

Series 44

Characteristics

The modular 22.5 mm Series 44 is especially suited for:

- Flush design
- Raised design

Up to three of these special switching elements can be arranged next to each other and can be combined in any way on up to two levels.

Functions

The Series 44 incorporates the following functions:

- Indicator
- Pushbutton
- Illuminated pushbutton
- E-STOP switch
- Stop switch
- Mushroom-head pushbutton
- Keylock switch
- Selector switch
- Potentiometer

Market segments

The EAO Series 44 is especially suited for applications in the segments:

- Machinery and Automation
- Construction machines and special-purpose vehicles
- Lifting and moving
- Panel building

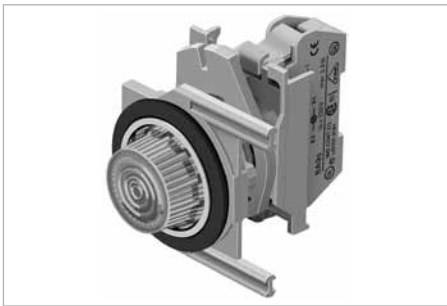
Please refer to the EAO website to obtain detailed information regarding this series www.products.eao.com
Configure a product to your exact needs and request a quotation.



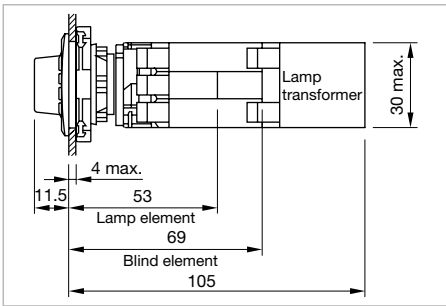
Overview	
Flush design	
Indicator	384
Pushbutton	386
Illuminated pushbutton	390
Keylock switch	392
Selector switch	393
Potentiometer	396
Raised design	
Indicator	397
Pushbutton	402
Double pushbutton	406
Illuminated pushbutton	407
Emergency-stop switch	410
Stop switch	412
Mushroom-head pushbutton	414
Keylock switch	415
Selector switch	417
Lever switch	421
Potentiometer	422
Accessories	423
Drawings	442
Technical data	443
Marking	446
Application guidelines	449

44 Flush design

Indicator full face illumination, IP 65



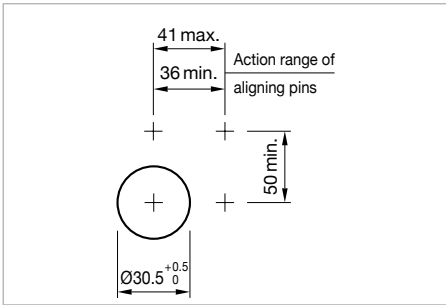
Product can differ from the current configuration.



Dimensions [mm]

Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- Non-markable



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

- Lens cap**
- Actuator**
- Front bezel set** *page 424*
- Fixing nut**
- Front adapter** *page 430*
- Single-LED** *page 435*
- Lamp element** *page 432*

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

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

Front ring	Lens cap	Part No.	Weight
 Indicator actuator full-face illumination			
Plastic matt grey	Plastic red	44-750.62	0.008 kg
	Plastic yellow	44-750.64	0.008 kg
	Plastic green	44-750.65	0.008 kg
	Plastic blue	44-750.66	0.008 kg
	Plastic colourless	44-750.67	0.008 kg
Plastic matt chrome	Plastic red	44-750.22	0.008 kg
	Plastic yellow	44-750.24	0.008 kg
	Plastic green	44-750.25	0.008 kg
	Plastic blue	44-750.26	0.008 kg
	Plastic colourless	44-750.27	0.008 kg

Indicator front illumination, IP 65

Equipment consisting of (schematic overview)

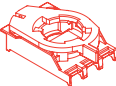
**Lens cap**

**Marking plate**

**Actuator**

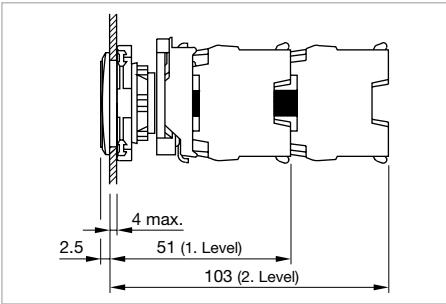
**Front bezel set** *page 424*

**Fixing nut**

**Front adapter** *page 430*

**Single-LED** *page 435*

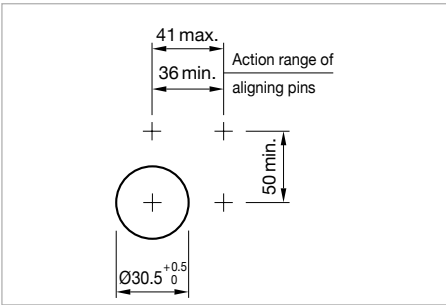
**Lamp element** *page 432*



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- Markable with text plate translucent white

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

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

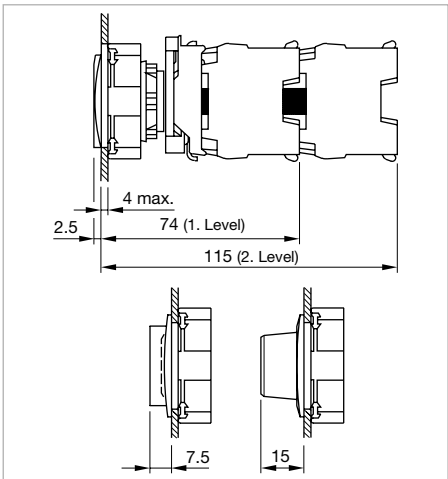
Front ring	Lens cap	Part No.	Weight
 Indicator actuator front illumination			
Plastic matt grey	Plastic red	44-751.62	0.007 kg
	Plastic yellow	44-751.64	0.007 kg
	Plastic green	44-751.65	0.007 kg
	Plastic blue	44-751.66	0.007 kg
	Plastic white	44-751.69	0.007 kg
Plastic matt chrome	Plastic red	44-751.22	0.007 kg
	Plastic yellow	44-751.24	0.007 kg
	Plastic green	44-751.25	0.007 kg

44 Flush design

Pushbutton, IP 65



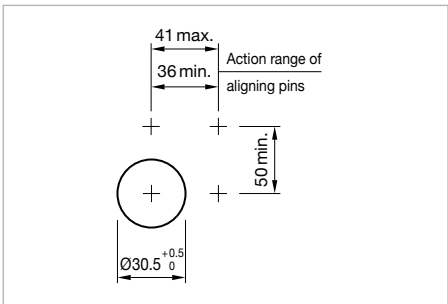
Product can differ from the current configuration.



Dimensions [mm]

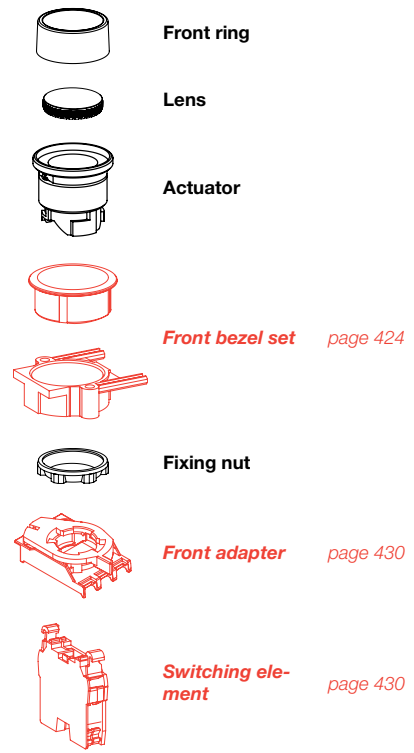
Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- Non-markable
- Up to 3 switching elements with maintain action



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)



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

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

Mounting type	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
 Pushbutton actuator	Plastic matt grey	Plastic black	B	44-701.60	1	0.013 kg
		Plastic red	B	44-701.62	1	0.013 kg
		Plastic yellow	B	44-701.64	1	0.013 kg
		Plastic green	B	44-701.65	1	0.013 kg
		Plastic blue	B	44-701.66	1	0.013 kg
		Plastic white	B	44-701.69	1	0.013 kg
	Plastic matt chrome	Plastic black	B	44-701.20	1	0.013 kg
		Plastic red	B	44-701.22	1	0.013 kg
		Plastic yellow	B	44-701.24	1	0.013 kg
		Plastic green	B	44-701.25	1	0.013 kg
		Plastic blue	B	44-701.26	1	0.013 kg
	Plastic matt grey	Plastic black	C	44-702.60	2	0.013 kg
		Plastic red	C	44-702.62	2	0.013 kg
		Plastic yellow	C	44-702.64	2	0.013 kg
		Plastic green	C	44-702.65	2	0.013 kg
		Plastic blue	C	44-702.66	2	0.013 kg

Mounting type	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
level with bezel	Plastic matt grey	Plastic white	C	44-702.69	2	0.013 kg
	Plastic matt chrome	Plastic black	C	44-702.20	2	0.013 kg
		Plastic red	C	44-702.22	2	0.013 kg
		Plastic yellow	C	44-702.24	2	0.013 kg
		Plastic green	C	44-702.25	2	0.013 kg
		Plastic blue	C	44-702.26	2	0.013 kg
		Plastic white	C	44-702.29	2	0.013 kg



Pushbutton actuator

lower than bezel	Plastic matt grey	Plastic black	B	44-703.60	1	0.015 kg
		Plastic red	B	44-703.62	1	0.015 kg
		Plastic yellow	B	44-703.64	1	0.015 kg
		Plastic green	B	44-703.65	1	0.015 kg
		Plastic blue	B	44-703.66	1	0.015 kg
		Plastic white	B	44-703.69	1	0.015 kg
	Plastic matt chrome	Plastic black	B	44-703.20	1	0.015 kg
		Plastic red	B	44-703.22	1	0.015 kg
		Plastic yellow	B	44-703.24	1	0.015 kg
		Plastic green	B	44-703.25	1	0.015 kg
		Plastic blue	B	44-703.26	1	0.015 kg
		Plastic white	B	44-703.29	1	0.015 kg



Pushbutton actuator

raised above bezel	Plastic matt grey	Plastic black	B	44-704.60	1	0.015 kg
		Plastic red	B	44-704.62	1	0.015 kg
		Plastic yellow	B	44-704.64	1	0.015 kg
		Plastic green	B	44-704.65	1	0.015 kg
		Plastic blue	B	44-704.66	1	0.015 kg
		Plastic white	B	44-704.69	1	0.015 kg
	Plastic matt chrome	Plastic black	B	44-704.20	1	0.015 kg
		Plastic red	B	44-704.22	1	0.015 kg
		Plastic yellow	B	44-704.24	1	0.015 kg
		Plastic green	B	44-704.25	1	0.015 kg
		Plastic blue	B	44-704.26	1	0.015 kg
		Plastic white	B	44-704.29	1	0.015 kg

Switching action: B = Momentary, C = Maintain

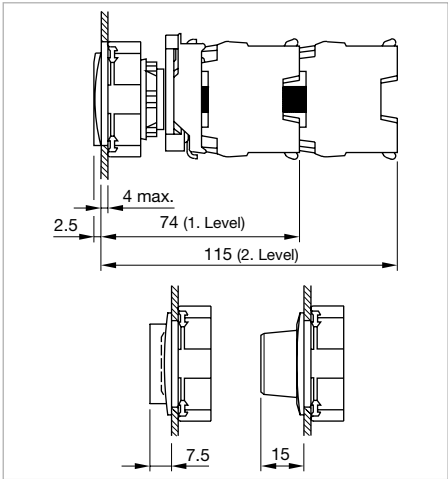
E---	E~--
Wiring diagram 1	Wiring diagram 2

44 Flush design

Pushbutton markable, IP 65



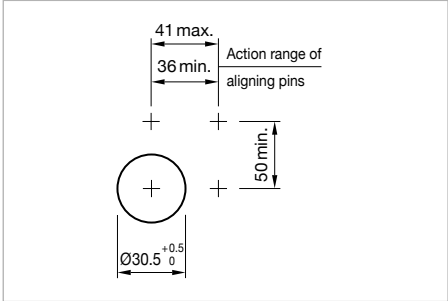
Product can differ from the current configuration.



Dimensions [mm]

Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

- Front ring
- Lens
- Marking plate *page 423*
- Actuator
- Front bezel set *page 424*
- Fixing nut
- Front adapter *page 430*
- Switching element *page 430*

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

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

Product attribute	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
 Pushbutton actuator markable						
Colour of lens is determined by the colour of text plate	Plastic matt chrome	Plastic colourless	B	44-701.27	1	0.012 kg

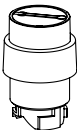
Switching action: B = Momentary

E---

Wiring diagram 1

Pushbutton lockable, IP 65

Equipment consisting of (schematic overview)



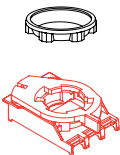
Actuator



Front bezel set *page 424*



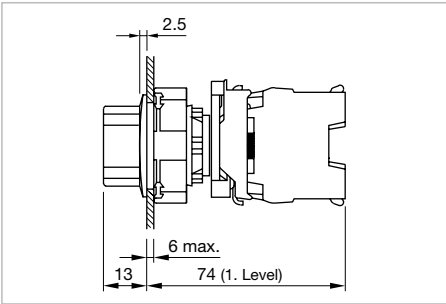
Fixing nut



Front adapter *page 430*



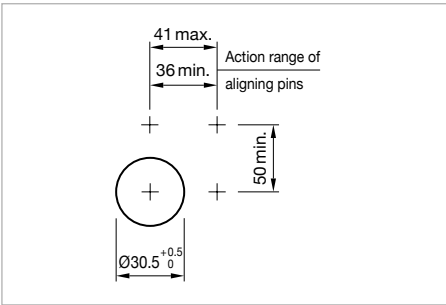
Switching element *page 430*



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

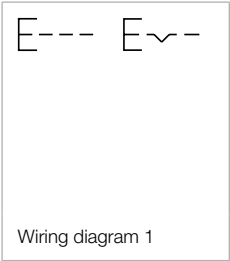
- Additional Information**
- For front dimensions 36 x 36 mm, Ø 36 mm
 - In activated state locked by turning to the right, otherwise momentary action
 - Up to 3 switching elements at 1. level

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

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

Lever	Front ring	Switching action	Part No.	Wiring diagram	Weight
 Pushbutton actuator lockable					
Plastic black	Plastic matt chrome	B - C	44-742.20	1	0.020 kg
Plastic red	Plastic matt chrome	B - C	44-742.22	1	0.02 kg

Switching action: B = Momentary, C = Maintain

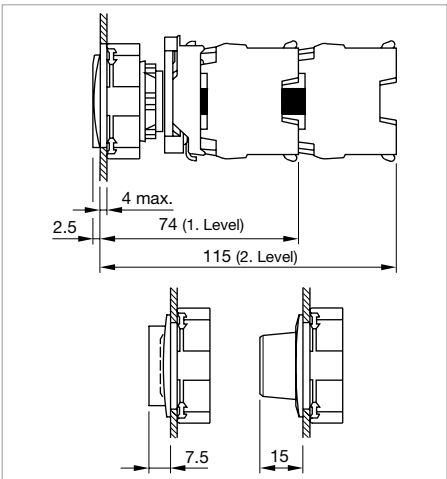


44 Flush design

Illuminated pushbutton, IP 65



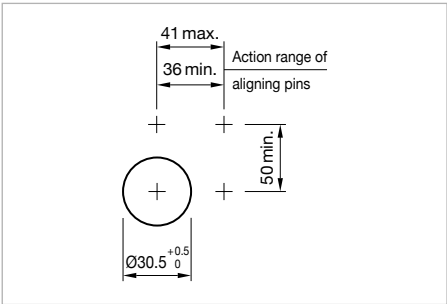
Product can differ from the current configuration.



Dimensions [mm]

Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- Markable with text plate translucent white
- Up to 3 switching elements with maintain action



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)	
	Front ring
	Lens
	Marking plate
	Actuator
	Front bezel set page 424
	Fixing nut
	Front adapter page 430
	Single-LED page 435
	Lamp element page 432
	Switching element page 430

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

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

Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
 Illuminated pushbutton actuator					
Plastic matt grey	Plastic red	B	44-746.62	1	0.012 kg
	Plastic yellow	B	44-746.64	1	0.012 kg
	Plastic green	B	44-746.65	1	0.012 kg
	Plastic blue	B	44-746.66	1	0.012 kg
	Plastic white	B	44-746.69	1	0.012 kg
Plastic matt chrome	Plastic red	B	44-746.22	1	0.012 kg
	Plastic yellow	B	44-746.24	1	0.012 kg
	Plastic green	B	44-746.25	1	0.012 kg
	Plastic blue	B	44-746.26	1	0.012 kg
	Plastic white	B	44-746.29	1	0.012 kg

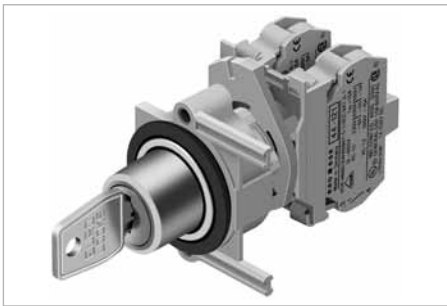
Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
Plastic matt grey	Plastic red	C	44-747.62	2	0.012 kg
	Plastic yellow	C	44-747.64	2	0.012 kg
	Plastic green	C	44-747.65	2	0.012 kg
	Plastic blue	C	44-747.66	2	0.012 kg
	Plastic white	C	44-747.69	2	0.012 kg
Plastic matt chrome	Plastic red	C	44-747.22	2	0.012 kg
	Plastic yellow	C	44-747.24	2	0.012 kg
	Plastic green	C	44-747.25	2	0.012 kg
	Plastic blue	C	44-747.26	2	0.012 kg
	Plastic white	C	44-747.29	2	0.012 kg

Switching action: B = Momentary, C = Maintain

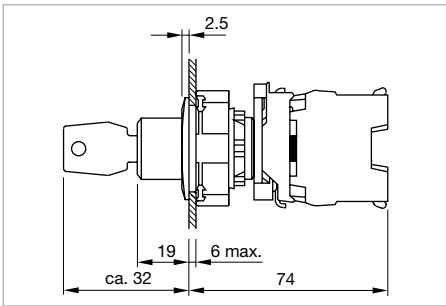
E---	E~--
Wiring diagram 1	Wiring diagram 2

44 Flush design

Keylock switch 2 positions, IP 65



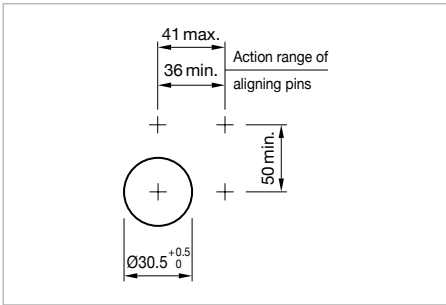
Product can differ from the current configuration.



Dimensions [mm]

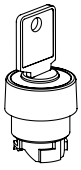
Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- The standard lock: Euro-Locks 9500
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Up to 3 switching elements at 1. level with main-tain action



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)



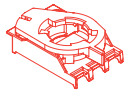
Vorsatz



Front bezel set *page 424*



Fixing nut



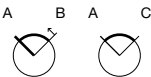
Front adapter *page 430*



Switching element *page 430*

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

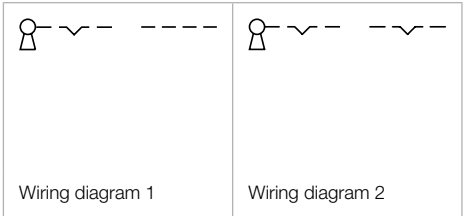
To obtain a complete unit, please select the red components from the pages shown.



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

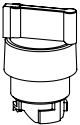
Front ring	Switching action	Switching angle	Key remove	Part No.	Compo- nent layout	Wiring diagram	Weight
 Keylock switch actuator 2 positions							
Plastic matt chrome	A - B	B = 90°	A	44-732.21	5	1	0.051 kg
Plastic matt grey	A - B	B = 90°	A	44-732.61	5	1	0.051 kg
Plastic matt chrome	A - C	C = 90°	A	44-730.21	5	2	0.051 kg
			A + C	44-730.22	5	2	0.051 kg
Plastic matt grey	A - C	C = 90°	A	44-730.61	5	2	0.051 kg
			A + C	44-730.62	5	2	0.051 kg

Switching action: A = Rest, B = Momentary, C = Maintain
The component layouts you will find from page 442



Selector switch 2 positions, IP 65

Equipment consisting of (schematic overview)



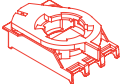
Actuator



Front bezel set *page 424*



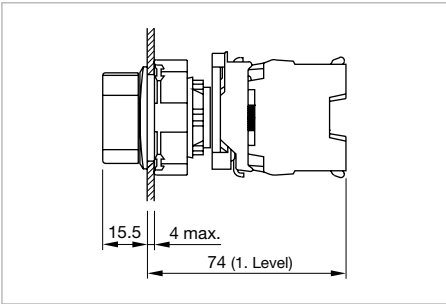
Fixing nut



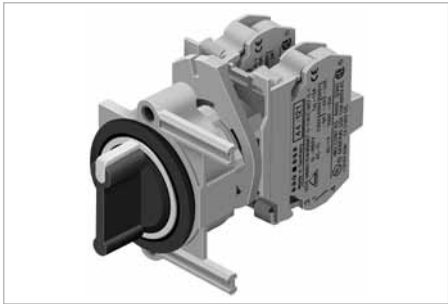
Front adapter *page 430*



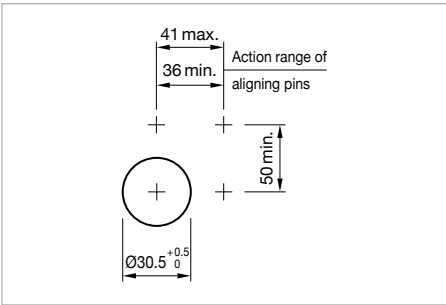
Switching element *page 430*



Dimensions [mm]



Product can differ from the current configuration.



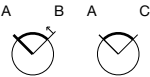
Mounting cut-outs [mm]

Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- Up to 3 switching elements at 1. level

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

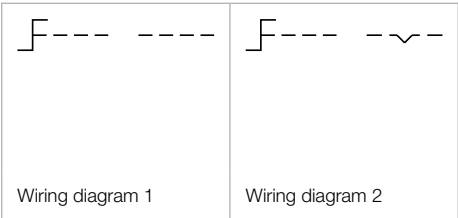
To obtain a complete unit, please select the red components from the pages shown.



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

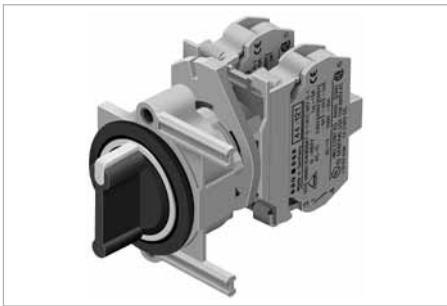
Lever	Front ring	Switching action	Switching angle	Part No.	Component layout	Wiring diagram	Weight
 Selector switch actuator 2 positions							
Plastic black	Plastic matt chrome	A - B	B = 90°	44-722.20	5	1	0.021 kg
Plastic grey	Plastic matt grey	A - B	B = 90°	44-722.68	5	1	0.021 kg
Plastic black	Plastic matt chrome	A - C	C = 90°	44-720.20	5	2	0.021 kg
Plastic red	Plastic matt chrome	A - C	C = 90°	44-720.22	5	2	0.021 kg
	Plastic matt grey	A - C	C = 90°	44-720.62	5	2	0.021 kg
Plastic grey	Plastic matt grey	A - C	C = 90°	44-720.68	5	2	0.021 kg

Switching action: A = Rest, B = Momentary, C = Maintain
The component layouts you will find from page 442

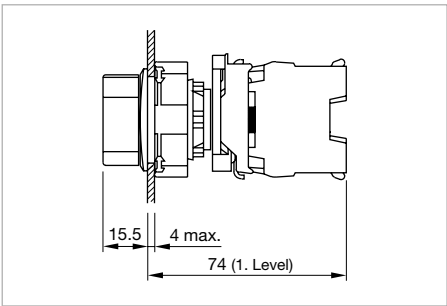


44 Flush design

Selector switch 3 positions, IP 65



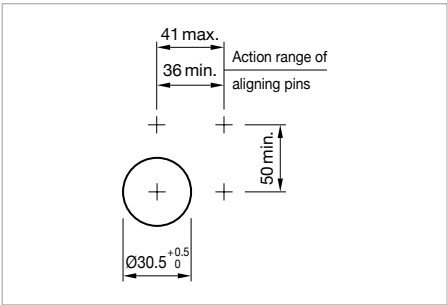
Product can differ from the current configuration.



Dimensions [mm]

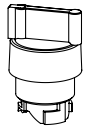
Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- Up to 3 switching elements at 1. level

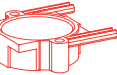


Mounting cut-outs [mm]

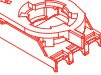
Equipment consisting of (schematic overview)

**Actuator**

**Front bezel set** *page 424*

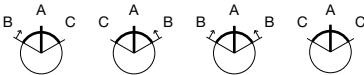
**Fixing nut**

**Front adapter** *page 430*

**Switching element** *page 430*

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

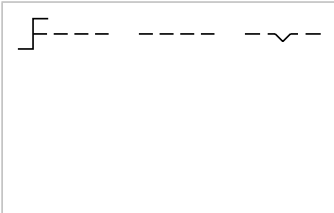
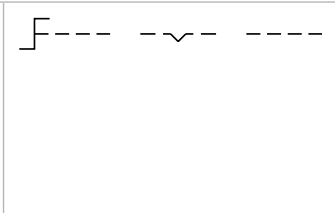
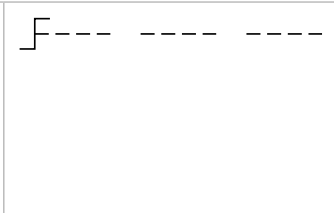
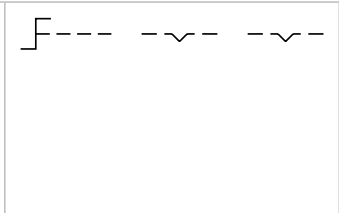
To obtain a complete unit, please select the red components from the pages shown.



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

Lever	Front ring	Switching action	Switching angle	Part No.	Compo- nent layout	Wiring diagram	Weight
 Selector switch actuator 3 positions							
Plastic black	Plastic matt chrome	B - A - C	B = 60°, C = 60°	44-727.20	4	1	0.021 kg
Plastic grey	Plastic matt grey	B - A - C	B = 60°, C = 60°	44-727.68	4	1	0.021 kg
Plastic black	Plastic matt chrome	C - A - B	C = 60°, B = 60°	44-726.20	4	2	0.021 kg
Plastic grey	Plastic matt grey	C - A - B	C = 60°, B = 60°	44-726.68	4	2	0.021 kg
Plastic black	Plastic matt chrome	B - A - B	B = 60° / 60°	44-725.20	4	3	0.021 kg
Plastic grey	Plastic matt grey	B - A - B	B = 60° / 60°	44-725.68	4	3	0.021 kg
Plastic black	Plastic matt chrome	C - A - C	C = 60° / 60°	44-724.20	4	4	0.021 kg
Plastic grey	Plastic matt grey	C - A - C	C = 60° / 60°	44-724.68	4	4	0.021 kg

Switching action: A = Rest, B = Momentary, C = Maintain
The component layouts you will find from page 442

			
Wiring diagram 1	Wiring diagram 2	Wiring diagram 3	Wiring diagram 4

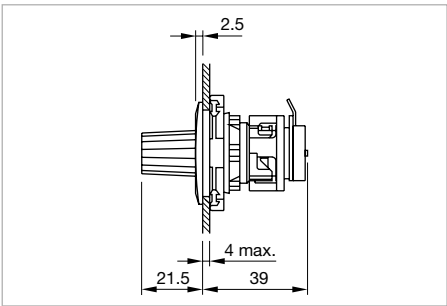
01
02
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82
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ST

44 Flush design

Potentiometer, IP 65

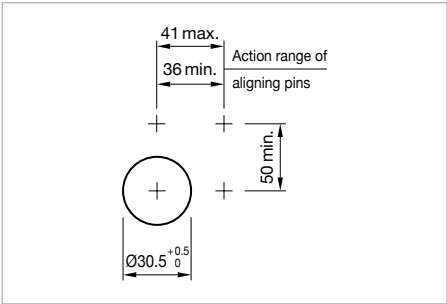


Product can differ from the current configuration.



Dimensions [mm]

- Additional Information**
- For front dimensions 36 x 36 mm, Ø 36 mm
 - Resistor 10 kOhm / linear, series E3
 - Power 0.4 W
 - Slewing range 300°



Mounting cut-outs [mm]

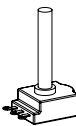
Equipment consisting of (schematic overview)

**Knob**

**Actuator**

**Front bezel set** *page 424*

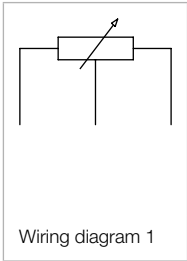
**Fixing nut**

**Potentiometer**

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

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

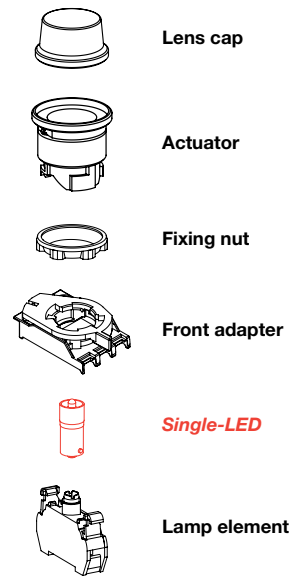
Product attribute	Front ring	Terminal	Part No.	Wiring diagram	Weight
 Potentiometer					
with potentiometer	Plastic matt chrome	Solder	44-745.20-10K1	1	0.030 kg
	Plastic matt grey	Solder	44-745.60-10K1	1	0.030 kg
without potentiometer, specification for potentiometer: Shaft = length 32 mm, shaft end = Form A, Ø = 6 mm	Plastic matt chrome		44-744.20		0.016 kg
	Plastic matt grey		44-744.60		0.016 kg



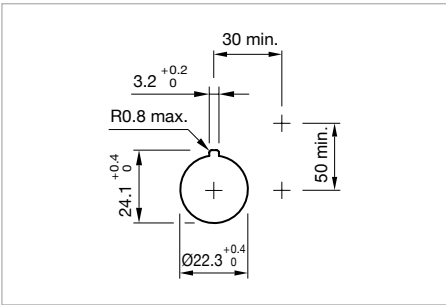
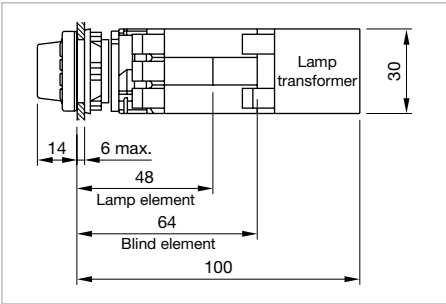
Wiring diagram 1

Indicator full-face illumination complete, IP 65

Equipment consisting of (schematic overview)



page 435



Product can differ from the current configuration.

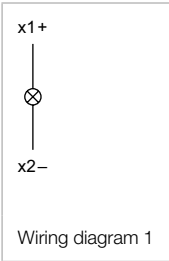
Additional Information

- Non-markable

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

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

Front ring	Lens cap	Terminal	Part No.	Wiring diagram	Weight
 Indicator full-face illumination complete, Front dimension Ø 28 mm					
Plastic matt chrome	Plastic red	Screw	44-750.22.000	1	0.025 kg
	Plastic yellow	Screw	44-750.24.000	1	0.025 kg
	Plastic green	Screw	44-750.25.000	1	0.025 kg
	Plastic colourless	Screw	44-750.27.000	1	0.025 kg

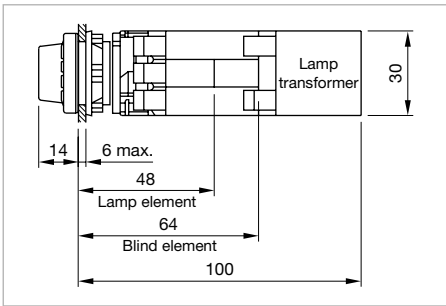


44 Raised design

Indicator full face illumination, IP 65



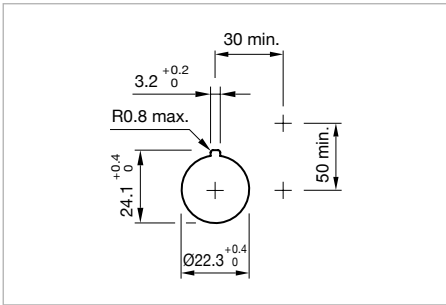
Product can differ from the current configuration.



Dimensions [mm]

Additional Information

- Non-markable



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Lens cap

Actuator

Fixing nut

Front adapter *page 430*

Single-LED *page 435*

Lamp element *page 432*

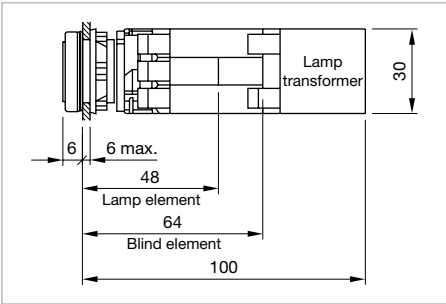
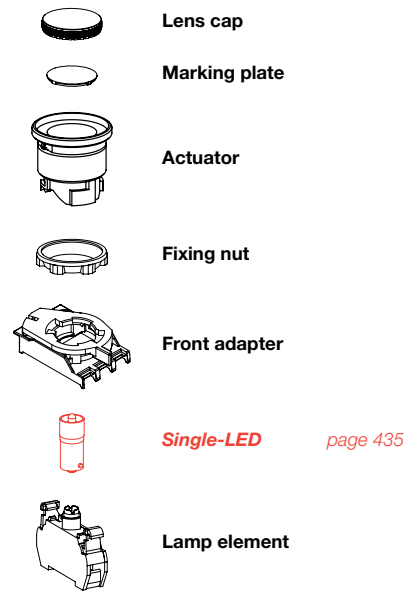
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

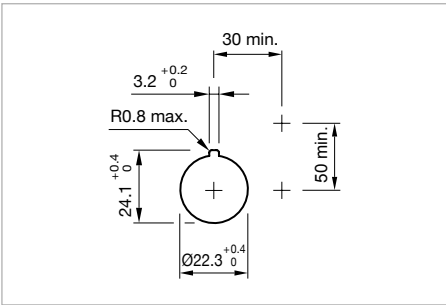
Front ring		Lens cap	Part No.	Weight
		Indicator actuator full-face illumination, Front dimension Ø 28 mm		
Plastic matt grey	Plastic red		44-750.62	0.008 kg
	Plastic yellow		44-750.64	0.008 kg
	Plastic green		44-750.65	0.008 kg
	Plastic blue		44-750.66	0.008 kg
	Plastic colourless		44-750.67	0.008 kg
Plastic matt chrome	Plastic red		44-750.22	0.008 kg
	Plastic yellow		44-750.24	0.008 kg
	Plastic green		44-750.25	0.008 kg
	Plastic blue		44-750.26	0.008 kg
	Plastic colourless		44-750.27	0.008 kg

Indicator front illumination complete, IP 65

Equipment consisting of (schematic overview)



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

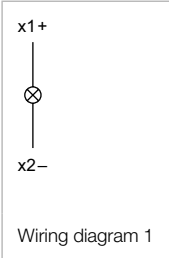
Additional Information

- Markable with text plate translucent white

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

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

Front ring	Lens cap	Terminal	Part No.	Wiring diagram	Weight
 Indicator front illumination complete, Front dimension Ø 28 mm					
Plastic matt chrome	Plastic red	Screw	44-751.22.000	1	0.025 kg
	Plastic yellow	Screw	44-751.24.000	1	0.025 kg
	Plastic green	Screw	44-751.25.000	1	0.025 kg
	Plastic white	Screw	44-751.29.000	1	0.025 kg

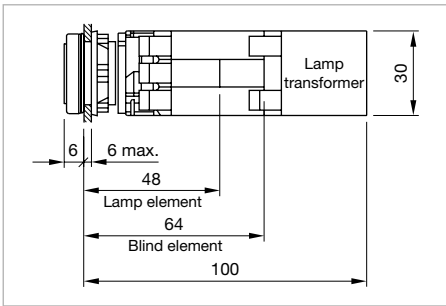


44 Raised design

Indicator front illumination, IP 65



Product can differ from the current configuration.



Dimensions [mm]

Equipment consisting of (schematic overview)

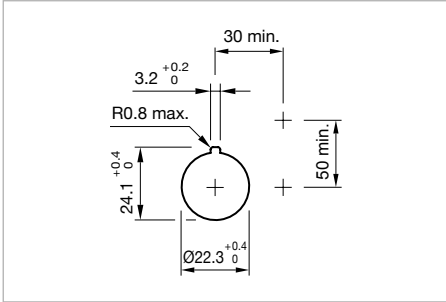
	Lens cap
	Marking plate
	Actuator
	Fixing nut
	Front adapter page 430
	Single-LED page 435
	Lamp element page 432

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

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

Additional Information

- Markable with text plate translucent white

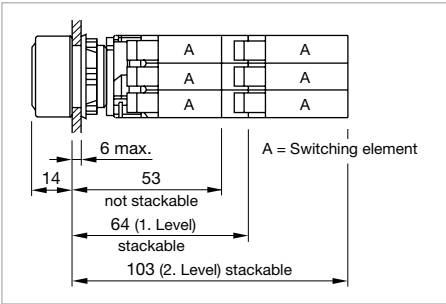
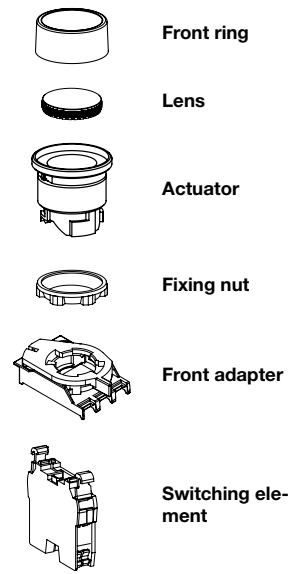


Mounting cut-outs [mm]

Front ring	Lens cap	Part No.	Weight
 Indicator actuator front illumination, Front dimension Ø 28 mm			
Plastic matt grey	Plastic red	44-751.62	0.007 kg
	Plastic yellow	44-751.64	0.007 kg
	Plastic green	44-751.65	0.007 kg
	Plastic blue	44-751.66	0.007 kg
	Plastic white	44-751.69	0.007 kg
Plastic matt chrome	Plastic red	44-751.22	0.007 kg
	Plastic yellow	44-751.24	0.007 kg
	Plastic green	44-751.25	0.007 kg

Pushbutton complete, IP 65

Equipment consisting of (schematic overview)



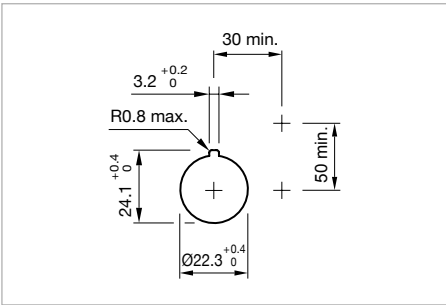
Dimensions [mm]



Product can differ from the current configuration.

Additional Information

- Switching system slow-make element
- Non-markable

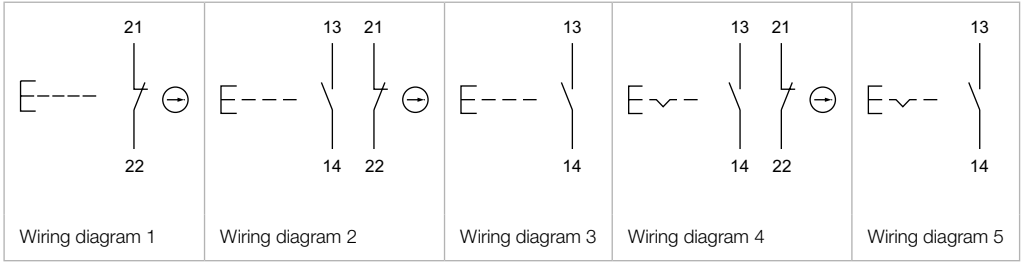


Mounting cut-outs [mm]

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

Front ring	Lens	Contacts	Switching action	Terminal	Part No.	Wiring diagram	Weight
 Pushbutton complete, Front dimension Ø 28 mm							
Plastic matt chrome	Plastic red	1 NC	B	Screw	44-701.22.001	1	0.030 kg
	Plastic black	1 NC + 1 NO	B	Screw	44-701.20.100	2	0.037 kg
	Plastic yellow	1 NO	B	Screw	44-701.24.010	3	0.030 kg
	Plastic green	1 NO	B	Screw	44-701.25.010	3	0.030 kg
	Plastic white	1 NO	B	Screw	44-701.29.010	3	0.030 kg
	Plastic black	1 NC + 1 NO	C	Screw	44-702.20.100	4	0.037 kg
	Plastic green	1 NO	C	Screw	44-702.25.010	5	0.030 kg

Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain

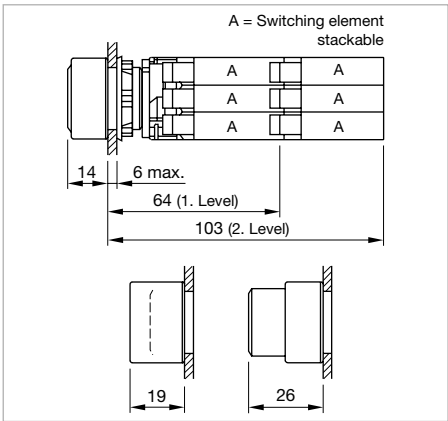


44 Raised design

Pushbutton, IP 65

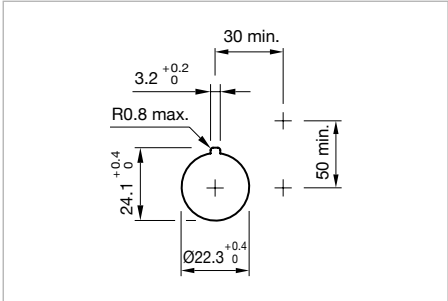


Product can differ from the current configuration.



Dimensions [mm]

- Additional Information**
- Non-markable
 - Up to 3 switching elements with maintain action



Mounting cut-outs [mm]

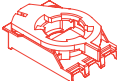
Equipment consisting of (schematic overview)

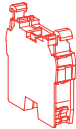
**Front ring**

**Lens**

**Actuator**

**Fixing nut**

**Front adapter** *page 430*

**Switching element** *page 430*

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

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

Mounting type	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
						
Pushbutton actuator, Front dimension Ø 28 mm						
level with bezel	Plastic matt chrome	Plastic black	B	44-701.20	1	0.013 kg
		Plastic red	B	44-701.22	1	0.013 kg
		Plastic yellow	B	44-701.24	1	0.013 kg
		Plastic green	B	44-701.25	1	0.013 kg
		Plastic blue	B	44-701.26	1	0.013 kg
		Plastic white	B	44-701.29	1	0.013 kg
	Plastic matt grey	Plastic black	B	44-701.60	1	0.013 kg
		Plastic red	B	44-701.62	1	0.013 kg
		Plastic yellow	B	44-701.64	1	0.013 kg
		Plastic green	B	44-701.65	1	0.013 kg
		Plastic blue	B	44-701.66	1	0.013 kg
		Plastic white	B	44-701.69	1	0.013 kg
	Plastic matt chrome	Plastic black	C	44-702.20	2	0.013 kg
		Plastic red	C	44-702.22	2	0.013 kg
		Plastic yellow	C	44-702.24	2	0.013 kg
		Plastic green	C	44-702.25	2	0.013 kg
		Plastic blue	C	44-702.26	2	0.013 kg
		Plastic white	C	44-702.29	2	0.013 kg
	Plastic matt grey	Plastic black	C	44-702.60	2	0.013 kg
		Plastic red	C	44-702.62	2	0.013 kg
		Plastic yellow	C	44-702.64	2	0.013 kg

Mounting type	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight		
level with bezel	Plastic matt grey	Plastic green	C	44-702.65	2	0.013 kg		
		Plastic blue	C	44-702.66	2	0.013 kg		
		Plastic white	C	44-702.69	2	0.013 kg		
 Pushbutton actuator, Front dimension Ø 28 mm								
lower than bezel	Plastic matt chrome	Plastic black	B	44-703.20	1	0.013 kg		
		Plastic red	B	44-703.22	1	0.013 kg		
		Plastic yellow	B	44-703.24	1	0.013 kg		
		Plastic green	B	44-703.25	1	0.013 kg		
		Plastic blue	B	44-703.26	1	0.013 kg		
		Plastic white	B	44-703.29	1	0.013 kg		
	Plastic matt grey	Plastic black	B	44-703.60	1	0.013 kg		
		Plastic red	B	44-703.62	1	0.013 kg		
		Plastic yellow	B	44-703.64	1	0.013 kg		
		Plastic green	B	44-703.65	1	0.013 kg		
		Plastic blue	B	44-703.66	1	0.013 kg		
		Plastic white	B	44-703.69	1	0.013 kg		
		 Pushbutton actuator, Front dimension Ø 28 mm						
		raised above bezel	Plastic matt chrome	Plastic black	B	44-704.20	1	0.013 kg
				Plastic red	B	44-704.22	1	0.013 kg
Plastic yellow	B			44-704.24	1	0.013 kg		
Plastic green	B			44-704.25	1	0.013 kg		
Plastic blue	B			44-704.26	1	0.013 kg		
Plastic white	B			44-704.29	1	0.013 kg		
Plastic matt grey	Plastic black		B	44-704.60	1	0.013 kg		
	Plastic red		B	44-704.62	1	0.013 kg		
	Plastic yellow		B	44-704.64	1	0.013 kg		
	Plastic green		B	44-704.65	1	0.013 kg		
	Plastic blue		B	44-704.66	1	0.013 kg		
	Plastic white		B	44-704.69	1	0.013 kg		

Switching action: B = Momentary, C = Maintain

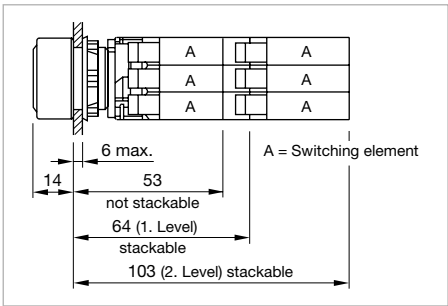
	
Wiring diagram 1	Wiring diagram 2

44 Raised design

Pushbutton markable, IP 65



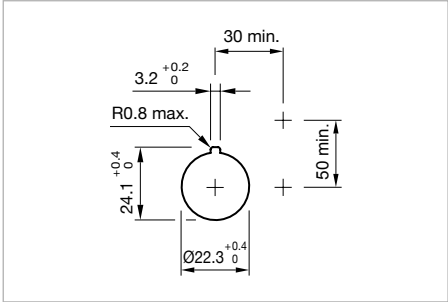
Product can differ from the current configuration.



Dimensions [mm]

Additional Information

- Colour of lens is determined by the colour of text plate, up to 3 Switching elements max.



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

- Front ring
- Lens
- Marking plate *page 423*
- Actuator
- Fixing nut
- Front adapter *page 430*
- Switching element *page 430*

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

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

Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
 Pushbutton actuator markable, Front dimension Ø 28 mm					
Plastic matt chrome	Plastic colourless	B	44-701.27	1	0.012 kg

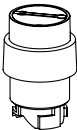
Switching action: B = Momentary

E---

Wiring diagram 1

Pushbutton lockable, IP 65

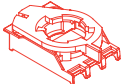
Equipment consisting of (schematic overview)



Actuator



Fixing nut



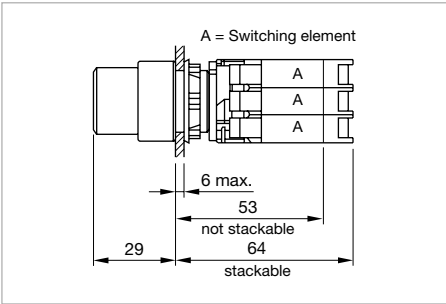
Front adapter *page 430*



Switching element *page 430*

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

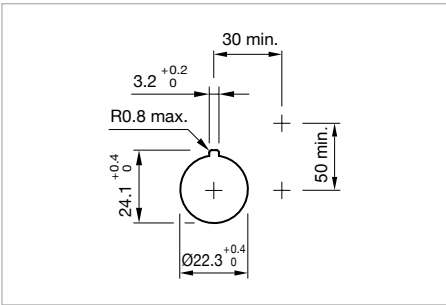
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



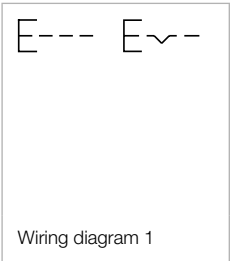
Mounting cut-outs [mm]

Additional Information

- In activated state locked by turning to the right, otherwise momentary action
- Up to 3 switching elements at 1. level

Lever	Front ring	Switching action	Part No.	Wiring diagram	Weight
 Pushbutton actuator lockable, Front dimension Ø 28 mm					
Plastic black	Plastic matt chrome	B - C	44-742.20	1	0.020 kg
Plastic red	Plastic matt chrome	B - C	44-742.22	1	0.020 kg

Switching action: B = Momentary, C = Maintain

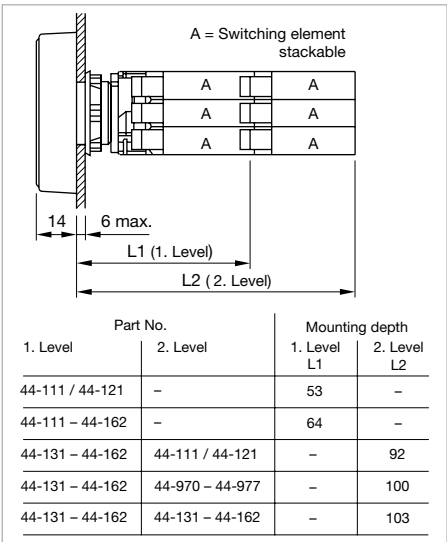


44 Raised design

Double pushbutton, IP 65



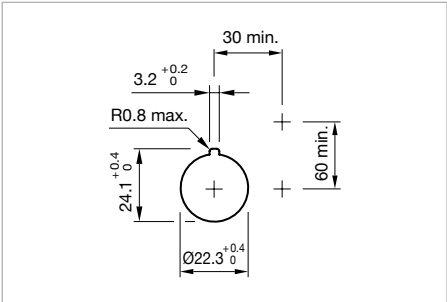
Product can differ from the current configuration.



Dimensions [mm]

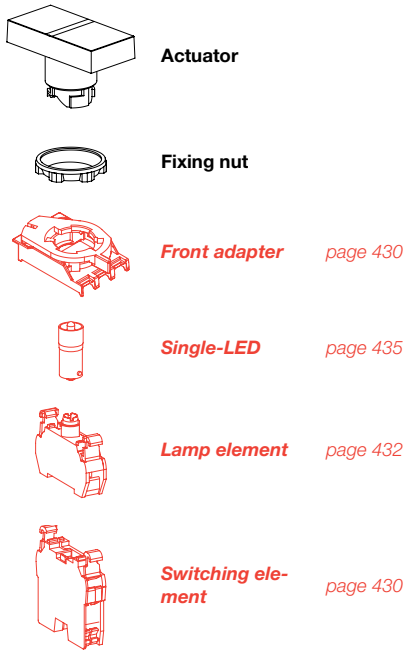
Additional Information

- With illuminative centre window



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)



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

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

Front bezel	Lens	Marking	Switching action	Part No.	Component layout	Weight
	Double pushbutton actuator, Front dimension 29.5 x 56 mm					
	Plastic green-red		B	44-770.2	3	0.018 kg
		I - O	B	44-771.2	3	0.018 kg
	Plastic white-black		B	44-773.2	3	0.018 kg
		I - O	B	44-774.2	3	0.018 kg

Switching action: B = Momentary
The component layouts you will find from page 442

Illuminated pushbutton complete, IP 65

Equipment consisting of (schematic overview)

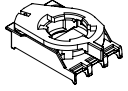
**Front ring**

**Lens**

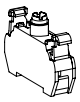
**Marking plate**

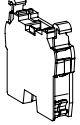
**Actuator**

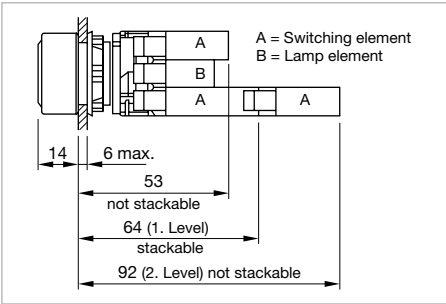
**Fixing nut**

**Front adapter**

**Single-LED** *page 435*

**Lamp element**

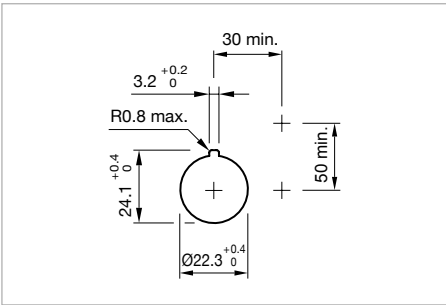
**Switching element**



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

Additional Information

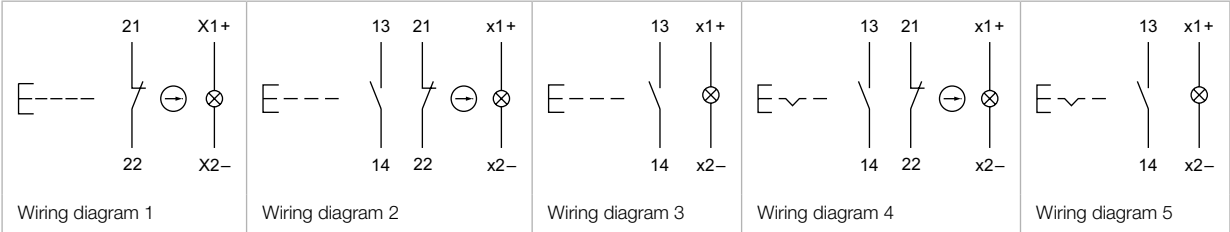
- Switching system slow-make element
- Markable

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

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

Front ring	Lens	Contacts	Switching action	Terminal	Part No.	Wiring diagram	Weight
 Illuminated pushbutton complete, Front dimension Ø 28 mm							
Plastic matt chrome	Plastic red	1 NC	B	Screw	44-746.22.001	1	0.040 kg
	Plastic white	1 NC + 1 NO	B	Screw	44-746.29.100	2	0.047 kg
	Plastic yellow	1 NO	B	Screw	44-746.24.010	3	0.040 kg
	Plastic green	1 NO	B	Screw	44-746.25.010	3	0.040 kg
	Plastic white	1 NC + 1 NO	C	Screw	44-747.29.100	4	0.047 kg
	Plastic green	1 NO	C	Screw	44-747.25.010	5	0.040 kg

Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain

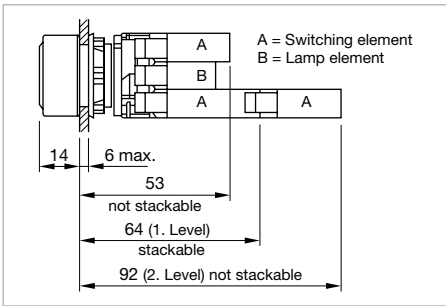


44 Raised design

Illuminated pushbutton, IP 65



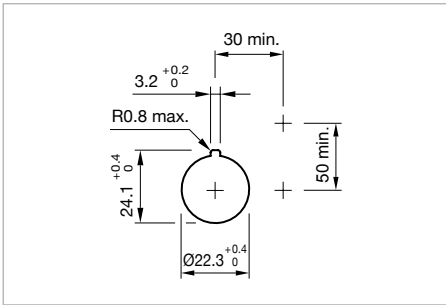
Product can differ from the current configuration.



Dimensions [mm]

Additional Information

- Markable with text plate translucent white
- Up to 3 switching elements with maintain action



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

	Front ring	
	Lens	
	Marking plate	
	Actuator	
	Fixing nut	
	Front adapter	page 430
	Single-LED	page 435
	Lamp element	page 432
	Switching element	page 430

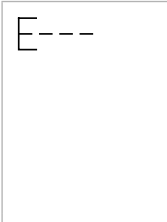
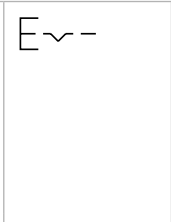
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
 Illuminated pushbutton actuator, Front dimension Ø 28 mm					
Plastic matt grey	Plastic red	B	44-746.62	1	0.012 kg
	Plastic yellow	B	44-746.64	1	0.012 kg
	Plastic green	B	44-746.65	1	0.012 kg
	Plastic blue	B	44-746.66	1	0.012 kg
	Plastic white	B	44-746.69	1	0.012 kg
Plastic matt chrome	Plastic red	B	44-746.22	1	0.012 kg
	Plastic yellow	B	44-746.24	1	0.012 kg
	Plastic green	B	44-746.25	1	0.012 kg
	Plastic blue	B	44-746.26	1	0.012 kg
	Plastic white	B	44-746.29	1	0.012 kg
Plastic matt grey	Plastic red	C	44-747.62	2	0.012 kg
	Plastic yellow	C	44-747.64	2	0.012 kg
	Plastic green	C	44-747.65	2	0.012 kg
	Plastic blue	C	44-747.66	2	0.012 kg

Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
Plastic matt grey	Plastic white	C	44-747.69	2	0.012 kg
Plastic matt chrome	Plastic red	C	44-747.22	2	0.012 kg
	Plastic yellow	C	44-747.24	2	0.012 kg
	Plastic green	C	44-747.25	2	0.012 kg
	Plastic blue	C	44-747.26	2	0.012 kg
	Plastic white	C	44-747.29	2	0.012 kg

Switching action: B = Momentary, C = Maintain

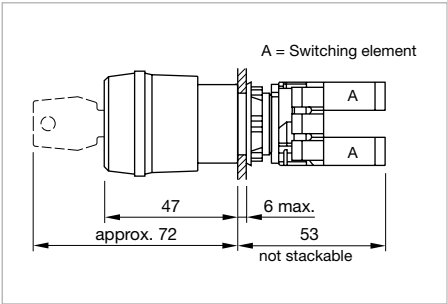
	
Wiring diagram 1	Wiring diagram 2

44 Raised design

Emergency-stop switch complete, foolproof EN IEC 60947-5-5, IP 65

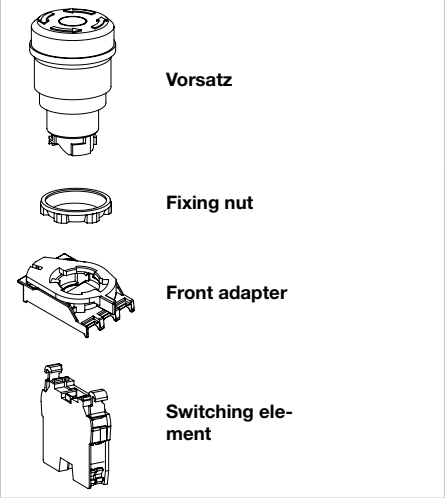


Product can differ from the current configuration.



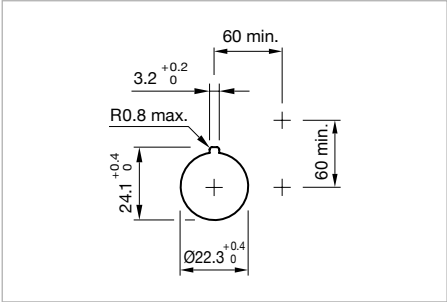
Dimensions [mm]

Equipment consisting of (schematic overview)



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

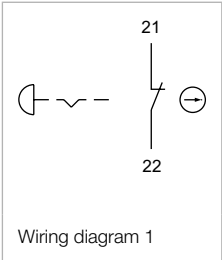
- Additional Information**
- Switching system slow-make element
 - Anwendung nach DIN EN ISO 13850 und EN 60204-1
 - Shaft yellow
 - The standard lock: Euro-Locks 9500
 - Two keys are supplied with each key lock switch
 - Optional lock numbers on request



Mounting cut-outs [mm]

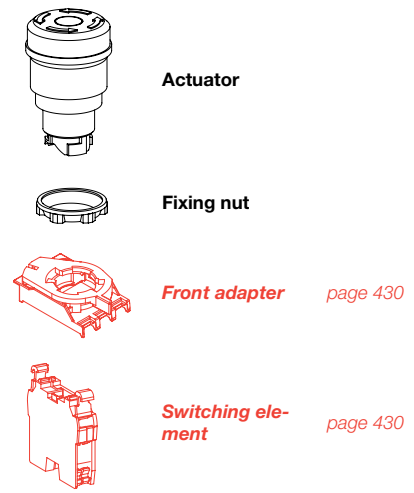
Product attribute	Lens	Contacts	Switching action	Terminal	Part No.	Wiring diagram	Weight
 Emergency-stop switch complete, foolproof EN IEC 60947-5-5, Front dimension Ø 37 mm							
Twist to unlock anti-clockwise	Plastic red	1 NC	C	Screw	44-712.001	1	0.047 kg
 Emergency-stop switch complete, foolproof EN IEC 60947-5-5, Front dimension Ø 37 mm							
Key to unlock anti-clockwise	Plastic red	1 NC	C	Screw	44-713.001	1	0.083 kg

Contacts: NC = Normally closed
Switching action: C = Maintain



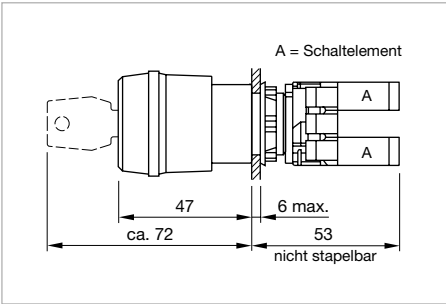
Emergency-stop switch foolproof, EN IEC 60947-5-5, IP 65

Equipment consisting of (schematic overview)

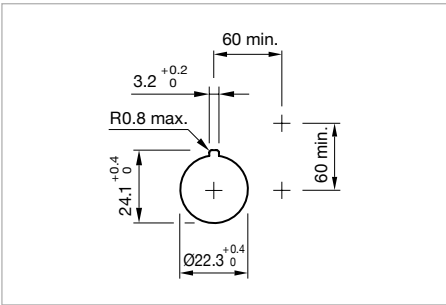


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]



Mounting cut-outs [mm]



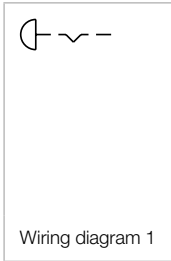
Product can differ from the current configuration.

Additional Information

- Application as per DIN EN ISO 13850 and EN 60204-1
- Shaft yellow
- The standard lock: Euro-Locks 9500
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Up to 3 switching elements at 1. level

Product attribute	Lens	Switching action	Part No.	Wiring diagram	Weight
 Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 37 mm					
Twist to unlock anti-clockwise	Plastic red	C	44-712	1	0.040 kg
 Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 37 mm					
Key to unlock anti-clockwise	Plastic red	C	44-713	1	0.066 kg

Switching action: C = Maintain

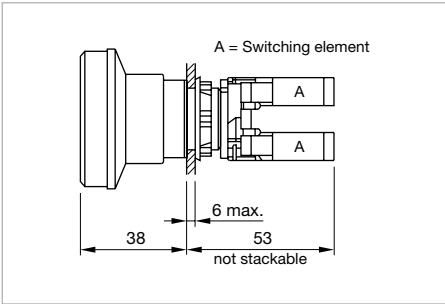


44 Raised design

Stop switch complete, IP 65



Product can differ from the current configuration.



Dimensions [mm]

Equipment consisting of (schematic overview)

Vorsatz

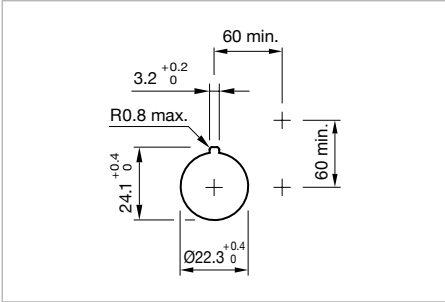
Fixing nut

Front adapter

Switching element

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

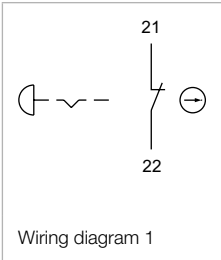
- Additional Information**
- Switching system slow-make element
 - Shaft yellow
 - Twist to unlock anti-clockwise



Mounting cut-outs [mm]

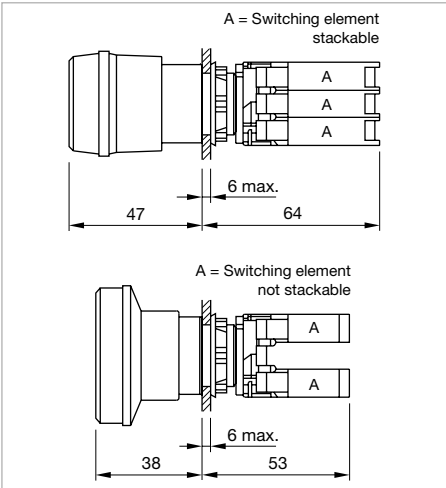
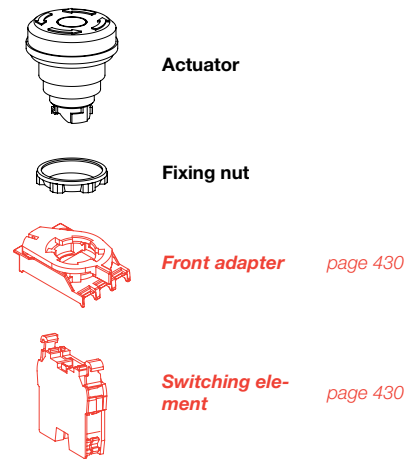
Lens	Contacts	Switching action	Terminal	Part No.	Wiring diagram	Weight
Plastic red	1 NC	C	Screw	44-710.001	1	0.057 kg

Contacts: NC = Normally closed
Switching action: C = Maintain



Stop switch, IP 65

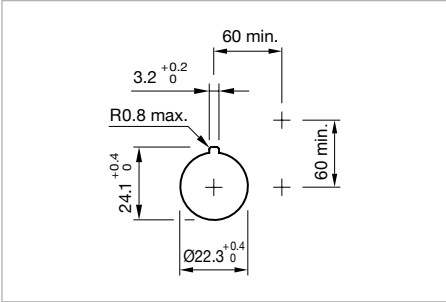
Equipment consisting of (schematic overview)



Product can differ from the current configuration.

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

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



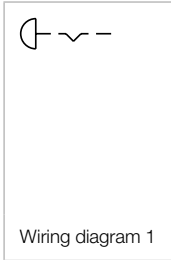
Mounting cut-outs [mm]

Additional Information

- Shaft yellow
- Twist to unlock anti-clockwise
- Up to 3 switching elements at 1. level

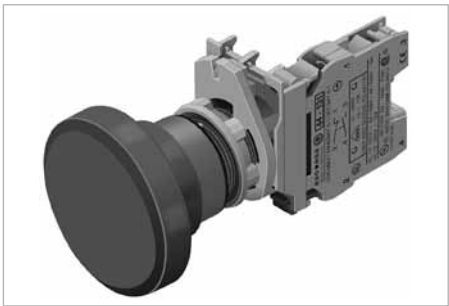
Lens	Switching action	Part No.	Wiring diagram	Weight
 Stop switch actuator, Front dimension Ø 50 mm				
Plastic red	C	44-710	1	0.040 kg
 Stop switch actuator, Front dimension Ø 37 mm				
Plastic red	C	44-711	1	0.035 kg

Switching action: C = Maintain

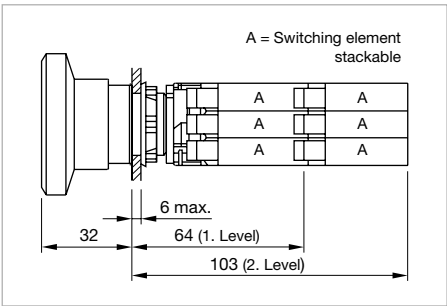


44 Raised design

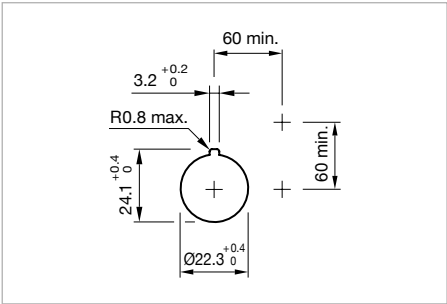
Mushroom-head pushbutton, IP 65



Product can differ from the current configuration.



Dimensions [mm]



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Vorsatz

Fixing nut

Front adapter *page 430*

Switching element *page 430*

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

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

Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
	Mushroom-head pushbutton actuator, Front dimension Ø 50 mm				
	Plastic matt chrome	Plastic black	B	44-707.20	1 0.028 kg
		Plastic red	B	44-707.22	1 0.028 kg
		Plastic green	B	44-707.25	1 0.028 kg

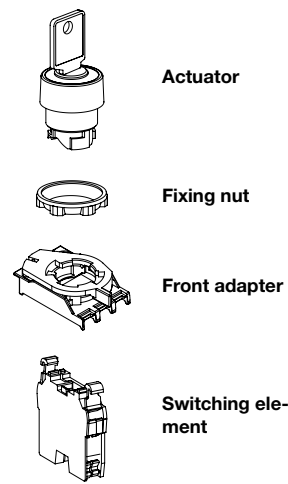
Switching action: B = Momentary

E----

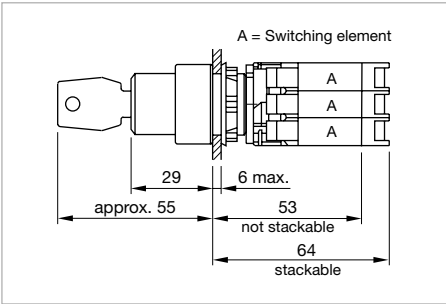
Wiring diagram 1

Key lock switch 2 positions complete, IP 65

Equipment consisting of (schematic overview)



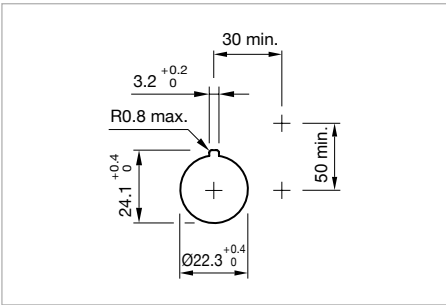
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

Additional Information

- Switching system slow-make element
- Front ring plastic matchchrome
- The standard lock: Euro-Locks 9500
- Two keys are supplied with each key lock switch
- Optional lock numbers on request

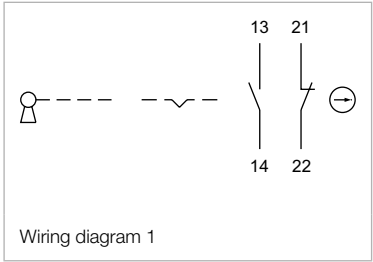
A C



Switching positions (A = Rest, C = Maintained)

Contacts	Switching action	Switching angle	Key remove	Terminal	Part No.	Wiring diagram	Weight
 Key lock switch 2 positions complete, Front dimension Ø 28 mm							
1 NC + 1 NO	A - C	C = 90°	A	Screw	44-730.21.100	1	0.075 kg
			A + C	Screw	44-730.22.100	1	0.075 kg

Contacts: NC = Normally closed, NO = Normally open
Switching action: A = Rest, C = Maintain

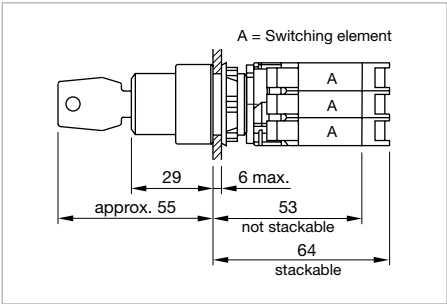


44 Raised design

Keylock switch 2 positions, IP 65

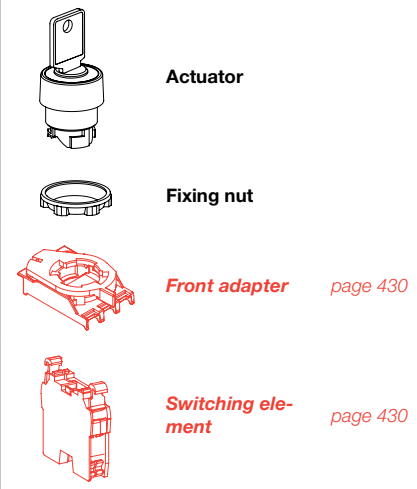


Product can differ from the current configuration.



Dimensions [mm]

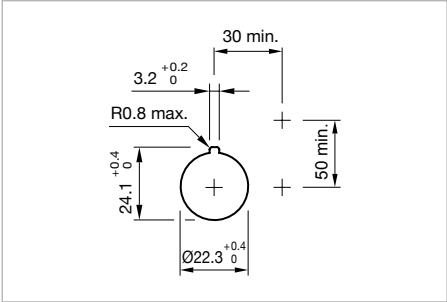
Equipment consisting of (schematic overview)



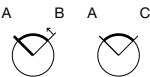
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

- Zusätzliche Informationen**
- The standard lock: Euro-Locks 9500
 - Two keys are supplied with each key lock switch
 - Optional lock numbers on request
 - Up to 3 switching elements at 1. level



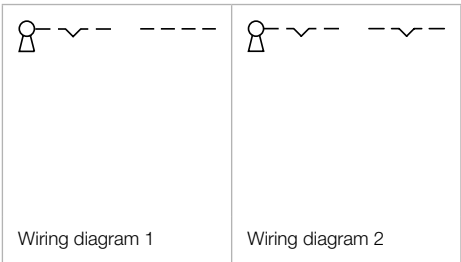
Mounting cut-outs [mm]



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

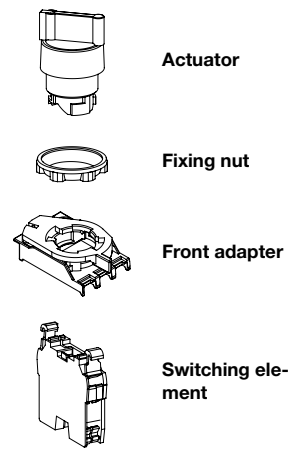
Front ring	Switching action	Switching angle	Key remove	Part No.	Component layout	Wiring diagram	Weight
 Keylock switch actuator 2 positions, Front dimension Ø 28 mm							
Plastic matt chrome	A - B	B = 90°	A	44-732.21	5	1	0.051 kg
Plastic matt grey	A - B	B = 90°	A	44-732.61	5	1	0.051 kg
Plastic matt chrome	A - C	C = 90°	A	44-730.21	5	2	0.051 kg
			A + C	44-730.22	5	2	0.051 kg
Plastic matt grey	A - C	C = 90°	A	44-730.61	5	2	0.051 kg
			A + C	44-730.62	5	2	0.051 kg

Switching action: A = Rest, B = Momentary, C = Maintain

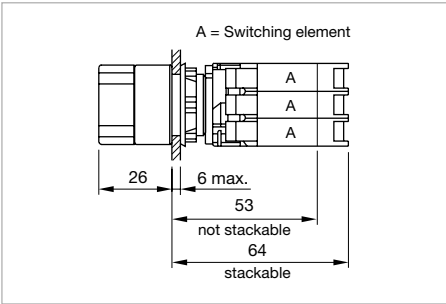


Selector switch 2 positions complete, IP 65

Equipment consisting of (schematic overview)



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



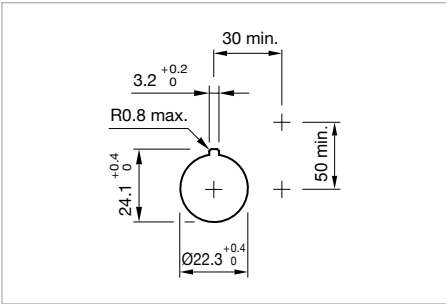
Dimensions [mm]



Product can differ from the current configuration.

Additional Information

- Switching system slow-make element



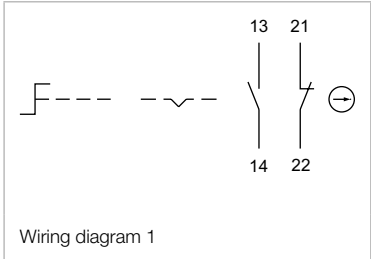
Mounting cut-outs [mm]



Switching positions (A = Rest, C = Maintained)

Lever	Front ring	Contacts	Switching action	Switching angle	Terminal	Part No.	Wiring diagram	Weight
 Selector switch 2 positions complete, Front dimension Ø 28 mm								
Plastic black	Plastic matt chrome	1 NC + 1 NO	A - C	C = 90°	Screw	44-720.20.100	1	0.045 kg

Contacts: NC = Normally closed, NO = Normally open
Switching action: A = Rest, C = Maintain

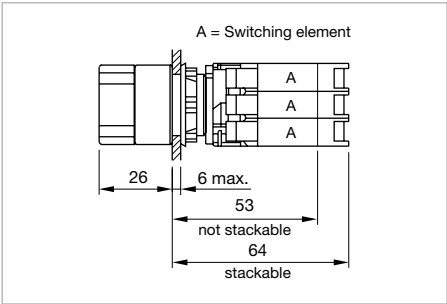


44 Raised design

Selector switch 2 positions, IP 65

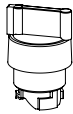


Product can differ from the current configuration.

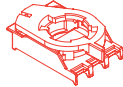


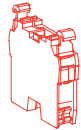
Dimensions [mm]

Equipment consisting of (schematic overview)

**Actuator**

**Fixing nut**

**Front adapter** *page 430*

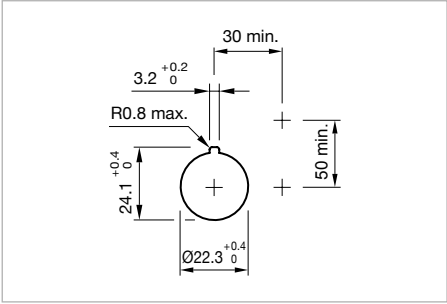
**Switching element** *page 430*

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

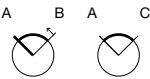
To obtain a complete unit, please select the red components from the pages shown.

Additional Information

- Up to 3 switching elements at 1. level



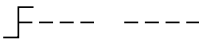
Mounting cut-outs [mm]

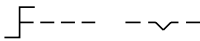


Switching positions (A = Rest, B = Momentary, C = Maintained)

Lever	Front ring	Switching action	Switching angle	Part No.	Component layout	Wiring diagram	Weight
Selector switch actuator 2 positions, Front dimension Ø 28 mm							
Plastic black	Plastic matt chrome	A - B	B = 90°	44-722.20	5	1	0.021 kg
Plastic grey	Plastic matt grey	A - B	B = 90°	44-722.68	5	1	0.021 kg
Plastic black	Plastic matt chrome	A - C	C = 90°	44-720.20	5	2	0.021 kg
Plastic red	Plastic matt chrome	A - C	C = 90°	44-720.22	5	2	0.021 kg
	Plastic matt grey	A - C	C = 90°	44-720.62	5	2	0.021 kg
Plastic grey	Plastic matt grey	A - C	C = 90°	44-720.68	5	2	0.021 kg

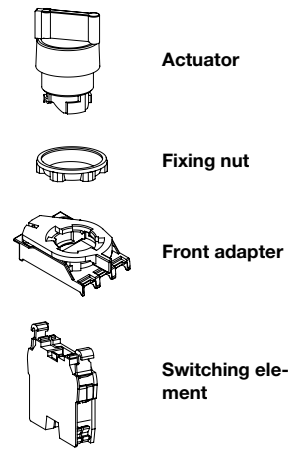
Switching action: A = Rest, B = Momentary, C = Maintain
The component layouts you will find from page 442


Wiring diagram 1

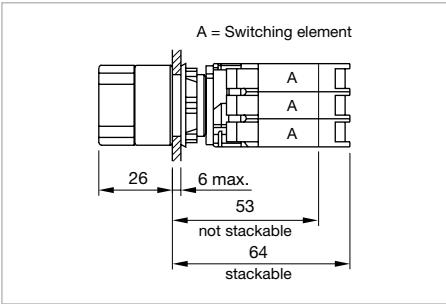

Wiring diagram 2

Selector switch 3 positions complete, IP 65

Equipment consisting of (schematic overview)



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



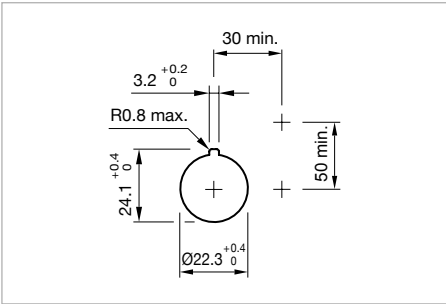
Dimensions [mm]



Product can differ from the current configuration.

Additional Information

- Switching system slow-make element



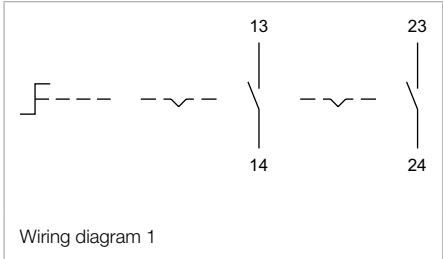
Mounting cut-outs [mm]



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

Lever	Front ring	Contacts	Switching action	Switching angle	Terminal	Part No.	Wiring diagram	Weight
 Selector switch 3 positions complete, Front dimension Ø 28 mm								
Plastic black	Plastic matt chrome	2 NO	C - A - C	C = 60° / 60°	Screw	44-724.20.020	1	0.048 kg

Contacts: 1 Normally open
Switching action: A = Rest, C = Maintain

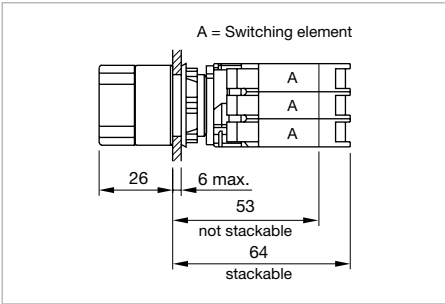


44 Raised design

Selector switch 3 positions, IP 65

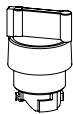


Product can differ from the current configuration.

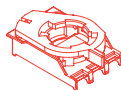


Dimensions [mm]

Equipment consisting of (schematic overview)

**Actuator**

**Fixing nut**

**Front adapter** *page 430*

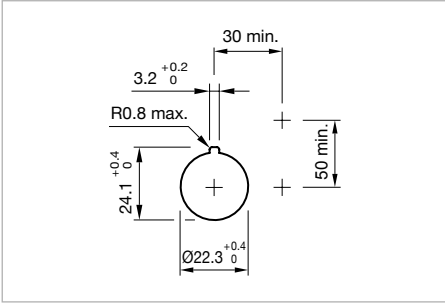
**Switching element** *page 430*

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

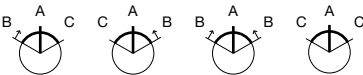
To obtain a complete unit, please select the red components from the pages shown.

Additional Information

- Up to 3 switching elements at 1. level



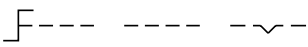
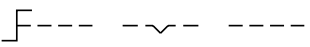
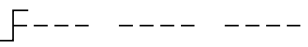
Mounting cut-outs [mm]



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

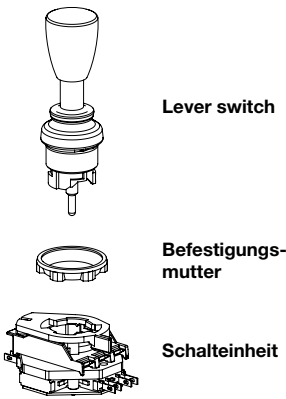
Lever	Front ring	Switching action	Switching angle	Part No.	Component layout	Wiring diagram	Weight
							
Plastic black	Plastic matt chrome	B - A - C	B = 60°, C = 60°	44-727.20	4	1	0.021 kg
Plastic grey	Plastic matt grey	B - A - C	B = 60°, C = 60°	44-727.68	4	1	0.021 kg
Plastic black	Plastic matt chrome	C - A - B	C = 60°, B = 60°	44-726.20	4	2	0.021 kg
Plastic grey	Plastic matt grey	C - A - B	C = 60°, B = 60°	44-726.68	4	2	0.021 kg
Plastic black	Plastic matt chrome	B - A - B	B = 60° / 60°	44-725.20	4	3	0.021 kg
Plastic grey	Plastic matt grey	B - A - B	B = 60° / 60°	44-725.68	4	3	0.021 kg
Plastic black	Plastic matt chrome	C - A - C	C = 60° / 60°	44-724.20	4	4	0.021 kg
Plastic grey	Plastic matt grey	C - A - C	C = 60° / 60°	44-724.68	4	4	0.021 kg

Switching action: A = Rest, B = Momentary, C = Maintain
The component layouts you will find from page 442

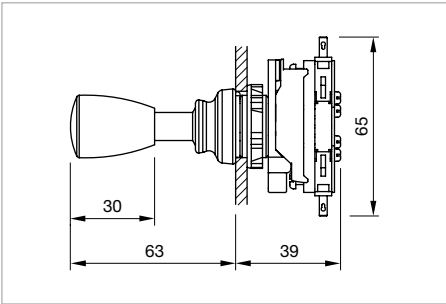
			
Wiring diagram 1	Wiring diagram 2	Wiring diagram 3	Wiring diagram 4

Lever switch, IP 65

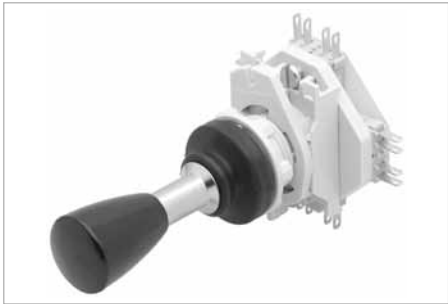
Equipment consisting of (schematic overview)



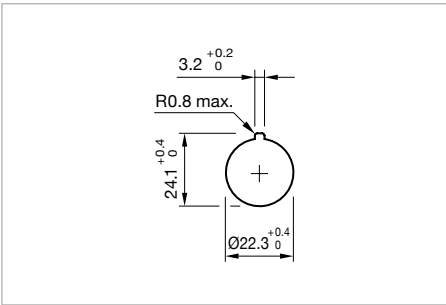
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



Product can differ from the current configuration.



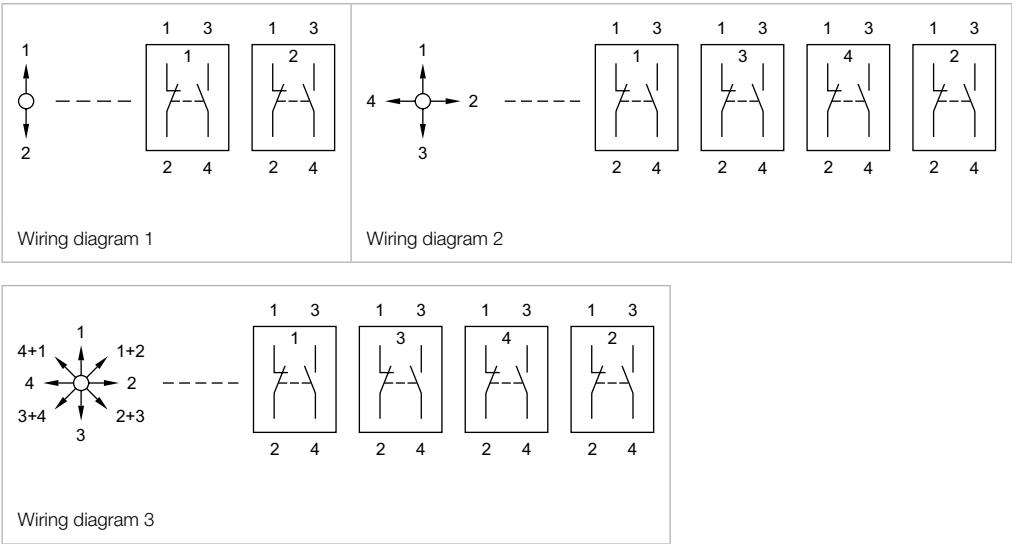
Mounting cut-outs [mm]

Additional Information

- Lever plastic black
- With flat receptacle, VDE 0630 (SEV) specify use of insulating sleeve Part No. 280-0010-00

Product attribute	Switching system	Contacts	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
 Lever switch complete, Front dimension Ø 22 mm								
2 positions without latch position	Snap-action switching element	2 NC + 2 NO	B	Solder 2.8 x 0.5 mm	44-800.2	1	1	0.080 kg
4 positions without latch position	Snap-action switching element	4 NC + 4 NO	B	Solder 2.8 x 0.5 mm	44-800.4	2	2	0.085 kg
8 positions without latch position and lever guidance (omni directional)	Snap-action switching element	4 NC + 4 NO	B	Solder 2.8 x 0.5 mm	44-800.8	2	3	0.085 kg

Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary
The component layouts you will find from page 442

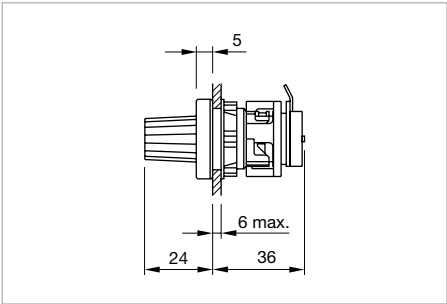


44 Raised design

Potentiometer, IP 65



Product can differ from the current configuration.



Dimensions [mm]

Gerät besteht aus (schematische Übersicht)



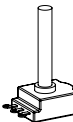
Knob



Actuator



Fixing nut

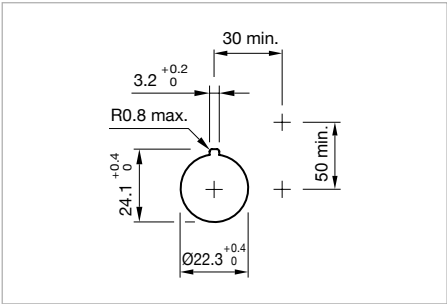


Potentiometer

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

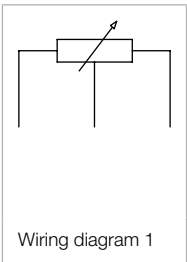
Additional Information

- Resistor 10 kOhm / linear, series E3
- Power 0.4 W
- Slewing range 300°



Mounting cut-outs [mm]

Product attribute	Front ring	Terminal	Part No.	Wiring diagram	Weight
 Potentiometer, Front dimension Ø 28 mm	with potentiometer	Plastic matt chrome	Solder	44-745.20-10K1	1 0.03 kg
		Plastic matt grey	Solder	44-745.60-10K1	1 0.03 kg
without potentiometer, specification for potentiometer: Shaft = length 32 mm, shaft end = Form A, Ø = 6 mm		Plastic matt chrome	Solder	44-744.20	 0.016 kg
		Plastic matt grey	Solder	44-744.60	 0.016 kg



Front**Lens****Additional Information**

- For indicator and illuminated pushbutton with front illumination und pushbutton markable

Dimension	Lens	Part No.	Weight
 Lens Ø 23 mm	Plastic red transparent	44-966.2	0.001 kg
	Plastic yellow transparent	44-966.4	0.001 kg
	Plastic green transparent	44-966.5	0.001 kg
	Plastic blue transparent	44-966.6	0.001 kg
	Plastic colourless transparent	44-966.7	0.001 kg

Marking plate for lens**Additional Information**

- Marking information see «Marking»

Product attribute	Marking plate	Part No.	Weight
 Marking plate for lens for pushbutton markable	black opaque	44-961.0	0.001 kg
	red opaque	44-961.2	0.001 kg
	yellow opaque	44-961.4	0.001 kg
	green opaque	44-961.5	0.001 kg
	blue opaque	44-961.6	0.001 kg
for indicator and illuminated pushbutton with front illumination und pushbutton markable	white translucent	44-962.9	0.001 kg

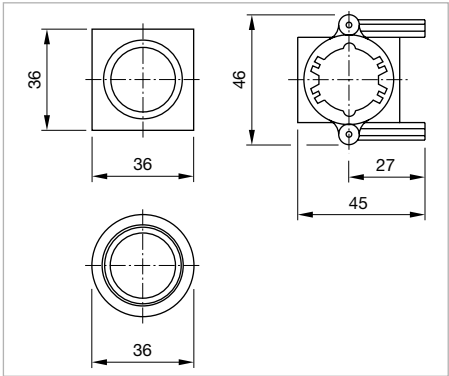
Lens cap

Additional Information

- For indicator with full face illumination, with sealing ring

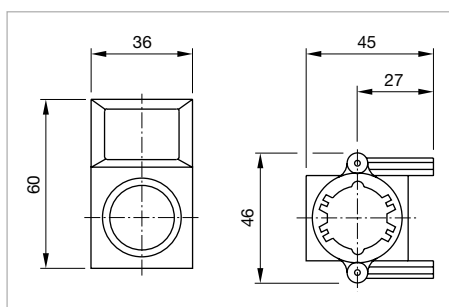
Dimension	Lens cap	Part No.	Weight
 Lens cap Ø 23 mm	Plastic red transparent	44-965.2	0.003 kg
	Plastic yellow transparent	44-965.4	0.003 kg
	Plastic green transparent	44-965.5	0.003 kg
	Plastic blue transparent	44-965.6	0.003 kg
	Plastic colourless transparent	44-965.7	0.003 kg

Front bezel set without legend



Dimensions [mm]

Product attribute	Mounting cut-out	Front bezel	Part No.	Weight
 Front bezel set without legend support, flush design, Front dimension 36 x 36 mm				
for indicator and potentiometer, the mounting depth extends for 3 mm	Ø 30.5 mm	Plastic black	44-946.01	0.006 kg
for illuminated pushbutton and pushbutton, selector- and keylock switch, interlocking pushbutton, the mounting depth extends for 12 mm	Ø 30.5 mm	Plastic black	44-946.03	0.010 kg
 Front bezel set without legend support, flush design, Front dimension Ø 36 mm				
for indicator and potentiometer, the mounting depth extends for 3 mm	Ø 30.5 mm	Plastic black	44-946.01-A	0.006 kg
for illuminated pushbutton and pushbutton, selector- and keylock switch, interlocking pushbutton, the mounting depth extends for 12 mm	Ø 30.5 mm	Plastic black	44-946.03-A	0.010 kg

Front bezel set with legend

Dimensions [mm]

Product attribute	Mounting cut-out	Front bezel	Part No.	Weight
 Front bezel set with legend support, flush design, Front dimension 36 x 60 mm				
for indicator and potentiometer, the mounting depth extends for 3 mm	Ø 30.5 mm	Plastic black	44-946.02	0.007 kg
for illuminated pushbutton and pushbutton, selector- and keylock switch, interlocking pushbutton, the mounting depth extends for 12 mm	Ø 30.5 mm	Plastic black	44-946.04	0.011 kg

Legend plate for legend support**Additional Information**

- Marking information see «Marking»

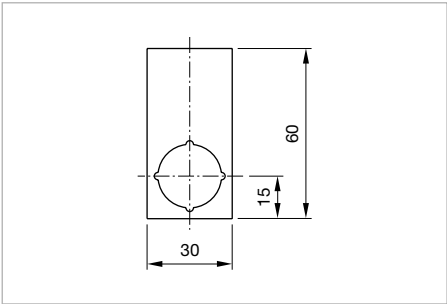
Dimension	Material	Colour	Mounting type	Part No.	Weight
 Legend plate for front bezel set with legend support, flush design					
27 x 18 mm	plastic, double layer	aluminium/black	adhesive	44-946	0.001 kg
		black/white	adhesive	44-946.0	0.001 kg

44 Accessories

Legend plate, IP 40

Additional Information

- For engraving
- The colour of anodized aluminium parts can vary due to technical production reasons



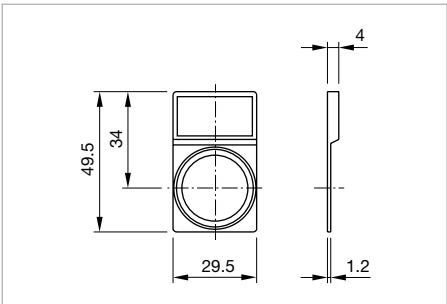
Dimensions [mm]

Dimension	Material	Colour	Part No.	Weight
	Legend plate			
30 x 60 mm	Aluminium	natural anodized	44-955	0.001 kg

Legend support without legend

Additional Information

- Label to be ordered separately Part No. 44-960
- Remove sealing ring from actuator

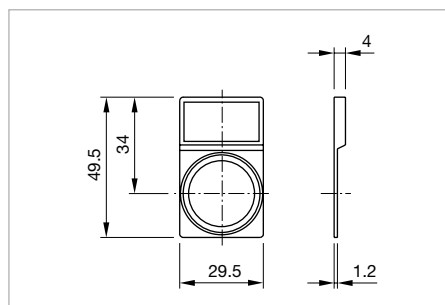


Dimensions [mm]

Dimension	Material	Colour	Part No.	Weight
	Legend support without legend			
29.5 x 49.5 mm	Plastic	black	44-944.00	0.002 kg
		grey	44-944.08	0.002 kg

Legend support with legend**Additional Information**

- Label unmarked, remove sealing ring from actuator



Dimensions [mm]

Dimension	Material	Colour	Part No.	Weight
 Legend support with legend	Plastic	black	44-945.00	0.002 kg
		grey	44-945.08	0.002 kg

Legend plate for legend support**Additional Information**

- Marking information see «Marking»
- The colour of anodized aluminium parts can vary due to technical production reasons

Dimension	Material	Colour	Part No.	Weight
 Legend plate for legend support with legend	Aluminium	black anodized	44-960	0.001 kg

Front ring**Additional Information**

- For illuminated pushbutton- and pushbutton actuator

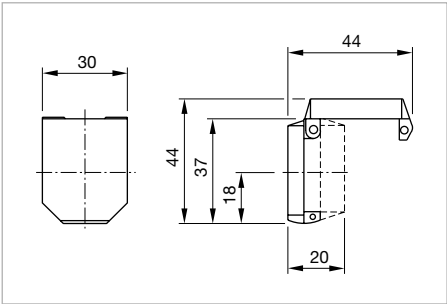
Front ring	Part No.	Weight
 Front ring		
	Plastic matt chrome	44-967.2 0.002 kg
	Plastic matt grey	44-967.6 0.002 kg

44 Accessories

Protective cover, IP 65

Additional Information

- Hinged, with means for sealing
- Front panel thickness up to 3 mm max
- Remove anti-twisting nose from the actuator
- The dimensions of the mounting cut-outs are shown in the product details
- Please note that bigger minimum distances are necessary



Dimensions [mm]

Front protection	Mounting cut-out	Material	Optics	Part No.	Weight
					
Protective cover					
IP 65	Ø 22.5 mm	Plastic	transparent	44-922	0.007 kg

Front protective cap, IP 68

Additional Information

- Only in connection with flush front ring. Protection when used under adverse ambient conditions. Remove gasket from the actuator. Cannot be used with the label support.

Material	Colour	Optics	Part No.	Weight
				
Front protective cap				
Silicone	colourless	transparent	44-917.07	0.002 kg

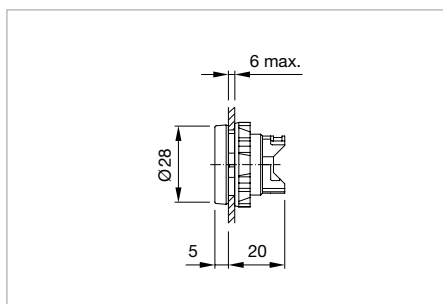
Keylock cap**Additional Information**

- For keylock pushbutton raised design. Protection when used under adverse ambient conditions
- Remove sealing ring from actuator
- Can not be used with the label support

Material	Colour	Part No.	Weight
 Keylock cap			
Plastic	black	44-921.00	0.004 kg
	grey	44-921.08	0.004 kg

Blind plug**Additional Information**

- Lamp transformer can be mounted with front adaptor
- The dimensions of the mounting cut-outs are shown in the product details



Dimensions [mm]

Mounting cut-out	Material	Colour	Part No.	Weight
 Blind plug				
Ø 22.5 mm	Plastic	grey	44-915	0.008 kg

Spare key**Zusätzliche Informationen**

- For standard lock: Euro-Locks 9500
- Optional lock numbers on request

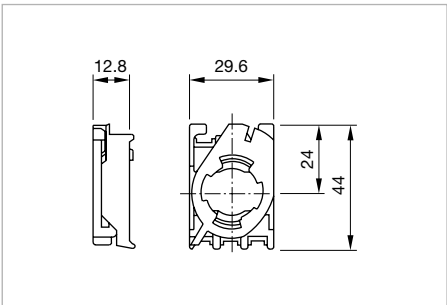
Part No.	Weight
 Spare key	
44-919	0.007 kg

Rear side

Front adapter front mounting

Additional Information

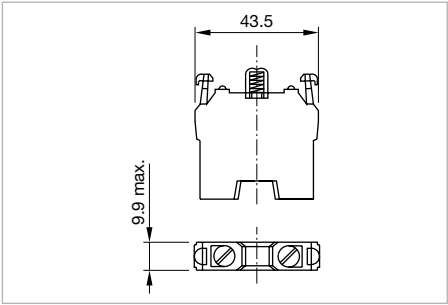
- Front adaptor marking: Terminal marking and distinctive number as per DIN EN 50013. The operating characters are marked on the switching elements beside the screw terminals



Dimensions [mm]

Product attribute	Marking	Part No.	Weight
 Front adapter front mounting			
for switching element or lamp element	without	44-900	0.007 kg
for switching elements in 1. level		44-901	0.007 kg
for switching elements in 2. level		44-902	0.007 kg
for switching elements in 3. level		44-903	0.007 kg

Slow-make element stackable

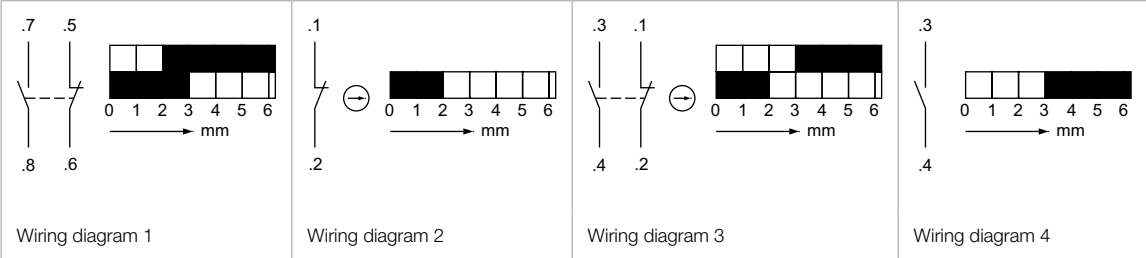


Dimensions [mm]

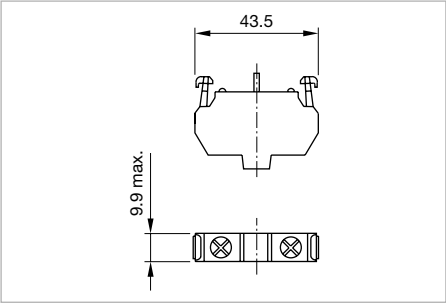
Product attribute	Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram	Weight
 Slow-make switching element front mounting stackable								
overlapping, not to use with EMERGENCY-STOP switch	500 VAC	10 A	1 NC + 1 NO	Silver	Screw	44-141	1	0.017 kg
Zwangsöffnung nach EN IEC 60947-5-1	500 VAC	10 A	1 Ö + 1 S	Silber	Schraub	44-131	3	0.017 kg
				Gold	Screw	44-132	3	0.017 kg
			1 NC	Silver	Screw	44-151	2	0.014 kg

Product attribute	Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram	Weight
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NC	Gold	Screw	44-152	2	0.014 kg
			1 NO	Silver	Screw	44-161	4	0.014 kg
				Gold	Screw	44-162	4	0.014 kg

Contacts: NC = Normally closed, NO = Normally open



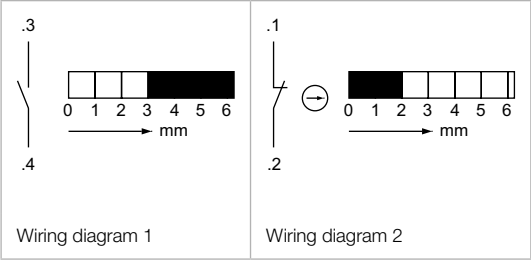
Slow make element non-stackable



Dimensions [mm]

Product attribute	Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram	Weight
 Slow-make switching element front mounting non-stackable								
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NC	Silver	Screw	44-111	2	0.010 kg
	500 VAC	10 A	1 NO	Silver	Screw	44-121	1	0.010 kg

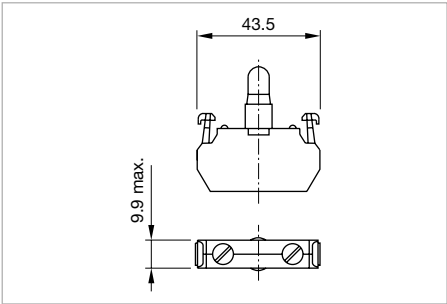
Contacts: NC = Normally closed, NO = Normally open



Lamp element front mounting

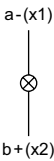
Additional Information

- Lamp socket BA9s, max. 2.6 W



Dimensions [mm]

Terminal	Part No.	Wiring diagram	Weight
 Lamp element front mounting			
Screw	44-524	1	0.011 kg



Wiring diagram 1

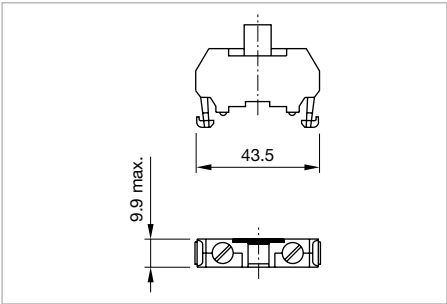
Base adaptor

Additional Information

- Front adaptor marking: Terminal marking and distinctive number as per DIN EN 50013. The operating characters are marked on the switching elements beside the screw terminals

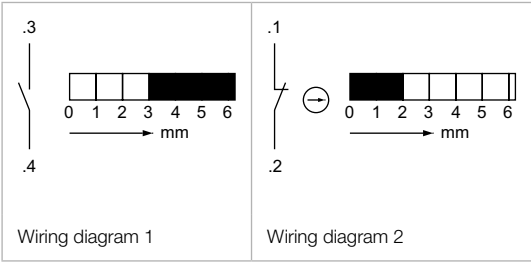
Marking	Part No.	Weight
 Base adaptor		
	44-905	0.006 kg

Slow-make element base mountingung



Dimensions [mm]

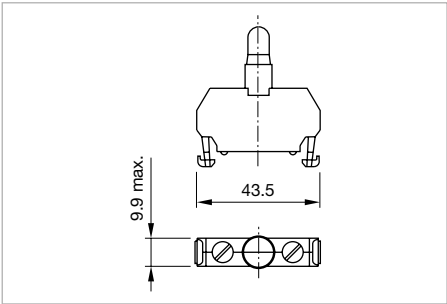
Product attribute	Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram	Weight
 Slow-make switching element base mounting non-stackable								
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NC	Silver	Screw	44-211	2	0.010 kg
	500 VAC	10 A	1 NO	Silver	Screw	44-221	1	0.010 kg



Lamp base mounting

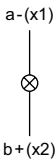
Additional Information

- Lamp socket BA9s, max. 2.6 W



Dimensions [mm]

Terminal	Part No.	Wiring diagram	Weight
 Lamp base mounting			
Screw	44-525	1	0.011 kg

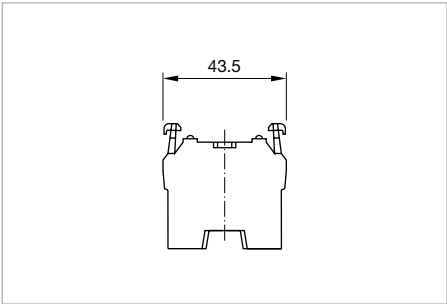


Wiring diagram 1

Blind element

Additional Information

- For mounting of lamp transformer

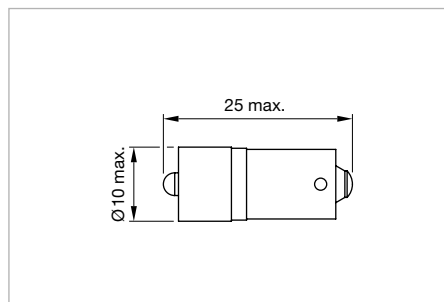


Dimensions [mm]

Part No.	Weight
 Blind element	
44-940	0.008 kg

Illumination**Single-LED, BA9s****Additional Information**

- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- The specified 6 VDC, 130 VAC, 130 DC und 230 VAC versions are built with a protection diode
- The specified 12, 24, 28, 48 VAC/DC versions are built with a bridge rectifier
- Luminosity and wave length scattering caused by LED manufacturing processes may cause slight variations in the illumination
- The specified 130 VAC types are developed to run on a supply voltage of 130 VAC only. An operation at a higher supply voltage using commercial lampholders with integrated resistors, is not approved



Dimensions [mm]

LED colour	Operating voltage	Operation current	Lumi. intensity	Dom. wavelength	Part No.	Weight
 Single-LED						
red	6 VDC +10 %	17 mA±15 %	400 mcd	630 nm	10-2506.1082	0.002 kg
	12 VAC/DC +10 %	16 mA±15 %	390 mcd	630 nm	10-2509.1142	0.002 kg
	24 VAC/DC +10 %	15 mA±15 %	350 mcd	630 nm	10-2512.1142	0.002 kg
	28 VAC/DC +10 %	13 mA±15 %	300 mcd	630 nm	10-2513.1142	0.002 kg
	48 VAC/DC +10 %	8 mA±15 %	200 mcd	630 nm	10-2519.1052	0.002 kg
	130 VDC +10 %	3 mA±15 %	120 mcd	630 nm	10-2524.3042	0.002 kg
	130 VAC +10 %	5 mA±15 %	180 mcd	630 nm	10-2H24.2052	0.002 kg
	230 VAC +10 %	3 mA±15 %	120 mcd	630 nm	10-2H25.2042	0.002 kg
yellow	6 VDC +10 %	17 mA±15 %	340 mcd	587 nm	10-2506.1084	0.002 kg
	12 VAC/DC +10 %	16 mA±15 %	340 mcd	587 nm	10-2509.1144	0.002 kg
	24 VAC/DC +10 %	15 mA±15 %	300 mcd	587 nm	10-2512.1144	0.002 kg
	28 VAC/DC +10 %	13 mA±15 %	270 mcd	587 nm	10-2513.1144	0.002 kg
	48 VAC/DC +10 %	8 mA±15 %	180 mcd	587 nm	10-2519.1054	0.002 kg
	130 VDC +10 %	3 mA±15 %	110 mcd	587 nm	10-2524.3044	0.002 kg
	130 VAC +10 %	5 mA±15 %	160 mcd	587 nm	10-2H24.2054	0.002 kg
	230 VAC +10 %	3 mA±15 %	110 mcd	587 nm	10-2H25.2044	0.002 kg
green	6 VDC +10 %	7 mA±15 %	1050 mcd	525 nm	10-2506.1085	0.002 kg
	12 VAC/DC +10 %	7 mA±15 %	1050 mcd	525 nm	10-2509.1145	0.002 kg
	24 VAC/DC +10 %	7 mA±15 %	1050 mcd	525 nm	10-2512.1145	0.002 kg
	28 VAC/DC +10 %	7 mA±15 %	1050 mcd	525 nm	10-2513.1145	0.002 kg
	48 VAC/DC +10 %	4 mA±15 %	600 mcd	525 nm	10-2519.1055	0.002 kg
	130 VDC +10 %	2 mA±15 %	300 mcd	525 nm	10-2524.3045	0.002 kg
	130 VAC +10 %	3 mA±15 %	450 mcd	525 nm	10-2H24.2055	0.002 kg
	230 VAC +10 %	2 mA±15 %	300 mcd	525 nm	10-2H25.2045	0.002 kg

44 Accessories

LED colour	Operating voltage	Operation current	Lumi. intensity	Dom. wavelength	Part No.	Weight
blue	6 VDC +10 %	17 mA±15 %	780 mcd	470 nm	10-2506.1086	0.002 kg
	12 VAC/DC +10 %	16 mA±15 %	720 mcd	470 nm	10-2509.1146	0.002 kg
	24 VAC/DC +10 %	15 mA±15 %	680 mcd	470 nm	10-2512.1146	0.002 kg
	28 VAC/DC +10 %	13 mA±15 %	590 mcd	470 nm	10-2513.1146	0.002 kg
	48 VAC/DC +10 %	8 mA±15 %	400 mcd	470 nm	10-2519.1056	0.002 kg
	130 VDC +10 %	3 mA±15 %	200 mcd	470 nm	10-2524.3046	0.002 kg
	130 VAC +10 %	5 mA±15 %	230 mcd	470 nm	10-2H24.2056	0.002 kg
	230 VAC +10 %	3 mA±15 %	200 mcd	470 nm	10-2H25.2046	0.002 kg
white	6 VDC +10 %	5 mA ±15 %	750 mcd	x0.31/y0.32 nm	10-2506.1089	0.002 kg
	12 VAC/DC +10 %	8 mA ±15 %	1200 mcd	x0.31/y0.32 nm	10-2509.1149	0.002 kg
	24 VAC/DC +10 %	7 mA ±15 %	1050 mcd	x0.31/y0.32 nm	10-2512.1149	0.002 kg
	28 VAC/DC +10 %	5 mA ±15 %	750 mcd	x0.31/y0.32 nm	10-2513.1149	0.002 kg
	48 VAC/DC +10 %	5 mA ±15 %	750 mcd	x0.31/y0.32 nm	10-2519.1059	0.002 kg
	130 VDC +10 %	1.5 mA ±15 %	225 mcd	x0.31/y0.32 nm	10-2524.3049	0.002 kg
	130 VAC +10 %	2 mA ±15 %	300 mcd	x0.31/y0.32 nm	10-2H24.2059	0.002 kg
	230 VAC +10 %	1.5 mA ±15 %	225 mcd	x0.31/y0.32 nm	10-2H25.2049	0.002 kg

Filament lamp, BA9s

Additional Information

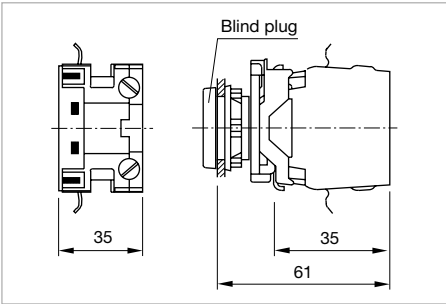
- The max. overall length of the lamp may not exceed 28 mm

Operating voltage	Operation current	Part No.	Weight
 Filament lamp			
6 VAC/DC	200 mA ±10 %	10-1406.1369	0.002 kg
12 VAC/DC	100 mA ±10 %	10-1409.1329	0.002 kg
24 VAC/DC	50 mA ±10 %	10-1412.1279	0.002 kg
36 VAC/DC	56 mA ±10 %	10-1416.1289	0.002 kg
48 VAC/DC	42 mA ±10 %	10-1419.1249	0.002 kg
60 VAC/DC	33 mA ±10 %	10-1420.1219	0.002 kg
110 VAC/DC	22 mA ±10 %	10-1422.1179	0.002 kg
130 VAC/DC	20 mA ±10 %	10-1424.1179	0.002 kg

Lamp transformer

Additional Information

- Short-circuit proof, 1.2 VA, 50/60 Hz, for front or base mounting



Dimensions [mm]

Operating voltage	Terminal	Part No.	Weight
 Lamp transformer			
	Screw	44-976	0.102 kg
	Screw	44-977	0.102 kg

Emergency-stop switch

Emergency-stop legend

Additional Information

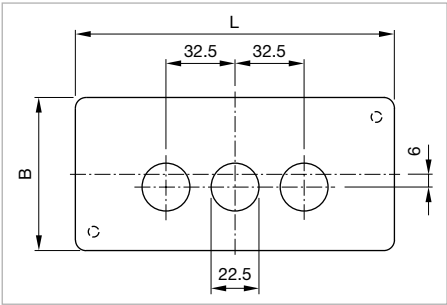
- Front protection IP 65 only ensured after protection foil is removed

Dimension	Marking	Colour	Mounting type	Part No.	Weight
 Emergency-stop legend					
Ø 45 x 1 mm	without	yellow	adhesive	44-951	0.002 kg
	NOT-AUS	yellow	adhesive	44-951.1	0.002 kg
	EMERGENCY-STOP	yellow	adhesive	44-951.2	0.002 kg
	ARRET-D'URGENCE	yellow	adhesive	44-951.3	0.002 kg
	NOT - HALT	yellow	adhesive	44-951.4	0.002 kg
Ø 60 x 1 mm	without	yellow	adhesive	44-950	0.004 kg
	NOT-AUS	yellow	adhesive	44-950.1	0.004 kg
	EMERGENCY-STOP	yellow	adhesive	44-950.2	0.004 kg
	ARRET-D'URGENCE	yellow	adhesive	44-950.3	0.004 kg
	NOT - HALT	yellow	adhesive	44-950.4	0.004 kg
Ø 90 x 1 mm	without	yellow	adhesive	44-949	0.009 kg
	NOT-AUS	yellow	adhesive	44-949.1	0.009 kg
	EMERGENCY-STOP	yellow	adhesive	44-949.2	0.009 kg
	ARRET-D'URGENCE	yellow	adhesive	44-949.3	0.009 kg
	NOT - HALT	yellow	adhesive	44-949.4	0.009 kg

Emergency-stop enclosure

Additional Information

- 1 mounting hole, with adaptor for base mounting



Dimensions [mm]

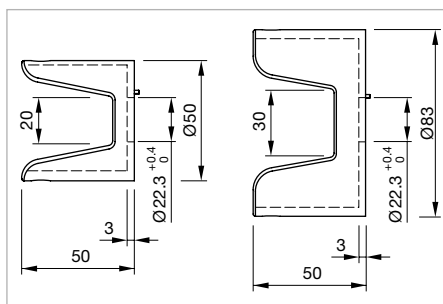
Dimension	Colour	Part No.	Weight
 Emergency-stop enclosure			
L 84 x B 72 x H 64 mm	yellow	44-001.4	0.174 kg

Cable gland, IP 68

Product attribute	Thread	Material	Colour	Part No.	Weight
 Cable gland					
with nut and sealing, clamping range Ø 7 ... 13 mm, thread length 10 mm	M20 x 1.5	Plastic	grey	44-956	0.009 kg

E-stop protective shroud, IP 65**Additional Information**

- Use only for Part No. 44-712, 44-713, 44-712.001 and 44-713.001
- The protection shroud is not suitable for a proper use of emergency-stop. It can obstruct a spontaneous operation of the emergency-stop

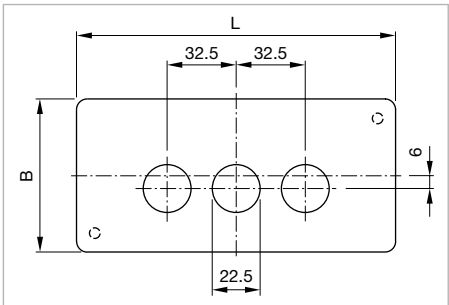


Dimensions [mm]

Dimension	Material	Colour	Standard	Part No.	Weight
 E-stop protective shroud					
Ø 50 mm	Plastic	yellow		704.927.8	0.052 kg
 E-stop protective shroud					
Ø 83 mm	Plastic	yellow	SEMI S2-93/12.4.c	704.927.9	0.067 kg

Mounting

Enclosure



Dimensions [mm]

Product attribute	Dimension	Colour	Part No.	Weight
 Enclosure				
1 mounting hole, with adaptor for base mounting	L 84 x B 72 x H 64 mm	light grey	44-001.8	0.175 kg
2 mounting holes, with adaptor for base mounting	L 117 x B 72 x H 64 mm	light grey	44-002.8	0.199 kg
3 mounting holes, with adaptor for base mounting	H 150 x B 72 x H 64 mm	light grey	44-003.8	0.252 kg
5 mounting holes, with adaptor for base mounting	L 215 x B 72 x H 64 mm	light grey	44-005.8	0.332 kg

Legend for enclosure

Additional Information
• Not marked

Dimension	Material	Mounting type	Part No.	Weight
 Legend for enclosure				
19 x 19 mm	plastic / aluminium plated (natural)	adhesive	44-963	0.001 kg

Cable gland, IP 68

Product attribute	Thread	Material	Colour	Part No.	Weight
 Cable gland					
with nut and sealing, clamping range Ø 7 ... 13 mm, thread length 10 mm	M20 x 1.5	Plastic	grey	44-956	0.009 kg

Reducing ring**Additional Information**

- For mounting of Ø 22.5 mm device into Ø 30.5 mm mounting cut-out
- The colour of anodized aluminium parts can vary due to technical production reasons

Material	Colour	Part No.	Weight
 Reducing ring			
Aluminium	natural anodized	44-925	0.003 kg

Mounting tool**Additional Information**

- For fixing nut, transparent lens, lens caps and illumination

Part No.	Weight
 Mounting tool	
44-935	0.037 kg

Component layout 1

Component layout 2

Arrangement switching element corresponds to designation of front adaptor

1	3	2
---	---	---

Switching action red (black) button pressed
 green (white) button pressed

Switching element actuated

Component layout 3

Arrangement switching element corresponds to designation of front adaptor

1	3*	2
---	----	---

90° O
Switching action I

Switching element actuated

* By using of not stackable switching elements, please cover the outside positions 1 and 2 of front adaptor

Component layout 5

Arrangement switching element corresponds to designation of front adaptor

1	3*	2
---	----	---

Switching function I
 O
 II

Switching element actuated

* By using of not stackable switching elements, please cover the outside positions 1 and 2 of front adaptor

Component layout 4

Snap-action switching element Control Switch

Switching system

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

Material

Housing

Polyethylene terephthalate (PETP), as per UL 94 V0

Contacts

AgNi, 2 µm gold plated

Contact carrier

Brass or CuBe

Mechanical characteristics

Terminals

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

Actuating force

For each snap-action switching element approx. 2 N

Rebound time

typically 0.5 µs

Contact opening width

2 x 0.65 mm

Contact cleaning path

2 x 0.6 mm

Mechanical lifetime

2 million cycles of operation

Electrical characteristics

Contact resistance

New state with gold plated contact $\leq 50 \text{ m}\Omega$, statically

Electrical life

> 10 000 cycles of operation

Switch rating

as per EN IEC 61058-1
250 VAC, 5 A $\cos\phi$ 0.7 ... 0.8
250 VDC, 0.5 A
110 VDC, 2 A
75 VDC, 5 A
5 VAC/DC, 1 mA min.

Protection class

Indicators and switches, fit for mounting into devices with protection class II

Approvals

Approbations

CSA
ENEC (EN 61058)
UL
VDE

Declaration of conformity

CE

Slow-make switching element

Switching system

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

The normally closed contacts have forced opening according to DIN 0660, IEC 60947-5-1 and DIN VDE 0113.

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

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

Material

Material of contact

Standard version: Ag-Ni alloy
special version: Gold/Silver

Plastics

UL listed, Cd-free

Switching element

PC, PA 6.6 self-extinguishing

Mechanical characteristics

Actuating force

per switching element $\leq 5 \text{ N}$
Illuminated pushbutton actuator $\leq 10 \text{ N}$
Stop pushbutton actuator $\leq 20 \text{ N}$
Emergency-stop pushbutton actuator foolproof $\leq 70 \text{ N}$
Double pushbutton $\leq 12 \text{ N}$ per contact surface

Actuating travel

approx. 6 mm

44 Technical data

Mechanical lifetime

Slow-make switching element	10 x 10 ⁶ switching operations
Pushbutton momentary action	5 x 10 ⁶ switching operations
Pushbutton maintained action	1 x 10 ⁶ cycles of operation
Illuminated pushbutton momentary action	3 x 10 ⁶ switching operations
Illuminated pushbutton maintained action	1 x 10 ⁶ cycles of operation
Interlocking pushbutton	2 x 10 ⁵ switching operations
Stop pushbutton not foolproof	1 x 10 ⁵ cycles of operation
Emergency-stop foolproof	> 6050 cycles of operation
Keylock switch	2 x 10 ⁵ cycles of operation
Selector switch	2 x 10 ⁵ cycles of operation
Double pushbutton	2 x 10 ⁵ switching operations per contact surface

Electrical characteristics

Rated Insulation Voltage U_i

Slow-make switching element	660 V
Lamp element	250 V
Lamp transformer	660 V

Rated Operational Voltage U_e

AC 15 (inductive)	
120 V, ~6 A	
230 V, ~6 A	
400 V, ~4 A	
500 V, ~3 A	
600 V, ~1.2 A	
DC 13	
24 V, 3 A	
60 V, 1.3 A	
120 V, 0.6 A	
250 V, 0.3 A	

Rated Impulse Withstand Voltage U_{imp}

Lamp element	2.5 kV
Lamp transformer	6 kV
Slow-make switching element	6 kV
Between the electrically separated normally closed contacts and normally open contacts for slow-make switching elements.	
1 NC + 1 NO without overlap	
U _e > 400 V, same polarity	
U _{imp} = 4000 V	
1 NC + 1 NO with overlap	
U _e > 250 V, same polarity	
U _{imp} = 4000 V	

Rated Operational Current I_e

AC-12 (resistive)	
500 V, ~5 A	
DC-12	
24 V, 10 A	
60 V, 8 A	
125 V, 3 A	
250 V, 1 A	

Contact resistance

Starting value (initial) ≤ 50 mΩ

Electrical life

AC-15	
400 V, ~2 A, 1 x 10 ⁶ switching operations	

Conventional free air thermal current

I_{th2} = 10 A

Short-circuit protection

max. series fuse to be provided 10 A gL
lamp transformer is short-circuit-protected

Switch rating

Ag-Ni alloy	
(Standard version)	minimal 6 V, 20 mA minimal 12 V, 10 mA
Gold/Silver	
(Special version)	minimal 5 V, 1 mA maximum 42 V, 100 mA

Degree of pollution

3, as per EN IEC 60947-1

Protection class

Indicators and switches, fit for mounting into devices with protection class II

Environmental conditions

Storage temperature

-40 °C ... +70 °C

Operating temperature

-25 °C, as per EN IEC 60068-2-1
+60 °C, as per EN IEC 60068-2-2

Protection degree

Actuators at front and enclosure IP 65, as per EN IEC 60529

Shock resistance

40 g (duration 6 ms), as per EN IEC 60 68-2-27

Vibration resistance

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

Climate resistance

Humidity and heat constant, as per EN IEC 60068-2-3
Humidity and heat cyclic, as per EN IEC 60068-2-30

Approvals

Approbations

CSA
Germanischer Lloyd
UL
VDE

Declaration of conformity

CE

Control Switch

General

Design

Modular, Actuator and Switch part separated

Operation

2-/4-/8-positions, each approx. 12°

Mounting position

In any way

Mechanical characteristics

Mechanical lifetime

2 million cycles of operation

Environmental conditions

Storage temperature

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

Operating temperature

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

Protection degree

IP 65 front side, as per IEC 60529

Shock resistance

40 g, 6 ms regarding mechanical destruction

Climate resistance

Damp heat state/cyclic as per EN IEC 60068-2

Actuator

Material

Adapter and enclosure

PC

Front parts

PA 6, PA 12, PC, chromium-plated ABS

EAO reserves the right to alter specifications without further notice.

44 Marking

Label marking for label support

Label black anodized

Standard text	Text-No.	Standard text	Text-No.	Standard text	Text-No.
0	T 01	Forwards	T 14	Set up	T 22
I	T 02	Revers	T 15	Raise	T 23
0 I	T 03	Right	T 16	Lower	T 24
I 0 II	T 04	Left	T 17	Hand	T 25
OFF	T 10	Halt	T 18	STOP	T 26
ON	T 11	Close	T 19	START	T 27
Up	T 12	Fast	T 20	HAND/AUTO	T 28
Down	T 13	Slow	T 21	OFF/ON	T 29

Standard texts for marking plates and marking caps for Indicator and Illuminated Pushbutton

Height of letters 6 mm

 Part No. 44-962.9-T1	 Part No. 44-962.9-T2	 Part No. 44-962.9-T3	 Part No. 44-962.9-T4
 Part No. 44-962.9-T5	 Part No. 44-962.9-T6	 Part No. 44-962.9-T7	 Part No. 44-962.9-T8
 Part No. 44-962.9-T9	 Part No. 44-962.9-T10	 Part No. 44-962.9-T11	 Part No. 44-962.9-T12
 Part No. 44-962.9-T13	 Part No. 44-962.9-T14	 Part No. 44-962.9-T15	 Part No. 44-962.9-T16
 Part No. 44-962.9-T17	 Part No. 44-962.9-T18		

Symbols for marking plates and marking caps for Indicator and Illuminated Pushbutton

All marking plates with the printed Part Numbers are available for flat lenses, marking cap only on request.

	Part No. 44-962.9-1 Direction of linear rectilinear motion (also for $\rightarrow \updownarrow$)		Part No. 44-962.9-2 Linear motion in 2 directions (also for $\downarrow$)		Part No. 44-962.9-3 Interrupted linear motion $\updownarrow$ (also for $\leftarrow \leftarrow \updownarrow$)		Part No. 44-962.9-4 Limited linear motion (also for $\leftarrow \updownarrow$)
	Part No. 44-962.9-5 Limited linear motion and return		Part No. 44-962.9-6 Oscillating linear motion (continuous)		Part No. 44-962.9-7 Direction of continuous rotation (right)		Part No. 44-962.9-7.1 Direction of continuous rotation (left)
	Part No. 44-962.9-8 Rotation in 2 directions		Part No. 44-962.9-9 Direction of interrupted rotation (right)		Part No. 44-962.9-9.1 Direction of interrupted rotation (left)		Part No. 44-962.9-10 Limited rotation (right)
	Part No. 44-962.9-10.1 Limited rotation (left)		Part No. 44-962.9-11 Limited rotation and return		Part No. 44-962.9-12 Oscillating rotary movement (continuous)		Part No. 44-962.9-13 Direction of spindle rotation
	Part No. 44-962.9-14 One revolution		Part No. 44-962.9-15 Number of revolutions per minute (spindle speed)		Part No. 44-962.9-16 Feed		Part No. 44-962.9-17 Feed per revolution
	Part No. 44-962.9-18 Feed per minute		Part No. 44-962.9-19 Reduced feed		Part No. 44-962.9-20 Rapid feed		Part No. 44-962.9-21 Normal feed
	Part No. 44-962.9-22 Direction of feed (orientation not specified)		Part No. 44-962.9-24 Transverse feed		Part No. 44-962.9-25 Vertical feed		Part No. 44-962.9-26 Rapid traverse
	Part No. 44-962.9-27 Threading		Part No. 44-962.9-28 Increase of value (speed, for instance)		Part No. 44-962.9-29 Decrease of value (speed, for instance)		Part No. 44-962.9-30 Speed of planing cut
	Part No. 44-962.9-31 Speed of turning cut		Part No. 44-962.9-32 Speed of drilling cut		Part No. 44-962.9-33 Speed of milling cut (similar symbol for speed of grinding)		Part No. 44-962.9-34 Conventional milling
	Part No. 44-962.9-35 Climb milling (down milling)		Part No. 44-962.9-41 Electric motor		Part No. 44-962.9-42 Rectangular work table or slide element		Part No. 44-962.9-43 Round work table or rotating element
	Part No. 44-962.9-44 Turning spindle		Part No. 44-962.9-45 Drilling spindle		Part No. 44-962.9-46 Milling spindle		Part No. 44-962.9-47 Schleifscheibenfutter
	Part No. 44-962.9-48 Pump (general symbol)		Part No. 44-962.9-49 Cooling pump		Part No. 44-962.9-50 Lubricant pump		Part No. 44-962.9-51 Hydraulic system pump
	Part No. 44-962.9-52 Hydraulic motor		Part No. 44-962.9-53 Tracer		Part No. 44-962.9-61 Stepless regulation		Part No. 44-962.9-62 Adjustable

44 Marking

	Part No. 44-962.9-63.1 Lock or tighten		Part No. 44-962.9-63.2 Lock or tighten		Part No. 44-962.9-64.1 Unlock, unclamp		Part No. 44-962.9-64.2 Unlock, unclamp
	Part No. 44-962.9-65 Brake on		Part No. 44-962.9-66 Brake off		Part No. 44-962.9-67 Automatic (or semi-automatic) cycle		Part No. 44-962.9-68 Hand control
	Part No. 44-962.9-69 Start, on		Part No. 44-962.9-70 Stop, off		Part No. 44-962.9-71 Start and stop with same button		Part No. 44-962.9-72 In action as long as button is operated
	Part No. 44-962.9-74 Engaging (mechanical start)		Part No. 44-962.9-75 Disengaging (mechanical stop)		Part No. 44-962.9-76 Close lock-nut		Part No. 44-962.9-77 Open lock-nut
	Part No. 44-962.9-78 Engage sensor		Part No. 44-962.9-79 Disengage sensor		Part No. 44-962.9-80 Change speed only in stopped position		Part No. 44-962.9-81 Change speed only in motion
	Part No. 44-962.9-91 Shear pin construction		Part No. 44-962.9-92 Danger (high voltage)!		Part No. 44-962.9-93 Caution!		Part No. 44-962.9-94 Main switch
	Part No. 44-962.9-101 Coolant fluid		Part No. 44-962.9-102 Machine lighting		Part No. 44-962.9-103 Weight		Part No. 44-962.9-104 Filter opening
	Part No. 44-962.9-105 Overflow		Part No. 44-962.9-106 Drain		Part No. 44-962.9-107 Oil, lubricant		Part No. 44-962.9-108 Blast
	Part No. 44-962.9-109 Suction						

Suppressor circuits

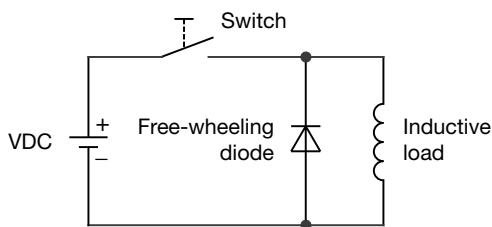
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

Fig. 1 shows an inductive load with a free-wheeling diode connected in parallel. This free-wheeling diode provides a path for the inductor current to flow when the current is interrupted by the switch. Without this free-wheeling diode, the voltage across the coil will be limited only by dielectric breakdown voltages of the circuit or parasitic elements of the coil. This voltage can be kilovolts in amplitude even when nominal circuit voltages are low (e.g. 12VDC) see Fig. 2.

The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (V_R) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current flowing through the load.

To get an efficient protection, the free-wheeling diode must be connected as close as possible to the inductive load!

Switching with inductive load
Fig. 1



Counter EMF
over load without free-wheeling diode
Fig. 2

