

Series 61

Comprehensive. Intuitive and versatile.

<https://eao.com/de/61>



61 Information about the Series

Key advantages

- Wide, modular Series
- Modern design
- Range of switching elements and ease of mounting
- Custom marking possible
- Internationally recognised and approved series

Typical application areas

- Machinery
- Measurement and control engineering
- Process engineering (air conditioning systems and heating technology)
- Public transportation
- Laboratory instruments

Functions

- Pushbutton
- Illuminated pushbutton
- Mushroom-head pushbutton
- Selector switch
- Keylock switch
- Indicator
- Buzzer
- Potentiometer
- Stop switch
- Emergency stop switch

Design

- Flush
- Raised

IP front protection

- IP65
- IP66/IP67/IP69K (Emergency Stop)

Mounting cut-outs

- Ø 16.2 mm
- Ø 22.3 mm
- 21.2 mm x 21.2 mm
- 21.2 mm x 27.2 mm

Ratings

- 42 VAC (100 mA)
- ≤250 VAC (5 A)

Terminal

- Soldering terminal
- Screw terminal
- PCB (with PCB plug-in base)
- Cable

Lens Material

- Aluminium
- Plastic

Markings

- Engraving
- Laser marking
- Hot stamping
- Film insert/marketing plate
- Pad printing
- Screen print

Approvals

- CB (IEC 61058)
- CB (IEC 60947)
- CSA
- ENEC (EN 61058)
- CQC
- CENELEC (IEC 60947-5-1)
- DNV
- GOST
- UL
- NFF
- VDE
- EAC

Conformities

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



Flush design

| | |
|--|-----|
| Pushbutton round | 693 |
| Illuminated pushbutton square | 694 |
| Illuminated pushbutton rectangular | 695 |
| Illuminated pushbutton round | 696 |
| Mushroom-head pushbutton | 697 |
| Selector switch 2 positions square | 698 |
| Selector switch 2 positions round | 699 |
| Selector switch 3 positions square | 700 |
| Selector switch 3 positions round | 702 |
| Keylock switch 2 positions square | 704 |
| Keylock switch 2 positions rectangular | 705 |
| Keylock switch 2 positions round | 706 |
| Keylock switch 3 positions square | 708 |
| Keylock switch 3 positions rectangular | 710 |
| Keylock switch 3 positions round | 712 |
| Indicator with lamp element square | 714 |
| Indicator with lamp element rectangular | 715 |
| Indicator with lamp element round | 716 |
| Indicator without lamp element square | 717 |
| Indicator without lamp element rectangular | 718 |
| Indicator without lamp element round | 719 |
| Buzzer | 720 |
| Potentiometer square | 721 |
| Potentiometer round | 723 |

Raised design

| | |
|---|-----|
| Illuminated pushbutton square | 725 |
| Illuminated pushbutton square | 726 |
| Illuminated pushbutton rectangular | 727 |
| Illuminated pushbutton round | 728 |
| Illuminated pushbutton without front bezel round | 729 |
| Mushroom-head pushbutton | 730 |
| Selector switch 2 positions square | 731 |
| Selector switch 2 positions round | 732 |
| Selector switch 3 positions square | 733 |
| Selector switch 3 positions round | 735 |
| Keylock switch 2 positions square | 737 |
| Keylock switch 2 positions rectangular | 738 |
| Keylock switch 2 positions round | 739 |
| Keylock switch 3 positions square | 740 |
| Keylock switch 3 positions rectangular | 742 |
| Keylock switch 3 positions round | 744 |
| Indicator with lamp element square | 746 |
| Indicator with lamp element rectangular | 747 |
| Indicator with lamp element round, Ø 18 mm | 748 |
| Indicator without front bezel round, Ø 24 mm | 749 |
| Indicator without lamp element square | 750 |
| Indicator without lamp element rectangular | 751 |
| Indicator without lamp element round | 752 |
| Indicator without front bezel round | 753 |
| Stop switch | 754 |
| Emergency stop switch compact, foolprof, EN IEC 60947-5-5 | 755 |

61 Index

| | |
|------------------------|-----|
| Raised design | |
| Emergency stop switch | 758 |
| Components | 759 |
| Accessories | 777 |
| Technical data | 787 |
| Marking | 794 |
| Application guidelines | 797 |

Pushbutton round, IP65

Equipment consisting of (schematic overview)



Lens

Page 759



Actuator



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut

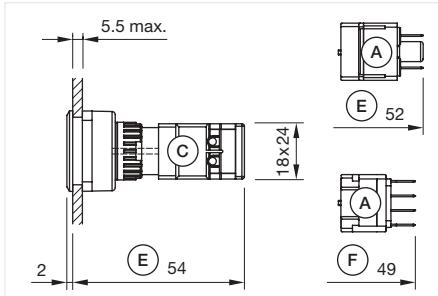


Switching element

Page 767

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

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



Product can differ from the current configuration.

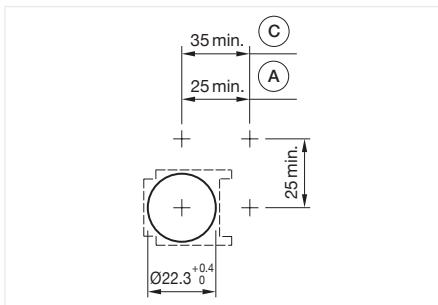
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal



Actuator, Front dimension Ø 25 mm

| Switching action | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | | 61-1100.0 | 72 |
| Maintained | Black | Plastic | | 61-1200.0 | 73 |
| Maintained or momentary | Black | Plastic | Convertible from momentary to maintained action | 61-1300.0 | 72 |

Wiring diagrams

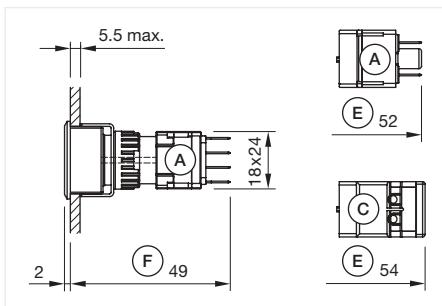
| | |
|-------------------|-------------------|
| | |
| Wiring diagram 72 | Wiring diagram 73 |

61 Flush design

Illuminated pushbutton square, IP65



Product can differ from the current configuration.



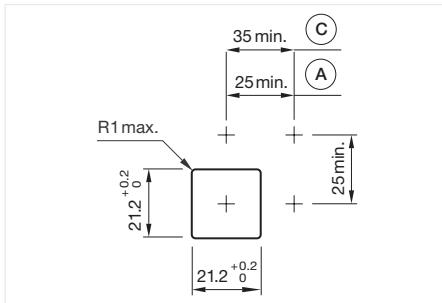
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



Actuator

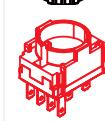


Front bezel set

Page 763



Fixing nut



Switching element

Page 767

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 24 mm x 24 mm

| Switching action | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | | 61-1100.0 | 72 |
| Maintained | Black | Plastic | | 61-1200.0 | 73 |
| Maintained or momentary | Black | Plastic | Convertible from momentary to maintained action | 61-1300.0 | 72 |

Wiring diagrams

| | |
|-------------------|-------------------|
| | |
| Wiring diagram 72 | Wiring diagram 73 |

Illuminated pushbutton rectangular, IP65

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



Actuator

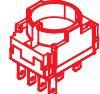


Front bezel set

Page 763



Fixing nut

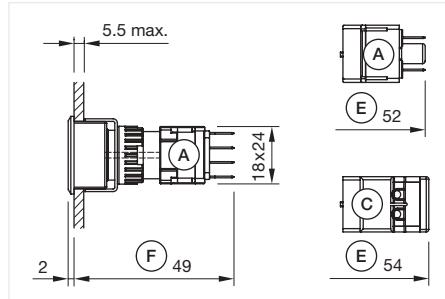


Switching element

Page 767

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

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



Product can differ from the current configuration.

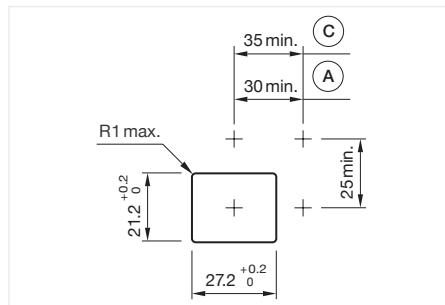
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal



Actuator, Front dimension 30 mm x 24 mm

| Switching action | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | | 61-1100.0 | 72 |
| Maintained | Black | Plastic | | 61-1200.0 | 73 |
| Maintained or momentary | Black | Plastic | Convertible from momentary to maintained action | 61-1300.0 | 72 |

Wiring diagrams

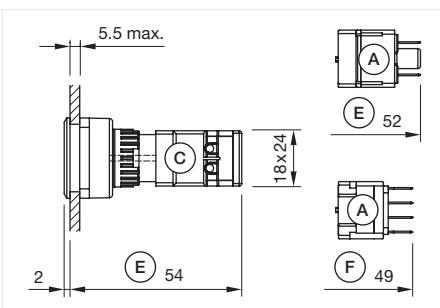
| | |
|-------------------|-------------------|
| | |
| Wiring diagram 72 | Wiring diagram 73 |

61 Flush design

Illuminated pushbutton round, IP65



Product can differ from the current configuration.



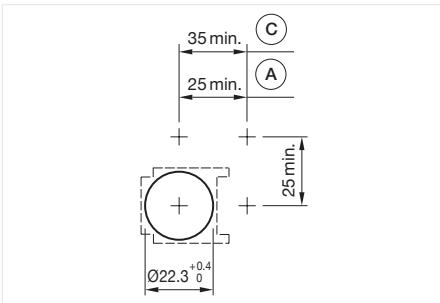
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



Actuator



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut



Switching element

Page 767

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 25 mm

| Switching action | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | | 61-1100.0 | 72 |
| Maintained | Black | Plastic | | 61-1200.0 | 73 |
| Maintained or momentary | Black | Plastic | Convertible from momentary to maintained action | 61-1300.0 | 72 |

Wiring diagrams

| | |
|-------------------|-------------------|
| | |
| Wiring diagram 72 | Wiring diagram 73 |

Mushroom-head pushbutton, IP65

Equipment consisting of (schematic overview)



Lens

Page 759



Actuator



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut

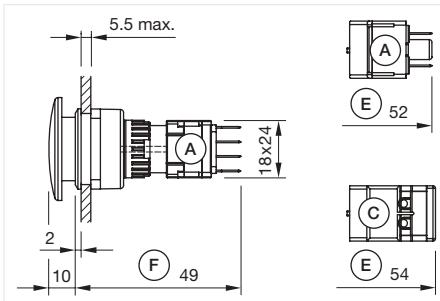


Switching element

Page 767

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

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



Product can differ from the current configuration.

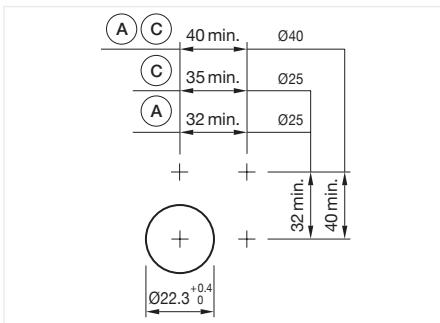
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

C = Screw terminal



Actuator, Front dimension Ø 32 mm

| Switching action | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | | 61-1100.0 | 72 |
| Maintained | Black | Plastic | | 61-1200.0 | 73 |
| Maintained or momentary | Black | Plastic | Convertible from momentary to maintained action | 61-1300.0 | 72 |

Wiring diagrams

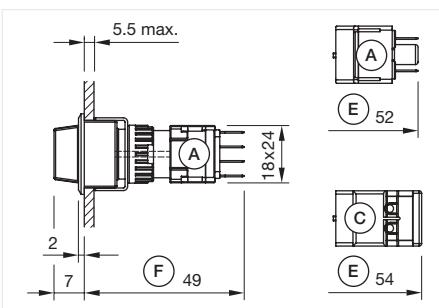
| | |
|-------------------|-------------------|
| | |
| Wiring diagram 72 | Wiring diagram 73 |

61 Flush design

Selector switch 2 positions square, IP65



Product can differ from the current configuration.



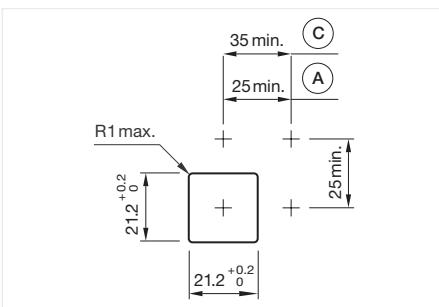
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Lever

Page 762



LED

Page 765



Actuator



Front bezel set

Page 763



Fixing nut

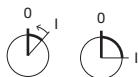


Switching element

Page 767

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

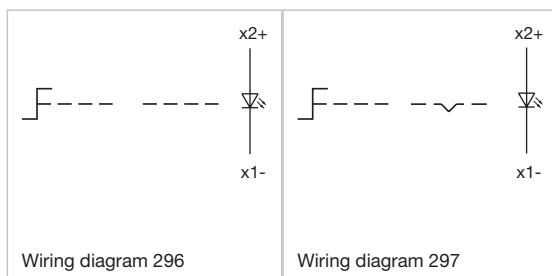
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension 24 mm x 24 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|-------------------|-----------------|--------------------|-----------|----------------|
| Rest - Momentary | 42° right | Illuminative | 61-4110.0 | 296 |
| Rest - Maintained | 90° right | Illuminative | 61-4210.0 | 297 |

Wiring diagrams



Wiring diagram 296

Wiring diagram 297

Selector switch 2 positions round, IP65

Equipment consisting of (schematic overview)



Lever

Page 762



LED

Page 765



Actuator

Page 763



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut

Page 767

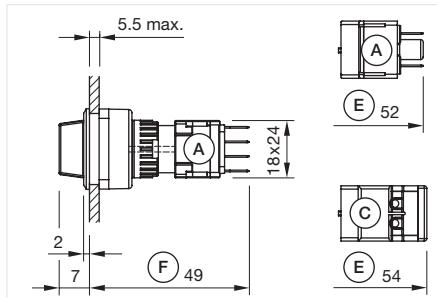


Switching element

Page 767

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

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



Product can differ from the current configuration.

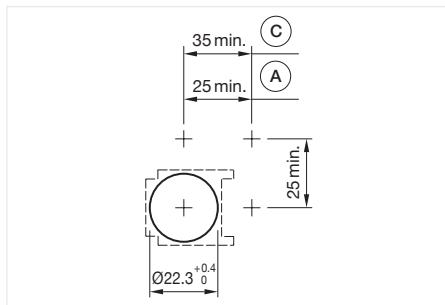
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



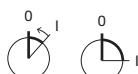
General information

- When using the anti-twist ring, the maximum permitted panel thickness is reduced by 1.5 mm

Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

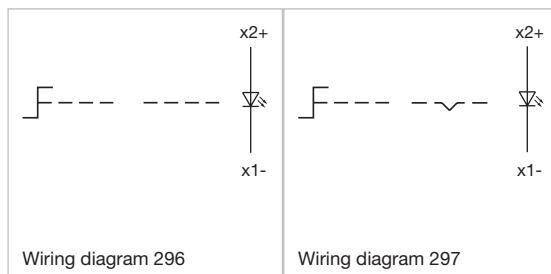
C = Screw terminal



Actuator, Front dimension Ø 25 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|-------------------|-----------------|--------------------|-----------|----------------|
| Rest - Momentary | 42° right | Illuminative | 61-4110.0 | 296 |
| Rest - Maintained | 90° right | Illuminative | 61-4210.0 | 297 |

Wiring diagrams

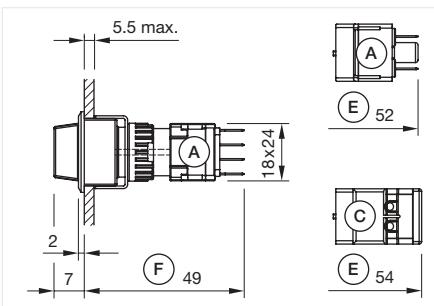


61 Flush design

Selector switch 3 positions square, IP65



Product can differ from the current configuration.



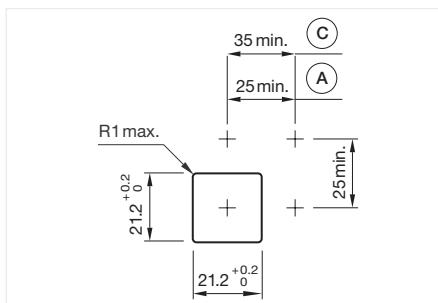
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Lever

Page 762



LED

Page 765



Actuator



Front bezel set

Page 763



Fixing nut

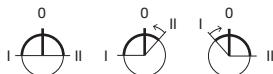


Switching element

Page 771

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

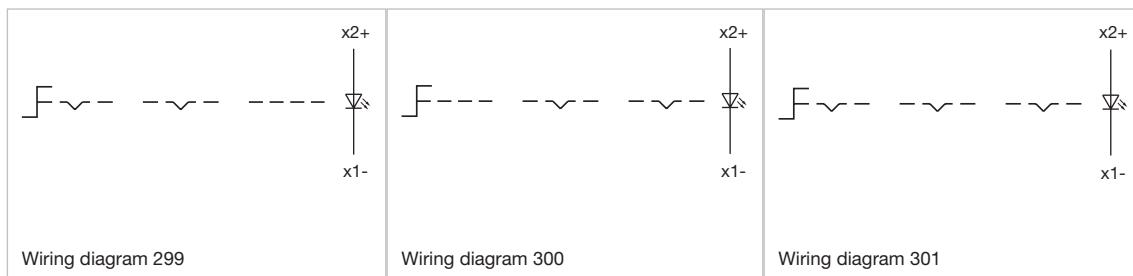
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension 24 mm x 24 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--------------------------------|----------------------|--------------------|-----------|----------------|
| Maintained - Rest - Maintained | 90° left / 90° right | Illuminative | 61-4610.0 | 301 |
| Momentary - Rest - Maintained | 42° left / 90° right | Illuminative | 61-4710.0 | 300 |
| Maintained - Rest - Momentary | 90° left / 42° right | Illuminative | 61-4810.0 | 299 |

Wiring diagrams





Comprehensive, intuitive and versatile.
The tried-and-tested EAO Series 61.

A versatile and modern range for complex industrial applications.

- Wide, modular series
- Modern design
- Ease of mounting
- Custom marking possible
- Internationally recognised and approved series

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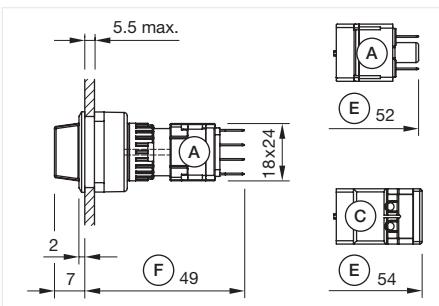
Your Expert Partner for Human Machine Interfaces

61 Flush design

Selector switch 3 positions round, IP65



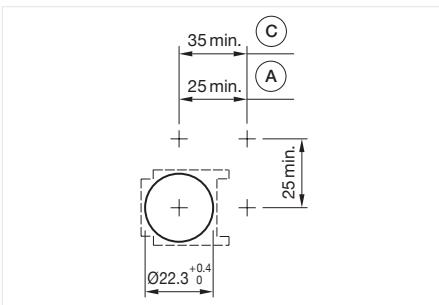
Product can differ from the current configuration.



General information

- When using the anti-twist ring, the maximum permitted panel thickness is reduced by 1.5 mm

Dimensions [mm]
 A = Plug-in terminal 2.8 mm x 0.5 mm
 C = Screw terminal
 E = Slow-make switching element
 F = Snap-action switching element



Mounting cut-outs [mm]
 A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
 C = Screw terminal

Equipment consisting of (schematic overview)



Lever

Page 762



LED

Page 765



Actuator



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut

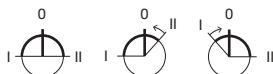


Switching element

Page 771

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

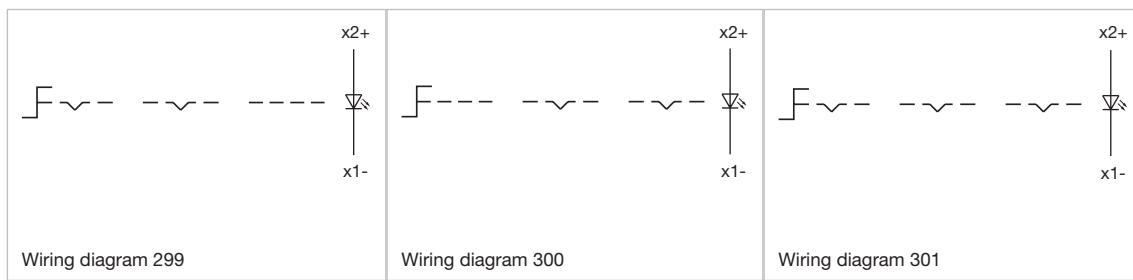
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 25 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--------------------------------|----------------------|--------------------|-----------|----------------|
| Maintained - Rest - Maintained | 90° left / 90° right | Illuminative | 61-4610.0 | 301 |
| Momentary - Rest - Maintained | 42° left / 90° right | Illuminative | 61-4710.0 | 300 |
| Maintained - Rest - Momentary | 90° left / 42° right | Illuminative | 61-4810.0 | 299 |

Wiring diagrams





Comprehensive, intuitive and versatile.
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A versatile and modern range for complex industrial applications.

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- Modern design
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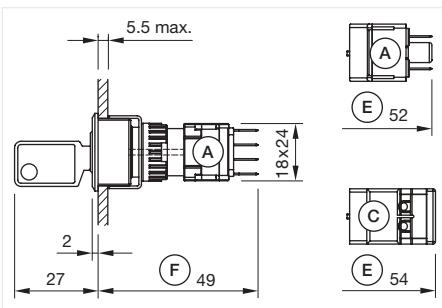
Your Expert Partner for Human Machine Interfaces

61 Flush design

Keylock switch 2 positions square, IP65



Product can differ from the current configuration.



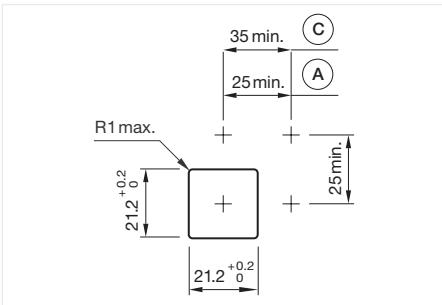
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element

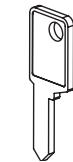


Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Front bezel set

Page 763



Fixing nut



Switching element

Page 767

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.

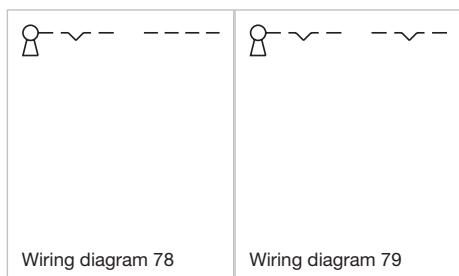


Actuator, Front dimension 24 mm x 24 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|---------------------------|-----------------|------------------------|-------------|----------------|
| Rest (a) - Momentary | 42° right | Standard lock: DOM 311 | 61-2101.0/D | 78 |
| Rest (a) - Maintained | 90° right | Standard lock: DOM 311 | 61-2201.0/D | 79 |
| Rest - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2203.0/D | 79 |
| Rest (a) - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2205.0/D | 79 |

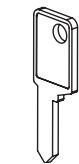
a = Key remove

Wiring diagrams



Keylock switch 2 positions rectangular, IP65

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Front bezel set

Page 763



Fixing nut

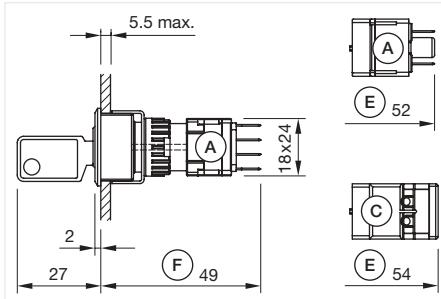


Switching element

Page 767

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

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



Product can differ from the current configuration.

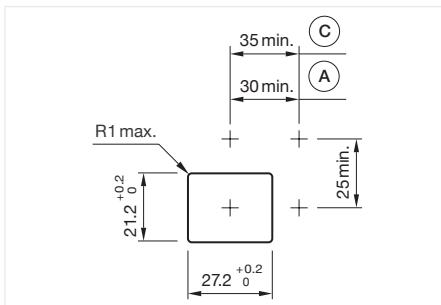
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

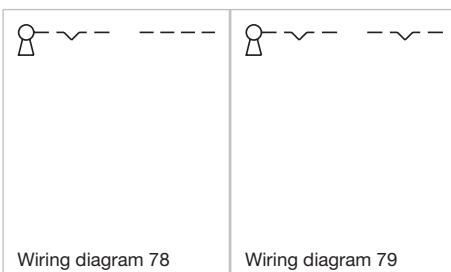


Actuator, Front dimension 30 mm x 24 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|---------------------------|-----------------|------------------------|-------------|----------------|
| Rest (a) - Momentary | 42° right | Standard lock: DOM 311 | 61-2101.0/D | 78 |
| Rest (a) - Maintained | 90° right | Standard lock: DOM 311 | 61-2201.0/D | 79 |
| Rest - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2203.0/D | 79 |
| Rest (a) - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2205.0/D | 79 |

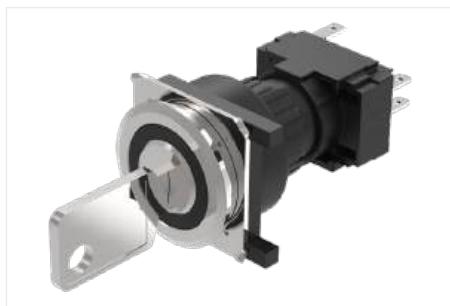
a = Key remove

Wiring diagrams

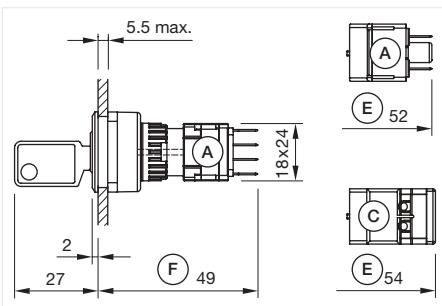


61 Flush design

Keylock switch 2 positions round, IP65



Product can differ from the current configuration.

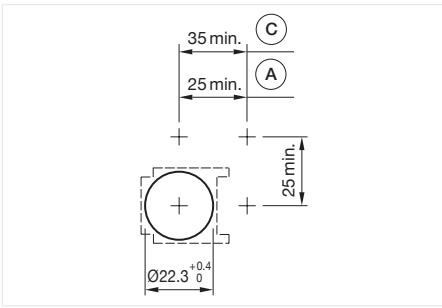


Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm
C = Screw terminal
E = Slow-make switching element
F = Snap-action switching element

General information

- When using the anti-twist ring, the maximum permitted panel thickness is reduced by 1.5 mm



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
C = Screw terminal

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut

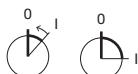


Switching element

Page 767

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.

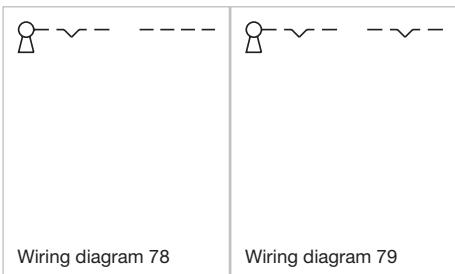


Actuator, Front dimension Ø 25 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|---------------------------|-----------------|------------------------|-------------|----------------|
| Rest (a) - Momentary | 42° right | Standard lock: DOM 311 | 61-2101.0/D | 78 |
| Rest (a) - Maintained | 90° right | Standard lock: DOM 311 | 61-2201.0/D | 79 |
| Rest - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2203.0/D | 79 |
| Rest (a) - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2205.0/D | 79 |

a = Key remove

Wiring diagrams



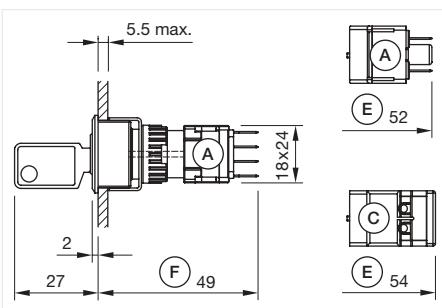
[On our website you can download technical data, assembly instructions, catalogs, brochures and much more.](http://www.eao.com/downloads)

61 Flush design

Keylock switch 3 positions square, IP65



Product can differ from the current configuration.



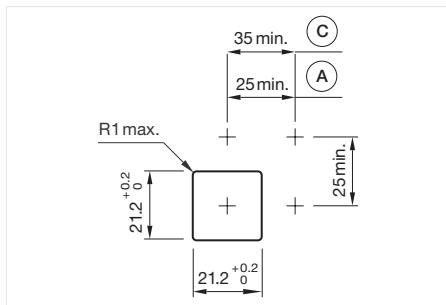
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element

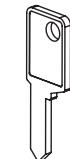


Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Front bezel set

Page 763



Fixing nut

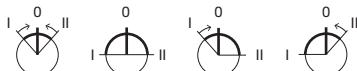


Switching element

Page 771

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 24 mm x 24 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--|----------------------|------------------------|-------------|----------------|
| Momentary - Rest (a) - Momentary | 42° left / 42° right | Standard lock: DOM 311 | 61-2501.0/D | 82 |
| Maintained - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2601.0/D | 83 |
| Maintained (a) - Rest - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2602.0/D | 83 |
| Maintained - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2603.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2604.0/D | 83 |
| Maintained - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2605.0/D | 83 |
| Maintained (a) - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2606.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2607.0/D | 83 |
| Momentary - Rest (a) - Maintained | 42° left / 90° right | Standard lock: DOM 311 | 61-2701.0/D | 80 |
| Momentary - Rest (a) - Maintained (a) | 42° left / 90° right | Standard lock: DOM 311 | 61-2705.0/D | 80 |
| Maintained - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2801.0/D | 81 |
| Maintained (a) - Rest - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2802.0/D | 81 |
| Maintained (a) - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2804.0/D | 81 |

a = Key remove

Wiring diagrams

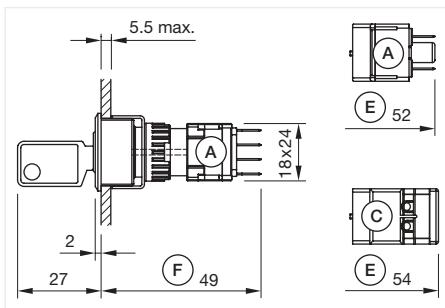
| | | | |
|---|---|--|---|
|  |  |  |  |
| Wiring diagram 80 | Wiring diagram 81 | Wiring diagram 82 | Wiring diagram 83 |

61 Flush design

Keylock switch 3 positions rectangular, IP65



Product can differ from the current configuration.



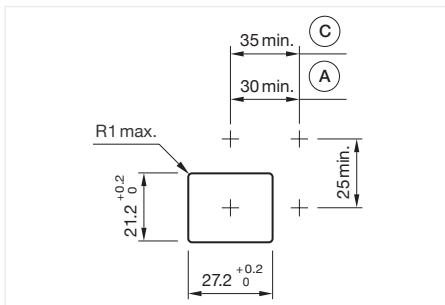
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element

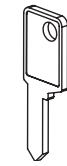


Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Front bezel set

Page 763



Fixing nut

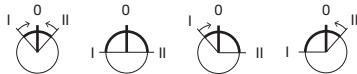


Switching element

Page 771

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 30 mm x 24 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--|----------------------|------------------------|-------------|----------------|
| Momentary - Rest (a) - Momentary | 42° left / 42° right | Standard lock: DOM 311 | 61-2501.0/D | 82 |
| Maintained - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2601.0/D | 83 |
| Maintained (a) - Rest - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2602.0/D | 83 |
| Maintained - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2603.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2604.0/D | 83 |
| Maintained - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2605.0/D | 83 |
| Maintained (a) - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2606.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2607.0/D | 83 |
| Momentary - Rest (a) - Maintained | 42° left / 90° right | Standard lock: DOM 311 | 61-2701.0/D | 80 |
| Momentary - Rest (a) - Maintained (a) | 42° left / 90° right | Standard lock: DOM 311 | 61-2705.0/D | 80 |
| Maintained - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2801.0/D | 81 |
| Maintained (a) - Rest - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2802.0/D | 81 |
| Maintained (a) - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2804.0/D | 81 |

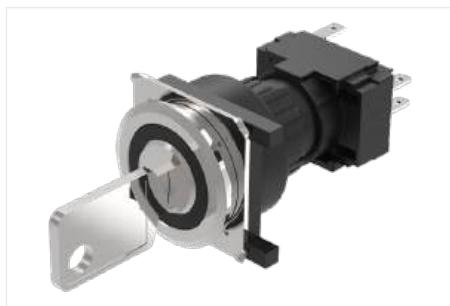
a = Key remove

Wiring diagrams

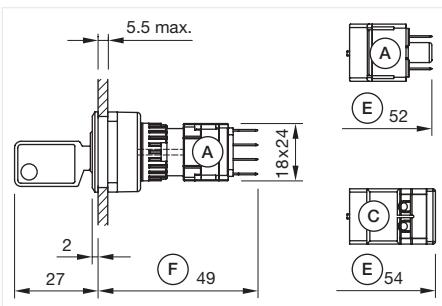
| | | | |
|---|---|--|---|
|  |  |  |  |
| Wiring diagram 80 | Wiring diagram 81 | Wiring diagram 82 | Wiring diagram 83 |

61 Flush design

Keylock switch 3 positions round, IP65



Product can differ from the current configuration.

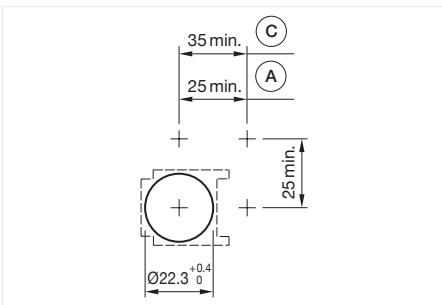


Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm
C = Screw terminal
E = Slow-make switching element
F = Snap-action switching element

General information

- When using the anti-twist ring, the maximum permitted panel thickness is reduced by 1.5 mm



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
C = Screw terminal

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut

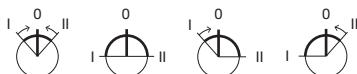


Switching element

Page 771

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.

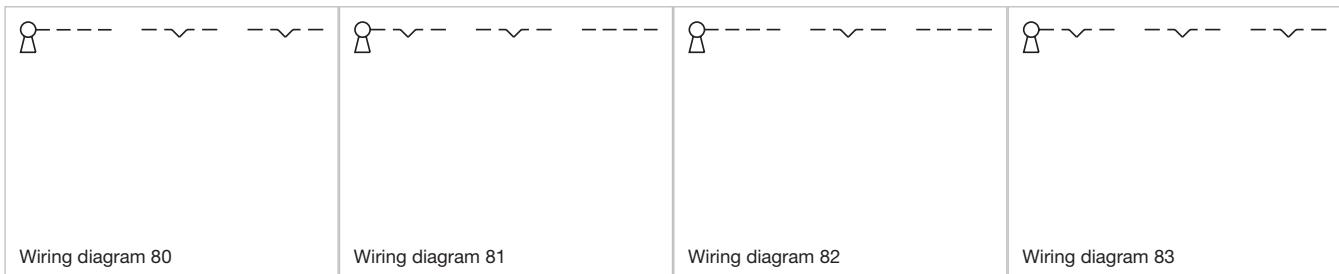


Actuator, Front dimension Ø 25 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--|----------------------|------------------------|-------------|----------------|
| Momentary - Rest (a) - Momentary | 42° left / 42° right | Standard lock: DOM 311 | 61-2501.0/D | 82 |
| Maintained - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2601.0/D | 83 |
| Maintained (a) - Rest - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2602.0/D | 83 |
| Maintained - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2603.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2604.0/D | 83 |
| Maintained - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2605.0/D | 83 |
| Maintained (a) - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2606.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2607.0/D | 83 |
| Momentary - Rest (a) - Maintained | 42° left / 90° right | Standard lock: DOM 311 | 61-2701.0/D | 80 |
| Momentary - Rest (a) - Maintained (a) | 42° left / 90° right | Standard lock: DOM 311 | 61-2705.0/D | 80 |
| Maintained - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2801.0/D | 81 |
| Maintained (a) - Rest - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2802.0/D | 81 |
| Maintained (a) - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2804.0/D | 81 |

a = Key remove

Wiring diagrams



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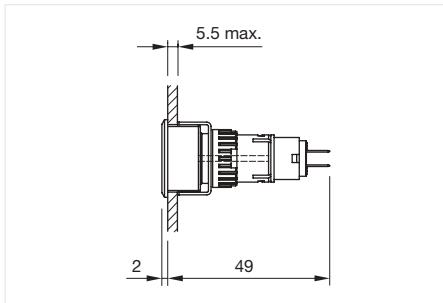
e a o

61 Flush design

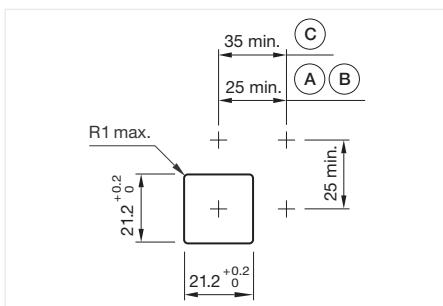
Indicator with lamp element square, IP65



Product can differ from the current configuration.



Dimensions [mm]



Mounting cut-outs [mm]
A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
B = Solder terminal
C = Screw terminal

Equipment consisting of (schematic overview)



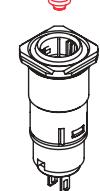
Lens

Page 759



LED

Page 765



Actuator



Front bezel set

Page 763



Fixing nut

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

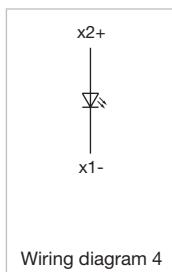
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension 24 mm x 24 mm

| Terminal | Part No. | Wiring diagram |
|------------------|------------|----------------|
| Plug-in terminal | 61-0000.02 | 4 |

Wiring diagrams



Wiring diagram 4

Indicator with lamp element rectangular, IP65

Equipment consisting of (schematic overview)



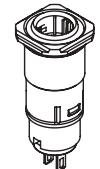
Lens

Page 759



LED

Page 765



Actuator



Front bezel set

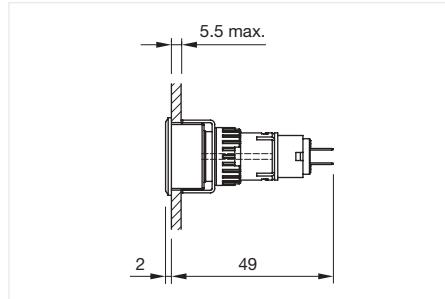
Page 763



Fixing nut

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

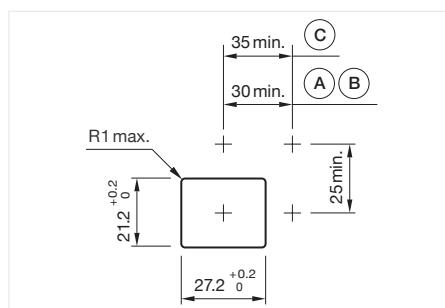
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

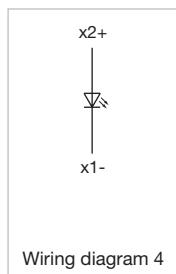
C = Screw terminal



Actuator, Front dimension 30 mm x 24 mm

| Terminal | Part No. | Wiring diagram |
|------------------|------------|----------------|
| Plug-in terminal | 61-0000.02 | 4 |

Wiring diagrams



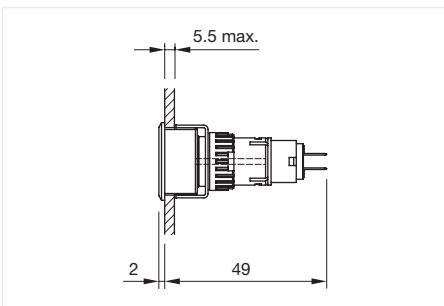
Wiring diagram 4

61 Flush design

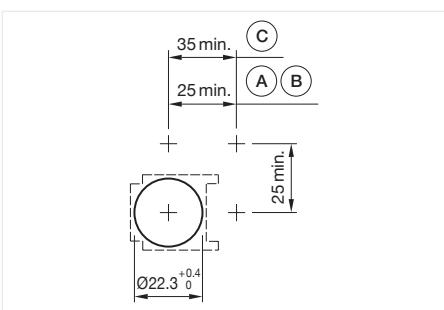
Indicator with lamp element round, IP65



Product can differ from the current configuration.



Dimensions [mm]



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

C = Screw terminal

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



Actuator



Front bezel set

Page 763



Anti-twist ring

Page 776



Fixing nut

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

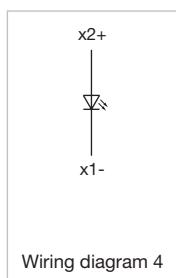
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 25 mm

| Terminal | Part No. | Wiring diagram |
|------------------|------------|----------------|
| Plug-in terminal | 61-0000.02 | 4 |

Wiring diagrams



Wiring diagram 4

Indicator without lamp element square, IP65

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



Actuator

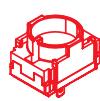


Front bezel set

Page 763



Fixing nut

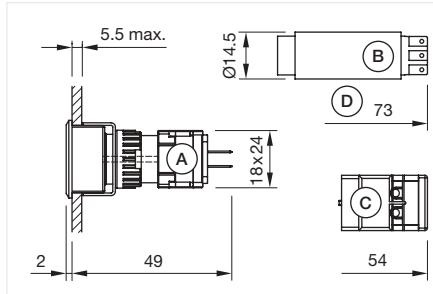


Lamp element

Page 775

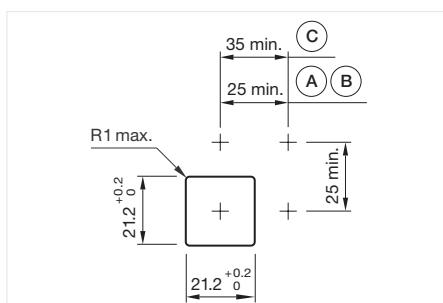
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Product can differ from the current configuration.

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



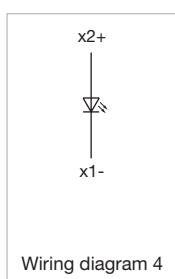
Mounting cut-outs [mm]
 A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
 B = Solder terminal
 C = Screw terminal



Actuator, Front dimension 24 mm x 24 mm

| Housing material | Part No. | Wiring diagram |
|------------------|-----------|----------------|
| Plastic | 61-0009.0 | 4 |

Wiring diagrams



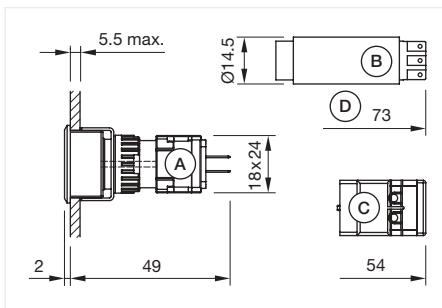
Wiring diagram 4

61 Flush design

Indicator without lamp element rectangular, IP65



Product can differ from the current configuration.



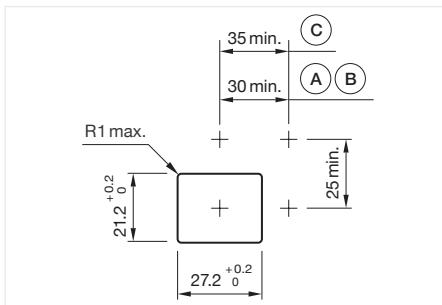
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

C = Screw terminal

D = Flasher



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

C = Screw terminal

Equipment consisting of (schematic overview)



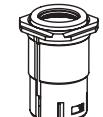
Lens

Page 759



LED

Page 765



Actuator

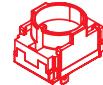


Front bezel set

Page 763



Fixing nut



Lamp element

Page 775

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

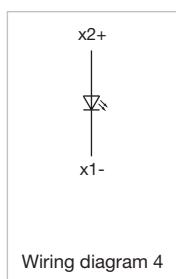
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension 30 mm x 24 mm

| Housing material | Part No. | Wiring diagram |
|------------------|-----------|----------------|
| Plastic | 61-0009.0 | 4 |

Wiring diagrams



Indicator without lamp element round, IP65

Equipment consisting of (schematic overview)



Lens Page 759



LED Page 765



Actuator



Front bezel set Page 763



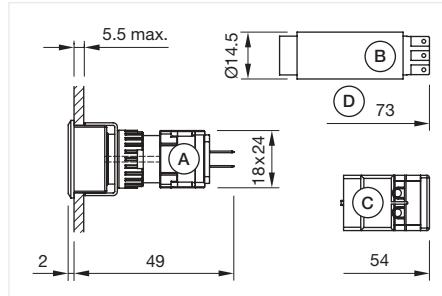
Anti-twist ring Page 776



Fixing nut

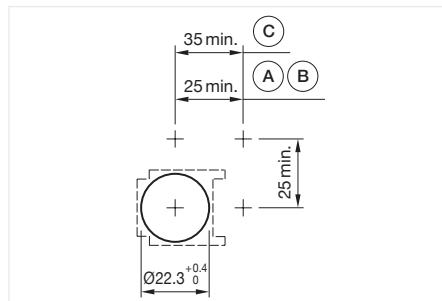


Lamp element Page 775



Product can differ from the current configuration.

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



Mounting cut-outs [mm]
 A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
 B = Solder terminal
 C = Screw terminal

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

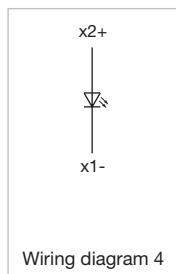
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 25 mm

| Housing material | Part No. | Wiring diagram |
|------------------|-----------|----------------|
| Plastic | 61-0009.0 | 4 |

Wiring diagrams



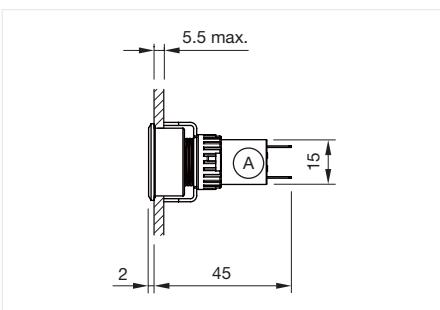
Wiring diagram 4

61 Flush design

Buzzer

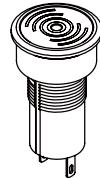


Product can differ from the current configuration.

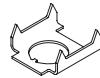


Dimensions [mm]
A = Plug-in terminal 2.8 mm x 0.5 mm

Equipment consisting of (schematic overview)



Actuator

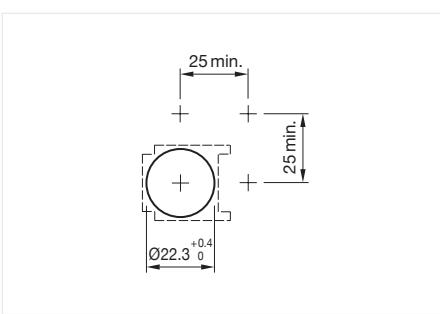


Thrust piece



Fixing nut

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



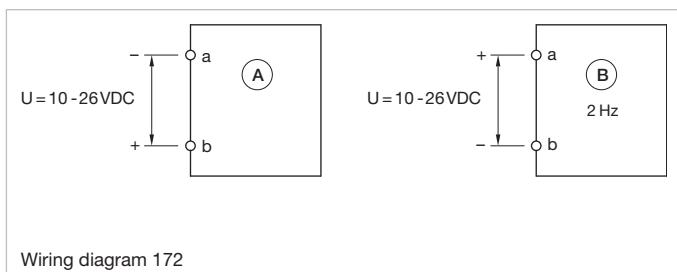
Mounting cut-outs [mm]



Actuator, Front dimension Ø 25 mm

| Operating voltage | Terminal | IP front protection | Part No. | Wiring diagram |
|-------------------|------------------|---------------------|------------|----------------|
| 10 - 26 DC | Plug-in terminal | IP40 | 61-7000.02 | 172 |
| | Plug-in terminal | IP65 | 61-7100.02 | 172 |

Wiring diagrams



Wiring diagram 172

Potentiometer square, IP65

Equipment consisting of (schematic overview)



Actuator

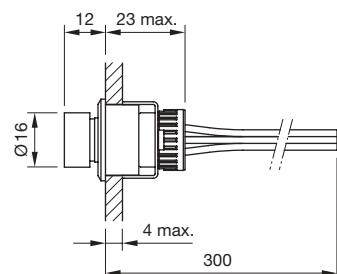


Front bezel



Fixing nut

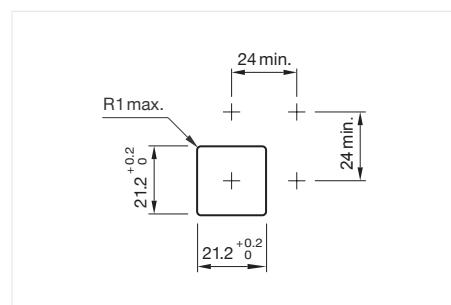
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



Product can differ from the current configuration.



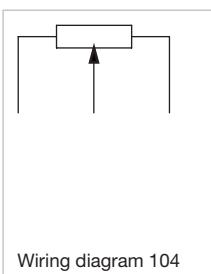
Mounting cut-outs [mm]



Actuator, Front dimension 24 mm x 24 mm

| Terminal | Front bezel colour | Front bezel material | Housing material | Product attributes | Part No. | Wiring diagram | Component Layout |
|-------------------|--------------------|----------------------|------------------|---------------------|------------|----------------|------------------|
| Flat ribbon cable | Black | Plastic | Plastic | Cable length 300 mm | 61-4970.13 | 104 | 30 |

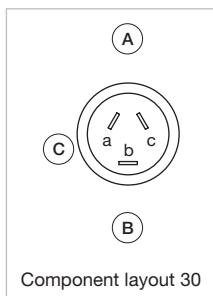
Wiring diagrams



Wiring diagram 104

61 Flush design

Component layouts



Component layout 30

A = Terminals (rear side)
B = Conductor colour of flat ribbon cable
C = a = blue, b = red, c = yellow



Compact, robust, reliable.
The Series 61 E-Stop compact.

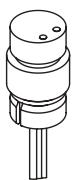
UL-certified – safety in a compact design for handheld control units.

- Very low back panel depth (21.2 mm)
- High front protection IP69K and IP67
- Robust mono-block design
- Mechanically decoupled triggering
- Optional illumination available
- Up to three switching elements

e a o ■

Potentiometer round, IP65

Equipment consisting of (schematic overview)



Actuator



Front bezel

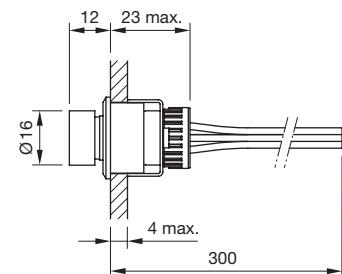


Anti-twist ring



Fixing nut

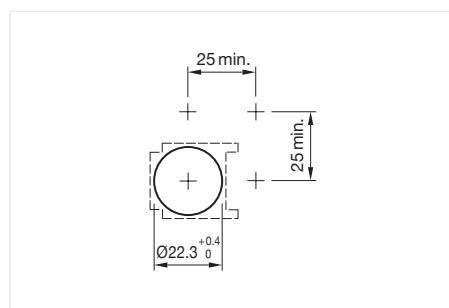
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



Product can differ from the current configuration.



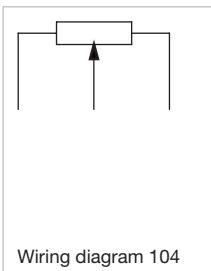
Mounting cut-outs [mm]



Actuator, Front dimension Ø 25 mm

| Terminal | Front bezel colour | Front bezel material | Housing material | Product attributes | Part No. | Wiring diagram | Component Layout |
|-------------------|--------------------|----------------------|------------------|---------------------|------------|----------------|------------------|
| Flat ribbon cable | Black | Plastic | Plastic | Cable length 300 mm | 61-4970.10 | 104 | 30 |

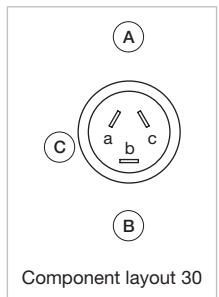
Wiring diagrams



Wiring diagram 104

61 Flush design

Component layouts



Component layout 30

A = Terminals (rear side)

B = Conductor colour of flat ribbon cable

C = a = blue, b = red, c = yellow

Illuminated pushbutton square, IP65

Equipment consisting of (schematic overview)



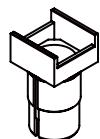
Lens

Page 759



LED

Page 765



Actuator

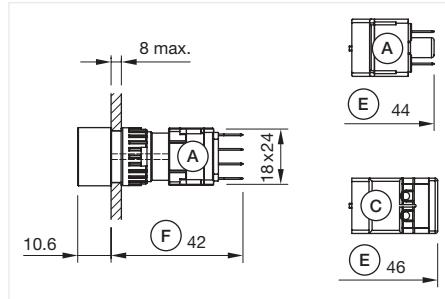


Fixing nut



Switching element

Page 767



Product can differ from the current configuration.

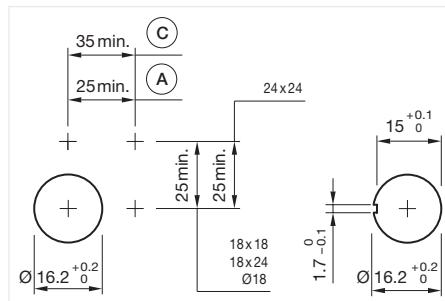
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

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

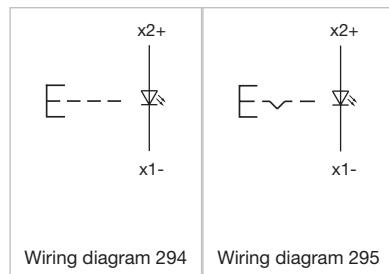
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension 18 mm x 18 mm

| Switching action | Front bezel colour | Front bezel material | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|--------------------|----------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | Black | Plastic | | 61-1120.0 | 294 |
| Maintained | Black | Plastic | Black | Plastic | | 61-1220.0 | 295 |
| Maintained or momentary | Black | Plastic | Black | Plastic | Convertible from momentary to maintained action | 61-1320.0 | 294 |

Wiring diagrams

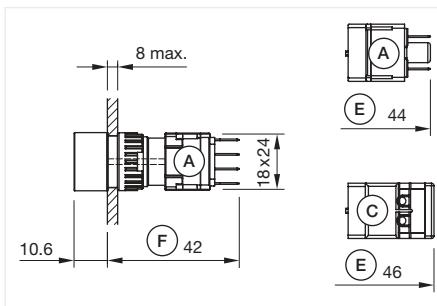


61 Raised design

Illuminated pushbutton square, IP65



Product can differ from the current configuration.



Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element

Equipment consisting of (schematic overview)



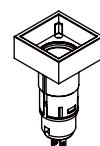
Lens

Page 759



LED

Page 765



Actuator



Fixing nut

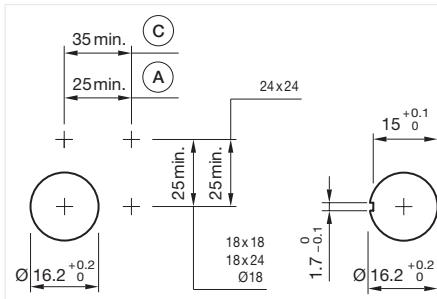


Switching element

Page 767

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.



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

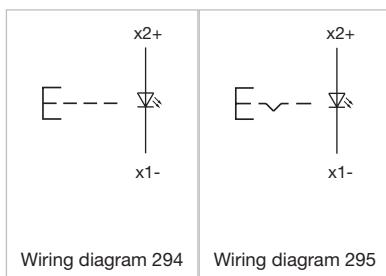
C = Screw terminal



Actuator, Front dimension 24 mm x 24 mm

| Switching action | Front bezel colour | Front bezel material | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|--------------------|----------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | Black | Plastic | | 61-1150.0 | 294 |
| Maintained | Black | Plastic | Black | Plastic | | 61-1250.0 | 295 |
| Maintained or momentary | Black | Plastic | Black | Plastic | Convertible from momentary to maintained action | 61-1350.0 | 294 |

Wiring diagrams



Illuminated pushbutton rectangular, IP65

Equipment consisting of (schematic overview)



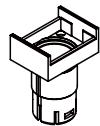
Lens

Page 759



LED

Page 765



Actuator



Fixing nut

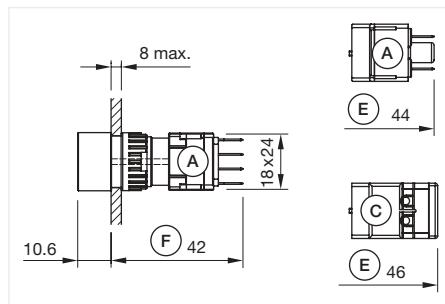


Switching element

Page 767

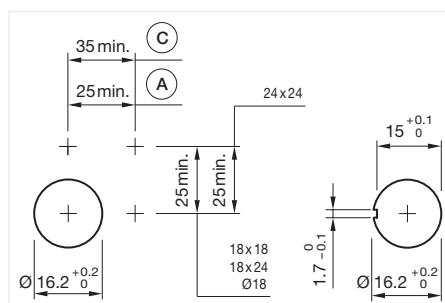
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



Product can differ from the current configuration.

Dimensions [mm]
 A = Plug-in terminal 2.8 mm x 0.5 mm
 C = Screw terminal
 E = Slow-make switching element
 F = Snap-action switching element



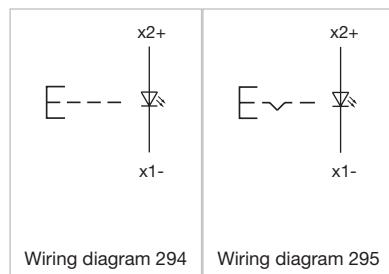
Mounting cut-outs [mm]
 A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
 C = Screw terminal



Actuator, Front dimension 24 mm x 18 mm

| Switching action | Front bezel colour | Front bezel material | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|--------------------|----------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | Black | Plastic | | 61-1130.0 | 294 |
| Maintained | Black | Plastic | Black | Plastic | | 61-1230.0 | 295 |
| Maintained or momentary | Black | Plastic | Black | Plastic | Convertible from momentary to maintained action | 61-1330.0 | 294 |

Wiring diagrams

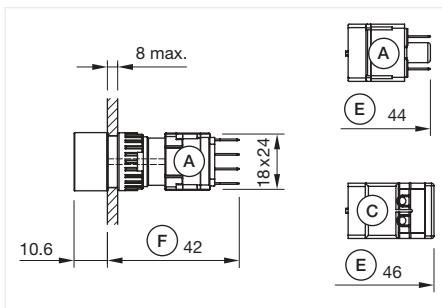


61 Raised design

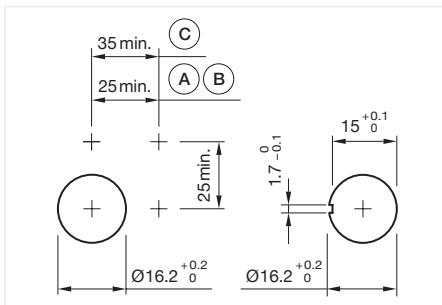
Illuminated pushbutton round, IP65



Product can differ from the current configuration.



Dimensions [mm]
 A = Plug-in terminal 2.8 mm x 0.5 mm
 C = Screw terminal
 E = Slow-make switching element
 F = Snap-action switching element



Mounting cut-outs [mm]
 A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
 B = Solder terminal
 C = Screw terminal

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



Actuator



Fixing nut



Switching element

Page 767

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

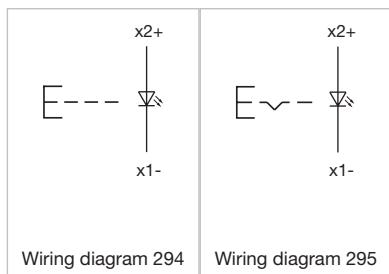
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 18 mm

| Switching action | Front bezel colour | Front bezel material | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|-------------------------|--------------------|----------------------|----------------|------------------|---|-----------|----------------|
| Momentary | Black | Plastic | Black | Plastic | | 61-1110.0 | 294 |
| Maintained | Black | Plastic | Black | Plastic | | 61-1210.0 | 295 |
| Maintained or momentary | Black | Plastic | Black | Plastic | Convertible from momentary to maintained action | 61-1310.0 | 294 |

Wiring diagrams



Illuminated pushbutton without front bezel round, IP65

Equipment consisting of (schematic overview)



Lens Page 759



Front bezel Page 764



LED Page 765



Actuator



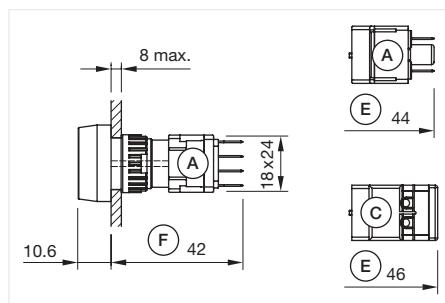
Fixing nut



Switching element Page 767

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

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



Product can differ from the current configuration.

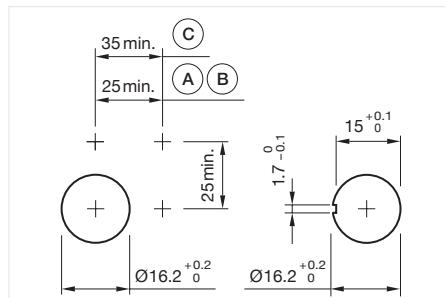
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

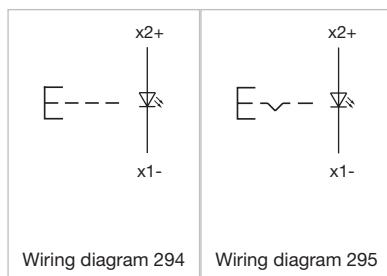
C = Screw terminal



Actuator, Front dimension Ø 24 mm

| Switching action | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No. | Wiring diagram |
|------------------|--------------------|----------------------|----------------|------------------|-----------|----------------|
| Momentary | Black | Plastic | Black | Plastic | 61-1140.0 | 294 |
| Maintained | Black | Plastic | Black | Plastic | 61-1240.0 | 295 |

Wiring diagrams

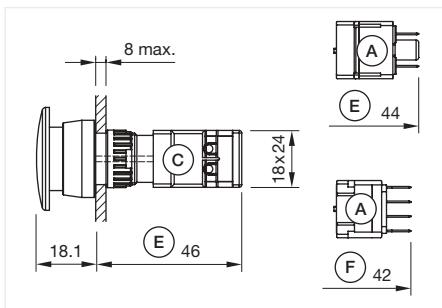


61 Raised design

Mushroom-head pushbutton, IP65



Product can differ from the current configuration.



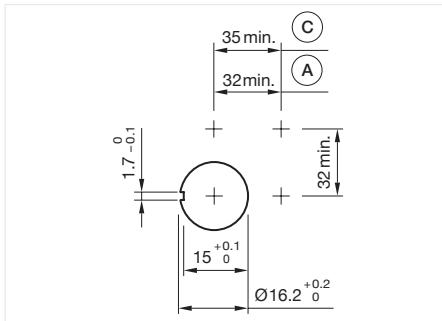
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Lens

Page 759



Front bezel

Page 764



Actuator



Fixing nut



Switching element

Page 767

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

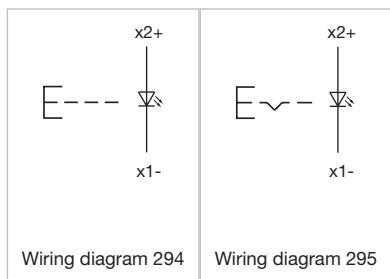
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 32 mm

| Switching action | Front bezel colour | Front bezel material | Housing colour | Housing material | Part No. | Wiring diagram |
|------------------|--------------------|----------------------|----------------|------------------|-----------|----------------|
| Momentary | Black | Plastic | Black | Plastic | 61-1140.0 | 294 |
| Maintained | Black | Plastic | Black | Plastic | 61-1240.0 | 295 |

Wiring diagrams



Wiring diagram 294

Wiring diagram 295

Selector switch 2 positions square, IP65

Equipment consisting of (schematic overview)



Lever

Page 762



Front bezel

Page 763



LED

Page 765



Actuator

Page 766



Anti-twist ring

Page 776



Fixing nut

Page 766

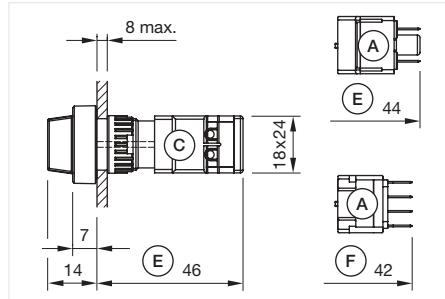


Switching element

Page 767

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

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



Product can differ from the current configuration.

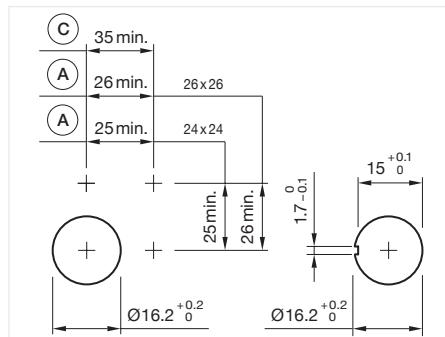
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



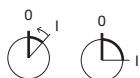
General information

- If mounted with anti-twist device, the lug is on the left side
- For front dimensions 26 mm x 26 mm, 24 mm x 24 mm

Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

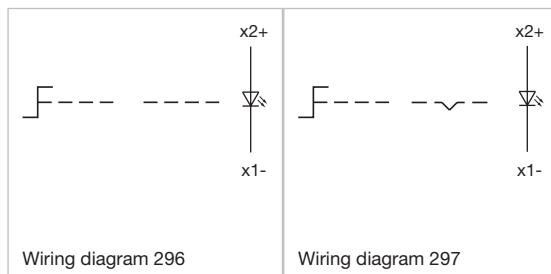
C = Screw terminal



Actuator

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|-------------------|-----------------|--------------------|-----------|----------------|
| Rest - Momentary | 42° right | Illuminative | 61-4110.0 | 296 |
| Rest - Maintained | 90° right | Illuminative | 61-4210.0 | 297 |

Wiring diagrams



Wiring diagram 296

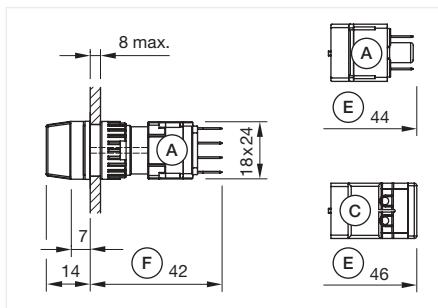
Wiring diagram 297

61 Raised design

Selector switch 2 positions round, IP65



Product can differ from the current configuration.



Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element

Equipment consisting of (schematic overview)



Lever

Page 762



LED

Page 765



Actuator



Anti-twist ring

Page 776



Fixing nut

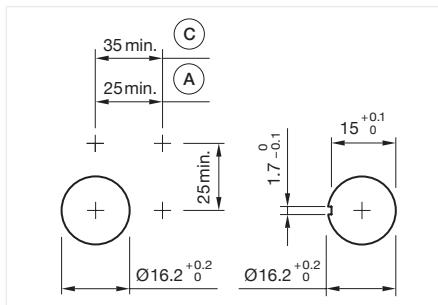


Switching element

Page 767

General information

- If mounted with anti-twist device, the lug is on the left side



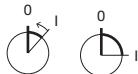
Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

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

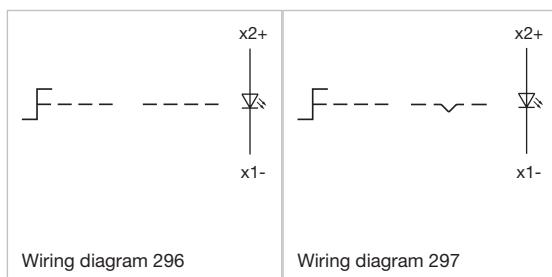
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 18 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|-------------------|-----------------|--------------------|-----------|----------------|
| Rest - Momentary | 42° right | Illuminative | 61-4110.0 | 296 |
| Rest - Maintained | 90° right | Illuminative | 61-4210.0 | 297 |

Wiring diagrams



Selector switch 3 positions square, IP65

Equipment consisting of (schematic overview)



Lever

Page 762



Front bezel

Page 763



LED

Page 765



Actuator



Anti-twist ring

Page 776



Fixing nut

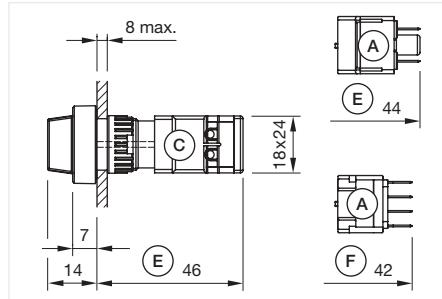


Switching element

Page 771

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

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



Product can differ from the current configuration.

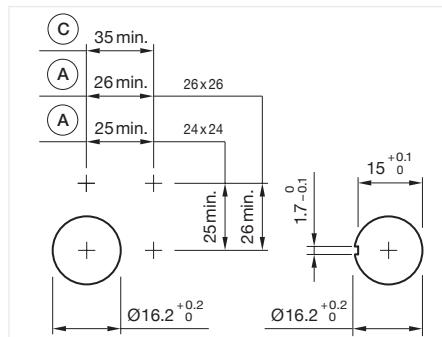
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



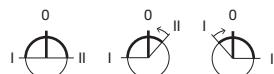
General information

- If mounted with anti-twist device, the lug is on the left side
- For front dimensions 26 mm x 26 mm, 24 mm x 24 mm

Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

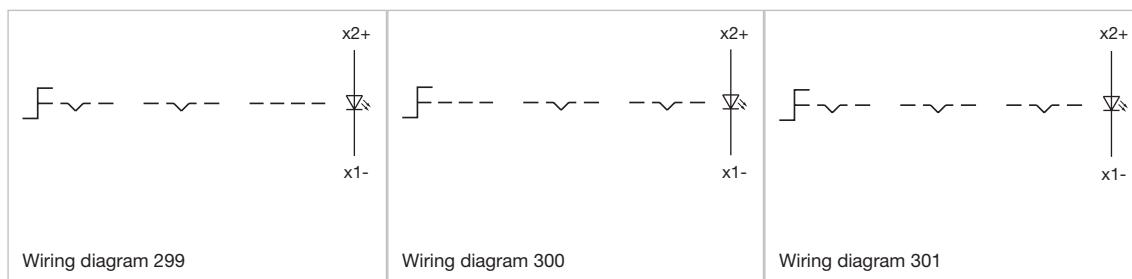
C = Screw terminal



Actuator, Front dimension

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--------------------------------|----------------------|--------------------|-----------|----------------|
| Maintained - Rest - Maintained | 90° left / 90° right | Illuminative | 61-4610.0 | 301 |
| Momentary - Rest - Maintained | 42° left / 90° right | Illuminative | 61-4710.0 | 300 |
| Maintained - Rest - Momentary | 90° left / 42° right | Illuminative | 61-4810.0 | 299 |

Wiring diagrams



61 Raised design



[On our website you can download technical data, assembly instructions, catalogs, brochures and much more.](http://www.eao.com/downloads)

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Your Expert Partner for Human Machine Interfaces

Selector switch 3 positions round, IP65

Equipment consisting of (schematic overview)



Lever

Page 762



LED

Page 765



Actuator

Page 776



Anti-twist ring

Page 776



Fixing nut

Page 776

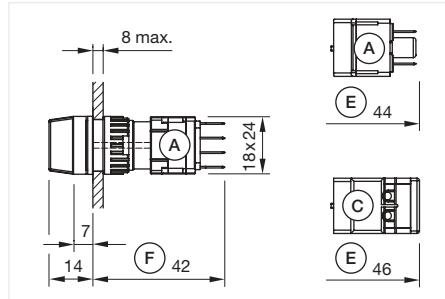


Switching element

Page 771

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

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



Product can differ from the current configuration.

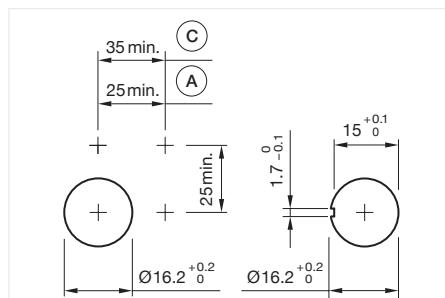
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element



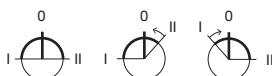
General information

- If mounted with anti-twist device, the lug is on the left side

Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

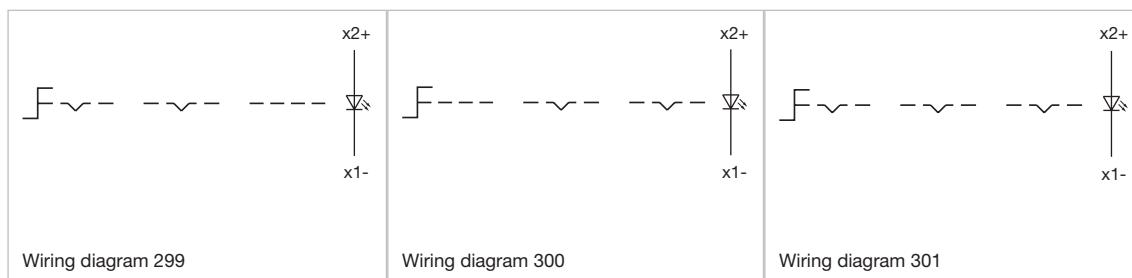
C = Screw terminal



Actuator, Front dimension Ø 18 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--------------------------------|----------------------|--------------------|-----------|----------------|
| Maintained - Rest - Maintained | 90° left / 90° right | Illuminative | 61-4610.0 | 301 |
| Momentary - Rest - Maintained | 42° left / 90° right | Illuminative | 61-4710.0 | 300 |
| Maintained - Rest - Momentary | 90° left / 42° right | Illuminative | 61-4810.0 | 299 |

Wiring diagrams



61 Raised design



[On our website you can download technical data, assembly instructions, catalogs, brochures and much more.](http://www.eao.com/downloads)

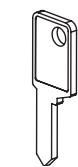
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Your Expert Partner for Human Machine Interfaces

Keylock switch 2 positions square, IP65

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Anti-twist ring

Page 776



Fixing nut

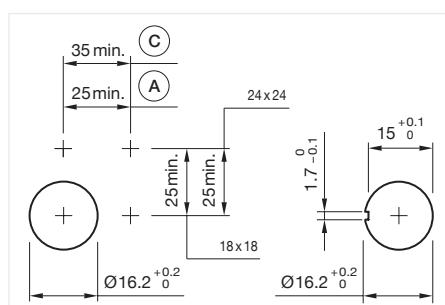
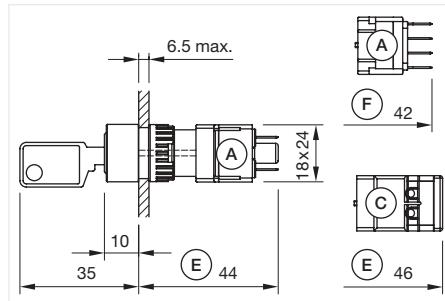


Switching element

Page 767

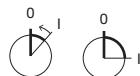
Each Part Number listed below includes all the black components shown in the 3D-drawing.

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



General information

- For front dimensions 24 mm x 24 mm, 18 mm x 18 mm

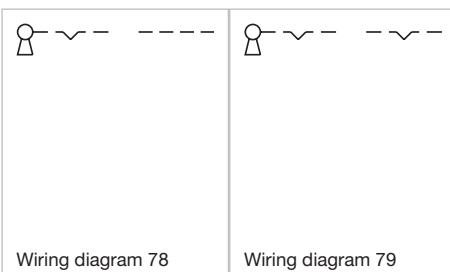


Actuator

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|---------------------------|-----------------|------------------------|-------------|----------------|
| Rest (a) - Momentary | 42° right | Standard lock: DOM 311 | 61-2101.0/D | 78 |
| Rest (a) - Maintained | 90° right | Standard lock: DOM 311 | 61-2201.0/D | 79 |
| Rest - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2203.0/D | 79 |
| Rest (a) - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2205.0/D | 79 |

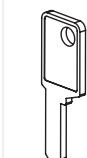
a = Key remove

Wiring diagrams



Keylock switch 2 positions round, IP65

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Anti-twist ring

Page 776



Fixing nut

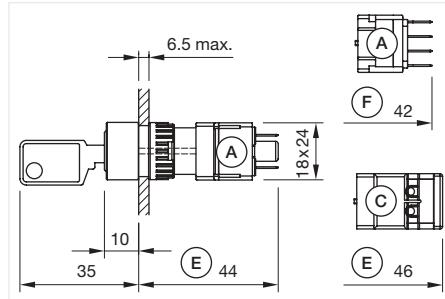


Switching element

Page 767

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

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



Product can differ from the current configuration.

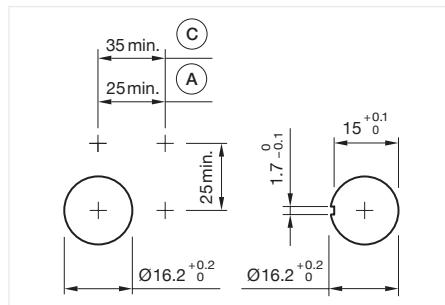
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

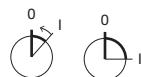
F = Snap-action switching element



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal



Actuator, Front dimension Ø 18 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|---------------------------|-----------------|------------------------|-------------|----------------|
| Rest (a) - Momentary | 42° right | Standard lock: DOM 311 | 61-2101.0/D | 78 |
| Rest (a) - Maintained | 90° right | Standard lock: DOM 311 | 61-2201.0/D | 79 |
| Rest - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2203.0/D | 79 |
| Rest (a) - Maintained (a) | 90° right | Standard lock: DOM 311 | 61-2205.0/D | 79 |

a = Key remove

Wiring diagrams

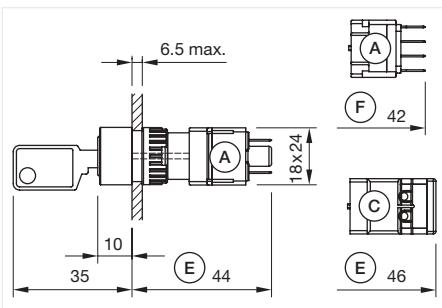
| | |
|-------------------|-------------------|
| | |
| Wiring diagram 78 | Wiring diagram 79 |

61 Raised design

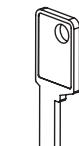
Keylock switch 3 positions square, IP65



Product can differ from the current configuration.



Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Anti-twist ring

Page 776



Fixing nut

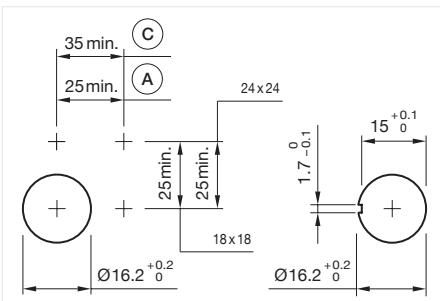


Switching element

Page 771

General information

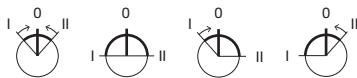
- For front dimensions 24 mm x 24 mm, 18 mm x 18 mm



Mounting cut-outs [mm]
A = Solder/Plug-in terminal 2.8 mm x 0.5 mm
C = Screw terminal

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

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



Actuator

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--|----------------------|------------------------|-------------|----------------|
| Momentary - Rest (a) - Momentary | 42° left / 42° right | Standard lock: DOM 311 | 61-2501.0/D | 82 |
| Maintained - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2601.0/D | 83 |
| Maintained (a) - Rest - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2602.0/D | 83 |
| Maintained - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2603.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2604.0/D | 83 |
| Maintained - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2605.0/D | 83 |
| Maintained (a) - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2606.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2607.0/D | 83 |
| Momentary - Rest (a) - Maintained | 42° left / 90° right | Standard lock: DOM 311 | 61-2701.0/D | 80 |
| Momentary - Rest (a) - Maintained (a) | 42° left / 90° right | Standard lock: DOM 311 | 61-2705.0/D | 80 |
| Maintained - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2801.0/D | 81 |
| Maintained (a) - Rest - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2802.0/D | 81 |
| Maintained (a) - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2804.0/D | 81 |

a = Key remove

Wiring diagrams

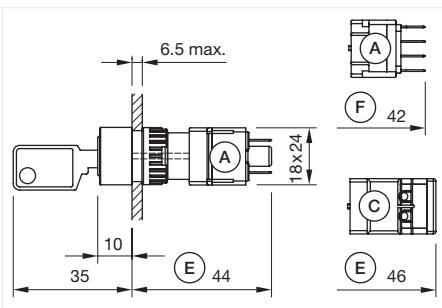
| | | | |
|---|---|--|---|
|  |  |  |  |
| Wiring diagram 80 | Wiring diagram 81 | Wiring diagram 82 | Wiring diagram 83 |

61 Raised design

Keylock switch 3 positions rectangular, IP65



Product can differ from the current configuration.



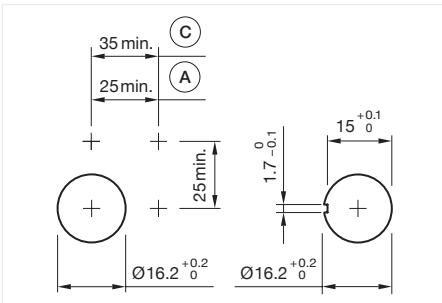
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element

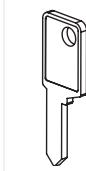


Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Anti-twist ring

Page 776



Fixing nut

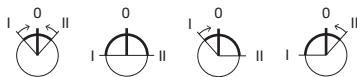


Switching element

Page 771

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.

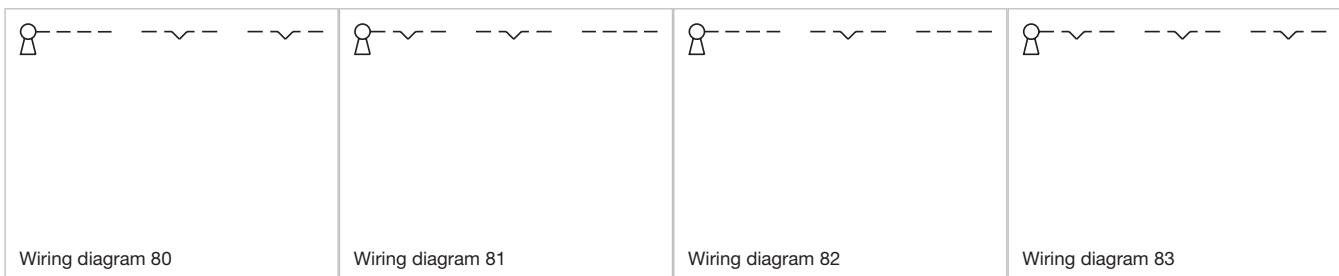


Actuator, Front dimension 24 mm x 18 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--|----------------------|------------------------|-------------|----------------|
| Momentary - Rest (a) - Momentary | 42° left / 42° right | Standard lock: DOM 311 | 61-2501.0/D | 82 |
| Maintained - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2601.0/D | 83 |
| Maintained (a) - Rest - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2602.0/D | 83 |
| Maintained - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2603.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2604.0/D | 83 |
| Maintained - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2605.0/D | 83 |
| Maintained (a) - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2606.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2607.0/D | 83 |
| Momentary - Rest (a) - Maintained | 42° left / 90° right | Standard lock: DOM 311 | 61-2701.0/D | 80 |
| Momentary - Rest (a) - Maintained (a) | 42° left / 90° right | Standard lock: DOM 311 | 61-2705.0/D | 80 |
| Maintained - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2801.0/D | 81 |
| Maintained (a) - Rest - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2802.0/D | 81 |
| Maintained (a) - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2804.0/D | 81 |

a = Key remove

Wiring diagrams



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

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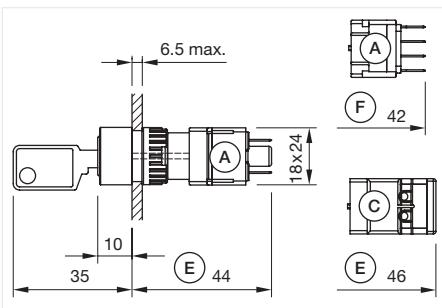
eao 743

61 Raised design

Keylock switch 3 positions round, IP65



Product can differ from the current configuration.



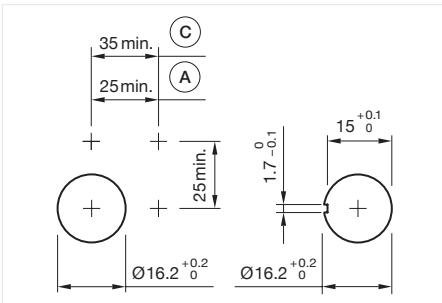
Dimensions [mm]

A = Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

E = Slow-make switching element

F = Snap-action switching element

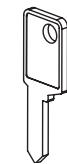


Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

C = Screw terminal

Equipment consisting of (schematic overview)



Key



Keylock front bezel

Page 764



Actuator



Anti-twist ring

Page 776



Fixing nut

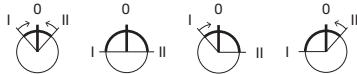


Switching element

Page 771

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 18 mm

| Switching action | Switching angle | Product attributes | Part No. | Wiring diagram |
|--|----------------------|------------------------|-------------|----------------|
| Momentary - Rest (a) - Momentary | 42° left / 42° right | Standard lock: DOM 311 | 61-2501.0/D | 82 |
| Maintained - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2601.0/D | 83 |
| Maintained (a) - Rest - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2602.0/D | 83 |
| Maintained - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2603.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained | 90° left / 90° right | Standard lock: DOM 311 | 61-2604.0/D | 83 |
| Maintained - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2605.0/D | 83 |
| Maintained (a) - Rest - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2606.0/D | 83 |
| Maintained (a) - Rest (a) - Maintained (a) | 90° left / 90° right | Standard lock: DOM 311 | 61-2607.0/D | 83 |
| Momentary - Rest (a) - Maintained | 42° left / 90° right | Standard lock: DOM 311 | 61-2701.0/D | 80 |
| Momentary - Rest (a) - Maintained (a) | 42° left / 90° right | Standard lock: DOM 311 | 61-2705.0/D | 80 |
| Maintained - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2801.0/D | 81 |
| Maintained (a) - Rest - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2802.0/D | 81 |
| Maintained (a) - Rest (a) - Momentary | 90° left / 42° right | Standard lock: DOM 311 | 61-2804.0/D | 81 |

a = Key remove

Wiring diagrams

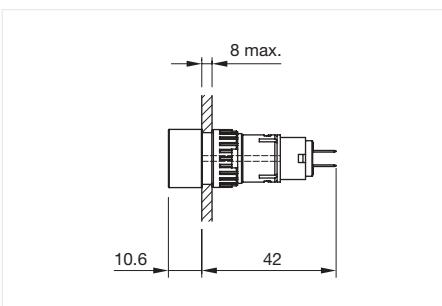
| | | | |
|---|---|--|---|
|  |  |  |  |
| Wiring diagram 80 | Wiring diagram 81 | Wiring diagram 82 | Wiring diagram 83 |

61 Raised design

Indicator with lamp element square, IP65



Product can differ from the current configuration.



Dimensions [mm]

Equipment consisting of (schematic overview)



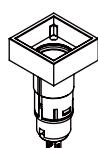
Lens

Page 759



LED

Page 765



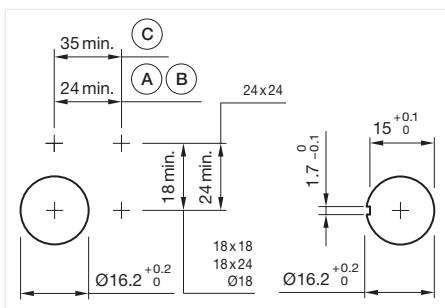
Actuator



Fixing nut

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

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



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

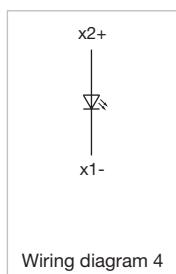
C = Screw terminal



Actuator

| Terminal | Housing colour | Housing material | Dimensions | Part No. | Wiring diagram |
|------------------|----------------|------------------|---------------|------------|----------------|
| Plug-in terminal | Black | Plastic | 18 mm x 18 mm | 61-0020.02 | 4 |
| | Black | Plastic | 24 mm x 24 mm | 61-0050.02 | 4 |

Wiring diagrams



Wiring diagram 4

Indicator with lamp element rectangular, IP65

Equipment consisting of (schematic overview)



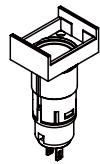
Lens

Page 759



LED

Page 765



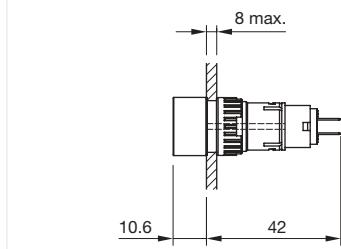
Actuator



Fixing nut

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

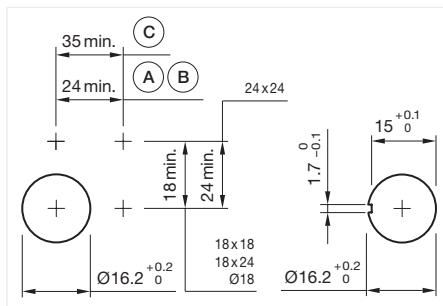
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

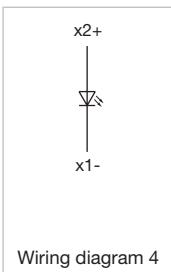
C = Screw terminal



Actuator, Front dimension 24 mm x 18 mm

| Terminal | Housing colour | Housing material | Part No. | Wiring diagram |
|------------------|----------------|------------------|------------|----------------|
| Plug-in terminal | Black | Plastic | 61-0030.02 | 4 |

Wiring diagrams



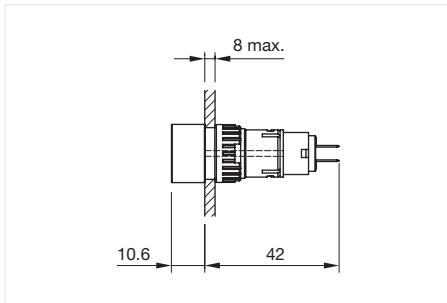
Wiring diagram 4

61 Raised design

Indicator with lamp element round, Ø 18 mm, IP65



Product can differ from the current configuration.



Dimensions [mm]

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



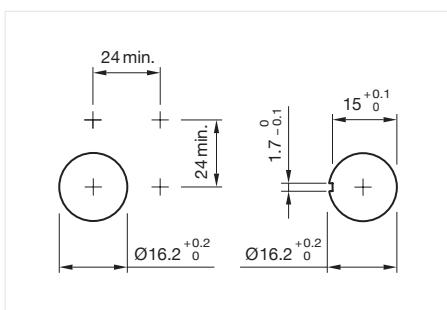
Actuator



Fixing nut

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

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



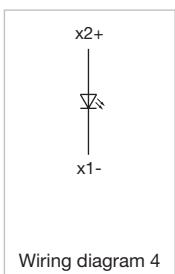
Mounting cut-outs [mm]



Actuator, Front dimension Ø 18 mm

| Terminal | Housing colour | Housing material | Part No. | Wiring diagram |
|------------------|----------------|------------------|------------|----------------|
| Plug-in terminal | Black | Plastic | 61-0010.02 | 4 |

Wiring diagrams



Wiring diagram 4

Indicator without front bezel round, Ø 24 mm, IP65

Equipment consisting of (schematic overview)



Lens Page 759



Front bezel Page 764



LED Page 765



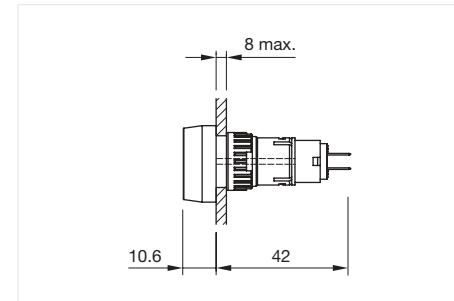
Actuator



Fixing nut

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

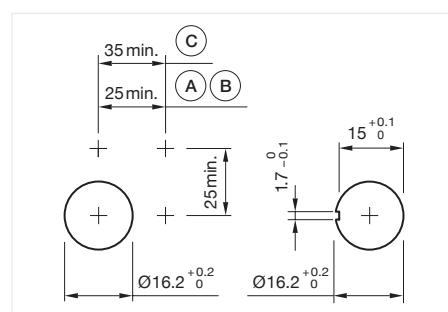
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

A = Solder/Plug-in terminal 2.8 mm x 0.5 mm

B = Solder terminal

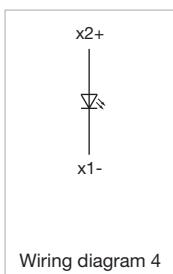
C = Screw terminal



Actuator, Front dimension Ø 24 mm

| Terminal | Housing colour | Housing material | Part No. | Wiring diagram |
|------------------|----------------|------------------|------------|----------------|
| Plug-in terminal | Black | Plastic | 61-0040.02 | 4 |

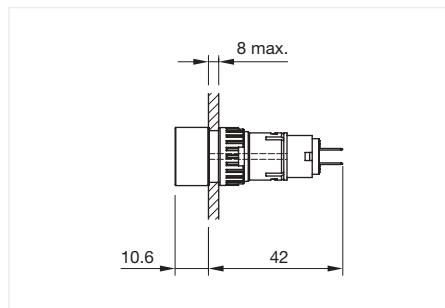
Wiring diagrams



Wiring diagram 4

Indicator without lamp element rectangular, IP65

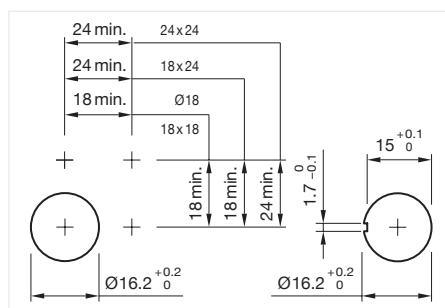
| Equipment consisting of (schematic overview) | | |
|--|--------------|----------|
|  | Lens | Page 759 |
|  | LED | Page 765 |
|  | Actuator | |
|  | Fixing nut | |
|  | Lamp element | Page 775 |
| Each Part Number listed below includes all the black components shown in the 3D-drawing. | | |
| To obtain a complete unit, please select the red components from the pages shown. | | |



Dimensions [mm]



Product can differ from the current configuration.



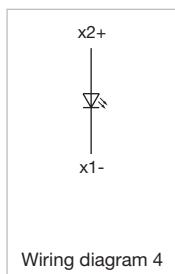
Mounting cut-outs [mm]



Actuator, Front dimension 24 mm x 18 mm

| Housing colour | Housing material | Part No. | Wiring diagram |
|----------------|------------------|-----------|----------------|
| Black | Plastic | 61-0039.0 | 4 |

Wiring diagrams

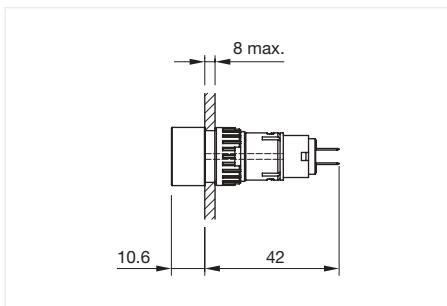


61 Raised design

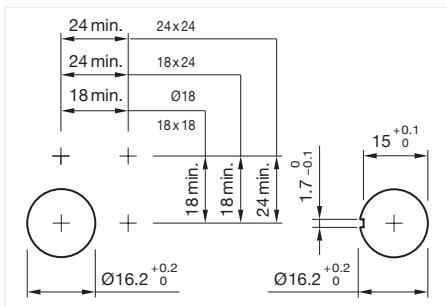
Indicator without lamp element round, IP65



Product can differ from the current configuration.



Dimensions [mm]



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)



Lens

Page 759



LED

Page 765



Fixing nut



Lamp element

Page 775

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

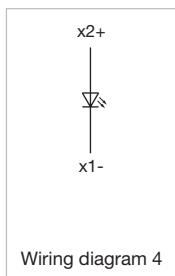
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 18 mm

| Housing colour | Housing material | Part No. | Wiring diagram |
|----------------|------------------|-----------|----------------|
| Black | Plastic | 61-0019.0 | 4 |

Wiring diagrams



Wiring diagram 4

Indicator without front bezel round, IP65

Equipment consisting of (schematic overview)



Lens

Page 759



Front bezel

Page 764



LED

Page 765



Actuator



Fixing nut

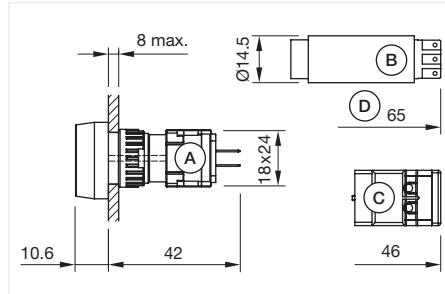


Lamp element

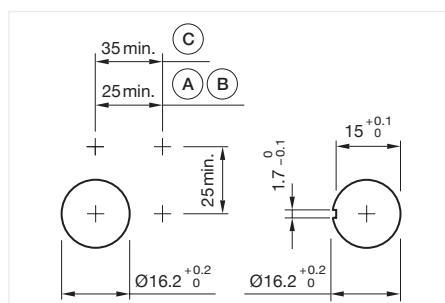
Page 775

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

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



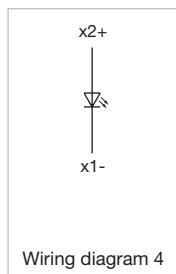
Product can differ from the current configuration.



Actuator, Front dimension Ø 24 mm

| Housing colour | Housing material | Part No. | Wiring diagram |
|----------------|------------------|-----------|----------------|
| Black | Plastic | 61-0049.0 | 4 |

Wiring diagrams

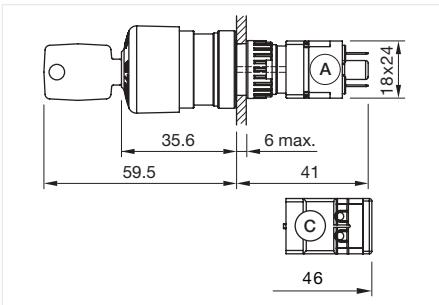


61 Raised design

Stop switch, IP65



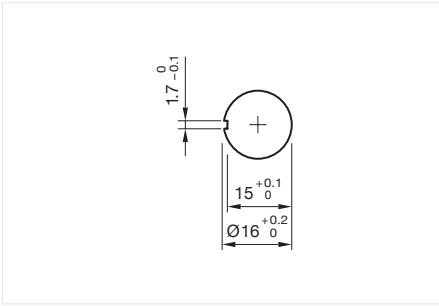
Product can differ from the current configuration.



Dimensions [mm]
A = Plug-in terminal 2.8 mm x 0.5 mm
C = Screw terminal

General information

- Position indication ring black
- Twist to unlock clockwise



Mounting cut-outs [mm]

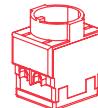
Equipment consisting of (schematic overview)



Actuator



Fixing nut



Switching element

Page 767

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

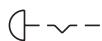
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 27 mm

| Switching action | Lens colour | Lens material | Marking | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|------------------|-------------|---------------|---------------|----------------|------------------|--|--------------|----------------|
| Maintained | Red | Plastic | Arrows | Yellow | Plastic | Twist to unlock clockwise | 61-3440.4/1 | 76 |
| | Red | Plastic | Stop + Arrows | Yellow | Plastic | Twist to unlock clockwise | 61-3440.4/2 | 76 |
| | Grey | Plastic | Arrows | Grey | Plastic | Twist to unlock clockwise | 61-3440.4/8 | 76 |
| | Red | Plastic | Arrows | Yellow | Plastic | Twist to unlock clockwise, with fixing nut metal | 61-3440.4/D | 76 |
| | Black | Plastic | – | Yellow | Plastic | Key to unlock clockwise | 61-5441.0/KA | 76 |
| | Red | Plastic | Stop | Yellow | Plastic | Key to unlock clockwise | 61-5441.4/K | 76 |

Wiring diagrams



Wiring diagram 76

Emergency stop switch compact, foolprof, EN IEC 60947-5-5, IP66, IP67, IP69K

Equipment consisting of (schematic overview)



Actuator



Seal

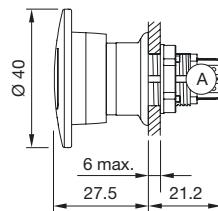
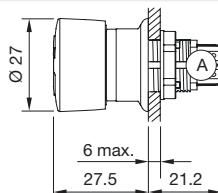


Anti-twist ring



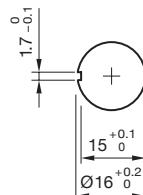
Fixing nut

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



Product can differ from the current configuration.

Dimensions [mm]
A = Plug-in terminal 2.8 mm x 0.5 mm



Mounting cut-outs [mm]



Actuator

General information

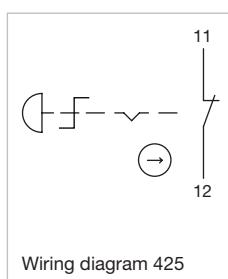
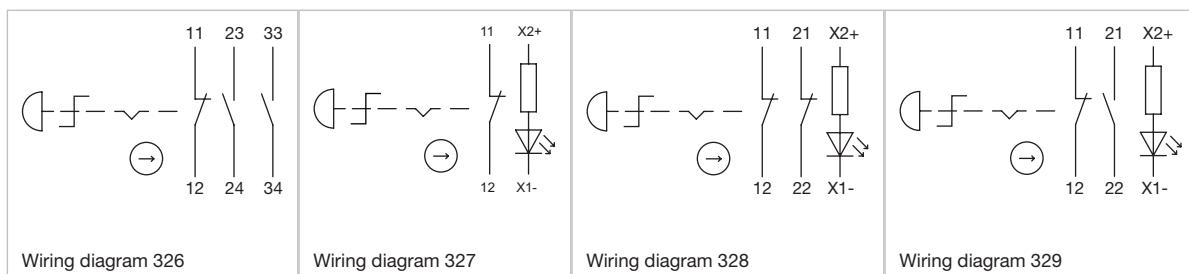
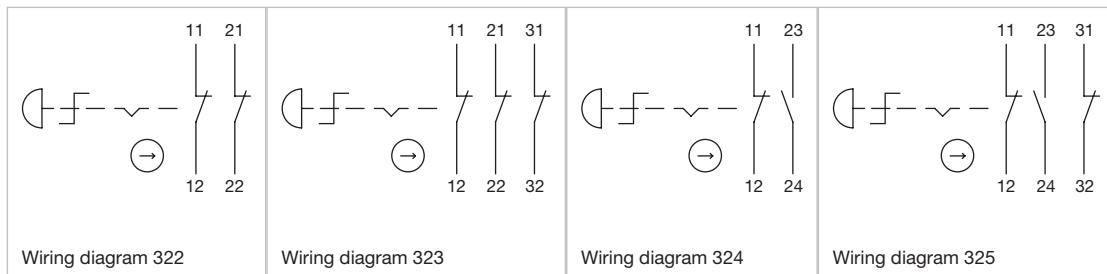
- Application as per DIN EN ISO 13850 and EN 60204-1
- Twist to unlock clockwise

| Contacts | Switching action | Terminal | Lens colour | Lens material | Type of illumination | Dimensions | Part No. | Wiring diagram | Component Layout |
|-------------|------------------|------------------|-------------|---------------|----------------------|------------|--------------|----------------|------------------|
| 1 NC | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6441.4047 | 425 | 70 |
| 2 NC | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6441.4057 | 322 | 71 |
| 3 NC | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6441.4067 | 323 | 72 |
| 1 NC / 1 NO | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6441.4077 | 324 | 73 |
| 2 NC / 1 NO | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6441.4087 | 325 | 74 |
| 1 NC / 2 NO | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6441.4097 | 326 | 75 |
| 1 NC | Maintained | Plug-in terminal | Red | Plastic | illuminated | Ø 27 mm | 61-6451.4247 | 327 | 76 |
| 2 NC | Maintained | Plug-in terminal | Red | Plastic | illuminated | Ø 27 mm | 61-6451.4257 | 328 | 77 |
| 1 NC / 1 NO | Maintained | Plug-in terminal | Red | Plastic | illuminated | Ø 27 mm | 61-6451.4277 | 329 | 78 |
| 1 NC | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6461.4047 | 425 | 70 |
| 2 NC | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6461.4057 | 322 | 71 |
| 3 NC | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 27 mm | 61-6461.4067 | 323 | 72 |
| 1 NC / 1 NO | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 40 mm | 61-6461.4077 | 324 | 73 |
| 2 NC / 1 NO | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 40 mm | 61-6461.4087 | 325 | 74 |

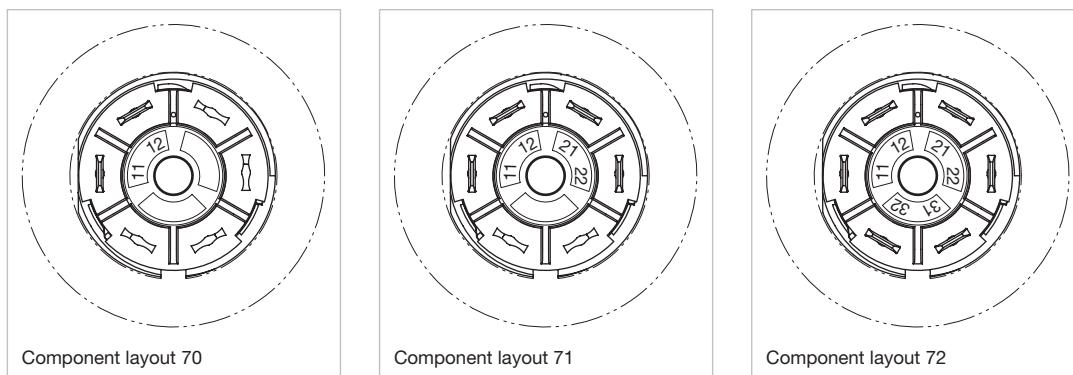
61 Raised design

| Contacts | Switching action | Terminal | Lens colour | Lens material | Type of illumination | Dimensions | Part No. | Wiring diagram | Component layout |
|-------------|------------------|------------------|-------------|---------------|----------------------|------------|--------------|----------------|------------------|
| 1 NC / 2 NO | Maintained | Plug-in terminal | Red | Plastic | non illuminated | Ø 40 mm | 61-6461.4097 | 326 | 75 |

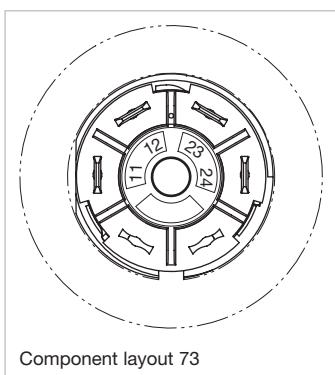
Wiring diagrams



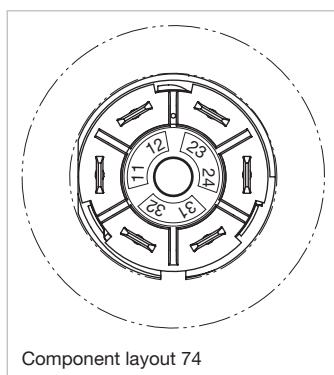
Component layouts



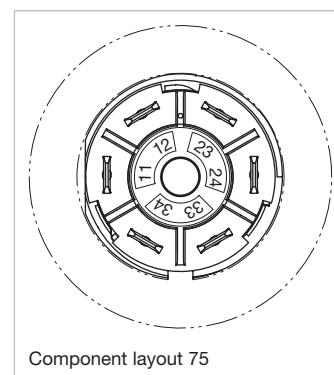
Component layouts



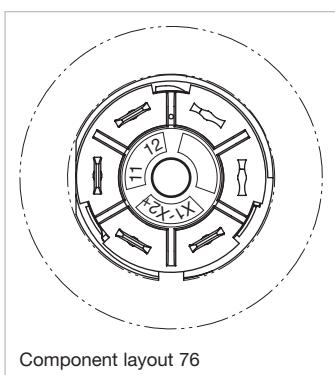
Component layout 73



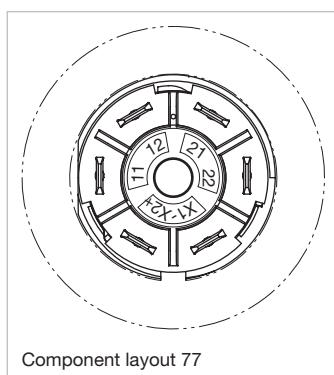
Component layout 74



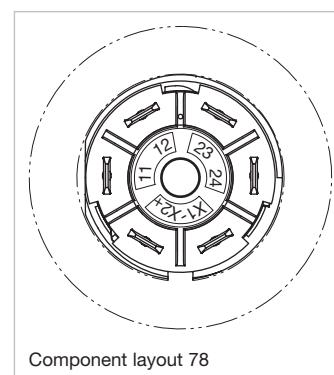
Component layout 75



Component layout 76



Component layout 77



Component layout 78



Compact, robust, reliable.
The Series 61 E-Stop compact.

UL-certified – safety in a compact design for a wide variety of applications.

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- High front protection IP69K and IP67
- Robust mono-block design
- Mechanically decoupled triggering
- Optional illumination available
- Up to three switching elements

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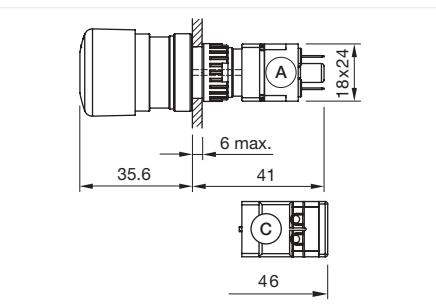
Your Expert Partner for Human Machine Interfaces

61 Raised design

Emergency stop switch, IP65



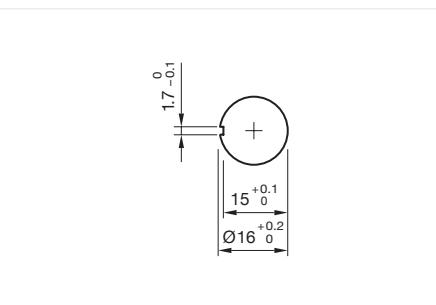
Product can differ from the current configuration.



Dimensions [mm]
A = Plug-in terminal 2.8 mm x 0.5 mm
C = Screw terminal

General information

- Application as per DIN EN ISO 13850 and EN 60204-1



Mounting cut-outs [mm]

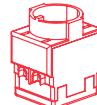
Equipment consisting of (schematic overview)



Actuator



Fixing nut



Switching element

Page 767

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

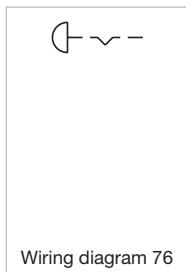
To obtain a complete unit, please select the red components from the pages shown.



Actuator, Front dimension Ø 27 mm

| Switching action | Lens colour | Lens material | Marking | Housing colour | Housing material | Product attributes | Part No. | Wiring diagram |
|------------------|-------------|---------------|---------|----------------|------------------|---------------------------|-------------|----------------|
| Maintained | Red | Plastic | Arrows | Yellow | Plastic | Twist to unlock clockwise | 61-3440.4/3 | 76 |

Wiring diagrams



Wiring diagram 76



Lens square, raised design

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No. |
|---------------|--------------|-------------|------------|-------------------|-------------------|-----------|
| Plastic | Smokey black | transparent | flush | illuminative | 20 mm x 20 mm | 61-9351.1 |
| | Red | transparent | flush | illuminative | 20 mm x 20 mm | 61-9351.2 |
| | Orange | transparent | flush | illuminative | 20 mm x 20 mm | 61-9351.3 |
| | Yellow | transparent | flush | illuminative | 20 mm x 20 mm | 61-9351.4 |
| | Green | transparent | flush | illuminative | 20 mm x 20 mm | 61-9351.5 |
| | Blue | transparent | flush | illuminative | 20 mm x 20 mm | 61-9351.6 |
| | Colourless | transparent | flush | illuminative | 20 mm x 20 mm | 61-9351.7 |
| | Black | opaque | flush | non illuminative | 20 mm x 20 mm | 61-9251.0 |
| | White | translucent | flush | non illuminative | 20 mm x 20 mm | 61-9251.9 |
| | Smokey black | transparent | flush | illuminative | 15.3 mm x 15.3 mm | 61-9321.1 |
| | Red | transparent | flush | illuminative | 15.3 mm x 15.3 mm | 61-9321.2 |
| | Orange | transparent | flush | illuminative | 15.3 mm x 15.3 mm | 61-9321.3 |
| | Yellow | transparent | flush | illuminative | 15.3 mm x 15.3 mm | 61-9321.4 |
| | Green | transparent | flush | illuminative | 15.3 mm x 15.3 mm | 61-9321.5 |
| | Blue | transparent | flush | illuminative | 15.3 mm x 15.3 mm | 61-9321.6 |
| | Colourless | transparent | flush | illuminative | 15.3 mm x 15.3 mm | 61-9321.7 |
| | | | flush | non illuminative | 20 mm | 61-9221.0 |
| | | | flush | non illuminative | 20 mm | 61-9221.9 |
| | Colourless | transparent | flush | illuminative | 15,3 mm x 15,3 mm | 61-9326.7 |



Lens rectangular, raised design

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No. |
|---------------|--------------|-------------|------------|-------------------|-------------------|-----------|
| Plastic | Smokey black | opaque | flush | illuminative | 21,5 | 61-9331.1 |
| | Red | transparent | flush | illuminative | 21,5 | 61-9331.2 |
| | Orange | transparent | flush | illuminative | 21,5 | 61-9331.3 |
| | Yellow | transparent | flush | illuminative | 21,5 | 61-9331.4 |
| | Green | transparent | flush | illuminative | 21,5 | 61-9331.5 |
| | Blue | transparent | flush | illuminative | 21,5 | 61-9331.6 |
| | Colourless | transparent | flush | illuminative | 21,5 | 61-9331.7 |
| | Black | opaque | flush | non illuminative | 21,5 | 61-9231.0 |
| | White | transparent | flush | non illuminative | 21,5 | 61-9231.9 |
| | Red | transparent | concave | illuminative | 15.3 mm x 21.5 mm | 61-9336.2 |
| | Colourless | transparent | concave | illuminative | 15.3 mm x 21.5 mm | 61-9336.7 |
| | White | translucent | concave | non illuminative | 15.3 mm x 21.5 mm | 61-9236.9 |

61 Components



Lens round, raised design

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No. |
|---------------|--------------|-------------|------------|-------------------|------------|-----------|
| Plastic | Smokey black | transparent | flush | illuminative | Ø 19,7 mm | 61-9642.1 |
| | Red | transparent | flush | illuminative | Ø 19,7 mm | 61-9642.2 |
| | Orange | transparent | flush | illuminative | Ø 19,7 mm | 61-9642.3 |
| | Yellow | transparent | flush | illuminative | Ø 19,7 mm | 61-9642.4 |
| | Green | transparent | flush | illuminative | Ø 19,7 mm | 61-9642.5 |
| | Blue | transparent | flush | illuminative | Ø 19,7 mm | 61-9642.6 |
| | Colourless | transparent | flush | illuminative | Ø 19,7 mm | 61-9642.7 |
| | Smokey black | transparent | flush | illuminative | 15,8 | 61-9311.1 |
| | Red | transparent | flush | illuminative | 15,8 | 61-9311.2 |
| | Orange | transparent | flush | illuminative | 15,8 | 61-9311.3 |
| | Yellow | transparent | flush | illuminative | 15,8 | 61-9311.4 |
| | Colourless | transparent | flush | illuminative | 15,8 | 61-9311.5 |
| | Black | transparent | flush | illuminative | 15,8 | 61-9311.6 |
| | White | transparent | flush | illuminative | 15,8 | 61-9311.7 |
| | Black | opaque | flush | non illuminative | 15,8 | 61-9211.0 |
| | White | translucent | flush | non illuminative | 15,8 | 61-9211.9 |



Lens square, flush design

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No. |
|---------------|--------------|-------------|------------|-------------------|---------------|-----------|
| Plastic | Smokey black | transparent | flush | illuminative | 18 mm x 18 mm | 61-9671.1 |
| | Red | transparent | flush | illuminative | 18 mm x 18 mm | 61-9671.2 |
| | Orange | transparent | flush | illuminative | 18 mm x 18 mm | 61-9671.3 |
| | Yellow | transparent | flush | illuminative | 18 mm x 18 mm | 61-9671.4 |
| | Green | transparent | flush | illuminative | 18 mm x 18 mm | 61-9671.5 |
| | Blue | transparent | flush | illuminative | 18 mm x 18 mm | 61-9671.6 |
| | Colourless | transparent | flush | illuminative | 18 mm x 18 mm | 61-9671.7 |
| | Black | opaque | flush | non illuminative | 18 mm x 18 mm | 61-9771.0 |
| | White | translucent | flush | non illuminative | 18 mm x 18 mm | 61-9771.9 |



Lens rectangular, flush design

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No. |
|---------------|--------------|-------------|------------|-------------------|---------------|-----------|
| Plastic | Smokey black | transparent | flush | illuminative | 18 mm x 24 mm | 61-9681.1 |
| | Red | transparent | flush | illuminative | 18 mm x 24 mm | 61-9681.2 |
| | Orange | transparent | flush | illuminative | 18 mm x 24 mm | 61-9681.3 |
| | Yellow | transparent | flush | illuminative | 18 mm x 24 mm | 61-9681.4 |
| | Green | transparent | flush | illuminative | 18 mm x 24 mm | 61-9681.5 |
| | Blue | transparent | flush | illuminative | 18 mm x 24 mm | 61-9681.6 |
| | Colourless | transparent | flush | illuminative | 18 mm x 24 mm | 61-9681.7 |
| | Black | opaque | flush | non illuminative | 18 mm x 24 mm | 61-9781.0 |
| | White | translucent | flush | non illuminative | 18 mm x 24 mm | 61-9781.9 |



Lens plastic with symbol

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Symbol | Dimensions | Part No. |
|---------------|-------------|-------------|------------|-------------------|---------|------------|-------------|
| Plastic | Red | transparent | flush | illuminative | Ring | Ø 19,7 mm | 61-9643.201 |
| | Orange | transparent | flush | illuminative | Ring | Ø 19,7 mm | 61-9643.301 |
| | Yellow | transparent | flush | illuminative | Ring | Ø 19,7 mm | 61-9643.401 |
| | Green | transparent | flush | illuminative | Ring | Ø 19,7 mm | 61-9643.501 |
| | Blue | transparent | flush | illuminative | Ring | Ø 19,7 mm | 61-9643.601 |
| | Colourless | transparent | flush | illuminative | Ring | Ø 19,7 mm | 61-9643.701 |
| | Green | transparent | flush | illuminative | ON/OFF | Ø 19,7 mm | 61-9643.502 |
| | Blue | transparent | flush | illuminative | ON/OFF | Ø 19,7 mm | 61-9643.602 |
| | Colourless | transparent | flush | illuminative | ON/OFF | Ø 19,7 mm | 61-9643.702 |
| | Green | transparent | flush | illuminative | Standby | Ø 19,7 mm | 61-9643.503 |
| | Blue | transparent | flush | illuminative | Standby | Ø 19,7 mm | 61-9643.603 |
| | Colourless | transparent | flush | illuminative | Standby | Ø 19,7 mm | 61-9643.703 |

Additional information

- The silvery coat is being applied on the lens (screen print) with an additional protective lacquer. Further information see Technical data



Lens metal

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No. |
|---------------|-------------|-------------|------------|-------------------|------------|-----------|
| Aluminium | Black | opaque | flush | non illuminative | Ø 19,7 mm | 61-9841.0 |
| | Red | opaque | flush | non illuminative | Ø 19,7 mm | 61-9841.2 |
| | Gold | opaque | flush | non illuminative | Ø 19,7 mm | 61-9841.4 |
| | Olive green | opaque | flush | non illuminative | Ø 19,7 mm | 61-9841.5 |
| | Blue | opaque | flush | non illuminative | Ø 19,7 mm | 61-9841.6 |
| | Nature | opaque | flush | non illuminative | Ø 19,7 mm | 61-9841.8 |
| | Black | opaque | convex | non illuminative | Ø 19,7 mm | 61-9842.0 |
| | Red | opaque | convex | non illuminative | Ø 19,7 mm | 61-9842.2 |
| | Olive green | opaque | convex | non illuminative | Ø 19,7 mm | 61-9842.5 |
| | Nature | opaque | convex | non illuminative | Ø 19,7 mm | 61-9842.8 |

Additional information

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



Lens metal with spot

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Dimensions | Part No. |
|---------------|-------------|-------------|------------|-------------------|------------|------------|
| Aluminium | Black | opaque | flush | illuminative | Ø 19,7 mm | 61-9841.0A |
| | Red | opaque | flush | illuminative | Ø 19,7 mm | 61-9841.2A |
| | Gold | opaque | flush | illuminative | Ø 19,7 mm | 61-9841.4A |
| | Olive green | opaque | flush | illuminative | Ø 19,7 mm | 61-9841.5A |
| | Blue | opaque | flush | illuminative | Ø 19,7 mm | 61-9841.6A |
| | Nature | opaque | flush | illuminative | Ø 19,7 mm | 61-9841.8A |

Additional information

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

61 Components



Mushroom-head cap

| Lens material | Lens colour | Lens optics | Lens shape | Lens illumination | Part No. |
|---------------|-------------|-------------|------------|-------------------|-----------|
| Plastic | Black | opaque | flush | non illuminative | 61-9593.0 |
| | Red | opaque | flush | non illuminative | 61-9593.2 |



Lever raised design

| Lever material | Lever colour | Lever illumination | Lever bar colour | Lever shape | Part No. |
|----------------|--------------|--------------------|------------------|-------------|-----------|
| plastic | Black | illuminative | Red | short | 52-928.20 |
| | Black | illuminative | Orange | short | 52-928.30 |
| | Black | illuminative | Yellow | short | 52-928.40 |
| | Black | illuminative | Green | short | 52-928.50 |
| | Black | illuminative | Blue | short | 52-928.60 |
| | Grey | illuminative | Red | short | 52-929.20 |
| | Grey | illuminative | Green | short | 52-929.50 |
| | Black | non illuminative | Black | short | 52-928.0 |
| | Black | non illuminative | White | short | 52-928.9 |
| | Grey | non illuminative | Grey | short | 52-929.8 |
| | Grey | non illuminative | White | short | 52-929.9 |

Additional information

- With bar and marking dot



Lever flush design

| Lever material | Lever colour | Lever illumination | Lever bar colour | Part No. |
|----------------|--------------|--------------------|------------------|------------|
| plastic | Black | illuminative | Red | 61-9028.20 |
| | Black | illuminative | Yellow | 61-9028.40 |
| | Black | illuminative | Green | 61-9028.50 |
| | Black | illuminative | Blue | 61-9028.60 |
| | Grey | illuminative | Orange | 61-9029.30 |
| | Black | non illuminative | | 61-9028.0 |
| | Black | illuminative | White | 61-9028.9 |

Additional information

- With bar and marking dot



Marking plate

| Marking plate material | Marking plate colour | Marking plate optics | Marking plate illumination | Part No. |
|------------------------|----------------------|----------------------|----------------------------|-----------|
| Plastic | Colourless | transparent | illuminative | 61-9707.7 |

Additional information

- Can be hot stamped

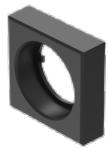


Front bezel set flush design

| Product attributes | Front bezel material | Front bezel colour | Front bezel surface | Mounting cut-out | Dimensions | Part No. |
|---|----------------------|--------------------|---------------------|------------------|---------------|------------|
| For indicator illuminated pushbutton and keylock switch | Plastic | Black | | 21 mm x 21 mm | 24 mm x 24 mm | 61-9930.0 |
| | Plastic | Silver | | 21 mm x 21 mm | 24 mm x 24 mm | 61-9930.4 |
| | Plastic | Black | | 21 mm x 27 mm | 24 mm x 30 mm | 61-9931.0 |
| | Plastic | Silver | | 21 mm x 27 mm | 24 mm x 30 mm | 61-9931.4 |
| For selector switch | Aluminium | Nature | anodised | Ø 22.5 mm | Ø 25 mm | 61-9932.0 |
| For indicator, illuminated pushbutton and push-button | Aluminium | Nature | anodised | Ø 22.3 mm | Ø 25 mm | 61-9933.0 |
| | Aluminium | Black | anodised | Ø 22.3 mm | Ø 25 mm | 61-9933.1 |
| | Aluminium | Red | anodised | Ø 22.3 mm | Ø 25 mm | 61-9933.2 |
| | Plastic | Black | | Ø 22.3 mm | Ø 25 mm | 61-9933.10 |
| For selector switch and keylock switch | Aluminium | Black | anodised | Ø 22.5 mm | Ø 25 mm | 61-9932.1 |
| | Plastic | Black | anodised | Ø 22.5 mm | Ø 25 mm | 61-9932.10 |
| | Plastic | Black | | 21 mm x 21 mm | 24 mm x 24 mm | 61-9936.0 |

Additional information

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



Front bezel Lever switch

| Front bezel material | Front bezel colour | Dimensions | Part No. |
|----------------------|--------------------|---------------|----------|
| Plastic | Black | 24 mm x 24 mm | 52-950.0 |
| | Black | 26 mm x 26 mm | 52-952.0 |

61 Components



Front bezel set mushroom head pushbutton

| Front bezel material | Front bezel colour | Front bezel type | Dimensions | Part No. |
|----------------------|--------------------|------------------|------------|-----------|
| Aluminium | Nature | flush | Ø 40 mm | 61-9934.8 |

Additional information

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



Keylock front bezel

| Material | Colour | Dimensions | Part No. |
|----------|--------|---------------|-----------|
| plastic | Black | 18 mm x 18 mm | 61-9220.0 |
| | Black | 24 mm x 18 mm | 61-9230.0 |
| | Black | Ø 18 mm | 61-9210.0 |
| | Black | 24 mm x 24 mm | 61-9250.0 |



Front bezel raised

| Front bezel material | Front bezel colour | Front bezel shape | Part No. |
|----------------------|--------------------|-------------------|-----------|
| Aluminium | Black | raised | 61-9600.0 |
| | Nature | | 61-9600.1 |

Additional information

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

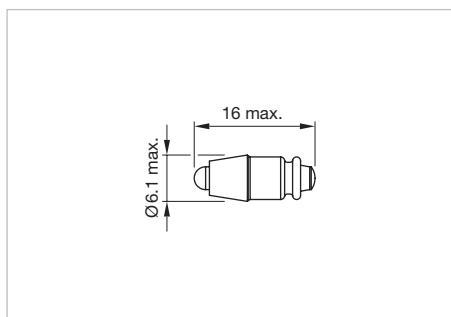


Single-LED, T1 3/4 MG

| Illumination colour | Operating voltage | Operation current | Lumi. Intensity | Dom. Wavelength | Part No. | Wiring diagram |
|---------------------|-------------------|-----------------------|-----------------|----------------------|--------------|----------------|
| Red | 6 V DC +10% | 15 mA $\pm 15\%$ | 350 mcd | 630 nm | 10-2J06.3142 | 55 |
| | 12 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 330 mcd | 630 nm | 10-2J09.1062 | 55 |
| | 24 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 330 mcd | 630 nm | 10-2J12.1062 | 55 |
| | 28 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 330 mcd | 630 nm | 10-2J13.1062 | 55 |
| | 48 V AC/DC +10% | 4 - 8 mA $\pm 15\%$ | 200 mcd | 630 nm | 10-2J19.1042 | 55 |
| Yellow | 6 V DC +10% | 15 mA $\pm 15\%$ | 300 mcd | 587 nm | 10-2J06.3144 | 55 |
| | 12 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 280 mcd | 587 nm | 10-2J09.1064 | 55 |
| | 24 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 280 mcd | 587 nm | 10-2J12.1064 | 55 |
| | 28 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 280 mcd | 587 nm | 10-2J13.1064 | 55 |
| | 48 V AC/DC +10% | 4 - 8 mA $\pm 15\%$ | 180 mcd | 587 nm | 10-2J19.1044 | 55 |
| Green | 6 V DC +10% | 7 mA $\pm 15\%$ | 1050 mcd | 525 nm | 10-2J06.3145 | 55 |
| | 12 V AC/DC +10% | 4 - 7 mA $\pm 15\%$ | 1050 mcd | 525 nm | 10-2J09.1065 | 55 |
| | 24 V AC/DC +10% | 4 - 7 mA $\pm 15\%$ | 1050 mcd | 525 nm | 10-2J12.1065 | 55 |
| | 28 V AC/DC +10% | 4 - 7 mA $\pm 15\%$ | 1050 mcd | 525 nm | 10-2J13.1065 | 55 |
| | 48 V AC/DC +10% | 2 - 4 mA $\pm 15\%$ | 600 mcd | 525 nm | 10-2J19.1045 | 55 |
| Blue | 6 V DC +10% | 15 mA $\pm 15\%$ | 680 mcd | 470 nm | 10-2J06.3146 | 55 |
| | 12 V AC/DC +10% | 4 - 14 mA $\pm 15\%$ | 650 mcd | 470 nm | 10-2J09.1066 | 55 |
| | 24 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 650 mcd | 470 nm | 10-2J12.1066 | 55 |
| | 28 V AC/DC +10% | 7 - 14 mA $\pm 15\%$ | 650 mcd | 470 nm | 10-2J13.1066 | 55 |
| | 48 V AC/DC +10% | 4 - 8 mA $\pm 15\%$ | 400 mcd | 470 nm | 10-2J19.1046 | 55 |
| White | 6 V DC +10% | 6 mA $\pm 15\%$ | 900 mcd | x: 0,31 / y: 0,32 nm | 10-2J06.3149 | 55 |
| | 12 V AC/DC +10% | 3 - 6 mA $\pm 15\%$ | 900 mcd | x: 0,31 / y: 0,32 nm | 10-2J09.1069 | 55 |
| | 24 V AC/DC +10% | 2,5 - 5 mA $\pm 15\%$ | 750 mcd | x: 0,31 / y: 0,32 nm | 10-2J12.1069 | 55 |
| | 28 V AC/DC +10% | 2,5 - 5 mA $\pm 15\%$ | 750 mcd | x: 0,31 / y: 0,32 nm | 10-2J13.1069 | 55 |
| | 48 V AC/DC +10% | 2 - 4 mA $\pm 15\%$ | 600 mcd | x: 0,31 / y: 0,32 nm | 10-2J19.1049 | 55 |

Additional information

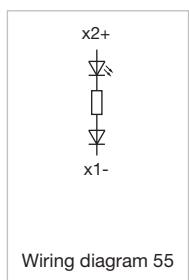
- Due to high surface temperatures, the series resistor must not be soldered directly to the terminals of the equipment (use a terminal plate)
- When using AC/DC types with AC operation, slight flickering can occur
- The luminous intensity stated is for when used with DC
- Electrical and optical data are measured at 25 °C
- The specified versions are built with a protection diode (half wave rectifier) in series and the LED
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination. The customer has to decide what resistor shall be used to the LED
- Where supply voltages are over 48 V, a voltage-reduction element (external protective series resistor) must be used.
- Keep to the country specific safety instructions



Dimensions [mm]

61 Components

Wiring diagrams



Wiring diagram 55

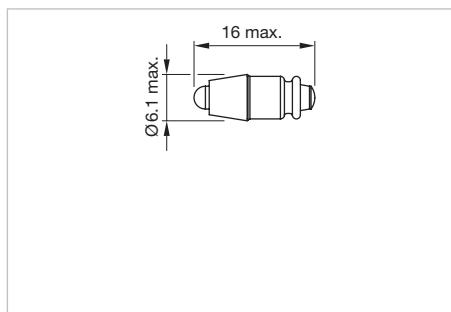


Bi-colour LED, BA9s

| Illumination colour | Operating voltage | Operation current | Lumi. Intensity | Dom. Wavelength | Part No. | Wiring diagram |
|---------------------|-------------------|-------------------|-----------------|-----------------|--------------|----------------|
| Red / Green | 24 V DC +10% | 15/14 mA ±15 % | 600/630 mcd | 625 / 525 nm | 10-A312.314A | 171 |

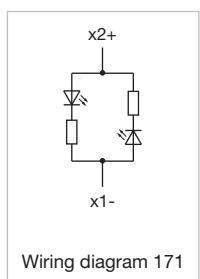
Additional information

- Due to high surface temperatures, the series resistor must not be soldered directly to the terminals of the equipment (use a terminal plate)
- When using AC/DC types with AC operation, slight flickering can occur
- The luminous intensity stated is for when used with DC
- Electrical and optical data are measured at 25 °C
- The specified versions are built with a protection diode (half wave rectifier) in series and the LED
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination. The customer has to decide what resistor shall be used to the LED
- Where supply voltages are over 48 V, a voltage-reduction element (external protective series resistor) must be used.



Dimensions [mm]

Wiring diagrams



Wiring diagram 171



Snap-action switching element 2 positions with plug-in terminal

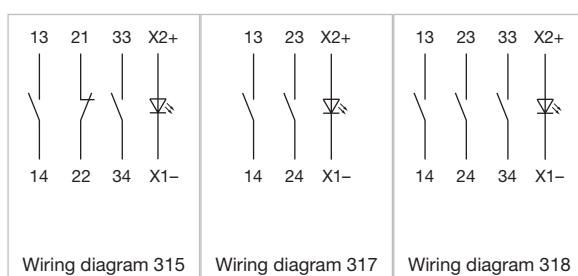
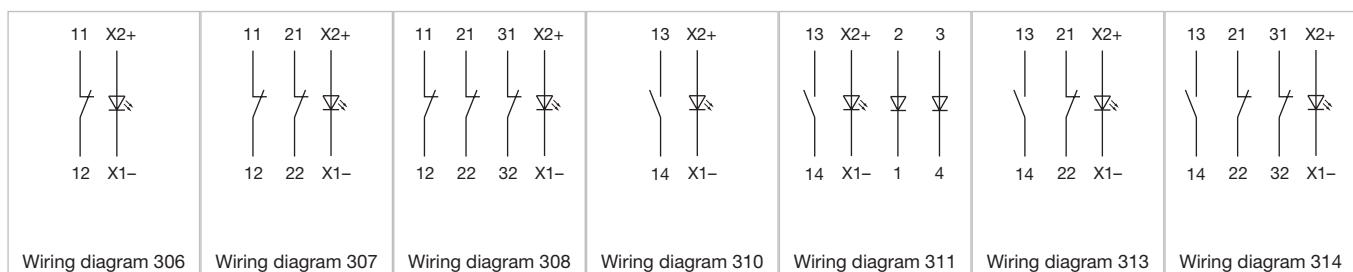
| Switching voltage | Switching current | Contacts | Contact material | Terminal | Part No. | Wiring diagram | Component layout |
|-------------------|-------------------|-------------|------------------|--------------------------------|--------------------------------|----------------|------------------|
| 250 V | 5 A | 1 NO | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8410.12 | 310 | 40 |
| | 5 A | 1 NO | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8410.22 | 310 | 40 |
| | 5 A | 2 NO | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8420.12 | 317 | 43 |
| | 5 A | 2 NO | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8420.22 | 317 | 43 |
| | 5 A | 1 NC | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8440.22 | 306 | 37 |
| | 5 A | 2 NC | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8450.12 | 307 | 41 |
| | 5 A | 2 NC | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8450.22 | 307 | 41 |
| | 5 A | 1 NC / 1 NO | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8470.12 | 313 | 38 |
| | 5 A | 1 NC / 1 NO | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8470.22 | 313 | 38 |
| 150 V | 3 A | 3 NO | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8430.12 | 318 | 45 |
| | 3 A | 3 NO | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8430.22 | 318 | 45 |
| | 3 A | 3 NC | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8460.12 | 308 | 44 |
| | 3 A | 3 NC | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8460.22 | 308 | 44 |
| | 3 A | 2 NC / 1 NO | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8480.12 | 314 | 42 |
| | 3 A | 2 NC / 1 NO | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8480.22 | 314 | 42 |
| | 5 A | 1 NC / 2 NO | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8490.12 | 315 | 39 |
| | 5 A | 1 NC / 2 NO | Gold | Plug-in terminal, 2.8 x 0.5 mm | 61-8490.22 | 315 | 39 |
| | 250 V | 5 A | 1 NC | Silver | Plug-in terminal, 2.8 x 0.5 mm | 61-8440.12-OUL | 306 |

Contacts: NC = Normally closed, NO = Normally open

Additional information

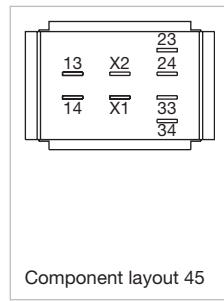
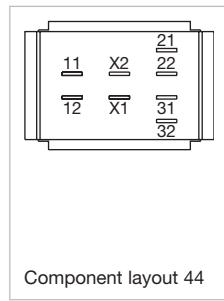
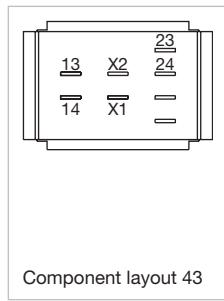
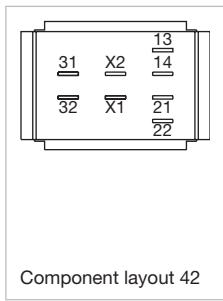
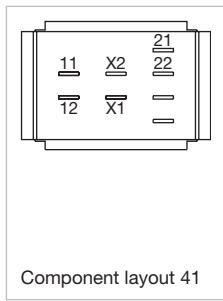
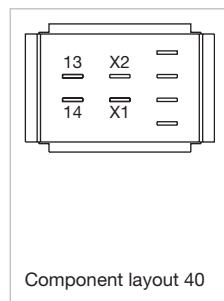
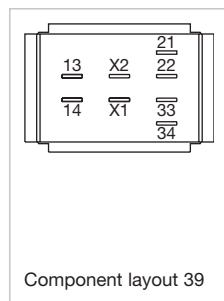
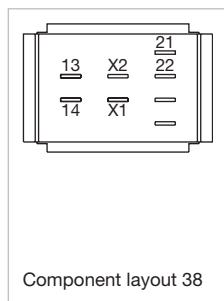
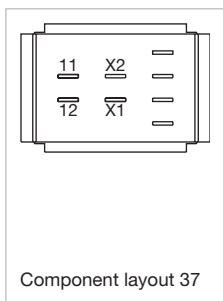
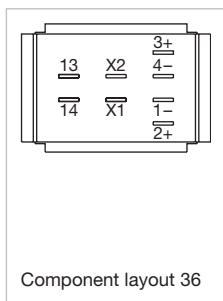
- With lamp terminal

Wiring diagrams



61 Components

Component layouts





Slow-make switching switching element 2 positions with plug-in terminal

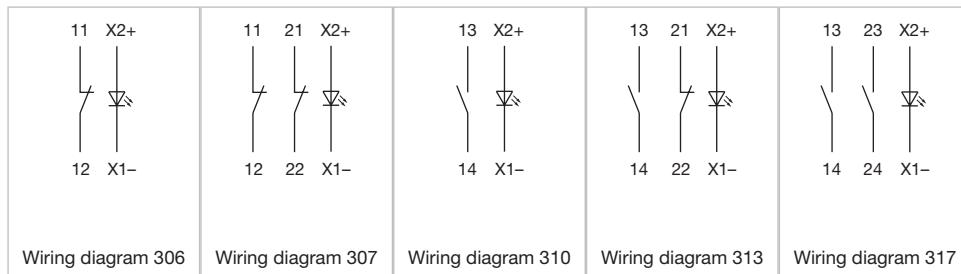
| Switching voltage | Switching current | Contacts | Contact material | Part No. | Wiring diagram | Component Layout |
|-------------------|-------------------|-------------|--------------------|------------|----------------|------------------|
| 250 V | 5 A | 1 NO | Silver | 61-8610.17 | 310 | 49 |
| | 5 A | 2 NO | Silver | 61-8620.17 | 317 | 52 |
| | 5 A | 1 NC / 1 NO | Silver | 61-8670.17 | 313 | 48 |
| 50 V | 0.3 A | 1 NO | Gold-plated silver | 61-8610.37 | 310 | 49 |
| | 0.3 A | 2 NO | Gold-plated silver | 61-8620.37 | 317 | 52 |
| | 0.3 A | 1 NC | Gold-plated silver | 61-8640.37 | 306 | 46 |
| | 0.3 A | 2 NC | Gold-plated silver | 61-8650.37 | 307 | 51 |
| | 0.3 A | 1 NC / 1 NO | Gold-plated silver | 61-8670.37 | 313 | 48 |

Contacts: NC = Normally closed, NO = Normally open

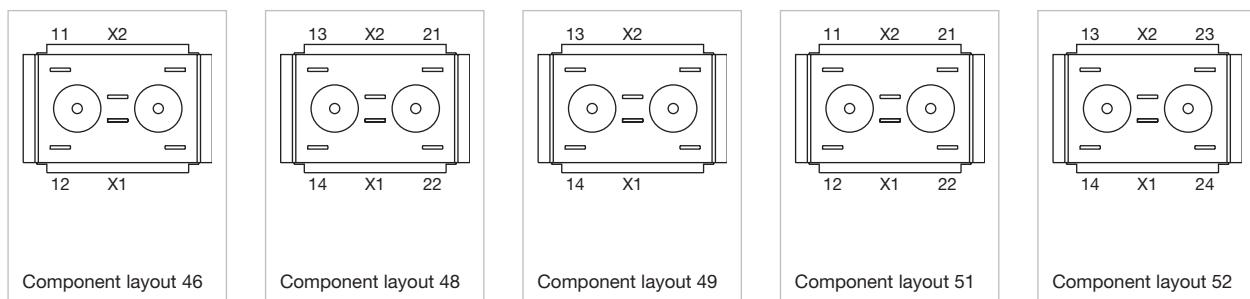
Additional information

- With lamp terminal

Wiring diagrams



Component layouts



61 Components

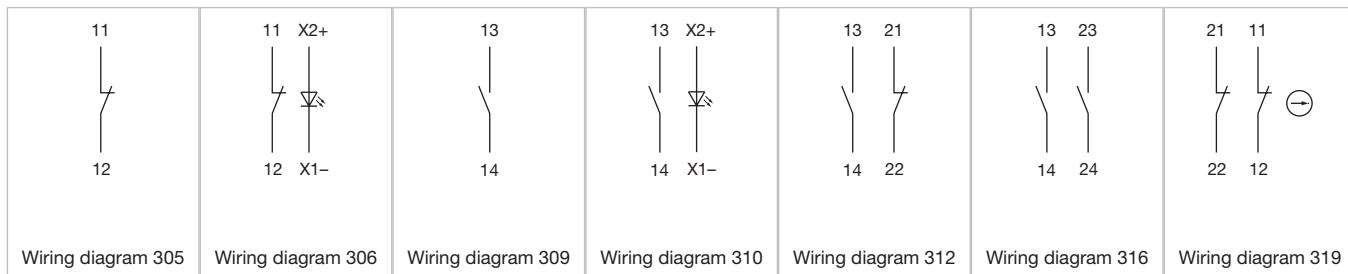


Slow-make switching switching element 2 positions with screw terminal

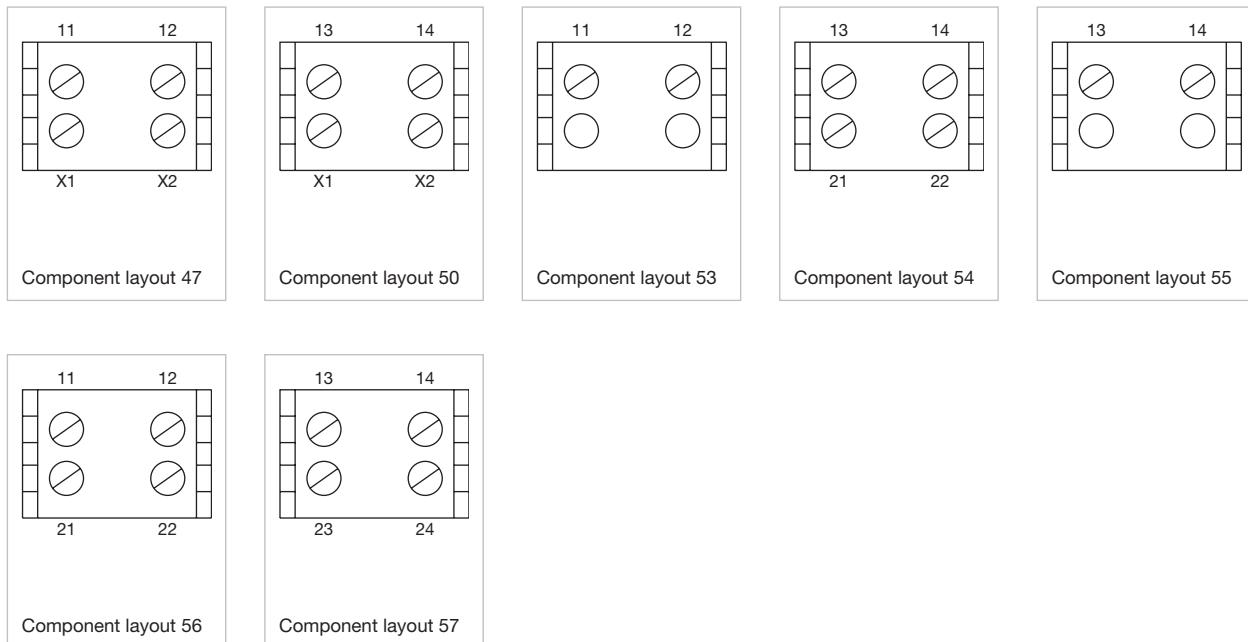
| Switching voltage | Switching current | Contacts | Contact material | Part No. | Wiring diagram | Component Layout |
|-------------------|-------------------|-------------|------------------|------------|----------------|------------------|
| 250 V | 5 A | 1 NO | Silver | 61-8610.11 | 310 | 50 |
| | 5 A | 1 NC | Silver | 61-8640.11 | 306 | 47 |
| | 5 A | 1 NO | Silver | 61-8615.11 | 309 | 55 |
| | 5 A | 2 NO | Silver | 61-8625.11 | 316 | 57 |
| | 5 A | 1 NC | Silver | 61-8645.11 | 305 | 53 |
| | 5 A | 2 NC | Silver | 61-8655.11 | 319 | 56 |
| | 5 A | 1 NC / 1 NO | Silver | 61-8675.11 | 312 | 54 |

Contacts: NC = Normally closed, NO = Normally open

Wiring diagrams



Component layouts





Snap-action switching element 3 positions with plug-in terminal

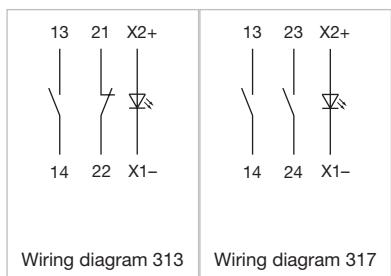
| Contacts | Contact material | Part No. | Wiring diagram | Component Layout |
|-------------|------------------|------------|----------------|------------------|
| 2 NO | Silver | 61-8520.12 | 317 | 60 |
| | Gold | 61-8520.22 | 317 | 60 |
| 1 NC / 1 NO | Gold | 61-8574.22 | 313 | 58 |
| | Silver | 61-8574.12 | 313 | 58 |

Contacts: NC = Normally closed, NO = Normally open

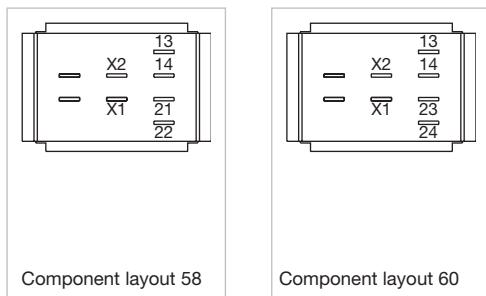
Additional information

- With lamp terminal

Wiring diagrams



Component layouts



61 Components



Slow-make switching switching element 3 positions with plug-in terminal

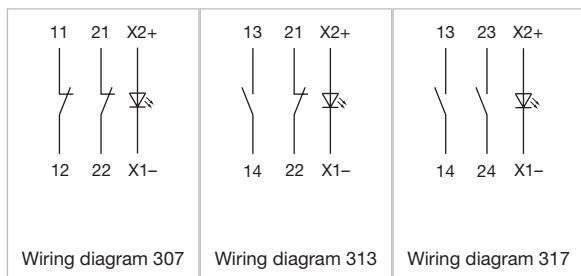
| Contacts | Contact material | Part No. | Wiring diagram | Component Layout |
|-------------|------------------|------------|----------------|------------------|
| 2 NO | Gold | 61-8720.37 | 317 | 63 |
| 2 NC | Gold | 61-8750.37 | 307 | 62 |
| 1 NC / 1 NO | Gold | 61-8770.37 | 313 | 61 |

Contacts: NC = Normally closed, NO = Normally open

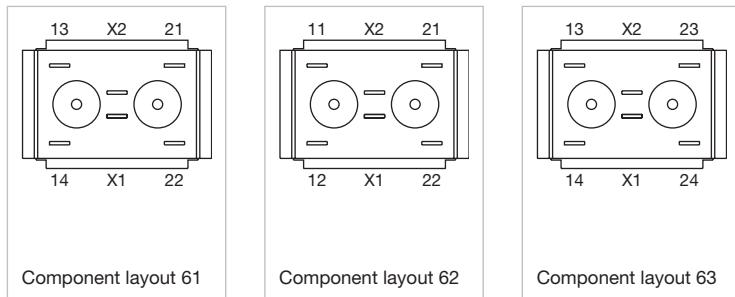
Additional information

- With lamp terminal

Wiring diagrams



Component layouts



Slow-make switching switching element 3 positions with screw terminal

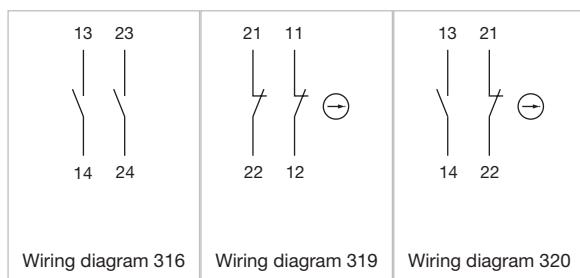
| Switching voltage | Switching current | Contacts | Contact material | Part No. | Wiring diagram | Component Layout |
|-------------------|-------------------|-------------|------------------|------------|----------------|------------------|
| 250 V | 5 A | 2 NO | Silver | 61-8725.11 | 316 | 57 |
| | 5 A | 2 NC | Silver | 61-8755.11 | 319 | 56 |
| | 5 A | 1 NC / 1 NO | Silver | 61-8775.11 | 320 | 54 |

Contacts: NC = Normally closed, NO = Normally open

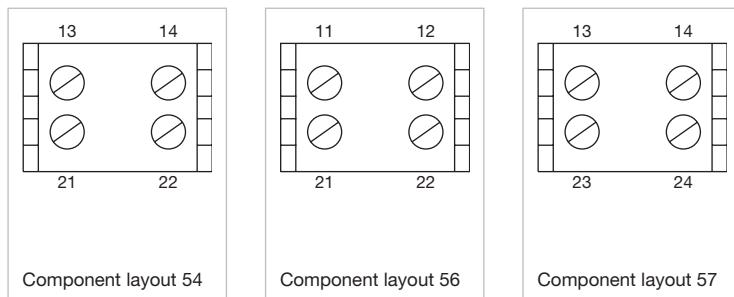
Additional information

- Without lamp terminal

Wiring diagrams



Component layouts



Switching element E-stop

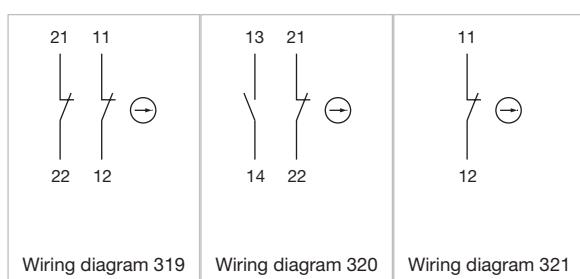
| Switching voltage | Switching current | Contacts | Contact material | Terminal | Part No. | Wiring diagram | Component Layout |
|-------------------|-------------------|-------------|------------------|----------------|------------|----------------|------------------|
| 250 V | 5 A | 1 NC | Silver | Screw terminal | 61-8745.11 | 321 | 53 |
| | 5 A | 2 NC | Silver | Screw terminal | 61-8755.11 | 319 | 56 |
| | 5 A | 1 NC / 1 NO | Silver | Screw terminal | 61-8775.11 | 320 | 54 |

Contacts: NC = Normally closed, NO = Normally open

Additional information

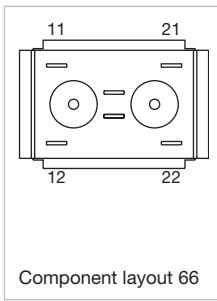
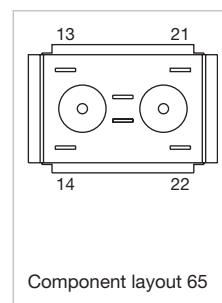
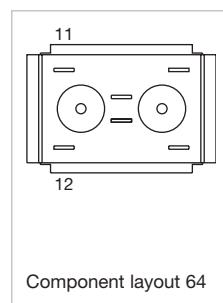
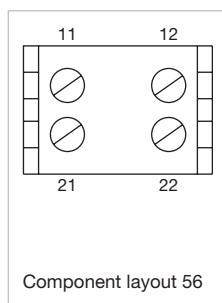
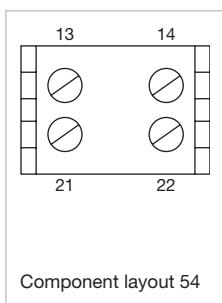
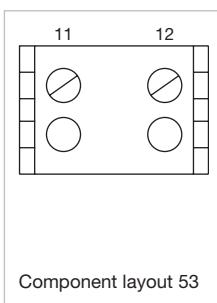
- Without lamp terminal

Wiring diagrams



61 Components

Component layouts

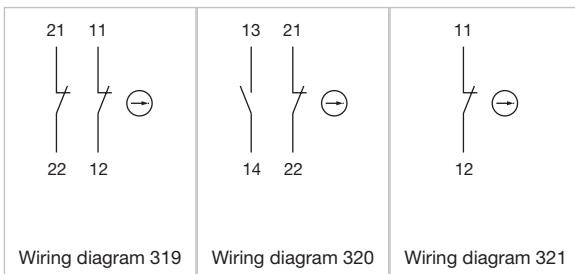


Switching element Stop switch

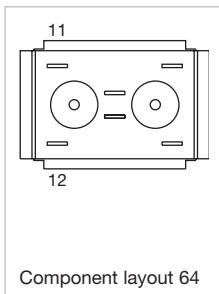
| Switching system | Contacts | Contact material | Terminal | Part No. | Wiring diagram | Component Layout |
|-----------------------------|-------------|------------------|------------------|------------|----------------|------------------|
| Slow-make switching element | 1 NC | Gold | Plug-in terminal | 61-8745.37 | 321 | 64 |
| | 2 NC | Gold | Plug-in terminal | 61-8755.37 | 319 | 66 |
| | 1 NC / 1 NO | Gold | Plug-in terminal | 61-8775.37 | 320 | 65 |

Contacts: NC = Normally closed, NO = Normally open

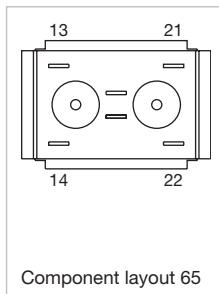
Wiring diagrams



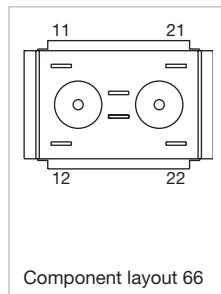
Component layouts



Component layout 64



Component layout 65



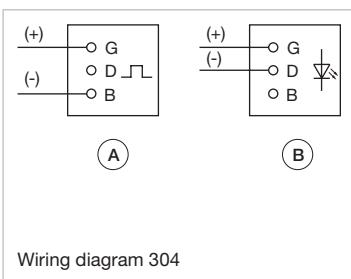
Component layout 66



Flasher element

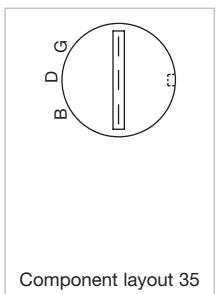
| Product attributes | Terminal | Part No. | Wiring diagram | Component Layout |
|--|--------------------|------------|----------------|------------------|
| Only for Indicator actuator (without indicator complete) | Soldering terminal | 61-8000.05 | 304 | 35 |

Wiring diagrams



Wiring diagram 304

Component layouts



Component layout 35

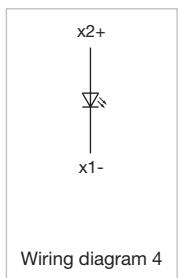


Lamp element

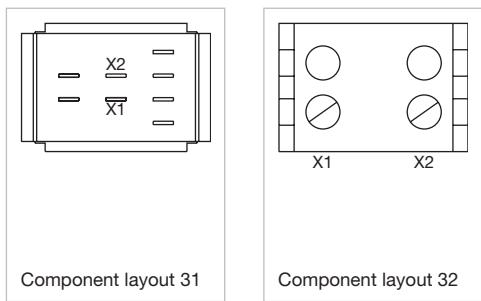
| Terminal | Part No. | Wiring diagram | Component Layout |
|--------------------|------------|----------------|------------------|
| Screw terminal | 61-8006.01 | 4 | 32 |
| Soldering terminal | 61-8006.02 | 4 | 31 |

61 Components

Wiring diagrams



Component layouts



Anti-twist ring

| Material | Mounting cut-out | Part No. |
|----------|------------------|-----------|
| metal | Ø 16.2 mm | 51-910 |
| | Ø 22.3 mm | 61-9912.0 |

Front side

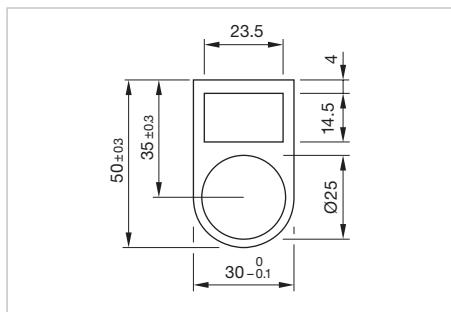


Legend frame

| Dimensions | Material | Colour | Surface | Mounting type | Part No. |
|---------------|-----------|--------|----------|---------------|-----------|
| 30 mm x 50 mm | aluminium | Black | anodised | adhesive | 61-9980.0 |

Additional information

- For devices with front dimension Ø 25 mm, flush design
- The colour of anodised aluminium parts can vary due to technical production reasons



Dimensions [mm]



Legend plate

| Product attributes | Dimensions | Material | Colour | Surface | Mounting type | Marking | Part No. |
|---|-------------------|-----------|--------|----------|---------------|--|-----------|
| | Ø 43 mm | plastic | Yellow | | | without marking | 61-9970.0 |
| | Ø 43 mm | plastic | Yellow | | | NOT AUS | 61-9970.1 |
| | Ø 43 mm | plastic | Yellow | | | EMERGENCY STOP | 61-9970.2 |
| | Ø 43 mm | plastic | Yellow | | | ARRET D'URGENCE | 61-9970.3 |
| | Ø 43 mm | plastic | Yellow | | | NOT HALT | 61-9970.6 |
| | Ø 43 mm | plastic | Yellow | | | Symbol EN ISO 13850 symbol (Stop switch) | 61-9970.9 |
| For legend frame Part No. 704.968.2 and 704.968.3 | 14.5 mm x 23.5 mm | aluminium | Nature | anodised | adhesive | | 704.968.0 |
| | 14.5 mm x 23.5 mm | aluminium | Black | anodised | adhesive | | 704.968.1 |

Additional information

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

61 Accessories



Blind plug raised design

| Dimensions | Material | Colour | Mounting cut-out | Part No. |
|---------------|----------|--------|------------------|-----------|
| 24 mm x 24 mm | plastic | Black | | 61-9450.0 |
| 18 mm x 18 mm | plastic | Black | Ø 16.2 mm | 51-948.0 |
| 18 mm x 24 mm | plastic | Black | Ø 16.2 mm | 51-947.0 |
| Ø 18 mm | plastic | Black | Ø 16.2 mm | 51-949.0 |

Additional information

- Blind plugs fit also in mounting cut-outs with anti-twist device

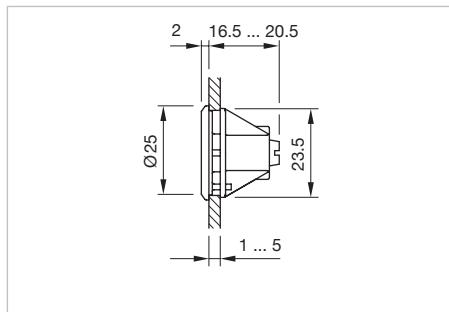


Blind plug flush design

| Dimensions | Material | Colour | Mounting cut-out | Part No. |
|---------------|----------|--------|------------------|-----------|
| 24 mm x 24 mm | plastic | Black | 21 mm x 21 mm | 61-9451.0 |
| 24 mm x 30 mm | plastic | Black | 21 mm x 27 mm | 61-9452.0 |
| Ø 25 mm | plastic | Black | Ø 25 mm | 61-9453.0 |

Additional information

- Please note that bigger minimum distances are necessary



Dimensions [mm]
for Part No. 61-9453.0



Key protection cap

| Product attributes | Material | Colour | Part No. |
|------------------------|----------|--------|----------|
| For standard lock: DOM | plastic | Black | 31-985.0 |



Spare key

| Product attributes | Material | Part No. |
|-------------------------|----------|-------------|
| Standard lock KABA 1001 | | 14-987.1001 |
| Standard lock: DOM 311 | metal | 31-989.311 |

Additional information

- Optional lock numbers on request



Protective cap

| Product attributes | Material | Colour | Optics | Part No. |
|---|----------|------------|-------------|-----------|
| For front bezel set 24 mm x 30 mm, flush design | silicone | Colourless | transparent | 61-9927.2 |
| For front bezel Ø 25 mm | silicone | Colourless | transparent | 84-9103.7 |

Additional information

- For flat lens profil only
- When using the front protection cover the external sealing in the actuator has to be removed



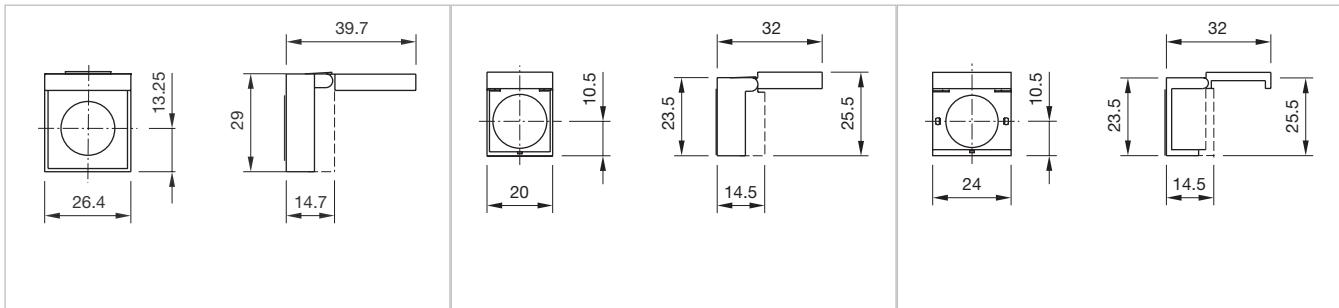
Spare key (key blank)

| Product attributes | Material | Part No. |
|------------------------------------|----------|------------|
| For standard lock: DOM 311 ... 445 | metal | 31-989.300 |



Protective cover raised design

| Product attributes | Dimensions | Material | Colour | Optics | Part No. |
|---------------------------------|---------------|----------|------------|-------------|-----------|
| Hinged, with cover locking hole | 24 mm x 24 mm | plastic | Colourless | transparent | 61-9920.0 |
| Hinged, with means for sealing | 18 mm x 18 mm | plastic | Colourless | transparent | 51-920 |
| | 18 mm x 24 mm | plastic | Colourless | transparent | 51-925 |

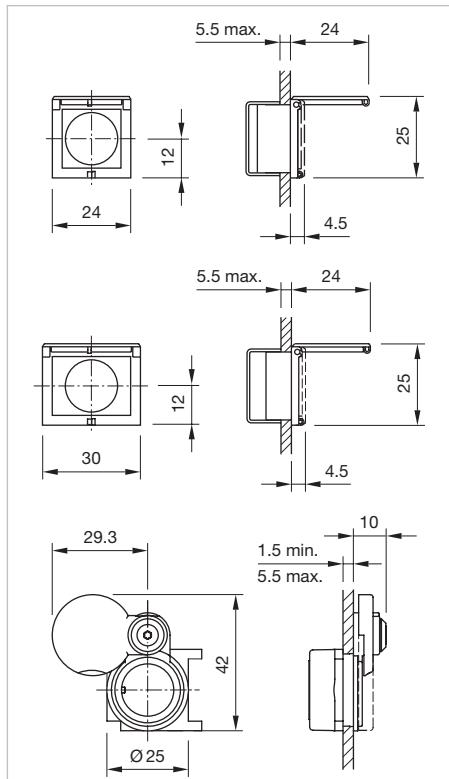


61 Accessories



Protective cover flush design

| Product attributes | Dimensions | Material | Colour | Optics | Mounting cut-out | Part No. |
|--|---------------|----------|------------|-------------|------------------|-----------|
| Hinged, with means for sealing, for device with front dimension 24 mm x 24 mm | 24 mm x 24 mm | plastic | Colourless | transparent | 21 mm x 21 mm | 61-9921.0 |
| Hinged, with means for sealing, for device with front dimension 24 mm x 30 mm | 30 mm x 24 mm | plastic | Colourless | transparent | 27 mm x 21 mm | 61-9922.0 |
| Slide by side, without cover locking hole, for device with front dimension Ø 25 mm | Ø 25 mm | plastic | Colourless | transparent | Ø 22.3 mm | 61-9924.0 |



Dimensions [mm]

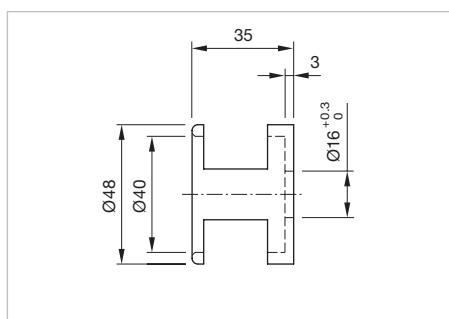


Protective shroud

| Material | Colour | Surface | Part No. |
|-----------|--------|----------|----------|
| aluminium | Yellow | anodised | 61-9965 |

Additional information

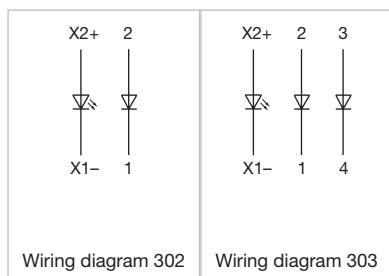
- The protection shroud is not suitable for a proper use of emergency stop. It can obstruct a spontaneous operation of the emergency stop



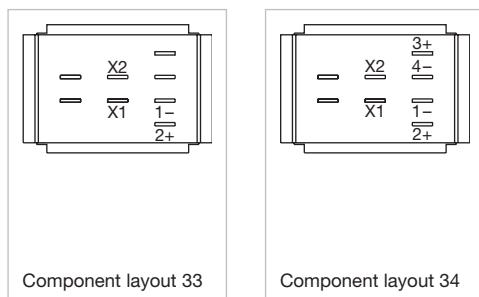
Dimensions [mm]

Rear side

Wiring diagrams



Component layouts



Flat receptacle

| Product attributes | Material | Part No. |
|---|-----------------|----------|
| 2.8 x 0.5 mm plug-in terminal | metal | 31-946 |
| 2.8 x 0.5 mm in combination with multi-plug housing | metal | 51-943.1 |
| Plug-in terminal 2.8 x 0.5 mm, partial isolated AWG-20-18 DIN 46245, set of 250 pieces, in combination with crimping tool, Part No. 61-9902 | metal / plastic | 61-9901 |



Insulation sleeve

| Product attributes | Material | Part No. |
|----------------------------|----------|----------|
| For flat receptacle 2.8 mm | plastic | 31-929 |

61 Accessories



Terminal cover

| Product attributes | Material | Part No. |
|---|----------|-----------|
| For snap-action switching element with soldering terminal | plastic | 61-9830.2 |



Side terminal plate empty

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



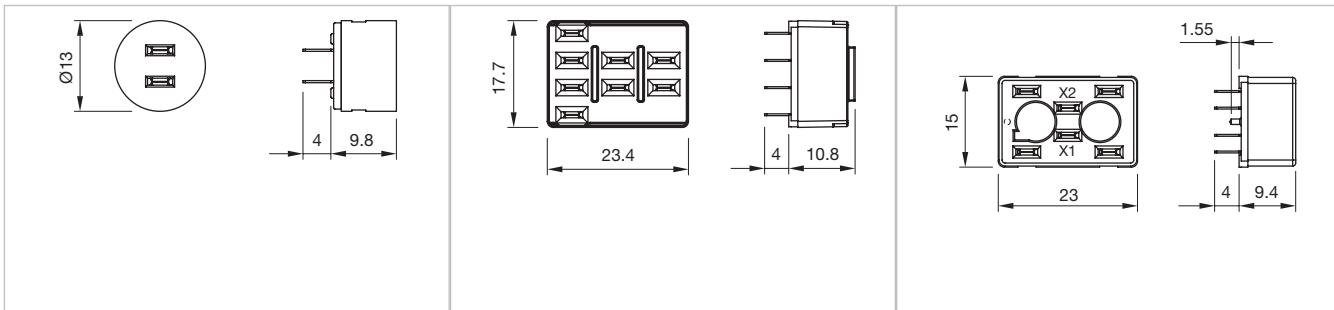
Multi-plug housing

| Product attributes | Material | Part No. |
|--|----------|----------|
| For snap-action switching element, max. 6 connections possible | plastic | 61-9830 |



PCB plug-in base

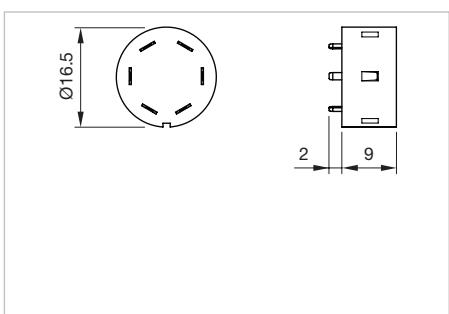
| Product attributes | Terminal | Pins | Part No. | Component Layout |
|---|--------------|-------|-----------|------------------|
| For indicator complete | PCB terminal | Axial | 61-9820.1 | 69 |
| For snap-action switching element, indicator- and diode element | PCB terminal | Axial | 61-9821.1 | 67 |
| For slow-make switching element | PCB terminal | Axial | 61-9823 | 68 |
| For emergency stop switch | PCB terminal | Axial | 61-9903 | 108 |



Dimensions [mm]
For Part No. 61-9820.1

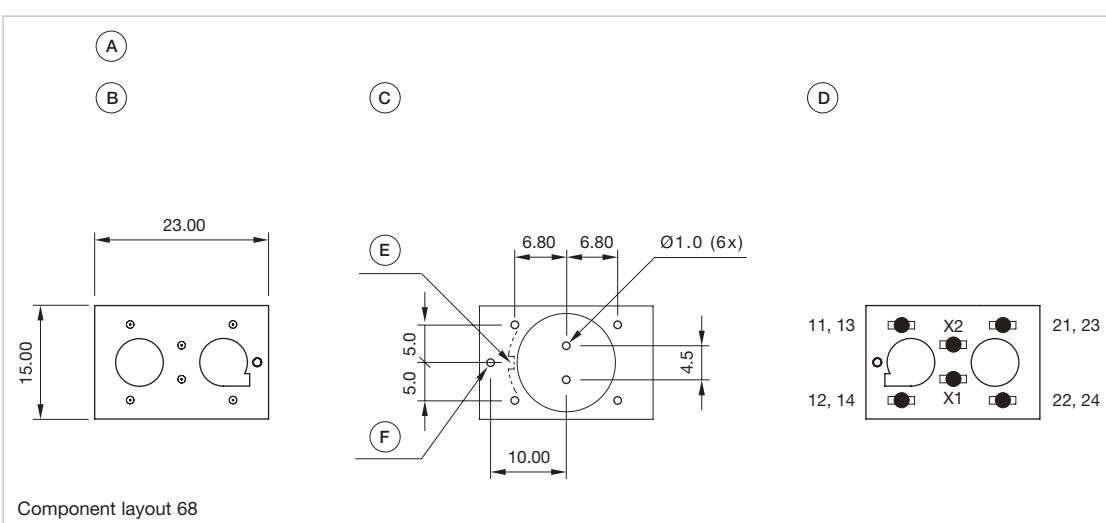
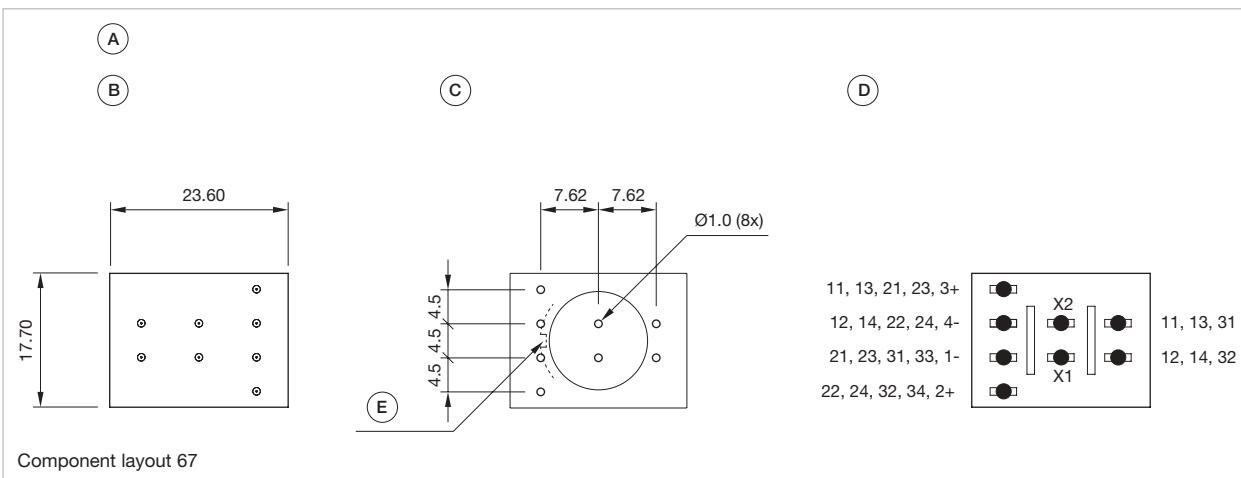
Dimensions [mm]
For Part No. 61-9821.1

Dimensions [mm]
For Part No. 61-9823



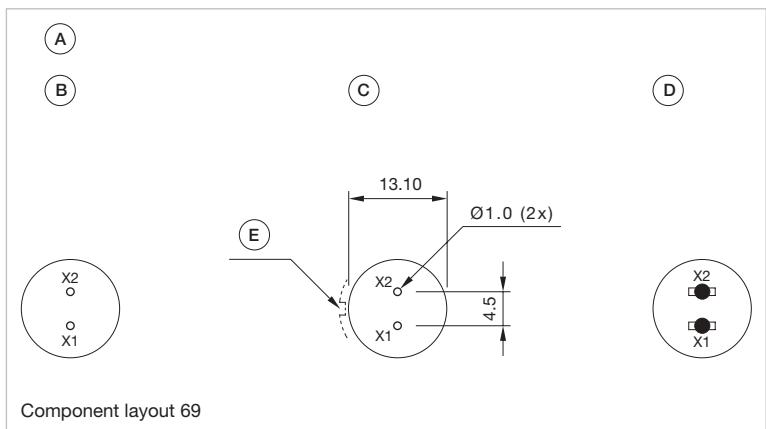
Dimensions [mm]
For Part No. 61-9903

Component layouts



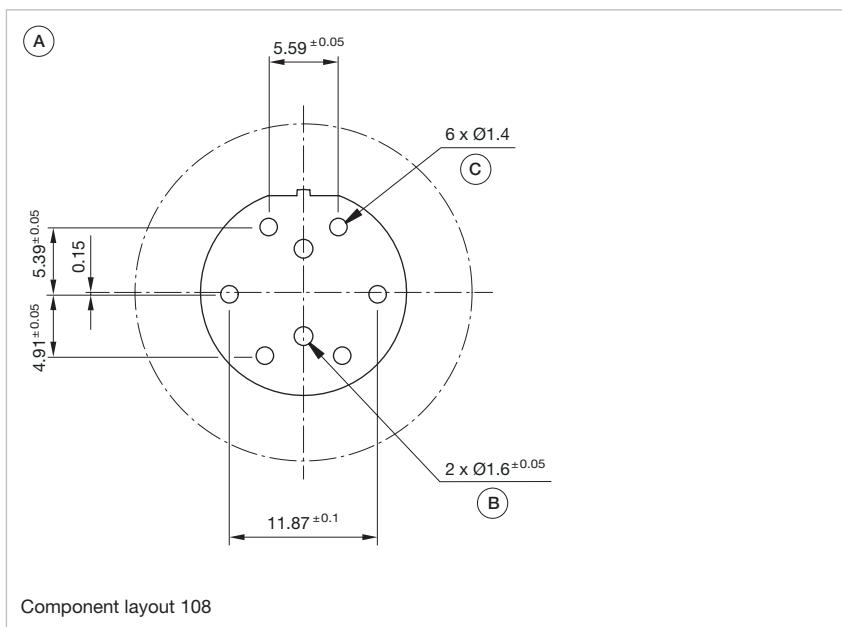
61 Accessories

Component layouts



Component layout 69

Dimensions in [mm]
 A = PCB plug-in base
 B = Terminals (rear side)
 C = Drilling plan (component side)
 D = Occupancy plan (component side)
 E = Anti-rotation device
 F = Positioning hole



Component layout 108

Dimensions in [mm]
 A = Drilling plan (component side)
 B = Positioning hole
 C = Pins for contacts/LED



Series resistor

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

Additional information

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

Mounting

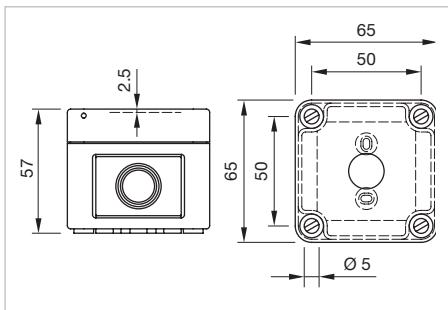


Enclosure

| Dimensions | Material | IP Protection | Part No. |
|-----------------------|----------|---------------|-----------|
| 65 mm x 57 mm x 65 mm | plastic | IP66 | 61-9480.5 |

Additional information

- Bottom grey similar RAL 7035; cover lead-sealable, yellow similar RAL 1004



Dimensions [mm]



Fixing nut

| Product attributes | Dimensions | Material | Colour | Part No. |
|--|------------|----------|--------|-----------|
| Special recommended for keylock switches | Ø 16 mm | metal | Silver | 31-991 |
| Standard delivery | Ø 16 mm | plastic | Black | 61-9915.0 |



Crimping tool AWG 20-10

| Product attributes | Part No. |
|--|----------|
| In combination with flat receptacle, Part No.Nr. 61-9901 | 61-9902 |



Dismantling tool

| Product attributes | Part No. |
|--|-----------|
| For dismantling of the switching element | 61-9711.0 |



Lens remover

| Product attributes | Material | Part No. |
|--------------------|-----------------|-----------|
| For raised design | metal | 02-905 |
| For flush design | metal / plastic | 61-9730.0 |



Cable gland

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

61 Accessories



Lamp remover

| Product attributes | Material | Part No. |
|--|----------|-----------|
| A switching action may occur when replacing the lamp | plastic | 61-9740.0 |



Mounting adapter

| Material | Part No. |
|----------|----------|
| Plastic | 61-9904 |



Mounting tool

| Product attributes | Dimensions | Material | Part No. |
|---|------------|----------|----------|
| For tightening or loosening of the fixing nut Ø 16 mm | Ø 16 mm | metal | 01-907 |

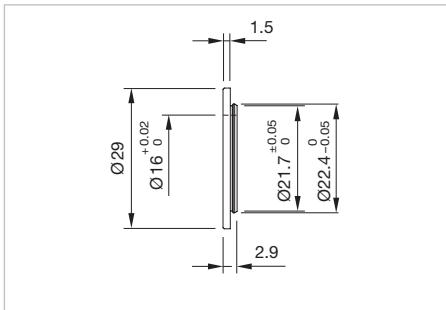


Reducing ring

| Material | Mounting cut-out | Part No. |
|-----------|------------------|----------|
| aluminium | Ø 22.3 mm | 61-9960 |

Additional information

- Only for use of devices with front size 24 x 24 mm and Ø 24 mm, mounting cut-out Ø 22.3 mm to Ø 16.2 mm, without keylock- and selector switch



Dimensions [mm]



Tool set

| Material | Part No. |
|-----------------|-------------|
| metal / plastic | K61-999.100 |

Additional information

- Consists of lens remover, lamp-and LED remover, mounting tool and dismantling tool

Actuator with snap-action switching element

Switching system

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

The switching elements are optionally equipped with the following switching functions

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

The number of switching elements cannot exceed three.

The switching elements provided for the 3-position switch actuators are equipped with max. 2 NC or 2 NO or any combination. The number of switching elements cannot exceed two.

Material

Lens

Raised mounting Plastic, as per UL 94 HB, flush mounting Plastic, as per UL 94 V0, or Aluminium anodized

Front bezel

Plastic, as per UL 94 V0, or Aluminium anodized

Material of contact

Silver or silver with gold plating

Switching element

Plastic, as per UL 94 V0

Actuator housing

Plastic, as per UL 94 V0, self-extinguishing

Mechanical characteristics

Terminals

| Solder/Plug-in | rigid | flexible | superflexible |
|----------------|-----------------------------|------------------------------|---------------------|
| 1 wire | 0.5 ... 1.5 mm ² | 0.5 ... 0.75 mm ² | 0.5 mm ² |
| 2 wires | 0.75 mm ² | 0.5 mm ² | |

Tightening torque

For fixing nut max. 0.5 Nm

Actuating torque

Selector-/Keylock switch 0.025 ... 0.1 Nm

Actuating force

Pushbutton 3 ... 5 N

Actuating travel

Pushbutton approx. 3 mm

Selector-/keylock switch 2 positions

3 positions

Momentary action approx. 42°

approx. 2 x 42°

Maintained action approx. 90°

approx. 2 x 90°

Mechanical lifetime

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

Pushbutton maintained action 1 million cycles of operation

Pushbutton momentary action 2 million cycles of operation

Keylock switch 50 000 cycles of operation

Selector switch 100 000 cycles of operation

Electrical characteristics

Standards

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

Rated Operational Voltage U_o

250 VAC/DC as per EN/IEC 60947-1

150 VAC/DC (Switching elements with 3 contacts)

Rated Insulation Voltage U_i

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

Rated Impulse Withstand Voltage U_{imp}

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

Electrical lifetime

≥50 000 cycles of operation at 250 VAC, 2 A, cosφ 0.95, as per EN/IEC 60947-5-1

Electrostatic discharge (ESD)

Keylock switch 11 kV

Thermal current I_{th}

≤5 A

Switching voltage and switching current

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

Voltage 125 VAC 250 VAC

Current 2.5 A 2 A

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

Voltage 250 VDC

Current 0.15 A

Recommended minimum operational data

Material of contact Silver Silver with gold plating

Voltage 20 VAC/DC 5 VAC/DC

Current 100 mA 10 mA

61 Technical data

Electric strength

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

Overvoltage category

III, as per EN/IEC 60947-5-1

Protection class

II, as per EN/IEC 61058-1

Degree of pollution

2, as per EN/IEC 60947-1

Ambient conditions

Storage temperature

-40 °C ... +85 °C

Operating temperature

-25 °C ... +55 °C

Protection degree

As per EN/IEC 60529

IP65 front side

IP40 rear side

Shock resistance

(semi-sinusoidal)

Max. 100 m/s², pulse width 11 ms, 3-axis,

as per EN/IEC 60068-2-27

Vibration resistance

(sinusoidal)

Max. 100 m/s² at 10 Hz ... 500 Hz, as per EN/IEC 60068-2-6

Climate resistance

Damp heat, cyclic

96 hours, +25 °C/97 %, +55 °C/93 % relative humidity, as per EN IEC 60068-2-30

Damp heat, state

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

Rapid change of temperature

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

Approvals

Approbations

CB (IEC 61058)

CB (IEC 60947)

CSA

ENEC (EN 61058)

CQC

CENELEC (IEC 60947-5-1)

DNV GL (previously Germanischer Lloyd)

GOST

UL

NFF

Conformities

CE

Actuator with slow-make switching element

Switching system

Double-break slow-make system, contact opening width 2 x 1.5 mm, with 2 x 2 contact points per switching element.

NC-contact elements in the slow-make elements fulfill requirements of switches with forced opening as per EN/IEC 60947-5-12.17.

The slow-make elements are optionally obtainable with the following switching functions 1 NO or 2 NO, 1 NC or 2 NC, 1 NO + 1 NC.

Front bezel

Plastic, as per UL 94 V0, or Aluminium anodized

Material of contact

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

Switching element

Plastic, as per UL 94 V0

Actuator housing

Plastic, as per UL 94 V0, self-extinguishing

Material

Lens

Raised mounting Plastic, as per UL 94 HB,

Flush mounting Plastic, as per UL 94 V0, or Aluminium anodized

Mechanical characteristics

Terminals

| | | | |
|---------------------------|-----------------------------|------------------------------|---------------------|
| – Solder/Plug-in terminal | rigid | flexible | superflexible |
| 1 wire | 0.5 ... 1.5 mm ² | 0.5 ... 0.75 mm ² | 0.5 mm ² |
| 2 wires | 0.75 mm ² | 0.5 mm ² | |
| – Screw terminal | | | |
| 1 wire | 0.5 ... 1.5 mm ² | 0.5 ... 0.75 mm ² | 0.5 mm ² |
| 2 wires | 0.75 mm ² | 0.5 mm ² | 0.5 mm ² |

Tightening torque

For fixing nut max. 0.5 Nm

Actuating torque

Selector-/Keylock switch 0.04 ... 0.16 Nm

Actuating force

Pushbutton 3.5 ... 11 N

Emergency stop switch max. 65 N

Actuating travel

Pushbutton approx. 3 mm

Emergency stop switch approx. 10 mm

Selector-/keylock switch 2 positions 3 positions

Momentary action approx. 42° approx. 2 x 42°

Maintained action approx. 90° approx. 2 x 90°

Mechanical lifetime

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

Pushbutton maintained action 1 million cycles of operation

Pushbutton momentary action 2 million cycles of operation

Emergency-stop switch 50 000 cycles of operation

Keylock switch 50 000 cycles of operation

Selector switch 100 000 cycles of operation

Electrical characteristics

Standards

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

Electrical life

≥ 50 000 cycles of operation at 250VAC, 2A, cosφ 0.95, as per EN/IEC 60947-5-1

Switching element of emergency stop 6050 cycles of operation, as per EN/IEC 60947-5-5

Electrostatic discharge (ESD)

Keylock switch 11 kV

Electric strength

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

Overvoltage category

III, as per EN/IEC 60947-5-1

Protection class

II, as per EN/IEC 61058-1

Degree of pollution

2, as per EN/IEC 60947-1

Electrical characteristics for silver contacts

Rated Operational Voltage U_o

250VAC/DC as per EN/IEC 60947-1

150 VAC/DC (Switching elements with 3 contacts)

Rated Insulation Voltage U_i

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

Rated Impulse Withstand Voltage U_{imp}

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

Contact resistance

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

Thermal current I_{th}

≤ 5 A

Switching voltage and switching current

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

Voltage

250 VDC

Current

0.2 A

Recommended minimum operational data

20VAC/DC, 100mA

Electrical characteristics for gold contacts

Rated Operational Voltage U_o

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

Rated Insulation Voltage U_i

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

Rated Impulse Withstand Voltage U_{imp}

0.8 kV, as per EN/IEC 60947-1

Thermal current I_{th}

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

61 Technical data

Switching voltage and switching current

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

Voltage 50VAC

Current 0.5A

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

Voltage 50VDC

Current 0.1A

Recommended minimum operational data

Voltage 10mVAC/DC

Current 2mA

Ambient conditions

Storage temperature

-40 °C ... +85 °C

Operating temperature

-25 °C ... +55 °C

Protection degree

As per EN/IEC 60529

IP65 frontside

IP40 rear side

Shock resistance

(semi-sinusoidal)

Max. 100 m/s², pulse width 11 ms, 3-axis,

as per EN/IEC 60068-2-27

Vibration resistance

(sinusoidal)

Max. 100 m/s² at 10Hz ... 500Hz, as per EN/IEC 60068-2-6

Climate resistance

Damp heat, cyclic

96 hours, +25 °C/97 %, +55 °C/93 % relative humidity,

as per EN/IEC 60068-2-30

Damp heat, state

56 days, +40 °C/93 % relative humidity,

as per EN/IEC 60068-2-78

Rapid change of temperature

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

Approvals

Approbations

CB (IEC 61058-1)

CB (IEC 60947-5-1)

CSA

ENEC (EN 61058-1)

CQC

DNV GL (previously Germanischer Lloyd)

EAC

UL

NFF

CENELEC (EN 60947-5-1)

Conformities

CE

2014/35/EC (LVD)

Actuator with flasher element

Material

Lens

Raised mounting plastic, as per UL 94 HB,
Flush mounting plastic, as per UL 94 V0

Actuator housing

Plastic, as per UL 94 V0, self-extinguishing

Flasher element

Plastic, as per UL 94 V0

Mechanical characteristics

Terminals

Soldering terminal

Tightening torque

For fixing nut max. 0.5Nm

Electrical characteristics

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

| |
|---------------------------|
| Flashing frequency |
| 1Hz ±0.25Hz |

| |
|--------------------------|
| Pulse duty factor |
| Approx. 50 % |

| |
|--------------------------|
| Operating voltage |
| 12 ... 28VAC/DC ±10 % |

Ambient conditions

| |
|------------------------------|
| Operating temperature |
| 0°C ... +45°C |
| Protection degree |
| As per EN/IEC 60529 |
| IP65 front side |
| IP40 rear side |

Approvals

| |
|---------------------|
| Conformities |
| CE |
| 2011/65/EG (RoHS) |

Buzzer**Buzzer system**

Electronic non-contacting buzzer with IC oscillator

Electrical characteristics

| |
|--------------------------|
| Operating voltage |
| 10 ... 26VDC |

Material

| |
|--------------------------|
| Operating current |
| ≤20mA |

| |
|--------------------|
| Buzzer case |
| Plastic |

Ambient conditions

| |
|--------------------|
| Front bezel |
| Plastic |

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

Mechanical characteristics

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

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

| |
|--------------------------|
| Protection degree |
| IP 40 |

| |
|---------------------------|
| Tightening torque |
| For fixing nut max. 0.5Nm |

| |
|--------------|
| IP 65 |
|--------------|

Electrical characteristics**Approvals**

| |
|-------------------------|
| Frequency (tone) |
| Approx. 2.0kHz |

| |
|---------------------|
| Conformities |
| CE |
| 2011/65/EC (RoHS) |

| |
|---------------------------|
| Interval frequency |
| 2Hz |

Sound pressure

| |
|--|
| 88dB (A) ±8dB at a distance of 0.1 m (IP 40) |
| 82dB (A) ±8dB at a distance of 0.1 m (IP 65) |
| Volume variable with a 1MΩ potentiometer or corresponding fixed resistor |

61 Technical data

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

Materials

Mushroom head lens
Plastic

Actuator housing material
Plastic

Contact material
Metal (Silver palladium)

Mechanical characteristics

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

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

Mounting cut-out
Ø 16.2 mm

Tightening torque
Max. 0.8 Nm

Actuation force
30 N ± 4 N

Actuating distance
Approx. 4.2 mm

Mechanical life time
≥ 20 000 switching cycles

Electrical characteristics

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

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

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

Rated insulation voltage U'
250 V (EN IEC 60947-1)

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

Contact resistance test

At 20 mV, 100 mA (IEC 60512-2-1) Insulation resistance

Insulation resistance

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

Conventional therm. Current in free air I_{th}

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

Rated short-circuit current caused

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

Breaking capacities

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

50 VAC

0.2 A

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

50 VDC

0.2 A

Minimum operating data

Voltage 1 VAC/DC

Current 1 mA

Dielectric strength

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

Protective class

II (EN IEC 60947-5)

Overvoltage category

II (EN IEC 60947-1)

Degree of pollution

3 (EN IEC 60947-1)

Electrical life time

≥ 20 000 switching cycles

Ambient conditions

Storage temperature

-40 °C ... +85 °C

Operating temperature

-25 °C ... +55 °C

Protection degree

IP66 front side
IP67 front side, in accordance with EN IEC 60529/A1:2010-04
IP69K front side, in accordance with EN IEC 60529/A1:2010-04
Panel surface roughness Ra1.6
IK07 (Cover D27)
IK06 (Cover D40)

Resistance to shock

Max. 150 m/s², pulse width 11 ms, 3-axis
(half sinusoidal EN IEC 60068-2-27)

Vibration resistance

Max. 100 m/s² from 10 Hz ... 500 Hz, 20 cycles, 3-axis
(sinusoidal EN IEC 60068-2-6)

Environmental resistance

Humid heat, constant, 56 days, +40 °C/93 % relative humidity (EN IEC 60068-2-78)
Dry heat, 96 hours, +55 °C (EN IEC 60068-2-2)
Cold, 96 hours, -25 °C (EN IEC 60068-2-1)
UV test, 56 days (EN 60068-2-5:1999)

Approvals

Approbations
UL NISD (cULus, UL EU) LISTED E-File no.: E341760
CB (EN 60947)

Conformities

CE

EAO reserves the right to alter specifications without further notice.

61 Marking

General notes

1. Engraving

In addition to the most commonly used world languages, in DIN1451-3 close spacing, other typefaces are available as Scandinavian, Slavic, Greek, Russian and Polish. Red, blue and black lenses are filled with white colour. Other colour lenses are filled in black. Standard height of letters is 2 mm. If the height is not specified, we will supply 2 mm engraved letters.

2. Hot stamping

For larger series it is worth considering markings by means of hot stamping. We will pleased to advise you.

3. Film inserts

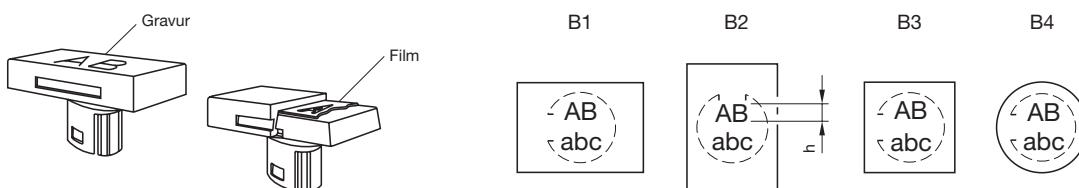
Instead of using engraving the lenses can be fitted with transparent film inserts, as an alternative. In the case of use of a smoke-black lens the fitted film becomes readable only if the lamp is on. The film thickness is 0.2 mm. For lenses Ø 24 mm and Ø 25 mm with Part No. 619642.x the marking takes place directly on the text plate Part No. 61-9707.7, instead of a film insert.

Important: Consider pushbutton mounting orientation befor specifying engraving characters!

Lenses for indicators and illuminated pushbuttons, raised mounting

All dimensions in mm

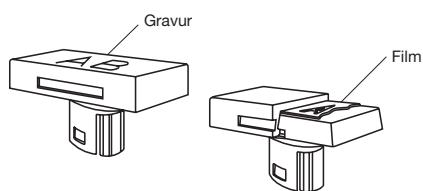
| Front size (Lens) | Film insert max. size | Height of letters h | Number of lines | Number of capital letters per line (target value) | Number of small letters per line (target value) | Image |
|-------------------|------------------------|---------------------|-----------------|---|---|-------|
| 24 x 30 (18 x 24) | 15.1 x 21 | 2.5 | 4 | 10 | 11 | B1 |
| | | 3 | 3 | 8 | 9 | B1 |
| | | 4 | 2 | 6 | 7 | B1 |
| | | 5 | 2 | 5 | 6 | B1 |
| | | 6 | 1 | 4 | 5 | B1 |
| | | 8 | 1 | 3 | 3 | B1 |
| | | 2.5 | 5 | 7 | 8 | B2 |
| | | 3 | 4 | 6 | 7 | B2 |
| | | 4 | 3 | 5 | 5 | B2 |
| | | 5 | 3 | 4 | 4 | B2 |
| | | 6 | 2 | 3 | 3 | B2 |
| | | 8 | 2 | 2 | 2 | B2 |
| 24 x 24 (18 x 18) | 15.1 x 15.1 | 2.5 | 4 | 7 | 8 | B3 |
| | | 3 | 3 | 6 | 7 | B3 |
| | | 4 | 2 | 5 | 5 | B3 |
| | | 5 | 2 | 4 | 4 | B3 |
| | | 6 | 1 | 3 | 3 | B3 |
| | | 8 | 1 | 2 | 2 | B3 |
| Ø 24 (Ø 18) | Marking plate (Ø 15.6) | 2.5 | 3 | 6-7 | 6-8 | B4 |
| | | 3 | 3 | 4-6 | 5-7 | B4 |
| | | 4 | 2 | 4 | 4-5 | B4 |
| | | 5 | 2 | 2-3 | 3 | B4 |
| | | 6 | 2 | 2 | 2-3 | B4 |
| | | 8 | 1 | 2 | 2 | B4 |



Lenses for indicators and illuminated pushbuttons, raised mounting

All dimensions in mm

| Front size (Lens) | Film insert max. size | Height of letters h | Number of lines | Number of capital letters per line (target value) | Number of small letters per line (target value) | Image |
|-----------------------|-----------------------|---------------------|-----------------|--|--|-------|
| 18 x 24 (15.3 x 21.5) | 12.7 x 18.7 | 2.5 | 3 | 9 | 10 | B1 |
| | | 3 | 3 | 8 | 8 | B1 |
| | | 4 | 2 | 5 | 6 | B1 |
| | | 5 | 2 | 4 | 5 | B1 |
| | | 6 | 1 | 4 | 4 | B1 |
| | | 8 | 1 | 3 | 3 | B1 |
| | | 2.5 | 5 | 6 | 7 | B2 |
| | | 3 | 4 | 5 | 6 | B2 |
| | | 4 | 3 | 4 | 4 | B2 |
| | | 5 | 3 | 3 | 3 | B2 |
| | | 6 | 2 | 2 | 3 | B2 |
| | | 8 | 1 | 2 | 2 | B2 |
| | | 2.5 | 3 | 6 | 7 | B3 |
| | | 3 | 3 | 5 | 6 | B3 |
| 18 x 18 (15.3 x 15.3) | 12.7 x 12.7 | 4 | 2 | 4 | 4 | B3 |
| | | 5 | 2 | 3 | 3 | B3 |
| | | 6 | 1 | 2 | 3 | B3 |
| | | 8 | 1 | 2 | 2 | B3 |
| | | 2.5 | 4 | 8 | 9 | B3 |
| | | 3 | 4 | 7 | 7 | B3 |
| 24 x 24 (20 x 20) | 16.9 x 16.9 | 4 | 3 | 5 | 5 | B3 |
| | | 5 | 2 | 4 | 4 | B3 |
| | | 6 | 2 | 3 | 4 | B3 |
| | | 8 | 1 | 2 | 3 | B3 |
| | | 2.5 | 3 | 4-5 | 5-6 | B4 |
| | | 3 | 3 | 2-4 | 3-5 | B4 |
| Ø 18 (Ø 15.8) | Ø 12.8 | 4 | 2 | 2-3 | 3-4 | B4 |
| | | 5 | 2 | 1-2 | 2-3 | B4 |
| | | 6 | 1 | 2 | 3 | B4 |
| | | 8 | 1 | 2 | 2 | B4 |
| | | 2.5 | 3 | 6-7 | 6-8 | B4 |
| | | 3 | 3 | 4-6 | 5-7 | B4 |
| Ø 24 (19.7) | Marking plate | 4 | 2 | 4 | 4-5 | B4 |
| | | 5 | 2 | 2-3 | 3 | B4 |
| | | 6 | 2 | 2 | 2-3 | B4 |
| | | 8 | 1 | 2 | 2 | B4 |



B1

B2

B3

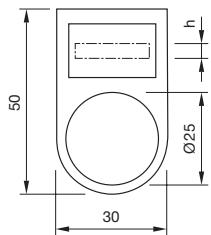
B4

61 Marking

Engraving legend plates

All dimensions in mm

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



Suppressor circuits

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

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

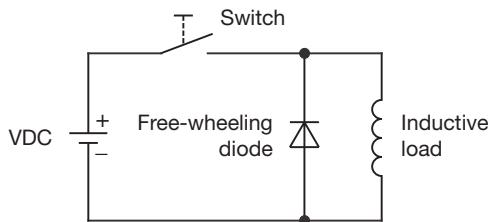
volts in amplitude even when nominal circuit voltages are low (e.g. 12VDC) see Fig. 2.

The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (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

