

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
- Double pushbutton
- Illuminated pushbutton
- E-STOP switch
- Stop switch
- Mushroom-head pushbutton
- Keylock switch
- Selector switch

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	4
Pushbutton	5
Illuminated pushbutton	7
Keylock switch	9
Selector switch	11

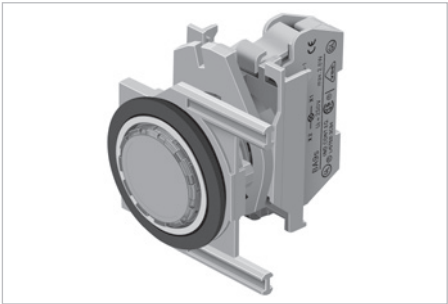
Raised design

Indicator	14
Pushbutton	15
Double pushbutton	17
Illuminated pushbutton	18
Emergency-stop switch	20
Stop switch	21
Mushroom-head pushbutton	22
Keylock switch	23
Selector switch	24

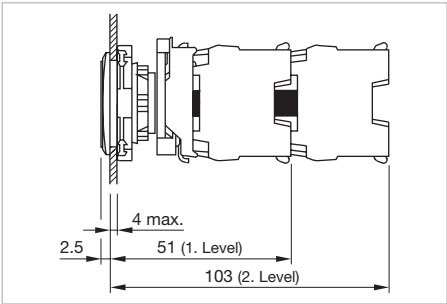
Accessories **26****Drawings** **40****Technical data** **41****Marking** **43****Application guidelines** **44****Index** **45**

44 Flush design

Indicator front illumination, IP 65



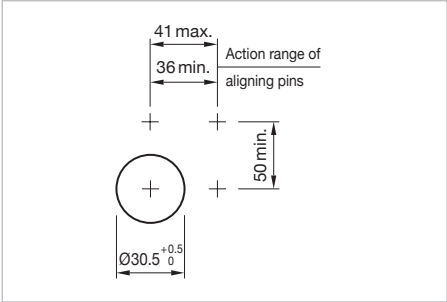
Product can differ from the current configuration.



Dimensions [mm]

Additional Information

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



Mounting cut-outs [mm]

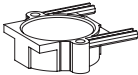
Equipment consisting of (schematic overview)

**Lens cap**

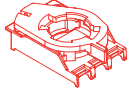
**Marking plate**

**Actuator**

**Front bezel set** *page 27*

**Press frame**

**Fixing nut**

**Front adapter** *page 32*

**LED** *page 37*

**Lamp element** *page 34*

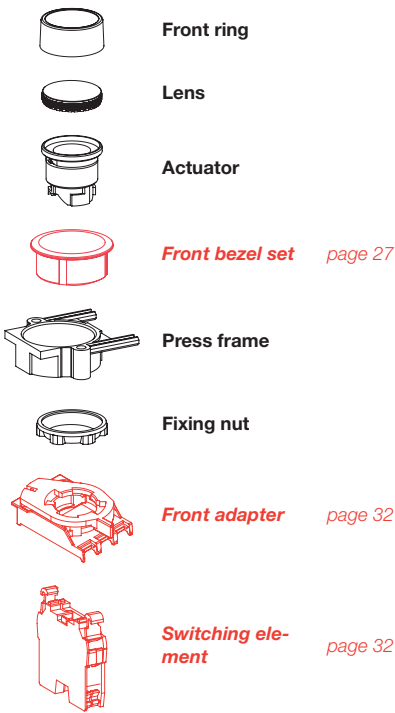
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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 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 red	44-751.22	0.007 kg
		Plastic yellow	44-751.24	0.007 kg
		Plastic green	44-751.25	0.007 kg

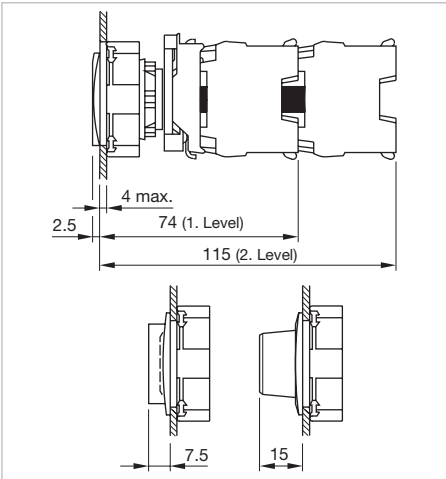
Pushbutton, IP 65

Equipment consisting of (schematic overview)

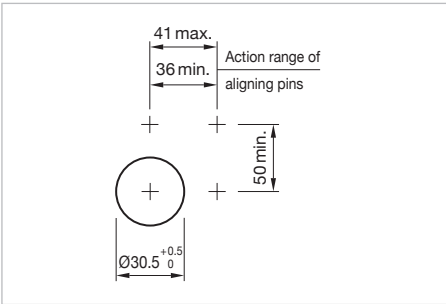


Each Part Number listed below includes all the black components shown in the 3D-drawing.

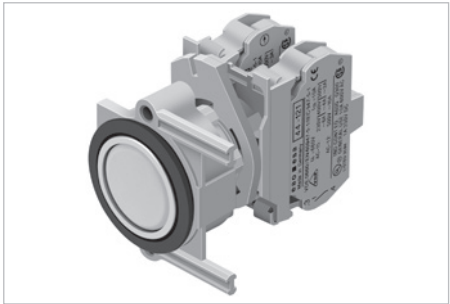
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

Additional Information

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

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 white	B	44-701.29	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 green	C	44-702.65	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

44 Flush design

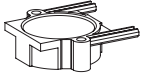
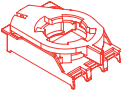
Mounting type	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
level with bezel	Plastic matt chrome	Plastic green	C	44-702.25	2	0.013 kg
		Plastic blue	C	44-702.26	2	0.013 kg
		Plastic white	C	44-702.29	2	0.013 kg

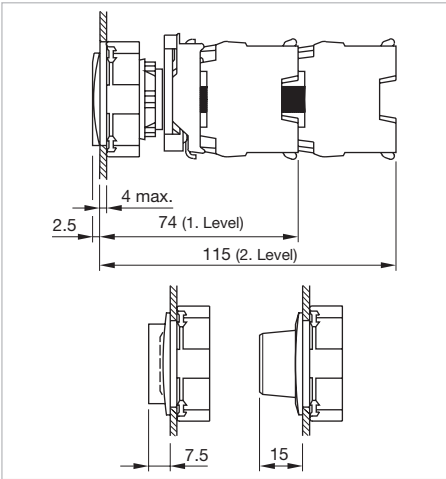
Switching action: B = Momentary, C = Maintain

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

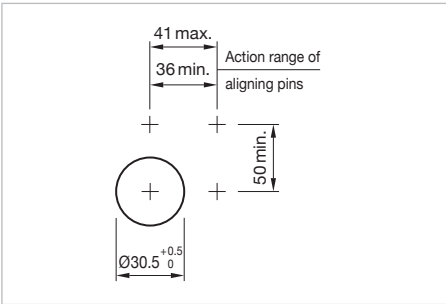
Illuminated pushbutton, IP 65

Equipment consisting of (schematic overview)

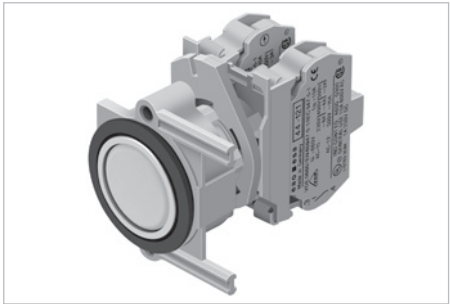
- **Front ring**
- **Lens**
- **Marking plate**
- **Actuator**
- **Front bezel set** *page 27*
- **Press frame**
- **Fixing nut**
- **Front adapter** *page 32*
- **LED** *page 37*
- **Lamp element** *page 34*
- **Switching element** *page 32*



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

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

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

44 Flush design

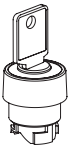
Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
Plastic matt grey	Plastic red	C	44-747.62	2	0.012 kg
	Plastic yellow	C	44-747.64	2	0.012 kg
	Plastic green	C	44-747.65	2	0.012 kg
	Plastic blue	C	44-747.66	2	0.012 kg
	Plastic white	C	44-747.69	2	0.012 kg
Plastic matt chrome	Plastic red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

Keylock switch 2 positions, IP 65

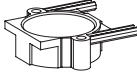
Equipment consisting of (schematic overview)



Actuator



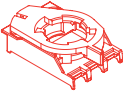
Front bezel set *page 27*



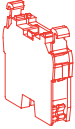
Press frame



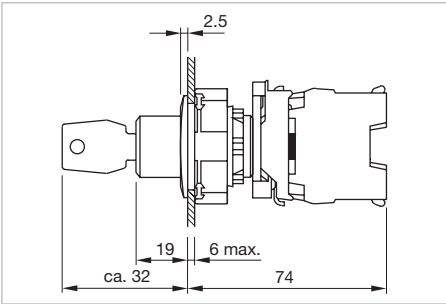
Fixing nut



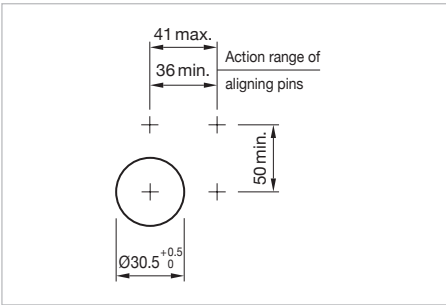
Front adapter *page 32*



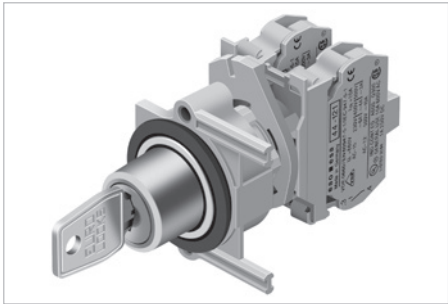
Switching element *page 32*



Dimensions [mm]



Mounting cut-outs [mm]



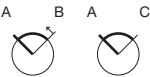
Product can differ from the current configuration.

Additional Information

- For front dimensions 36 x 36 mm, Ø 36 mm
- Standard lock: Euro-Locks 9500
- Two keys are supplied with each key lock switch
- Up to 3 switching elements at 1. level with maintained action

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.

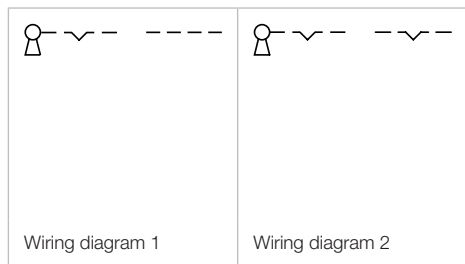


Switching positions (A = Rest, B = Momentary, C = Maintained)

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

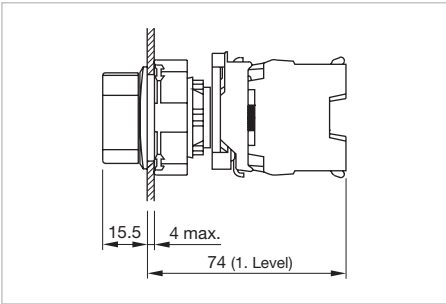
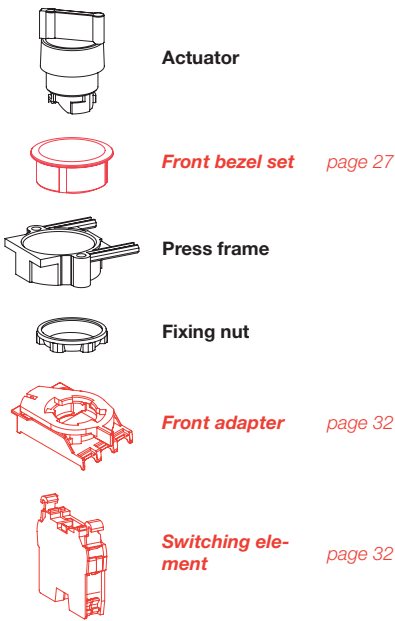
Switching positions: A = Rest, B = Momentary, C = Maintained
The component layouts you will find from page 40

44 Flush design

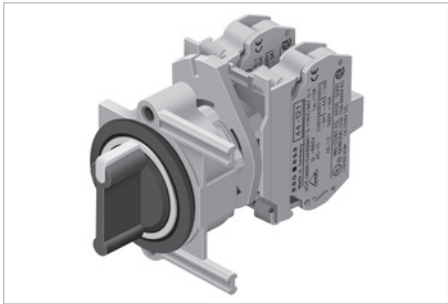


Selector switch 2 positions, IP 65

Equipment consisting of (schematic overview)



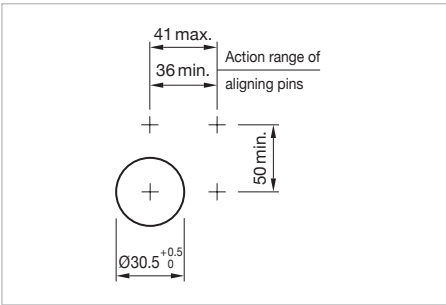
Dimensions [mm]



Product can differ from the current configuration.

Additional Information

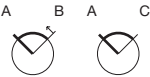
- For front dimensions 36 x 36 mm, Ø 36 mm
- Up to 3 switching elements at 1. level



Mounting cut-outs [mm]

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

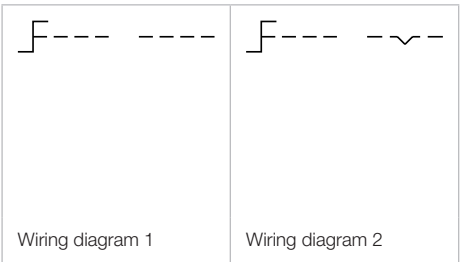
To obtain a complete unit, please select the red components from the pages shown.



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

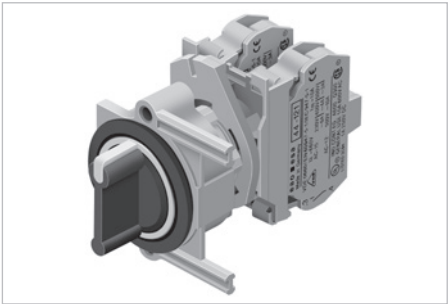
Lever	Front ring	Switching action	Switching angle	Part No.	Compo- nent layout	Wiring diagram	Weight
 Selector switch actuator 2 positions							
Plastic black	Plastic matt chrome	A - B	B = 90°	44-722.20	1	1	0.021 kg
Plastic grey	Plastic matt grey	A - B	B = 90°	44-722.68	1	1	0.021 kg
Plastic black	Plastic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

Switching positions: A = Rest, B = Momentary, C = Maintained
The component layouts you will find from page 40

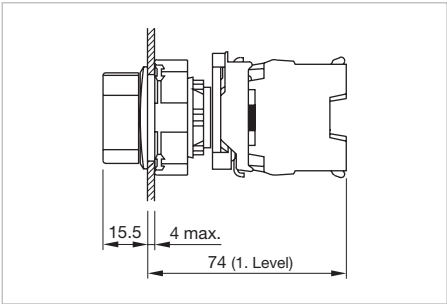


44 Flush design

Selector switch 3 positions, IP 65

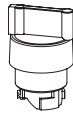


Product can differ from the current configuration.

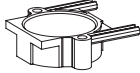


Dimensions [mm]

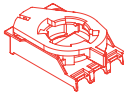
Equipment consisting of (schematic overview)

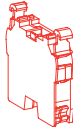
**Actuator**

**Front bezel set** *page 27*

**Press frame**

**Fixing nut**

**Front adapter** *page 32*

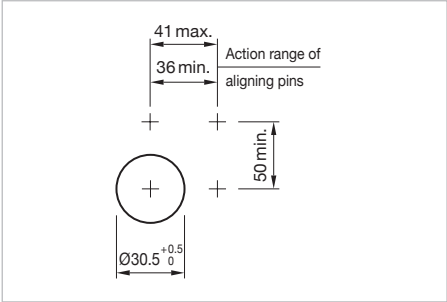
**Switching element** *page 32*

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

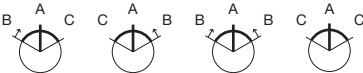
To obtain a complete unit, please select the red components from the pages shown.

Additional Information

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



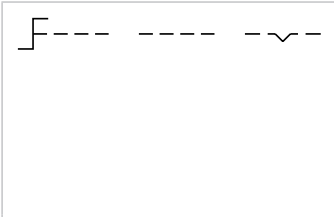
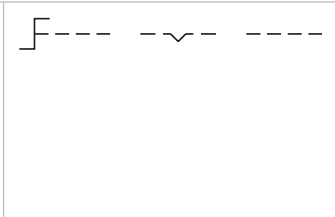
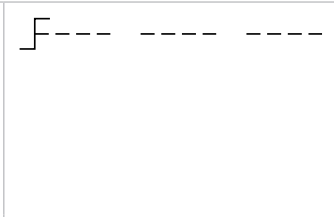
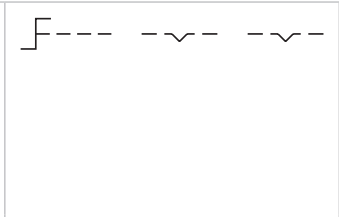
Mounting cut-outs [mm]



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

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

Switching positions: A = Rest, B = Momentary, C = Maintained
The component layouts you will find from page 40

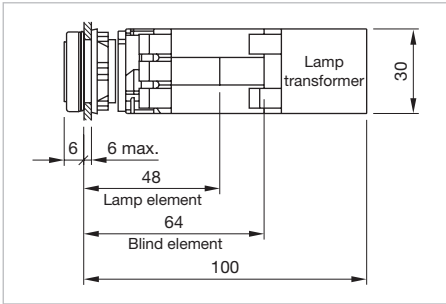
			
Wiring diagram 1	Wiring diagram 2	Wiring diagram 3	Wiring diagram 4

44 Raised design

Indicator front illumination, IP 65



Product can differ from the current configuration.



Dimensions [mm]

Equipment consisting of (schematic overview)

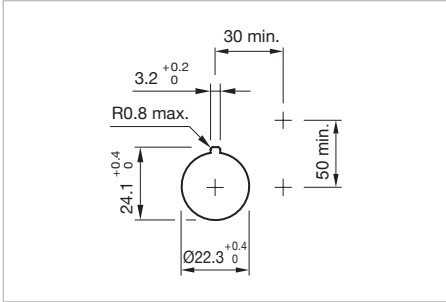
	Lens cap	
	Marking plate	
	Actuator	
	Fixing nut	
	Front adapter	page 32
	LED	page 37
	Lamp element	page 34

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

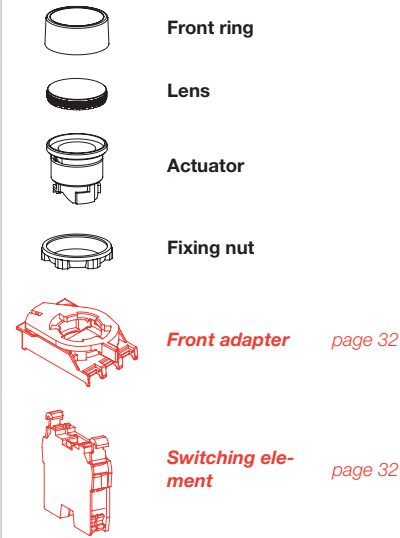


Mounting cut-outs [mm]

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

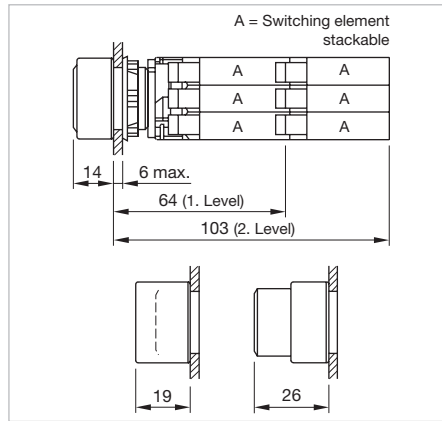
Pushbutton, IP 65

Equipment consisting of (schematic overview)

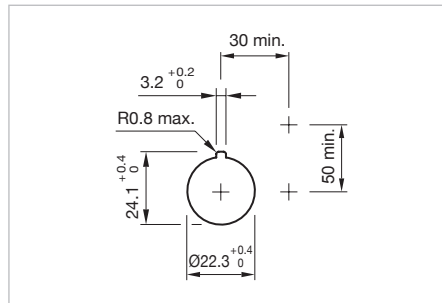


Each Part Number listed below includes all the black components shown in the 3D-drawing.

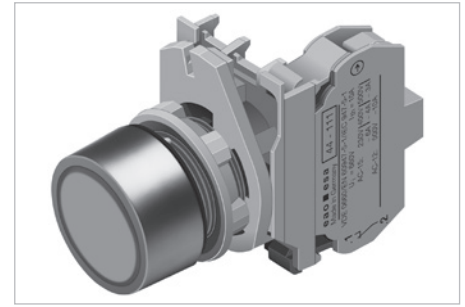
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

Additional Information

- Non-markable
- Up to 3 switching elements with maintain action

Mounting type	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
 Pushbutton actuator, Front dimension Ø 28 mm	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 green	C	44-702.65	2	0.013 kg

44 Raised design

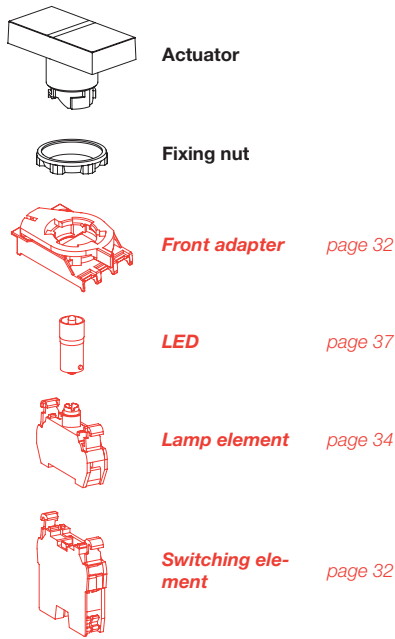
Mounting type	Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
level with bezel	Plastic matt grey	Plastic blue	C	44-702.66	2	0.013 kg
	Plastic matt grey	Plastic white	C	44-702.65	2	0.013 kg

Switching action: B = Momentary, C = Maintain

	
Wiring diagram 1	Wiring diagram 2

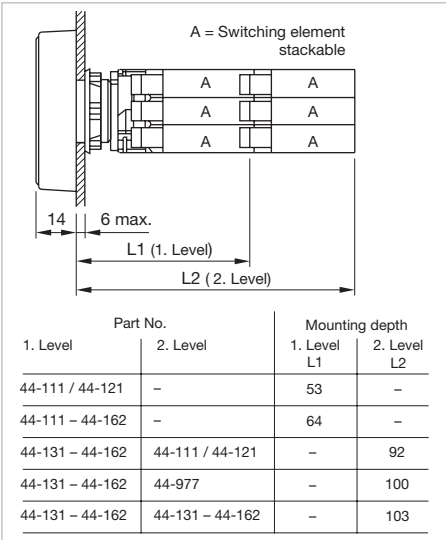
Double pushbutton, IP 65

Equipment consisting of (schematic overview)

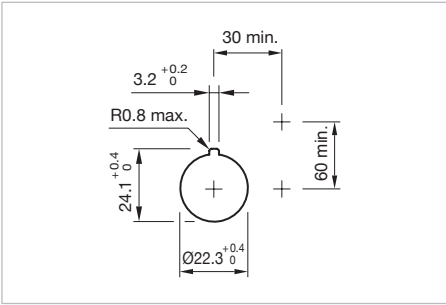


Each Part Number listed below includes all the black components shown in the 3D-drawing.

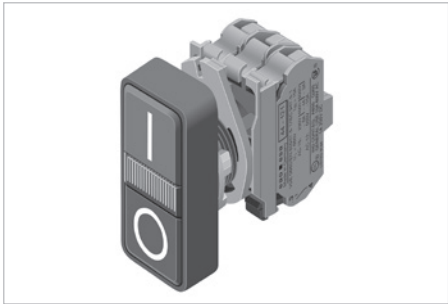
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

Additional Information

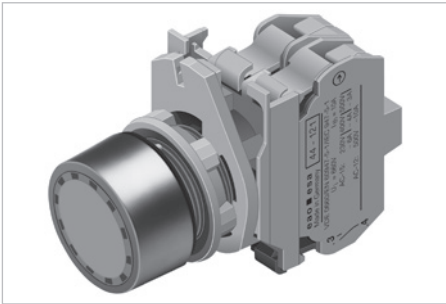
- With illuminative centre window

Front bezel	Lens	Marking	Switching action	Part No.	Component layout	Weight
 Double pushbutton actuator, Front dimension 29.5 x 56 mm						
Plastic matt chrome	Plastic green-red	–	B	44-770.2	3	0.018 kg
	Plastic green-red	I - 0	B	44-771.2	3	0.018 kg

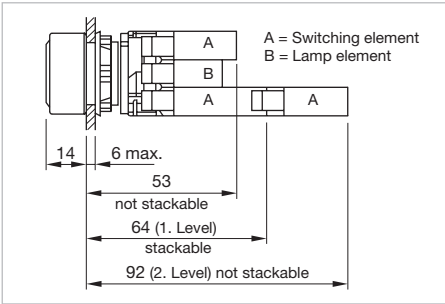
Switching action: B = Momentary
The component layouts you will find from page 40

44 Raised design

Illuminated pushbutton, IP 65

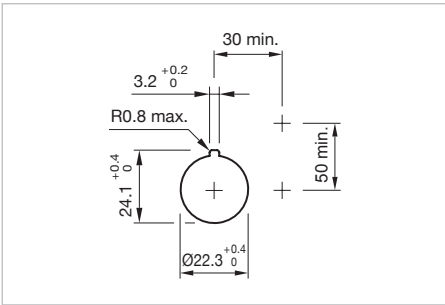


Product can differ from the current configuration.



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 32](#)
- LED** [page 37](#)
- Lamp element** [page 34](#)
- Switching element** [page 32](#)

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
	Plastic white	C	44-747.69	2	0.012 kg
Plastic matt chrome	Plastic red	C	44-747.22	2	0.012 kg

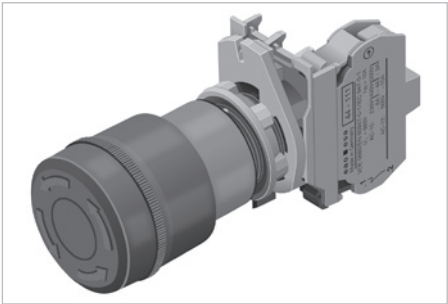
Front ring	Lens	Switching action	Part No.	Wiring diagram	Weight
Plastic matt chrome	Plastic yellow	C	44-747.24	2	0.012 kg
	Plastic green	C	44-747.25	2	0.012 kg
	Plastic blue	C	44-747.26	2	0.012 kg
	Plastic white	C	44-747.29	2	0.012 kg

Switching action: B = Momentary, C = Maintain

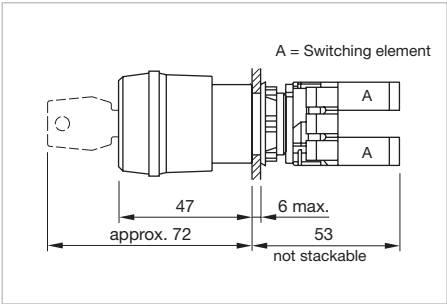
E---	E~--
Wiring diagram 1	Wiring diagram 2

44 Raised design

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

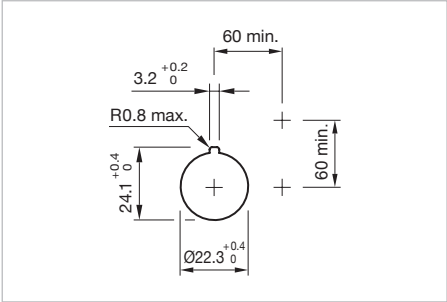


Product can differ from the current configuration.



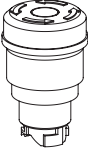
Dimensions [mm]

- Additional Information**
- Application as per DIN EN ISO 13850 and EN 60204-1
 - Shaft yellow
 - Lock type Euro-Locks 9500
 - Two keys are supplied with each key lock switch
 - Up to 3 switching elements at 1. level

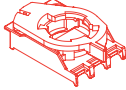


Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

**Actuator**

**Fixing nut**

**Front adapter** *page 32*

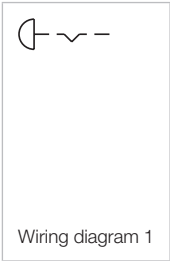
**Switching element** *page 32*

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.

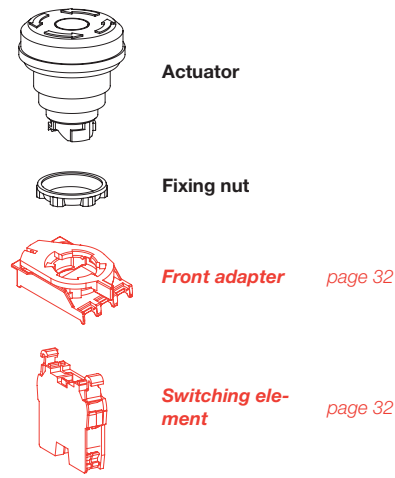
Product attribute	Lens	Switching action	Part No.	Wiring diagram	Weight
 Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 37 mm					
Twist to unlock anti-clockwise	Plastic red	C	44-712	1	0.040 kg
 Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension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

Switching action: C = Maintain



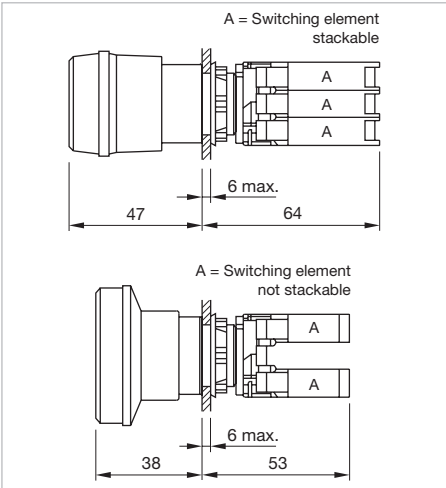
Stop switch, IP 65

Equipment consisting of (schematic overview)

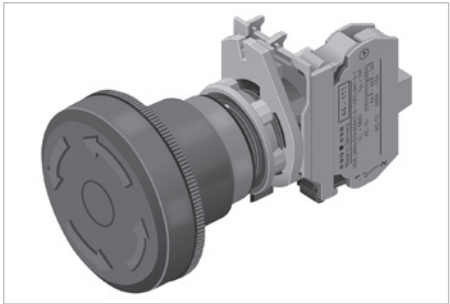


Each Part Number listed below includes all the black components shown in the 3D-drawing.

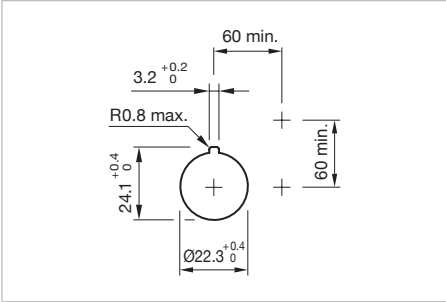
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



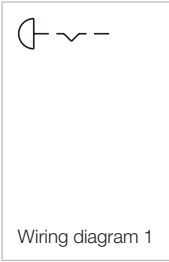
Mounting cut-outs [mm]

Additional Information

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

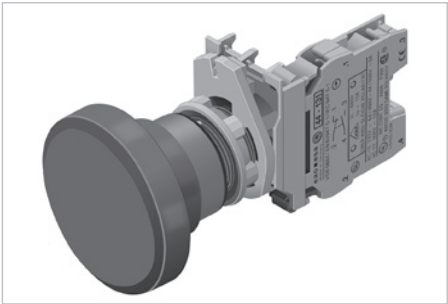
Lens	Switching action	Part No.	Wiring diagram	Weight
 Stop switch actuator, Front dimension Ø 50 mm				
Plastic red	C	44-710	1	0.040 kg
 Stop switch actuator, Front dimension Ø 37 mm				
Plastic red	C	44-711	1	0.035 kg

Switching action: C = Maintain

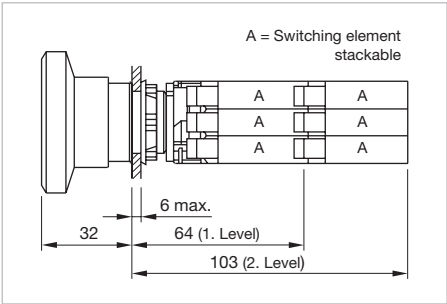


44 Raised design

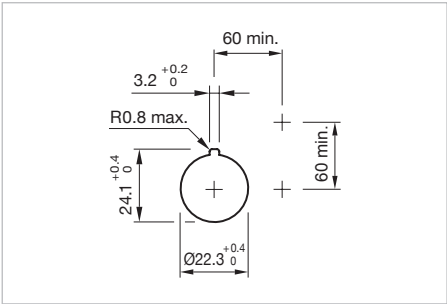
Mushroom-head pushbutton, IP 65



Product can differ from the current configuration.

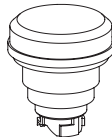


Dimensions [mm]

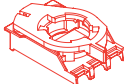


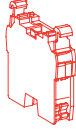
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

**Actuator**

**Fixing nut**

**Front adapter** *page 32*

**Switching element** *page 32*

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
 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

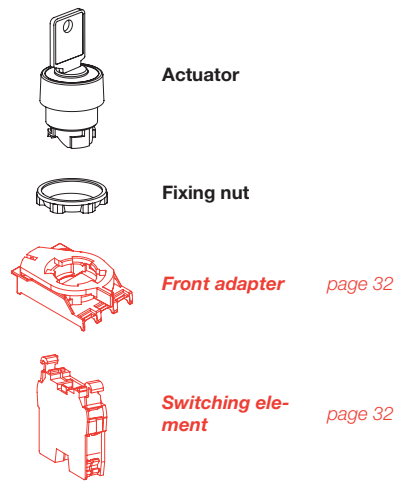
Switching positions B = Momentary

E----

Wiring diagram 1

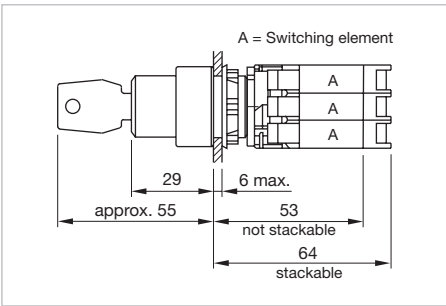
Keylock switch 2 positions, IP 65

Equipment consisting of (schematic overview)

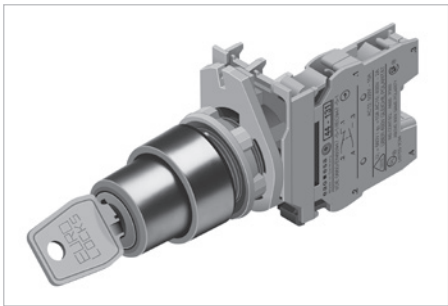


Each Part Number listed below includes all the black components shown in the 3D-drawing.

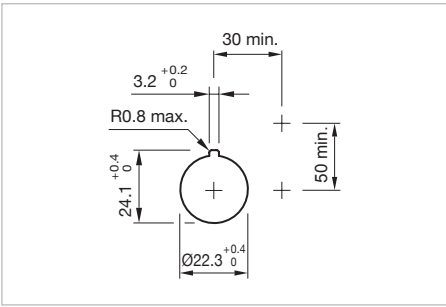
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



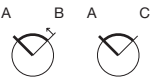
Product can differ from the current configuration.



Mounting cut-outs [mm]

Additional Information

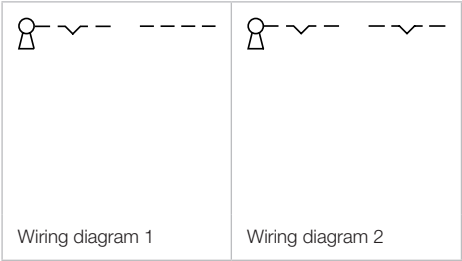
- Standard lock: Euro-Locks 9500
- Two keys are supplied with each key lock switch
- Up to 3 switching elements at 1. level



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

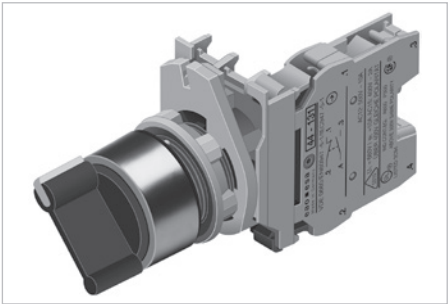
Front ring	Switching action	Switching angle	Key remove	Part No.	Component layout	Wiring diagram	Weight
 Keylock switch actuator 2 positions, Front dimension Ø 28 mm							
Plastic matt chrome	A - B	B = 90°	A	44-732.21	1	1	0.051 kg
Plastic matt grey	A - B	B = 90°	A	44-732.61	1	1	0.051 kg
Plastic matt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

Switching positions: A = Rest, B = Momentary, C = Maintained

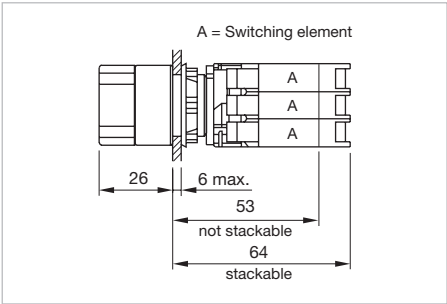


44 Raised design

Selector switch 2 positions, IP 65

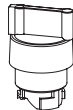


Product can differ from the current configuration.

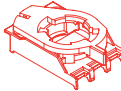


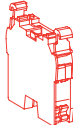
Dimensions [mm]

Equipment consisting of (schematic overview)

**Actuator**

**Fixing nut**

**Front adapter** *page 32*

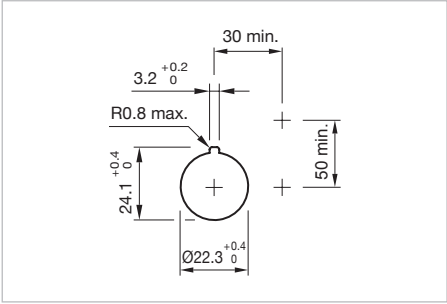
**Switching element** *page 32*

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

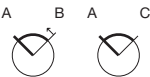
To obtain a complete unit, please select the red components from the pages shown.

Additional Information

- Up to 3 switching elements at 1. level



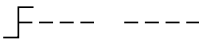
Mounting cut-outs [mm]

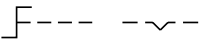


Switching positions (A = Rest, B = Momentary, C = Maintained)

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	1	1	0.021 kg
Plastic grey	Plastic matt grey	A - B	B = 90°	44-722.68	1	1	0.021 kg
Plastic black	Plastic matt chrome	A - C	C = 90°	44-720.20	1	2	0.021 kg
Plastic red	Plastic matt chrome	A - C	C = 90°	44-720.22	1	2	0.021 kg
	Plastic matt grey	A - C	C = 90°	44-720.62	1	2	0.021 kg
Plastic grey	Plastic matt grey	A - C	C = 90°	44-720.68	1	2	0.021 kg

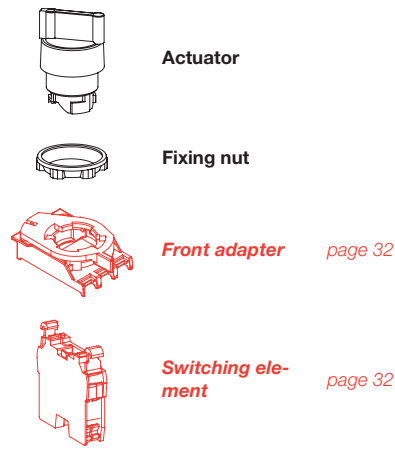
Switching positions: A = Rest, B = Momentary, C = Maintained
The component layouts you will find from page 40


Wiring diagram 1


Wiring diagram 2

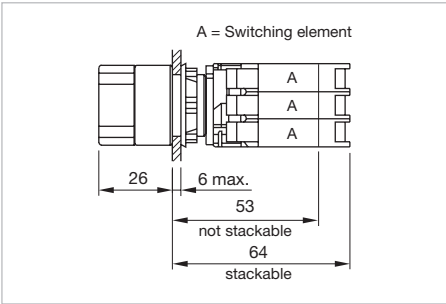
Selector switch 3 positions, IP 65

Equipment consisting of (schematic overview)

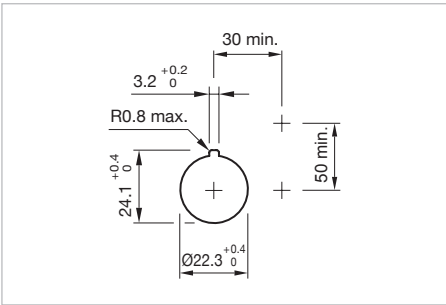


Each Part Number listed below includes all the black components shown in the 3D-drawing.

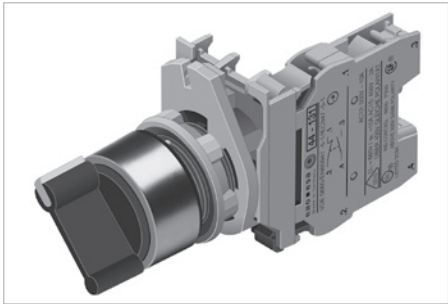
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



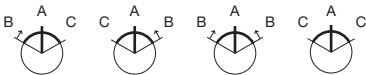
Mounting cut-outs [mm]



Product can differ from the current configuration.

Additional Information

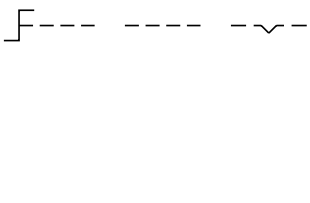
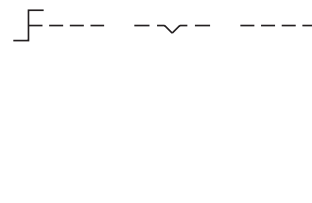
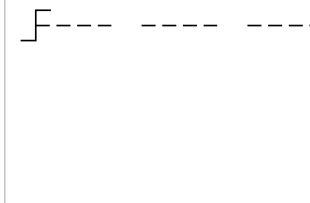
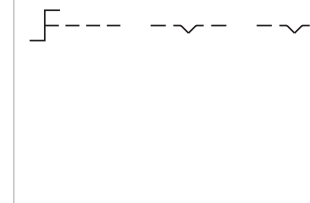
- Up to 3 switching elements at 1. level



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 3 positions, Front dimension Ø 28 mm							
Plastic black	Plastic matt chrome	B - A - C	B = 60°, C = 60°	44-727.20	2	1	0.021 kg
		C - A - B	C = 60°, B = 60°	44-726.20	2	2	0.021 kg
Plastic grey	Plastic matt grey	C - A - B	C = 60°, B = 60°	44-726.68	2	2	0.021 kg
Plastic black	Plastic matt chrome	B - A - B	B = 60° / 60°	44-725.20	2	3	0.021 kg
Plastic grey	Plastic matt grey	B - A - B	B = 60° / 60°	44-725.68	2	3	0.021 kg
Plastic black	Plastic matt chrome	C - A - C	C = 60° / 60°	44-724.20	2	4	0.021 kg
Plastic grey	Plastic matt grey	C - A - C	C = 60° / 60°	44-724.68	2	4	0.021 kg

Switching positions: A = Rest, B = Momentary, C = Maintained
The component layouts you will find from page 40

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

44 Accessories

Front

Lens

Additional Information

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

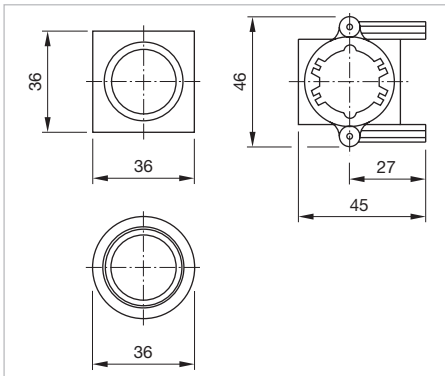
Dimension	Lens	Part No.	Weight	
 Lens				
	Ø 23 mm	Plastic red transparent	44-966.2	0.001 kg
	Ø 23 mm	Plastic yellow transparent	44-966.4	0.001 kg
	Ø 23 mm	Plastic green transparent	44-966.5	0.001 kg
	Ø 23 mm	Plastic blue transparent	44-966.6	0.001 kg
	Ø 23 mm	Plastic colourless transparent	44-966.7	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 indicator and illuminated pushbutton with front illumination und pushbutton markable	white translucent	44-962.9	0.001 kg

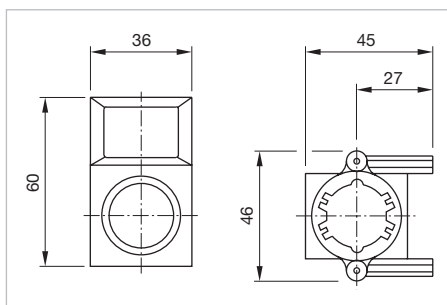
Front bezel set without legend support, flush design

Dimensions [mm]

Product attribute	Mounting cut-out	Front bezel	Part No.	Weight
 Front bezel set without legend support, flush design square, 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 round, 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

44 Accessories

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 rectangular, 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

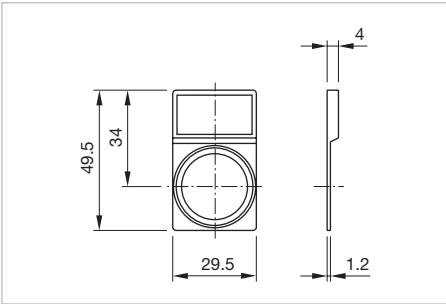
Additional Information

- 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	self-adhesive	44-946	0.001 kg

Legend support without legend

- Additional Information**
- Label to be ordered separatly Part No. 44-960
 - Remove sealing ring from actuator

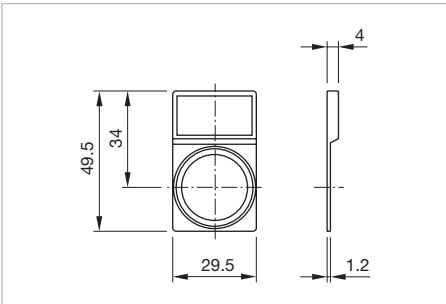


Dimensions [mm]

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

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				
29.5 x 49.5 mm	Plastic	black	44-945.00	0.002 kg
29.5 x 49.5 mm	Plastic	grey	44-945.08	0.002 kg

44 Accessories

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				
13 x 26 mm	Aluminium	black anodized	44-960	0.001 kg

Front ring

Additional Information

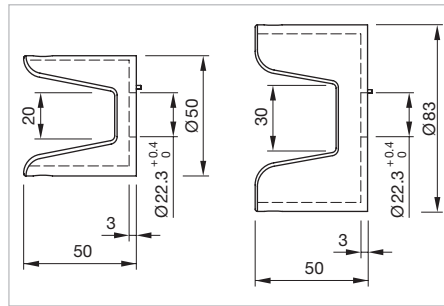
- For illuminated pushbutton- and pushbutton actuator

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

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

Spare key

Additional Information

- Standard lock: Euro-Locks 9500

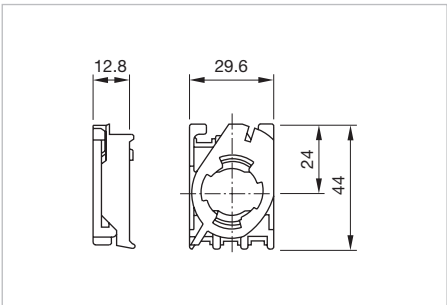
Part No.	Weight
 Spare key	
44-919	0.007 kg

Rear side

Front adapter front mounting

Additional Information

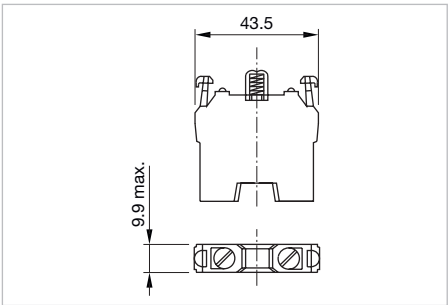
- Front adaptor marking: Terminal marking and distinctive number as per DIN EN 50013. The operating characters are marked on the switching elements beside the screw terminals



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

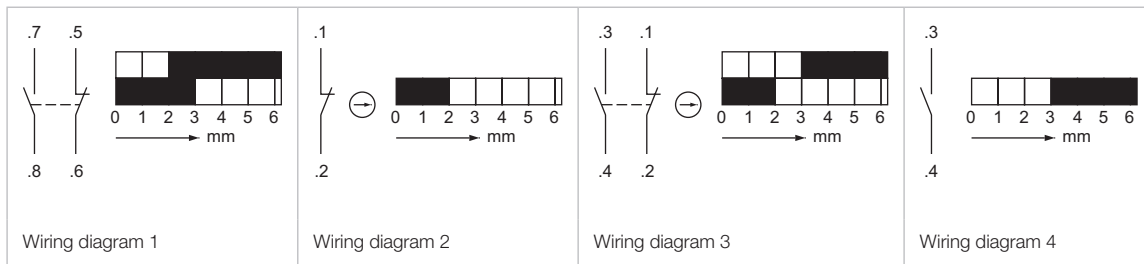


Dimensions [mm]

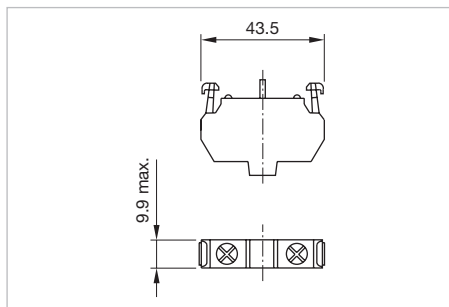
Product attribute	Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram	Weight
 Slow-make switching element front mounting stackable								
overlapping, not to use with EMERGENCY-STOP switch	500 VAC	10 A	1 NC + 1 NO	Silver	Screw	44-141	1	0.017 kg
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NC + 1 NO	Silver	Screw	44-131	3	0.017 kg
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NC + 1 NO	Gold	Screw	44-132	3	0.017 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	Silver	Screw	44-151	2	0.014 kg
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NC	Gold	Screw	44-152	2	0.014 kg
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NO	Silver	Screw	44-161	4	0.014 kg
Forced opening as per EN IEC 947-5-1	500 VAC	10 A	1 NO	Gold	Screw	44-162	4	0.014 kg

Contacts: NC = Normally closed, NO = Normally open



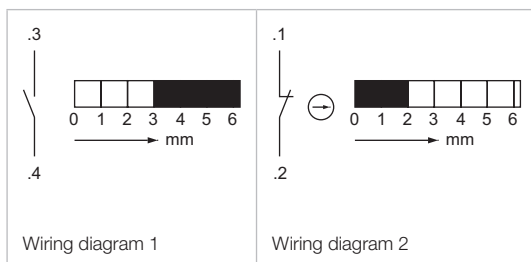
Slow make element non-stackable



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

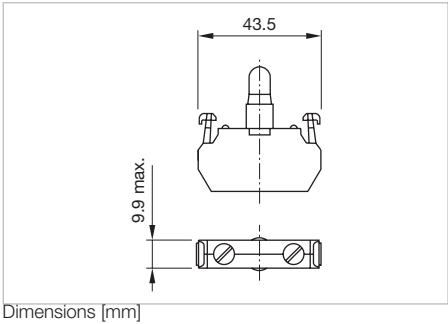
Contacts: NC = Normally closed, NO = Normally open



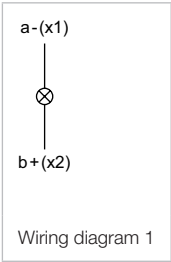
Lamp element front mounting

Additional Information

- Lamp socket BA9s, max. 2.6 W



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

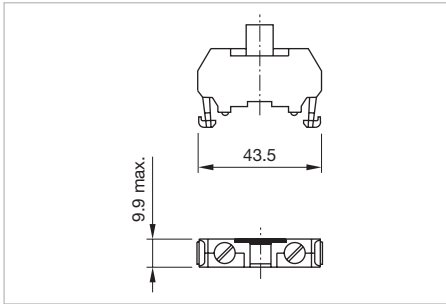


Base adaptor

Additional Information

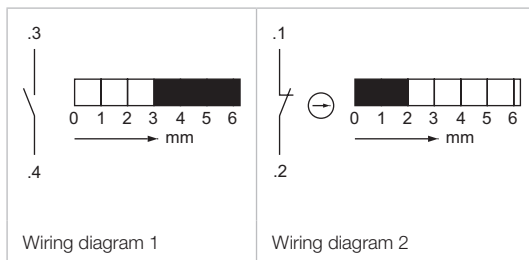
- Front adaptor marking: Terminal marking and distinctive number as per DIN EN 50013. The operating characters are marked on the switching elements beside the screw terminals

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

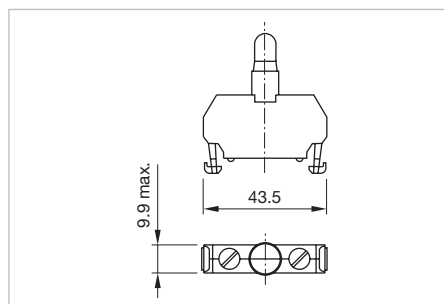
Slow-make element base mounting

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**

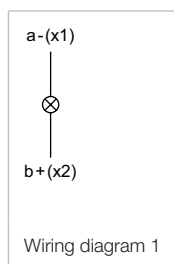
- Lamp socket BA9s, max. 2.6 W



Dimensions [mm]

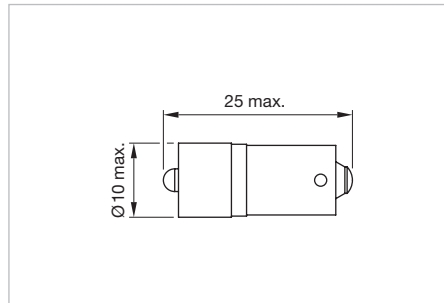
Terminal	Part No.	Wiring diagram	Weight
 Lamp base mounting			
Screw	44-525	1	0.011 kg

44 Accessories



Illumination**LED, BA9s****Additional Information**

- The specified 6 VDC, 24 VDC Bi-colour; 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
- 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
- If the 24VDC Bi-colour lamp is driven with normal polarity (plus on middle contact of the lamp) the first mentioned colour will light up, with inverted polarity the second colour will light up
- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination



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
 Bi-colour LED						
red/green	2424 V VDC +10 %	1515 mA ±15 %	1200/900 mcd	625/525 nm	10-2H12.314A	0.002kg
red/yellow	2424 V VDC +10 %	1515 mA ±15 %	1200/550 mcd	625/589 nm	10-2H12.314B	0.002kg
yellow/green	2424 V VDC +10 %	1515 mA ±15 %	900/550 mcd	525/589 nm	10-2H12.314C	0.002kg

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			
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
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

Mounting

Mounting tool

- Additional Information**
- For fixing nut, transparent lens, lens caps and illumination

Part No.		Weight
 Mounting tool		
44-935		0.037 kg

Drawings

Arrangement switching element
correspondens 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 1

Arrangement switching element
correspondens to
designation of front adaptor

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

I
Switching function O
2 x 60° II

Switching element
actuated

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

Component layout 2

Arrangement switching element
correspondens to
designation of front adaptor

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

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

Switching element
actuated

Component layout 3

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 ≤ 5 N
Illuminated pushbutton actuator ≤ 10 N
Stop pushbutton actuator ≤ 20 N
Emergency-stop pushbutton actuator foolproof ≤ 70 N
Double pushbutton ≤ 12 N per contact surface

Actuating travel

approx. 6 mm

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 m Ω

Electrical life

AC-15
400 V, ~2 A, 1 x 10⁶ 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-proofed

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 protec-

44 Technical data

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 68-2-26

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

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.

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

 EIN Part-Nr. 44-962.9-T5	 AUS Part-Nr. 44-962.9-T6		
--	--	--	--

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. 44-962.9-69 Start, on	 Part No. 44-962.9-70 Stop, off	 Part No. 44-962.9-68 Automatic (or semi-automatic) cycle	 Part No. 44-962.9-68 Hand control
--	--	---	---

44 Application guidelines

Suppressor circuits

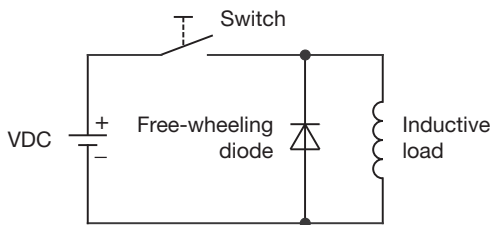
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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.

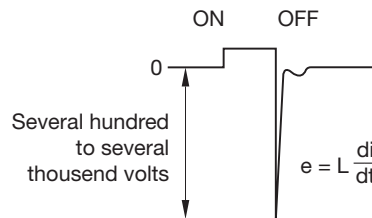
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (V_R) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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



Index from Part No.

Part No.	Page	Part No.	Page	Part No.	Page	Part No.	Page
10-1409.1329	38	44-701.62	15	44-746.25	7	44-966.6	26
10-1412.1279	38	44-701.64	5	44-746.25	18	44-966.7	26
10-1416.1289	38	44-701.64	15	44-746.26	7	44-967.2	30
10-1420.1219	38	44-701.65	5	44-746.26	18	704.927.8	31
10-1422.1179	38	44-701.65	15	44-746.29	7	704.927.9	31
10-1424.1179	38	44-701.66	5	44-746.29	18		
10-2506.1082	37	44-701.66	15	44-746.62	7		
10-2506.1084	37	44-701.69	5	44-746.62	18		
10-2506.1085	37	44-701.69	15	44-746.64	7		
10-2506.1086	38	44-702.20	5	44-746.64	18		
10-2506.1089	38	44-702.20	15	44-746.65	7		
10-2509.1142	37	44-702.22	5	44-746.65	18		
10-2509.1144	37	44-702.22	15	44-746.66	7		
10-2509.1145	37	44-702.24	5	44-746.66	18		
10-2509.1146	38	44-702.24	15	44-746.69	7		
10-2509.1149	38	44-702.25	6	44-746.69	18		
10-2512.1142	37	44-702.25	15	44-747.22	8		
10-2512.1144	37	44-702.26	6	44-747.22	18		
10-2512.1145	37	44-702.26	15	44-747.24	8		
10-2512.1146	38	44-702.29	6	44-747.24	19		
10-2512.1149	38	44-702.60	5	44-747.25	8		
10-2513.1142	37	44-702.60	15	44-747.25	19		
10-2513.1144	37	44-702.62	5	44-747.26	8		
10-2513.1145	37	44-702.62	15	44-747.26	19		
10-2513.1146	38	44-702.65	5	44-747.29	8		
10-2513.1149	38	44-702.65	15	44-747.29	19		
10-2519.1052	37	44-702.66	16	44-747.62	8		
10-2519.1054	37	44-702.69	16	44-747.62	18		
10-2519.1055	37	44-707.20	22	44-747.64	8		
10-2519.1056	38	44-707.22	22	44-747.64	18		
10-2519.1059	38	44-707.25	22	44-747.65	8		
10-2524.3042	37	44-710	21	44-747.65	18		
10-2524.3044	37	44-711	21	44-747.66	8		
10-2524.3045	37	44-712	20	44-747.66	18		
10-2524.3046	38	44-713	20	44-747.69	8		
10-2524.3049	38	44-720.20	11	44-747.69	18		
10-2H12.314A	38	44-720.20	24	44-751.22	4		
10-2H12.314B	38	44-720.22	11	44-751.22	14		
10-2H12.314C	38	44-720.22	24	44-751.24	4		
10-2H24.2052	37	44-720.62	11	44-751.24	14		
10-2H24.2054	37	44-720.62	24	44-751.25	4		
10-2H24.2055	37	44-720.68	11	44-751.25	14		
10-2H24.2056	38	44-720.68	24	44-751.62	4		
10-2H24.2059	38	44-722.20	11	44-751.62	14		
10-2H25.2042	37	44-722.20	24	44-751.64	4		
10-2H25.2044	37	44-722.68	11	44-751.64	14		
10-2H25.2045	37	44-722.68	24	44-751.65	4		
10-2H25.2046	38	44-724.20	12	44-751.65	14		
10-2H25.2049	38	44-724.20	25	44-751.66	4		
44-111	33	44-724.68	12	44-751.66	14		
44-121	33	44-724.68	25	44-751.69	4		
44-131	32	44-725.20	12	44-751.69	14		
44-132	32	44-725.20	25	44-770.2	17		
44-141	32	44-725.68	12	44-771.2	17		
44-151	33	44-725.68	25	44-900	32		
44-152	33	44-726.20	12	44-901	32		
44-161	33	44-726.20	25	44-902	32		
44-162	33	44-726.68	12	44-903	32		
44-211	35	44-726.68	25	44-905	34		
44-221	35	44-727.20	12	44-919	31		
44-524	34	44-727.20	25	44-935	39		
44-525	35	44-730.21	9	44-944.00	29		
44-701.20	5	44-730.21	23	44-944.08	29		
44-701.20	15	44-730.22	9	44-945.00	29		
44-701.22	5	44-730.22	23	44-945.08	29		
44-701.22	15	44-730.61	9	44-946	28		
44-701.24	5	44-730.61	23	44-946.01	27		
44-701.24	15	44-730.62	9	44-946.01-A	27		
44-701.25	5	44-730.62	23	44-946.02	28		
44-701.25	15	44-732.21	9	44-946.03	27		
44-701.26	5	44-732.21	23	44-946.03-A	27		
44-701.26	15	44-732.61	9	44-946.04	28		
44-701.29	5	44-732.61	23	44-960	30		
44-701.29	15	44-746.22	7	44-962.9	26		
44-701.60	5	44-746.22	18	44-966.2	26		
44-701.60	15	44-746.24	7	44-966.4	26		
44-701.62	5	44-746.24	18	44-966.5	26		

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

EAO:

[44-525](#) [44-701.29](#) [44-751.23](#) [44-745.20-4K1](#) [44-946.03-A](#) [44-747.26](#) [44-702.20](#) [EUS-44-06552](#) [44.744.20](#)