■	■	■	■				■	■		■	■	
Series 31			■											■			■				■	■			■	■	■	■									
Series 22						■									■		■							■	■	■	■	■							■	■	
Series 17	■	■	■	■		■								■	■		■	■							■	■											
Series 14			■	■											■		■	■			■	■			■	■	■	■							■	■	■
Series 04			■	■	■										■		■	■			■	■			■	■	■	■				■	■		■	■	■
Series 03						■								■			■						■		■	■	■	■	■						■		■

Keylock switches 3 positions
Lever/selector switches 2 positions
Lever/selector switches 3 positions
Key-rotary selector switches
Key insert switches
Keyboards
Keypads
Changeover switch
Buzzers
Flasher

Contact Terminals
Screw terminals
Soldering-/Plug-in terminals 2,0 x 0,5mm
Soldering-/Plug-in terminals 2,8 x 0,5mm
Soldering-/Plug-in terminals 2,8 x 0,8mm
Plug-in terminals 4,8 x 0,8mm
Plug-in terminals 6,3 x 0,8mm
Soldering terminals
PCB-terminals
Tension-clamp
Cable
Pin Header

Illumination
LED
Filament lamp

Lens Cap
Plastic
Metal

Marking
Engraving, Film insert

Application
Transportation
Machinery
Instrumentation
Process Control and Panel Building
Lifting & Moving

Approvals
CE
CB (IEC 60947)
CB (IEC 61058)
CCA-NTR (EN 60947)
CSA
e1
EMC
ENEC (EN61058)
FCC
Germanischer Lloyd
GOST
NFF
SEV
UL / UR
VDE

* E-stop only

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