

# Series 61

## Characteristics

The compact 16 mm Series 61 is especially suited for:

- Flush design
- Raised design
- PCB (with adaptor)

The modular design caters to a broad range of applications and combinations.

## Functions

The Series 61 incorporates the following functions:

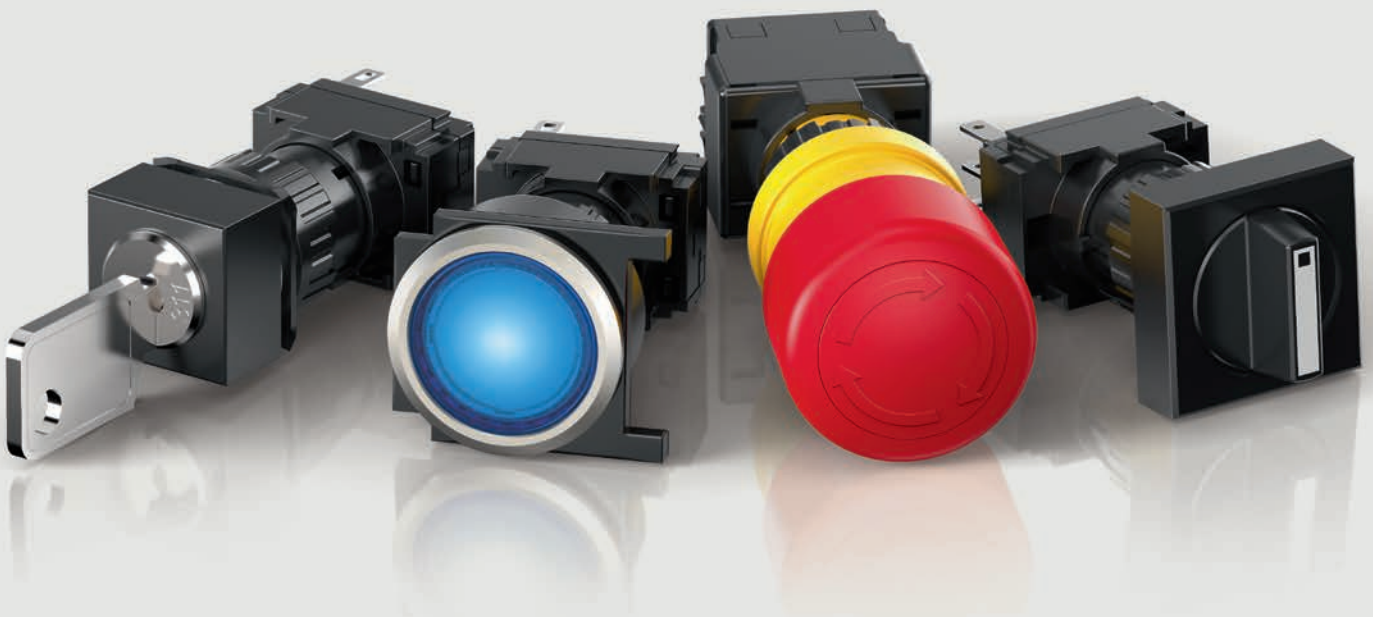
- Indicator
- Pushbutton
- Illuminated pushbutton
- E-STOP switch
- Stop switch
- Mushroom-head pushbutton
- Keylock switch
- Selector switch
- Buzzer
- Potentiometer

## Market segments

The EAO Series 61 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.





**Overview****Flush design**

Indicator	4
Buzzer	10
Pushbutton	11
Illuminated pushbutton	12
Mushroom-head pushbutton	15
Keylock switch	16
Selector switch	25
Potentiometer	29

**Raised design**

Indicator	30
Illuminated pushbutton	34
Emergency-stop switch	37
Stop switch	39
Mushroom-head pushbutton	41
Keylock switch	42
Selector switch	51

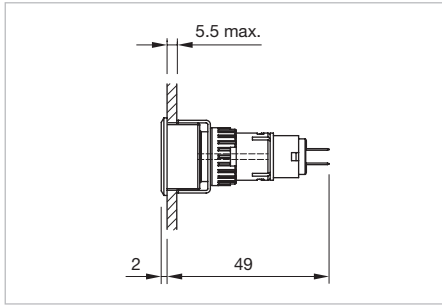
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# 61 Flush design

## Indicator complete square, IP 65



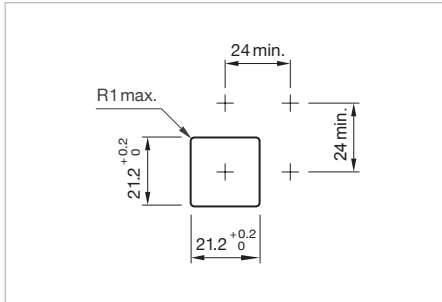
Product can differ from the current configuration.



Dimensions [mm]



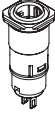


### Additional Information

- For front dimension 24 x 24 mm




Mounting cut-outs [mm]

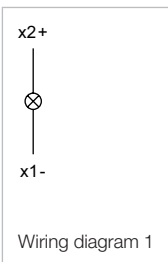
### Equipment consisting of (schematic overview)

	<b>Lens</b>	page 55
	<b>LED</b>	page 80
	<b>Actuator</b>	
	<b>Front bezel set</b>	page 63
	<b>Fixing nut</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.*

Terminal	Part No.	Wiring diagram	Weight
 <p><b>Indicator actuator complete square</b></p> <p>Solder 2.8 x 0.5 mm</p>	<b>61-0000.02</b>	1	0,006 kg



## Indicator complete rectangular, IP 65


### Equipment consisting of (schematic overview)

 **Lens** *page 55*

 **LED** *page 80*

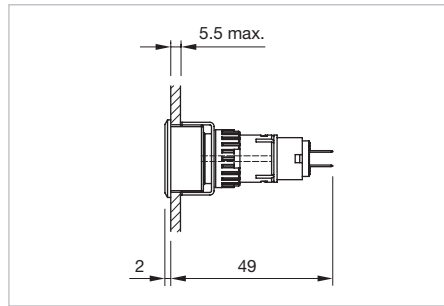
 **Actuator**

 **Front bezel set** *page 63*

 **Fixing nut**

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

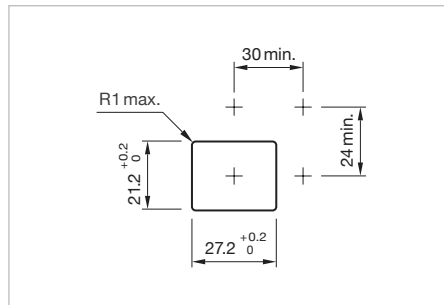
*To obtain a complete unit, please select the red components from the pages shown.*



Dimensions [mm]




Product can differ from the current configuration.

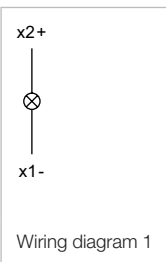


Mounting cut-outs [mm]

### Additional Information

- For front dimension 24 x 30 mm

Terminal	Part No.	Wiring diagram	Weight
 <p><b>Indicator actuator complete rectangular</b></p> <p>Solder 2.8 x 0.5 mm</p>	<b>61-0000.02</b>	1	0.006 kg

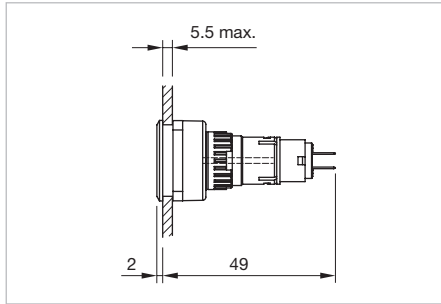


# 61 Flush design

## Indicator complete round, IP 65



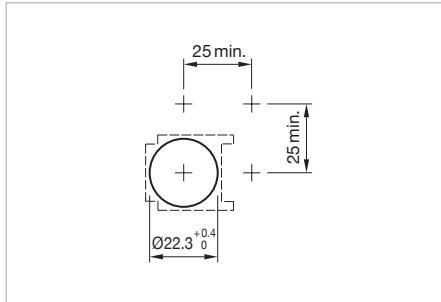
Product can differ from the current configuration.



Dimensions [mm]



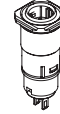


### Additional Information

- For front dimension  $\varnothing 25$  mm




Mounting cut-outs [mm]

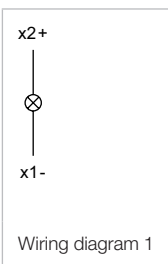
### Equipment consisting of (schematic overview)

	<b>Lens</b>	page 55
	<b>LED</b>	page 80
	<b>Actuator</b>	
	<b>Front bezel set</b>	page 63
	<b>Fixing nut</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.*

Terminal	Part No.	Wiring diagram	Weight
 <p><b>Indicator actuator complete round</b></p> <p>Solder 2.8 x 0.5 mm</p>	<b>61-0000.02</b>	1	0.006 kg



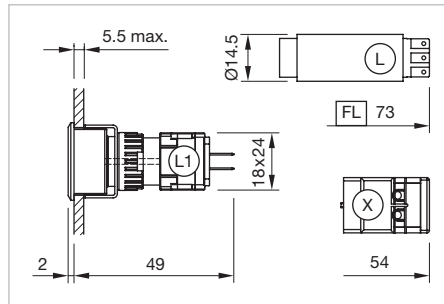
## Indicator square, IP 65

### Equipment consisting of (schematic overview)

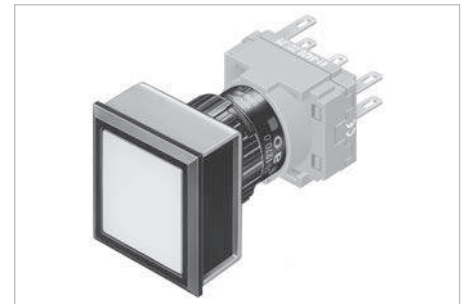
	<b>Lens</b>	<i>page 55</i>
	<b>LED</b>	<i>page 80</i>
	<b>Actuator</b>	
	<b>Front bezel set</b>	<i>page 63</i>
		
	<b>Fixing nut</b>	
	<b>Lamp element</b>	<i>page 73</i>

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

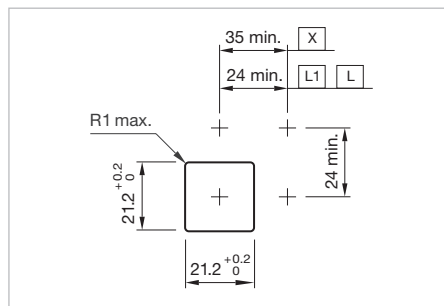
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal,  
 FL = Flasher



Product can differ from the current configuration.



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal

### Additional Information

- For front dimension 24 x 24 mm

Part No.

Weight



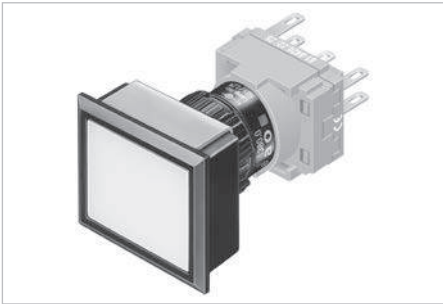
**Indicator actuator square, flush design**

61-0009.0

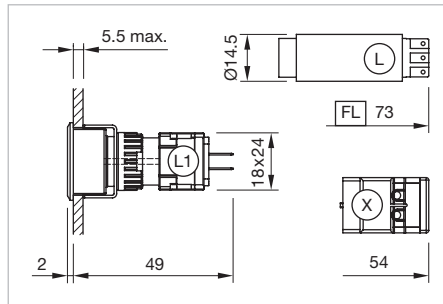
0.005 kg

# 61 Flush design

## Indicator rectangular, IP 65



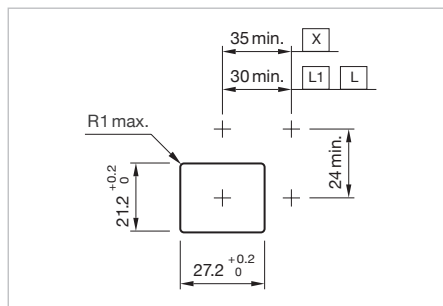
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal,  
 FL = Flasher






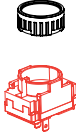
### Additional Information

- For front dimension 24 x 30 mm




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal

### Equipment consisting of (schematic overview)

-  **Lens** page 55
-  **LED** page 80
-  **Actuator**
-  **Front bezel set** page 63
-  **Fixing nut**
-  **Lamp element** page 73

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 rectangular</b></p>	
61-0009.0	0.005 kg



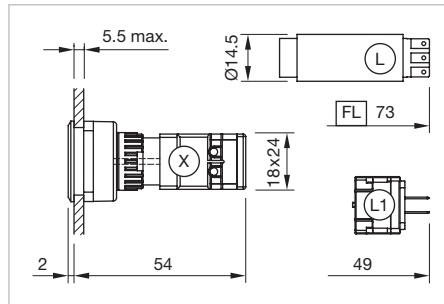
## Indicator round, IP 65

### Equipment consisting of (schematic overview)

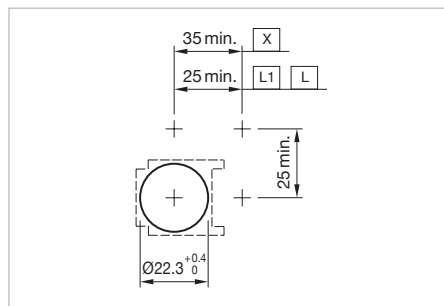
	<b>Lens</b>	<i>page 55</i>
	<b>LED</b>	<i>page 80</i>
	<b>Actuator</b>	
	<b>Front bezel set</b>	<i>page 63</i>
	<b>Fixing nut</b>	
	<b>Lamp element</b>	<i>page 73</i>

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

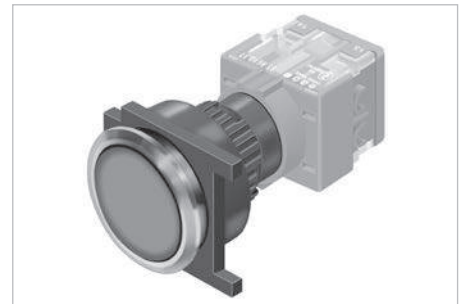
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal,  
 FL = Flasher



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal



Product can differ from the current configuration.

### Additional Information

- For front dimension Ø 25 mm

Part No.

Weight



**Indicator actuator round**

61-0009.0

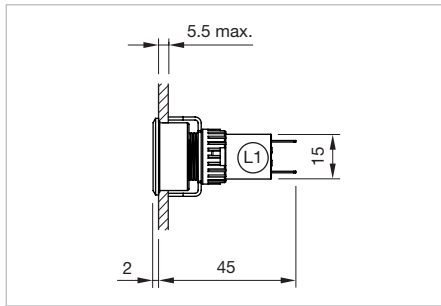
0.005 kg

# 61 Flush design

## Buzzer, IP 40



Product can differ from the current configuration.



Dimensions [mm]  
L1 = Solder/Plug-in terminal 2.8 x 0.5 mm

### Equipment consisting of (schematic overview)



Actuator



Anti-twist ring

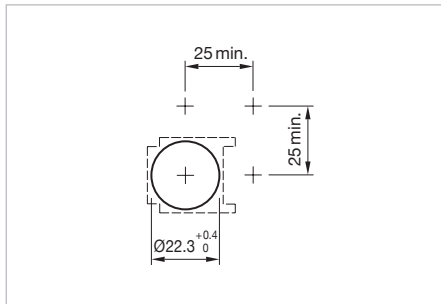


Fixing nut


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

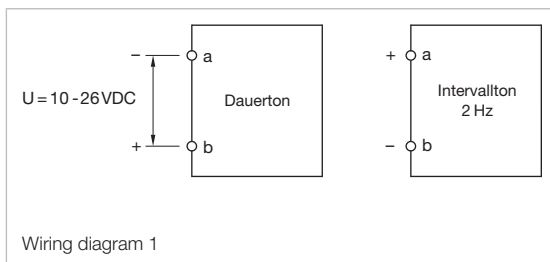
### Additional Information

- Further information see «Technical data»



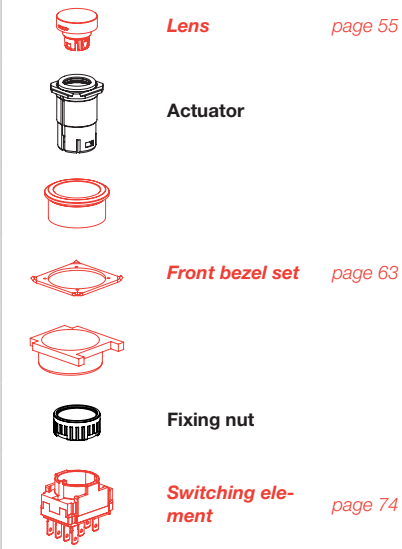
Mounting cut-outs [mm]

Front protection	Operating voltage	Front cap	Terminal	Part No.	Wiring diagram	Weight
	<b>Buzzer, Front dimension Ø 25 mm</b>					
IP 40	10 ... 26 VDC	Plastic black	Plug 2.8 x 0.5 mm	<b>61-7000.02</b>	1	0.015 kg
IP 65	10 ... 26 VDC	Plastic black	Plug 2.8 x 0.5 mm	<b>61-7100.02</b>	1	0.015 kg



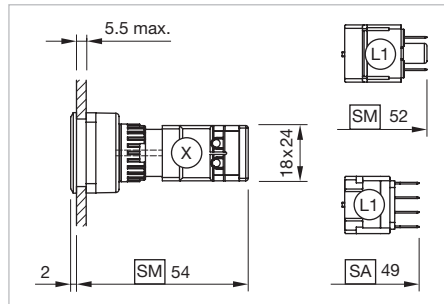
## Pushbutton round, IP 65

### Equipment consisting of (schematic overview)

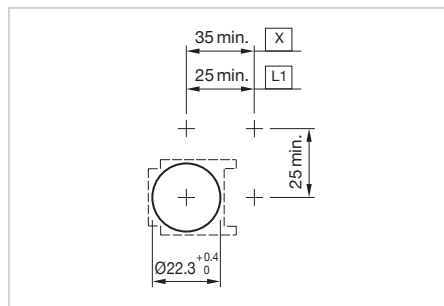


Each Part Number listed below includes all the black components shown in the 3D-drawing.

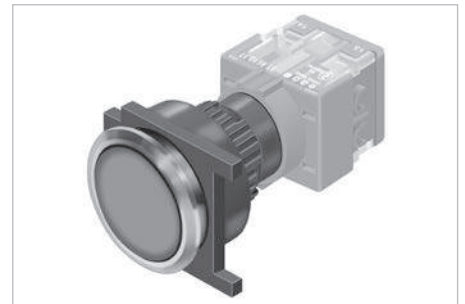
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal



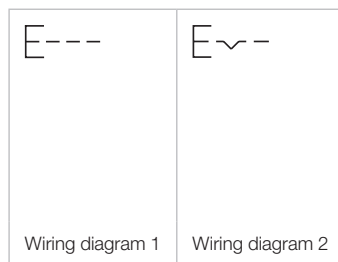
Product can differ from the current configuration.

### Additional Information

- For front dimension Ø 25 mm

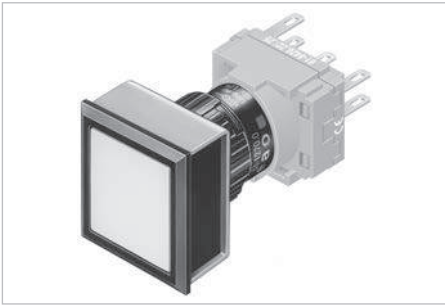
Product attribute	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Pushbutton actuator round</b></p>	B	<b>61-1100.0</b>	1	0.005 kg
	C	<b>61-1200.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1300.0</b>	1

Switching action: B = Momentary, C= Maintained

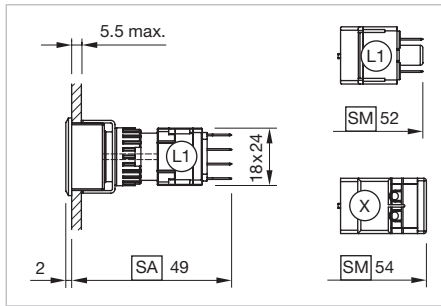


# 61 Flush design

## Illuminated pushbutton square, IP 65



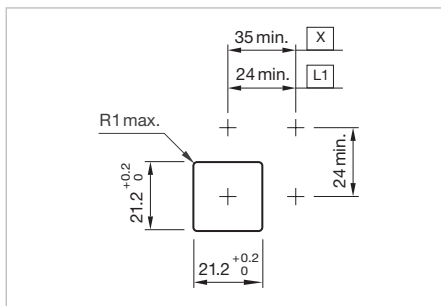
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal

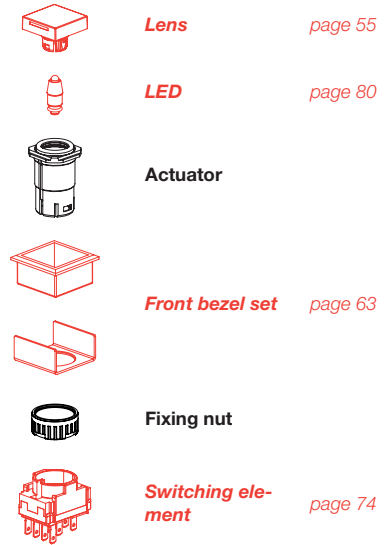
### Additional Information

- For front dimension 24 x 24 mm




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)

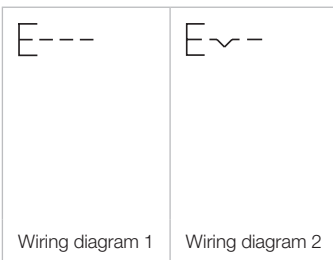


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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







Product attribute	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Illuminated pushbutton actuator square</b></p>	B	<b>61-1100.0</b>	1	0.005 kg
	C	<b>61-1200.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1300.0</b>	1

Switching action: B = Momentary, C= Maintained



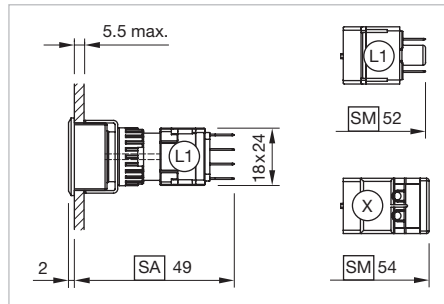
## Illuminated pushbutton rectangular, IP 65

### Equipment consisting of (schematic overview)

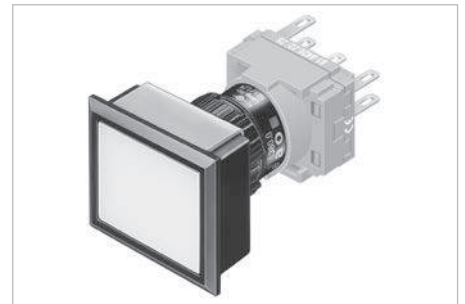
-  **Lens** page 55
-  **LED** page 80
-  **Actuator**
-  **Front bezel set** page 63
-  **Switching element** page 74
-  **Fixing nut**

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

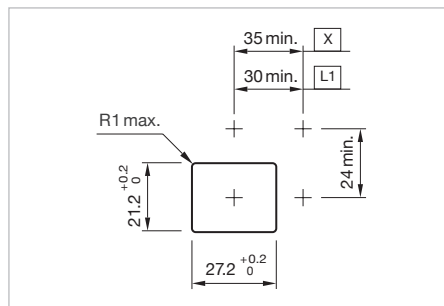
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal




Product can differ from the current configuration.



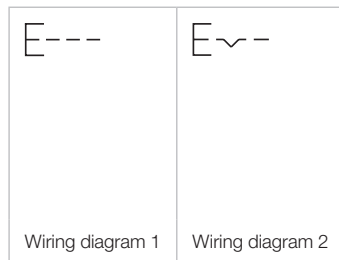
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

- For front dimension 24 x 30 mm

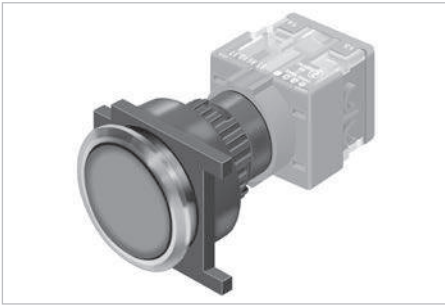
Product attribute	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Illuminated pushbutton actuator rectangular</b></p>	B	<b>61-1100.0</b>	1	0.005 kg
	C	<b>61-1200.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1300.0</b>	1

Switching action: B = Momentary, C= Maintained

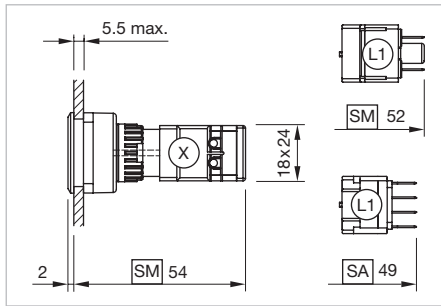


# 61 Flush design

## Illuminated pushbutton round, IP 65



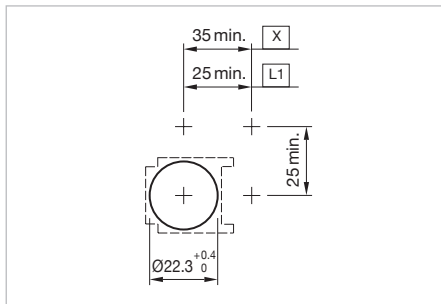
Product can differ from the current configuration.



Dimensions [mm]  
L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
SA = Snap-action switching element,  
SA = Slow-make switching element,  
X = Screw terminal

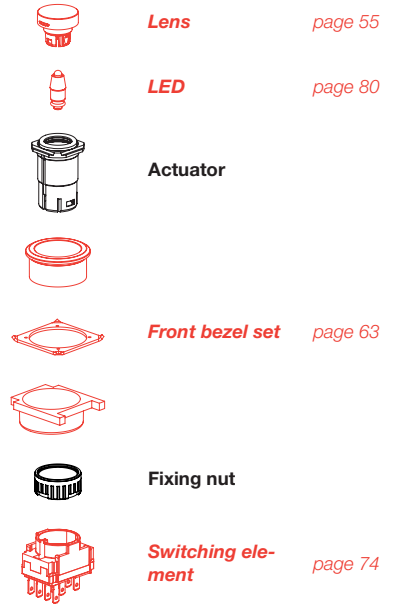
### Additional Information

- For front dimension  $\varnothing 25$  mm




Mounting cut-outs [mm]  
L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
X = Screw terminal

### Equipment consisting of (schematic overview)

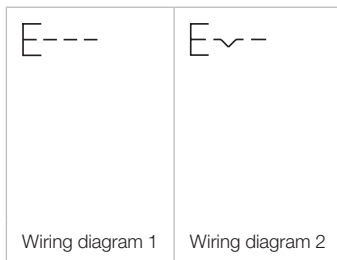


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To obtain a complete unit, please select the red components from the pages shown.

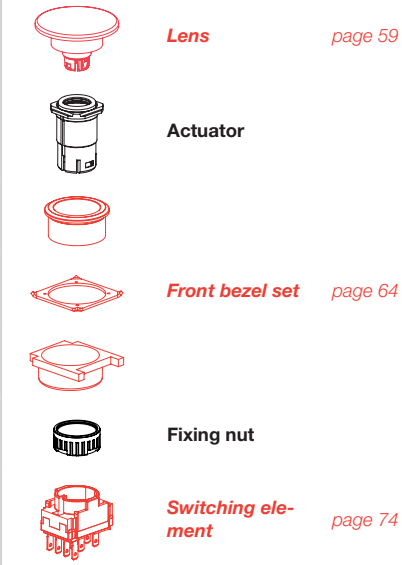
Product attribute	Switching action	Part No.	Wiring diagram	Weight
 <b>Illuminated pushbutton actuator round</b>	B	<b>61-1100.0</b>	1	0.005 kg
	C	<b>61-1200.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1300.0</b>	1

Switching action: B = Momentary, C= Maintained



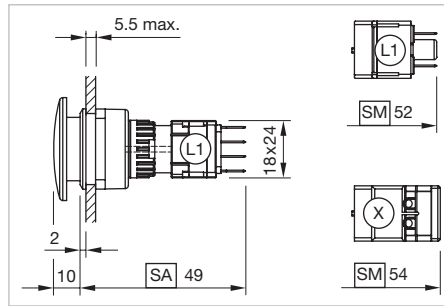
## Mushroom-head pushbutton, IP 65

### Equipment consisting of (schematic overview)

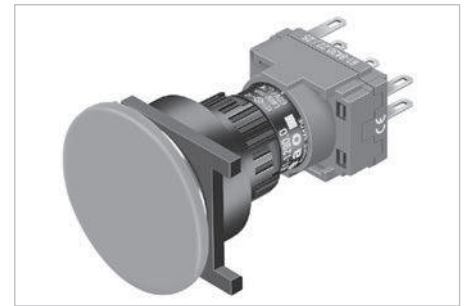


Each Part Number listed below includes all the black components shown in the 3D-drawing.

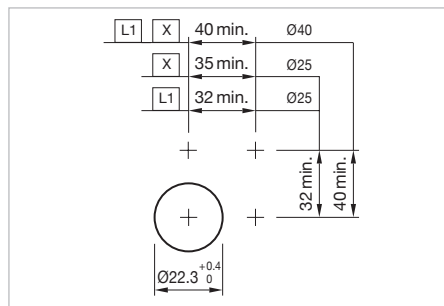
To obtain a complete unit, please select the red components from the pages shown.




Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



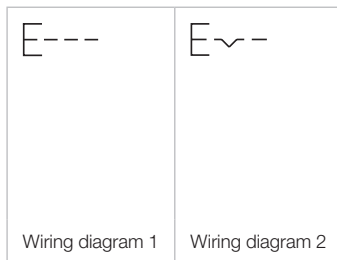
Product can differ from the current configuration.



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

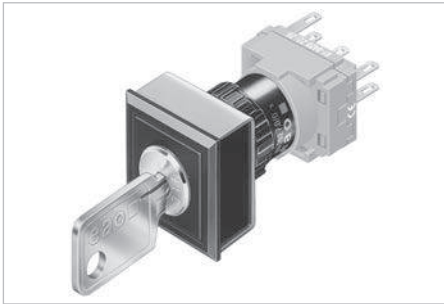
Product attribute	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Mushroom-head pushbutton actuator, Front dimension Ø 32 mm</b></p>	B	<b>61-1100.0</b>	1	0.005 kg
	C	<b>61-1200.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1300.0</b>	1

Switching action: B = Momentary, C= Maintained

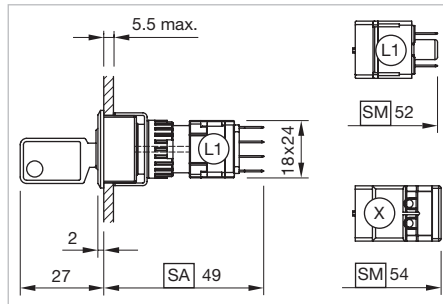


# 61 Flush design

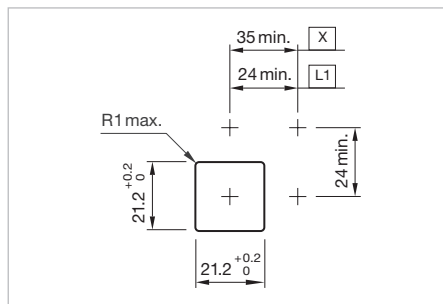
## Keylock switch 2 positions square, IP 65



Product can differ from the current configuration.

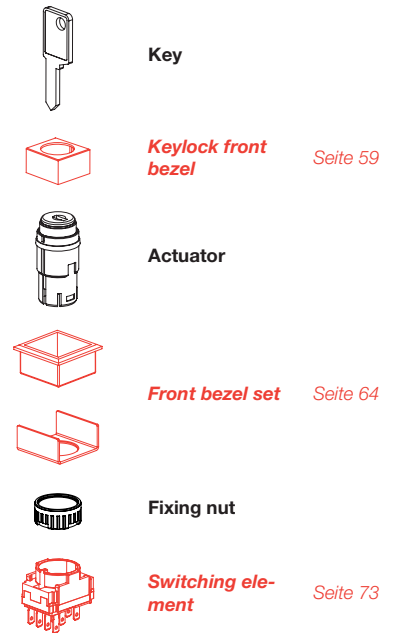


Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)

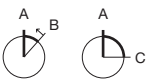


Each Part Number listed below includes all the black components shown in the 3D-drawing.


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

### Additional Information

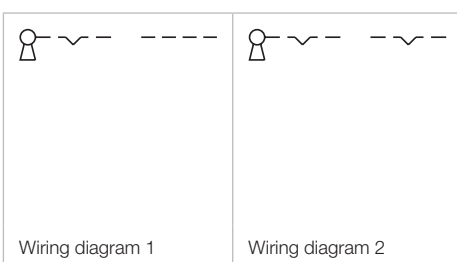
- For front dimension 24 x 24 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request



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 square</b>					
A - B	B = 42°	A	<b>61-2101.0/D</b>	1	0.065 kg
A - C	C = 90°	A	<b>61-2201.0/D</b>	2	0.065 kg
		C	<b>61-2203.0/D</b>	2	0.065 kg
		A + C	<b>61-2205.0/D</b>	2	0.065 kg



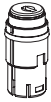
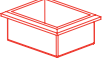

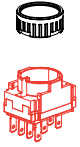
Switching positions A = Rest, B = Momentary, C = Maintained

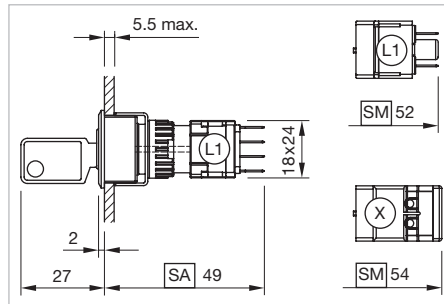




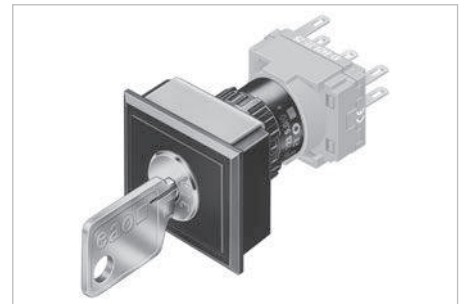
## Keylock switch 2 positions rectangular, IP 65

**Equipment consisting of (schematic overview)**

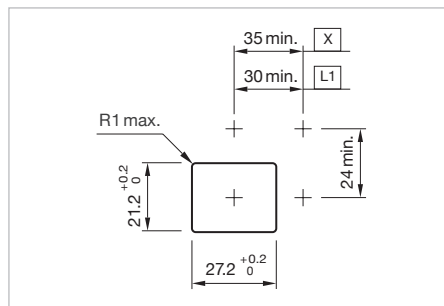
-  **Key**
-  **Keylock front bezel** *Seite 59*
-  **Actuator**
-  **Front bezel set** *Seite 64*
-  **Fixing nut**
-  **Switching element** *Seite 73*



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



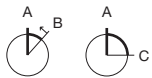
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

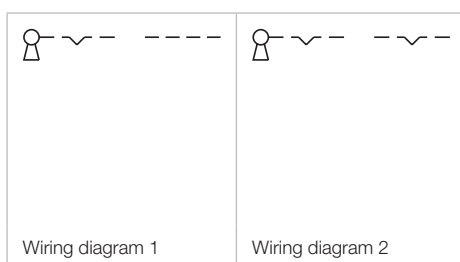
- For front dimension 24 x 30 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request



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

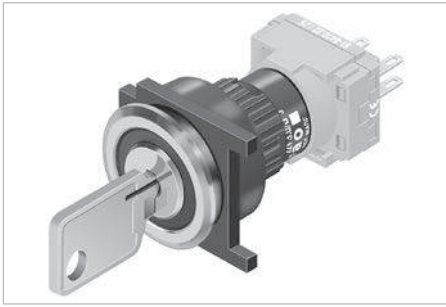
Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <b>Keylock switch actuator 2 positions rectangular</b>					
A - B	B = 42°	A	<b>61-2101.0/D</b>	1	0.065 kg
A - C	C = 90°	A	<b>61-2201.0/D</b>	2	0.065 kg
		C	<b>61-2203.0/D</b>	2	0.065 kg
		A + C	<b>61-2205.0/D</b>	2	0.065 kg

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

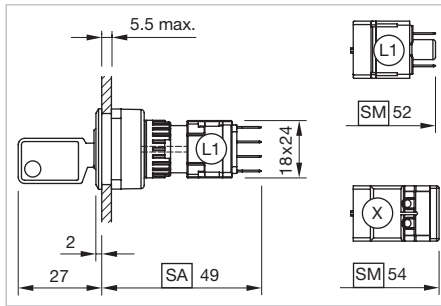


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## Keylock switch actuator 2 positions round, IP 65



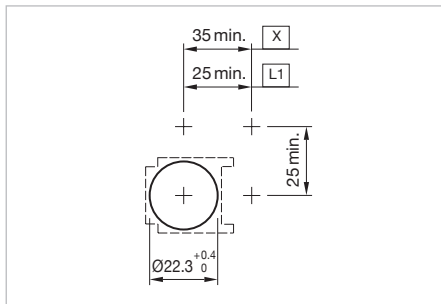
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal

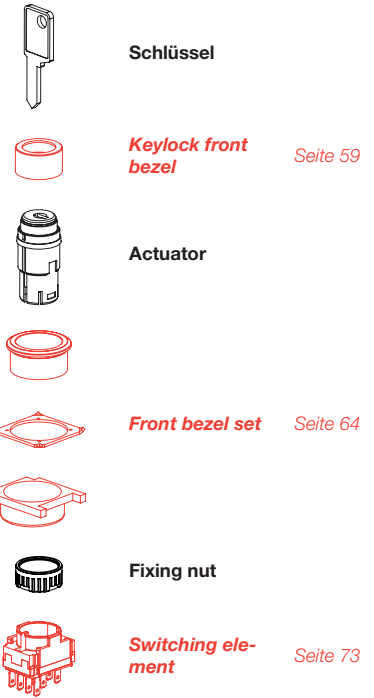
### Additional Information

- For front dimension Ø 25 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request



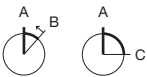
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)




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

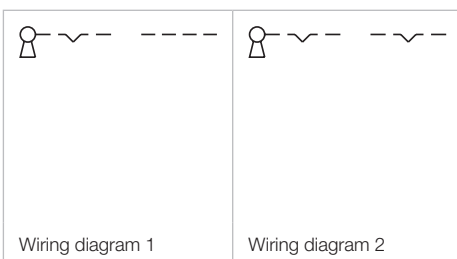
To obtain a complete unit, please select the red components from the pages shown.



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



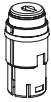
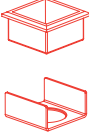


Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <b>Keylock switch actuator 2 positions round</b>					
A - B	B = 42°	A	<b>61-2101.0/D</b>	1	0.065 kg
A - C	C = 90°	A	<b>61-2201.0/D</b>	2	0.065 kg
		C	<b>61-2203.0/D</b>	2	0.065 kg
		A + C	<b>61-2205.0/D</b>	2	0.065 kg

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



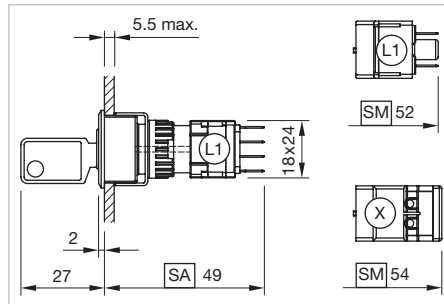
## Keylock switch 3 positions square, IP 65

**Equipment consisting of (schematic overview)**

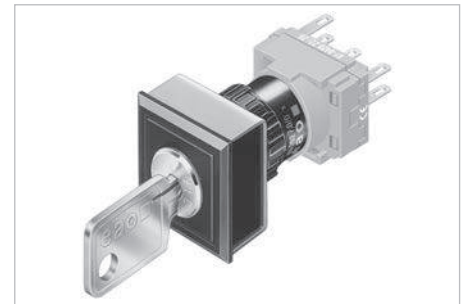
-  **Key**
-  **Keylock front bezel** *page 59*
-  **Actuator**
-  **Front bezel set** *page 64*
-  **Fixing nut**
-  **Switching element** *page 75*

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

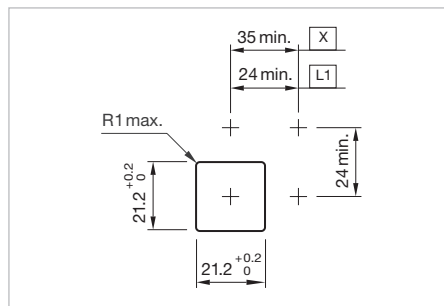
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



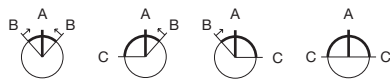
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

- For front dimension 24 x 24 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request

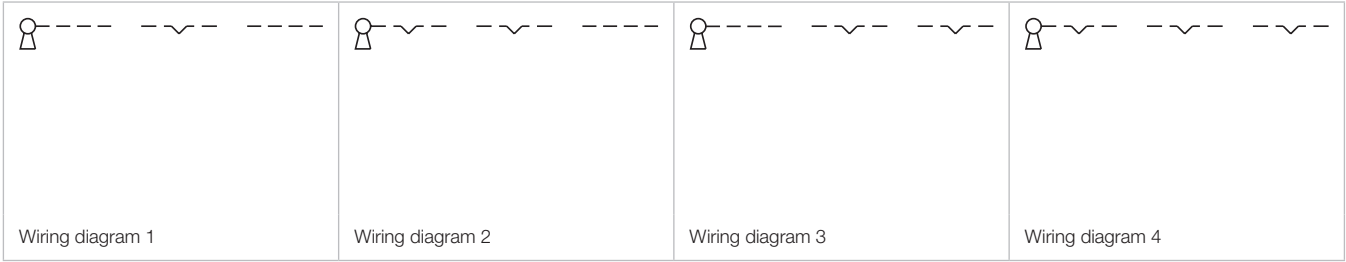


Switching positions (A = Rest, B = Momentary, C = Maintained)

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>61-2501.0/D</b>	1	0.065 kg
C - A - B	C = 90°, B = 42°	A	<b>61-2801.0/D</b>	2	0.065 kg
		C	<b>61-2802.0/D</b>	2	0.065 kg
		C + A	<b>61-2804.0/D</b>	2	0.065 kg
B - A - C	B = 42°, C = 90°	A	<b>61-2701.0/D</b>	3	0.065 kg
		A + C	<b>61-2705.0/D</b>	3	0.065 kg
C - A - C	C = 90° / 90°	A	<b>61-2601.0/D</b>	4	0.065 kg
		C - -	<b>61-2602.0/D</b>	4	0.065 kg
		- - C	<b>61-2603.0/D</b>	4	0.065 kg
		C + A	<b>61-2604.0/D</b>	4	0.065 kg
		A + C	<b>61-2605.0/D</b>	4	0.065 kg
		C + C	<b>61-2606.0/D</b>	4	0.065 kg
		C + A + C	<b>61-2607.0/D</b>	4	0.065 kg







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

# 61 Flush design



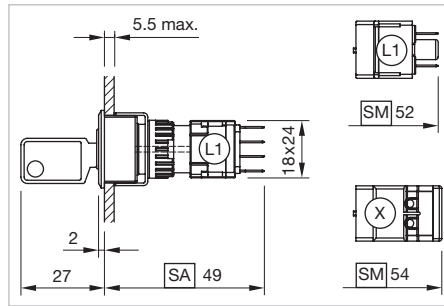
## Keylock switch 3 positions rectangular, IP 65

**Equipment consisting of (schematic overview)**

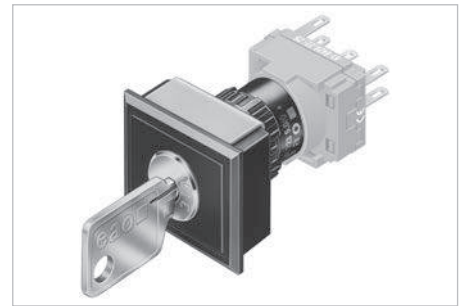
-  **Key**
-  **Keylock front bezel** *page 59*
-  **Actuator**
-  **Front bezel set** *page 64*
-  **Fixing nut**
-  **Switching element** *page 75*

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

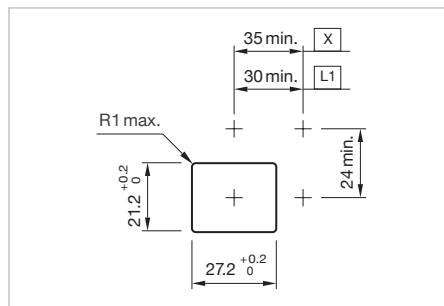
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



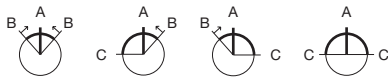
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

- For front dimension 24 x 30 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request

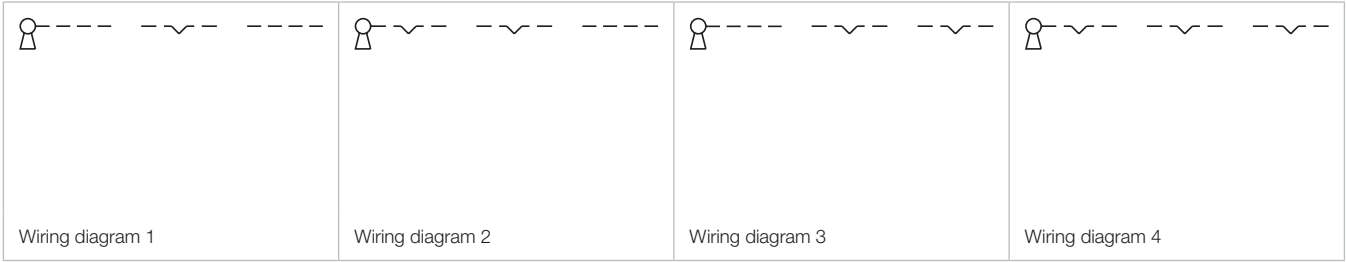


Switching positions (A = Rest, B = Momentary, C = Maintained)

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>61-2501.0/D</b>	1	0.065 kg
C - A - B	C = 90°, B = 42°	A	<b>61-2801.0/D</b>	2	0.065 kg
		C	<b>61-2802.0/D</b>	2	0.065 kg
		C + A	<b>61-2804.0/D</b>	2	0.065 kg
B - A - C	B = 42°, C = 90°	A	<b>61-2701.0/D</b>	3	0.065 kg
		A + C	<b>61-2705.0/D</b>	3	0.065 kg
C - A - C	C = 90° / 90°	A	<b>61-2601.0/D</b>	4	0.065 kg
		C - -	<b>61-2602.0/D</b>	4	0.065 kg
		- - C	<b>61-2603.0/D</b>	4	0.065 kg
		C + A	<b>61-2604.0/D</b>	4	0.065 kg
		A + C	<b>61-2605.0/D</b>	4	0.065 kg
		C + C	<b>61-2606.0/D</b>	4	0.065 kg
		C + A + C	<b>61-2607.0/D</b>	4	0.065 kg



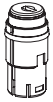



Switching positions A = Rest, B = Momentary, C = Maintained

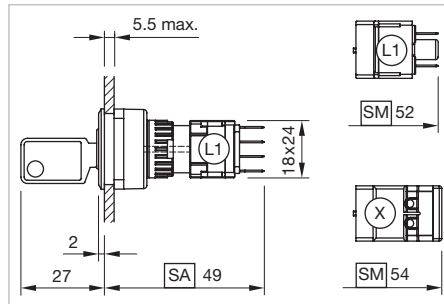
# 61 Flush design



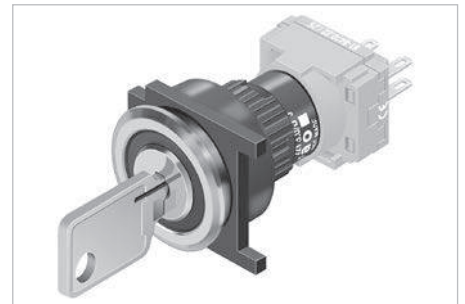
## Keylock switch 3 positions round, IP 65

**Equipment consisting of (schematic overview)**

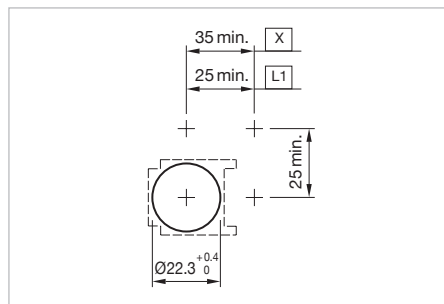
-  **Key**
-  **Keylock front bezel** *page 59*
-  **Actuator**
-  **Front bezel set** *page 64*
-  **Fixing nut**
-  **Switching element** *page 75*



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



Product can differ from the current configuration.



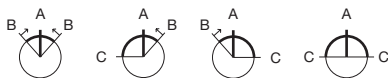
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information


- For front dimension Ø 25 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request

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.

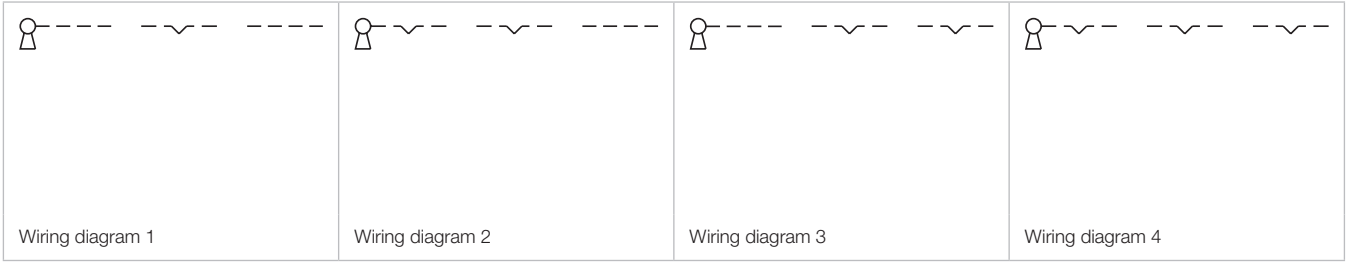


Switching positions (A = Rest, B = Momentary, C = Maintained)

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>61-2501.0/D</b>	1	0.065 kg
C - A - B	C = 90°, B = 42°	A	<b>61-2801.0/D</b>	2	0.065 kg
		C	<b>61-2802.0/D</b>	2	0.065 kg
		C + A	<b>61-2804.0/D</b>	2	0.065 kg
		C + A + C	<b>61-2805.0/D</b>	2	0.065 kg
B - A - C	B = 42°, C = 90°	A	<b>61-2701.0/D</b>	3	0.065 kg
		A + C	<b>61-2705.0/D</b>	3	0.065 kg
C - A - C	C = 90° / 90°	A	<b>61-2601.0/D</b>	4	0.065 kg
		C - -	<b>61-2602.0/D</b>	4	0.065 kg
		- - C	<b>61-2603.0/D</b>	4	0.065 kg
		C + A	<b>61-2604.0/D</b>	4	0.065 kg
		A + C	<b>61-2605.0/D</b>	4	0.065 kg
		C + C	<b>61-2606.0/D</b>	4	0.065 kg
		C + A + C	<b>61-2607.0/D</b>	4	0.065 kg

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








# 61 Flush design





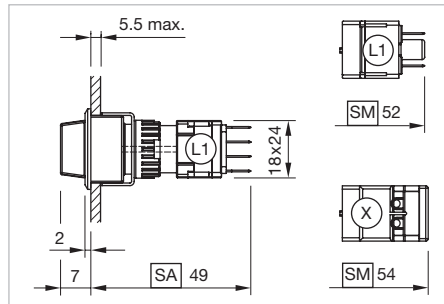
## Selector switch 2 positions square, IP 65

### Equipment consisting of (schematic overview)

-  **Lever** page 60
-  **LED** page 80
-  **Actuator**
-  **Front bezel set** page 65
-  **Front bezel set** page 65
-  **Fixing nut**
-  **Switching element** page 73

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.



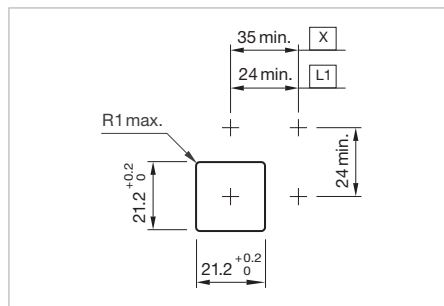
Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



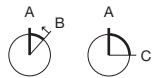
Product can differ from the current configuration.

### Additional Information


- For front dimension 24 x 24 mm
- illuminative



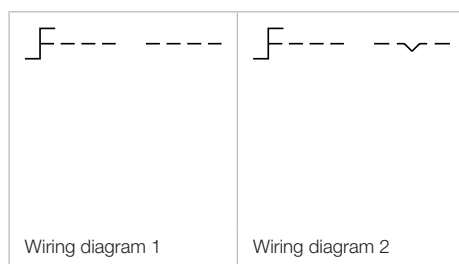
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal



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

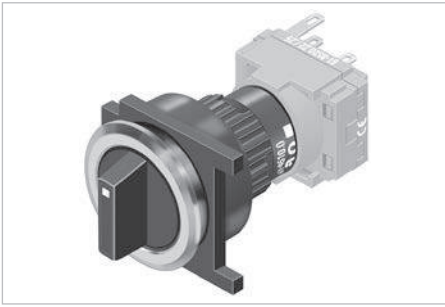
Switching action	Switching angle	Part No.	Wiring diagram	Weight
				
<b>Selector switch actuator 2 positions square</b>				
A - B	B = 42°	<b>61-4110.0</b>	1	0.006 kg
A - C	C = 90°	<b>61-4210.0</b>	2	0.006 kg

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

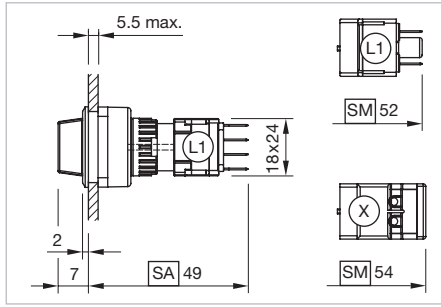


# 61 Flush design

## Selector switch 2 positions round, IP 65



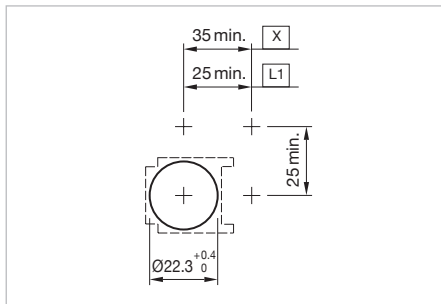
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal







### Additional Information

- For front dimension Ø 25 mm
- illuminative



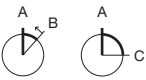
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)


-  **Lever** page 60
-  **LED** page 80
-  **Actuator**
-  **Front bezel set** page 65
-  **Fixing nut**
-  **Switching element** page 76

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

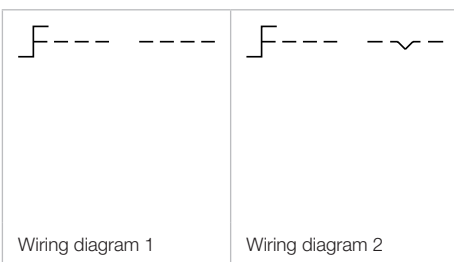
*To obtain a complete unit, please select the red components from the pages shown.*



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




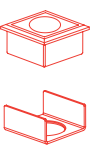


Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch actuator 2 positions round</b>				
A - B	B = 42°	<b>61-4110.0</b>	1	0.006 kg
A - C	C = 90°	<b>61-4210.0</b>	2	0.006 kg

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



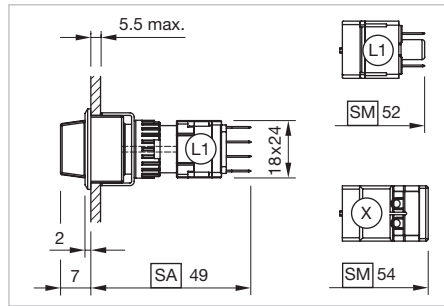
## Selector switch 3 positions square, IP 65

### Equipment consisting of (schematic overview)

-  **Lever** page 60
-  **LED** page 80
-  **Actuator**
-  **Front bezel set** page 65
-  **Fixing nut**
-  **Switching element** page 76

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

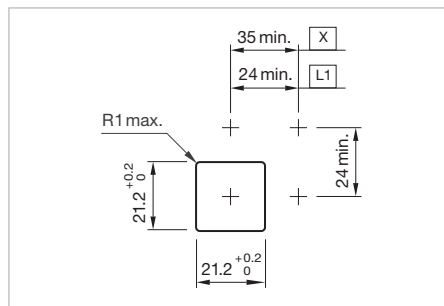
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



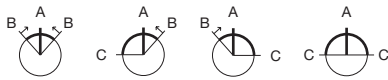
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information



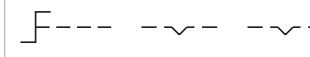
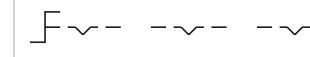
- For front dimension 24 x 24 mm
- illuminative



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

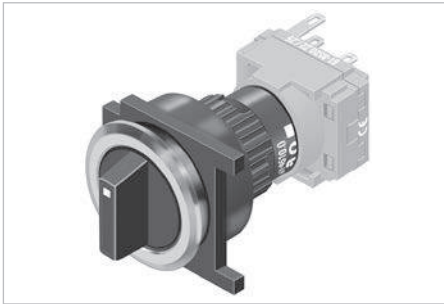
Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch actuator 3 positions square</b>				
B - A - B	B = 42° / 42°	<b>61-4510.0</b>	1	0.006 kg
C - A - B	C = 90°, B = 42°	<b>61-4810.0</b>	2	0.006 kg
B - A - C	B = 42°, C = 90°	<b>61-4710.0</b>	3	0.006 kg
C - A - C	C = 90° / 90°	<b>61-4610.0</b>	4	0.006 kg

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

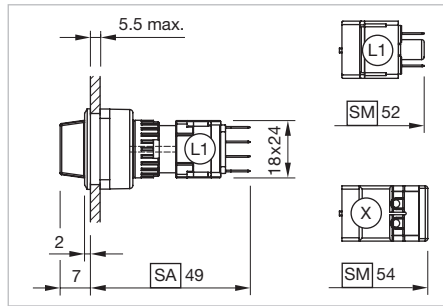
			
Wiring diagram 1	Wiring diagram 2	Wiring diagram 3	Wiring diagram 4

# 61 Flush design

## Selector switch 3 positions round, IP 65



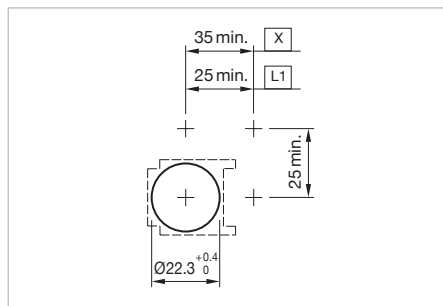
Product can differ from the current configuration.



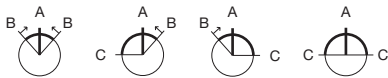
Dimensions [mm]  
L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
SA = Snap-action switching element,  
SA = Slow-make switching element,  
X = Screw terminal

### Additional Information

- For front dimension Ø 25 mm
- illuminative

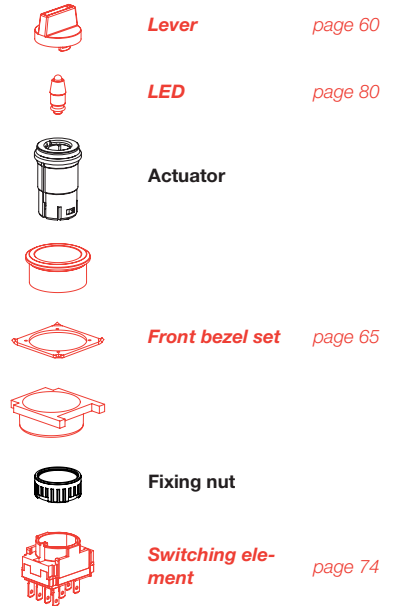


Mounting cut-outs [mm]  
L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
X = Screw terminal




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

### Equipment consisting of (schematic overview)

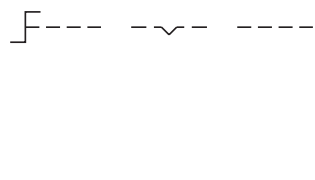
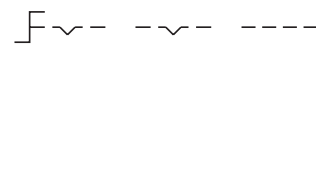
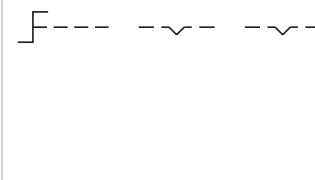
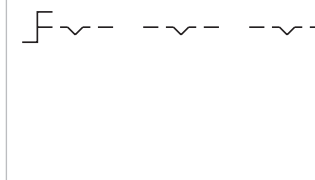


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

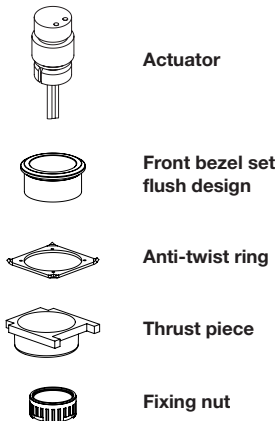
Switching action	Switching angle	Part No.	Wiring diagram	Weight
				
<b>Selector switch 3 positions round</b>				
B - A - B	B = 42° / 42°	<b>61-4510.0</b>	1	0.006 kg
C - A - B	C = 90°, B = 42°	<b>61-4810.0</b>	2	0.006 kg
B - A - C	B = 42°, C = 90°	<b>61-4710.0</b>	3	0.006 kg
C - A - C	C = 90° / 90°	<b>61-4610.0</b>	4	0.006 kg

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

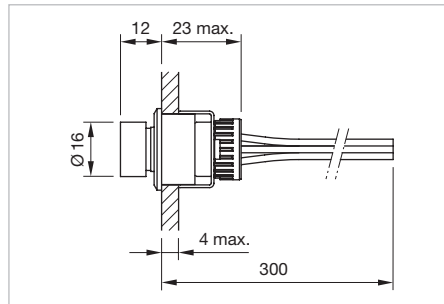
			
Wiring diagram 1	Wiring diagram 2	Wiring diagram 3	Wiring diagram 4

## Potentiometer, IP 65

### Equipment consisting of (schematic overview)



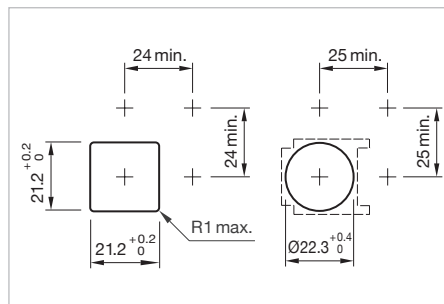
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]





Product can differ from the current configuration.



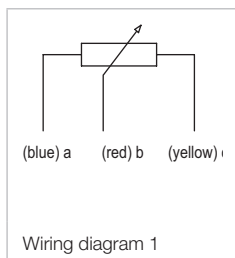
Mounting cut-outs [mm]

### Additional Information

- Resistance 10 kOhms / linear
- Power 1 W
- Slewing range 300°
- Cable length 300 mm

Front bezel	Terminal	Part No.	Component layout	Wiring diagram	Weight
					
<b>Potentiometer, Front dimension 24 x 24 mm</b>					
Plastic black	Flat ribbon cable	<b>61-4970.13</b>	1	1	0.023 kg
					
<b>Potentiometer, Front dimension Ø 25 mm</b>					
Plastic black	Flat ribbon cable	<b>61-4970.10</b>	1	1	0.016 kg

The component layouts you will find from page 90

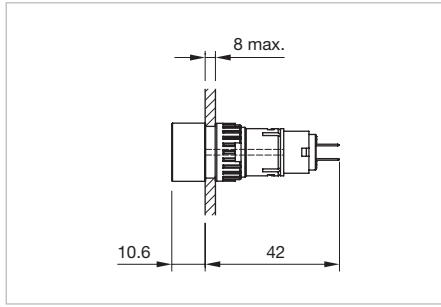


# 61 Raised design

## Indicator complete, IP 65

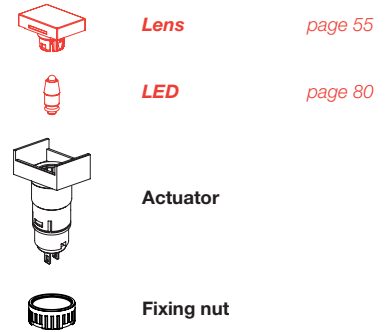


Product can differ from the current configuration.



Dimensions [mm]

### Equipment consisting of (schematic overview)

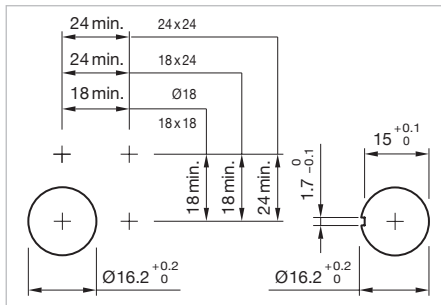


Each Part Number listed below includes all the black components shown in the 3D-drawing.





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

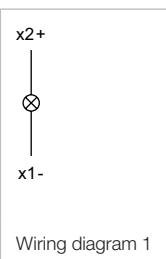
### Additional Information

- Actuator housing plastic black








Mounting cut-outs [mm]

Terminal	Part No.	Wiring diagram	Weight
 <p><b>Indicator actuator complete, Front dimension 24 x 24 mm</b></p>			
Solder 2.8 x 0.5 mm	<b>61-0050.02</b>	1	0.005 kg
 <p><b>Indicator actuator complete, Front dimension 18 x 18 mm</b></p>			
Solder 2.8 x 0.5 mm	<b>61-0020.02</b>	1	0.005 kg
 <p><b>Indicator actuator complete, Front dimension 18 x 24 mm</b></p>			
Solder 2.8 x 0.5 mm	<b>61-0030.02</b>	1	0.005 kg
 <p><b>Indicator actuator complete, Front dimension Ø 18 mm</b></p>			
Solder 2.8 x 0.5 mm	<b>61-0010.02</b>	1	0.005 kg



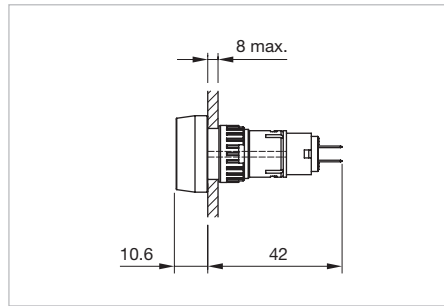
Indicator complete Ø 24 mm, IP 65

Equipment consisting of (schematic overview)

-  **Lens** *page 55*
-  **Front ring** *page 66*
-  **LED** *page 80*
-  **Actuator**
-  **Fixing nut**

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

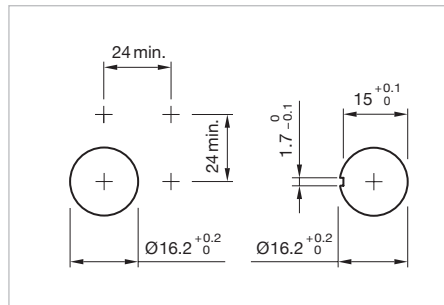
*To obtain a complete unit, please select the red components from the pages shown.*



Dimensions [mm]




Product can differ from the current configuration.

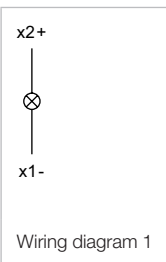


Mounting cut-outs [mm]

**Additional Information**

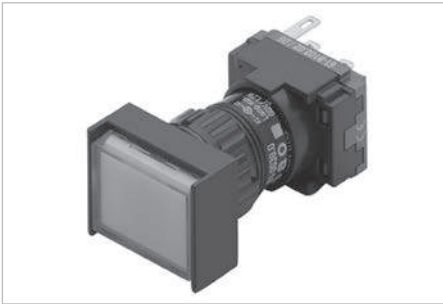
- Actuator housing plastic black

Terminal	Part No.	Wiring diagram	Weight
 <p><b>Indicator actuator complete Ø 24 mm</b></p>			
Solder 2.8 x 0.5 mm	<b>61-0040.02</b>	1	0.005 kg

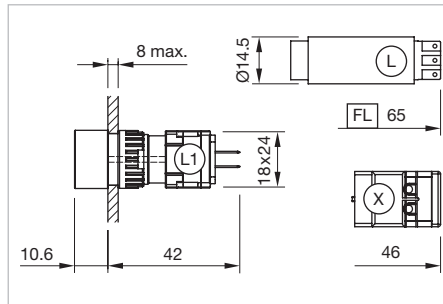


# 61 Raised design

## Indicator, IP 65

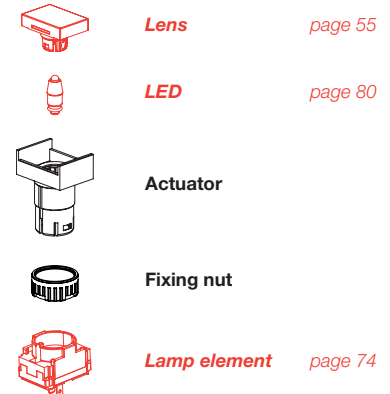


Product can differ from the current configuration.



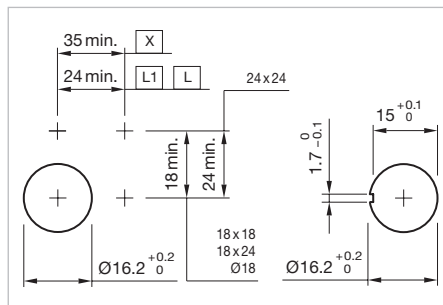
Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal,  
 FL = Flasher

### Equipment consisting of (schematic overview)



### Additional Information





- Actuator housing plastic black



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal

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, Front dimension 24 x 24 mm</b></p>	
61-0059.0	0.005 kg
 <p><b>Indicator actuator, Front dimension 18 x 18 mm</b></p>	
61-0029.0	0.005 kg
 <p><b>Indicator actuator, Front dimension 18 x 24 mm</b></p>	
61-0039.0	0.005 kg
 <p><b>Indicator actuator, Front dimension Ø 18 mm</b></p>	
61-0019.0	0.005 kg



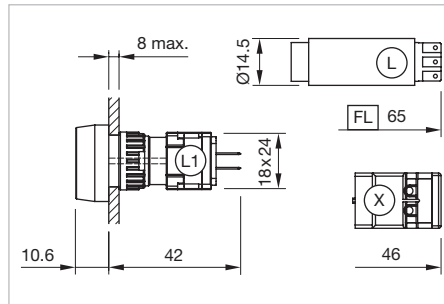
## Indicator Ø 24 mm, IP 65

### Equipment consisting of (schematic overview)

	<b>Lens</b>	<i>page 55</i>
	<b>Front ring</b>	<i>page 66</i>
	<b>LED</b>	<i>page 80</i>
	<b>Actuator</b>	
	<b>Fixing nut</b>	
	<b>Lamp element</b>	<i>page 73</i>

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.



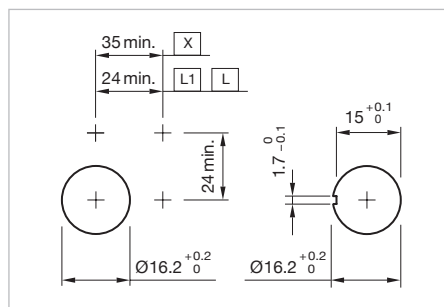
Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal,  
 FL = Flasher



Product can differ from the current configuration.

### Additional Information

- Actuator housing plastic black



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 L = Solder terminal,  
 X = Screw terminal

### Part No.

### Weight



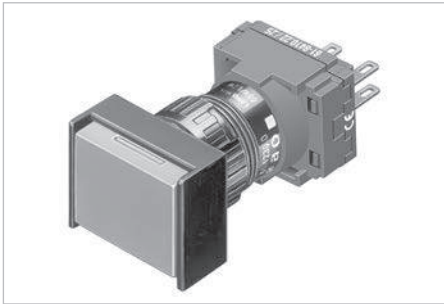
### Indicator actuator Ø 24 mm

61-0049.0

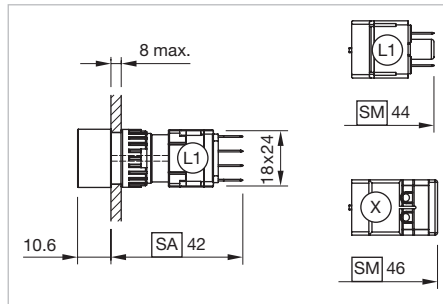
0.005 kg

# 61 Raised design

## Illuminated pushbutton, IP 65

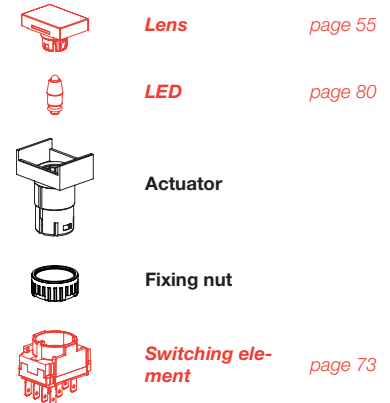


Product can differ from the current configuration.



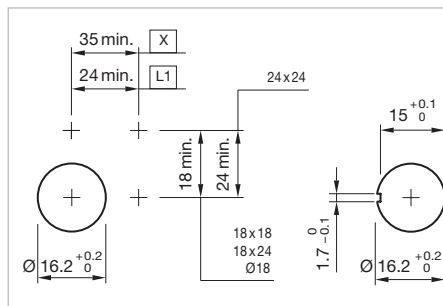
Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal

### Equipment consisting of (schematic overview)



### Additional Information




- Actuator housing plastic black




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

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	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Illuminated pushbutton actuator, Front dimension 24 x 24 mm</b></p>	B	<b>61-1150.0</b>	1	0.005 kg
	C	<b>61-1250.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1350.0</b>	1
 <p><b>Illuminated pushbutton actuator, Front dimension 18 x 18 mm</b></p>	B	<b>61-1120.0</b>	1	0.005 kg
	C	<b>61-1220.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1320.0</b>	1
 <p><b>Illuminated pushbutton actuator, Front dimension 18 x 24 mm</b></p>	B	<b>61-1130.0</b>	1	0.005 kg
	C	<b>61-1230.0</b>	2	0.005 kg
	B-C convertible from momentary to maintained action	B - C	<b>61-1330.0</b>	1

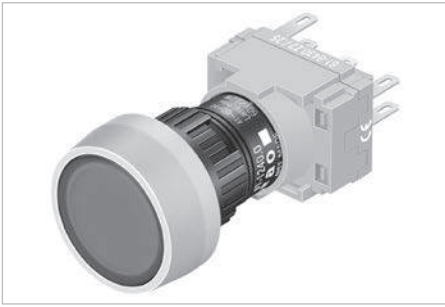
Product attribute	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Illuminated pushbutton actuator, Front dimension Ø 18 mm</b></p>				
	B	<b>61-1110.0</b>	1	0.005 kg
	C	<b>61-1210.0</b>	2	0.005 kg
B-C convertible from momentary to maintained action	B - C	<b>61-1310.0</b>	1	0.005 kg

Switching action: B = Momentary, C= Maintained

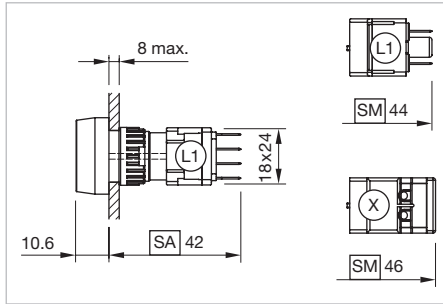
E---	E~--
Wiring diagram 1	Wiring diagram 2

# 61 Raised design

## Illuminated pushbutton round Ø 24 mm, IP 65



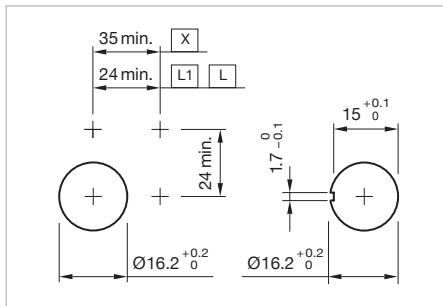
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal

### Additional Information

- Actuator housing plastic black
- Lens Ø 19.7 mm




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)

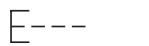
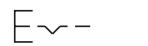
	<b>Lens</b>	page 55
	<b>Front ring</b>	page 66
	<b>LED</b>	page 80
	<b>Actuator</b>	
	<b>Fixing nut</b>	
	<b>Switching element</b>	page 74

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.

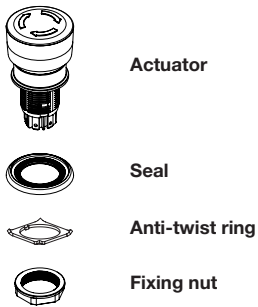
Switching action	Part No.	Wiring diagram	Weight
 <p><b>Indicator actuator Ø 24 mm</b></p>	<b>61-1140.0</b>	1	0.005 kg
	<b>61-1240.0</b>	2	0.005 kg

Switching action: B = Momentary, C= Maintained

 <p>Wiring diagram 1</p>	 <p>Wiring diagram 2</p>
--	---

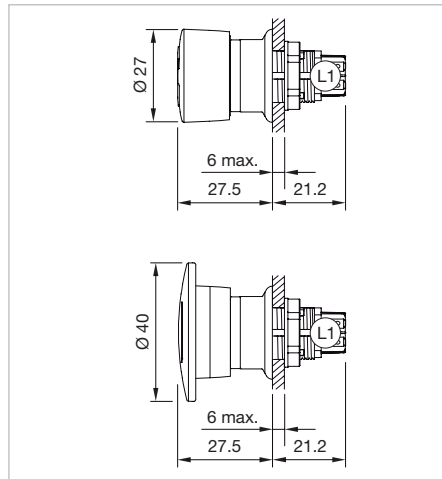
## Emergency-stop switch compact, foolproof EN IEC 60947-5-5, IP67, IP69K

### Equipment consisting of (schematic overview)

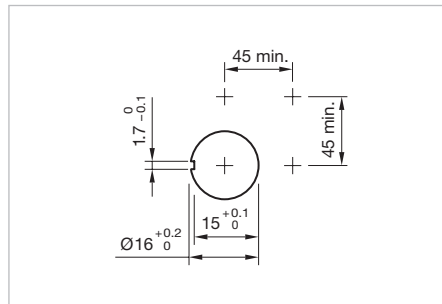


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]  
L1 = Solder/Plug-in terminal 2.8 x 0.5 mm





Mounting cut-outs [mm]




Product can differ from the current configuration.

### Additional Information

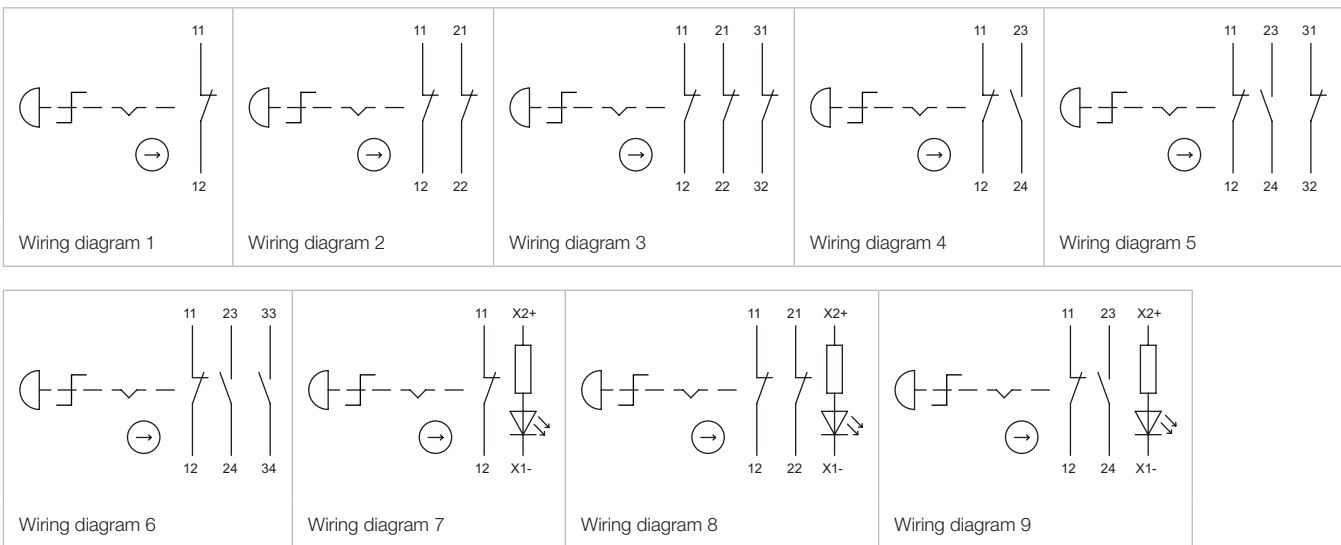
- Application as per DIN EN ISO 13850 and EN 60204-1
- Seal Part No. 61-9900
- Anti-twist ring No. 51-910
- Fixing nut No. 51-991
- Other accessories and spare parts see chapter «Accessories»

Product attribute	Marking	Contacts	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Emergency-stop switch compact, foolproof EN IEC 60947-5-5, Front dimension Ø 27 mm</b></p>								
Twist to unlock clockwise, position indication ring green	Arrows	1 NC	C	Solder 2.8 x 0.5 mm	61-6441.4047	41	1	0.018 kg
	Arrows	2 NC	C	Solder 2.8 x 0.5 mm	61-6441.4057	42	2	0.018 kg
	Arrows	3 NC	C	Solder 2.8 x 0.5 mm	61-6441.4067	43	3	0.018 kg
	Arrows	1 NC + 1 NO	C	Solder 2.8 x 0.5 mm	61-6441.4077	44	4	0.018 kg
	Arrows	2 NC + 1 NO	C	Solder 2.8 x 0.5 mm	61-6441.4087	45	5	0.018 kg
	Arrows	1 NC + 2 NO	C	Solder 2.8 x 0.5 mm	61-6441.4097	46	6	0.018 kg
 <p><b>Emergency-stop switch compact, foolproof EN IEC 60947-5-5, Front dimension Ø 27 mm</b></p>								
Twist to unlock clockwise, position indication ring green	Arrows	1 NC	C	Solder 2.8 x 0.5 mm	61-6451.4247	47	7	0.018 kg
	Arrows	2 NC	C	Solder 2.8 x 0.5 mm	61-6451.4257	48	8	0.018 kg
	Arrows	1 NC + 1 NO	C	Solder 2.8 x 0.5 mm	61-6451.4277	49	9	0.018 kg

# 61 Raised design

Product attribute	Marking	Contacts	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Emergency-stop switch compact, foolproof EN IEC 60947-5-5, Front dimension Ø 40 mm</b></p>								
Twist to unlock clockwise, position indication ring green	Arrows	1 NC	C	Solder 2.8 x 0.5 mm	61-6461.4047	41	1	0.018 kg
	Arrows	2 NC	C	Solder 2.8 x 0.5 mm	61-6461.4057	42	2	0.018 kg
	Arrows	3 NC	C	Solder 2.8 x 0.5 mm	61-6461.4067	43	3	0.018 kg
	Arrows	1 NC + 1 NO	C	Solder 2.8 x 0.5 mm	61-6461.4077	44	4	0.018 kg
	Arrows	2 NC + 1 NO	C	Solder 2.8 x 0.5 mm	61-6461.4087	45	5	0.018 kg
	Arrows	1 NC + 2 NO	C	Solder 2.8 x 0.5 mm	61-6461.4097	46	6	0.018 kg

Switching action: C = Maintained  
The component layouts you will find from page 90



Stop switch actuator, foolproof, IP 65

Equipment consisting of (schematic overview)



Actuator



Fixing nut

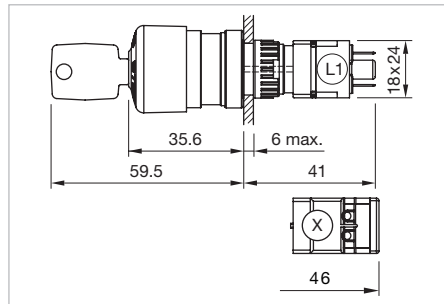


Switching element

Seite 76

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

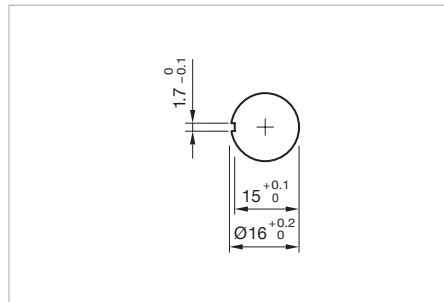
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
X = Screw terminal





Product can differ from the current configuration.



Mounting cut-outs [mm]





Additional Information

- Position indication ring black
- Standard lock KABA 1001
- Two keys are supplied with each key lock switch
- Optional lock numbers on request

Product attribute	Lens	Marking	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Stop switch actuator, foolproof, Front dimension Ø 27 mm</b></p>						
Twist to unlock clockwise, position indication ring black	Plastic grey	Arrows	C	<b>61-3440.4/8</b>	1	0.02 kg
 <p><b>Stop switch actuator, foolproof, Front dimension Ø 27 mm</b></p>						
Key to unlock clockwise, position indication ring black	Plastic black		C	<b>61-5441.0/KA</b>	1	0.033 kg

Switching action: C = Maintain

# 61 Raised design

Product attribute	Marking	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Stop switch actuator, foolproof, Front dimension Ø 27 mm</b></p>					
Twist to unlock clockwise, position indication ring black	Arrows	C	<b>61-3440.4/1</b>	1	0.02 kg
 <p><b>Stop switch actuator, foolproof, Front dimension Ø 27 mm</b></p>					
Twist to unlock clockwise, position indication ring black	Stop + Arrows	C	<b>61-3440.4/2</b>	1	0.02 kg
 <p><b>Stop switch actuator, foolproof, Front dimension Ø 27 mm</b></p>					
Position indication ring black, twist to unlock clockwise, with metal fixing nut	Arrows	C	<b>61-3440.4/D</b>	1	0.02 kg
 <p><b>Stop switch actuator, foolproof, Front dimension Ø 27 mm</b></p>					
Key to unlock clockwise, position indication ring black	Stop	C	<b>61-5441.4/K</b>	1	0.033 kg

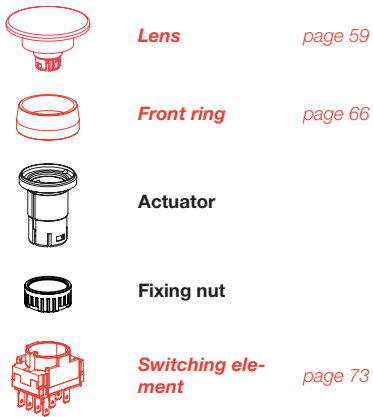


Wiring diagram 1



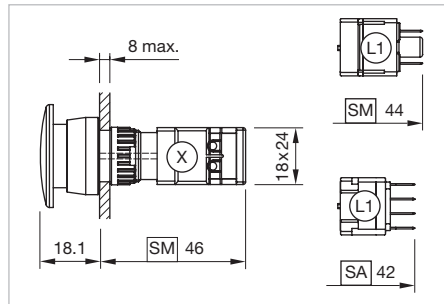
## Mushroom-head pushbutton, IP 65

### Equipment consisting of (schematic overview)



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

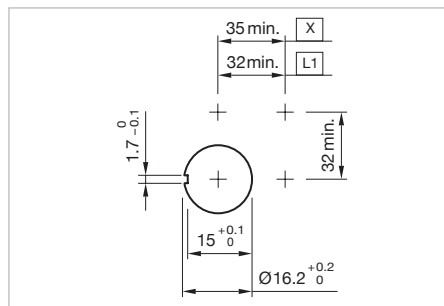
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal




Product can differ from the current configuration.



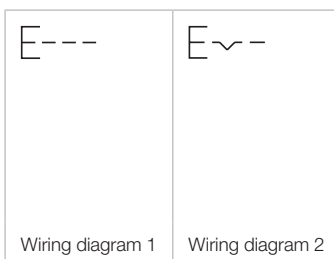
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

- For front dimension  $\varnothing$  32 mm

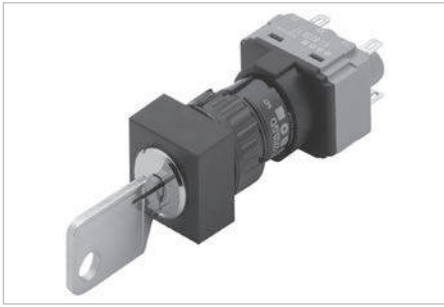
Switching action	Part No.	Wiring diagram	Weight
 <p><b>Mushroom-head pushbutton actuator</b></p>	B	1	0.005 kg
	C	2	0.005 kg

Switching action: B = Momentary, C= Maintained

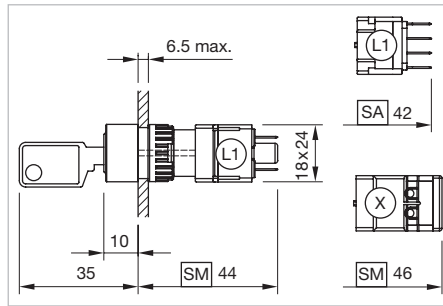


# 61 Raised design

## Keylock switch 2 positions square, IP 65



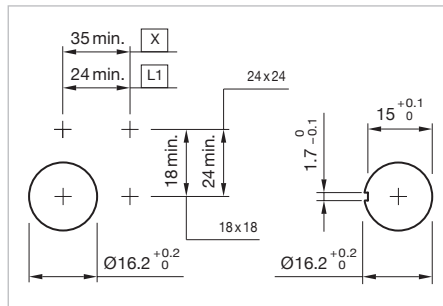
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal

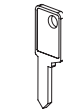
### Additional Information

- For front dimensions 24 x 24 mm, 18 x 18 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)



**Key**



**Keylock front bezel** *page 60*



**Actuator**



**Anti-twist ring** *page 84*



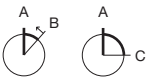
**Fixing nut**




**Switching element** *page 73*

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

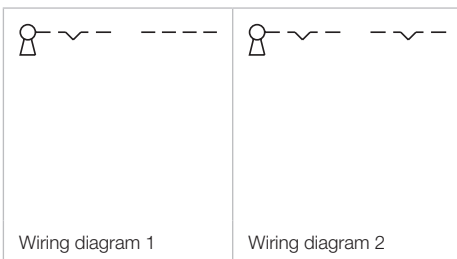
*To obtain a complete unit, please select the red components from the pages shown.*



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

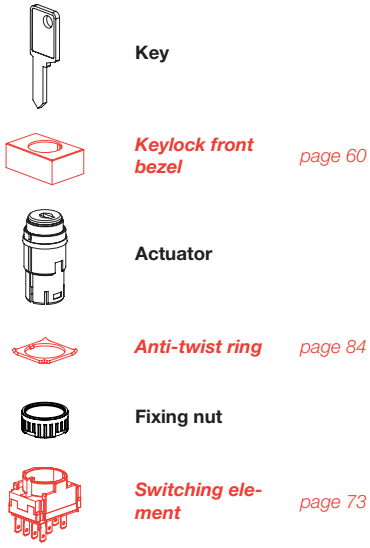
Switching action	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <b>Keylock switch actuator 2 positions square</b>					
A - B	B = 42°	A	<b>61-2101.0/D</b>	1	0.065 kg
A - C	C = 90°	A	<b>61-2201.0/D</b>	2	0.065 kg
		C	<b>61-2203.0/D</b>	2	0.065 kg
		A + C	<b>61-2205.0/D</b>	2	0.065 kg

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



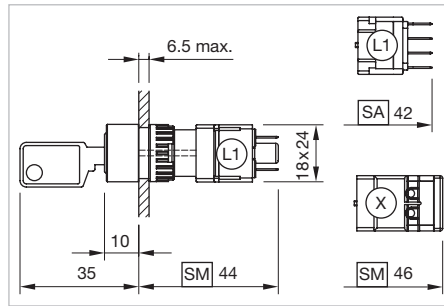
## Keylock switch 2 positions rectangular, IP 65

### Equipment consisting of (schematic overview)

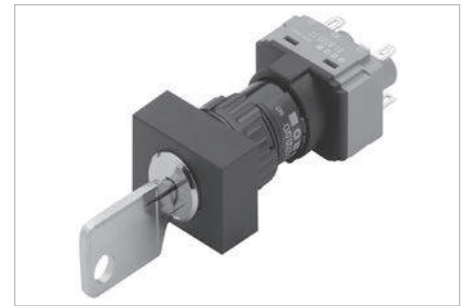


Each Part Number listed below includes all the black components shown in the 3D-drawing.

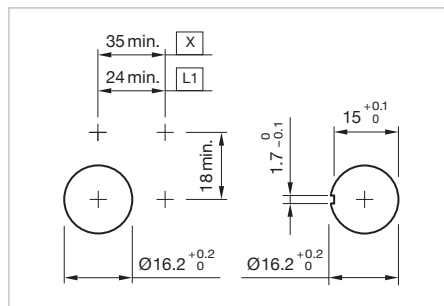
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



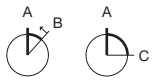
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

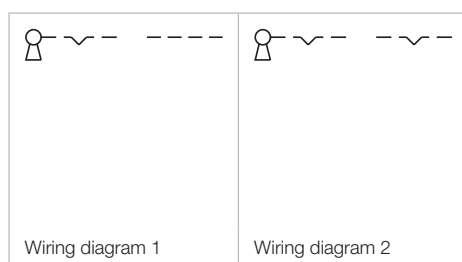
- For front dimension 18 x 24 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device



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>61-2101.0/D</b>	1	0.065 kg
A - C	C = 90°	A	<b>61-2201.0/D</b>	2	0.065 kg
		C	<b>61-2203.0/D</b>	2	0.065 kg
		A + C	<b>61-2205.0/D</b>	2	0.065 kg

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

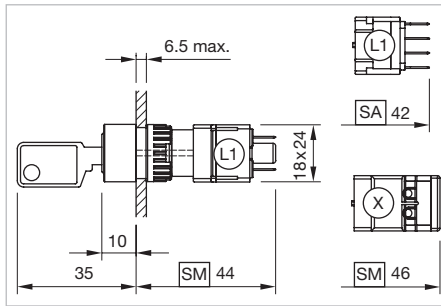


# 61 Raised design

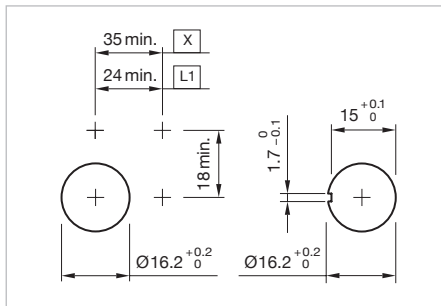
## Keylock switch actuator 2 positions round, IP 65



Product can differ from the current configuration.

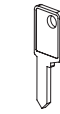


Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)



**Key**



**Keylock front bezel** *page 60*



**Actuator**



**Anti-twist ring** *page 84*



**Fixing nut**



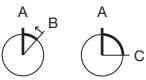
**Switching element** *page 74*

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

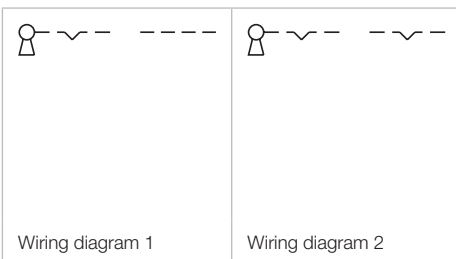
- For front dimension Ø 18 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device



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

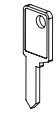
Switching action	Switching positions	Switching angle	Key remove	Part No.	Wiring diagram	Weight
 <b>Keylock switch actuator 2 positions round</b>						
A - B	A = Rest, C = Momentary	B = 42°	A	<b>61-2101.0/D</b>	1	0.065 kg
A - C	A = Rest, C = Maintained	C = 90°	A	<b>61-2201.0/D</b>	2	0.065 kg
			C	<b>61-2203.0/D</b>	2	0.065 kg
			A + C	<b>61-2205.0/D</b>	2	0.065 kg

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



## Keylock switch 3 positions square, IP 65

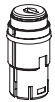
### Equipment consisting of (schematic overview)



Key



Keylock front bezel *page 60*



Actuator



Anti-twist ring *page 84*



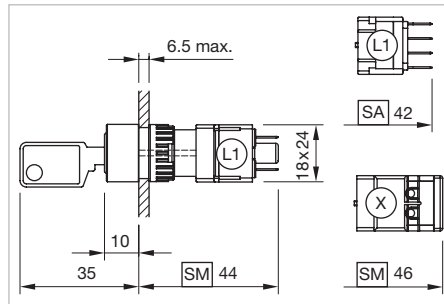
Fixing nut



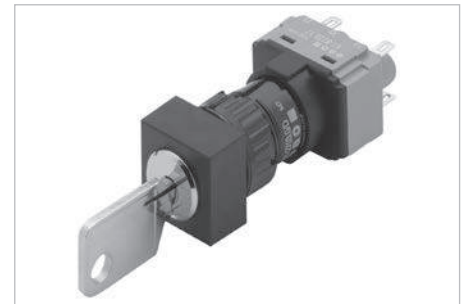
Switching element *page 75*

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

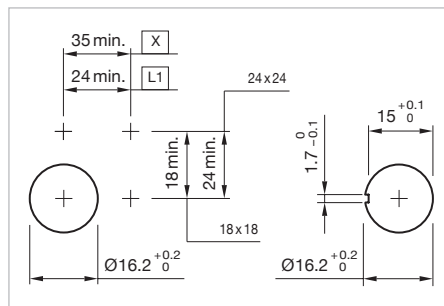
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



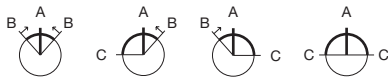
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

- For front dimensions 24 x 24 mm, 18 x 18 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device

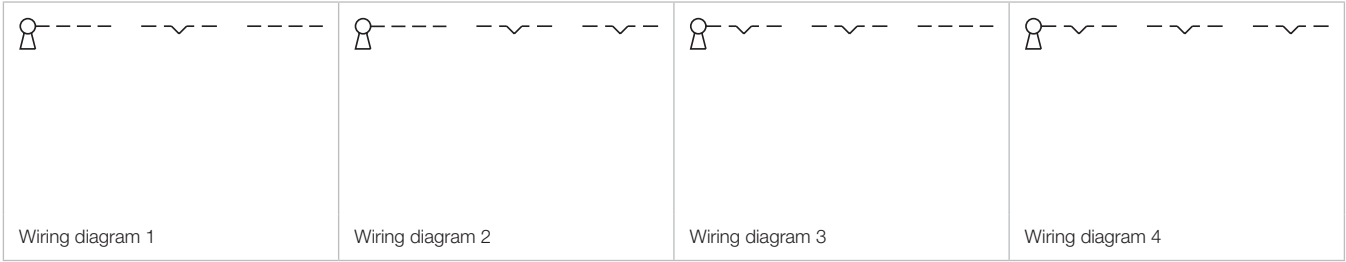


Switching positions (A = Rest, B = Momentary, C = Maintained)

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>61-2501.0/D</b>	1	0.065 kg
C - A - B	C = 90°, B = 42°	A	<b>61-2801.0/D</b>	2	0.065 kg
		C	<b>61-2802.0/D</b>	2	0.065 kg
		C + A	<b>61-2804.0/D</b>	2	0.065 kg
B - A - C	B = 42°, C = 90°	A	<b>61-2701.0/D</b>	3	0.065 kg
		A + C	<b>61-2705.0/D</b>	3	0.065 kg
C - A - C	C = 90° / 90°	A	<b>61-2601.0/D</b>	4	0.065 kg
		C - -	<b>61-2602.0/D</b>	4	0.065 kg
		- - C	<b>61-2603.0/D</b>	4	0.065 kg
		C + A	<b>61-2604.0/D</b>	4	0.065 kg
		A + C	<b>61-2605.0/D</b>	4	0.065 kg
		C + C	<b>61-2606.0/D</b>	4	0.065 kg
		C + A + C	<b>61-2607.0/D</b>	4	0.065 kg

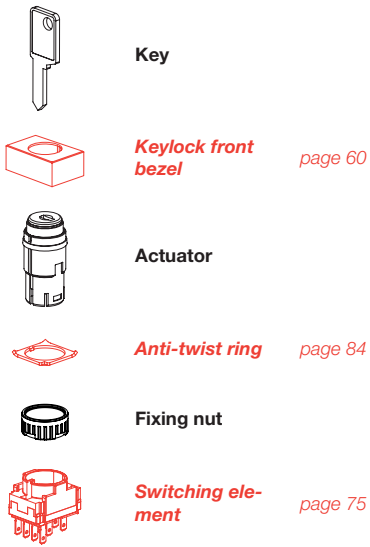
Switching positions A = Rest, B = Momentary, C = Maintained

# 61 Raised design



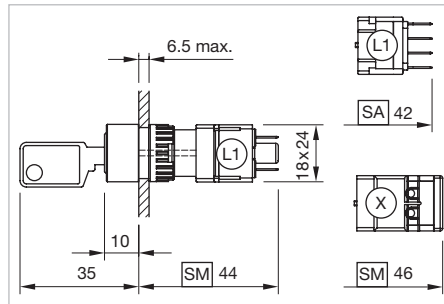
## Keylock switch 3 positions rectangular, IP 65

### Equipment consisting of (schematic overview)

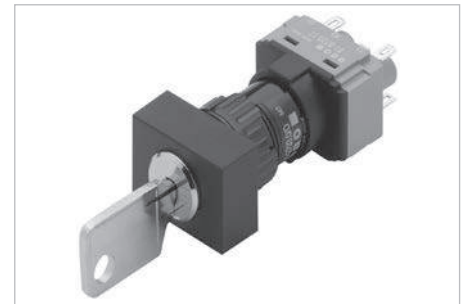


Each Part Number listed below includes all the black components shown in the 3D-drawing.

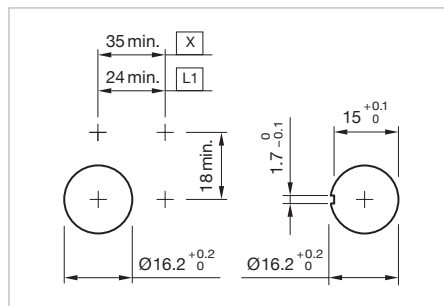
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



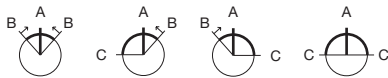
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

- For front dimension 18 x 24 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device

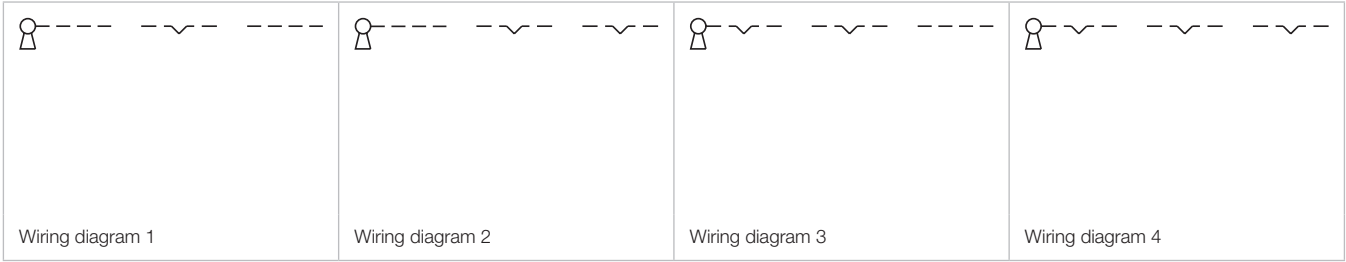


Switching positions (A = Rest, B = Momentary, C = Maintained)

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>61-2501.0/D</b>	1	0.065 kg
C - A - B	C = 90°, B = 42°	A	<b>61-2801.0/D</b>	2	0.065 kg
		C	<b>61-2802.0/D</b>	2	0.065 kg
		C + A	<b>61-2804.0/D</b>	2	0.065 kg
B - A - C	B = 42°, C = 90°	A	<b>61-2701.0/D</b>	3	0.065 kg
		A + C	<b>61-2705.0/D</b>	3	0.065 kg
C - A - C	C = 90° / 90°	A	<b>61-2601.0/D</b>	4	0.065 kg
		C - -	<b>61-2602.0/D</b>	4	0.065 kg
		- - C	<b>61-2603.0/D</b>	4	0.065 kg
		C + A	<b>61-2604.0/D</b>	4	0.065 kg
		A + C	<b>61-2605.0/D</b>	4	0.065 kg
		C + C	<b>61-2606.0/D</b>	4	0.065 kg
		C + A + C	<b>61-2607.0/D</b>	4	0.065 kg

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

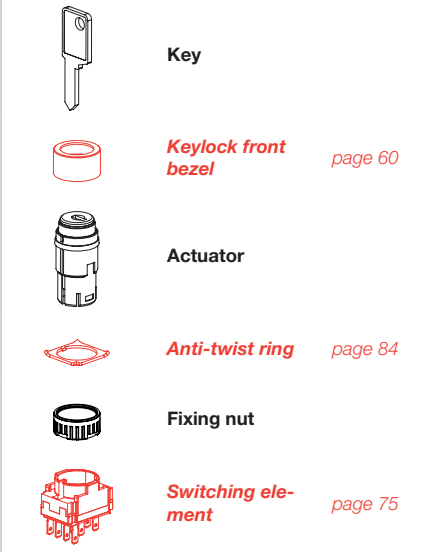
# 61 Raised design





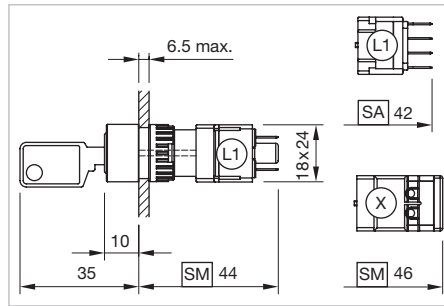
## Keylock switch 3 positions round, IP 65

### Equipment consisting of (schematic overview)



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

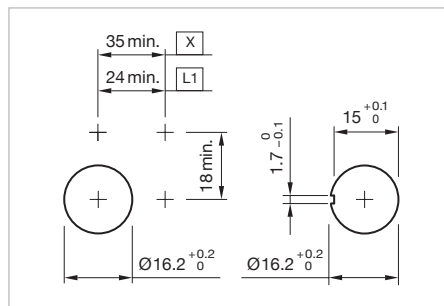
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



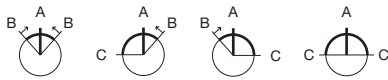
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

- For front dimension Ø 18 mm
- Standard lock: DOM 311
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device

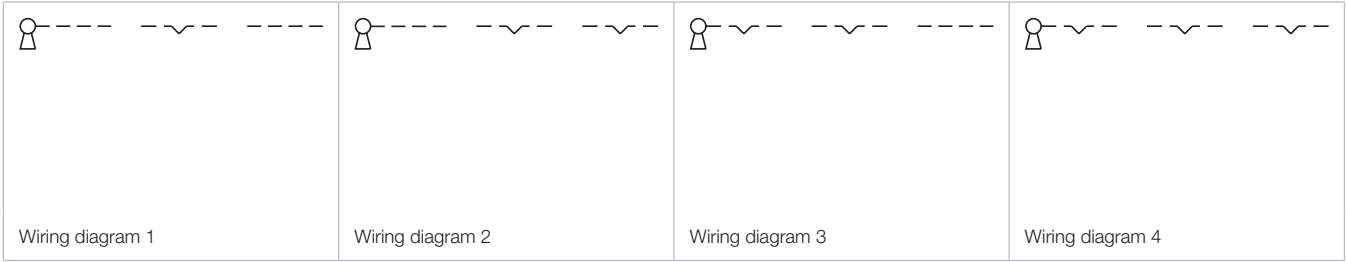


Switching positions (A = Rest, B = Momentary, C = Maintained)

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>61-2501.0/D</b>	1	0.065 kg
C - A - B	C = 90°, B = 42°	A	<b>61-2801.0/D</b>	2	0.065 kg
		C	<b>61-2802.0/D</b>	2	0.065 kg
		C + A	<b>61-2804.0/D</b>	2	0.065 kg
B - A - C	B = 42°, C = 90°	A	<b>61-2701.0/D</b>	3	0.065 kg
		A + C	<b>61-2705.0/D</b>	3	0.065 kg
C - A - C	C = 90° / 90°	A	<b>61-2601.0/D</b>	4	0.065 kg
		C - -	<b>61-2602.0/D</b>	4	0.065 kg
		- - C	<b>61-2603.0/D</b>	4	0.065 kg
		C + A	<b>61-2604.0/D</b>	4	0.065 kg
		A + C	<b>61-2605.0/D</b>	4	0.065 kg
		C + C	<b>61-2606.0/D</b>	4	0.065 kg
		C + A + C	<b>61-2607.0/D</b>	4	0.065 kg








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

# 61 Raised design



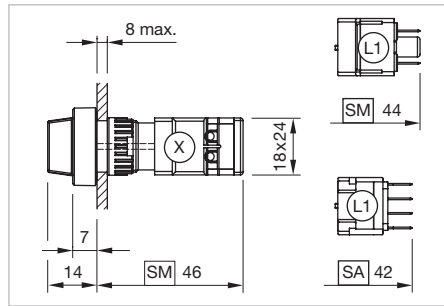
## Selector switch 2 positions square, IP 65

### Equipment consisting of (schematic overview)

-  **Lever** page 61
-  **Front bezel** page 65
-  **LED** page 79
-  **Actuator**
-  **Anti-twist ring** page 84
-  **Fixing nut**
-  **Switching element** page 73

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

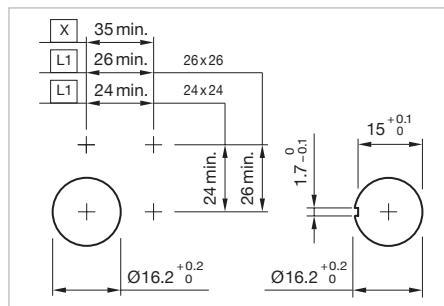
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



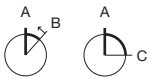
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information

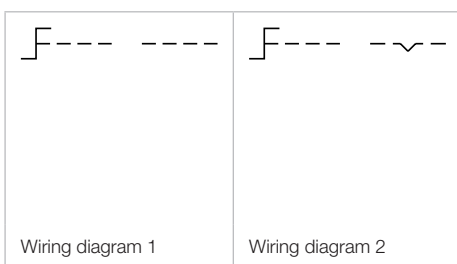
- For front dimensions 26 x 26 mm, 24 x 24 mm
- illuminative
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device



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

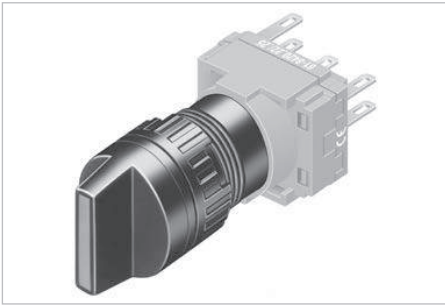
Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch actuator 2 positions square</b>				
A - B	B = 42°	<b>61-4110.0</b>	1	0.006 kg
A - C	C = 90°	<b>61-4210.0</b>	2	0.006 kg

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

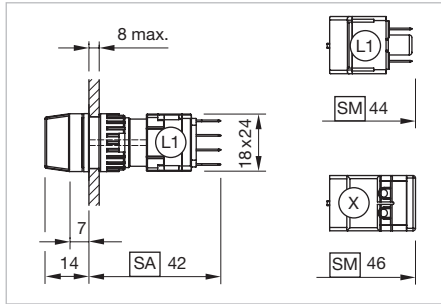


# 61 Raised design

## Selector switch 2 positions round, IP 65



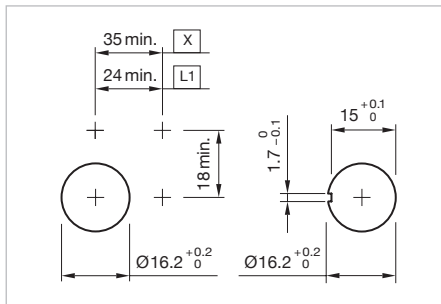
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal

### Additional Information

- illuminative
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device



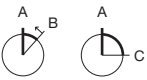
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)


- Lever** page 61
- LED** page 80
- Actuator**
- Anti-twist ring** page 84
- Fixing nut**
- Switching element** page 73

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

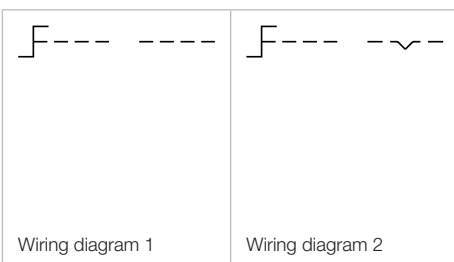
*To obtain a complete unit, please select the red components from the pages shown.*



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








Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch actuator 2 positions round, Front dimension Ø 18 mm</b>				
A - B	B = 42°	<b>61-4110.0</b>	1	0.006 kg
A - C	C = 90°	<b>61-4210.0</b>	2	0.006 kg

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



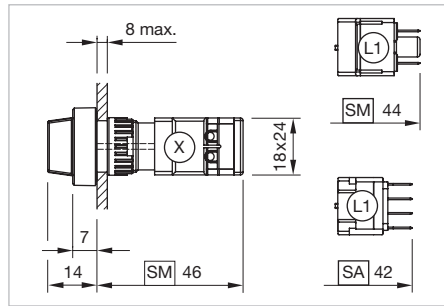
## Selector switch 3 positions square, IP 65

### Equipment consisting of (schematic overview)

-  **Lever** page 61
-  **Front bezel** page 65
-  **LED** page 80
-  **Actuator**
-  **Anti-twist ring** page 84
-  **Fixing nut**
-  **Switching element** page 73

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

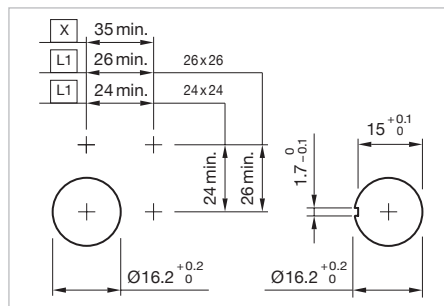
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal



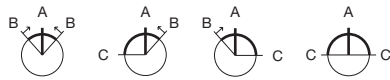
Product can differ from the current configuration.




Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Additional Information





- illuminative
- For front dimensions 26 x 26 mm, 24 x 24 mm
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device



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

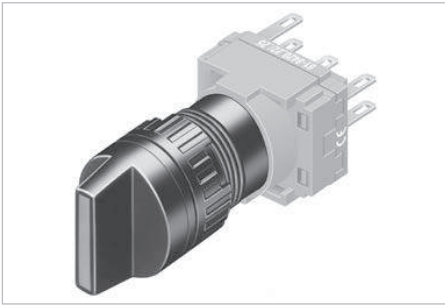
Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch actuator 3 positions square</b>				
B - A - B	B = 42° / 42°	<b>61-4510.0</b>	1	0.006 kg
C - A - B	C = 90°, B = 42°	<b>61-4810.0</b>	2	0.006 kg
B - A - C	B = 42°, C = 90°	<b>61-4710.0</b>	3	0.006 kg
C - A - C	C = 90° / 90°	<b>61-4610.0</b>	4	0.006 kg

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

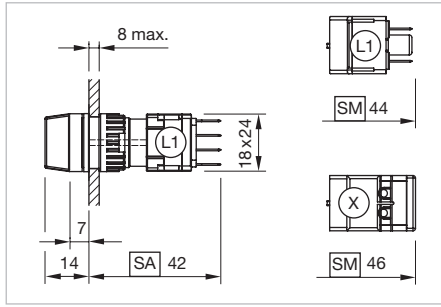
			
Wiring diagram 1	Wiring diagram 2	Wiring diagram 3	Wiring diagram 4

# 61 Raised design

## Selector switch 3 positions round, IP 65



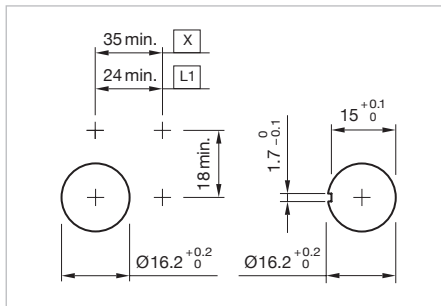
Product can differ from the current configuration.



Dimensions [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 SA = Snap-action switching element,  
 SA = Slow-make switching element,  
 X = Screw terminal







### Additional Information

- illuminative
- If mounted with anti-twist device, the lug is on the left side
- Anti-twist ring not needed by using anti-twist device



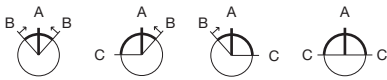
Mounting cut-outs [mm]  
 L1 = Solder/Plug-in terminal 2.8 x 0.5 mm,  
 X = Screw terminal

### Equipment consisting of (schematic overview)


-  **Lever** page 61
-  **LED** page 80
-  **Actuator**
-  **Anti-twist ring** page 84
-  **Fixing nut**
-  **Switching element** page 75

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

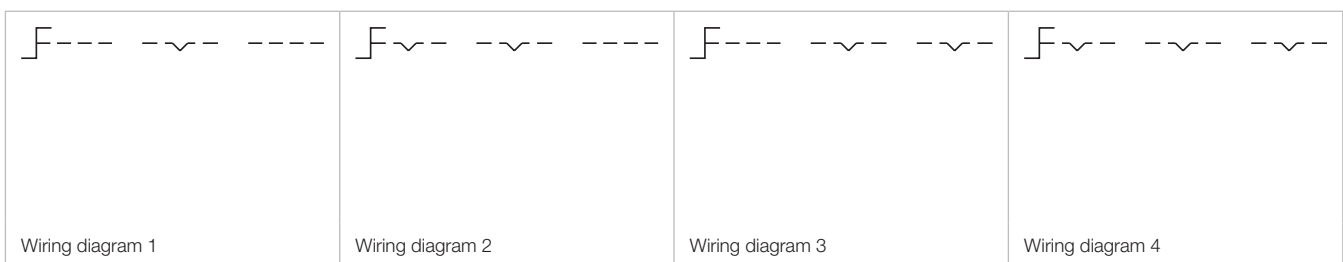
*To obtain a complete unit, please select the red components from the pages shown.*



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

Switching action	Switching angle	Part No.	Wiring diagram	Weight
 <b>Selector switch 3 positions round, Front dimension Ø 18 mm</b>				
B - A - B	B = 42° / 42°	<b>61-4510.0</b>	1	0.006 kg
C - A - B	C = 90°, B = 42°	<b>61-4810.0</b>	2	0.006 kg
B - A - C	B = 42°, C = 90°	<b>61-4710.0</b>	3	0.006 kg
C - A - C	C = 90° / 90°	<b>61-4610.0</b>	4	0.006 kg




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



Front

**Lens flush design**




- Lens surface matt
- 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
		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

## Lens plastic with symbol

### Additional Information


- illuminative
- Lens surface matt
- Lens profile flat
- Lenses are suitable for devices with front dimensions  $\varnothing$  24 mm raised design or  $\varnothing$  25 mm flush design
- 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
 <p><b>Lens plastic with symbol</b></p>				
$\varnothing$ 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
 <p><b>Lens plastic with symbol</b></p>				
$\varnothing$ 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
 <p><b>Lens plastic with symbol</b></p>				
$\varnothing$ 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 matt
- Lens profile flat
- Lenses are suitable for devices with front dimensions  $\varnothing$  24 mm raised design or  $\varnothing$  25 mm flush design
- 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>	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
	$\varnothing$ 19.7 mm		

**Lens raised design**

- Lens surface matt

Product attribute	Dimension	Lens	Part No.	Weight
 <p><b>Lens plastic, raised design</b></p>	20 x 20 mm	smoked transparent	<b>61-9351.1</b>	0.002 kg
		red transparent	<b>61-9351.2</b>	0.002 kg
		orange transparent	<b>61-9351.3</b>	0.002 kg
		yellow transparent	<b>61-9351.4</b>	0.002 kg
		green transparent	<b>61-9351.5</b>	0.002 kg
		blue transparent	<b>61-9351.6</b>	0.002 kg
		colourless transparent	<b>61-9351.7</b>	0.002 kg
flat, non-illuminative	20 x 20 mm	black opaque	<b>61-9251.0</b>	0.002 kg
		white translucent	<b>61-9251.9</b>	0.002 kg
flat, illuminative	15.3 x 15.3 mm	smoked transparent	<b>61-9321.1</b>	0.002 kg
		red transparent	<b>61-9321.2</b>	0.002 kg
		orange transparent	<b>61-9321.3</b>	0.002 kg



# 61 Accessories

Product attribute	Dimension	Lens	Part No.	Weight
flat, illuminative	15.3 x 15.3 mm	yellow transparent	<b>61-9321.4</b>	0.002 kg
		green transparent	<b>61-9321.5</b>	0.002 kg
		blue transparent	<b>61-9321.6</b>	0.002 kg
		colourless transparent	<b>61-9321.7</b>	0.002 kg
flat, non-illuminative	15.3 x 15.3 mm	black opaque	<b>61-9221.0</b>	0.002 kg
		white translucent	<b>61-9221.9</b>	0.002 kg
 <p><b>Lens plastic, raised design</b></p>				
concave, illuminative	15.3 x 15.3 mm	colourless transparent	<b>61-9326.7</b>	0.002 kg
 <p><b>Lens plastic, raised design</b></p>				
flat, illuminative	15.3 x 21.5 mm	smoked transparent	<b>61-9331.1</b>	0.002 kg
		red transparent	<b>61-9331.2</b>	0.002 kg
		orange transparent	<b>61-9331.3</b>	0.002 kg
		yellow transparent	<b>61-9331.4</b>	0.002 kg
		green transparent	<b>61-9331.5</b>	0.002 kg
		blue transparent	<b>61-9331.6</b>	0.002 kg
		colourless transparent	<b>61-9331.7</b>	0.002 kg
flat, non-illuminative	15.3 x 21.5 mm	black opaque	<b>61-9231.0</b>	0.002 kg
		white translucent	<b>61-9231.9</b>	0.002 kg
 <p><b>Lens plastic, raised design</b></p>				
concave, illuminative	15.3 x 21.5 mm	red transparent	<b>61-9336.2</b>	0.002 kg
		colourless transparent	<b>61-9336.7</b>	0.002 kg
concave, non-illuminative	15.3 x 21.5 mm	white translucent	<b>61-9236.9</b>	0.002 kg
 <p><b>Lens plastic, raised design</b></p>				
flat, 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
	Ø 15.8 mm	smoked transparent	<b>61-9311.1</b>	0.002 kg
		red transparent	<b>61-9311.2</b>	0.002 kg
		orange transparent	<b>61-9311.3</b>	0.002 kg
		yellow transparent	<b>61-9311.4</b>	0.002 kg
		green transparent	<b>61-9311.5</b>	0.002 kg
		blue transparent	<b>61-9311.6</b>	0.002 kg
		colourless transparent	<b>61-9311.7</b>	0.002 kg
flat, non-illuminative	Ø 15.8 mm	black opaque	<b>61-9211.0</b>	0.002 kg
		white translucent	<b>61-9211.9</b>	0.002 kg

**Lens metal**


**Additional Information**

- Non-illuminative
- Lens surface matt
- Lenses are suitable for devices with front dimensions Ø 24 mm raised design or Ø 25 mm flush design
- 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

**Mushroom-head cap**

- Non-illuminative


Mushroom-head cap	Part No.	Weight
 <p><b>Mushroom-head cap round, 32 mm</b></p>		
Plastic black	<b>61-9593.0</b>	0.004 kg
Plastic red	<b>61-9593.2</b>	0.004 kg

# 61 Accessories




## Marking plate

### Additional Information





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

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

## Keylock front bezel flush design

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


**Keylock front bezel raised design**

Material	Colour	Part No.	Weight
	<b>Keylock front bezel for keylock switch, raised design square, 24 x 24 mm</b>		
Plastic	black	<b>61-9250.0</b>	0.001 kg
	<b>Keylock front bezel for keylock switch, raised design square, 18 x 18 mm</b>		
Plastic	black	<b>61-9220.0</b>	0.001 kg
	<b>Keylock front bezel for keylock switch, raised design rectangular, 18 x 24 mm</b>		
Plastic	black	<b>61-9230.0</b>	0.001 kg
	<b>Keylock front bezel for keylock switch, raised design round, 18 mm</b>		
Plastic	black	<b>61-9210.0</b>	0.001 kg

**Lever flush design**

**Additional Information**

- With bar and marking dot


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

# 61 Accessories

## Lever raised design

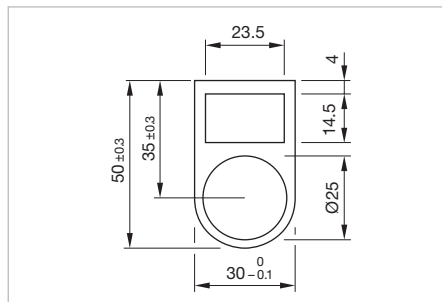
### Additional Information

- With bar and marking dot


Lever illumination	Lever	Bar colour	Part No.	Weight
 <b>Lever raised design</b>				
illuminative	Plastic black	red	<b>52-928.20</b>	0.001 kg
		orange	<b>52-928.30</b>	0.001 kg
		yellow	<b>52-928.40</b>	0.001 kg
		green	<b>52-928.50</b>	0.001 kg
		blue	<b>52-928.60</b>	0.001 kg
	Plastic grey	red	<b>52-929.20</b>	0.001 kg
		orange	<b>52-929.30</b>	0.001 kg
		yellow	<b>52-929.40</b>	0.001 kg
		green	<b>52-929.50</b>	0.001 kg
		blue	<b>52-929.60</b>	0.001 kg
non-illuminative	Plastic black	black	<b>52-928.0</b>	0.001 kg
		white	<b>52-928.9</b>	0.001 kg
	Plastic grey	grey	<b>52-929.8</b>	0.001 kg

## Legend frame

- For devices with front dimension  $\varnothing 25$  mm, flush design
- The colour of anodized aluminium parts can vary due to technical production reasons




Dimensions [mm]

Dimension	Material	Colour	Mounting type	Part No.	Weight
 <b>Legend frame</b>					
30 x 50 mm	Aluminium	black anodized	adhesive	<b>61-9980.0</b>	0.001 kg




**Legend plate**
**Additional Information**

- For legend frame Part No. 61-9980.0
- The colour of anodized aluminium parts can vary due to technical production reasons

Dimension	Material	Colour	Mounting type	Part No.	Weight
 <p><b>Legend plate for legend frame</b></p>					
14.5 x 23.5 mm	Aluminium	natural anodized	adhesive	<b>704.968.0</b>	0.001 kg
		black anodized	adhesive	<b>704.968.1</b>	0.001 kg

**Front bezel set pushbutton**
**Additional Information**



- The dimensions of the mounting cut-outs are shown in the product details
- 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, pushbutton, illuminated pushbutton, flush design square, 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, pushbutton, illuminated pushbutton, flush design rectangular, 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>Frontrahmen-Set zu Leuchtmelder, Druck-, Leuchtdrucktaste, flache Bauform round, 25 mm</b></p>			
Ø 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




- The dimensions of the mounting cut-outs are shown in the product details
- The colour of anodized aluminium parts can vary due to technical production reasons

Dimension	Mounting cut-out	Front bezel	Part No.	Weight
	<b>Front bezel set for mushroom-head pushbutton, flush design round, 40 mm</b>			
	Ø 22.5 mm	Aluminium natural anodized	<b>61-9934.8</b>	0.013 kg
	<b>Front bezel set for mushroom-head pushbutton, flush design</b>			
Ø 25 mm	Ø 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 keylock switch**
**Additional Information**

- The dimensions of the mounting cut-outs are shown in the product details
- 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
 <p><b>Front bezel set for keylock switch, flush design square, 24 x 24 mm</b></p>	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 keylock switch, flush design rectangular, 24 x 30 mm</b></p>	Plastic black	<b>61-9931.0</b>	0.008 kg
	Plastic silver	<b>61-9931.4</b>	0.008 kg
 <p><b>Frontrahmen-Set zu Schlüsselschalter, flache Bauform round, 25 mm</b></p>	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

# 61 Accessories

## Front bezel set selector switch

### Additional Information


- The dimensions of the mounting cut-outs are shown in the product details
- 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
	<b>Front bezel set for selector switch, flush design square, 24 x 24 mm</b>		
21 x 21 mm	Plastic black	<b>61-9936.0</b>	0.007 kg
	<b>Frontrahmen-Set zu Wahlschalter, flache Bauform round, 25 mm</b>		
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 bezel selector switch square

### Additional Information


- The dimensions of the mounting cut-outs are shown in the product details
- Please note that bigger minimum distances are necessary

Dimension	Front bezel	Part No.	Weight
	<b>Front bezel for selector switch square, raised design</b>		
24 x 24 mm	Plastic black	<b>52-950.0</b>	0.001 kg
26 x 26 mm	Plastic black	<b>52-952.0</b>	0.001 kg

**Front ring**

**Zusätzliche Informationen**



- For devices with front dimension Ø 24 mm, raised design
- The colour of anodized aluminium parts can vary due to technical production reasons
- Lens Ø 19.7 mm

Front ring	Part No.	Weight
 <p><b>Front ring round, 24 mm</b></p>		
Aluminium black anodized	<b>61-9600.0</b>	0.003 kg
Aluminium natural anodized	<b>61-9600.1</b>	0.003 kg

**Front protective cap, IP 68**

**Additional Information**

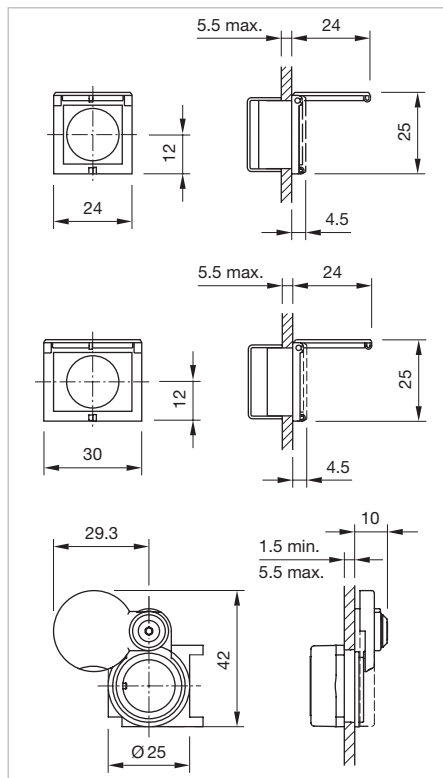
- For flat lens profil only
- When using the front protection cover for push buttons the external sealing in the front bezel set and the silicone bellows in the actuator are to be removed

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




## Protective cover flush design, IP 65

### Additional Information

- The dimensions of the mounting cut-outs are shown in the product details
- Please note that bigger minimum distances are necessary



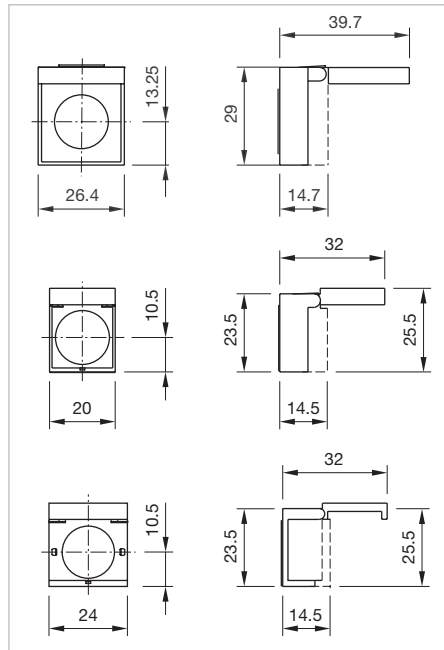
Dimensions [mm]

Product attribute	Mounting cut-out	Material	Optics	Part No.	Weight
 <p><b>Protective cover flush design</b></p>					
hinged, with means for sealing, for device with front dimension 24 x 24 mm	21 x 21 mm	Plastic	transparent	<b>61-9921.0</b>	0.006 kg
 <p><b>Protective cover flush design</b></p>					
hinged, with means for sealing, for device with front dimension 24 x 30 mm	21 x 27 mm	Plastic	transparent	<b>61-9922.0</b>	0.006 kg
 <p><b>Protective cover flush design</b></p>					
slide by side, with means not for sealing, for device with front dimension Ø 25 mm	Ø 22.5 mm	Plastic	transparent	<b>61-9924.0</b>	0.006 kg




**Protective cover raised design, IP 65**

**Additional Information**

- The dimensions of the mounting cut-outs are shown in the product details
- Please note that bigger minimum distances are necessary



Dimensions [mm]

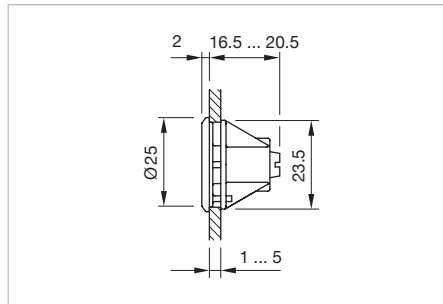
Product attribute	Mounting cut-out	Material	Optics	Part No.	Weight
 <p><b>Protective cover</b></p>					
hinged, with means not for sealing, for device with front dimension 24 x 24 mm	Ø 16 mm	PlasticPlastic	transparenttransparent	<b>61-9920.0</b>	0.0040.004 kg kg
 <p><b>Protective cover raised design</b></p>					
hinged, with means for sealing, for device with front dimension 18 x 18 mm	Ø 16 mm	Plastic	transparent	<b>51-920</b>	0.002 kg
 <p><b>Protective cover raised design</b></p>					
hinged, with means for sealing, for device with front dimension 18 x 24 mm	Ø 16 mm	Plastic	transparent	<b>51-925</b>	0.002 kg

# 61 Accessories




## Blind plug flush design

### Additional Information

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



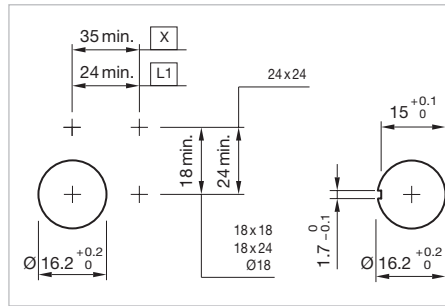
Dimensions [mm]

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




**Blind plug raised design**

**Additional Information**

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



Mounting cut-outs [mm]


Dimension	Mounting cut-out	Material	Colour	Part No.	Weight
	<b>Blind plug</b>				
24 x 24 mm	$\varnothing 16$ mm	Plastic	black	<b>61-9450.0</b>	0.003 kg
18 x 18 mm	$\varnothing 16$ mm	Plastic	black	<b>51-948.0</b>	0.003 kg
	<b>Blind plug raised design</b>				
18 x 24 mm	$\varnothing 16$ mm	Plastic	black	<b>51-947.0</b>	0.003 kg
	<b>Blind plug raised design</b>				
$\varnothing 18$ mm	$\varnothing 16$ mm	Plastic	black	<b>51-949.0</b>	0.003 kg

# 61 Accessories

## Master key

### Additional Information



- For standard lock: DOM 311 ... 445

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

## Spare key

### Additional Information


- Standard lock: DOM 311
- Optional lock numbers on request

Product attribute	Part No.	Weight
 <p><b>Spare key</b></p>		
for emergency-stop switch, standard lock: KABA 1001	<b>14-987.1001</b>	0.006 kg
 <p><b>Spare key</b></p>		
for key lock switch, standard lock: DOM 311	<b>31-989.311</b>	0.006 kg

## EMC key protection cap

### Additional Information



- For standard lock: DOM
- Plastic black

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

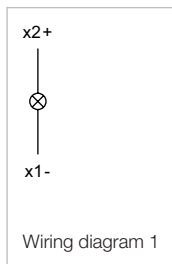


Rear side


**Lamp element**

Terminal	Part No.	Component layout	Wiring diagram	Weight
 <b>Lamp element</b>				
Screw	<b>61-8006.01</b>	3	1	0.005 kg
 <b>Lamp element</b>				
Solder 2.8 x 0.5 mm	<b>61-8006.02</b>	2	1	0.005 kg

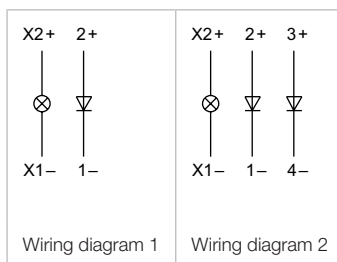
The component layouts you will find from page 90



**Diode element**

Diode	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <b>Diode element</b>					
1	Solder 2.8 x 0.5 mm	<b>61-8101.02</b>	4	1	0.007 kg
2	Solder 2.8 x 0.5 mm	<b>61-8102.02</b>	5	2	0.008 kg

The component layouts you will find from page 90




# 61 Accessories

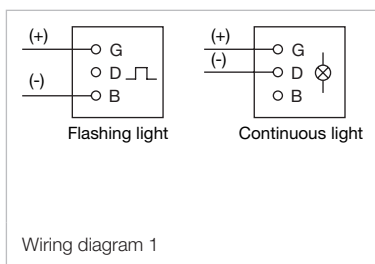
## Flasher element

### Additional Information

- Only for Indicator actuator (without indicator complete)
- Flashing frequency 1 Hz
- Further information see «Technical data»
- Do not connect terminal B and D simultaneously when powered up.

Operating voltage	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <b>Flasher element</b>					
12 ... 28 ±10 % VAC/DC	Solder	<b>61-8000.05</b>	6	1	0.005 kg


The component layouts you will find from page 90



## Switching element 2 positions

### Additional Information

- We offer a dismantling tool Part No. 61-9711.0 for dismantling of the switching element

Product attribute	Diode 1N4007	Switching voltage	Switching current	Switching system	Contacts	Contact material	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <b>Switching element for pushbutton and keylock- and selector switch 2 positions</b>											
with lamp terminal	2	250 VAC/DC	5 A	Snap-action switching element	1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8212.12</b>	7	1	0.007 kg
						Gold	Solder 2.8 x 0.5 mm	<b>61-8212.22</b>	7	1	0.007 kg
		250 VAC/DC	5 A	Snap-action switching element	1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8410.12</b>	11	5	0.007 kg
						Gold	Solder 2.8 x 0.5 mm	<b>61-8410.22</b>	11	5	0.007 kg
					2 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8420.12</b>	14	8	0.007 kg
						Gold	Solder 2.8 x 0.5 mm	<b>61-8420.22</b>	14	8	0.007 kg
					3 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8430.12</b>	16	10	0.007 kg
						Gold	Solder 2.8 x 0.5 mm	<b>61-8430.22</b>	16	10	0.007 kg
					1 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8440.12</b>	8	2	0.007 kg
					1 NC	Gold	Solder 2.8 x 0.5 mm	<b>61-8440.22</b>	8	2	0.007 kg
	2 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8450.12</b>	12	6	0.007 kg				
	2 NC	Gold	Solder 2.8 x 0.5 mm	<b>61-8450.22</b>	12	6	0.007 kg				

Product attribute	Diode 1N4007	Switching voltage	Switching current	Switching system	Contacts	Contact material	Terminal	Part No.	Component layout	Wiring diagram	Weight
with lamp terminal		250 VAC/DC	5 A	Snap-action switching element	3 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8460.12</b>	15	9	0.007 kg
						Gold	Solder 2.8 x 0.5 mm	<b>61-8460.22</b>	15	9	0.007 kg
					1 NC + 1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8470.12</b>	9	3	0.007 kg
						Gold	Solder 2.8 x 0.5 mm	<b>61-8470.22</b>	9	3	0.007 kg
					2 NC + 1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8480.12</b>	13	7	0.007 kg
						Gold	Solder 2.8 x 0.5 mm	<b>61-8480.22</b>	13	7	0.007 kg
1 NC + 2 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8490.12</b>	10	4	0.007 kg					
	Gold	Solder 2.8 x 0.5 mm	<b>61-8490.22</b>	10	4	0.007 kg					



### Switching element for pushbutton and keylock- and selector switch 2 positions

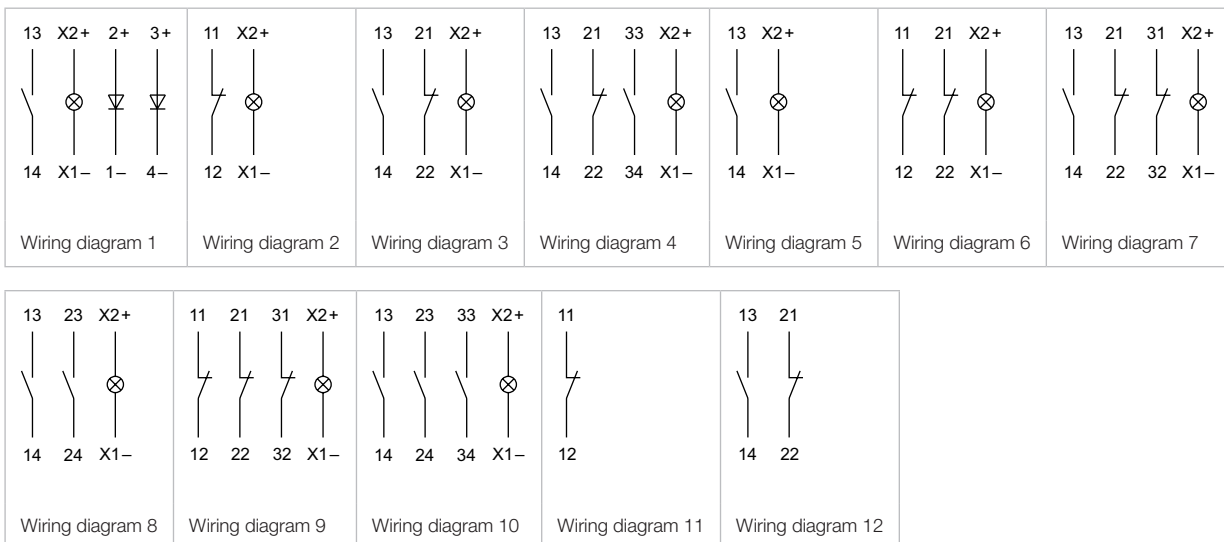
with lamp terminal		250 VAC/DC	5 A	Slow-make switching element	1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8610.17</b>	20	5	0.008 kg
					2 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8620.17</b>	23	8	0.008 kg
					1 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8640.17</b>	17	2	0.008 kg
					2 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8650.17</b>	22	6	0.008 kg
					1 NC + 1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8670.17</b>	19	3	0.008 kg
					50 VAC/DC	0.3 A	Slow-make switching element	1 NO	Gold	Solder 2.8 x 0.5 mm	<b>61-8610.37</b>
2 NO	Gold	Solder 2.8 x 0.5 mm	<b>61-8620.37</b>	23				8	0.008 kg		
1 NC	Gold	Solder 2.8 x 0.5 mm	<b>61-8640.37</b>	17				2	0.008 kg		
2 NC	Gold	Solder 2.8 x 0.5 mm	<b>61-8650.37</b>	22				6	0.008 kg		
1 NC + 1 NO	Gold	Solder 2.8 x 0.5 mm	<b>61-8670.37</b>	19				3	0.008 kg		



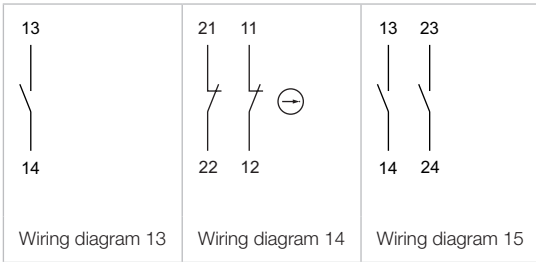
### Switching element for pushbutton and keylock- and selector switch 2 positions

with lamp terminal		250 VAC/DC	5 A	Slow-make switching element	1 NO	Silver	Screw	<b>61-8610.11</b>	21	5	0.008 kg
					1 NC	Silver	Screw	<b>61-8640.11</b>	18	2	0.008 kg
without lamp terminal		250 VAC/DC	5 A	Slow-make switching element	1 NO	Silver	Screw	<b>61-8615.11</b>	26	13	0.008 kg
					2 NO	Silver	Screw	<b>61-8625.11</b>	28	15	0.008 kg
					1 NC	Silver	Screw	<b>61-8645.11</b>	24	11	0.008 kg
					2 NC	Silver	Screw	<b>61-8655.11</b>	27	14	0.008 kg
					1 NC + 1 NO	Silver	Screw	<b>61-8675.11</b>	25	12	0.008 kg

Kontakte: Ö = Öffner, S = Schliesser  
The component layouts you will find from page 90



# 61 Accessories



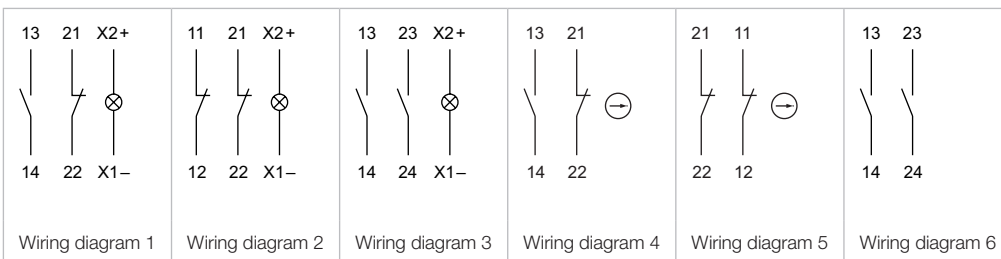
## Switching element 3 positions

### Additional Information



- We offer a dismantling tool Part No. 61-9711.0 for dismantling of the switching element

Product attribute	Switching voltage	Switching current	Switching system	Contacts	Contact material	Terminal	Part No.	Component layout	Wiring diagram	Weight
	250 VAC/DC	5 A	Snap-action switching element	2 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8520.12</b>	31	3	0.008 kg
					Gold	Solder 2.8 x 0.5 mm	<b>61-8520.22</b>	31	3	0.008 kg
				2 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8550.12</b>	30	2	0.008 kg
					Gold	Solder 2.8 x 0.5 mm	<b>61-8550.22</b>	30	2	0.008 kg
				1 NC + 1 NO	Gold	Solder 2.8 x 0.5 mm	<b>61-8574.22</b>	29	1	0.008 kg
					Silver	Solder 2.8 x 0.5 mm	<b>61-8574.12</b>	29	1	0.008 kg
			Slow-make switching element	2 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8720.17</b>	31	3	0.008 kg
				2 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8750.17</b>	31	2	0.008 kg
				1 NC + 1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8770.17</b>	32	1	0.008 kg
		0.3 A	Slow-make switching element	2 NO	Gold	Solder 2.8 x 0.5 mm	<b>61-8720.37</b>	34	3	0.008 kg
				2 NC	Gold	Solder 2.8 x 0.5 mm	<b>61-8750.37</b>	33	2	0.008 kg
				1 NC + 1 NO	Gold	Solder 2.8 x 0.5 mm	<b>61-8770.37</b>	32	1	0.008 kg
		5 A	Slow-make switching element	2 NO	Silver	Screw	<b>61-8725.11</b>	28	6	0.008 kg
				2 NC	Silver	Screw	<b>61-8755.11</b>	27	5	0.008 kg
				1 NC + 1 NO	Silver	Screw	<b>61-8775.11</b>	25	4	0.008 kg

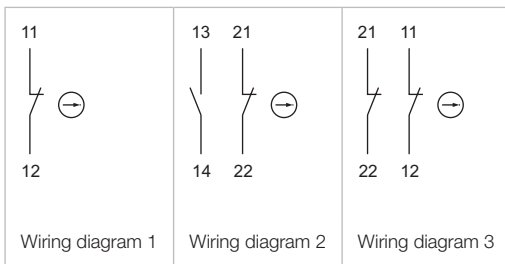
Kontakte: Ö = Öffner, S = Schliesser  
 The component layouts you will find from page 90




**Switching element E-stop & Stop**

Switching voltage	Switching current	Switching system	Contacts	Contact material	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Switching element for emergency-stop switch, foolproof EN IEC 60947-5-5</b></p>									
250 VAC/DC	5 A	Slow-make switching element	1 NC	Silver	Screw	<b>61-8745.11</b>	24	1	0.008 kg
			2 NC	Silver	Screw	<b>61-8755.11</b>	27	3	0.008 kg
			1 NC + 1 NO	Silver	Screw	<b>61-8775.11</b>	25	2	0.008 kg
 <p><b>Switching element for emergency-stop switch, foolproof EN IEC 60947-5-5</b></p>									
250 VAC/DC	5 A	Slow-make switching element	1 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8745.17</b>	35	1	0.008 kg
			2 NC	Silver	Solder 2.8 x 0.5 mm	<b>61-8755.17</b>	37	3	0.008 kg
			1 NC + 1 NO	Silver	Solder 2.8 x 0.5 mm	<b>61-8775.17</b>	36	2	0.008 kg

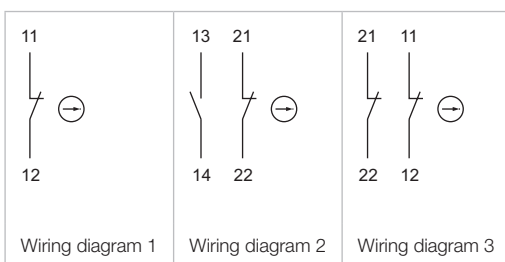
Kontakte: Ö = Öffner, S = Schliesser  
 The component layouts you will find from page 90



**Switching element stop switch**

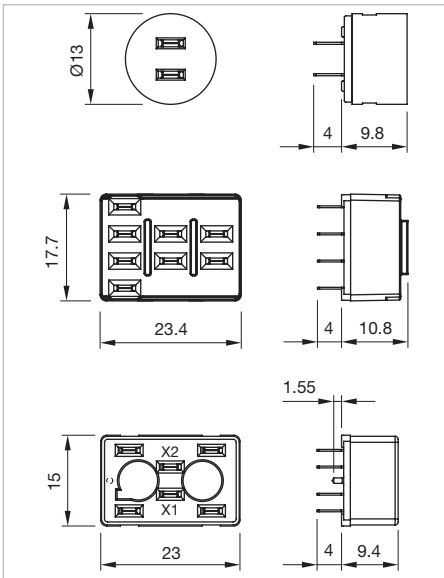
Switching voltage	Switching current	Switching system	Contacts	Contact material	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Switching element for stop switch, foolproof</b></p>									
50 VAC/DC	0.3 A	Slow-make switching element	1 NC	Gold	Solder 2.8 x 0.5 mm	<b>61-8745.37</b>	35	1	0.008 kg
			2 NC	Gold	Solder 2.8 x 0.5 mm	<b>61-8755.37</b>	37	3	0.008 kg
			1 NC + 1 NO	Gold	Solder 2.8 x 0.5 mm	<b>61-8775.37</b>	36	2	0.008 kg

Kontakte: Ö = Öffner, S = Schliesser  
 The component layouts you will find from page 90






# 61 Accessories

## PCB plug-in base



Dimensions [mm]


Product attribute	Pins	Terminal	Part No.	Component layout	Weight
 <p><b>PCB plug-in base</b></p>					
for indicator complete	axial	PCB	<b>61-9820.1</b>	40	0.002 kg
 <p><b>PCB plug-in base</b></p>					
for snap-action switching element, indicator- and diode element	axial	PCB	<b>61-9821.1</b>	38	0.003 kg
 <p><b>PCB plug-in base</b></p>					
for slow-make switching element	axial	PCB	<b>61-9823</b>	39	0.002 kg

The component layouts you will find from page 90



**Multi-plug housing**

**Additional Information**


- For snap-action switching element, max. 6 connections possible

Part No.	Weight
 <p><b>Multi-plug housing</b></p>	
61-9830	0.002 kg


**Flat receptacle**

Product attribute	Part No.	Weight
 <p><b>Flat receptacle</b></p>		
2.8 x 0.5 mm plug-in terminal	31-946	0.001 kg
 <p><b>Flat receptacle</b></p>		
2.8 x 0.5 mm in combination with multi-plug housing	51-943.1	0.001 kg

**Insulation sleeve**

Product attribute	Part No.	Weight
 <p><b>Insulation sleeve</b></p>		
for flat receptacle 2.8 mm	31-929	0.001 kg

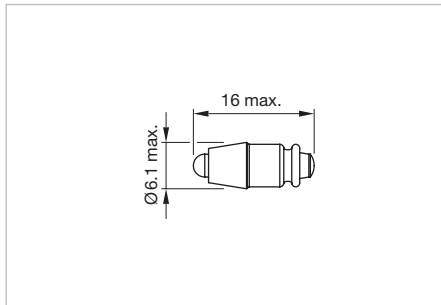
**Terminal cover**

Product attribute	Part No.	Weight
 <p><b>Terminal cover</b></p>		
for snap-action switching element with soldering terminal	61-9830.2	0.002 kg


## LED, T1 3/4 MG

### Additional Information


- Due to high surface temperatures, the series resistor must not be soldered directly to the terminals of the equipment (use a terminal plate)
- When using AC/DC types with AC operation, slight flickering can occur
- 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
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination
- For supply voltages above 48 V, it is necessary to use a voltage reduction element (external series resistor or transformer)




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 %	2/4 mA ±15 %	600 mcd	x0.31/y0.32 nm	<b>10-2J19.1049</b>	0.002 kg



LED colour	Operating voltage	Operation current	Lumi. intensity	Dom. wavelength	Part No.	Weight
 <p style="text-align: center;"><b>Bi-colour LED</b></p>						
Bi-colour LED red/green	24 VDC +10 %DC	15/14 mA ±15 %	600/630 mcd	625/525 nm	<b>10-A312.314A</b>	0.002 kg


### Filament lamp, T1 3/4 MG

Operating voltage	Operation current	Part No.	Weight
 <p style="text-align: center;"><b>Filament lamp</b></p>			
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
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
28 VAC/DC	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
36 VAC/DC	30 mA±10 %	<b>10-1316.1209</b>	0.001 kg
48 VAC/DC	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


Operating voltage	Resistance	Part No.	Weight
 <p style="text-align: center;"><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

# 61 Accessories

## Terminal plate empty



### Additional Information

- For fitting with series resistors

Product attribute	Dimension	Part No.	Weight
 <b>Terminal plate empty</b>			
5 spaces	62.5 x 60 x 15 mm	<b>02-912.1</b>	0.025 kg
10 spaces	125 x 60 x 15 mm	<b>02-912.2</b>	0.045 kg
15 spaces	187.6 x 60 x 15 mm	<b>02-912.3</b>	0.090 kg
20 spaces	250 x 60 x 15 mm	<b>02-912.4</b>	0.095 kg

Emergency-stop switch

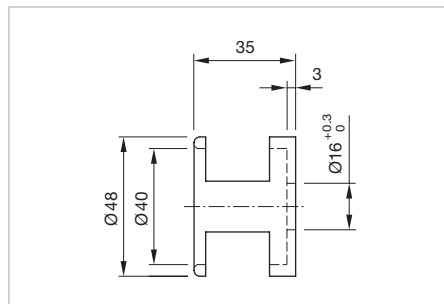
Emergency-stop legend

Dimension	Mounting cut-out	Marking	Colour	Part No.	Weight
 <p><b>Emergency-stop legend</b></p>					
Ø 43 x 1.7 mm	Ø 16 mm	without marking	yellow	61-9970.0	0.002 kg
Ø 43 x 1.7 mm	Ø 16 mm	NOT AUS	yellow	61-9970.1	0.002 kg
Ø 43 x 1.7 mm	Ø 16 mm	EMERGENCY STOP	yellow	61-9970.2	0.002 kg
Ø 43 x 1.7 mm	Ø 16 mm	ARRET D'URGENCE	yellow	61-9970.3	0.002 kg
Ø 43 x 1.7 mm	Ø 16 mm	NOT HALT	yellow	61-9970.6	0.002 kg
Ø 43 x 1.7 mm	Ø 16 mm	PARO DE EMERGENZIA	yellow	61-9970.7	0.002 kg
Ø 43 x 1.7 mm	Ø 16 mm	NÖDSTOP	yellow	61-9970.8	0.002 kg
 <p><b>Emergency-stop legend</b></p>					
Ø 43 x 1.7 mm	Ø 16 mm	Symbol	yellow	61-9970.9	0.002 kg


E-stop protective shroud

Additional Information

- 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]

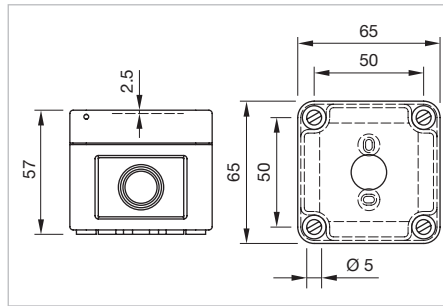
Material	Colour	Part No.	Weight
 <p><b>E-stop protective shroud</b></p>			
Aluminium anodised	yellow varnished	61-9965	0.036 kg

# 61 Accessories


## Emergency-stop enclosure, IP 66

### Additional Information

- Bottom grey similar RAL 7035; cover lead-sealable, yellow similar RAL 1004
- With mounting cut-out  $\varnothing$  16 mm, without anti-twist device
- Openings for cable gland M16 or M20




Dimensions [mm]

Dimension	Part No.	Weight
 <p><b>Emergency-stop enclosure</b></p> <p>65 x 65 x 57 mm</p>	<b>61-9480.5</b>	0.099 kg


## Cable gland, IP 68

### Additional Information

- With traction relief
- With fixing nut



Product attribute	Thread	Material	Colour	Part No.	Weight
 <p><b>Cable gland</b></p>					
Clamping range $\varnothing$ 4 ... 10 mm, thread length 8 mm	M16 x 1.5	Plastic	grey	<b>61-9481.6</b>	0.007 kg
Clamping range $\varnothing$ 6 ... 12 mm, thread length 9 mm	M20 x 1.5	Plastic	grey	<b>704.945.6</b>	0.011 kg

## Flat receptacle


Product attribute	Part No.	Weight
 <p><b>Flat receptacle</b></p>		
Plug-in terminal 2.8 x 0.5 mm, partial isolated AWG-20-18 DIN 46245, in combination with crimping tool, Part No. 61-9902	<b>61-9901</b>	0.001 kg

Mounting

**Fixing nut**

Product attribute	Material	Part No.	Weight
 <p><b>Fixing nut</b></p> <p>special recommended for keylock switches</p>	Metal	<b>31-991</b>	0.005 kg
 <p><b>Fixing nut</b></p> <p>Standard delivery</p>	Plastic	<b>61-9915.0</b>	0.002 kg


**Anti-twist ring**

Mounting cut-out	Part No.	Weight
 <p>Ø 16 mm</p>	<b>51-910</b>	0.001 kg
<p>Ø 22.5 mm</p>	<b>61-9912.0</b>	0.002 kg

**Reducing ring**

**Additional Information**

- Only for use of devices with front size 24 x 24 mm and Ø 24 mm, mounting cut-out Ø 22.5 mm to Ø 16.5 mm, without keylock- and selector switch


Part No.	Weight
 <p><b>Reducing ring</b></p> <p><b>61-9960</b></p>	0.003 kg

# 61 Accessories



## Tool set

### Additional Information

- Consists of lens remover, lamp-and LED remover, mounting tool and dismantling tool
- For dismantling keep care of the enclosed assembly instruction

Part No.	Weight
 <p><b>Tool set</b></p>	
<b>K61-999.100</b>	0,048 kg


## Lens remover

Product attribute	Part No.	Weight
 <p><b>Lens remover</b></p>		
for raised design	<b>02-905</b>	0,011 kg
 <p><b>Lens remover</b></p>		
for flush design	<b>61-9730.0</b>	0,011 kg

## Lamp remover

### Additional Information


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

Part No.	Weight
 <p><b>Lamp remover</b></p>	
<b>61-9740.0</b>	0,003 kg

**Mounting tool**

**Additional Information**


- For device with mounting cut-out  $\varnothing$  16 mm
- for tightening or loosening of the fixing nut

Part No.	Weight
 <p><b>Mounting tool</b></p>	
01-907	0.020 kg

**Dismantling tool**

**Additional Information**

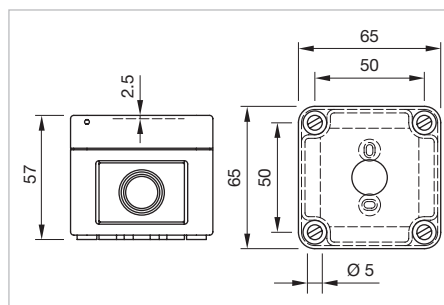
- For dismantling of the switching element

Part No.	Weight
 <p><b>Dismantling tool</b></p>	
61-9711.0	0.004 kg

**Enclosure, IP 66**

**Additional Information**

- Cover lead-sealable
- Openings for cable gland M16 or M20
- With mounting cut-out  $\varnothing$  16 mm, without anti-twist device



Dimensions [mm]


Dimension	Colour	Part No.	Weight
 <p><b>Enclosure</b></p>			
65 x 65 x 57 mm	grey, similar RAL 7035	61-9480.6	0.099 kg

# 61 Accessories


## Cable gland, IP 68

### Additional Information

- With traction relief
- With fixing nut


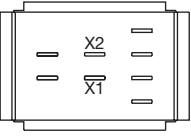
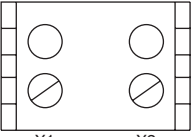
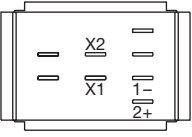
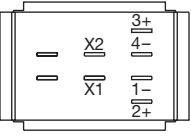
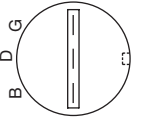
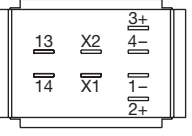
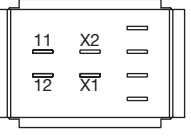
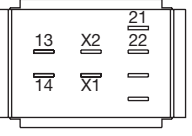
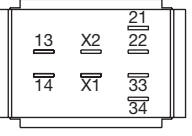
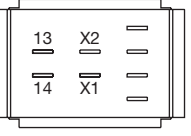
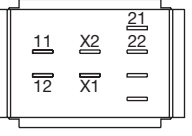
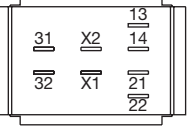
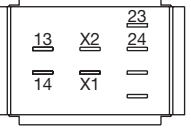
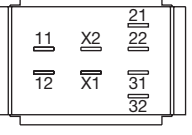
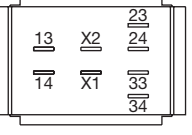
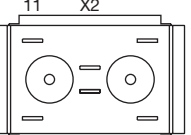
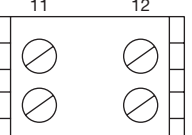
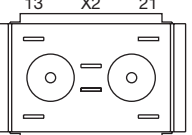
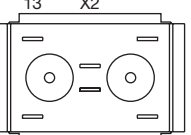
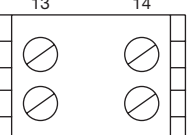
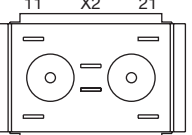
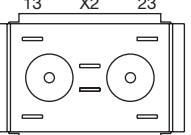
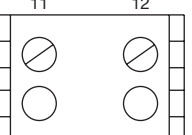
Product attribute	Thread	Material	Colour	Part No.	Weight
 <p><b>Cable gland</b></p>					
Clamping range Ø 4 ... 10 mm, thread length 8 mm	M16 x 1.5	Plastic	grey	<b>61-9481.6</b>	0.007 kg
Clamping range Ø 6 ... 12 mm, thread length 9 mm	M20 x 1.5	Plastic	grey	<b>704.945.6</b>	0.011 kg

## Crimping tool AWG 20-10

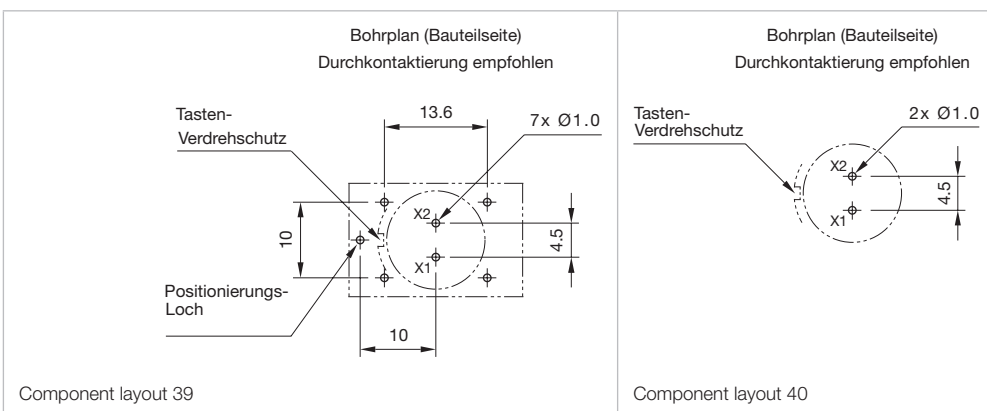
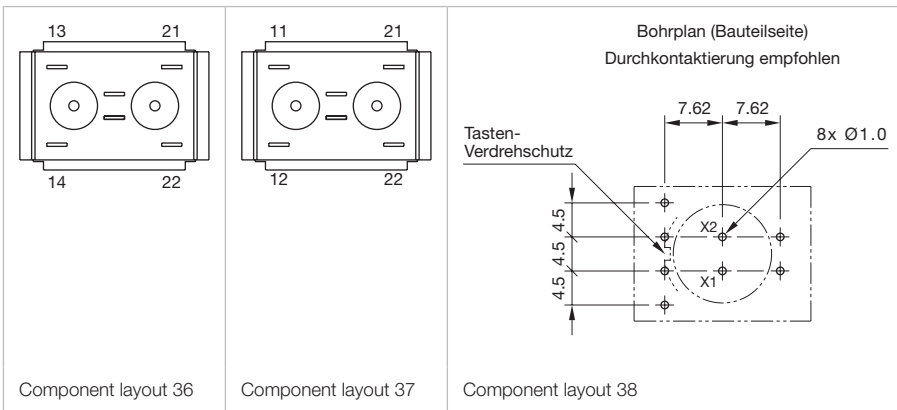
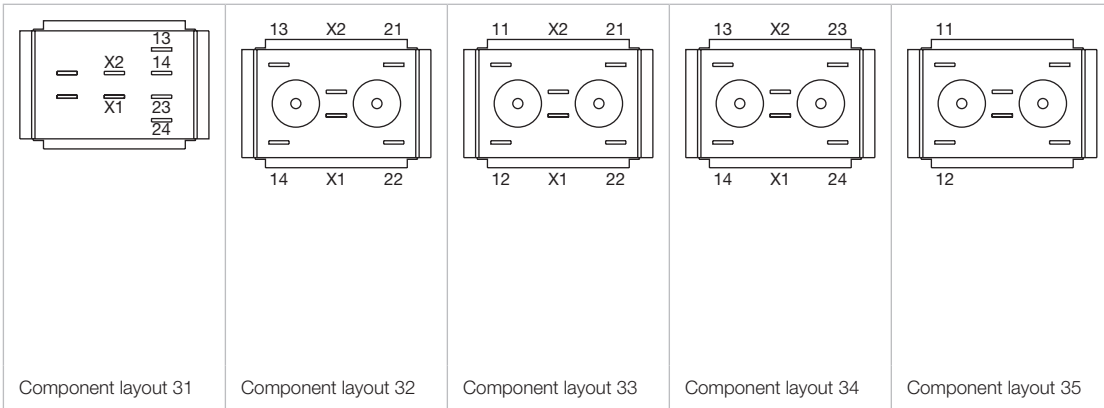
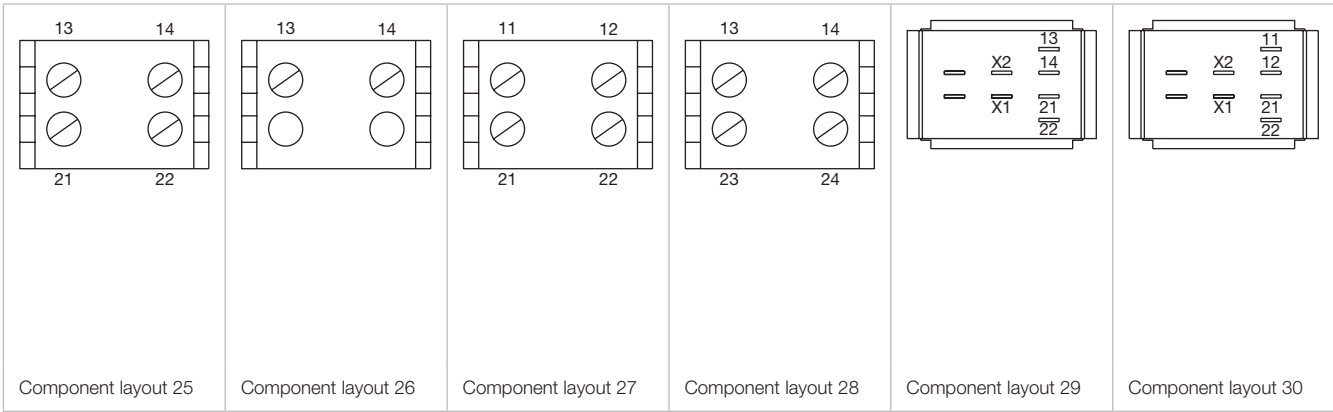
Product attribute	Part No.	Weight
 <p><b>Crimping tool AWG 20-10</b></p>		
in combination with flat receptacle, Part No. 61-9901	<b>61-9902</b>	<b>0.500</b>

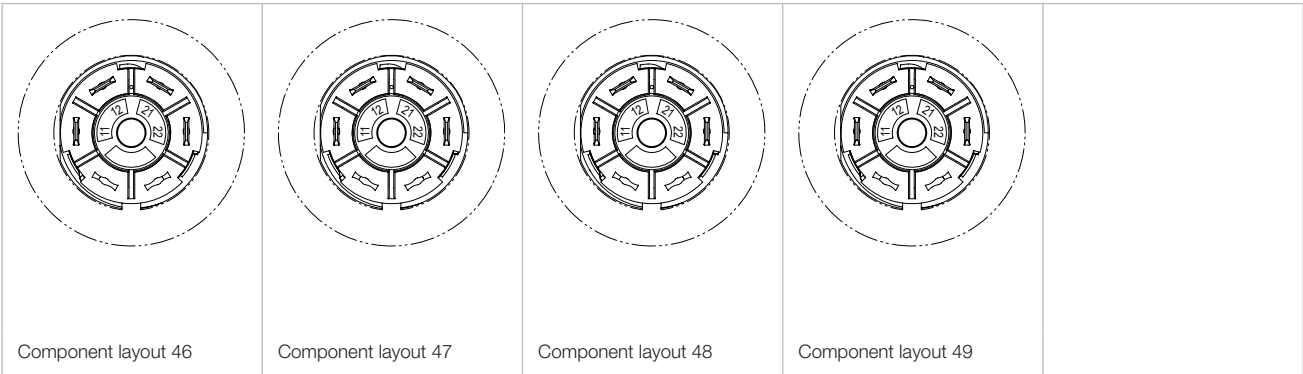
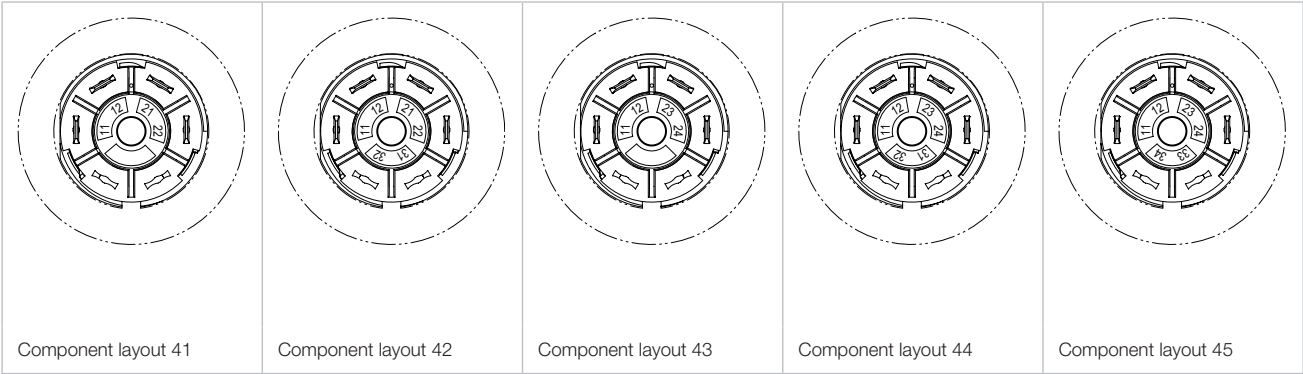


## Drawings

<p>Rearview Potentiometer terminals</p>  <p>Conductor colour of flat ribbon cable a = blue, b = red, c = yellow</p>					
Component layout 1	Component layout 2	Component layout 3	Component layout 4	Component layout 5	Component layout 6
					
Component layout 7	Component layout 8	Component layout 9	Component layout 10	Component layout 11	Component layout 12
					
Component layout 13	Component layout 14	Component layout 15	Component layout 16	Component layout 17	Component layout 18
					
Component layout 19	Component layout 20	Component layout 21	Component layout 22	Component layout 23	Component layout 24

# 61 Drawings





## Actuator with snap-action switching element

### Switching system

Self-cleaning, double-break snap-action switching system with contact opening width 2 x 0.5 mm (switch with small contact opening width as per EN IEC 61058-1).

The switching elements are optionally equipped with the following switching functions:

One to three normally open (NO) or normally closed (NC), or any combination of NO and NC plus connections for T1 3/4 LED or lamp.

The number of switching elements cannot exceed three.

The switching elements provided for the 3-position switch actuators are equipped with max. 2 NC or 2 NO or any combination.

The number of switching elements cannot exceed two.

### Material

#### Lens

Raised mounting Polymethylmethacrylat (PMMA), as per UL 94 HB, flush mounting Polycarbonat (PC), as per UL 94 V0, or Aluminium anodized

#### Front bezel

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

#### Front ring

Aluminium anodized

#### Material of contact

Silver or silver with gold plating

#### Switching element

Diallylphthalate (DAP), as per UL 94 V0 and Polyamide (PA 66), as per UL 94 V0

#### Actuator housing

Polyetherimide (PEI), as per UL 94 V0, self-extinguishing

### Mechanical characteristics

#### Terminals

	rigid	flexible	superflexible
1 wire	0.5 ... 1.5 mm <sup>2</sup>	0.5 ... 0.75 mm <sup>2</sup>	0.5 mm <sup>2</sup>
2 wires	0.75 mm <sup>2</sup>	0.5 mm <sup>2</sup>	

#### Tightening torque

for fixing nut max. 50 Ncm

#### Actuating torque

Selector-/Keylock switch 2.5 ... 10 Ncm

#### Actuating force

Pushbutton 2.7 ... 3.6 N

#### Actuating travel

Pushbutton 3 mm

	2 positions	3 positions
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

The rebound times apply to normal manual activation

Contact making 3 ms

Contact breaking 5 ms

### Mechanical lifetime

as per DIN IEC 60512-5-6 and EN IEC 60947-5-1

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

### Electrical characteristics

#### Standards

The devices comply with: EN IEC 61058-1 and EN IEC 60947-5-1

#### Rated Operational Voltage $U_e$

250 VAC/DC as per EN IEC 60947-1

#### Rated Insulation Voltage $U_i$

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

#### Rated Impulse Withstand Voltage $U_{imp}$

4 kV, as per EN IEC 60947-5-1

#### Contact resistance

New state with silver contact  $\leq 100 \text{ m}\Omega$

as per DIN IEC 60512-2-4, measured at 100 mA, 10 V

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

as per DIN IEC 60512-2-3, measured at 20 mV, 10 mA

#### Electrical life

$\geq 50\,000$  cycles of operation at 250 VAC, 5 A,  $\cos\phi 0.95$ ,

as per EN IEC 60947-5-1

#### Electrostatic discharge (ESD)

Keylock switch 11 kV

#### Conventional free air thermal current $I_{th}$

5 A, as per EN IEC 60947-5-1

the maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

#### Switch rating

Switch rating AC with silver contact or silver contact with gold plating, service category AC-15, as per EN IEC 60947-5-1

Voltage 125 VAC 250 VAC

Current 2.5 A 2 A

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

Voltage 250 VDC

Current 0.15 A

#### Recommended minimum operational data

Material of contact Silver Silver with gold plating

Voltage 20 VAC/DC 5 VAC/DC

Current 100 mA 10 mA

**Electric strength**

2500 VAC, 50 Hz, 1 min., as per DIN IEC 60512-2-11 between all terminals and earth

**Overvoltage category**

III, as per EN IEC 60947-5-1

**Protection class**

Class II, as per EN IEC 61058-1

**Degree of pollution**

3, as per EN IEC 60947-1

**Environmental conditions**
**Storage temperature**

-40 °C ... +85 °C

**Operating temperature**

-25 °C ... +55 °C

**Protection degree**

as per EN IEC 60529  
Front side IP 65, rear side IP 40

**Shock resistance**

(semi-sinusoidal)  
max. 10 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, cyclic  
96 hours, +25 °C/97 %, +55 °C/93 % relative humidity,  
as per EN IEC 60068-2-30

**Damp heat, state**

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

**Rapid change of temperature**

100 cycles, -40 °C ... +80 °C, as per EN IEC 60068-2-14

**Approvals**
**Approbations**

CB (IEC 61058)  
CB (IEC 60947)  
CSA  
ENEC (EN 61058)  
CCA-NTR (EN 60947)  
CCC  
CENELEC (IEC 60947-5-1)  
Germanischer Lloyd  
GOST  
UL  
SEV  
NFF

**Declaration of conformity**

CE

**Actuator with slow-make switching element**
**Switching system**

Double-break slow-make system, contact opening width 2 x 1.5 mm, with 2 x 2 contact points per switching element. NC-contact elements in the slow-make elements fulfill requirements of switches with forced opening as per EN IEC 60947-5-12.17. The slow-make elements are optionally obtainable with the following switching functions : 1 NO or 2 NO, 1 NC or 2 NC, 1 NO + 1 NC.

**Material**
**Lens**

Raised mounting Polymethylmethacrylat (PMMA), as per UL 94 HB, flush mounting Polycarbonat (PC), as per UL 94 V0, or Aluminium anodized

**Front bezel**

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

**Front ring**

Aluminium anodized

**Material of contact**

Silver or gold (specified for operation for low level switching)

**Switching element**

Diallylphthalate (DAP), as per UL 94 V0 and Polyamide (PA 66), as per UL 94 V0

**Actuator housing**

Polyetherimide (PEI), as per UL 94 V0, self-extinguishing

**Mechanical characteristics**
**Terminals**

	rigid	flexible	superflexible
– Solder/Plug-in			
1 wire	0.5 ... 1.5 mm <sup>2</sup>	0.5 ... 0.75 mm <sup>2</sup>	0.5 mm <sup>2</sup>
2 wires	0.75 mm <sup>2</sup>	0.5 mm <sup>2</sup>	
– Screw			
1 wire	0.5 ... 1.5 mm <sup>2</sup>	0.5 ... 0.75 mm <sup>2</sup>	0.5 mm <sup>2</sup>
2 wires	0.75 mm <sup>2</sup>	0.5 mm <sup>2</sup>	0.5 mm <sup>2</sup>

**Tightening torque**

for fixing nut max. 50 Ncm

**Actuating torque**

Selector-/Keylock switch 4 ... 16 Ncm

## Actuating force

Pushbutton 3.5... 11 N  
Emergency-stop switch max. 65 N

## Actuating travel

Pushbutton 3 mm  
Emergency-stop switch 10 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

2 ms, contact making and contact breaking the rebound times apply to normal manual activation

## Mechanical lifetime

as per DIN IEC 60512-5-6 and EN IEC 60947-5-1  
Pushbutton maintained action 1 million cycles of operation  
Pushbutton momentary action 2 million cycles of operation  
Emergency-stop switch 50 000 cycles of operation  
Keylock switch 50 000 cycles of operation  
Selector switch 100 000 cycles of operation

## Electrical characteristics

### Standards

The devices comply with: EN IEC 61058-1 and EN IEC 60947-5-1, EN IEC 60947-5-5 (Emergency-stop)

### Electrical life

≥ 50 000 cycles of operation at 250 VAC, 5 A,  $\cos\phi$  0.95, as per EN IEC 60947-5-1  
Switching element of emergency-stop 6050 cycles of operation, as per EN IEC 60947-5-5

### Electrostatic discharge (ESD)

Keylock switch 11 kV

### Electric strength

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

### Overvoltage category

III, as per EN IEC 60947-5-1

### Protection class

Class II, as per EN IEC 61058-1

### Degree of pollution

3, as per EN IEC 60947-1

## Electrical characteristics for silver contacts

### Rated Operational Voltage $U_e$

250 VAC/DC as per EN IEC 60947-1

### Rated Insulation Voltage $U_i$

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

### Rated Impulse Withstand Voltage $U_{imp}$

4 kV, as per EN IEC 60947-5-1

## Contact resistance

New state ≤ 50 mΩ, as per DIN IEC 60512-2-4, measured at 100 mA, 10 V

## Conventional free air thermal current $I_{th}$

5 A, as per EN IEC 60947-5-1  
the maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

## Switch rating

Switch rating AC with silver contact and screw terminal, service category AC-15, as per EN IEC 60947-5-1

Voltage	125 VAC	250 VAC
Current	3 A	2 A

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

Voltage	250 VDC
Current	0.2 A

## Recommended minimum operational data

20 VAC/DC, 100 mA

## Electrical characteristics for gold contacts

### Rated Operational Voltage $U_e$

50 VAC/DC, as per EN IEC 60947-5-1

### Rated Insulation Voltage $U_i$

$U_i$  = 320 VAC, as per EN IEC 60947-5-1

### Rated Impulse Withstand Voltage $U_{imp}$

0.8 kV, as per EN IEC 60947-1

## Contact resistance

New state ≤ 50 mΩ  
as per DIN IEC 60512-2-4, measured at 20 mV, 10 mA

## Conventional free air thermal current $I_{th}$

0.3 A, as per EN IEC 60947-5-1  
the maximum current in continuous operation and at ambient temperature must not exceed the quoted maximum values.

## Switch rating

Switch rating AC with gold contact, service category AC-15, as per EN IEC 60947-5-1

Voltage	50 VAC
Current	0.5 A

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

Voltage	50 VDC
Current	0.1 A

## Recommended minimum operational data

Voltage	10 mVAC/DC
Current	2 mA

## Environmental conditions

### Storage temperature

-40 °C ... +85 °C

### Operating temperature

-25 °C ... +55 °C

### Protection degree

as per EN IEC 60529  
Frontside IP 65, rear side IP 40

### Shock resistance

(semi-sinusoidal)  
max. 100 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, cyclic  
96 hours, +25 °C/97 %, +55 °C/93 % relative humidity,  
as per EN IEC 60068-2-30

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

Rapid change of temperature  
100 cycles, -40 °C ... +80 °C, as per EN IEC 60068-2-14

## Approvals

### Approbations

CB (IEC 61058)  
CB (IEC 60947)  
CSA  
ENEC (EN 61058)  
CCA-NTR (EN 60947)  
CCC  
CENELEC (IEC 60947-5-1)  
Germanischer Lloyd  
GOST  
UL  
SEV  
NFF

### Declaration of conformity

CE

## Actuator with flasher element

### Material

#### Lens

Raised mounting Polymethylmethacrylat PMMA, as per UL 94 HB,  
flush mounting Polycarbonat (PC), as per UL 94 V0

#### Actuator housing

Polyetherimide (PEI), as per UL 94 V0, self-extinguishing

#### Flasher element

Polyetherimide (PEI), as per UL 94 V0

### Mechanical characteristics

#### Terminals

Soldering terminal

#### Tightening torque

for fixing nut max. 50 Ncm

### Electrical characteristics

#### Illumination

Filament lamp	14 VAC/DC	28 VAC/DC
Power consumption	80 mA	44 mA
Single-LED	12 VAC/DC	28 VAC/DC
Power consumption	15 mA	18 mA

#### Flashing frequency

1 Hz ±0.25 Hz

#### Pulse duty factor

approx. 50 %

#### Operating voltage

12 ... 28 VAC/DC ±10 %

### Environmental conditions

#### Operating temperature

0 °C ... +45 °C

#### Protection degree

as per EN IEC 60529  
Front side IP 65, rear side IP 40

# 61 Technical data

## Buzzer

### Buzzer system

Electronic non-contacting buzzer with IC oscillator

### Material

**Alarm buzzer case**  
Polyetherimide

**Front bezel**  
Polyamide

### Mechanical characteristics

**Terminals**  
Solder/Plug-in terminal 2.8 x 0.5 mm

**Tightening torque**  
for fixing nut max. 50 Ncm

### Electrical characteristics

**Frequency (tone)**  
Approx. 2.0 kHz

**Interval frequency**  
2 Hz

### Sound pressure

88 dB (A)  $\pm 8$  dB at a distance of 0.1 m (IP 40)  
82 dB (A)  $\pm 8$  dB at a distance of 0.1 m (IP 65)  
Volume variable with a 1 M $\Omega$  potentiometer or corresponding fixed resistor

### Operation Voltage/Current

Typ. 10 VDC ... 26 VDC,  $\leq 20$  mA

### Environmental conditions

**Storage temperature**  
-40 °C ... +85 °C

**Service temperature**  
-25 °C ... +55 °C

### Protection degree

IP 40  
IP 65

### Approvals

**Declaration of conformity**  
CE

## Emergency-stop switch compact, foolproof EN IEC 60947-5-5

### Materials

**Mushroom head lens**  
Plastic

**Actuator housing material**  
Plastic

**Contact material**  
Metal (Silver palladium)

### Mechanical characteristics

**Front plate thickness**  
1 ... < 4 mm with an anti-rotation ring  
Maximum 6 mm without an anti-rotation ring

**Terminals**  
Plug-in terminals 2.8 mm x 0.5 mm  
(solderable, without UL certification)

**Mounting cut-out**  
 $\varnothing 16.2$  mm

**Tightening torque**  
Max. 0.8 Nm

**Actuation force**  
30 N  $\pm$  4 N

**Actuating distance**  
4.2 mm

**Mechanical life time**  
 $\geq 20\,000$  switching cycles

### Electrical characteristics

**Standards**  
EN 60947-5-1, EN 60947-5-5,  
DIN EN ISO 13850, EN IEC 60204

**Illumination**  
LED red with reverse polarity protection, constant current source  
Operating voltage 6 VDC ... 32 VDC  
Current consumption 10 mA ... 12 mA

**Rated operating voltage  $U_o$**   
50 VAC/DC (EN IEC 60947-1)

**Rated insulation voltage  $U^i$**   
250 V (EN IEC 60947-1)

**Rated impulse withstand voltage  $U_{imp}$**   
0.5 kV (EN IEC 60947-1)

**Contact resistance test**  
At 20 mV, 100 mA (IEC 60512-2-1)



**Insulation resistance**

2 MΩ between the open contacts,  
7 MΩ towards the panel (DIN IEC 60512-3-1)

**Conventional therm. Current in free air  $I_{th}$**

0.5A (EN IEC 60947-5-1 / maximum current in continuous operation at maximum +55 degrees C)

**Rated short-circuit current caused**

1 000A, type of short-circuit device 2A gG  
(EN 60947-5-1)

**Breaking capacities**

Alternating current usage category AC-15  
(EN IEC 60947-5-1)

50VAC

0.2A

DC usage category DC-13 (EN IEC 60947-5-1)

50VDC

0.2A

**Minimum operating data**

Voltage 1 VAC/DC

Current 1 mA

**Dielectric strength**

500VAC, 50Hz, 1 min, (DIN IEC 60512-2)

**Protective class**

Class II (EN IEC 60947-5)

**Overvoltage category**

II (EN IEC 60947-1)

**Degree of pollution**

3 (EN IEC 60947-1)

**Electrical life time**

≥ 20 000 switching cycles

**Ambient conditions**

**Storage temperature**

-40 °C ... +85 °C

**Operating temperature**

-25 °C ... +55 °C

**Front protection**

IP67, in accordance with EN IEC 60529/A1:2010-04

IP69K, in accordance with EN IEC 60529/A1:2010-04

Panel surface roughness Ra1.6

IK07 (Cover D27)

IK06 (Cover D40)

**Resistance to shock**

Max. 150 m/s<sup>2</sup>, pulse width 11 ms, 3-axis

(half sinusoidal EN IEC 60068-2-27)

**Vibration resistance**

Max. 100 m/s<sup>2</sup> from 10 Hz ... 500 Hz, 20 cycles, 3-axis

(sinusoidal EN IEC 60068-2-6)

**Environmental resistance**

Humid heat, constant, 56 days, +40 °C/93% relative humidity (EN IEC 60068-2-78)

Dry heat, 96 hours, +55 °C (EN IEC 60068-2-2)

Cold, 96 hours, -25 °C (EN IEC 60068-2-1)

UV test, 56 days (EN 60068-2-5:1999)

**Certificates**

**Approvals**

UL NISD (cULus, UL EU) LISTED E-File no.: E341760

CB (EN 60947)

**Declaration of Conformity**

CE

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

# 61 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

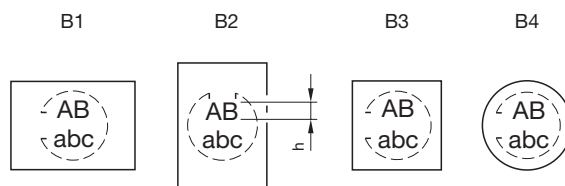
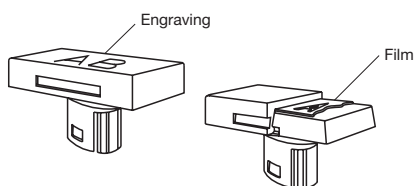
Instead of using engraving the lenses can be fitted with transparent film inserts, as an alternative. In the case of use of a smoke-black lens the fitted film becomes readable only if the lamp is on. The film thickness is 0.2 mm. For lenses Ø 24 mm and Ø 25 mm with Part No. 619642.x the marking takes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

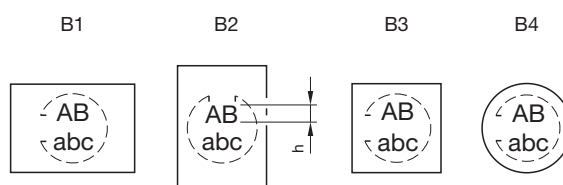
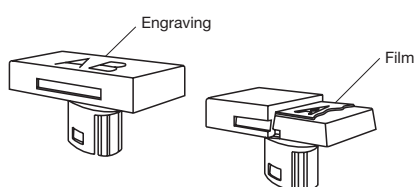
Front size (Lens)	Film insert max. size	Height of letters h	Number of lines	Number of capital letters per line (target value)	Number of small letters per line (target value)	Image
24 x 24 (18 x 18)	15.1 x 15.1	2	4	8-9	9	B3
		3	3	7-8	8	B3
		4	2	4-5	5	B3
		5	2	4	4-5	B3
		6	1	4	4	B3
		8	1	2-3	2-3	B3
24 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	B2
		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



## Lenses for Indicators, Illuminated pushbuttons, raised 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
18 x 18 (15.3 x 15.3)	12.7 x 12.7	2	4	7-8	8	B3
		3	3	6-7	7	B3
		4	2	4-5	5	B3
		5	2	3-4	4	B3
		6	1	3	3-4	B3
		8	1	2-3	2-3	B3
18 x 24 (15.3 x 21.5)	12.7 x 18.7	2	4	11	12	B1
			5	7-8	8	B2
		3	3	9-10	10-11	B1
			4	6-7	7	B2
		4	2	7	7-8	B1
			3	4-5	5	B2
		5	2	5-6	6	B1
				3-4	4	B2
		6	1	4-5	5	B1
				3	3-4	B2
		8	1	3-4	3-4	B1
				2-3	2-3	B2
24 x 24 (20 x 20)	16.9 x 16.9	2	4	9	10	B3
		3	3	7-8	9	B3
		4	2	4-5	5	B3
		5	2	4	4-5	B3
		6	1	4	4	B3
		8	1	2	2	B3
Ø 18 (Ø 15.8)	Ø 12.8	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
Ø 24 (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

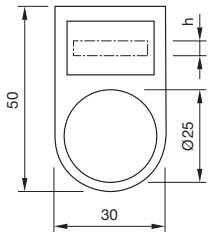


# 61 Marking

## Engraving legend plates

All dimensions in mm

Height of letters h	Number of lines	Number of letters per line (target value)
3.0	1	11
3.0	2	11
4.0	1	7
8.0	1	4



**Suppressor circuits**

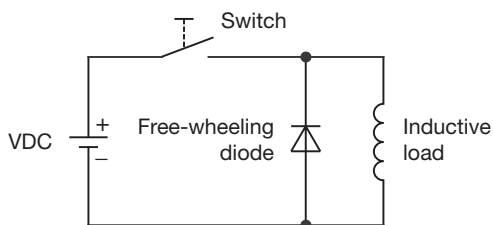
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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.

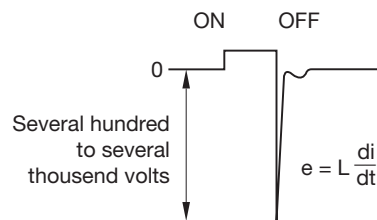
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage ( $V_R$ ) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum 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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02-904.7	82	61-0000.02	6	61-2601.0/D	23	61-4110.0	26	61-8610.37	76	61-9331.3	59
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10-1310.1319	82	61-0039.0	32	61-2602.0/D	50	61-4510.0	54	61-8650.17	76	61-9351.3	58
10-1311.1249	82	61-0040.02	31	61-2602.0/D	19	61-4510.0	55	61-8650.37	76	61-9351.4	58
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10-1313.1209	82	61-0050.02	30	61-2603.0/D	23	61-4610.0	28	61-8670.17	76	61-9351.6	58
10-1313.1249	82	61-0059.0	32	61-2603.0/D	46	61-4610.0	54	61-8670.37	76	61-9351.7	58
10-1316.1179	82	61-1100.0	11	61-2603.0/D	48	61-4610.0	55	61-8675.11	76	61-9450.0	72
10-1316.1209	82	61-1100.0	12	61-2603.0/D	50	61-4710.0	27	61-8720.17	77	61-9451.0	71
10-1319.1179	82	61-1100.0	13	61-2604.0/D	19	61-4710.0	28	61-8720.37	77	61-9452.0	71
10-1319.1199	82	61-1100.0	14	61-2604.0/D	21	61-4710.0	54	61-8725.11	77	61-9453.0	71
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10-2J06.3146	81	61-1130.0	34	61-2604.0/D	50	61-4810.0	54	61-8750.17	77	61-9481.6	89
10-2J06.3149	81	61-1140.0	36	61-2605.0/D	19	61-4810.0	55	61-8750.37	77	61-9593.0	60
10-2J09.1062	81	61-1140.0	42	61-2605.0/D	21	61-4970.10	29	61-8755.11	77	61-9593.2	60
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51-943.9	89	61-2201.0/D	44	61-2801.0/D	46	61-8430.12	75	61-9231.9	59	61-9671.2	56
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52-928.40	63	61-2203.0/D	45	61-2802.0/D	48	61-8460.22	76	61-9311.3	59	61-9681.2	56
52-928.50	63	61-2205.0/D	16	61-2802.0/D	50	61-8470.12	76	61-9311.4	59	61-9681.3	56
52-928.60	63	61-2205.0/D	17	61-2804.0/D	19	61-8470.22	76	61-9311.5	59	61-9681.4	56
52-928.9	63	61-2205.0/D	18	61-2804.0/D	21	61-8480.12	76	61-9311.6	59	61-9681.5	56
52-929.20	63	61-2205.0/D	43	61-2804.0/D	23	61-8480.22	76	61-9311.7	59	61-9681.6	56
52-929.30	63	61-2205.0/D	44	61-2804.0/D	46	61-8490.12	76	61-9321.1	58	61-9681.7	56
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52-929.50	63	61-2501.0/D	19	61-2804.0/D	50	61-8520.12	77	61-9321.3	58	61-9711.0	88
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61-9931.4	64		
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61-9932.0	66		
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