

## Series 45

*Innovative and comprehensive. Modular.*

<https://eao.com/45>



# 45 Information about the Series

## Key advantages

- Comprehensive and modular series
- Rugged in use (up to IP69K)
- Easy to assemble and use
- Modern design with many options

## Typical application areas

Various operating and control functions in machinery and equipment, such as:

- Start and stop
- Reset
- On and off
- Function control

## Functions

- Pushbutton
- Illuminated pushbutton
- Double pushbutton
- Mushroom-head pushbutton
- Palm Switch
- Selector switch
- Keylock switch
- ID keylock switch
- Toggle stick
- Toggle switch
- Indicator
- Buzzer
- Potentiometer
- Stop switch
- Emergency stop switch

## Design

- Flush
- Raised

## IP front protection

- IP40
- IP65
- IP66
- IP67
- IP69K

## Rating

- 500 VAC (10 A)

## Mounting cut-outs

- Ø 22.3 mm
- Ø 30.5 mm

## Terminal

- Screw terminal
- PCB
- Spring-loaded terminal

## Lens Material

- Plastic

## Markings

- Laser marking

## Approvals

- CCC
- CSA
- UL

## Conformities

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



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# 45 Product overview

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- Functions**  
Indicator  
Buzzer  
Pushbutton  
Double pushbutton  
Illuminated pushbutton  
Emergency stop switch  
Stop switch  
Palm switch  
Mushroom-head pushbutton  
Keylock switch  
ID keylock switch  
Selector switch  
Potentiometer  
Toggle stick  
Toggle switch



Holder



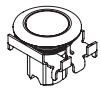
- Switching elements**  
1 Switching element 1 NC/1 NO  
2 Switching elements 2 NC or 2 NO



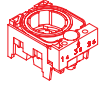
Lamp element

## Pushbutton, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

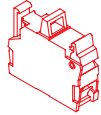


Actuator



Holder

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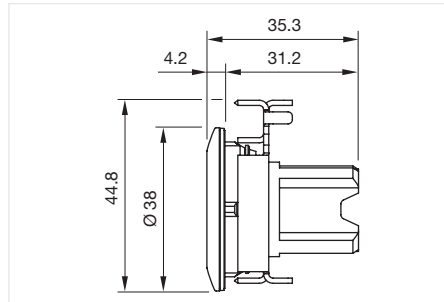


Switching element

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

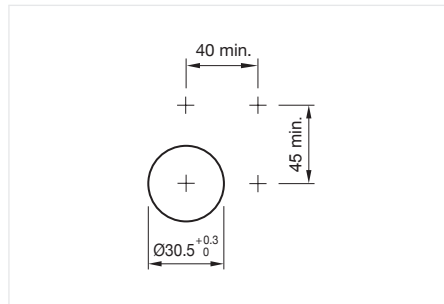
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Front panel thickness 1 ... 6 mm



Actuator, Front dimension Ø 38 mm

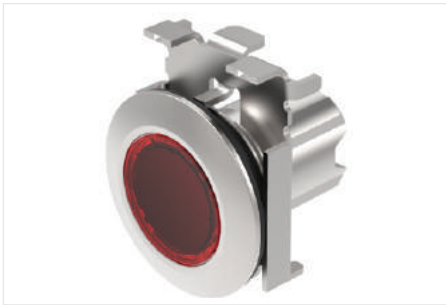
| Switching action | Lens colour | Lens shape | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Black       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2131.4F10.000 | 72             |
|                  | Red         | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2131.4F20.000 | 72             |
|                  | Yellow      | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2131.4F40.000 | 72             |
|                  | Green       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2131.4F50.000 | 72             |
|                  | Blue        | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2131.4F60.000 | 72             |
|                  | White       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2131.4F90.000 | 72             |
| Maintained       | Black       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2134.4F10.000 | 73             |
|                  | Red         | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2134.4F20.000 | 73             |
|                  | Yellow      | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2134.4F40.000 | 73             |
|                  | Green       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2134.4F50.000 | 73             |
|                  | Blue        | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2134.4F60.000 | 73             |
|                  | White       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2134.4F90.000 | 73             |

### Wiring diagrams

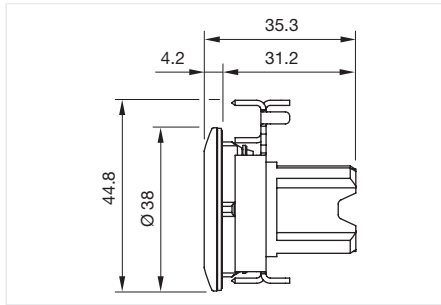
|                   |                   |
|-------------------|-------------------|
| E---              | E~--              |
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# 45 Flush design

## Illuminated pushbutton, IP66, IP67, IP69K



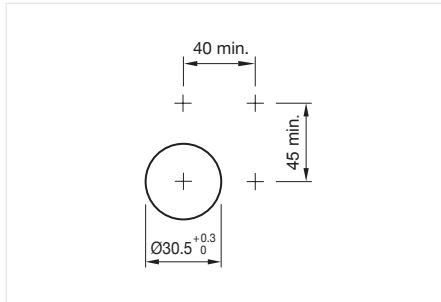
Product can differ from the current configuration.



Dimensions [mm]





### General information

- Front panel thickness 1 ... 6 mm



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

|   |                      |         |
|---|----------------------|---------|
|  | Actuator             |         |
|  | Holder               | Page 66 |
|  | Switching element    | Page 68 |
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Each Part Number listed below includes all the black components shown in the 3D-drawing.

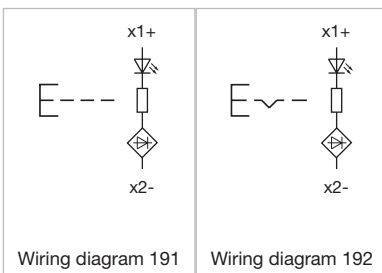
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 38 mm

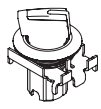
| Switching action | Lens colour | Lens shape | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Red         | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2231.4FE0.000 | 191            |
|                  | Yellow      | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2231.4FG0.000 | 191            |
|                  | Green       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2231.4FH0.000 | 191            |
|                  | Blue        | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2231.4FJ0.000 | 191            |
|                  | Colourless  | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2231.4FK0.000 | 191            |
| Maintained       | Red         | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2234.4FE0.000 | 192            |
|                  | Yellow      | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2234.4FG0.000 | 192            |
|                  | Green       | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2234.4FH0.000 | 192            |
|                  | Blue        | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2234.4FJ0.000 | 192            |
|                  | Colourless  | flush      | Sand grey          | Metal                | Silver         | Metal            | 45-2234.4FK0.000 | 192            |

## Wiring diagrams

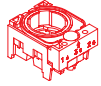


## Selector switch 2 positions short lever, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

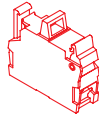


Actuator



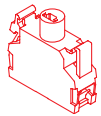
Holder

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Switching element

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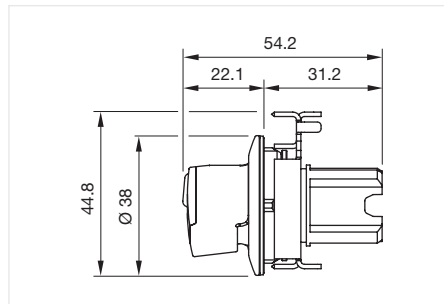


Illumination element

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

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



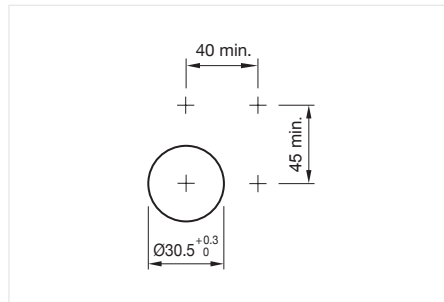
Dimensions [mm]



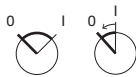
Product can differ from the current configuration.

### General information

- Front panel thickness 1 ... 6 mm
- It is advisable to choose a white illumination



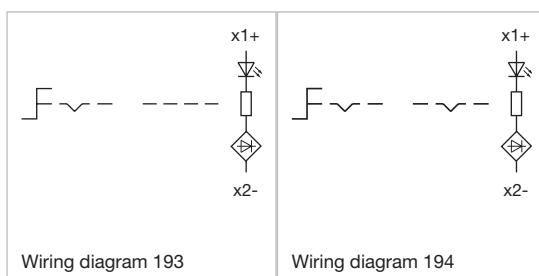
Mounting cut-outs [mm]



Actuator, Front dimension Ø 38 mm

| Switching action  | Switching angle | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|-------------------|-----------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Rest - Maintained | 90° right       | Red          | Sand grey          | Metal                | Metal            | 45-2828.4C20.001 | 194            |
|                   | 90° right       | Green        | Sand grey          | Metal                | Metal            | 45-2828.4C50.001 | 194            |
|                   | 90° right       | White        | Sand grey          | Metal                | Metal            | 45-2828.4C90.001 | 194            |
| Rest - Momentary  | 45° right       | Red          | Sand grey          | Metal                | Metal            | 45-2844.4C20.006 | 193            |
|                   | 45° right       | Green        | Sand grey          | Metal                | Metal            | 45-2844.4C50.006 | 193            |
|                   | 45° right       | White        | Sand grey          | Metal                | Metal            | 45-2844.4C90.006 | 193            |

### Wiring diagrams

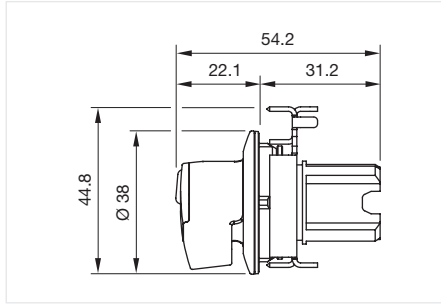


# 45 Flush design

## Selector switch 2 positions long lever, IP66, IP67, IP69K



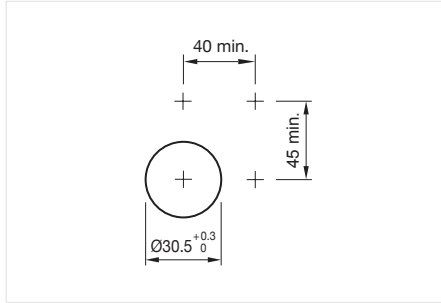
Product can differ from the current configuration.



Dimensions [mm]

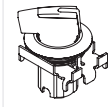
### General information

- Front panel thickness 1 ... 6 mm
- It is advisable to choose a white illumination

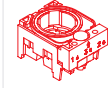


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

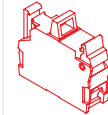


Actuator



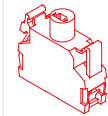
Holder

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Switching element

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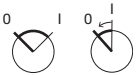


Illumination element

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

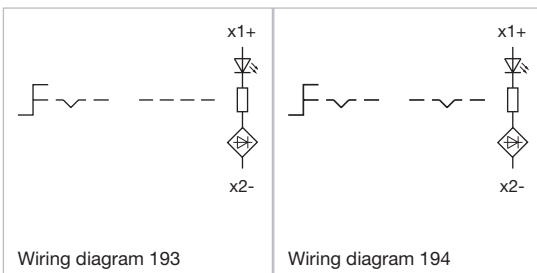
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 38 mm

| Switching action  | Switching angle | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|-------------------|-----------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Rest - Maintained | 90° right       | Red          | Sand grey          | Metal                | Metal            | 45-2828.4D20.001 | 194            |
|                   | 90° right       | Green        | Sand grey          | Metal                | Metal            | 45-2828.4D50.001 | 194            |
|                   | 90° right       | White        | Sand grey          | Metal                | Metal            | 45-2828.4D90.001 | 194            |
| Rest - Momentary  | 45° right       | Red          | Sand grey          | Metal                | Metal            | 45-2844.4D20.006 | 193            |
|                   | 45° right       | Green        | Sand grey          | Metal                | Metal            | 45-2844.4D50.006 | 193            |
|                   | 45° right       | White        | Sand grey          | Metal                | Metal            | 45-2844.4D90.006 | 193            |

## Wiring diagrams



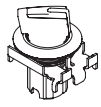
Wiring diagram 193

Wiring diagram 194

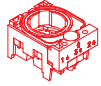


## Selector switch 3 positions short lever, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

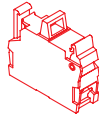


Actuator



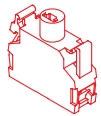
Holder

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Switching element

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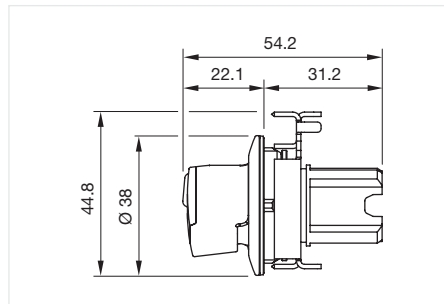


Illumination element

Page 75

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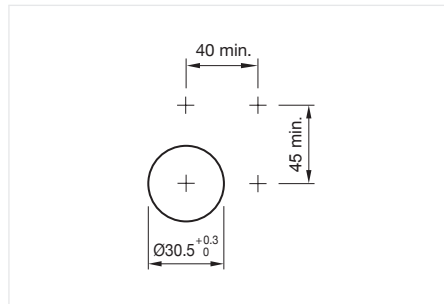
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



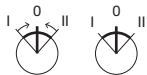
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

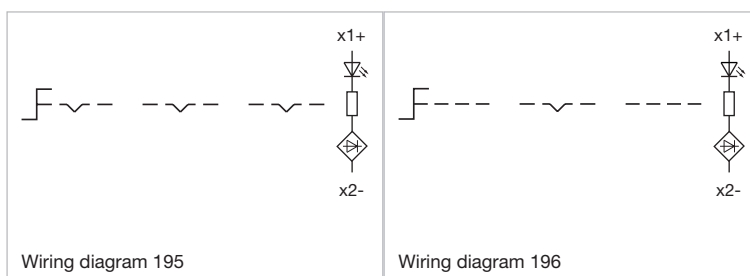
- Front panel thickness 1 ... 6 mm
- It is advisable to choose a white illumination



Actuator, Front dimension Ø 38 mm

| Switching action               | Switching angle      | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|--------------------------------|----------------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Momentary - Rest - Momentary   | 45° left / 45° right | Red          | Sand grey          | Metal                | Metal            | 45-280S.4C20.003 | 196            |
|                                | 45° left / 45° right | Green        | Sand grey          | Metal                | Metal            | 45-280S.4C50.003 | 196            |
|                                | 45° left / 45° right | White        | Sand grey          | Metal                | Metal            | 45-280S.4C90.003 | 196            |
| Maintained - Rest - Maintained | 45° left / 45° right | Red          | Sand grey          | Metal                | Metal            | 45-2819.4C20.003 | 195            |
|                                | 45° left / 45° right | Green        | Sand grey          | Metal                | Metal            | 45-2819.4C50.003 | 195            |
|                                | 45° left / 45° right | White        | Sand grey          | Metal                | Metal            | 45-2819.4C90.003 | 195            |

### Wiring diagrams

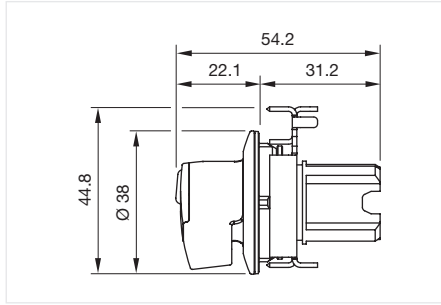


# 45 Flush design

## Selector switch 3 positions long lever, IP66, IP67, IP69K



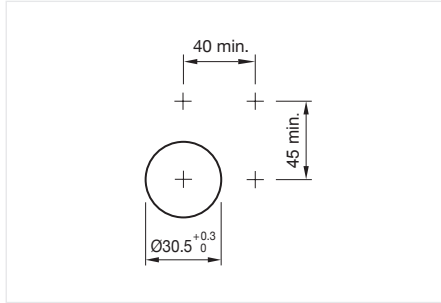
Product can differ from the current configuration.



Dimensions [mm]

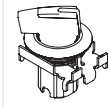
### General information

- Front panel thickness 1 ... 6 mm
- It is advisable to choose a white illumination

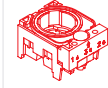


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

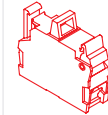


Actuator



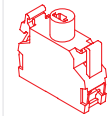
Holder

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Switching element

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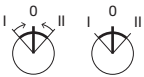


Illumination element

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

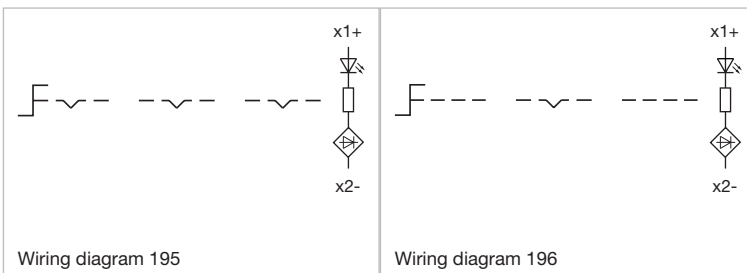
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension  $\varnothing$  38 mm

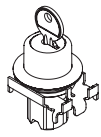
| Switching action               | Switching angle      | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|--------------------------------|----------------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Momentary - Rest - Momentary   | 45° left / 45° right | Red          | Sand grey          | Metal                | Metal            | 45-280S.4D20.003 | 196            |
|                                | 45° left / 45° right | Green        | Sand grey          | Metal                | Metal            | 45-280S.4D50.003 | 196            |
|                                | 45° left / 45° right | White        | Sand grey          | Metal                | Metal            | 45-280S.4D90.003 | 196            |
| Maintained - Rest - Maintained | 45° left / 45° right | Red          | Sand grey          | Metal                | Metal            | 45-2819.4D20.003 | 195            |
|                                | 45° left / 45° right | Green        | Sand grey          | Metal                | Metal            | 45-2819.4D50.003 | 195            |
|                                | 45° left / 45° right | White        | Sand grey          | Metal                | Metal            | 45-2819.4D90.003 | 195            |

## Wiring diagrams

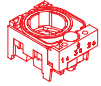


## Keylock switch 2 and 3 positions, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

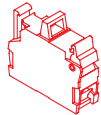


Actuator



Holder

Page 66

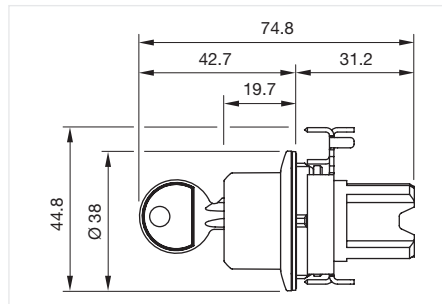


Switching element

Page 68

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

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



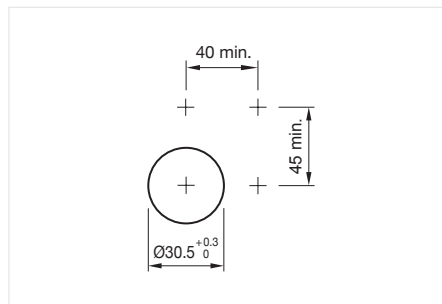
Dimensions [mm]



Product can differ from the current configuration.

### General information

- Front panel thickness 1 ... 6 mm
- The standard lock: RONIS, T254



Mounting cut-outs [mm]

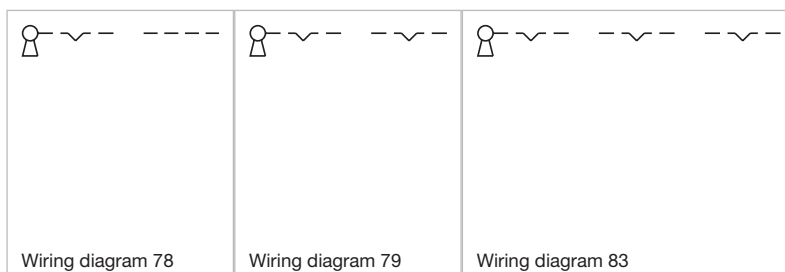


Actuator, Front dimension Ø 38 mm

| Switching action                           | Switching angle      | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|--|----------------------|--------------------|----------------------|------------------|------------------|----------------|
| Maintained (a) - Rest (a) - Maintained (a) | 45° left / 45° right | Sand grey          | Metal                | Metal            | 45-290F.4F00.113 | 83             |
| Rest (a) - Maintained (a)                  | 90° right            | Sand grey          | Metal                | Metal            | 45-290H.4F00.111 | 79             |
| Rest - Maintained (a)                      | 90° right            | Sand grey          | Metal                | Metal            | 45-290J.4F00.111 | 79             |
| Rest (a) - Momentary                       | 45° right            | Sand grey          | Metal                | Metal            | 45-290J.4F00.116 | 78             |

a = Key remove

### Wiring diagrams

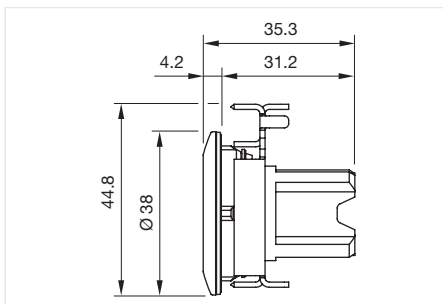


# 45 Flush design

## Indicator, IP66, IP67, IP69K



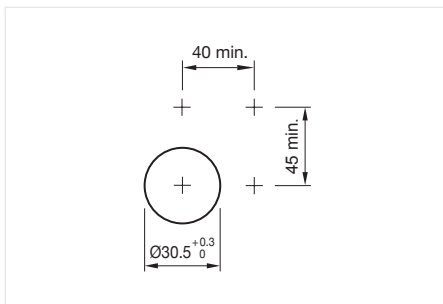
Product can differ from the current configuration.



Dimensions [mm]

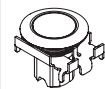
### General information

- Front panel thickness 1 ... 6 mm

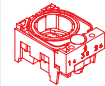


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

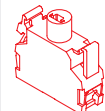


Actuator



Holder

Page 66



Illumination element

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

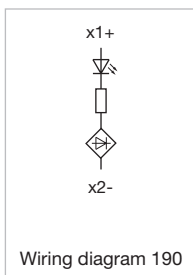
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 38 mm

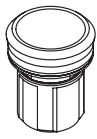
| Front bezel colour | Front bezel material | Lens cap colour | Housing material | Part No.         | Wiring diagram |
|--------------------|----------------------|-----------------|------------------|------------------|----------------|
| Sand grey          | Metal                | Red             | Metal            | 45-2T07.4FE0.000 | 190            |
|                    | Metal                | Yellow          | Metal            | 45-2T07.4FG0.000 | 190            |
|                    | Metal                | Green           | Metal            | 45-2T07.4FH0.000 | 190            |
|                    | Metal                | Blue            | Metal            | 45-2T07.4FJ0.000 | 190            |
|                    | Metal                | Colourless      | Metal            | 45-2T07.4FK0.000 | 190            |

## Wiring diagrams



## Pushbutton, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

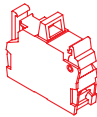


Actuator



Holder

Page 66

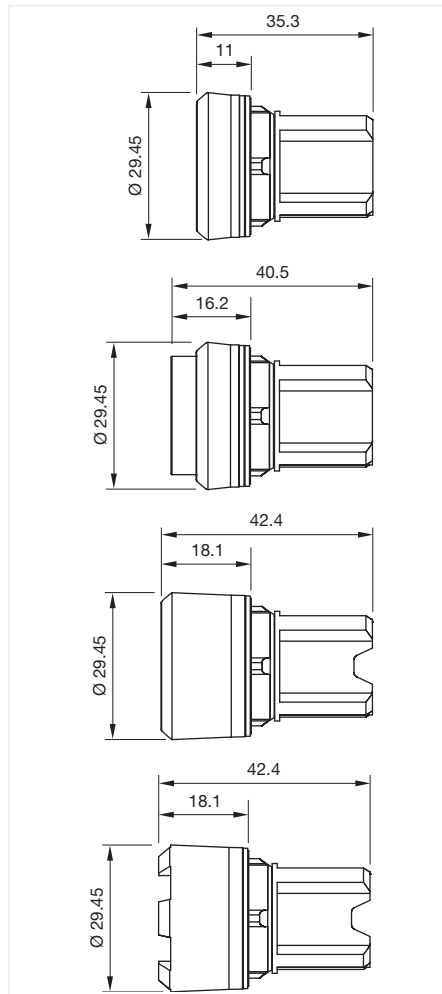


Switching element

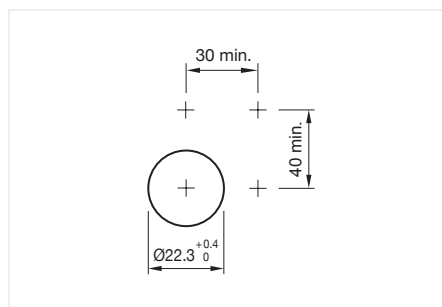
Page 68

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

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



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

### General information

- Mounting depth, incl. front plate, see chapter drawings



### Actuator, Front dimension $\varnothing$ 29,5 mm

| Switching action | Lens colour | Lens shape | Lens type              | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|------------|------------------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Black       | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1110.000 | 72             |
|                  | Red         | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1120.000 | 72             |
|                  | Yellow      | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1140.000 | 72             |
|                  | Green       | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1150.000 | 72             |

# 45 Raised design

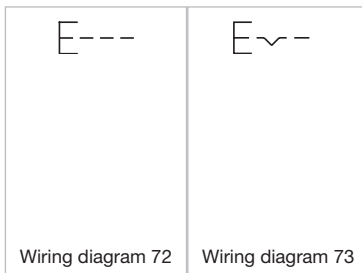
| Switching action | Lens colour | Lens shape               | Lens type                | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|--------------------------|--------------------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Blue        | flush                    | level with front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2131.1160.000 | 72             |
|                  | Grey        | flush                    | level with front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2131.1180.000 | 72             |
|                  | White       | flush                    | level with front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2131.1190.000 | 72             |
|                  | Colourless  | flush                    | level with front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2131.11K0.000 | 72             |
|                  | Black       | flush                    | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1210.000 | 72             |
|                  | Red         | flush                    | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1220.000 | 72             |
|                  | Yellow      | flush                    | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1240.000 | 72             |
|                  | Green       | flush                    | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1250.000 | 72             |
|                  | Blue        | flush                    | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1260.000 | 72             |
|                  | White       | flush                    | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1290.000 | 72             |
|                  | Black       | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.2110.000 | 72             |
|                  | Red         | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.2120.000 | 72             |
|                  | Yellow      | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.2140.000 | 72             |
|                  | Green       | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.2150.000 | 72             |
|                  | Blue        | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.2160.000 | 72             |
|                  | Grey        | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.2180.000 | 72             |
|                  | White       | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.2190.000 | 72             |
|                  | Colourless  | flush                    | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2131.21K0.000 | 72             |
|                  | Black       | flush                    | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2131.2210.000 | 72             |
|                  | Red         | flush                    | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2131.2220.000 | 72             |
|                  | Yellow      | flush                    | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2131.2240.000 | 72             |
|                  | Green       | flush                    | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2131.2250.000 | 72             |
|                  | Blue        | flush                    | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2131.2260.000 | 72             |
|                  | White       | flush                    | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2131.2290.000 | 72             |
|                  | Black       | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3110.000 | 72             |
|                  | Red         | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3120.000 | 72             |
|                  | Yellow      | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3140.000 | 72             |
|                  | Green       | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3150.000 | 72             |
|                  | Blue        | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3160.000 | 72             |
|                  | Grey        | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3180.000 | 72             |
|                  | White       | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3190.000 | 72             |
|                  | Colourless  | flush                    | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2131.31K0.000 | 72             |
|                  | Black       | flush                    | raised above front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2131.3210.000 | 72             |
| Red              | flush       | raised above front bezel | Sand grey                | Metal              | Black                | Plastic        | 45-2131.3220.000 | 72               |                |
| Yellow           | flush       | raised above front bezel | Sand grey                | Metal              | Black                | Plastic        | 45-2131.3240.000 | 72               |                |

| Switching action | Lens colour | Lens shape             | Lens type                | Front bezel colour     | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram   |
|------------------|-------------|------------------------|--------------------------|------------------------|----------------------|----------------|------------------|------------------|------------------|
| Momentary        | Green       | flush                  | raised above front bezel | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3250.000 | 72               |
|                  | Blue        | flush                  | raised above front bezel | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3260.000 | 72               |
|                  | White       | flush                  | raised above front bezel | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3290.000 | 72               |
| Maintained       | Black       | flush                  | level with front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2134.1110.000 | 73               |
|                  | Red         | flush                  | level with front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2134.1120.000 | 73               |
|                  | Yellow      | flush                  | level with front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2134.1140.000 | 73               |
|                  | Green       | flush                  | level with front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2134.1150.000 | 73               |
|                  | Blue        | flush                  | level with front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2134.1160.000 | 73               |
|                  | White       | flush                  | level with front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2134.1190.000 | 73               |
|                  | Black       | flush                  | level with front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2134.2110.000 | 73               |
|                  | Red         | flush                  | level with front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2134.2120.000 | 73               |
|                  | Yellow      | flush                  | level with front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2134.2140.000 | 73               |
|                  | Green       | flush                  | level with front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2134.2150.000 | 73               |
|                  | Blue        | flush                  | level with front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2134.2160.000 | 73               |
|                  | White       | flush                  | level with front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2134.2190.000 | 73               |
|                  | Red         | flush                  | raised above front bezel | Silver                 | Metal                | Silver         | Metal            | 45-2134.2220.000 | 73               |
|                  | Black       | flush                  | level with front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2134.3110.000 | 73               |
|                  | Red         | flush                  | level with front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2134.3120.000 | 73               |
|                  | Yellow      | flush                  | level with front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2134.3140.000 | 73               |
|                  | Green       | flush                  | level with front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2134.3150.000 | 73               |
|                  | Blue        | flush                  | level with front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2134.3160.000 | 73               |
|                  | White       | flush                  | level with front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2134.3190.000 | 73               |
|                  | Momentary   | Black                  | flush                    | lower than front bezel | Black                | Plastic        | Black            | Plastic          | 45-2131.1310.000 |
| Red              |             | flush                  | lower than front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2131.1320.000 | 72               |
| Yellow           |             | flush                  | lower than front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2131.1340.000 | 72               |
| Green            |             | flush                  | lower than front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2131.1350.000 | 72               |
| Blue             |             | flush                  | lower than front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2131.1360.000 | 72               |
| White            |             | flush                  | lower than front bezel   | Black                  | Plastic              | Black          | Plastic          | 45-2131.1390.000 | 72               |
| Black            |             | flush                  | lower than front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2131.2310.000 | 72               |
| Red              |             | flush                  | lower than front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2131.2320.000 | 72               |
| Yellow           |             | flush                  | lower than front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2131.2340.000 | 72               |
| Green            |             | flush                  | lower than front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2131.2350.000 | 72               |
| Blue             |             | flush                  | lower than front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2131.2360.000 | 72               |
| White            |             | flush                  | lower than front bezel   | Silver                 | Metal                | Silver         | Metal            | 45-2131.2390.000 | 72               |
| Black            |             | flush                  | lower than front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3310.000 | 72               |
| Red              |             | flush                  | lower than front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3320.000 | 72               |
| Yellow           |             | flush                  | lower than front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3340.000 | 72               |
| Green            |             | flush                  | lower than front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3350.000 | 72               |
| Blue             |             | flush                  | lower than front bezel   | Sand grey              | Metal                | Black          | Plastic          | 45-2131.3360.000 | 72               |
| White            | flush       | lower than front bezel | Sand grey                | Metal                  | Black                | Plastic        | 45-2131.3390.000 | 72               |                  |

# 45 Raised design

| Switching action | Lens colour | Lens shape | Lens type              | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|------------|------------------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Black       | flush      | lower than front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1410.000 | 72             |
|                  | Red         | flush      | lower than front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1420.000 | 72             |
|                  | Yellow      | flush      | lower than front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1440.000 | 72             |
|                  | Green       | flush      | lower than front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1450.000 | 72             |
|                  | Blue        | flush      | lower than front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1460.000 | 72             |
|                  | White       | flush      | lower than front bezel | Black              | Plastic              | Black          | Plastic          | 45-2131.1490.000 | 72             |

## Wiring diagrams



## Robust. Aesthetic and versatile. *EAO Series 45 illuminated pushbuttons.*

Ideal for use in harsh environments – thanks to robust construction with IP69K protection and aesthetic flush design.

- Robust metal or plastic construction (IP69K)
- Fast and simple assembly without special tools
- Aesthetic design with uniform LED illumination
- Long mechanical service life
- Modular system with customer-specific options

**eao** ■

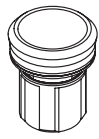
[www.eao.com/45](http://www.eao.com/45)

Your Expert Partner for Human Machine Interfaces



## Illuminated pushbutton, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

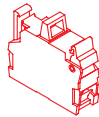


Actuator



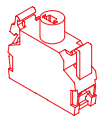
Holder

Page 66



Switching element

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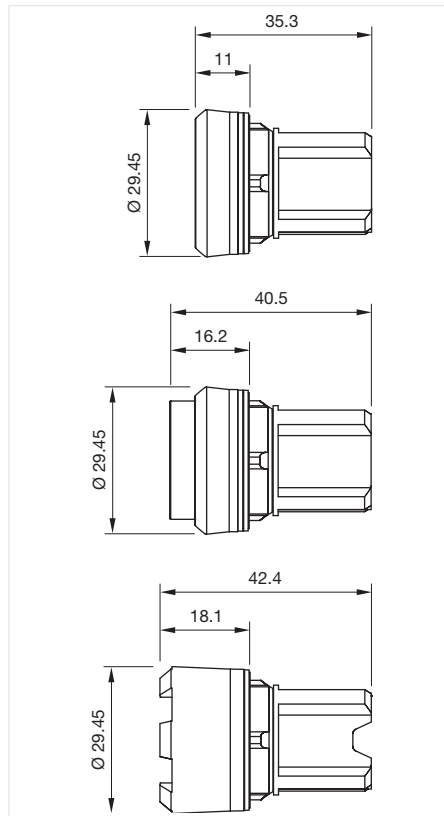


Illumination element

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

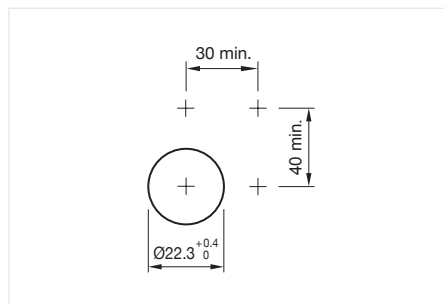
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Mounting depth, incl. front plate, see chapter drawings



### Actuator, Front dimension $\varnothing$ 29,5 mm

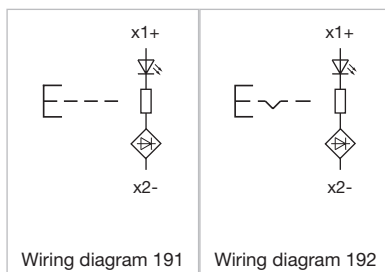
| Switching action | Lens colour | Lens shape | Lens type              | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|------------|------------------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Red         | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.11E0.000 | 191            |
|                  | Amber       | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.11F0.000 | 191            |
|                  | Yellow      | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.11G0.000 | 191            |
|                  | Green       | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.11H0.000 | 191            |
|                  | Blue        | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.11J0.000 | 191            |
|                  | Colourless  | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.11K0.000 | 191            |
|                  | White       | flush      | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.11N0.000 | 191            |

# 45 Raised design

| Switching action | Lens colour | Lens shape | Lens type                | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|------------|--------------------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Red         | flush      | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.12E0.000 | 191            |
|                  | Yellow      | flush      | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.12G0.000 | 191            |
|                  | Green       | flush      | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.12H0.000 | 191            |
|                  | Blue        | flush      | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.12J0.000 | 191            |
|                  | Colour-less | flush      | raised above front bezel | Black              | Plastic              | Black          | Plastic          | 45-2231.12K0.000 | 191            |
|                  | Blue        | flush      | lower than front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2231.14J0.000 | 191            |
|                  | Red         | flush      | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2231.21E0.000 | 191            |
|                  | Amber       | flush      | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2231.21F0.000 | 191            |
|                  | Yellow      | flush      | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2231.21G0.000 | 191            |
|                  | Green       | flush      | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2231.21H0.000 | 191            |
|                  | Blue        | flush      | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2231.21J0.000 | 191            |
|                  | Colour-less | flush      | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2231.21K0.000 | 191            |
|                  | White       | flush      | level with front bezel   | Silver             | Metal                | Silver         | Metal            | 45-2231.21N0.000 | 191            |
|                  | Red         | flush      | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2231.22E0.000 | 191            |
|                  | Amber       | flush      | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2231.22F0.000 | 191            |
|                  | Yellow      | flush      | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2231.22G0.000 | 191            |
|                  | Green       | flush      | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2231.22H0.000 | 191            |
|                  | Blue        | flush      | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2231.22J0.000 | 191            |
|                  | Colour-less | flush      | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2231.22K0.000 | 191            |
|                  | White       | flush      | raised above front bezel | Silver             | Metal                | Silver         | Metal            | 45-2231.22N0.000 | 191            |
|                  | Red         | flush      | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2231.31E0.000 | 191            |
|                  | Amber       | flush      | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2231.31F0.000 | 191            |
|                  | Yellow      | flush      | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2231.31G0.000 | 191            |
|                  | Green       | flush      | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2231.31H0.000 | 191            |
|                  | Blue        | flush      | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2231.31J0.000 | 191            |
|                  | Colour-less | flush      | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2231.31K0.000 | 191            |
|                  | White       | flush      | level with front bezel   | Sand grey          | Metal                | Black          | Plastic          | 45-2231.31N0.000 | 191            |
|                  | Red         | flush      | raised above front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2231.32E0.000 | 191            |
|                  | Yellow      | flush      | raised above front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2231.32G0.000 | 191            |
|                  | Green       | flush      | raised above front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2231.32H0.000 | 191            |
|                  | Blue        | flush      | raised above front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2231.32J0.000 | 191            |
|                  | Colour-less | flush      | raised above front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2231.32K0.000 | 191            |
| Maintained       | Red         | flush      | level with front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2234.11E0.000 | 192            |
|                  | Yellow      | flush      | level with front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2234.11G0.000 | 192            |
|                  | Green       | flush      | level with front bezel   | Black              | Plastic              | Black          | Plastic          | 45-2234.11H0.000 | 192            |

| Switching action | Lens colour | Lens shape             | Lens type              | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|------------------------|------------------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Maintained       | Blue        | flush                  | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2234.11J0.000 | 192            |
|                  | Colourless  | flush                  | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2234.11K0.000 | 192            |
|                  | White       | flush                  | level with front bezel | Black              | Plastic              | Black          | Plastic          | 45-2234.11N0.000 | 192            |
|                  | Red         | flush                  | level with front bezel | Silver             | Metal                | Silver         | Metal            | 45-2234.21E0.000 | 192            |
|                  | Yellow      | flush                  | level with front bezel | Silver             | Metal                | Silver         | Metal            | 45-2234.21G0.000 | 192            |
|                  | Green       | flush                  | level with front bezel | Silver             | Metal                | Silver         | Metal            | 45-2234.21H0.000 | 192            |
|                  | Blue        | flush                  | level with front bezel | Silver             | Metal                | Silver         | Metal            | 45-2234.21J0.000 | 192            |
|                  | Colourless  | flush                  | level with front bezel | Silver             | Metal                | Silver         | Metal            | 45-2234.21K0.000 | 192            |
|                  | White       | flush                  | level with front bezel | Silver             | Metal                | Silver         | Metal            | 45-2234.21N0.000 | 192            |
|                  | Red         | flush                  | level with front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2234.31E0.000 | 192            |
|                  | Yellow      | flush                  | level with front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2234.31G0.000 | 192            |
|                  | Green       | flush                  | level with front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2234.31H0.000 | 192            |
|                  | Blue        | flush                  | level with front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2234.31J0.000 | 192            |
|                  | Colourless  | flush                  | level with front bezel | Sand grey          | Metal                | Black          | Plastic          | 45-2234.31K0.000 | 192            |
| White            | flush       | level with front bezel | Sand grey              | Metal              | Black                | Plastic        | 45-2234.31N0.000 | 192              |                |

## Wiring diagrams

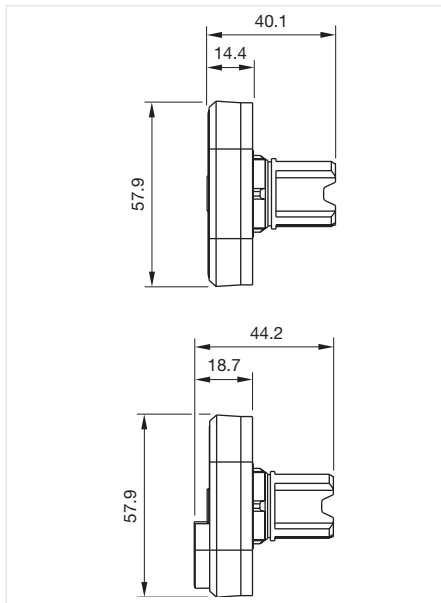


# 45 Raised design

## Double pushbutton, IP66, IP67, IP69K

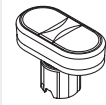


Product can differ from the current configuration.

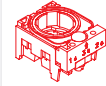


Dimensions [mm]

### Equipment consisting of (schematic overview)

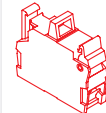


Actuator



Holder

Page 66



Switching element

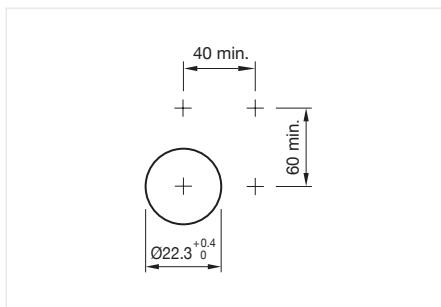
Page 68

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.

### General information

- Mounting depth, incl. front plate, see chapter drawings



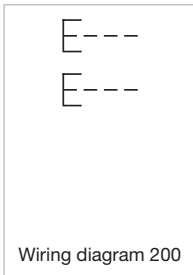
Mounting cut-outs [mm]



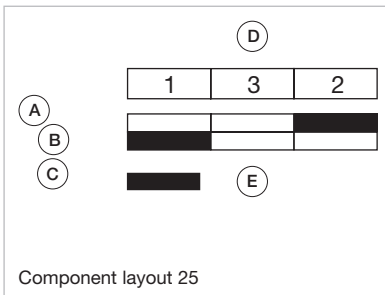
### Actuator, Front dimension 58 mm x 30 mm

| Switching action | Lens colour   | Lens shape | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram | Component Layout |
|------------------|---------------|------------|--------------------|----------------------|----------------|------------------|------------------|----------------|------------------|
| Momentary        | Green/ Red    | flush      | Black              | Plastic              | Black          | Plastic          | 45-2J31.15T0.000 | 200            | 25               |
|                  | White / Black | flush      | Black              | Plastic              | Black          | Plastic          | 45-2J31.15V0.000 | 200            | 25               |
|                  | Green/ Red    | flush      | Black              | Plastic              | Black          | Plastic          | 45-2J31.16T0.000 | 200            | 25               |
|                  | White / Black | flush      | Black              | Plastic              | Black          | Plastic          | 45-2J31.16V0.000 | 200            | 25               |
|                  | Green/ Red    | flush      | Silver             | Metal                | Silver         | Metal            | 45-2J31.25T0.000 | 200            | 25               |
|                  | White / Black | flush      | Silver             | Metal                | Silver         | Metal            | 45-2J31.25V0.000 | 200            | 25               |
|                  | Green/ Red    | flush      | Silver             | Metal                | Silver         | Metal            | 45-2J31.26T0.000 | 200            | 25               |
|                  | White / Black | flush      | Silver             | Metal                | Silver         | Metal            | 45-2J31.26V0.000 | 200            | 25               |
|                  | Green/ Red    | flush      | Sand grey          | Metal                | Black          | Plastic          | 45-2J31.35T0.000 | 200            | 25               |
|                  | Green/ Red    | flush      | Sand grey          | Metal                | Black          | Plastic          | 45-2J31.36T0.000 | 200            | 25               |
|                  | White / Black | flush      | Sand grey          | Metal                | Black          | Plastic          | 45-2J31.36V0.000 | 200            | 25               |

## Wiring diagrams



## Component layouts



- A = Switching action
- B = green (white) button pressed
- C = red (black) button pressed
- D = Arrangement switching element corresponds to designation of front adaptor
- E = Switching element actuated

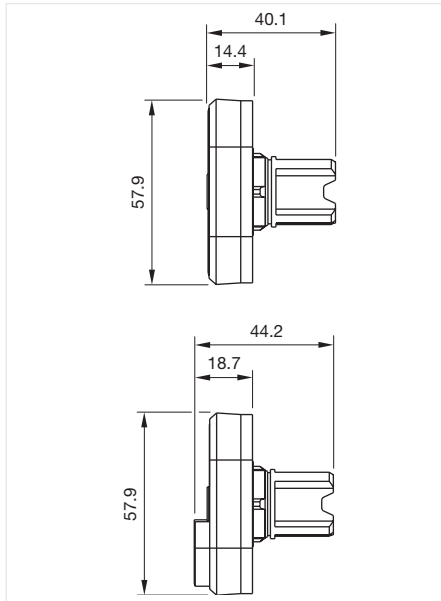
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# 45 Raised design

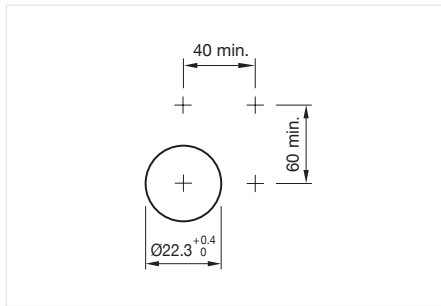
## Illuminated double pushbutton, IP66, IP67, IP69K



Product can differ from the current configuration.

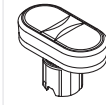


Dimensions [mm]

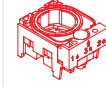


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

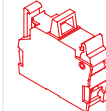


Actuator



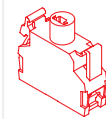
Holder

Page 66



Switching element

Page 68



Illumination element

Page 75

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

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

### General information

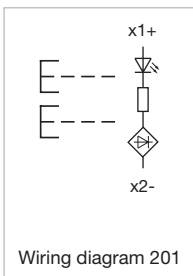
- With illuminative centre window
- Mounting depth, incl. front plate, see chapter drawings



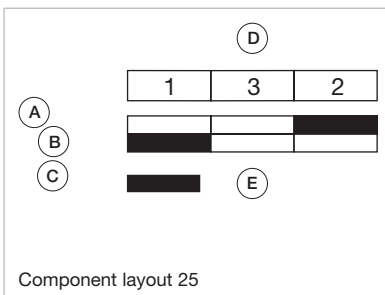
Actuator, Front dimension 58 mm x 30 mm

| Switching action | Lens colour   | Lens shape | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram | Component Layout |
|------------------|---------------|------------|--------------------|----------------------|----------------|------------------|------------------|----------------|------------------|
| Momentary        | Green/ Red    | flush      | Black              | Plastic              | Black          | Plastic          | 45-2K31.15T0.000 | 201            | 25               |
|                  | White / Black | flush      | Black              | Plastic              | Black          | Plastic          | 45-2K31.15V0.000 | 201            | 25               |
|                  | Green/ Red    | flush      | Black              | Plastic              | Black          | Plastic          | 45-2K31.16T0.000 | 201            | 25               |
|                  | White / Black | flush      | Black              | Plastic              | Black          | Plastic          | 45-2K31.16V0.000 | 201            | 25               |
|                  | Green/ Red    | flush      | Sand grey          | Metal                | Black          | Plastic          | 45-2K31.35T0.000 | 201            | 25               |
|                  | White / Black | flush      | Sand grey          | Metal                | Black          | Plastic          | 45-2K31.35V0.000 | 201            | 25               |
|                  | Green/ Red    | flush      | Sand grey          | Metal                | Black          | Plastic          | 45-2K31.36T0.000 | 201            | 25               |
|                  | White / Black | flush      | Sand grey          | Metal                | Black          | Plastic          | 45-2K31.36V0.000 | 201            | 25               |

## Wiring diagrams



## Component layouts



- A = Switching action
- B = green (white) button pressed
- C = red (black) button pressed
- D = Arrangement switching element corresponds to designation of front adaptor
- E = Switching element actuated



## Versatile. Aesthetic and robust. *EAO Series 45 double pushbuttons.*

Double pushbuttons are cost effective, compact pushbuttons, ideal for start/stop, up/down or similar machine functions.

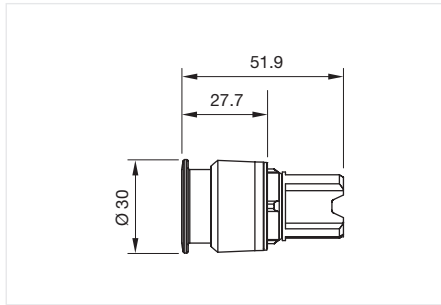
- Compact construction – two switches in one
- Range of colours and marking options
- IP69K sealed and optional silicon covers
- Plastic or metal versions
- Up to three contacts for each pushbutton
- Optional illumination

# 45 Raised design

## Mushroom-head pushbutton Ø 30 mm, IP66, IP67, IP69K



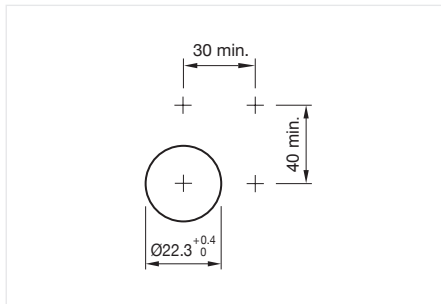
Product can differ from the current configuration.



Dimensions [mm]

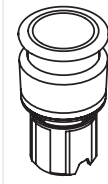
### General information

- Mounting depth, incl. front plate, see chapter drawings

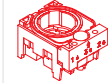


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

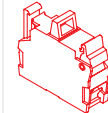


Actuator



Holder

Page 66



Switching element

Page 68

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.

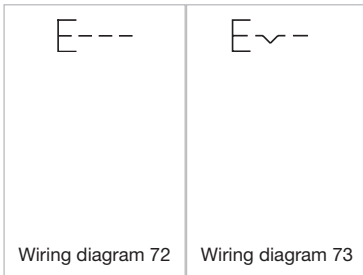


Actuator, Front dimension Ø 30 mm

| Switching action | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram   |
|------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|------------------|
| Maintained       | Black       | Black              | Plastic              | Black          | Plastic          | 45-2530.1810.000 | 73               |
|                  | Red         | Black              | Plastic              | Black          | Plastic          | 45-2530.1820.000 | 73               |
|                  | Yellow      | Black              | Plastic              | Black          | Plastic          | 45-2530.1840.000 | 73               |
|                  | Black       | Silver             | Metal                | Silver         | Metal            | 45-2530.2810.000 | 73               |
|                  | Red         | Silver             | Metal                | Silver         | Metal            | 45-2530.2820.000 | 73               |
|                  | Black       | Sand grey          | Metal                | Black          | Plastic          | 45-2530.3810.000 | 73               |
|                  | Red         | Sand grey          | Metal                | Black          | Plastic          | 45-2530.3820.000 | 73               |
|                  | Momentary   | Black              | Black                | Plastic        | Black            | Plastic          | 45-2531.1810.000 |
| Red              |             | Black              | Plastic              | Black          | Plastic          | 45-2531.1820.000 | 72               |
| Yellow           |             | Black              | Plastic              | Black          | Plastic          | 45-2531.1840.000 | 72               |
| Green            |             | Black              | Plastic              | Black          | Plastic          | 45-2531.1850.000 | 72               |
| Black            |             | Silver             | Metal                | Silver         | Metal            | 45-2531.2810.000 | 72               |
| Red              |             | Silver             | Metal                | Silver         | Metal            | 45-2531.2820.000 | 72               |
| Yellow           |             | Silver             | Metal                | Silver         | Metal            | 45-2531.2840.000 | 72               |
| Green            |             | Silver             | Metal                | Silver         | Metal            | 45-2531.2850.000 | 72               |
| Black            |             | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3810.000 | 72               |
| Red              |             | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3820.000 | 72               |
| Yellow           |             | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3840.000 | 72               |
| Green            |             | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3850.000 | 72               |





Wiring diagrams




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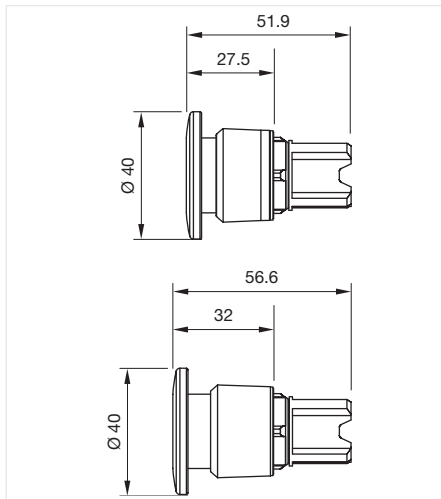
Your Expert Partner for Human Machine Interfaces

# 45 Raised design

## Mushroom-head pushbutton Ø 40 mm, IP66, IP67, IP69K

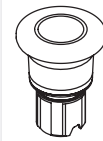


Product can differ from the current configuration.

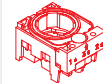


Dimensions [mm]

### Equipment consisting of (schematic overview)

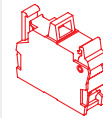


Actuator



Holder

Page 66



Switching element

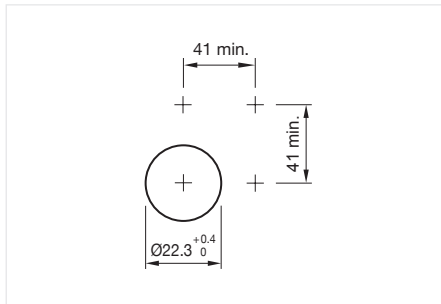
Page 68

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.

### General information

- Mounting depth, incl. front plate, see chapter drawings



Mounting cut-outs [mm]



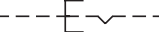



### Actuator, Front dimension Ø 40 mm

| Switching action       | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Maintained             | Black       | Black              | Plastic              | Black          | Plastic          | 45-2530.1910.000 | 73             |
|                        | Red         | Black              | Plastic              | Black          | Plastic          | 45-2530.1920.000 | 73             |
|                        | Yellow      | Black              | Plastic              | Black          | Plastic          | 45-2530.1940.000 | 73             |
|                        | Green       | Black              | Plastic              | Black          | Plastic          | 45-2530.1950.000 | 73             |
|                        | Black       | Silver             | Metal                | Silver         | Metal            | 45-2530.2910.000 | 73             |
|                        | Red         | Silver             | Metal                | Silver         | Metal            | 45-2530.2920.000 | 73             |
|                        | Yellow      | Silver             | Metal                | Silver         | Metal            | 45-2530.2940.000 | 73             |
|                        | Black       | Sand grey          | Metal                | Black          | Plastic          | 45-2530.3910.000 | 73             |
|                        | Red         | Sand grey          | Metal                | Black          | Plastic          | 45-2530.3920.000 | 73             |
| Momentary              | Black       | Black              | Plastic              | Black          | Plastic          | 45-2531.1910.000 | 72             |
|                        | Red         | Black              | Plastic              | Black          | Plastic          | 45-2531.1920.000 | 72             |
|                        | Yellow      | Black              | Plastic              | Black          | Plastic          | 45-2531.1940.000 | 72             |
|                        | Green       | Black              | Plastic              | Black          | Plastic          | 45-2531.1950.000 | 72             |
|                        | Black       | Silver             | Metal                | Silver         | Metal            | 45-2531.2910.000 | 72             |
|                        | Red         | Silver             | Metal                | Silver         | Metal            | 45-2531.2920.000 | 72             |
|                        | Yellow      | Silver             | Metal                | Silver         | Metal            | 45-2531.2940.000 | 72             |
|                        | Green       | Silver             | Metal                | Silver         | Metal            | 45-2531.2950.000 | 72             |
|                        | Black       | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3910.000 | 72             |
|                        | Red         | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3920.000 | 72             |
|                        | Yellow      | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3940.000 | 72             |
|                        | Green       | Sand grey          | Metal                | Black          | Plastic          | 45-2531.3950.000 | 72             |
| Momentary / maintained | Black       | Silver             | Metal                | Silver         | Metal            | 45-2532.2910.000 | 208            |
|                        | Red         | Silver             | Metal                | Silver         | Metal            | 45-2532.2920.000 | 208            |

| Switching action       | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary / maintained | Black       | Silver             | Metal                | Silver         | Metal            | 45-2533.2910.000 | 209            |
|                        | Red         | Silver             | Metal                | Silver         | Metal            | 45-2533.2920.000 | 209            |

## Wiring diagrams

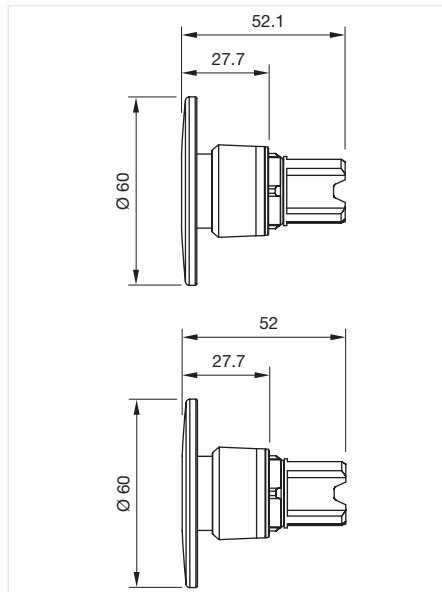
|   |   |   |   |
|---|---|---|---|
|  |  |  |  |
| Wiring diagram 72   | Wiring diagram 73   | Wiring diagram 208  | Wiring diagram 209  |

# 45 Raised design

## Mushroom-head pushbutton Ø 60 mm, IP66, IP67, IP69K

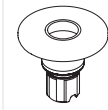


Product can differ from the current configuration.

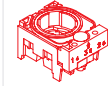


Dimensions [mm]

### Equipment consisting of (schematic overview)

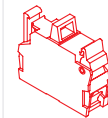


Actuator



Holder

Page 66



Switching element

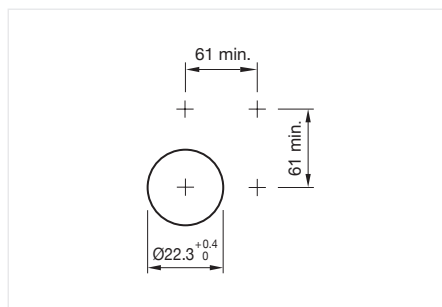
Page 68

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.

### General information

- Mounting depth, incl. front plate, see chapter drawings



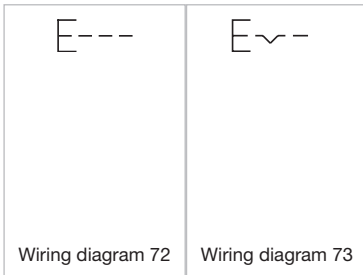
Mounting cut-outs [mm]



Actuator, Front dimension Ø 60 mm

| Switching action | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Maintained       | Black       | Black              | Plastic              | Black          | Plastic          | 45-2530.1A10.000 | 73             |
|                  | Red         | Black              | Plastic              | Black          | Plastic          | 45-2530.1A20.000 | 73             |
|                  | Black       | Silver             | Metal                | Silver         | Metal            | 45-2530.2A10.000 | 73             |
|                  | Red         | Silver             | Metal                | Silver         | Metal            | 45-2530.2A20.000 | 73             |
| Momentary        | Black       | Black              | Plastic              | Black          | Plastic          | 45-2531.1A10.000 | 72             |
|                  | Red         | Black              | Plastic              | Black          | Plastic          | 45-2531.1A20.000 | 72             |
|                  | Yellow      | Black              | Plastic              | Black          | Plastic          | 45-2531.1A40.000 | 72             |
|                  | Green       | Black              | Plastic              | Black          | Plastic          | 45-2531.1A50.000 | 72             |
|                  | Black       | Silver             | Metal                | Silver         | Metal            | 45-2531.2A10.000 | 72             |
|                  | Red         | Silver             | Metal                | Silver         | Metal            | 45-2531.2A20.000 | 72             |
|                  | Yellow      | Silver             | Metal                | Silver         | Metal            | 45-2531.2A40.000 | 72             |
|                  | Green       | Silver             | Metal                | Silver         | Metal            | 45-2531.2A50.000 | 72             |

Wiring diagrams



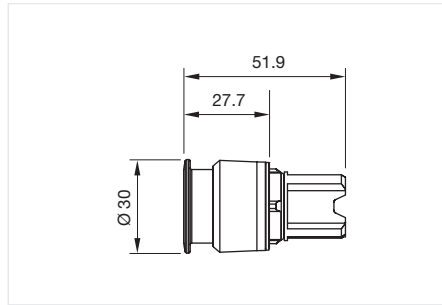
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# 45 Raised design

## Mushroom-head pushbutton illuminated Ø 30 mm, IP66, IP67, IP69K



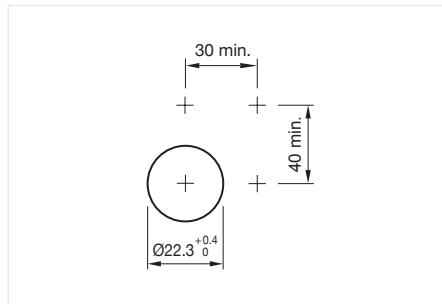
Product can differ from the current configuration.



Dimensions [mm]

### General information

- Mounting depth, incl. front plate, see chapter drawings

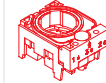


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

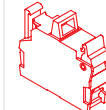


Actuator



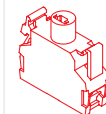
Holder

Page 66



Switching element

Page 68



Illumination element

Page 75

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

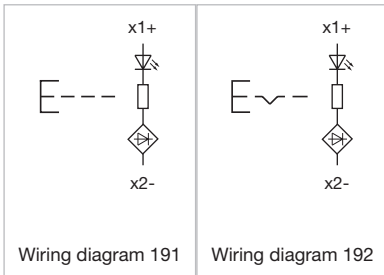
To obtain a complete unit, please select the red components from the pages shown.



### Actuator, Front dimension Ø 30 mm

| Switching action | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram   |
|------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|------------------|
| Maintained       | Red         | Black              | Plastic              | Black          | Plastic          | 45-2630.18E0.000 | 192              |
|                  | Yellow      | Black              | Plastic              | Black          | Plastic          | 45-2630.18G0.000 | 192              |
|                  | Green       | Black              | Plastic              | Black          | Plastic          | 45-2630.18H0.000 | 192              |
|                  | Blue        | Black              | Plastic              | Black          | Plastic          | 45-2630.18J0.000 | 192              |
|                  | Colourless  | Black              | Plastic              | Black          | Plastic          | 45-2630.18K0.000 | 192              |
|                  | Red         | Silver             | Metal                | Silver         | Metal            | 45-2630.28E0.000 | 192              |
|                  | Amber       | Silver             | Metal                | Silver         | Metal            | 45-2630.28F0.000 | 192              |
|                  | Yellow      | Silver             | Metal                | Silver         | Metal            | 45-2630.28G0.000 | 192              |
|                  | Green       | Silver             | Metal                | Silver         | Metal            | 45-2630.28H0.000 | 192              |
|                  | Blue        | Silver             | Metal                | Silver         | Metal            | 45-2630.28J0.000 | 192              |
|                  | Colourless  | Silver             | Metal                | Silver         | Metal            | 45-2630.28K0.000 | 192              |
|                  | Red         | Sand grey          | Metal                | Black          | Plastic          | 45-2630.38E0.000 | 192              |
|                  | Yellow      | Sand grey          | Metal                | Black          | Plastic          | 45-2630.38G0.000 | 192              |
|                  | Momentary   | Red                | Black                | Plastic        | Black            | Plastic          | 45-2631.18E0.000 |
| Yellow           |             | Black              | Plastic              | Black          | Plastic          | 45-2631.18G0.000 | 191              |
| Green            |             | Black              | Plastic              | Black          | Plastic          | 45-2631.18H0.000 | 191              |
| Blue             |             | Black              | Plastic              | Black          | Plastic          | 45-2631.18J0.000 | 191              |
| Colourless       |             | Black              | Plastic              | Black          | Plastic          | 45-2631.18K0.000 | 191              |
| White            |             | Black              | Plastic              | Black          | Plastic          | 45-2631.18N0.000 | 191              |
| Yellow           |             | Silver             | Metal                | Silver         | Metal            | 45-2631.28G0.000 | 191              |
| Green            |             | Silver             | Metal                | Silver         | Metal            | 45-2631.28H0.000 | 191              |
| White            |             | Silver             | Metal                | Silver         | Metal            | 45-2631.28N0.000 | 191              |
| Yellow           |             | Sand grey          | Metal                | Black          | Plastic          | 45-2631.38G0.000 | 191              |
| Green            |             | Sand grey          | Metal                | Black          | Plastic          | 45-2631.38H0.000 | 191              |
| Colourless       |             | Sand grey          | Metal                | Black          | Plastic          | 45-2631.38K0.000 | 191              |
| White            |             | Sand grey          | Metal                | Black          | Plastic          | 45-2631.38N0.000 | 191              |

## Wiring diagrams



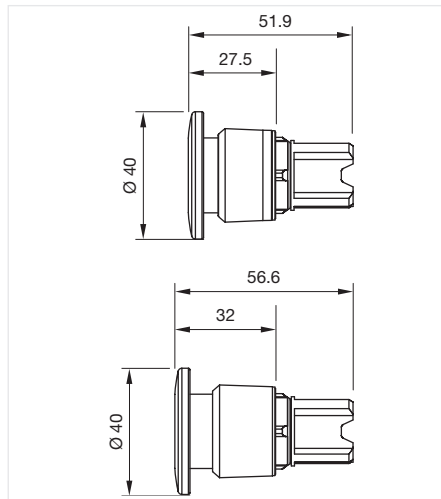
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# 45 Raised design

## Mushroom-head pushbutton illuminated Ø 40 mm, IP66, IP67, IP69K

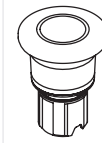


Product can differ from the current configuration.

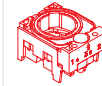


Dimensions [mm]

### Equipment consisting of (schematic overview)

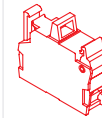


Actuator



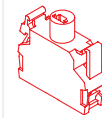
Holder

Page 66



Switching element

Page 68

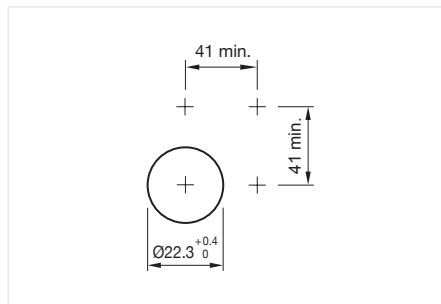


Illumination element

Page 75

### General information

- Mounting depth, incl. front plate, see chapter drawings



Mounting cut-outs [mm]

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

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



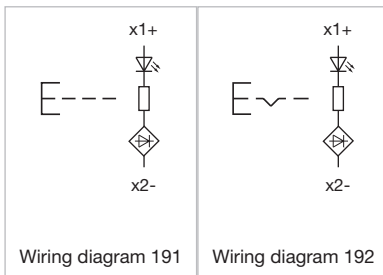
### Actuator, Front dimension Ø 40 mm

| Switching action | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram   |
|------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|------------------|
| Maintained       | Red         | Black              | Plastic              | Black          | Plastic          | 45-2630.19E0.000 | 192              |
|                  | Yellow      | Black              | Plastic              | Black          | Plastic          | 45-2630.19G0.000 | 192              |
|                  | Green       | Black              | Plastic              | Black          | Plastic          | 45-2630.19H0.000 | 192              |
|                  | Blue        | Black              | Plastic              | Black          | Plastic          | 45-2630.19J0.000 | 192              |
|                  | Colourless  | Black              | Plastic              | Black          | Plastic          | 45-2630.19K0.000 | 192              |
|                  | Red         | Silver             | Metal                | Silver         | Metal            | 45-2630.29E0.000 | 192              |
|                  | Amber       | Silver             | Metal                | Silver         | Metal            | 45-2630.29F0.000 | 192              |
|                  | Yellow      | Silver             | Metal                | Silver         | Metal            | 45-2630.29G0.000 | 192              |
|                  | Green       | Silver             | Metal                | Silver         | Metal            | 45-2630.29H0.000 | 192              |
|                  | Blue        | Silver             | Metal                | Silver         | Metal            | 45-2630.29J0.000 | 192              |
|                  | Colourless  | Silver             | Metal                | Silver         | Metal            | 45-2630.29K0.000 | 192              |
|                  | Red         | Sand grey          | Metal                | Black          | Plastic          | 45-2630.39E0.000 | 192              |
|                  | Yellow      | Sand grey          | Metal                | Black          | Plastic          | 45-2630.39G0.000 | 192              |
|                  | Momentary   | Yellow             | Black                | Plastic        | Black            | Plastic          | 45-2631.19G0.000 |
| Green            |             | Black              | Plastic              | Black          | Plastic          | 45-2631.19H0.000 | 191              |
| Colourless       |             | Black              | Plastic              | Black          | Plastic          | 45-2631.19K0.000 | 191              |
| White            |             | Black              | Plastic              | Black          | Plastic          | 45-2631.19N0.000 | 191              |
| Amber            |             | Silver             | Metal                | Silver         | Metal            | 45-2631.29F0.000 | 191              |
| Yellow           |             | Silver             | Metal                | Silver         | Metal            | 45-2631.29G0.000 | 191              |
| Green            |             | Silver             | Metal                | Silver         | Metal            | 45-2631.29H0.000 | 191              |
| White            |             | Silver             | Metal                | Silver         | Metal            | 45-2631.29N0.000 | 191              |
| Yellow           |             | Sand grey          | Metal                | Black          | Plastic          | 45-2631.39G0.000 | 191              |



| Switching action | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Momentary        | Green       | Sand grey          | Metal                | Black          | Plastic          | 45-2631.39H0.000 | 191            |
|                  | Colourless  | Sand grey          | Metal                | Black          | Plastic          | 45-2631.39K0.000 | 191            |
|                  | White       | Sand grey          | Metal                | Black          | Plastic          | 45-2631.39N0.000 | 191            |
|                  | Red         | Silver             | Metal                | Silver         | Metal            | 45-2632.29E0.000 | 191            |
|                  | Green       | Silver             | Metal                | Silver         | Metal            | 45-2632.29H0.000 | 191            |
|                  | Red         | Silver             | Metal                | Silver         | Metal            | 45-2633.29E0.000 | 191            |
|                  | White       | Silver             | Metal                | Silver         | Metal            | 45-2633.29N0.000 | 191            |

## Wiring diagrams



**Innovative and comprehensive.**  
*EAO's new Series 45.*

**Modular, aesthetic and robust for every conceivable HMI function of machine operating.**

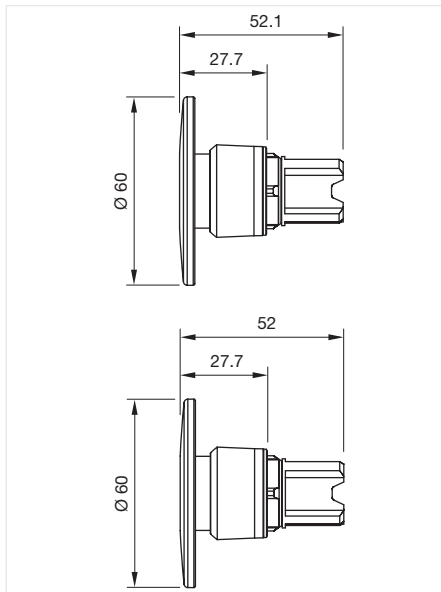
- Comprehensive and modular Series
- Rugged in use (up to IP69K)
- Easy to assemble and use
- Modern design with many options
- Value added services
- Long service life (up to 10 million switching cycles, depending on function)

# 45 Raised design

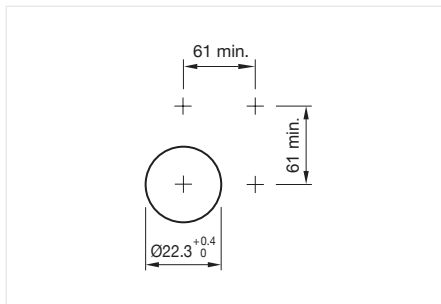
## Mushroom-head pushbutton illuminated Ø 60 mm, IP66, IP67, IP69K



Product can differ from the current configuration.



Dimensions [mm]

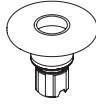

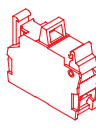
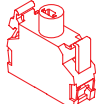


Mounting cut-outs [mm]

### General information

- Mounting depth, incl. front plate, see chapter drawings

### Equipment consisting of (schematic overview)

|   |                      |         |
|---|----------------------|---------|
|  | Actuator             |         |
|  | Holder               | Page 66 |
|  | Switching element    | Page 68 |
|  | Illumination element | Page 75 |

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

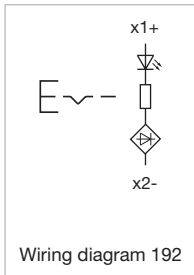
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 60 mm

| Switching action | Lens colour | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No.         | Wiring diagram |
|------------------|-------------|--------------------|----------------------|----------------|------------------|------------------|----------------|
| Maintained       | Red         | Silver             | Metal                | Silver         | Metal            | 45-2630.2AE0.000 | 192            |
|                  | Yellow      | Silver             | Metal                | Silver         | Metal            | 45-2630.2AG0.000 | 192            |
|                  | Green       | Silver             | Metal                | Silver         | Metal            | 45-2630.2AH0.000 | 192            |
|                  | Blue        | Silver             | Metal                | Silver         | Metal            | 45-2630.2AJ0.000 | 192            |
|                  | Colourless  | Silver             | Metal                | Silver         | Metal            | 45-2630.2AK0.000 | 192            |
| Momentary        | Amber       | Silver             | Metal                | Silver         | Metal            | 45-2631.2AF0.000 | 191            |
|                  | Yellow      | Silver             | Metal                | Silver         | Metal            | 45-2631.2AG0.000 | 191            |
|                  | Green       | Silver             | Metal                | Silver         | Metal            | 45-2631.2AH0.000 | 191            |
|                  | White       | Silver             | Metal                | Silver         | Metal            | 45-2631.2AN0.000 | 191            |

## Wiring diagrams



Wiring diagram 192

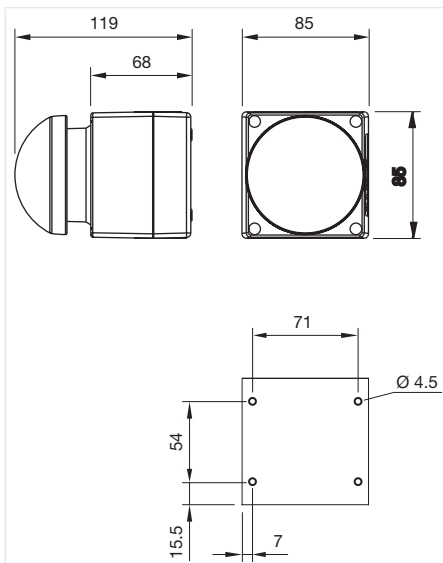
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# 45 Raised design

## Palm switch, IP66, IP67, IP69K

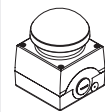


Product can differ from the current configuration.

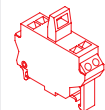


Dimensions [mm]

### Equipment consisting of (schematic overview)



Actuator



Switching element

Page 71

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.

### General information

- Mounting depth, incl. front plate, see chapter drawings

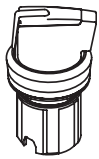


Actuator, Front dimension 85 mm x 85 mm

| Switching action | Lens colour | Housing colour | Housing material | Part No.    |
|------------------|-------------|----------------|------------------|-------------|
| Momentary        | Black       | Grey           | Plastic          | 45-481.1810 |
|                  | Black       | Grey           | Metal            | 45-481.2810 |
| Maintained       | Red         | Yellow         | Plastic          | 45-482.1810 |
|                  | Red         | Yellow         | Metal            | 45-482.2810 |

## Selector switch 2 positions short lever, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

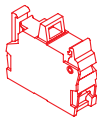


Actuator



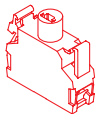
Holder

Page 66



Switching element

Page 68

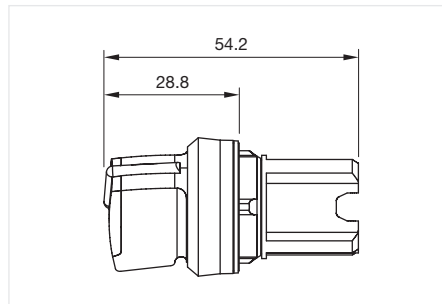


Illumination element

Page 75

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

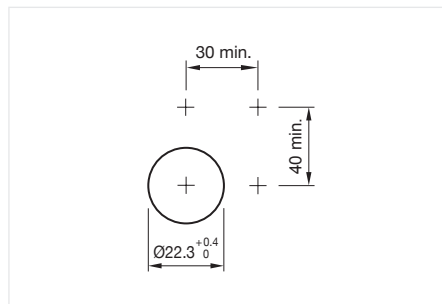
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



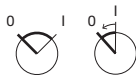
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- External diameter of the short lever 32.3 mm
- Mounting depth, incl. front plate, see chapter drawings



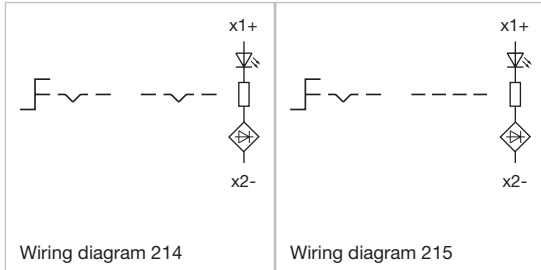
Actuator, Front dimension Ø 29,5 mm

| Switching action  | Switching angle | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|-------------------|-----------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Rest - Maintained | 90° right       | Red          | Black              | Plastic              | Plastic          | 45-2828.1C20.001 | 214            |
|                   | 90° right       | Yellow       | Black              | Plastic              | Plastic          | 45-2828.1C40.001 | 214            |
|                   | 90° right       | Green        | Black              | Plastic              | Plastic          | 45-2828.1C50.001 | 214            |
|                   | 90° right       | Blue         | Black              | Plastic              | Plastic          | 45-2828.1C60.001 | 214            |
|                   | 90° right       | White        | Black              | Plastic              | Plastic          | 45-2828.1C90.001 | 214            |
|                   | 90° right       | Red          | Silver             | Metal                | Metal            | 45-2828.2C20.001 | 214            |
|                   | 90° right       | Amber        | Silver             | Metal                | Metal            | 45-2828.2C30.001 | 214            |
|                   | 90° right       | Green        | Silver             | Metal                | Metal            | 45-2828.2C50.001 | 214            |
|                   | 90° right       | White        | Silver             | Metal                | Metal            | 45-2828.2C90.001 | 214            |
|                   | 90° right       | Red          | Sand grey          | Metal                | Plastic          | 45-2828.3C20.001 | 214            |
|                   | 90° right       | Yellow       | Sand grey          | Metal                | Plastic          | 45-2828.3C40.001 | 214            |
|                   | 90° right       | Green        | Sand grey          | Metal                | Plastic          | 45-2828.3C50.001 | 214            |
|                   | 90° right       | Blue         | Sand grey          | Metal                | Plastic          | 45-2828.3C60.001 | 214            |
|                   | 90° right       | White        | Sand grey          | Metal                | Plastic          | 45-2828.3C90.001 | 214            |
| Rest - Momentary  | 45° right       | Red          | Black              | Plastic              | Plastic          | 45-2844.1C20.006 | 215            |
|                   | 45° right       | Yellow       | Black              | Plastic              | Plastic          | 45-2844.1C40.006 | 215            |
|                   | 45° right       | Green        | Black              | Plastic              | Plastic          | 45-2844.1C50.006 | 215            |
|                   | 45° right       | Blue         | Black              | Plastic              | Plastic          | 45-2844.1C60.006 | 215            |
|                   | 45° right       | White        | Black              | Plastic              | Plastic          | 45-2844.1C90.006 | 215            |
|                   | 45° right       | Red          | Silver             | Metal                | Metal            | 45-2844.2C20.006 | 215            |
|                   | 45° right       | Yellow       | Silver             | Metal                | Metal            | 45-2844.2C40.006 | 215            |
|                   | 45° right       | Green        | Silver             | Metal                | Metal            | 45-2844.2C50.006 | 215            |
|                   | 45° right       | Blue         | Silver             | Metal                | Metal            | 45-2844.2C60.006 | 215            |
|                   | 45° right       | White        | Silver             | Metal                | Metal            | 45-2844.2C90.006 | 215            |
|                   | 45° right       | Red          | Sand grey          | Metal                | Plastic          | 45-2844.3C20.006 | 215            |
|                   | 45° right       | Yellow       | Sand grey          | Metal                | Plastic          | 45-2844.3C40.006 | 215            |

# 45 Raised design

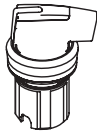
| Switching action | Switching angle | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|------------------|-----------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Rest - Momentary | 45° right       | Green        | Sand grey          | Metal                | Plastic          | 45-2844.3C50.006 | 215            |
|                  | 45° right       | Blue         | Sand grey          | Metal                | Plastic          | 45-2844.3C60.006 | 215            |
|                  | 45° right       | White        | Sand grey          | Metal                | Plastic          | 45-2844.3C90.006 | 215            |

## Wiring diagrams



## Selector switch 2 positions long lever, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

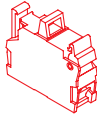


Actuator



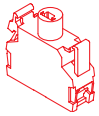
Holder

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Switching element

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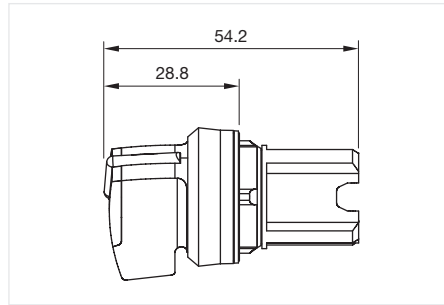


Illumination element

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

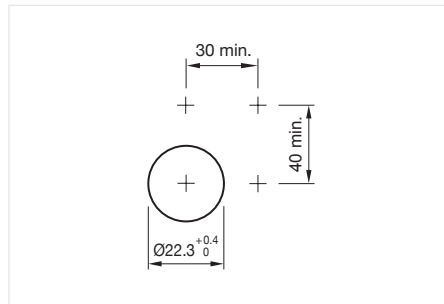
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



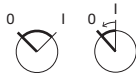
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- External diameter of the long lever 44.8 mm
- Mounting depth, incl. front plate, see chapter drawings



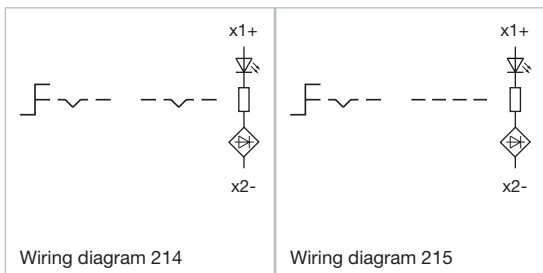
Actuator, Front dimension Ø 29,5 mm

| Switching action  | Switching angle | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|-------------------|-----------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Rest - Maintained | 90° right       | Red          | Black              | Plastic              | Plastic          | 45-2828.1D20.001 | 214            |
|                   | 90° right       | White        | Black              | Plastic              | Plastic          | 45-2828.1D90.001 | 214            |
|                   | 90° right       | Red          | Silver             | Metal                | Metal            | 45-2828.2D20.001 | 214            |
|                   | 90° right       | Yellow       | Silver             | Metal                | Metal            | 45-2828.2D40.001 | 214            |
|                   | 90° right       | Green        | Silver             | Metal                | Metal            | 45-2828.2D50.001 | 214            |
|                   | 90° right       | Blue         | Silver             | Metal                | Metal            | 45-2828.2D60.001 | 214            |
|                   | 90° right       | White        | Silver             | Metal                | Metal            | 45-2828.2D90.001 | 214            |
|                   | 90° right       | Red          | Sand grey          | Metal                | Plastic          | 45-2828.3D20.001 | 214            |
|                   | 90° right       | White        | Sand grey          | Metal                | Plastic          | 45-2828.3D90.001 | 214            |
| Rest - Momentary  | 45° right       | Yellow       | Silver             | Metal                | Metal            | 45-2844.2D40.006 | 215            |
|                   | 45° right       | Green        | Silver             | Metal                | Metal            | 45-2844.2D50.006 | 215            |
|                   | 45° right       | Blue         | Silver             | Metal                | Metal            | 45-2844.2D60.006 | 215            |
|                   | 45° right       | White        | Silver             | Metal                | Metal            | 45-2844.2D90.006 | 215            |

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# 45 Raised design

## Wiring diagrams



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<https://www.youtube.com/user/eaoswitches>

[www.eao.com](http://www.eao.com)

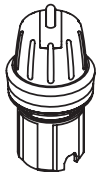
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## Selector switch 2 positions round lever, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

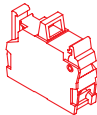


Actuator



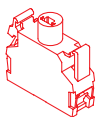
Holder

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Switching element

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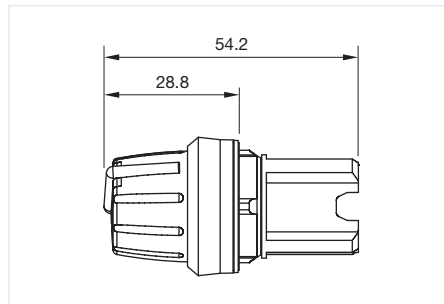


Illumination element

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

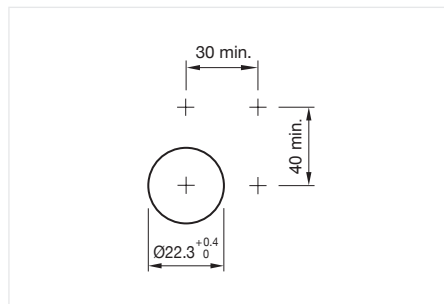
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

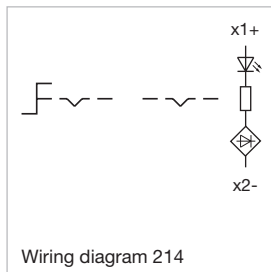
- Mounting depth, incl. front plate, see chapter drawings



Actuator, Front dimension  $\varnothing 29,5$  mm

| Switching action  | Switching angle | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|-------------------|-----------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Rest - Maintained | 90° right       | Red          | Black              | Plastic              | Plastic          | 45-2828.1E20.001 | 214            |
|                   | 90° right       | White        | Black              | Plastic              | Plastic          | 45-2828.1E90.001 | 214            |
|                   | 90° right       | Red          | Sand grey          | Metal                | Plastic          | 45-2828.3E20.001 | 214            |
|                   | 90° right       | White        | Sand grey          | Metal                | Plastic          | 45-2828.3E90.001 | 214            |

### Wiring diagrams

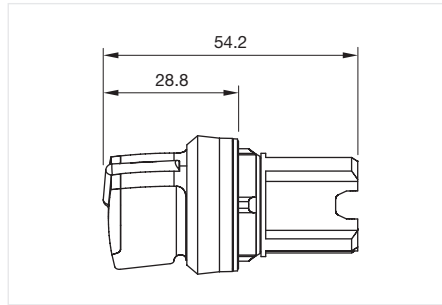


# 45 Raised design

## Selector switch 3 positions short lever, IP66, IP67, IP69K



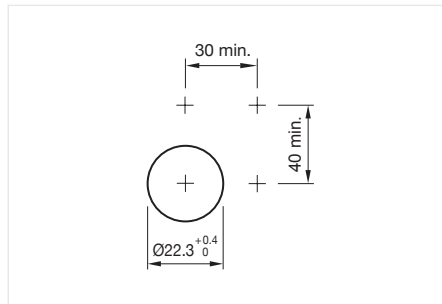
Product can differ from the current configuration.



Dimensions [mm]

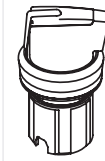
### General information

- External diameter of the short lever 32.3 mm
- Mounting depth, incl. front plate, see chapter drawings

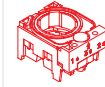


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

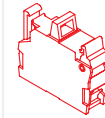


Actuator



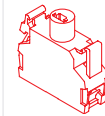
Holder

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Switching element

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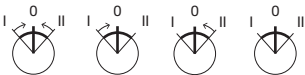


Illumination element

Page 75

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

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

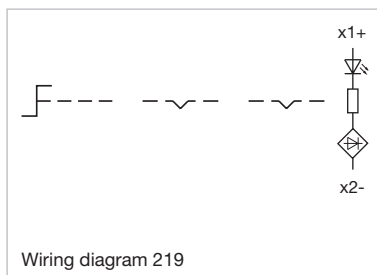
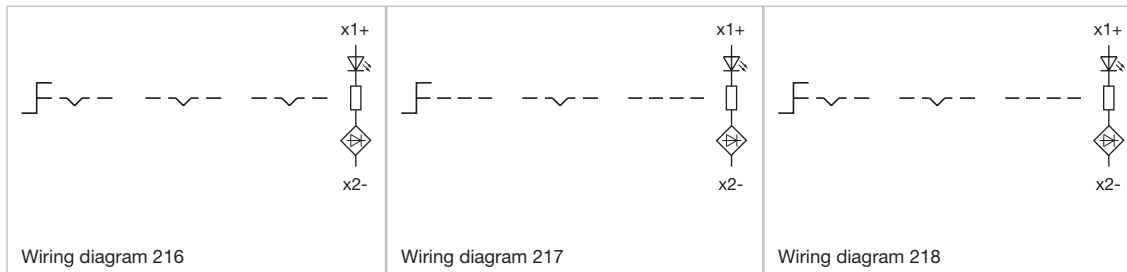


Actuator, Front dimension  $\varnothing 29,5$  mm

| Switching action             | Switching angle               | Lever colour         | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram   |     |
|------------------------------|-------------------------------|----------------------|--------------------|----------------------|------------------|------------------|------------------|-----|
| Momentary - Rest - Momentary | 45° left / 45° right          | Red                  | Black              | Plastic              | Plastic          | 45-280S.1C20.003 | 217              |     |
|                              | 45° left / 45° right          | Yellow               | Black              | Plastic              | Plastic          | 45-280S.1C40.003 | 217              |     |
|                              | 45° left / 45° right          | Green                | Black              | Plastic              | Plastic          | 45-280S.1C50.003 | 217              |     |
|                              | 45° left / 45° right          | Blue                 | Black              | Plastic              | Plastic          | 45-280S.1C60.003 | 217              |     |
|                              | 45° left / 45° right          | White                | Black              | Plastic              | Plastic          | 45-280S.1C90.003 | 217              |     |
|                              | 45° left / 45° right          | Red                  | Silver             | Metal                | Metal            | 45-280S.2C20.003 | 217              |     |
|                              | 45° left / 45° right          | Amber                | Silver             | Metal                | Metal            | 45-280S.2C30.003 | 217              |     |
|                              | 45° left / 45° right          | Yellow               | Silver             | Metal                | Metal            | 45-280S.2C40.003 | 217              |     |
|                              | 45° left / 45° right          | Green                | Silver             | Metal                | Metal            | 45-280S.2C50.003 | 217              |     |
|                              | 45° left / 45° right          | Blue                 | Silver             | Metal                | Metal            | 45-280S.2C60.003 | 217              |     |
|                              | 45° left / 45° right          | White                | Silver             | Metal                | Metal            | 45-280S.2C90.003 | 217              |     |
|                              | 45° left / 45° right          | Red                  | Sand grey          | Metal                | Plastic          | 45-280S.3C20.003 | 217              |     |
|                              | 45° left / 45° right          | Yellow               | Sand grey          | Metal                | Plastic          | 45-280S.3C40.003 | 217              |     |
|                              | 45° left / 45° right          | Green                | Sand grey          | Metal                | Plastic          | 45-280S.3C50.003 | 217              |     |
|                              | 45° left / 45° right          | Blue                 | Sand grey          | Metal                | Plastic          | 45-280S.3C60.003 | 217              |     |
|                              | 45° left / 45° right          | White                | Sand grey          | Metal                | Plastic          | 45-280S.3C90.003 | 217              |     |
|                              | Momentary - Rest - Maintained | 45° left / 45° right | Red                | Black                | Plastic          | Plastic          | 45-280X.1C20.003 | 219 |
|                              |                               | 45° left / 45° right | Yellow             | Black                | Plastic          | Plastic          | 45-280X.1C40.003 | 219 |
| 45° left / 45° right         |                               | Green                | Black              | Plastic              | Plastic          | 45-280X.1C50.003 | 219              |     |
| 45° left / 45° right         |                               | Blue                 | Black              | Plastic              | Plastic          | 45-280X.1C60.003 | 219              |     |
| 45° left / 45° right         |                               | White                | Black              | Plastic              | Plastic          | 45-280X.1C90.003 | 219              |     |
| 45° left / 45° right         |                               | White                | Silver             | Metal                | Metal            | 45-280X.2C90.003 | 219              |     |
| 45° left / 45° right         |                               | Red                  | Sand grey          | Metal                | Plastic          | 45-280X.3C20.003 | 219              |     |
| 45° left / 45° right         |                               | Yellow               | Sand grey          | Metal                | Plastic          | 45-280X.3C40.003 | 219              |     |
| 45° left / 45° right         |                               | Green                | Sand grey          | Metal                | Plastic          | 45-280X.3C50.003 | 219              |     |
| 45° left / 45° right         |                               | Blue                 | Sand grey          | Metal                | Plastic          | 45-280X.3C60.003 | 219              |     |

| Switching action              | Switching angle                | Lever colour         | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram   |
|-------------------------------|--------------------------------|----------------------|--------------------|----------------------|------------------|------------------|------------------|
| Momentary - Rest - Maintained | 45° left / 45° right           | White                | Sand grey          | Metal                | Plastic          | 45-280X.3C90.003 | 219              |
| Maintained - Rest - Momentary | 45° left / 45° right           | Red                  | Black              | Plastic              | Plastic          | 45-2816.1C20.003 | 218              |
|                               | 45° left / 45° right           | Yellow               | Black              | Plastic              | Plastic          | 45-2816.1C40.003 | 218              |
|                               | 45° left / 45° right           | Green                | Black              | Plastic              | Plastic          | 45-2816.1C50.003 | 218              |
|                               | 45° left / 45° right           | Blue                 | Black              | Plastic              | Plastic          | 45-2816.1C60.003 | 218              |
|                               | 45° left / 45° right           | White                | Black              | Plastic              | Plastic          | 45-2816.1C90.003 | 218              |
|                               | 45° left / 45° right           | Red                  | Silver             | Metal                | Metal            | 45-2816.2C20.003 | 218              |
|                               | 45° left / 45° right           | Green                | Silver             | Metal                | Metal            | 45-2816.2C50.003 | 218              |
|                               | 45° left / 45° right           | White                | Silver             | Metal                | Metal            | 45-2816.2C90.003 | 218              |
|                               | 45° left / 45° right           | Red                  | Sand grey          | Metal                | Plastic          | 45-2816.3C20.003 | 218              |
|                               | 45° left / 45° right           | Yellow               | Sand grey          | Metal                | Plastic          | 45-2816.3C40.003 | 218              |
|                               | 45° left / 45° right           | Green                | Sand grey          | Metal                | Plastic          | 45-2816.3C50.003 | 218              |
|                               | 45° left / 45° right           | Blue                 | Sand grey          | Metal                | Plastic          | 45-2816.3C60.003 | 218              |
|                               | 45° left / 45° right           | White                | Sand grey          | Metal                | Plastic          | 45-2816.3C90.003 | 218              |
|                               | Maintained - Rest - Maintained | 45° left / 45° right | Red                | Black                | Plastic          | Plastic          | 45-2819.1C20.003 |
| 45° left / 45° right          |                                | Yellow               | Black              | Plastic              | Plastic          | 45-2819.1C40.003 | 216              |
| 45° left / 45° right          |                                | Green                | Black              | Plastic              | Plastic          | 45-2819.1C50.003 | 216              |
| 45° left / 45° right          |                                | Blue                 | Black              | Plastic              | Plastic          | 45-2819.1C60.003 | 216              |
| 45° left / 45° right          |                                | White                | Black              | Plastic              | Plastic          | 45-2819.1C90.003 | 216              |
| 45° left / 45° right          |                                | Red                  | Silver             | Metal                | Metal            | 45-2819.2C20.003 | 216              |
| 45° left / 45° right          |                                | Yellow               | Silver             | Metal                | Metal            | 45-2819.2C40.003 | 216              |
| 45° left / 45° right          |                                | Green                | Silver             | Metal                | Metal            | 45-2819.2C50.003 | 216              |
| 45° left / 45° right          |                                | White                | Silver             | Metal                | Metal            | 45-2819.2C90.003 | 216              |
| 45° left / 45° right          |                                | Red                  | Sand grey          | Metal                | Plastic          | 45-2819.3C20.003 | 216              |
| 45° left / 45° right          |                                | Yellow               | Sand grey          | Metal                | Plastic          | 45-2819.3C40.003 | 216              |
| 45° left / 45° right          |                                | Green                | Sand grey          | Metal                | Plastic          | 45-2819.3C50.003 | 216              |
| 45° left / 45° right          |                                | Blue                 | Sand grey          | Metal                | Plastic          | 45-2819.3C60.003 | 216              |
| 45° left / 45° right          |                                | White                | Sand grey          | Metal                | Plastic          | 45-2819.3C90.003 | 216              |

## Wiring diagrams

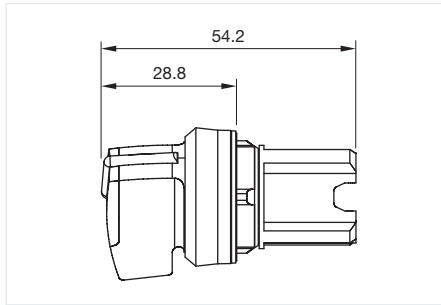


# 45 Raised design

## Selector switch 3 positions long lever, IP66, IP67, IP69K



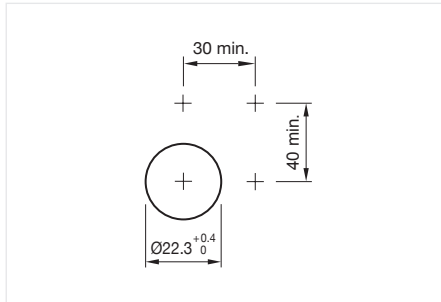
Product can differ from the current configuration.



Dimensions [mm]

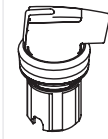
### General information

- External diameter of the long lever 44.8 mm
- Mounting depth, incl. front plate, see chapter drawings

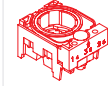


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

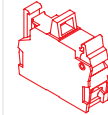


Actuator



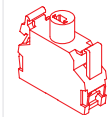
Holder

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Switching element

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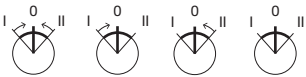


Illumination element

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

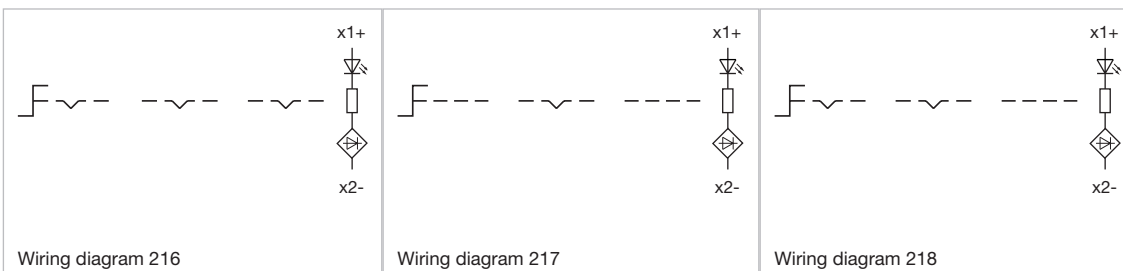
To obtain a complete unit, please select the red components from the pages shown.



### Actuator, Front dimension $\varnothing 29,5$ mm

| Switching action               | Switching angle      | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|--------------------------------|----------------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Momentary - Rest - Momentary   | 45° left / 45° right | Red          | Silver             | Metal                | Metal            | 45-280S.2D20.003 | 217            |
|                                | 45° left / 45° right | Green        | Silver             | Metal                | Metal            | 45-280S.2D50.003 | 217            |
|                                | 45° left / 45° right | White        | Silver             | Metal                | Metal            | 45-280S.2D90.003 | 217            |
| Momentary - Rest - Maintained  | 45° left / 45° right | Red          | Silver             | Metal                | Metal            | 45-280X.2D20.003 | 219            |
|                                | 45° left / 45° right | White        | Silver             | Metal                | Metal            | 45-280X.2D90.003 | 219            |
| Maintained - Rest - Momentary  | 45° left / 45° right | Red          | Silver             | Metal                | Metal            | 45-2816.2D20.003 | 218            |
|                                | 45° left / 45° right | White        | Silver             | Metal                | Metal            | 45-2816.2D90.003 | 218            |
| Maintained - Rest - Maintained | 45° left / 45° right | Red          | Silver             | Metal                | Metal            | 45-2819.2D20.003 | 216            |
|                                | 45° left / 45° right | Green        | Silver             | Metal                | Metal            | 45-2819.2D50.003 | 216            |
|                                | 45° left / 45° right | White        | Silver             | Metal                | Metal            | 45-2819.2D90.003 | 216            |

### Wiring diagrams

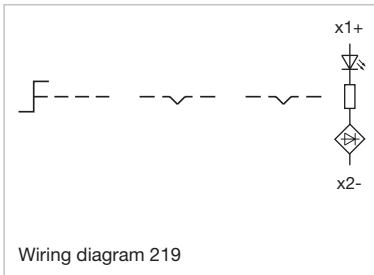


Wiring diagram 216

Wiring diagram 217

Wiring diagram 218

## Wiring diagrams



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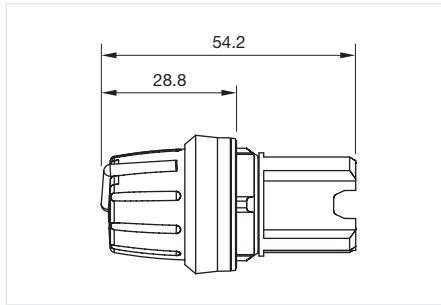
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# 45 Raised design

## Selector switch 4 positions round lever, IP66, IP67, IP69K



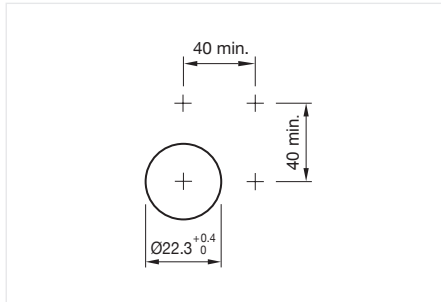
Product can differ from the current configuration.



Dimensions [mm]

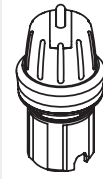
### General information

- Use only with holder for 4 elements
- Mounting depth, incl. front plate, see chapter drawings

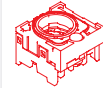


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

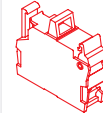


Actuator



Holder

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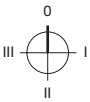


Switching element

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

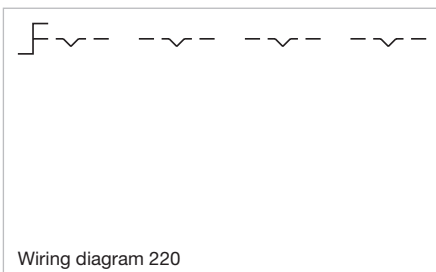
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension  $\varnothing 29,5$  mm

| Switching action                                  | Switching angle | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|---|-----------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Maintained - Maintained - Maintained - Maintained | 4 x 90°         | White        | Black              | Plastic              | Plastic          | 45-2845.1E90.002 | 220            |
|   | 4 x 90°         | White        | Silver             | Metal                | Metal            | 45-2845.2E90.002 | 220            |
|   | 4 x 90°         | White        | Sand grey          | Metal                | Plastic          | 45-2845.3E90.002 | 220            |

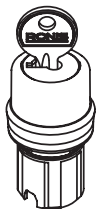
## Wiring diagrams



Wiring diagram 220

## Keylock switch 2 positions, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

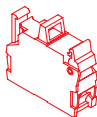


Actuator



Holder

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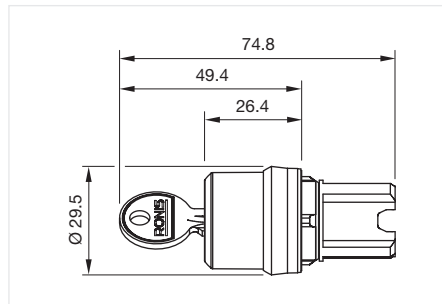


Switching element

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

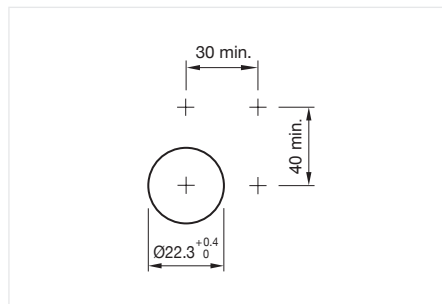
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



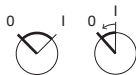
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- The standard lock: RONIS, T254
- Mounting depth, incl. front plate, see chapter drawings

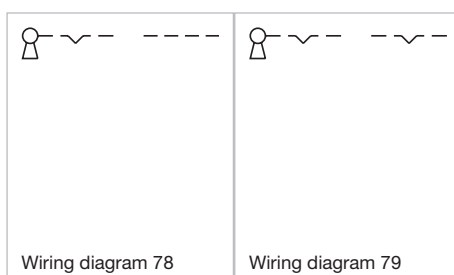


Actuator, Front dimension Ø 29,5 mm

| Switching action          | Switching angle | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|---------------------------|-----------------|--------------------|----------------------|------------------|------------------|----------------|
| Rest (a) - Maintained (a) | 90° right       | Black              | Plastic              | Plastic          | 45-290H.1000.111 | 79             |
|                           | 90° right       | Silver             | Metal                | Metal            | 45-290H.2000.111 | 79             |
|                           | 90° right       | Sand grey          | Metal                | Plastic          | 45-290H.3000.111 | 79             |
| Rest (a) - Maintained     | 90° right       | Black              | Plastic              | Plastic          | 45-290J.1000.111 | 79             |
|                           | 90° right       | Silver             | Metal                | Metal            | 45-290J.2000.111 | 79             |
|                           | 90° right       | Sand grey          | Metal                | Plastic          | 45-290J.3000.111 | 79             |
| Rest (a) - Momentary      | 45° right       | Black              | Plastic              | Plastic          | 45-290K.1000.116 | 78             |
|                           | 45° right       | Silver             | Metal                | Metal            | 45-290K.2000.116 | 78             |
|                           | 45° right       | Sand grey          | Metal                | Plastic          | 45-290K.3000.116 | 78             |
| Rest - Maintained (a)     | 90° right       | Black              | Plastic              | Plastic          | 45-2925.1000.111 | 79             |
|                           | 90° right       | Silver             | Metal                | Metal            | 45-2925.2000.111 | 79             |
|                           | 90° right       | Sand grey          | Metal                | Plastic          | 45-2925.3000.111 | 79             |

a = Key remove

### Wiring diagrams



Wiring diagram 78

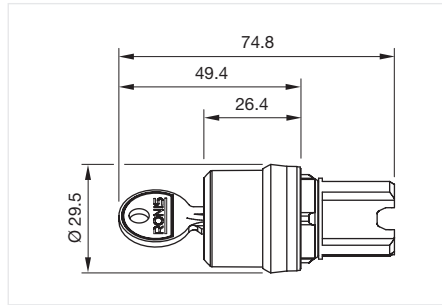
Wiring diagram 79

# 45 Raised design

## Keylock switch 3 positions, IP66, IP67, IP69K



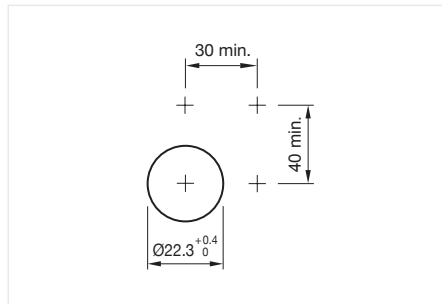
Product can differ from the current configuration.



Dimensions [mm]

### General information

- The standard lock: RONIS, T254
- Mounting depth, incl. front plate, see chapter drawings

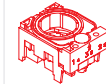


Mounting cut-outs [mm]

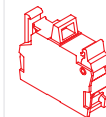
### Equipment consisting of (schematic overview)



Actuator



Holder



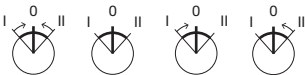
Switching element

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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 29,5 mm

| Switching action                           | Switching angle      | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|--|----------------------|--------------------|----------------------|------------------|------------------|----------------|
| Maintained (a) - Rest - Momentary          | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290A.1000.113 | 81             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-290A.2000.113 | 81             |
| Maintained (a) - Rest - Maintained (a)     | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290C.1000.113 | 83             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-290C.2000.113 | 83             |
|  | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-290C.3000.113 | 83             |
| Maintained (a) - Rest - Maintained         | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290D.1000.113 | 83             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-290D.2000.113 | 83             |
|  | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-290D.3000.113 | 83             |
| Maintained (a) - Rest (a) - Momentary      | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290E.1000.113 | 81             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-290E.2000.113 | 81             |
| Maintained (a) - Rest (a) - Maintained (a) | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290F.1000.113 | 83             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-290F.2000.113 | 83             |
|  | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-290F.3000.113 | 83             |
| Maintained (a) - Rest (a) - Maintained     | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290G.1000.113 | 83             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-290G.2000.113 | 83             |
|  | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-290G.3000.113 | 83             |
| Momentary - Rest - Maintained (a)          | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290W.1000.113 | 80             |
| Momentary - Rest (a) - Momentary           | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-290Z.1000.113 | 82             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-290Z.2000.113 | 82             |
|  | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-290Z.3000.113 | 82             |
| Momentary - Rest (a) - Maintained (a)      | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-2910.1000.113 | 80             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-2910.2000.113 | 80             |
| Momentary - Rest (a) - Maintained          | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-2911.1000.113 | 80             |
|  | 45° left / 45° right | Silver             | Metal                | Metal            | 45-2911.2000.113 | 80             |
|  | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-2911.3000.113 | 80             |

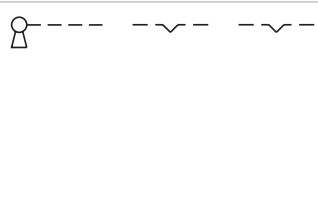
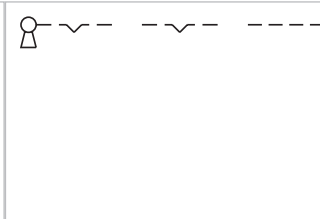
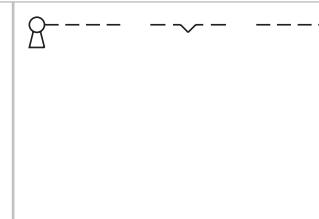
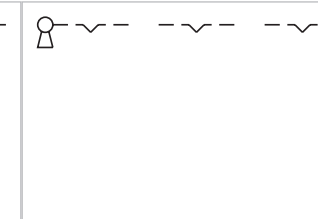
a = Key remove



| Switching action                   | Switching angle      | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|------------------------------------|----------------------|--------------------|----------------------|------------------|------------------|----------------|
| Maintained - Rest - Maintained (a) | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-2917.1000.113 | 83             |
|                                    | 45° left / 45° right | Silver             | Metal                | Metal            | 45-2917.2000.113 | 83             |
|                                    | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-2917.3000.113 | 83             |
| Maintained - Rest (a) - Momentary  | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-2922.1000.113 | 81             |
|                                    | 45° left / 45° right | Silver             | Metal                | Metal            | 45-2922.2000.113 | 81             |
|                                    | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-2922.3000.113 | 81             |
| Maintained - Rest (a) - Maintained | 45° left / 45° right | Black              | Plastic              | Plastic          | 45-2924.1000.113 | 83             |
|                                    | 45° left / 45° right | Silver             | Metal                | Metal            | 45-2924.2000.113 | 83             |
|                                    | 45° left / 45° right | Sand grey          | Metal                | Plastic          | 45-2924.3000.113 | 83             |

a = Key remove

## Wiring diagrams

|   |   |  |   |
|---|---|--|---|
|  |  |  |  |
| Wiring diagram 80   | Wiring diagram 81   | Wiring diagram 82  | Wiring diagram 83   |

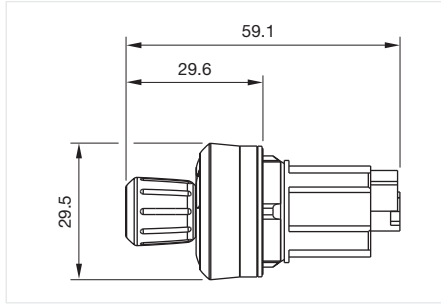
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# 45 Raised design

## ID keylock switch, IP65



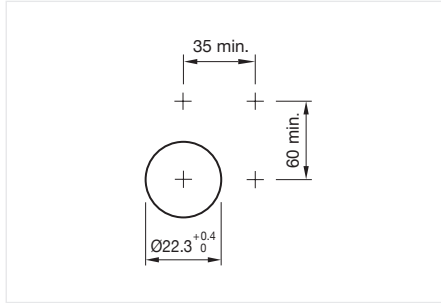
Product can differ from the current configuration.



Dimensions [mm]

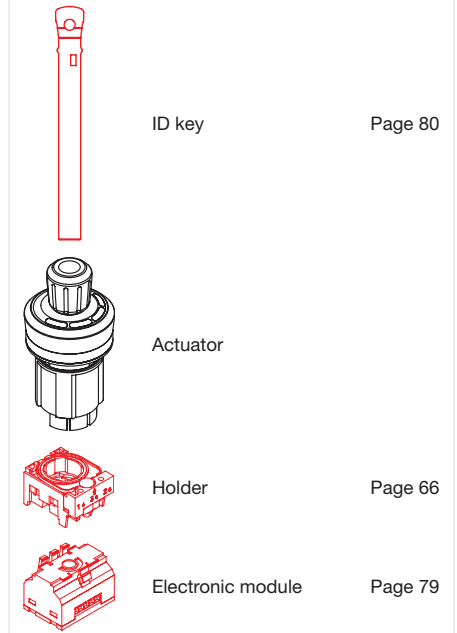
### General information

- Mounting depth, incl. front plate, see chapter drawings



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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

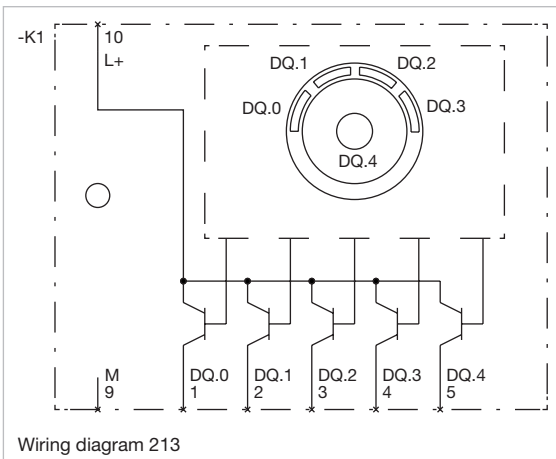
To obtain a complete unit, please select the red components from the pages shown.



### Actuator, Front dimension $\varnothing 29,5$ mm

| Switching action                                  | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|---|--------------------|----------------------|------------------|------------------|----------------|
| Maintained - Maintained - Maintained - Maintained | Black              | Plastic              | Plastic          | 45-2S00.1001.404 | 213            |
|   | Sand grey          | Metal                | Plastic          | 45-2S00.3001.404 | 213            |

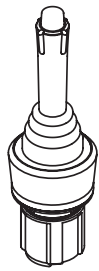
## Wiring diagrams



Wiring diagram 213

## Toggle stick, IP65, IP67

### Equipment consisting of (schematic overview)

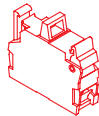


Actuator



Holder

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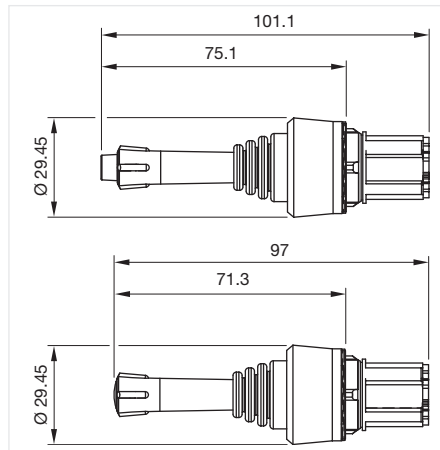


Switching element

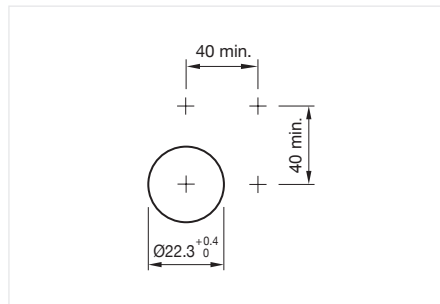
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Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

### General information

- Use only with holder for 4 elements
- Mounting depth, incl. front plate, see chapter drawings
- Lockable only in center position



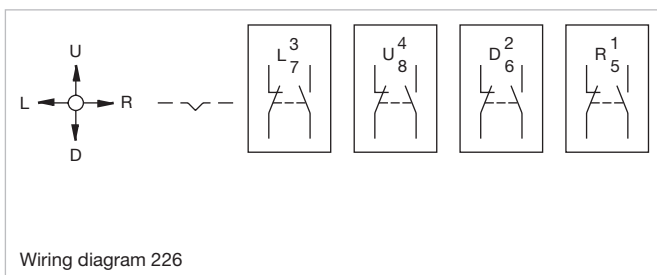
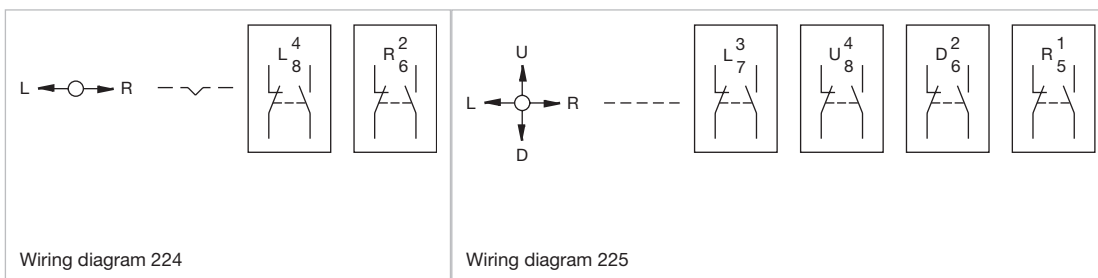
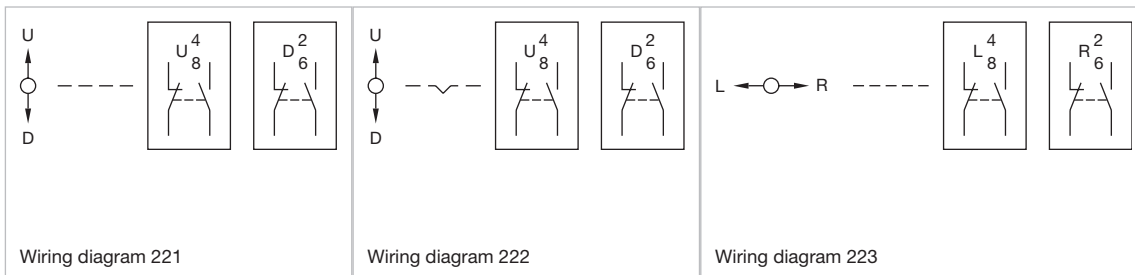
### Actuator, Front dimension Ø 29,5 mm

| Switching action | Product attributes          | Housing material | Front bezel colour | Front bezel material | Part No.         | Wiring diagram |
|------------------|-----------------------------|------------------|--------------------|----------------------|------------------|----------------|
| Momentary        | 2 positions (L-R)           | Plastic          | Black              | Plastic              | 45-2F0T.1010.000 | 223            |
|                  | 2 positions (L-R)           | Metal            | Silver             | Metal                | 45-2F0T.2010.000 | 223            |
|                  | 2 positions (L-R)           | Plastic          | Sand grey          | Metal                | 45-2F0T.3010.000 | 223            |
|                  | 4 positions                 | Plastic          | Black              | Plastic              | 45-2F0V.1010.000 | 225            |
|                  | 4 positions                 | Metal            | Silver             | Metal                | 45-2F0V.2010.000 | 225            |
|                  | 4 positions                 | Plastic          | Sand grey          | Metal                | 45-2F0V.3010.000 | 225            |
|                  | 2 positions (L-R), lockable | Plastic          | Black              | Plastic              | 45-2F13.1010.000 | 223            |
|                  | 2 positions (L-R), lockable | Metal            | Silver             | Metal                | 45-2F13.2010.000 | 223            |
|                  | 2 positions (L-R), lockable | Plastic          | Sand grey          | Metal                | 45-2F13.3010.000 | 223            |
|                  | 4 positions, lockable       | Plastic          | Black              | Plastic              | 45-2F14.1010.000 | 225            |
|                  | 4 positions, lockable       | Metal            | Silver             | Metal                | 45-2F14.2010.000 | 225            |
|                  | 4 positions, lockable       | Plastic          | Sand grey          | Metal                | 45-2F14.3010.000 | 225            |
| Maintained       | 2 positions (LR)            | Plastic          | Black              | Plastic              | 45-2F20.1010.000 | 224            |
|                  | 2 positions (LR)            | Metal            | Silver             | Metal                | 45-2F20.2010.000 | 224            |
|                  | 2 positions (LR)            | Plastic          | Sand grey          | Metal                | 45-2F20.3010.000 | 224            |
|                  | 4 positions                 | Plastic          | Black              | Plastic              | 45-2F21.1010.000 | 226            |
|                  | 4 positions                 | Metal            | Silver             | Metal                | 45-2F21.2010.000 | 226            |
|                  | 4 positions                 | Plastic          | Sand grey          | Metal                | 45-2F21.3010.000 | 226            |
|                  | 2 positions (LR), lockable  | Plastic          | Black              | Plastic              | 45-2F26.1010.000 | 224            |
|                  | 2 positions (LR), lockable  | Metal            | Silver             | Metal                | 45-2F26.2010.000 | 224            |
|                  | 2 positions (LR), lockable  | Plastic          | Sand grey          | Metal                | 45-2F26.3010.000 | 224            |
|                  | 4 positions, lockable       | Plastic          | Black              | Plastic              | 45-2F27.1010.000 | 226            |
|                  | 4 positions, lockable       | Metal            | Silver             | Metal                | 45-2F27.2010.000 | 226            |
|                  | 4 positions, lockable       | Plastic          | Sand grey          | Metal                | 45-2F27.3010.000 | 226            |
| Momentary        | 2 positions (U-D)           | Plastic          | Black              | Plastic              | 45-2F38.1010.000 | 221            |

# 45 Raised design

| Switching action | Product attributes          | Housing material | Front bezel colour | Front bezel material | Part No.         | Wiring diagram |
|------------------|-----------------------------|------------------|--------------------|----------------------|------------------|----------------|
| Momentary        | 2 positions (U-D)           | Metal            | Silver             | Metal                | 45-2F38.2010.000 | 221            |
|                  | 2 positions (U-D)           | Plastic          | Sand grey          | Metal                | 45-2F38.3010.000 | 221            |
|                  | 2 positions (U-D), lockable | Plastic          | Black              | Plastic              | 45-2F40.1010.000 | 221            |
|                  | 2 positions (U-D), lockable | Metal            | Silver             | Metal                | 45-2F40.2010.000 | 221            |
|                  | 2 positions (U-D), lockable | Plastic          | Sand grey          | Metal                | 45-2F40.3010.000 | 221            |
| Maintained       | 2 positions (UD)            | Plastic          | Black              | Plastic              | 45-2F41.1010.000 | 222            |
|                  | 2 positions (UD)            | Metal            | Silver             | Metal                | 45-2F41.2010.000 | 222            |
|                  | 2 positions (UD)            | Plastic          | Sand grey          | Metal                | 45-2F41.3010.000 | 222            |
|                  | 2 positions (UD), lockable  | Plastic          | Black              | Plastic              | 45-2F43.1010.000 | 222            |
|                  | 2 positions (UD), lockable  | Metal            | Silver             | Metal                | 45-2F43.2010.000 | 222            |
|                  | 2 positions (UD), lockable  | Plastic          | Sand grey          | Metal                | 45-2F43.3010.000 | 222            |

## Wiring diagrams



## Toggle switch, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

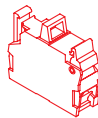


Actuator



Holder

Page 66

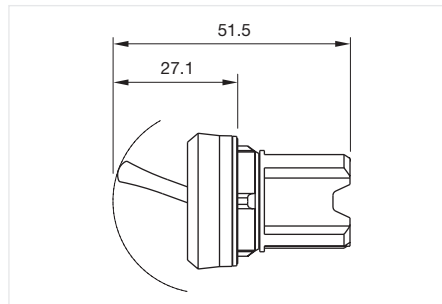


Switching element

Page 68

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

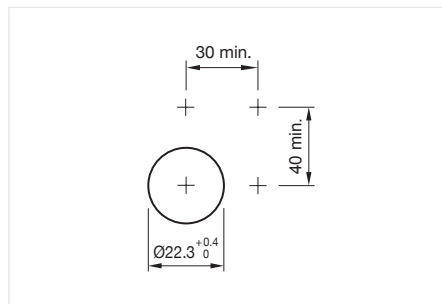
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Mounting depth, incl. front plate, see chapter drawings



Actuator, Front dimension  $\varnothing$  29,5 mm

| Switching action | Lever colour | Front bezel colour | Front bezel material | Housing material | Part No.         | Wiring diagram |
|------------------|--------------|--------------------|----------------------|------------------|------------------|----------------|
| Momentary        | Black        | Black              | Plastic              | Plastic          | 45-2N39.1010.000 | 72             |
|                  | Black        | Silver             | Metal                | Metal            | 45-2N39.2010.000 | 72             |
|                  | Black        | Sand grey          | Metal                | Plastic          | 45-2N39.3010.000 | 72             |
| Maintained       | Black        | Black              | Plastic              | Plastic          | 45-2N42.1010.000 | 73             |
|                  | Black        | Silver             | Metal                | Metal            | 45-2N42.2010.000 | 73             |
|                  | Black        | Sand grey          | Metal                | Plastic          | 45-2N42.3010.000 | 73             |

## Wiring diagrams

|                   |                   |
|-------------------|-------------------|
| E---              | E~--              |
| Wiring diagram 72 | Wiring diagram 73 |

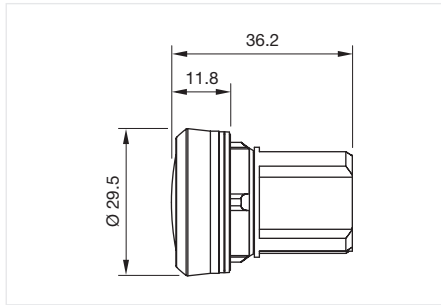
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# 45 Raised design

## Indicator full-face illumination, IP66, IP67, IP69K



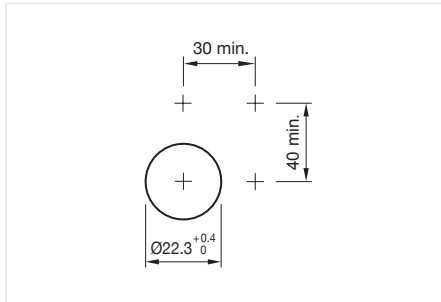
Product can differ from the current configuration.



Dimensions [mm]

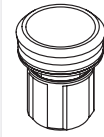
### General information

- Mounting depth, incl. front plate, see chapter drawings

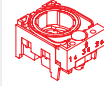


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)

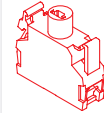


Actuator



Holder

Page 66



Illumination element

Page 75

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

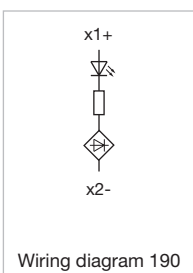
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 30 mm

| Lens cap colour | Housing material | Part No.         | Wiring diagram |
|-----------------|------------------|------------------|----------------|
| Red             | Plastic          | 45-2T00.10E0.000 | 190            |
| Amber           | Plastic          | 45-2T00.10F0.000 | 190            |
| Yellow          | Plastic          | 45-2T00.10G0.000 | 190            |
| Green           | Plastic          | 45-2T00.10H0.000 | 190            |
| Blue            | Plastic          | 45-2T00.10J0.000 | 190            |
| Colourless      | Plastic          | 45-2T00.10K0.000 | 190            |
| White           | Plastic          | 45-2T00.10N0.000 | 190            |
| Red             | Metal            | 45-2T00.20E0.000 | 190            |
| Amber           | Metal            | 45-2T00.20F0.000 | 190            |
| Yellow          | Metal            | 45-2T00.20G0.000 | 190            |
| Green           | Metal            | 45-2T00.20H0.000 | 190            |
| Blue            | Metal            | 45-2T00.20J0.000 | 190            |
| Colourless      | Metal            | 45-2T00.20K0.000 | 190            |
| White           | Metal            | 45-2T00.20N0.000 | 190            |

## Wiring diagrams



## Indicator front illumination, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

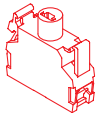


Actuator



Holder

Page 66

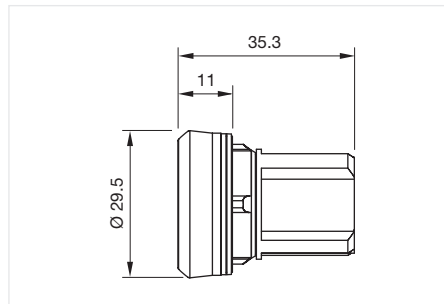


Illumination element

Page 75

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

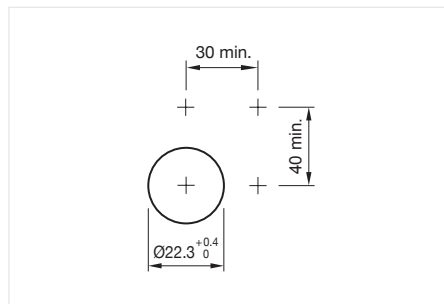
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

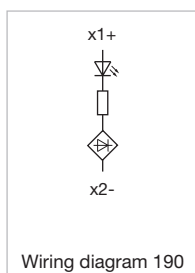
- Mounting depth, incl. front plate, see chapter drawings



Actuator, Front dimension Ø 29,5 mm

| Front bezel colour | Front bezel material | Lens cap colour | Housing material | Part No.         | Wiring diagram |
|--------------------|----------------------|-----------------|------------------|------------------|----------------|
| Black              | Plastic              | Red             | Plastic          | 45-2T07.10E0.000 | 190            |
|                    | Plastic              | Yellow          | Plastic          | 45-2T07.10G0.000 | 190            |
|                    | Plastic              | Green           | Plastic          | 45-2T07.10H0.000 | 190            |
|                    | Plastic              | Blue            | Plastic          | 45-2T07.10J0.000 | 190            |
|                    | Plastic              | White           | Plastic          | 45-2T07.10K0.000 | 190            |
| Sand grey          | Metal                | Red             | Plastic          | 45-2T07.30E0.000 | 190            |
|                    | Metal                | Yellow          | Plastic          | 45-2T07.30G0.000 | 190            |
|                    | Metal                | Green           | Plastic          | 45-2T07.30H0.000 | 190            |
|                    | Metal                | Blue            | Plastic          | 45-2T07.30J0.000 | 190            |
|                    | Metal                | White           | Plastic          | 45-2T07.30K0.000 | 190            |

## Wiring diagrams



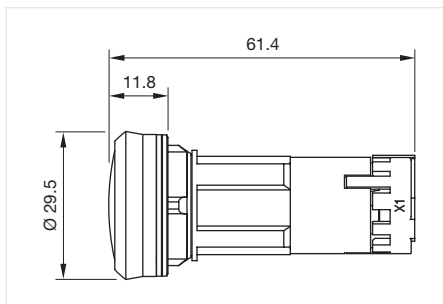
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# 45 Raised design

## Indicator Bi-colour, IP66, IP67, IP69K



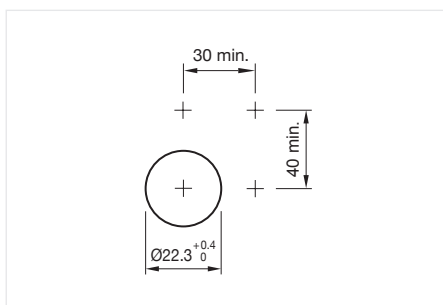
Product can differ from the current configuration.



Dimensions [mm]

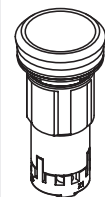
### General information

- Mounting depth, incl. front plate, see chapter drawings

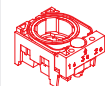


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



Actuator



Holder

Page 66

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

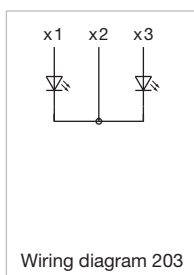
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 29,5 mm

| Operating voltage | Illumination colour | Housing material | Part No.         | Wiring diagram |
|-------------------|---------------------|------------------|------------------|----------------|
| 6 - 24 V AC/DC    | Red / Green         | Plastic          | 45-2G08.10K1.000 | 203            |
| 110 V AC          | Red / Green         | Plastic          | 45-2G08.10K7.000 | 203            |
| 230 V AC          | Red / Green         | Plastic          | 45-2G08.10K8.000 | 203            |
| 6 - 24 V AC/DC    | Red / Green         | Metal            | 45-2G08.20K2.000 | 203            |
| 110 V AC          | Red / Green         | Metal            | 45-2G08.20K7.000 | 203            |
| 230 V AC          | Red / Green         | Metal            | 45-2G08.20K8.000 | 203            |

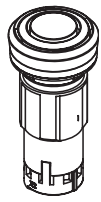
### Wiring diagrams



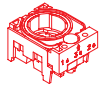


## Buzzer, IP40

Equipment consisting of (schematic overview)



Actuator

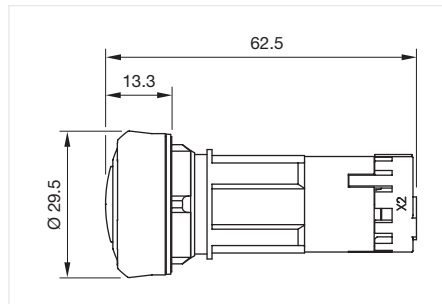


Holder

Page 66

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

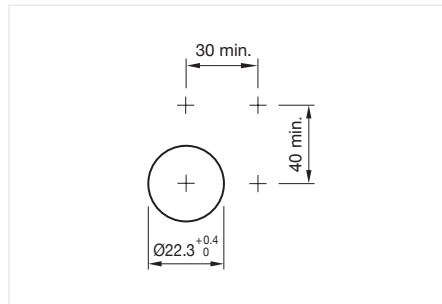
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

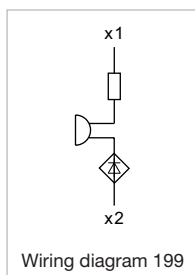
- Mounting depth, incl. front plate, see chapter drawings



Actuator, Front dimension Ø 29,5 mm

| Operating voltage | Housing material | Part No.         | Wiring diagram |
|-------------------|------------------|------------------|----------------|
| 24 V AC/DC        | Plastic          | 45-2H00.1016.000 | 199            |
| 110 V AC          | Plastic          | 45-2H00.1017.000 | 199            |
| 230 V AC          | Plastic          | 45-2H00.1018.000 | 199            |
| 24 V AC/DC        | Metal            | 45-2H00.2016.000 | 199            |
| 110 V AC          | Metal            | 45-2H00.2017.000 | 199            |
| 230 V AC          | Metal            | 45-2H00.2018.000 | 199            |

## Wiring diagrams

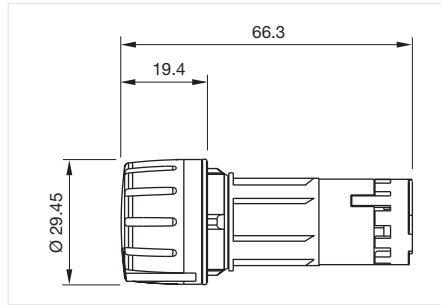


# 45 Raised design

## Potentiometer, IP66, IP67, IP69K



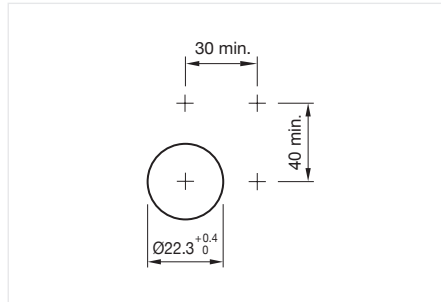
Product can differ from the current configuration.



Dimensions [mm]

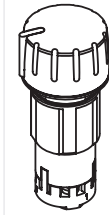
### General information

- Power 0.5 W
- Mounting depth, incl. front plate, see chapter drawings

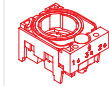


Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



Actuator



Holder

Page 66

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

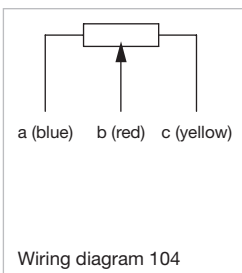
To obtain a complete unit, please select the red components from the pages shown.



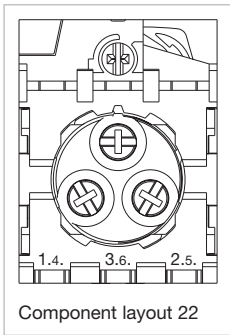
Actuator, Front dimension Ø 30 mm

| Front bezel colour | Front bezel material | Housing material | Resistance | Resistance kind of | Part No.         | Wiring diagram | Component Layout |
|--------------------|----------------------|------------------|------------|--------------------|------------------|----------------|------------------|
| Black              | Plastic              | Plastic          | 100 kΩ     | linear, row_E3     | 45-2P01.1E10.000 | 104            | 22               |
|                    | Plastic              | Plastic          | 10 kΩ      | linear, row_E3     | 45-2P02.1E10.000 | 104            | 22               |
|                    | Plastic              | Plastic          | 1 kΩ       | linear, row_E3     | 45-2P03.1E10.000 | 104            | 22               |
|                    | Plastic              | Plastic          | 4.7 kΩ     | linear, row_E3     | 45-2P04.1E10.000 | 104            | 22               |
|                    | Plastic              | Plastic          | 470 kΩ     | linear, row_E3     | 45-2P05.1E10.000 | 104            | 22               |
|                    | Plastic              | Plastic          | 47 kΩ      | linear, row_E3     | 45-2P06.1E10.000 | 104            | 22               |
| Silver             | Metal                | Metal            | 100 kΩ     | linear, row_E3     | 45-2P01.2E10.000 | 104            | 22               |
|                    | Metal                | Metal            | 10 kΩ      | linear, row_E3     | 45-2P02.2E10.000 | 104            | 22               |
|                    | Metal                | Metal            | 1 kΩ       | linear, row_E3     | 45-2P03.2E10.000 | 104            | 22               |
|                    | Metal                | Metal            | 4.7 kΩ     | linear, row_E3     | 45-2P04.2E10.000 | 104            | 22               |
|                    | Metal                | Metal            | 470 kΩ     | linear, row_E3     | 45-2P05.2E10.000 | 104            | 22               |
|                    | Metal                | Metal            | 47 kΩ      | linear, row_E3     | 45-2P06.2E10.000 | 104            | 22               |

## Wiring diagrams



Component layouts



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User-friendly and robust.  
*EAO Series 45 Potentiometers.*

Ideal for harsh industrial environments – thanks to IP69K protection and the long service life.

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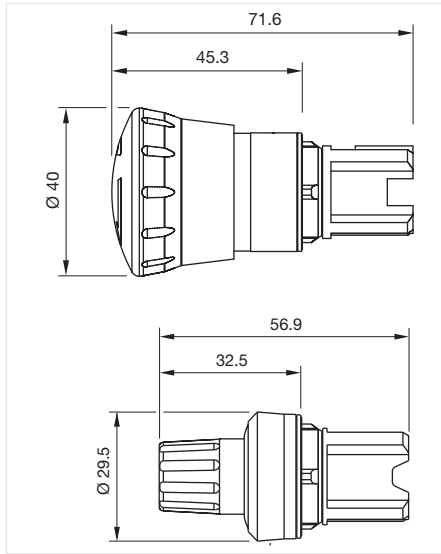
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# 45 Raised design

## Stop switch, IP66, IP67, IP69K

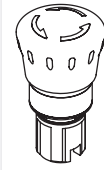


Product can differ from the current configuration.

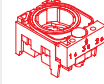


Dimensions [mm]

### Equipment consisting of (schematic overview)

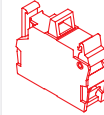


Actuator



Holder

Page 66



Switching element

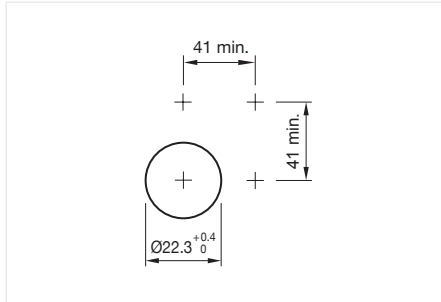
Page 68

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.

### General information

- Mounting depth, incl. front plate, see chapter drawings



Mounting cut-outs [mm]



Actuator

| Product attributes   | Lens colour | Front bezel colour | Front bezel material | Dimensions | Housing material | Part No.         | Wiring diagram |
|--|-------------|--------------------|----------------------|------------|------------------|------------------|----------------|
| Twist to unlock clockwise  | Black       | Black              | Plastic              | Ø 40 mm    | Plastic          | 45-2736.1910.000 | 76             |
|  | Blue        | Black              | Plastic              | Ø 40 mm    | Plastic          | 45-2736.1960.000 | 76             |
|  | Black       | Silver             | Metal                | Ø 40 mm    | Metal            | 45-2C36.2910.000 | 76             |
| Twist to release, can be latched after pressing by rotating to the right | Black       | Black              | Plastic              | Ø 29 mm    | Plastic          | 45-2729.1010.000 | 76             |
|  | Red         | Black              | Plastic              | Ø 29 mm    | Plastic          | 45-2729.1020.000 | 76             |

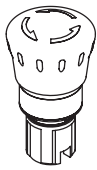
## Wiring diagrams



Wiring diagram 76

## Emergency stop switch foolproof, EN IEC 60947-5-5, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

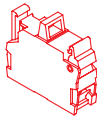


Actuator



Holder

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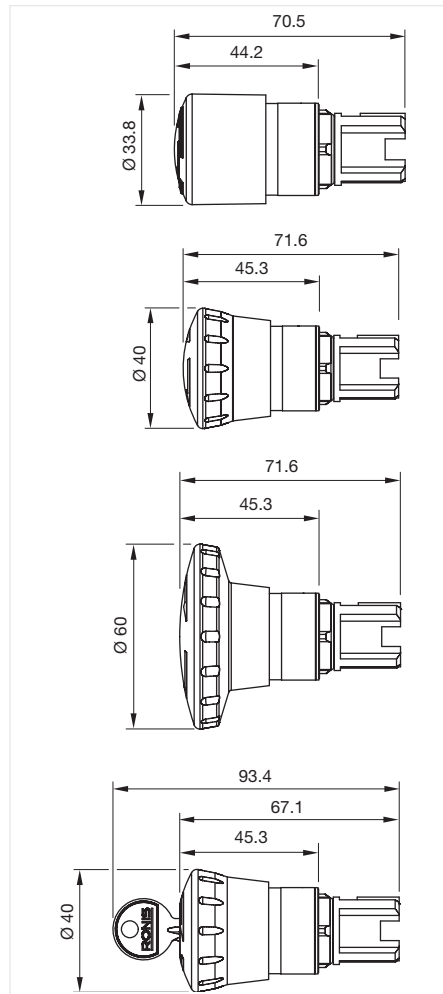


Switching element

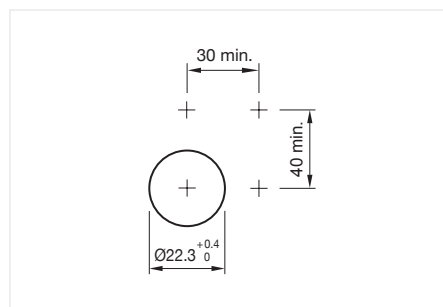
Page 68

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

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



Dimensions [mm]



Mounting cut-outs [mm]



Product can differ from the current configuration.

### General information

- The standard lock: RONIS, T254
- Mounting depth, incl. front plate, see chapter drawings
- Application as per DIN EN ISO 13850




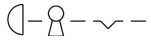
### Actuator

| Product attributes        | Lens colour | Front bezel colour | Front bezel material | Dimensions | Housing colour | Housing material | Part No.         | Wiring diagram |
|---------------------------|-------------|--------------------|----------------------|------------|----------------|------------------|------------------|----------------|
| Key to releas             | Red         | Black              | Plastic              | Ø 40 mm    | Yellow         | Plastic          | 45-2C35.1920.110 | 364            |
|                           | Red         | Silver             | Metal                | Ø 40 mm    | Yellow         | Metal            | 45-2C35.2920.110 | 364            |
| Pull release              | Red         | Black              | Plastic              | Ø 40 mm    | Yellow         | Plastic          | 45-2C37.1920.000 | 76             |
| Twist to unlock clockwise | Red         | Black              | Plastic              | Ø 34 mm    | Yellow         | Plastic          | 45-2C36.1820.000 | 76             |
|                           | Red         | Black              | Plastic              | Ø 40 mm    | Yellow         | Plastic          | 45-2C36.1920.000 | 76             |
|                           | Red         | Black              | Plastic              | Ø 60 mm    | Yellow         | Plastic          | 45-2C36.1A20.000 | 76             |
|                           | Red         | Silver             | Metal                | Ø 34 mm    | Silver         | Metal            | 45-2C36.2820.000 | 76             |

# 45 Raised design

| Product attributes        | Lens colour | Front bezel colour | Front bezel material | Dimensions | Housing colour | Housing material | Part No.         | Wiring diagram |
|---------------------------|-------------|--------------------|----------------------|------------|----------------|------------------|------------------|----------------|
| Twist to unlock clockwise | Red         | Silver             | Metal                | Ø 40 mm    | Silver         | Metal            | 45-2C36.2920.000 | 76             |

## Wiring diagrams

|   |   |
|---|---|
|  |  |
| Wiring diagram 76   | Wiring diagram 364  |



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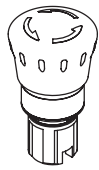
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## Illuminated emergency stop switch, foolproof, EN IEC 60947-5-5, IP66, IP67, IP69K

### Equipment consisting of (schematic overview)

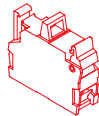


Actuator



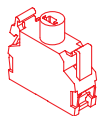
Holder

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Switching element

Page 68

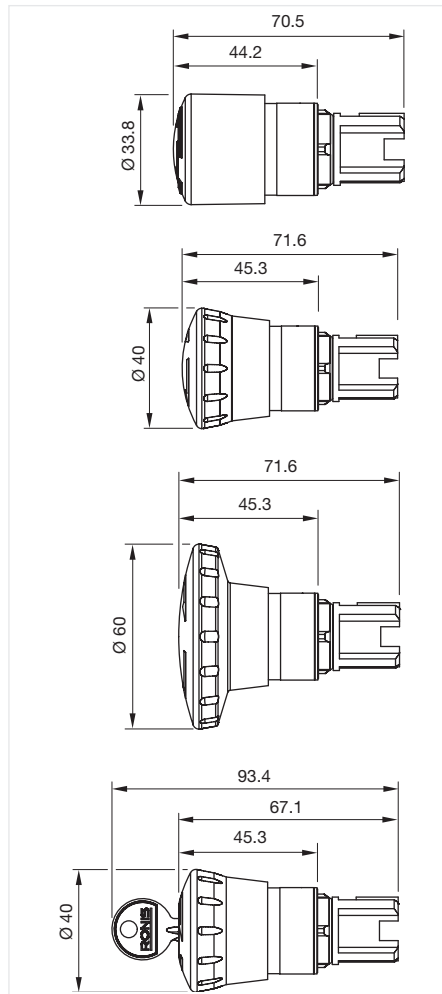


Illumination element

Page 75

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

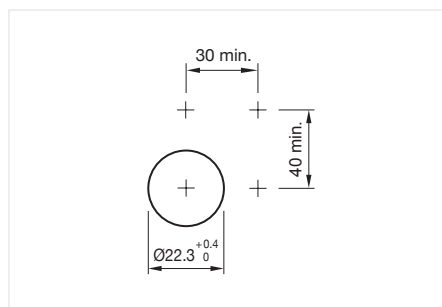
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- The standard lock: RONIS, T254
- Mounting depth, incl. front plate, see chapter drawings
- Application as per DIN EN ISO 13850

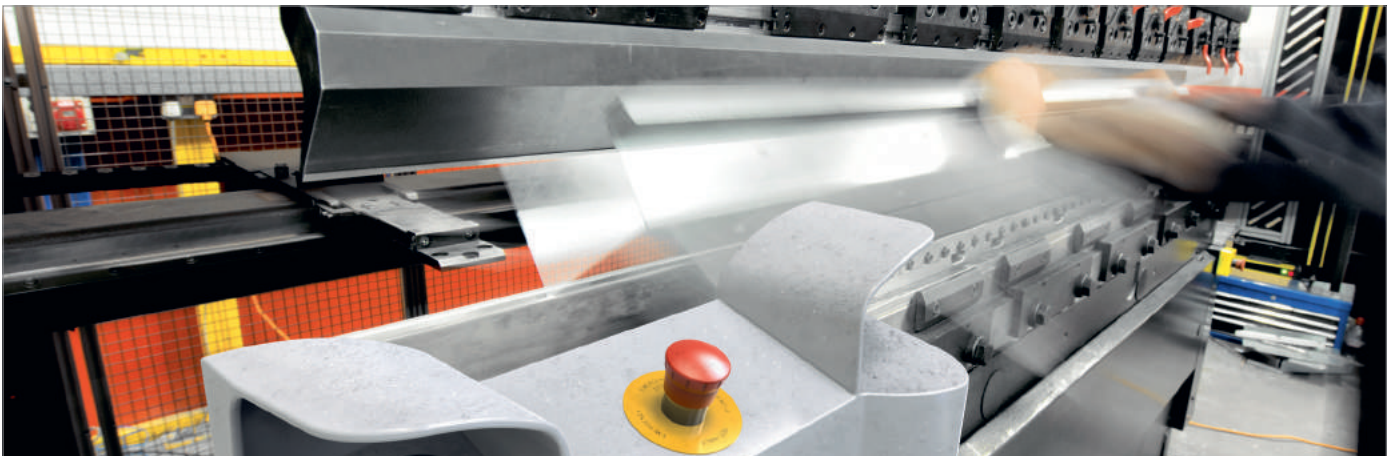
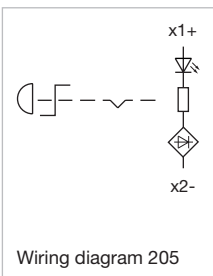


### Actuator

| Product attributes        | Lens colour | Front bezel colour | Front bezel material | Dimensions | Housing colour | Housing material | Part No.         | Wiring diagram |
|---------------------------|-------------|--------------------|----------------------|------------|----------------|------------------|------------------|----------------|
| Twist to unlock clockwise | Red         | Black              | Plastic              | Ø 34 mm    | Yellow         | Plastic          | 45-2D36.1820.000 | 205            |
|                           | Red         | Black              | Plastic              | Ø 40 mm    | Yellow         | Plastic          | 45-2D36.1920.000 | 205            |
|                           | Red         | Black              | Plastic              | Ø 60 mm    | Yellow         | Plastic          | 45-2D36.1A20.000 | 205            |
|                           | Red         | Silver             | Metal                | Ø 34 mm    | Silver         | Metal            | 45-2D36.2820.000 | 205            |
|                           | Red         | Silver             | Metal                | Ø 40 mm    | Silver         | Metal            | 45-2D36.2920.000 | 205            |
|                           | Red         | Silver             | Metal                | Ø 60 mm    | Silver         | Metal            | 45-2D36.2A20.000 | 205            |

# 45 Raised design

## Wiring diagrams



### Rugged and reliable. *EAO Series 45 mushroom-head pushbuttons.*

Reliable switching for harsh industrial environments – thanks to a large operating area and IP69K.

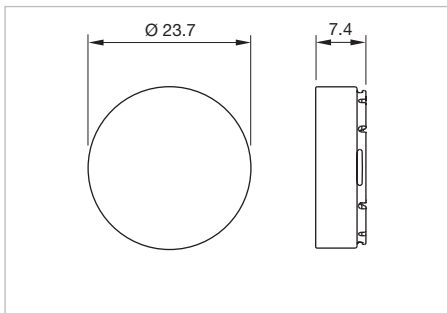
- Large, distinctive operating area
- Easy operation – even with gloves
- Many configuration options
- Optional illumination
- Long service life (up to 10 million switching cycles)
- Rugged in use (IP69K)





## Lens plastic round increased

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No.    |
|---------------|-------------|-------------|------------|-------------------|------------|-------------|
| Plastic       | Black       | opaque      | flush      | non illuminative  | Ø 23.7 mm  | 45-552.0100 |
|               | Red         | opaque      | flush      | non illuminative  | Ø 23.7 mm  | 45-552.0200 |
|               | Yellow      | opaque      | flush      | non illuminative  | Ø 23.7 mm  | 45-552.0400 |
|               | Green       | opaque      | flush      | non illuminative  | Ø 23.7 mm  | 45-552.0500 |
|               | Red         | transparent | flush      | illuminative      | Ø 23.7 mm  | 45-552.0E00 |
|               | Yellow      | transparent | flush      | illuminative      | Ø 23.7 mm  | 45-552.0G00 |
|               | Green       | transparent | flush      | illuminative      | Ø 23.7 mm  | 45-552.0H00 |
|               | Blue        | transparent | flush      | illuminative      | Ø 23.7 mm  | 45-552.0J00 |
|               | Colourless  | transparent | flush      | illuminative      | Ø 23.7 mm  | 45-552.0K00 |

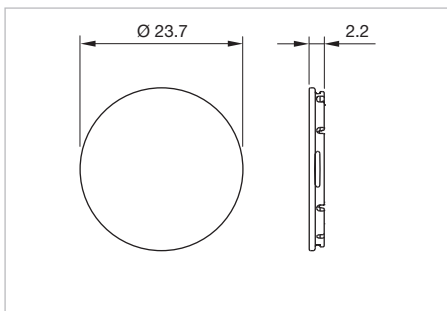


Dimensions [mm]



## Lens plastic round flat

| Lens material | Lens colour | Lens optics | Lens shape  | Lens illumination | Dimensions   | Part No.    |
|---------------|-------------|-------------|-------------|-------------------|--------------|-------------|
| Plastic       | Black       | opaque      | flush       | non illuminative  | Ø 23.7 mm    | 45-553.0100 |
|               | Red         | opaque      | flush       | non illuminative  | Ø 23.7 mm    | 45-553.0200 |
|               | Yellow      | opaque      | flush       | non illuminative  | Ø 23.7 mm    | 45-553.0400 |
|               | Green       | opaque      | flush       | non illuminative  | Ø 23.7 mm    | 45-553.0500 |
|               | Blue        | opaque      | flush       | non illuminative  | Ø 23.7 mm    | 45-553.0600 |
|               | White       | opaque      | flush       | non illuminative  | Ø 23.7 mm    | 45-553.0900 |
|               | Red         | transparent | flush       | illuminative      | Ø 23.7 mm    | 45-553.0E00 |
|               | Amber       | transparent | flush       | illuminative      | Ø 23.7 mm    | 45-553.0F00 |
|               | Yellow      | transparent | flush       | illuminative      | Ø 23.7 mm    | 45-553.0G00 |
|               | Green       | transparent | flush       | illuminative      | Ø 23.7 mm    | 45-553.0H00 |
|               | Blue        | transparent | flush       | illuminative      | Ø 23.7 mm    | 45-553.0J00 |
|               | White       | transparent | flush       | illuminative      | Ø 23.7 mm    | 45-553.0K00 |
|               |             | Colourless  | transparent | flush             | illuminative | Ø 23.7 mm   |



Dimensions [mm]

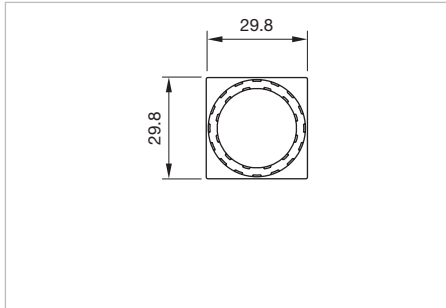
01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 45 Components



Single frame

| Product attributes | Material | Colour | Dimensions        | Part No.    |
|--------------------|----------|--------|-------------------|-------------|
| For design square  | Plastic  | Black  | 29,8 mm x 29,8 mm | 45-558.0000 |

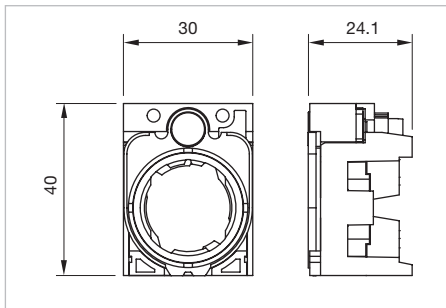


Dimensions [mm]



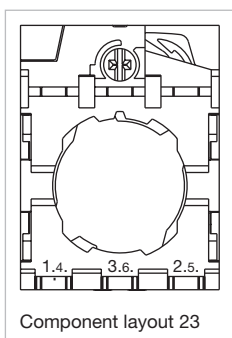
Holder for 3 elements

| Material | Part No.         | Component Layout |
|----------|------------------|------------------|
| Plastic  | 45-2300.1000.000 | 23               |
| Metal    | 45-2300.2000.000 | 23               |



Dimensions [mm]

## Component layouts

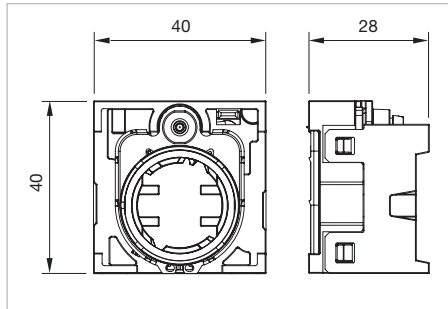


Component layout 23



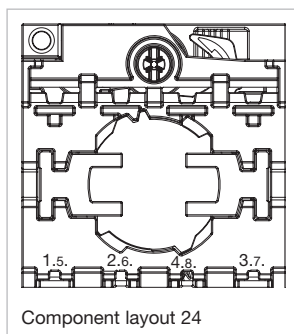
## Holder for 4 elements

| Product attributes                               | Material | Part No.         | Component Layout |
|--|----------|------------------|------------------|
| for selector switch 4 positions and toggle stick | Plastic  | 45-2400.1000.000 | 24               |
|  | Metal    | 45-2400.2000.000 | 24               |



Dimensions [mm]

## Component layouts



Component layout 24

- 01
- 02
- 03
- 04
- 09
- 14
- 17
- 18
- 19
- 22
- 31
- 41
- 45
- 51
- 56
- 57
- 61
- 70
- 71
- 82
- 84
- 92
- 96

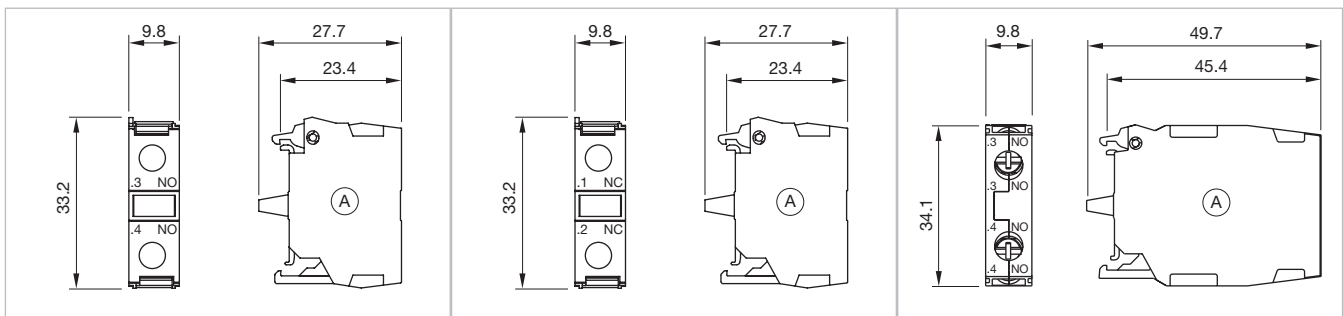
# 45 Components



## Slow-make switching element front mounting with screw terminal

| Switching current | Contacts    | Contact material | Terminal       | Part No.    | Wiring diagram |
|-------------------|-------------|------------------|----------------|-------------|----------------|
| 10 A              | 1 NO        | Silver           | Screw terminal | 45-311.1Z10 | 227            |
|                   | 1 NC        | Silver           | Screw terminal | 45-312.1Z10 | 228            |
|                   | 2 NO        | Silver           | Screw terminal | 45-313.1Z10 | 231            |
|                   | 2 NC        | Silver           | Screw terminal | 45-314.1Z10 | 234            |
|                   | 1 NC / 1 NO | Silver           | Screw terminal | 45-315.1Z10 | 235            |
|                   | 1 NO        | Gold             | Screw terminal | 45-311.1X10 | 227            |
|                   | 1 NC        | Gold             | Screw terminal | 45-312.1X10 | 228            |
|                   | 1 NC / 1 FS | Gold             | Screw terminal | 45-316.1X10 | 233            |

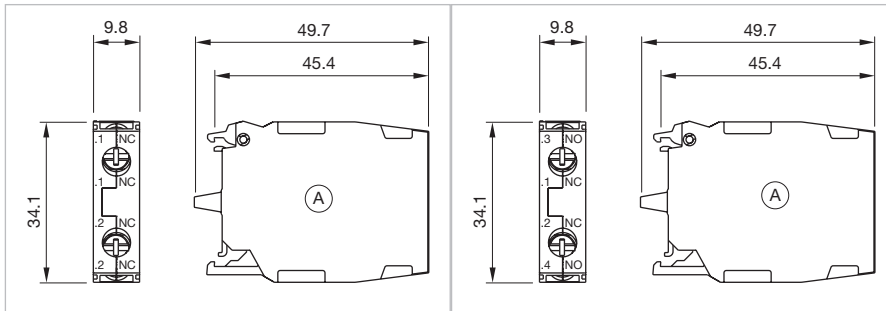
Contacts: NC = Normally closed, NO = Normally open



Dimensions [mm]  
A = Screw terminal  
for Part No. 45-311.1Z10, 45-311.1X10

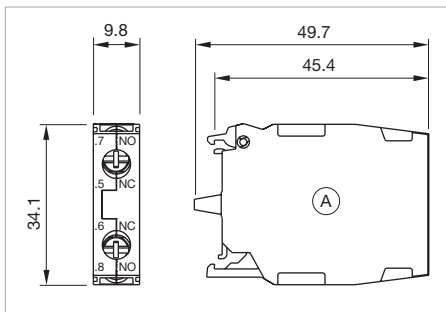
Dimensions [mm]  
A = Screw terminal  
for Part No. 45-312.1Z10, 45-312.1X10

Dimensions [mm]  
A = Screw terminal  
for Part No. 45-313.1Z10




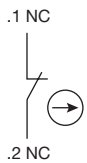
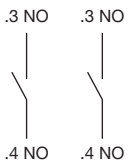
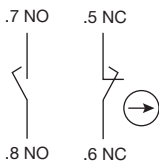
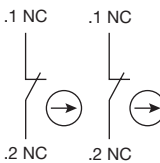
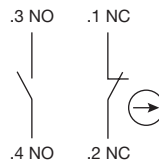
Dimensions [mm]  
A = Screw terminal  
for Part No. 45-314.1Z10

Dimensions [mm]  
A = Screw terminal  
for Part No. 45-315.1Z10



Dimensions [mm]  
A = Screw terminal  
for Part No. 45-316.1X10

## Wiring diagrams

|  |  |  |  |   |  |
|--|--|--|--|---|--|
|  <p>.3 NO<br/>.4 NO</p> |  <p>.1 NC<br/>.2 NC</p> |  <p>.3 NO .3 NO<br/>.4 NO .4 NO</p> |  <p>.7 NO .5 NC<br/>.8 NO .6 NC</p> |  <p>.1 NC .1 NC<br/>.2 NC .2 NC</p> |  <p>.3 NO .1 NC<br/>.4 NO .2 NC</p> |
| Wiring diagram 227   | Wiring diagram 228   | Wiring diagram 231   | Wiring diagram 233   | Wiring diagram 234  | Wiring diagram 235   |



### Innovative and comprehensive. *EAO's new Series 45.*

**Modular, aesthetic and robust for every conceivable HMI function of machine operating.**

- Comprehensive and modular Series
- Rugged in use (up to IP69K)
- Easy to assemble and use
- Modern design with many options
- Value added services
- Long service life (up to 10 million switching cycles, depending on function)

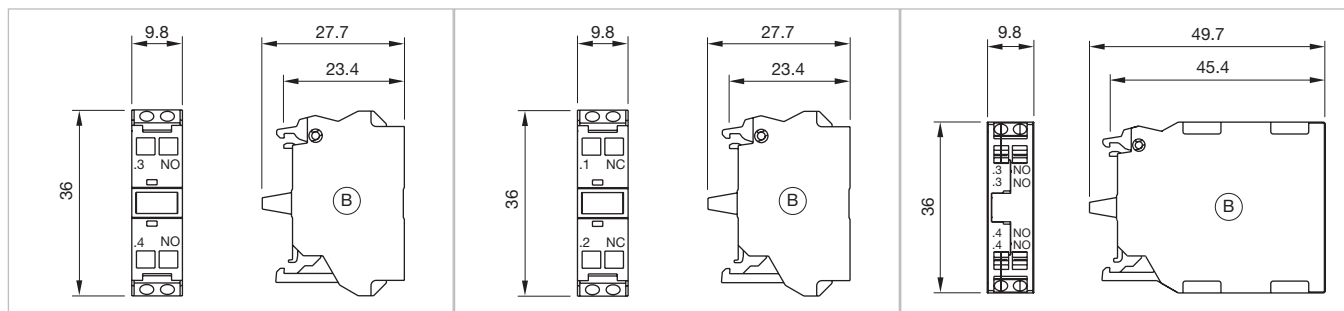
# 45 Components



## Slow-make switching element front mounting with spring-type terminal

| Switching current | Contacts    | Contact material | Terminal             | Part No.    | Wiring diagram |
|-------------------|-------------|------------------|----------------------|-------------|----------------|
| 10 A              | 1 NO        | Silver           | Spring-type terminal | 45-311.1Z40 | 227            |
|                   | 1 NC        | Silver           | Spring-type terminal | 45-312.1Z40 | 228            |
|                   | 2 NO        | Silver           | Spring-type terminal | 45-313.1Z40 | 231            |
|                   | 2 NC        | Silver           | Spring-type terminal | 45-314.1Z40 | 234            |
|                   | 1 NC / 1 NO | Silver           | Spring-type terminal | 45-315.1Z40 | 235            |
|                   | 1 NC / 1 FS | Silver           | Spring-type terminal | 45-316.1Z40 | 233            |
|                   | 1 NC        | Silver           | Spring-type terminal | 45-317.1Z40 | 232            |
|                   | 1 NO        | Gold             | Spring-type terminal | 45-311.1X40 | 227            |
|                   | 1 NC        | Gold             | Spring-type terminal | 45-312.1X40 | 228            |
|                   | 2 NO        | Gold             | Spring-type terminal | 45-313.1X40 | 231            |
|                   | 2 NC        | Gold             | Spring-type terminal | 45-314.1X40 | 234            |
|                   | 1 NC / 1 NO | Gold             | Spring-type terminal | 45-315.1X40 | 235            |
|                   | 1 NC / 1 FS | Gold             | Spring-type terminal | 45-316.1X40 | 233            |

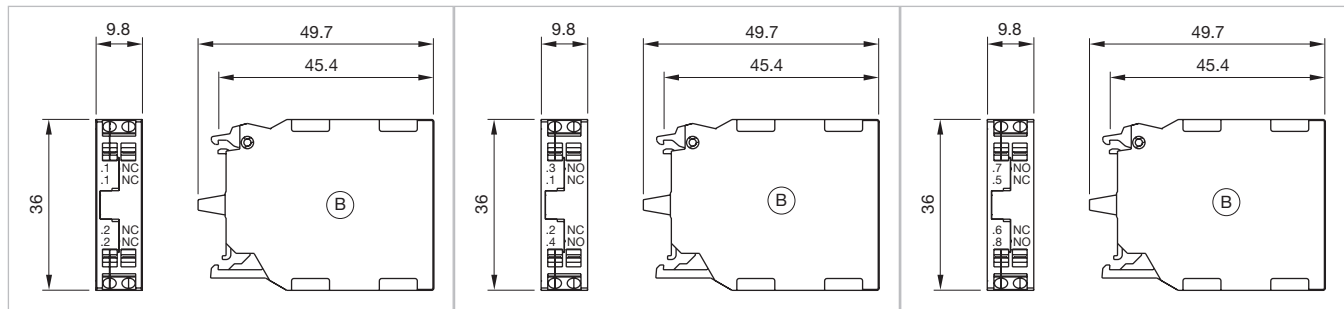
Contacts: NC = Normally closed, NO = Normally open



Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-311.1Z40, 45-311.1X40

Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-312.1Z40, 45-312.1X40

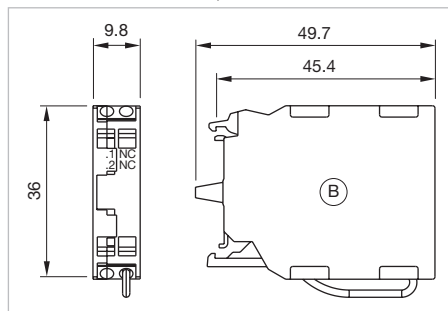
Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-313.1Z40, 45-313.1X40



Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-314.1Z40, 45-314.1X40

Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-315.1Z40, 45-315.1X40

Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-316.1Z40, 45-316.1X40



Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-317.1Z40

## Wiring diagrams

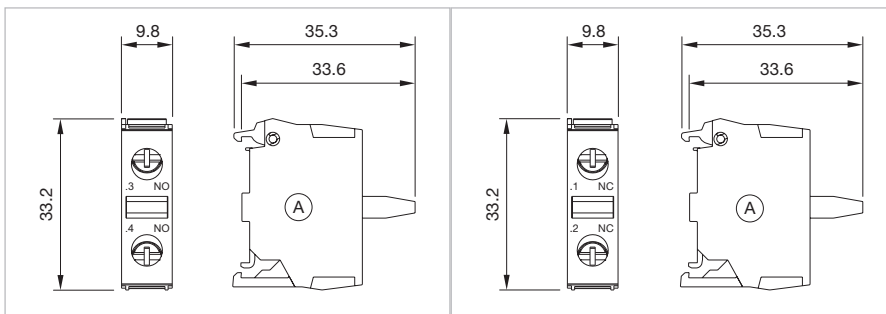
|                           |                           |                           |                           |                           |                           |                           |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|
| <p>Wiring diagram 227</p> | <p>Wiring diagram 228</p> | <p>Wiring diagram 231</p> | <p>Wiring diagram 232</p> | <p>Wiring diagram 233</p> | <p>Wiring diagram 234</p> | <p>Wiring diagram 235</p> |
|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|---------------------------|



### Slow-make switching element base mounting with screw terminal

| Switching current | Contacts | Contact material | Terminal       | Part No.    | Wiring diagram |
|-------------------|----------|------------------|----------------|-------------|----------------|
| 10 A              | 1 NO     | Silver           | Screw terminal | 45-311.2Z10 | 227            |
|                   | 1 NC     | Silver           | Screw terminal | 45-312.2Z10 | 228            |

Contacts: NC = Normally closed, NO = Normally open



Dimensions [mm]  
A = Screw terminal  
for Part No. 45-311.2Z10

Dimensions [mm]  
A = Screw terminal  
for Part No. 45-312.2Z10

## Wiring diagrams

|                           |                           |
|---------------------------|---------------------------|
| <p>Wiring diagram 227</p> | <p>Wiring diagram 228</p> |
|---------------------------|---------------------------|

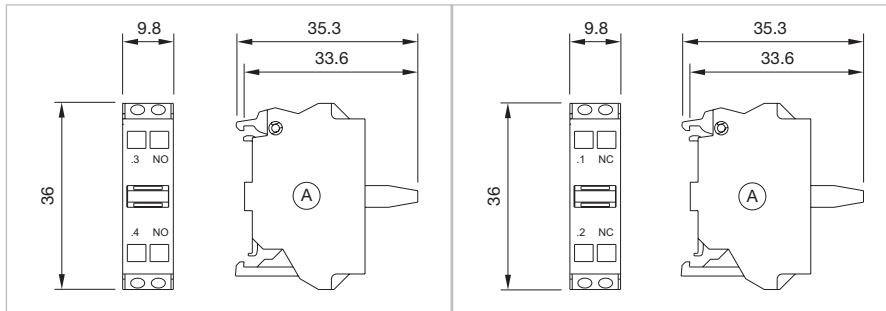
# 45 Components



## Slow-make switching element base mounting with spring-type terminal

| Switching current | Contacts | Contact material | Terminal             | Part No.    | Wiring diagram |
|-------------------|----------|------------------|----------------------|-------------|----------------|
| 10 A              | 1 NO     | Silver           | Spring-type terminal | 45-311.2Z40 | 227            |
|                   | 1 NC     | Silver           | Spring-type terminal | 45-312.2Z40 | 228            |

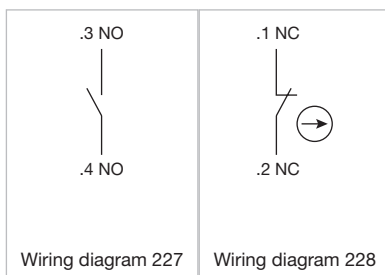
Contacts: NC = Normally closed, NO = Normally open



Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-311.2Z40

Dimensions [mm]  
B = Spring-type terminal  
for Part No. 45-312.2Z40

### Wiring diagrams



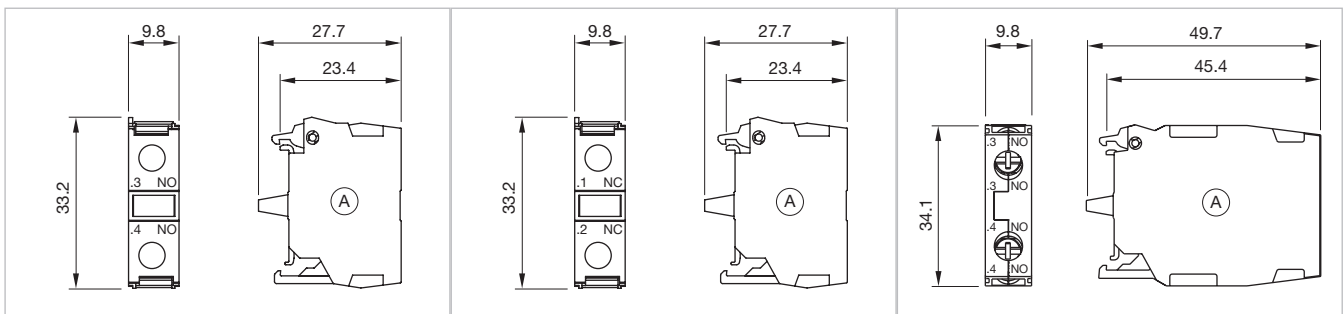




## Slow-make switching element front mounting with screw terminal

| Switching current | Contacts    | Contact material | Terminal       | Part No.    | Wiring diagram |
|-------------------|-------------|------------------|----------------|-------------|----------------|
| 10 A              | 1 NO        | Silver           | Screw terminal | 45-311.1Z10 | 227            |
|                   | 1 NC        | Silver           | Screw terminal | 45-312.1Z10 | 228            |
|                   | 2 NO        | Silver           | Screw terminal | 45-313.1Z10 | 231            |
|                   | 2 NC        | Silver           | Screw terminal | 45-314.1Z10 | 234            |
|                   | 1 NC / 1 NO | Silver           | Screw terminal | 45-315.1Z10 | 235            |
|                   | 1 NO        | Gold             | Screw terminal | 45-311.1X10 | 227            |
|                   | 1 NC        | Gold             | Screw terminal | 45-312.1X10 | 228            |
|                   | 1 NC / 1 FS | Gold             | Screw terminal | 45-316.1X10 | 233            |

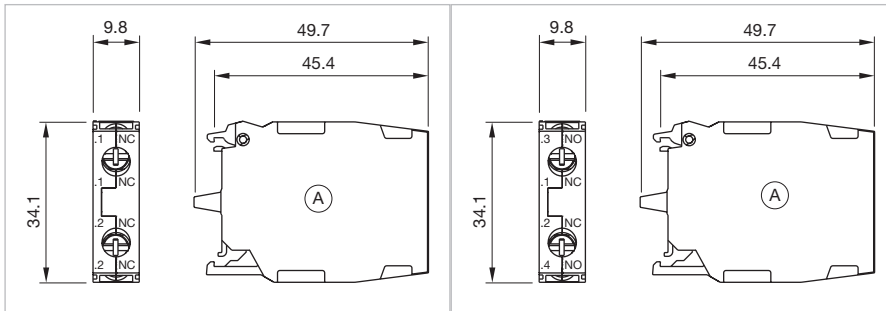
Contacts: NC = Normally closed, NO = Normally open



Dimensions [mm]  
A = Screw terminal  
for Part No. 45-311.1Z10, 45-311.1X10

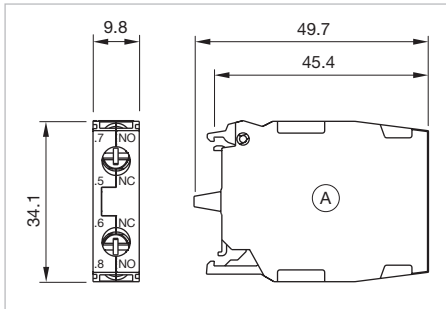
Dimensions [mm]  
A = Screw terminal  
for Part No. 45-312.1Z10, 45-312.1X10

Dimensions [mm]  
A = Screw terminal  
for Part No. 45-313.1Z10



Dimensions [mm]  
A = Screw terminal  
for Part No. 45-314.1Z10


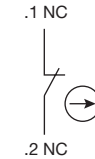
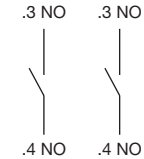
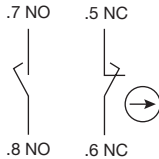
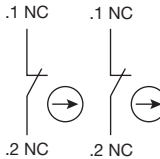
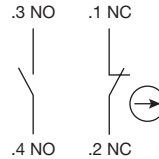
Dimensions [mm]  
A = Screw terminal  
for Part No. 45-315.1Z10



Dimensions [mm]  
A = Screw terminal  
for Part No. 45-316.1X10

# 45 Components

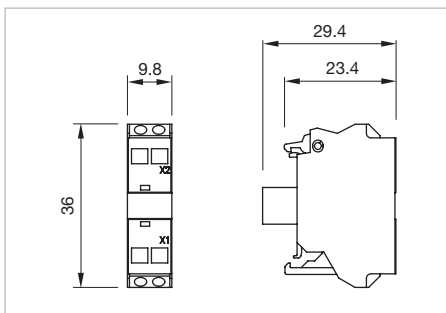
## Wiring diagrams

|   |   |   |   |  |   |
|---|---|---|---|--|---|
|  |  |  |  |  |  |
| Wiring diagram 227  | Wiring diagram 228  | Wiring diagram 231  | Wiring diagram 233  | Wiring diagram 234   | Wiring diagram 235  |



## Illumination element front mounting with spring-type terminal

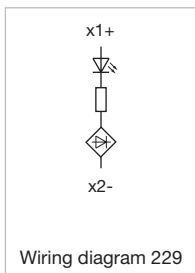
| Operating voltage | Illuminative colour | Part No.    | Wiring diagram |
|-------------------|---------------------|-------------|----------------|
| 6 - 24 V AC/DC    | Red                 | 45-320.1E41 | 229            |
|                   | Amber               | 45-320.1F41 | 229            |
|                   | Yellow              | 45-320.1G41 | 229            |
|                   | Green               | 45-320.1H41 | 229            |
|                   | Blue                | 45-320.1J41 | 229            |
|                   | White               | 45-320.1N41 | 229            |
| 24 - 240 V AC/DC  | Red                 | 45-320.1E42 | 229            |
|                   | Amber               | 45-320.1F42 | 229            |
|                   | Yellow              | 45-320.1G42 | 229            |
|                   | Green               | 45-320.1H42 | 229            |
|                   | Blue                | 45-320.1J42 | 229            |
|                   | White               | 45-320.1N42 | 229            |
| 24 V AC/DC        | Red                 | 45-320.1E46 | 229            |
|                   | Amber               | 45-320.1F46 | 229            |
|                   | Yellow              | 45-320.1G46 | 229            |
|                   | Green               | 45-320.1H46 | 229            |
|                   | Blue                | 45-320.1J46 | 229            |
|                   | White               | 45-320.1N46 | 229            |
| 110 V AC/DC       | Red                 | 45-320.1E47 | 229            |
|                   | Amber               | 45-320.1F47 | 229            |
|                   | Yellow              | 45-320.1G47 | 229            |
|                   | Green               | 45-320.1H47 | 229            |
|                   | Blue                | 45-320.1J47 | 229            |
|                   | White               | 45-320.1N47 | 229            |
| 230 V AC/DC       | Red                 | 45-320.1E48 | 229            |
|                   | Amber               | 45-320.1F48 | 229            |
|                   | Yellow              | 45-320.1G48 | 229            |
|                   | Green               | 45-320.1H48 | 229            |
|                   | Blue                | 45-320.1J48 | 229            |
|                   | White               | 45-320.1N48 | 229            |



Dimensions [mm]

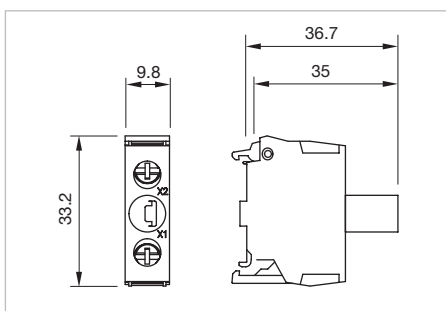
# 45 Components

## Wiring diagrams



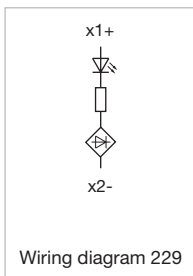
Illumination element base mounting with screw terminal

| Operating voltage | Illuminative colour | Part No.    | Wiring diagram |
|-------------------|---------------------|-------------|----------------|
| 6 - 24 V AC/DC    | Red                 | 45-320.2E11 | 229            |
|                   | Amber               | 45-320.2F11 | 229            |
|                   | Yellow              | 45-320.2G11 | 229            |
|                   | Green               | 45-320.2H11 | 229            |
|                   | Blue                | 45-320.2J11 | 229            |
|                   | White               | 45-320.2N11 | 229            |
| 24 - 240 V AC/DC  | Red                 | 45-320.2E12 | 229            |
|                   | Amber               | 45-320.2F12 | 229            |
|                   | Yellow              | 45-320.2G12 | 229            |
|                   | Green               | 45-320.2H12 | 229            |
|                   | Blue                | 45-320.2J12 | 229            |
|                   | White               | 45-320.2N12 | 229            |
| 24 V AC/DC        | Red                 | 45-320.2E16 | 229            |
|                   | Amber               | 45-320.2F16 | 229            |
|                   | Yellow              | 45-320.2G16 | 229            |
|                   | Green               | 45-320.2H16 | 229            |
|                   | Blue                | 45-320.2J16 | 229            |
|                   | White               | 45-320.2N16 | 229            |
| 110 V AC/DC       | Red                 | 45-320.2E17 | 229            |
|                   | Amber               | 45-320.2F17 | 229            |
|                   | Yellow              | 45-320.2G17 | 229            |
|                   | Green               | 45-320.2H17 | 229            |
|                   | Blue                | 45-320.2J17 | 229            |
|                   | White               | 45-320.2N17 | 229            |
| 230 V AC/DC       | Red                 | 45-320.2E18 | 229            |
|                   | Amber               | 45-320.2F18 | 229            |
|                   | Yellow              | 45-320.2G18 | 229            |
|                   | Green               | 45-320.2H18 | 229            |
|                   | Blue                | 45-320.2J18 | 229            |
|                   | White               | 45-320.2N18 | 229            |



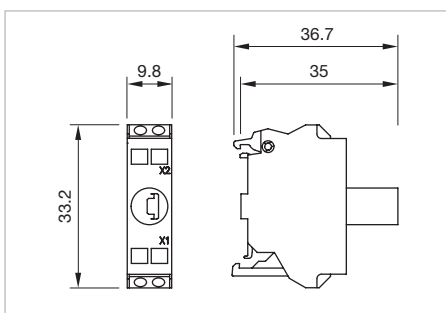
Dimensions [mm]

## Wiring diagrams



### Illumination element base mounting with spring-type terminal

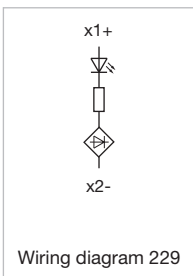
| Operating voltage | Illuminative colour | Part No.    | Wiring diagram |
|-------------------|---------------------|-------------|----------------|
| 6 - 24 V AC/DC    | Red                 | 45-320.2E41 | 229            |
|                   | Amber               | 45-320.2F41 | 229            |
|                   | Yellow              | 45-320.2G41 | 229            |
|                   | Green               | 45-320.2H41 | 229            |
|                   | Blue                | 45-320.2J41 | 229            |
|                   | White               | 45-320.2N41 | 229            |
| 24 - 240 V AC/DC  | Red                 | 45-320.2E42 | 229            |
|                   | Amber               | 45-320.2F42 | 229            |
|                   | Yellow              | 45-320.2G42 | 229            |
|                   | Green               | 45-320.2H42 | 229            |
|                   | Blue                | 45-320.2J42 | 229            |
|                   | White               | 45-320.2N42 | 229            |
| 24 V AC/DC        | Red                 | 45-320.2E46 | 229            |
|                   | Amber               | 45-320.2F46 | 229            |
|                   | Yellow              | 45-320.2G46 | 229            |
|                   | Green               | 45-320.2H46 | 229            |
|                   | Blue                | 45-320.2J46 | 229            |
|                   | White               | 45-320.2N46 | 229            |
| 110 V AC/DC       | Red                 | 45-320.2E47 | 229            |
|                   | Amber               | 45-320.2F47 | 229            |
|                   | Yellow              | 45-320.2G47 | 229            |
|                   | Green               | 45-320.2H47 | 229            |
|                   | Blue                | 45-320.2J47 | 229            |
|                   | White               | 45-320.2N47 | 229            |
| 230 V AC/DC       | Red                 | 45-320.2E48 | 229            |
|                   | Amber               | 45-320.2F48 | 229            |
|                   | Yellow              | 45-320.2G48 | 229            |
|                   | Green               | 45-320.2H48 | 229            |
|                   | Blue                | 45-320.2J48 | 229            |
|                   | White               | 45-320.2N48 | 229            |



Dimensions [mm]

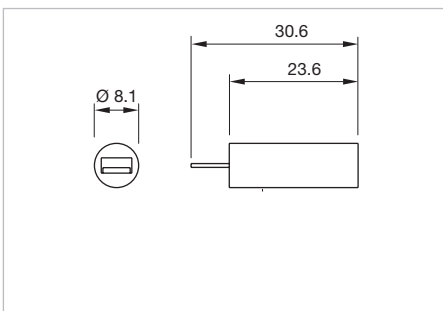
# 45 Components

## Wiring diagrams



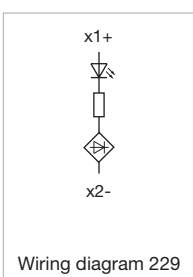
### Illumination element PCB mounting

| Operating voltage | Illuminative colour | Part No.    | Wiring diagram |
|-------------------|---------------------|-------------|----------------|
| 5 V AC/DC         | Red                 | 45-320.3E60 | 229            |
|                   | Amber               | 45-320.3F60 | 229            |
|                   | Yellow              | 45-320.3G60 | 229            |
|                   | Green               | 45-320.3H60 | 229            |
|                   | Blue                | 45-320.3J60 | 229            |
|                   | White               | 45-320.3N60 | 229            |



Dimensions [mm]

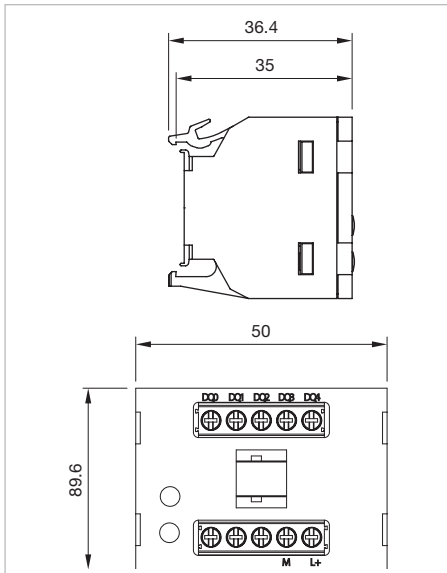
## Wiring diagrams





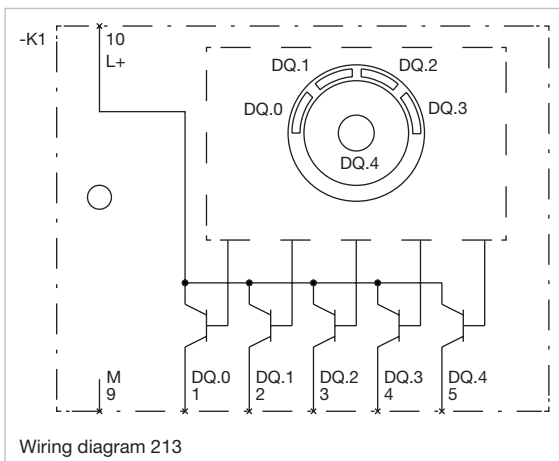
## Electronic module

| Product attributes | Operating voltage | Terminal       | Part No.    | Wiring diagram | Component Layout |
|--------------------|-------------------|----------------|-------------|----------------|------------------|
| Front mounting     | 24 V DC           | Screw terminal | 45-36F.1114 | 213            | 26               |



Dimensions [mm]

## Wiring diagrams

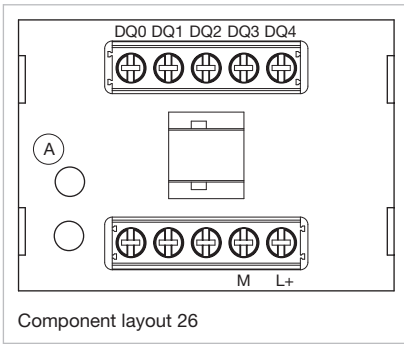


Wiring diagram 213

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# 45 Components

## Component layouts



A = Device



ID-Key

| Product attributes                      | Colour | Part No.    |
|---|--------|-------------|
| Design of the RFID coding: Step 1       | Green  | 45-50T.0500 |
| Design of the RFID coding: Step 1+2     | Yellow | 45-50V.0400 |
| Design of the RFID coding: Step 1+2+3   | Red    | 45-50W.0200 |
| Design of the RFID coding: Step 1+2+3+4 | Blue   | 45-574.0600 |

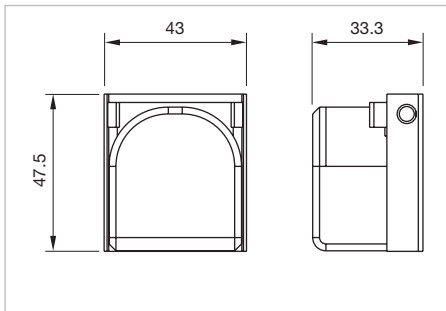


Front side



Cover for locking device


| Product attributes   | Material        | Colour     | Optics      | IP Protection     | Part No.    |
|--|-----------------|------------|-------------|-------------------|-------------|
| For pushbuttons, selector switches with round or short lever | Metal / plastic | Colourless | transparent | IP66, IP67, IP69K | 45-529.2100 |





Dimensions [mm]

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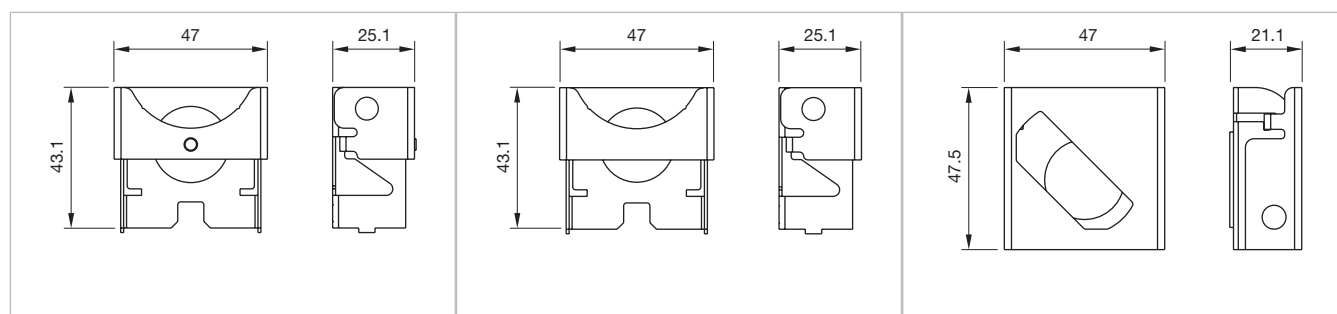
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# 45 Accessories



## Locking device

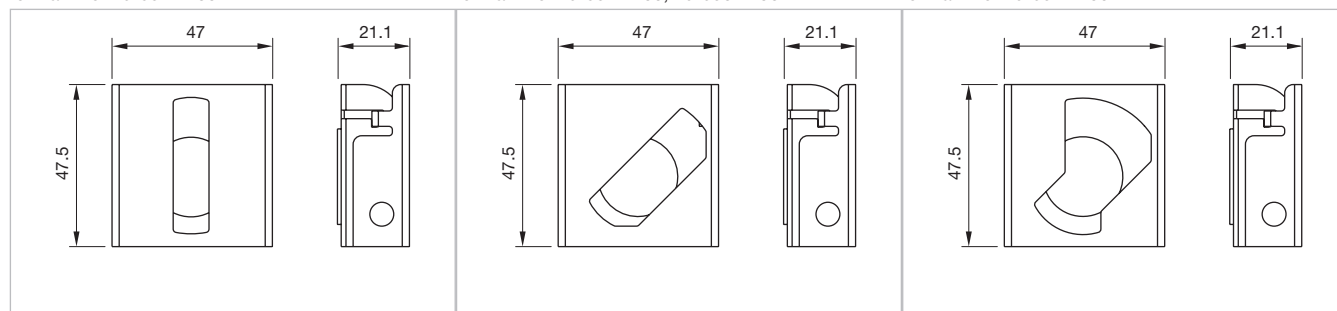
| Product attributes                               | Dimensions                | Material | Colour | Part No.    |
|--|---------------------------|----------|--------|-------------|
| For pushbutton with lens raised                  | 47 mm x 25.1 mm x 43.1 mm | Metal    | Silver | 45-531.2100 |
| For pushbutton with lens flat                    | 47 mm x 25.1 mm x 43.1 mm | Metal    | Silver | 45-532.2100 |
| For mushroom-head pushbutton Ø 30 mm or Ø 40 mm  | 47 mm x 25.1 mm x 43.1 mm | Metal    | Silver | 45-530.2100 |
| For selector switch in position left             | 47 mm x 21.1 mm x 47.1 mm | Metal    | Silver | 45-534.2100 |
| For selector switch in position center           | 47 mm x 21.1 mm x 47.1 mm | Metal    | Silver | 45-533.2100 |
| For selector switch in position right            | 47 mm x 21.1 mm x 47.1 mm | Metal    | Silver | 45-536.2100 |
| For selector switch in position center and right | 47 mm x 21.1 mm x 47.1 mm | Metal    | Silver | 45-535.2100 |
| For selector switch in position center and left  | 47 mm x 21.1 mm x 47.1 mm | Metal    | Silver | 45-537.2100 |



Dimensions [mm]  
for Part No. 45-531.2100

Dimensions [mm]  
for Part No. 45-532.2100, 45-530.2100

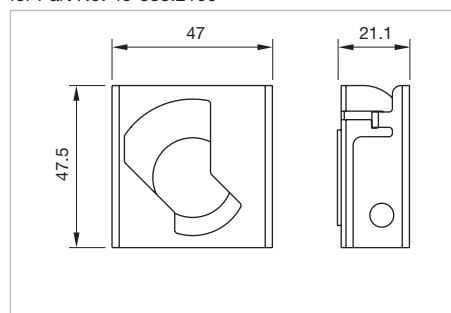
Dimensions [mm]  
for Part No. 45-534.2100



Dimensions [mm]  
for Part No. 45-533.2100

Dimensions [mm]  
for Part No. 45-536.2100

Dimensions [mm]  
for Part No. 45-535.2100

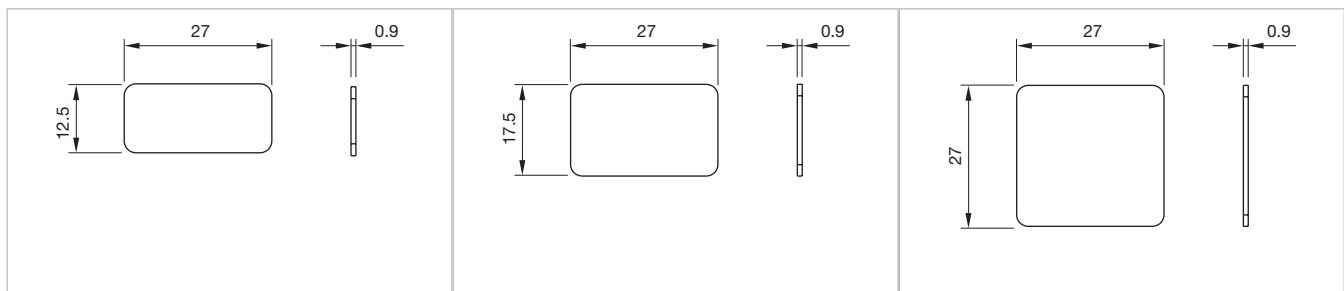


Dimensions [mm]  
for Part No. 45-537.2100



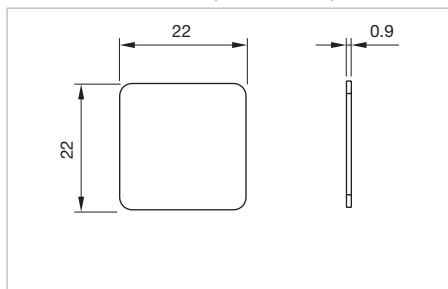
## Legend plate

| Product attributes                    | Dimensions      | Material | Colour | Mounting type | Part No.    |
|---------------------------------------|-----------------|----------|--------|---------------|-------------|
| Not to use with emergency stop switch | 27 mm x 12.5 mm | Plastic  | Black  | adhesive      | 45-573.1102 |
|                                       | 27 mm x 12.5 mm | Plastic  | Red    | adhesive      | 45-573.1202 |
|                                       | 27 mm x 12.5 mm | Plastic  | Silver | adhesive      | 45-573.1A02 |
|                                       | 27 mm x 17.5 mm | Plastic  | Black  | adhesive      | 45-573.1103 |
|                                       | 27 mm x 17.5 mm | Plastic  | Silver | adhesive      | 45-573.1A03 |
|                                       | 27 mm x 27 mm   | Plastic  | Black  | adhesive      | 45-573.1105 |
|                                       | 27 mm x 27 mm   | Plastic  | Silver | adhesive      | 45-573.1A05 |
|                                       | 22 mm x 22 mm   | Plastic  | Silver | adhesive      | 45-573.1A04 |
|                                       | 22 mm x 22 mm   | Plastic  | Black  | adhesive      | 45-573.1104 |



Dimensions [mm]  
for Part No. 45-573.1102, 45-573.1202, 45-573.1A02 for Part No. 45-573.1103, 45-573.1A03

Dimensions [mm]  
for Part No. 45-573.1105, 45-573.1A05



Dimensions [mm]  
for Part No. 45-573.1A04, 45-573.1104



## Emergency stop legend

| Dimensions     | Material | Colour | Mounting type | Marking                                      | Part No.    |
|----------------|----------|--------|---------------|--|-------------|
| Ø 45 mm        | Plastic  | Yellow |               | without marking                              | 45-50K.1407 |
| Ø 75 mm        | Plastic  | Yellow |               | without marking                              | 45-50K.1408 |
|                | Plastic  | Yellow | adhesive      | without marking                              | 45-50J.1400 |
|                | Plastic  | Yellow | adhesive      | NOT - HALT                                   | 45-50J.140Q |
|                | Plastic  | Yellow | adhesive      | EMERGENCY STOP                               | 45-50J.140S |
|                | Plastic  | Yellow | adhesive      | NOT - AUS                                    | 45-50J.140P |
|                | Plastic  | Yellow | adhesive      | ARRET D'URGENCE                              | 45-50J.140T |
|                | Plastic  | Yellow | adhesive      | EMERGENZA                                    | 45-50J.140V |
|                | Plastic  | Yellow | adhesive      | NODSTOP                                      | 45-50J.140W |
|                | Plastic  | Yellow | adhesive      | 紧急停止   | 45-50J.140X |
|                | Plastic  | Yellow | adhesive      | NOT-HALT EMERGENCY STOP EMERGENZA EMERGENCIA | 45-50J.140Z |
| 150 mm x 38 mm | Plastic  | Yellow | adhesive      | without marking                              | 45-561.1400 |
|                | Plastic  | Yellow | adhesive      | NOT - AUS                                    | 45-561.140P |
|                | Plastic  | Yellow | adhesive      | without marking, with recess                 | 45-562.1400 |

### Additional information

- Front panel thickness 3 mm max.

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# 45 Accessories



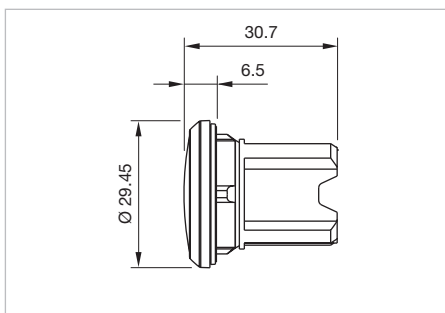
Legend plate for potentiometer

| Dimensions | Material | Colour | Part No.    |
|------------|----------|--------|-------------|
| Ø 40 mm    | Plastic  | Black  | 45-538.1100 |



Blind plug

| Material | Colour    | Part No.    |
|----------|-----------|-------------|
| Plastic  | Black     | 45-506.1100 |
| Metal    | Sand grey | 45-506.3A00 |
|          | Silver    | 45-506.2A00 |



Dimensions [mm]

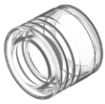


Spare key

| Product attributes | Part No.    |
|--------------------|-------------|
| 2 spare keys       | 45-522.0900 |

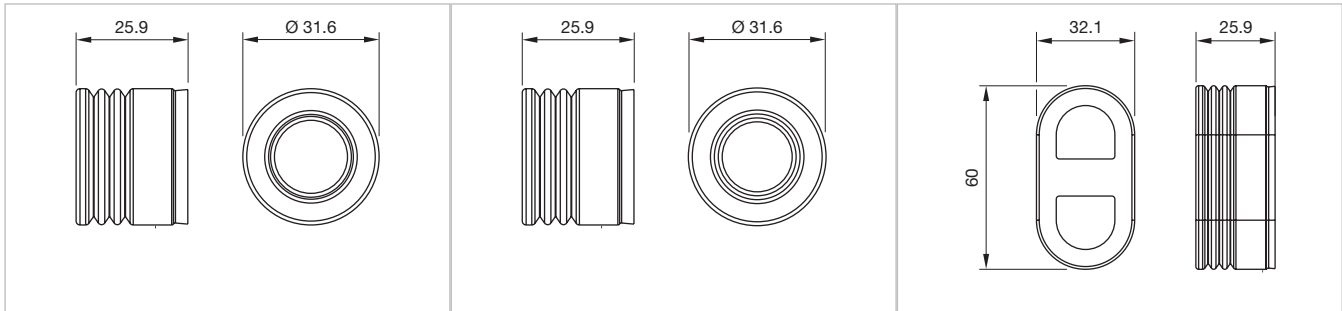
**Additional information**

- For standard lock RONIS T254



## Protective cap

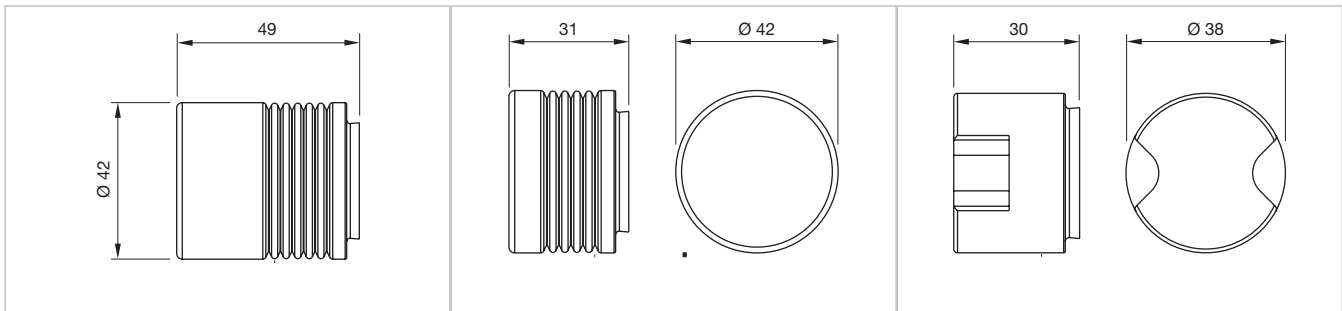
| Product attributes                   | Material | Colour     | Optics      | Part No.    |
|--------------------------------------|----------|------------|-------------|-------------|
| For lens raised above bezel          | Silicone | Colourless | transparent | 45-544.1K00 |
| For lens flush                       | Silicone | Colourless | transparent | 45-545.1K00 |
| For lens raised above bezel          | Silicone | Colourless | transparent | 45-547.1K00 |
| For lens flush                       | Silicone | Colourless | transparent | 45-548.1K00 |
| For lens raised above bezel          | Silicone | Colourless | transparent | 45-542.1K00 |
| For Mushroom-head pushbutton Ø 40 mm | Silicone | Colourless | transparent | 45-543.1K00 |
| For lever switch, short lever        | Silicone | Colourless | transparent | 45-546.1K00 |
| For keylock switch                   | Silicone | Colourless | transparent | 45-50F.1100 |



Dimensions [mm]  
for Part No. 45-544.1K00

Dimensions [mm]  
for Part No. 45-545.1K00

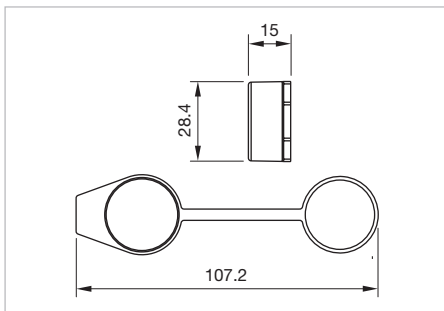
Dimensions [mm]  
for Part No. 45-547.1K00, 45-548.1K00



Dimensions [mm]  
for Part No. 45-542.1K00

Dimensions [mm]  
for Part No. 45-543.1K00

Dimensions [mm]  
for Part No. 45-546.1K00



Dimensions [mm]  
for Part No. 45-50F.1100

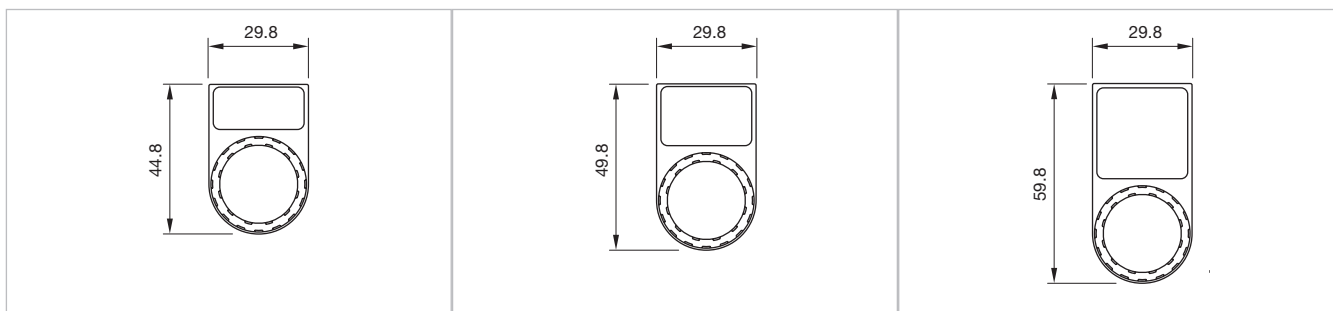
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# 45 Accessories



Legend support without legend

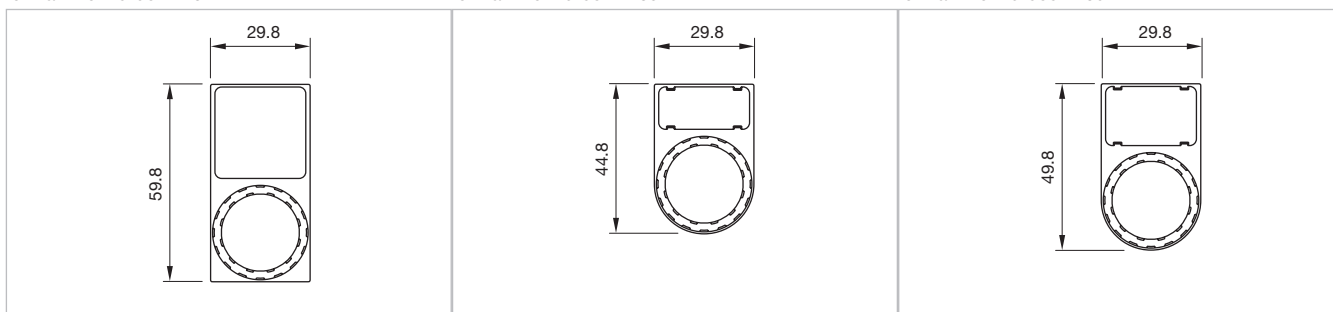
| Product attributes         | Material | Colour | Mounting type                     | Part No.    |
|----------------------------|----------|--------|-----------------------------------|-------------|
| For legend 27 mm x 12.5 mm | Plastic  | Black  | For sticking or snapping in place | 45-564.1102 |
|                            | Plastic  | Black  | For sticking or snapping in place | 45-567.1103 |
| For legend 27 mm x 27 mm   | Plastic  | Black  | For sticking or snapping in place | 45-569.1105 |
|                            | Plastic  | Black  | For sticking or snapping in place | 45-570.1105 |
| For legend 27 mm x 12.5 mm | Plastic  | Black  | For sticking or snapping in place | 45-564.1110 |
| For legend 27 mm x 17.5 mm | Plastic  | Black  | For sticking or snapping in place | 45-567.1111 |
| For legend 27 mm x 27 mm   | Plastic  | Black  | For sticking or snapping in place | 45-569.1112 |



Dimensions [mm]  
for Part No. 45-564.1102

Dimensions [mm]  
for Part No. 45-567.1103

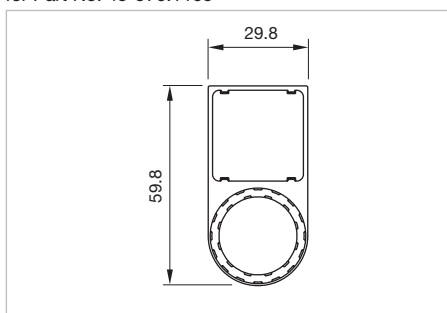
Dimensions [mm]  
for Part No. 45-569.1105



Dimensions [mm]  
for Part No. 45-570.1105

Dimensions [mm]  
for Part No. 45-564.1110

Dimensions [mm]  
for Part No. 45-567.1111

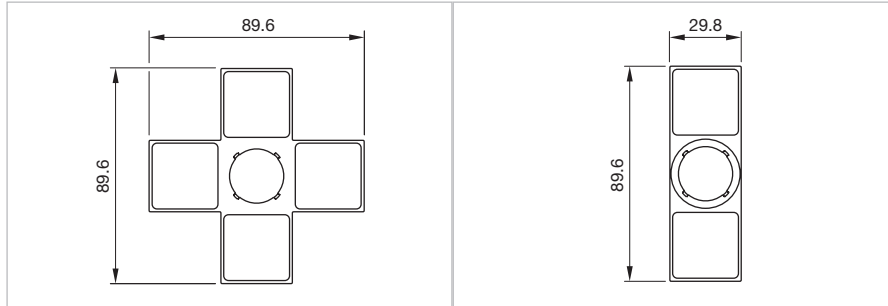


Dimensions [mm]  
for Part No. 45-569.1112



## Legend support without legend for toggle stick

| Product attributes            | Material | Colour | Mounting type                     | Part No.    |
|-------------------------------|----------|--------|-----------------------------------|-------------|
| For legend 27 mm x 27 mm (2x) | Plastic  | Black  | For sticking or snapping in place | 45-571.1105 |
| For legend 27 mm x 27 mm (4x) | Plastic  | Black  | For sticking or snapping in place | 45-572.1105 |



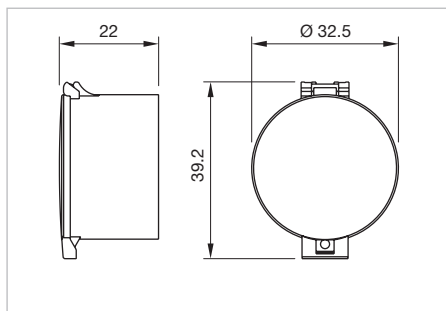
Dimensions [mm]  
for Part No. 45-571.1105

Dimensions [mm]  
for Part No. 45-572.1105



## Protective cover

| Product attributes             | Material | Colour     | Optics      | Part No.    |
|--------------------------------|----------|------------|-------------|-------------|
| Hinged, with means for sealing | Plastic  | Black      | opaque      | 45-555.1100 |
|                                | Plastic  | Colourless | transparent | 45-555.1K00 |

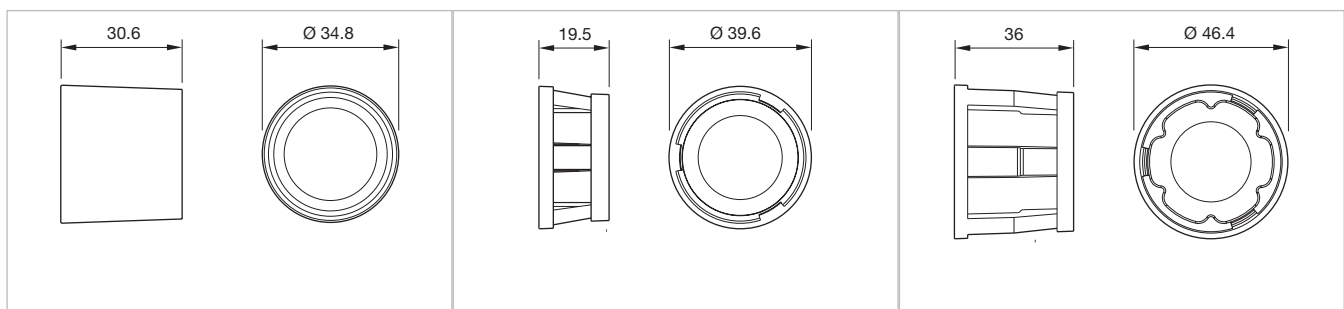


Dimensions [mm]



## Protective shroud

| Dimensions | Material | Colour | Part No.    |
|------------|----------|--------|-------------|
| Ø 34.8 mm  | Plastic  | Black  | 45-50N.1100 |
| Ø 46.4 mm  | Metal    | Silver | 45-50Q.2100 |
| Ø 39.6 mm  | Metal    | Silver | 45-50P.0100 |



Dimensions [mm]  
for Part No. 45-50N.1100

Dimensions [mm]  
for Part No. 45-50Q.2100

Dimensions [mm]  
for Part No. 45-50P.0100

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# 45 Accessories

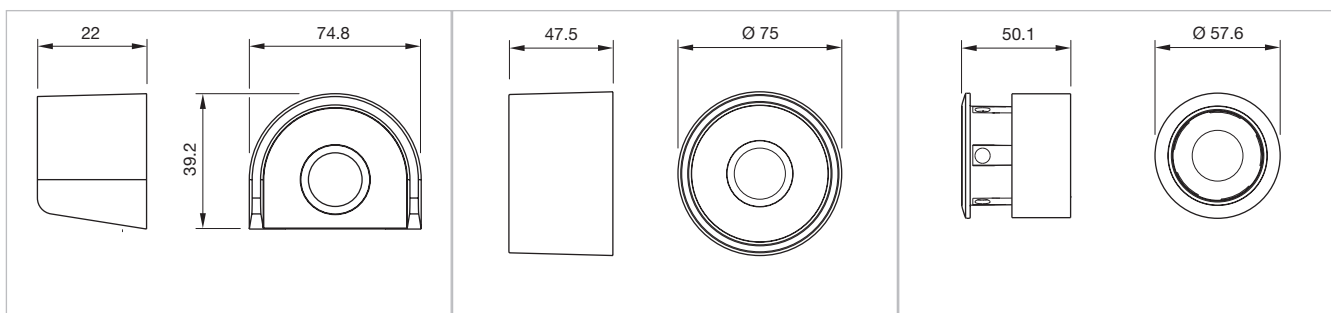


## E stop protective shroud

| Product attributes                                | Material | Colour | Part No.    |
|---|----------|--------|-------------|
|   | Plastic  | Yellow | 45-549.1400 |
|   | Plastic  | Grey   | 45-549.1800 |
|   | Plastic  | Yellow | 45-550.1400 |
| For Emergency stop switch Ø 40 mm, for 5 padlocks | Metal    | Yellow | 45-539.2400 |
|   | Metal    | Grey   | 45-539.2800 |

### Additional information

- The protection shroud is not suitable for a proper use of emergency stop. It can obstruct a spontaneous operation of the emergency stop



Dimensions [mm]  
for Part No. 45-549.1400, 45-549.1800

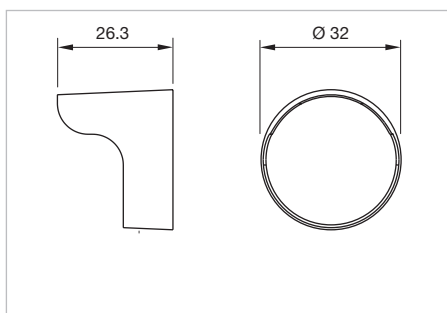
Dimensions [mm]  
for Part No. 45-550.1400

Dimensions [mm]  
for Part No. 45-539.2400, 45-539.2800



## Sun collar

| Product attributes         | Material | Colour | Part No.    |
|----------------------------|----------|--------|-------------|
| For pushbutton illuminated | Plastic  | Black  | 45-560.1100 |



Dimensions [mm]

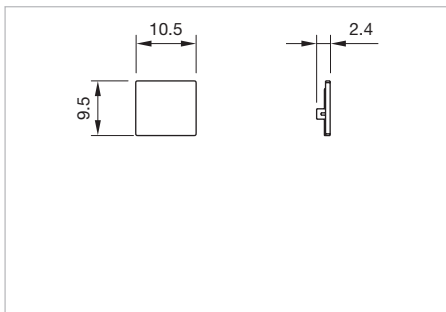


## Rear side



Legend plate for switching elements

| Dimensions       | Material | Colour | Mounting type         | Part No.    |
|------------------|----------|--------|-----------------------|-------------|
| 10.5 mm x 9.5 mm | Plastic  | White  | for snapping in place | 45-523.1900 |

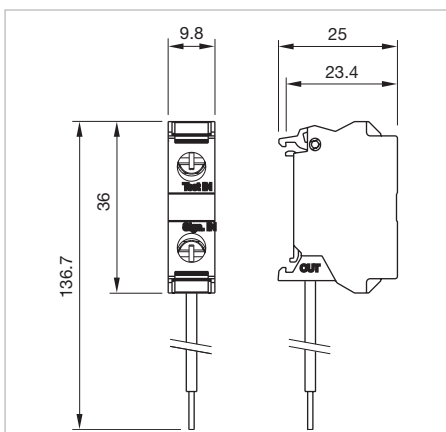


Dimensions [mm]



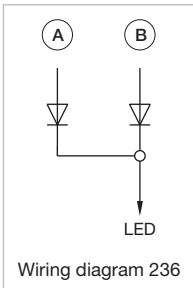
Test module

| Product attributes | Operating voltage | Terminal       | Part No.    | Wiring diagram |
|--------------------|-------------------|----------------|-------------|----------------|
| Front mounting     | 12 - 240 V AC/DC  | Screw terminal | 45-330.1115 | 236            |
| Base mounting      | 12 - 240 V AC/DC  | Screw terminal | 45-330.2115 | 236            |



Dimensions [mm]

## Wiring diagrams



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<https://www.youtube.com/user/eaoswitches>

## Mounting



Adapter for reduction of 30.5 mm to 22.3 mm

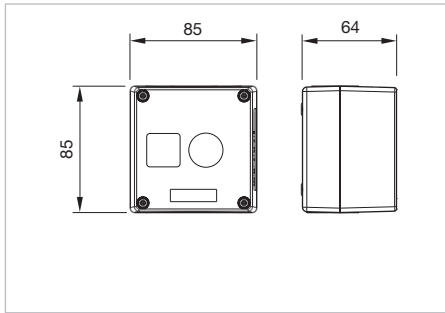
| Product attributes | Material | IP front protection | Part No.    |
|--------------------|----------|---------------------|-------------|
| With seal          | Metal    | IP66, IP67, IP69K   | 45-501.2000 |



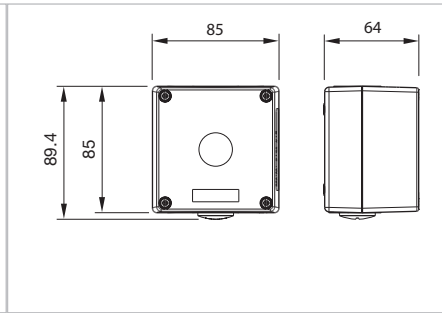
Enclosure

| Product attributes  | Dimensions              | Material | Colour | IP Protection     | Part No.    |
|---|-------------------------|----------|--------|-------------------|-------------|
| 1 mounting hole Ø 22.3 mm 1 x M20   | 85 mm x 64 mm x 85 mm   | Plastic  | Grey   | IP66, IP67, IP69K | 45-430.1801 |
|   | 85 mm x 64 mm x 85 mm   | Plastic  | Yellow | IP66, IP67, IP69K | 45-410.1401 |
| 1 mounting hole Ø 22.3 mm, top and bottom each 1 x M20                    | 89.4 mm x 64 mm x 85 mm | Metal    | Yellow | IP66, IP67, IP69K | 45-410.2403 |
|   | 89.4 mm x 64 mm x 85 mm | Metal    | Grey   | IP66, IP67, IP69K | 45-430.2803 |
| 1 mounting hole Ø 22.3 mm 1 x M20, with protective shroud                 | 85 mm x 64 mm x 85 mm   | Plastic  | Yellow | IP66, IP67, IP69K | 45-420.1401 |
|   | 85 mm x 64 mm x 85 mm   | Metal    | Yellow | IP66, IP67, IP69K | 45-420.2403 |
| 1 mounting hole Ø 22.3 mm, with protective shroud, top and bottom 1 x M20 | 89.4 mm x 64 mm x 85 mm | Metal    | Grey   | IP66, IP67, IP69K | 45-420.2803 |
| 2 mounting holes Ø 22.3 mm, top and bottom 1 x M20                        | 114 mm x 64 mm x 85 mm  | Plastic  | Grey   | IP66, IP67, IP69K | 45-440.1801 |
|   | 118 mm x 64 mm x 85 mm  | Metal    | Grey   | IP66, IP67, IP69K | 45-440.2803 |
| 3 mounting holes Ø 22.3 mm, top and bottom 1 x M20                        | 154 mm x 64 mm x 85 mm  | Plastic  | Grey   | IP66, IP67, IP69K | 45-450.1801 |
|   | 158 mm x 64 mm x 85 mm  | Metal    | Grey   | IP66, IP67, IP69K | 45-450.2803 |
| 4 mounting holes Ø 22.3 mm, top and bottom 1 x M25                        | 194 mm x 64 mm x 85 mm  | Plastic  | Grey   | IP66, IP67, IP69K | 45-460.1802 |
|   | 199 mm x 64 mm x 85 mm  | Metal    | Grey   | IP66, IP67, IP69K | 45-460.2804 |
| 6 mounting holes Ø 22.3 mm, top and bottom 1 x M25                        | 280 mm x 64 mm x 85 mm  | Plastic  | Grey   | IP66, IP67, IP69K | 45-470.1802 |
|   | 285 mm x 64 mm x 85 mm  | Metal    | Grey   | IP66, IP67, IP69K | 45-470.2804 |

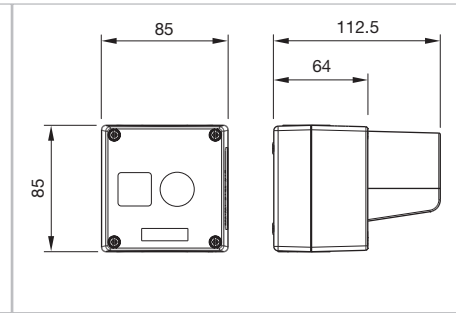
# 45 Accessories



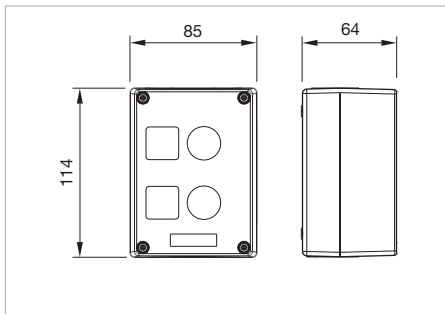
Dimensions [mm]  
for Part No. 45-430.1801, 45-410.1401



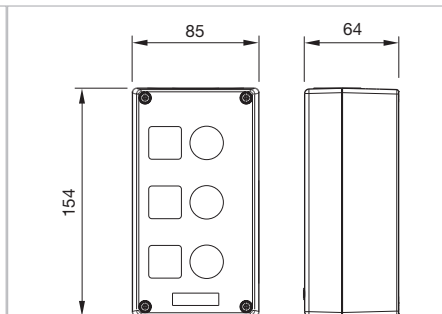
Dimensions [mm]  
for Part No. 45-410.2403, 45-430.2803, 45-420.2803



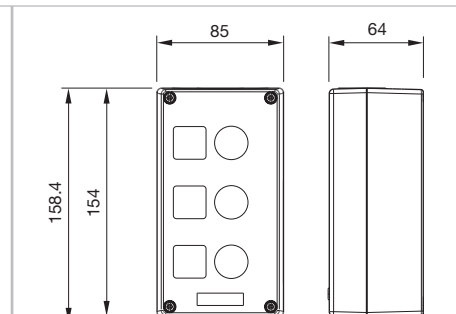
Dimensions [mm]  
for Part No. 45-420.1401, 45-420.2403



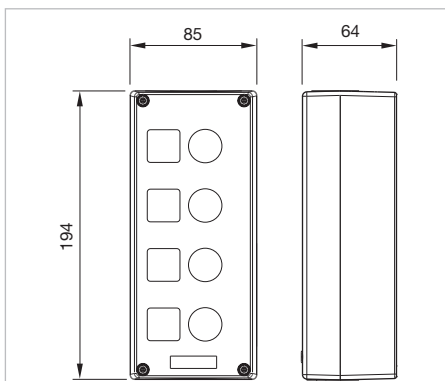
Dimensions [mm]  
for Part No. 45-440.1801, 45-440.2803



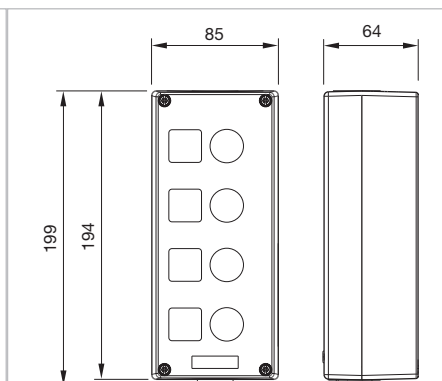
Dimensions [mm]  
for Part No. 45-450.1801



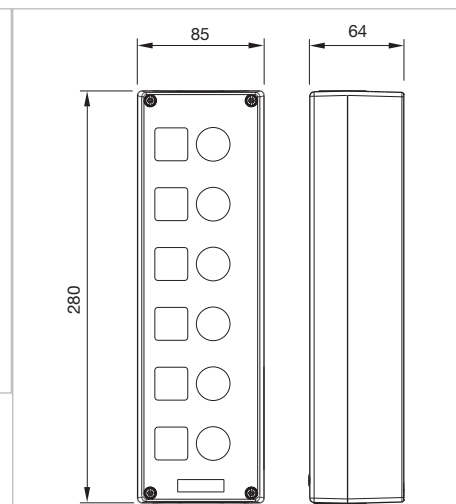
Dimensions [mm]  
for Part No. 45-450.2803



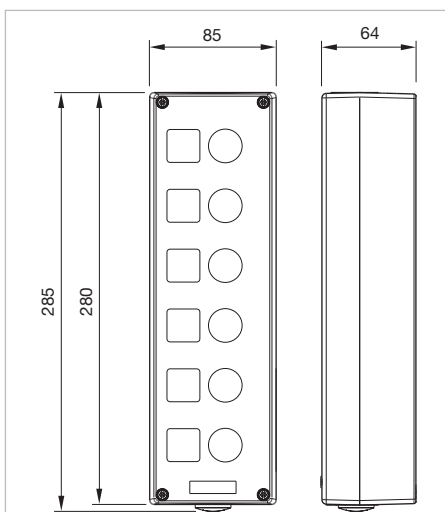
Dimensions [mm]  
for Part No. 45-460.1802



Dimensions [mm]  
for Part No. 45-460.2804



Dimensions [mm]  
for Part No. 45-470.1802

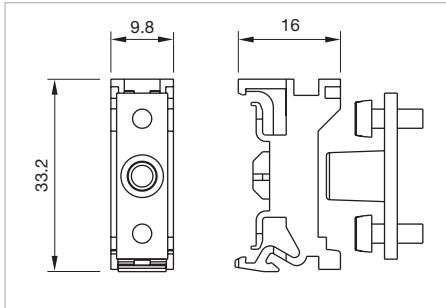


Dimensions [mm]  
for Part No. 45-470.2804



## Enclosure cover monitoring

| Product attributes      | Material | Colour | Part No.    |
|-------------------------|----------|--------|-------------|
| With extension plungers | Plastic  | Black  | 45-50G.0900 |

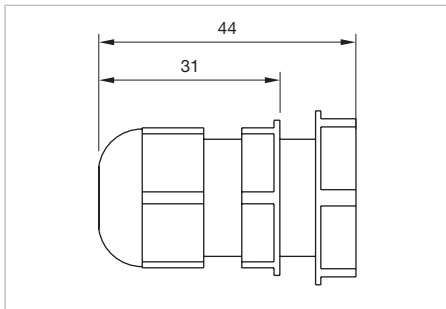


Dimensions [mm]



## Cable gland

| Material | Colour | IP Protection     | Thread | Part No.    |
|----------|--------|-------------------|--------|-------------|
| Plastic  | Black  | IP66, IP67, IP69K | M20    | 45-507.1100 |
|          | Black  | IP66, IP67, IP69K | M25    | 45-509.1100 |



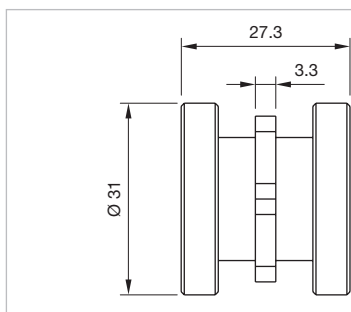
Dimensions [mm]

# 45 Accessories

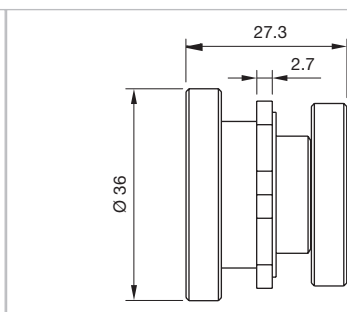


## Connection piece

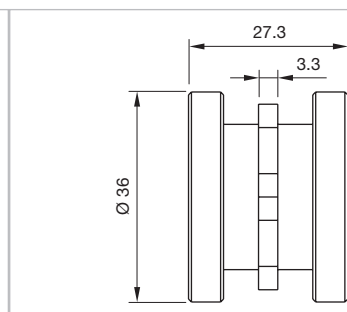
| Product attributes                              | Material | Colour | IP Protection     | Thread    | Part No.    |
|---|----------|--------|-------------------|-----------|-------------|
| For connecting 2 enclosures, with hexagonal nut | Plastic  | Black  | IP66, IP67, IP69K | M20 / M20 | 45-50C.1900 |
|   | Plastic  | Black  | IP66, IP67, IP69K | M20 / M25 | 45-50D.1900 |
|   | Plastic  | Black  | IP66, IP67, IP69K | M25 / M26 | 45-50E.1900 |
|   | Metal    | Silver | IP66, IP67, IP69K | M20 / M20 | 45-50C.2900 |
|   | Metal    | Silver | IP66, IP67, IP69K | M20 / M25 | 45-50D.2900 |
|   | Metal    | Silver | IP66, IP67, IP69K | M25 / M26 | 45-50E.2900 |



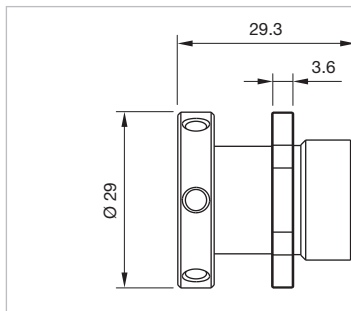
Dimensions [mm]  
for Part No. 45-50C.1900



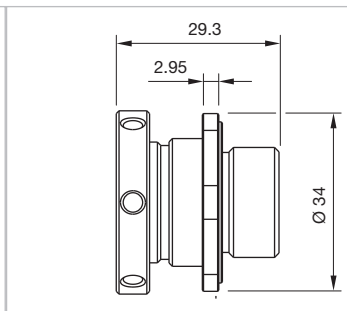
Dimensions [mm]  
for Part No. 45-50D.1900



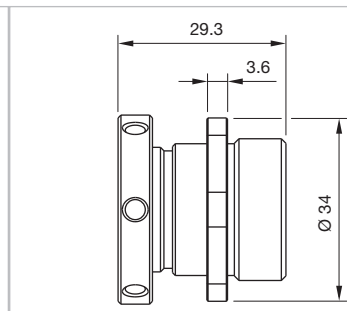
Dimensions [mm]  
for Part No. 45-50E.1900



Dimensions [mm]  
for Part No. 45-50C.2900



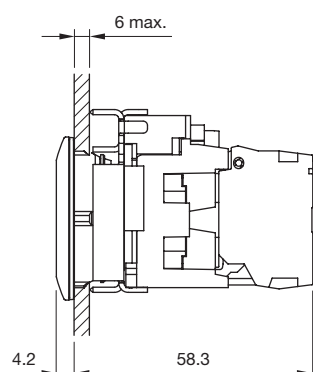
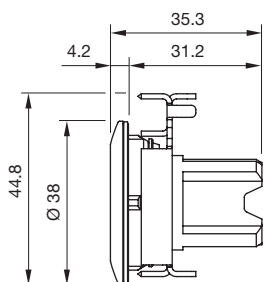
Dimensions [mm]  
for Part No. 45-50D.2900



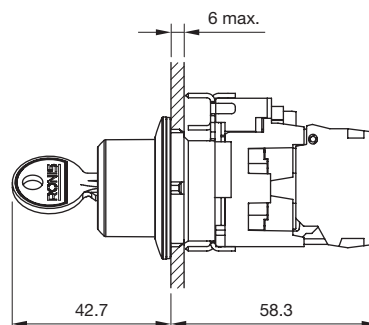
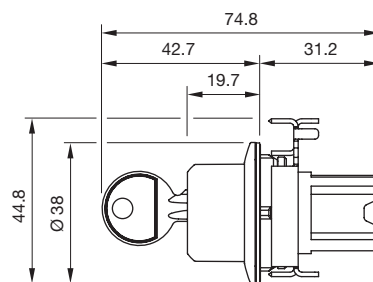
Dimensions [mm]  
for Part No. 45-50E.2900

Dimensions incl. mounting depth of 3 or 4 elements

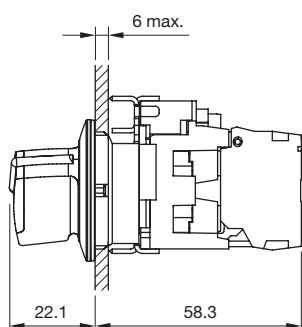
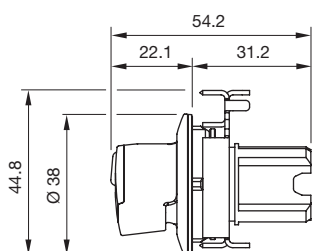
Indicator, Pushbutton, Illuminated pushbutton (flush design)



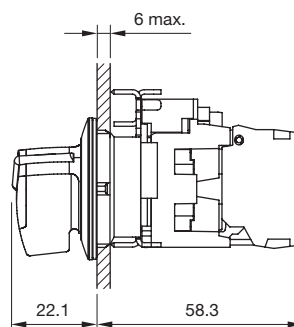
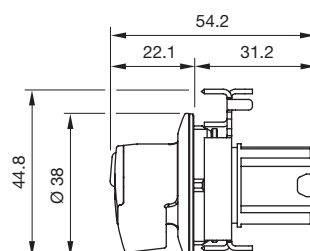
Keylock switch (flush design)



Selector switch short lever (flush design)



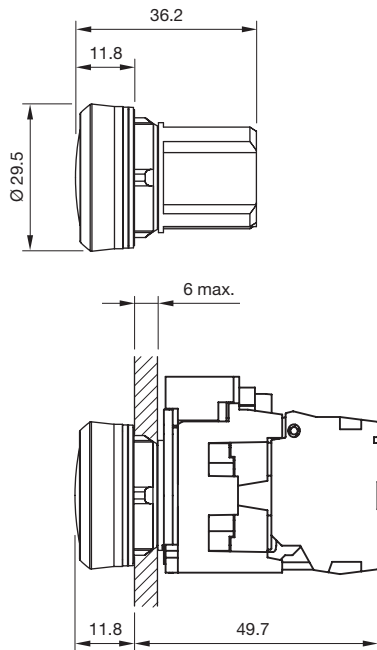
Selector switch long lever (flush design)



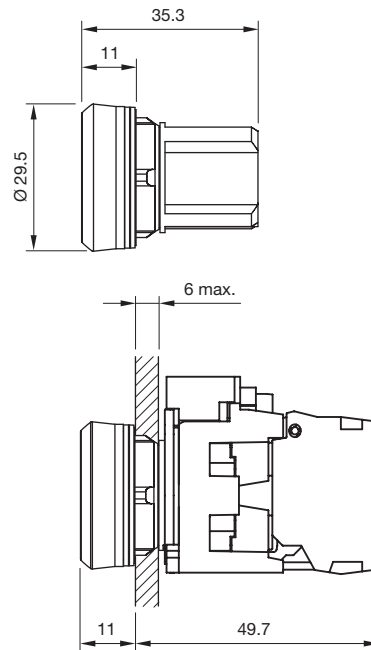
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# 45 Drawings

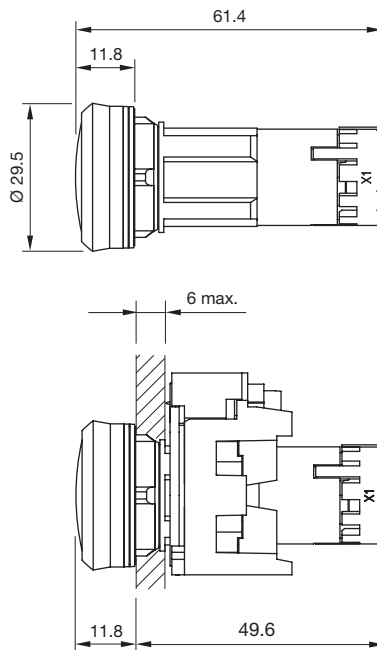
Indicator full face illumination (raised design)



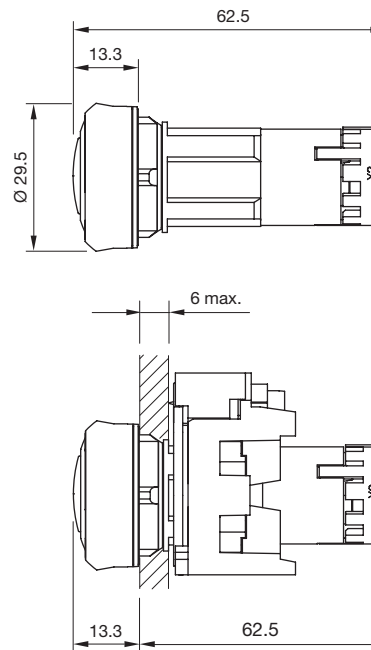
Indicator front illumination, Pushbutton, Illuminated pushbutton, Lens level with front ring (raised design)



Duo indicator

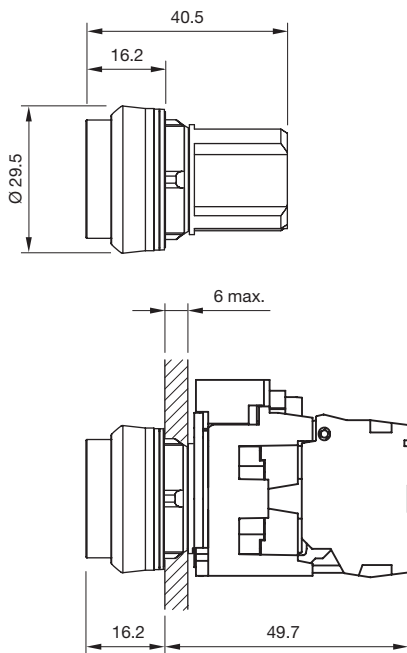


Buzzer

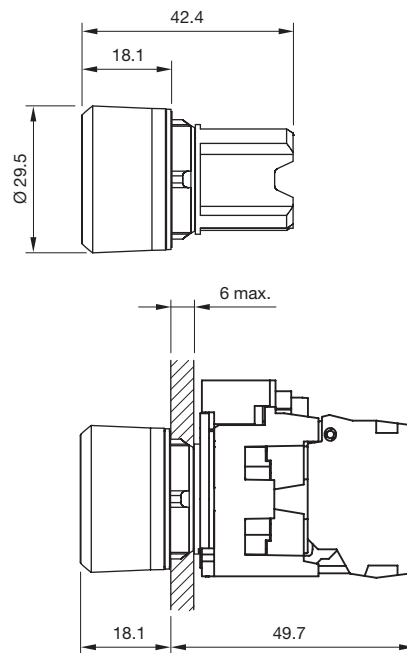




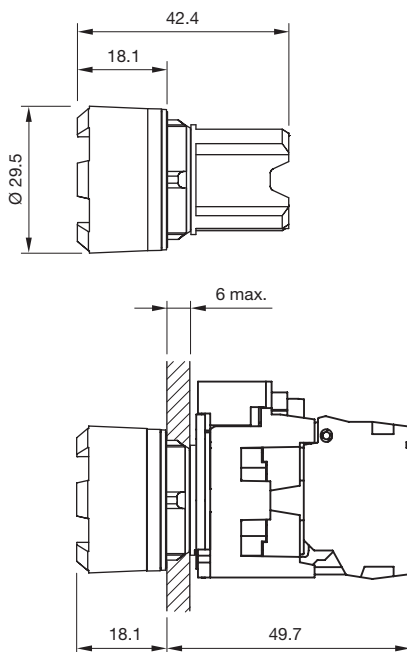
Pushbutton, Illuminated pushbutton, lens raised above front ring (raised design)



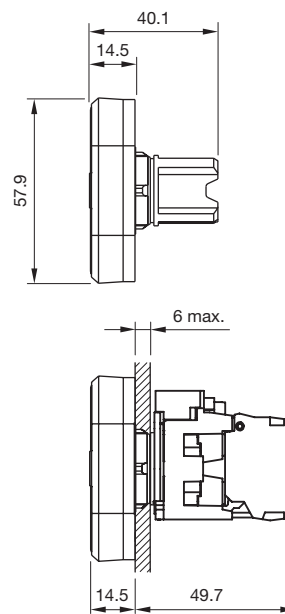
Pushbutton, lens lower than front ring (raised design)



Pushbutton, Illuminated pushbutton, lens lower than front ring, with castellation (raised design)



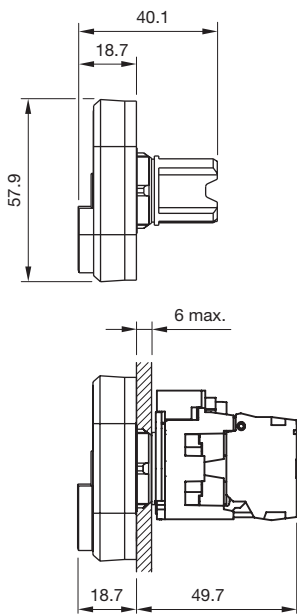
Double pushbutton, Lens level with front ring (raised design)



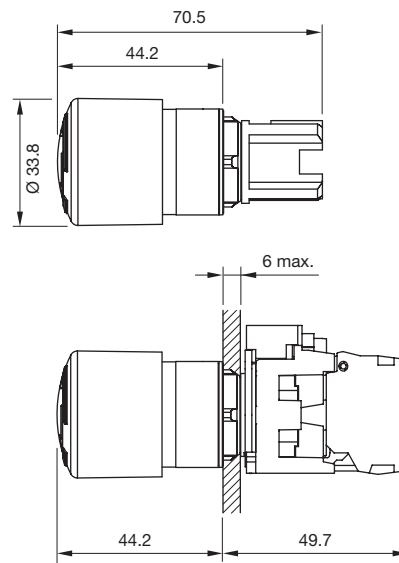
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# 45 Drawings

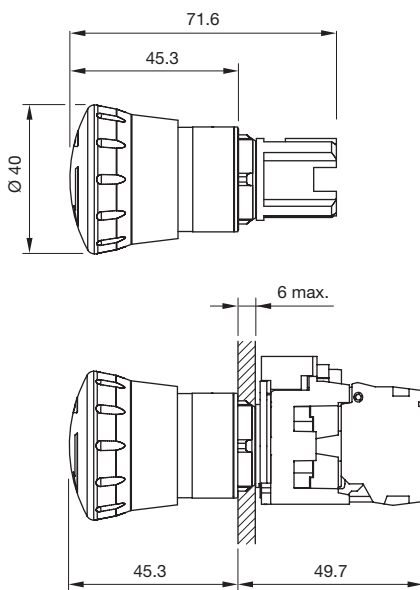
Double pushbutton, level with/raised above front ring (raised design)



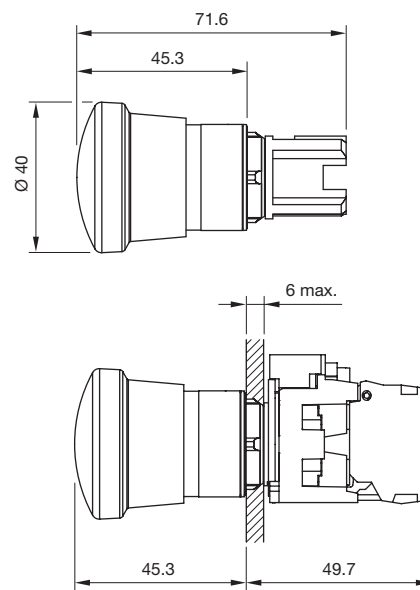
Emergency stop switch Ø 33.8 mm (raised design)



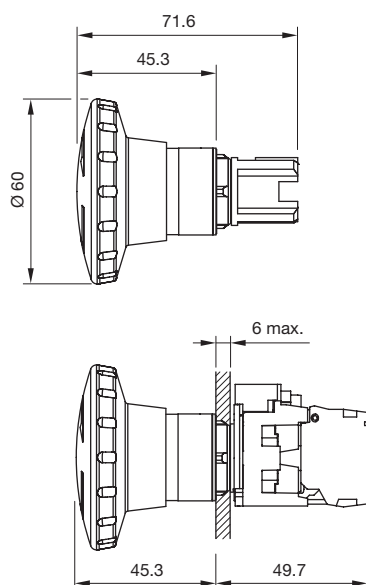
Emergency stop switch, Stop switch Ø 40 mm (raised design)



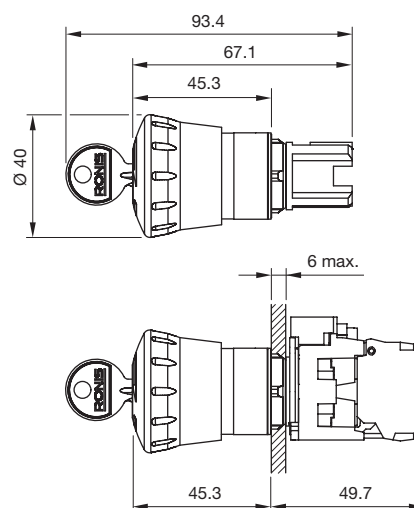
Emergency stop switch, Stop switch Ø 40 mm (raised design)



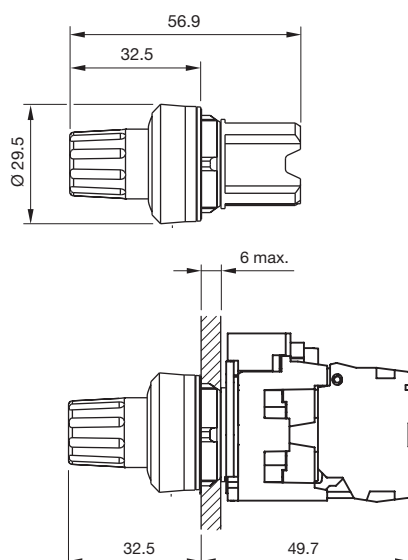
Emergency stop switch Ø 60 mm (raised design)



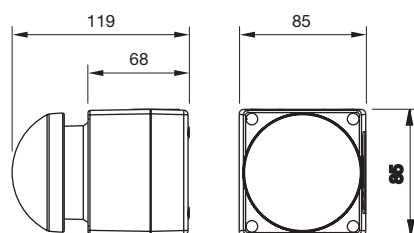
Emergency stop switch with key Ø 40 mm (raised design)



Stop switch Ø 29.5 mm (raised design)



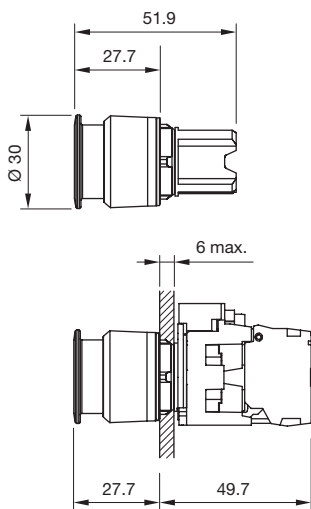
Palm switch



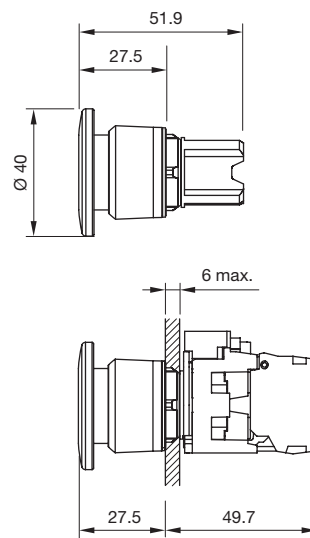
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# 45 Drawings

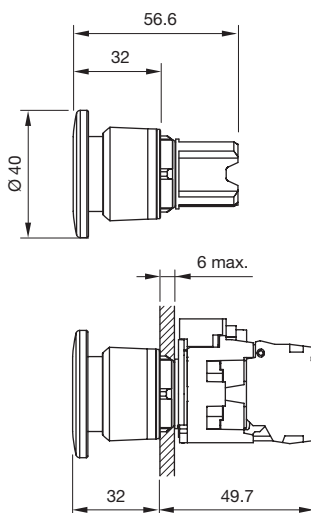
Mushroom-head pushbutton  $\varnothing$  30 mm (raised design)



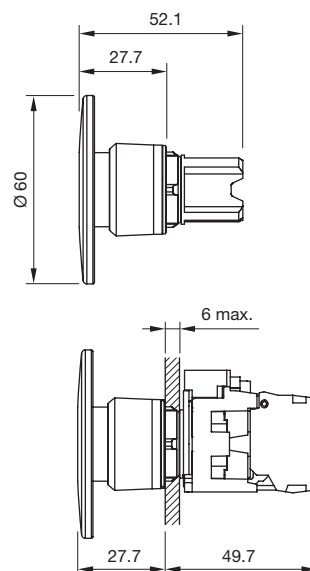
Mushroom-head pushbutton Momentary, Maintain,  $\varnothing$  40 mm (raised design)



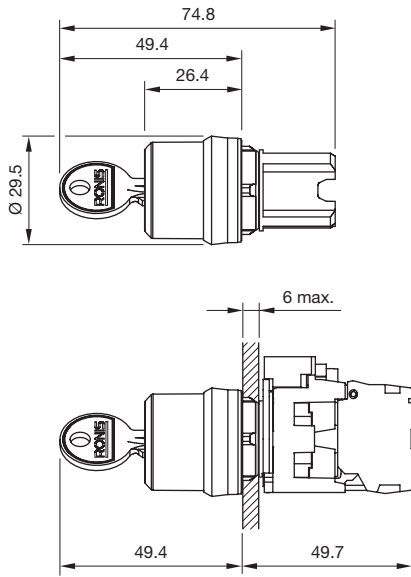
Mushroom-head pushbutton Momentary/Maintain, Momentary/Momentary,  $\varnothing$  40 mm (raised design)



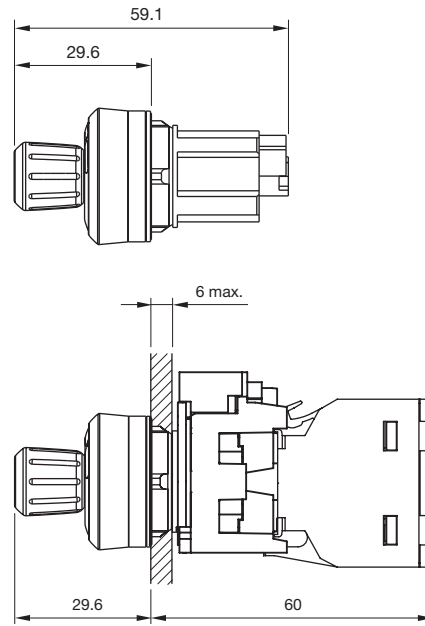
Mushroom-head pushbutton  $\varnothing$  60 mm (raised design)



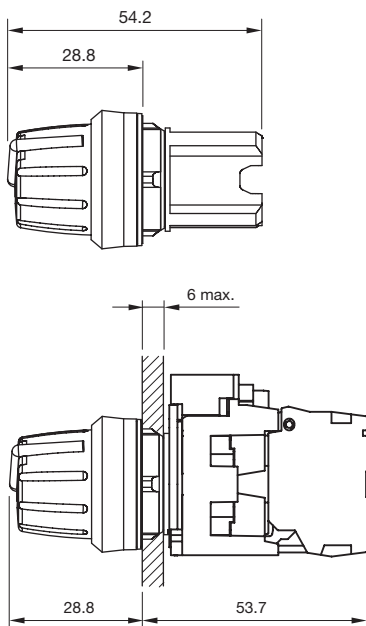
Keylock switch (raised design)



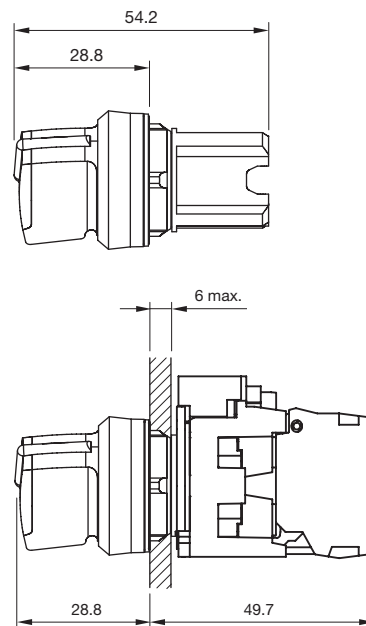
ID keylock switch (raised design)



Selector switch, round lever (raised design)

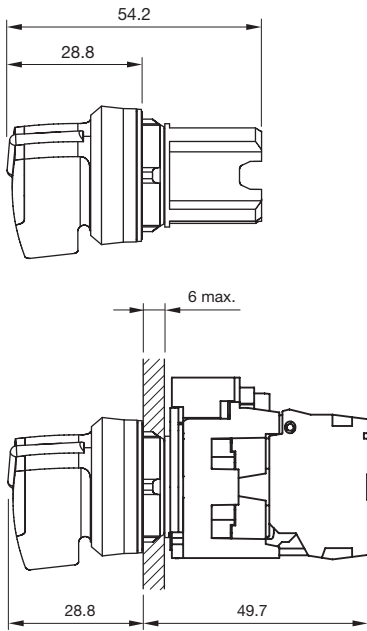


Selector switch, short lever (raised design)

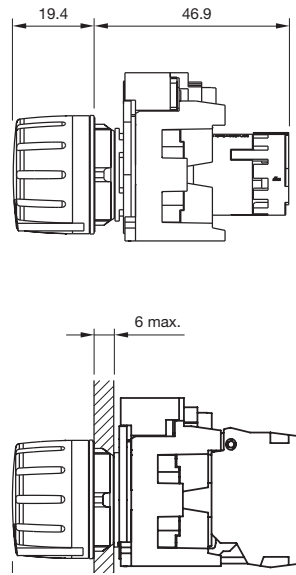


# 45 Drawings

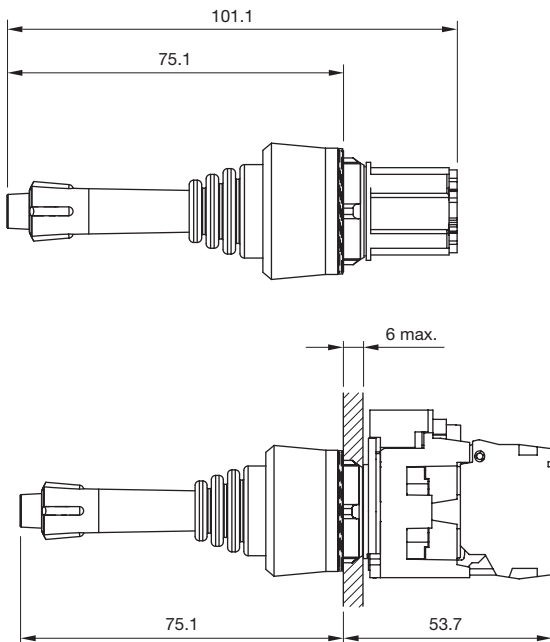
Selector switch, long lever (raised design)



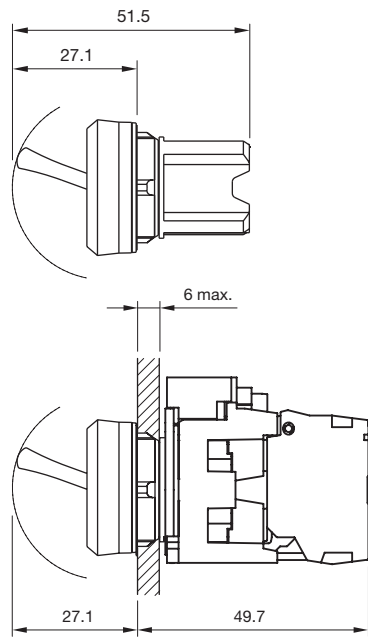
Potentiometer (raised design)



Toggle stick (raised design)



Toggle switch (raised design)



## Indicator actuator

### Material

**Actuator element**  
Plastic

**Front ring**  
Plastic or metal

**Actuator housing**  
Plastic or metal

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
2 ... 500 Hz: 5 g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

## Duo Indicator

### Material

**Actuator element**  
Plastic

**Front ring**  
Plastic or metal

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Terminal**  
Screw terminal  
- Solid without end sleeves 2 x (1.0 ... 1.5 mm<sup>2</sup>)  
- Solid with end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)  
- Finely stranded without end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)  
- Finely stranded with end sleeves 2 x (0.5 ... 1.5 mm<sup>2</sup>)  
- For AWG cables for auxiliary contacts 2 x (18 ... 14)

**Tightening torque**  
Screw terminal 0.8 ... 1 Nm

### Electrical characteristics

**Insulation voltage**  
Rated value 320 V

**Pollution degree**  
3

**Surge voltage resistance**  
Rated value 4 kV

**Operating voltage**  
at AC/DC  
- Rated value 6 ... 24 V

at AC  
- Rated value 110 or 230 V

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
10 ... 500 Hz: 5 g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3B2, 3K6, 3S2, 3M6

# 45 Technical data

## Buzzer

### Material

**Actuator element**  
Plastic

**Front bezel**  
Plastic or metal

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Terminal**  
Screw terminal

- Solid without end sleeves 2 x (1.0 ... 1.5 mm<sup>2</sup>)
- Solid with end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)
- Finely stranded without end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)
- Finely stranded with end sleeves 2 x (0.5 ... 1.5 mm<sup>2</sup>)
- For AWG cables for auxiliary contacts 2 x (18 ... 14)

**Tightening torque**  
Screw terminal 0.8 ... 1 Nm

### Electrical characteristics

**Frequency (tone)**  
Approx. 2.4 kHz continuous tone only

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

**Insulation voltage**  
Rated value 320 V

**Pollution degree**  
3

**Surge voltage resistance**  
Rated value 4 kV

**Operating voltage**  
at AC  
- Rated value 24 ... 24 V

at DC  
- Rated value 24 ... 24 V

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP40

**Vibration resistance**  
According to IEC 60068-2-6  
10 ... 500 Hz: 5 g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3B2, 3K6, 3S2, 3M6



## Pushbutton actuator

### Material

**Actuator element**  
Plastic

**Front ring**  
Plastic or metal

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Operating frequency**  
- Momentary max. 3 600/h  
- Maintain max. 1 800/h

**Mechanical lifetime**  
- Momentary 500 000 cycles of operation  
- Maintain 10 000 000 cycles of operation

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
20 ... 500 Hz: 5g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50g / 11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

|           |
|-----------|
| 01        |
| 02        |
| 03        |
| 04        |
| 09        |
| 14        |
| 17        |
| 18        |
| 19        |
| 22        |
| 31        |
| 41        |
| <b>45</b> |
| 51        |
| 56        |
| 57        |
| 61        |
| 70        |
| 71        |
| 82        |
| 84        |
| 92        |
| 96        |

# 45 Technical data

## Double pushbutton actuator, Double pushbutton actuator illuminated

### Material

Actuator element  
Plastic

Front ring  
Plastic or metal

Actuator housing  
Plastic or metal

### Mechanical characteristics

Operating frequency  
max. 3 600/h

Mechanical lifetime  
2 000 000 cycles of operation

### Ambient conditions

Operating temperature  
-25 °C ... +70 °C

Storage temperature  
-40 °C ... +80 °C

Protection degree  
IP66, IP67, IP69K

Vibration resistance  
According to IEC 60068-2-6  
10 ... 500 Hz: 5g

Shock resistance  
According to IEC 60068-2-27  
Sinusoidal half-wave 50g / 11 ms

Climatic ambient conditions  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6, 3B2

## Illuminated pushbuton actuator

### Material

Actuator element  
Plastic

Front ring  
Plastic or metal

Actuator housing  
Plastic or metal

### Mechanical characteristics

Operating frequency  
- Momentary max. 3 600/h  
- Maintain max. 1 800/h

Mechanical lifetime  
- Momentary 3 000 000 cycles of operation  
- Maintain 500 000 cycles of operation

### Ambient conditions

Operating temperature  
-25 °C ... +70 °C

Storage temperature  
-40 °C ... +80 °C

Protection degree  
IP66, IP67, IP69K

Vibration resistance  
According to IEC 60068-2-6  
20 ... 500 Hz: 5g

Shock resistance  
According to IEC 60068-2-27  
Sinusoidal half-wave 50g / 11 ms

Climatic ambient conditions  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

## Emergency stop switch actuator

### Material

**Actuator element**  
Plastic red

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Type of unlocking device**  
Twist to release, pull release or key to release

**Operating frequency**  
Max. 600/h

**Mechanical lifetime**  
300 000 cycles of operation

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
2 ... 500 Hz: 5 g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

## Stop switch actuator

### Material

**Actuator element**  
Plastic red

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Type of unlocking device**  
Twist to release

**Operating frequency**  
Max. 600/h

**Mechanical lifetime**  
300 000 cycles of operation

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
2 ... 500 Hz: 5 g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

# 45 Technical data

## Palm switch

### Material

**Actuator element**  
Plastic or metal, red or black

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Type of unlocking device**  
Pull to release

### Electrical characteristics

**Operating voltage**  
at AC  
- Rated value 5 ... 500V

at DC  
- Rated value 5 ... 500V

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
10 ... 500 Hz: 5g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50g/11ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6, 3B2

## Mushroom-head pushbutton actuator

### Material

**Actuator element**  
Plastic

**Front ring**  
Plastic or metal

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Type of unlocking device**  
Pull release

**Operating frequency**  
- Momentary max. 3600/h  
- Maintain max. 1800/h

**Mechanical lifetime**  
- Momentary 10 000 000 cycles of operation  
- Maintain 500 000 cycles of operation

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Vibration resistance**  
According to IEC 60068-2-6  
20 ... 500 Hz: 5g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50g/11ms

**Protection degree**  
IP66, IP67, IP69K

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

## Keylock switch actuator

### Material

**Actuator element**  
Metal

**Front ring**  
Plastic or metal

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Operating frequency**  
Max. 1800/h

**Mechanical lifetime**  
1 000 000 cycles of operation

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
10 ... 500 Hz: 5g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

## ID keylock switch

### Material

**Actuator element**  
Plastic

**Front ring**  
Plastic or metal

**Actuator housing**  
Plastic

### Mechanical characteristics

**Terminals**  
Screw terminal front mounting

- Solid with end sleeves  
1 x (0.2 ... 2.5 mm<sup>2</sup>), 2 x (0.2 ... 0.75 mm<sup>2</sup>)
- Solid without end sleeves  
1 x (0.2 ... 2.5 mm<sup>2</sup>), 2 x (0.2 ... 0.75 mm<sup>2</sup>)
- Finely stranded with end sleeves  
1 x (0.2 ... 2.5 mm<sup>2</sup>), 2 x (0.25 ... 0.75 mm<sup>2</sup>)
- Finely stranded with end sleeves  
1 x (0.2 ... 2.5 mm<sup>2</sup>), 2 x (0.2 ... 0.75 mm<sup>2</sup>)
- For AWG cables  
1 x (24 ... 14), (24 ... 19)

**Tightening torque**  
Screw terminal  
0.35 ... 0.4 Nm

**Mechanical lifetime**  
100 000 cycles of operation

**Number of NO contacts**  
5

**ID-Key**

| Authorization level | Key colour |
|---------------------|------------|
| 1                   | green      |
| 1+2                 | yellow     |
| 1+2+3               | red        |
| 1+2+3+4             | blue       |

### Electrical characteristics

**Operating voltage**  
24 VDC

# 45 Technical data

## Ambient conditions

### Operating temperature

-25 °C ... +70 °C

### Storage temperature

-40 °C ... +80 °C

### Protection degree

IP65

### Climatic ambient conditions

During operation according to IEC 60721:

3M6, 3S2, 3B2, 3C3, 3K6 (with relative air humidity of 10 ... 95 %)

## Selector switch actuator

### Material

#### Actuator element

Round lever, plastic, illuminable

Short lever, plastic, illuminable

Long lever, plastic, illuminable

#### Front ring

Plastic or metal

#### Actuator housing

Plastic or metal

### Mechanical characteristics

#### Operating frequency

Max. 1 800/h

#### Mechanical lifetime

1 000 000 cycles of operation

### Ambient conditions

#### Operating temperature

-25 °C ... +70 °C

#### Storage temperature

-40 °C ... +80 °C

#### Protection degree

IP66, IP67, IP69K

#### Vibration resistance

According to IEC 60068-2-6

10 ... 500 Hz: 5g

#### Shock resistance

According to IEC 60068-2-27

Sinusoidal half-wave 50g/11ms

#### Climatic ambient conditions

During operation according to IEC 60721:

3K6, 3C3, 3S2, 3M6

## Potentiometer

### Material

#### Actuator element

Round lever, plastic

#### Front ring

Plastic or metal

#### Actuator housing

Plastic or metal

### Mechanical characteristics

#### Terminals

Screw terminal

- Solid 2 x (1.0 ... 1.5 mm<sup>2</sup>)

- With end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)

- Finely stranded

- Without end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)

- With end sleeves 2 x (0.5 ... 1.5 mm<sup>2</sup>)

- For AWG cables for auxiliary contacts 2 x (18 ... 14)

#### Tightening torque

0.8 ... 1 Nm

#### Turning frequency

Max. 1 800/h

## Mechanical lifetime

25000 turning cycles

## Vibration resistance

according to IEC 60068-2-6

10 ... 500 Hz: 5g

## Shock resistance

according to IEC 60068-2-27

Sinusoidal half-wave 50g/11ms

## Slewing range

275° ±2°

## Electrical characteristics

### Active power consumption

0.5W

### Insulation voltage

Rated value 500V

## Toggle stick actuator

## Material

### Actuator element

Plastic

### Front ring

Plastic or metal

### Actuator housing

Plastic or metal

## Mechanical characteristics

### Operating frequency

3600/h

### Mechanical lifetime

Momentary: 250 000 cycles of operation per direction of actuation

Maintain: 100 000 cycles of operation per direction of actuation

### Deflection angle

Max. 30°

## Ambient conditions

### Operating temperature

-25°C ... +70°C

### Storage temperature

-40°C ... +80°C

### Protection degree

IP66, IP67, IP69K

### Climatic ambient conditions

During operation according to IEC 60721:

3K6, 3C3, 3S2, 3M6

## Ambient conditions

### Operating temperature

-25°C ... +70°C

### Storage temperature

-40°C ... +80°C

### Protection degree

IP65, IP67

### Vibration resistance

According to IEC 60068-2-6

10 ... 500 Hz: 5g

### Shock resistance

According to IEC 60068-2-27

Sinusoidal half-wave 50g/11ms

### Climatic ambient conditions

During operation according to IEC 60721:

3K6, 3C3, 3S2, 3M6

# 45 Technical data

## Toggle switch actuator

### Material

**Actuator element**  
Plastic

**Front ring**  
Plastic or metal

**Actuator housing**  
Plastic or metal

### Mechanical characteristics

**Operating frequency**  
Max. 1 800/h

**Mechanical lifetime**  
1 000 000 cycles of operation

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

**Protection degree**  
IP66, IP67, IP69K

**Vibration resistance**  
According to IEC 60068-2-6  
10 ... 500 Hz: 5g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

## Slow-make switching element

### Switching system

The double-break, slow-make switching element is equipped with normally open or normally closed contact. The normally closed contact has forced opening. Slow-make contacts with forced action are ideal for high switch ratings. Up to six switching elements can be snapped to each holder.

The NC contact opens automatically upon disconnection of the actuator. On delivery, the contact is open (= safe state). Activation (= NC contacts on the non-actuated commanding device are closed) takes place upon first-time actuation after the contact block is snapped onto the actuator.

### Material

**Material of contact**  
Silver alloy

**Housing**  
Plastic

### Mechanical characteristics

**Terminals**  
Screw terminal  
- Solid 2 x (1.0 ... 1.5 mm<sup>2</sup>)  
- With end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)  
- Finely stranded  
- Without end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)  
- With end sleeves 2 x (0.5 ... 1.5 mm<sup>2</sup>)  
- For AWG cables for auxiliary contacts 2 x (18 ... 14)

Spring-type terminal (SP)  
- Solid 2 x (0.25 ... 1.5 mm<sup>2</sup>)  
- Finely stranded  
- Without end sleeves 2 x (0.5 ... 1.5 mm<sup>2</sup>)  
- With end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)  
- For AWG cables for auxiliary contacts 2 x (24 ... 16)

**Tightening torque**  
Screw terminal, spring-type terminal 0.8 ... 0.9 Nm

**Operating frequency**  
Max. 3 600/h

**Mechanical lifetime**  
10 000 000 cycles of operation



## Electrical characteristics

### Standards

The switches comply with the "Standards for low-voltage switching devices" EN IEC 60947-5-1

**Thermal current  $I_{th}$**   
10A

**Insulation voltage**  
Rated value 500V

**Pollution degree**  
3

**Surge voltage resistance**  
Rated value 6kV

**Contact reliability**  
One contact failure per 100 million switching operations (17 V, 5 mA)  
One contact failure per 10 million switching operations (5 V, 1 mA)

**Operating voltage**  
at AC  
- Rated value 5 ... 500V

at DC  
- Rated value 5 ... 500V

### Switching voltage and switching current

at AC-12

|         |     |      |      |
|---------|-----|------|------|
| Voltage | 24V | 230V | 500V |
| Current | 10A | 10A  | 10A  |

at AC-15

|         |     |      |      |      |
|---------|-----|------|------|------|
| Voltage | 24V | 230V | 400V | 500V |
| Current | 6A  | 6A   | 3A   | 1.4A |

at DC-12

|         |     |     |      |      |      |      |
|---------|-----|-----|------|------|------|------|
| Voltage | 24V | 48V | 110V | 230V | 400V | 500V |
| Current | 10A | 5A  | 2.5A | 1A   | 0.3A | 0.2A |

at DC-13

|         |     |      |      |      |      |       |
|---------|-----|------|------|------|------|-------|
| Voltage | 24V | 48V  | 110V | 230V | 400V | 500V  |
| Current | 3A  | 1.5A | 0.7A | 0.3A | 0.1A | 0.07A |

## Ambient conditions

**Operating temperature**  
-25°C ... +70°C

**Storage temperature**  
-40°C ... +80°C

**Protection degree**  
IP40 housing  
IP20 terminal

**Vibration resistance**  
According to IEC 60068-2-6  
2 ... 500 Hz: 5g

**Shock resistance**  
According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

**Climatic ambient conditions**  
During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

## Approvals

### Approbations

CCC  
CSA  
UL

### Declaration of conformity

CE

|    |
|----|
| 01 |
| 02 |
| 03 |
| 04 |
| 09 |
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| 82 |
| 84 |
| 92 |
| 96 |

## Illumination element

### Material

**Housing**  
Plastic

### Mechanical characteristics

#### Terminals

- Screw terminal
- Solid 2 x (1.0 ... 1.5 mm<sup>2</sup>)
  - With end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)
  - Finely stranded
  - Without end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)
  - With end sleeves 2 x (0.5 ... 1.5 mm<sup>2</sup>)
  - For AWG cables for auxiliary contacts 2 x (18 ... 14)

Spring-type terminal (SP)

- Solid 2 x (0.25 ... 1.5 mm<sup>2</sup>)
- Finely stranded
- Without end sleeves 2 x (0.5 ... 1.5 mm<sup>2</sup>)
- With end sleeves 2 x (0.5 ... 0.75 mm<sup>2</sup>)
- For AWG cables for auxiliary contacts 2 x (24 ... 16)

#### Tightening torque

Screw terminal, spring-type terminal 0.8 ... 0.9 Nm

### Electrical characteristics

#### Standards

The switches comply with the "Standards for low-voltage switching devices" EN IEC 60947-5-1

#### Electrical life

100 000 h

#### Insulation voltage

Rated value 320 V

#### Surge voltage resistance

Rated value 4 kV

EAO reserves the right to alter specifications without further notice.

### Ambient conditions

**Operating temperature**  
-25 °C ... +70 °C

**Storage temperature**  
-40 °C ... +80 °C

#### Protection degree

IP20 terminal

#### Shock resistance

According to IEC 60068-2-27  
Sinusoidal half-wave 50 g/11 ms

#### Vibration resistance

According to IEC 60068-2-6  
2 ... 500 Hz: 5 g

#### Climatic ambient conditions

During operation according to IEC 60721:  
3K6, 3C3, 3S2, 3M6

### Optical characteristics

#### Luminous intensity

|        |                  |
|--------|------------------|
| Red    | 450 ... 1120 mcd |
| Amber  | 450 ... 1120 mcd |
| Yellow | 900 ... 1400 mcd |
| Green  | 900 ... 1400 mcd |
| Blue   | 280 ... 710 mcd  |
| White  | 900 ... 1400 mcd |

### Approvals

#### Approbations

CCC  
CSA  
UL


#### Declaration of conformity

CE

## Inscription marking plates and legend plates

Labels can be inserted for identification purposes in illuminated pushbuttons and pushbuttons with a flat lens. This marking plates are made of translucent plastic with a black inscription, which can be fitted in any 90° angle.

## Standard texts for marking plates


























|                |   |                             |
|----------------|---|-----------------------------|
| <b>Example</b> |  | Part No. 45-563.0K00.T00029 |
|----------------|---|-----------------------------|

| Standard texts German |                             | Standard texts English |                             |
|-----------------------|-----------------------------|------------------------|-----------------------------|
| Ein                   | Part No. 45-563.0K00.T00001 | On                     | Part No. 45-563.0K00.T00020 |
| Aus                   | Part No. 45-563.0K00.T00002 | Off                    | Part No. 45-563.0K00.T00021 |
| Auf                   | Part No. 45-563.0K00.T00003 | Up                     | Part No. 45-563.0K00.T00022 |
| Ab                    | Part No. 45-563.0K00.T00004 | Down                   | Part No. 45-563.0K00.T00023 |
| Vor                   | Part No. 45-563.0K00.T00005 | Forward                | Part No. 45-563.0K00.T00024 |
| Zurück                | Part No. 45-563.0K00.T00006 | Right                  | Part No. 45-563.0K00.T00026 |
| Rechts                | Part No. 45-563.0K00.T00007 | Left                   | Part No. 45-563.0K00.T00027 |
| Links                 | Part No. 45-563.0K00.T00008 | Stop                   | Part No. 45-563.0K00.T00028 |
| Halt                  | Part No. 45-563.0K00.T00009 | Start                  | Part No. 45-563.0K00.T00029 |
| Zu                    | Part No. 45-563.0K00.T00010 | Reset                  | Part No. 45-563.0K00.T00030 |
| Schnell               | Part No. 45-563.0K00.T00011 | Test                   | Part No. 45-563.0K00.T00031 |
| Langsam               | Part No. 45-563.0K00.T00012 | Open                   | Part No. 45-563.0K00.T00032 |
| Betrieb               | Part No. 45-563.0K00.T00013 | Close                  | Part No. 45-563.0K00.T00033 |
| Störung               | Part No. 45-563.0K00.T00014 | Running                | Part No. 45-563.0K00.T00035 |
| Einrichten            | Part No. 45-563.0K00.T00018 | Fast                   | Part No. 45-563.0K00.T00044 |
|                       |                             | Slow                   | Part No. 45-563.0K00.T00045 |

# 45 Marking

## Symbols for marking plates

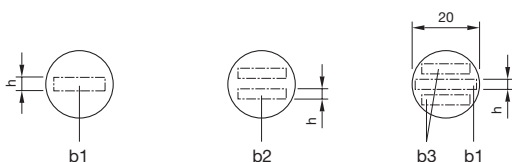
Graphic symbols are according to ISO 7000 or IEC 60417.

|  |  |  |
|--|--|--|
|  Part No. 45-563.0K00.S00001                                |  Part No. 45-563.0K00.S00012<br>Decrease, Minus   |  Part No. 45-563.0K00.S00023<br>Unlock                        |
|  Part No. 45-563.0K00.S00002                                |  Part No. 45-563.0K00.S00013<br>Electric motor    |  Part No. 45-563.0K00.S00024<br>Setting                       |
|  Part No. 45-563.0K00.S00003                                |  Part No. 45-563.0K00.S00014<br>Horn              |  Part No. 45-563.0K00.S00025<br>On-Off momentary contact type |
|  Part No. 45-563.0K00.S00004                                |  Part No. 45-563.0K00.S00015<br>Water tap         |  Part No. 45-563.0K00.S00026<br>Manual operating              |
|  Part No. 45-563.0K00.S00005<br>Arrow direction to right    |  Part No. 45-563.0K00.S00016<br>Pump              |  Part No. 45-563.0K00.S00027<br>Automatic cycle               |
|  Part No. 45-563.0K00.S00006<br>Arrow direction up          |  Part No. 45-563.0K00.S00017<br>Coolant pump      |  Part No. 45-563.0K00.S00028<br>Suction                       |
|  Part No. 45-563.0K00.S00007<br>Clockwise rotation         |  Part No. 45-563.0K00.S00018<br>Lock, tighten    |  Part No. 45-563.0K00.S00029<br>Blowing                      |
|  Part No. 45-563.0K00.S00008<br>Counterclockwise rotation |  Part No. 45-563.0K00.S00019<br>Unlock, unclamp |  |
|  Part No. 45-563.0K00.S00009<br>Rapid traverse            |  Part No. 45-563.0K00.S00020<br>Brake           |  |
|  Part No. 45-563.0K00.S00010<br>Feed                      |  Part No. 45-563.0K00.S00021<br>Release brake   |  |
|  Part No. 45-563.0K00.S00011<br>Increase, Plus            |  Part No. 45-563.0K00.S00022<br>Interlock       |  |

## Customised inscription for marking plates

All dimensions in mm

| Height of letters | Number of lines | Number of letters per line (target value) |    |    |
|-------------------|-----------------|---|----|----|
|                   |                 | b1  | b2 | b3 |
| h                 |                 |   |    |    |
| 4                 | 1               | 10  | –  | –  |
| 3                 | 2               | –   | 8  | –  |
|                   | 3               | 10  | –  | 6  |



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






## Standard texts for legend plates black, 27 x 12.5 mm

|                |              |                             |
|----------------|--------------|-----------------------------|
| <b>Example</b> | <b>Reset</b> | Part No. 45-573.1102.T00030 |
|----------------|--------------|-----------------------------|

| Standard texts German |                             | Standard texts English |                             | Standard texts French |                             |
|-----------------------|-----------------------------|------------------------|-----------------------------|-----------------------|-----------------------------|
| Ein                   | Part No. 45-573.1102.T00001 | On                     | Part No. 45-573.1102.T00020 | Marche                | Part No. 45-573.1102.T00048 |
| Aus                   | Part No. 45-573.1102.T00002 | Off                    | Part No. 45-573.1102.T00021 | Arrêt                 | Part No. 45-573.1102.T00049 |
| Auf                   | Part No. 45-573.1102.T00003 | Up                     | Part No. 45-573.1102.T00022 | Montée                | Part No. 45-573.1102.T00050 |
| Ab                    | Part No. 45-573.1102.T00004 | Down                   | Part No. 45-573.1102.T00023 | Descente              | Part No. 45-573.1102.T00051 |
| Vor                   | Part No. 45-573.1102.T00005 | Forward                | Part No. 45-573.1102.T00024 | Avant                 | Part No. 45-573.1102.T00052 |
| Zurück                | Part No. 45-573.1102.T00006 | Reverse                | Part No. 45-573.1102.T00025 | Retour                | Part No. 45-573.1102.T00053 |
| Rechts                | Part No. 45-573.1102.T00007 | Right                  | Part No. 45-573.1102.T00026 | Droite                | Part No. 45-573.1102.T00054 |
| Links                 | Part No. 45-573.1102.T00008 | Left                   | Part No. 45-573.1102.T00027 | Gauche                | Part No. 45-573.1102.T00055 |
| Halt                  | Part No. 45-573.1102.T00009 | Stop                   | Part No. 45-573.1102.T00028 | Ouvert                | Part No. 45-573.1102.T00056 |
| Zu                    | Part No. 45-573.1102.T00010 | Start                  | Part No. 45-573.1102.T00029 | Fermé                 | Part No. 45-573.1102.T00057 |
| Betrieb               | Part No. 45-573.1102.T00013 | Reset                  | Part No. 45-573.1102.T00030 | Rapide                | Part No. 45-573.1102.T00058 |
| Störung               | Part No. 45-573.1102.T00014 | Test                   | Part No. 45-573.1102.T00031 | En Service            | Part No. 45-573.1102.T00059 |
| Hand Auto             | Part No. 45-573.1102.T00015 | Open                   | Part No. 45-573.1102.T00032 | Default               | Part No. 45-573.1102.T00060 |
| Hand O Auto           | Part No. 45-573.1102.T00017 | Close                  | Part No. 45-573.1102.T00033 | Reglage               | Part No. 45-573.1102.T00061 |
|                       |                             | Jog                    | Part No. 45-573.1102.T00034 | Arrêt d'urgence       | Part No. 45-573.1102.T00062 |
|                       |                             | Running                | Part No. 45-573.1102.T00035 | Hors service          | Part No. 45-573.1102.T00063 |
|                       |                             | Fault                  | Part No. 45-573.1102.T00036 | Sous tension          | Part No. 45-573.1102.T00064 |
|                       |                             | Run                    | Part No. 45-573.1102.T00037 | Manu Auto             | Part No. 45-573.1102.T00065 |
|                       |                             | Stop Start             | Part No. 45-573.1102.T00038 | Marche Arrêt          | Part No. 45-573.1102.T00066 |
|                       |                             | Off On                 | Part No. 45-573.1102.T00039 | Rearmement            | Part No. 45-573.1102.T00067 |
|                       |                             | Power off              | Part No. 45-573.1102.T00040 |                       |                             |
|                       |                             | Power on               | Part No. 45-573.1102.T00041 |                       |                             |
|                       |                             | Man O Auto             | Part No. 45-573.1102.T00042 |                       |                             |
|                       |                             | Man Auto               | Part No. 45-573.1102.T00043 |                       |                             |

## Symbols for legend plates black, 27 x 12.5 mm

Graphic symbols are according to ISO 7000 or IEC 60417.

|   |                             |   |   |
|---|-----------------------------|---|---|
|  | Part No. 45-573.1102.S00001 |  | Part No. 45-573.1102.S00007                       |
|  | Part No. 45-573.1102.S00002 |  | Part No. 45-573.1102.S00009<br>Arrow/Direction up |
|  | Part No. 45-573.1102.S00005 |   |   |

# 45 Marking










## Standard texts for legend plates silver, 27 x 12.5 mm

|                |              |                             |
|----------------|--------------|-----------------------------|
| <b>Example</b> | <b>Reset</b> | Part No. 45-573.1A02.T00030 |
|----------------|--------------|-----------------------------|


| Standard texts German |                             | Standard texts English |                             |
|-----------------------|-----------------------------|------------------------|-----------------------------|
| Ein                   | Part No. 45-573.1A02.T00001 | On                     | Part No. 45-573.1A02.T00020 |
| Aus                   | Part No. 45-573.1A02.T00002 | Off                    | Part No. 45-573.1A02.T00021 |
| Auf                   | Part No. 45-573.1A02.T00003 | Up                     | Part No. 45-573.1A02.T00022 |
| Ab                    | Part No. 45-573.1A02.T00004 | Down                   | Part No. 45-573.1A02.T00023 |
| Vor                   | Part No. 45-573.1A02.T00005 | Stop                   | Part No. 45-573.1A02.T00028 |
| Zurück                | Part No. 45-573.1A02.T00006 | Start                  | Part No. 45-573.1A02.T00029 |
| Rechts                | Part No. 45-573.1A02.T00007 | Reset                  | Part No. 45-573.1A02.T00030 |
| Links                 | Part No. 45-573.1A02.T00008 | Test                   | Part No. 45-573.1A02.T00031 |
| Halt                  | Part No. 45-573.1A02.T00009 | Open                   | Part No. 45-573.1A02.T00032 |
| Zu                    | Part No. 45-573.1A02.T00010 | Close                  | Part No. 45-573.1A02.T00033 |
| Schnell               | Part No. 45-573.1A02.T00011 | Man O Auto             | Part No. 45-573.1A02.T00042 |
| Langsam               | Part No. 45-573.1A02.T00012 | Man Auto               | Part No. 45-573.1A02.T00043 |
| Betrieb               | Part No. 45-573.1A02.T00013 | Running                | Part No. 45-573.1A02.T00035 |
| Störung               | Part No. 45-573.1A02.T00014 | Fault                  | Part No. 45-573.1A02.T00036 |
| Hand Auto             | Part No. 45-573.1A02.T00015 | Fast                   | Part No. 45-573.1A02.T00044 |
| Stop Start            | Part No. 45-573.1A02.T00016 | Slow                   | Part No. 45-573.1A02.T00045 |
| Hand O Auto           | Part No. 45-573.1A02.T00017 |                        |                             |

## Symbols for legend plates silver, 27 x 12.5 mm

Graphic symbols are according to ISO 7000 or IEC 60417.

|   |                             |   |  |
|---|-----------------------------|---|--|
|  | Part No. 45-573.1A02.S00001 |  | Part No. 45-573.1A02.S00006                          |
|  | Part No. 45-573.1A02.S00002 |  | Part No. 45-573.1A02.S00007                          |
|  | Part No. 45-573.1A02.S00003 |  | Part No. 45-573.1A02.S00008<br>Arrow/Direction right |
|  | Part No. 45-573.1A02.S00004 |  | Part No. 45-573.1A02.S00009<br>Arrow/Direction up    |
|  | Part No. 45-573.1A02.S00005 |   |  |






## Standard texts for legend plates black, 27 x 17.5 mm

|                |   |                             |
|----------------|---|-----------------------------|
| <b>Example</b> |  | Part No. 45-573.1103.T00028 |
|----------------|---|-----------------------------|

| Standard texts German |                             | Standard texts English |                             | Standard texts French |                             |
|-----------------------|-----------------------------|------------------------|-----------------------------|-----------------------|-----------------------------|
| Ein                   | Part No. 45-573.1103.T00001 | On                     | Part No. 45-573.1103.T00020 | Marche                | Part No. 45-573.1103.T00048 |
| Aus                   | Part No. 45-573.1103.T00002 | Off                    | Part No. 45-573.1103.T00021 | Arrêt                 | Part No. 45-573.1103.T00049 |
| Auf                   | Part No. 45-573.1103.T00003 | Up                     | Part No. 45-573.1103.T00022 | Droite                | Part No. 45-573.1103.T00054 |
| Ab                    | Part No. 45-573.1103.T00004 | Down                   | Part No. 45-573.1103.T00023 | Gauche                | Part No. 45-573.1103.T00055 |
| Vor                   | Part No. 45-573.1103.T00005 | Forward                | Part No. 45-573.1103.T00024 | En Service            | Part No. 45-573.1103.T00059 |
| Zurück                | Part No. 45-573.1103.T00006 | Reverse                | Part No. 45-573.1103.T00025 | Default               | Part No. 45-573.1103.T00060 |
| Halt                  | Part No. 45-573.1103.T00009 | Right                  | Part No. 45-573.1103.T00026 | Sous tension          | Part No. 45-573.1103.T00064 |
| Zu                    | Part No. 45-573.1103.T00010 | Stop                   | Part No. 45-573.1103.T00028 | Manu Auto             | Part No. 45-573.1103.T00065 |
| Betrieb               | Part No. 45-573.1103.T00011 | Start                  | Part No. 45-573.1103.T00029 | Marche Arrêt          | Part No. 45-573.1103.T00066 |
| Störung               | Part No. 45-573.1103.T00014 | Open                   | Part No. 45-573.1103.T00032 | Rearmement            | Part No. 45-573.0K00.T00067 |
| Hand Auto             | Part No. 45-573.1103.T00015 | Close                  | Part No. 45-573.1103.T00033 |                       |                             |
|                       |                             | Running                | Part No. 45-573.1103.T00035 |                       |                             |
|                       |                             | Fault                  | Part No. 45-573.1103.T00036 |                       |                             |
|                       |                             | Stop Start             | Part No. 45-573.1103.T00038 |                       |                             |
|                       |                             | Man Auto               | Part No. 45-573.1103.T00043 |                       |                             |

## Symbols for legend plates black, 27 x 12.5 mm

Graphic symbols are according to ISO 7000 or IEC 60417.

|   |                             |   |  |
|---|-----------------------------|---|--|
|  | Part No. 45-573.1103.S00001 |  | Part No. 45-573.1103.S00008<br>Arrow/Direction right |
|  | Part No. 45-573.1103.S00002 |  | Part No. 45-573.1103.S00009<br>Arrow/Direction up    |
|  | Part No. 45-573.1103.S00005 |   |  |

# 45 Marking







## Standard texts for legend plates silver, 27 x 17.5 mm

|                |             |                             |
|----------------|-------------|-----------------------------|
| <b>Example</b> | <b>Stop</b> | Part No. 45-573.1A03.T00028 |
|----------------|-------------|-----------------------------|

| Standard texts German |                             | Standard texts English |                             |
|-----------------------|-----------------------------|------------------------|-----------------------------|
| Ein                   | Part No. 45-573.1A03.T00001 | On                     | Part No. 45-573.1A03.T00020 |
| Aus                   | Part No. 45-573.1A03.T00002 | Off                    | Part No. 45-573.1A03.T00021 |
| Auf                   | Part No. 45-573.1A03.T00003 | Stop                   | Part No. 45-573.1A03.T00028 |
| Ab                    | Part No. 45-573.1A03.T00004 | Start                  | Part No. 45-573.1A03.T00029 |
| Vor                   | Part No. 45-573.1A03.T00005 | Reset                  | Part No. 45-573.1A03.T00030 |
| Zurück                | Part No. 45-573.1A03.T00006 | Fault                  | Part No. 45-573.1A03.T00036 |
| Rechts                | Part No. 45-573.1A03.T00007 | Man O Auto             | Part No. 45-573.1A03.T00043 |
| Halt                  | Part No. 45-573.1A03.T00009 |                        |                             |
| Zu                    | Part No. 45-573.1A03.T00010 |                        |                             |
| Betrieb               | Part No. 45-573.1A03.T00013 |                        |                             |
| Störung               | Part No. 45-573.1A03.T00014 |                        |                             |
| Hand Auto             | Part No. 45-573.1A03.T00015 |                        |                             |
| Hand O Auto           | Part No. 45-573.1A03.T00017 |                        |                             |

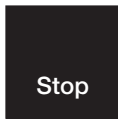
## Symbols for legend plates silver, 27 x 17.5 mm

Graphic symbols are according to ISO 7000 or IEC 60417.

|   |  |
|---|--|
|  Part No. 45-573.1A02.S00001 |  Part No. 45-573.1A02.S00007                          |
|  Part No. 45-573.1A02.S00002 |  Part No. 45-573.1A02.S00008<br>Arrow/Direction right |
|  Part No. 45-573.1A02.S00005 |  Part No. 45-573.1A02.S00009<br>Arrow/Direction up    |





## Standard texts for legend plates black, 27 x 27 mm

|                |   |                             |
|----------------|---|-----------------------------|
| <b>Example</b> |  | Part No. 45-573.1103.T00028 |
|----------------|---|-----------------------------|

| Standard texts German |                             | Standard texts English |                             | Standard texts French |                             |
|-----------------------|-----------------------------|------------------------|-----------------------------|-----------------------|-----------------------------|
| Ein                   | Part No. 45-573.1105.T00001 | On                     | Part No. 45-573.1105.T00020 | Marche                | Part No. 45-573.1105.T00048 |
| Aus                   | Part No. 45-573.1105.T00002 | Off                    | Part No. 45-573.1105.T00021 | Arrêt                 | Part No. 45-573.1105.T00049 |
| Auf                   | Part No. 45-573.1105.T00003 | Up                     | Part No. 45-573.1105.T00022 | Montée                | Part No. 45-573.1105.T00050 |
| Ab                    | Part No. 45-573.1105.T00004 | Down                   | Part No. 45-573.1105.T00023 | Descente              | Part No. 45-573.1105.T00051 |
| Vor                   | Part No. 45-573.1105.T00005 | Forward                | Part No. 45-573.1105.T00024 | En Service            | Part No. 45-573.1105.T00059 |
| Zurück                | Part No. 45-573.1105.T00006 | Reverse                | Part No. 45-573.1105.T00025 | Default               | Part No. 45-573.1105.T00060 |
| Rechts                | Part No. 45-573.1105.T00007 | Stop                   | Part No. 45-573.1105.T00028 | Sous tension          | Part No. 45-573.1105.T00064 |
| Links                 | Part No. 45-573.1105.T00008 | Start                  | Part No. 45-573.1105.T00029 | Manu Auto             | Part No. 45-573.1105.T00065 |
| Halt                  | Part No. 45-573.1105.T00009 | Stop Start             | Part No. 45-573.1105.T00038 | Marche Arrêt          | Part No. 45-573.1105.T00066 |
| Zu                    | Part No. 45-573.1105.T00010 | EMERGENCY STOP         | Part No. 45-573.1105.T00046 |                       |                             |
| Betrieb               | Part No. 45-573.1105.T00013 |                        |                             |                       |                             |
| Störung               | Part No. 45-573.1105.T00014 |                        |                             |                       |                             |
| Hand Auto             | Part No. 45-573.1105.T00015 |                        |                             |                       |                             |

## Symbols for legend plates black, 27 x 27 mm

Graphic symbols are according to ISO 7000 or IEC 60417.

|   |                             |   |  |
|---|-----------------------------|---|--|
|  | Part No. 45-573.1105.S00003 |  | Part No. 45-573.1105.S00008<br>Arrow/Direction right |
|---|-----------------------------|---|--|

## Customized inscription for legend plates

All dimensionen in mm

| Size of legend plates | Height of letters | Number of lines |
|-----------------------|-------------------|-----------------|
| 27 x 12.5             | 4                 | 1               |
|                       | 3.5               | 2               |
|                       | 2.5               | 3               |
| 27 x 17.5             | 4                 | 1 – 2           |
|                       | 3                 | 3               |
| 27 x 27               | 4                 | 1 – 5           |

Up to 11 characters per line are possible.

## 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.

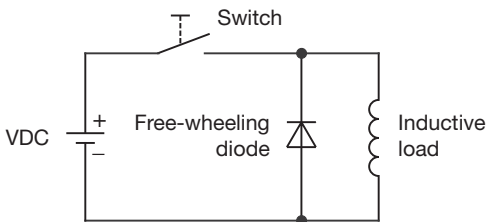
Fig. 1 shows an inductive load with a free-wheeling diode connected in parallel. This free-wheeling diode provides a path for the inductor current to flow when the current is interrupted by the switch. Without this free-wheeling diode, the voltage across the coil will be limited only by dielectric breakdown 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. 12VDC) see Fig. 2.

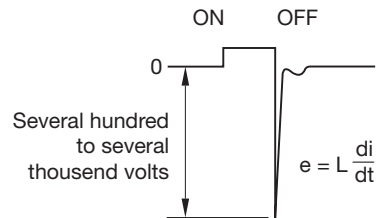
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage ( $V_R$ ) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum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

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

Switching with inductive load  
Fig. 1



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





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| Part No.         | Page | Part No.         | Page | Part No.    | Page | Part No.    | Page | Part No.    | Page | Part No.         | Page |
|------------------|------|------------------|------|-------------|------|-------------|------|-------------|------|------------------|------|
| 45-2910.1000.113 | 48   | 45-2H00.2016.000 | 57   | 45-311.2Z10 | 71   | 45-320.2G11 | 76   | 45-50D.2900 | 94   | 45-567.1103      | 86   |
| 45-2910.2000.113 | 48   | 45-2H00.2017.000 | 57   | 45-311.2Z40 | 72   | 45-320.2G12 | 76   | 45-50E.1900 | 94   | 45-567.1111      | 86   |
| 45-2911.1000.113 | 48   | 45-2H00.2018.000 | 57   | 45-312.1X10 | 68   | 45-320.2G16 | 76   | 45-50E.2900 | 94   | 45-569.1105      | 86   |
| 45-2911.2000.113 | 48   | 45-2J31.15T0.000 | 20   | 45-312.1X10 | 73   | 45-320.2G17 | 76   | 45-50F.1100 | 85   | 45-569.1112      | 86   |
| 45-2911.3000.113 | 48   | 45-2J31.15V0.000 | 20   | 45-312.1X40 | 70   | 45-320.2G18 | 76   | 45-50G.0900 | 93   | 45-570.1105      | 86   |
| 45-2917.1000.113 | 49   | 45-2J31.16T0.000 | 20   | 45-312.1Z10 | 68   | 45-320.2G41 | 77   | 45-50J.1400 | 83   | 45-571.1105      | 87   |
| 45-2917.2000.113 | 49   | 45-2J31.16V0.000 | 20   | 45-312.1Z10 | 73   | 45-320.2G42 | 77   | 45-50J.140P | 83   | 45-572.1105      | 87   |
| 45-2917.3000.113 | 49   | 45-2J31.25T0.000 | 20   | 45-312.1Z40 | 70   | 45-320.2G46 | 77   | 45-50J.140Q | 83   | 45-573.1102      | 83   |
| 45-2922.1000.113 | 49   | 45-2J31.25V0.000 | 20   | 45-312.2Z10 | 71   | 45-320.2G47 | 77   | 45-50J.140S | 83   | 45-573.1103      | 83   |
| 45-2922.2000.113 | 49   | 45-2J31.26T0.000 | 20   | 45-312.2Z40 | 72   | 45-320.2G48 | 77   | 45-50J.140T | 83   | 45-573.1104      | 83   |
| 45-2922.3000.113 | 49   | 45-2J31.26V0.000 | 20   | 45-313.1X40 | 70   | 45-320.2H11 | 76   | 45-50J.140V | 83   | 45-573.1105      | 83   |
| 45-2924.1000.113 | 49   | 45-2J31.35T0.000 | 20   | 45-313.1Z10 | 68   | 45-320.2H12 | 76   | 45-50J.140W | 83   | 45-573.1202      | 83   |
| 45-2924.2000.113 | 49   | 45-2J31.36T0.000 | 20   | 45-313.1Z10 | 73   | 45-320.2H16 | 76   | 45-50J.140X | 83   | 45-573.1A02      | 83   |
| 45-2924.3000.113 | 49   | 45-2J31.36V0.000 | 20   | 45-314.1X40 | 70   | 45-320.2H17 | 76   | 45-50J.140Z | 83   | 45-573.1A03      | 83   |
| 45-2925.1000.111 | 47   | 45-2K31.15T0.000 | 22   | 45-314.1X40 | 70   | 45-320.2H18 | 76   | 45-50K.1407 | 83   | 45-573.1A04      | 83   |
| 45-2925.2000.111 | 47   | 45-2K31.15V0.000 | 22   | 45-314.1Z10 | 68   | 45-320.2H41 | 77   | 45-50K.1408 | 83   | 45-573.1A05      | 83   |
| 45-2925.3000.111 | 47   | 45-2K31.16T0.000 | 22   | 45-314.1Z10 | 73   | 45-320.2H42 | 77   | 45-50N.1100 | 87   | 45-574.0600      | 80   |
| 45-2C35.1920.110 | 61   | 45-2K31.16V0.000 | 22   | 45-315.1Z40 | 70   | 45-320.2H46 | 77   | 45-50P.0100 | 87   | 45-2910.1000.113 | 48   |
| 45-2C35.2920.110 | 61   | 45-2K31.35T0.000 | 22   | 45-315.1X40 | 70   | 45-320.2H47 | 77   | 45-50Q.2100 | 87   | 45-2910.2000.113 | 48   |
| 45-2C36.1820.000 | 61   | 45-2K31.35V0.000 | 22   | 45-315.1Z10 | 68   | 45-320.2H48 | 77   | 45-50T.0500 | 80   | 45-2911.1000.113 | 48   |
| 45-2C36.1920.000 | 61   | 45-2K31.36T0.000 | 22   | 45-315.1Z10 | 73   | 45-320.2J11 | 76   | 45-50V.0400 | 80   | 45-2911.2000.113 | 48   |
| 45-2C36.1A20.000 | 61   | 45-2K31.36V0.000 | 22   | 45-320.1E40 | 70   | 45-320.2J12 | 76   | 45-50W.0200 | 80   | 45-2911.3000.113 | 48   |
| 45-2C36.2820.000 | 61   | 45-2N39.1010.000 | 53   | 45-316.1X10 | 68   | 45-320.2J16 | 76   | 45-522.0900 | 84   | 45-2917.1000.113 | 49   |
| 45-2C36.2910.000 | 60   | 45-2N39.2010.000 | 53   | 45-316.1X10 | 73   | 45-320.2J17 | 76   | 45-523.1900 | 89   | 45-2917.2000.113 | 49   |
| 45-2C36.2920.000 | 62   | 45-2N39.3010.000 | 53   | 45-316.1X40 | 70   | 45-320.2J18 | 76   | 45-529.2100 | 81   | 45-2917.3000.113 | 49   |
| 45-2C37.1920.000 | 61   | 45-2N42.1010.000 | 53   | 45-316.1Z40 | 70   | 45-320.2J41 | 77   | 45-530.2100 | 82   | 45-2922.1000.113 | 49   |
| 45-2D36.1820.000 | 63   | 45-2N42.2010.000 | 53   | 45-317.1Z40 | 70   | 45-320.2J42 | 77   | 45-531.2100 | 82   | 45-2922.2000.113 | 49   |
| 45-2D36.1920.000 | 63   | 45-2N42.3010.000 | 53   | 45-320.1E41 | 75   | 45-320.2J46 | 77   | 45-532.2100 | 82   | 45-2922.3000.113 | 49   |
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