

# Series 71

## Characteristics

The compact 16mm Series 71 is particularly suited for:

- Flush design
- PCB mounting

The product range includes special switching elements for direct PCB installation.

## Functions

The Series 71 incorporates the following functions:

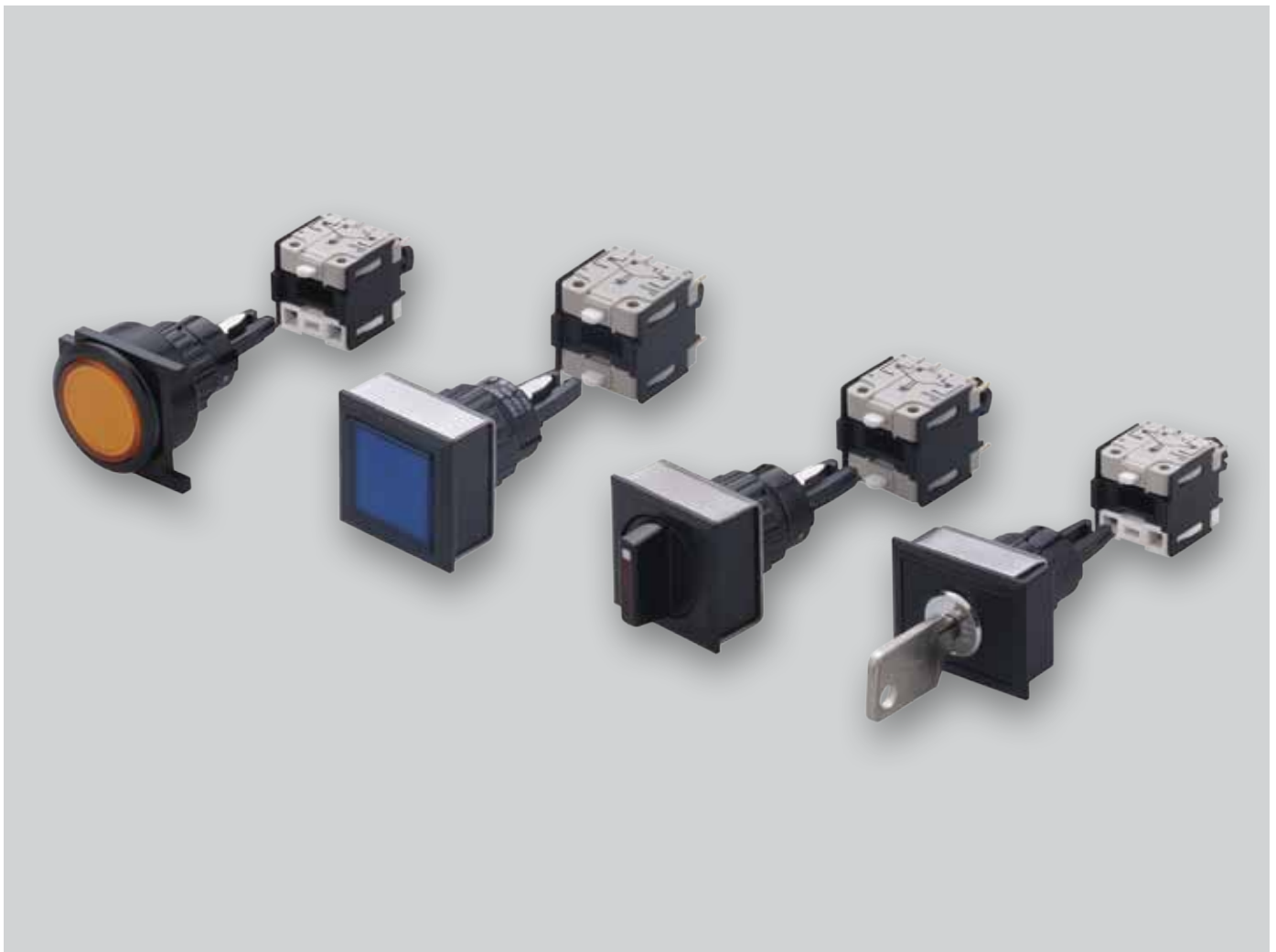
- Indicator
- Pushbutton
- Illuminated pushbutton
- Keylock switch
- Selector switch

## Market segments

The EAO Series 71 is especially suited for applications in the segments:

- Public transportation
- 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](http://www.products.eao.com)  
Configure a product to your exact needs and request a quotation.





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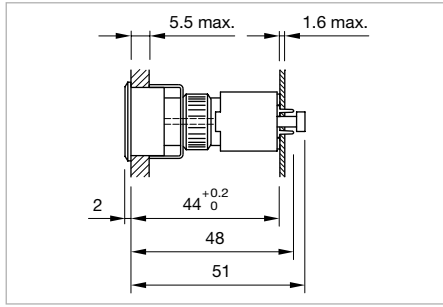
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# 71 Flush design

## Indicator square, IP 65



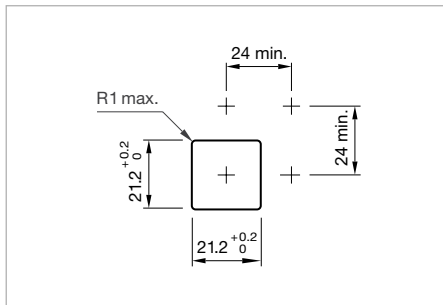
Product can differ from the current configuration.



Dimensions [mm]








### Additional Information

- For front dimension 24 x 24 mm
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes Ø 3.5




Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

	<b>Lens</b>	page 715
	<b>Single-LED</b>	page 730
	<b>Actuator</b>	
	<b>Front bezel set</b>	page 720
	<b>Fixing nut</b>	
	<b>Lamp element</b>	page 727
	<b>Interlocking pin</b>	




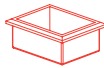



Each Part Number listed below includes all the black components shown in the 3D-drawing.

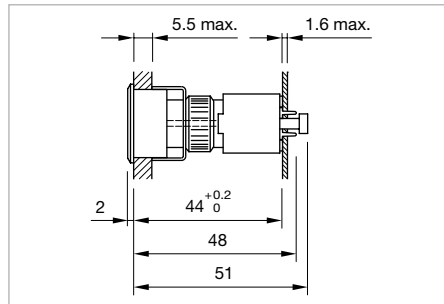
*To obtain a complete unit, please select the red components from the pages shown.*

Part No.	Weight
 <b>Indicator actuator square</b>	
71-600.0	0.005 kg

## Indicator rectangular, IP 65

### Equipment consisting of (schematic overview)

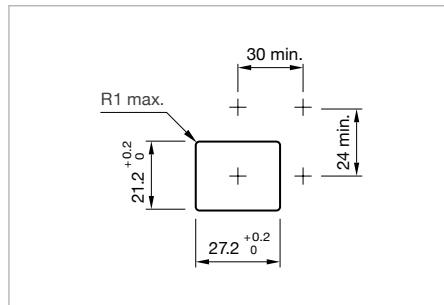
-  **Lens** page 715
-  **Single-LED** page 730
-  **Actuator**
-  **Front bezel set** page 720
-  **Fixing nut**
-  **Lamp element** page 727
-  **Interlocking pin**



Dimensions [mm]



Product can differ from the current configuration.




Mounting cut-outs [mm]

### Additional Information

- For front dimension 24 x 30 mm
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

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.

Part No.	Weight
 <p><b>Indicator actuator rectangular</b></p>	
<b>71-600.0</b>	0.005 kg

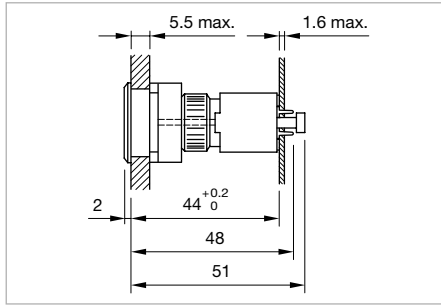
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# 71 Flush design

## Indicator round, IP 65



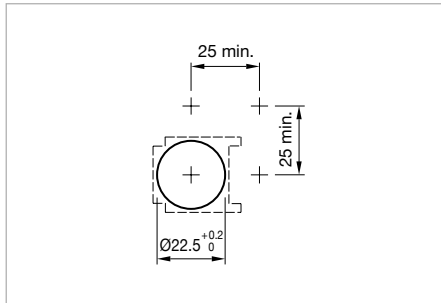
Product can differ from the current configuration.



Dimensions [mm]

### Additional Information

- For front dimension  $\varnothing 25$  mm
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

	<b>Lens</b>	page 715
	<b>Single-LED</b>	page 730
	<b>Actuator</b>	
	<b>Front bezel set</b>	page 720
	<b>Fixing nut</b>	
	<b>Lamp element</b>	page 727
	<b>Interlocking pin</b>	



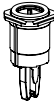


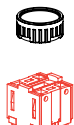

Each Part Number listed below includes all the black components shown in the 3D-drawing.

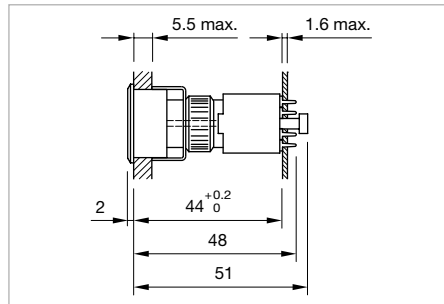
*To obtain a complete unit, please select the red components from the pages shown.*

Part No.	Weight
<p><b>Indicator actuator round</b></p>	
71-600.0	0.005 kg

## Illuminated pushbutton square, IP 65

### Equipment consisting of (schematic overview)

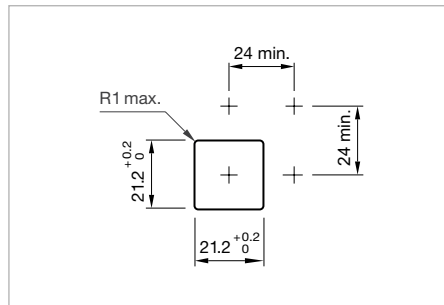
-  **Lens** page 715
-  **Single-LED** page 730
-  **Actuator**
-  **Front bezel set** page 720
-  **Fixing nut**
-  **Switching element** page 727
-  **Interlocking pin**



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### Additional Information

- For front dimension 24 x 24 mm
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

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 action	Part No.	Wiring diagram	Weight
 <p><b>Illuminated pushbutton actuator square</b></p>	B	1	0.005 kg
	C	2	0.005 kg

Switching action: B = Momentary, C = Maintain

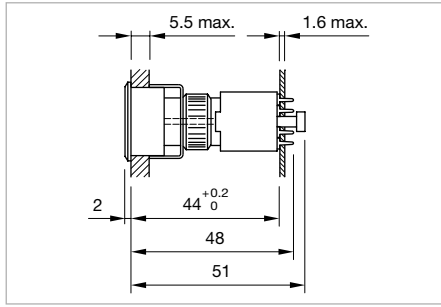
E ---	E ~ ---
Wiring diagram 1	Wiring diagram 2

# 71 Flush design

## Illuminated pushbutton rectangular, IP 65

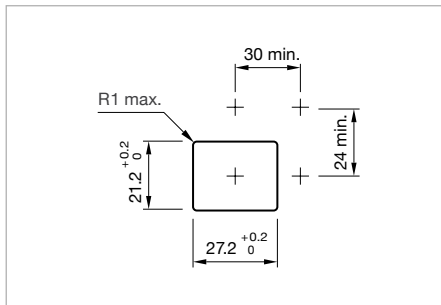


Product can differ from the current configuration.



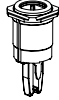
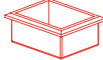





### Additional Information

- For front dimension 24 x 30 mm
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing$  3.5




### Equipment consisting of (schematic overview)



	<b>Lens</b>	page 715
	<b>Single-LED</b>	page 730
	<b>Actuator</b>	
	<b>Front bezel set</b>	page 720
	<b>Fixing nut</b>	
	<b>Switching element</b>	page 727
	<b>Interlocking pin</b>	

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 action	Part No.	Wiring diagram	Weight
 <p><b>Illuminated pushbutton actuator rectangular</b></p>	B	1	0.005 kg
	C	2	0.005 kg

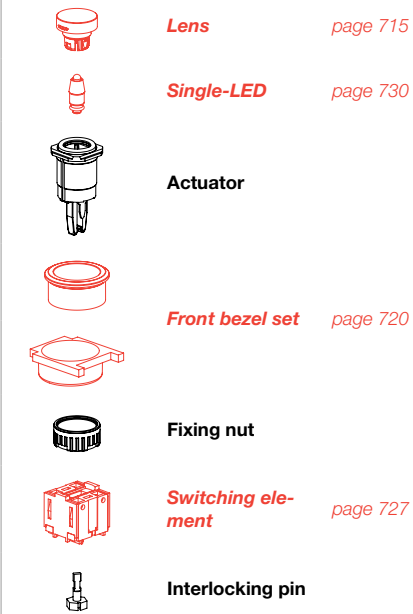
Switching action: B = Momentary, C = Maintain

	
Wiring diagram 1	Wiring diagram 2



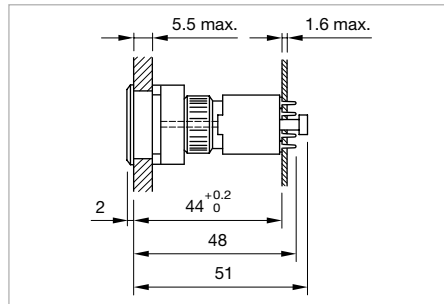
## Illuminated pushbutton round, IP 65

### Equipment consisting of (schematic overview)

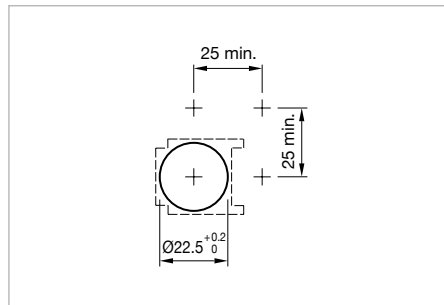


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]




Mounting cut-outs [mm]



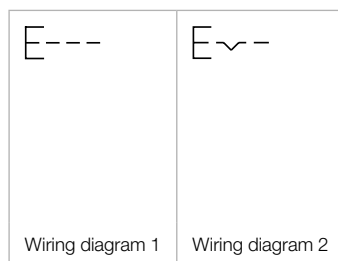
Product can differ from the current configuration.

### Additional Information

- For front dimension  $\varnothing 25$  mm
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

Switching action	Part No.	Wiring diagram	Weight
 <p><b>Illuminated pushbutton actuator round</b></p>			
	B	<b>71-611.0</b>	1
C	<b>71-612.0</b>	2	0.005 kg

Switching action: B = Momentary, C = Maintain

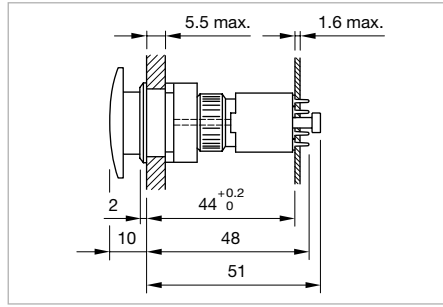


# 71 Flush design

## Mushroom-head pushbutton, IP 65



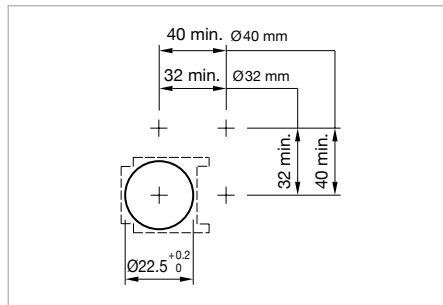
Product can differ from the current configuration.



Dimensions [mm]

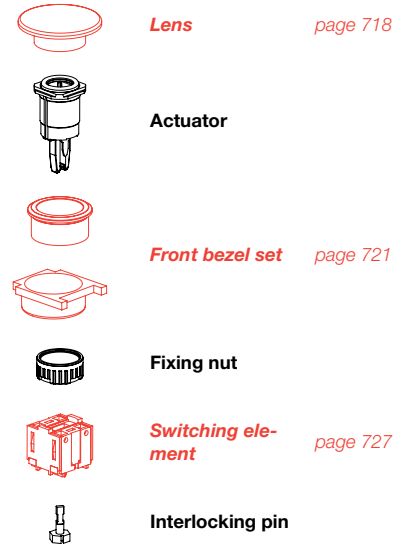
### Additional Information

- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$




Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

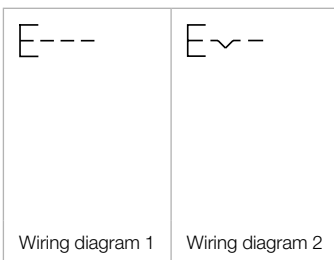


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

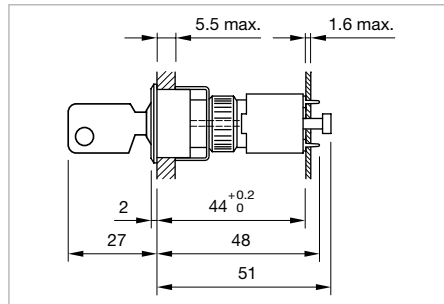
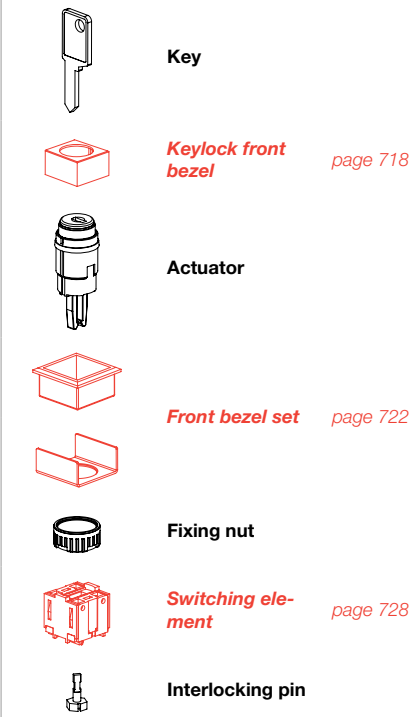
Switching action	Part No.	Wiring diagram	Weight
 <p><b>Mushroom-head pushbutton actuator, Front dimension <math>\varnothing 32</math> mm</b></p>	<b>71-611.0</b>	1	0.005 kg
	<b>71-612.0</b>	2	0.005 kg

Switching action: B = Momentary, C = Maintain

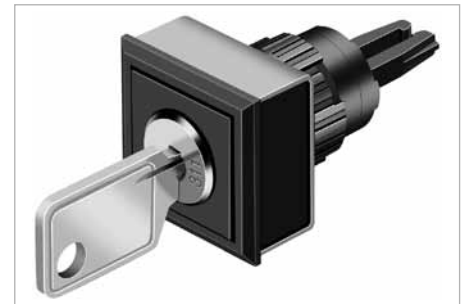


## Keylock switch 2 positions square, IP 65

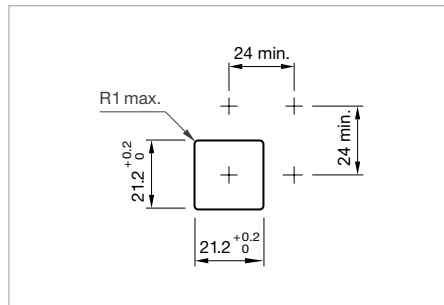
### Equipment consisting of (schematic overview)



Dimensions [mm]



Product can differ from the current configuration.



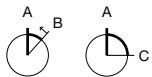
Mounting cut-outs [mm]

### Additional Information


- For front dimension 24 x 24 mm
- The standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

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

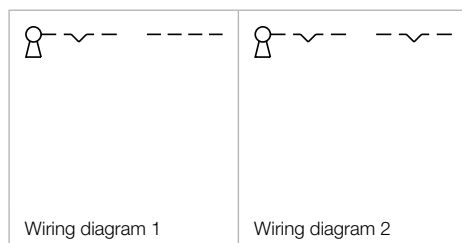
To obtain a complete unit, please select the red components from the pages shown.



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

Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <p><b>Keylock switch actuator 2 positions square</b></p>					
A - B	B = 42°	A	<b>71-621.0/D</b>	1	0.003 kg
A - C	C = 90°	A	<b>71-622.0/D</b>	2	0.003 kg
		C	<b>71-623.0/D</b>	2	0.003 kg
		A + C	<b>71-624.0/D</b>	2	0.003 kg

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

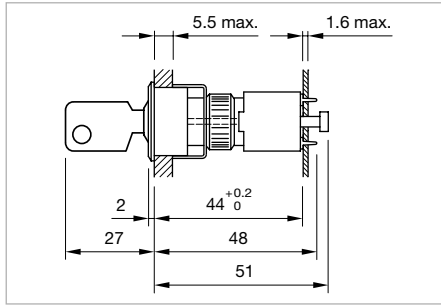


# 71 Flush design

## Keylock switch 2 positions rectangular, IP 65



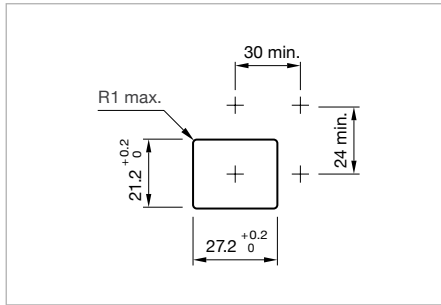
Product can differ from the current configuration.



Dimensions [mm]

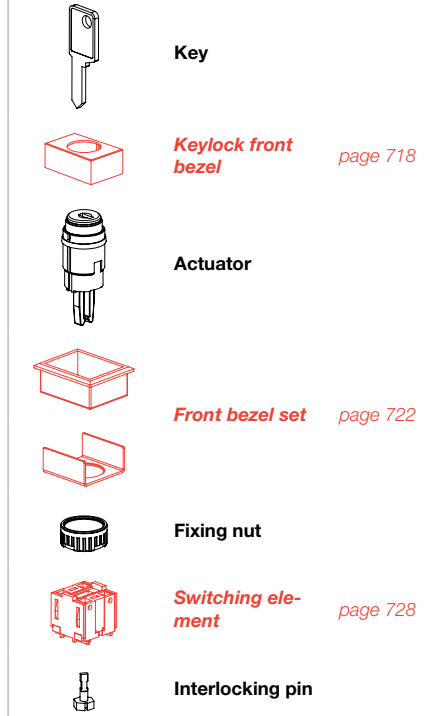
### Additional Information

- For front dimension 24 x 30 mm
- The standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$



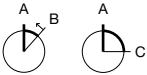
Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)




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

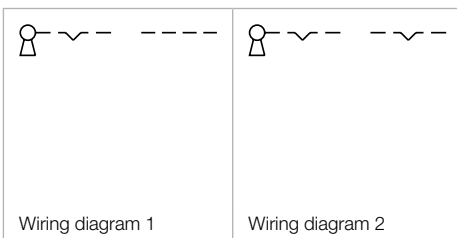
To obtain a complete unit, please select the red components from the pages shown.



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

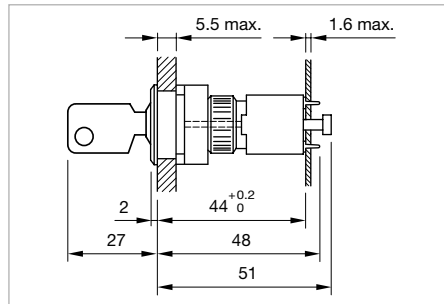
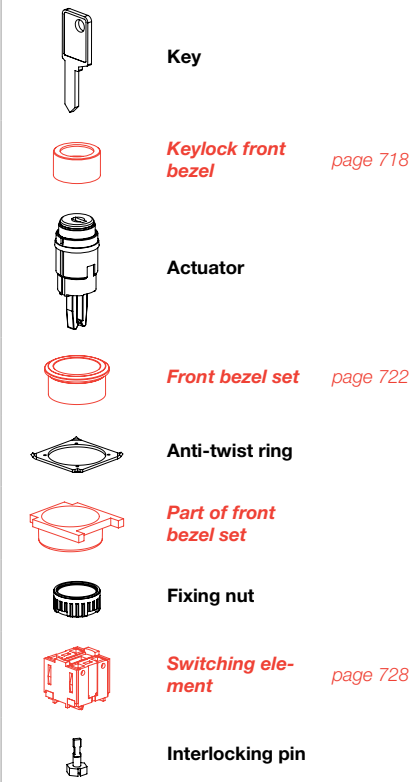
Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <b>Keylock switch actuator 2 positions rectangular</b>					
A - B	B = 42°	A	<b>71-621.0/D</b>	1	0.003 kg
A - C	C = 90°	A	<b>71-622.0/D</b>	2	0.003 kg
		C	<b>71-623.0/D</b>	2	0.003 kg
		A + C	<b>71-624.0/D</b>	2	0.003 kg

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



## Keylock switch 2 positions round, IP 65

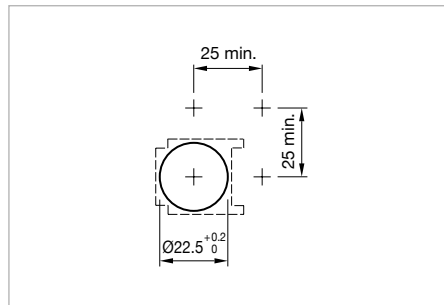
### Equipment consisting of (schematic overview)



Dimensions [mm]



Product can differ from the current configuration.



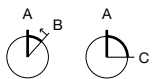
Mounting cut-outs [mm]

### Additional Information


- For front dimension  $\varnothing$  25 mm
- The standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing$  3.5

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.



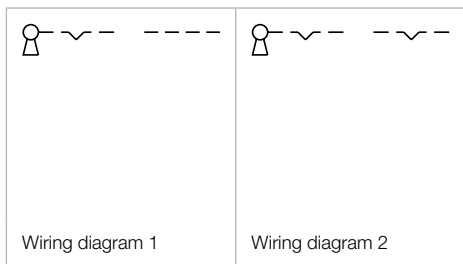
Switching positions (A = Rest, B = Momentary, C = Maintained)

Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
					
<b>Keylock switch actuator 2 positions round</b>					
A - B	B = 42°	A	<b>71-621.0/D</b>	1	0.003 kg
A - C	C = 90°	A	<b>71-622.0/D</b>	2	0.003 kg
		C	<b>71-623.0/D</b>	2	0.003 kg
		A + C	<b>71-624.0/D</b>	2	0.003 kg

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

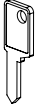






# 71 Flush design

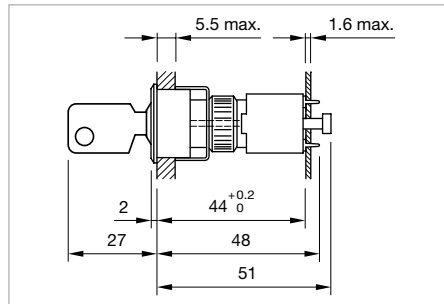
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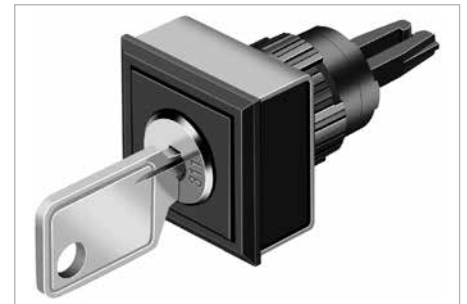
## Keylock switch 3 positions square, IP 65

**Equipment consisting of (schematic overview)**

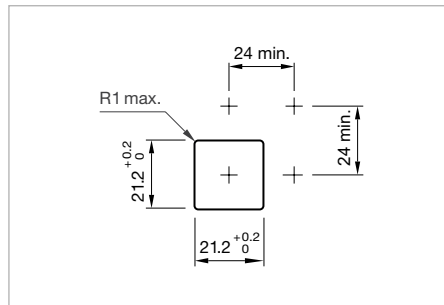
-  **Key**
-  **Keylock front bezel** page 718
-  **Actuator**
-  **Front bezel set** page 722
-  **Fixing nut**
-  **Switching element** page 728
-  **Interlocking pin**



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### Additional Information


- For front dimension 24 x 24 mm
- The standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

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.*



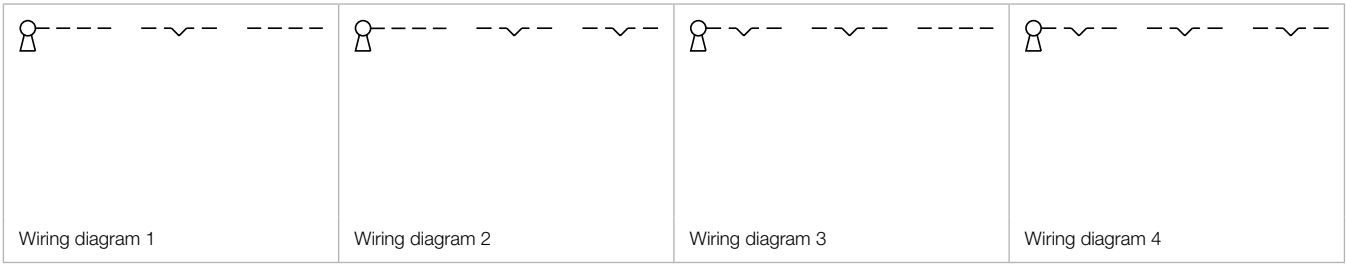
Switching positions (A = Rest, B = Momentary, C = Maintained)

Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <b>Keylock switch actuator 3 positions square</b>					
B - A - B	B = 42° / 42°	A	<b>71-631.0/D</b>	1	0.003 kg
B - A - C	B = 42°, C = 90°	A	<b>71-636.0/D</b>	2	0.003 kg
		A + C	<b>71-637.0/D</b>	2	0.003 kg
C - A - B	C = 90°, B = 42°	A	<b>71-638.0/D</b>	3	0.003 kg
		C + A	<b>71-639.0/D</b>	3	0.003 kg
C - A - C	C = 90° / 90°	A	<b>71-632.0/D</b>	4	0.003 kg
		-- C	<b>71-633.0/D</b>	4	0.003 kg
		C + C	<b>71-634.0/D</b>	4	0.003 kg
		C + A + C	<b>71-635.0/D</b>	4	0.003 kg

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

# 71 Flush design

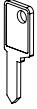

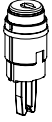




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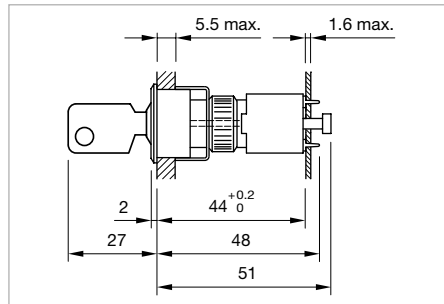




## Keylock switch 3 positions rectangular, IP 65

**Equipment consisting of (schematic overview)**

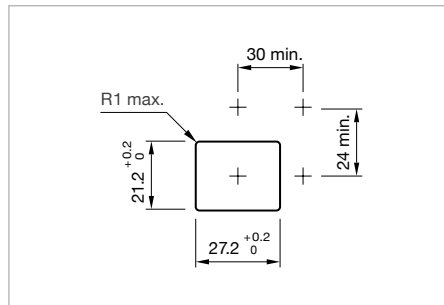
-  **Key**
-  **Keylock front bezel** page 718
-  **Actuator**
-  **Front bezel set** page 722
-  **Fixing nut**
-  **Switching element** page 728
-  **Interlocking pin**



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### Additional Information


- For front dimension 24 x 30 mm
- The standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

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.



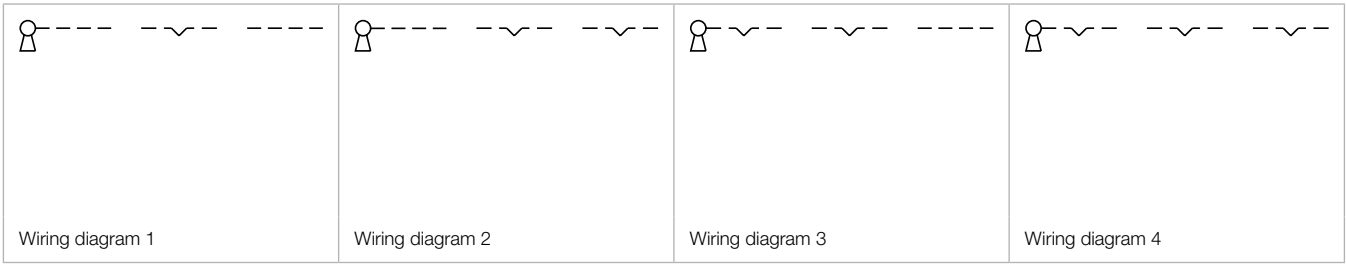
Switching positions (A = Rest, B = Momentary, C = Maintained)

Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <b>Keylock switch actuator 3 positions rectangular</b>					
B - A - B	B = 42° / 42°	A	<b>71-631.0/D</b>	1	0.003 kg
B - A - C	B = 42°, C = 90°	A	<b>71-636.0/D</b>	2	0.003 kg
		A + C	<b>71-637.0/D</b>	2	0.003 kg
C - A - B	C = 90°, B = 42°	A	<b>71-638.0/D</b>	3	0.003 kg
		C + A	<b>71-639.0/D</b>	3	0.003 kg
C - A - C	C = 90° / 90°	A	<b>71-632.0/D</b>	4	0.003 kg
		-- C	<b>71-633.0/D</b>	4	0.003 kg
		C + C	<b>71-634.0/D</b>	4	0.003 kg
		C + A + C	<b>71-635.0/D</b>	4	0.003 kg

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

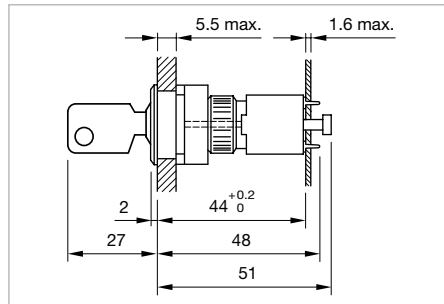
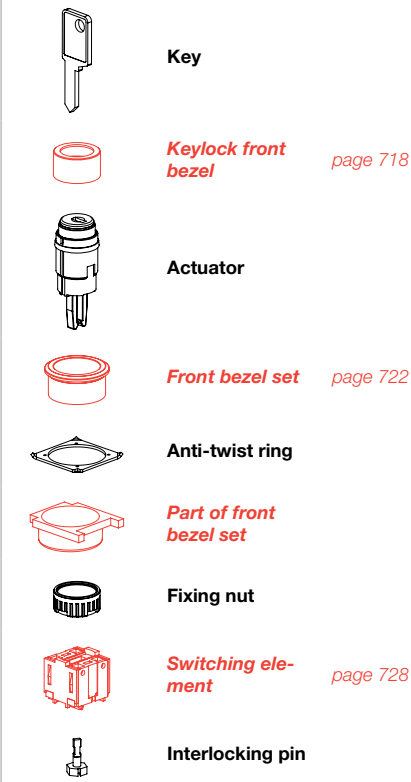
# 71 Flush design

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## Keylock switch 3 positions round, IP 65

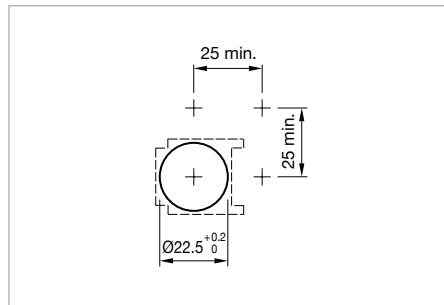
### Equipment consisting of (schematic overview)



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### Additional Information


- For front dimension  $\varnothing 25$  mm
- The standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

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.



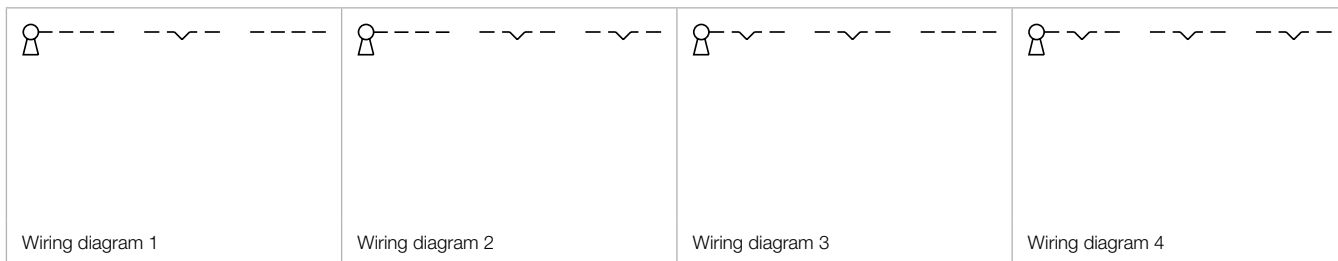
Switching positions (A = Rest, B = Momentary, C = Maintained)

Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
	<b>Keylock switch actuator 3 positions round</b>				
B - A - B	B = 42° / 42°	A	<b>71-631.0/D</b>	1	0.003 kg
B - A - C	B = 90°, C = 42°	A	<b>71-636.0/D</b>	2	0.003 kg
		A + C	<b>71-637.0/D</b>	2	0.003 kg
C - A - B	C = 90°, B = 42°	A	<b>71-638.0/D</b>	3	0.003 kg
		C + A	<b>71-639.0/D</b>	3	0.003 kg
C - A - C	C = 90° / 90°	A	<b>71-632.0/D</b>	4	0.003 kg
		-- C	<b>71-633.0/D</b>	4	0.003 kg
		C + C	<b>71-634.0/D</b>	4	0.003 kg
		C + A + C	<b>71-635.0/D</b>	4	0.003 kg

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



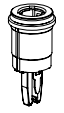


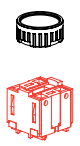

# 71 Flush design

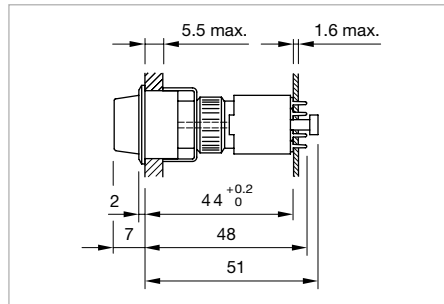
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## Selector switch 2 positions square, IP 65

### Equipment consisting of (schematic overview)

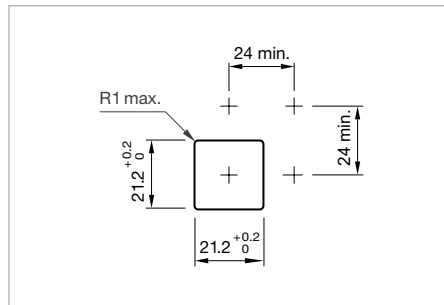
-  **Lever** page 719
-  **Single-LED** page 730
-  **Actuator**
-  **Front bezel set** page 723
-  **Fixing nut**
-  **Switching element** page 728
-  **Interlocking pin**



Dimensions [mm]



Product can differ from the current configuration.



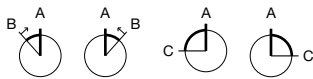
Mounting cut-outs [mm]

### Additional Information


- For front dimension 24 x 24 mm
- Illuminative
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes Ø 3.5

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

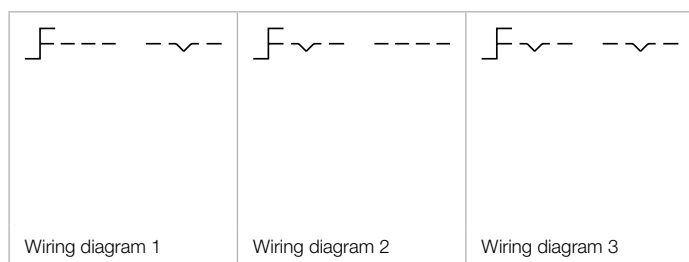
To obtain a complete unit, please select the red components from the pages shown.



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

Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch actuator 2 positions square</b>				
B - A	B = 42°	<b>71-641.0</b>	1	0.003 kg
A - B	B = 42°	<b>71-641.0A</b>	2	0.003 kg
C - A	C = 90°	<b>71-642.0</b>	3	0.003 kg
A - C	C = 90°	<b>71-642.0A</b>	3	0.003 kg

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

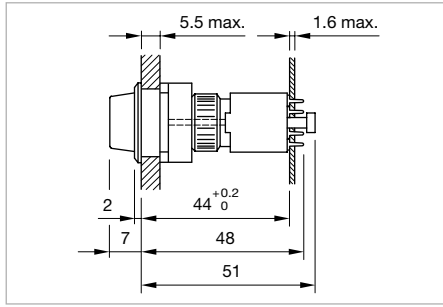


# 71 Flush design

## Selector switch 2 positions round, IP 65

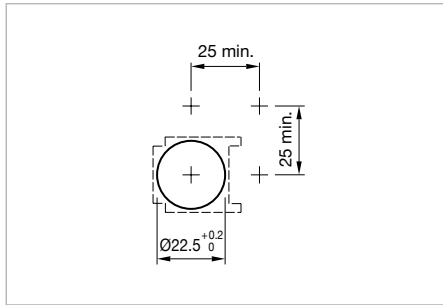


Product can differ from the current configuration.












### Additional Information

- For front dimension  $\varnothing 25$  mm
- Illuminative
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$

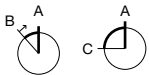


### Equipment consisting of (schematic overview)


-  **Lever** page 719
-  **Single-LED** page 730
-  **Actuator**
-  **Front bezel set** page 723
-  **Anti-twist ring**
-  **Part of front bezel set**
-  **Fixing nut**
-  **Switching element** page 728
-  **Interlocking pin**

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

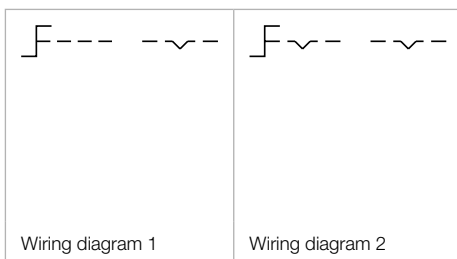
*To obtain a complete unit, please select the red components from the pages shown.*



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



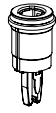




Switching action	Switching angle	Part No.	Wiring diagram	Weight
				
<b>Selector switch actuator 2 positions round</b>				
B - A	B = 42°	<b>71-641.0</b>	1	0.003 kg
C - A	C = 90°	<b>71-642.0</b>	2	0.003 kg

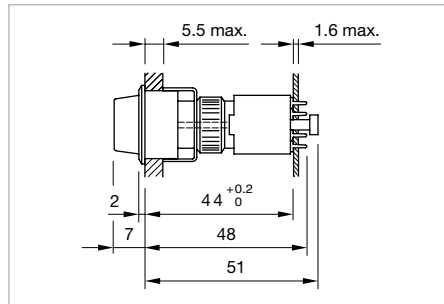
Switching action: A = Rest, B = Momentary, C = Maintain



## Selector switch 3 positions square, IP 65

### Equipment consisting of (schematic overview)

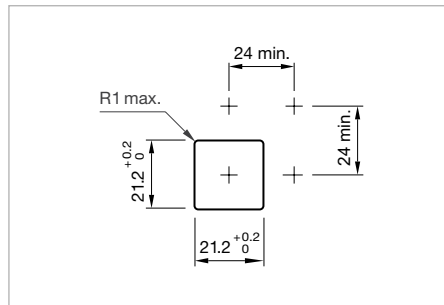
-  **Lever** page 719
-  **Single-LED** page 730
-  **Actuator**
-  **Front bezel set** page 723
-  **Fixing nut**
-  **Switching element** page 728
-  **Interlocking pin**



Dimensions [mm]



Product can differ from the current configuration.



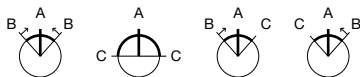
Mounting cut-outs [mm]

### Additional Information


- For front dimension 24 x 24 mm
- Illuminative
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes Ø 3.5

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




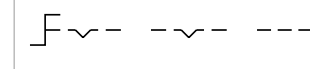
To obtain a complete unit, please select the red components from the pages shown.



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

Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch actuator 3 positions square</b>				
B - A - B	B = 42° / 42°	<b>71-651.0</b>	1	0.003 kg
C - A - C	C = 90° / 90°	<b>71-652.0</b>	2	0.003 kg
B - A - C	B = 42°, C = 90°	<b>71-656.0</b>	3	0.003 kg
C - A - B	C = 90°, B = 42°	<b>71-658.0</b>	4	0.003 kg

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

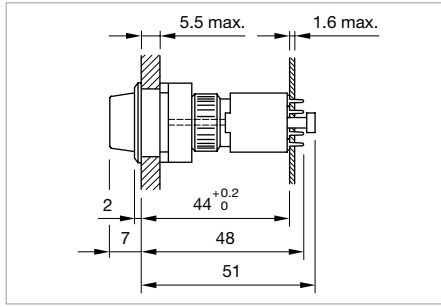
 Wiring diagram 1	 Wiring diagram 2	 Wiring diagram 3	 Wiring diagram 4
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# 71 Flush design

## Selector switch 3 positions round, IP 65



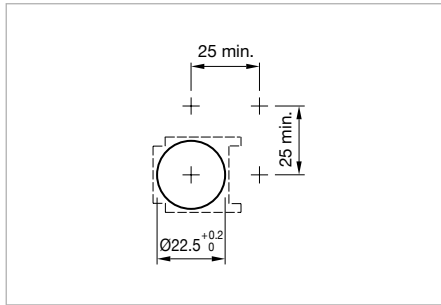
Product can differ from the current configuration.



Dimensions [mm]

### Additional Information

- For front dimension  $\varnothing$  25 mm
- Illuminative
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing$  3.5



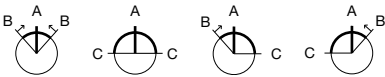
Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

	<b>Lever</b>	page 719
	<b>Single-LED</b>	page 730
	<b>Actuator</b>	
	<b>Front bezel set</b>	page 723
	<b>Anti-twist ring</b>	
	<b>Part of front bezel set</b>	
	<b>Fixing nut</b>	
	<b>Switching element</b>	page 728
	<b>Interlocking pin</b>	

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)

Switching action	Switching angle	Part No.	Wiring diagram	Weight
<b>Selector switch 3 positions round</b>				
B - A - B	B = 42° / 42°	<b>71-651.0</b>	1	0.003 kg
C - A - C	C = 90° / 90°	<b>71-652.0</b>	2	0.003 kg
B - A - C	B = 42°, C = 90°	<b>71-656.0</b>	3	0.003 kg
C - A - B	C = 90°, B = 42°	<b>71-658.0</b>	4	0.003 kg

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

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



Front

Lens plastic

Additional Information

- Lens surface mat
- Lens profile flat

Product attribute	Dimension	Lens	Part No.	Weight
 <p><b>Lens plastic, flush design</b></p>				
illuminative	18 x 18 mm	smoked transparent	<b>61-9671.1</b>	0.002 kg
		red transparent	<b>61-9671.2</b>	0.002 kg
		orange transparent	<b>61-9671.3</b>	0.002 kg
		yellow transparent	<b>61-9671.4</b>	0.002 kg
		green transparent	<b>61-9671.5</b>	0.002 kg
		blue transparent	<b>61-9671.6</b>	0.002 kg
		colourless transparent	<b>61-9671.7</b>	0.002 kg
non-illuminative	18 x 18 mm	black opaque	<b>61-9771.0</b>	0.002 kg
		grey opaque	<b>61-9771.8</b>	0.002 kg
		white translucent	<b>61-9771.9</b>	0.002 kg
 <p><b>Lens plastic, flush design</b></p>				
illuminative	18 x 24 mm	smoked transparent	<b>61-9681.1</b>	0.002 kg
		red transparent	<b>61-9681.2</b>	0.002 kg
		orange transparent	<b>61-9681.3</b>	0.002 kg
		yellow transparent	<b>61-9681.4</b>	0.002 kg
		green transparent	<b>61-9681.5</b>	0.002 kg
		blue transparent	<b>61-9681.6</b>	0.002 kg
		colourless transparent	<b>61-9681.7</b>	0.002 kg
non-illuminative	18 x 24 mm	black opaque	<b>61-9781.0</b>	0.002 kg
		grey opaque	<b>61-9781.8</b>	0.002 kg
		white translucent	<b>61-9781.9</b>	0.002 kg
 <p><b>Lens plastic, flush design</b></p>				
illuminative	Ø 19.7 mm	smoked transparent	<b>61-9642.1</b>	0.002 kg
		red transparent	<b>61-9642.2</b>	0.002 kg
		orange transparent	<b>61-9642.3</b>	0.002 kg
		yellow transparent	<b>61-9642.4</b>	0.002 kg
		green transparent	<b>61-9642.5</b>	0.002 kg
		blue transparent	<b>61-9642.6</b>	0.002 kg
		colourless transparent	<b>61-9642.7</b>	0.002 kg




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# 71 Accessories

## Lens plastic with symbol

### Additional Information


- Illuminative
- Lens surface mat
- Lens profile flat
- The silvery coat is being applied on the lens (screen print) with an additional protective lacquer. Further information see «Technical data»

Dimension	Lens	Symbol	Part No.	Weight
 <b>Lens plastic with symbol</b>				
Ø 19.7 mm	red transparent	Ring	<b>61-9643.201</b>	0.002 kg
	orange transparent	Ring	<b>61-9643.301</b>	0.002 kg
	yellow transparent	Ring	<b>61-9643.401</b>	0.002 kg
	green transparent	Ring	<b>61-9643.501</b>	0.002 kg
	blue transparent	Ring	<b>61-9643.601</b>	0.002 kg
	colourless transparent	Ring	<b>61-9643.701</b>	0.002 kg
 <b>Lens plastic with symbol</b>				
Ø 19.7 mm	red transparent	ON/OFF	<b>61-9643.202</b>	0.002 kg
	green transparent	ON/OFF	<b>61-9643.502</b>	0.002 kg
	blue transparent	ON/OFF	<b>61-9643.602</b>	0.002 kg
	colourless transparent	ON/OFF	<b>61-9643.702</b>	0.002 kg
 <b>Lens plastic with symbol</b>				
Ø 19.7 mm	red transparent	Stand by	<b>61-9643.203</b>	0.002 kg
	green transparent	Stand by	<b>61-9643.503</b>	0.002 kg
	blue transparent	Stand by	<b>61-9643.603</b>	0.002 kg
	colourless transparent	Stand by	<b>61-9643.703</b>	0.002 kg

**Lens metal with dot**

**Additional Information**



- Illuminative
- Lens surface mat
- Lens profile flat
- The colour of anodized aluminium parts can vary due to technical production reasons

Dimension	Lens	Part No.	Weight
 <p><b>Lens metal with dot</b></p>			
Ø 19.7 mm	Aluminium black anodized	<b>61-9841.0A</b>	0.002 kg
	Aluminium red anodized	<b>61-9841.2A</b>	0.002 kg
	Aluminium gold anodized	<b>61-9841.4A</b>	0.002 kg
	Aluminium olive-green anodized	<b>61-9841.5A</b>	0.002 kg
	Aluminium blue anodized	<b>61-9841.6A</b>	0.002 kg
	Aluminium natural anodized	<b>61-9841.8A</b>	0.002 kg

**Lens metal**

**Additional Information**

- Non-illuminative
- Lens surface mat
- The colour of anodized aluminium parts can vary due to technical production reasons

Product attribute	Dimension	Lens	Part No.	Weight
 <p><b>Lens metal</b></p>				
flat	Ø 19.7 mm	Aluminium black anodized	<b>61-9841.0</b>	0.002 kg
		Aluminium red anodized	<b>61-9841.2</b>	0.002 kg
		Aluminium gold anodized	<b>61-9841.4</b>	0.002 kg
		Aluminium olive-green anodized	<b>61-9841.5</b>	0.002 kg
		Aluminium blue anodized	<b>61-9841.6</b>	0.002 kg
		Aluminium natural anodized	<b>61-9841.8</b>	0.002 kg
 <p><b>Lens metal</b></p>				
convex (domed)	Ø 19.7 mm	Aluminium black anodized	<b>61-9842.0</b>	0.003 kg
		Aluminium red anodized	<b>61-9842.2</b>	0.003 kg
		Aluminium olive-green anodized	<b>61-9842.5</b>	0.003 kg
		Aluminium blue anodized	<b>61-9842.6</b>	0.003 kg
		Aluminium natural anodized	<b>61-9842.8</b>	0.003 kg


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## Mushroom-head cap

### Additional Information

- Non-illuminative

Mushroom-head cap	Part No.	Weight
 <b>Mushroom-head cap, Front dimension Ø 32 mm</b>		
Plastic black	<b>61-9593.0</b>	0.004 kg
Plastic red	<b>61-9593.2</b>	0.004 kg
Plastic yellow	<b>61-9593.4</b>	0.004 kg
Plastic green	<b>61-9593.5</b>	0.004 kg




## Marking plate

### Additional Information

- Can be hot stamped
- Only applicable with lens round  
Part No. 61-9642.X

Marking plate	Part No.	Weight
 <b>Legend plate for lens plastic</b>		
Plastic colourless transparent	<b>61-9707.7</b>	0.001 kg


## Keylock front bezel

Product attribute	Dimension	Material	Colour	Part No.	Weight
 <b>Keylock front bezel for keylock switch, flush design</b>					
for device with front dimension 24 x 24 mm	18 x 18 mm	Plastic	black	<b>61-9220.0</b>	0.001 kg
 <b>Keylock front bezel for keylock switch, flush design</b>					
for device with front dimension 24 x 30 mm	18 x 24 mm	Plastic	black	<b>61-9230.0</b>	0.001 kg
 <b>Keylock front bezel for keylock switch, flush design</b>					
fro device with front dimension Ø 25 mm	Ø 18 mm	Plastic	black	<b>61-9210.0</b>	0.001 kg

**Lever**

**Additional Information**

- With bar and marking dot




Lever illumination	Lever	Bar colour	Part No.	Weight
 <p><b>Lever flush design</b></p>				
illuminative	Plastic black	red	<b>61-9028.20</b>	0.001 kg
	Plastic black	yellow	<b>61-9028.40</b>	0.001 kg
	Plastic black	green	<b>61-9028.50</b>	0.001 kg
	Plastic black	blue	<b>61-9028.60</b>	0.001 kg
	Plastic grey	red	<b>61-9029.20</b>	0.001 kg
	Plastic grey	orange	<b>61-9029.30</b>	0.001 kg
	Plastic grey	yellow	<b>61-9029.40</b>	0.001 kg
	Plastic grey	green	<b>61-9029.50</b>	0.001 kg
	Plastic grey	blue	<b>61-9029.60</b>	0.001 kg
non-illuminative	Plastic black	black	<b>61-9028.0</b>	0.001 kg
	Plastic black	white	<b>61-9028.9</b>	0.001 kg
	Plastic grey	grey	<b>61-9029.8</b>	0.001 kg
	Plastic grey	white	<b>61-9029.9</b>	0.001 kg

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## Front bezel set pushbutton

### Additional Information

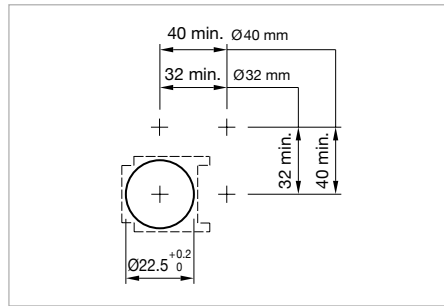
- The dimensions of the mounting cut-outs are shown in the product details
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing$  3.5
- The colour of anodized aluminium parts can vary due to technical production reasons

Mounting cut-out	Front bezel	Part No.	Weight
 <p><b>Front bezel set for indicator and illuminated pushbutton, flush design, Front dimension 24 x 24 mm</b></p>			
21 x 21 mm	Plastic black	<b>61-9930.0</b>	0.008 kg
	Plastic silver	<b>61-9930.4</b>	0.008 kg
 <p><b>Front bezel set for indicator and illuminated pushbutton, flush design, Front dimension 24 x 30 mm</b></p>			
21 x 27 mm	Plastic black	<b>61-9931.0</b>	0.008 kg
	Plastic silver	<b>61-9931.4</b>	0.008 kg
 <p><b>Front bezel set for indicator and illuminated pushbutton, flush design, Front dimension <math>\varnothing</math> 25 mm</b></p>			
$\varnothing$ 22.5 mm	Aluminium natural anodized	<b>61-9933.0</b>	0.006 kg
	Aluminium black anodized	<b>61-9933.1</b>	0.006 kg
	Aluminium red anodized	<b>61-9933.2</b>	0.006 kg
	Aluminium gold anodized	<b>61-9933.4</b>	0.006 kg
	Aluminium olive-green anodized	<b>61-9933.5</b>	0.006 kg
	Aluminium blue anodized	<b>61-9933.6</b>	0.006 kg
	Plastic black	<b>61-9933.10</b>	0.008 kg



**Front bezel set mushroom**

**Additional Information**

- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$
- The colour of anodized aluminium parts can vary due to technical production reasons






Mounting cut-outs [mm]

Dimension	Mounting cut-out	Front bezel	Part No.	Weight																			
 <p><b>Front bezel set for mushroom-head pushbutton, flush design, Front dimension <math>\varnothing 40</math> mm</b></p>	$\varnothing 22.5$ mm	Aluminium natural anodized	<b>61-9934.8</b>	0.013 kg																			
		 <p><b>Front bezel set for mushroom-head pushbutton, flush design</b></p>	25 mm	<table border="1"> <tr> <td>Aluminium natural anodized</td> <td><b>61-9933.0</b></td> <td>0.006 kg</td> </tr> <tr> <td>Aluminium black anodized</td> <td><b>61-9933.1</b></td> <td>0.006 kg</td> </tr> <tr> <td>Aluminium red anodized</td> <td><b>61-9933.2</b></td> <td>0.006 kg</td> </tr> <tr> <td>Aluminium gold anodized</td> <td><b>61-9933.4</b></td> <td>0.006 kg</td> </tr> <tr> <td>Aluminium olive-green anodized</td> <td><b>61-9933.5</b></td> <td>0.006 kg</td> </tr> <tr> <td>Aluminium blue anodized</td> <td><b>61-9933.6</b></td> <td>0.006 kg</td> </tr> <tr> <td>Plastic black</td> <td><b>61-9933.10</b></td> <td>0.008 kg</td> </tr> </table>	Aluminium natural anodized	<b>61-9933.0</b>	0.006 kg	Aluminium black anodized	<b>61-9933.1</b>	0.006 kg	Aluminium red anodized	<b>61-9933.2</b>	0.006 kg	Aluminium gold anodized	<b>61-9933.4</b>	0.006 kg	Aluminium olive-green anodized	<b>61-9933.5</b>	0.006 kg	Aluminium blue anodized	<b>61-9933.6</b>	0.006 kg	Plastic black
Aluminium natural anodized	<b>61-9933.0</b>	0.006 kg																					
Aluminium black anodized	<b>61-9933.1</b>	0.006 kg																					
Aluminium red anodized	<b>61-9933.2</b>	0.006 kg																					
Aluminium gold anodized	<b>61-9933.4</b>	0.006 kg																					
Aluminium olive-green anodized	<b>61-9933.5</b>	0.006 kg																					
Aluminium blue anodized	<b>61-9933.6</b>	0.006 kg																					
Plastic black	<b>61-9933.10</b>	0.008 kg																					

## Front bezel set keylock switch

### Additional Information

- The dimensions of the mounting cut-outs are shown in the product details
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing$  3.5
- For the round front bezel sets the anti-twist ring is part of the sales-package
- The colour of anodized aluminium parts can vary due to technical production reasons



Mounting cut-out	Front bezel	Part No.	Weight
 <b>Front bezel set for keylock switch, flush design, Front dimension 24 x 24 mm</b>			
21 x 21 mm	Plastic black	<b>61-9930.0</b>	0.008 kg
	Plastic silver	<b>61-9930.4</b>	0.008 kg
 <b>Front bezel set for keylock switch, flush design, Front dimension 24 x 30 mm</b>			
21 x 27 mm	Plastic black	<b>61-9931.0</b>	0.008 kg
	Plastic silver	<b>61-9931.4</b>	0.008 kg
 <b>Front bezel set for keylock switch, flush design, Front dimension <math>\varnothing</math> 25 mm</b>			
$\varnothing$ 22.5 mm	Aluminium natural anodized	<b>61-9932.0</b>	0.006 kg
	Aluminium black anodized	<b>61-9932.1</b>	0.006 kg
	Aluminium red anodized	<b>61-9932.2</b>	0.006 kg
	Aluminium gold anodized	<b>61-9932.4</b>	0.006 kg
	Aluminium olive-green anodized	<b>61-9932.5</b>	0.006 kg
	Aluminium blue anodized	<b>61-9932.6</b>	0.006 kg
	Plastic black	<b>61-9932.10</b>	0.008 kg



**Front bezel set selector switch**

**Additional Information**



- The dimensions of the mounting cut-outs are shown in the product details
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes Ø 3.5
- With the round front bezel sets Ø 25 mm the anti-twist ring is part of the sales-package
- The colour of anodized aluminium parts can vary due to technical production reasons

Mounting cut-out	Front bezel	Part No.	Weight
 <p><b>Front bezel set for selector switch, flush design, Front dimension 24 x 24 mm</b></p>			
21 x 21 mm	Plastic black	<b>61-9936.0</b>	0.007 kg
 <p><b>Front bezel set for selector switch, flush design, Front dimension Ø 25 mm</b></p>			
Ø 22.5 mm	Aluminium natural anodized	<b>61-9932.0</b>	0.006 kg
	Aluminium black anodized	<b>61-9932.1</b>	0.006 kg
	Aluminium red anodized	<b>61-9932.2</b>	0.006 kg
	Aluminium gold anodized	<b>61-9932.4</b>	0.006 kg
	Aluminium olive-green anodized	<b>61-9932.5</b>	0.006 kg
	Aluminium blue anodized	<b>61-9932.6</b>	0.006 kg
	Plastic black	<b>61-9932.10</b>	0.008 kg

**Front protective cap, IP 68**

**Additional Information**

- When using the front protection cover for push buttons the external sealing in the front bezel set and the silicone bellows in the actuator are to be removed

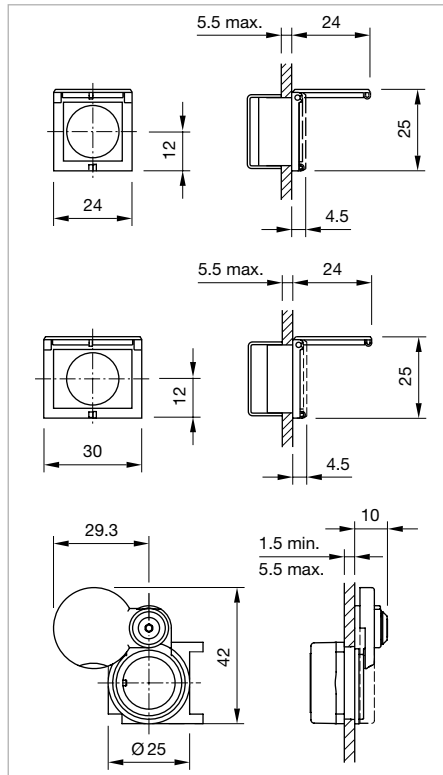
Product attribute	Material	Colour	Optics	Part No.	Weight
 <p><b>Front protective cap</b></p>					
for front bezel set 24 x 30 mm, flush design	Silicone	colourless	transparent	<b>61-9927.2</b>	0.001 kg
 <p><b>Front protective cap</b></p>					
for front bezel set Ø 25 mm, flush design	Silicone	colourless	transparent	<b>84-9103.7</b>	0.001 kg

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## Protective cover, IP 65

### Additional Information

- The dimensions of the mounting cut-outs are shown in the product details
- Pitch of the front plate mounting cut-outs must agree with the printed circuit board holes  $\varnothing 3.5$
- Please note that bigger minimum distances are necessary



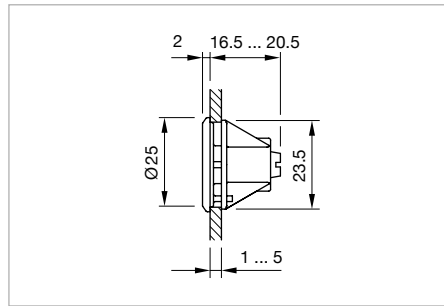
Dimensions [mm]

Product attribute	Mounting cut-out	Material	Optics	Part No.	Weight
 <b>Protective cover</b>					
Hinged, with means for sealing	21 x 21 mm	Plastic	transparent	<b>61-9921.0</b>	0.006 kg
 <b>Protective cover</b>					
Hinged, with means for sealing	21 x 27 mm	Plastic	transparent	<b>61-9922.0</b>	0.006 kg
 <b>Protective cover</b>					
slide by side, with means not for sealing	$\varnothing 22.5$ mm	Plastic	transparent	<b>61-9924.0</b>	0.006 kg




**Blind plug**

**Additional Information**

- The dimensions of the mounting cut-outs are shown in the product details



Dimensions [mm]

Dimension	Mounting cut-out	Material	Colour	Part No.	Weight
 <b>Blind plug</b>					
24 x 24 mm	21 x 21 mm	Plastic	black	<b>61-9451.0</b>	0.006 kg
 <b>Blind plug</b>					
24 x 30 mm	21 x 27 mm	Plastic	black	<b>61-9452.0</b>	0.006 kg
 <b>Blind plug</b>					
Ø 25 mm	Ø 22.5 mm	Plastic	black	<b>61-9453.0</b>	0.006 kg

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# 71 Accessories

## Spare key

### Additional Information


- For standard lock: DOM 311
- Optional lock numbers on request

Part No.	Weight
 <b>Spare key</b>	
31-989.311	0.006 kg

## Master key

### Additional Information


- For standard lock: DOM 311 ... 445

Part No.	Weight
 <b>Master key</b>	
31-989.300	0.006 kg

## EMC key protection cap

### Additional Information

- For standard lock: DOM
- Plastic black

Part No.	Weight
 <b>EMC key protection cap</b>	
31-985.0	0.005 kg

Rear side

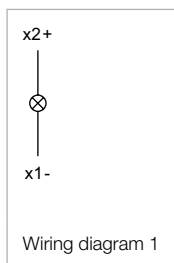
Lamp element

Additional Information

- Including locking pin

Terminal	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Lamp element</b></p>				
PCB	<b>71-670.006</b>	1	1	0.005 kg


The component layouts you will find from page 733



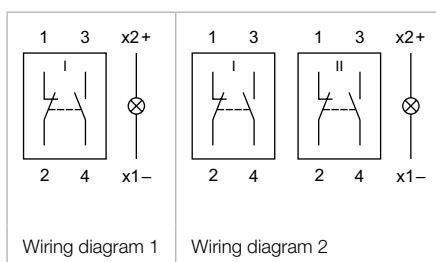
Switching element pushbutton

Additional Information

- Including locking pin

Contacts	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Switching element for illuminated pushbutton and mushroom-head pushbutton</b></p>					
1 NC + 1 NO	PCB	<b>71-671.026</b>	1	1	0.005 kg
2 NC + 2 NO	PCB	<b>71-672.026</b>	1	2	0.005 kg


Contacts: NC = Normally closed, NO = Normally open  
The component layouts you will find from page 733



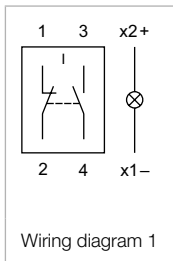
## Switching element switch 2 positions

### Additional Information

- Including locking pin

Contacts	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <b>Switching element for keylock- and selector switch 2 positions</b>					
1 NC + 1 NO	PCB	71-671.026	1	1	0.005 kg


Contacts: NC = Normally closed, NO = Normally open  
 The component layouts you will find from page 733



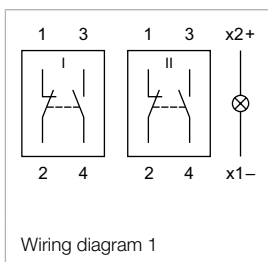
## Switching element switch 3 positions

### Additional Information


- Including locking pin

Contacts	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <b>Switching element for keylock- and selector switch 3 positions</b>					
2 NC + 2 NO	PCB	71-672.026	1	1	0.005 kg

Contacts: NC = Normally closed, NO = Normally open  
 The component layouts you will find from page 733



Interlocking pin

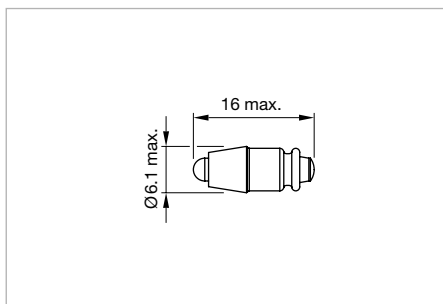
Part No.	Weight
 <p><b>Interlocking pin</b></p>	
71-679.0	0.001 kg

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### Single-LED, T1 3/4 MG

#### Additional Information

- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- The specified versions are built with a protection diode (half wave rectifier) in series and the LED
- When using AC/DC types with AC operation, slight flickering can occur
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination
- For supply voltages above 48V, a voltage reduction element (external series resistor or transformer) must be used




Dimensions [mm]

LED colour	Operating voltage	Operation current	Lumi. intensity	Dom. wavelength	Part No.	Weight
 <p><b>Single-LED</b></p>						
red	6 VDC +10 %	15 mA ±15 %	350 mcd	630 nm	<b>10-2J06.3142</b>	0.002 kg
	12 VAC/DC +10 %	7/14 mA ±15 %	330 mcd	630 nm	<b>10-2J09.1062</b>	0.002 kg
	24 VAC/DC +10 %	7/14 mA ±15 %	330 mcd	630 nm	<b>10-2J12.1062</b>	0.002 kg
	28 VAC/DC +10 %	7/14 mA ±15 %	330 mcd	630 nm	<b>10-2J13.1062</b>	0.002 kg
	48 VAC/DC +10 %	4/8 mA ±15 %	200 mcd	630 nm	<b>10-2J19.1042</b>	0.002 kg
yellow	6 VDC +10 %	15 mA ±15 %	300 mcd	587 nm	<b>10-2J06.3144</b>	0.002 kg
	12 VAC/DC +10 %	7/14 mA ±15 %	280 mcd	587 nm	<b>10-2J09.1064</b>	0.002 kg
	24 VAC/DC +10 %	7/14 mA ±15 %	280 mcd	587 nm	<b>10-2J12.1064</b>	0.002 kg
	28 VAC/DC +10 %	7/14 mA ±15 %	280 mcd	587 nm	<b>10-2J13.1064</b>	0.002 kg
	48 VAC/DC +10 %	4/8 mA ±15 %	180 mcd	587 nm	<b>10-2J19.1044</b>	0.002 kg
green	6 VDC +10 %	7 mA ±15 %	1050 mcd	525 nm	<b>10-2J06.3145</b>	0.002 kg
	12 VAC/DC +10 %	4/7 mA ±15 %	1050 mcd	525 nm	<b>10-2J09.1065</b>	0.002 kg
	24 VAC/DC +10 %	4/7 mA ±15 %	1050 mcd	525 nm	<b>10-2J12.1065</b>	0.002 kg
	28 VAC/DC +10 %	4/7 mA ±15 %	1050 mcd	525 nm	<b>10-2J13.1065</b>	0.002 kg
	48 VAC/DC +10 %	2/4 mA ±15 %	600 mcd	525 nm	<b>10-2J19.1045</b>	0.002 kg
blue	6 VDC +10 %	15 mA ±15 %	680 mcd	470 nm	<b>10-2J06.3146</b>	0.002 kg
	12 VAC/DC +10 %	7/14 mA ±15 %	650 mcd	470 nm	<b>10-2J09.1066</b>	0.002 kg
	24 VAC/DC +10 %	7/14 mA ±15 %	650 mcd	470 nm	<b>10-2J12.1066</b>	0.002 kg
	28 VAC/DC +10 %	7/14 mA ±15 %	650 mcd	470 nm	<b>10-2J13.1066</b>	0.002 kg
	48 VAC/DC +10 %	4/8 mA ±15 %	400 mcd	470 nm	<b>10-2J19.1046</b>	0.002 kg
white	6 VDC +10 %	6 mA ±15 %	900 mcd	x0.31/y0.32 nm	<b>10-2J06.3149</b>	0.002 kg
	12 VAC/DC +10 %	3/6 mA ±15 %	900 mcd	x0.31/y0.32 nm	<b>10-2J09.1069</b>	0.002 kg
	24 VAC/DC +10 %	2.5/5 mA ±15 %	750 mcd	x0.31/y0.32 nm	<b>10-2J12.1069</b>	0.002 kg
	28 VAC/DC +10 %	2.5/5 mA ±15 %	750 mcd	x0.31/y0.32 nm	<b>10-2J13.1069</b>	0.002 kg
	48 VAC/DC +10 %	2/5 mA ±15 %	600 mcd	x0.31/y0.32 nm	<b>10-2J19.1049</b>	0.002 kg




**Filament lamp, T1 3/4 MG**

Operating voltage	Operation current	Part No.	Weight
 <p><b>Filament lamp</b></p>			
6 VAC/DC	120 mA±10 %	<b>10-1306.1349</b>	0.001 kg
6.3 VAC/DC	200 mA±10 %	<b>10-1307.1369</b>	0.001 kg
12 VAC/DC	75 mA±10 %	<b>10-1309.1309</b>	0.001 kg
14 VAC/DC	80 mA±10 %	<b>10-1310.1319</b>	0.001 kg
18 VAC/DC	40 mA±10 %	<b>10-1311.1249</b>	0.001 kg
24 VAC/DC	35 mA±10 %	<b>10-1312.1229</b>	0.001 kg
28 VAC/DC	30 mA±10 %	<b>10-1313.1209</b>	0.001 kg
	40 mA±10 %	<b>10-1313.1249</b>	0.001 kg
36 VAC/DC	20 mA±10 %	<b>10-1316.1179</b>	0.001 kg
	30 mA±10 %	<b>10-1316.1209</b>	0.001 kg
48 VAC/DC	20 mA±10 %	<b>10-1319.1179</b>	0.001 kg
	25 mA±10 %	<b>10-1319.1199</b>	0.001 kg

**Series resistor****Additional Information**

- Only for filament lamp 48 VAC, 25 mA
- For lamp voltage reduction
- Keep to the country specific safety instructions
- Due to high surface temperatures, the surface resistors must be soldered directly to the terminals of the equipment (use a terminal plate)

Operating voltage	Resistance	Part No.	Weight
 <p><b>Series resistor</b></p>			
110 VAC	2.7 kOhm	<b>02-904.0</b>	0.003 kg
125 VAC	3.3 kOhm	<b>02-904.1</b>	0.003 kg
145 VAC	4.7 kOhm	<b>02-904.3</b>	0.003 kg
240 VAC	10 kOhm	<b>02-904.7</b>	0.003 kg


# 71 Accessories

## Mounting

### Anti-twist ring

Mounting cut-out	Part No.	Weight
 <b>Anti-twist ring</b>		
Ø 22.5 mm	61-9912.0	0.002 kg


### Lens remover

Part No.	Weight
 <b>Lens remover</b>	
61-9730.0	0.011 kg


### Lamp remover

#### Additional Information

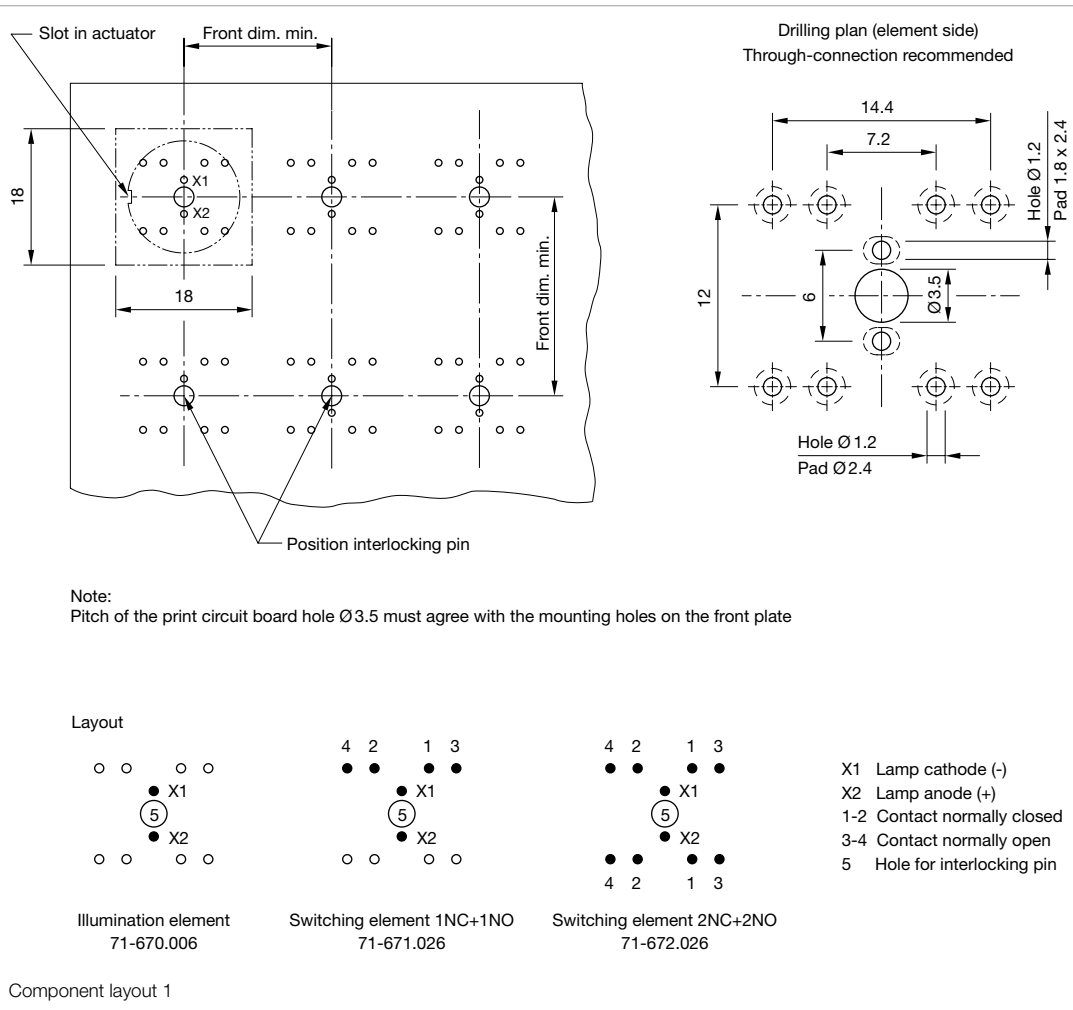
▲ **Caution:** A switching process might be released when replacing the lamp

Part No.	Weight
 <b>Lamp remover</b>	
61-9740.0	0.003 kg

### Mounting tool

Part No.	Weight
 <b>Mounting tool</b>	
01-907	0.02 kg

## Drawings



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# 71 Technical data

## System switch 71

### Switching system

Self-cleaning, double-break snap-action switching system with one NC- (Normally closed) and one NO-contact (Normally open).

### Material

#### Lens

Polycarbonat (PC), as per UL 94 V0, or Aluminium anodized

#### Front bezel

Polyetherimid (PEI), as per UL 94 V0, or Aluminium anodized

#### Material of contact

AgNi, 2 µm gold plated

#### Switching element

Polyethylene terephthalate (PETP), as per UL 94 V0

#### Actuator housing

Polyetherimide (PEI), as per UL 94 V0

### Mechanical characteristics

#### Terminals

PCB terminal, Brass gold plated

#### Tightening torque

for fixing nut max. 50 Ncm

#### Actuating torque

Selector-/Keylock switch 4 Ncm ... 8 Ncm

#### Actuating force

Pushbutton 2 N ... 3 N

#### Actuating travel

Pushbutton 3 mm

Selector-/keylock switch	2 positions	3 positions
Momentary action	approx. 42°	approx. 2 x 42°
Maintained action	approx. 90°	approx. 2 x 90°

#### Rebound time

≤ 1 ms

#### Mechanical lifetime

Pushbutton maintained action	1 million cycles of operation
Pushbutton momentary action	2 million cycles of operation
Keylock switch	50 000 cycles of operation
Selector switch	100 000 cycles of operation

#### Resistance to heat of soldering

Manual soldering 350 °C, 3 sec.  
Flow soldering 260 °C, 5 sec.

### Electrical characteristics

#### Contact resistance

Starting value (initial) ≤ 50 mΩ

#### Isolation resistance

≥ 10<sup>12</sup> Ω

#### Switch rating

Switch rating AC cos φ 0.7 ... 0.8

Voltage 250 VAC

Current 3 A

Switch rating DC

Voltage 24 VDC 250 VDC

Current 3 A 0.5 A

#### Recommended minimum operational data

Voltage 5 VAC

Current 10 mA

#### Electric strength

2000 VAC, 50 Hz, 1 min. between all terminals and earth

### Environmental conditions

#### Storage temperature

-40 °C ... +85 °C

#### Operating temperature

-25 °C ... +55 °C

#### Protection degree

Frontside IP 65

#### Shock resistance

(semi-sinusoidal)

max. 500 m/s<sup>2</sup>, pulse width 11 ms, 3-axis,

as per EN IEC 60068-2-27

#### Vibration resistance

(sinusoidal)

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

#### Climate resistance

Damp heat, state

56 days, +40 °C/93 % relative humidity, as per EN IEC 60068-2-78

### Approvals

#### Declaration of conformity

CE

**Lens plastic with symbols**

**Chemical and mechanical tests**

1. Wipe resistance according to EN 61058-1 section 8.9  
(Petrol/gasoline, distilled water, diluted alcohol)
2. Graffiti-Killer Test
3. Railway cleaning agents (Walo)
4. Damp/dry heat durability
5. UV test according to EN 60068-2-5 / 56 days
6. Mechanical life time 2 Mio. Operations (abrasive test)

*EAO reserves the right to alter specifications without further notice.*

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# 71 Marking

## General notes

### 1. Engraving

In addition to the most commonly used world languages, in DIN1451-3 close spacing, other typefaces are available as Scandinavian, Slavic, Greek, Russian and Polish. Red, blue and black lenses are filled with white colour. Other colour lenses are filled in black. Standard height of letters is 2 mm. If the height is not specified, we will supply 2 mm engraved letters.

### 2. Hot stamping

For larger series it is worth considering markings by means of hot stamping or laser engraving. We will pleased to advise you. For letters and figures, typefaces with 2.5 mm, 3 mm and 4 mm are available.

### 3. Film inserts

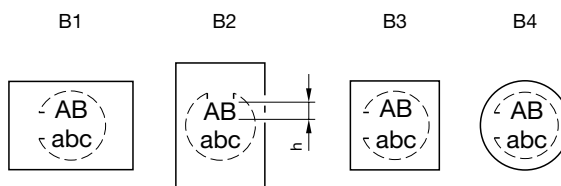
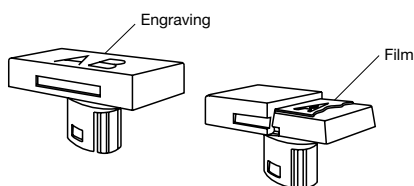
Instead of using engraving the lenses can be fitted with transparent film inserts, as an alternative. In the case of use of a smoke-black lens the fitted film becomes readable only if the lamp is on. The film thickness is 0.2 mm. For lenses Ø 24 mm and Ø 25 mm with Part No. 619642.x the marking takes place directly on the text plate Part No. 61-9707.7, instead of a film insert.

**Important: Consider pushbutton mounting orientation before specifying engraving characters!**

## Lenses for Indicators, Illuminated pushbuttons, flush mounting

All dimensions in mm

Front size (Lens)	Film insert max. size	Height of letters h	Number of lines	Number of capital letters per line (target value)	Number of small letters per line (target value)	Image
24 x 24 (18 x 18)	15.1 x 15.1	2	4	8-9	9	B3
		3	3	7-8	8	B3
		4	2	4-5	5	B3
		5	2	4	4-5	B3
		6	1	4	4	B3
		8	1	2-3	2-3	B3
24 x 30 (18 x 24)	15.1 x 21	2	4	12	13	B1
			5	8-9	9	B2
		3	3	10-11	11-12	B1
			4	7-8	8	B2
		4	2	7	8	B1
			3	4-5	5	B2
		5	2	5-6	6	B1
				4	4-5	B2
		6	1	4-5	5	B1
				2	3	3-4
		8	1	3-4	3-4	B1
				2-3	2-3	B2
Ø 25 (Ø 19.7)	Marking plate	2	3	6	6	B4
		3	2	5	6	B4
		4	2	3	4	B4
		5	1	2	3	B4
		6	1	2	3	B4
		8	1	2	2	B4



## Suppressor circuits

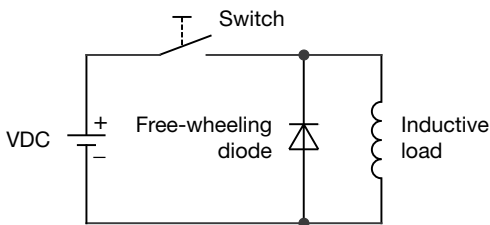
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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.

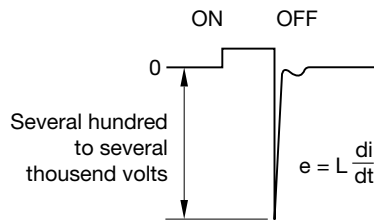
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage ( $V_R$ ) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum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



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