Series 45

Innovative and comprehensive. Modular.

https://eao.com/45

45

Key advantages

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

Typical application areas

Various operating and control functions in machinery and equipment, such as:
- Start and stop
- Reset
- On and off
- Function control

Functions

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

Design

- Flush
- Raised

IP front protection

- IP40
- IP65
- IP66
- IP67
- IP69K

Ratings

- 500 VAC (10 A)

Mounting cut-outs

- Ø 22.3 mm
- Ø 30.5 mm

Terminal

- Screw terminal
- PCB
- Spring-loaded terminal

Lens Material

- Plastic

Markings

- Laser marking

Approvals

- CCC
- CSA
- UL

Conformities

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

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45 Product overview

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

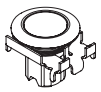
Holder

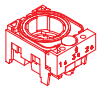
Switching elements
1 Switching element 1 NC/1 NO
2 Switching elements 2 NC or 2 NO

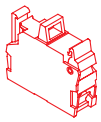
Lamp element

Pushbutton, IP66, IP67, IP69K

Equipment consisting of (schematic overview)

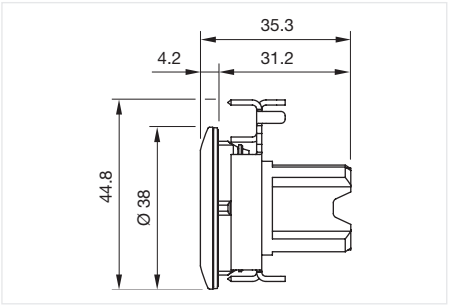

Actuator


Holder Page 57


Switching element Page 59

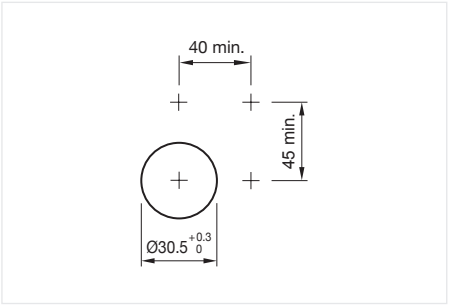
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

- Front panel thickness 1 … 6 mm

Actuator, Front dimension Ø 38 mm

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

Wiring diagrams

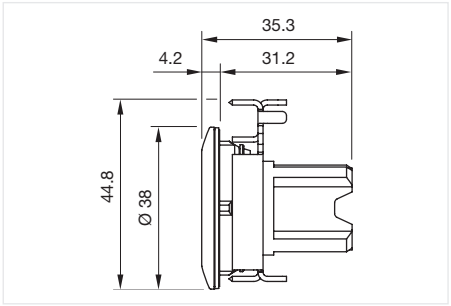
Wiring diagram 72

Wiring diagram 73

45 Flush design

Illuminated pushbutton, IP66, IP67, IP69K

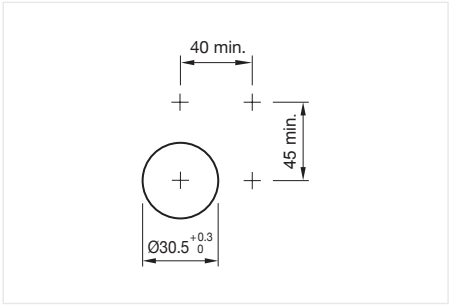
Product can differ from the current configuration.



Dimensions [mm]

General information

- Front panel thickness 1 … 6 mm

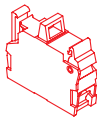


Mounting cut-outs [mm]

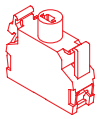
Equipment consisting of (schematic overview)

Actuator

Holder Page 57



Switching element Page 59



Illumination element Page 63

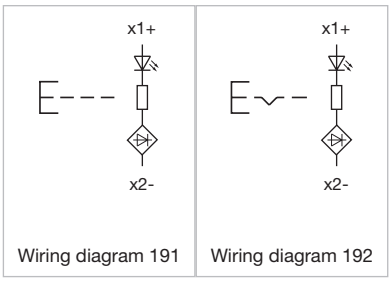
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

Actuator, Front dimension Ø 38 mm

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

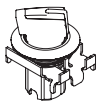
Wiring diagrams



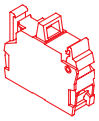
Wiring diagram 191 | Wiring diagram 192

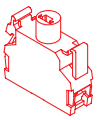
Selector switch 2 positions short lever, IP66, IP67, IP69K

Equipment consisting of (schematic overview)


Actuator

Holder Page 57


Switching element Page 59


Illumination element Page 63

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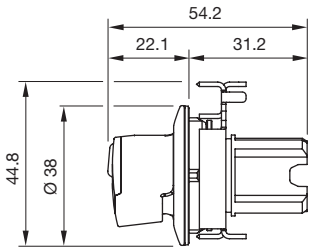
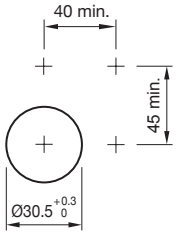


Dimensions [mm]

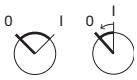
Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

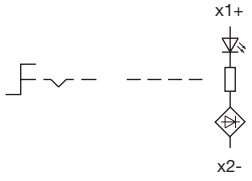
- Front panel thickness 1 … 6 mm
- It is advisable to choose a white illumination



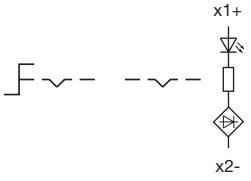
Actuator, Front dimension Ø 38 mm

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

Wiring diagrams



Wiring diagram 193

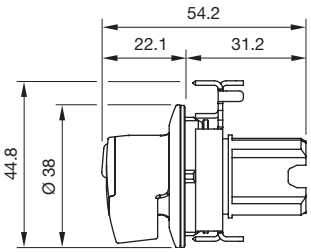


Wiring diagram 194

45 Flush design

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

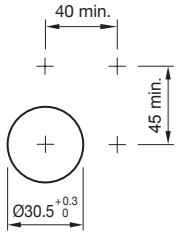
Product can differ from the current configuration.



Dimensions [mm]

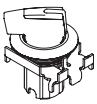
General information

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



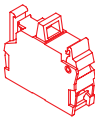
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

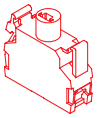


Actuator

Holder Page 57



Switching element Page 59



Illumination element Page 63

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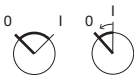
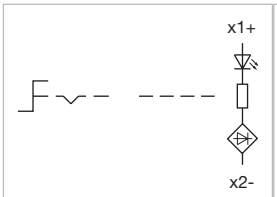


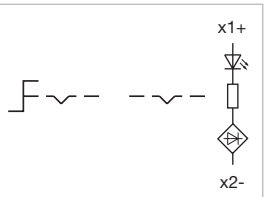
Actuator, Front dimension Ø 38 mm

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

Wiring diagrams



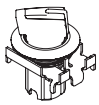
Wiring diagram 193



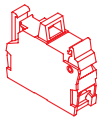
Wiring diagram 194

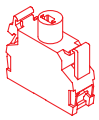
Selector switch 3 positions short lever, IP66, IP67, IP69K

Equipment consisting of (schematic overview)


Actuator

Holder Page 57


Switching element Page 59


Illumination element Page 63

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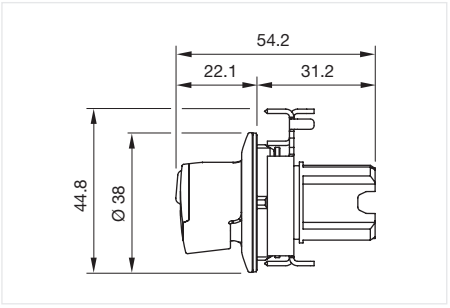
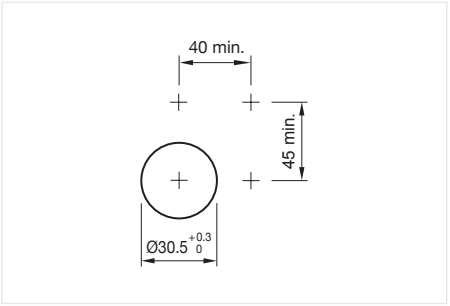


Dimensions [mm]

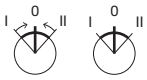


Mounting cut-outs [mm]

Product can differ from the current configuration.

General information

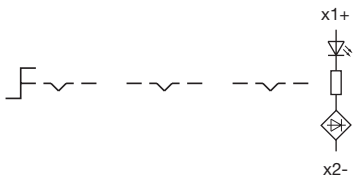
- Front panel thickness 1 … 6 mm
- It is advisable to choose a white illumination



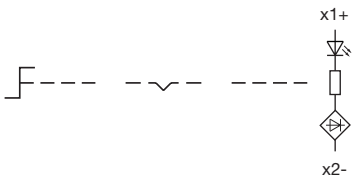
Actuator, Front dimension Ø 38 mm

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

Wiring diagrams



Wiring diagram 195

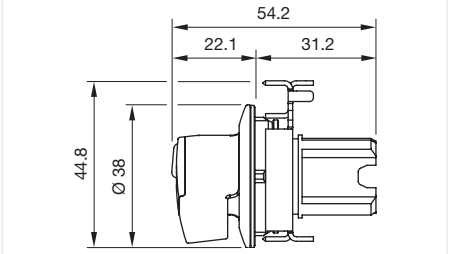


Wiring diagram 196

45 Flush design

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

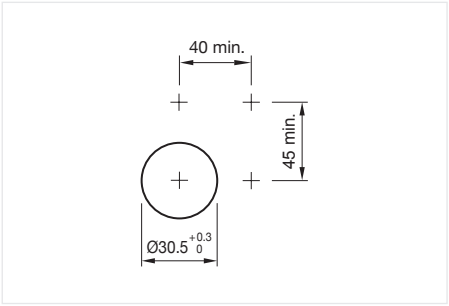
Product can differ from the current configuration.



Dimensions [mm]

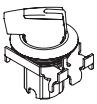
General information

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



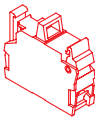
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

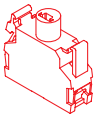


Actuator

Holder Page 57



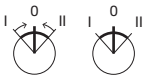
Switching element Page 59



Illumination element Page 63

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

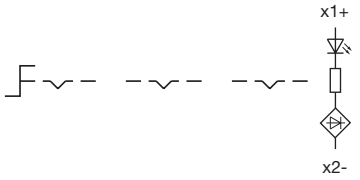
To obtain a complete unit, please select the red components from the pages shown.



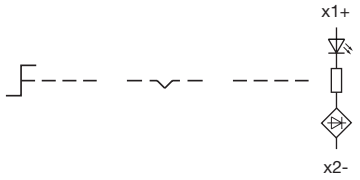
Actuator, Front dimension Ø 38 mm

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

Wiring diagrams



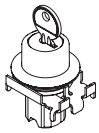
Wiring diagram 195



Wiring diagram 196

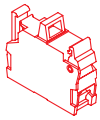
Keylock switch 2 and 3 positions, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator

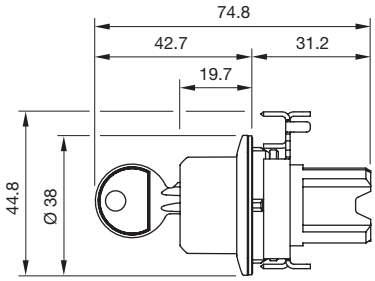
Holder Page 57



Switching element Page 59

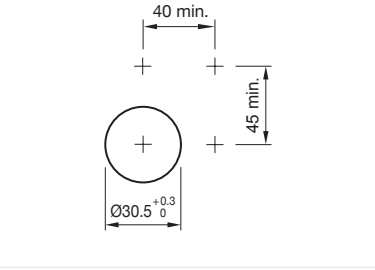
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

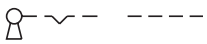
- Front panel thickness 1 … 6 mm
- The standard lock: RONIS, T254

Actuator, Front dimension Ø 38 mm

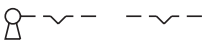
Switching action	Switching angle	Front bezel colour	Front bezel material	Housing material	Part No.	Wiring diagram
Maintained (a) - Rest (a) - Maintained (a)	45° left / 45° right / -45° … +45°	Sand grey	Metal	Metal	45-290F.4F00.113	83
Rest (a) - Maintained (a)	90° right / -45° … +45°	Sand grey	Metal	Metal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

a = Key remove

Wiring diagrams



Wiring diagram 78

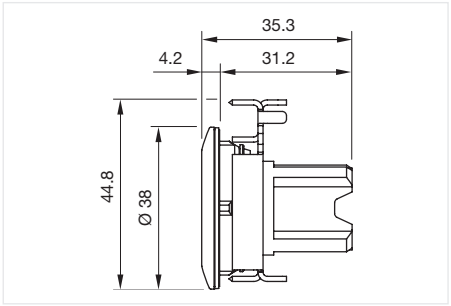


Wiring diagram 79

Wiring diagram 83

Indicator, IP66, IP67, IP69K

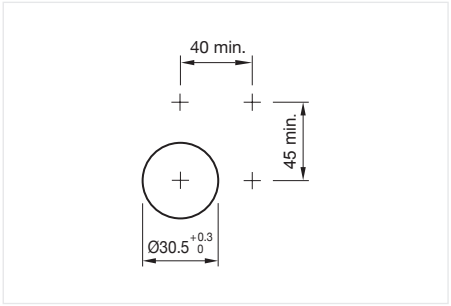
Product can differ from the current configuration.



Dimensions [mm]

General information

- Front panel thickness 1 … 6 mm

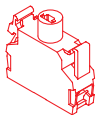


Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Actuator

Holder Page 57



Illumination element Page 63

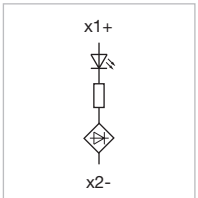
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

Actuator, Front dimension Ø 38 mm

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

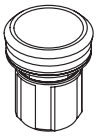
Wiring diagrams



Wiring diagram 190

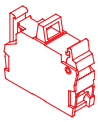
Pushbutton, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator

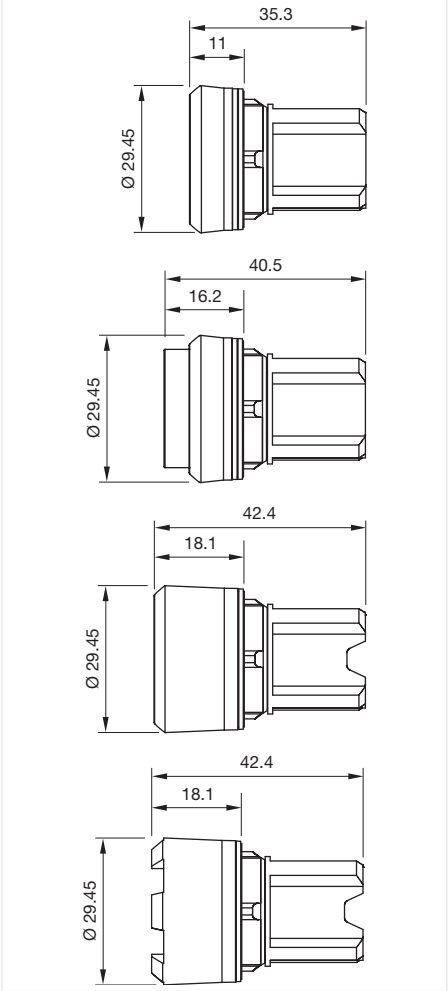
Holder Page 57



Switching element Page 59

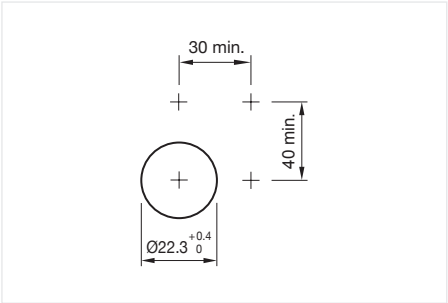
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

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

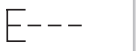
Actuator, Front dimension Ø 29,5 mm

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

45 Raised design

Switching action	Lens colour	Lens shape	Lens type	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram
Momentary	Blue	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2131.1160.000	72
	Grey	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2131.1180.000	72
	White	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2131.1190.000	72
	Black	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2131.1210.000	72
	Red	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2131.1220.000	72
	Green	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2131.1250.000	72
	Black	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2131.2110.000	72
	Red	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2131.2120.000	72
	Yellow	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2131.2140.000	72
	Green	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2131.2150.000	72
	Blue	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2131.2160.000	72
	White	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2131.2190.000	72
	Colourless	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2131.21K0.000	72
	Black	flush	raised above front bezel	Silver	Metal	Silver	Metal	45-2131.2210.000	72
	Red	flush	raised above front bezel	Silver	Metal	Silver	Metal	45-2131.2220.000	72
	Green	flush	raised above front bezel	Silver	Metal	Silver	Metal	45-2131.2250.000	72
	Blue	flush	raised above front bezel	Silver	Metal	Silver	Metal	45-2131.2260.000	72
Maintained	Black	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2134.1110.000	73
	Red	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2134.1120.000	73
	Yellow	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2134.1140.000	73
	Green	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2134.1150.000	73
	Black	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2134.2110.000	73
	Red	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2134.2120.000	73
Momentary	Red	flush	lower than front bezel	Black	Plastic	Black	Plastic	45-2131.1320.000	72
	Blue	flush	lower than front bezel	Black	Plastic	Black	Plastic	45-2131.1360.000	72
	Green	flush	lower than front bezel	Silver	Metal	Silver	Metal	45-2131.2350.000	72

Wiring diagrams

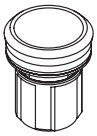


Wiring diagram 72

Wiring diagram 73

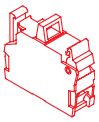
Illuminated pushbutton, IP66, IP67, IP69K

Equipment consisting of (schematic overview)

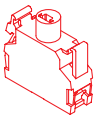


Actuator

Holder Page 57



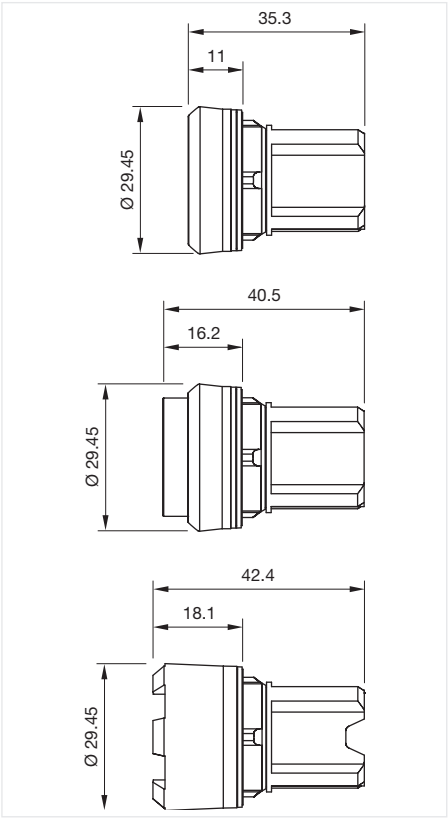
Switching element Page 59



Illumination element Page 63

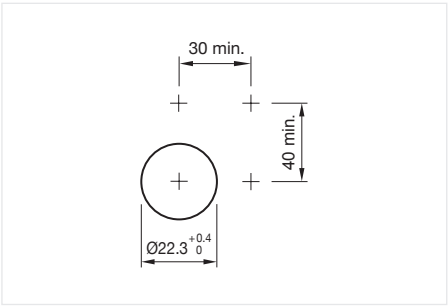
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

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

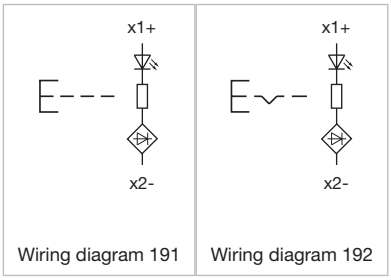
Actuator, Front dimension Ø 29,5 mm

Switching action	Lens colour	Lens shape	Lens type	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram
Momentary	Red	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2231.11E0.000	191
	Yellow	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2231.11G0.000	191
	Green	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2231.11H0.000	191
	Blue	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2231.11J0.000	191
	White	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2231.11N0.000	191
	Red	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2231.12E0.000	191
	Yellow	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2231.12G0.000	191

45 Raised design

Switching action	Lens colour	Lens shape	Lens type	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram
Momentary	Green	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2231.12H0.000	191
	Blue	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2231.12J0.000	191
	Colourless	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2231.12K0.000	191
	Red	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2231.21E0.000	191
	Yellow	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2231.21G0.000	191
	Green	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2231.21H0.000	191
	Blue	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2231.21J0.000	191
	White	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2231.21N0.000	191
	Red	flush	raised above front bezel	Silver	Metal	Silver	Metal	45-2231.22E0.000	191
	Green	flush	raised above front bezel	Silver	Metal	Silver	Metal	45-2231.22H0.000	191
Maintained	Red	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2234.11E0.000	192
	Green	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2234.11H0.000	192
	Blue	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2234.11J0.000	192
	Colourless	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2234.11K0.000	192
	Red	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2234.21E0.000	192
	Yellow	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2234.21G0.000	192
	Green	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2234.21H0.000	192
	Blue	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2234.21J0.000	192

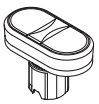
Wiring diagrams



Wiring diagram 191 | Wiring diagram 192

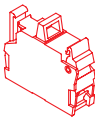
Double pushbutton, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator

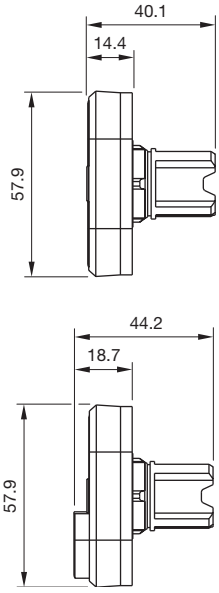
Holder Page 57



Switching element Page 59

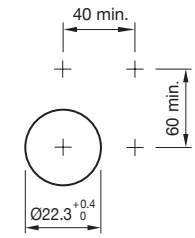
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

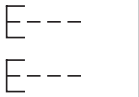
- Mounting depth, incl. front plate, see chapter drawings

Actuator, Front dimension 58 mm x 30 mm

Switching action	Lens colour	Lens shape	Lens type	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram	Component Layout
Momentary	White-Black	flush	raised above front bezel	Black	Plastic	Black	Plastic	45-2J31.15V0.000	200	25
	Green-red	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2J31.16T0.000	200	25
	Green-red	flush	raised above front bezel	Silver	Metal	Silver	Metal	45-2J31.25T0.000	200	25
	Green-red	flush	level with front bezel	Silver	Metal	Silver	Metal	45-2J31.26T0.000	200	25

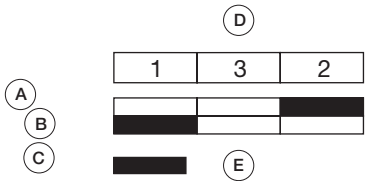
45 Raised design

Wiring diagrams



Wiring diagram 200

Component layouts

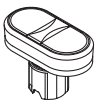


Component layout 25

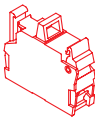
A = Switching action
B = green (white) button pressed
C = red (black) button pressed
D = Arrangement switching element correspondens to designation of front adaptor
E = Switching element actuated

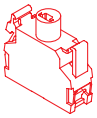
Illuminated double pushbutton, IP66, IP67, IP69K

Equipment consisting of (schematic overview)


Actuator

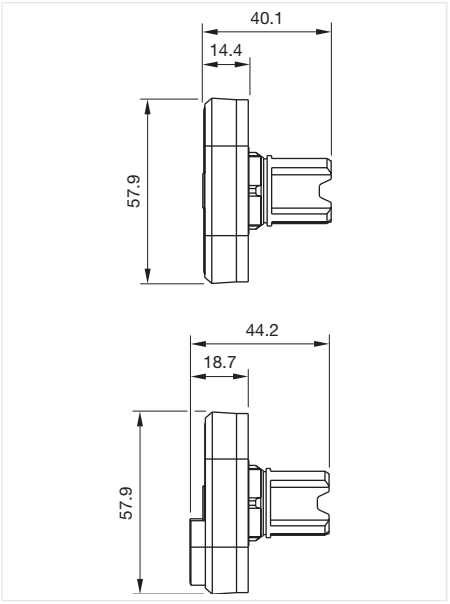
Holder Page 57


Switching element Page 59


Illumination element Page 63

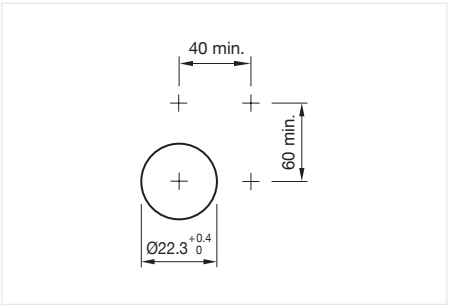
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

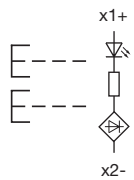
General information

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

Actuator, Front dimension 58 mm x 30 mm

Switching action	Lens colour	Lens shape	Lens type	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram	Component Layout
Momentary	Green-red	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2K31.16T0.000	201	25
	White-Black	flush	level with front bezel	Black	Plastic	Black	Plastic	45-2K31.16V0.000	201	25

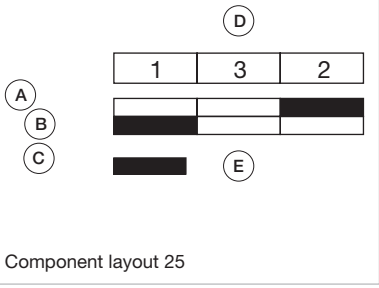
Wiring diagrams



Wiring diagram 201

45 Raised design

Component layouts

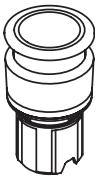


Component layout 25

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

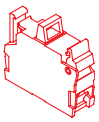
Mushroom-head pushbutton Ø 30 mm, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator

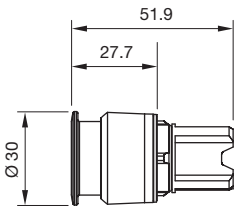
Holder Page 57



Switching element Page 59

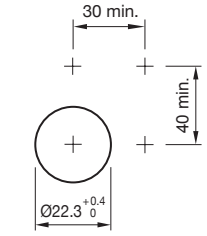
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

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

Actuator, Front dimension Ø 30 mm

Switching action	Lens colour	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram
Maintained	Black	Black	Plastic	Black	Plastic	45-2530.1810.000	73
	Red	Silver	Metal	Silver	Metal	45-2530.2820.000	73
Momentary	Black	Black	Plastic	Black	Plastic	45-2531.1810.000	72
	Black	Silver	Metal	Silver	Metal	45-2531.2810.000	72
	Red	Silver	Metal	Silver	Metal	45-2531.2820.000	72
	Green	Silver	Metal	Silver	Metal	45-2531.2850.000	72

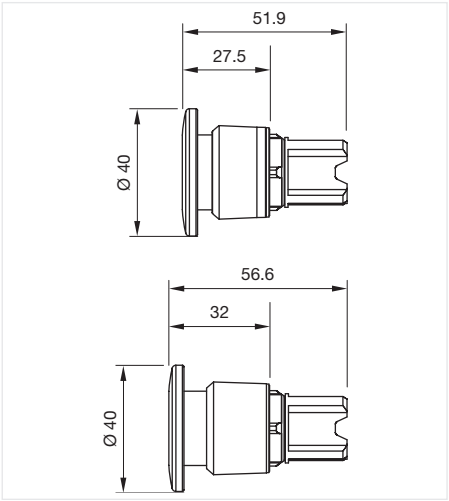
Wiring diagrams

Wiring diagram 72

Wiring diagram 73

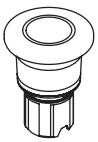
Mushroom-head pushbutton Ø 40 mm, IP66, IP67, IP69K

Product can differ from the current configuration.



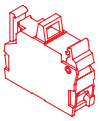
Dimensions [mm]

Equipment consisting of (schematic overview)



Actuator

Holder Page 57



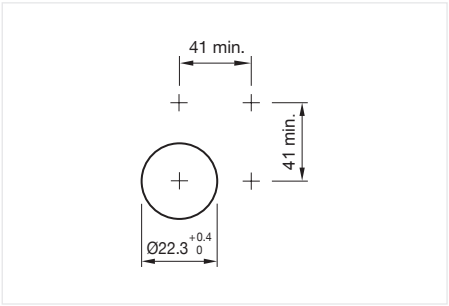
Switching element Page 59

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

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

General information

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



Mounting cut-outs [mm]

Actuator, Front dimension Ø 40 mm

Switching action	Lens colour	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram
Maintained	Black	Black	Plastic	Black	Plastic	45-2530.1910.000	73
	Red	Black	Plastic	Black	Plastic	45-2530.1920.000	73
	Yellow	Black	Plastic	Black	Plastic	45-2530.1940.000	73
	Green	Black	Plastic	Black	Plastic	45-2530.1950.000	73
	Black	Silver	Metal	Silver	Metal	45-2530.2910.000	73
	Red	Silver	Metal	Silver	Metal	45-2530.2920.000	73
Momentary	Black	Black	Plastic	Black	Plastic	45-2531.1910.000	72
	Red	Black	Plastic	Black	Plastic	45-2531.1920.000	72
	Black	Silver	Metal	Silver	Metal	45-2531.2910.000	72
	Red	Silver	Metal	Silver	Metal	45-2531.2920.000	72
	Green	Silver	Metal	Silver	Metal	45-2531.2950.000	72
Momentary / maintained	Red	Silver	Metal	Silver	Metal	45-2532.2920.000	208

Wiring diagrams

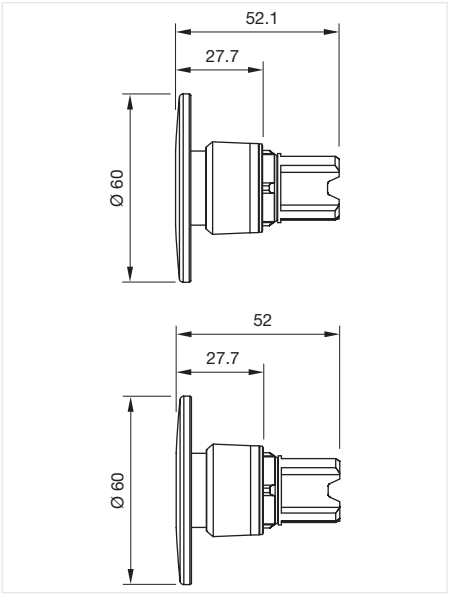
Wiring diagram 72

Wiring diagram 73

Wiring diagram 208

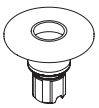
Mushroom-head pushbutton Ø 60 mm, IP66, IP67, IP69K

Product can differ from the current configuration.



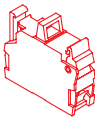
Dimensions [mm]

Equipment consisting of (schematic overview)



Actuator

Holder Page 57



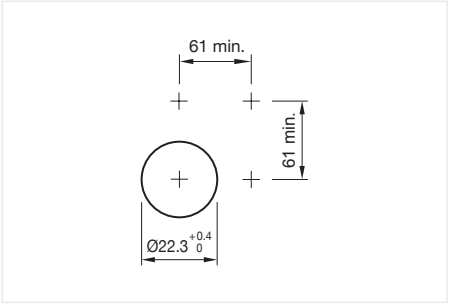
Switching element Page 59

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

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

General information

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



Mounting cut-outs [mm]

Actuator, Front dimension Ø 60 mm

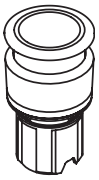
Switching action	Lens colour	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram
Momentary	Red	Black	Plastic	Black	Plastic	45-2531.1A20.000	72
	Green	Black	Plastic	Black	Plastic	45-2531.1A50.000	72
	Black	Silver	Metal	Silver	Metal	45-2531.2A10.000	72

Wiring diagrams

Wiring diagram 72

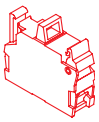
Mushroom-head pushbutton illuminated Ø 30 mm, IP66, IP67, IP69K

Equipment consisting of (schematic overview)

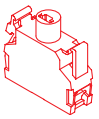


Actuator

Holder Page 57



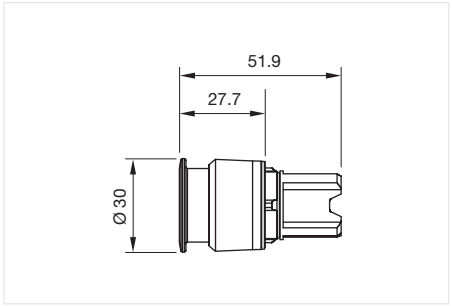
Switching element Page 59



Illumination element Page 63

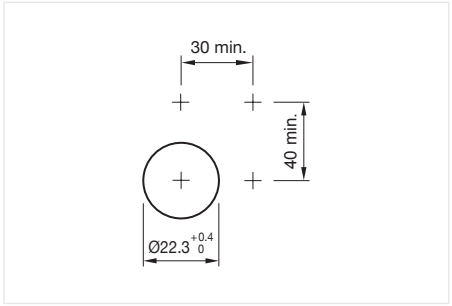
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

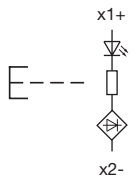
General information

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

Actuator, Front dimension Ø 30 mm

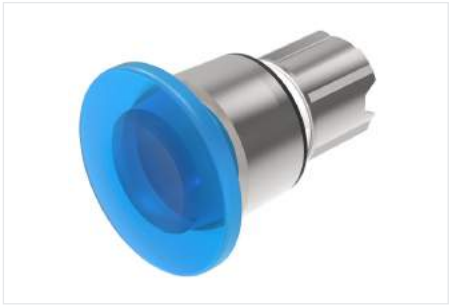
Switching action	Lens colour	Front bezel colour	Front bezel material	Housing colour	Housing material	Part No.	Wiring diagram
Momentary	Green	Black	Plastic	Black	Plastic	45-2631.18H0.000	191
	Blue	Black	Plastic	Black	Plastic	45-2631.18J0.000	191

Wiring diagrams

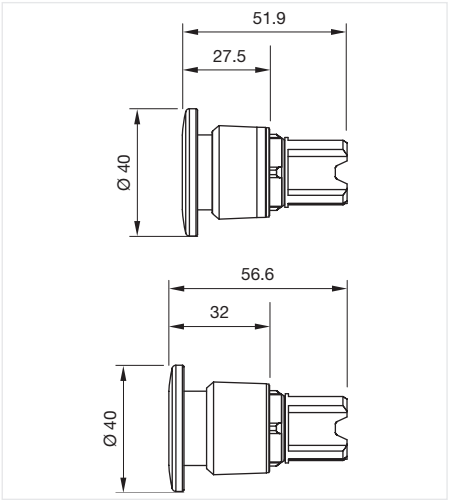


Wiring diagram 191

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



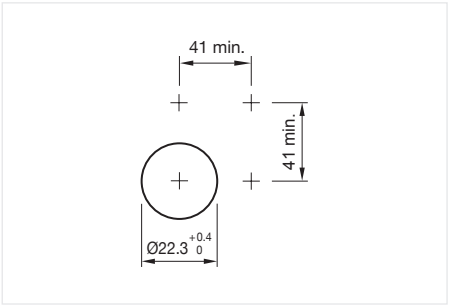
Product can differ from the current configuration.



Dimensions [mm]

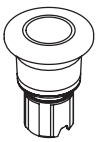
General information

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



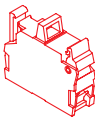
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

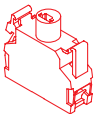


Actuator

Holder Page 57



Switching element Page 59



Illumination element Page 63

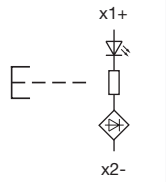
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

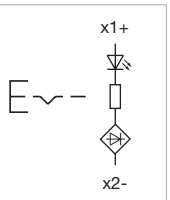
Actuator, Front dimension Ø 40 mm

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

Wiring diagrams



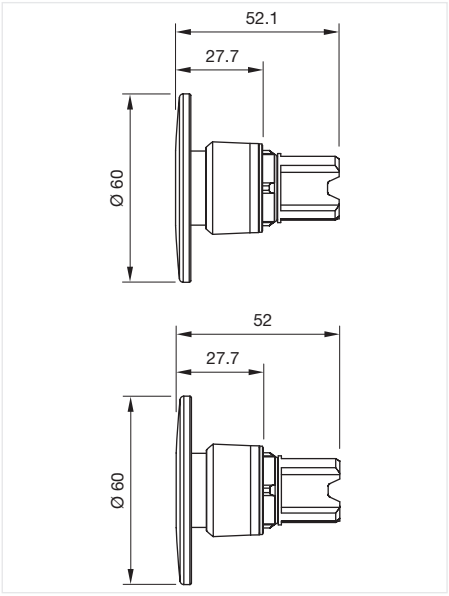
Wiring diagram 191



Wiring diagram 192

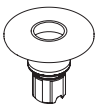
Mushroom-head pushbutton illuminated Ø 60 mm, IP66, IP67, IP69K

Product can differ from the current configuration.



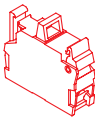
Dimensions [mm]

Equipment consisting of (schematic overview)

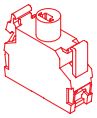


Actuator

Holder Page 57



Switching element Page 59



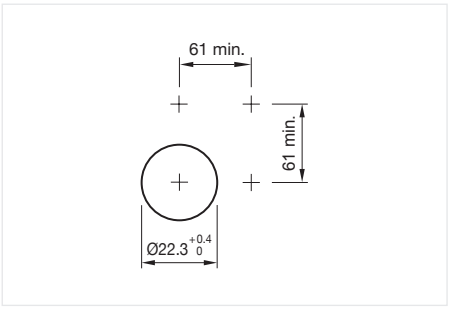
Illumination element Page 63

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

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

General information

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

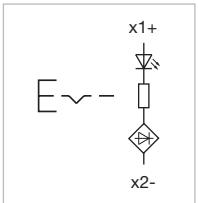


Mounting cut-outs [mm]

Actuator, Front dimension Ø 60 mm

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

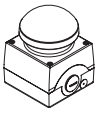
Wiring diagrams



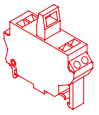
Wiring diagram 192

Palm switch, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



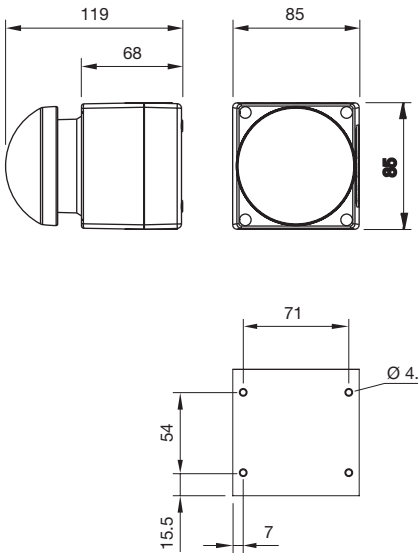
Actuator



Switching element Page 61

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

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



Dimensions [mm]

Product can differ from the current configuration.

General information

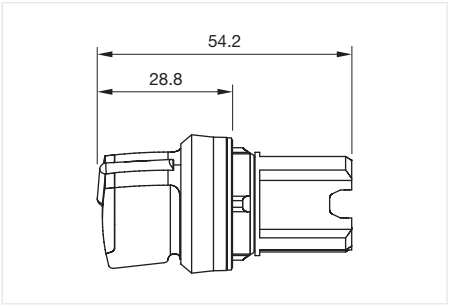
- Mounting depth, incl. front plate, see chapter drawings

Actuator, Front dimension 85 mm x 85 mm

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

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

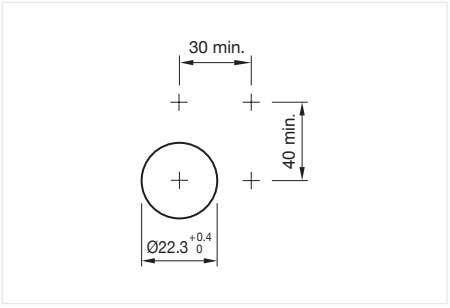
Product can differ from the current configuration.



Dimensions [mm]

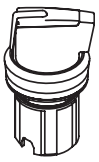
General information

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



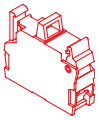
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

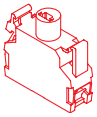


Actuator

Holder Page 57



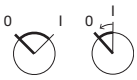
Switching element Page 59



Illumination element Page 63

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

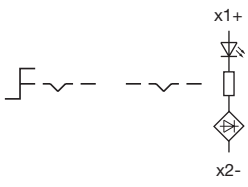
To obtain a complete unit, please select the red components from the pages shown.



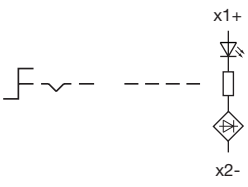
Actuator, Front dimension Ø 29,5 mm

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

Wiring diagrams



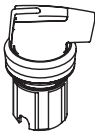
Wiring diagram 214



Wiring diagram 215

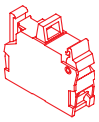
Selector switch 2 positions long lever, IP66, IP67, IP69K

Equipment consisting of (schematic overview)

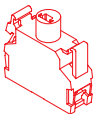


Actuator

Holder Page 57



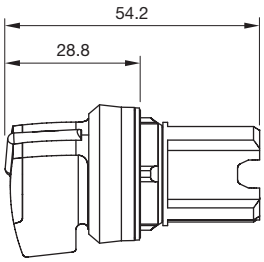
Switching element Page 59



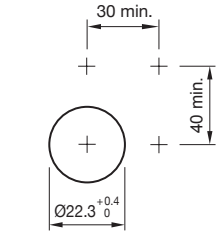
Illumination element Page 63

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

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



Dimensions [mm]



Mounting cut-outs [mm]

Product can differ from the current configuration.

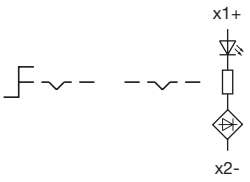
General information

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

Actuator, Front dimension Ø 29,5 mm

Switching action	Switching angle	Lever colour	Front bezel colour	Front bezel material	Housing material	Part No.	Wiring diagram
Rest - Maintained	90° right / -45° ... +45°	White	Black	Plastic	Plastic	45-2828.1D90.001	214
	90° right / -45° ... +45°	Green	Silver	Metal	Metal	45-2828.2D50.001	214
	90° right / -45° ... +45°	Blue	Silver	Metal	Metal	45-2828.2D60.001	214
	90° right / -45° ... +45°	White	Silver	Metal	Metal	45-2828.2D90.001	214

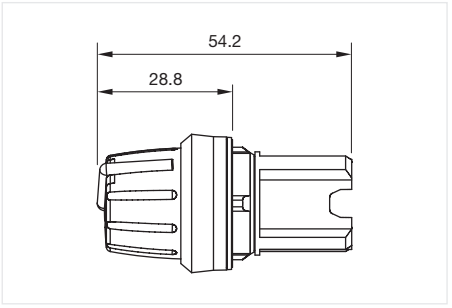
Wiring diagrams



Wiring diagram 214

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

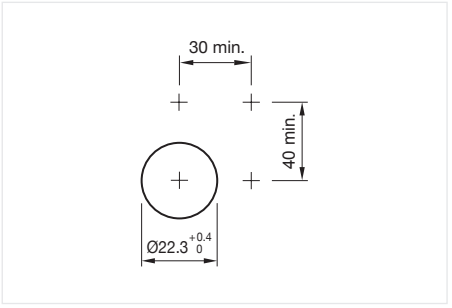
Product can differ from the current configuration.



Dimensions [mm]

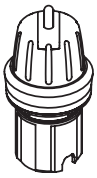
General information

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



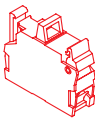
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

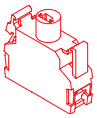


Actuator

Holder Page 57



Switching element Page 59



Illumination element Page 63

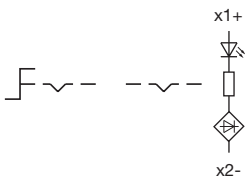
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

Actuator, Front dimension Ø 29,5 mm

Switching action	Switching angle	Lever colour	Front bezel colour	Front bezel material	Housing material	Part No.	Wiring diagram
Rest - Maintained	90° right / -45° … +45°	White	Black	Plastic	Plastic	45-2828.1E90.001	214

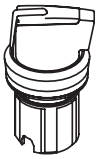
Wiring diagrams



Wiring diagram 214

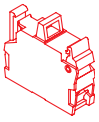
Selector switch 3 positions short lever, IP66, IP67, IP69K

Equipment consisting of (schematic overview)

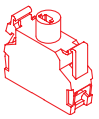


Actuator

Holder Page 57



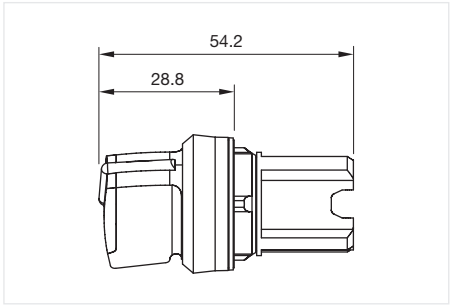
Switching element Page 59



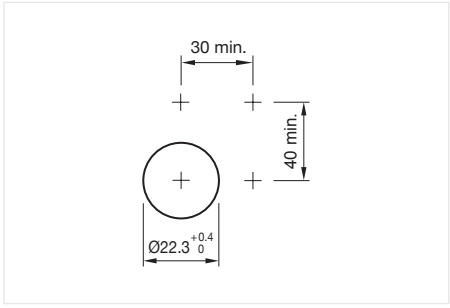
Illumination element Page 63

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

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



Dimensions [mm]

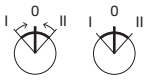


Mounting cut-outs [mm]

Product can differ from the current configuration.

General information

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

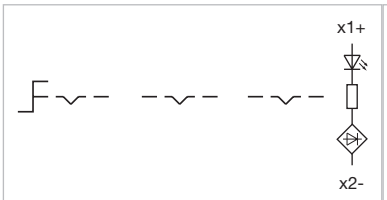


Actuator, Front dimension Ø 29,5 mm

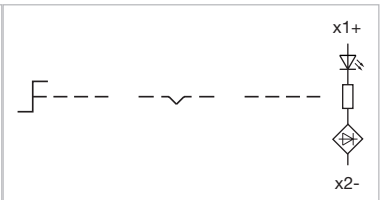
Switching action	Switching angle	Lever colour	Front bezel colour	Front bezel material	Housing material	Part No.	Wiring diagram
Momentary - Rest - Momentary	45° left / 45° right	White	Black	Plastic	Plastic	45-280S.1C90.003	217
	45° left / 45° right / -45° … +45°	Red	Silver	Metal	Metal	45-280S.2C20.003	217
	45° left / 45° right / -45° … +45°	Amber	Silver	Metal	Metal	45-280S.2C30.003	217
	45° left / 45° right / -45° … +45°	Yellow	Silver	Metal	Metal	45-280S.2C40.003	217
	45° left / 45° right / -45° … +45°	Green	Silver	Metal	Metal	45-280S.2C50.003	217
	45° left / 45° right / -45° … +45°	Blue	Silver	Metal	Metal	45-280S.2C60.003	217
	45° left / 45° right / -45° … +45°	White	Silver	Metal	Metal	45-280S.2C90.003	217
Maintained - Rest - Maintained	45° left / 45° right / -45° … +45°	Red	Black	Plastic	Plastic	45-2819.1C20.003	216
	45° left / 45° right / -45° … +45°	Blue	Black	Plastic	Plastic	45-2819.1C60.003	216
	45° left / 45° right / -45° … +45°	White	Black	Plastic	Plastic	45-2819.1C90.003	216
	45° left / 45° right / -45° … +45°	Red	Silver	Metal	Metal	45-2819.2C20.003	216
	45° left / 45° right / -45° … +45°	White	Silver	Metal	Metal	45-2819.2C90.003	216

45 Raised design

Wiring diagrams



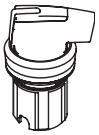
Wiring diagram 216



Wiring diagram 217

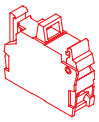
Selector switch 3 positions long lever, IP66, IP67, IP69K

Equipment consisting of (schematic overview)

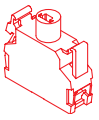


Actuator

Holder Page 57



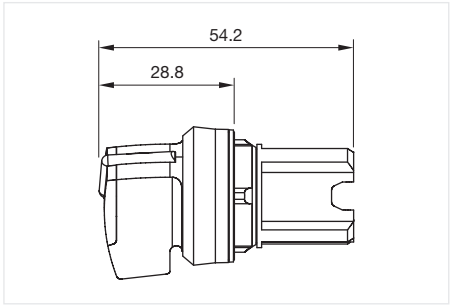
Switching element Page 59



Illumination element Page 63

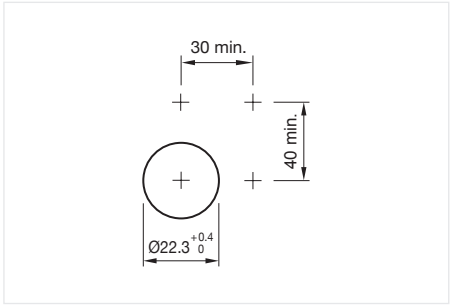
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

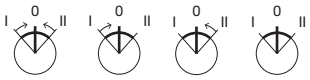
Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

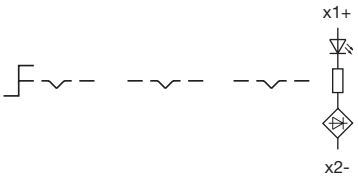
- External diameter of the long lever 44.8 mm
- Mounting depth, incl. front plate, see chapter drawings



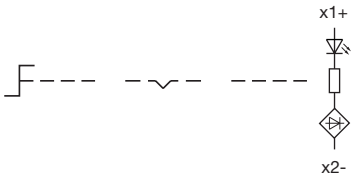
Actuator, Front dimension Ø 29,5 mm

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

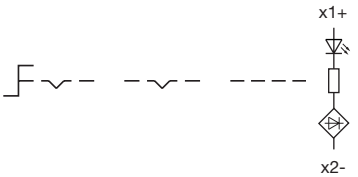
Wiring diagrams



Wiring diagram 216



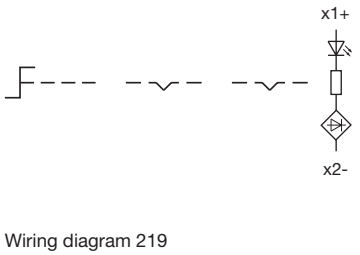
Wiring diagram 217



Wiring diagram 218

45 Raised design

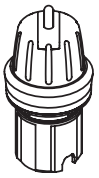
Wiring diagrams



Wiring diagram 219

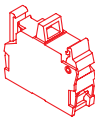
Selector switch 4 positions round lever, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator

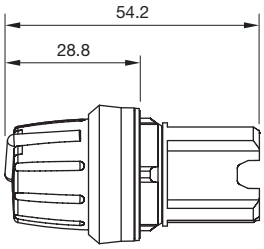
Holder Page 58



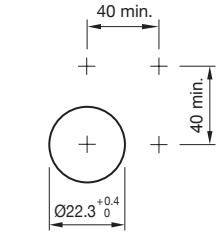
Switching element Page 59

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

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



Dimensions [mm]

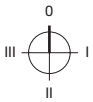


Mounting cut-outs [mm]

Product can differ from the current configuration.

General information

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



Actuator, Front dimension Ø 29,5 mm

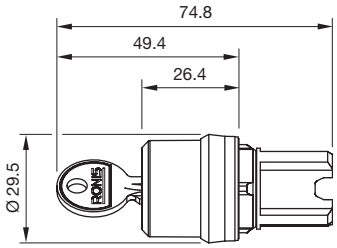
Switching action	Switching angle	Lever colour	Front bezel colour	Front bezel material	Housing material	Part No.	Wiring diagram
Maintained - Maintained - Maintained - Maintained	4 x 90°	White	Black	Plastic	Plastic	45-2845.1E90.002	220
	4 x 90°	White	Silver	Metal	Metal	45-2845.2E90.002	220

Wiring diagrams

Wiring diagram 220

Keylock switch 2 positions, IP66, IP67, IP69K

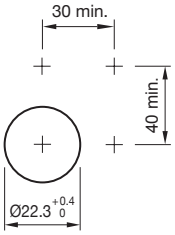
Product can differ from the current configuration.



Dimensions [mm]

General information

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

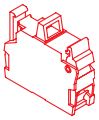


Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Actuator

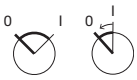
Holder Page 57



Switching element Page 59

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

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

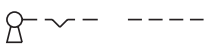


Actuator, Front dimension Ø 29,5 mm

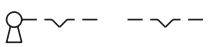
Switching action	Switching angle	Front bezel colour	Front bezel material	Housing material	Part No.	Wiring diagram
Rest (a) - Maintained (a)	90° right / -45° ... +45°	Black	Plastic	Plastic	45-290H.1000.111	79
	90° right / -45° ... +45°	Silver	Metal	Metal	45-290H.2000.111	79
Rest (a) - Maintained	90° right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

a = Key remove

Wiring diagrams



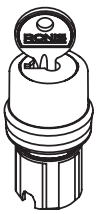
Wiring diagram 78



Wiring diagram 79

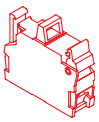
Keylock switch 3 positions, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator

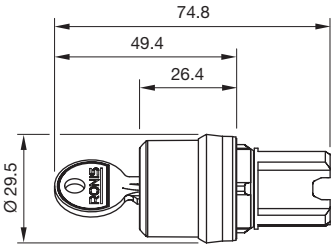
Holder Page 57



Switching element Page 59

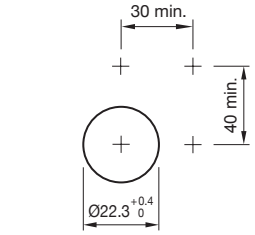
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

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

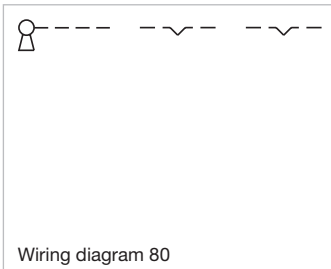
Actuator, Front dimension Ø 29,5 mm

Switching action	Switching angle	Front bezel colour	Front bezel material	Housing material	Part No.	Wiring diagram
Maintained (a) - Rest - Momentary	45° left / 45° right / -45° … +45°	Black	Plastic	Plastic	45-290A.1000.113	81
	45° left / 45° right / -45° … +45°	Silver	Metal	Metal	45-290A.2000.113	81
Maintained (a) - Rest - Maintained	45° left / 45° right / -45° … +45°	Silver	Metal	Metal	45-290D.2000.113	83
Maintained (a) - Rest (a) - Maintained (a)	45° left / 45° right / -45° … +45°	Black	Plastic	Plastic	45-290F.1000.113	83
	45° left / 45° right / -45° … +45°	Silver	Metal	Metal	45-290F.2000.113	83
Maintained (a) - Rest (a) - Maintained	45° left / 45° right / -45° … +45°	Black	Plastic	Plastic	45-290G.1000.113	83
	45° left / 45° right / -45° … +45°	Silver	Metal	Metal	45-290G.2000.113	83
Momentary - Rest (a) - Momentary	45° left / 45° right / -45° … +45°	Black	Plastic	Plastic	45-290Z.1000.113	82
	45° left / 45° right / -45° … +45°	Silver	Metal	Metal	45-290Z.2000.113	82
Momentary - Rest (a) - Maintained	45° left / 45° right / -45° … +45°	Sand grey	Metal	Plastic	45-2911.3000.113	80
Maintained - Rest (a) - Maintained	45° left / 45° right / -45° … +45°	Black	Plastic	Plastic	45-2924.1000.113	83
	45° left / 45° right / -45° … +45°	Silver	Metal	Metal	45-2924.2000.113	83

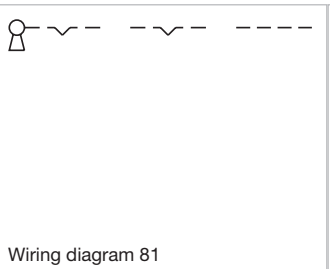
a = Key remove

45 Raised design

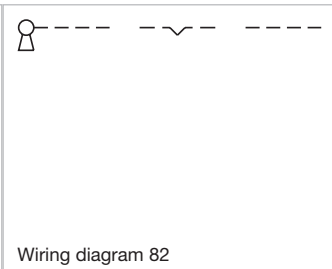
Wiring diagrams



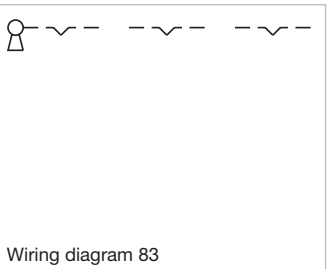
Wiring diagram 80



Wiring diagram 81



Wiring diagram 82

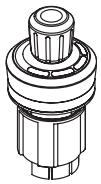


Wiring diagram 83

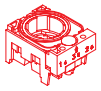
ID keylock switch, IP65

Equipment consisting of (schematic overview)

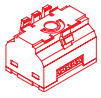
ID key Page {$l=ID-Schlüssel}



Actuator



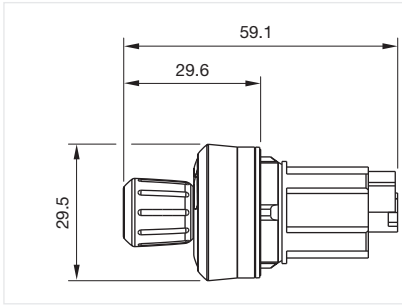
Holder Page 57



Electronic module Page {$l=Elektronikmodul}

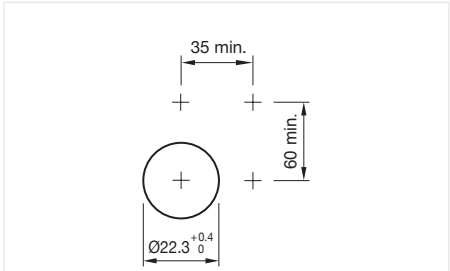
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

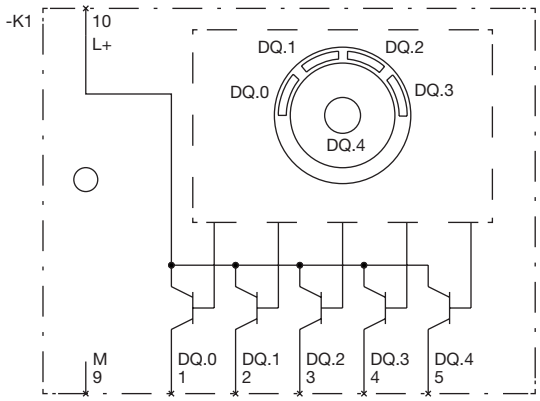
- Mounting depth, incl. front plate, see chapter drawings

Actuator, Front dimension Ø 29,5 mm

Operating Voltage/ Current	Switching action	Front bezel colour	Front bezel material	Operating voltage	Housing material	Part No.	Wiring diagram
- 24,00	Maintained - Maintained - Maintained - Maintained	Black	Plastic	24,00 V DC	Plastic	45-2S00.1001.404	213

45 Raised design

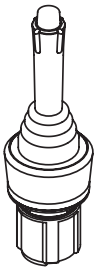
Wiring diagrams



Wiring diagram 213

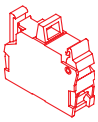
Toggle stick, IP65, IP67

Equipment consisting of (schematic overview)



Actuator

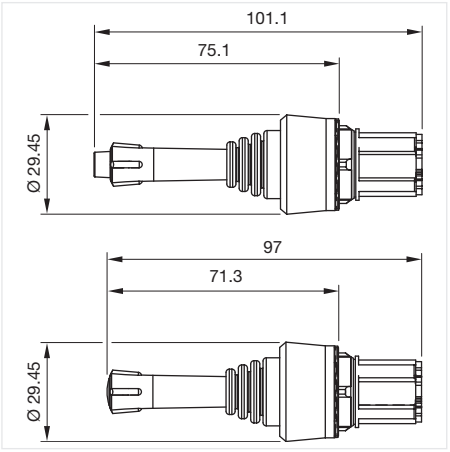
Holder Page 58



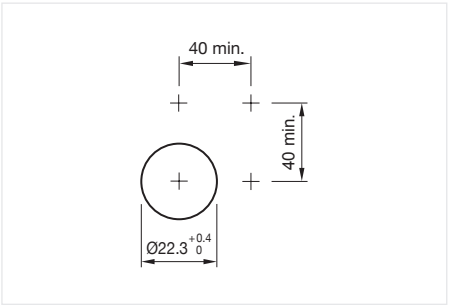
Switching element Page 59

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

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



Dimensions [mm]



Mounting cut-outs [mm]

Product can differ from the current configuration.

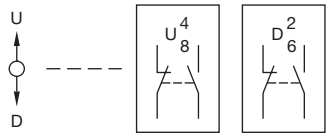
General information

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

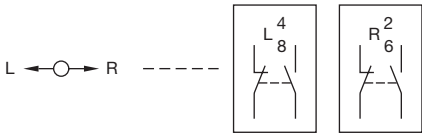
Actuator, Front dimension Ø 29,5 mm

Switching action	Product attributes	Housing material	Front bezel colour	Front bezel material	Part No.	Wiring diagram
Momentary	2 positions (L-R)	Plastic	Black	Plastic	45-2F0T.1010.000	223
	4 positions	Plastic	Black	Plastic	45-2F0V.1010.000	225
	4 positions	Metal	Silver	Metal	45-2F0V.2010.000	225
	4 positions, lockable	Metal	Silver	Metal	45-2F14.2010.000	225
	2 positions (U-D)	Metal	Silver	Metal	45-2F38.2010.000	221
	2 positions (U-D), lockable	Plastic	Black	Plastic	45-2F40.1010.000	221

Wiring diagrams



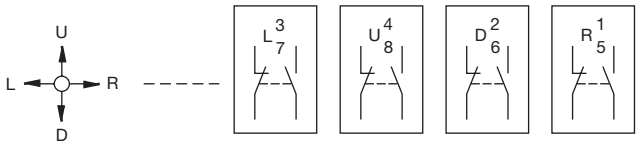
Wiring diagram 221



Wiring diagram 223

45 Raised design

Wiring diagrams



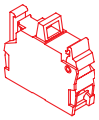
Wiring diagram 225

Toggle switch, IP66, IP67, IP69K

Equipment consisting of (schematic overview)

Actuator

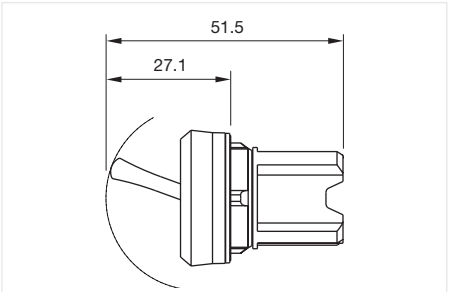
Holder Page 57



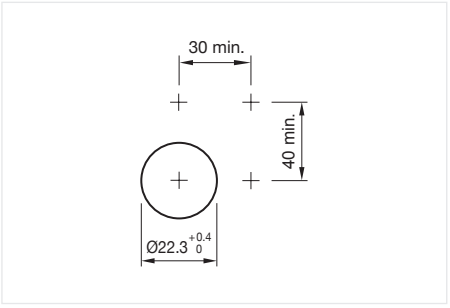
Switching element Page 59

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

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



Dimensions [mm]



Mounting cut-outs [mm]

Product can differ from the current configuration.

General information

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

Actuator, Front dimension Ø 29,5 mm

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

Wiring diagrams

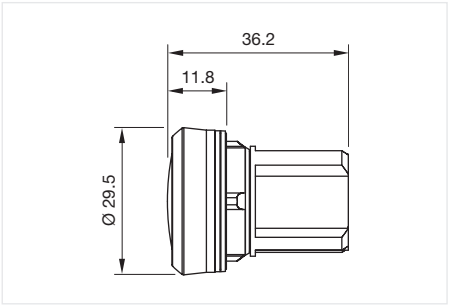
Wiring diagram 72

Wiring diagram 73

45 Raised design

Indicator full-face illumination, IP66, IP67, IP69K

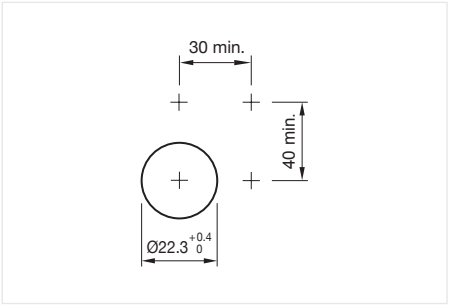
Product can differ from the current configuration.



Dimensions [mm]

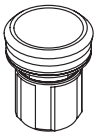
General information

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



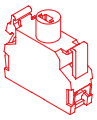
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)



Actuator

Holder Page 57



Illumination element Page 63

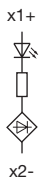
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

Actuator, Front dimension Ø 30 mm

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

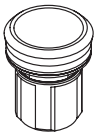
Wiring diagrams



Wiring diagram 190

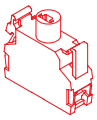
Indicator front illumination, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator

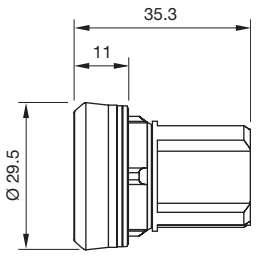
Holder Page 57



Illumination element Page 63

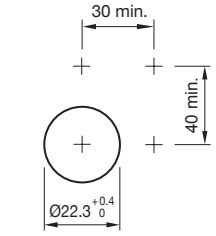
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

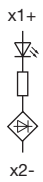
General information

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

Actuator, Front dimension Ø 29,5 mm

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

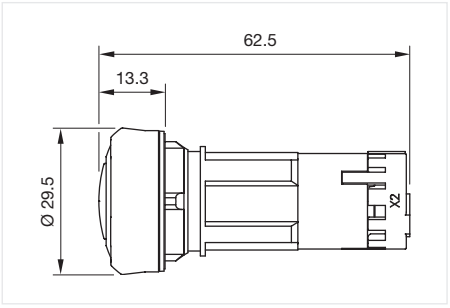
Wiring diagrams



Wiring diagram 190

Buzzer, IP40

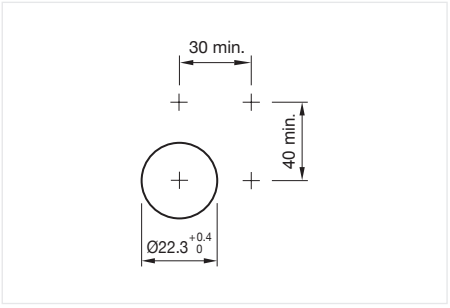
Product can differ from the current configuration.



Dimensions [mm]

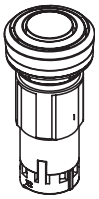
General information

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



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)



Actuator

Holder Page 57

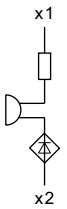
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

Actuator, Front dimension Ø 29,5 mm

Soundpressure	Tone frequency	Operating Voltage/Current	Operating voltage	Housing material	Part No.	Wiring diagram
95 db (A) ±8 dB at a distance of 0.1m	Approx. 2.4 kHz continuous tone only	24 V	24 V AC/DC	Plastic	45-2H00.1016.000	199

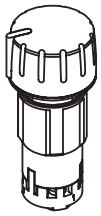
Wiring diagrams



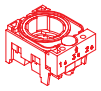
Wiring diagram 199

Potentiometer, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



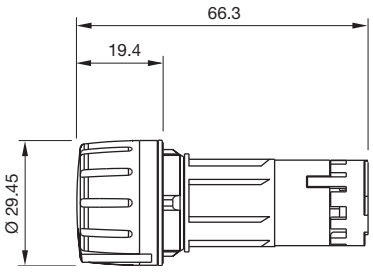
Actuator



Holder Page 57

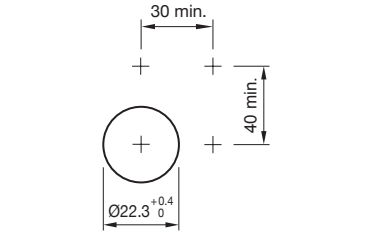
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

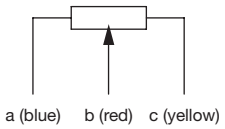
General information

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

Actuator, Front dimension Ø 30 mm

Operating Voltage/ Current	Front bezel colour	Front bezel material	Operating voltage	Housing material	Resistance	Resistance kind of	Part No.	Wiring diagram	Component Layout
- 300,00	Black	Plastic	300,00 V DC	Plastic	100 kΩ	linear, row_E3	45-2P01.1E10.000	104	22
	Black	Plastic	300,00 V DC	Plastic	10 kΩ	linear, row_E3	45-2P02.1E10.000	104	22
	Black	Plastic	300,00 V DC	Plastic	1 kΩ	linear, row_E3	45-2P03.1E10.000	104	22
	Black	Plastic	300,00 V DC	Plastic	4.7 kΩ	linear, row_E3	45-2P04.1E10.000	104	22

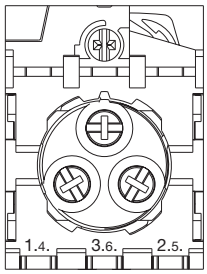
Wiring diagrams



Wiring diagram 104

45 Raised design

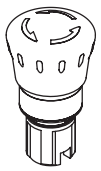
Component layouts



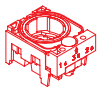
Component layout 22

Stop switch, IP66, IP67, IP69K

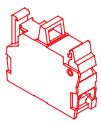
Equipment consisting of (schematic overview)



Actuator



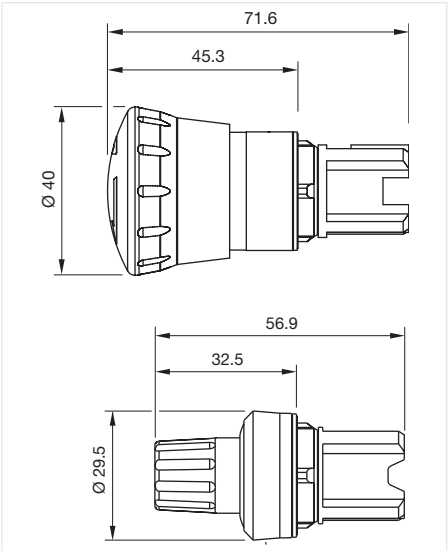
Holder Page 57



Switching element Page 59

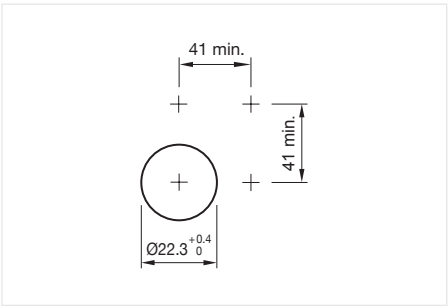
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Dimensions [mm]

Product can differ from the current configuration.



Mounting cut-outs [mm]

General information

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

Actuator

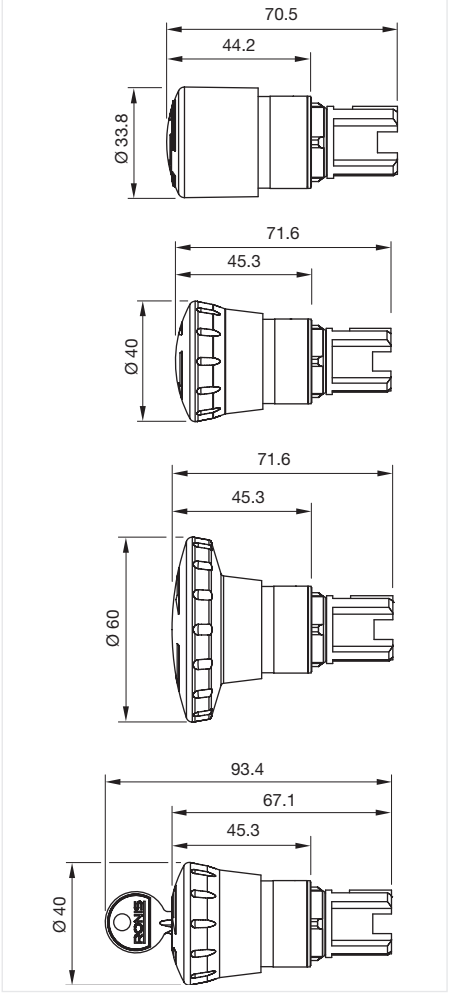
Product attributes	Lens colour	Front bezel colour	Front bezel material	Dimension	Housing material	Part No.	Wiring diagram
Twist to unlock clockwise	Black	Black	Plastic	Ø 40 mm	Plastic	45-2736.1910.000	76
	Blue	Black	Plastic	Ø 40 mm	Plastic	45-2736.1960.000	76
Twist to release, can be latched after pressing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

Wiring diagrams

Wiring diagram 76

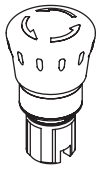
Emergency stop switch, IP66, IP67, IP69K

Product can differ from the current configuration.



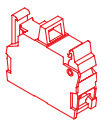
Dimensions [mm]

Equipment consisting of (schematic overview)



Actuator

Holder Page 57



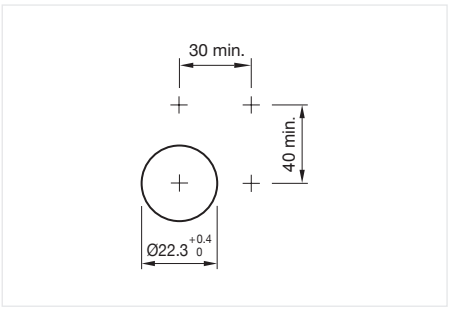
Switching element Page 59

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

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

General information

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



Mounting cut-outs [mm]

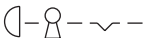
Actuator

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

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

Wiring diagrams

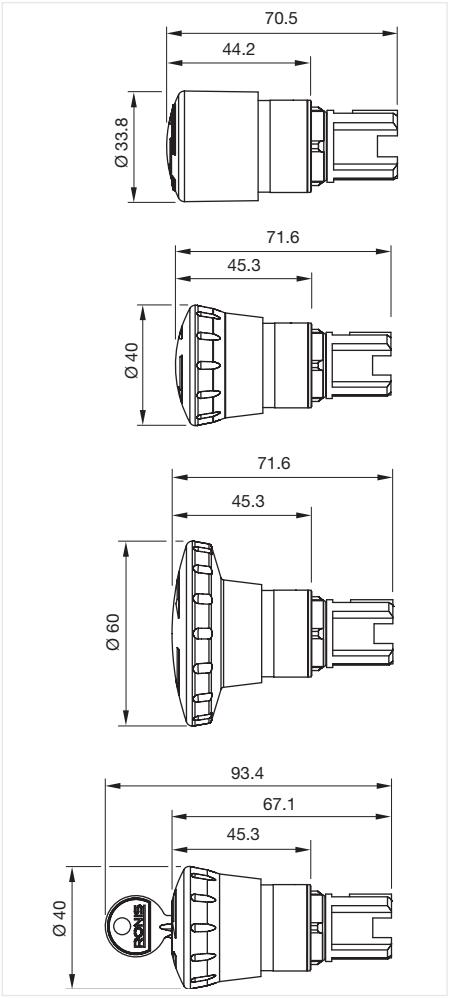
Wiring diagram 76



Wiring diagram 364

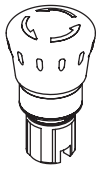
Illuminated emergency stop switch, IP66, IP67, IP69K

Product can differ from the current configuration.



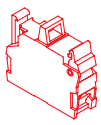
Dimensions [mm]

Equipment consisting of (schematic overview)

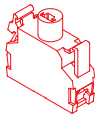


Actuator

Holder Page 57



Switching element Page 59



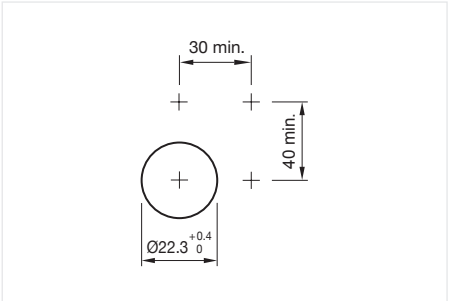
Illumination element Page 63

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

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

General information

- Mounting depth, incl. front plate, see chapter drawings
- Application as per DIN EN ISO 13850

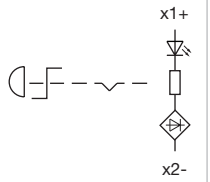


Mounting cut-outs [mm]

Actuator

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

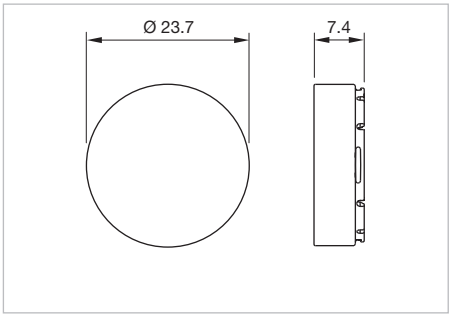
Wiring diagrams



Wiring diagram 205

Lens plastic round encreased

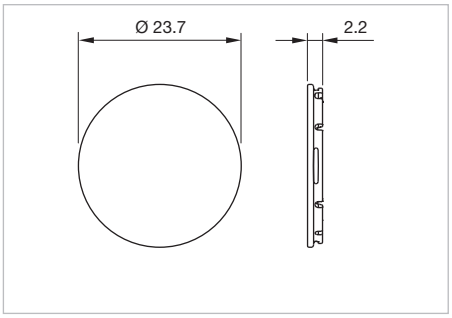
Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimension	Part No.
Plastic	Colourless	transparent	flush	illuminative	Ø 23.7 mm	45-552.0K00



Dimensions [mm]

Lens plastic round flat

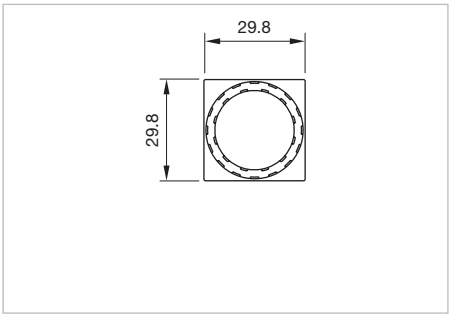
Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimension	Part No.
Plastic	Blue	transparent	flush	illuminative	Ø 23.7 mm	45-553.0J00
	Red	transparent	flush	illuminative	Ø 23.7 mm	45-553.0E00
	Amber	transparent	flush	illuminative	Ø 23.7 mm	45-553.0F00
	Yellow	transparent	flush	illuminative	Ø 23.7 mm	45-553.0G00
	Green	transparent	flush	illuminative	Ø 23.7 mm	45-553.0H00
	Colourless	transparent	flush	illuminative	Ø 23.7 mm	45-553.0K00
	White	transparent	flush	illuminative	Ø 23.7 mm	45-553.0N00



Dimensions [mm]

Single frame

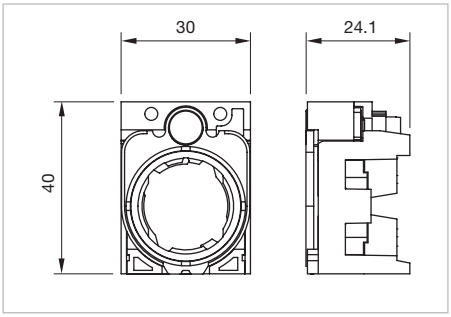
Product attributes	Front bezel material	Front bezel colour	Material	Dimension	Part No.
For design square	Plastic	Black	Plastic	29.8 mm x 29.8 mm	45-558.0000



Dimensions [mm]

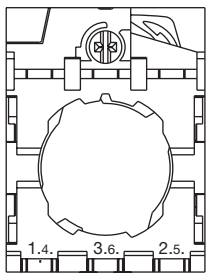
Holder for 3 elements

Material	Part No.	Compo-nent Layout
Plastic	45-2300.1000.000	23
Metal	45-2300.2000.000	23
Metal / plastic	45-2300.3000.000	23



Dimensions [mm]

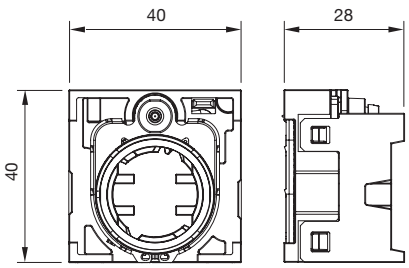
Component layouts



Component layout 23

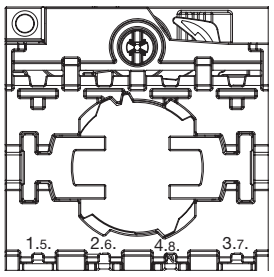
Holder for 4 elements

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



Dimensions [mm]

Component layouts

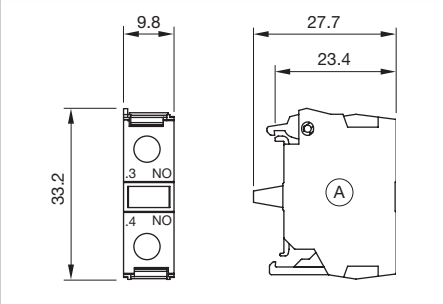


Component layout 24

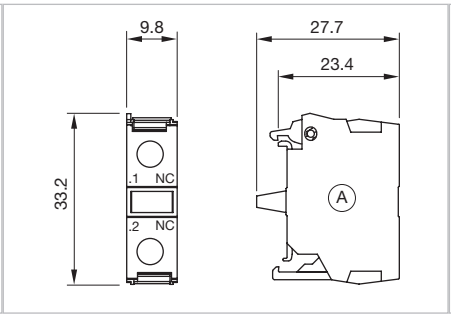
Slow-make switching switching element front mounting with screw terminal

Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram
500.00 V	10.00 A	1 NO	Silver	Screw terminal	45-311.1Z10	227
	10.00 A	1 NC	Silver	Screw terminal	45-312.1Z10	228
	10.00 A	2 NO	Silver	Screw terminal	45-313.1Z10	231
	10.00 A	2 NC	Silver	Screw terminal	45-314.1Z10	234
	10.00 A	1 NC / 1 NO	Silver	Screw terminal	45-315.1Z10	235
	10.00 A	1 NO	Gold	Screw terminal	45-311.1X10	227
	10.00 A	1 NC	Gold	Screw terminal	45-312.1X10	228
	10.00 A	1 NC / 1 FS	Gold	Screw terminal	45-316.1X10	233

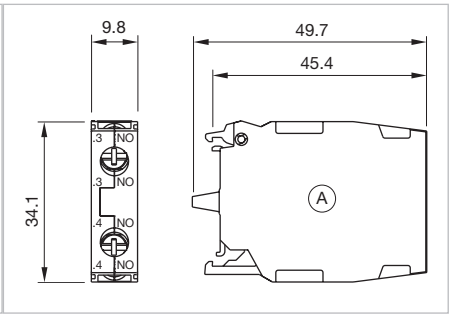
Contacts: NC = Normally closed, NO = Normally open



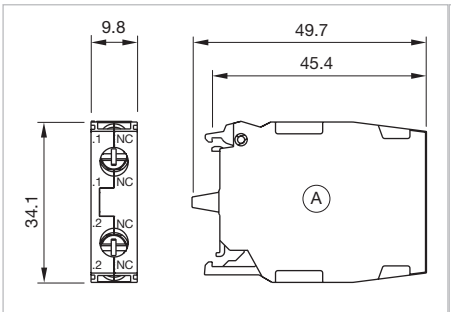
Dimensions [mm]
A = Screw terminal
for Part No. 45-311.1Z10, 45-311.1X10



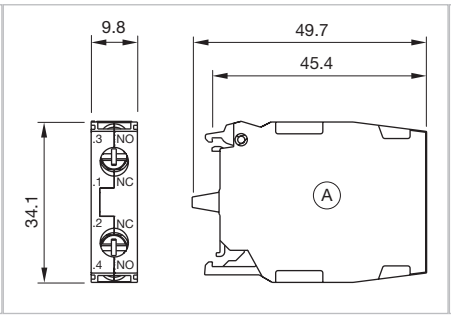
Dimensions [mm]
A = Screw terminal
for Part No. 45-312.1Z10, 45-312.1X10



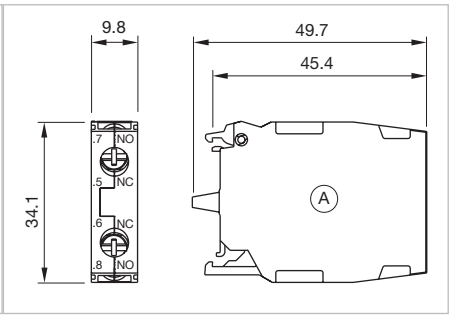
Dimensions [mm]
A = Screw terminal
for Part No. 45-313.1Z10



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

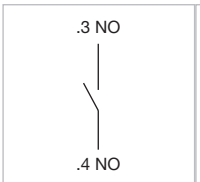


Dimensions [mm]
A = Screw terminal
for Part No. 45-315.1Z10

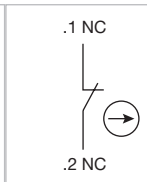


Dimensions [mm]
A = Screw terminal
for Part No. 45-316.1X10

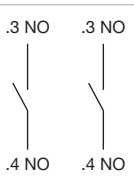
Wiring diagrams



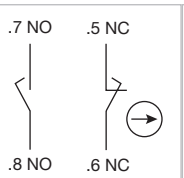
Wiring diagram 227



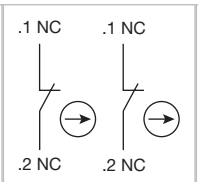
Wiring diagram 228



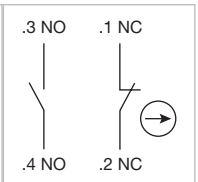
Wiring diagram 231



Wiring diagram 233



Wiring diagram 234

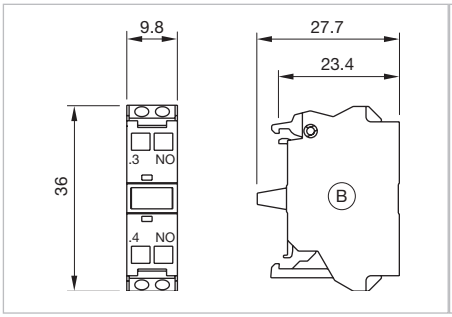


Wiring diagram 235

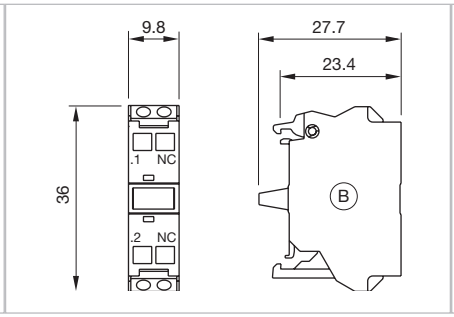
Slow-make switching switching element front mounting with spring-type terminal

Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram
500.00 V	10.00 A	1 NO	Silver	Spring-type terminal	45-311.1Z40	227
	10.00 A	1 NC	Silver	Spring-type terminal	45-312.1Z40	228
	10.00 A	2 NO	Silver	Spring-type terminal	45-313.1Z40	231
	10.00 A	2 NC	Silver	Spring-type terminal	45-314.1Z40	234
	10.00 A	1 NC / 1 NO	Silver	Spring-type terminal	45-315.1Z40	235
	10.00 A	1 NC / 1 MC	Silver	Spring-type terminal	45-317.1Z40	232
	10.00 A	1 NO	Gold	Spring-type terminal	45-311.1X40	227
	10.00 A	1 NC	Gold	Spring-type terminal	45-312.1X40	228
	10.00 A	2 NO	Gold	Spring-type terminal	45-313.1X40	231
	10.00 A	2 NC	Gold	Spring-type terminal	45-314.1X40	234
	10.00 A	1 NC / 1 NO	Gold	Spring-type terminal	45-315.1X40	235
	10.00 A	1 NC / 1 FS	Gold	Spring-type terminal	45-316.1X40	233

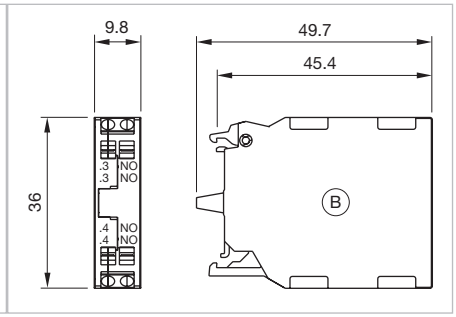
Contacts: NC = Normally closed, NO = Normally open



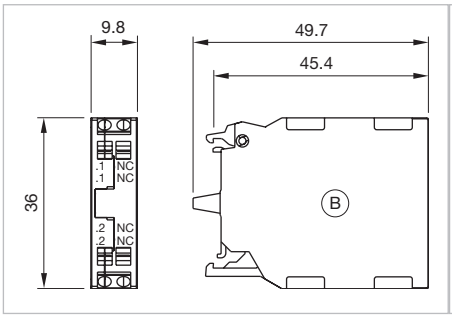
Dimensions [mm]
B = Spring-type terminal
for Part No. 45-311.1Z40, 45-311.1X40



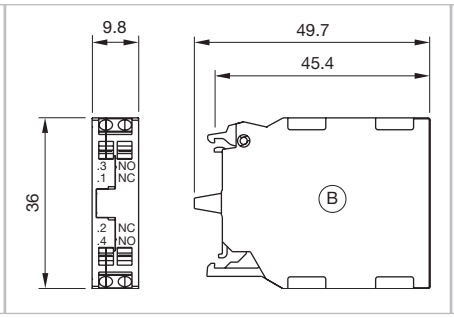
Dimensions [mm]
B = Spring-type terminal
for Part No. 45-312.1Z40, 45-312.1X40



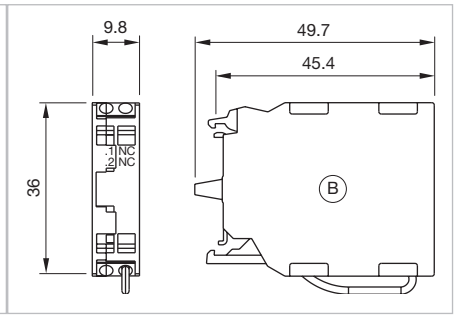
Dimensions [mm]
B = Spring-type terminal
for Part No. 45-313.1Z40, 45-313.1X40



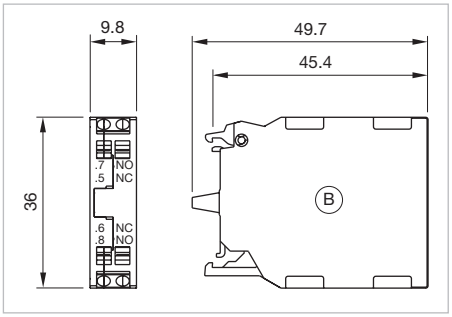
Dimensions [mm]
B = Spring-type terminal
for Part No. 45-314.1Z40, 45-314.1X40



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

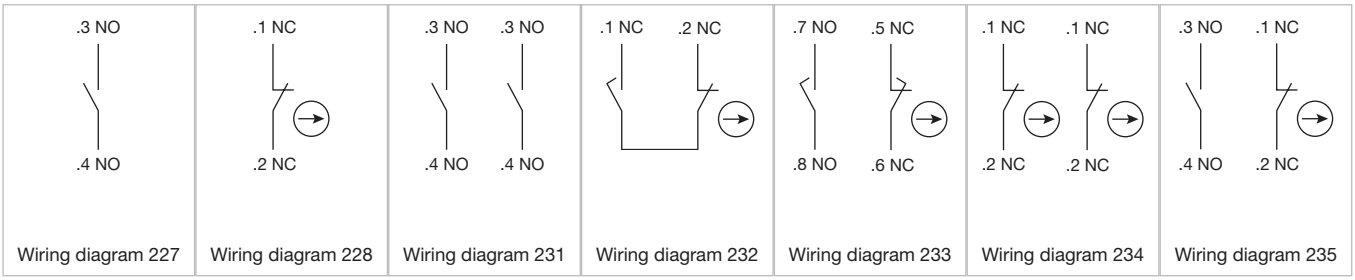


Dimensions [mm]
B = Spring-type terminal
for Part No. 45-317.1Z40



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

Wiring diagrams



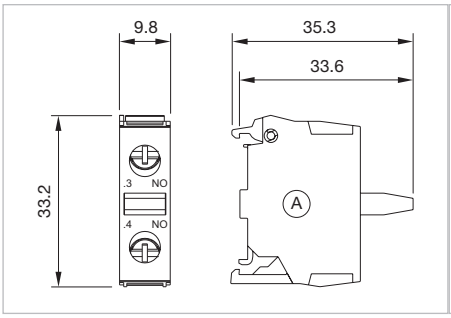
Slow-make switching switching element base mounting with screw terminal

Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram
500.00 V	10.00 A	1 NO	Silver	Screw terminal	45-311.2Z10	227
	10.00 A	1 NC	Silver	Screw terminal	45-312.2Z10	228

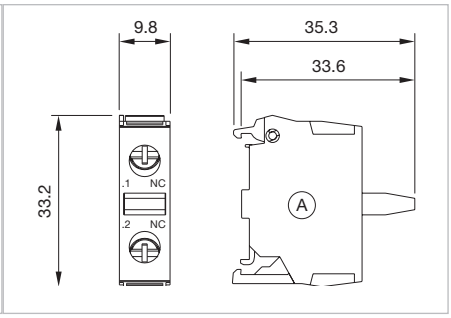
Contacts: NC = Normally closed, NO = Normally open

Additional information

- Switching element base mounting can used only with enclosure

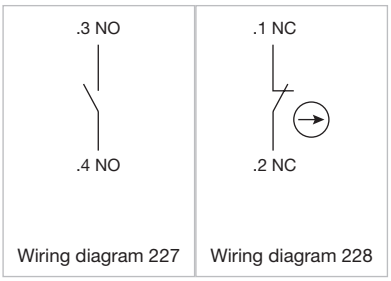


Dimensions [mm]
A = Screw terminal
for Part No. 45-311.2Z10



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

Wiring diagrams



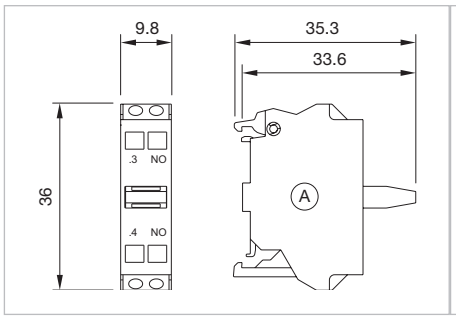
Slow-make switching switching element base mounting with spring-type terminal

Switching voltage	Switching current	Contacts	Contact material	Terminal	Part No.	Wiring diagram
500.00 V	10.00 A	1 NO	Silver	Spring-type terminal	45-311.2Z40	227
	10.00 A	1 NC	Silver	Spring-type terminal	45-312.2Z40	228

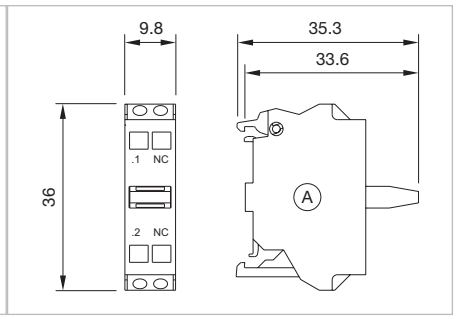
Contacts: NC = Normally closed, NO = Normally open

Additional information

- Switching element base mounting can used only with enclosure

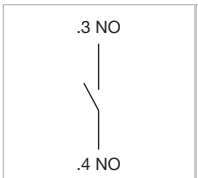


Dimensions [mm]
B = Spring-type terminal
for Part No. 45-311.2Z40

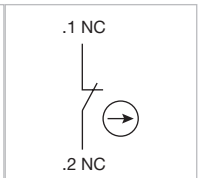


Dimensions [mm]
B = Spring-type terminal
for Part No. 45-312.2Z40

Wiring diagrams



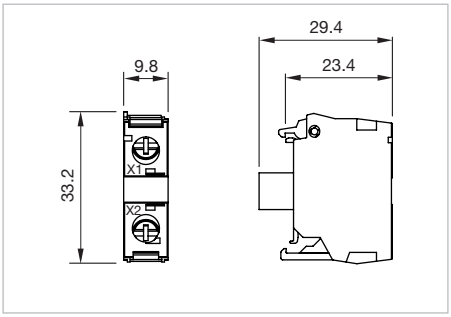
Wiring diagram 227



Wiring diagram 228

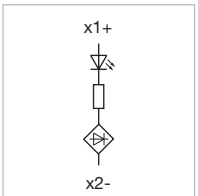
Illumination element front mounting with screw terminal

Operating voltage	Lumi. Intensity	Illuminative colour	Part No.	Wiring diagram
6 - 24,00 V AC/DC	450 - 1120 mcd	Red	45-320.1E11	229
	450 - 1120 mcd	Amber	45-320.1F11	229
	900 - 1400 mcd	Yellow	45-320.1G11	229
	900 - 1400 mcd	Green	45-320.1H11	229
	280 - 710 mcd	Blue	45-320.1J11	229
	900 - 1400 mcd	White	45-320.1N11	229
24 - 240,00 V AC/DC	450 - 1120 mcd	Red	45-320.1E12	229
	450 - 1120 mcd	Amber	45-320.1F12	229
	900 - 1400 mcd	Yellow	45-320.1G12	229
	900 - 1400 mcd	Green	45-320.1H12	229
	280 - 710 mcd	Blue	45-320.1J12	229
	900 - 1400 mcd	White	45-320.1N12	229
24 V AC/DC	450 - 1120 mcd	Red	45-320.1E16	229
	450 - 1120 mcd	Amber	45-320.1F16	229
	900 - 1400 mcd	Yellow	45-320.1G16	229
	900 - 1400 mcd	Green	45-320.1H16	229
	280 - 710 mcd	Blue	45-320.1J16	229
	900 - 1400 mcd	White	45-320.1N16	229
110 V AC	450 - 1120 mcd	Red	45-320.1E17	229
230 V AC	450 - 1120 mcd	Red	45-320.1E18	229
	900 - 1400 mcd	Yellow	45-320.1G18	229
	900 - 1400 mcd	Green	45-320.1H18	229
	900 - 1400 mcd	White	45-320.1N18	229



Dimensions [mm]

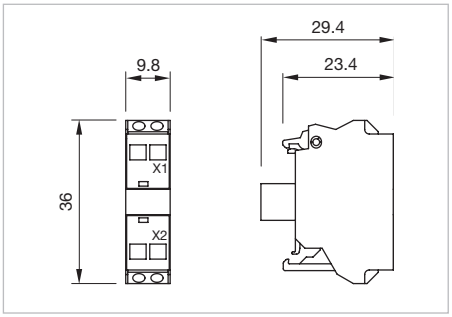
Wiring diagrams



Wiring diagram 229

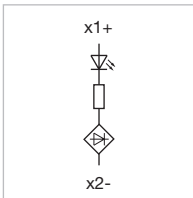
Illumination element front mounting with spring-type terminal

Operating voltage	Lumi. Intensity	Illuminative colour	Part No.	Wiring diagram
6 - 24,00 V AC/DC	450 - 1120 mcd	Red	45-320.1E41	229
	900 - 1400 mcd	Green	45-320.1H41	229
	280 - 710 mcd	Blue	45-320.1J41	229
	900 - 1400 mcd	White	45-320.1N41	229
24 - 240,00 V AC/DC	450 - 1120 mcd	Red	45-320.1E42	229
	450 - 1120 mcd	Amber	45-320.1F42	229
	900 - 1400 mcd	Yellow	45-320.1G42	229
	900 - 1400 mcd	Green	45-320.1H42	229
	280 - 710 mcd	Blue	45-320.1J42	229
	900 - 1400 mcd	White	45-320.1N42	229
24 V AC/DC	450 - 1120 mcd	Red	45-320.1E46	229
	450 - 1120 mcd	Amber	45-320.1F46	229
	900 - 1400 mcd	Yellow	45-320.1G46	229
	900 - 1400 mcd	Green	45-320.1H46	229
	280 - 710 mcd	Blue	45-320.1J46	229
	900 - 1400 mcd	White	45-320.1N46	229
110 V AC	450 - 1120 mcd	Red	45-320.1E47	229
230 V AC	450 - 1120 mcd	Red	45-320.1E48	229
	900 - 1400 mcd	Green	45-320.1H48	229
	280 - 710 mcd	Blue	45-320.1J48	229
	900 - 1400 mcd	White	45-320.1N48	229



Dimensions [mm]

Wiring diagrams



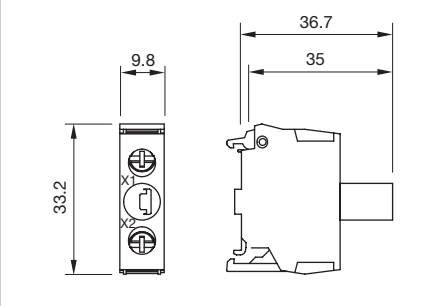
Wiring diagram 229

Illumination element base mounting with screw terminal

Operating voltage	Lumi. Intensity	Illuminative colour	Part No.	Wiring diagram
6 - 24,00 V AC/DC	450 - 1120 mcd	Red	45-320.2E11	229
	450 - 1120 mcd	Amber	45-320.2F11	229
	900 - 1400 mcd	Yellow	45-320.2G11	229
	900 - 1400 mcd	White	45-320.2N11	229
24 - 240,00 V AC/DC	900 - 1400 mcd	Red	45-320.2E12	229
	900 - 1400 mcd	Green	45-320.2H12	229
	900 - 1400 mcd	White	45-320.2N12	229
24 V AC/DC	450 - 1120 mcd	Red	45-320.2E16	229
	900 - 1400 mcd	Yellow	45-320.2G16	229
	900 - 1400 mcd	Green	45-320.2H16	229
	280 - 710 mcd	Blue	45-320.2J16	229
	900 - 1400 mcd	White	45-320.2N16	229
230 V AC	900 - 1400 mcd	Green	45-320.2H18	229

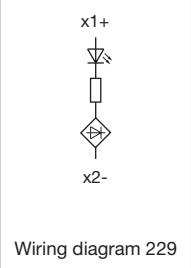
Additional information

- Illumination element base mounting can used only with enclosure



Dimensions [mm]

Wiring diagrams



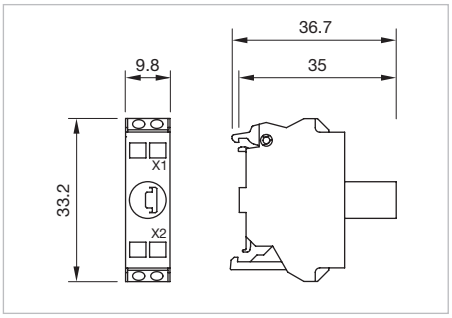
Wiring diagram 229

Illumination element base mounting with spring-type terminal

Operating voltage	Lumi. Intensity	Illuminative colour	Part No.	Wiring diagram
6 - 24,00 V AC/DC	900 - 1400 mcd	Green	45-320.2H41	229
	900 - 1400 mcd	White	45-320.2N41	229

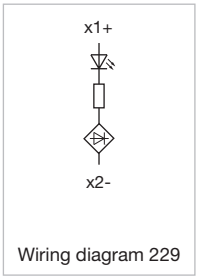
Additional information

- Illumination element base mounting can used only with enclosure



Dimensions [mm]

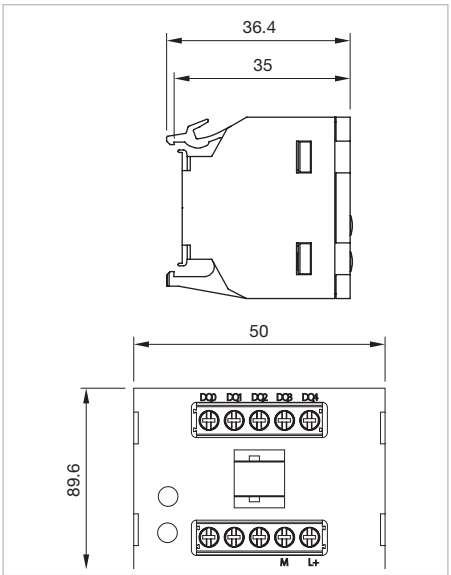
Wiring diagrams



Wiring diagram 229

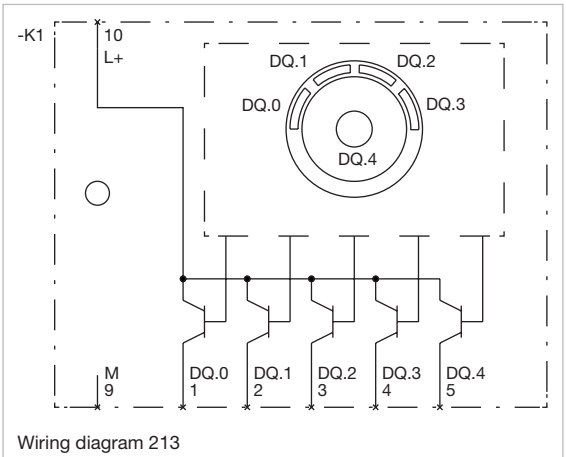
Electronic module

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



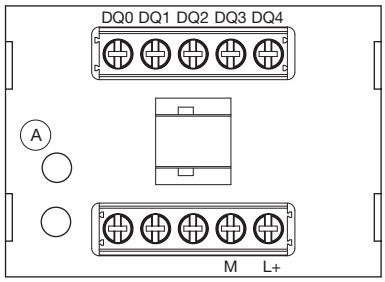
Dimensions [mm]

Wiring diagrams



Wiring diagram 213

Component layouts



Component layout 26

A = Device

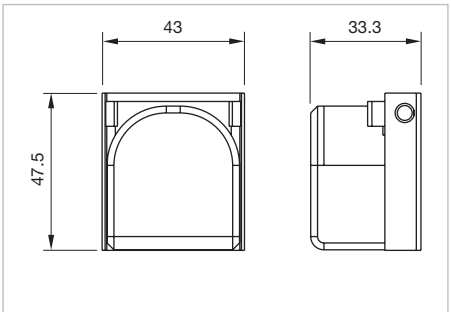
ID-Key

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

Front side

Cover for locking device

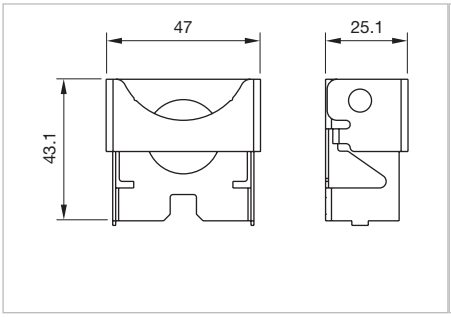
Product attributes	Material	Colour	Optics	IP Protection	Part No.
For pushbuttons, selector switches with round or short lever	Metal / plastic	Colourless	transparent	IP66, IP67, IP69K	45-529.2100



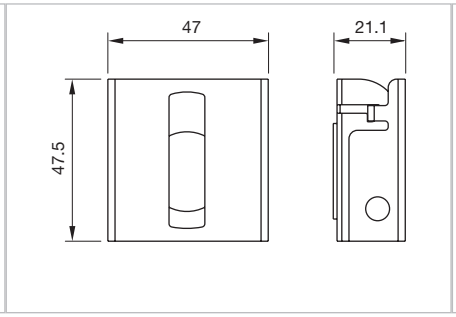
Dimensions [mm]

Locking device

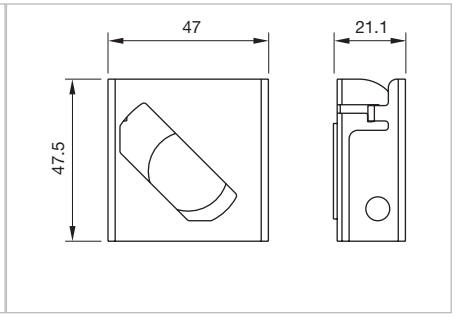
Product attributes	Dimension	Material	Colour	Part No.
For mushroom-head pushbutton Ø 30 mm or Ø 40 mm	47 mm x 43.1 mm x 25.1 mm	Metal	Silver	45-530.2100
For selector switch in position center	47 mm x 47.1 mm x 21.1 mm	Metal	Silver	45-533.2100
For selector switch in position left	47 mm x 47.1 mm x 21.1 mm	Metal	Silver	45-534.2100



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



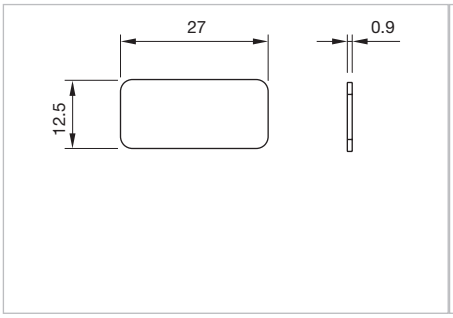
Dimensions [mm]
for Part No. 45-533.2100



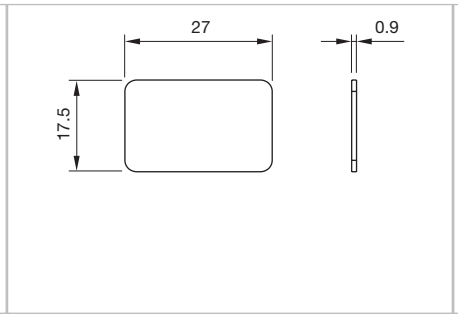
Dimensions [mm]
for Part No. 45-534.2100

Legend plate

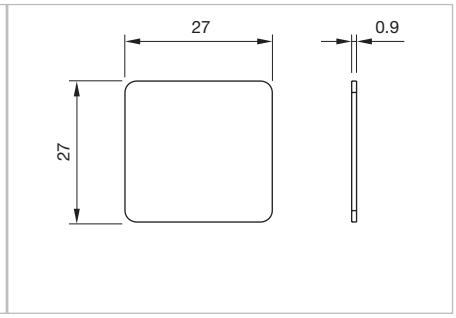
Product attributes	Dimension	Material	Colour	Mounting type	Part No.
Not to use with emergency stop switch	27 mm x 12.5 mm	Plastic	Black	adhesive	45-573.1102
	27 mm x 17.5 mm	Plastic	Black	adhesive	45-573.1103
	27 mm x 17.5 mm	Plastic	Silver	adhesive	45-573.1A03
	27 mm x 27 mm	Plastic	Black	adhesive	45-573.1105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



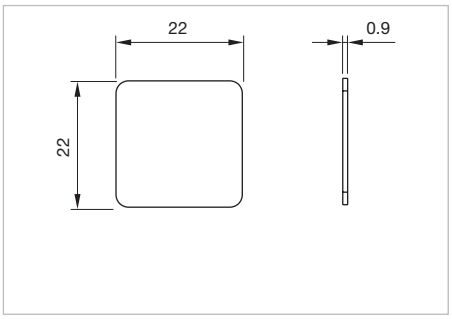
Dimensions [mm]
for Part No. 45-573.1102, 45-573.1202, 45-573.1A02



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



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



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

Emergency stop legend

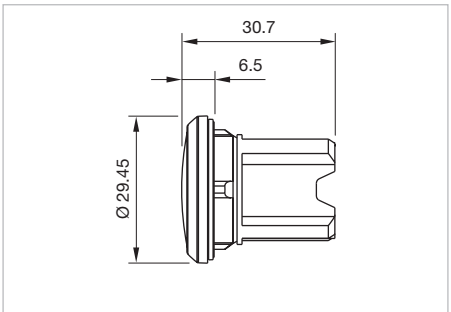
Dimension	Material	Colour	Mounting type	Marking	Part No.
Ø 45 mm	Plastic	Yellow		without marking	45-50K.1407
Ø 75 mm	Plastic	Yellow		without marking	45-50K.1408
	Plastic	Yellow	adhesive	without marking	45-50J.1400
	Plastic	Yellow	adhesive	EMERGENCY STOP	45-50J.140S
	Plastic	Yellow	adhesive	NOT - AUS	45-50J.140P
112 mm x 38 mm	Plastic	Yellow	adhesive	without marking	45-561.1400
Ø 75 mm	Plastic	Yellow	adhesive	NOT - HALT	45-50J.140Q

Additional information

- Front panel thickness 3 mm max.

Blind plug

Material	Colour	Part No.
Plastic	Black	45-506.1100
Metal	Silver	45-506.2A00



Dimensions [mm]

Spare key

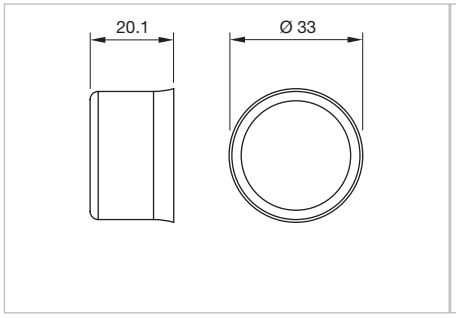
Product attributes	Part No.
2 spare keys	45-522.0900

Additional information

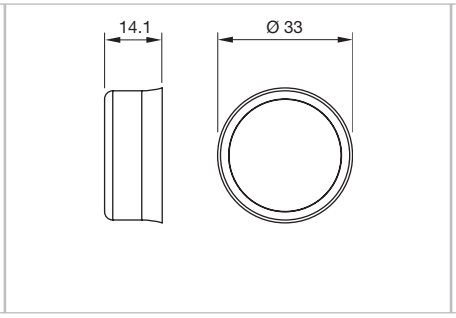
- For standard lock RONIS T254

Protective cap

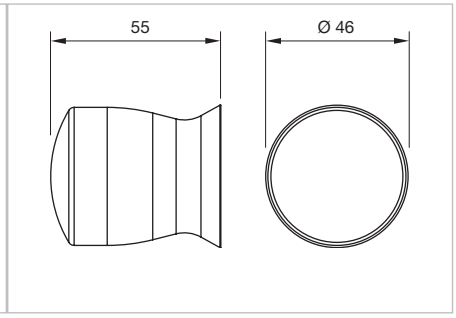
Product attributes	Dimension	Material	Colour	Optics	Part No.
For lens raised above bezel		Silicone	Colourless	transparent	45-544.1K00
For lens flush		Silicone	Colourless	transparent	45-545.1K00
	Ø 40 mm	Silicone	Colourless	transparent	45-542.1K00
For Mushroom-head pushbutton Ø 40 mm	Ø 40 mm	Silicone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



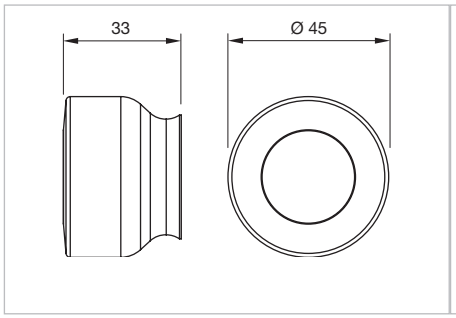
Dimensions [mm]
for Part No. 45-544.1K00



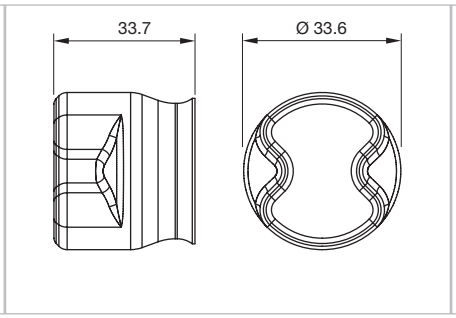
Dimensions [mm]
for Part No. 45-545.1K00



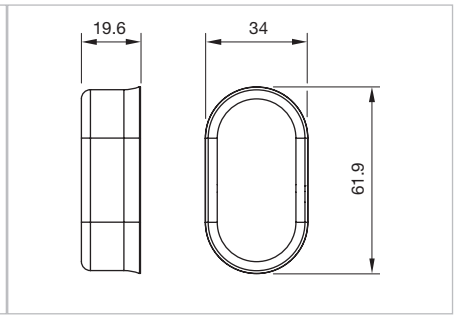
Dimensions [mm]
for Part No. 45-542.1K00



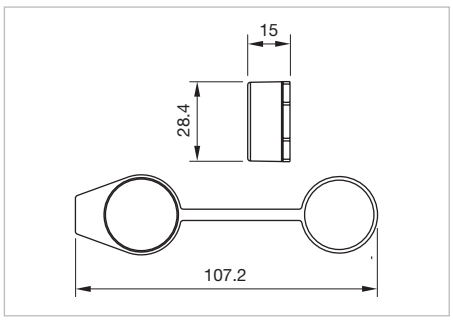
Dimensions [mm]
for Part No. 45-543.1K00



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



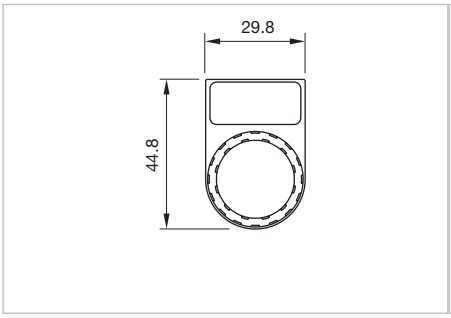
Dimensions [mm]
for Part No. 45-548.1K00



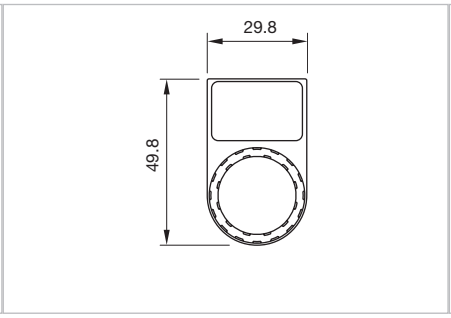
Dimensions [mm]
for Part No. 45-50F.1100

Legend support without legend

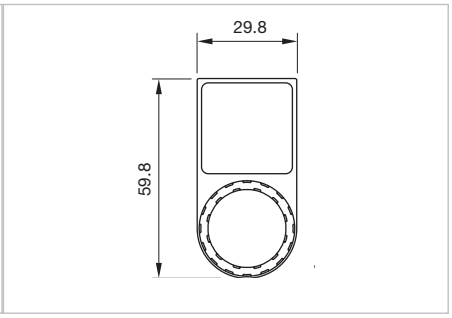
Product attributes	Dimension	Material	Colour	Mounting type	Part No.
For legend 27 mm x 12.5 mm	12.5 mm	Plastic	Black	For sticking or snapping in place	45-564.1102
For legend 27 mm x 17.5 mm	17.5 mm	Plastic	Black	For sticking or snapping in place	45-567.1103
For legend 27 mm x 27 mm	27 mm	Plastic	Black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



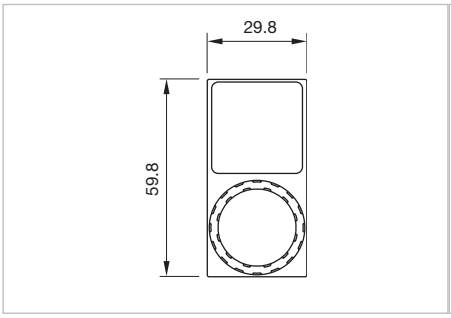
Dimensions [mm]
for Part No. 45-564.1102



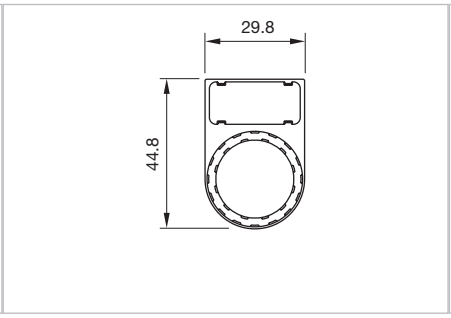
Dimensions [mm]
for Part No. 45-567.1103



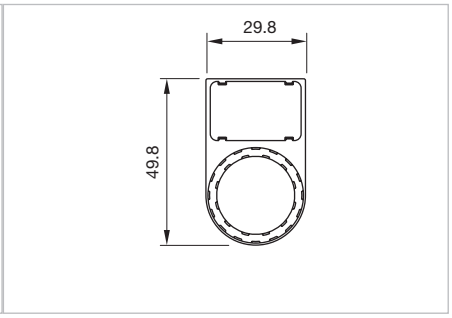
Dimensions [mm]
for Part No. 45-569.1105



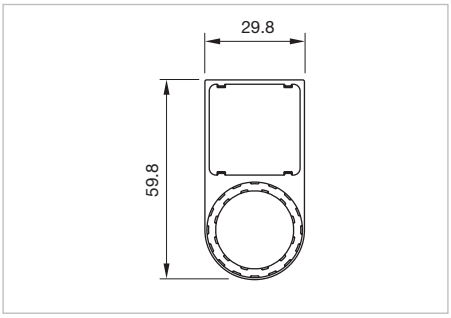
Dimensions [mm]
for Part No. 45-570.1105



Dimensions [mm]
for Part No. 45-564.1110



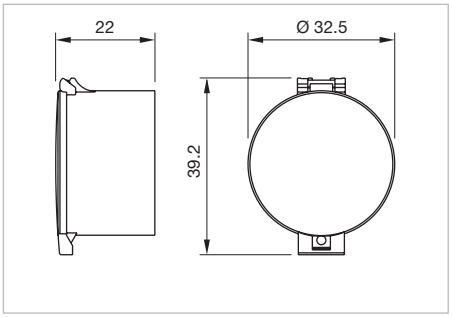
Dimensions [mm]
for Part No. 45-567.1111



Dimensions [mm]
for Part No. 45-569.1112

Protective cover

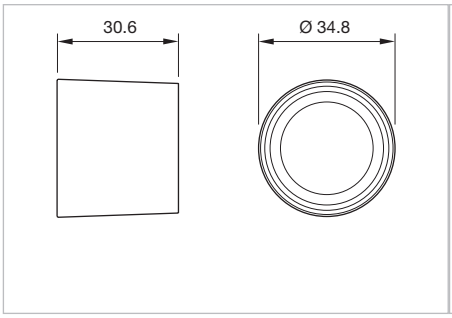
Product attributes	Material	Colour	Optics	Part No.
Hinged, with means for sealing	Plastic	Black	opaque	45-555.1100
	Plastic	Colourless	transparent	45-555.1K00



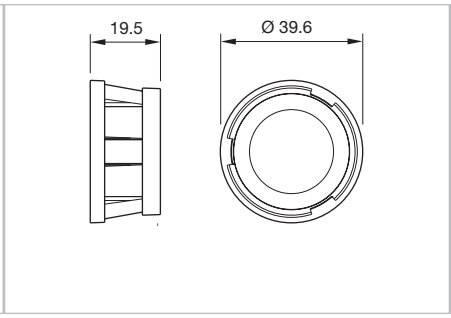
Dimensions [mm]

Protective shroud

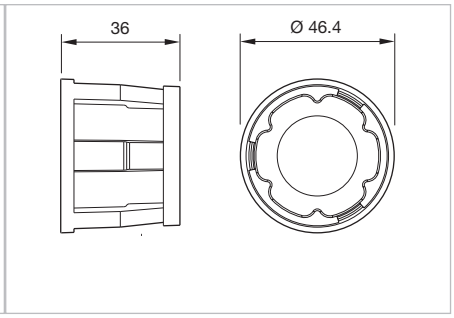
Dimension	Material	Colour	Part No.
Ø 34.8 mm	Plastic	Black	45-50N.1100
Ø 46.4 mm	Metal	Silver	45-50Q.2100
Ø 39.6 mm	Metal	Silver	45-50P.0100



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



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



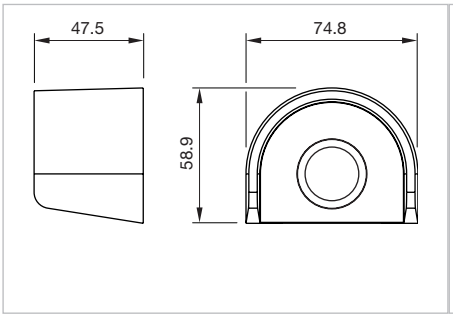
Dimensions [mm]
for Part No. 45-50P.0100

E stop protective shroud

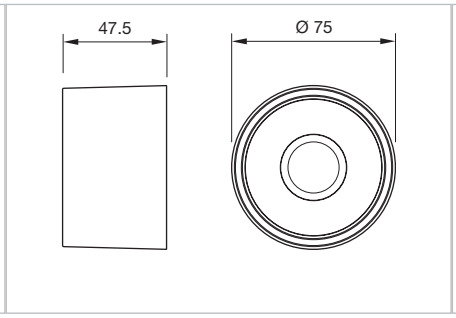
Product attributes	Material	Colour	Part No.
	Plastic	Yellow	45-549.1400
	Plastic	Yellow	45-550.1400
For Emergency stop switch Ø 40 mm, for 5 pad-locks	Metal	Yellow	45-539.2400

Additional information

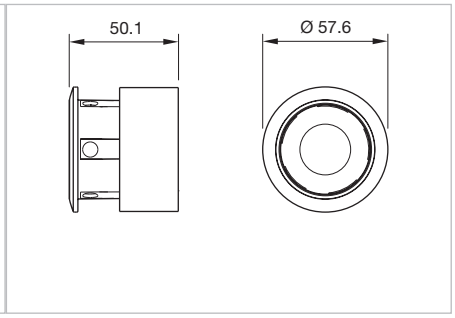
- The protection shroud is not suitable for a proper use of emergency stop. It can obstruct a spontaneous operation of the emergency stop



Dimensions [mm]
for Part No. 45-549.1400



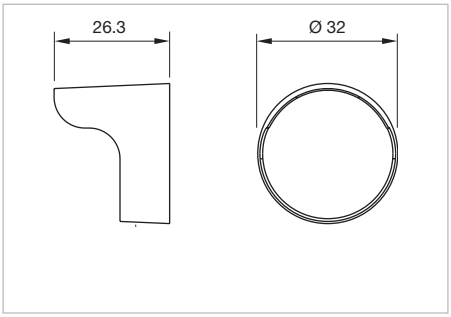
Dimensions [mm]
for Part No. 45-550.1400



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

Sun collar

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

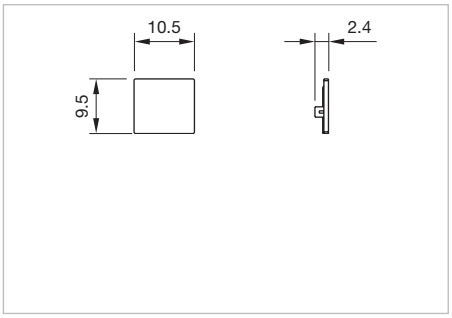


Dimensions [mm]

Rear side

Legend plate for switching elements

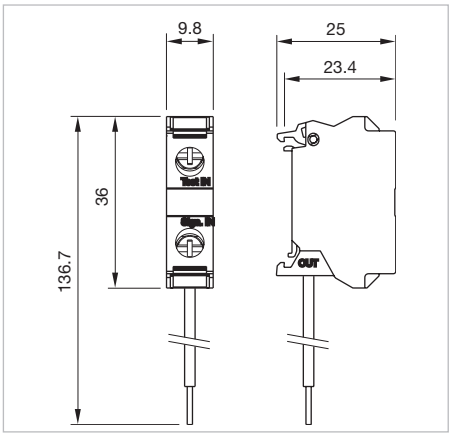
Dimension	Material	Colour	Mounting type	Part No.
10.5 mm x 9.5 mm	Plastic	White	for snapping in place	45-523.1900



Dimensions [mm]

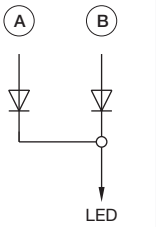
Test module

Product attributes	Operating voltage	Terminal	Part No.	Wiring diagram
Front plate mounting	12 - 240,00 V AC/DC	Screw terminal	45-330.1115	236
Base mounting	12 - 240,00 V AC/DC	Screw terminal	45-330.2115	236



Dimensions [mm]

Wiring diagrams



Wiring diagram 236

Extension plungers

Product attributes	Material	Colour	Terminal	Part No.
For pushbutton with extended stroke	Plastic	Black	null	45-50M.1900

45 Accessories

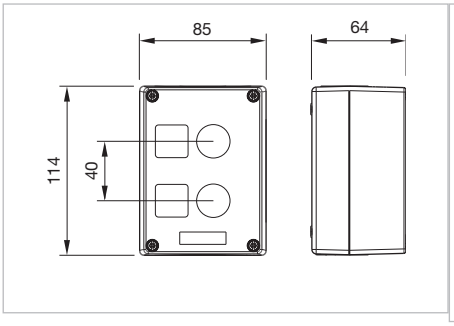
Mounting

Adapter for reduction of 30.5 mm to 22.3 mm

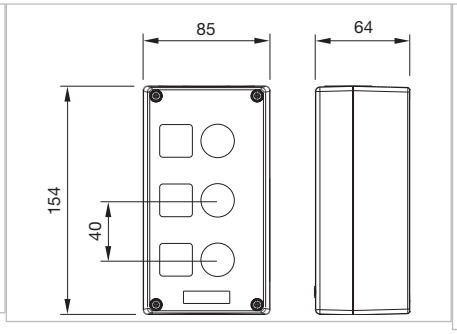
Product attributes	Material	IP front protection	Part No.
With seal	Metal	IP66, IP67, IP69K	45-501.2000

Enclosure

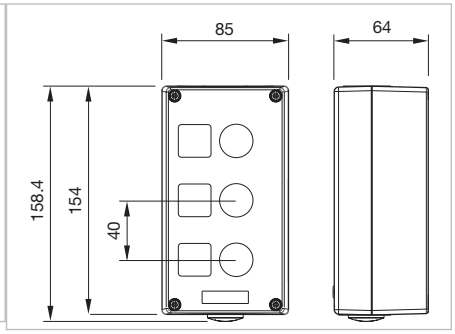
Product attributes	Dimension	Material	Colour	IP Protection	Part No.
2 mounting holes Ø 22.3 mm, top and bottom 1 x M20	114 mm x 85 mm x 64 mm	Plastic	Grey	IP66, IP67, IP69K	45-440.1801
	118 mm x 85 mm x 64 mm	Metal	Grey	IP66, IP67, IP69K	45-440.2803
3 mounting holes Ø 22.3 mm, top and bottom 1 x M20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



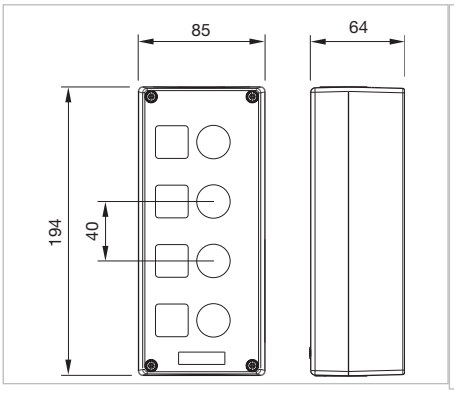
Dimensions [mm]
for Part No. 45-440.1801, 45-440.2803



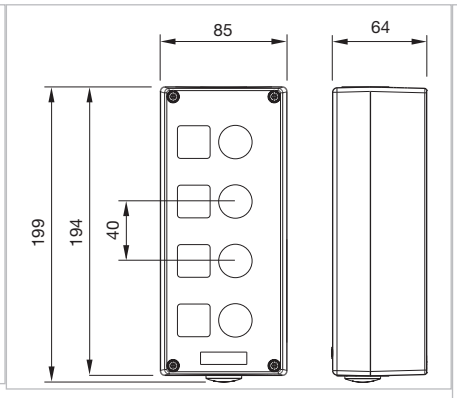
Dimensions [mm]
for Part No. 45-450.1801



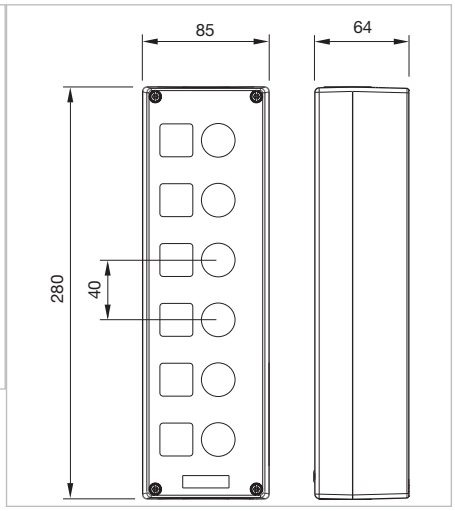
Dimensions [mm]
for Part No. 45-450.2803



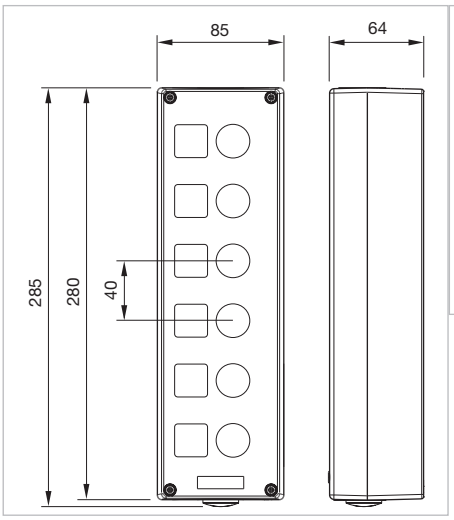
Dimensions [mm]
for Part No. 45-460.1802



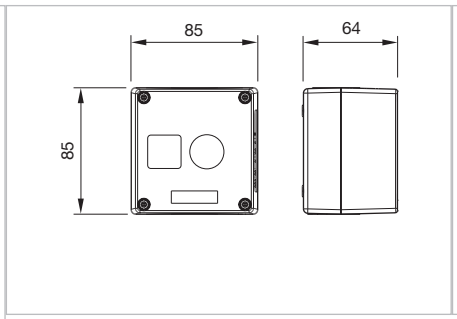
Dimensions [mm]
for Part No. 45-460.2804



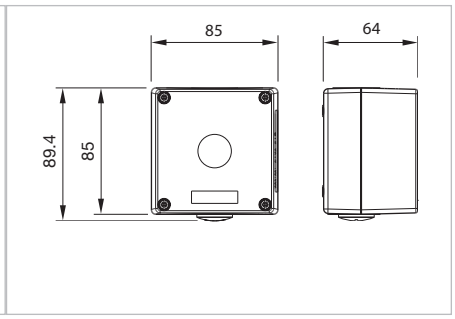
Dimensions [mm]
for Part No. 45-470.1802



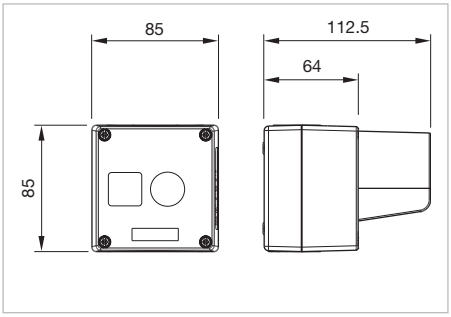
Dimensions [mm]
for Part No. 45-470.2804



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



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

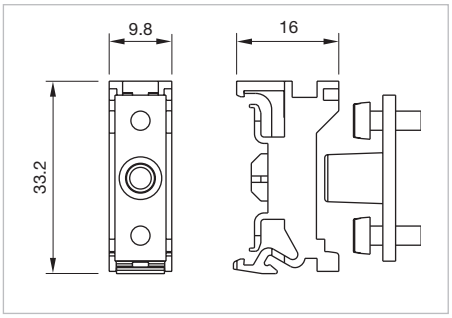


Dimensions [mm]
for Part No. 45-420.1401, 45-420.2403

45 Accessories

Enclosure cover monitoring

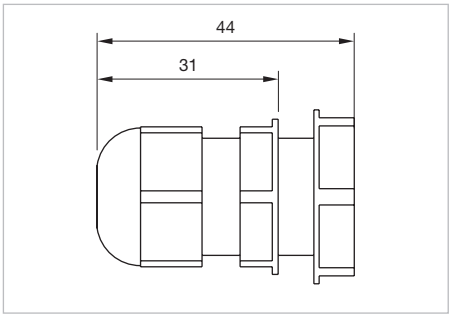
Product attributes	Material	Colour	Part No.
With extension plungers	Plastic	Black	45-50G.0900



Dimensions [mm]

Cable gland

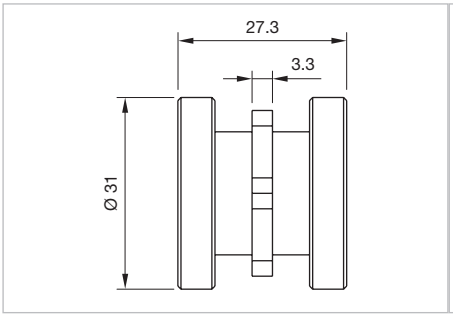
Material	Colour	IP Protection	Thread	Part No.
Plastic	Black	IP66, IP67, IP69K	M20	45-507.1100
	Black	IP66, IP67, IP69K	M25	45-509.1100



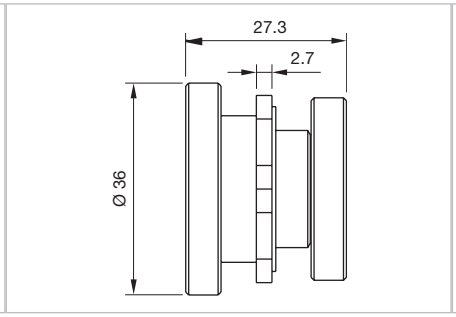
Dimensions [mm]

Connection piece

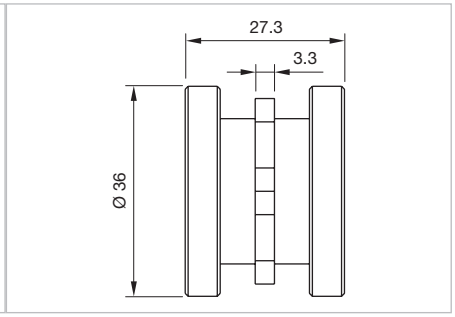
Product attributes	Material	Colour	IP Protection	Thread	Part No.
For connecting 2 enclosures, with hexagonal nut	Plastic	Black	IP66, IP67, IP69K	M20 / M20	45-50C.1900
	Plastic	Black	IP66, IP67, IP69K	M20 / M25	45-50D.1900
	Plastic	Black	IP66, IP67, IP69K	M25 / M26	45-50E.1900
	Metal	Silver	IP66, IP67,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



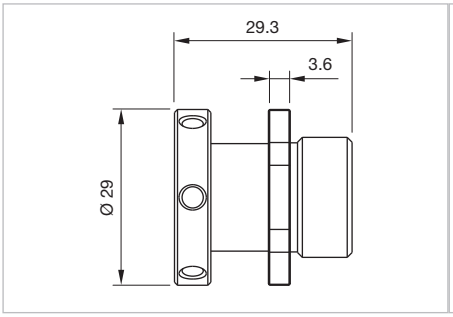
Dimensions [mm]
for Part No. 45-50C.1900



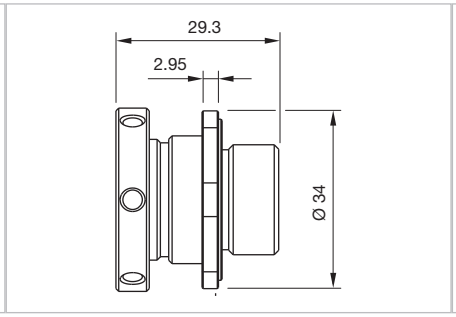
Dimensions [mm]
for Part No. 45-50D.1900



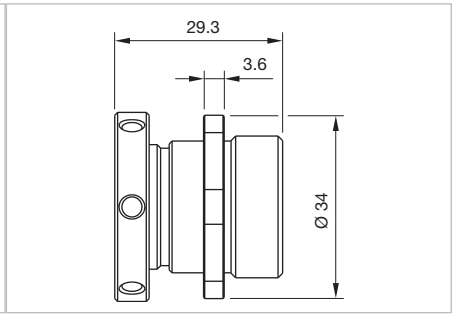
Dimensions [mm]
for Part No. 45-50E.1900



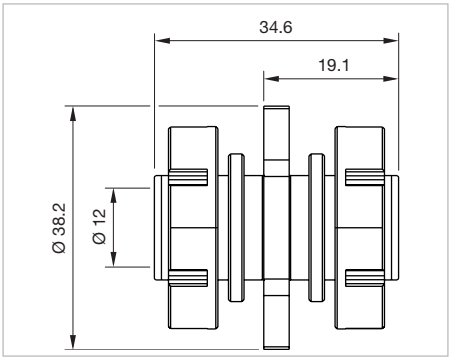
Dimensions [mm]
for Part No. 45-50C.2900



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



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

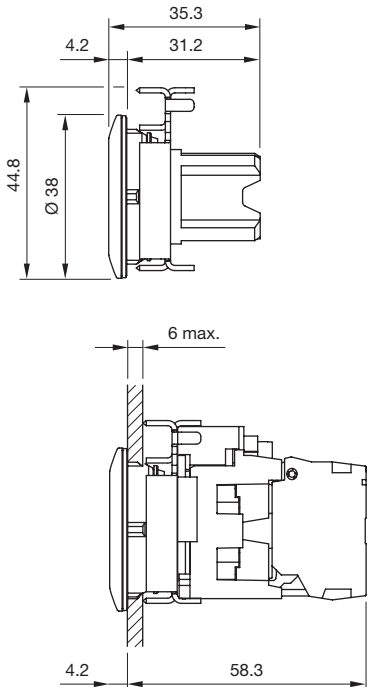


Dimensions [mm]
for Part No. 45-50F.2900

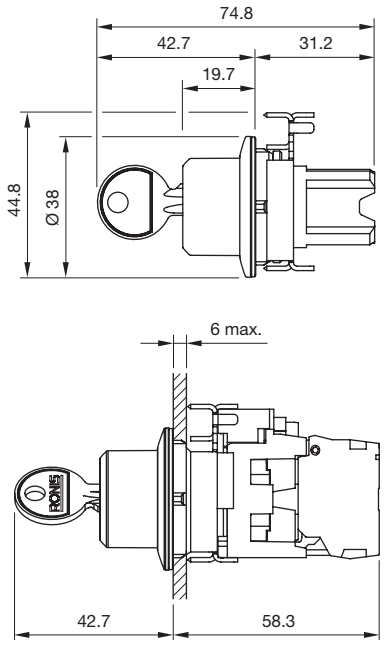
45 Drawings

Dimensions incl. mounting depth of 3 or 4 elements

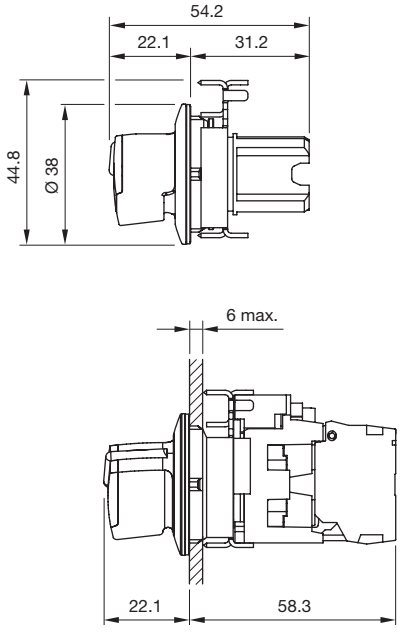
Indicator, Pushbutton, Illuminated pushbutton (flush design)



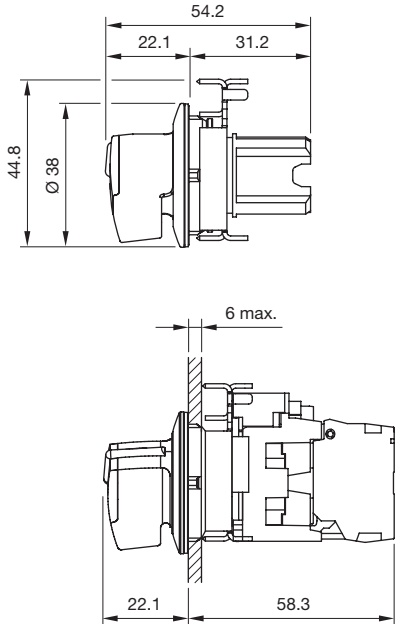
Keylock switch (flush design)



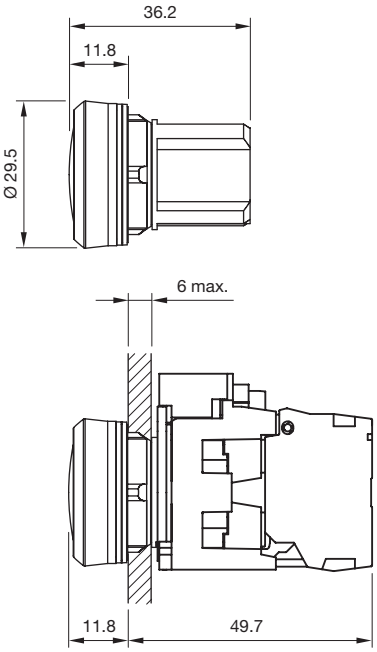
Selector switch short lever (flush design)



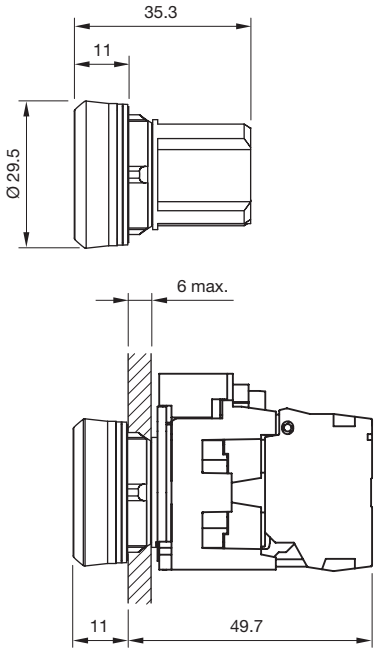
Selector switch long lever (flush design)



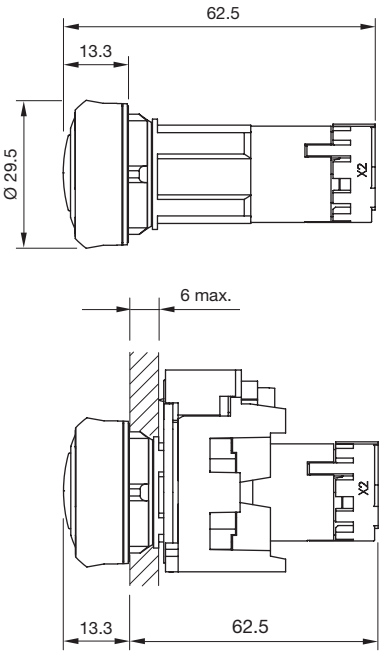
Indicator full face illumination (raised design)



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

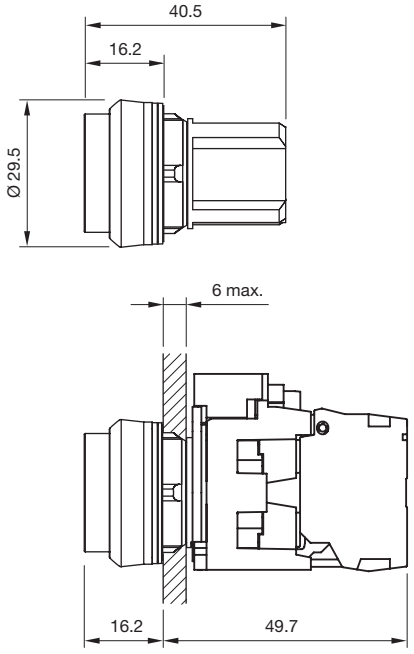


Buzzer

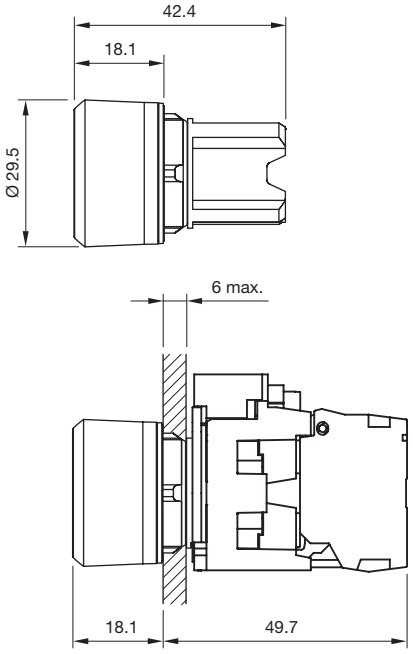


45 Drawings

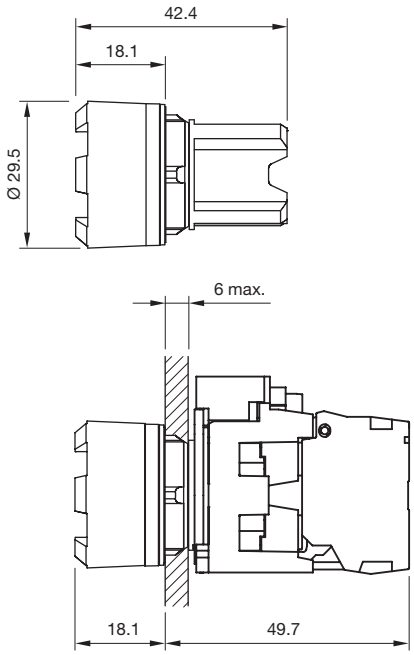
Pushbutton, Illuminated pushbutton, lens raised above front ring (raised design)



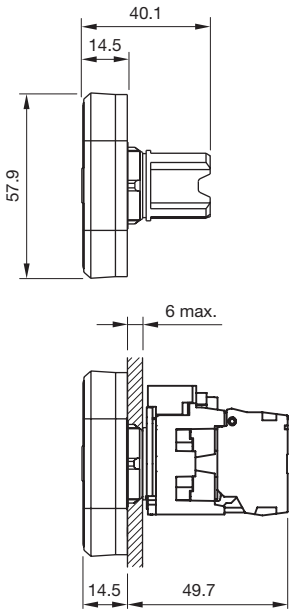
Pushbutton, lens lower than front ring (raised design)



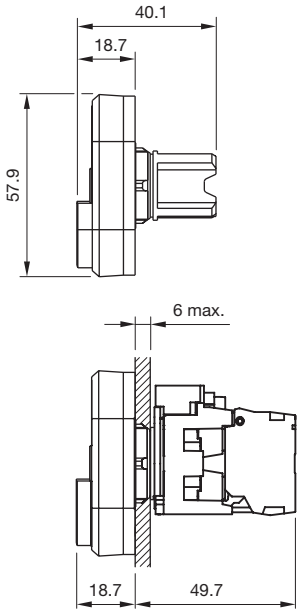
Pushbutton, Illuminated pushbutton, lens lower than front ring, with castellation (raised design)



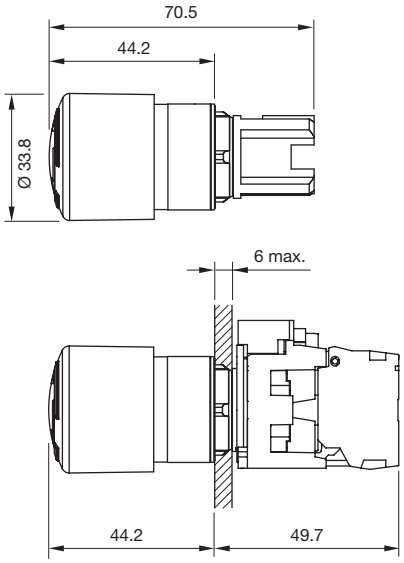
Double pushbutton, Lens level with front ring (raised design)



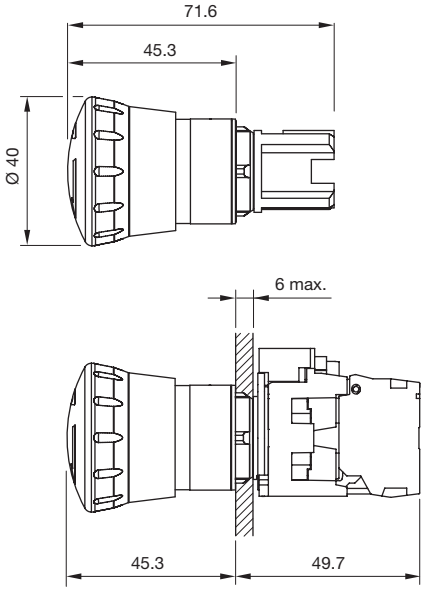
Double pushbutton, level with/raised above front ring (raised design)



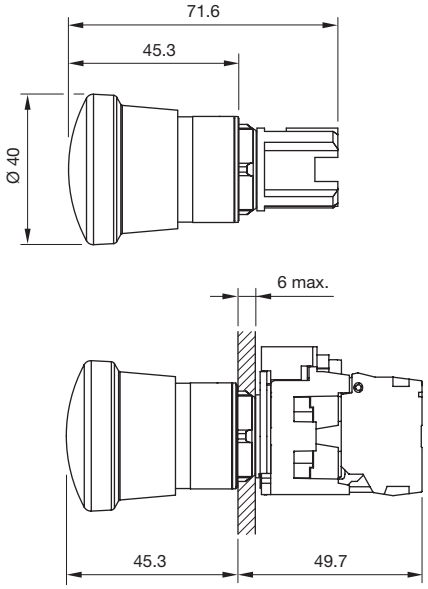
Emergency stop switch Ø 33.8 mm (raised design)



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

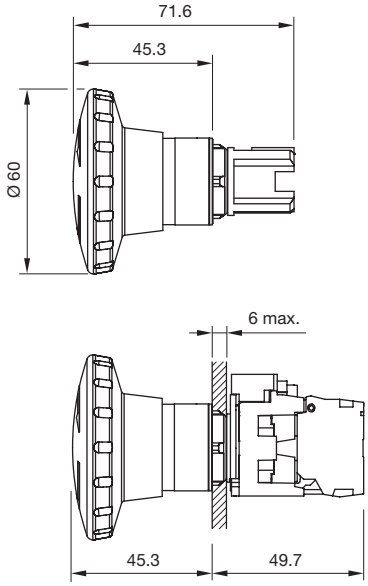


Emergency stop switch, Stop switch Ø 40 mm (raised design)

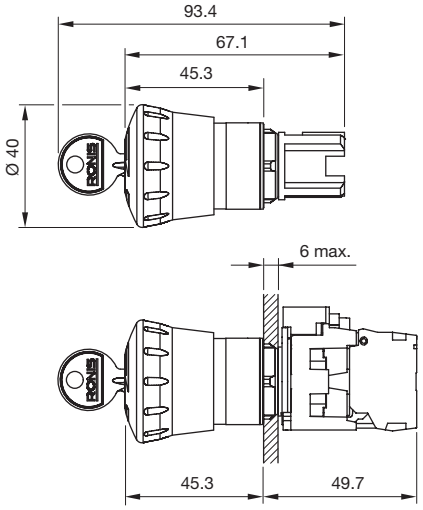


45 Drawings

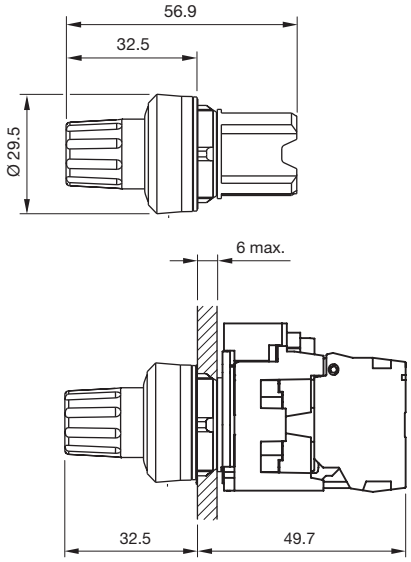
Emergency stop switch Ø 60 mm (raised design)



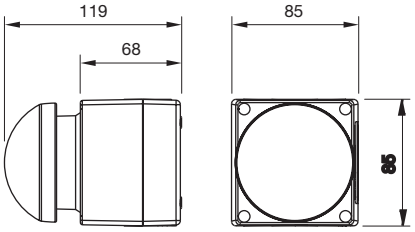
Emergency stop switch with key Ø 40 mm (raised design)



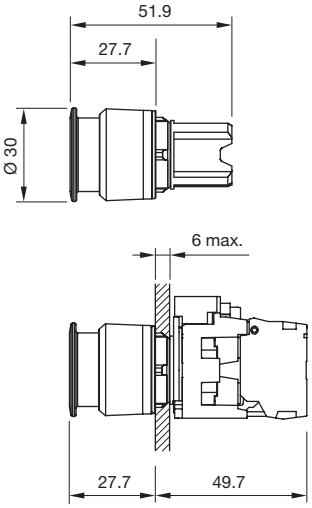
Stop switch Ø 29.5 mm (raised design)



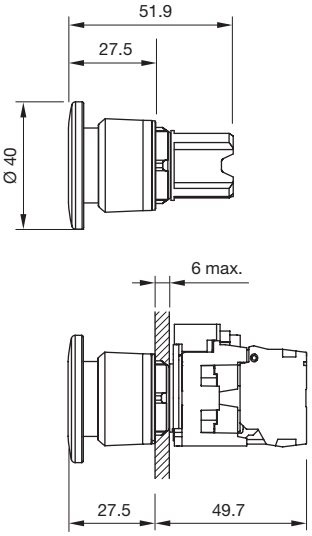
Palm switch



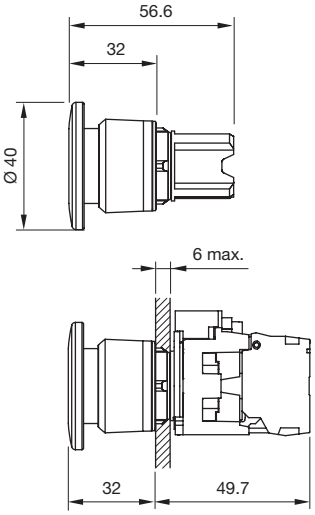
Mushroom-head pushbutton Ø 30 mm (raised design)



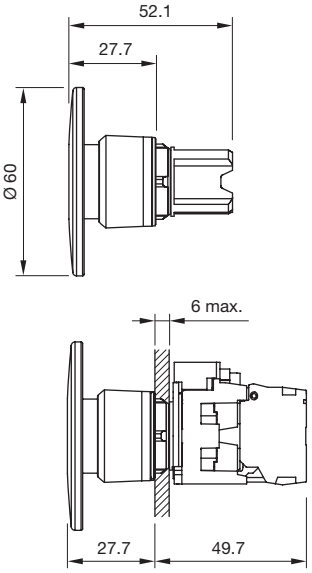
Mushroom-head pushbutton Momentary, Maintain, Ø 40 mm (raised design)



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

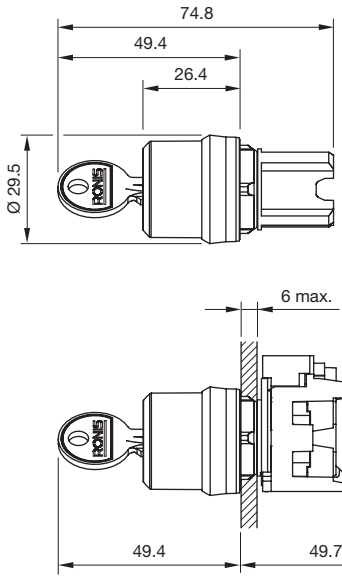


Mushroom-head pushbutton Ø 60 mm (raised design)

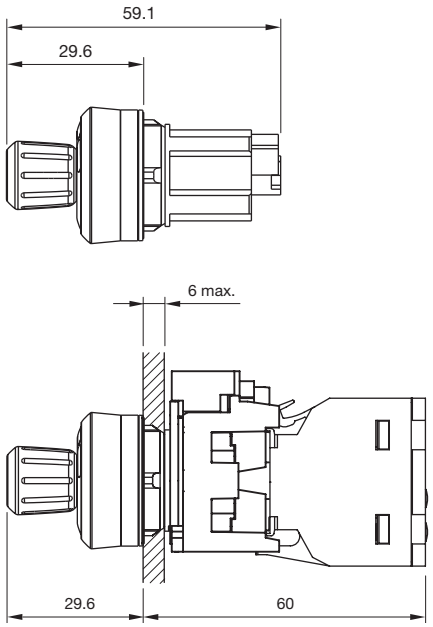


45 Drawings

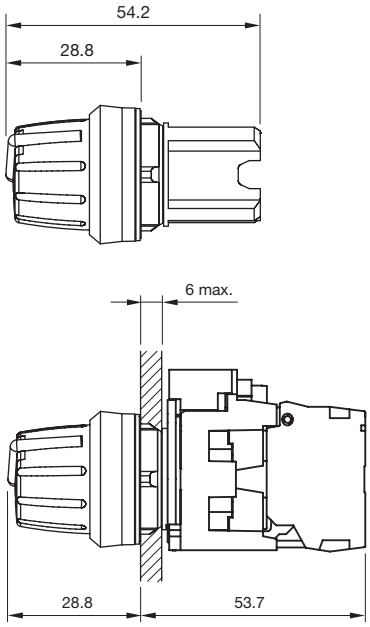
Keylock switch (raised design)



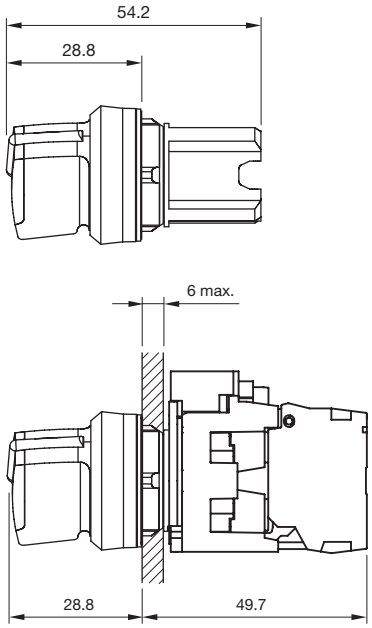
ID keylock switch (raised design)



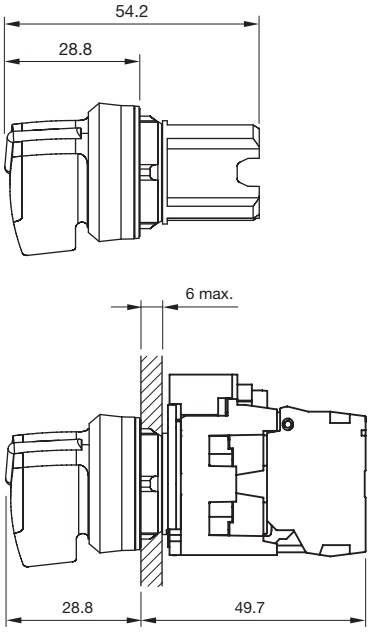
Selector switch, round lever (raised design)



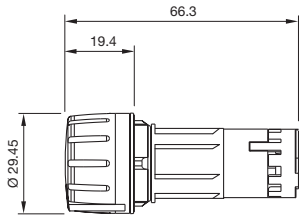
Selector switch, short lever (raised design)



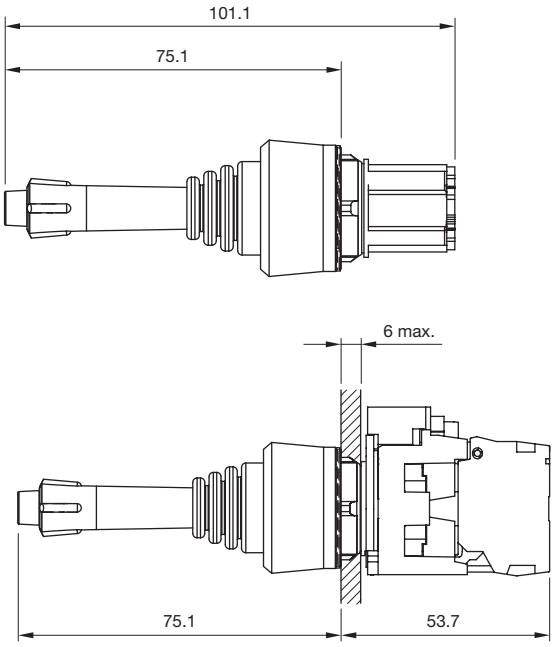
Selector switch, long lever (raised design)



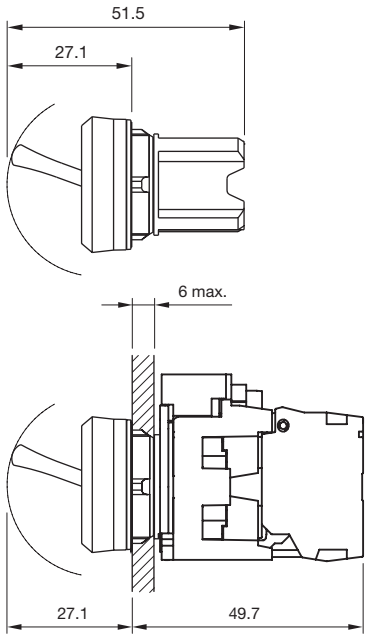
Potentiometer (raised design)



Toggle stick (raised design)



Toggle switch (raised design)



45 Technical data

Indicator actuator

Material

Actuator element
Plastic

Front ring
Plastic or metal

Actuator housing
Plastic or metal

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

Buzzer

Material

Actuator element
Plastic

Front bezel
Plastic or metal

Actuator housing
Plastic or metal

Mechanical characteristics

Terminal
Screw terminal
- Solid without end sleeves 2 x (1.0 … 1.5 mm^2)
- Solid with end sleeves 2 x (0.5 … 0.75 mm^2)
- Finely stranded without end sleeves 2 x (0.5 … 0.75 mm^2)
- Finely stranded with end sleeves 2 x (0.5 … 1.5 mm^2)
- For AWG cables for auxiliary contacts 2 x (18 … 14)

Tightening torque
Screw terminal 0.8 … 1 Nm

Electrical characteristics

Frequency (tone)
Approx. 2.4 kHz continuous tone only

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

Insulation voltage
Rated value 320 V

Pollution degree
3

Surge voltage resistance
Rated value 4 kV

Operating voltage
at AC
- Rated value 24 … 24 V

at DC
- Rated value 24 … 24 V

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP40

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

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

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

Pushbutton actuator

Material

Actuator element
Plastic

Front ring
Plastic or metal

Actuator housing
Plastic or metal

Mechanical characteristics

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

Mechanical lifetime
- Momentary 500000 cycles of operation
- Maintain 10000000 cycles of operation

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

45 Technical data

Double pushbutton actuator, Double pushbutton actuator illuminated

Material

Actuator element
Plastic

Front ring
Plastic or metal

Actuator housing
Plastic or metal

Mechanical characteristics

Operating frequency
max. 3 600 / h

Mechanical lifetime
2 000 000 cycles of operation

Ambient conditions

Operating temperature
– 25 °C … + 70 °C

Storage temperature
– 40 °C … + 80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

Illuminated pushbuton actuator

Material

Actuator element
Plastic

Front ring
Plastic or metal

Actuator housing
Plastic or metal

Mechanical characteristics

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

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

Ambient conditions

Operating temperature
– 25 °C … + 70 °C

Storage temperature
– 40 °C … + 80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

Emergency stop switch actuator

Material

Actuator element
Plastic red

Actuator housing
Plastic or metal

Mechanical characteristics

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

Operating frequency
Max. 600 / h

Mechanical lifetime
300 000 cycles of operation

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

Stop switch actuator

Material

Actuator element
Plastic red

Actuator housing
Plastic or metal

Mechanical characteristics

Type of unlocking device
Twist to release

Operating frequency
Max. 600 / h

Mechanical lifetime
300 000 cycles of operation

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

45 Technical data

Palm switch

Material

Actuator element
Plastic or metal, red or black

Actuator housing
Plastic or metal

Mechanical characteristics

Type of unlocking device
Pull to release

Electrical characteristics

Operating voltage
at AC
- Rated value 5 … 500 V

at DC
- Rated value 5 … 500 V

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

Mushroom-head pushbuton actuator

Material

Actuator element
Plastic

Front ring
Plastic or metal

Actuator housing
Plastic or metal

Mechanical characteristics

Type of unlocking device
Pull release

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

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

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

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

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

Protection degree
IP66, IP67, IP69K

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

Keylock switch actuator

Material

Actuator element
Metal

Front ring
Plastic or metal

Actuator housing
Plastic or metal

Mechanical characteristics

Operating frequency
Max. 1 800 / h

Mechanical lifetime
1 000 000 cycles of operation

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

ID keylock switch

Material

Actuator element
Plastic

Front ring
Plastic or metal

Actuator housing
Plastic

Mechanical characteristics

Terminals
Screw terminal front mounting
- Solid with end sleeves
  1 x (0.2 … 2.5 mm²), 2 x (0.2 … 0.75 mm²)
- Solid without end sleeves
  1 x (0.2 … 2.5 mm²), 2 x (0.2 … 0.75 mm²)
- Finely stranded with end sleeves
  1 x (0.2 … 2.5 mm²), 2 x (0.25 … 0.75 mm²)
- Finely stranded with end sleeves
  1 x (0.2 … 2.5 mm²), 2 x (0.2 … 0.75 mm²)
- For AWG cables
  1 x (24 … 14), (24 … 19)

Tightening torque
Screw terminal
0.35 … 0.4 Nm

Mechanical lifetime
100 000 cycles of operation

Number of NO contacts
5

ID-Key

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

Electrical characteristics

Operating voltage
24 VDC

45 Technical data

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP65

Climatic ambient conditions
During operation according to IEC 60721:
3M6, 3S2, 3B2, 3C3, 3K6 (with relative air humidity of 10 … 95 %)

Selector switch actuator

Material

Actuator element
Round lever, plastic, illuminable
Short lever, plastic, illuminable
Long lever, plastic, illuminable

Front ring
Plastic or metal

Actuator housing
Plastic or metal

Mechanical characteristics

Operating frequency
Max. 1 800 / h

Mechanical lifetime
1 000 000 cycles of operation

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

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

Turning frequency
Max. 1 800 / h

Mechanical lifetime
25 000 turning cycles

Slewing range
300°

Electrical characteristics

Active power consumption
0.5 W

Insulation voltage
Rated value 500 V

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP66, IP67, IP69K

Vibration resistance
according to IEC 60068-2-6
10 … 500 Hz: 5 g

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

Climatic ambient conditions
During operation according to IEC 60721:
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 cycles of operation per direction of actuation
Maintain: 100 000 cycles of operation per direction of actuation

Deflection angle
Max. 30°

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP65, IP67

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

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

Climatic ambient conditions
During operation according to IEC 60721:
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 cycles of operation

Ambient conditions

Operating temperature
– 25 °C … + 70 °C

Storage temperature
– 40 °C … + 80 °C

Protection degree
IP66, IP67, IP69K

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

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

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

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 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

Operating frequency
Max. 3 600 / h

Mechanical lifetime
10 000 000 cycles of operation

Electrical characteristics

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

Thermal current I_{th}
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

Switching voltage and switching current

at AC-12

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

at AC-15

Voltage	24 V	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

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP40 housing
IP20 terminal

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

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

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

Approvals

Approbations
CCC
CSA
UL

Declaration of conformity
CE

45 Technical data

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

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

Ambient conditions

Operating temperature
–25 °C … +70 °C

Storage temperature
–40 °C … +80 °C

Protection degree
IP20 terminal

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

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

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

Optical characteristics

Luminous intensity

Red	450 … 1120 mcd
Amber	450 … 1120 mcd
Yellow	900 … 1400 mcd
Green	900 … 1400 mcd
Blue	280 … 710 mcd
White	900 … 1400 mcd

Approvals

Approbations
CCC
CSA
UL

Declaration of conformity
CE

EAO reserves the right to alter specifications without further notice.

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

45 Marking

Symbols for marking plates

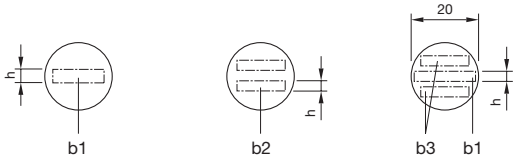
Graphic symbols are according to ISO 7000 or IEC 60417.

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	

Customised 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 27 mm

Example	Stop	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

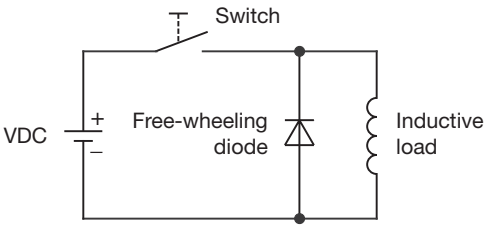
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e. g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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.

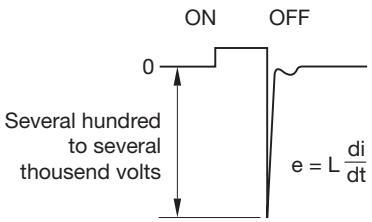
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (VR) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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