eao

Your Expert Partner for **Human Machine Interfaces**

# Series 45

*Catalogue*

www.eao.com

# Expert manufacturers.
## *EAO creates possibilities. Since 1947.*

**Founding year:** 1947
**Number of employees:** 600
**Headquarters:** Olten, Switzerland
**Manufacturing Companies:** Switzerland, Germany, North America, China
**Sales Companies:** 11
**Distribution countries:** 50
**Core markets:** Transportation, Automotive, Heavy Duty & Special Vehicles, Machinery

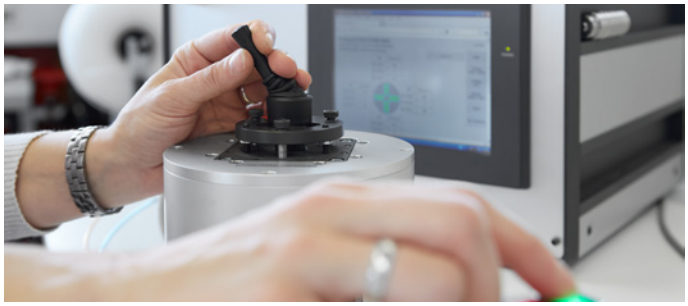
EAO AG, a Swiss, family-owned company founded in 1947, has developed into one of the world's leading manufacturers of high-quality industrial switches, complete custom HMI panels and interface systems, and specialised automotive switch systems.

Efficient and modern development processes, effective global supply chains and skilled project and consultation management represent additional services that we offer our customers and business partners around the world.

### Your solution-focused expert and partner

We do much more than just manufacture individual control elements. As a solution-focused partner, we provide the option of technically and mechanically customizing existing HMI Components in line with our customers' individual requirements. From simple control elements through to sophisticated HMI Systems, from serial production through to installation – we offer the entire range of HMI services and inspire the confidence of our customers.

# Customer-oriented.
## *More than an expert, a partner.*



Being close to customers and able to offer a comprehensive range of services are fundamental to our success and at the core of our corporate policy.

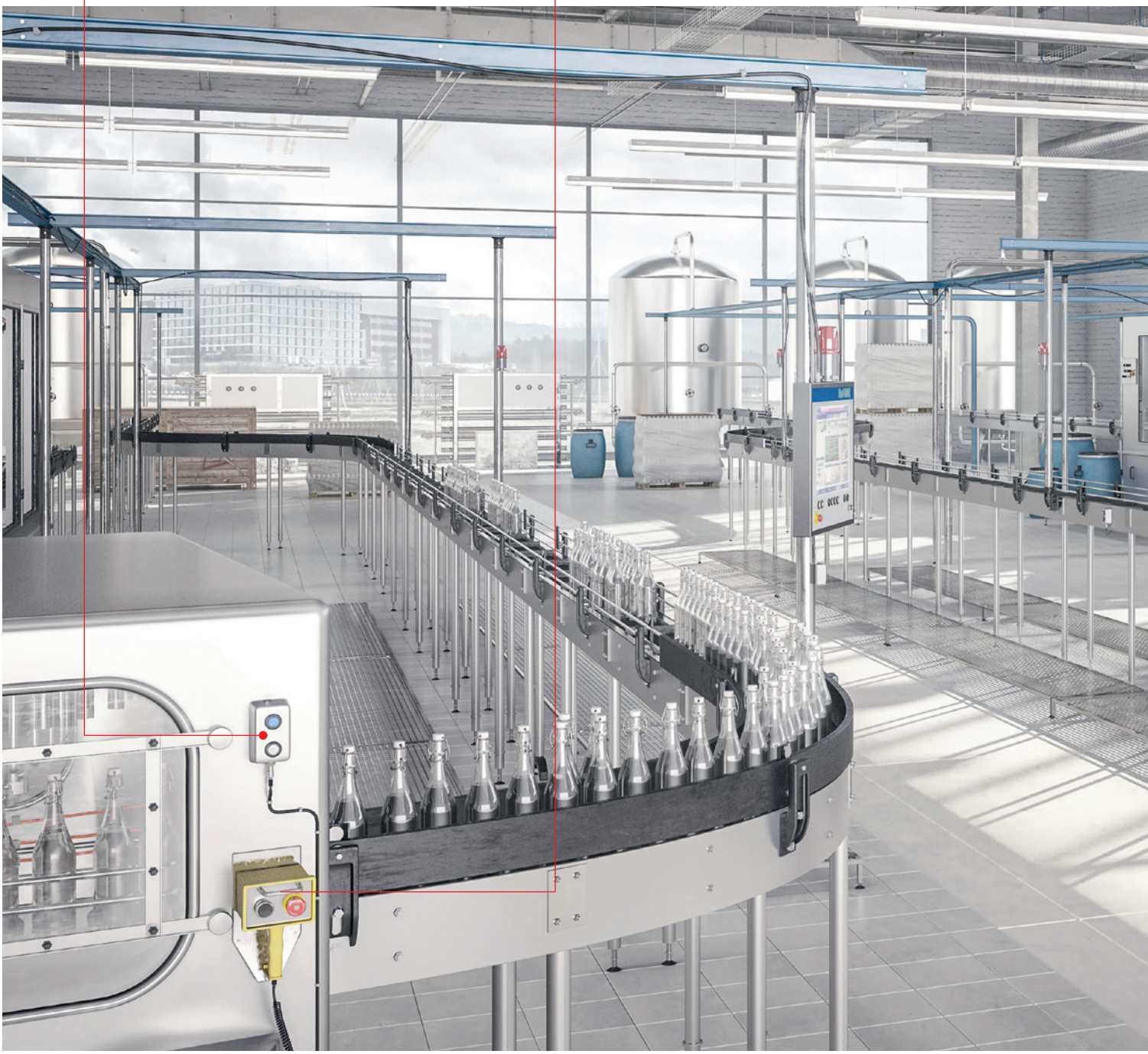
EAO's production sites in Switzerland, Germany, North America and China combine volume production, development, research, and logistics. In addition to these centres of competence, EAO has 11 sales companies around the world at its disposal.

Thanks to this comprehensive network and our 50 distribution companies in the major industrialized countries, EAO is represented wherever interactions between humans and machines play key roles.

# Control.
*For every application.*

Operator Device
*Actuators and indicators for controlling specific and basic machine functions.*

Handheld Control Unit
*HMI solutions for mobile control units.*



Regardless of the industrial demands placed on our HMI Components and Systems, reliability, longevity, intuitive operation and safety are always at the heart of our products and solutions. Our aim is to provide control over these processes and to afford machine operators the greatest possible level of protection at all times.

Main Operator Panel

*HMI Components and Systems for main control units for the overall control of machinery.*

# Series 45.
## *Modular, aesthetic and robust in use.*

### Innovative and comprehensive
*Series 45*

EAO's Series 45 unites an extremely broad range of machine operating functions with outstanding technical properties. Penetration by dust and liquids is prevented even under the most adverse conditions.

**Robust industrial control system**
Resistant to aggressive cleaning agents, oils, dyes and other chemical substances, the actuators and indicators of the new Series 45 work perfectly each and every time. Our HMIs literally keep their cool in the face of high humidity and extreme fluctuations in temperature. Functionality is preserved even when the control units are subjected to dust or water at high pressures (IP69K). Series 45 is ideal for use in the most adverse conditions.

**High level of modularity**
Their modular construction ensures that our HMI Components all operate smoothly with each other. They are straightforward to install and can also be integrated easily into decentralised systems.

**Full functionality**
Every conceivable HMI function can be performed by products from Series 45. Pushbuttons, illuminated pushbuttons, indicators, selector switches, keylock switches, toggle sticks and emergency stop switches are capable of handling all major functions.

**Major benefits**
- Comprehensive Series
- Easy to use, modular construction and rapid assembly without special tools
- Rugged in use; IP69K front protection and metal models
- Modern design thanks to flush mounting, attractive illumination and metallic or plastic appearance
- Low energy consumption thanks to LEDs
- Long service life (up to 10 million switching cycles)

## Overview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# 45 Numbering structure

## Indicator

| 45 - | 2 | T | XX | . | X | X | X | 0 | . | 0 | 0 | 0 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Actuator** | | | | | | | | | | | | |
| T = Indicator | | | | | | | | | | | | |
| **Function** | | | | | | | | | | | | |
| 00 = Full face illumination | | | | | | | | | | | | |
| 07 = Front illumination | | | | | | | | | | | | |
| **Material** | | | | | | | | | | | | |
| 1 = Plastic | | | | | | | | | | | | |
| 2 = Metal | | | | | | | | | | | | |
| 3 = Metal/plastic | | | | | | | | | | | | |
| 4 = Metal/matt | | | | | | | | | | | | |
| **Shape of handle or front ring** | | | | | | | | | | | | |
| F = flush | | | | | | | | | | | | |
| 0 = raised | | | | | | | | | | | | |
| **Colour** | | | | | | | | | | | | |
| E = red transparent | | | | | | | | | | | | |
| F = amber transparent | | | | | | | | | | | | |
| G = yellow transparent | | | | | | | | | | | | |
| H = green transparent | | | | | | | | | | | | |
| J = blue transparent | | | | | | | | | | | | |
| K = colourless transparent | | | | | | | | | | | | |
| N = white transparent | | | | | | | | | | | | |

## Pushbutton

45 - 2 1 XX . X X X 0 . 0 0 0

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Actuator** | | | | | | | | | | | |
| 1 = Pushbutton | | 1 | | | | | | | | | |
| **Function** | | | | | | | | | | | |
| 31 = 2 positions, momentary | | | 31 | | | | | | | | |
| 34 = 2 positions, maintain, push to release | | | 34 | | | | | | | | |
| **Material** | | | | | | | | | | | |
| 1 = Plastic | | | | 1 | | | | | | | |
| 2 = Metal | | | | 2 | | | | | | | |
| 3 = Metal/plastic | | | | 3 | | | | | | | |
| 4 = Metal/matt | | | | 4 | | | | | | | |
| **Shape of handle or front ring** | | | | | | | | | | | |
| 1 = raised/lens level with front ring | | | | | 1 | | | | | | |
| 2 = raised/lens raised above front ring | | | | | 2 | | | | | | |
| 3 = raised/lens lower than front ring | | | | | 3 | | | | | | |
| 4 = raised/lens lower than front ring, with castallations | | | | | 4 | | | | | | |
| F = flush | | | | | F | | | | | | |
| **Colour** | | | | | | | | | | | |
| 1 = black | | | | | | 1 | | | | | |
| 2 = red | | | | | | 2 | | | | | |
| 4 = yellow | | | | | | 4 | | | | | |
| 5 = green | | | | | | 5 | | | | | |
| 6 = blue | | | | | | 6 | | | | | |
| 8 = grey | | | | | | 8 | | | | | |
| 9 = white | | | | | | 9 | | | | | |
| K = clear transparent | | | | | | K | | | | | |

# 45 Numbering structure

## Double pushbutton, Double pushbutton illuminated

45 - 2 X XX . X X X 0 . 0 0 0

**Actuator**

J = Double pushbutton

K = Double pushbutton illuminated

**Function**

31 = 2 positions, momentary

**Material**

1 = Plastic

2 = Metal

3 = Metal/plastic

**Shape of handle**

5 = 2 lenses level with front ring

6 = lens level with front ring/ lens level raised above front ring

**Colour**

T = green/red

V = white/black

## Illuminated pushbutton

45 - 2 2 XX . X X X 0 . 0 0 0

**Actuator**

2 = Illuminated pushbutton

**Function**

31 = 2 positions, momentary

34 = 2 positions, maintain, push to release

**Material**

1 = Plastic

2 = Metal

3 = Metal/plastic

4 = Metal/matt

**Shape of handle or front ring**

1 = raised/lens level with front ring

2 = raised/lens raised above front ring

4 = raised/lens lower than front ring, with castallations

F = flush

**Colour**

E = red transparent

F = amber transparent

G = yellow transparent

H = green transparent

J = blue transparent

K = colourless transparent

N = white transparent

# 45 Numbering structure

## Emergency stop switch

45 - 2 X XX . X X X 0 . 0 0 0

**Actuator**

C = Emergency stop switch

D = Emergency stop switch, illuminated

**Function**

35 = Key to release

36 = Twist to release

37 = Pull to release

**Material**

1 = Plastic

**Shape of handle or front ring**

8 = Diameter 30 mm

9 = Diameter 40 mm

A = Diameter 60 mm

**Colour**

2 = red

## Stop switch

45 - 2 7 XX . X X X 0 . 0 0 0

**Actuator**

7 = Stop switch

**Function**

36 = Twist to release

**Material**

1 = Plastic

**Shape of handle or front ring**

9 = Diameter 40 mm

**Colour**

1 = black

# 45 Numbering structure

## Mushroom-head pushbutton

45 - 2 X XX . X X X 0 . 0 0 0

**Actuator**

5 = Mushroom-head pushbutton

6 = Mushroom-head pushbutton, illuminated

**Function**

30 = 2 positions, maintain, pull release

31 = 2 positions, momentary

32 = 3 positions, maintain/momentary, pull release

**Material**

1 = Plastic

2 = Metal

3 = Metal/plastic

**Shape of handle or front ring**

8 = Diameter 30 mm

9 = Diameter 40 mm

A = Diameter 60 mm

**Colour**

1 = black

2 = red

4 = yellow

5 = green

## Keylock switch

45 - 2 9 XX . X X 0 0 . X X X

**Actuator**

9 = Keylock switch

**Function**

0C = 3 positions, maintain, key remove L/R
0D = 3 positions, maintain, key remove L
0F = 3 positions, maintain, key remove L/C/R
0G = 3 positions, maintain, key remove L/C
0H = 2 positions, maintain, key remove L/R
0J = 2 positions, maintain, key remove L
0K = 2 positions, maintain, key remove L
0Z = 3 positions, maintain, key remove C
11 = 3 positions, momentary/maintain, key remove C
17 = 3 positions, maintain, key remove R
22 = 3 positions, maintain/momentary, key remove C
24 = 3 positions, maintain, key remove C
25 = 2 positions, maintain, key remove R

**Material**

1 = Plastic
2 = Metal
3 = Metal/plastic
4 = Metal/matt

**Shape of handle or front ring**

F = flush
0 = raised

**Lock System**

1 = RONIS

**Key**

1 = T254

**Angle**

1 = 90° (V-Pos)
3 = 2x45° (V-Pos)
6 = 45° (0-Pos.12 o'clock)

# 45 Numbering structure

## Selector switch

| 45 - | 2 | 8 | XX | . | X | X | X | 0 | . | 0 | 0 | X |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Actuator** | | | | | | | | | | | | |
| 8 = Selector switch | | | | | | | | | | | | |
| **Function** | | | | | | | | | | | | |
| 0S = 3 positions, momentary | | | | | | | | | | | | |
| 0X = 3 positions, momentary L, maintain R | | | | | | | | | | | | |
| 16 = 3 positions, momentary R, maintain L | | | | | | | | | | | | |
| 19 = 3 positions, maintain | | | | | | | | | | | | |
| 28 = 2 positions, maintain | | | | | | | | | | | | |
| 44 = 2 positions, momentary | | | | | | | | | | | | |
| 45 = 4 positions, Maintain, (0-Position 15 h/18 h/21 h/12 h | | | | | | | | | | | | |
| **Material** | | | | | | | | | | | | |
| 1 = Plastic | | | | | | | | | | | | |
| 2 = Metal | | | | | | | | | | | | |
| 3 = Metal/plastic | | | | | | | | | | | | |
| 4 = Metal/matt | | | | | | | | | | | | |
| **Shape of handle or front ring** | | | | | | | | | | | | |
| C = short lever | | | | | | | | | | | | |
| D = long lever | | | | | | | | | | | | |
| E = round lever | | | | | | | | | | | | |
| **Colour** | | | | | | | | | | | | |
| 2 = red | | | | | | | | | | | | |
| 4 = yellow | | | | | | | | | | | | |
| 5 = green | | | | | | | | | | | | |
| 6 = blue | | | | | | | | | | | | |
| 9 = white | | | | | | | | | | | | |
| **Angle** | | | | | | | | | | | | |
| 1 = 90° (V-Pos) | | | | | | | | | | | | |
| 2 = 4x90° | | | | | | | | | | | | |
| 3 = 2x45° (V-Pos) | | | | | | | | | | | | |
| 6 = 45° (0-Pos.12 o'clock) | | | | | | | | | | | | |

## Potentiometer

45 - 2 P XX . X X X 0 . 0 0 0

**Actuator**

P = Potentiometer

**Function**

01 = 100 kOhm
02 = 10 kOhm
03 = 1 kOhm
04 = 4.7 kOhm
05 = 470 kOhm
06 = 47 kOhm

**Material**

1 = Plastic
2 = Metal

**Shape of handle or front ring**

E = round lever

**Colour**

1 = black

# 45 Numbering structure

## Toggle stick

45 - 2 F XX . X X X 0 . 0 0 0

**Actuator**

F = Toggle stick

**Function**

0T = 2 positions, momentary, L/R
0V = 4 positions, momentary, L/R/U/D
13 = 2 positions, momentary, L/R, lockable C
14 = 4 positions, momentary, L/R/U/D, lockable C
20 = 2 positions, maintain, L/R
21 = 4 positions, maintain, L/R/U/D
26 = 2 positions, maintain, L/R, lockable C
27 = 4 positions, maintain, L/R/U/D, lockable C
38 = 2 positions, momentary U/D
40 = 2 positions, momentary, U/D, lockable C
41 = 2 positions, maintain, U/D
43 = 2 positions, maintain, U/D, lockable

**Material**

1 = Plastic
2 = Metal
3 = Metal/plastic

**Colour**

1 = black

## Toggle switch

45 - 2 N XX . X 0 1 0 . 0 0 0

**Actuator**

N = Toggle switch

**Funktion**

39 = 2 positions, momentary

42 = 2 positions, maintain

**Material**

1 = Plastic

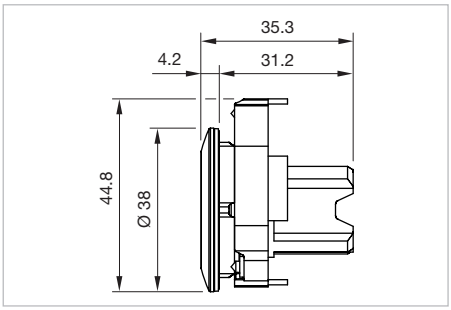
2 = Metal

3 = Metal/plastic

# 45 Flush design

## Indicator, IP66, IP67, IP69K

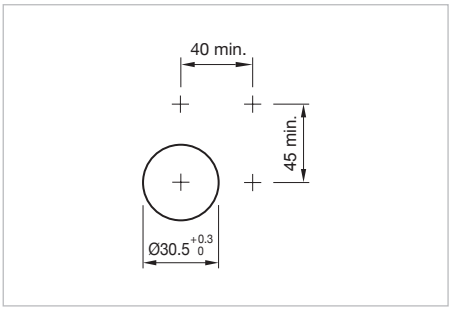
Product can differ from the current configuration.




Dimensions [mm]

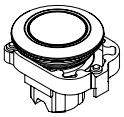
**Additional Information**

- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm

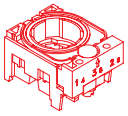



Mounting cut-outs [mm]

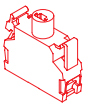
**Equipment consisting of (schematic overview)**



**Actuator**



***Holder*** *page 130*



***Illumination element*** *page 134*

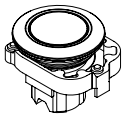
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

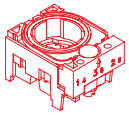
| LED colour | Front ring | Lens cap | Part No. | Weight |
|---|---|---|---|---|
| **Indicator actuator, Front dimension Ø 38 mm** | | | | |
| red | Metal sandgrey | Plastic red transparent | **45-2T07.4FE0.000** | 0.048 kg |
| **Indicator actuator, Front dimension Ø 38 mm** | | | | |
| yellow | Metal sandgrey | Plastic yellow transparent | **45-2T07.4FG0.000** | 0.048 kg |
| **Indicator actuator, Front dimension Ø 38 mm** | | | | |
| green | Metal sandgrey | Plastic green transparent | **45-2T07.4FH0.000** | 0.048 kg |
| **Indicator actuator, Front dimension Ø 38 mm** | | | | |
| blue | Metal sandgrey | Plastic blue transparent | **45-2T07.4FJ0.000** | 0.048 kg |
| **Indicator actuator, Front dimension Ø 38 mm** | | | | |
| white | Metal sandgrey | Plastic colourless transparent | **45-2T07.4FK0.000** | 0.048 kg |

## Pushbutton, IP66, IP67, IP69K

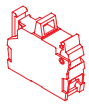
**Equipment consisting of (schematic overview)**



**Actuator**



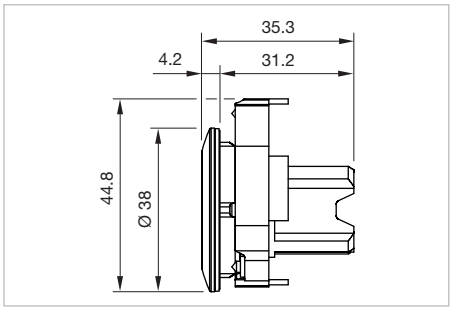
***Holder*** *page 130*



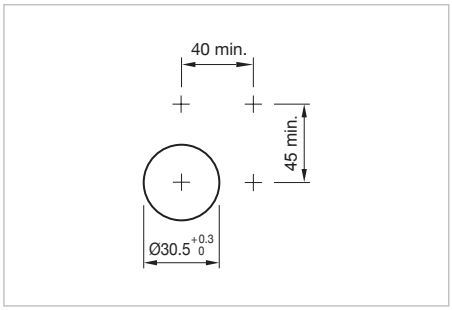
***Switching element*** *page 132*

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

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




Dimensions [mm]




Mounting cut-outs [mm]

Product can differ from the current configuration.

**Additional Information**

- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm

| Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic black | B | **45-2131.4F10.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic red | B | **45-2131.4F20.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic yellow | B | **45-2131.4F40.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic green | B | **45-2131.4F50.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic blue | B | **45-2131.4F60.000** | 1 | 0.048 kg |

# 45 Flush design

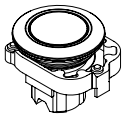
| Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic white | B | **45-2131.4F90.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic black | C | **45-2134.4F10.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic red | C | **45-2134.4F20.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic yellow | C | **45-2134.4F40.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic green | C | **45-2134.4F50.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic blue | C | **45-2134.4F60.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | |
| Metal sandgrey | Plastic white | C | **45-2134.4F90.000** | 2 | 0.048 kg |

Switching action: B = Momentary, C = Maintain

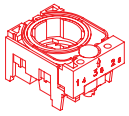
| | |
|---|---|
| Wiring diagram 1 | Wiring diagram 2 |

## Illuminated pushbutton, IP66, IP67, IP69K

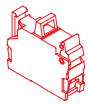
**Equipment consisting of (schematic overview)**



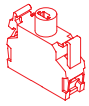
**Actuator**



***Holder*** *page 130*



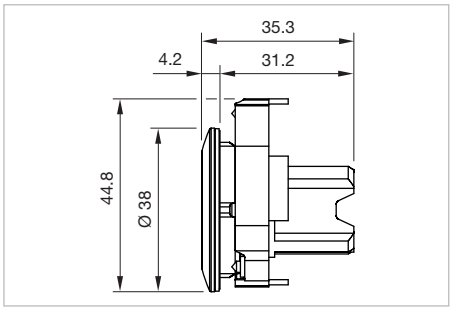
***Switching element*** *page 132*



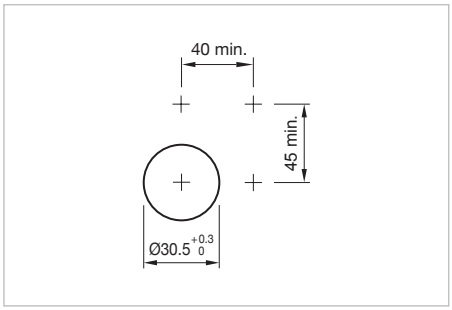
***Illumination element*** *page 134*

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

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




Dimensions [mm]




Mounting cut-outs [mm]

Product can differ from the current configuration.

**Additional Information**

- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm

| LED colour | Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | | |
| red | Metal sandgrey | Plastic red transparent | B | **45-2231.4FE0.000** | 1 | 0.048 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | | |
| yellow | Metal sandgrey | Plastic yellow transparent | B | **45-2231.4FG0.000** | 1 | 0.048 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | | |
| green | Metal sandgrey | Plastic green transparent | B | **45-2231.4FH0.000** | 1 | 0.048 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | | |
| blue | Metal sandgrey | Plastic blue transparent | B | **45-2231.4FJ0.000** | 1 | 0.048 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 38 mm** | | | | | | |
| white | Metal sandgrey | Plastic colourless transparent | B | **45-2231.4FK0.000** | 1 | 0.048 kg |

# 45 Flush design

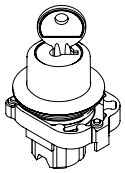
| LED colour | Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | | |
| red | Metal sandgrey | Plastic red transparent | C | **45-2234.4FE0.000** | 2 | 0.048 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | | |
| yellow | Metal sandgrey | Plastic yellow transparent | C | **45-2234.4FG0.000** | 2 | 0.048 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | | |
| green | Metal sandgrey | Plastic green transparent | C | **45-2234.4FH0.000** | 2 | 0.048 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | | |
| blue | Metal sandgrey | Plastic blue transparent | C | **45-2234.4FJ0.000** | 2 | 0.048 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 38 mm** | | | | | | |
| white | Metal sandgrey | Plastic colourless transparent | C | **45-2234.4FK0.000** | 2 | 0.048 kg |

Switching action: B = Momentary, C = Maintain

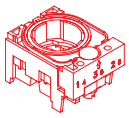
| | |
|---|---|
| Wiring diagram 1 | Wiring diagram 2 |

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

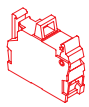
**Equipment consisting of (schematic overview)**



**Actuator**



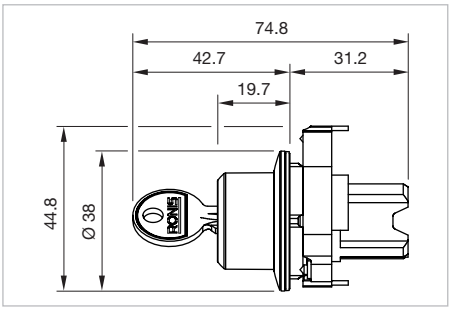
***Holder*** *page 130*



***Switching element*** *page 132*

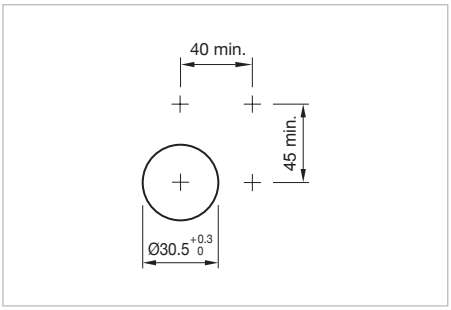
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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




Dimensions [mm]

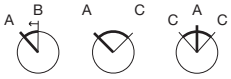
Product can differ from the current configuration.




Mounting cut-outs [mm]

**Additional Information**

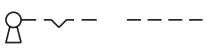
- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm
- The standard lock: RONIS, T254
- Two keys are supplied with each key lock switch



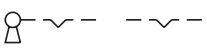

Switching positions (A = Rest, B = Momentary, C = Maintained)

| Front ring | Switching action | Switching angle | Key remove | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Keylock switch 2 positions, Front dimension Ø 38 mm** | | | | | | |
| Metal sandgrey | A - B | B = 45° | A | **45-290J.4F00.116** | 1 | 0.090 kg |
| | A - C | C = 90° | A + C | **45-290H.4F00.111** | 2 | 0.090 kg |
| | | | A | **45-290J.4F00.111** | 2 | 0.090 kg |
| **Keylock switch 3 positions, Front dimension Ø 38 mm** | | | | | | |
| Metal sandgrey | C - A - C | C = 45° | C - A - C | **45-290F.4F00.113** | 3 | 0.090 kg |

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



Wiring diagram 1



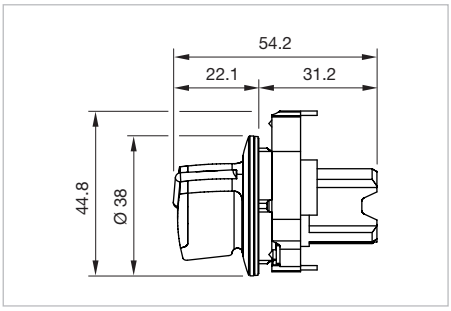
Wiring diagram 2

Wiring diagram 3

# 45 Flush design

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

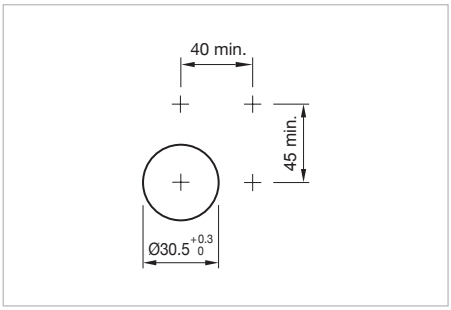
Product can differ from the current configuration.




Dimensions [mm]

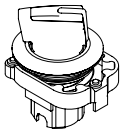
**Additional Information**

- It is advisable to choose a white illumination
- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm
- Illumination elements are optional

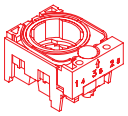



Mounting cut-outs [mm]

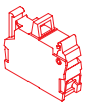
**Equipment consisting of (schematic overview)**



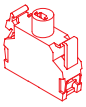
**Actuator**



***Holder*** *page 130*



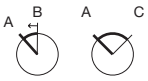
***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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

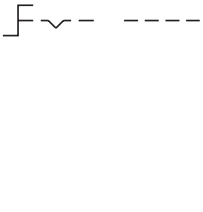



Switching positions (A = Rest, B = Momentary, C = Maintained)

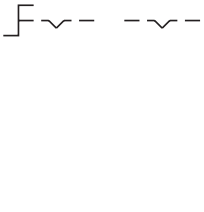
| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | A - B | B = 45° | **45-2844.4C20.006** | 1 | 0.055 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic green | Metal sandgrey | A - B | B = 45° | **45-2844.4C50.006** | 1 | 0.055 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic white | Metal sandgrey | A - B | B = 45° | **45-2844.4C90.006** | 1 | 0.055 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | A - C | C = 90° | **45-2828.4C20.001** | 2 | 0.055 kg |

| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic green | Metal sandgrey | A - C | C = 90° | **45-2828.4C50.001** | 2 | 0.055 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic white | Metal sandgrey | A - C | C = 90° | **45-2828.4C90.001** | 2 | 0.055 kg |

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



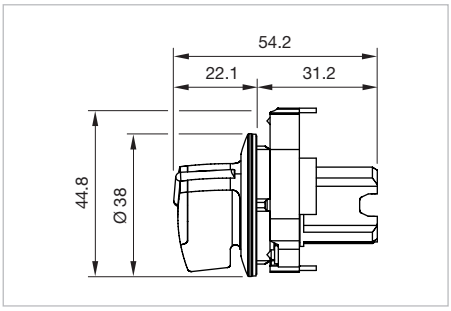
Wiring diagram 1



Wiring diagram 2

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

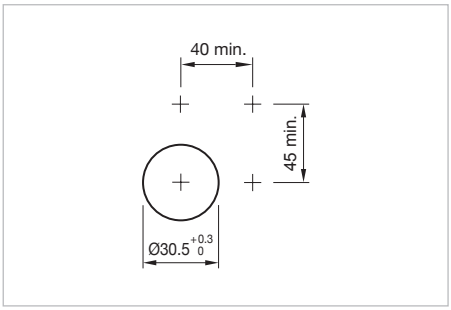
Product can differ from the current configuration.




Dimensions [mm]

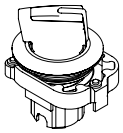
**Additional Information**

- It is advisable to choose a white illumination
- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm
- Illumination elements are optional

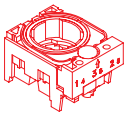



Mounting cut-outs [mm]

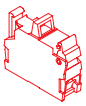
**Equipment consisting of (schematic overview)**



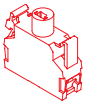
**Actuator**



***Holder*** *page 130*



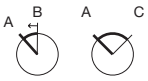
***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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

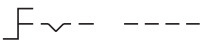
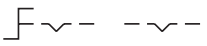



Switching positions (A = Rest, B = Momentary, C = Maintained)

| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | A - B | B = 45° | **45-2844.4D20.006** | 1 | 0.055 kg |
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic green | Metal sandgrey | A - B | B = 45° | **45-2844.4D50.006** | 1 | 0.055 kg |
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic white | Metal sandgrey | A - B | B = 45° | **45-2844.4D90.006** | 1 | 0.055 kg |
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | A - C | C = 90° | **45-2828.4D20.001** | 2 | 0.055 kg |

| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic green | Metal sandgrey | A - C | C = 90° | **45-2828.4D50.001** | 2 | 0.055 kg |
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic white | Metal sandgrey | A - C | C = 90° | **45-2828.4D90.001** | 2 | 0.055 kg |

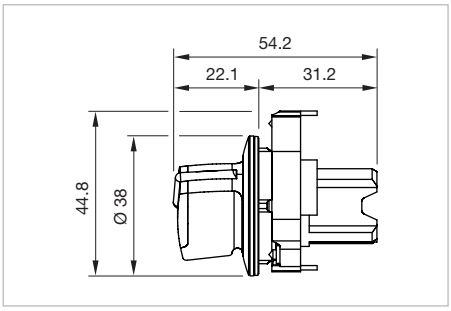
Switching action: A = Rest, B = Momentary, C = Maintain

| | |
|---|---|
|  Wiring diagram 1 |  Wiring diagram 2 |

# 45 Flush design

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

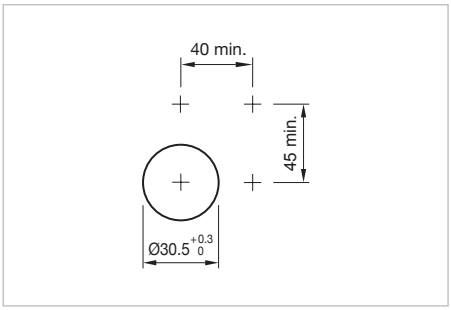
Product can differ from the current configuration.




Dimensions [mm]

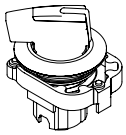
**Additional Information**

- It is advisable to choose a white illumination
- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm
- Illumination elements are optional

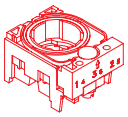



Mounting cut-outs [mm]

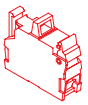
**Equipment consisting of (schematic overview)**



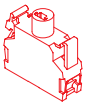
**Actuator**



***Holder*** *page 130*



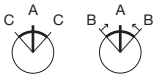
***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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




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

| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | C - A - C | C = 45° | **45-2819.4C20.003** | 1 | 0.055 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic green | Metal sandgrey | C - A - C | C = 45° | **45-2819.4C50.003** | 1 | 0.055 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic white | Metal sandgrey | C - A - C | C = 45° | **45-2819.4C90.003** | 1 | 0.055 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | B - A - B | B = 45° | **45-280S.4C20.003** | 2 | 0.055 kg |

| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 38 mm** | | | | | |
| Plastic green | Metal sandgrey | B - A - B | B = 45° | **45-280S.4C50.003** | 2 | 0.055 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 38 mm** | | | | | |
| Plastic white | Metal sandgrey | B - A - B | B = 45° | **45-280S.4C90.003** | 2 | 0.055 kg |

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

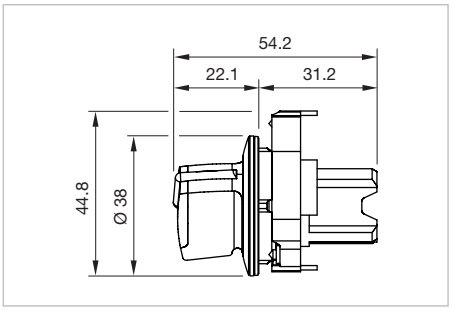
Wiring diagram 1

Wiring diagram 2

# 45 Flush design

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

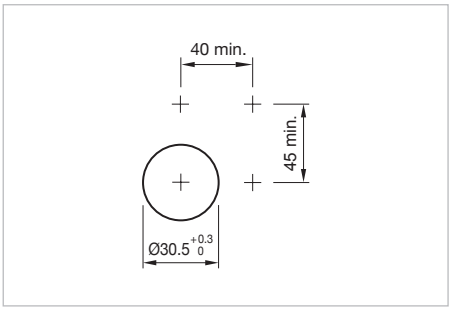
Product can differ from the current configuration.




Dimensions [mm]

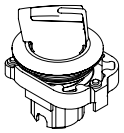
**Additional Information**

- It is advisable to choose a white illumination
- Mounting depth incl. front plate, see chapter «drawings»
- Front panel thickness 1 … 6 mm
- Illumination elements are optional

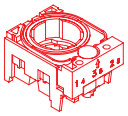



Mounting cut-outs [mm]

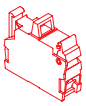
**Equipment consisting of (schematic overview)**



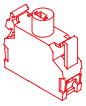
**Actuator**



***Holder*** *page 130*



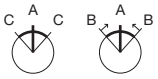
***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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




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

| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | C - A - C | C = 45° | **45-2819.4D20.003** | 1 | 0.055 kg |
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic green | Metal sandgrey | C - A - C | C = 45° | **45-2819.4D50.003** | 1 | 0.055 kg |
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic white | Metal sandgrey | C - A - C | C = 45° | **45-2819.4D90.003** | 1 | 0.055 kg |
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 38 mm** | | | | | | |
| Plastic red | Metal sandgrey | B - A - B | B = 45° | **45-280S.4D20.003** | 2 | 0.055 kg |

| Lever | Front ring | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 38 mm** | | | | | |
| Plastic green | Metal sandgrey | B - A - B | B = 45° | **45-280S.4D50.003** | 2 | 0.055 kg |
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 38 mm** | | | | | |
| Plastic white | Metal sandgrey | B - A - B | B = 45° | **45-280S.4D90.003** | 2 | 0.055 kg |

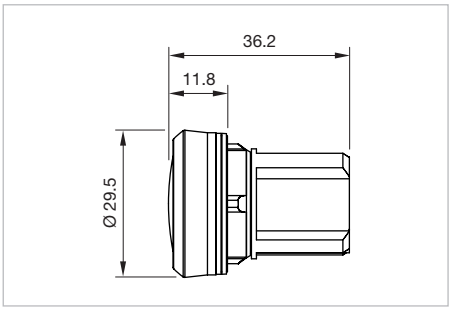
Switching action: A = Rest, B = Momentary, C = Maintain

| | |
|---|---|
| Wiring diagram 1 | Wiring diagram 2 |

# 45 Raised design

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

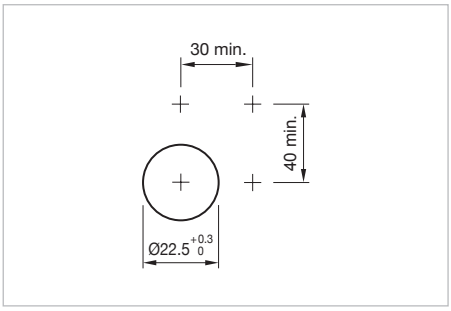
Product can differ from the current configuration.




Dimensions [mm]

**Additional Information**

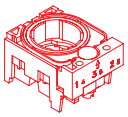
- Mounting depth incl. front plate, see chapter «drawings»



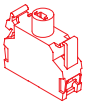

Mounting cut-outs [mm]

**Equipment consisting of (schematic overview)**

**Actuator**



***Holder*** *page 130*



***Illumination element*** *page 134*

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.*

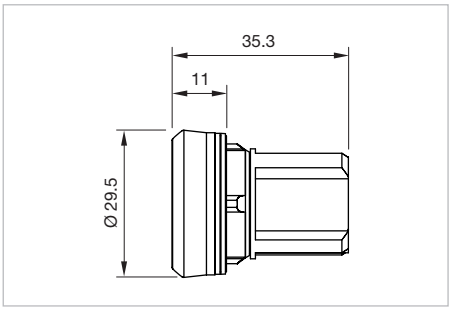
| LED colour | Housing material | Lens cap | Part No. | Weight |
|---|---|---|---|---|
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| amber | Plastic | Plastic amber transparency | **45-2T00.10F0.000** | 0.001 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| red | Plastic | Plastic red transparent | **45-2T00.10E0.000** | 0.001 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| yellow | Plastic | Plastic yellow transparent | **45-2T00.10G0.000** | 0.001 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| green | Plastic | Plastic green transparent | **45-2T00.10H0.000** | 0.001 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| blue | Plastic | Plastic blue transparent | **45-2T00.10J0.000** | 0.001 kg |

| LED colour | Housing material | Lens cap | Part No. | Weight |
|---|---|---|---|---|
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| white | Plastic | Plastic white transparent | **45-2T00.10N0.000** | 0.001 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| colourless | Plastic | Plastic colourless transparent | **45-2T00.10K0.000** | 0.001 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| amber | Metal | Plastic amber transparency | **45-2T00.20F0.000** | 0.010 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| red | Metal | Plastic red transparent | **45-2T00.20E0.000** | 0.010 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| yellow | Metal | Plastic yellow transparent | **45-2T00.20G0.000** | 0.010 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| green | Metal | Plastic green transparent | **45-2T00.20H0.000** | 0.010 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| blue | Metal | Plastic blue transparent | **45-2T00.20J0.000** | 0.010 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| white | Metal | Plastic white transparent | **45-2T00.20N0.000** | 0.010 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | |
| colourless | Metal | Plastic colourless transparent | **45-2T00.20K0.000** | 0.010 kg |

# 45 Raised design

## Indicator front illumination, IP66, IP67, IP69K

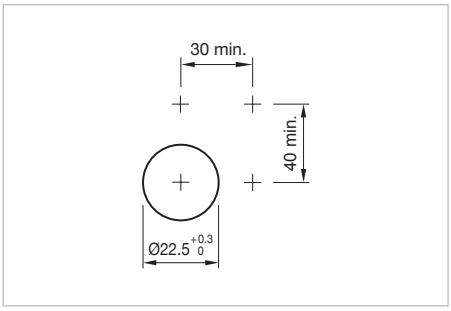
Product can differ from the current configuration.




Dimensions [mm]

**Additional Information**

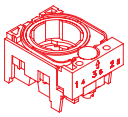
- Mounting depth incl. front plate, see chapter «drawings»



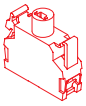

Mounting cut-outs [mm]

**Equipment consisting of (schematic overview)**

**Actuator**



***Holder*** *page 130*



***Illumination element*** *page 134*

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.*

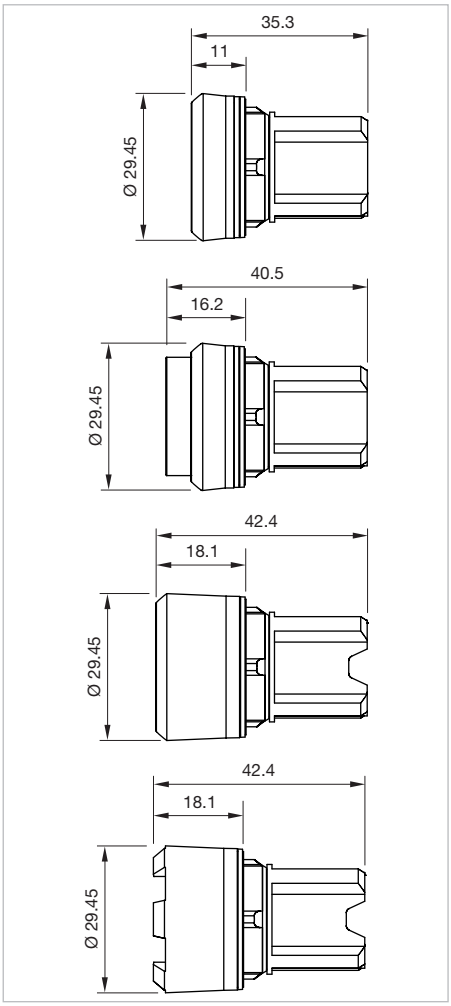
| LED colour | Front ring | Lens | Housing material | Part No. | Weight |
|---|---|---|---|---|---|
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| red | Plastic black | Plastic red transparent | Plastic | **45-2T07.10E0.000** | 0.011 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| yellow | Plastic black | Plastic yellow transparent | Plastic | **45-2T07.10G0.000** | 0.011 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| green | Plastic black | Plastic green transparent | Plastic | **45-2T07.10H0.000** | 0.011 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| blue | Plastic black | Plastic blue transparent | Plastic | **45-2T07.10J0.000** | 0.011 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| colourless | Plastic black | Plastic colourless transparent | Plastic | **45-2T07.10K0.000** | 0.011 kg |

| LED colour | Front ring | Lens | Housing material | Part No. | Weight |
|---|---|---|---|---|---|
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| red | Metal sandgrey | Plastic red transparent | Plastic | **45-2T07.30E0.000** | 0.020 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| yellow | Metal sandgrey | Plastic yellow transparent | Plastic | **45-2T07.30G0.000** | 0.020 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| green | Metal sandgrey | Plastic green transparent | Plastic | **45-2T07.30H0.000** | 0.020 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| blue | Metal sandgrey | Plastic blue transparent | Plastic | **45-2T07.30J0.000** | 0.020 kg |
| **Indicator actuator, Front dimension Ø 29.45 mm** | | | | | |
| colourless | Metal sandgrey | Plastic colourless transparent | Plastic | **45-2T07.30K0.000** | 0.020 kg |

# 45 Raised design

## Pushbutton, IP66, IP67, IP69K

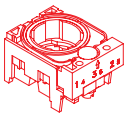
Product can differ from the current configuration.



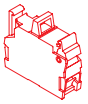

Dimensions [mm]

**Equipment consisting of (schematic overview)**

**Actuator**



***Holder*** *page 130*



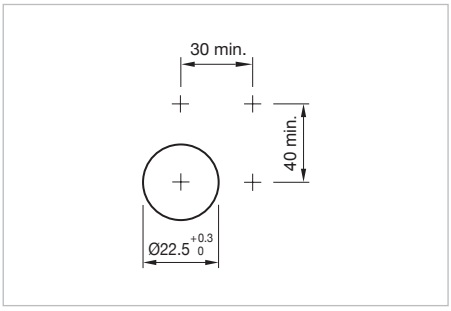
***Switching element*** *page 132*

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

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

**Additional Information**

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




Mounting cut-outs [mm]

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic black | Plastic | B | **45-2131.1110.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic red | Plastic | B | **45-2131.1120.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic yellow | Plastic | B | **45-2131.1140.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic green | Plastic | B | **45-2131.1150.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic blue | Plastic | B | **45-2131.1160.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic grey | Plastic | B | **45-2131.1180.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic white | Plastic | B | **45-2131.1190.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic colourless | Plastic | B | **45-2131.11K0.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic black | Plastic | C | **45-2134.1110.000** | 2 | 0.013 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic red | Plastic | C | **45-2134.1120.000** | 2 | 0.013 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic yellow | Plastic | C | **45-2134.1140.000** | 2 | 0.013 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic green | Plastic | C | **45-2134.1150.000** | 2 | 0.013 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic blue | Plastic | C | **45-2134.1160.000** | 2 | 0.013 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic white | Plastic | C | **45-2134.1190.000** | 2 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic black | Plastic | B | **45-2131.3110.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic red | Plastic | B | **45-2131.3120.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic yellow | Plastic | B | **45-2131.3140.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic green | Plastic | B | **45-2131.3150.000** | 1 | 0.021 kg |

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic blue | Plastic | B | **45-2131.3160.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic grey | Plastic | B | **45-2131.3180.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic white | Plastic | B | **45-2131.3190.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic colourless | Plastic | B | **45-2131.31K0.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic black | Plastic | C | **45-2134.3110.000** | 2 | 0.021 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic red | Plastic | C | **45-2134.3120.000** | 2 | 0.021 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic yellow | Plastic | C | **45-2134.3140.000** | 2 | 0.021 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic green | Plastic | C | **45-2134.3150.000** | 2 | 0.021 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic blue | Plastic | C | **45-2134.3160.000** | 2 | 0.021 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic white | Plastic | C | **45-2134.3190.000** | 2 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic black | Metal | B | **45-2131.2110.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic red | Metal | B | **45-2131.2120.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic yellow | Metal | B | **45-2131.2140.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic green | Metal | B | **45-2131.2150.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic blue | Metal | B | **45-2131.2160.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic grey | Metal | B | **45-2131.2180.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic white | Metal | B | **45-2131.2190.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic colourless | Metal | B | **45-2131.21K0.000** | 1 | 0.048 kg |

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic black | Metal | C | **45-2134.2110.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic red | Metal | C | **45-2134.2120.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic yellow | Metal | C | **45-2134.2140.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic green | Metal | C | **45-2134.2150.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic blue | Metal | C | **45-2134.2160.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic white | Metal | C | **45-2134.2190.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic black | Plastic | B | **45-2131.1210.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic red | Plastic | B | **45-2131.1220.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic yellow | Plastic | B | **45-2131.1240.000** | 1 | 0.013 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic green | Plastic | B | **45-2131.1250.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic blue | Plastic | B | **45-2131.1260.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic white | Plastic | B | **45-2131.1290.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic black | Plastic | B | **45-2131.3210.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic red | Plastic | B | **45-2131.3220.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic yellow | Plastic | B | **45-2131.3240.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic green | Plastic | B | **45-2131.3250.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic blue | Plastic | B | **45-2131.3260.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic white | Plastic | B | **45-2131.3290.000** | 1 | 0.021 kg |

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic black | Metal | B | **45-2131.2210.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic red | Metal | B | **45-2131.2220.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic yellow | Metal | B | **45-2131.2240.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic green | Metal | B | **45-2131.2250.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic blue | Metal | B | **45-2131.2260.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic white | Metal | B | **45-2131.2290.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic red | Metal | C | **45-2134.2220.000** | 2 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Plastic black | Plastic black | Plastic | B | **45-2131.1310.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Plastic black | Plastic red | Plastic | B | **45-2131.1320.000** | 1 | 0.013 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Plastic black | Plastic yellow | Plastic | B | **45-2131.1340.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Plastic black | Plastic green | Plastic | B | **45-2131.1350.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Plastic black | Plastic blue | Plastic | B | **45-2131.1360.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Plastic black | Plastic white | Plastic | B | **45-2131.1390.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal sandgrey | Plastic black | Plastic | B | **45-2131.3310.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal sandgrey | Plastic red | Plastic | B | **45-2131.3320.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal sandgrey | Plastic yellow | Plastic | B | **45-2131.3340.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal sandgrey | Plastic green | Plastic | B | **45-2131.3350.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal sandgrey | Plastic blue | Plastic | B | **45-2131.3360.000** | 1 | 0.021 kg |

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal sandgrey | Plastic white | Plastic | B | **45-2131.3390.000** | 1 | 0.021 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal silver | Plastic black | Metal | B | **45-2131.2310.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal silver | Plastic red | Metal | B | **45-2131.2320.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal silver | Plastic yellow | Metal | B | **45-2131.2340.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal silver | Plastic green | Metal | B | **45-2131.2350.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal silver | Plastic blue | Metal | B | **45-2131.2360.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lower than front ring | Metal silver | Plastic white | Metal | B | **45-2131.2390.000** | 1 | 0.048 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lover than front ring, with castellation | Plastic black | Plastic black | Plastic | B | **45-2131.1410.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lover than front ring, with castellation | Plastic black | Plastic red | Plastic | B | **45-2131.1420.000** | 1 | 0.013 kg |

# 45 Raised design

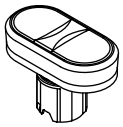
| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lover than front ring, with castellation | Plastic black | Plastic yellow | Plastic | B | **45-2131.1440.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lover than front ring, with castellation | Plastic black | Plastic green | Plastic | B | **45-2131.1450.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lover than front ring, with castellation | Plastic black | Plastic blue | Plastic | B | **45-2131.1460.000** | 1 | 0.013 kg |
| **Pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lover than front ring, with castellation | Plastic black | Plastic white | Plastic | B | **45-2131.1490.000** | 1 | 0.013 kg |

Switching action: B = Momentary, C = Maintain

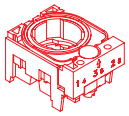
| | |
|---|---|
| Wiring diagram 1 | Wiring diagram 2 |

## Double pushbutton, IP66, IP67, IP69K

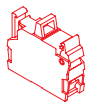
**Equipment consisting of (schematic overview)**



**Actuator**



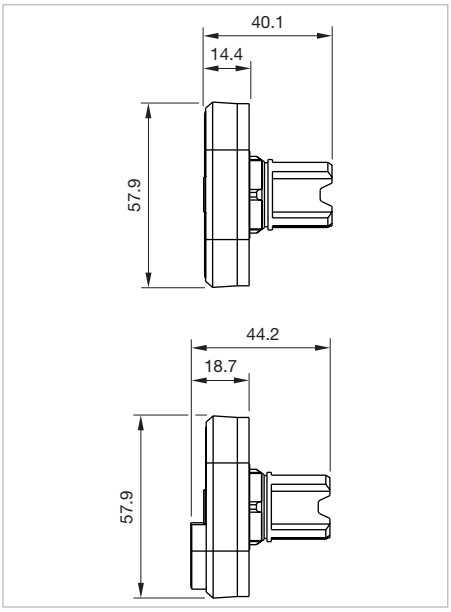
***Holder*** *page 130*



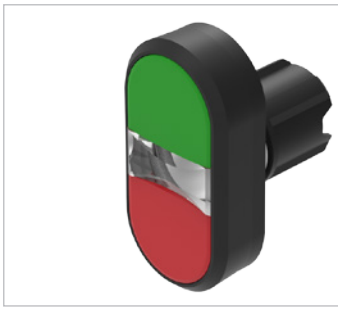
***Switching element*** *page 132*

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

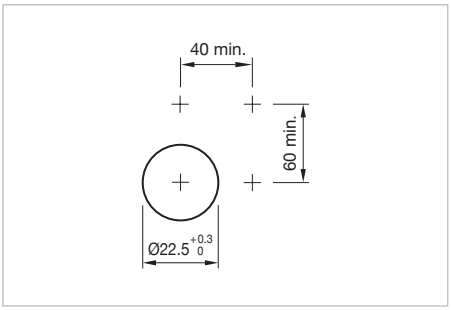
*To obtain a complete unit, please select the red components from the pages shown.*




Dimensions [mm]



Product can differ from the current configuration.




Mounting cut-outs [mm]

**Additional Information**

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

| Product attribute | Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with front ring | Plastic black | Plastic green-red | B | **45-2J31.16T0.000** | 1 | 0.026 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with front ring | Plastic black | Plastic white-black | B | **45-2J31.16V0.000** | 1 | 0.026 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with/raised above front ring | Plastic black | Plastic green-red | B | **45-2J31.15T0.000** | 1 | 0.026 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with/raised above front ring | Plastic black | Plastic white-black | B | **45-2J31.15V0.000** | 1 | 0.026 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with front ring | Metal sandgrey | Plastic green-red | B | **45-2J31.36T0.000** | 1 | 0.043 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with front ring | Metal sandgrey | Plastic white-black | B | **45-2J31.36V0.000** | 1 | 0.043 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with/raised above front ring | Metal sandgrey | Plastic green-red | B | **45-2J31.35T0.000** | 1 | 0.043 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with front ring | Metal silver | Plastic green-red | B | **45-2J31.26T0.000** | 1 | 0.068 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with front ring | Metal silver | Plastic white-black | B | **45-2J31.26V0.000** | 1 | 0.068 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with/raised above front ring | Metal silver | Plastic green-red | B | **45-2J31.25T0.000** | 1 | 0.068 kg |
| **Double pushbutton actuator, momentary, Front dimension 57.7 x 29.8 mm** | | | | | | |
| 2 lenses, level with/raised above front ring | Metal silver | Plastic white-black | B | **45-2J31.25V0.000** | 1 | 0.068 kg |

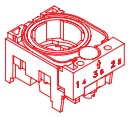
Switching action: B = Momentary

Wiring diagram 1

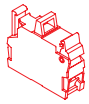
## Illuminated pushbutton, IP66, IP67, IP69K

**Equipment consisting of (schematic overview)**

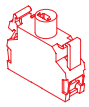
**Actuator**



***Holder*** *page 130*



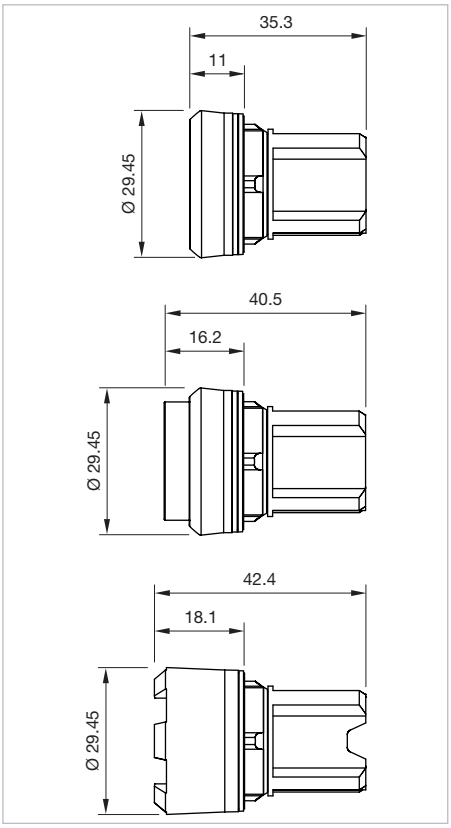
***Switching element*** *page 132*



***Illumination element*** *page 134*

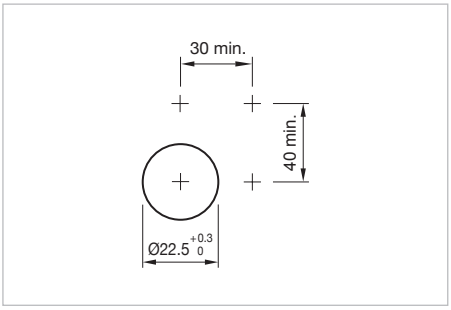
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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




Dimensions [mm]

Product can differ from the current configuration.




Mounting cut-outs [mm]

**Additional Information**

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

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic amber transparency | Plastic | B | **45-2231.11F0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic red transparent | Plastic | B | **45-2231.11E0.000** | 1 | 0.011 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic yellow transparent | Plastic | B | **45-2231.11G0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic green transparent | Plastic | B | **45-2231.11H0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic blue transparent | Plastic | B | **45-2231.11J0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic white transparent | Plastic | B | **45-2231.11N0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic colourless transparent | Plastic | B | **45-2231.11K0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic red transparent | Plastic | C | **45-2234.11E0.000** | 2 | 0.011 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic yellow transparent | Plastic | C | **45-2234.11G0.000** | 2 | 0.011 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic green transparent | Plastic | C | **45-2234.11H0.000** | 2 | 0.011 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic blue transparent | Plastic | C | **45-2234.11J0.000** | 2 | 0.011 kg |

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic white transparent | Plastic | C | **45-2234.11N0.000** | 2 | 0.011 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Plastic black | Plastic colourless transparent | Plastic | C | **45-2234.11K0.000** | 2 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic amber transparency | Plastic | B | **45-2231.31F0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic red transparent | Plastic | B | **45-2231.31E0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic yellow transparent | Plastic | B | **45-2231.31G0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic green transparent | Plastic | B | **45-2231.31H0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic blue transparent | Plastic | B | **45-2231.31J0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic white transparent | Plastic | B | **45-2231.31N0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic colourless transparent | Plastic | B | **45-2231.31K0.000** | 1 | 0.020 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic red transparent | Plastic | C | **45-2234.31E0.000** | 2 | 0.020 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic yellow transparent | Plastic | C | **45-2234.31G0.000** | 2 | 0.020 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic green transparent | Plastic | C | **45-2234.31H0.000** | 2 | 0.020 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic blue transparent | Plastic | C | **45-2234.31J0.000** | 2 | 0.020 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic white transparent | Plastic | C | **45-2234.31N0.000** | 2 | 0.020 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal sandgrey | Plastic colourless transparent | Plastic | C | **45-2234.31K0.000** | 2 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic amber transparency | Metal | B | **45-2231.21F0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic red transparent | Metal | B | **45-2231.21E0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic yellow transparent | Metal | B | **45-2231.21G0.000** | 1 | 0.032 kg |

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic green transparent | Metal | B | **45-2231.21H0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic blue transparent | Metal | B | **45-2231.21J0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic white transparent | Metal | B | **45-2231.21N0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic colourless transparent | Metal | B | **45-2231.21K0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic red transparent | Metal | C | **45-2234.21E0.000** | 2 | 0.032 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic yellow transparent | Metal | C | **45-2234.21G0.000** | 2 | 0.032 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic green transparent | Metal | C | **45-2234.21H0.000** | 2 | 0.032 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic blue transparent | Metal | C | **45-2234.21J0.000** | 2 | 0.032 kg |
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic white transparent | Metal | C | **45-2234.21N0.000** | 2 | 0.032 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Maintain, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens level with front ring | Metal silver | Plastic colourless transparent | Metal | C | **45-2234.21K0.000** | 2 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic red transparent | Plastic | B | **45-2231.12E0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic yellow transparent | Plastic | B | **45-2231.12G0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic green transparent | Plastic | B | **45-2231.12H0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic blue transparent | Plastic | B | **45-2231.12J0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Plastic black | Plastic colourless transparent | Plastic | B | **45-2231.12K0.000** | 1 | 0.011 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic red transparent | Plastic | B | **45-2231.32E0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic yellow transparent | Plastic | B | **45-2231.32G0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic green transparent | Plastic | B | **45-2231.32H0.000** | 1 | 0.020 kg |

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic blue transparent | Plastic | B | **45-2231.32J0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal sandgrey | Plastic colourless transparent | Plastic | B | **45-2231.32K0.000** | 1 | 0.020 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic red transparent | Metal | B | **45-2231.22E0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic amber transparency | Metal | B | **45-2231.22F0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic yellow transparent | Metal | B | **45-2231.22G0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic green transparent | Metal | B | **45-2231.22H0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic blue transparent | Metal | B | **45-2231.22J0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic colourless transparent | Metal | B | **45-2231.22K0.000** | 1 | 0.032 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens raised above bezel | Metal silver | Plastic white transparent | Metal | B | **45-2231.22N0.000** | 1 | 0.032 kg |
| **Illuminated pushbutton actuator, Momentary, Front dimension Ø 29.45 mm** | | | | | | | |
| Lens lover than front ring, with castellation | Plastic black | Plastic blue transparent | Plastic | B | **45-2231.14J0.000** | 1 | 0.011 kg |

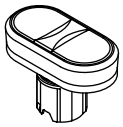
Switching action: B = Momentary, C = Maintain

Wiring diagram 1

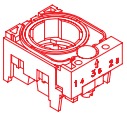
Wiring diagram 2

## Illuminated double pushbutton, IP66, IP67, IP69K

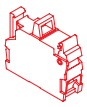
**Equipment consisting of (schematic overview)**



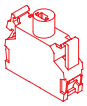
**Actuator**



***Holder*** *page 130*



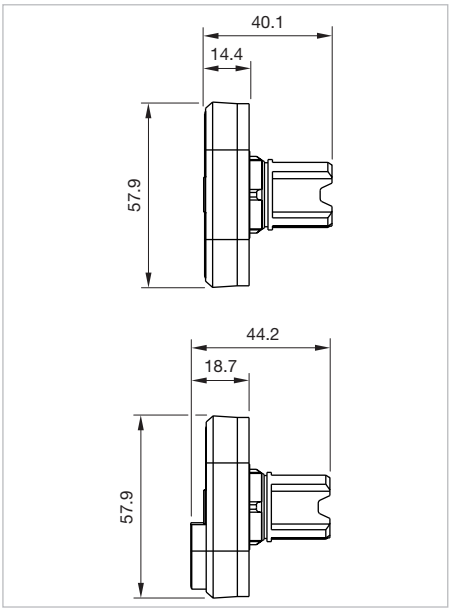
***Switching element*** *page 132*



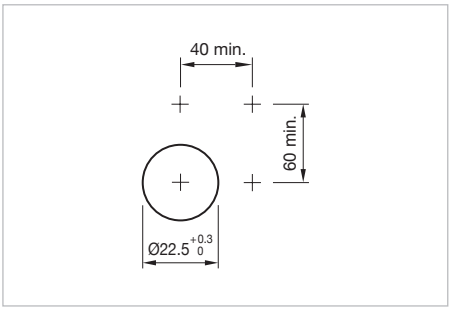
***Illumination element*** *page 134*

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

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




Dimensions [mm]




Mounting cut-outs [mm]

Product can differ from the current configuration.

**Additional Information**

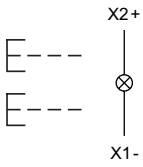
- Mounting depth incl. front plate, see chapter «drawings»
- With illuminative centre window

| Product attribute | Front ring | Lens | Switching action | Part No. | Component layout | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with front ring | Plastic black | Plastic green-red | B | **45-2K31.16T0.000** | 4 | 1 | 0.025 kg |
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with front ring | Plastic black | Plastic white-black | B | **45-2K31.16V0.000** | 4 | 1 | 0.025 kg |
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with/raised above front ring | Plastic black | Plastic green-red | B | **45-2K31.15T0.000** | 4 | 1 | 0.025 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Switching action | Part No. | Bauteile-Layout | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with/raised above front ring | Plastic black | Plastic white-black | B | **45-2K31.15V0.000** | 4 | 1 | 0.025 kg |
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with front ring | Metal sandgrey | Plastic green-red | B | **45-2K31.36T0.000** | 4 | 1 | 0.043 kg |
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with front ring | Metal sandgrey | Plastic white-black | B | **45-2K31.36V0.000** | 4 | 1 | 0.043 kg |
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with/raised above front ring | Metal sandgrey | Plastic green-red | B | **45-2K31.35T0.000** | 4 | 1 | 0.043 kg |
| **Illuminated double pushbutton actuator, Momentary, Front dimension 57.7 x 29.8 mm** | | | | | | | |
| 2 lenses, level with/raised above front ring | Metal sandgrey | Plastic white-black | B | **45-2K31.35V0.000** | 4 | 1 | 0.043 kg |

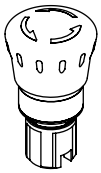
Switching action: B = Momentary
The component layouts you will find from page 144



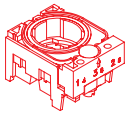

Wiring diagram 1

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

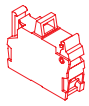
**Equipment consisting of (schematic overview)**



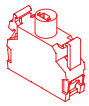
**Actuator**



***Holder*** *page 130*



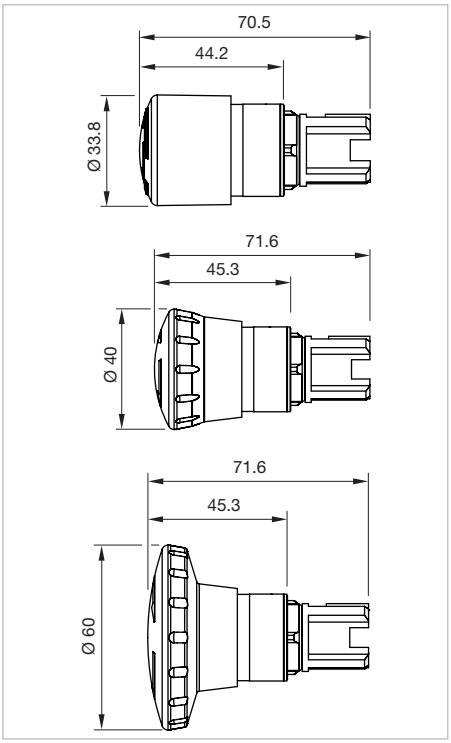
***Switching element*** *page 132*



***Illumination element*** *page 134*

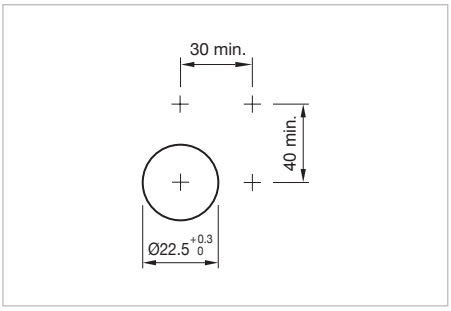
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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




Dimensions [mm]

Product can differ from the current configuration.




Mounting cut-outs [mm]

**Additional Information**

- Mounting depth incl. front plate, see chapter «drawings»
- The standard lock: RONIS, T254
- Two keys are supplied with each key lock switch

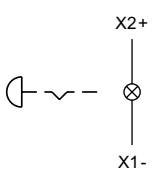
| Product attribute | Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 33.8 mm** | | | | | | |
| twist to release | Plastic black | Plastic red | C | **45-2C36.1820.000** | 1 | 0.046 kg |
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 33.8 mm** | | | | | | |
| twist to release, illuminable | Plastic black | Plastic red | C | **45-2D36.1820.000** | 2 | 0.046 kg |

# 45 Raised design

| Product attribute | Front ring | Lens | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 33.8 mm** | | | | | | |
| twist to release, illuminable | Metall silber | Plastic red | C | **45-2D36.2820.000** | 2 | 0.046 kg |
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 40 mm** | | | | | | |
| twist to release | Plastic black | Plastic red | C | **45-2C36.1920.000** | 1 | 0.046 kg |
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 40 mm** | | | | | | |
| Pull release | Plastic black | Plastic red | C | **45-2C37.1920.000** | 1 | 0.046 kg |
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 40 mm** | | | | | | |
| twist to release, illuminable | Plastic black | Plastic red | C | **45-2D36.1920.000** | 2 | 0.046 kg |
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 60 mm** | | | | | | |
| twist to release | Plastic black | Plastic red | C | **45-2C36.1A20.000** | 1 | 0.056 kg |
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 60 mm** | | | | | | |
| twist to release, illuminable | Plastic black | Plastic red | C | **45-2D36.1A20.000** | 2 | 0.053 kg |
| **Emergency-stop switch actuator, foolproof EN IEC 60947-5-5, Front dimension Ø 40 mm** | | | | | | |
| key to release | Plastic black | Plastic red | C | **45-2C35.1920.110** | 1 | 0.083 kg |

Switching action: C = Maintain

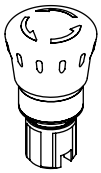
Wiring diagram 1



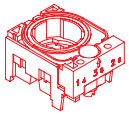

Wiring diagram 2

## Stop switch actuator, foolproof, IP66, IP67, IP69K

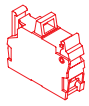
**Equipment consisting of (schematic overview)**



**Actuator**



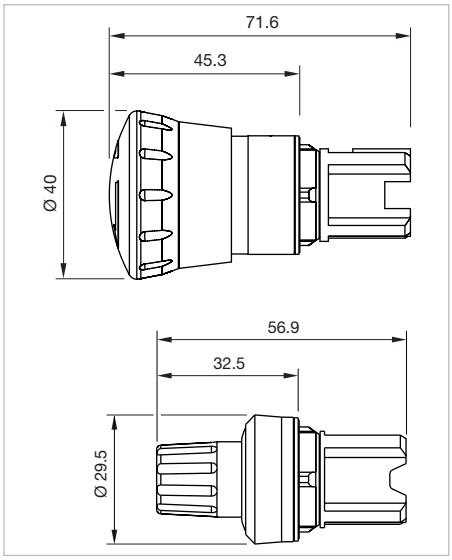
***Holder*** *page 130*



***Switching element*** *page 132*

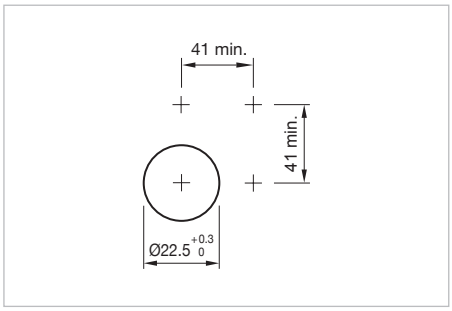
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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




Dimensions [mm]

Product can differ from the current configuration.




Mounting cut-outs [mm]

**Additional Information**

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

| Product attribute | Front ring | Lens | Switching action | Lever | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Stop switch actuator, foolproof, Front dimension Ø 40 mm** | | | | | | | |
| twist to release | Plastic black | Plastic black | C | – | **45-2736.1910.000** | 1 | 0.036 kg |
| **Stop switch actuator, foolproof, Front dimension Ø 40 mm** | | | | | | | |
| twist to release | Plastic black | Plastic blue | C | – | **45-2736.1960.000** | 1 | 0.046 kg |

# 45 Raised design

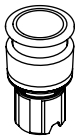
| Product attribute | Front ring | Lens | Switching action | Lever | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Stop switch actuator, foolproof, Front dimension Ø 29.5 mm** | | | | | | | |
| twist to release, can be latched after pressing by rotating to the right | Plastic black | – | C | Plastic black | **45-2729.1010.000** | 1 | 0.018 kg |
| **Stop switch actuator, foolproof, Front dimension Ø 29.5 mm** | | | | | | | |
| twist to release, can be latched after pressing by rotating to the right | Plastic black | – | C | Plastic red | **45-2729.1020.000** | 1 | 0.018 kg |

Switching action: C = Maintain

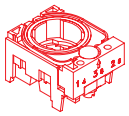
Wiring diagram 1

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

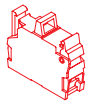
**Equipment consisting of (schematic overview)**



**Actuator**



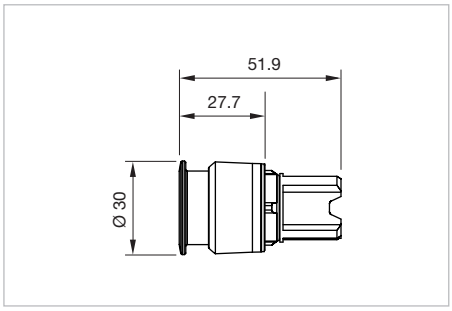
***Holder*** *page 130*



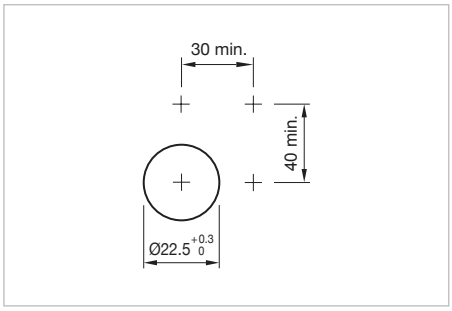
***Switching element*** *page 132*

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

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




Dimensions [mm]




Mounting cut-outs [mm]

Product can differ from the current configuration.

**Additional Information**

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

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic black | Plastic | C | **45-2530.1810.000** | 2 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic red | Plastic | C | **45-2530.1820.000** | 2 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic yellow | Plastic | C | **45-2530.1840.000** | 2 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic black | Plastic | B | **45-2531.1810.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic red | Plastic | B | **45-2531.1820.000** | 1 | 0.020 kg |

# 45 Raised design

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic yellow | Plastic | B | **45-2531.1840.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic green | Plastic | B | **45-2531.1850.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic black | Plastic | C | **45-2530.3810.000** | 2 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic red | Plastic | C | **45-2530.3820.000** | 2 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic black | Plastic | B | **45-2531.3810.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic red | Plastic | B | **45-2531.3820.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic yellow | Plastic | B | **45-2531.3840.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic green | Plastic | B | **45-2531.3850.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic black | Metal | C | **45-2530.2810.000** | 2 | 0.052 kg |

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic red | Metal | C | **45-2530.2820.000** | 2 | 0.052 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic black | Metal | B | **45-2531.2810.000** | 1 | 0.052 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic red | Metal | B | **45-2531.2820.000** | 1 | 0.052 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic yellow | Metal | B | **45-2531.2840.000** | 1 | 0.052 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic green | Metal | B | **45-2531.2850.000** | 1 | 0.052 kg |

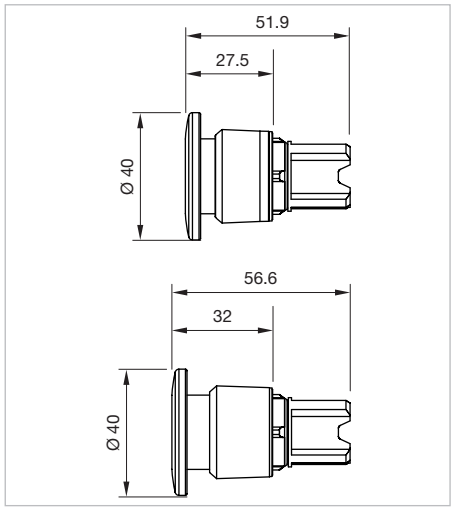
Switching action: B = Momentary, C = Maintain

| | |
|---|---|
| Wiring diagram 1 | Wiring diagram 2 |

# 45 Raised design

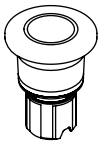
## Mushroom-head pushbutton Ø 40 mm, IP66, IP67, IP69K

Product can differ from the current configuration.

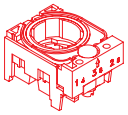



Dimensions [mm]

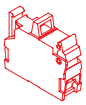
**Equipment consisting of (schematic overview)**



**Actuator**



***Holder*** *page 130*



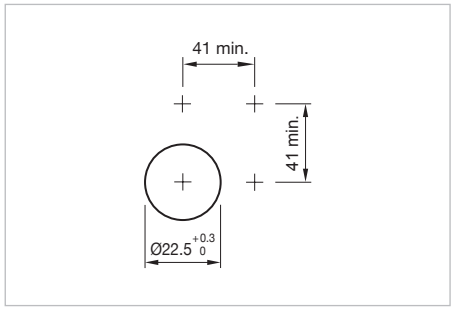
***Switching element*** *page 132*

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

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

**Additional Information**

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




Mounting cut-outs [mm]

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic black | Plastic | C | **45-2530.1910.000** | 2 | 0.022 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic red | Plastic | C | **45-2530.1920.000** | 2 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic yellow | Plastic | C | **45-2530.1940.000** | 2 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic green | Plastic | C | **45-2530.1950.000** | 2 | 0.020 kg |

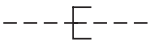
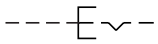
| Front ring | Lens | Housing material | Switching action | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic black | Plastic | B | **45-2531.1910.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic red | Plastic | B | **45-2531.1920.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic yellow | Plastic | B | **45-2531.1940.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic green | Plastic | B | **45-2531.1950.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Metal sandgrey | Plastic black | Plastic | C | **45-2530.3910.000** | 2 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Metal sandgrey | Plastic red | Plastic | C | **45-2530.3920.000** | 2 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal sandgrey | Plastic black | Plastic | B | **45-2531.3910.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal sandgrey | Plastic red | Plastic | B | **45-2531.3920.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal sandgrey | Plastic yellow | Plastic | B | **45-2531.3940.000** | 1 | 0.034 kg |

# 45 Raised design

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal sandgrey | Plastic green | Plastic | B | **45-2531.3950.000** | 1 | 0.034 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic black | Metal | C | **45-2530.2910.000** | 2 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic red | Metal | C | **45-2530.2920.000** | 2 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic yellow | Metal | C | **45-2530.2940.000** | 2 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic black | Metal | B | **45-2531.2910.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic red | Metal | B | **45-2531.2920.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic yellow | Metal | B | **45-2531.2940.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic green | Metal | B | **45-2531.2950.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, momentary/maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic black | Metal | B/C | **45-2532.2910.000** | 3 | 0.052 kg |

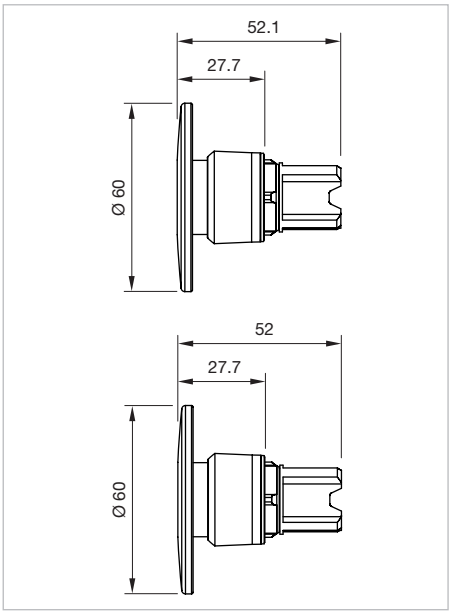
| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, momentary/maintain, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic red | Metal | B/C | **45-2532.2920.000** | 3 | 0.052 kg |
| **Mushroom-head pushbutton actuator, momentary/momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic black | Metal | B/B | **45-2533.2910.000** | 4 | 0.052 kg |
| **Mushroom-head pushbutton actuator, momentary/momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic red | Metal | B/B | **45-2533.2920.000** | 4 | 0.052 kg |

Switching action: B = Momentary, C = Maintain, B/B = Momentary/Momentary, B/C = Momentary/Maintain

| | | | |
|---|---|---|---|
| Wiring diagram 1 | Wiring diagram 2 |  Wiring diagram 3 |  Wiring diagram 4 |

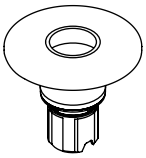
## Mushroom-head pushbutton Ø 60 mm, IP66, IP67, IP69K

Product can differ from the current configuration.

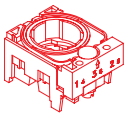



Dimensions [mm]

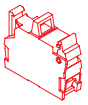
**Equipment consisting of (schematic overview)**



**Actuator**



***Holder*** *page 130*



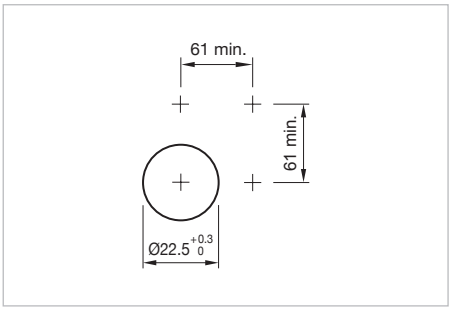
***Switching element*** *page 132*

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

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

**Additional Information**

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

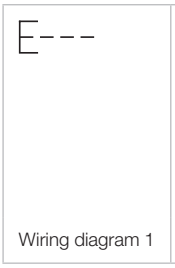



Mounting cut-outs [mm]

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | | |
| Plastic black | Plastic black | Plastic | C | **45-2530.1A10.000** | 2 | 0.022 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | | |
| Plastic black | Plastic red | Plastic | C | **45-2530.1A20.000** | 2 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | | |
| Plastic black | Plastic black | Plastic | B | **45-2531.1A10.000** | 1 | 0.020 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | | |
| Plastic black | Plastic red | Plastic | B | **45-2531.1A20.000** | 1 | 0.020 kg |

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Plastic black | Plastic yellow | Plastic | B | **45-2531.1A40.000** | 1 | 0.020 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Plastic black | Plastic green | Plastic | B | **45-2531.1A50.000** | 1 | 0.020 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic black | Metal | C | **45-2530.2A10.000** | 2 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic red | Metal | C | **45-2530.2A20.000** | 2 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic black | Metal | B | **45-2531.2A10.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic red | Metal | B | **45-2531.2A20.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic yellow | Metal | B | **45-2531.2A40.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic green | Metal | B | **45-2531.2A50.000** | 1 | 0.052 kg |

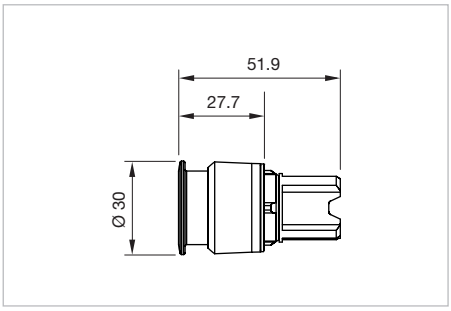
Switching action: B = Momentary, C = Maintain



Wiring diagram 1 | Wiring diagram 2

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

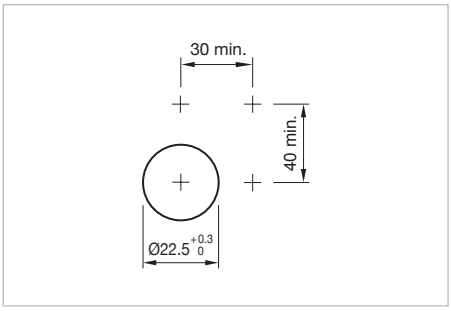
Product can differ from the current configuration.




Dimensions [mm]

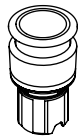
**Additional Information**

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

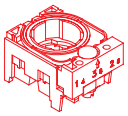



Mounting cut-outs [mm]

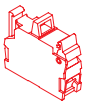
**Equipment consisting of (schematic overview)**



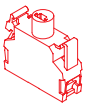
**Actuator**



***Holder*** *page 130*



***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic red transparent | Plastic | C | **45-2630.18E0.000** | 1 | 0.027 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic yellow transparent | Plastic | C | **45-2630.18G0.000** | 1 | 0.027 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic green transparent | Plastic | C | **45-2630.18H0.000** | 1 | 0.027 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic blue transparent | Plastic | C | **45-2630.18J0.000** | 1 | 0.027 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic colourless transparent | Plastic | C | **45-2630.18K0.000** | 1 | 0.027 kg |

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic red transparent | Plastic | B | **45-2631.18E0.000** | 2 | 0.033 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic yellow transparent | Plastic | B | **45-2631.18G0.000** | 2 | 0.033 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic green transparent | Plastic | B | **45-2631.18H0.000** | 2 | 0.033 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic blue transparent | Plastic | B | **45-2631.18J0.000** | 2 | 0.033 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic colourless transparent | Plastic | B | **45-2631.18K0.000** | 2 | 0.033 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Plastic black | Plastic white transparent | Plastic | B | **45-2631.18N0.000** | 2 | 0.033 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic red transparent | Plastic | C | **45-2630.38E0.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic yellow transparent | Plastic | C | **45-2630.38G0.000** | 1 | 0.034 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal sandgrey | Plastic yellow transparent | Plastic | B | **45-2631.38G0.000** | 2 | 0.026 kg |

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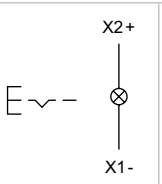
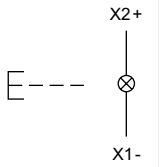
| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | |
| Metal sandgrey | Plastic red transparent | Plastic | B | **45-2631.38H0.000** | 2 | 0.026 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | |
| Metal sandgrey | Plastic colourless transparent | Plastic | B | **45-2631.38K0.000** | 2 | 0.026 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | |
| Metal sandgrey | Plastic white transparent | Plastic | B | **45-2631.38N0.000** | 2 | 0.026 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | |
| Metal silver | Plastic amber transparency | Metal | C | **45-2630.28F0.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | |
| Metal silver | Plastic red transparent | Metal | C | **45-2630.28E0.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | |
| Metal silver | Plastic yellow transparent | Metal | C | **45-2630.28G0.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | |
| Metal silver | Plastic green transparent | Metal | C | **45-2630.28H0.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | |
| Metal silver | Plastic blue transparent | Metal | C | **45-2630.28J0.000** | 1 | 0.052 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 30 mm** | | | | | |
| Metal silver | Plastic colourless transparent | Metal | C | **45-2630.28K0.000** | 1 | 0.052 kg |

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic yellow transparent | Metal | B | **45-2631.28G0.000** | 2 | 0.041 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic green transparent | Metal | B | **45-2631.28H0.000** | 2 | 0.041 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 30 mm** | | | | | | |
| Metal silver | Plastic white transparent | Metal | B | **45-2631.28N0.000** | 2 | 0.041 kg |

Switching action: B = Momentary, C = Maintain

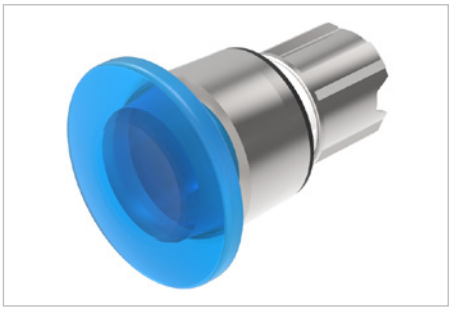


Wiring diagram 1

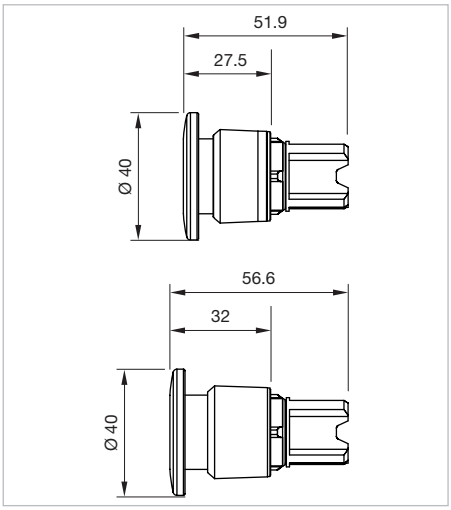


Wiring diagram 2

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



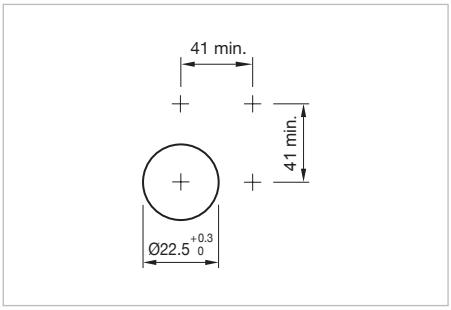
Product can differ from the current configuration.




Dimensions [mm]

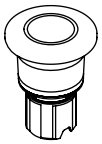
**Additional Information**

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

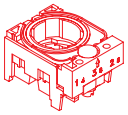



Mounting cut-outs [mm]

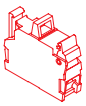
**Equipment consisting of (schematic overview)**



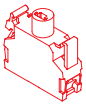
**Actuator**



***Holder*** *page 130*



***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic red transparent | Plastic | C | **45-2630.19E0.000** | 1 | 0.028 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic yellow transparent | Plastic | C | **45-2630.19G0.000** | 1 | 0.028 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic green transparent | Plastic | C | **45-2630.19H0.000** | 1 | 0.028 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | | |
| Plastic black | Plastic blue transparent | Plastic | C | **45-2630.19J0.000** | 1 | 0.028 kg |

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Plastic black | Plastic colourless transparent | Plastic | C | **45-2630.19K0.000** | 1 | 0.028 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Plastic black | Plastic yellow transparent | Plastic | B | **45-2631.19G0.000** | 2 | 0.019 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Plastic black | Plastic green transparent | Plastic | B | **45-2631.19H0.000** | 2 | 0.019 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Plastic black | Plastic colourless transparent | Plastic | B | **45-2631.19K0.000** | 2 | 0.019 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Plastic black | Plastic white transparent | Plastic | B | **45-2631.19N0.000** | 2 | 0.019 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal sandgrey | Plastic red transparent | Plastic | C | **45-2630.39E0.000** | 1 | 0.035 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal sandgrey | Plastic yellow transparent | Plastic | C | **45-2630.39G0.000** | 1 | 0.035 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal sandgrey | Plastic yellow transparent | Plastic | B | **45-2631.39G0.000** | 2 | 0.028 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal sandgrey | Plastic green transparent | Plastic | B | **45-2631.39H0.000** | 2 | 0.028 kg |

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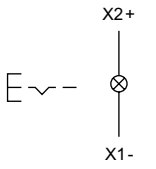
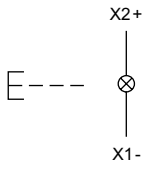
| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal sandgrey | Plastic colourless transparent | Plastic | B | **45-2631.39K0.000** | 2 | 0.028 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal sandgrey | Plastic white transparent | Plastic | B | **45-2631.39N0.000** | 2 | 0.028 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic red transparent | Metal | C | **45-2630.29E0.000** | 1 | 0.035 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic amber transparency | Metal | C | **45-2630.29F0.000** | 1 | 0.053 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic yellow transparent | Metal | C | **45-2630.29G0.000** | 1 | 0.053 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic green transparent | Metal | C | **45-2630.29H0.000** | 1 | 0.053 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic blue transparent | Metal | C | **45-2630.29J0.000** | 1 | 0.053 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic colourless transparent | Metal | C | **45-2630.29K0.000** | 1 | 0.053 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | |
| Metal silver | Plastic amber transparency | Metal | B | **45-2631.29F0.000** | 2 | 0.042 kg |

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic yellow transparent | Metal | B | **45-2631.29G0.000** | 2 | 0.042 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic green transparent | Metal | B | **45-2631.29H0.000** | 2 | 0.042 kg |
| **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic white transparent | Metal | B | **45-2631.29N0.000** | 2 | 0.042 kg |
| **Mushroom-head pushbutton actuator, momentary/maintain, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic red transparent | Metal | B/C | **45-2632.29E0.000** | 3 | 0.051 kg |
| **Mushroom-head pushbutton actuator, momentary/maintain, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic green transparent | Metal | B/C | **45-2632.29H0.000** | 3 | 0.051 kg |
| **Mushroom-head pushbutton actuator, momentary/momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic red transparent | Metal | B/B | **45-2633.29E0.000** | 4 | 0.051 kg |
| **Mushroom-head pushbutton actuator, momentary/momentary, Front dimension Ø 40 mm** | | | | | | |
| Metal silver | Plastic white transparent | Metal | B/B | **45-2633.29N0.000** | 4 | 0.051 kg |

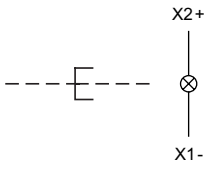
Switching action: B = Momentary, C = Maintain, B/B = Momentary/Momentary, B/C = Momentary/Maintain



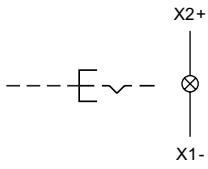
Wiring diagram 1



Wiring diagram 2



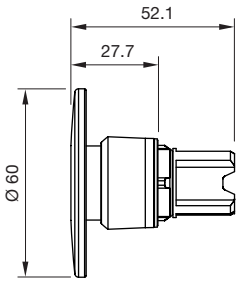
Wiring diagram 3

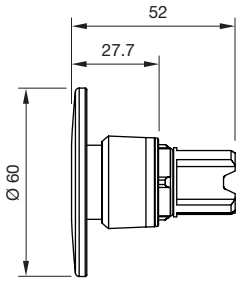


Wiring diagram 4

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

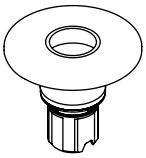
Product can differ from the current configuration.



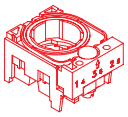




Dimensions [mm]

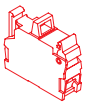
**Equipment consisting of (schematic overview)**



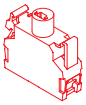
**Actuator**



***Holder*** *page 130*



***Switching element*** *page 132*



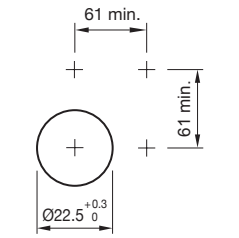
***Illumination element*** *page 134*

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

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

**Additional Information**

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

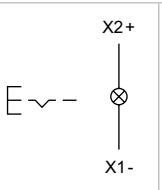



Mounting cut-outs [mm]

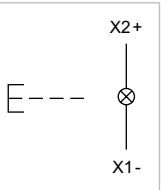
| Front ring | Lens | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | | |
| Metal silver | Plastic red transparent | Metal | C | **45-2630.2AE0.000** | 1 | 0.057 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | | |
| Metal silver | Plastic yellow transparent | Metal | C | **45-2630.2AG0.000** | 1 | 0.057 kg |
| **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | | |
| Metal silver | Plastic green transparent | Metal | C | **45-2630.2AH0.000** | 1 | 0.057 kg |

| Front ring | Lens | Housing material | Switching action | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic blue transparent | Metal | C | **45-2630.2AJ0.000** | 1 | 0.057 kg |
| | **Mushroom-head pushbutton actuator, Maintain, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic colourless transparent | Metal | C | **45-2630.2AK0.000** | 1 | 0.057 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic amber transparency | Metal | B | **45-2631.2AF0.000** | 2 | 0.045 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic yellow transparent | Metal | B | **45-2631.2AG0.000** | 2 | 0.045 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic green transparent | Metal | B | **45-2631.2AH0.000** | 2 | 0.045 kg |
| | **Mushroom-head pushbutton actuator, Momentary, Front dimension Ø 60 mm** | | | | | |
| Metal silver | Plastic white transparent | Metal | B | **45-2631.2AN0.000** | 2 | 0.045 kg |

Switching action: B = Momentary, C = Maintain



Wiring diagram 1

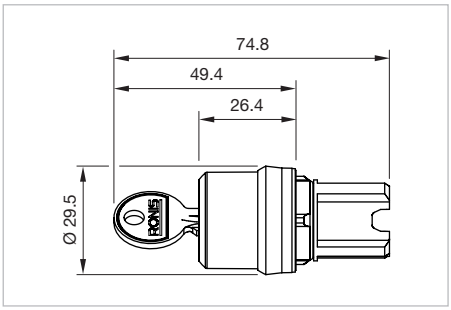


Wiring diagram 2

# 45 Raised design

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

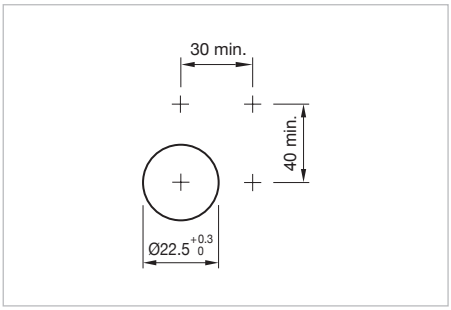
Product can differ from the current configuration.




Dimensions [mm]

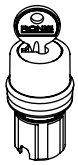
**Additional Information**

- Mounting depth incl. front plate, see chapter «drawings»
- The standard lock: RONIS, T254
- Two keys are supplied with each key lock switch

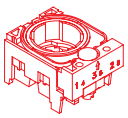



Mounting cut-outs [mm]

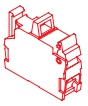
**Equipment consisting of (schematic overview)**



**Actuator**



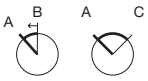
***Holder*** *page 130*



***Switching element*** *page 132*

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

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




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

| Front ring | Housing material | Switching action | Switching angle | Key remove | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Keylock switch actuator 2 positions, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic black | Plastic | A - B | B = 45° | A | **45-290K.1000.116** | 1 | 0.046 kg |
| | | A - C | C = 90° | A | **45-290J.1000.111** | 2 | 0.046 kg |
| | | A - C | C = 90° | A + C | **45-290H.1000.111** | 2 | 0.046 kg |
| | | A - C | C = 90° | A | **45-2925.1000.111** | 2 | 0.046 kg |
| **Keylock switch actuator 2 positions, Front dimension Ø 29.45 mm** | | | | | | | |
| Metal sandgrey | Plastic | A - B | B = 45° | A | **45-290K.3000.116** | 1 | 0.061 kg |
| | | A - C | C = 90° | A | **45-290J.3000.111** | 2 | 0.061 kg |
| | | A - C | C = 90° | A + C | **45-290H.3000.111** | 2 | 0.061 kg |
| | | A - C | C = 90° | A | **45-2925.3000.111** | 2 | 0.061 kg |

| Front ring | Housing material | Switching action | Switching angle | Key remove | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|---|
| **Keylock switch actuator 2 positions, Front dimension Ø 29.45 mm** | | | | | | | |
| Metal silver | Metal | A - B | B = 45° | A | **45-290K.2000.116** | 1 | 0.080 kg |
| | | A - C | C = 90° | A | **45-290J.2000.111** | 2 | 0.080 kg |
| | | A - C | C = 90° | A + C | **45-290H.2000.111** | 2 | 0.080 kg |
| | | A - C | C = 90° | A | **45-2925.2000.111** | 2 | 0.080 kg |

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

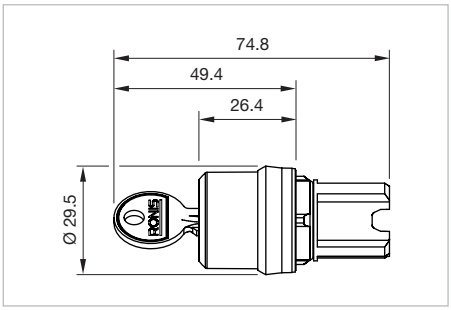
Wiring diagram 1

Wiring diagram 2

# 45 Raised design

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

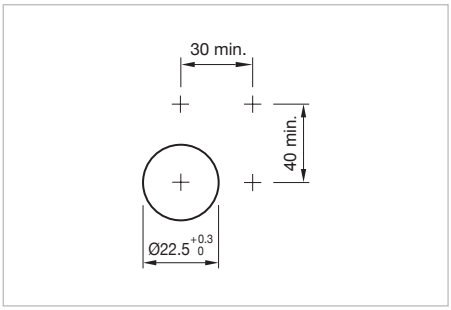
Product can differ from the current configuration.




Dimensions [mm]

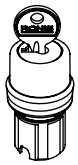
**Additional Information**

- Mounting depth incl. front plate, see chapter «drawings»
- The standard lock: RONIS, T254
- Two keys are supplied with each key lock switch

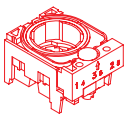



Mounting cut-outs [mm]

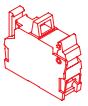
**Equipment consisting of (schematic overview)**



**Actuator**



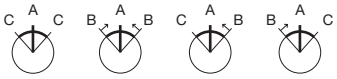
***Holder*** *page 130*



***Switching element*** *page 132*

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

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




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

| Front ring | Switching action | Switching angle | Key remove | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Keylock switch actuator 3 positions, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic black | C - A - C | C = 45° | A | **45-2924.1000.113** | 1 | 0.060 kg |
| | | C = 45° | C + A + C | **45-290F.1000.113** | 1 | 0.060 kg |
| | | C = 45° | C - - | **45-290D.1000.113** | 1 | 0.060 kg |
| | | C = 45° | - - C | **45-2917.1000.113** | 1 | 0.060 kg |
| | | C = 45° | C + C | **45-290C.1000.113** | 1 | 0.060 kg |
| | | C = 45° | C + A | **45-290G.1000.113** | 1 | 0.060 kg |
| | B - A - B | B = 45° | A | **45-290Z.1000.113** | 2 | 0.060 kg |
| | C - A - B | C = 45°, B = 45° | A | **45-2922.1000.113** | 3 | 0.060 kg |
| | | C = 45°, B = 45° | C | **45-290A.1000.113** | 3 | 0.060 kg |
| | | C = 45°, B = 45° | C + A | **45-290E.1000.113** | 3 | 0.060 kg |
| | B - A - C | B = 45°, C = 45° | A | **45-2911.1000.113** | 4 | 0.060 kg |
| | | B = 45°, C = 45° | C | **45-290W.1000.113** | 4 | 0.060 kg |
| | | B = 45°, C = 45° | A + C | **45-2910.1000.113** | 4 | 0.060 kg |

| Front ring | Switching action | Switching angle | Key remove | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Keylock switch actuator 3 positions, Front dimension Ø 29.45 mm** | | | | | | |
| Metal sandgrey | C - A - C | C = 45° | A | **45-2924.3000.113** | 1 | 0.061 kg |
| | | C = 45° | C + A + C | **45-290F.3000.113** | 1 | 0.061 kg |
| | | C = 45° | C - - | **45-290D.3000.113** | 1 | 0.061 kg |
| | | C = 45° | - - C | **45-2917.3000.113** | 1 | 0.061 kg |
| | | C = 45° | C + C | **45-290C.3000.113** | 1 | 0.061 kg |
| | | C = 45° | C + A | **45-290G.3000.113** | 1 | 0.061 kg |
| | B - A - B | B = 45° | A | **45-290Z.3000.113** | 2 | 0.061 kg |
| | C - A - B | C = 45°, B = 45° | A | **45-2922.3000.113** | 3 | 0.061 kg |
| | B - A - C | B = 45°, C = 45° | A | **45-2911.3000.113** | 4 | 0.061 kg |
| **Keylock switch actuator 3 positions, Front dimension Ø 29.45 mm** | | | | | | |
| Metal silver | C - A - C | C = 45° | A | **45-2924.2000.113** | 1 | 0.080 kg |
| | | C = 45° | C + A + C | **45-290F.2000.113** | 1 | 0.080 kg |
| | | C = 45° | C - - | **45-290D.2000.113** | 1 | 0.080 kg |
| | | C = 45° | - - C | **45-2917.2000.113** | 1 | 0.080 kg |
| | | C = 45° | C + C | **45-290C.2000.113** | 1 | 0.080 kg |
| | | C = 45° | C + A | **45-290G.2000.113** | 1 | 0.080 kg |
| | B - A - B | B = 45° | A | **45-290Z.2000.113** | 2 | 0.080 kg |
| | C - A - B | C = 45°, B = 45° | A | **45-2922.2000.113** | 3 | 0.080 kg |
| | | C = 45°, B = 45° | C | **45-290A.2000.113** | 3 | 0.080 kg |
| | | C = 45°, B = 45° | C + A | **45-290E.2000.113** | 3 | 0.080 kg |
| | B - A - C | B = 45°, C = 45° | A | **45-2911.2000.113** | 4 | 0.080 kg |
| | | B = 45°, C = 45° | A + C | **45-2910.2000.113** | 4 | 0.080 kg |

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

Wiring diagram 1

Wiring diagram 2

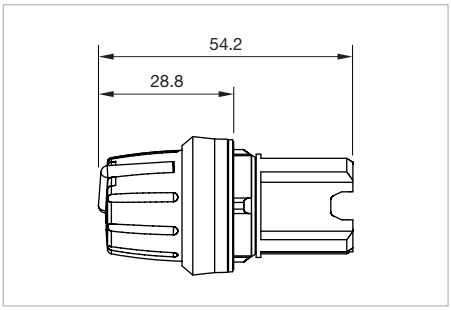
Wiring diagram 3

Wiring diagram 4

# 45 Raised design

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

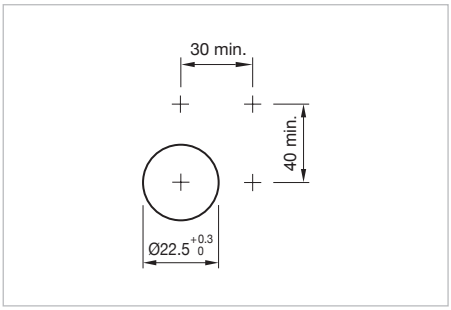
Product can differ from the current configuration.




Dimensions [mm]

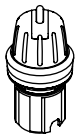
**Additional Information**

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

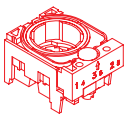



Mounting cut-outs [mm]

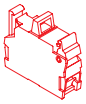
**Equipment consisting of (schematic overview)**



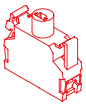
**Actuator**



***Holder*** *page 130*



***Switching element*** *page 132*



***Illumination element*** *page 134*

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

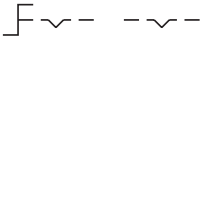
*To obtain a complete unit, please select the red components from the pages shown.*

A C

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

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, round lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Plastic black | Plastic | A - C | C = 90° | **45-2828.1E20.001** | 1 | 0.023 kg |
| **Selector switch actuator 2 positions, round lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Plastic black | Plastic | A - C | C = 90° | **45-2828.1E90.001** | 1 | 0.023 kg |
| **Selector switch actuator 2 positions, round lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3E20.001** | 1 | 0.023 kg |
| **Selector switch actuator 2 positions, round lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3E90.001** | 1 | 0.023 kg |

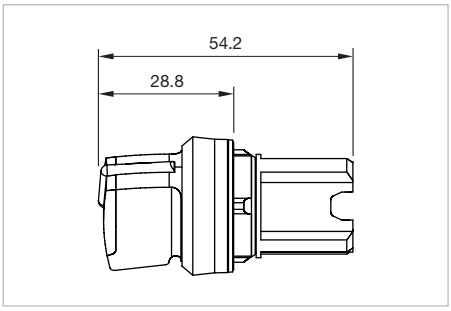
Switching action: A = Rest, C = Maintain



Wiring diagram 1

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

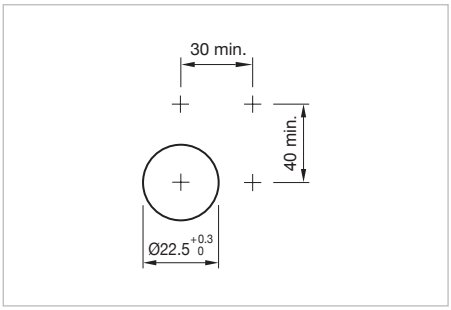
Product can differ from the current configuration.




Dimensions [mm]

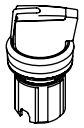
**Additional Information**

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

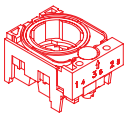



Mounting cut-outs [mm]

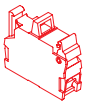
**Equipment consisting of (schematic overview)**



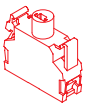
**Actuator**



***Holder*** *page 130*



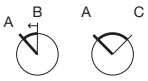
***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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




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

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Plastic black | Plastic | A - B | B = 45° | **45-2844.1C20.006** | 1 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic yellow | Plastic black | Plastic | A - B | B = 45° | **45-2844.1C40.006** | 1 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Plastic black | Plastic | A - B | B = 45° | **45-2844.1C50.006** | 1 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic blue | Plastic black | Plastic | A - B | B = 45° | **45-2844.1C60.006** | 1 | 0.022 kg |

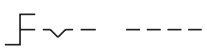
| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Plastic black | Plastic | A - B | B = 45° | **45-2844.1C90.006** | 1 | 0.022 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal sandgrey | Plastic | A - B | B = 45° | **45-2844.3C20.006** | 1 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal sandgrey | Plastic | A - B | B = 45° | **45-2844.3C40.006** | 1 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal sandgrey | Plastic | A - B | B = 45° | **45-2844.3C50.006** | 1 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal sandgrey | Plastic | A - B | B = 45° | **45-2844.3C60.006** | 1 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal sandgrey | Plastic | A - B | B = 45° | **45-2844.3C90.006** | 1 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal silver | Metal | A - B | B = 45° | **45-2844.2C20.006** | 1 | 0.044 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal silver | Metal | A - B | B = 45° | **45-2844.2C40.006** | 1 | 0.044 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal silver | Metal | A - B | B = 45° | **45-2844.2C50.006** | 1 | 0.044 kg |

# 45 Raised design

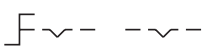
| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic blue | Metal silver | Metal | A - B | B = 45° | **45-2844.2C60.006** | 1 | 0.044 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal silver | Metal | A - B | B = 45° | **45-2844.2C90.006** | 1 | 0.044 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Plastic black | Plastic | A - C | C = 90° | **45-2828.1C20.001** | 2 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic yellow | Plastic black | Plastic | A - C | C = 90° | **45-2828.1C40.001** | 2 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Plastic black | Plastic | A - C | C = 90° | **45-2828.1C50.001** | 2 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic blue | Plastic black | Plastic | A - C | C = 90° | **45-2828.1C60.001** | 2 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Plastic black | Plastic | A - C | C = 90° | **45-2828.1C90.001** | 2 | 0.022 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3C20.001** | 2 | 0.029 kg |
| **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic yellow | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3C40.001** | 2 | 0.029 kg |

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3C50.001** | 2 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3C60.001** | 2 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3C90.001** | 2 | 0.029 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal silver | Metal | A - C | C = 90° | **45-2828.2C20.001** | 2 | 0.044 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic ambergris | Metal silver | Metal | A - C | C = 90° | **45-2828.2C30.001** | 2 | 0.044 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal silver | Metal | A - C | C = 90° | **45-2828.2C50.001** | 2 | 0.044 kg |
| | **Selector switch actuator 2 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal silver | Metal | A - C | C = 90° | **45-2828.2C90.001** | 2 | 0.044 kg |

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



Wiring diagram 1

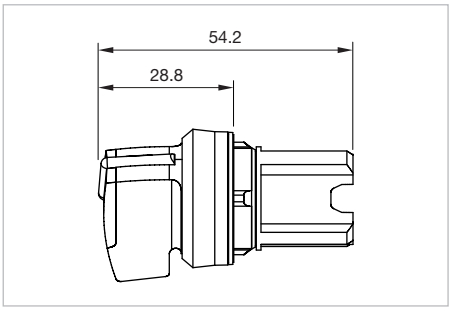


Wiring diagram 2

# 45 Raised design

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

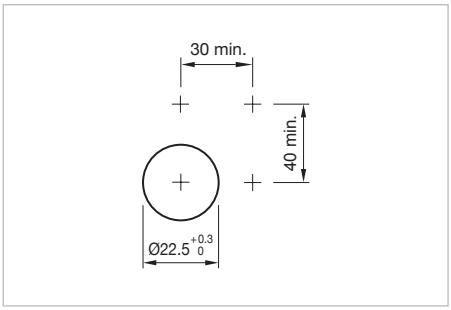
Product can differ from the current configuration.




Dimensions [mm]

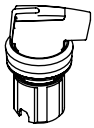
**Additional Information**

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

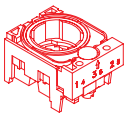



Mounting cut-outs [mm]

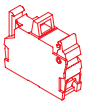
**Equipment consisting of (schematic overview)**



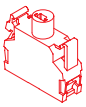
**Actuator**



***Holder*** *page 130*



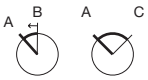
***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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



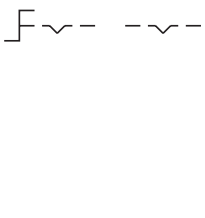

Switching positions (A = Rest, B = Momentary, C = Maintained)

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Plastic black | Plastic | A - C | C = 90° | **45-2828.1D20.001** | 1 | 0.022 kg |
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Plastic black | Plastic | A - C | C = 90° | **45-2828.1D90.001** | 1 | 0.022 kg |
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3D20.001** | 1 | 0.029 kg |
| **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal sandgrey | Plastic | A - C | C = 90° | **45-2828.3D90.001** | 1 | 0.029 kg |

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal silver | Metal | A - C | C = 90° | **45-2828.2D20.001** | 1 | 0.022 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal silver | Metal | A - C | C = 90° | **45-2828.2D40.001** | 1 | 0.052 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal silver | Metal | A - C | C = 90° | **45-2828.2D50.001** | 1 | 0.052 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal silver | Metal | A - C | C = 90° | **45-2828.2D60.001** | 1 | 0.052 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal silver | Metal | A - C | C = 90° | **45-2828.2D90.001** | 1 | 0.052 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal silver | Metal | A - B | B = 45° | **45-2844.2D40.006** | 2 | 0.044 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal silver | Metal | A - B | B = 45° | **45-2844.2D50.006** | 2 | 0.044 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal silver | Metal | A - B | B = 45° | **45-2844.2D60.006** | 2 | 0.044 kg |
| | **Selector switch actuator 2 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal silver | Metal | A - B | B = 45° | **45-2844.2D90.006** | 2 | 0.044 kg |

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

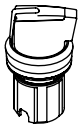
# 45 Raised design



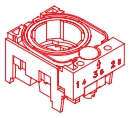
Wiring diagram 1

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

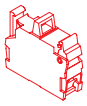
**Equipment consisting of (schematic overview)**



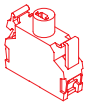
**Actuator**



***Holder*** *page 130*



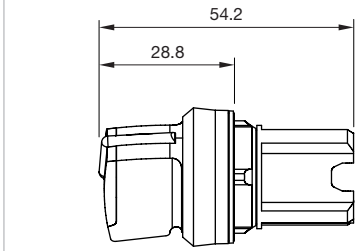
***Switching element*** *page 132*



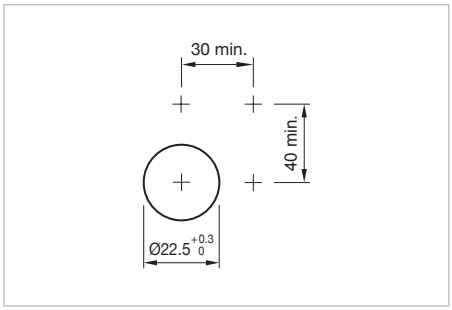
***Illumination element*** *page 134*

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

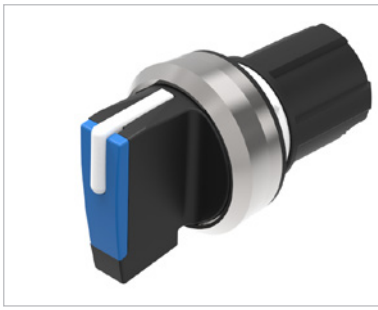
*To obtain a complete unit, please select the red components from the pages shown.*




Dimensions [mm]



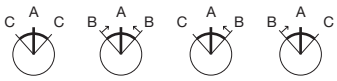

Mounting cut-outs [mm]



Product can differ from the current configuration.

**Additional Information**

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




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

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Plastic black | Plastic | C - A - C | C = 45° | **45-2819.1C20.003** | 1 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic yellow | Plastic black | Plastic | C - A - C | C = 45° | **45-2819.1C40.003** | 1 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Plastic black | Plastic | C - A - C | C = 45° | **45-2819.1C50.003** | 1 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic blue | Plastic black | Plastic | C - A - C | C = 45° | **45-2819.1C60.003** | 1 | 0.022 kg |

# 45 Raised design

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Plastic black | Plastic | C - A - C | C = 45° | **45-2819.1C90.003** | 1 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Plastic black | Plastic | B - A - B | B = 45° | **45-280S.1C20.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic yellow | Plastic black | Plastic | B - A - B | B = 45° | **45-280S.1C40.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Plastic black | Plastic | B - A - B | B = 45° | **45-280S.1C50.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic blue | Plastic black | Plastic | B - A - B | B = 45° | **45-280S.1C60.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Plastic black | Plastic | B - A - B | B = 45° | **45-280S.1C90.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Plastic black | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.1C20.003** | 3 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic yellow | Plastic black | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.1C40.003** | 3 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Plastic black | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.1C50.003** | 3 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic blue | Plastic black | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.1C60.003** | 3 | 0.022 kg |

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|---|
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Plastic black | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.1C90.003** | 3 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Plastic black | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.1C20.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Plastic black | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.1C40.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Plastic black | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.1C50.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Plastic black | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.1C60.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Plastic black | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.1C90.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal sandgrey | Plastic | C - A - C | C = 45° | **45-2819.3C20.003** | 1 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal sandgrey | Plastic | C - A - C | C = 45° | **45-2819.3C40.003** | 1 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal sandgrey | Plastic | C - A - C | C = 45° | **45-2819.3C50.003** | 1 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal sandgrey | Plastic | C - A - C | C = 45° | **45-2819.3C60.003** | 1 | 0.022 kg |

# 45 Raised design

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal sandgrey | Plastic | C - A - C | C = 45° | **45-2819.3C90.003** | 1 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal sandgrey | Plastic | B - A - B | B = 45° | **45-280S.3C20.003** | 2 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal sandgrey | Plastic | B - A - B | B = 45° | **45-280S.3C40.003** | 2 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal sandgrey | Plastic | B - A - B | B = 45° | **45-280S.3C50.003** | 2 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal sandgrey | Plastic | B - A - B | B = 45° | **45-280S.3C60.003** | 2 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal sandgrey | Plastic | B - A - B | B = 45° | **45-280S.3C90.003** | 2 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal sandgrey | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.3C20.003** | 3 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal sandgrey | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.3C40.003** | 3 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal sandgrey | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.3C50.003** | 3 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal sandgrey | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.3C60.003** | 3 | 0.022 kg |

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal sandgrey | Plastic | C - A - B | C = 45°, B = 45° | **45-2816.3C90.003** | 3 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal sandgrey | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.3C20.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal sandgrey | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.3C40.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal sandgrey | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.3C50.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic blue | Metal sandgrey | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.3C60.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal sandgrey | Plastic | B - A - C | B = 45°, C = 45° | **45-280X.3C90.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal silver | Metal | C - A - C | C = 45° | **45-2819.2C20.003** | 1 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic yellow | Metal silver | Metal | C - A - C | C = 45° | **45-2819.2C40.003** | 1 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal silver | Metal | C - A - C | C = 45° | **45-2819.2C50.003** | 1 | 0.022 kg |
| | **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal silver | Metal | C - A - C | C = 45° | **45-2819.2C90.003** | 1 | 0.022 kg |

# 45 Raised design

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2C20.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic ambergris | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2C30.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic yellow | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2C40.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2C50.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic blue | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2C60.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2C90.003** | 2 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Metal silver | Metal | C - A - B | C = 45°, B = 45° | **45-2816.2C20.003** | 3 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Metal silver | Metal | C - A - B | C = 45°, B = 45° | **45-2816.2C50.003** | 3 | 0.022 kg |
| **Selector switch actuator 3 positions, short lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal silver | Metal | C - A - B | C = 45°, B = 45° | **45-2816.2C90.003** | 3 | 0.022 kg |
| | | | B - A - C | B = 45°, C = 45° | **45-280X.2C90.003** | 4 | 0.022 kg |

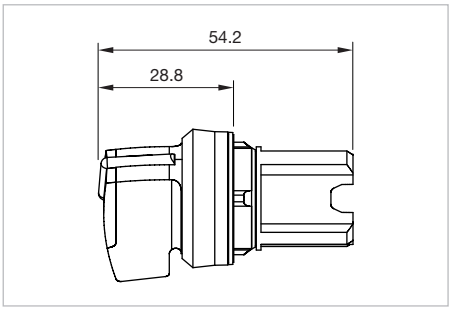
Switching action: A = Rest, B = Momentary, C = Maintain

| | | | |
|---|---|---|---|
| Wiring diagram 1 | Wiring diagram 2 | Wiring diagram 3 | Wiring diagram 4 |

# 45 Raised design

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

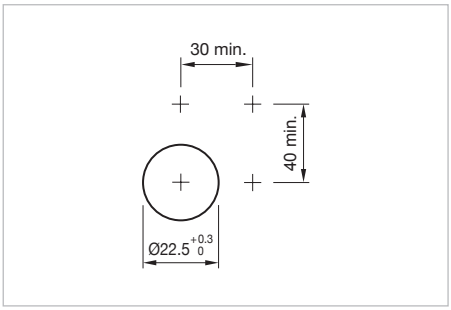
Product can differ from the current configuration.




Dimensions [mm]

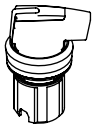
**Additional Information**

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

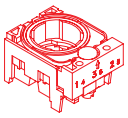



Mounting cut-outs [mm]

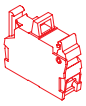
**Equipment consisting of (schematic overview)**



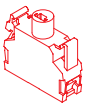
**Actuator**



***Holder*** *page 130*



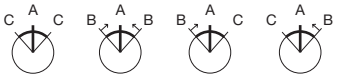
***Switching element*** *page 132*



***Illumination element*** *page 134*

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

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




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

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Metal silver | Metal | C - A - C | C = 45° | **45-2819.2D20.003** | 1 | 0.022 kg |
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic green | Metal silver | Metal | C - A - C | C = 45° | **45-2819.2D50.003** | 1 | 0.022 kg |
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal silver | Metal | C - A - C | C = 45° | **45-2819.2D90.003** | 1 | 0.022 kg |
| **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic red | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2D20.003** | 2 | 0.022 kg |

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|---|
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic green | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2D50.003** | 2 | 0.022 kg |
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal silver | Metal | B - A - B | B = 45° | **45-280S.2D90.003** | 2 | 0.022 kg |
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal silver | Metal | C - A - B | C = 45°, B = 45° | **45-2816.2D20.003** | 3 | 0.022 kg |
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal silver | Metal | C - A - B | C = 45°, B = 45° | **45-2816.2D90.003** | 3 | 0.022 kg |
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic red | Metal silver | Metal | B - A - C | B = 45°, C = 45° | **45-280X.2D20.003** | 4 | 0.022 kg |
| | **Selector switch actuator 3 positions, long lever, Front dimension Ø 29.45 mm** | | | | | | |
| Plastic white | Metal silver | Metal | B - A - C | B = 45°, C = 45° | **45-280X.2D90.003** | 4 | 0.022 kg |

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

Wiring diagram 1

Wiring diagram 2

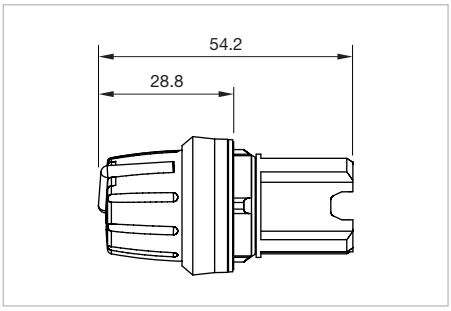
Wiring diagram 3

Wiring diagram 4

# 45 Raised design

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

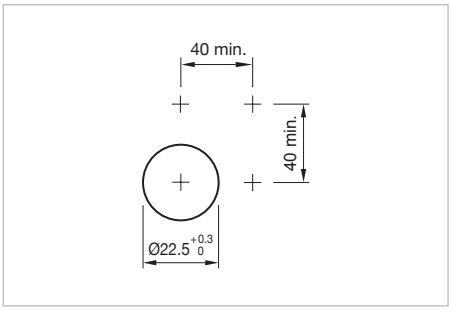
Product can differ from the current configuration.




Dimensions [mm]

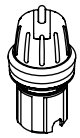
**Additional Information**

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

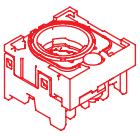



Mounting cut-outs [mm]

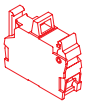
**Equipment consisting of (schematic overview)**



**Actuator**



***Holder*** *page 130*



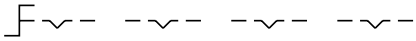
***Switching element*** *page 132*

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.*

| Lever | Front ring | Housing material | Switching action | Switching angle | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|---|
| **Selector switch actuator 4 positions, round lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Plastic black | Plastic | C | C = 90° | **45-2845.1E90.002** | 1 | 0.023 kg |
| **Selector switch actuator 4 positions, round lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal sandgrey | Plastic | C | C = 90° | **45-2845.3E90.002** | 1 | 0.023 kg |
| **Selector switch actuator 4 positions, round lever, Front dimension Ø 29.45 mm** | | | | | | | |
| Plastic white | Metal silver | Metal | C | C = 90° | **45-2845.2E90.002** | 1 | 0.023 kg |

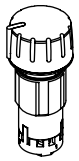
Switching action: C = Maintain



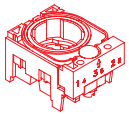
Wiring diagram 1

## Potentiometer, IP66, IP67, IP69K

**Equipment consisting of (schematic overview)**



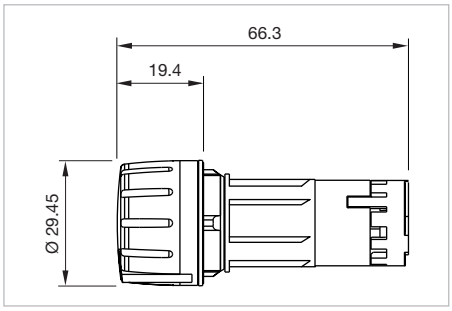
**Actuator**



***Holder*** *page 130*

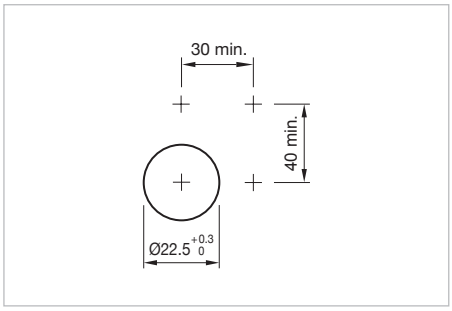
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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




Dimensions [mm]

Product can differ from the current configuration.




Mounting cut-outs [mm]

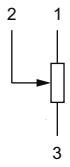
**Additional Information**

- Power 0.5 W
- Slewing range 275° ±2°
- Mounting depth incl. front plate, see chapter «drawings»

| Product attribute | Front ring | Housing material | Part No. | Component layout | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Potentiometer, Front dimension Ø 29.45 mm** | | | | | | |
| Resistor 1 kOhm / linear, series E3 | Plastic black | Plastic | **45-2P03.1E10.000** | 1 | 1 | 0.03 kg |
| Resistor 4.7 kOhm / linear, series E3 | Plastic black | Plastic | **45-2P04.1E10.000** | 1 | 1 | 0.03 kg |
| Resistor 10 kOhm / linear, series E3 | Plastic black | Plastic | **45-2P02.1E10.000** | 1 | 1 | 0.03 kg |
| Resistor 47 kOhm / linear, series E3 | Plastic black | Plastic | **45-2P06.1E10.000** | 1 | 1 | 0.03 kg |
| Resistor 100 kOhm / linear, series E3 | Plastic black | Plastic | **45-2P01.1E10.000** | 1 | 1 | 0.03 kg |
| Resistor 470 kOhm / linear, series E3 | Plastic black | Plastic | **45-2P05.1E10.000** | 1 | 1 | 0.03 kg |
| **Potentiometer, Front dimension Ø 29.45 mm** | | | | | | |
| Resistor 1 kOhm / linear, series E3 | Metal silver | Metal | **45-2P03.2E10.000** | 1 | 1 | 0.03 kg |
| Resistor 4.7 kOhm / linear, series E3 | Metal silver | Metal | **45-2P04.2E10.000** | 1 | 1 | 0.03 kg |
| Resistor 10 kOhm / linear, series E3 | Metal silver | Metal | **45-2P02.2E10.000** | 1 | 1 | 0.03 kg |
| Resistor 47 kOhm / linear, series E3 | Metal silver | Metal | **45-2P06.2E10.000** | 1 | 1 | 0.03 kg |
| Resistor 100 kOhm / linear, series E3 | Metal silver | Metal | **45-2P01.2E10.000** | 1 | 1 | 0.03 kg |
| Resistor 470 kOhm / linear, series E3 | Metal silver | Metal | **45-2P05.2E10.000** | 1 | 1 | 0.03 kg |

The component layouts you will find from Page 144

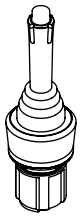
# 45 Raised design



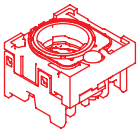

Wiring diagram 1

## Toggle stick, IP 65, IP 67

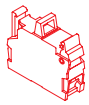
**Equipment consisting of (schematic overview)**



**Actuator**



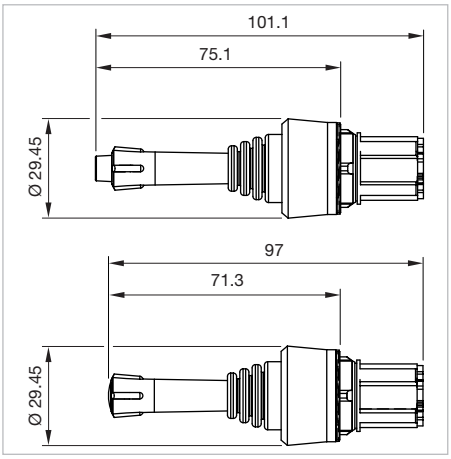
***Holder*** *page 130*



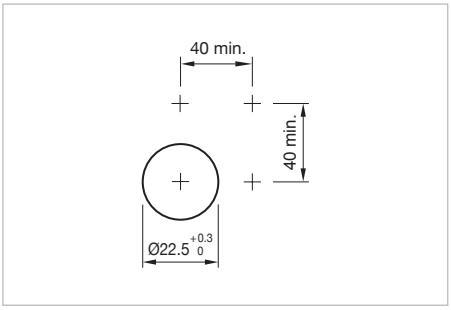
***Switching element*** *page 132*

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

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




Dimensions [mm]




Mounting cut-outs [mm]

Product can differ from the current configuration.

**Additional Information**

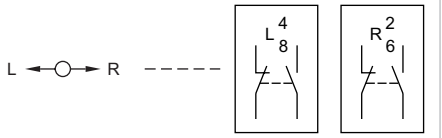
- Use only with holder for 4 elements
- Mounting depth incl. front plate, see chapter «drawings»

| Product attribute | Front ring | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Toggle stick, Front dimension Ø 29.45 mm** | | | | | | |
| 2 positions (L-R), lockable | Plastic black | Plastic | B | **45-2F13.1010.000** | 1 | 0.035 kg |
| 2 positions (U-D), lockable | Plastic black | Plastic | B | **45-2F40.1010.000** | 3 | 0.035 kg |
| 4-positions, lockable | Plastic black | Plastic | B | **45-2F14.1010.000** | 5 | 0.035 kg |
| **Toggle stick, Front dimension Ø 29.45 mm** | | | | | | |
| 2 positions (L-R), lockable | Metal sandgrey | Plastic | B | **45-2F13.3010.000** | 1 | 0.042 kg |
| 2 positions (U-D), lockable | Metal sandgrey | Plastic | B | **45-2F40.3010.000** | 3 | 0.042 kg |
| 4-positions, lockable | Metal sandgrey | Plastic | B | **45-2F14.3010.000** | 5 | 0.042 kg |
| **Toggle stick, Front dimension Ø 29.45 mm** | | | | | | |
| 2 positions (L-R), lockable | Metal silver | Metal | B | **45-2F13.2010.000** | 1 | 0.081 kg |
| 2 positions (U-D), lockable | Metal silver | Metal | B | **45-2F40.2010.000** | 3 | 0.081 kg |
| 4-positions, lockable | Metal silver | Metal | B | **45-2F14.2010.000** | 5 | 0.081 kg |

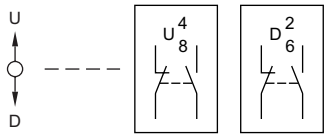
# 45 Raised design

| Product attribute | Front ring | Housing material | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Toggle stick, Front dimension Ø 29.45 mm** | | | | | | |
| 2 positions (L-R) | Plastic black | Plastic | B | **45-2F0T.1010.000** | 1 | 0.035 kg |
| 2 positions (U-D) | Plastic black | Plastic | B | **45-2F38.1010.000** | 3 | 0.035 kg |
| 4 positions | Plastic black | Plastic | B | **45-2F0V.1010.000** | 5 | 0.035 kg |
| **Toggle stick, Front dimension Ø 29.45 mm** | | | | | | |
| 2 positions (L-R) | Metal sandgrey | Plastic | B | **45-2F0T.3010.000** | 1 | 0.042 kg |
| 2 positions (U-D) | Metal sandgrey | Plastic | B | **45-2F38.3010.000** | 3 | 0.042 kg |
| 4 positions | Metal sandgrey | Plastic | B | **45-2F0V.3010.000** | 5 | 0.042 kg |
| **Toggle stick, Front dimension Ø 29.45 mm** | | | | | | |
| 2 positions (L-R) | Metal silver | Metal | B | **45-2F0T.2010.000** | 1 | 0.081 kg |
| 2 positions (U-D) | Metal silver | Metal | B | **45-2F38.2010.000** | 3 | 0.081 kg |
| 4 positions | Metal silver | Metal | B | **45-2F0V.2010.000** | 5 | 0.081 kg |

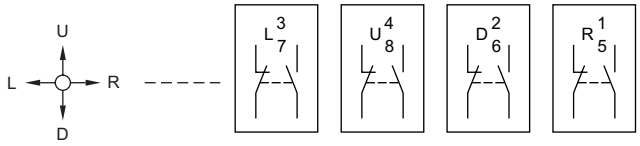
Switching action: B = Momentary




Wiring diagram 1




Wiring diagram 3

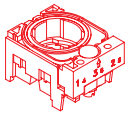



Wiring diagram 5

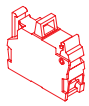
## Toggle switches, IP66, IP67, IP69K

**Equipment consisting of (schematic overview)**

**Actuator**



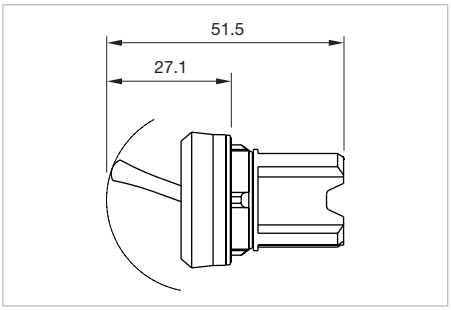
***Holder*** *page 130*



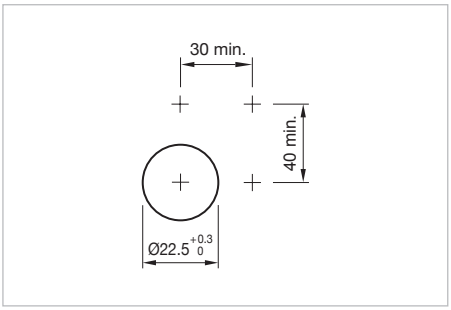
***Switching element*** *page 132*

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

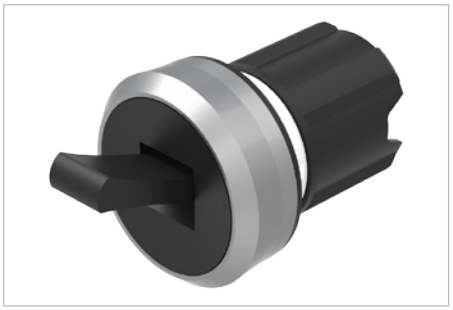
*To obtain a complete unit, please select the red components from the pages shown.*




Dimensions [mm]




Mounting cut-outs [mm]



Product can differ from the current configuration.

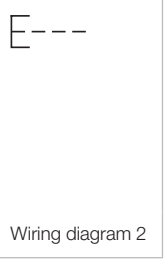
**Additional Information**

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

| Product attribute | Lever | Front ring | Switching action | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Toggle switch actuator, Front dimension Ø 29.45 mm** | | | | | | |
| reset from above | Plastic black | Plastic black | C | **45-2N42.1010.000** | 1 | 0.015 kg |
| – | Plastic black | Plastic black | B | **45-2N39.1010.000** | 2 | 0.015 kg |
| **Toggle switch actuator, Front dimension Ø 29.45 mm** | | | | | | |
| reset from above | Plastic black | Metal sandgrey | C | **45-2N42.3010.000** | 1 | 0.020 kg |
| – | Plastic black | Metal sandgrey | B | **45-2N39.3010.000** | 2 | 0.020 kg |
| **Toggle switch actuator, Front dimension Ø 29.45 mm** | | | | | | |
| reset from above | Plastic black | Metal silver | C | **45-2N42.2010.000** | 1 | 0.038 kg |
| – | Plastic black | Metal silver | B | **45-2N39.2010.000** | 2 | 0.038 kg |

Switching action: B = Momentary, C = Maintain

Wiring diagram 1

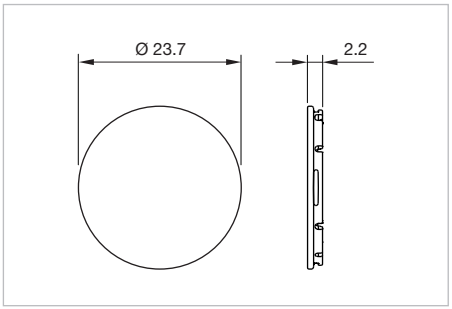


Wiring diagram 2

# 45

## Front

## Lens plastic round flat

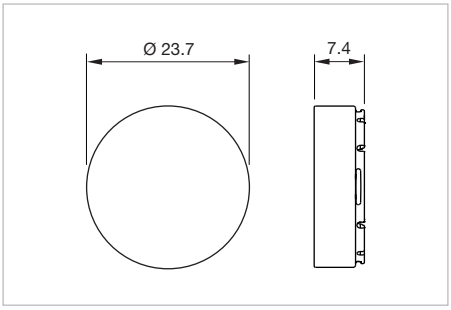



Dimensions [mm]

| Dimension | Lens | Part No. | Weight |
|---|---|---|---|
| **Lens** | | | |
| Ø 23.7 mm | Plastic black | **45-553.0100** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic red | **45-553.0200** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic yellow | **45-553.0400** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic green | **45-553.0500** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic blue | **45-553.0600** | 0.001 kg |
|  **Lens** | | | |
| Ø 23.7 mm | Plastic white | **45-553.0900** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic red transparent | **45-553.0E00** | 0.001 kg |

| Dimension | Lens | Part No. | Weight |
|---|---|---|---|
| **Lens** | | | |
| Ø 23.7 mm | Plastic amber transparent | **45-553.0F00** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic yellow transparent | **45-553.0G00** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic green transparent | **45-553.0H00** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic blue transparent | **45-553.0J00** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic white transparent | **45-553.0K00** | 0.001 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic colourless transparent | **45-553.0N00** | 0.001 kg |

## Lens plastic round encreased




Dimensions [mm]

| Dimension | Lens | Part No. | Weight |
|---|---|---|---|
| **Lens** | | | |
| Ø 23.7 mm | Plastic black | **45-552.0100** | 0.002 kg |

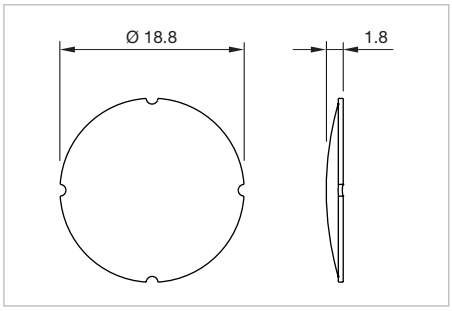
# 45

| Dimension | Lens | Part No. | Weight |
|---|---|---|---|
| **Lens** | | | |
| Ø 23.7 mm | Plastic red | **45-552.0200** | 0.002 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic yellow | **45-552.0400** | 0.002 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic green | **45-552.0500** | 0.002 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic red transparent | **45-552.0E00** | 0.002 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic yellow transparent | **45-552.0G00** | 0.002 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic green transparent | **45-552.0H00** | 0.002 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic blue transparent | **45-552.0J00** | 0.002 kg |
| **Lens** | | | |
| Ø 23.7 mm | Plastic colourless transparent | **45-552.0K00** | 0.002 kg |

## Marking plate

**Additional Information**

- For pushbutton illuminated
- Markable, see «Marking»
- To change the text plate, the push cap is removed with a screwdriver and then snapped back



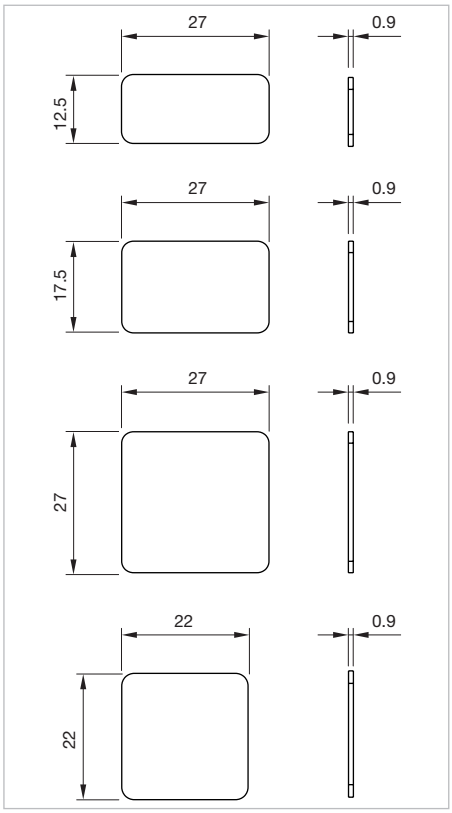

Dimensions [mm]

| Marking plate illumination | Marking plate | Part No. | Weight |
|---|---|---|---|
|  **Marking plate** | | | |
| illuminative | white translucent | **45-563.0K00** | 0.001 kg |

## Legend plate

**Additional Information**

- Markable, see «Marking»




Dimensions [mm]

# 45

| Product attribute | Dimension | Material | Colour | Part No. | Weight |
|---|---|---|---|---|---|
| **Legend plate** | | | | | |
| For sticking or snapping in place | 27 x 12.5 mm | Plastic | black | **45-573.1102** | 0.001 kg |
| For sticking or snapping in place | 27 x 12.5 mm | Plastic | red | **45-573.1202** | 0.001 kg |
| For sticking or snapping in place | 27 x 12.5 mm | Plastic | silver | **45-573.1A02** | 0.001 kg |
| **Legend plate** | | | | | |
| For sticking or snapping in place | 27 x 17.5 mm | Plastic | black | **45-573.1103** | 0.001 kg |
| For sticking or snapping in place | 27 x 17.5 mm | Plastic | silver | **45-573.1A03** | 0.001 kg |
| **Legend plate** | | | | | |
| For sticking or snapping in place | 27 x 27 mm | Plastic | black | **45-573.1105** | 0.001 kg |
| For sticking or snapping in place | 27 x 27 mm | Plastic | silver | **45-573.1A05** | 0.001 kg |
| **Legend plate** | | | | | |
| For sticking or snapping in place | 22 x 22 mm | Plastic | silver | **45-573.1A04** | 0.001 kg |
| For sticking | 22 x 22 mm | Plastic | black | **45-573.1104** | 0.001 kg |

## Emergency-stop legend

**Additional Information**

- Front panel thickness 3 mm max.

| Product attribute | Dimension | Mounting cut-out | Marking | Colour | Part No. | Weight |
|---|---|---|---|---|---|---|
| **Emergency-stop legend** | | | | | | |
| – | Ø 45 x 1 mm | Ø 22.5 mm | without marking | yellow | **45-50K.1407** | 0.005 kg |
| **Emergency-stop legend** | | | | | | |
| – | Ø 75 x 1 mm | Ø 22.5 mm | without marking | yellow | **45-50K.1408** | 0.010 kg |
|  **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | without marking | yellow | **45-50J.1400** | 0.004 kg |
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | NOT - HALT | yellow | **45-50J.140Q** | 0.004 kg |
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | EMERGENCY STOP | yellow | **45-50J.140S** | 0.004 kg |
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | NOT - AUS | yellow | **45-50J.140P** | 0.004 kg |
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | ARRET D›URGENCE | yellow | **45-50J.140T** | 0.004 kg |
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | EMERGENZA | yellow | **45-50J.140V** | 0.004 kg |
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | NODSTOP | yellow | **45-50J.140W** | 0.004 kg |

# 45

| Product attribute | Dimension | Mounting cut-out | Marking | Colour | Part No. | Weight |
|---|---|---|---|---|---|---|
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | 紧急停止 | yellow | **45-50J.140X** | 0.004 kg |
| **Emergency-stop legend** | | | | | | |
| self-adhesive | Ø 75 x 1 mm | Ø 23 mm | NOT-HALT<br>EMERGENCY STOP<br>EMERGENZA<br>EMERGENCIA | yellow | **45-50J.140Z** | 0.004 kg |
|  **Emergency-stop legend** | | | | | | |
| self-adhesive | 150 x 38 mm | Ø 23 mm | without marking | yellow | **45-561.1400** | 0.004 kg |
|  **Emergency-stop legend** | | | | | | |
| self-adhesive | 150 x 38 mm | Ø 23 mm | NOT - AUS | yellow | **45-561.140P** | 0.004 kg |
|  **Emergency-stop legend** | | | | | | |
| self-adhesive | 150 x 38 mm | Ø 23 mm | without marking | yellow | **45-562.1400** | 0.004 kg |

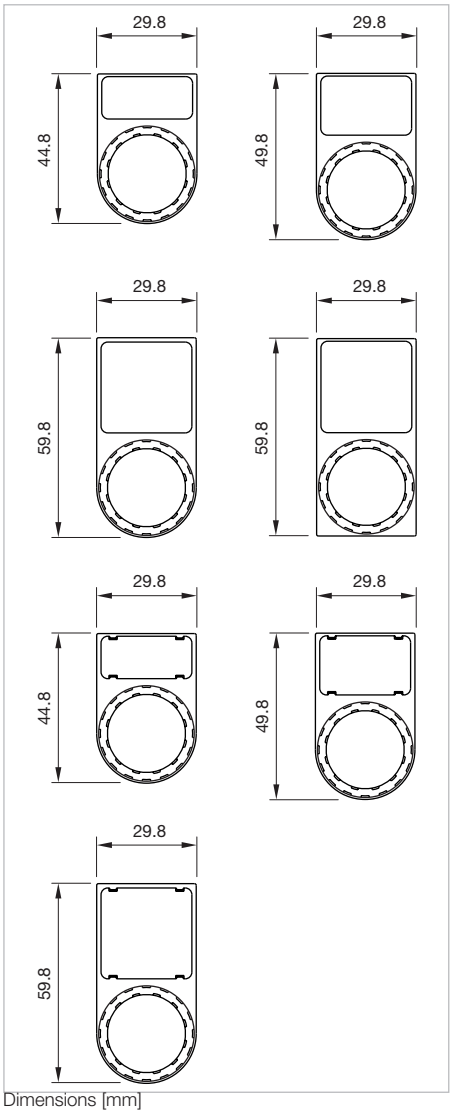
## Legend plate for potentiometer

| Dimension | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Legend plate for potentiometer** | | | | |
| Ø 40 mm | Plastic | black | **45-538.1100** | 0.001 kg |

## Legend support without legend

**Additional Information**

- For sticking or snapping in place




Dimensions [mm]

| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Legend support without legend** | | | | |
| for legend plate 27 x 12.5 mm | Plastic | black | **45-564.1102** | 0.002 kg |
| **Legend support without legend** | | | | |
| for legend plate 27 x 17.5 mm | Plastic | black | **45-567.1103** | 0.002 kg |
| **Legend support without legend** | | | | |
| for legend plate 27 x 27 mm | Plastic | black | **45-569.1105** | 0.002 kg |

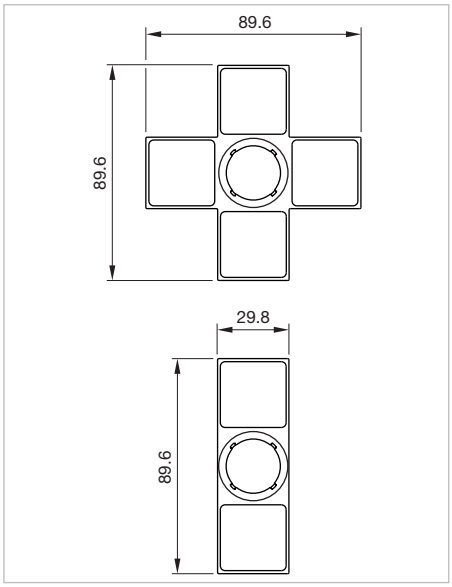
# 45

| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Legend support without legend** | | | | |
| for legend plate 27 x 27 mm | Plastic | black | **45-570.1105** | 0.002 kg |
| **Legend support without legend** | | | | |
| for legend plate 27 x 12.5 mm | Plastic | black | **45-564.1110** | 0.002 kg |
| **Legend support without legend** | | | | |
| for legend plate 27 x 17.5 mm | Plastic | black | **45-567.1111** | 0.002 kg |
| **Legend support without legend** | | | | |
| for legend plate 27 x 27 mm | Plastic | black | **45-569.1112** | 0.002 kg |

## Legend support without legend for toggle stick

**Additional Information**

- For sticking or snapping in place




Dimensions [mm]

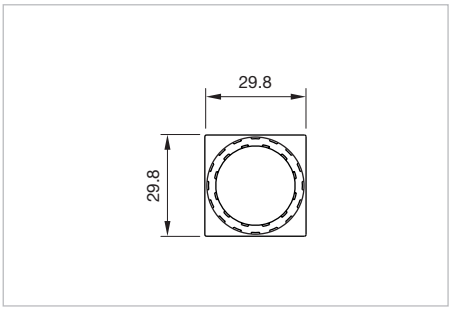
| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Legend support without legend for toggle stick** | | | | |
| for legend plate 27 x 27 mm | Plastic | black | **45-571.1105** | 0.002 kg |
| **Legend support without legend for toggle stick** | | | | |
| for legend plate 27 x 27 mm | Plastic | black | **45-572.1105** | 0.002 kg |

# 45

## Single frame, IP66, IP67, IP69K

**Additional Information**

- For design square



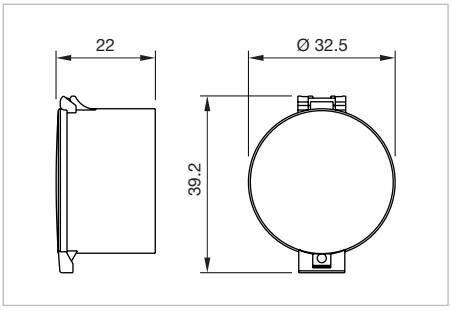

Dimensions [mm]

| Dimension | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Single frame for design square** | | | | |
| 29.8 x 29.8 mm | Plastic | black | **45-558.0000** | 0.001 kg |

## Protective cover, IP66, IP67

**Additional Information**

- Hinged, with means for sealing
- Please note that bigger minimum distances are necessary




Dimensions [mm]

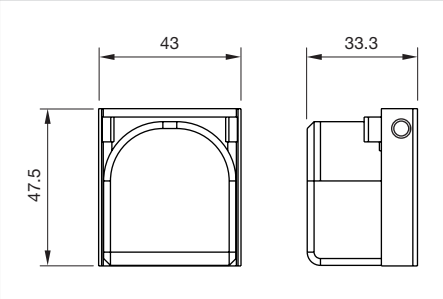
| Material | Colour | Optics | Part No. | Weight |
|---|---|---|---|---|
| **Protective cover** | | | | |
| Plastic | black | opaque | **45-555.1100** | 0.012 kg |
| **Protective cover** | | | | |
| Plastic | colourless | transparent | **45-555.1K00** | 0.012 kg |

## Protective cap

| Product attribute | Front protection | Material | Colour | Optics | Part No. | Weight |
|---|---|---|---|---|---|---|
| **Protective cap for pushbutton** | | | | | | |
| for lens raised above bezel | IP66, IP67 | Silicone | colourless | transparent | **45-544.1K00** | 0.008 kg |
| for lens flush | IP66, IP67 | Silicone | colourless | transparent | **45-545.1K00** | 0.008 kg |
| **Protective cap for twin pushbutton** | | | | | | |
| for lens raised above bezel | IP66, IP67 | Silicone | colourless | transparent | **45-547.1K00** | 0.011 kg |
| for lens flush | IP66, IP67 | Silicone | colourless | transparent | **45-548.1K00** | 0.011 kg |
| **Protective cap for Emergency stop switch** | | | | | | |
| for lens raised above bezel | IP66, IP67 | Silicone | colourless | transparent | **45-542.1K00** | 0.015 kg |
| **Protective cap for Mushroom-head pushbutton** | | | | | | |
| for Mushroom-head pushbutton Ø 40 | IP66, IP67 | Silicone | colourless | transparent | **45-543.1K00** | 0.006 kg |
| **Protective cap for selector switch** | | | | | | |
| for lever switch, short lever | IP66, IP67 | Silicone | colourless | transparent | **45-546.1K00** | 0.006 kg |
| **Protective cap for keylock switch** | | | | | | |
| for keylock switch | IP66, IP67 | Silicone | colourless | transparent | **45-50F.1100** | 0.006 kg |

# 45

## Cover, IP66, IP67, IP69K



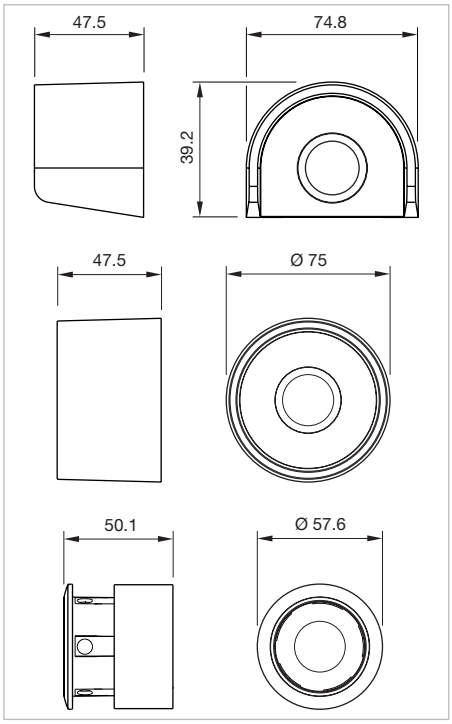

Dimensions [mm]

| Product attribute | Material | Colour | Optics | Part No. | Weight |
|---|---|---|---|---|---|
| **Cover for locking device** | | | | | |
| For pushbuttons, selector switches with round or short lever | Metall/Kunststoff | silver/colourless | transparent | **45-529.2100** | 0.043 kg |

## E-stop protective shroud

**Additional Information**

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

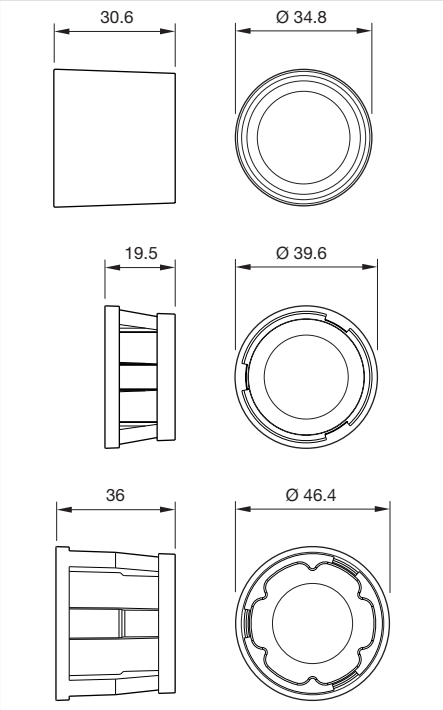



Dimensions [mm]

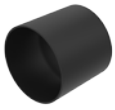
| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **E-stop protective shroud** | | | | |
| non-illuminative | Plastic | yellow | **45-549.1400** | 0.052 kg |
| **E-stop protective shroud** | | | | |
| non-illuminative | Plastic | grey | **45-549.1800** | 0.052 kg |
| **E-stop protective shroud** | | | | |
| non-illuminative | Plastic | yellow | **45-550.1400** | 0.044 kg |
| **E-stop protective shroud** | | | | |
| for Emergency stop switch Ø 40 mm, for 5 padlocks | Metal | yellow | **45-539.2400** | 0.162 kg |
| **E-stop protective shroud** | | | | |
| for Emergency stop switch Ø 40 mm, for 5 padlocks | Metal | grey | **45-539.2800** | 0.153 kg |

# 45

## Protective shroud, IP66, IP67, IP69K




Dimensions [mm]

| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
|  **Protective shroud** | | | | |
| for pushbutton, selector switch | Plastic | black | **45-50N.1100** | 0.010 kg |
| **Protective shroud** | | | | |
| for pushbuttons | Metal | silver | **45-50Q.2100** | 0.020 kg |
| **Protective shroud** | | | | |
| for mushroom-head pushbutton Ø 40 mm | Metal | silver | **45-50P.0100** | 0.020 kg |

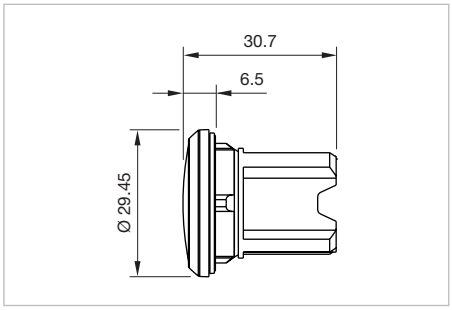
## Sun collar

| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Sun collar** | | | | |
| for pushbutton illuminated | Plastic | black | **45-560.1100** | 0.010 kg |

## Blind plug, IP66, IP67, IP69K

**Additional Information**

- Use with plastic or metal holder




Dimensions [mm]

| Mounting cut-out | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Blind plug** | | | | |
| Ø 22.5 mm | Plastic | black | **45-506.1100** | 0.010 kg |
| **Blind plug** | | | | |
| Ø 22.5 mm | Metal sandgrey | silver | **45-506.3A00** | 0.008 kg |
| **Blind plug** | | | | |
| Ø 22.5 mm | Metal shiny | silver | **45-506.2A00** | 0.038 kg |

# 45

## Locking device, IP66, IP67, IP69K

| Product attribute | Dimension | Material | Colour | Part No. | Weight |
|---|---|---|---|---|---|
| **Locking device** | | | | | |
| for pushbutton with lens raised | 47 x 43.1 x 25.1 mm | Metal | silver | **45-531.2100** | 0.047 kg |
| **Locking device** | | | | | |
| for pushbutton with lens flat | 47 x 43.1 x 25.1 mm | Metal | silver | **45-532.2100** | 0.047 kg |
| for mushroom-head pushbutton Ø 30 mm or Ø 40 mm | 47 x 43.1 x 25.1 mm | Metal | silver | **45-530.2100** | 0.047 kg |
| **Locking device** | | | | | |
| for selector switch in position left | 47 x 47.1 x 21.1 mm | Metal | silver | **45-534.2100** | 0.047 kg |
| **Locking device** | | | | | |
| for selector switch in position center | 47 x 47.1 x 21.1 mm | Metal | silver | **45-533.2100** | 0.047 kg |
| **Locking device** | | | | | |
| for selector switch in position right | 47 x 47.1 x 21.1 mm | Metal | silver | **45-536.2100** | 0.047 kg |
| **Locking device** | | | | | |
| for selector switch in position center and right | 47 x 47.1 x 21.1 mm | Metal | silver | **45-535.2100** | 0.047 kg |
| **Locking device** | | | | | |
| for selector switch in position center and left | 47 x 47.1 x 21.1 mm | Metal | silver | **45-537.2100** | 0.047 kg |

## Spare key

**Additional Information**

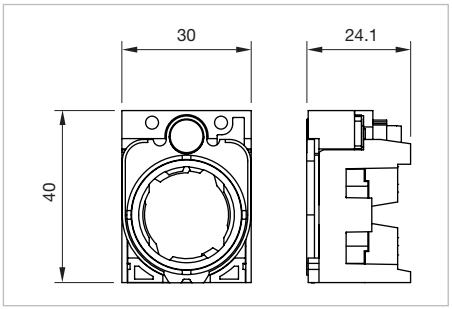
- For standard lock RONIS T254

| Product attribute | Part No. | Weight |
|---|---|---|
| **Spare key** | | |
| 2 spare keys | **45-522.0900** | 0.007 kg |

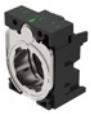
# 45

## Rear side

## Holder for 3 elements

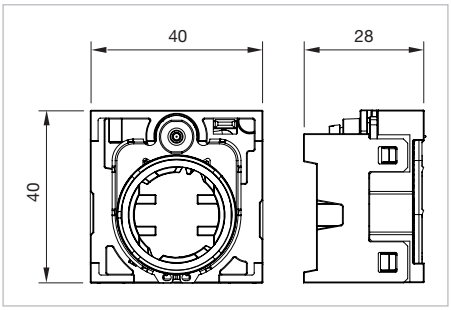



Dimensions [mm]

| Product attribute | Material | Part No. | Component layout | Weight |
|---|---|---|---|---|
|  **Holder for 3 elements** | | | | |
| for all buttons except selector switch 4 positions and toggle stick | Plastic | **45-2300.1000.000** | 2 | 0.028 kg |
| **Holder for 3 elements** | | | | |
| for all buttons except selector switch 4 positions and toggle stick | Metal | **45-2300.2000.000** | 2 | 0.046 kg |

The component layouts you will find from Page 145

## Holder for 4 elements



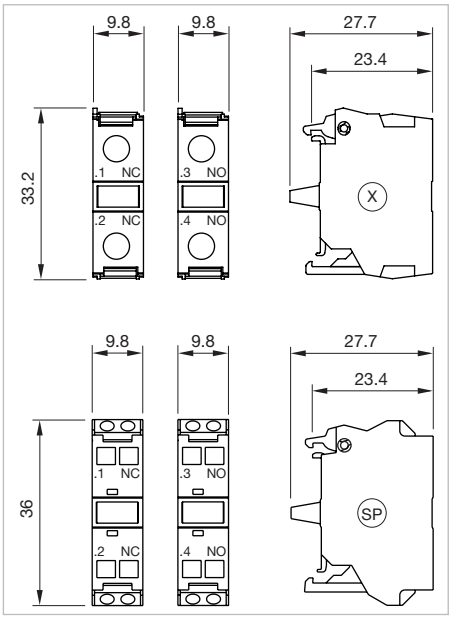

Dimensions [mm]

| Product attribute | Material | Part No. | Compo-nent layout | Weight |
|---|---|---|---|---|
| **Holder for 4 elements** | | | | |
| for selector switch 4 positions and toggle stick | Plastic | **45-2400.1000.000** | 3 | 0.028 kg |
| **Holder for 4 elements** | | | | |
| for selector switch 4 positions and toggle stick | Metal | **45-2400.2000.000** | 3 | 0.046 kg |

The component layouts you will find from Page 145

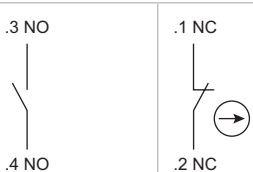
# 45

## Switching element front mounting



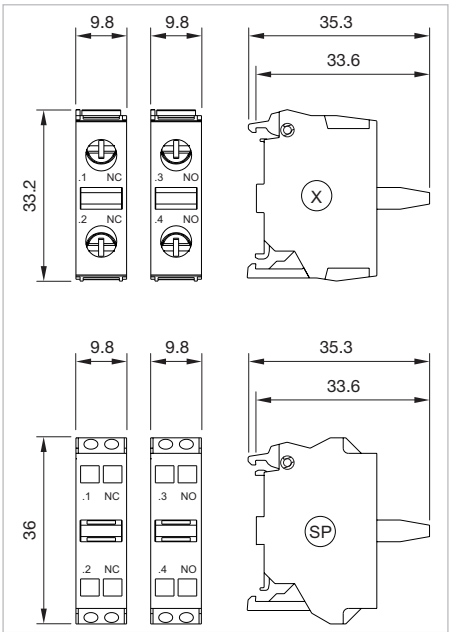

Dimensions [mm]
X = Screw terminal,
SP = Spring-type terminal

| Switching current | Contacts | Contact material | Terminal | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Switching element** | | | | | | |
| 10 A | 1 NO | Silver | Screw | **45-311.1Z10** | 1 | 0.010 kg |
| 10 A | 1 NC | Silver | Screw | **45-312.1Z10** | 2 | 0.010 kg |
| **Switching element** | | | | | | |
| 10 A | 1 NO | Silver | Spring-type terminal | **45-311.1Z40** | 1 | 0.010 kg |
| 10 A | 1 NC | Silver | Spring-type terminal | **45-312.1Z40** | 2 | 0.010 kg |



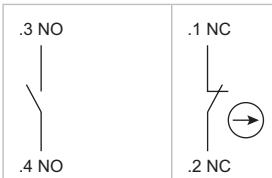

Wiring diagram 1 | Wiring diagram 2

## Switching element base mounting

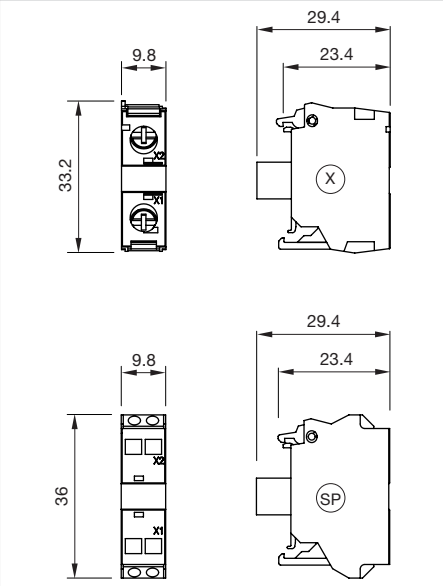



Dimensions [mm]
X = Screw terminal,
SP = Spring-type terminal

| Switching current | Contacts | Contact material | Terminal | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Switching element** | | | | | | |
| 10 A | 1 NO | Silver | Screw | **45-311.2Z10** | 1 | 0.010 kg |
| **Switching element** | | | | | | |
| 10 A | 1 NC | Silver | Screw | **45-312.2Z10** | 2 | 0.010 kg |
| **Switching element** | | | | | | |
| 10 A | 1 NO | Silver | Spring-type terminal | **45-311.2Z40** | 1 | 0.010 kg |
| **Switching element** | | | | | | |
| 10 A | 1 NC | Silver | Spring-type terminal | **45-312.2Z40** | 2 | 0.010 kg |



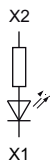

Wiring diagram 1 | Wiring diagram 2




Dimensions [mm]
X = Screw terminal,
SP = Spring-type terminal

| LED colour | Operating voltage | Lumi. intensityt | Terminal | Part No. | Wiring dia-gram | Weight |
|---|---|---|---|---|---|---|
| **Illumination element** | | | | | | |
| red | 6-24 VAC/DC | 450...1120 mcd | Screw | **45-320.1E11** | 1 | 0.009 kg |
| amber | 6-24 VAC/DC | 450...1120 mcd | Screw | **45-320.1F11** | 1 | 0.009 kg |
| yellow | 6-24 VAC/DC | 900...1400 mcd | Screw | **45-320.1G11** | 1 | 0.009 kg |
| green | 6-24 VAC/DC | 900...1400 mcd | Screw | **45-320.1H11** | 1 | 0.009 kg |
| blue | 6-24 VAC/DC | 280...710 mcd | Screw | **45-320.1J11** | 1 | 0.009 kg |
| white | 6-24 VAC/DC | 900...1400 mcd | Screw | **45-320.1N11** | 1 | 0.009 kg |
| red | 24-240 VAC/DC | 450...1120 mcd | Screw | **45-320.1E12** | 1 | 0.010 kg |
| amber | 24-240 VAC/DC | 450...1120 mcd | Screw | **45-320.1F12** | 1 | 0.010 kg |
| yellow | 24-240 VAC/DC | 900...1400 mcd | Screw | **45-320.1G12** | 1 | 0.010 kg |
| green | 24-240 VAC/DC | 900...1400 mcd | Screw | **45-320.1H12** | 1 | 0.010 kg |
| blue | 24-240 VAC/DC | 280...710 mcd | Screw | **45-320.1J12** | 1 | 0.010 kg |
| white | 24-240 VAC/DC | 900...1400 mcd | Screw | **45-320.1N12** | 1 | 0.010 kg |
| red | 24 VAC/DC | 450...1120 mcd | Screw | **45-320.1E16** | 1 | 0.009 kg |
| amber | 24 VAC/DC | 450...1120 mcd | Screw | **45-320.1F16** | 1 | 0.009 kg |
| yellow | 24 VAC/DC | 900...1400 mcd | Screw | **45-320.1G16** | 1 | 0.009 kg |
| green | 24 VAC/DC | 900...1400 mcd | Screw | **45-320.1H16** | 1 | 0.009 kg |
| blue | 24 VAC/DC | 280...710 mcd | Screw | **45-320.1J16** | 1 | 0.009 kg |
| white | 24 VAC/DC | 900...1400 mcd | Screw | **45-320.1N16** | 1 | 0.009 kg |
| red | 110 VAC | 450...1120 mcd | Screw | **45-320.1E17** | 1 | 0.010 kg |
| amber | 110 VAC | 450...1120 mcd | Screw | **45-320.1F17** | 1 | 0.010 kg |
| yellow | 110 VAC | 900...1400 mcd | Screw | **45-320.1G17** | 1 | 0.010 kg |
| green | 110 VAC | 900...1400 mcd | Screw | **45-320.1H17** | 1 | 0.010 kg |
| blue | 110 VAC | 280...710 mcd | Screw | **45-320.1J17** | 1 | 0.010 kg |
| white | 110 VAC | 900...1400 mcd | Screw | **45-320.1N17** | 1 | 0.010 kg |

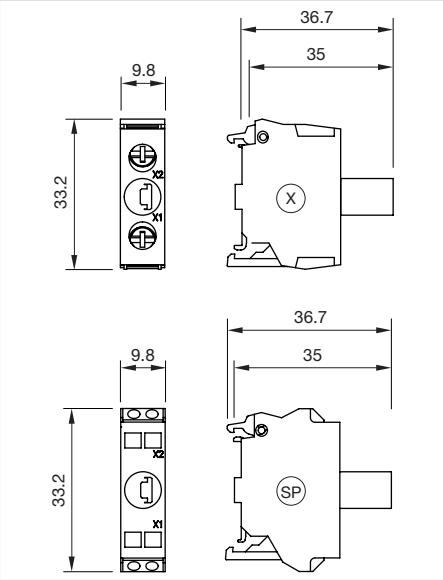
| LED colour | Operating voltage | Lumi. intensity | Terminal | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| red | 230 VAC | 450...1120 mcd | Screw | **45-320.1E18** | 1 | 0.010 kg |
| amber | 230 VAC | 450...1120 mcd | Screw | **45-320.1F18** | 1 | 0.010 kg |
| yellow | 230 VAC | 900...1400 mcd | Screw | **45-320.1G18** | 1 | 0.010 kg |
| green | 230 VAC | 900...1400 mcd | Screw | **45-320.1H18** | 1 | 0.010 kg |
| blue | 230 VAC | 280...710 mcd | Screw | **45-320.1J18** | 1 | 0.010 kg |
| white | 230 VAC | 900...1400 mcd | Screw | **45-320.1N18** | 1 | 0.010 kg |
| **Illumination element** | | | | | | |
| red | 6-24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.1E41** | 1 | 0.009 kg |
| amber | 6-24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.1F41** | 1 | 0.009 kg |
| yellow | 6-24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1G41** | 1 | 0.009 kg |
| green | 6-24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1H41** | 1 | 0.009 kg |
| blue | 6-24 VAC/DC | 280...710 mcd | Spring-type terminal | **45-320.1J41** | 1 | 0.009 kg |
| white | 6-24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1N41** | 1 | 0.009 kg |
| red | 24-240 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.1E42** | 1 | 0.010 kg |
| amber | 24-240 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.1F42** | 1 | 0.010 kg |
| yellow | 24-240 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1G42** | 1 | 0.010 kg |
| green | 24-240 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1H42** | 1 | 0.010 kg |
| blue | 24-240 VAC/DC | 280...710 mcd | Spring-type terminal | **45-320.1J42** | 1 | 0.010 kg |
| white | 24-240 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1N42** | 1 | 0.010 kg |
| red | 24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.1E46** | 1 | 0.009 kg |
| amber | 24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.1F46** | 1 | 0.009 kg |
| yellow | 24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1G46** | 1 | 0.009 kg |
| green | 24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1H46** | 1 | 0.009 kg |
| blue | 24 VAC/DC | 280...710 mcd | Spring-type terminal | **45-320.1J46** | 1 | 0.009 kg |
| white | 24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.1N46** | 1 | 0.009 kg |
| red | 110 VAC | 450...1120 mcd | Spring-type terminal | **45-320.1E47** | 1 | 0.010 kg |
| amber | 110 VAC | 450...1120 mcd | Spring-type terminal | **45-320.1F47** | 1 | 0.010 kg |
| yellow | 110 VAC | 900...1400 mcd | Spring-type terminal | **45-320.1G47** | 1 | 0.010 kg |
| green | 110 VAC | 900...1400 mcd | Spring-type terminal | **45-320.1H47** | 1 | 0.010 kg |
| blue | 110 VAC | 280...710 mcd | Spring-type terminal | **45-320.1J47** | 1 | 0.010 kg |
| white | 110 VAC | 900...1400 mcd | Spring-type terminal | **45-320.1N47** | 1 | 0.010 kg |
| red | 230 VAC | 450...1120 mcd | Spring-type terminal | **45-320.1E48** | 1 | 0.010 kg |
| amber | 230 VAC | 450...1120 mcd | Spring-type terminal | **45-320.1F48** | 1 | 0.010 kg |
| yellow | 230 VAC | 900...1400 mcd | Spring-type terminal | **45-320.1G48** | 1 | 0.010 kg |
| green | 230 VAC | 900...1400 mcd | Spring-type terminal | **45-320.1H48** | 1 | 0.010 kg |
| blue | 230 VAC | 280...710 mcd | Spring-type terminal | **45-320.1J48** | 1 | 0.010 kg |
| white | 230 VAC | 900...1400 mcd | Spring-type terminal | **45-320.1N48** | 1 | 0.010 kg |




Wiring diagram 1

# 45

## Illumination element base mounting




Dimensions [mm]
X = Screw terminal,
SP = Spring-type terminal

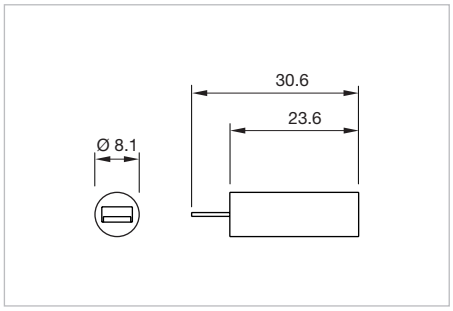
| LED colour | Operating voltage | Lumi. intensity | Terminal | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| **Illumination element** | | | | | | |
| red | 6-24 VAC/DC | 450...1120 mcd | Screw | **45-320.2E11** | 1 | 0.009 kg |
| amber | 6-24 VAC/DC | 450...1120 mcd | Screw | **45-320.2F11** | 1 | 0.009 kg |
| yellow | 6-24 VAC/DC | 900...1400 mcd | Screw | **45-320.2G11** | 1 | 0.009 kg |
| green | 6-24 VAC/DC | 900...1400 mcd | Screw | **45-320.2H11** | 1 | 0.009 kg |
| blue | 6-24 VAC/DC | 280...710 mcd | Screw | **45-320.2J11** | 1 | 0.009 kg |
| white | 6-24 VAC/DC | 900...1400 mcd | Screw | **45-320.2N11** | 1 | 0.009 kg |
| red | 24-240 VAC/DC | 900...1400 mcd | Screw | **45-320.2E12** | 1 | 0.009 kg |
| amber | 24-240 VAC/DC | 450...1120 mcd | Screw | **45-320.2F12** | 1 | 0.009 kg |
| yellow | 24-240 VAC/DC | 900...1400 mcd | Screw | **45-320.2G12** | 1 | 0.009 kg |
| green | 24-240 VAC/DC | 900...1400 mcd | Screw | **45-320.2H12** | 1 | 0.009 kg |
| blue | 24-240 VAC/DC | 280...710 mcd | Screw | **45-320.2J12** | 1 | 0.009 kg |
| white | 24-240 VAC/DC | 900...1400 mcd | Screw | **45-320.2N12** | 1 | 0.009 kg |
| red | 24 VAC/DC | 450...1120 mcd | Screw | **45-320.2E16** | 1 | 0.009 kg |
| amber | 24 VAC/DC | 450...1120 mcd | Screw | **45-320.2F16** | 1 | 0.009 kg |
| yellow | 24 VAC/DC | 900...1400 mcd | Screw | **45-320.2G16** | 1 | 0.009 kg |
| green | 24 VAC/DC | 900...1400 mcd | Screw | **45-320.2H16** | 1 | 0.009 kg |
| blue | 24 VAC/DC | 280...710 mcd | Screw | **45-320.2J16** | 1 | 0.009 kg |
| white | 24 VAC/DC | 900...1400 mcd | Screw | **45-320.2N16** | 1 | 0.009 kg |
| red | 110 VAC | 450...1120 mcd | Screw | **45-320.2E17** | 1 | 0.009 kg |
| amber | 110 VAC | 450...1120 mcd | Screw | **45-320.2F17** | 1 | 0.009 kg |
| yellow | 110 VAC | 900...1400 mcd | Screw | **45-320.2G17** | 1 | 0.009 kg |
| green | 110 VAC | 900...1400 mcd | Screw | **45-320.2H17** | 1 | 0.009 kg |
| blue | 110 VAC | 280...710 mcd | Screw | **45-320.2J17** | 1 | 0.009 kg |
| white | 110 VAC | 900...1400 mcd | Screw | **45-320.2N17** | 1 | 0.009 kg |

| LED colour | Operating voltage | Lichtstärke | Terminal | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|---|
| red | 230 VAC | 450...1120 mcd | Screw | **45-320.2E18** | 1 | 0.009 kg |
| amber | 230 VAC | 450...1120 mcd | Screw | **45-320.2F18** | 1 | 0.009 kg |
| yellow | 230 VAC | 900...1400 mcd | Screw | **45-320.2G18** | 1 | 0.009 kg |
| green | 230 VAC | 900...1400 mcd | Screw | **45-320.2H18** | 1 | 0.009 kg |
| blue | 230 VAC | 280...710 mcd | Screw | **45-320.2J18** | 1 | 0.009 kg |
| white | 230 VAC | 900...1400 mcd | Screw | **45-320.2N18** | 1 | 0.009 kg |
| **Illumination element** | | | | | | |
| red | 6-24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.2E41** | 1 | 0.009 kg |
| amber | 6-24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.2F41** | 1 | 0.009 kg |
| yellow | 6-24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2G41** | 1 | 0.009 kg |
| green | 6-24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2H41** | 1 | 0.009 kg |
| blue | 6-24 VAC/DC | 280...710 mcd | Spring-type terminal | **45-320.2J41** | 1 | 0.009 kg |
| white | 6-24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2N41** | 1 | 0.009 kg |
| red | 24-240 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.2E42** | 1 | 0.009 kg |
| amber | 24-240 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.2F42** | 1 | 0.009 kg |
| yellow | 24-240 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2G42** | 1 | 0.009 kg |
| green | 24-240 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2H42** | 1 | 0.009 kg |
| blue | 24-240 VAC/DC | 280...710 mcd | Spring-type terminal | **45-320.2J42** | 1 | 0.009 kg |
| white | 24-240 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2N42** | 1 | 0.009 kg |
| red | 24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.2E46** | 1 | 0.009 kg |
| amber | 24 VAC/DC | 450...1120 mcd | Spring-type terminal | **45-320.2F46** | 1 | 0.009 kg |
| yellow | 24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2G46** | 1 | 0.009 kg |
| green | 24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2H46** | 1 | 0.009 kg |
| blue | 24 VAC/DC | 280...710 mcd | Spring-type terminal | **45-320.2J46** | 1 | 0.009 kg |
| white | 24 VAC/DC | 900...1400 mcd | Spring-type terminal | **45-320.2N46** | 1 | 0.009 kg |
| red | 110 VAC | 450...1120 mcd | Spring-type terminal | **45-320.2E47** | 1 | 0.009 kg |
| amber | 110 VAC | 450...1120 mcd | Spring-type terminal | **45-320.2F47** | 1 | 0.009 kg |
| yellow | 110 VAC | 900...1400 mcd | Spring-type terminal | **45-320.2G47** | 1 | 0.009 kg |
| green | 110 VAC | 900...1400 mcd | Spring-type terminal | **45-320.2H47** | 1 | 0.009 kg |
| blue | 110 VAC | 280...710 mcd | Spring-type terminal | **45-320.2J47** | 1 | 0.009 kg |
| white | 110 VAC | 900...1400 mcd | Spring-type terminal | **45-320.2N47** | 1 | 0.009 kg |
| red | 230 VAC | 450...1120 mcd | Spring-type terminal | **45-320.2E48** | 1 | 0.009 kg |
| amber | 230 VAC | 450...1120 mcd | Spring-type terminal | **45-320.2F48** | 1 | 0.009 kg |
| yellow | 230 VAC | 900...1400 mcd | Spring-type terminal | **45-320.2G48** | 1 | 0.009 kg |
| green | 230 VAC | 900...1400 mcd | Spring-type terminal | **45-320.2H48** | 1 | 0.009 kg |
| blue | 230 VAC | 280...710 mcd | Spring-type terminal | **45-320.2J48** | 1 | 0.009 kg |
| white | 230 VAC | 900...1400 mcd | Spring-type terminal | **45-320.2N48** | 1 | 0.009 kg |

Wiring diagram 1

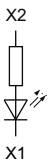
# 45

## Illumination element PCB mounting



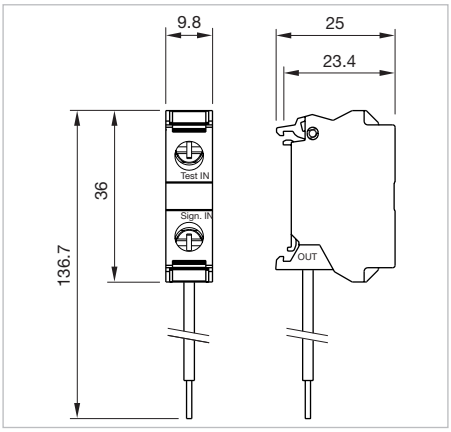

Dimensions [mm]
X = Screw terminal,
SP = Spring-type terminal

| LED colour | Operating voltage | Terminal | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|
| **Illumination element** | | | | | |
| red | 5 VDC | PCB terminal | **45-320.3E60** | 1 | 0.009 kg |
| amber | 5 VDC | PCB terminal | **45-320.3F60** | 1 | 0.009 kg |
| yellow | 5 VDC | PCB terminal | **45-320.3G60** | 1 | 0.009 kg |
| green | 5 VDC | PCB terminal | **45-320.3H60** | 1 | 0.009 kg |
| blue | 5 VDC | PCB terminal | **45-320.3J60** | 1 | 0.009 kg |
| white | 5 VDC | PCB terminal | **45-320.3N60** | 1 | 0.009 kg |



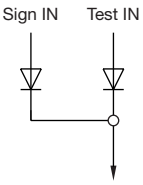

Wiring diagram 1

## Test module




Dimensions [mm]
X = Screw terminal,
SP = Spring-type terminal

| Product attribute | Operating voltage | Terminal | Part No. | Wiring diagram | Weight |
|---|---|---|---|---|---|
| **Test module front mounting** | | | | | |
| front plate mounting | 12-240 VAC/DC | Screw | **45-330.1115** | 1 | 0.011 kg |
| **Test module base mounting** | | | | | |
| base mounting | 12-240 VAC/DC | Screw | **45-330.2115** | 1 | 0.011 kg |




Wiring diagram 1

# 45

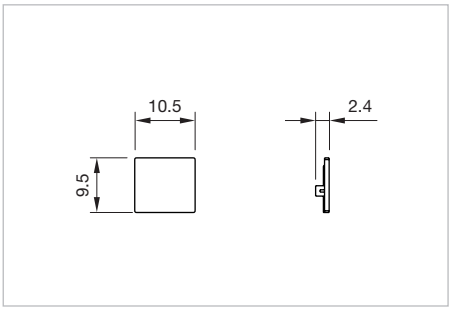
## Extension plungers

| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Extension plungers** | | | | |
| for pushbutton with extended stroke | Plastic | black | **45-50M.1900** | 0.009 kg |

## Legend plate for switching elements

**Additional Information**

- Without inscription
- In support of the dust resistance




Dimensions [mm]

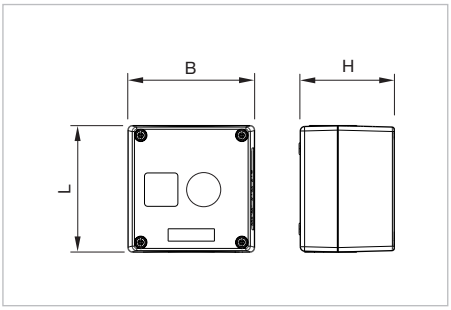
| Product attribute | Dimension | Material | Colour | Part No. | Weight |
|---|---|---|---|---|---|
|  **Legend plate** | | | | | |
| for snapping in place | 10.5 x 9.5 mm | Plastic | white | **45-523.1900** | 0.001 kg |

## Mounting

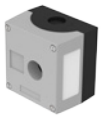
## Enclosure, IP66, IP67, IP69K

**Additional Information**

- Openings for cable gland M16 or M20




Dimensions [mm]

| Product attribute | Dimension | Material | Colour | Part No. | Weight |
|---|---|---|---|---|---|
| **Enclosure** | | | | | |
| 1 mounting hole Ø 22.3 mm | L 85 x B 85 x H 64 mm | Plastic | grey | **45-430.1801** | 0.251 kg |
| **Enclosure** | | | | | |
| 1 mounting hole Ø 22.3 mm | L 85 x B 85 x H 64 mm | Plastic | yellow | **45-410.1401** | 0.248 kg |
| **Enclosure** | | | | | |
| 1 mounting hole Ø 22.3 mm, for base mounting, top and bottom 1 x M20 | L 89.4 x B 85 x H 64 mm | Metal | yellow | **45-410.2403** | 0.478 kg |
|  **Enclosure** | | | | | |
| 1 mounting hole Ø 22.3 mm, for base mounting, top and bottom 1 x M20 | L 89.4 x B 85 x H 64 mm | Metal | grey | **45-430.2803** | 0.479 kg |
| **Enclosure** | | | | | |
| 1 mounting hole Ø 22.3 mm, with protective shroud | L 85 x B 85 x H 64 mm | Plastic | yellow | **45-420.1401** | 0.287 kg |
| **Enclosure** | | | | | |
| 1 mounting hole Ø 22.3 mm, with protective shroud, for base mounting, top and bottom 1 x M20 | L 89.4 x B 85 x H 64 mm | Metal | grey | **45-420.2803** | 0.568 kg |

# 45

| Product attribute | Dimension | Material | Colour | Part No. | Weight |
|---|---|---|---|---|---|
| **Enclosure** | | | | | |
| 2 mounting holes Ø 22.3 mm | L 114 x B 85 x H 64 mm | Plastic | grey | **45-440.1801** | 0.299 kg |
| 2 mounting holes Ø 22.3 mm, for base mounting, top and bottom 1 x M20 | L 118 x B 85 x H 64 mm | Metal | grey | **45-440.2803** | 0.299 kg |
| **Enclosure** | | | | | |
| 3 mounting holes Ø 22.3 mm | L 154 x B 85 x H 64 mm | Plastic | grey | **45-450.1801** | 0.364 kg |
| 3 mounting holes Ø 22.3 mm, for base mounting, top and bottom 1 x M20 | L 158 x B 85 x H 64 mm | Metal | grey | **45-450.2803** | 0.683 kg |
| **Enclosure** | | | | | |
| 4 mounting holes Ø 22.3 mm | L 194 x B 85 x H 64 mm | Plastic | grey | **45-460.1802** | 0.436 kg |
| 4 mounting holes Ø 22.3 mm, for base mounting, top and bottom 1 x M20 | L 199 x B 85 x H 64 mm | Metal | grey | **45-460.2804** | 0.799 kg |
| **Enclosure** | | | | | |
| 6 mounting holes Ø 22.3 mm | L 280 x B 85 x H 64 mm | Plastic | grey | **45-470.1802** | 0.602 kg |
| 6 mounting holes Ø 22.3 mm, for base mounting, top and bottom 1 x M20 | L 285 x B 85 x H 64 mm | Metal | grey | **45-470.2804** | 1.081 kg |

## Cable gland, IP66, IP67, IP69K

| Thread | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Cable gland** | | | | |
| M20 | Plastic | black | **45-507.1100** | 0.016 kg |
| M25 | Plastic | black | **45-509.1100** | 0.022 kg |

## Connection piece, IP 68

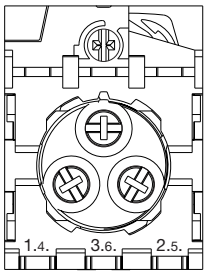
| Product attribute | Thread | Material | Colour | Part No. | Weight |
|---|---|---|---|---|---|
| **Connection piece** | | | | | |
| for connecting 2 enclosures, with hexagonal nut | M20/M20 | Plastic | black | **45-50C.1900** | 0.050 kg |
| **Connection piece** | | | | | |
| for connecting 2 enclosures, with hexagonal nut | M20/M25 | Plastic | black | **45-50D.1900** | 0.055 kg |
| **Connection piece** | | | | | |
| for connecting 2 enclosures, with hexagonal nut | M25/M25 | Plastic | black | **45-50E.1900** | 0.060 kg |
| **Connection piece** | | | | | |
| for connecting 2 enclosures, with hexagonal nut | M20/M20 | Metal | silver | **45-50C.2900** | 0.055 kg |
| **Connection piece** | | | | | |
| for connecting 2 enclosures, with hexagonal nut | M20/M25 | Metal | silver | **45-50D.2900** | 0.075 kg |
| **Connection piece** | | | | | |
| for connecting 2 enclosures, with hexagonal nut | M25/M25 | Metal | silver | **45-50E.2900** | 0.077 kg |

## Enclosure cover monitoring

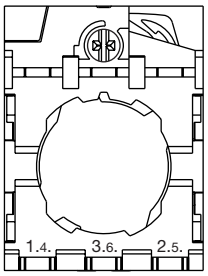
| Product attribute | Material | Colour | Part No. | Weight |
|---|---|---|---|---|
| **Enclosure cover monitoring** | | | | |
| with extension plungers | Plastic | black | **45-50G.0900** | 0.007 kg |

# 45 Drawings

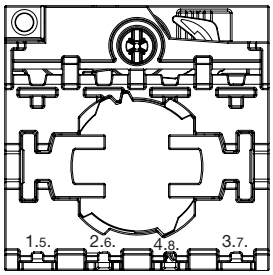
## Drawings



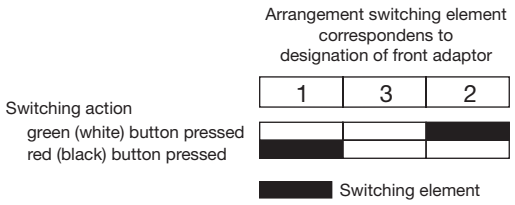

Component layout 1




Component layout 2



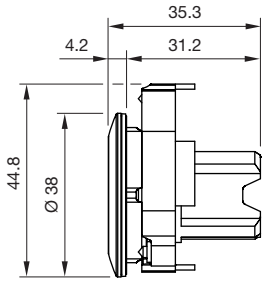

Component layout 3

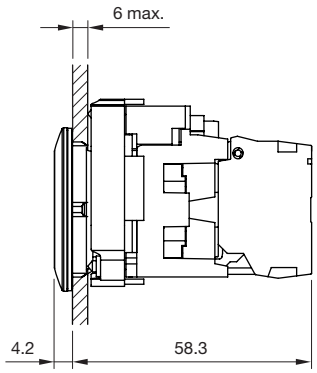



Component layout 4

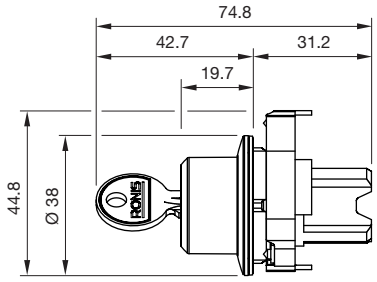
## Dimensions incl. mounting depth of 3 or 4 elements

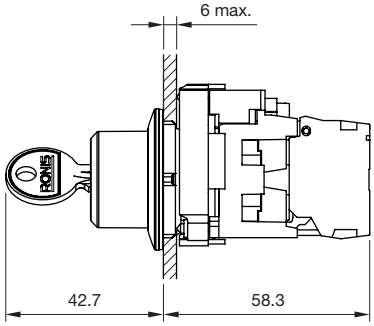
### Indicator, Pushbutton, Illuminated pushbutton (flush design)



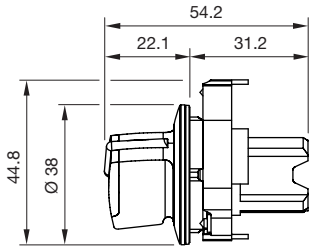



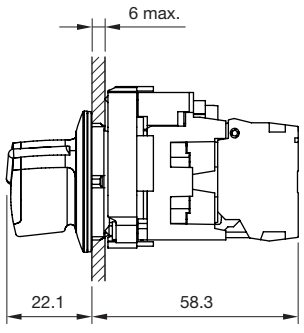

### Keylock switch (flush design)



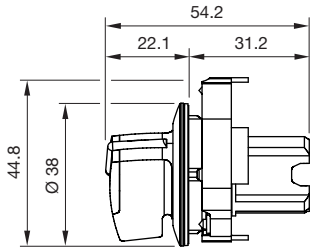



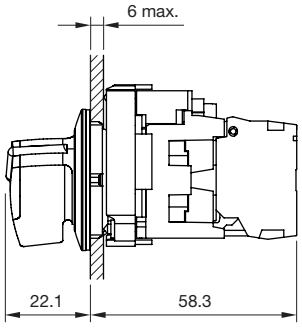

### Selector switch short lever (flush design)



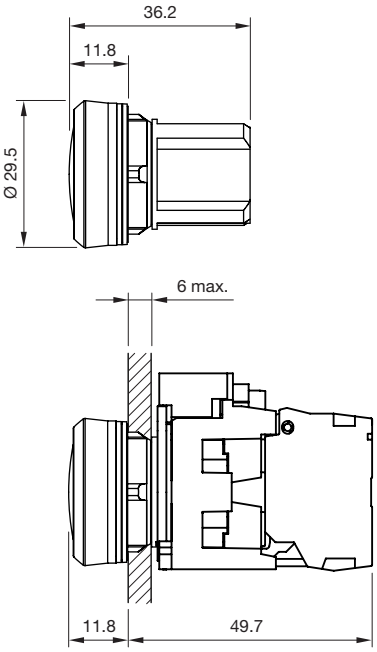




### Selector switch long lever (flush design)

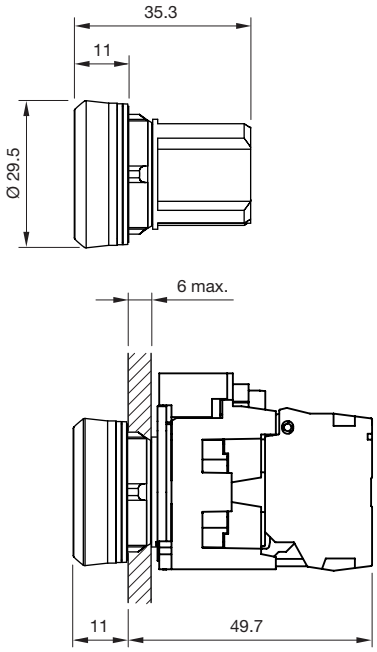


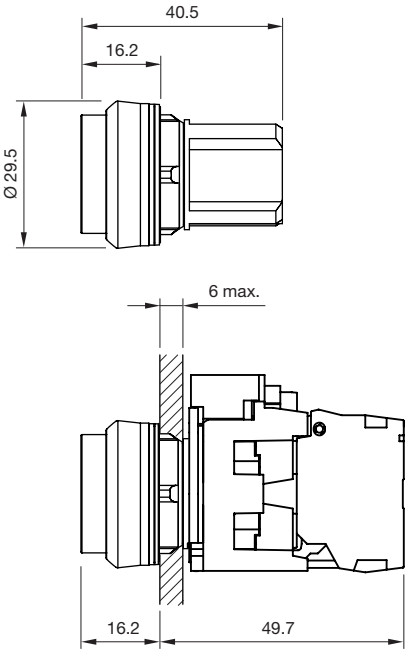
Indicator full face illumination (raised design)



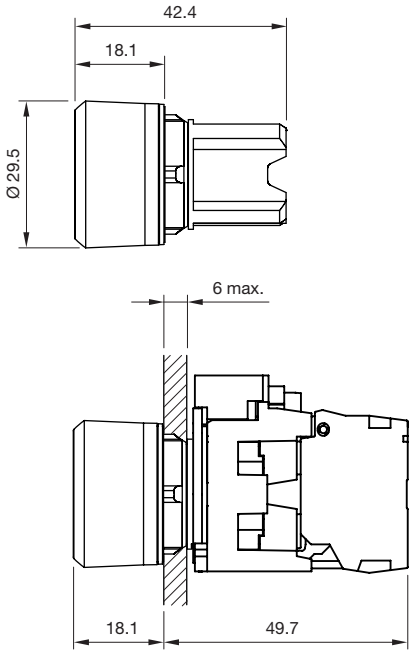

Indicator front illumination,
Pushbutton, Illuminated pushbutton, Lens level with front ring (raised design)




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

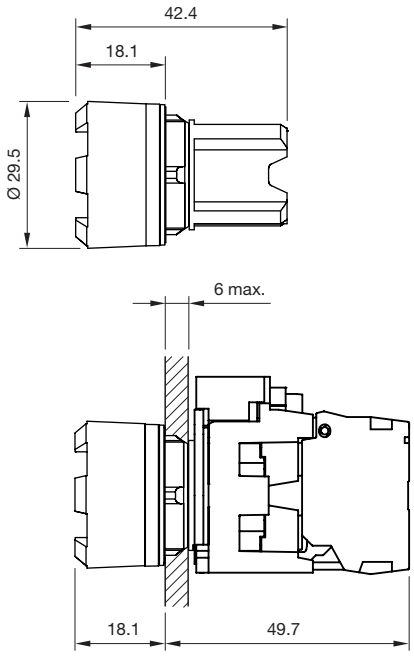



Pushbutton, lens lower than front ring (raised design)

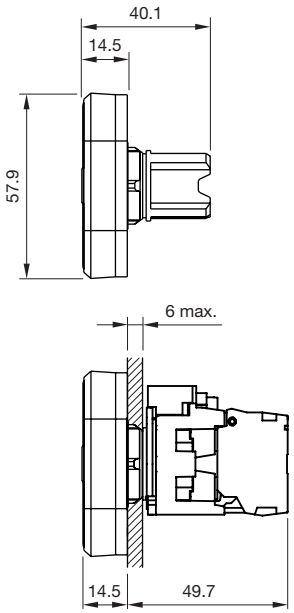


# 45 Drawings

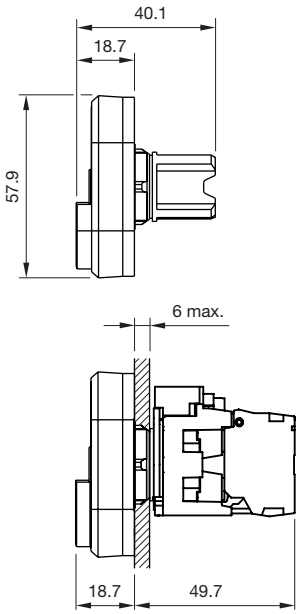
Pushbutton, Illuminated pushbutton, lens lower than front ring, with castellation (raised design)



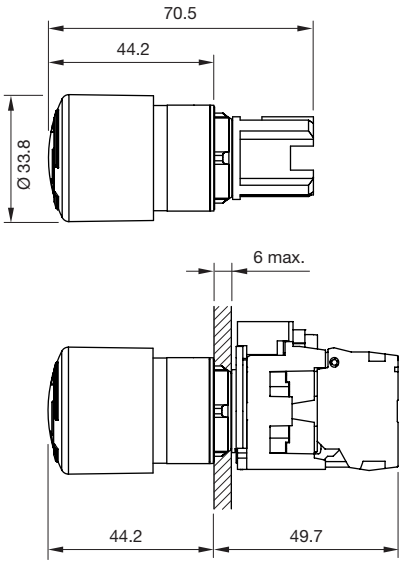

Double pushbutton, Lens level with front ring (raised design)



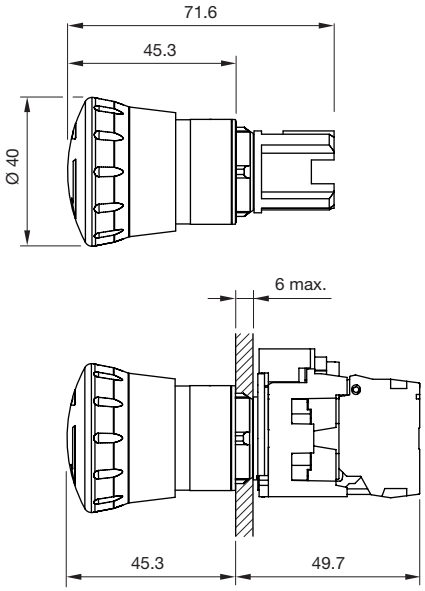

Double pushbutton, level with/raised above front ring (raised design)



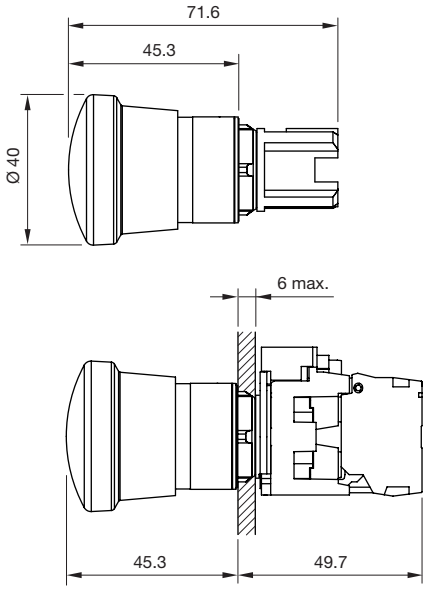

Emergency stop switch Ø 33.8 mm (raised design)



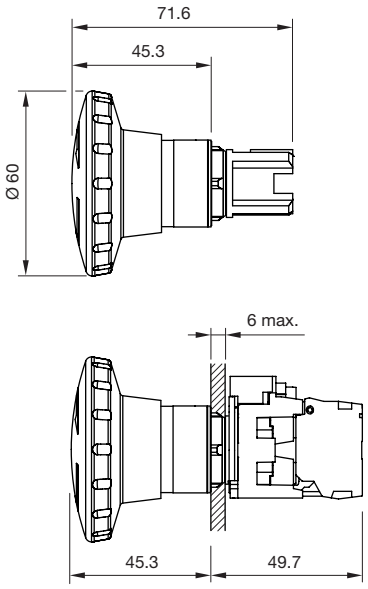
Emergency stop switch, Stop switch Ø 40 mm (raised design)



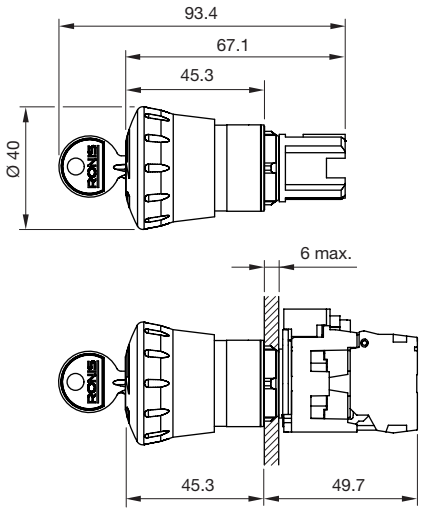

Emergency stop switch, Stop switch Ø 40 mm (raised design)




Emergency stop switch Ø 60 mm (raised design)

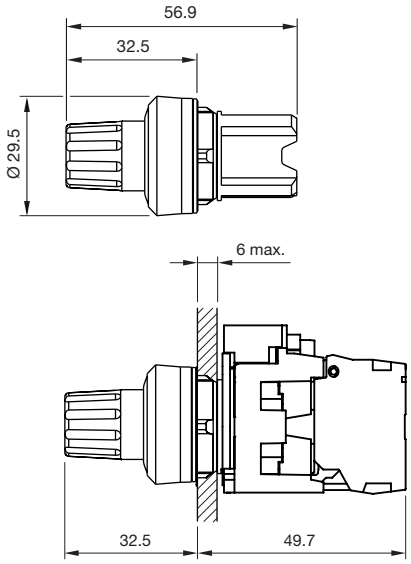



Emergency stop switch with key Ø 40 mm (raised design)

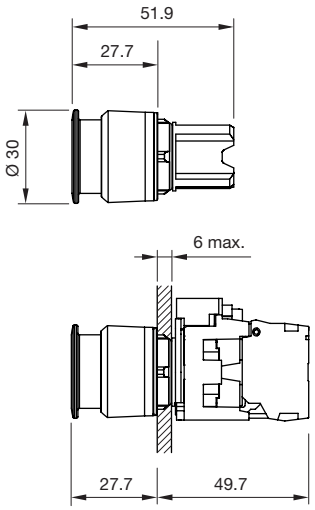


# 45 Drawings

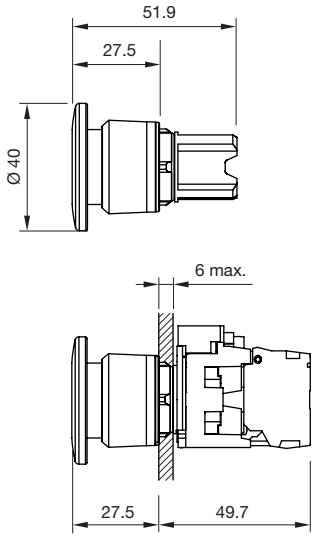
## Stop switch Ø 29.5 mm (raised design)



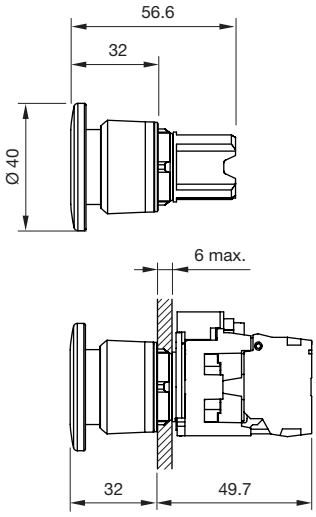

## Mushroom-head pushbutton Ø 30 mm (raised design)



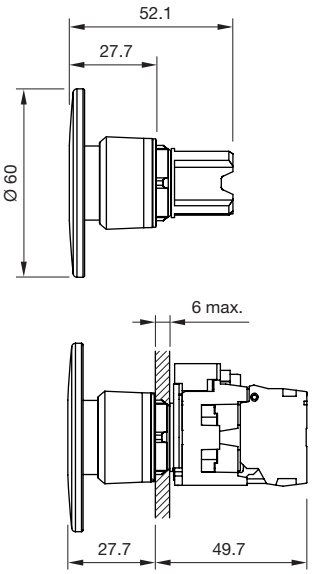

## Mushroom-head pushbutton Momentary, Maintain, Ø 40 mm (raised design)



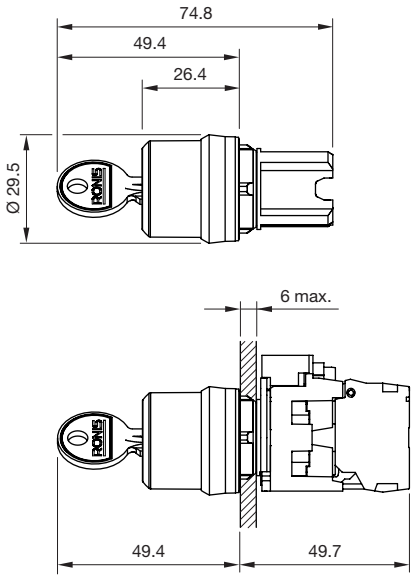

## Mushroom-head pushbutton Momentary/Maintain, Momentary/Momentary, Ø 40 mm (raised design)



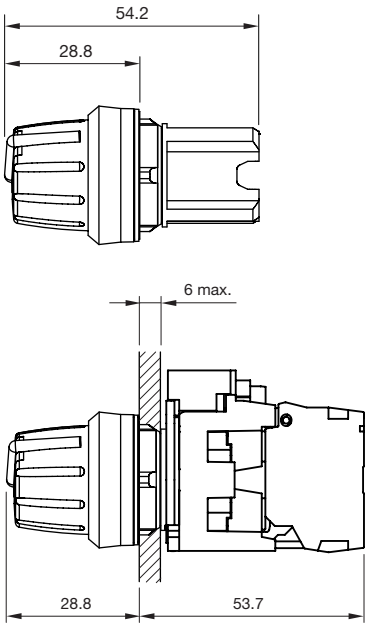
Mushroom-head pushbutton Ø 60 mm (raised design)



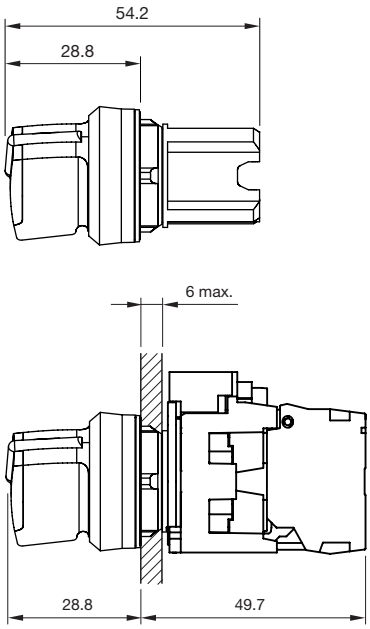

Keylock switch (raised design)




Selector switch, round lever (raised design)

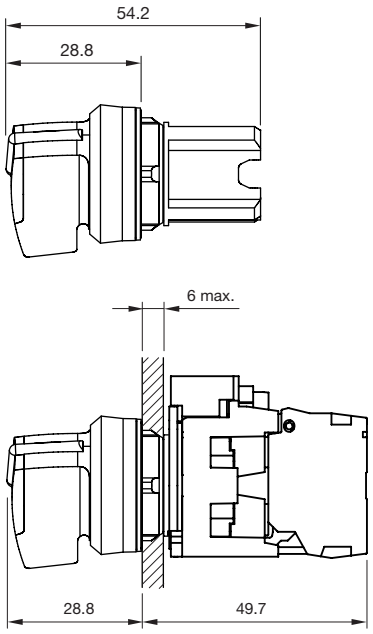



Selector switch, short lever (raised design)

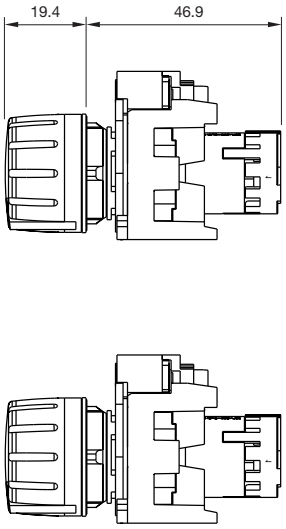


# 45 Drawings

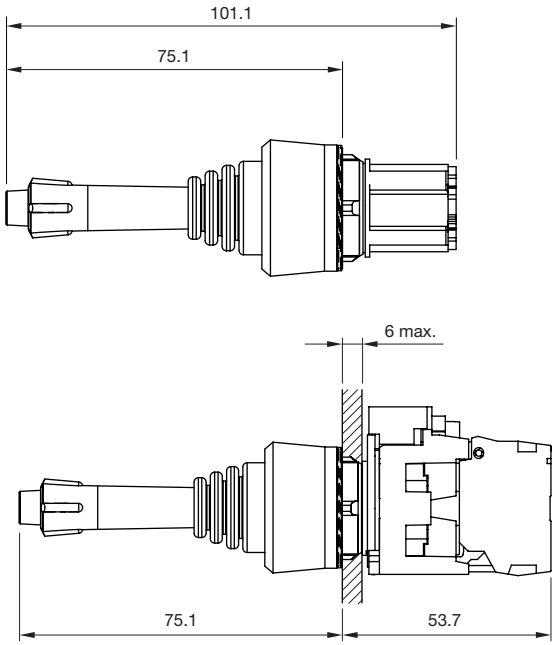
## Selector switch, long lever (raised design)



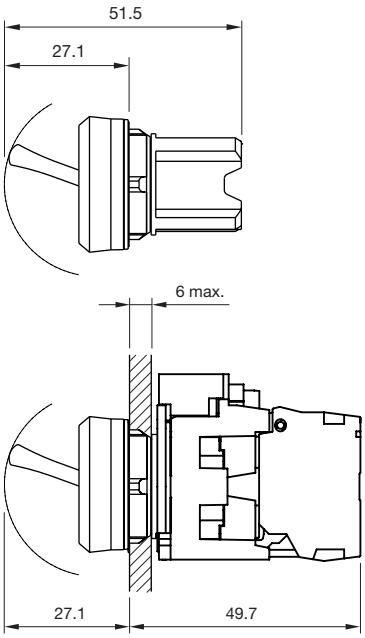

## Potentiometer (raised design)




## Toggle stick (raised design)




## Toggle switch (raised design)



## Indicator actuator

### Material

**Actuator element**
Plastic

**Front ring**
Plastic or metal

**Actuator housing**
Plastic or metal

### Mechanical characteristics

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

## Pushbutton actuator

### Material

**Actuator element**
Plastic

**Front ring**
Plastic or metal

**Actuator housing**
Plastic or metal

### Mechanical characteristics

**Operating frequency**
Lens flat/level with front bezel:
- Momentary max. 3 600/h
- Maintain max. 1 800/h
Lens flat/raised above front ring:
- Momentary max. 3 600/h
- Maintain max. 1 800/h
Lens flat/lower than front ring:
- Momentary max. 3 600/h
Lens flat/lower than front ring, with castellation:
- Momentary max. 3 600/h

**Mechanical lifetime**
Lens flat/level with front bezel:
- Momentary 10 000 000 switching cycles
- Maintain 500 000 switching cycles
Lens flat/raised above front ring:
- Momentary 10 000 000 switching cycles
- Maintain 500 000 switching cycles
Lens flat/lower than front ring:
- Momentary 10 000 000 switching cycles
Lens flat/lower than front ring, with castellation:
- Momentary 10 000 000 switching cycles

**Vibration resistance**
according to IEC 60068-2-6
20 … 500 Hz: 5 g

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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

## 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 switching cycles

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6, 2B2

## Illuminated pushbuton actuator

### Material

**Actuator element**
Plastic

**Front ring**
Plastic or metal

**Actuator housing**
Plastic or metal

### Mechanical characteristics

**Operating frequency**
Lens flat/level with front bezel:
- Momentary max. 3 600/h
- Maintain max. 1 800/h
Lens flat/raised above front ring:
- Momentary max. 3 600/h
Lens flat/lower than front ring, with castellation:
- Momentary max. 3 600/h

**Mechanical lifetime**
Lens flat/level with front bezel:
- Momentary 3 000 000 switching cycles
- Maintain 500 000 switching cycles
Lens flat/raised above front ring:
- Momentary 3 000 000 switching cycles
Lens flat/lower than front ring, with castellation:
- Momentary 3 000 000 switching cycles

**Vibration resistance**
according to IEC 60068-2-6
20 … 500 Hz: 5 g

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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
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 switching cycles

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
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 switching cycles

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

# 45 Technical data

## Mushroom-head pushbuton actuator

### Material

**Actuator element**
Plastic

**Actuator housing**
Plastic or metal

### Mechanical characteristics

**Type of unlocking device**
Pull release

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

**Mechanical lifetime**
- Momentary 10 000 000 switching cycles
- Maintain 500 000 switching cycles

**Vibration resistance**
according to IEC 60068-2-6
20 … 500 Hz: 5 g

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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
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 switching cycles

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

## 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. 1800/h

**Mechanical lifetime**
1 000 000 switching cycles

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
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 $mm^2$)
- With end sleeves 2 x (0.5 … 0.75 $mm^2$)
- Finely stranded
- Without end sleeves 2 x (0.5 … 0.75 $mm^2$)
- With end sleeves 2 x (0.5 … 1.5 $mm^2$)
- For AWG cables for auxiliary contacts 2 x (18 … 14)

**Tightening torque**
0.8 … 1 Nm

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

**Mechanical lifetime**
25 000 switching cycles

**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

**Slewing range**
275° ±2°

### Electrical characteristics

**Active power consumption**
0.5 W

**Insulation voltage**
Rated value 500 V

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

## Toggle stick actuator

### Material

**Actuator element**
Plastic

**Front ring**
Plastic or metal

**Actuator housing**
Plastic or metal

### Mechanical characteristics

**Operating frequency**
3 600/h

**Mechanical lifetime**
Momentary: 250 000 switching cycles

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP65, IP67

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

## 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 switching cycles

**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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
IP66, IP67, IP69K

**Environmental category**
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 $mm^2$)
- With end sleeves 2 x (0.5 … 0.75 $mm^2$)
- Finely stranded
- Without end sleeves 2 x (0.5 … 0.75 $mm^2$)
- With end sleeves 2 x (0.5 … 1.5 $mm^2$)
- For AWG cables for auxiliary contacts 2 x (18 … 14)

Spring-type terminal (SP)
- Solid 2 x (0.25 … 1.5 $mm^2$)
- Finely stranded
- Without end sleeves 2 x (0.5 … 1.5 $mm^2$)
- With end sleeves 2 x (0.5 … 0.75 $mm^2$)
- 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 switching cycles

**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

## Electrical characteristics

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

**Thermal current**
10 A

**Insulation voltage**
Rated value 500 V

**Pollution degree**
3

**Surge voltage resistance**
Rated value 6 kV

**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 … 500 V

at DC
- Rated value 5 … 500 V

**Operating current**
at AC-12

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

at AC-15

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

at DC-12

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

at DC-13

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

## Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
Housing IP40
Terminal IP20

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

## Approvals

**Approbations**
CCC
CSA
UL

## Illumination element

### Material

**Housing**
Plastic

### Mechanical characteristics

**Terminals**
Screw terminal
- Solid 2 x (1.0 … 1.5 mm²)
- With end sleeves 2 x (0.5 … 0.75 mm²)
- Finely stranded
- Without end sleeves 2 x (0.5 … 0.75 mm²)
- With end sleeves 2 x (0.5 … 1.5 mm²)
- For AWG cables for auxiliary contacts 2 x (18 … 14)

Spring-type terminal (SP)
- Solid 2 x (0.25 … 1.5 mm²)
- Finely stranded
- Without end sleeves 2 x (0.5 … 1.5 mm²)
- With end sleeves 2 x (0.5 … 0.75 mm²)
- For AWG cables for auxiliary contacts 2 x (24 … 16)

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

**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

### 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

### Environmental conditions

**Operating temperature**
–25 °C … +70 °C

**Storage temperature**
–40 °C … +80 °C

**Protection degree**
Terminal IP20

**Environmental category**
during operation according to IEC 60721:
3K6, 3C3, 3S2, 3M6

### Approvals

**Approbations**
CCC
CSA
UL

**Declaration of conformity**
CE

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

# 45 Marking

## Inscription marking plates and legend plates

Labels can be inserted for identification pusposes 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

| | | |
|---|---|---|
| **Example** | | 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 |

## Symbols for marking plates

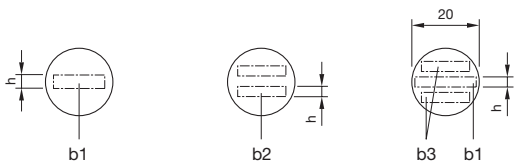
Graphic symbols are according to ISO 7000 or IEC 60417.

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

## Customized inscription for marking plates

All dimensions in mm

| Height of letters | Number of lines | Number of letters per line (target value) | | |
|---|---|---|---|---|
| h | | b1 | b2 | b3 |
| 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

| Example | Reset | 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 | Defaut | 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 Arrow/Direction up |
| | Part No. 45-573.1102.S00005 | | |

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

| Example | Reset | 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

| | | |
|---|---|---|
| **Example** | Stop | 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 | Defaut | 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 | | |

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

| | | |
|---|---|---|
| **Example** | Stop | 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 |

# 45 Marking

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

| | | |
|---|---|---|
| **Example** | | 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 | Defaut | 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 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

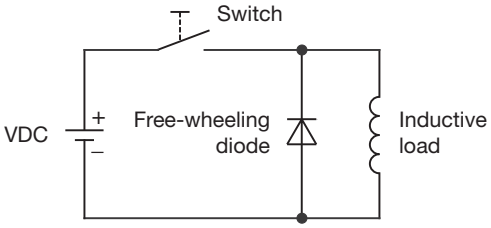
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e. g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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

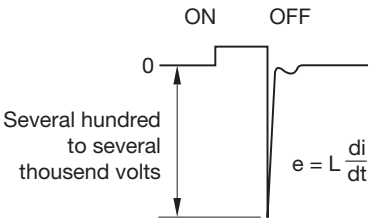
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (VR) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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

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

Switching with inductive load
Fig. 1




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



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