

# Series 14

*Attractive. Compact. Reliable.*

<https://eao.com/14>



# 14 Information about the Series

## Key advantages

- Attractive 22.5 mm or 30.5 mm design (flush)
- Up to 4 NO and 4 NC contacts
- Low back panel depth
- High IP67 protection
- Low-level switching possible
- Excellent tactile feedback

## Typical application areas

- Industrial machinery and process automation
- Panel building
- Lifting and moving
- Public transportation
- Construction machinery and special vehicles

## Functions

- Pushbutton
- Illuminated pushbutton
- Mushroom-head pushbutton
- Selector switch
- Keylock switch
- Indicator
- Buzzer

## Design

- Flush
- Raised

## IP front protection

- IP40
- IP65
- IP67

## Rating

- 42 VAC (100 mA)
- 250 VAC (5 A)

## Mounting cut-outs

- Ø 22.3 mm
- Ø 30.5 mm

## Terminal

- Soldering terminal
- Plug-in terminal
- Soldering/plug-in terminal
- PCB (with PCB plug-in base)
- Cable
- Push-in terminal (PIT)

## Lens Material

- Aluminium
- Stainless steel
- Plastic

## Markings

- Engraving
- Hot stamping
- Pad printing
- Screen print

## Approvals

- CB (IEC 61058)
- CSA
- CQC
- ENEC (EN 61058)
- DNV GL (previously Germanischer Lloyd)
- UL

## Conformities

- CE
- 2014/35/EU (LVD)
- 2011/65/EU (RoHS)
- 2014/30/EU (EMC)



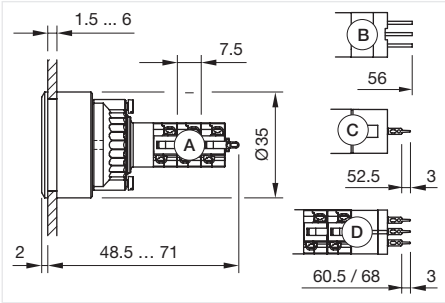
|                                      |     |
|--------------------------------------|-----|
| <b>Flush design</b>                  |     |
| Illuminated pushbutton               | 282 |
| Mushroom-head pushbutton             | 285 |
| Mushroom-head pushbutton illuminated | 288 |
| Selector switch 2 positions          | 291 |
| Keylock switch 2 positions           | 294 |
| Indicator                            | 297 |
| Buzzer                               | 299 |
| <b>Raised design</b>                 |     |
| Illuminated pushbutton               | 300 |
| Mushroom-head pushbutton             | 303 |
| Mushroom-head pushbutton illuminated | 306 |
| Selector switch 2 positions          | 309 |
| Keylock switch 2 positions           | 312 |
| Indicator compact                    | 315 |
| Indicator full-face illumination     | 316 |
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# 14 Flush design

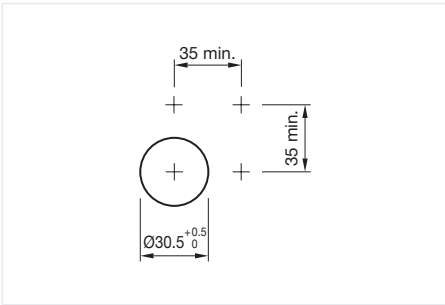
## Illuminated pushbutton, IP67



Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm  
Universal-Solder terminal



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

|  |               |          |
|--|---------------|----------|
|  | Front bezel   | Page 323 |
|  | Lens          | Page 321 |
|  | Marking Plate | Page 323 |
|  | Single-LED    | Page 325 |
|  | Actuator      |          |
|  | Pressure ring |          |
|  | 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.



Actuator, Front dimension Ø 35 mm

| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|------------------|
| Momentary        | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-131.022  | 18             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-131.0252 | 17             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-132.0252 | 24             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-133.0252 | 26             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-134.0252 | 28             |                  |
| Maintained       | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-271.022  | 20             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-271.0252 | 19             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-272.0252 | 25             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-273.0252 | 27             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-274.0252 | 29             |                  |
| Momentary        | Universal terminal | Low-level element             | 2 NO        |              | 14-431.036  | 11             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-432.036  | 30             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-433.036  | 7              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-435.036  | 9              | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-436.036  | 5              | 5                |
| Maintained       | Universal terminal | Low-level element             | 2 NO        |              | 14-471.036  | 12             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-472.036  | 31             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-473.036  | 8              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-475.036  | 10             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-476.036  | 6              | 5                |
| Momentary        | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-743.0292 | 13             | 5                |
|                  | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-744.0292 | 15             | 5                |

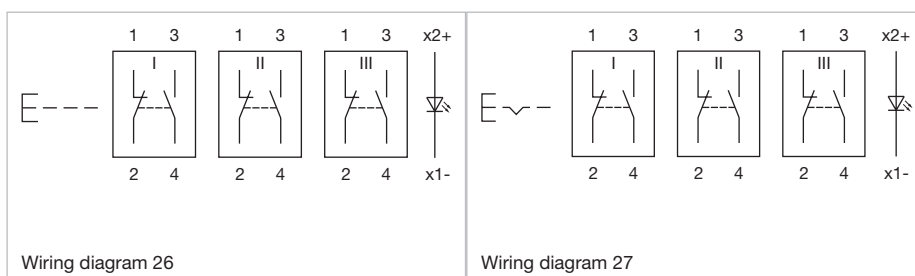
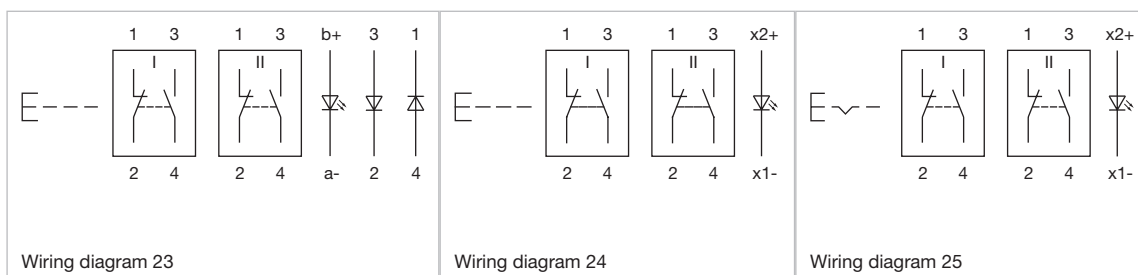
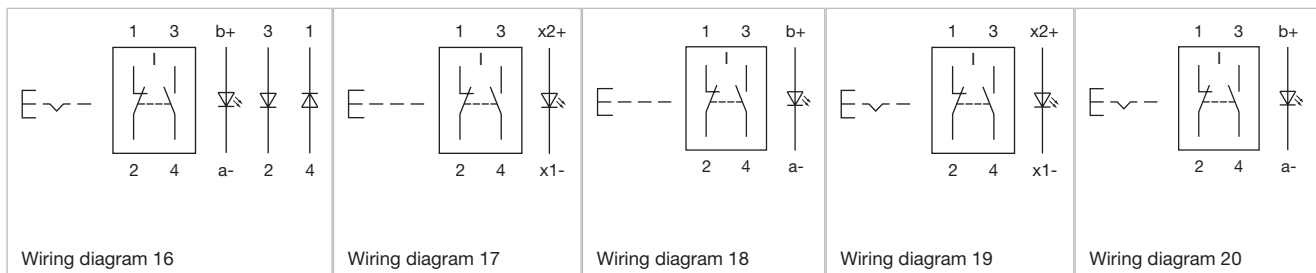
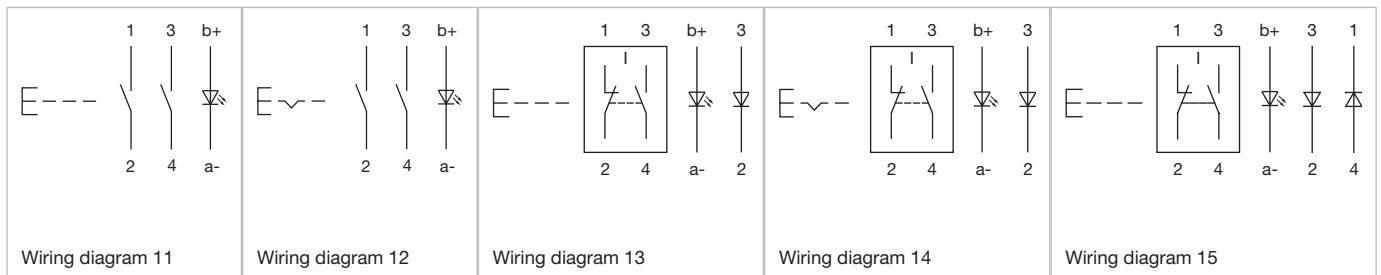
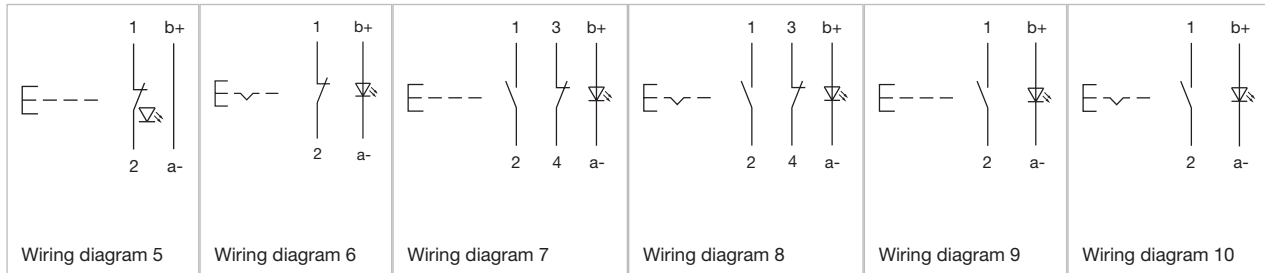
Contacts: NC = Normally closed, NO = Normally open



| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|------------------|
| Momentary        | Universal terminal | Snap-action switching element | 2 NC / 2 NO | 2            | 14-746.0292 | 23             | 5                |
| Maintained       | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-747.0292 | 14             | 5                |
|                  | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-748.0292 | 16             | 5                |

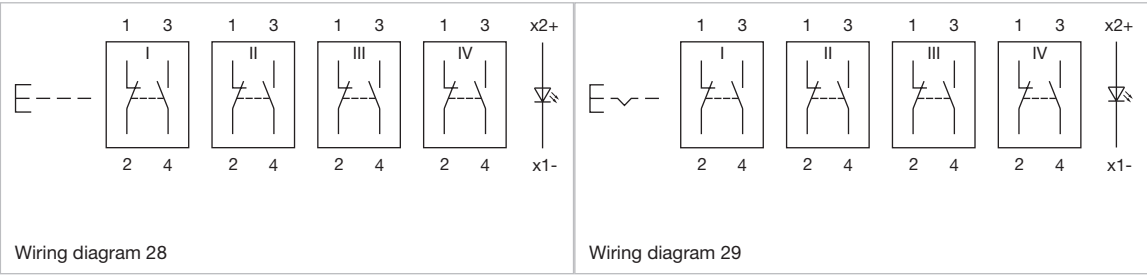
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams



# 14 Flush design

## Wiring diagrams



Mushroom-head pushbutton, IP67

Equipment consisting of (schematic overview)



Lens

Page 321



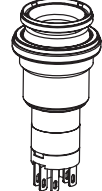
Front bezel set

Page 323

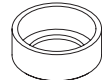


Marking Plate

Page 323



Actuator



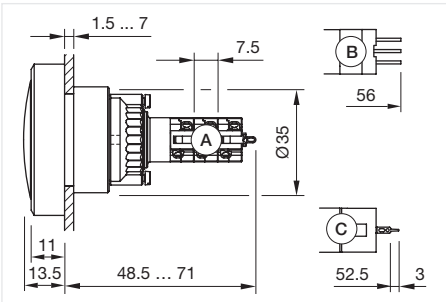
Pressure ring



Fixing nut

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

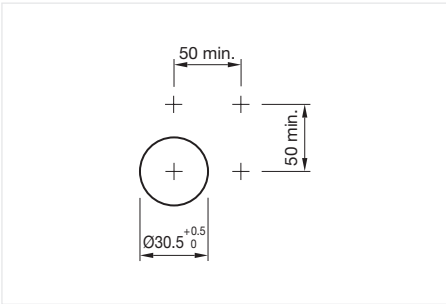
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 mm x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



Mounting cut-outs [mm]



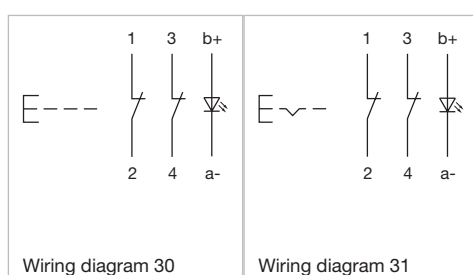
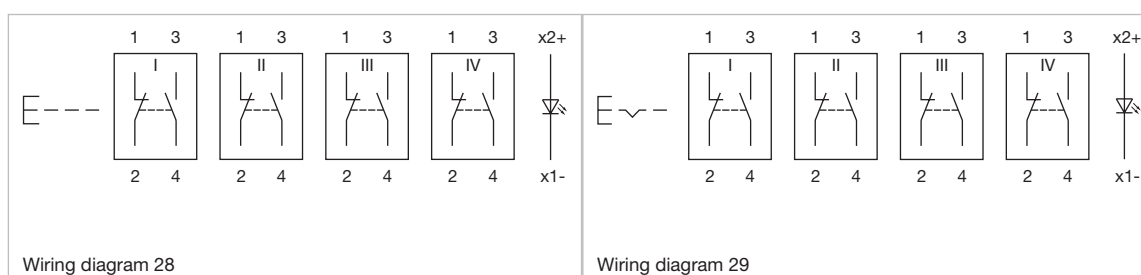
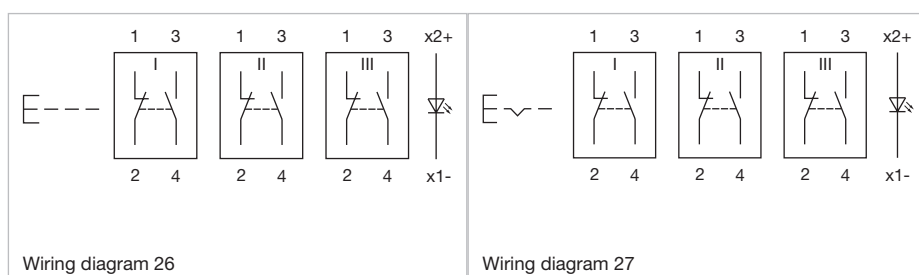
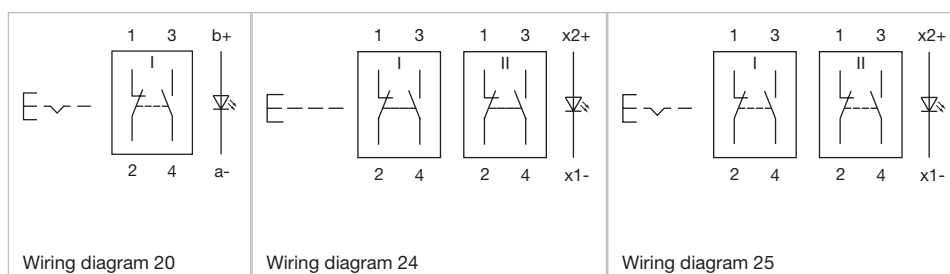
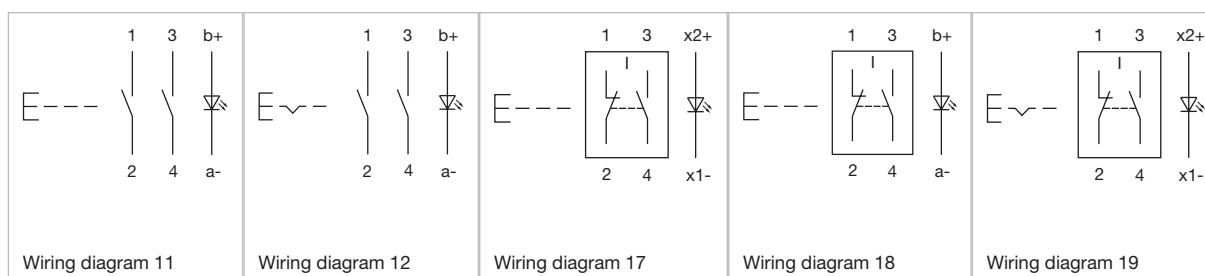
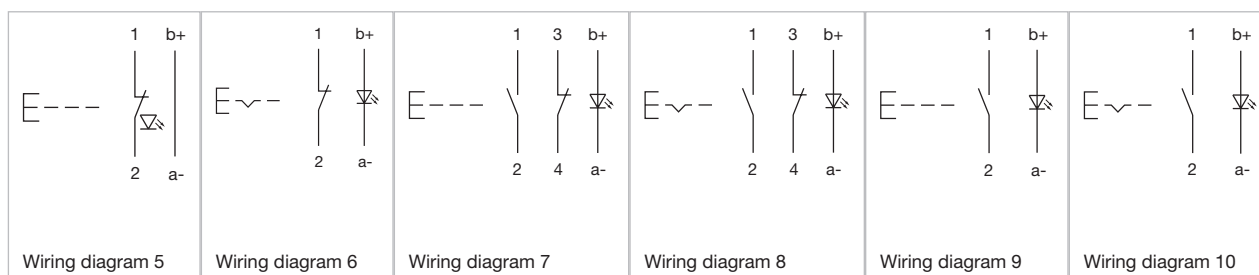
Actuator, Front dimension Ø 35 mm

| Switching action | Terminal           | Switching system              | Contacts    | Part No.    | Wiring diagram | Com-<br>ponent<br>Layout |
|------------------|--------------------|-------------------------------|-------------|-------------|----------------|--------------------------|
| Momentary        | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 14-131.022  | 18             |                          |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 14-131.0252 | 17             |                          |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 14-132.0252 | 24             |                          |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 14-133.0252 | 26             |                          |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 14-134.0252 | 28             |                          |
| Maintained       | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 14-271.022  | 20             |                          |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 14-271.0252 | 19             |                          |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 14-272.0252 | 25             |                          |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 14-273.0252 | 27             |                          |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 14-274.0252 | 29             |                          |
| Momentary        | Universal terminal | Low-level element             | 2 NO        | 14-431.036  | 11             | 5                        |
|                  | Universal terminal | Low-level element             | 2 NC        | 14-432.036  | 30             | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO | 14-433.036  | 7              | 5                        |
|                  | Universal terminal | Low-level element             | 1 NO        | 14-435.036  | 9              | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC        | 14-436.036  | 5              | 5                        |
| Maintained       | Universal terminal | Low-level element             | 2 NO        | 14-471.036  | 12             | 5                        |
|                  | Universal terminal | Low-level element             | 2 NC        | 14-472.036  | 31             | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO | 14-473.036  | 8              | 5                        |
|                  | Universal terminal | Low-level element             | 1 NO        | 14-475.036  | 10             | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC        | 14-476.036  | 6              | 5                        |

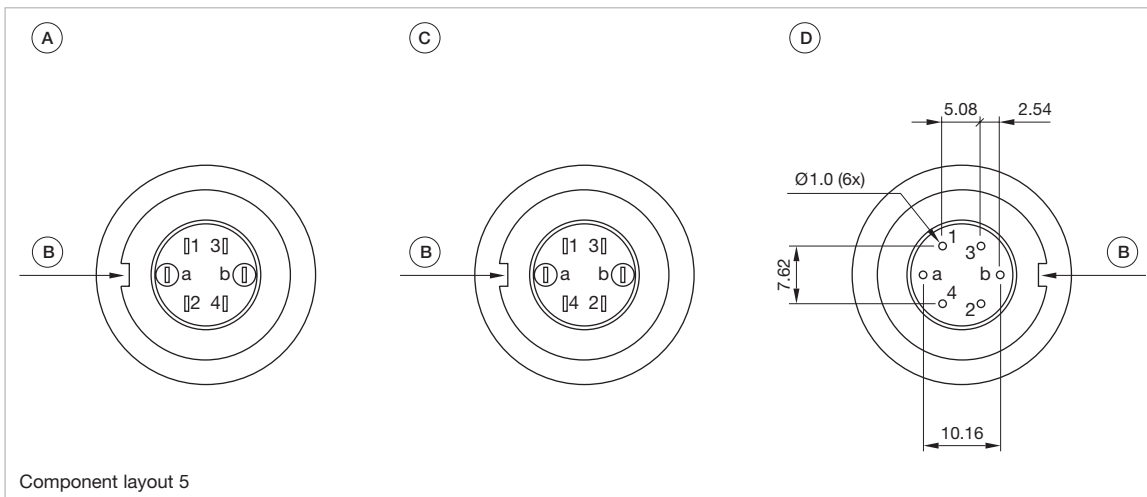
Contacts: NC = Normally closed, NO = Normally open

# 14 Flush design

## Wiring diagrams



## Component layouts



Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

D = Drilling plan (component side)

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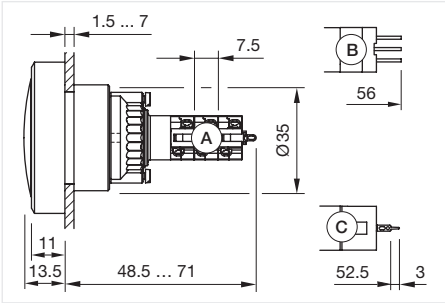


# 14 Flush design

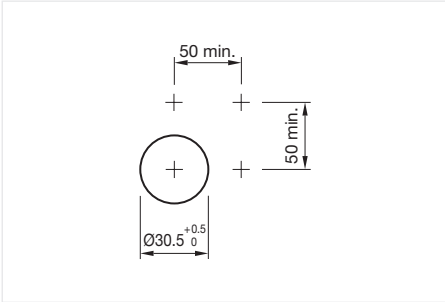
## Mushroom-head pushbutton illuminated, IP67



Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 mm x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

- Lens [Page 321](#)
- Front bezel set [Page 323](#)
- Marking Plate [Page 323](#)
- Single-LED [Page 325](#)
- Actuator
- Pressure ring
- 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.



Actuator, Front dimension Ø 35 mm

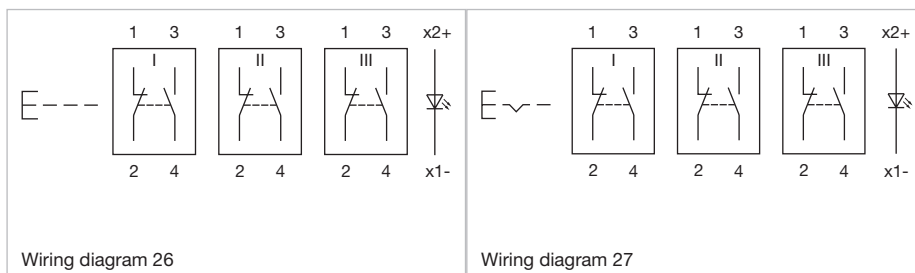
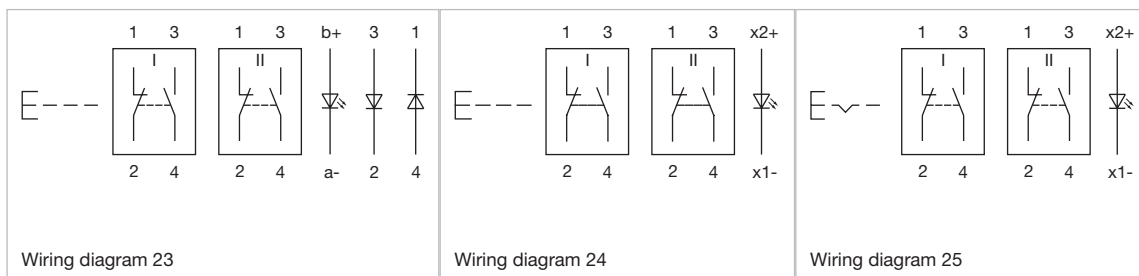
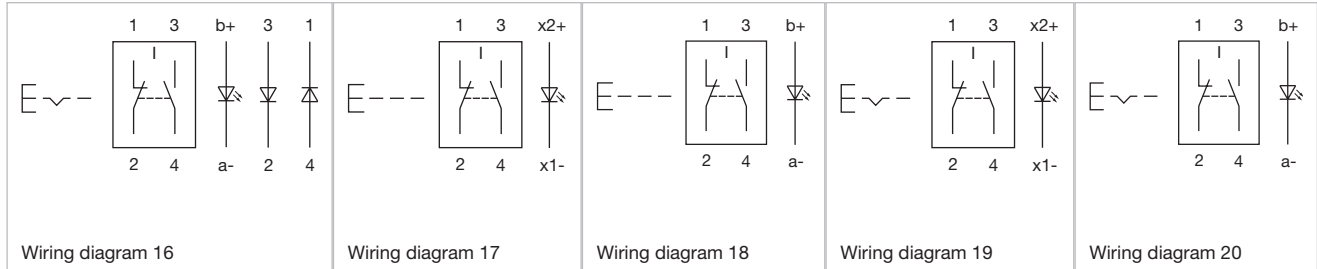
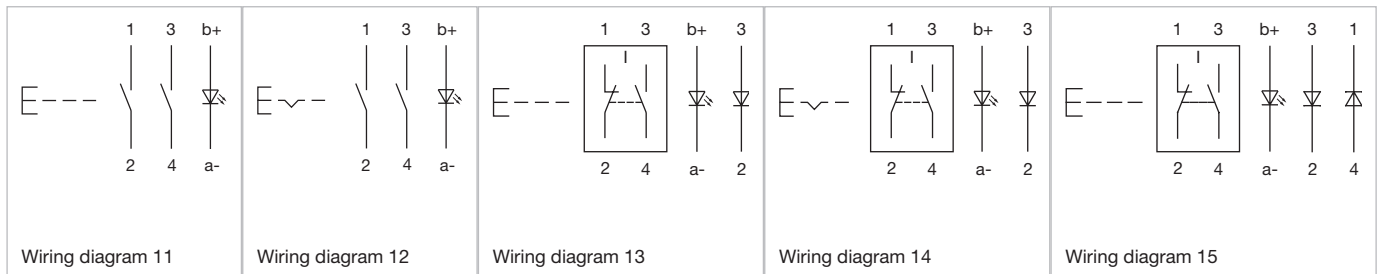
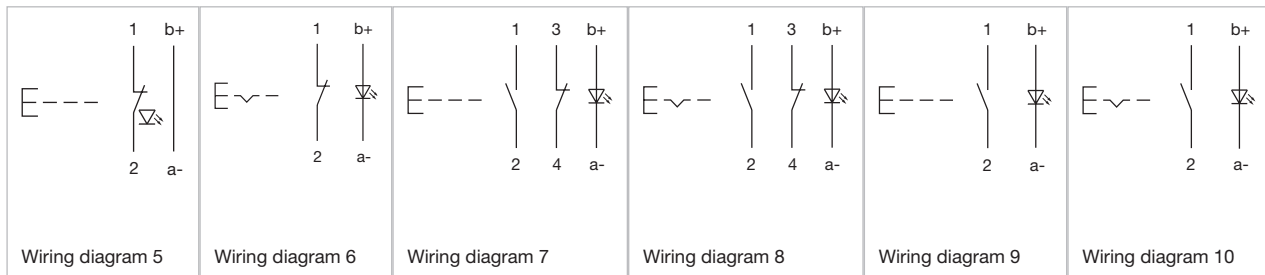
| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|------------------|
| Momentary        | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-131.022  | 18             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-131.0252 | 17             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-132.0252 | 24             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-133.0252 | 26             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-134.0252 | 28             |                  |
| Maintained       | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-271.022  | 20             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-271.0252 | 19             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-272.0252 | 25             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-273.0252 | 27             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-274.0252 | 29             |                  |
| Momentary        | Universal terminal | Low-level element             | 2 NO        |              | 14-431.036  | 11             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-432.036  | 30             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-433.036  | 7              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-435.036  | 9              | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-436.036  | 5              | 5                |
| Maintained       | Universal terminal | Low-level element             | 2 NO        |              | 14-471.036  | 12             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-472.036  | 31             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-473.036  | 8              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-475.036  | 10             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-476.036  | 6              | 5                |
| Momentary        | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-743.0292 | 13             | 5                |

Contacts: NC = Normally closed, NO = Normally open

| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|------------------|
| Momentary        | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-744.0292 | 15             | 5                |
|                  | Universal terminal | Snap-action switching element | 2 NC / 2 NO | 2            | 14-746.0292 | 23             | 5                |
| Maintained       | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-747.0292 | 14             | 5                |
|                  | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-748.0292 | 16             | 5                |

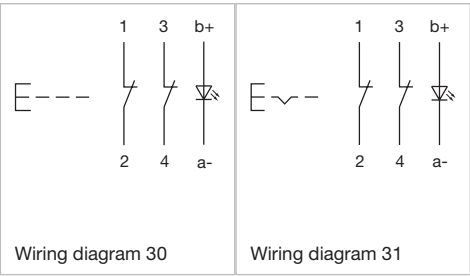
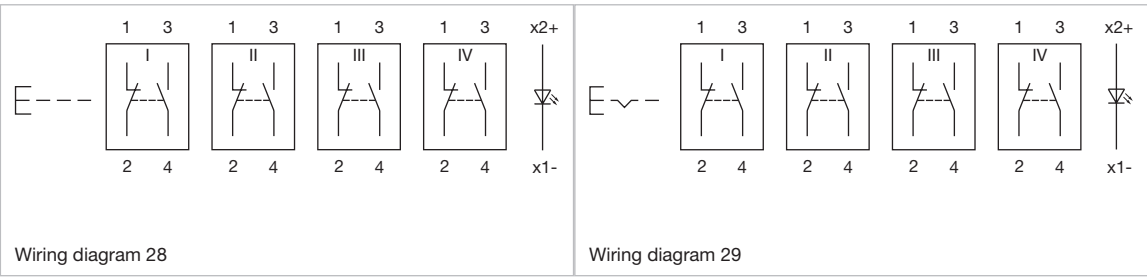
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams

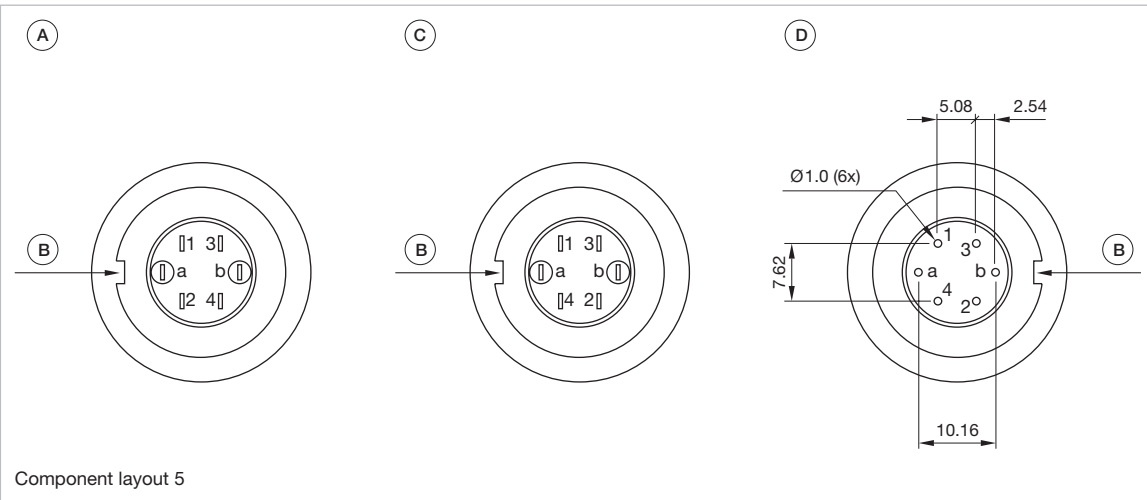


# 14 Flush design

## Wiring diagrams



## Component layouts



Dimensions [mm]  
A = Terminals (rear side)  
B = Anti twist device  
C = Diode block  
D = Drilling plan (component side)

## Selector switch 2 positions, IP67

### Equipment consisting of (schematic overview)



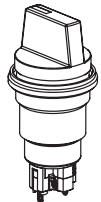
Front bezel

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Anti-twist device

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Actuator



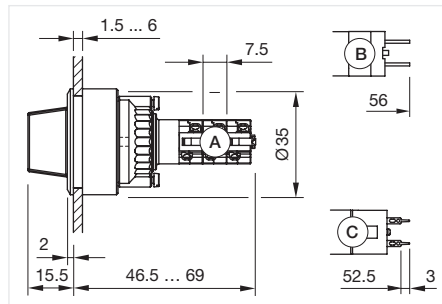
Pressure ring



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]

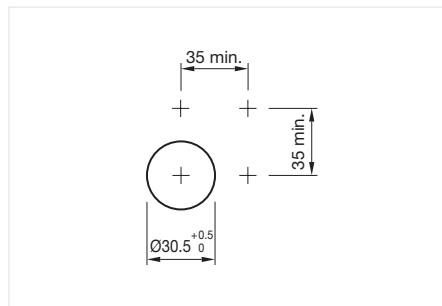
A = Solder terminal

B = Plug-in terminal 2.8 x 0.5 mm

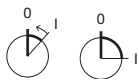
C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



Mounting cut-outs [mm]



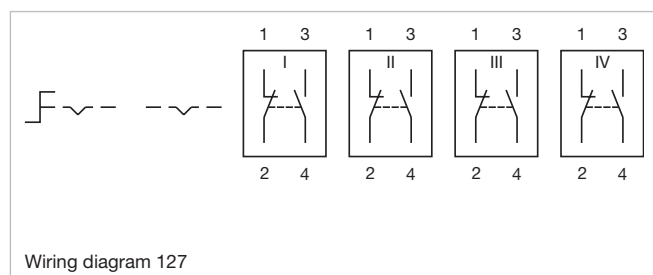
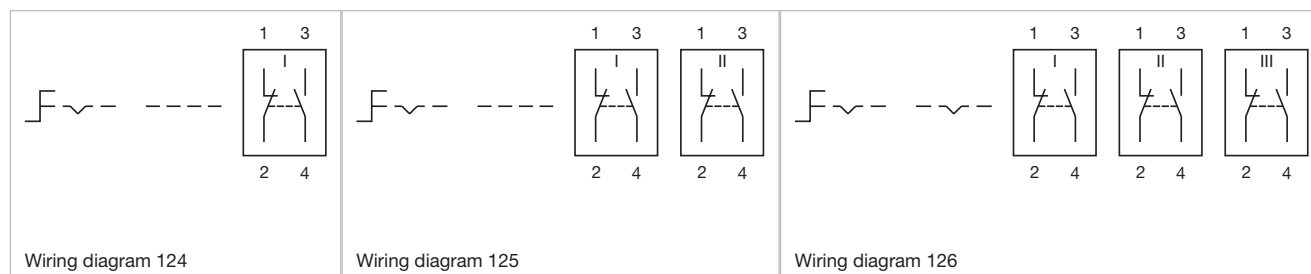
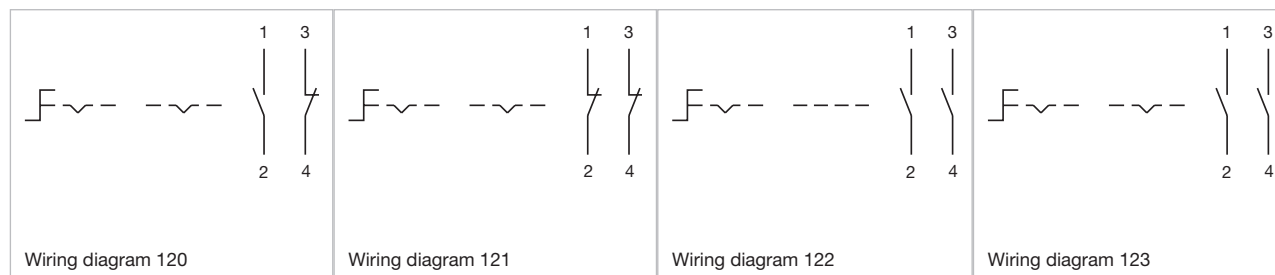
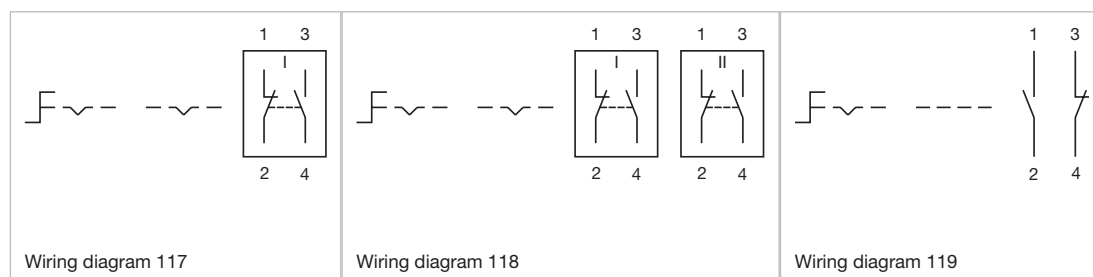
Actuator, Front dimension Ø 35 mm

| Switching action  | Terminal           | Switching system              | Contacts    | Switching angle | Lever shape | Part No.     | Wiring diagram | Component Layout |
|-------------------|--------------------|-------------------------------|-------------|-----------------|-------------|--------------|----------------|------------------|
| Rest - Momentary  | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 42° right       | short       | 14-501.0220  | 124            |                  |
|                   | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 42° right       | short       | 14-501.02502 | 124            |                  |
|                   | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 42° right       | short       | 14-502.02502 | 125            |                  |
| Rest - Maintained | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 90° right       | short       | 14-506.0220  | 117            |                  |
|                   | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | short       | 14-506.02502 | 117            |                  |
|                   | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | short       | 14-507.02502 | 118            |                  |
|                   | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | short       | 14-508.02502 | 126            |                  |
|                   | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | short       | 14-509.02502 | 127            |                  |
| Rest - Momentary  | Universal terminal | Low-level element             | 2 NO        | 42° right       | short       | 14-515.0360  | 122            | 5                |
|                   | Universal terminal | Low-level element             | 1 NC / 1 NO | 42° right       | short       | 14-517.0360  | 119            | 5                |
| Rest - Maintained | Universal terminal | Low-level element             | 2 NO        | 90° right       | short       | 14-520.0360  | 123            | 5                |
|                   | Universal terminal | Low-level element             | 2 NC        | 90° right       | short       | 14-521.0360  | 121            | 5                |
|                   | Universal terminal | Low-level element             | 1 NC / 1 NO | 90° right       | short       | 14-522.0360  | 120            | 5                |

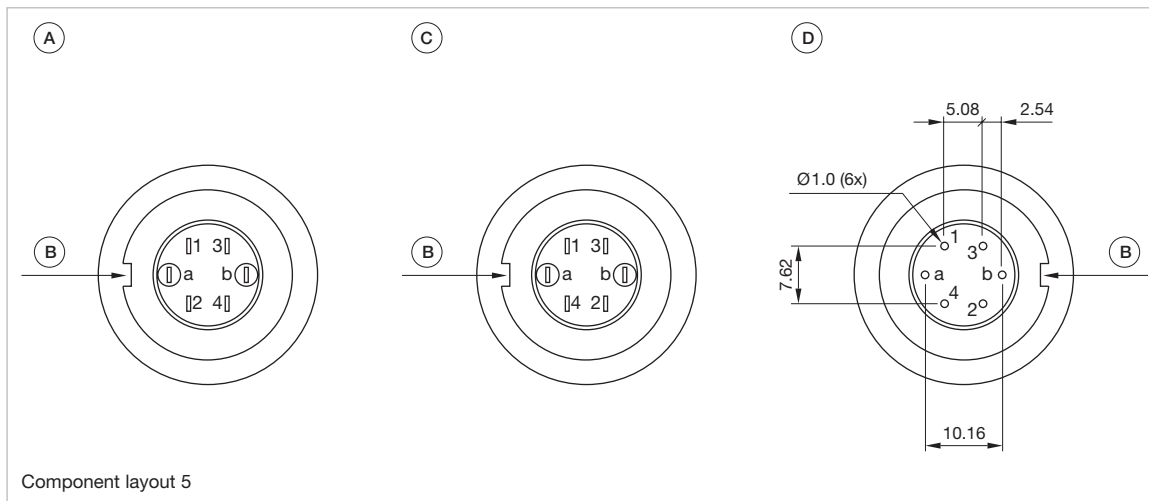
Contacts: NC = Normally closed, NO = Normally open

# 14 Flush design

## Wiring diagrams



## Component layouts



Component layout 5

Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

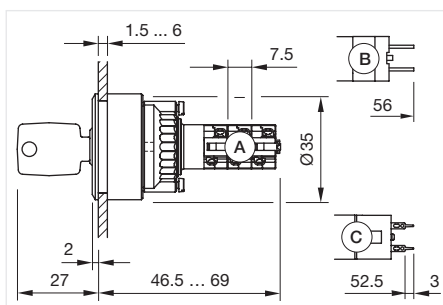
D = Drilling plan (component side)

# 14 Flush design

## Keylock switch 2 positions, IP65



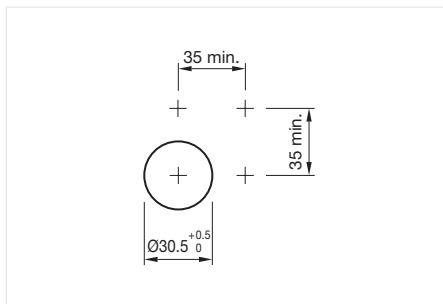
Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm

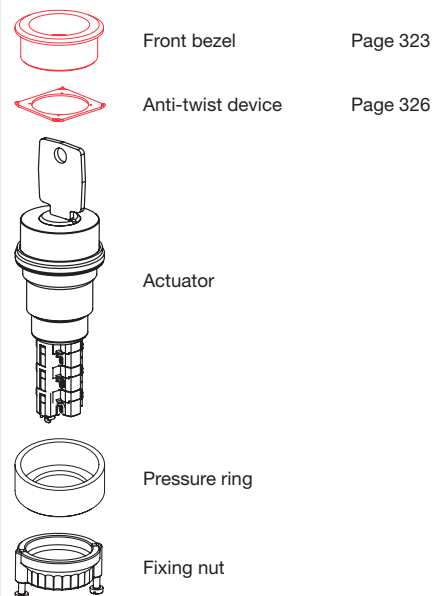
### General information

- Lock numbers 1001, lock type KABA
- Front plastic black



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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

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



Actuator, Front dimension Ø 35 mm

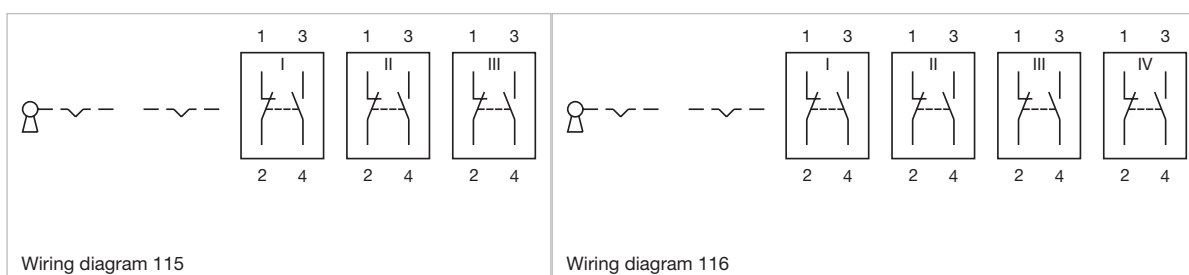
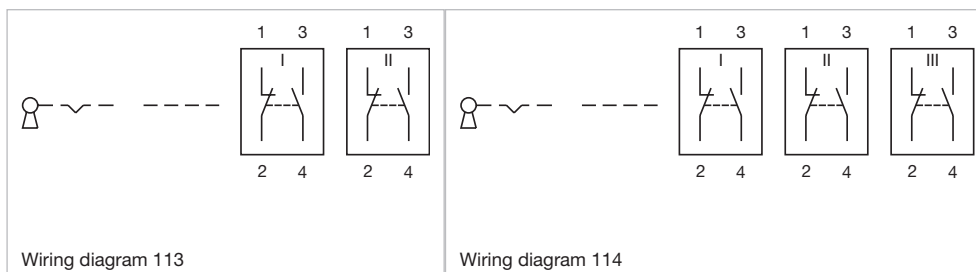
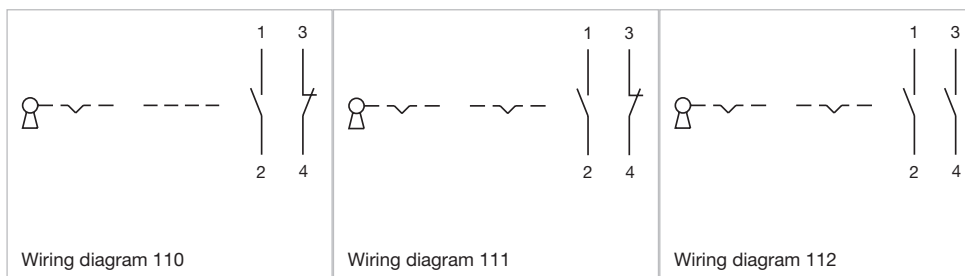
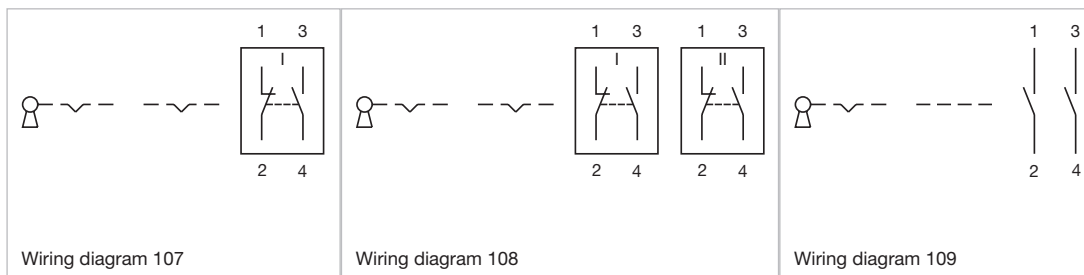
| Switching action          | Terminal           | Switching system              | Contacts    | Switching angle | Part No.     | Wiring diagram | Component Layout |
|---------------------------|--------------------|-------------------------------|-------------|-----------------|--------------|----------------|------------------|
| Rest (a) - Maintained (a) | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-135.022K  | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-135.025K2 | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | 14-136.025K2 | 108            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | 14-137.025K2 | 115            |                  |
|                           | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | 14-138.025K2 | 116            |                  |
| Rest (a) - Momentary      | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 42° right       | 14-141.022K  | 113            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 42° right       | 14-141.025K2 | 113            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 42° right       | 14-142.025K2 | 113            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 42° right       | 14-143.025K2 | 114            |                  |
| Rest (a) - Maintained     | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-235.022K  | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-235.025K2 | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | 14-236.025K2 | 108            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | 14-237.025K2 | 115            |                  |
|                           | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | 14-238.025K2 | 116            |                  |
| Rest - Maintained (a)     | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-335.022K  | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-335.025K2 | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | 14-336.025K2 | 108            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | 14-337.025K2 | 115            |                  |
|                           | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | 14-338.025K2 | 116            |                  |
| Rest (a) - Maintained (a) | Universal terminal | Low-level element             | 2 NO        | 90° right       | 14-411.036K  | 112            | 5                |
|                           | Universal terminal | Low-level element             | 1 NC / 1 NO | 90° right       | 14-412.036K  | 111            | 5                |

Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

| Switching action      | Terminal           | Switching system  | Contacts    | Switching angle | Part No.    | Wiring diagram | Component Layout |
|-----------------------|--------------------|-------------------|-------------|-----------------|-------------|----------------|------------------|
| Rest (a) - Maintained | Universal terminal | Low-level element | 2 NO        | 90° right       | 14-414.036K | 112            | 5                |
|                       | Universal terminal | Low-level element | 1 NC / 1 NO | 90° right       | 14-415.036K | 111            | 5                |
| Rest - Maintained (a) | Universal terminal | Low-level element | 2 NO        | 90° right       | 14-417.036K | 112            | 5                |
|                       | Universal terminal | Low-level element | 1 NC / 1 NO | 90° right       | 14-418.036K | 111            | 5                |
| Rest (a) - Momentary  | Universal terminal | Low-level element | 2 NO        | 42° right       | 14-437.036K | 109            | 5                |
|                       | Universal terminal | Low-level element | 1 NC / 1 NO | 42° right       | 14-438.036K | 110            | 5                |

Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

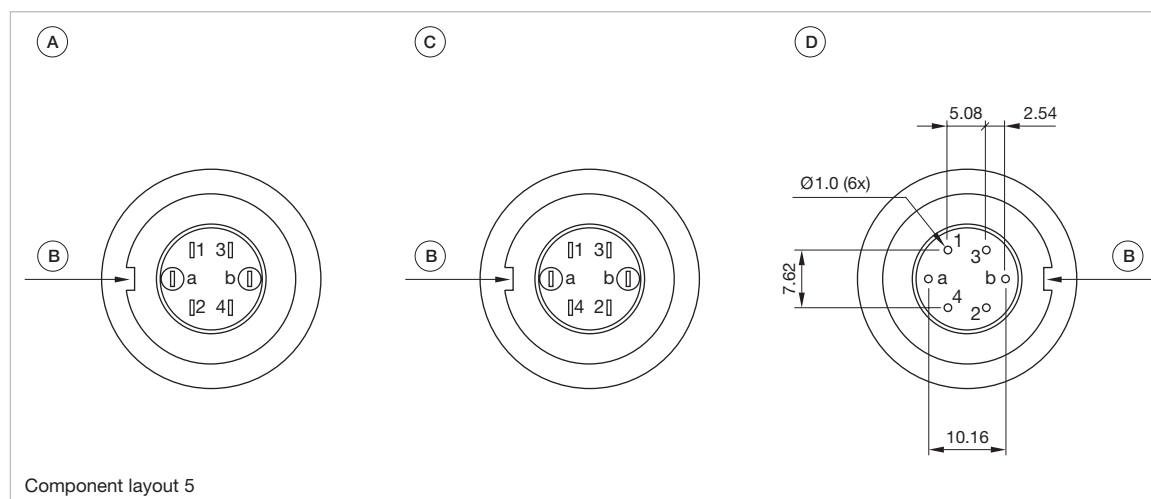
## Wiring diagrams





# 14 Flush design

## Component layouts



Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

D = Drilling plan (component side)



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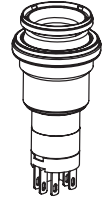
Equipment consisting of (schematic overview)

- 

Front bezelPage 323
- 

LensPage 321
- 

Marking PlatePage 323
- 

Single-LEDPage 325
- 

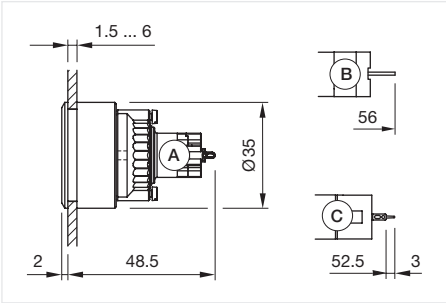
Actuator
- 

Pressure ring
- 

Fixing nut

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

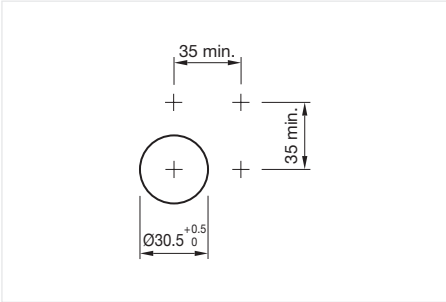
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



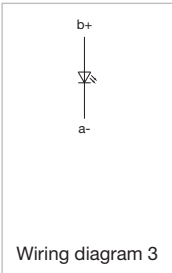
Mounting cut-outs [mm]



Actuator, Front dimension Ø 35 mm

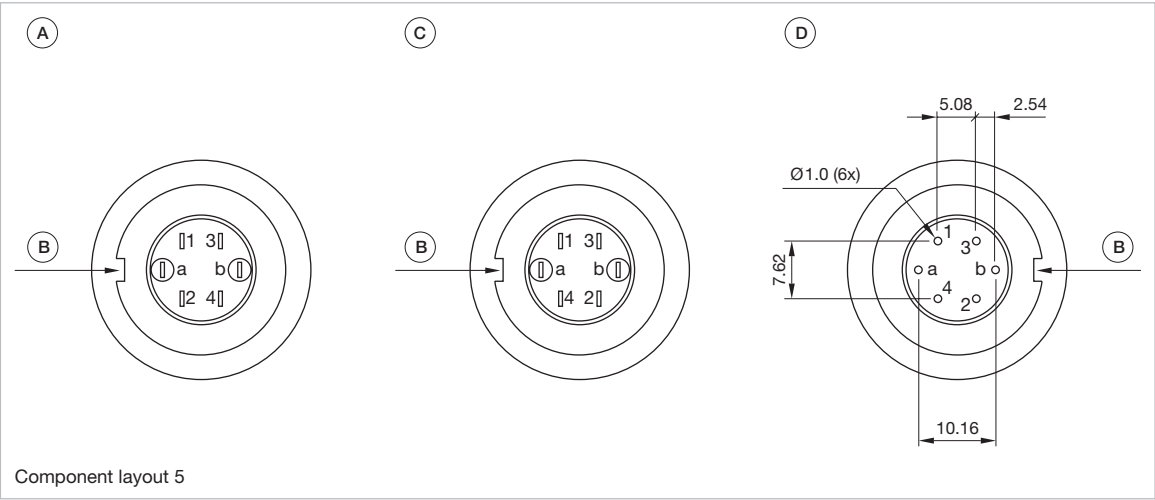
| Terminal           | Part No.   | Wiring diagram | Com-<br>ponent<br>Layout |
|--------------------|------------|----------------|--------------------------|
| Plug-in terminal   | 14-040.002 | 3              |                          |
| Soldering terminal | 14-040.005 | 3              |                          |
| Universal terminal | 14-041.006 | 3              | 5                        |

Wiring diagrams



# 14 Flush design

## Component layouts

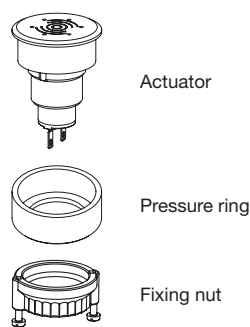


Component layout 5

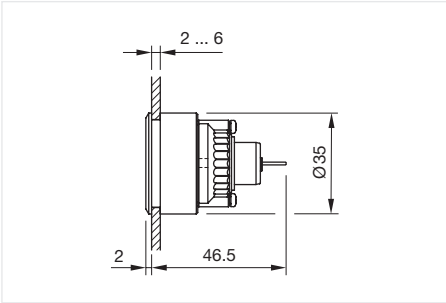
Dimensions [mm]  
A = Terminals (rear side)  
B = Anti twist device  
C = Diode block  
D = Drilling plan (component side)

Buzzer, IP40

Equipment consisting of (schematic overview)



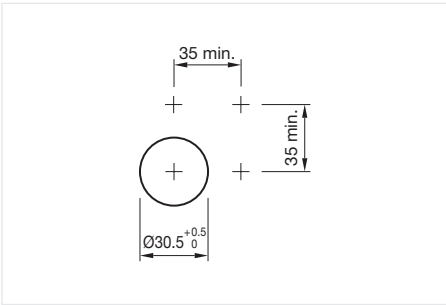
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

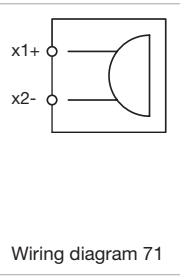
- For PCB application use adaptor Part-No. 31-942
- The colour of anodised aluminium parts can vary due to technical production reasons



Actuator, Front dimension Ø 35 mm

| Terminal         | Operating voltage | Front cap colour | Front cap material | Front cap surface | Part No.   | Wiring diagram |
|------------------|-------------------|------------------|--------------------|-------------------|------------|----------------|
| Plug-in terminal | 24 V DC           | Black            | Aluminium          | anodised          | 14-810.910 | 71             |
|                  | 24 V DC           | Nature           | Aluminium          | anodised          | 14-810.918 | 71             |

Wiring diagrams

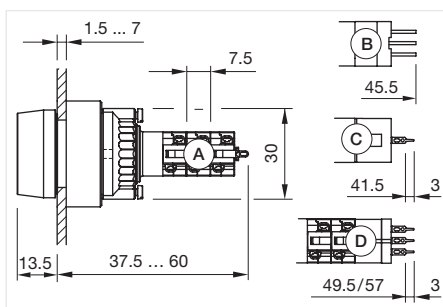


# 14 Raised design

## Illuminated pushbutton, IP67



Product can differ from the current configuration.



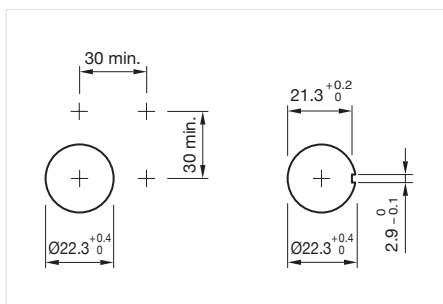
Dimensions [mm]

A = Solder terminal

B = Plug-in terminal 2.8 x 0.5 mm

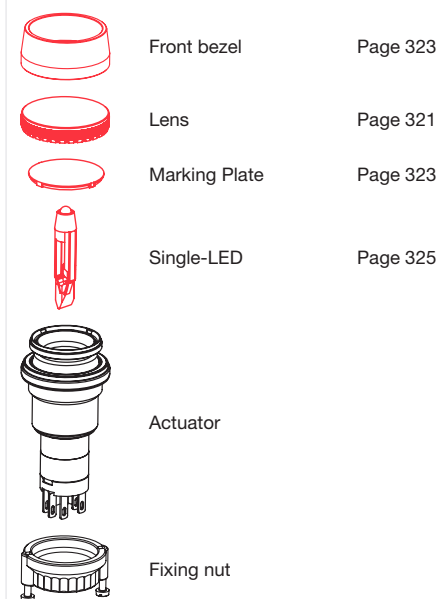
C = Universal terminal 2.0 mm x 0.5 mm

D = Universal-Solder terminal



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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

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



### Actuator, Front dimension Ø 29 mm

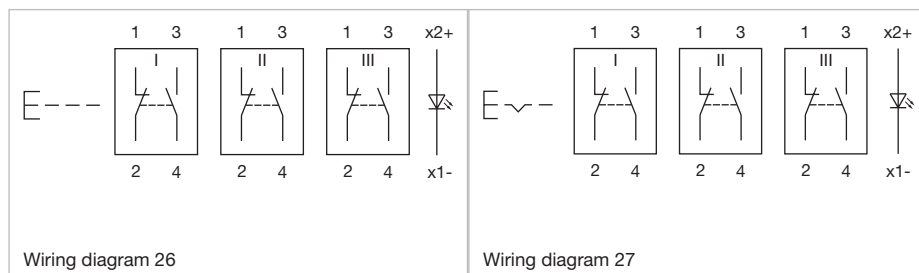
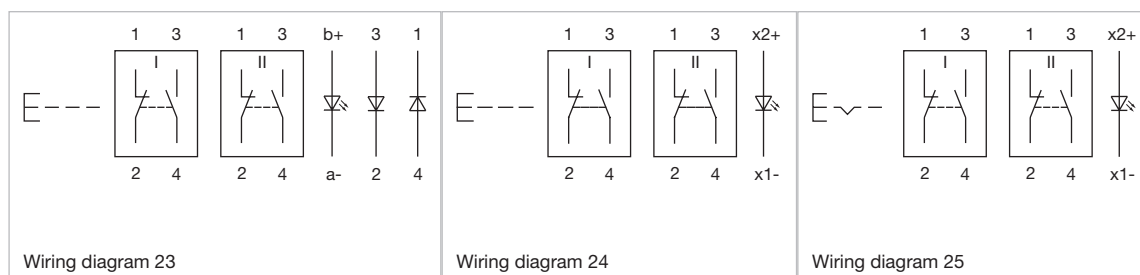
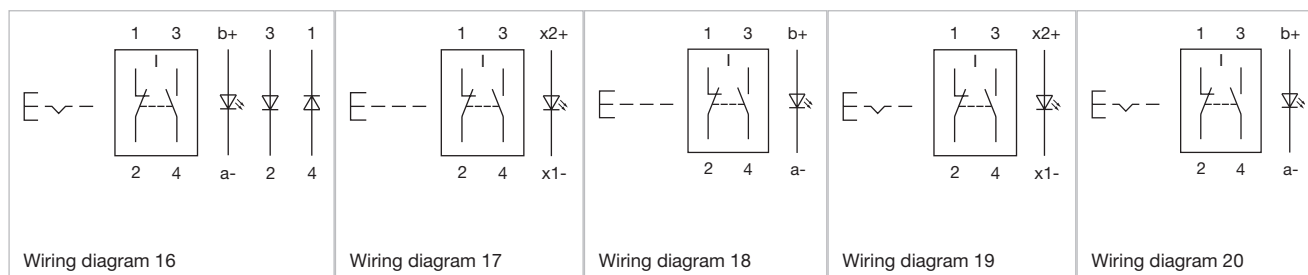
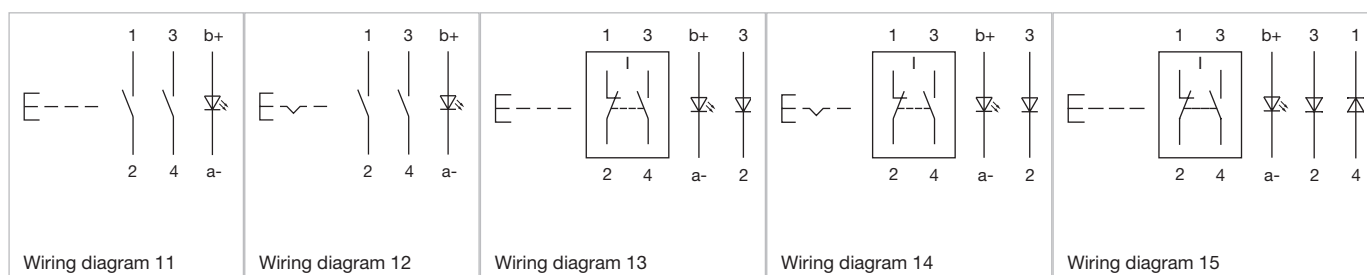
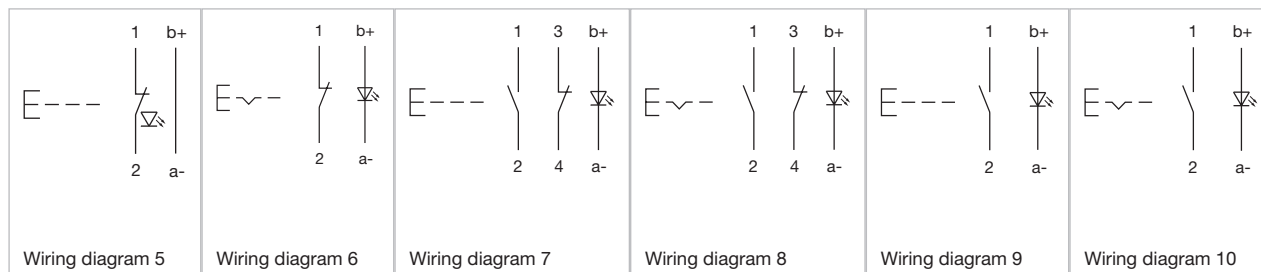
| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|------------------|
| Momentary        | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-131.022  | 18             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-131.0252 | 17             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-132.0252 | 24             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-133.0252 | 26             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-134.0252 | 28             |                  |
| Maintained       | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-271.022  | 20             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-271.0252 | 19             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-272.0252 | 25             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-273.0252 | 27             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-274.0252 | 29             |                  |
| Momentary        | Universal terminal | Low-level element             | 2 NO        |              | 14-431.036  | 11             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-432.036  | 30             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-433.036  | 7              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-435.036  | 9              | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-436.036  | 5              | 5                |
| Maintained       | Universal terminal | Low-level element             | 2 NO        |              | 14-471.036  | 12             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-472.036  | 31             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-473.036  | 8              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-475.036  | 10             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-476.036  | 6              | 5                |
| Momentary        | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-743.0292 | 13             | 5                |
|                  | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-744.0292 | 15             | 5                |
|                  | Universal terminal | Snap-action switching element | 2 NC / 2 NO | 2            | 14-746.0292 | 23             | 5                |
| Maintained       | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-747.0292 | 14             | 5                |

Contacts: NC = Normally closed, NO = Normally open

| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|------------------|
| Maintained       | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-748.0292 | 16             | 5                |

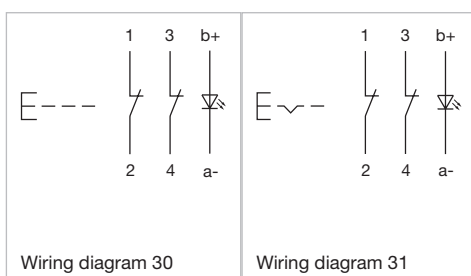
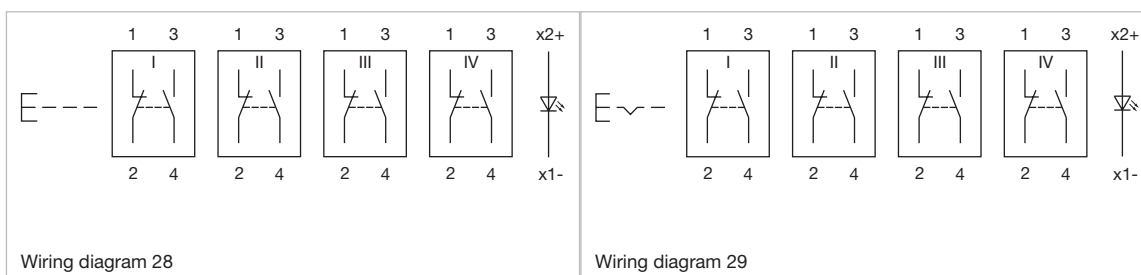
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams

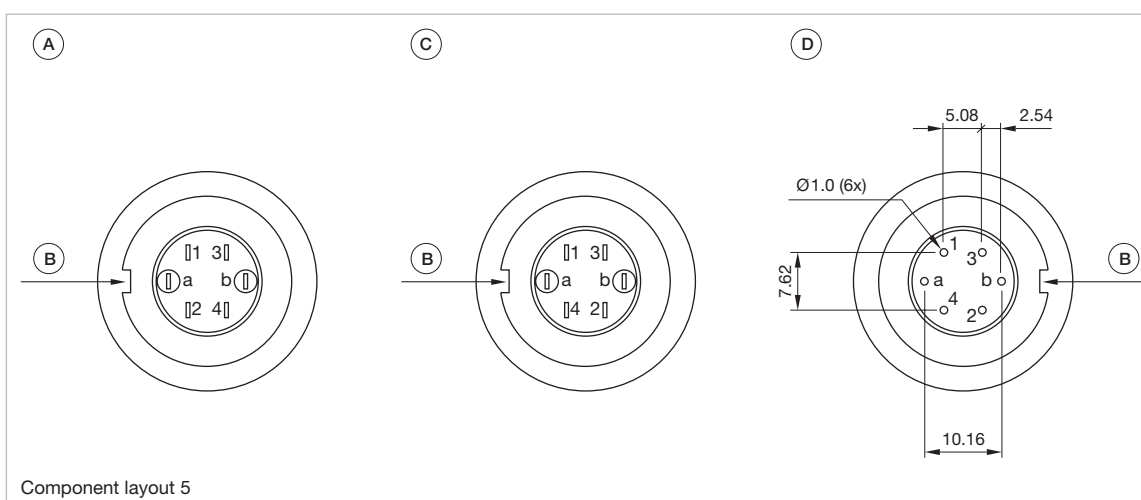


## 14 Raised design

## Wiring diagrams



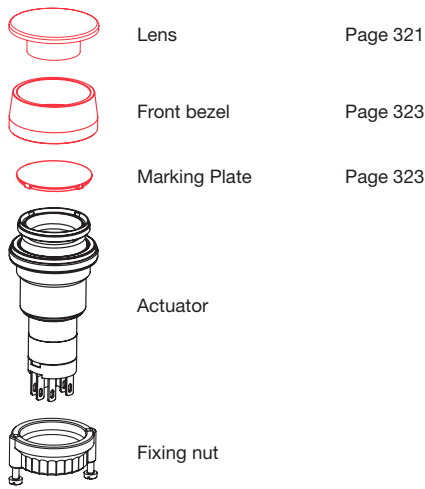
## Component layouts



Dimensions [mm]  
A = Terminals (rear side)  
B = Anti twist device  
C = Diode block  
D = Drilling plan (component side)

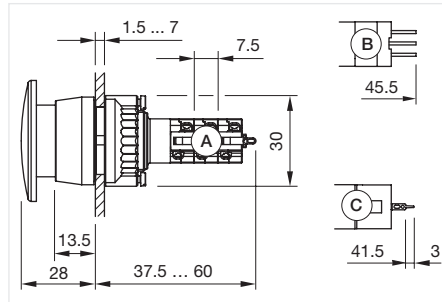
## Mushroom-head pushbutton, IP67

### Equipment consisting of (schematic overview)



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

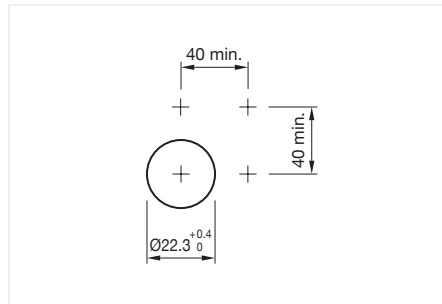
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



Mounting cut-outs [mm]



Actuator, Front dimension Ø 40 mm

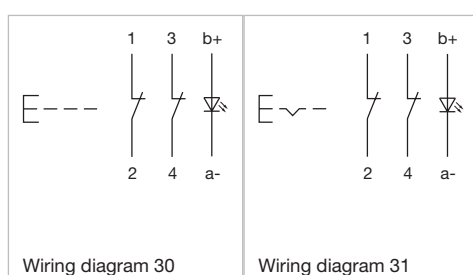
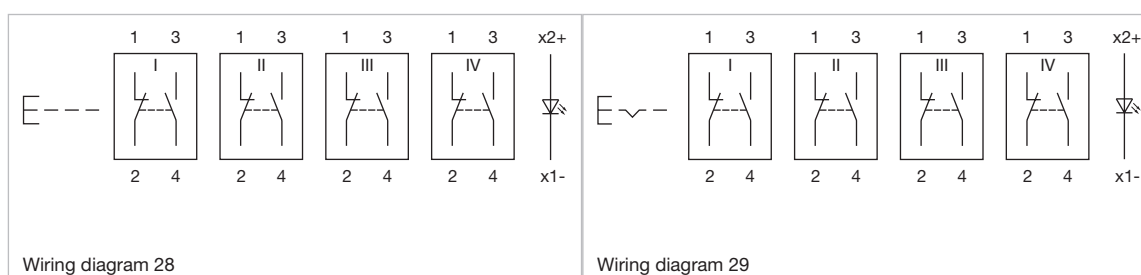
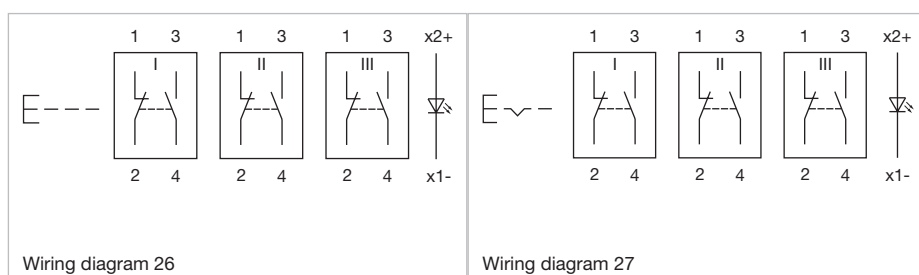
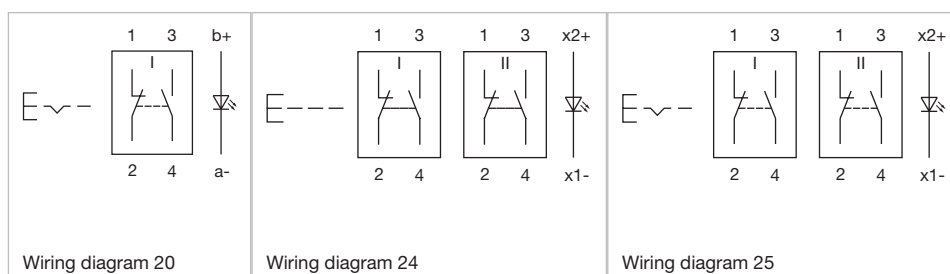
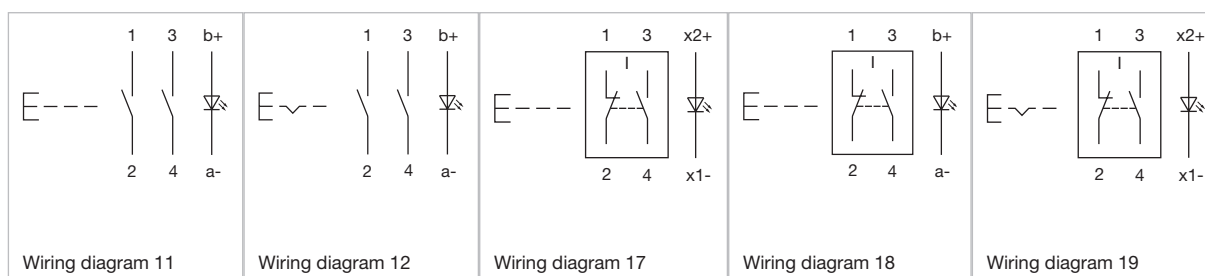
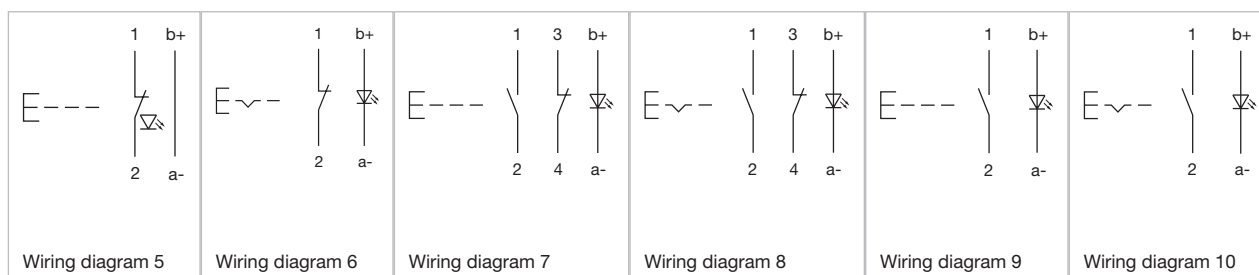
| Switching action | Terminal           | Switching system              | Contacts    | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|-------------|----------------|------------------|
| Momentary        | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 14-131.022  | 18             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 14-131.0252 | 17             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 14-132.0252 | 24             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 14-133.0252 | 26             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 14-134.0252 | 28             |                  |
| Maintained       | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 14-271.022  | 20             |                  |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 14-271.0252 | 19             |                  |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 14-272.0252 | 25             |                  |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 14-273.0252 | 27             |                  |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 14-274.0252 | 29             |                  |
| Momentary        | Universal terminal | Low-level element             | 2 NO        | 14-431.036  | 11             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        | 14-432.036  | 30             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO | 14-433.036  | 7              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        | 14-435.036  | 9              | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        | 14-436.036  | 5              | 5                |
| Maintained       | Universal terminal | Low-level element             | 2 NO        | 14-471.036  | 12             | 5                |
|                  | Universal terminal | Low-level element             | 2 NC        | 14-472.036  | 31             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO | 14-473.036  | 8              | 5                |
|                  | Universal terminal | Low-level element             | 1 NO        | 14-475.036  | 10             | 5                |
|                  | Universal terminal | Low-level element             | 1 NC        | 14-476.036  | 6              | 5                |

Contacts: NC = Normally closed, NO = Normally open

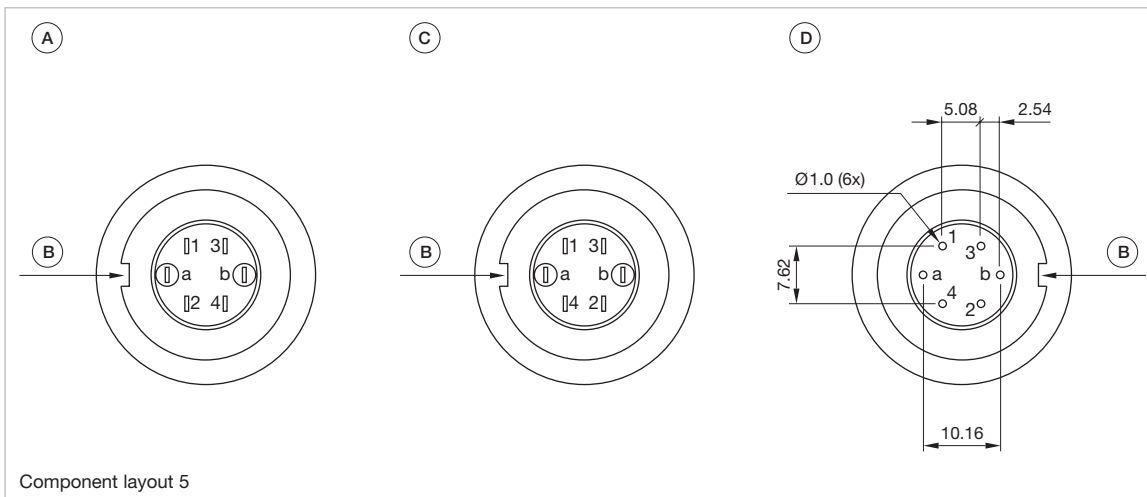


# 14 Raised design

## Wiring diagrams



## Component layouts



Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

D = Drilling plan (component side)

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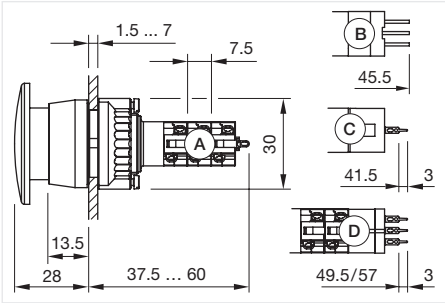
On our website you can download technical data, assembly instructions, catalogs, brochures and much more.

# 14 Raised design

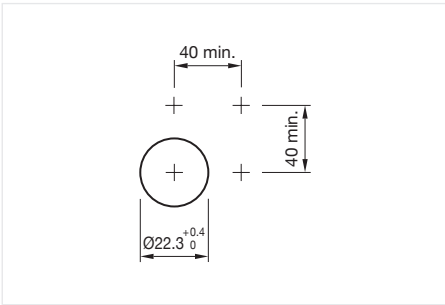
## Mushroom-head pushbutton illuminated, IP67



Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm  
D = Universal-Solder terminal



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

|  |               |          |
|--|---------------|----------|
|  | Lens          | Page 321 |
|  | Front bezel   | Page 323 |
|  | Marking Plate | Page 323 |
|  | Single-LED    | Page 325 |
|  | 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.



Actuator, Front dimension Ø 40 mm

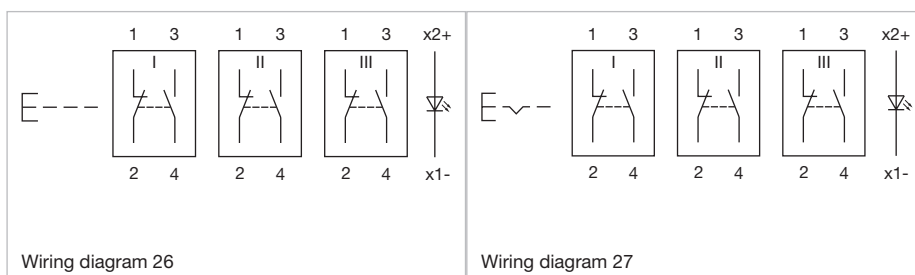
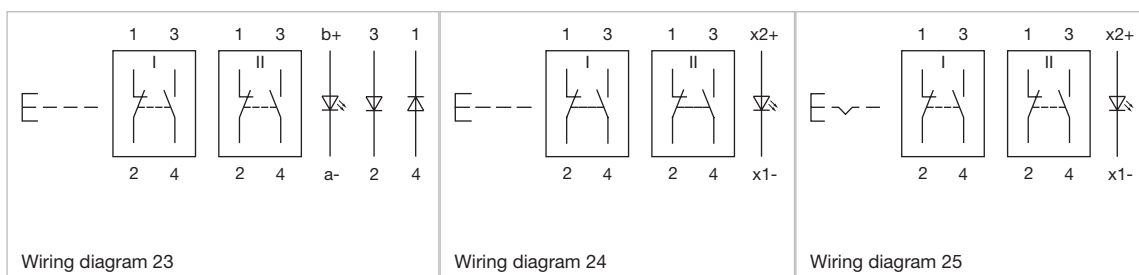
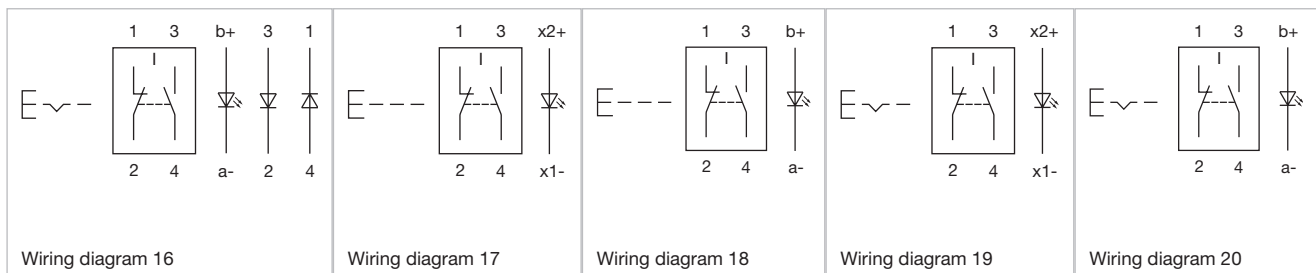
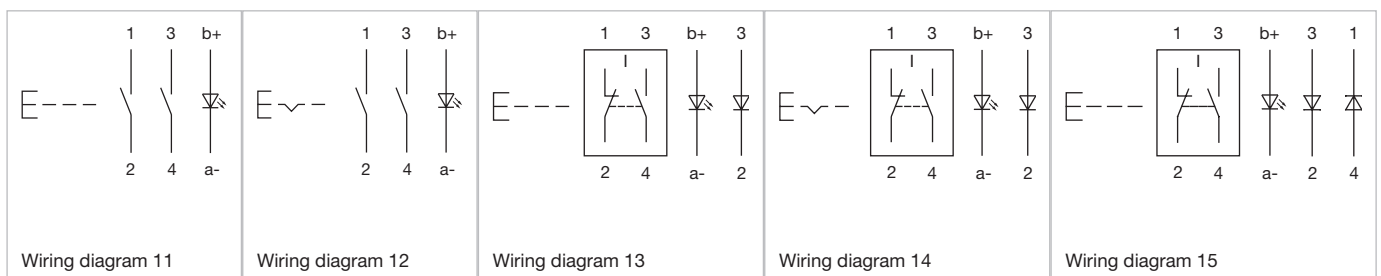
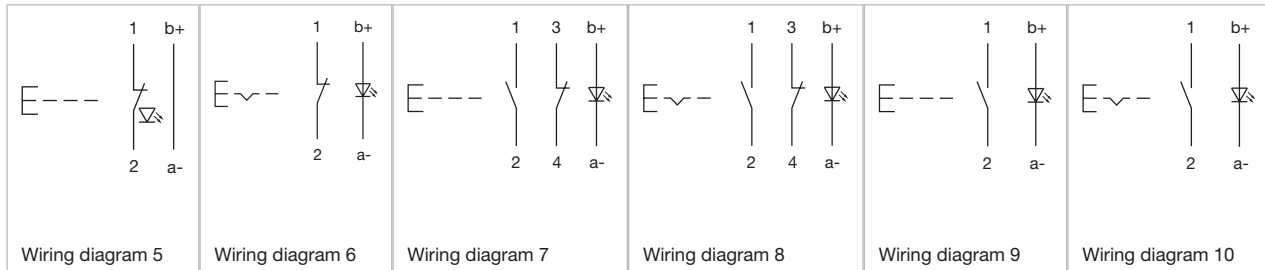
| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Com-<br>ponent<br>Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|--------------------------|
| Momentary        | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-131.022  | 18             |                          |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-131.0252 | 17             |                          |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-132.0252 | 24             |                          |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-133.0252 | 26             |                          |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-134.0252 | 28             |                          |
| Maintained       | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO |              | 14-271.022  | 20             |                          |
|                  | Soldering terminal | Snap-action switching element | 1 NC / 1 NO |              | 14-271.0252 | 19             |                          |
|                  | Soldering terminal | Snap-action switching element | 2 NC / 2 NO |              | 14-272.0252 | 25             |                          |
|                  | Soldering terminal | Snap-action switching element | 3 NC / 3 NO |              | 14-273.0252 | 27             |                          |
|                  | Soldering terminal | Snap-action switching element | 4 NC / 4 NO |              | 14-274.0252 | 29             |                          |
| Momentary        | Universal terminal | Low-level element             | 2 NO        |              | 14-431.036  | 11             | 5                        |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-432.036  | 30             | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-433.036  | 7              | 5                        |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-435.036  | 9              | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-436.036  | 5              | 5                        |
| Maintained       | Universal terminal | Low-level element             | 2 NO        |              | 14-471.036  | 12             | 5                        |
|                  | Universal terminal | Low-level element             | 2 NC        |              | 14-472.036  | 31             | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC / 1 NO |              | 14-473.036  | 8              | 5                        |
|                  | Universal terminal | Low-level element             | 1 NO        |              | 14-475.036  | 10             | 5                        |
|                  | Universal terminal | Low-level element             | 1 NC        |              | 14-476.036  | 6              | 5                        |
| Momentary        | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-743.0292 | 13             | 5                        |
|                  | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-744.0292 | 15             | 5                        |
|                  | Universal terminal | Snap-action switching element | 2 NC / 2 NO | 2            | 14-746.0292 | 23             | 5                        |
| Maintained       | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 1            | 14-747.0292 | 14             | 5                        |

Contacts: NC = Normally closed, NO = Normally open

| Switching action | Terminal           | Switching system              | Contacts    | Diode 1N4007 | Part No.    | Wiring diagram | Component Layout |
|------------------|--------------------|-------------------------------|-------------|--------------|-------------|----------------|------------------|
| Maintained       | Universal terminal | Snap-action switching element | 1 NC / 1 NO | 2            | 14-748.0292 | 16             | 5                |

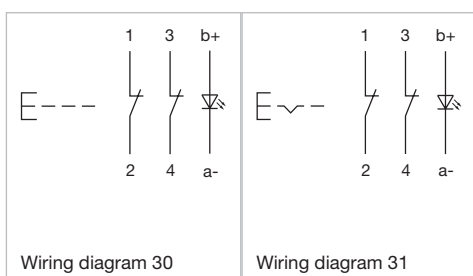
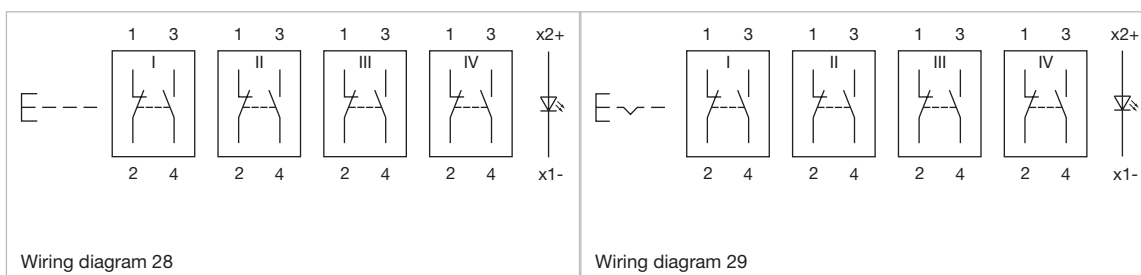
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams

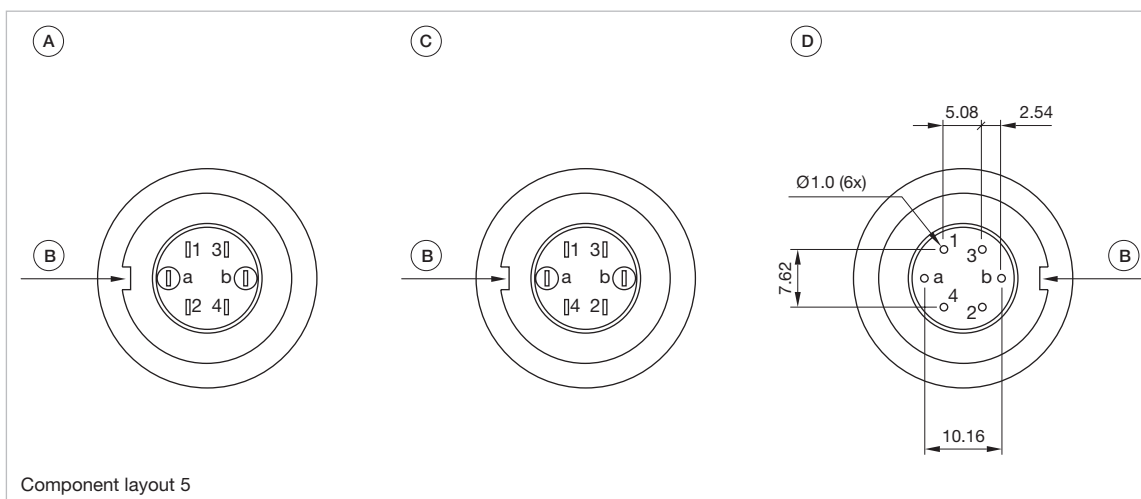


## 14 Raised design

## Wiring diagrams



## Component layouts



Dimensions [mm]

A = Terminals (rear side)

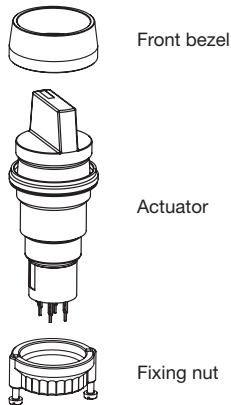
B = Anti twist device

C = Diode block

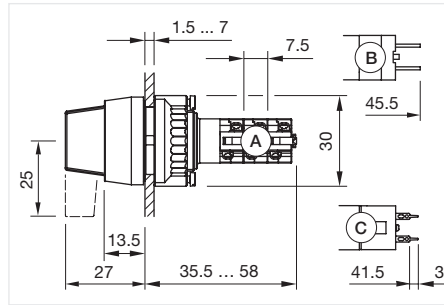
D = Drilling plan (component side)

## Selector switch 2 positions, IP67

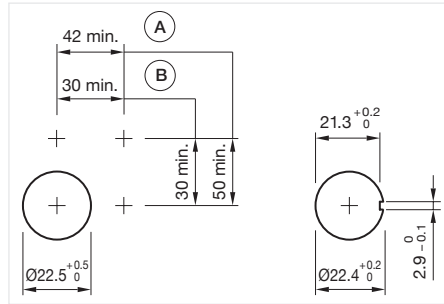
### Equipment consisting of (schematic overview)



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



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm



Mounting cut-outs [mm]  
A = Long lever  
B = Short lever



Product can differ from the current configuration.

### General information

- The colour of anodised aluminium parts can vary due to technical production reasons
- Non-illuminative



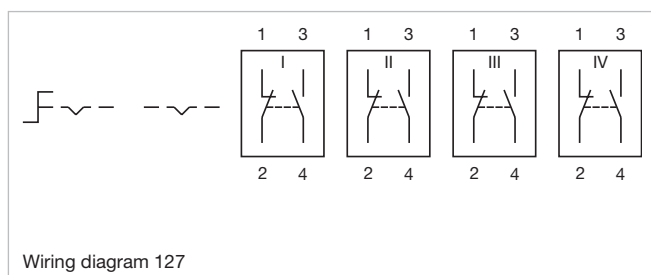
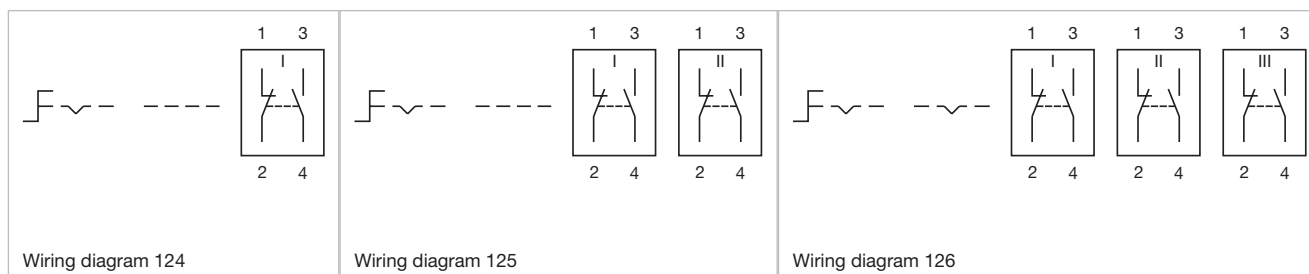
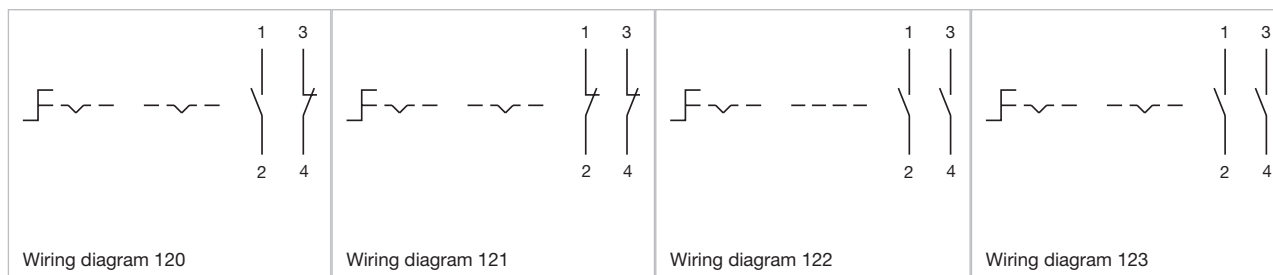
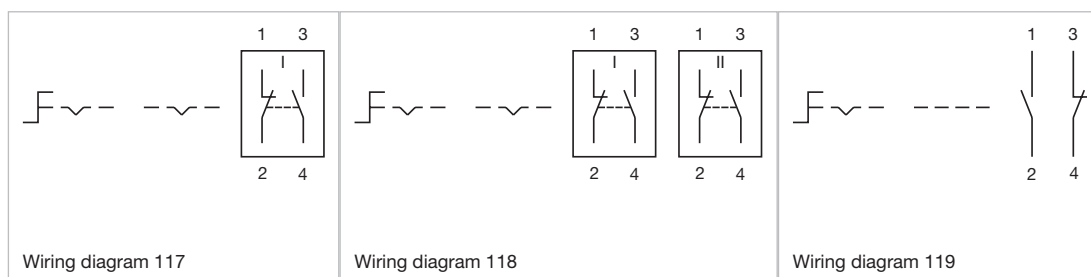
Actuator, Front dimension Ø 29 mm

| Switching action  | Terminal           | Switching system              | Contacts    | Switching angle | Lever shape | Part No.     | Wiring diagram | Component Layout |
|-------------------|--------------------|-------------------------------|-------------|-----------------|-------------|--------------|----------------|------------------|
| Rest - Momentary  | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 42° right       | short       | 14-501.0220  | 124            |                  |
|                   | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 42° right       | short       | 14-501.02502 | 124            |                  |
|                   | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 42° right       | short       | 14-502.02502 | 125            |                  |
| Rest - Maintained | Plug-in terminal   | Snap-action switching element | 1 NC / 1 NO | 90° right       | short       | 14-506.0220  | 117            |                  |
|                   | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | short       | 14-506.02502 | 117            |                  |
|                   | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | short       | 14-507.02502 | 118            |                  |
|                   | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | short       | 14-508.02502 | 126            |                  |
|                   | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | short       | 14-509.02502 | 127            |                  |
| Rest - Momentary  | Universal terminal | Low-level element             | 2 NO        | 42° right       | short       | 14-515.0360  | 122            | 5                |
|                   | Universal terminal | Low-level element             | 1 NC / 1 NO | 42° right       | short       | 14-517.0360  | 119            | 5                |
| Rest - Maintained | Universal terminal | Low-level element             | 2 NO        | 90° right       | short       | 14-520.0360  | 123            | 5                |
|                   | Universal terminal | Low-level element             | 2 NC        | 90° right       | short       | 14-521.0360  | 121            | 5                |
|                   | Universal terminal | Low-level element             | 1 NC / 1 NO | 90° right       | short       | 14-522.0360  | 120            | 5                |
|                   | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | long        | 14-556.0220  | 117            |                  |
|                   | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | long        | 14-556.02502 | 117            |                  |
|                   | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | long        | 14-557.02502 | 118            |                  |
|                   | Universal terminal | Low-level element             | 2 NO        | 90° right       | long        | 14-570.0360  | 123            | 1                |
|                   | Universal terminal | Low-level element             | 1 NC / 1 NO | 90° right       | long        | 14-572.0360  | 120            | 1                |

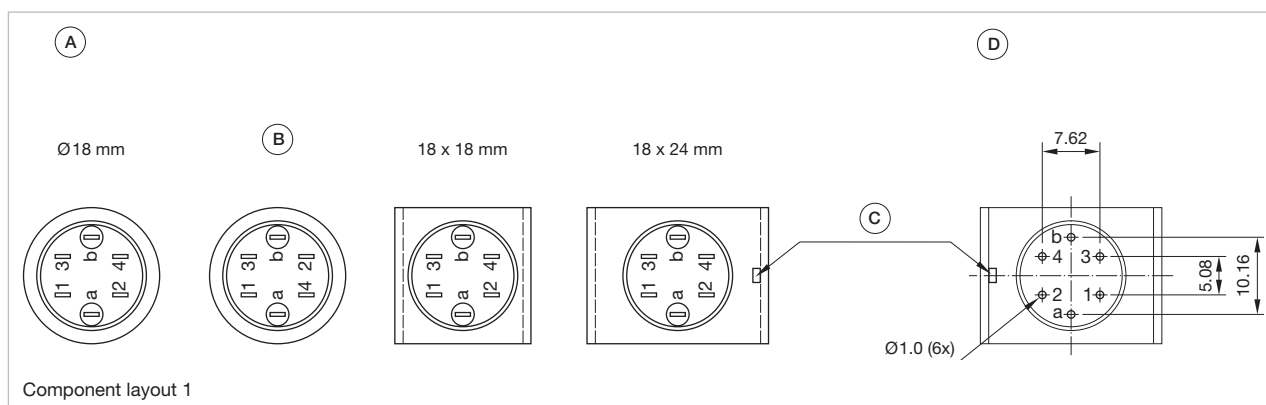
Contacts: NC = Normally closed, NO = Normally open

# 14 Raised design

## Wiring diagrams



## Component layouts



Dimensions [mm]

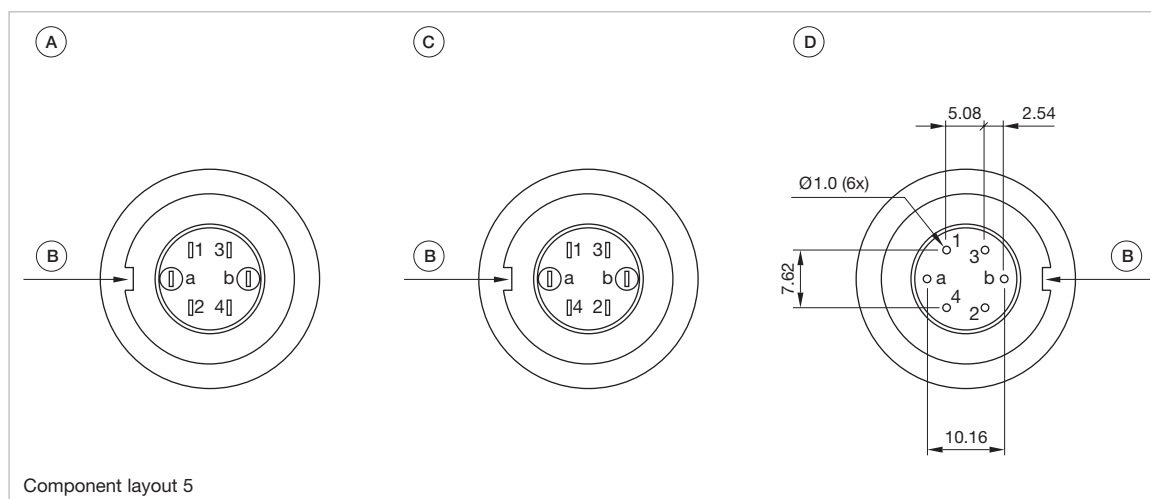
A = Terminals (rear side)

B = Diode block

C = Anti twist device only 18 x 24 mm

D = Drilling plan (component side)

## Component layouts



Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

D = Drilling plan (component side)

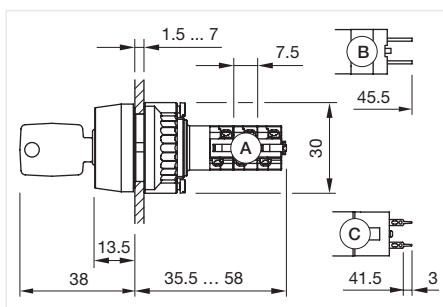


# 14 Raised design

## Keylock switch 2 positions, IP65



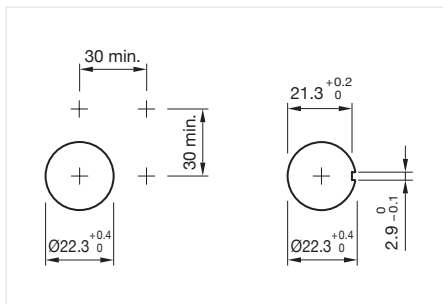
Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 mm x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm

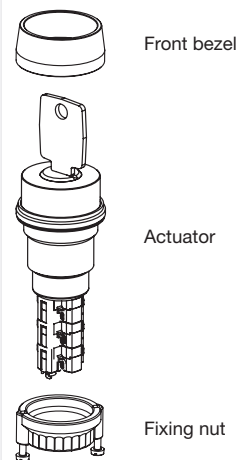
### General information

- Lock numbers 1001, lock type KABA
- Front plastic black

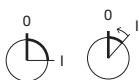


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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



Actuator, Front dimension Ø 29 mm

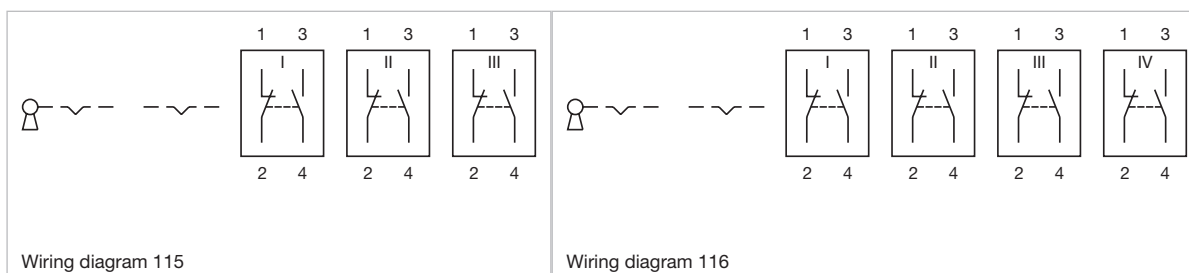
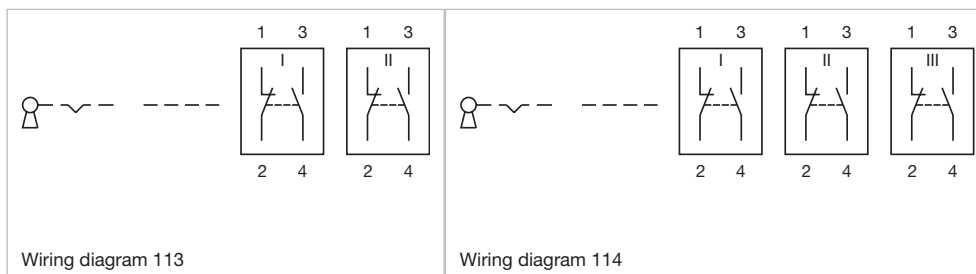
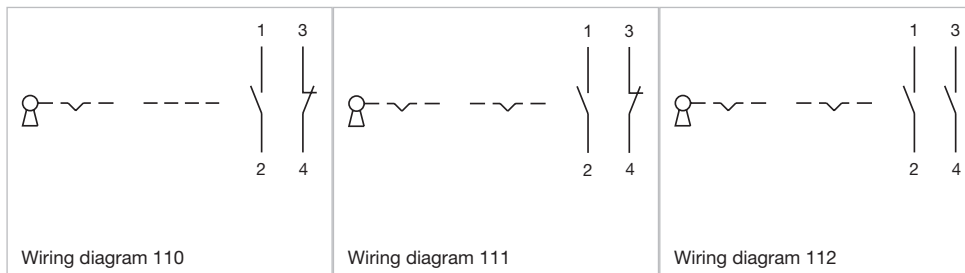
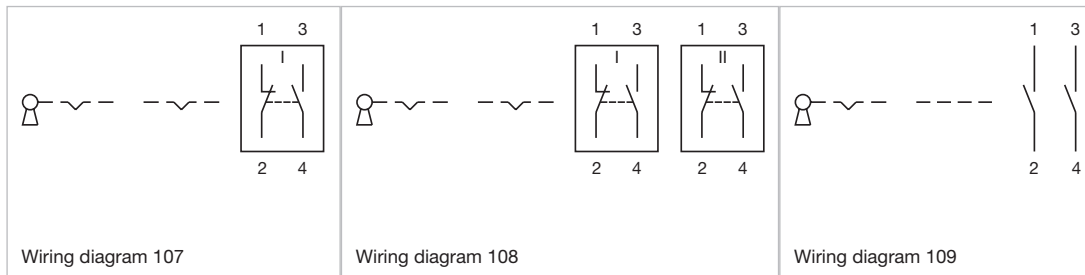
| Switching action          | Terminal           | Switching system              | Contacts    | Switching angle | Part No.     | Wiring diagram | Component Layout |
|---------------------------|--------------------|-------------------------------|-------------|-----------------|--------------|----------------|------------------|
| Rest (a) - Maintained (a) | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-135.022K  | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-135.025K2 | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | 14-136.025K2 | 108            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | 14-137.025K2 | 115            |                  |
|                           | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | 14-138.025K2 | 116            |                  |
| Rest (a) - Momentary      | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 42° right       | 14-141.022K  | 113            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 42° right       | 14-141.025K2 | 113            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 42° right       | 14-142.025K2 | 113            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 42° right       | 14-143.025K2 | 114            |                  |
| Rest (a) - Maintained     | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-235.022K  | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-235.025K2 | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | 14-236.025K2 | 108            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | 14-237.025K2 | 115            |                  |
|                           | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | 14-238.025K2 | 116            |                  |
| Rest - Maintained (a)     | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-335.022K  | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 1 NC / 1 NO | 90° right       | 14-335.025K2 | 107            |                  |
|                           | Soldering terminal | Snap-action switching element | 2 NC / 2 NO | 90° right       | 14-336.025K2 | 108            |                  |
|                           | Soldering terminal | Snap-action switching element | 3 NC / 3 NO | 90° right       | 14-337.025K2 | 115            |                  |
|                           | Soldering terminal | Snap-action switching element | 4 NC / 4 NO | 90° right       | 14-338.025K2 | 116            |                  |
| Rest (a) - Maintained (a) | Universal terminal | Low-level element             | 2 NO        | 90° right       | 14-411.036K  | 112            | 5                |
|                           | Universal terminal | Low-level element             | 1 NC / 1 NO | 90° right       | 14-412.036K  | 111            | 5                |
| Rest (a) - Maintained     | Universal terminal | Low-level element             | 2 NO        | 90° right       | 14-414.036K  | 112            | 5                |

Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

| Switching action      | Terminal           | Switching system  | Contacts    | Switching angle | Part No.    | Wiring diagram | Component Layout |
|-----------------------|--------------------|-------------------|-------------|-----------------|-------------|----------------|------------------|
| Rest (a) - Maintained | Universal terminal | Low-level element | 1 NC / 1 NO | 90° right       | 14-415.036K | 111            | 5                |
| Rest - Maintained (a) | Universal terminal | Low-level element | 2 NO        | 90° right       | 14-417.036K | 112            | 5                |
|                       | Universal terminal | Low-level element | 1 NC / 1 NO | 90° right       | 14-418.036K | 111            | 5                |
| Rest (a) - Momentary  | Universal terminal | Low-level element | 2 NO        | 42° right       | 14-437.036K | 109            | 5                |
|                       | Universal terminal | Low-level element | 1 NC / 1 NO | 42° right       | 14-438.036K | 110            | 5                |

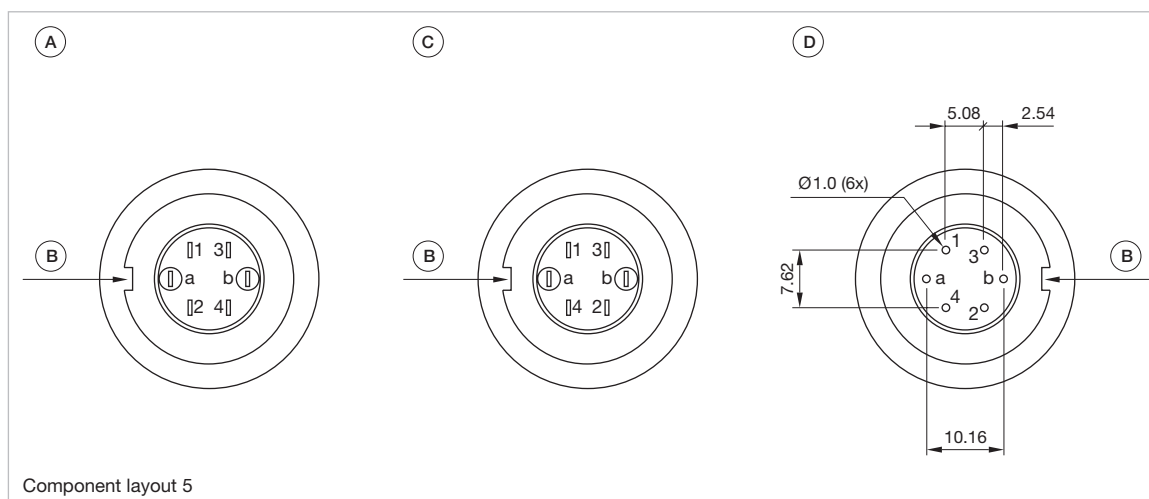
Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

## Wiring diagrams



# 14 Raised design

## Component layouts



Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

D = Drilling plan (component side)



**High-intensity illuminated and robust.**  
*EAO Series 14 Indicator compact.*

**Ideal for safe status indications – thanks to excellent visibility.**

- High-intensity illumination
- Compact, space-saving design
- 180° all-round visibility
- Easy mounting with reliable PIT terminal
- IP69K protection

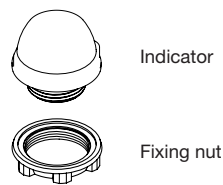
**eao** ■

[www.eao.com/de/14-compact](http://www.eao.com/de/14-compact)

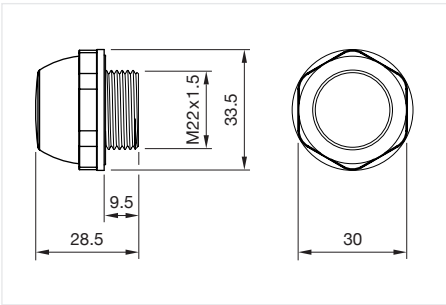
Your Expert Partner for Human Machine Interfaces

Indicator compact, IP65, IP67, IP69K

Equipment consisting of (schematic overview)



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



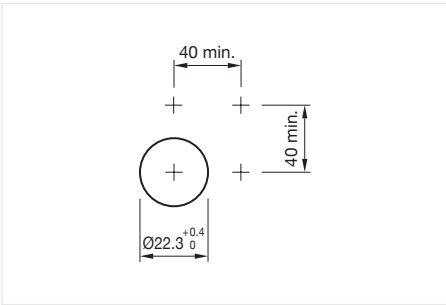
Dimensions [mm]



Product can differ from the current configuration.

General information

- Low back panel depth



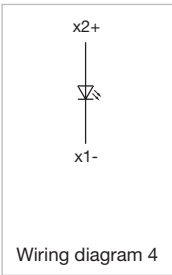
Mounting cut-outs [mm]



Actuator, Front dimension Ø 34 mm

| Terminal         | Illuminative colour | Operating voltage | Part No.   | Wiring diagram |
|------------------|---------------------|-------------------|------------|----------------|
| Push-in terminal | Red                 | 24 V AC/DC        | 14-060.207 | 4              |
|                  | Orange              | 24 V AC/DC        | 14-060.307 | 4              |
|                  | Green               | 24 V AC/DC        | 14-060.507 | 4              |
|                  | Blue                | 24 V AC/DC        | 14-060.607 | 4              |
|                  | White               | 24 V AC/DC        | 14-060.907 | 4              |

Wiring diagrams

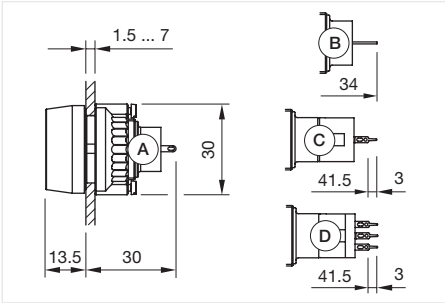


# 14 Raised design

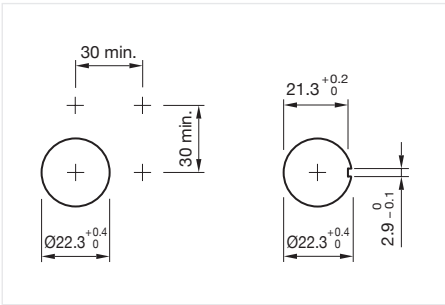
## Indicator full-face illumination, IP67



Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm  
D = Universal-Solder terminal



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

- Lens cap [Page 322](#)
- Marking cap [Page 323](#)
- Single-LED [Page 325](#)
- Actuator
- Fixing nut

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

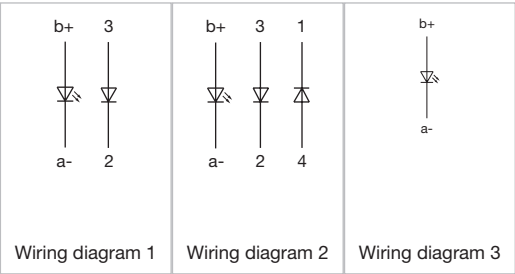
To obtain a complete unit, please select the red components from the pages shown.



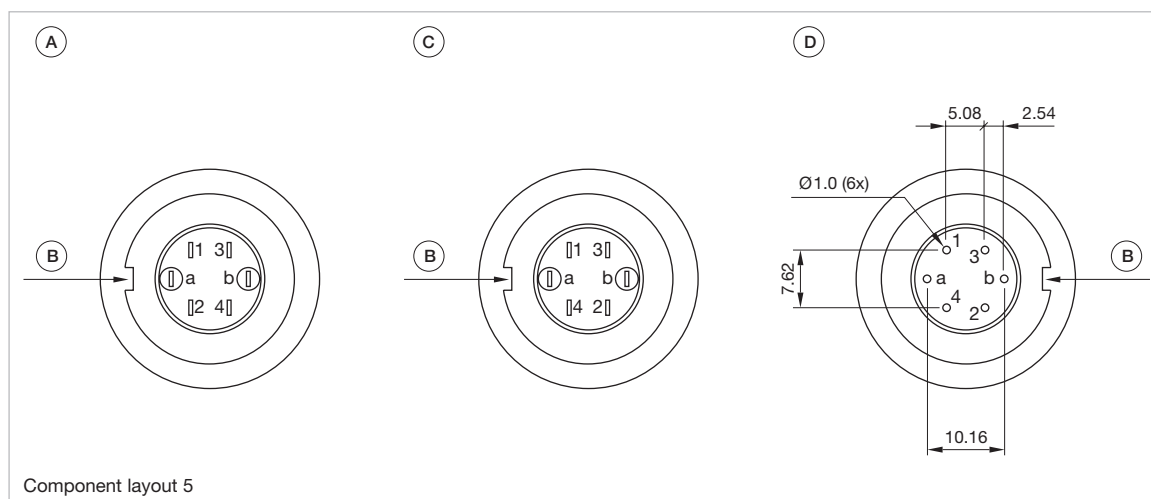
Actuator, Front dimension Ø 29 mm

| Terminal           | Diode 1N4007 | Part No.   | Wiring diagram | Component Layout |
|--------------------|--------------|------------|----------------|------------------|
| Plug-in terminal   |              | 14-030.002 | 3              |                  |
| Soldering terminal |              | 14-030.005 | 3              |                  |
| Universal terminal |              | 14-031.006 | 3              | 5                |
|                    | 1            | 14-741.006 | 1              | 5                |
|                    | 2            | 14-742.006 | 2              | 5                |

## Wiring diagrams



## Component layouts



Component layout 5

Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

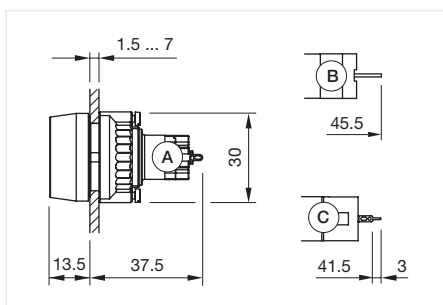
D = Drilling plan (component side)

## 14 Raised design

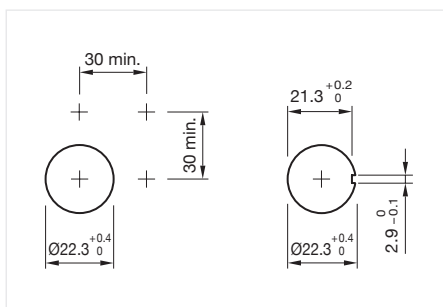
## Indicator front illumination, IP67



Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Plug-in terminal 2.8 x 0.5 mm  
C = Universal terminal 2.0 mm x 0.5 mm



Mounting cut-outs [mm]

## Equipment consisting of (schematic overview)



Front bezel Page 323



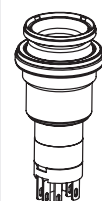
Page 321



Marking Plate Page 323



Single-LED Page 325



Actuator



Fixing nut

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

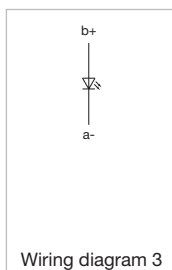
To obtain a complete unit, please select the red components from the pages shown.



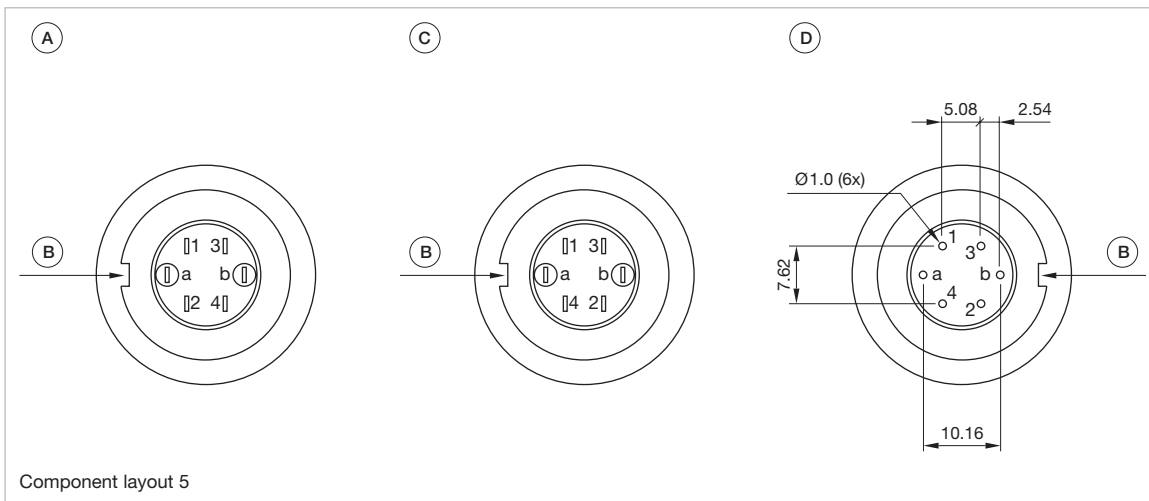
**Actuator, Front dimension Ø 29 mm**

| Terminal           | Part No.   | Wiring diagram | Component Layout |
|--------------------|------------|----------------|------------------|
| Plug-in terminal   | 14-040.002 | 3              |                  |
| Soldering terminal | 14-040.005 | 3              |                  |
| Universal terminal | 14-041.006 | 3              | 5                |

## Wiring diagrams



## Component layouts



Dimensions [mm]

A = Terminals (rear side)

B = Anti twist device

C = Diode block

D = Drilling plan (component side)

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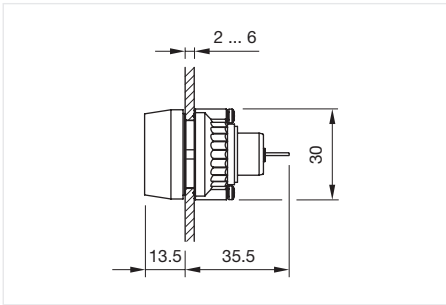


# 14 Raised design

## Buzzer, IP65

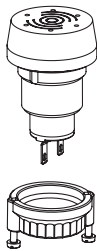


Product can differ from the current configuration.



Dimensions [mm]

### Equipment consisting of (schematic overview)



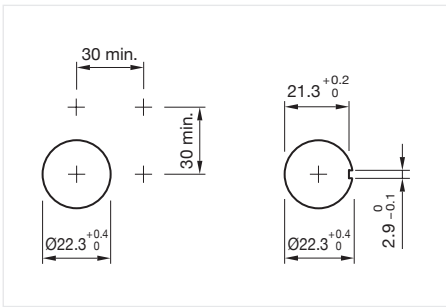
Actuator

Fixing nut

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

### General information

- For PCB application use adaptor Part-No. 31-942



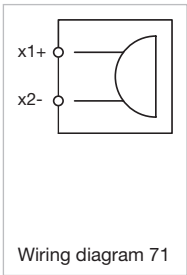
Mounting cut-outs [mm]



Actuator, Front dimension Ø 29 mm

| Terminal         | Operating voltage | Front cap colour | Front cap material | Front cap surface | Part No.   | Wiring diagram |
|------------------|-------------------|------------------|--------------------|-------------------|------------|----------------|
| Plug-in terminal | 24 V DC           | Black            | Plastic            |                   | 14-810.002 | 71             |
|                  | 24 V DC           | Nature           | Aluminium          | anodised          | 14-810.902 | 71             |

## Wiring diagrams



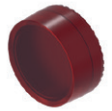


## Lens plastic

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Symbol | Dimensions | Part No.     |
|---------------|-------------|-------------|------------|-------------------|--------|------------|--------------|
| Plastic       | Black       | opaque      | flush      | non illuminative  |        | Ø 23,7 mm  | 704.602.0    |
|               | Red         | transparent | flush      | illuminative      |        | Ø 23,7 mm  | 704.602.2    |
|               | Yellow      | transparent | flush      | illuminative      |        | Ø 23,7 mm  | 704.602.4    |
|               | Green       | transparent | flush      | illuminative      |        | Ø 23,7 mm  | 704.602.5    |
|               | Blue        | transparent | flush      | illuminative      |        | Ø 23,7 mm  | 704.602.6    |
|               | Colourless  | transparent | flush      | illuminative      |        | Ø 23,7 mm  | 704.602.7    |
|               | Silver      | transparent | flush      | illuminative      | Ring   | Ø 23,7 mm  | 704.602.7A01 |

### Additional information

- To obtain IP67, use marking plate Part No. 704.609.9
- To obtain IP67 use marking plate Part No. 704.609.9A01 (ring illumination)



## Lens plastic increased

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No.  |
|---------------|-------------|-------------|------------|-------------------|------------|-----------|
| Plastic       | Red         | transparent | flush      | illuminative      | Ø 23,7 mm  | 704.611.2 |
|               | Yellow      | transparent | flush      | illuminative      | Ø 23,7 mm  | 704.611.4 |
|               | Green       | transparent | flush      | illuminative      | Ø 23,7 mm  | 704.611.5 |
|               | Blue        | transparent | flush      | illuminative      | Ø 23,7 mm  | 704.611.6 |
|               | Colourless  | transparent | flush      | illuminative      | Ø 23,7 mm  | 704.611.7 |

### Additional information

- To obtain IP67, use marking plate Part Nr. 704.610.X



## Lens metal

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No.  |
|---------------|-------------|-------------|------------|-------------------|------------|-----------|
| Aluminium     | Black       | opaque      | flush      | non illuminative  | Ø 23,7 mm  | 704.601.0 |
|               | Red         | opaque      | flush      | non illuminative  | Ø 23,7 mm  | 704.601.2 |
|               | Gold        | opaque      | flush      | non illuminative  | Ø 23,7 mm  | 704.601.4 |
|               | Olive green | opaque      | flush      | non illuminative  | Ø 23,7 mm  | 704.601.5 |
|               | Blue        | opaque      | flush      | non illuminative  | Ø 23,7 mm  | 704.601.6 |
|               | Nature      | opaque      | flush      | non illuminative  | Ø 23,7 mm  | 704.601.8 |
|               | Nature      | opaque      | flush      | non illuminative  | Ø 23,7 mm  | 704.601.9 |

### Additional information

- The colour of anodised aluminium parts can vary due to technical production reasons
- To obtain IP65, it is necessary to use marking plate Part No.. 704.609.X

# 14 Components



**Lens metal round spot round**

| Lens material   | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No.   |
|-----------------|-------------|-------------|------------|-------------------|------------|------------|
| Aluminium       | Black       | opaque      | flush      | illuminative      | Ø 23,7 mm  | 704.601.01 |
|                 | Red         | opaque      | flush      | illuminative      | Ø 23,7 mm  | 704.601.21 |
|                 | Gold        | opaque      | flush      | illuminative      | Ø 23,7 mm  | 704.601.41 |
|                 | Olive green | opaque      | flush      | illuminative      | Ø 23,7 mm  | 704.601.51 |
|                 | Blue        | opaque      | flush      | illuminative      | Ø 23,7 mm  | 704.601.61 |
|                 | Nature      | opaque      | flush      | illuminative      | Ø 23,7 mm  | 704.601.81 |
| Stainless steel | Nature      | opaque      | flush      | illuminative      | Ø 23,7 mm  | 704.601.91 |

## Additional information

- The colour of anodised aluminium parts can vary due to technical production reasons
- To obtain IP65, it is necessary to use marking plate Part No.. 704.609.X



**Mushroom-head cap**

| Lens material | Lens colour | Lens optics | Lens shape    | Lens illumination | Dimensions | Part No.  |
|---------------|-------------|-------------|---------------|-------------------|------------|-----------|
| Plastic       | Black       | opaque      | mushroom-head | non illuminative  | Ø 40 mm    | 704.604.0 |
|               | Red         | opaque      | mushroom-head | non illuminative  | Ø 40 mm    | 704.604.2 |
|               | Yellow      | opaque      | mushroom-head | non illuminative  | Ø 40 mm    | 704.604.4 |
|               | Green       | opaque      | mushroom-head | non illuminative  | Ø 40 mm    | 704.604.5 |

## Additional information

- To obtain IP67, use marking plate Part No. 704.609.9

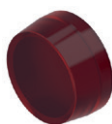


**Mushroom-head cap illuminated**

| Lens material | Lens colour | Lens optics | Lens shape    | Lens illumination | Dimensions | Part No.  |
|---------------|-------------|-------------|---------------|-------------------|------------|-----------|
| Plastic       | Red         | transparent | mushroom-head | illuminative      | Ø 40 mm    | 704.614.2 |
|               | Yellow      | transparent | mushroom-head | illuminative      | Ø 40 mm    | 704.614.4 |
|               | Green       | transparent | mushroom-head | illuminative      | Ø 40 mm    | 704.614.5 |
|               | Blue        | transparent | mushroom-head | illuminative      | Ø 40 mm    | 704.614.6 |
|               | Colourless  | transparent | mushroom-head | illuminative      | Ø 40 mm    | 704.614.7 |

## Additional information

- To obtain IP67, use marking plate Part No. 704.609.9



**Lens cap round for full face indicator**

| Lens cap material | Lens cap colour | Lens cap optical effect | Diameter | Part No.  |
|-------------------|-----------------|-------------------------|----------|-----------|
| Plastic           | Red             | transparent             | 29 mm    | 704.603.2 |
|                   | Yellow          | transparent             | 29 mm    | 704.603.4 |
|                   | Green           | transparent             | 29 mm    | 704.603.5 |
|                   | Blue            | transparent             | 29 mm    | 704.603.6 |
|                   | Colourless      | transparent             | 29 mm    | 704.603.7 |

## Additional information

- To obtain IP67, use marking plate Part Nr. 704.608.X



### Marking cap for front illumination

| Marking cap material | Marking cap colour | Marking cap optics | Dimensions | Marking cap surface | Part No.  |
|----------------------|--------------------|--------------------|------------|---------------------|-----------|
| Plastic              | Colourless         | transparent        | Ø 29 mm    | ribbed              | 704.610.7 |
|                      | White              | translucent        | Ø 29 mm    |                     | 704.610.9 |



### Marking cap for full face illumination

| Marking cap material | Marking cap colour | Marking cap optics | Dimensions | Marking cap surface | Part No.  |
|----------------------|--------------------|--------------------|------------|---------------------|-----------|
| Plastic              | Colourless         | transparent        | Ø 29 mm    | ribbed              | 704.608.7 |
|                      | White              | translucent        | Ø 29 mm    |                     | 704.608.9 |



### Marking plate

| Marking plate material | Marking plate colour | Marking plate optics | Marking plate illumination | Diameter | Part No.     |
|------------------------|----------------------|----------------------|----------------------------|----------|--------------|
| Plastic                | Black                | opaque               | non illuminative           | 20 mm    | 704.609.0    |
|                        | Colourless           | transparent          | illuminative               | 20 mm    | 704.609.7    |
|                        | White                | translucent          | illuminative               | 20 mm    | 704.609.9    |
|                        | White                | translucent          | ring illumination          | 20 mm    | 704.609.9A01 |

#### Additional information

- For front bezel set 24 mm x 30 mm, flush design



### Front bezel round, raised design

| Front bezel material | Front bezel colour | Front bezel surface | Dimensions | Part No.   |
|----------------------|--------------------|---------------------|------------|------------|
| Plastic              | Black              |                     | Ø 29 mm    | 704.600.0  |
|                      | Grey               |                     | Ø 29 mm    | 704.600.6  |
| Aluminium            | Nature             | anodised            | Ø 29 mm    | 704.600.1  |
|                      | Black              | anodised            | Ø 29 mm    | 704.600.1A |
| Stainless steel      | Nature             |                     | Ø 29 mm    | 704.600.9  |

#### Additional information

- The colour of anodised aluminium parts can vary due to technical production reasons



### Front bezel set

| Front bezel material | Front bezel colour | Front bezel surface | Mounting cut-out | Dimensions | Part No. |
|----------------------|--------------------|---------------------|------------------|------------|----------|
| Aluminium            | Black              | anodised            | Ø 30.5 mm        | Ø 35 mm    | 14-955.0 |
|                      | Nature             | anodised            | Ø 30.5 mm        | Ø 35 mm    | 14-955.1 |
| Stainless steel      | Nature             |                     | Ø 30.5 mm        | Ø 35 mm    | 14-955.9 |

#### Additional information

- The colour of anodised aluminium parts can vary due to technical production reasons

# 14 Components



Front bezel set protective membrane

| Product attributes                                         | Front bezel material | Front bezel colour | Front bezel surface | Mounting cut-out | Dimensions | Part No.  |
|------------------------------------------------------------|----------------------|--------------------|---------------------|------------------|------------|-----------|
| With transparent silicone membrane                         | Aluminium            | Nature             | anodised            | Ø 30.5 mm        | Ø 35 mm    | 14-955.3  |
|                                                            | Aluminium            | Black              | anodised            | Ø 30.5 mm        | Ø 35 mm    | 14-955.4  |
| With transparent silicone membrane, resistant to sea water | Stainless steel      | Nature             |                     | Ø 30.5 mm        | Ø 35 mm    | 14-955.9E |

## Additional information

- The colour of anodised aluminium parts can vary due to technical production reasons



Front bezel set mushroom head pushbutton

| Product attributes                              | Front bezel material | Front bezel colour | Front bezel surface | Mounting cut-out | Part No. |
|-------------------------------------------------|----------------------|--------------------|---------------------|------------------|----------|
| For front bezel set 24 mm x 30 mm, flush design | Aluminium            | Nature             | anodised            | Ø 30.5 mm        | 14-958.8 |
|                                                 | Aluminium            | Black              | anodised            | Ø 30.5 mm        | 14-958.0 |

## Additional information

- The colour of anodised aluminium parts can vary due to technical production reasons

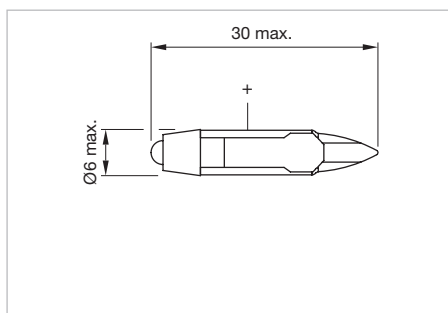


## Single-LED, T5.7

| Illumination colour | Operating voltage | Operation current     | Lumi. Intensity | Dom. Wavelength      | Part No.     | Wiring diagram |
|---------------------|-------------------|-----------------------|-----------------|----------------------|--------------|----------------|
| Red                 | 6 V DC +10%       | 15 mA $\pm$ 15 %      | 350 mcd         | 630 nm               | 10-2106.3142 | 33             |
|                     | 12 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 330 mcd         | 630 nm               | 10-2109.1062 | 33             |
|                     | 24 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 330 mcd         | 630 nm               | 10-2112.1062 | 33             |
|                     | 28 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 330 mcd         | 630 nm               | 10-2113.1062 | 33             |
|                     | 48 V AC/DC +10%   | 4 - 8 mA $\pm$ 15 %   | 200 mcd         | 630 nm               | 10-2119.1042 | 33             |
| Yellow              | 6 V DC +10%       | 15 mA $\pm$ 15 %      | 300 mcd         | 587 nm               | 10-2106.3144 | 33             |
|                     | 12 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 280 mcd         | 587 nm               | 10-2109.1064 | 33             |
|                     | 24 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 280 mcd         | 587 nm               | 10-2112.1064 | 33             |
|                     | 28 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 280 mcd         | 587 nm               | 10-2113.1064 | 33             |
|                     | 48 V AC/DC +10%   | 4 - 8 mA $\pm$ 15 %   | 180 mcd         | 587 nm               | 10-2119.1044 | 33             |
| Green               | 6 V DC +10%       | 7 mA $\pm$ 15 %       | 1050 mcd        | 525 nm               | 10-2106.3145 | 33             |
|                     | 12 V AC/DC +10%   | 4 - 7 mA $\pm$ 15 %   | 1050 mcd        | 525 nm               | 10-2109.1065 | 33             |
|                     | 24 V AC/DC +10%   | 4 - 7 mA $\pm$ 15 %   | 1050 mcd        | 525 nm               | 10-2112.1065 | 33             |
|                     | 28 V AC/DC +10%   | 4 - 7 mA $\pm$ 15 %   | 1050 mcd        | 525 nm               | 10-2113.1065 | 33             |
|                     | 48 V AC/DC +10%   | 2 - 4 mA $\pm$ 15 %   | 600 mcd         | 525 nm               | 10-2119.1045 | 33             |
| Blue                | 6 V DC +10%       | 15 mA $\pm$ 15 %      | 680 mcd         | 470 nm               | 10-2106.3146 | 33             |
|                     | 12 V AC/DC +10%   | 4 - 14 mA $\pm$ 15 %  | 650 mcd         | 470 nm               | 10-2109.1066 | 33             |
|                     | 24 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 650 mcd         | 470 nm               | 10-2112.1066 | 33             |
|                     | 28 V AC/DC +10%   | 7 - 14 mA $\pm$ 15 %  | 650 mcd         | 470 nm               | 10-2113.1066 | 33             |
|                     | 48 V AC/DC +10%   | 4 - 8 mA $\pm$ 15 %   | 400 mcd         | 470 nm               | 10-2119.1046 | 33             |
| White               | 6 V DC +10%       | 6 mA $\pm$ 15 %       | 900 mcd         | x: 0.31 / y: 0.32 nm | 10-2106.3149 | 33             |
|                     | 12 V AC/DC +10%   | 3 - 6 mA $\pm$ 15 %   | 900 mcd         | x: 0.31 / y: 0.32 nm | 10-2109.1069 | 33             |
|                     | 24 V AC/DC +10%   | 2,5 - 5 mA $\pm$ 15 % | 750 mcd         | x: 0.31 / y: 0.32 nm | 10-2112.1069 | 33             |
|                     | 28 V AC/DC +10%   | 2,5 - 5 mA $\pm$ 15 % | 750 mcd         | x: 0.31 / y: 0.32 nm | 10-2113.1069 | 33             |
|                     | 48 V AC/DC +10%   | 2 - 4 mA $\pm$ 15 %   | 600 mcd         | x: 0.31 / y: 0.32 nm | 10-2119.1049 | 33             |

### Additional information

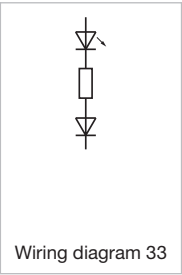
- For LED element fitting information see Application guidelines, LED polarity
- Due to high surface temperatures, the series resistor must not be soldered directly to the terminals of the equipment (use a terminal plate)
- When using AC/DC types with AC operation, slight flickering can occur
- The luminous intensity stated is for when used with DC
- 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. The customer has to decide what resistor shall be used to the LED
- Where supply voltages are over 48 V, a voltage-reduction element (external protective series resistor) must be used.



Dimensions [mm]

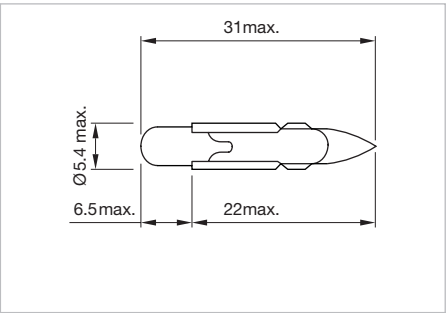
# 14 Components

## Wiring diagrams



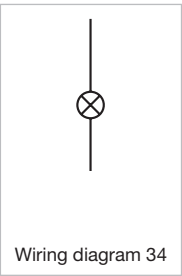
Filament lamp

| Operating voltage | Operation current | Part No.     | Wiring diagram |
|-------------------|-------------------|--------------|----------------|
| 6 V AC/DC         | 200 mA            | 10-1106.1369 | 34             |
| 12 V AC/DC        | 100 mA            | 10-1109.1329 | 34             |
| 24 V AC/DC        | 50 mA             | 10-1112.1279 | 34             |
| 28 V AC/DC        | 40 mA             | 10-1113.1249 | 34             |
| 30 V AC/DC        | 40 mA             | 10-1114.1249 | 34             |
| 36 V AC/DC        | 35 mA             | 10-1116.1229 | 34             |
| 48 V AC/DC        | 25 mA             | 10-1119.1199 | 34             |



Dimensions [mm]

## Wiring diagrams



Anti-twist ring

| Material    | Mounting cut-out | Part No.  |
|-------------|------------------|-----------|
| steel plate | Ø 30 mm          | 704.954.0 |

## Front side

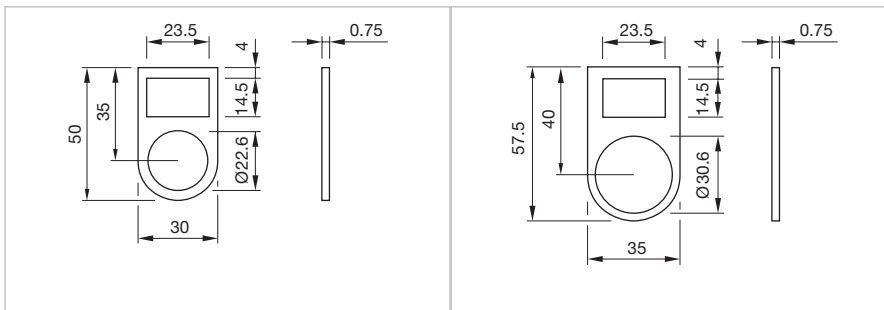


Legend frame

| Product attributes | Dimensions                | Material  | Colour | Surface  | Mounting type | Part No.  |
|--------------------|---------------------------|-----------|--------|----------|---------------|-----------|
| For raised design  | 30 mm x 0.75 mm x 50 mm   | aluminium | Black  | anodised | adhesive      | 704.968.2 |
| For flush design   | 35 mm x 0.75 mm x 57.5 mm | aluminium | Black  | anodised | adhesive      | 704.968.3 |

## Additional information

- The colour of anodised aluminium parts can vary due to technical production reasons



Dimensions [mm]  
for Part No. 704.968.2

Dimensions [mm]  
for Part No. 704.968.3



Legend plate

| Dimensions        | Material  | Colour | Surface  | Mounting type | Part No.  |
|-------------------|-----------|--------|----------|---------------|-----------|
| 14.5 mm x 23.5 mm | aluminium | Nature | anodised | adhesive      | 704.968.0 |
|                   | aluminium | Black  | anodised | adhesive      | 704.968.1 |

## Additional information

- For legend frame Part No.704.968.2 and 704.968.3
- The colour of anodised aluminium parts can vary due to technical production reasons



# 14 Accessories

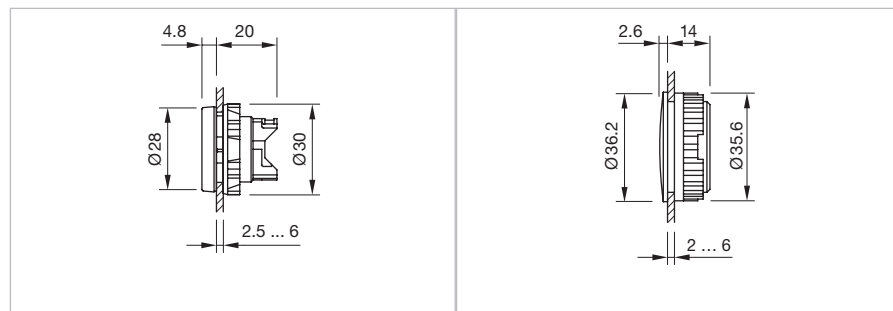


**Blind plug**

| Dimensions | Material | Colour | Mounting cut-out | Part No.  |
|------------|----------|--------|------------------|-----------|
| Ø 28 mm    | plastic  | Black  | Ø 22.3 mm        | 704.960.4 |
| Ø 36 mm    | plastic  | Black  | Ø 30.5 mm        | 704.964.8 |

## Additional information

- Please note that bigger minimum distances are necessary



Dimensions [mm]  
for Part No. 704.960.4

Dimensions [mm]  
for Part No. 704.964.8



**Spare key**

| Product attributes      | Part No.    |
|-------------------------|-------------|
| Standard lock KABA 1001 | 14-987.1001 |



**Protective cap**

| Product attributes                                                                         | Material | Colour     | Optics      | Part No.  |
|--------------------------------------------------------------------------------------------|----------|------------|-------------|-----------|
| Only together with lenses Part No. 704.602.X, 704.601.X and front rings Part No. 704.600.X | silicone | Colourless | transparent | 704.953.0 |

## Additional information

- For Indicator and Illuminated pushbutton for IP68 protection



**Protective ring**

| Product attributes                                                                                    | Material  | Colour | Surface  | Part No.    |
|-------------------------------------------------------------------------------------------------------|-----------|--------|----------|-------------|
| With transparent silicone membrane (resistant to sea water), temperature resistance -40 °C ... +85 °C | brass     |        | chrome   | 704.600.2   |
|                                                                                                       | aluminium | Nature | anodised | 704.600.3   |
| With transparent Pebax membrane, temperature resistance -40 °C ... +85 °C                             | aluminium | Nature | anodised | 704.600.5/A |

## Additional information

- For Illuminated pushbutton for front protection IP 67
- The colour of anodised aluminium parts can vary due to technical production reasons

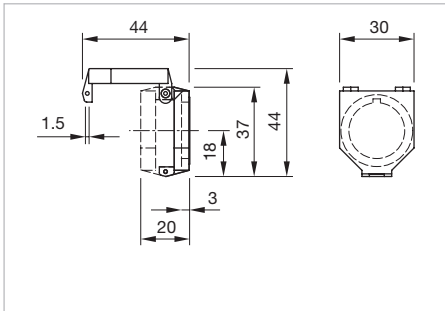


### Protective cover raised design

| Product attributes                 | Material | Optics      | Part No.  |
|------------------------------------|----------|-------------|-----------|
| For pushbutton                     | plastic  | transparent | 704.925.0 |
| For pushbutton, with spring fitted | plastic  | transparent | 704.925.3 |
| For selector switch                | plastic  | transparent | 704.925.2 |

#### Additional information

- Hinged, with means for sealing



Dimensions [mm]

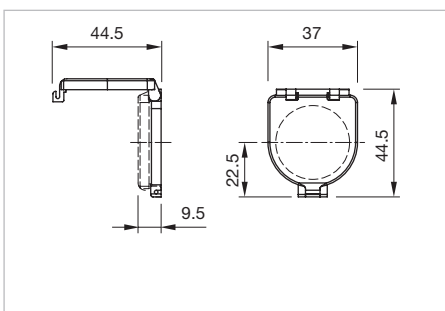


### Protective cover flush design

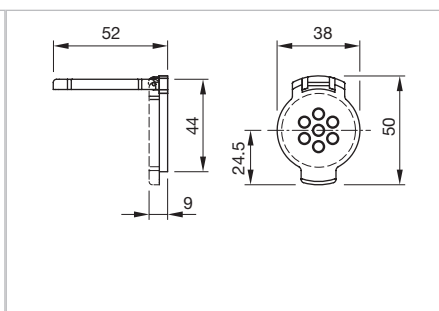
| Product attributes                                                                                           | Dimensions      | Material  | Colour     | Surface  | Part No.   |
|--------------------------------------------------------------------------------------------------------------|-----------------|-----------|------------|----------|------------|
| With means for sealing, for pushbutton with mounting cut-outs Ø 30.5 mm                                      | 37 mm x 44.5 mm | plastic   | Colourless |          | 704.925.7  |
| Without cover locking hole, with spring fitted, with window, for pushbutton with mounting cut-outs Ø 30.5 mm | 38 mm x 50 mm   | aluminium | Nature     | anodised | 704.928.18 |
| Without cover locking hole, for pushbutton and selector switch short lever with mounting cut-outs Ø 30.5 mm  | 38 mm x 50 mm   | aluminium | Nature     | anodised | 704.928.28 |
| With means for sealing, for pushbutton and selector switch short lever with mounting cut-outs Ø 30.5 mm      | 38 mm x 50 mm   | aluminium | Nature     | anodised | 704.928.38 |

#### Additional information

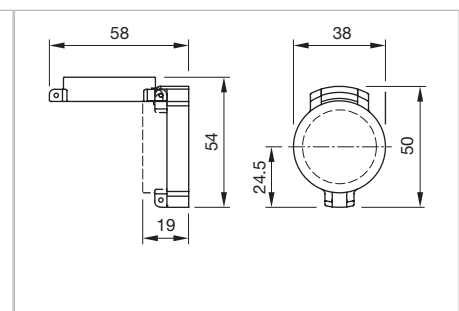
- Hinged
- Front panel thickness reduces by 2 mm
- Please note that bigger minimum distances are necessary
- The colour of anodised aluminium parts can vary due to technical production reasons



Dimensions [mm]  
for Part No. 704.925.7



Dimensions [mm]  
for Part No. 704.928.18



Dimensions [mm]  
for Part No. 704.928.28, 704.928.38

# 14 Accessories

## Rear side



Flat receptacle

| Product attributes            | Material | Part No. |
|-------------------------------|----------|----------|
| 2.0 x 0.5 mm plug-in terminal | metal    | 31-945   |
| 2.8 x 0.8 mm plug-in terminal | metal    | 31-946   |



Insulation sleeve

| Product attributes                                               | Material | Part No. |
|------------------------------------------------------------------|----------|----------|
| For flat receptacle 2.0 mm                                       | plastic  | 31-928   |
| For flat receptacle 2.8 mm                                       | plastic  | 31-929   |
| Cover plug-in terminals for snap-action switching element 2.8 mm | plastic  | 01-928   |



Terminal cover

| Product attributes                | Material | Part No. |
|-----------------------------------|----------|----------|
| For snap-action switching element | plastic  | 01-929   |



Side terminal plate empty

| Product attributes | Dimensions               | Part No. |
|--------------------|--------------------------|----------|
| 5 spaces           | 62.5 mm x 15 mm x 60 mm  | 02-912.1 |
| 10 spaces          | 125 mm x 15 mm x 60 mm   | 02-912.2 |
| 15 spaces          | 187.6 mm x 15 mm x 60 mm | 02-912.3 |
| 20 spaces          | 250 mm x 15 mm x 60 mm   | 02-912.4 |

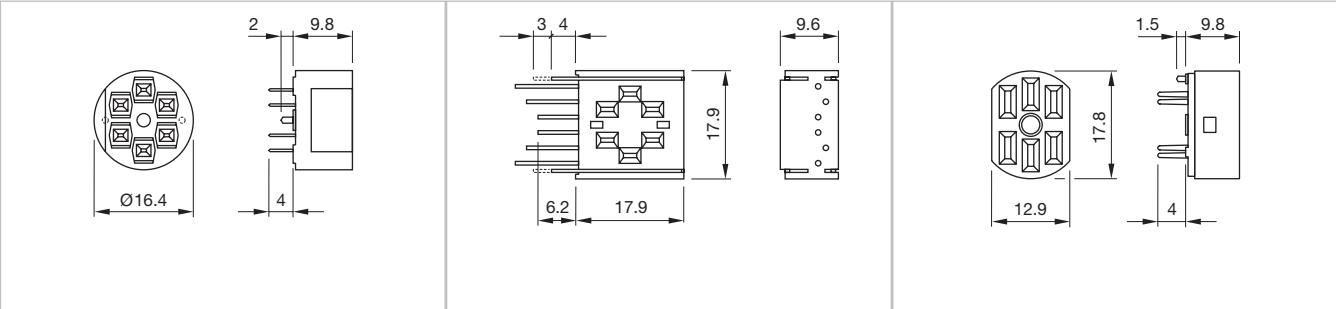


PCB plug-in base

| Product attributes                       | Terminal     | Pins       | Part No. | Component Layout |
|------------------------------------------|--------------|------------|----------|------------------|
| For low level switching element          | PCB terminal | Axial      | 31-940   | 3                |
|                                          | PCB terminal | 90° angled | 31-941   | 2                |
| For snap-action switching element 2.8 mm | PCB terminal | Axial      | 31-942   | 4                |

### Additional information

- PCB plug-in base pins right-angle: With the extendable mounting the distance between plug-in base and PCB can be varied up to 3 mm

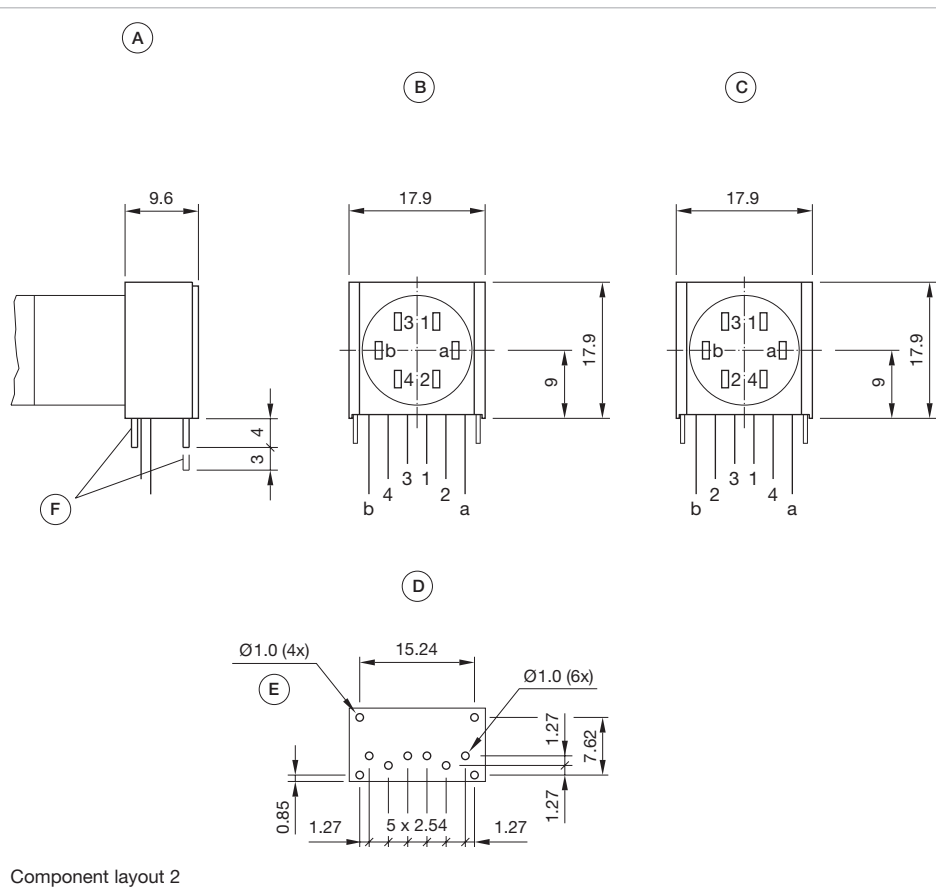


Dimensions [mm]  
for Part No. 31-940

Dimensions [mm]  
for Part No. 31-941

Dimensions [mm]  
for Part No. 31-942

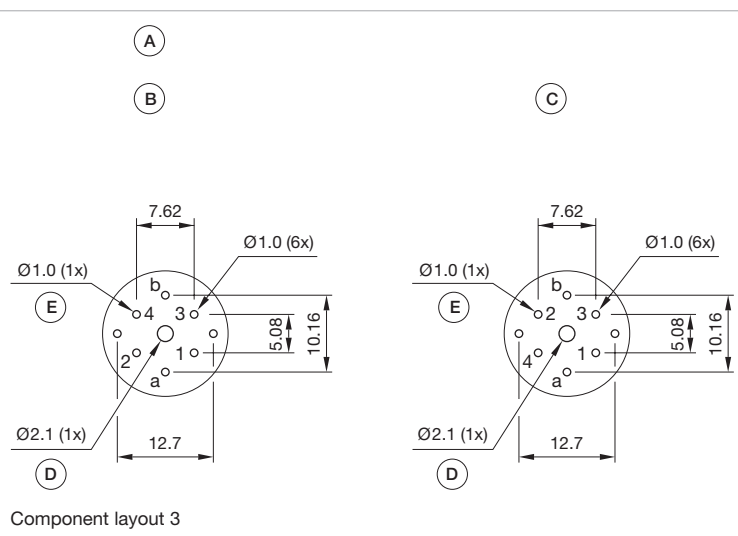
## Component layouts



Component layout 2

Dimensions [mm]

- A = Socket 90° angled
- B = Occupancy plan (component side)
- C = Diode block
- D = Drilling plan (component side)
- E = Non-metallic
- F = Extendable mounting pins



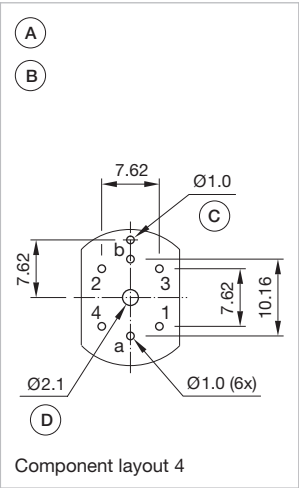
Component layout 3

Dimensions [mm]

- A = Axial socket
- B = Drilling/occupancy plan (component side)
- C = Diode block
- D = For central mounting with M2 screw, if desired
- E = Non-metallic

# 14 Accessories

## Component layouts



Dimensions [mm]  
A = Axial socket  
B = Drilling-/occupancy plan (component side)  
C = Non-metallic  
D = For central mounting with M2 screw, if desired



### Series resistor

| Operating voltage | Resistance | Part No. |
|-------------------|------------|----------|
| 110 V AC          | 2.7 kOhm   | 02-904.0 |
| 125 V AC          | 3.3 kOhm   | 02-904.1 |
| 145 V AC          | 4.7 kOhm   | 02-904.3 |
| 240 V AC          | 10 kOhm    | 02-904.7 |

**Additional information**

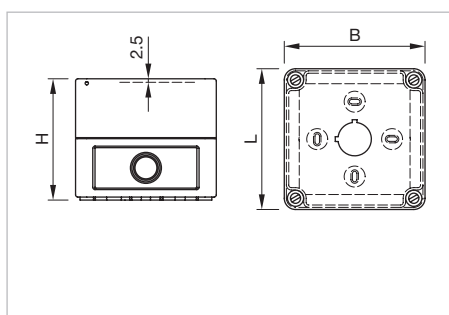
- Only for filament lamp 48 VAC, 25 mA
- Due to high surface temperatures, the series resistor must not be soldered directly to the terminals of the equipment (use a terminal plate)

## Mounting



## Enclosure

| Product attributes                                          | Dimensions               | Material | Colour | IP Protection | Part No.  |
|-------------------------------------------------------------|--------------------------|----------|--------|---------------|-----------|
| With mounting cut-out 1 x Ø 22.5 mm, with anti-twist device | 94 mm x 81 mm x 94 mm    | plastic  | Grey   | IP66          | 704.945.1 |
| With mounting cut-out 2 x Ø 22.3 mm, with anti-twist device | 130 mm x 81 mm x 94 mm   | plastic  | Grey   | IP66          | 704.945.2 |
| With mounting cut-out 3 x Ø 22.3 mm, with anti-twist device | 180 mm x 81 mm x 94 mm   | plastic  | Grey   | IP66          | 704.945.3 |
| With mounting cut-out 4 x Ø 22.3 mm, with anti-twist device | 180 mm x 110 mm x 182 mm | plastic  | Grey   | IP66          | 704.945.4 |
| With mounting cut-out 6 x Ø 22.3 mm, with anti-twist device | 180 mm x 110 mm x 182 mm | plastic  | Grey   | IP66          | 704.945.5 |



Dimensions [mm]



## Cable gland

| Product attributes   | Material | Colour | IP Protection | Thread       | Part No.  |
|----------------------|----------|--------|---------------|--------------|-----------|
| With traction relief | plastic  | Grey   | IP68          | M16 x 1.5 mm | 61-9481.6 |
|                      | plastic  | Grey   | IP68          | M20 x 1.5 mm | 704.945.6 |



## Lens plug

| Product attributes                                           | Material | Part No.  |
|--------------------------------------------------------------|----------|-----------|
| For mounting and dismantling of the round lens, flush design | plastic  | 700.006.0 |



## Lamp remover

| Material | Part No. |
|----------|----------|
| Plastic  | 02-906   |

## Additional information

- A switching action may occur when replacing the lamp



## Positioning insert for anti-twist ring

| Material | Part No. |
|----------|----------|
| Plastic  | 14-910   |

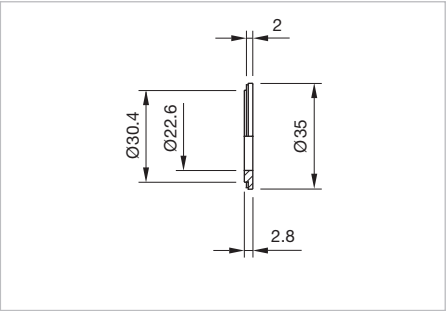
14 Accessories



Reducing ring

| Material  | Colour | Surface  | Part No.  |
|-----------|--------|----------|-----------|
| Aluminium | Black  | anodised | 704.960.0 |
|           | Nature | anodised | 704.960.8 |

- Additional information
- Devices Ø 22.3 mm in mounting cut-out Ø 30.5 mm
  - The colour of anodised aluminium parts can vary due to technical production reasons



Dimensions [mm]

## Actuator with snap-action switching element

### Switching system

Self-cleaning, double-break, snap action switching system (with contact gap 2 mm x 0.5 mm).

1 normally closed or 1 normally open contact per element.

Snap-action switching elements with soldering terminals at the sides: up to 4 switching element can be on a pushbutton (max. 4 normally closed and 4 normally open contacts).

Snap-action switching element with axial plug-in terminals 2.8 mm stackable, only 1 switching element can be on a pushbutton.

### Material

**Material of contact**  
Gold plated silver

**Switch housing**  
Plug-in-/soldering terminal Plastic  
Heat-resistant and self-extinguishing  
Soldering terminal Plastic

**Actuator housing**  
Plastic

### Mechanical characteristics

#### Terminals

Snap-action switching element with tinned soldering terminals at the sides:

Max. wire diameter 2 wires à 1.2 mm

Max. wire cross-section of stranded cable 1 x 1 mm<sup>2</sup>

Snap-action switching element with axial plug-in terminals, which can also be used as soldering terminals:  
Plug-in terminal 2.8 mm x 0.5 mm

Soldering terminal:  
Max. wire diameter 2 wires of 1 mm  
Max. wire cross-section of stranded cable 2 x 0.75 mm<sup>2</sup> or 1 x 1.0 mm<sup>2</sup>

**Tightening torque**  
For fixing nut max. 0.25 Nm

**Actuating torque**  
0.025 Nm ... 0.055 Nm, depending on the number of switching elements, measured at the key or lever of the keylock- or selector switch

**Actuating force**  
Maintain 5 N ... 8 N  
Momentary 3 N ... 6 N  
depending on the number of switching elements

**Actuating travel**  
Illuminated pushbutton approx. 3 mm

Switch actuator 2 positions  
Momentary action 1 x ca. 42° deflection  
Maintained action 1 x ca. 90° deflection

**Mechanical lifetime**  
Momentary action 2 million cycles of operation  
Maintained action 1 million cycles of operation

### Electrical characteristics

**Standards**  
The devices comply with EN IEC 61058-1

**Rated voltage**  
250 VAC as per EN IEC 61058-1

**Rated current**  
5 A

**Electrostatic discharge (ESD)**  
Keylock switch 15 kV

**Thermal current I<sub>th</sub>**  
5 A

**Switching voltage and switching current**  
250 VAC, 5 A (ohmic)  
250 VAC, 2 A (inductive, cos(φ) = 0.7)  
220 VDC, 0.1 A (inductive, L:R = 30 ms)  
110 VDC, 0.2 A (inductive, L:R = 30 ms)  
60 VDC, 0.7 A (inductive, L:R = 30 ms)  
24 VDC, 2 A (inductive, L:R = 30 ms)

**Electric strength**  
3000 VAC, 50 Hz, 1 minute between all terminals and earth, as per EN IEC 61058-1

**Protection class**  
II

**Electrical life**  
50 000 cycles of operation

### Ambient conditions

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

**Service temperature**  
-25 °C ... +55 °C  
For indicators and illuminated pushbuttons mounted as a block, make sure the heat can escape freely.



# 14 Technical data

## Protection degree

As per DIN EN 60529  
IP67 front side, Indicator  
IP67 front side, Illuminated pushbutton  
IP67 front side, Mushroom-head pushbutton  
IP67 front side, Selector switch  
IP65 front side, Keylock switch

## Shock resistance

(semi-sinusoidal)  
Max. 150 m/s<sup>2</sup>, pulse width 11 ms, 3-axis, as per  
DIN EN 60068-2-27

## Vibration resistance

(sinusoidal)  
Max. 100 m/s<sup>2</sup> at 10 Hz... 500 Hz, as per DIN EN 60068-2-6

## Climate resistance

Damp heat state as per DIN EN 60068-2-78  
Damp heat cyclic as per DIN EN 60068-2-30

## Approvals

### Approbations

CB (IEC 61058-1)  
CSA  
CQC  
ENEC (EN 61058-1)  
DNV GL (previously Germanischer Lloyd)  
UL

### Conformities

CE  
2014/35/EC (LVD)  
2011/65/EC (RoHS)

## Actuator with low level switching element

### Switching system

This low level switching element was designed for switching low powers in electronic circuits. The mechanism assures reliable switching of loads ranging from a few  $\mu\text{A}/\mu\text{V}$  up to 100 mA/ 42 VAC/DC.

Single-break momentary contact, as normally open or normally closed with 4 independent points of contact. 2 momentary contacts per switching element; combination of normally open and normally closed is possible. Special features are the long life, extremely short rebound time and stable contact resistance.

### Material

#### Material of contact

Gold plated

#### Switch housing

Plastic, heat-resistant and self-extinguishing

#### Actuator housing

Plastic

### Mechanical characteristics

#### Terminals

The universal terminals permit these units to be mounted on printed circuit boards (PCB). These terminals can also be used as soldering or plug-in terminals.

For these terminals we can also supply a plug-in base which, when soldered on to the board, enables the switch to be plugged in.

#### Soldering terminal

Max. wire diameter 2 wires of 1 mm  
Max. wire cross-section of stranded cable 2 x 0.75 mm<sup>2</sup>

Plug-in terminal 2.0 mm x 0.5 mm

#### Tightening torque

For fixing nut max. 0.25 Nm

#### Actuating torque

0.025 Nm ... 0.055 Nm, depending on the number of switching elements, measured at the key or lever of the keylock- or selector switch

#### Actuating force

3 ... 4 N, depending on the number of switching elements

#### Actuating travel

Illuminated pushbutton: approx. 3 mm

Switch actuator 2 positions

Momentary action 1 x ca. 42° deflection momentary action  
Maintained action 1 x ca. 90° deflection maintained action

#### Mechanical lifetime

Momentary action 5 million cycles of operation  
Maintained action 1 million cycles of operation

## Electrical characteristics

### Electrostatic discharge (ESD)

Keylock switch 15 kV

### Switching voltage and switching current

100 mA at 42 VAC/VDC

### Electric strength

3000 VAC, 50 Hz, 1 min. between all terminals and earth,  
as per EN IEC 61058-1-15

### Protection class

II

## Ambient conditions

### Storage temperature

−40 °C ... +85 °C

### Service temperature

−25 °C ... +55 °C

For indicators and illuminated pushbuttons mounted as a block,  
make sure the heat can escape freely.

### Protection degree

As per EN IEC 60529

IP67 front side, Indicator

IP67 front side, Illuminated pushbutton

IP67 front side, Mushroom-head pushbutton

IP67 front side, Selector switch

IP65 front side, Keylock switch

### Shock resistance

(semi-sinusoidal)

Max. 150 m/s<sup>2</sup>, pulse width 11 ms, 3-axis, as per  
DIN EN 60068-2-27

## Approvals

### Conformities

2014/35/EC (LVD)

2011/65/EC (RoHS)

## Buzzer

### Buzzer

#### System

Piezo disc

### Material

#### Buzzer case

Plastic

#### Front cap

Flush design

Aluminium black anodised

Aluminium natural anodised

Raised design

Plastic

Metal = nickel-plated brass (sea-water proof)

## Mechanical characteristics

### Terminals

Plug-in terminal 2.8 mm x 0.5 mm

### Tightening torque

For fixing nut max. 0.25 Nm

## Acoustic characteristics

### Frequency (tone)

Approx. 3.2 kHz continuous tone only

### Sound pressure

95 db (A) ± 8 dB at a distance of 0.1 m

## Electrical characteristics

### Operation Voltage/Current

Operation Voltage 24 VDC ± 10 %

Operation Current ≤ 25 mA

## Ambient conditions

### Storage temperature

−40 °C ... +85 °C

### Operating temperature

−25 °C ... +55 °C

### Protection degree

As per EN IEC 60529

IP65 front side, Buzzer

# 14 Technical data

## Approvals

### Approbations

CQC  
EMC

### Conformities

CE  
2014/30/EC (EMC)  
2011/65/EC (RoHS)

## Indicator compact

### Material

Lens cap  
Plastic

Housing  
Plastic

### Mechanical characteristics

#### Terminals

PIT push-in terminal  
Skinning 8 mm  
Wire cross-section:  
Wire 0.2 to 1.0 mm<sup>2</sup>  
Stranded wire 0.2 to 1.0 mm<sup>2</sup> without core and sleeve  
Stranded wire 0.2 to 0.75 mm<sup>2</sup> with core and sleeve

#### Tightening torque

For fixing nut min. 0.8 Nm

#### Protection degree

As per EN IEC 60529  
IP65, IP67, IP69K front side  
IP20 rear side

#### Shock resistance

(semi-sinusoidal)  
Max. 300 m/s<sup>2</sup>, puls width 18 ms, 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

### Electrical characteristics

Operation Voltage  
24 VAC/DC (14...32 VAC/DC)

Operating current  
< 50 mA

lifetime  
50 000 h

### Ambient conditions

#### Climatic conditions

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

Rapid temperature changes  
5 cycles, -40 °C to +85 °C, as per EN 60068-2-14

#### Operating temperature

-25 °C ... +60 °C

#### Storage temperature

-40 °C ... +85 °C

### Approvals

#### Approbations

UL

#### Declaration of conformity

CE

EAO reserves the right to alter specifications without further notice.

## 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 3 mm. If the height is not specified, we will supply 3 mm engraved letters.

### 2. Hot stamping

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

## Engraving marking cap for Indicator round, full face illumination

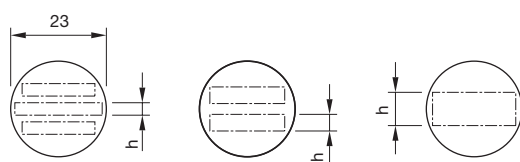
All dimensions in mm

| Height of text cap | Height of letters h | Number of lines | Number of capital letters per line (guide value) | Number of lowercase letters per line (guide value) | Picture |
|--------------------|---------------------|-----------------|--------------------------------------------------|----------------------------------------------------|---------|
| Text cap (Ø 23)    | 3                   | 3               | 8-9                                              | 9-10                                               | B1      |
|                    | 4                   | 3               | 5-7                                              | 6-8                                                | B1      |
|                    | 8                   | 3               | –                                                | –                                                  | B1      |
|                    | 3                   | 2               | 8                                                | 9                                                  | B2      |
|                    | 4                   | 2               | 5                                                | 6                                                  | B2      |
|                    | 8                   | 2               | 2                                                | 2                                                  | B2      |
|                    | 3                   | 1               | 9                                                | 10                                                 | B3      |
|                    | 4                   | 1               | 7                                                | 8                                                  | B3      |
|                    | 8                   | 1               | 3                                                | 3-4                                                | B3      |

B1

B2

B3



The gap between two words results in each case a letter less.

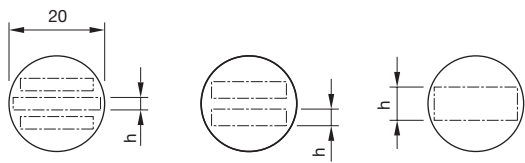
# 14 Marking

## Engraving marking plate for Indicator and illuminated Pushbutton round, front illumination

All dimensions in mm

| Height of marking plate | Height of letters h | Number of lines | Number of capital letters per line (guide value) | Number of lowercase letters per line (guide value) | Picture |
|-------------------------|---------------------|-----------------|--------------------------------------------------|----------------------------------------------------|---------|
| Marking plate (Ø 20)    | 3                   | 3               | 6-8                                              | 7-9                                                | B1      |
|                         | 4                   | 3               | 5-6                                              | 6-7                                                | B1      |
|                         | 8                   | 3               | –                                                | –                                                  | B1      |
|                         | 3                   | 2               | 6                                                | 7                                                  | B2      |
|                         | 4                   | 2               | 5                                                | 6                                                  | B2      |
|                         | 8                   | 2               | 1                                                | 2                                                  | B2      |
|                         | 3                   | 1               | 8                                                | 9                                                  | B3      |
|                         | 4                   | 1               | 6                                                | 7                                                  | B3      |
|                         | 8                   | 1               | 3                                                | 3                                                  | B3      |

B1                      B2                      B3



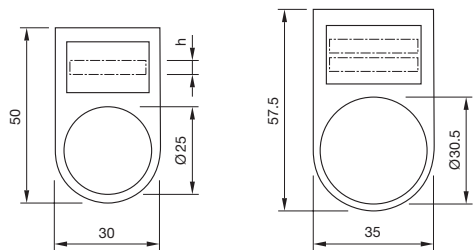
The gap between two words results in each case a letter less.

## Engraving diffusor cap for Indicator square, full face illumination

All dimensions in mm

| Dimension | Devices mounting style | Height of letters | Number of lines | Number of capital letters per line (guide value) | Number of lowercase letters per line (guide value) | Picture |
|-----------|------------------------|-------------------|-----------------|--------------------------------------------------|----------------------------------------------------|---------|
| 30 x 50   | round, raised          | 3                 | 2               | 10                                               | 11                                                 | B1      |
| 30 x 50   | round, raised          | 4                 | 1               | 7                                                | 8                                                  | B1      |
| 30 x 50   | round, raised          | 8                 | 1               | 3                                                | 4                                                  | B1      |
| 35 x 57.5 | round, flush           | 3                 | 2               | 10                                               | 11                                                 | B2      |
| 35 x 57.5 | round, flush           | 4                 | 1               | 7                                                | 8                                                  | B2      |
| 35 x 57.5 | round, flush           | 8                 | 1               | 3                                                | 4                                                  | B2      |

B1                      B2



The gap between two words results in each case a letter less.

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

Height of letters 6 mm

|                                                                                                                  |                                                                                                                 |                                                                                                                |                                                                                                                   |
|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|  I Part No. 704.609.912001      |  II Part No. 704.609.912002    |  III Part No. 704.609.912003  |  O Part No. 704.609.912004     |
|  EIN Part No. 704.609.912005    |  AUS Part No. 704.609.912006   |  AUF Part No. 704.609.912007  |  AB Part No. 704.609.912008    |
|  START Part No. 704.609.912009  |  STOP Part No. 704.609.912010  |  HAND Part No. 704.609.912011 |  AUTO Part No. 704.609.912012  |
|  ZU Part No. 704.609.912013     |  ON Part No. 704.609.912014    |  OFF Part No. 704.609.912015  |  ARRET Part No. 704.609.912016 |
|  MARCHE Part No. 704.609.912017 |  RESET Part No. 704.609.912018 |                                                                                                                |                                                                                                                   |

# 14 Marking

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

All marking plates with the printed article-numbers are available for flat lenses, marking cap only on request.

|                                                                                     |                                                                                                          |                                                                                     |                                                                                     |                                                                                     |                                                                                        |                                                                                       |                                                                     |
|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|---------------------------------------------------------------------|
|    | Part No. 704.609.910001<br>Direction of linear rectilinear motion (also for $\rightarrow \updownarrow$ ) |    | Part No. 704.609.910002<br>Linear motion in 2 directions (also for $\updownarrow$ ) |    | Part No. 704.609.910004<br>Limited linear motion (also for $\leftarrow \updownarrow$ ) |    | Part No. 704.609.910007<br>Direction of continuous rotation (right) |
|    | Part No. 704.609.9100071<br>Direction of continuous rotation (left)                                      |    | Part No. 704.609.910008<br>Rotation in 2 directions                                 |    | Part No. 704.609.910009<br>Direction of interrupted rotation (right)                   |    | Part No. 704.609.910010<br>Limited rotation (right)                 |
|    | Part No. 704.609.9100101<br>Limited rotation (left)                                                      |    | Part No. 704.609.910013<br>Direction of spindle rotation                            |    | Part No. 704.609.910026<br>Rapid traverse                                              |    | Part No. 704.609.910028<br>Increase of value (speed, for instance)  |
|    | Part No. 704.609.910029<br>Decrease of value (speed, for instance)                                       |    | Part No. 704.609.910041<br>Electric motor                                           |    | Part No. 704.609.910048<br>Pump (general symbol)                                       |    | Part No. 704.609.9100631<br>Lock or tighten                         |
|    | Part No. 704.609.9100632<br>Lock or tighten                                                              |    | Part No. 704.609.9100641<br>Unlock, unclamp                                         |    | Part No. 704.609.9100642<br>Unlock, unclamp                                            |    | Part No. 704.609.910065<br>Brake on                                 |
|   | Part No. 704.609.910066<br>Brake off                                                                     |   | Part No. 704.609.910067<br>Automatic (or semi-automatic) cycle                      |   | Part No. 704.609.910068<br>Hand control                                                |   | Part No. 704.609.910069<br>Start, on                                |
|  | Part No. 704.609.910070<br>Stop, off                                                                     |  | Part No. 704.609.910071<br>Start and stop with same button                          |  | Part No. 704.609.910072<br>In action as long as button is operated                     |  | Part No. 704.609.910074<br>Engaging (mechanical start)              |
|  | Part No. 704.609.910075<br>Disengaging (mechanical stop)                                                 |  | Part No. 704.609.910092<br>Danger (high voltage)!                                   |  | Part No. 704.609.910093<br>Caution!                                                    |  | Part No. 704.609.910101<br>Coolant fluid                            |
|  | Part No. 704.609.910102<br>Machine lighting                                                              |  | Part No. 704.609.910108<br>Blast                                                    |                                                                                     |                                                                                        |                                                                                       |                                                                     |

## 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.

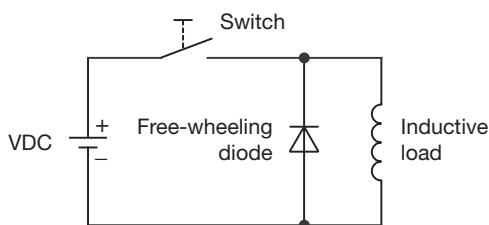
Fig. 1 shows an inductive load with a free-wheeling diode connected in parallel. This free-wheeling diode provides a path for the inductor current to flow when the current is interrupted by the switch. Without this free-wheeling diode, the voltage across the coil will be limited only by dielectric breakdown voltages of the circuit or parasitic elements of the coil. This voltage can be kilo-

volts in amplitude even when nominal circuit voltages are low (e.g. 12 VDC) see Fig. 2.

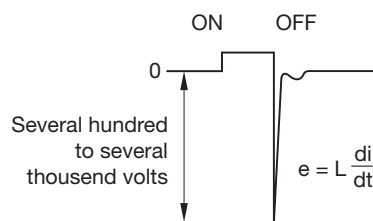
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (VR) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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

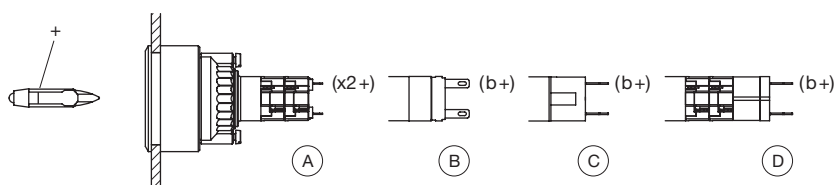


Counter EMF  
over load without free-wheeling diode  
Fig. 2



## LED polarity

When fitting the LED element the polarity has to correspond with the respective terminal, (+) goes to +.



- A = Solder terminal
- B = Plug-in terminal 2.8 mm x 0.5 mm
- C = Universal terminal 2.0 mm x 0.5 mm
- D = Universal/Solder terminal



