

EAO – Your Expert Partner for  
**Human Machine Interfaces**



## EAO Product Information

Series 51





Description .....

Product Assembly .....

Devices raised mounting .....

Devices flush mounting .....

Accessories.....

Technical Data.....

Typical Applications .....

Application guidelines.....

Marking .....

Drawings.....

Index.....

3

4

7

13

21

33

36

37

38

40

58

## Product Information

### General notes

The illuminated pushbuttons of series 51 with hoseproof front (IP 65) can be supplied with snap-action or low-level switching elements. The equipment (switches) for raised mounting are protected against accidental operation by the extended sides of the bezel. Flush mounting equipment excels with best available ergonomics and low down height. To supplement the range of illuminated pushbuttons, we can offer a hoseproof safety keylock switch with various lock numbers.

### Mounting

All switch actuators are mounted from the front by pushing them through the mounting hole in the front panel. They are then fixed from the back with a fixing nut and the mounting tool Typ-Nr. 01-907. Max. tightening torque 50 Ncm.

For switching elements we offer plug-in bases, which when soldered to a PCB enable a plug-in connection to the button. The rectangular actuators for raised are provided with an anti-twisting device.

### Lenses

The flat or concave lenses are available in various colours, as well as translucent or transparent. Round lenses for flush mounting equipment are available in aluminium also.

Because of production related reasons, the colours of anodized aluminium parts can vary slightly.

### Marking

For further information about engraving, hot stamping and film inserts see part Marking.

### Illumination

The T1  $\frac{3}{4}$  Midget Groove incandescent (filament) lamp (6 ... 48 V) ensures perfect illumination of the lenses, which are supplied in various colours.

T1  $\frac{3}{4}$  Midget Groove Single-LED (6, 12, 24, 28, 48 V) are also available in blue, green, red, white or yellow.

Luminosity and wave length scattering caused by technology used in the LED manufacturing processes may lead to visual differences in our products.

For supply voltages above 48 V, it is necessary to use a voltage reduction element (external series resistor or transformer).

### Position indication

The status of a maintained action switch can be determined by the position of the lens.

### Keylock switch

Standard lock (Index D). Standard lock number is 311. If the lock number is not specified, we will supply standard number 311.

An additional 134 special locks (Index X) are available on request.

Master keys for lock numbers 311 ... 445 may be ordered by quoting Typ-Nr. 31-989.300. Two keys are supplied with each keylock switch.

Spare keys (Index D) for standard locks may be ordered by quoting Typ-Nr. 31-989.xxx (please state the lock number).

## Specimen order

### Indicator :

- |                                                      |            |
|------------------------------------------------------|------------|
| - Indicator actuator, 18 x 24 mm, soldering terminal | 31-040.005 |
|------------------------------------------------------|------------|

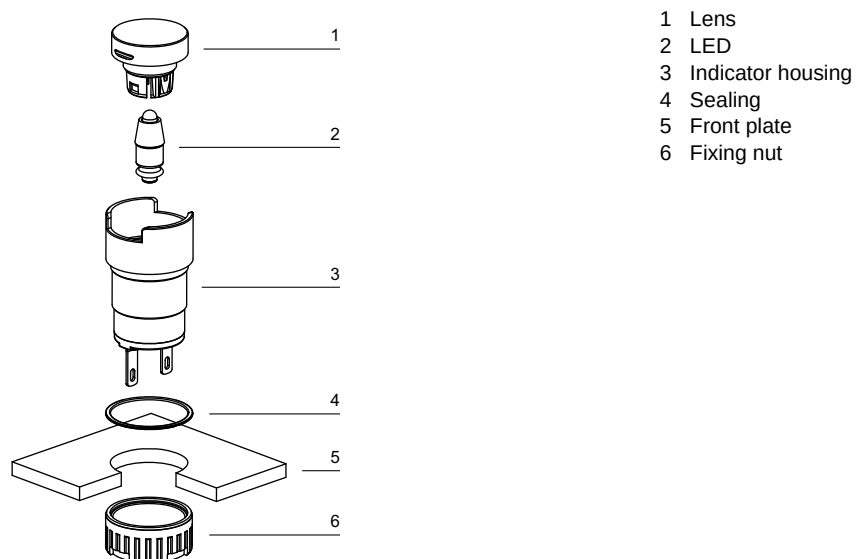
### Essential accessories :

- |                                                     |              |
|-----------------------------------------------------|--------------|
| - Lens plastic blue, transparent, flush, 18 x 24 mm | 31-903.6     |
| - Single-LED, T1 $\frac{3}{4}$ MG, 24 VAC/DC, blau  | 10-2J12.1066 |

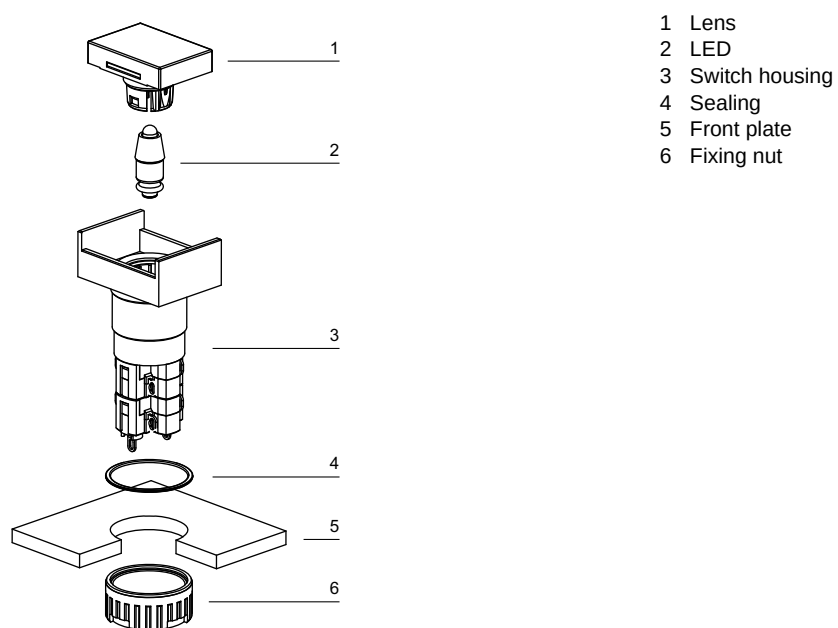
*We reserve the right to modify technical data*

*All dimensions in mm*

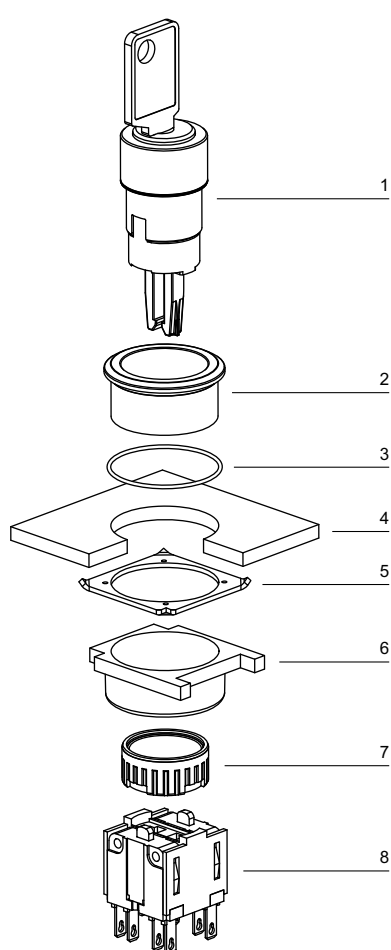
## Indicator round, raised mounting



## Illuminated pushbutton, raised mounting

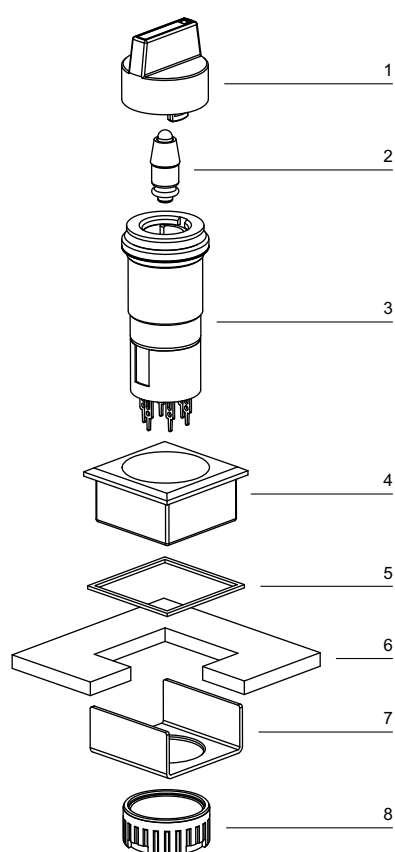


## Keylock switch round, flush mounting



- 1 Actuator housing
- 2 Front bezel
- 3 Sealing
- 4 Front plate
- 5 Anti-twist ring
- 6 Thrust piece
- 7 Fixing nut
- 8 Switching element

## Selector switch square, flush mounting



- 1 Actuator housing
- 2 LED
- 3 Actuator housing
- 4 Front bezel
- 5 Sealing
- 6 Front plate
- 7 Fixing bracket
- 8 Fixing nut



## Indicator actuator



### Essential Accessories:

-  Lens plastic, raised mounting page 21
-  Single-LED page 30

|                    | Front protection | Diode (1N 4007) | Terminals | 18 x 18 mm<br>Typ-Nr. | 18 x 24 mm<br>Typ-Nr. | Ø 18 mm<br>Typ-Nr. | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
|--------------------|------------------|-----------------|-----------|-----------------------|-----------------------|--------------------|------------------|---------------------|-------------------|-----------------|-------|
| Indicator actuator | IP 65            | 1 D             | UT        | <b>51-703.006</b>     | <b>51-701.006</b>     | <b>51-741.006</b>  | 4                | 1                   | 12                | 78              | 0.006 |
|                    |                  | 2 D             | UT        | <b>51-704.006</b>     | <b>51-702.006</b>     | <b>51-742.006</b>  | 4                | 1                   | 12                | 79              | 0.006 |
|                    |                  | -               | S         | <b>51-050.005</b>     | <b>51-040.005</b>     | <b>51-030.005</b>  |                  | 1                   | 12                | 1               | 0.004 |
|                    |                  |                 | S1        | <b>51-050.002</b>     | <b>51-040.002</b>     | <b>51-030.002</b>  |                  | 1                   | 12                | 1               | 0.004 |
|                    |                  |                 | UT        | <b>51-051.006</b>     | <b>51-041.006</b>     | <b>51-031.006</b>  | 4                | 1                   | 12                | 1               | 0.005 |

Indicators fit also in mounting hole no. 2

Diode (1N 4007): D = Diode, - = without

Terminals: UT = Universal terminal, S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Illuminated pushbutton actuator



### Essential Accessories:

- Lens plastic, raised mounting page 21
- Single-LED page 30

|                                 | Front protection | Switching system | Contacts    | Diode (1N 4007) | Switching action | Terminals | Ø 18 x 18 mm<br>Typ-Nr. | Ø 18 x 24 mm<br>Typ-Nr. | Ø 18 mm<br>Typ-Nr. | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
|---------------------------------|------------------|------------------|-------------|-----------------|------------------|-----------|-------------------------|-------------------------|--------------------|------------------|---------------------|-------------------|-----------------|-------|
| Illuminated pushbutton actuator | IP 65            | LL               | 1 NC        | -               | MA               | UT        | 51-486.036              | 51-466.036              | 51-476.036         | 4                | 1                   | 13                | 11              | 0.007 |
|                                 |                  |                  |             |                 | M                | UT        | 51-456.036              | 51-426.036              | 51-436.036         | 4                | 1                   | 13                | 57              | 0.007 |
|                                 |                  |                  | 1 NC + 1 NO | -               | MA               | UT        | 51-483.036              | 51-463.036              | 51-473.036         | 4                | 1                   | 13                | 14              | 0.007 |
|                                 |                  |                  |             |                 | M                | UT        | 51-453.036              | 51-423.036              | 51-433.036         | 4                | 1                   | 13                | 60              | 0.007 |
|                                 |                  |                  | 1 NO        | -               | MA               | UT        | 51-485.036              | 51-465.036              | 51-475.036         | 4                | 1                   | 13                | 13              | 0.007 |
|                                 |                  |                  |             |                 | M                | UT        | 51-455.036              | 51-425.036              | 51-435.036         | 4                | 1                   | 13                | 59              | 0.007 |
|                                 |                  |                  | 2 NC        | -               | MA               | UT        | 51-482.036              | 51-462.036              | 51-472.036         | 4                | 1                   | 13                | 12              | 0.007 |
|                                 |                  |                  |             |                 | M                | UT        | 51-452.036              | 51-422.036              | 51-432.036         | 4                | 1                   | 13                | 58              | 0.007 |
|                                 |                  |                  | 2 NO        | -               | MA               | UT        | 51-481.036              | 51-461.036              | 51-471.036         | 4                | 1                   | 13                | 15              | 0.007 |
|                                 |                  |                  |             |                 | M                | UT        | 51-451.036              | 51-421.036              | 51-431.036         | 4                | 1                   | 13                | 61              | 0.007 |
|                                 |                  | SA               | 1 NC + 1 NO | 1 D             | MA               | H         | 51-717.0292             | 51-713.0292             | 51-747.0292        |                  | 1                   | 13                | 8               | 0.008 |
|                                 |                  |                  |             |                 | M                | H         | 51-709.0292             | 51-705.0292             | 51-743.0292        |                  | 1                   | 13                | 54              | 0.008 |
|                                 |                  |                  |             | 2 D             | MA               | H         | 51-718.0292             | 51-714.0292             | 51-748.0292        |                  | 1                   | 13                | 9               | 0.008 |
|                                 |                  |                  |             |                 | M                | H         | 51-710.0292             | 51-706.0292             | 51-744.0292        |                  | 1                   | 13                | 55              | 0.008 |
|                                 |                  |                  |             | -               | MA               | S         | 51-281.0252             | 51-261.0252             | 51-271.0252        |                  | 1                   | 13                | 10              | 0.006 |
|                                 |                  |                  |             |                 | S1               |           | 51-281.022              | 51-261.022              | 51-271.022         |                  | 1                   | 13                | 7               | 0.006 |
|                                 |                  |                  |             |                 | M                | S         | 51-151.0252             | 51-121.0252             | 51-131.0252        |                  | 1                   | 13                | 56              | 0.006 |
|                                 |                  |                  |             |                 | S1               |           | 51-151.022              | 51-121.022              | 51-131.022         |                  | 1                   | 13                | 53              | 0.006 |
|                                 |                  |                  | 2 NC + 2 NO | 1 D             | MA               | H         | 51-719.0292             | 51-715.0292             | 51-749.0292        |                  | 1                   | 13                | 4               | 0.010 |
|                                 |                  |                  |             |                 | M                | H         | 51-711.0292             | 51-707.0292             | 51-745.0292        |                  | 1                   | 13                | 50              | 0.010 |
|                                 |                  |                  |             | 2 D             | MA               | H         | 51-720.0292             | 51-716.0292             | 51-750.0292        |                  | 1                   | 13                | 5               | 0.010 |
|                                 |                  |                  |             |                 | M                | H         | 51-712.0292             | 51-708.0292             | 51-746.0292        |                  | 1                   | 13                | 51              | 0.010 |
|                                 |                  |                  |             | -               | MA               | S         | 51-282.0252             | 51-262.0252             | 51-272.0252        |                  | 1                   | 13                | 6               | 0.008 |
|                                 |                  |                  |             |                 | M                | S         | 51-152.0252             | 51-122.0252             | 51-132.0252        |                  | 1                   | 13                | 52              | 0.008 |
|                                 |                  |                  | 3 NC + 3 NO | -               | MA               | S         | 51-283.0252             | 51-263.0252             | 51-273.0252        |                  | 1                   | 13                | 3               | 0.010 |
|                                 |                  |                  |             |                 | M                | S         | 51-153.0252             | 51-123.0252             | 51-133.0252        |                  | 1                   | 13                | 49              | 0.010 |
|                                 |                  |                  | 4 NC + 4 NO | -               | MA               | S         | 51-284.0252             | 51-264.0252             | 51-274.0252        |                  | 1                   | 13                | 2               | 0.012 |
|                                 |                  |                  |             |                 | M                | S         | 51-154.0252             | 51-124.0252             | 51-134.0252        |                  | 1                   | 13                | 48              | 0.012 |

Illuminated pushbutton fit also in mounting hole no. 2

Switching system: LL = Low level switching element, SA = Snap-action switching element

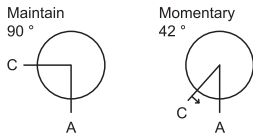
Contacts: NC = Normally closed, NO = Normally open

Diode (1N 4007): - = without, D = Diode

Switching action: MA = Maintained action, M = Momentary action

Terminals: UT = Universal terminal, H = Combined terminal: Solder-/ Universal (at contact/ at diode), S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47



Other lock numbers on request  
Switching system: LL = Low level switching element, SA = Snap-action switching element  
Contacts: NC = Normally closed, NO = Normally open  
Switching action: MA = Maintained action, M = Momentary action  
Terminals: UT = Universal terminal, S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)  
Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Keylock switch 3 positions



|                                                                                                                                                           | Front protection | Switching system | Contacts    | Switching action | Terminals | Key remove | ⌀ 18 x 18 mm<br>Typ-Nr. | ⌀ 18 x 24 mm<br>Typ-Nr. | Ø 18 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |       |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------|------------------|-----------|------------|-------------------------|-------------------------|--------------------|---------------------|-------------------|-----------------|-------|
| <b>Keylock switch 3 positions</b><br>Position C : Maintained action<br>Position A : Basic position<br>Position B : Maintained action<br>Standard lock 311 | IP 65            | SA               | 2 NC + 2 NO | MA-0-MA          | S1        | A          | <b>51-381.022D</b>      | <b>51-361.022D</b>      | <b>51-371.022D</b> | 2                   | 1                 | 65              | 0.025 |
|                                                                                                                                                           |                  |                  |             |                  |           | C + B      | <b>51-383.022D</b>      | <b>51-363.022D</b>      | <b>51-373.022D</b> | 2                   | 1                 | 65              | 0.025 |
|                                                                                                                                                           |                  |                  |             |                  |           | C+A+B      | <b>51-382.022D</b>      | <b>51-362.022D</b>      | <b>51-372.022D</b> | 2                   | 1                 | 65              | 0.025 |
| Position C : Maintained action<br>Position A : Basic position<br>Position B : Momentary action<br>Standard lock 311                                       | IP 65            | SA               | 2 NC + 2 NO | MA-0-M           | S1        | A          | <b>51-385.022D</b>      | <b>51-365.022D</b>      | <b>51-375.022D</b> | 2                   | 1                 | 64              | 0.025 |
|                                                                                                                                                           |                  |                  |             |                  |           | C + A      | <b>51-386.022D</b>      | <b>51-366.022D</b>      | <b>51-376.022D</b> | 2                   | 1                 | 64              | 0.025 |
| Position C : Momentary action<br>Position A : Basic position<br>Position B : Momentary action<br>Standard lock 311                                        | IP 65            | SA               | 2 NC + 2 NO | M-0-M            | S1        | A          | <b>51-384.022D</b>      | <b>51-364.022D</b>      | <b>51-374.022D</b> | 2                   | 1                 | 63              | 0.025 |
| Position C : Momentary action<br>Position A : Basic position<br>Position B : Maintained action<br>standard lock 311                                       | IP 65            | SA               | 2 NC + 2 NO | M-0-MA           | S1        | A          | <b>51-387.022D</b>      | <b>51-367.022D</b>      | <b>51-377.022D</b> | 2                   | 1                 | 62              | 0.025 |
|                                                                                                                                                           |                  |                  |             |                  |           | A + B      | <b>51-388.022D</b>      | <b>51-368.022D</b>      | <b>51-378.022D</b> | 2                   | 1                 | 62              | 0.025 |

Other lock numbers on request

Switching system: SA = Snap-action switching element

Contacts: NC = Normally closed, NO = Normally open

Switching action: MA = Maintained action, M = Momentary action

Terminals: S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

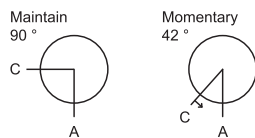
## Selector switch 2 positions

illuminative



### Essential Accessories:

- Lever, raised mounting page 24
- Single-LED page 30



|                                                                                                     | Front protection | Switching system | Contacts    | Diode (1N 4007) | Switching action | Terminals | Ø 18 mm<br>Typ-Nr. | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
|-----------------------------------------------------------------------------------------------------|------------------|------------------|-------------|-----------------|------------------|-----------|--------------------|------------------|---------------------|-------------------|-----------------|-------|
| <b>Selector switch 2 positions</b><br>Position A : Basic position<br>Position C : Maintained action | IP 65            | LL               | 1 NC        | -               | MA               | UT        | <b>52-476.036</b>  | 4                | 2                   | 19                | 43              | 0.007 |
|                                                                                                     |                  |                  | 1 NC + 1 NO | -               | MA               | UT        | <b>52-473.036</b>  | 4                | 2                   | 19                | 46              | 0.007 |
|                                                                                                     |                  |                  | 1 NO        | -               | MA               | UT        | <b>52-475.036</b>  | 4                | 2                   | 19                | 45              | 0.007 |
|                                                                                                     |                  |                  | 2 NC        | -               | MA               | UT        | <b>52-472.036</b>  | 4                | 2                   | 19                | 44              | 0.007 |
|                                                                                                     |                  |                  | 2 NO        | -               | MA               | UT        | <b>52-471.036</b>  | 4                | 2                   | 19                | 47              | 0.007 |
|                                                                                                     |                  | SA               | 1 NC + 1 NO | 1 D             | MA               | H         | <b>52-747.0292</b> |                  | 2                   | 19                | 40              | 0.008 |
|                                                                                                     |                  |                  |             | 2 D             | MA               | H         | <b>52-748.0292</b> |                  | 2                   | 19                | 41              | 0.008 |
|                                                                                                     |                  |                  |             | -               | MA               | S         | <b>52-271.0252</b> |                  | 2                   | 19                | 42              | 0.006 |
|                                                                                                     |                  |                  |             | -               | MA               | S1        | <b>52-271.022</b>  |                  | 2                   | 19                | 39              | 0.006 |
|                                                                                                     |                  |                  | 2 NC + 2 NO | 1 D             | MA               | H         | <b>52-749.0292</b> |                  | 2                   | 19                | 36              | 0.010 |
|                                                                                                     |                  |                  |             | 2 D             | MA               | H         | <b>52-750.0292</b> |                  | 2                   | 19                | 37              | 0.010 |
|                                                                                                     |                  |                  |             | -               | MA               | S         | <b>52-272.0252</b> |                  | 2                   | 19                | 38              | 0.006 |
|                                                                                                     |                  |                  | 3 NC + 3 NO | -               | MA               | S         | <b>52-273.0252</b> |                  | 2                   | 19                | 35              | 0.006 |
|                                                                                                     |                  |                  | 4 NC + 4 NO | -               | MA               | S         | <b>52-274.0252</b> |                  | 2                   | 19                | 34              | 0.006 |
| Position A : Basic position<br>Position C : Momentary action                                        | IP 65            | LL               | 1 NC        | -               | M                | UT        | <b>52-436.036</b>  | 4                | 2                   | 19                | 29              | 0.007 |
|                                                                                                     |                  |                  | 1 NC + 1 NO | -               | M                | UT        | <b>52-433.036</b>  | 4                | 2                   | 19                | 32              | 0.007 |
|                                                                                                     |                  |                  | 1 NO        | -               | M                | UT        | <b>52-435.036</b>  | 4                | 2                   | 19                | 31              | 0.007 |
|                                                                                                     |                  |                  | 2 NC        | -               | M                | UT        | <b>52-432.036</b>  | 4                | 2                   | 19                | 30              | 0.007 |
|                                                                                                     |                  |                  | 2 NO        | -               | M                | UT        | <b>52-431.036</b>  | 4                | 2                   | 19                | 33              | 0.007 |
|                                                                                                     |                  | SA               | 1 NC + 1 NO | 1 D             | M                | H         | <b>52-743.0292</b> |                  | 2                   | 19                | 26              | 0.008 |
|                                                                                                     |                  |                  |             | 2 D             | M                | H         | <b>52-744.0292</b> |                  | 2                   | 19                | 27              | 0.008 |
|                                                                                                     |                  |                  |             | -               | M                | S         | <b>52-131.0252</b> |                  | 2                   | 19                | 28              | 0.006 |
|                                                                                                     |                  |                  |             | -               | M                | S1        | <b>52-131.022</b>  |                  | 2                   | 19                | 25              | 0.006 |
|                                                                                                     |                  |                  | 2 NC + 2 NO | 1 D             | M                | H         | <b>52-745.0292</b> |                  | 2                   | 19                | 22              | 0.010 |
|                                                                                                     |                  |                  |             | 2 D             | M                | H         | <b>52-746.0292</b> |                  | 2                   | 19                | 23              | 0.010 |
|                                                                                                     |                  |                  |             | -               | M                | S         | <b>52-132.0252</b> |                  | 2                   | 19                | 24              | 0.006 |
|                                                                                                     |                  |                  | 3 NC + 3 NO | -               | M                | S         | <b>52-133.0252</b> |                  | 2                   | 19                | 21              | 0.006 |
|                                                                                                     |                  |                  | 4 NC + 4 NO | -               | M                | S         | <b>52-134.0252</b> |                  | 2                   | 19                | 20              | 0.006 |

Switching system: LL = Low level switching element, SA = Snap-action switching element

Contacts: NC = Normally closed, NO = Normally open

Diode (1N 4007): - = without, D = Diode

Switching action: MA = Maintained action, M = Momentary action

Terminals: UT = Universal terminal, H = Combined terminal: Solder-/ Universal (at contact/ at diode), S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Selector switch 3 positions

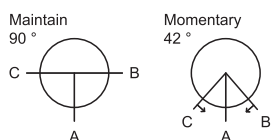
illuminative



### Essential Accessories:

Lever, raised mounting page 24

Single-LED page 30



|                                                                                                                                       | Front protection | Switching system | Contacts    | Switching action | Terminals | Ø 18 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |       |
|---------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------|------------------|-----------|--------------------|---------------------|-------------------|-----------------|-------|
| <b>Selector switch 3 positions</b><br>Position C : Maintained action<br>Position A : Basic position<br>Position B : Maintained action | IP 40            | SA               | 2 NC + 2 NO | MA-0-MA          | S1        | <b>52-571.022A</b> | 2                   | 6                 | 19              | 0.015 |
|                                                                                                                                       |                  |                  |             | M-0-MA           | S1        | <b>52-574.022A</b> | 2                   | 6                 | 17              | 0.015 |
| Position C : Momentary action<br>Position A : Basic position<br>Position B : Momentary action                                         | IP 40            | SA               | 2 NC + 2 NO | MA-0-M           | S1        | <b>52-573.022A</b> | 2                   | 6                 | 18              | 0.015 |
|                                                                                                                                       |                  |                  |             | M-0-M            | S1        | <b>52-572.022A</b> | 2                   | 6                 | 16              | 0.015 |

Switching system: SA = Snap-action switching element

Contacts: NC = Normally closed, NO = Normally open

Switching action: MA = Maintained action, M = Momentary action

Terminals: S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Indicator actuator, flush mounting

Actuators usable for front dimensions:  $\varnothing$  24 x 24 mm |  $\varnothing$  24 x 30 mm | 25 mm dia.



### Essential Accessories:

- Front bezel set for Indicators and Illuminated pushbutton, flush mounting page 25
- Lens plastic, flush mounting page 21
- Single-LED page 30

|                                    | Front protection | Terminals | Typ-Nr.     | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
|------------------------------------|------------------|-----------|-------------|------------------|---------------------|-------------------|-----------------|-------|
| Indicator actuator, flush mounting | IP 65            | S         | 51-050.005F |                  | 3                   | 15                | 1               | 0.004 |
|                                    |                  | S1        | 51-050.002F |                  | 3                   | 15                | 1               | 0.004 |
|                                    |                  | UT        | 51-051.006F | 4                | 3                   | 15                | 1               | 0.005 |

Terminals: S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm), UT = Universal terminal  
Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Illuminated pushbutton actuator, flush mounting

Actuators usable for front dimensions: □ 24 x 24 mm | □ 24 x 30 mm | 25 mm dia.



### Essential Accessories:

- Front bezel set for Indicators and Illuminated pushbutton, flush mounting page 25
- Lens plastic, flush mounting page 21
- Single-LED page 30

|                                                 | Front protection | Switching system | Contacts    | Switching action | Terminals | Typ-Nr.             | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
|-------------------------------------------------|------------------|------------------|-------------|------------------|-----------|---------------------|------------------|---------------------|-------------------|-----------------|-------|
| Illuminated pushbutton actuator, flush mounting | IP 65            | LL               | 1 NC        | MA               | UT        | <b>51-486.036F</b>  | 4                | 3                   | 16                | 11              | 0.006 |
|                                                 |                  |                  |             | M                | UT        | <b>51-456.036F</b>  | 4                | 3                   | 16                | 57              | 0.006 |
|                                                 |                  |                  | 1 NC + 1 NO | MA               | UT        | <b>51-483.036F</b>  | 4                | 3                   | 16                | 14              | 0.006 |
|                                                 |                  |                  |             | M                | UT        | <b>51-453.036F</b>  | 4                | 3                   | 16                | 60              | 0.006 |
|                                                 |                  |                  | 1 NO        | MA               | UT        | <b>51-485.036F</b>  | 4                | 3                   | 16                | 13              | 0.006 |
|                                                 |                  |                  |             | M                | UT        | <b>51-455.036F</b>  | 4                | 3                   | 16                | 59              | 0.006 |
|                                                 |                  |                  | 2 NC        | MA               | UT        | <b>51-482.036F</b>  | 4                | 3                   | 16                | 12              | 0.006 |
|                                                 |                  |                  |             | M                | UT        | <b>51-452.036F</b>  | 4                | 3                   | 16                | 58              | 0.006 |
|                                                 |                  |                  | 2 NO        | MA               | UT        | <b>51-481.036F</b>  | 4                | 3                   | 16                | 15              | 0.006 |
|                                                 |                  |                  |             | M                | UT        | <b>51-451.036F</b>  | 4                | 3                   | 16                | 61              | 0.006 |
|                                                 |                  | SA               | 1 NC + 1 NO | MA               | S         | <b>51-281.0252F</b> |                  | 3                   | 16                | 10              | 0.005 |
|                                                 |                  |                  |             |                  | S1        | <b>51-281.022F</b>  |                  | 3                   | 16                | 7               | 0.007 |
|                                                 |                  |                  |             | M                | S         | <b>51-151.0252F</b> |                  | 3                   | 16                | 56              | 0.005 |
|                                                 |                  |                  |             |                  | S1        | <b>51-151.022F</b>  |                  | 3                   | 16                | 53              | 0.007 |
|                                                 |                  |                  | 2 NC + 2 NO | MA               | S         | <b>51-282.0252F</b> |                  | 3                   | 16                | 6               | 0.008 |
|                                                 |                  |                  |             | M                | S         | <b>51-152.0252F</b> |                  | 3                   | 16                | 52              | 0.008 |
|                                                 |                  |                  | 3 NC + 3 NO | MA               | S         | <b>51-283.0252F</b> |                  | 3                   | 16                | 3               | 0.010 |
|                                                 |                  |                  |             | M                | S         | <b>51-153.0252F</b> |                  | 3                   | 16                | 49              | 0.010 |
|                                                 |                  |                  | 4 NC + 4 NO | MA               | S         | <b>51-284.0252F</b> |                  | 3                   | 16                | 2               | 0.012 |
|                                                 |                  |                  |             | M                | S         | <b>51-154.0252F</b> |                  | 3                   | 16                | 48              | 0.012 |

Switching system: LL = Low level switching element, SA = Snap-action switching element

Contacts: NC = Normally closed, NO = Normally open

Switching action: MA = Maintained action, M = Momentary action

Terminals: UT = Universal terminal, S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

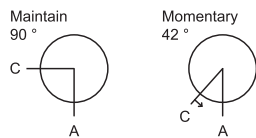


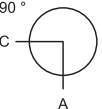
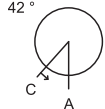
## Keylock switch actuator 2 positions, flush mounting



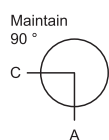
### Essential Accessories:

 Front bezel set for Keylock switch, flush mounting page 26



|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             |                      |                         |                         |                      |                  |                     |                   |                 |       |       |       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------------------------------------------------------------------------------------------------|-------------|----------------------|-------------|----------------------|-------------------------|-------------------------|----------------------|------------------|---------------------|-------------------|-----------------|-------|-------|-------|
| <div>Maintain<br/>90 °</div>  <div>Momentary<br/>42 °</div>  | Front protection | Switching system                                                                                           | Contacts    | Switching action     | Terminals   | Key remove           | Ø 24 x 24 mm<br>Typ-Nr. | Ø 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr.   | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |       |       |
| <b>Keylock switch actuator<br/>2 positions, flush mounting</b><br>Position A : Basic position<br>Position C : Maintained action<br>Standard lock 311<br>Front : Plastic black                                                  | IP 65            | LL                                                                                                         | 1 NC + 1 NO | MA                   | UT          | A                    | <b>51-445.036DF</b>     |                         |                      | 4                | 3                   | 17                | 76              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C                    | <b>51-448.036DF</b>     |                         |                      | 4                | 3                   | 17                | 76              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C + A                | <b>51-442.036DF</b>     |                         |                      | 4                | 3                   | 17                | 76              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            | 2 NO        | MA                   | UT          | A                    | <b>51-444.036DF</b>     |                         |                      | 4                | 3                   | 17                | 77              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C                    | <b>51-447.036DF</b>     |                         |                      | 4                | 3                   | 17                | 77              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C + A                | <b>51-441.036DF</b>     |                         |                      | 4                | 3                   | 17                | 77              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            | SA          | 1 NC + 1 NO          | MA          | S                    | A                       | <b>51-255.025D2F</b>    |                      |                  |                     | 3                 | 17              | 72    | 0.027 |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             |                      | C                       | <b>51-355.025D2F</b>    |                      |                  |                     | 3                 | 17              | 72    | 0.027 |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             |                      | C + A                   | <b>51-155.025D2F</b>    |                      |                  |                     | 3                 | 17              | 72    | 0.027 |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | S1                   | A                       | <b>51-255.022DF</b>     |                      |                  |                     | 3                 | 17              | 72    | 0.027 |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             |                      | C                       | <b>51-355.022DF</b>     |                      |                  |                     | 3                 | 17              | 72    | 0.027 |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             |                      | C + A                   | <b>51-155.022DF</b>     |                      |                  |                     | 3                 | 17              | 72    | 0.027 |       |
|                                                                                                                                                                                                                                |                  | 2 NC + 2 NO                                                                                                |             | MA                   | S           | A                    | <b>51-256.025D2F</b>    |                         |                      |                  | 3                   | 17                | 73              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C                    | <b>51-356.025D2F</b>    |                         |                      |                  | 3                   | 17                | 73              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C + A                | <b>51-156.025D2F</b>    |                         |                      |                  | 3                   | 17                | 73              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  | 3 NC + 3 NO                                                                                                |             | MA                   | S           | A                    | <b>51-257.025D2F</b>    |                         |                      |                  | 3                   | 17                | 74              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C                    | <b>51-357.025D2F</b>    |                         |                      |                  | 3                   | 17                | 74              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      |             | C + A                | <b>51-157.025D2F</b>    |                         |                      |                  | 3                   | 17                | 74              | 0.027 |       |       |
|                                                                                                                                                                                                                                |                  | 4 NC + 4 NO                                                                                                | MA          | S                    | A           | <b>51-258.025D2F</b> |                         |                         |                      | 3                | 17                  | 75                | 0.027           |       |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      | C           | <b>51-358.025D2F</b> |                         |                         |                      | 3                | 17                  | 75                | 0.027           |       |       |       |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      | C + A       | <b>51-158.025D2F</b> |                         |                         |                      | 3                | 17                  | 75                | 0.027           |       |       |       |
|                                                                                                                                                                                                                                |                  | Position A : Basic position<br>Position C : Momentary action<br>Standard lock 311<br>Front : Plastic black | IP 65       | LL                   | 1 NC + 1 NO | M                    | UT                      | A                       | <b>51-458.036DF</b>  |                  |                     | 4                 | 3               | 17    | 70    | 0.027 |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             |                      | 2 NO        | M                    | UT                      | A                       | <b>51-457.036DF</b>  |                  |                     | 4                 | 3               | 17    | 71    | 0.027 |
|                                                                                                                                                                                                                                |                  |                                                                                                            |             | SA                   | 1 NC + 1 NO | M                    | S                       | A                       | <b>51-145.025D2F</b> |                  |                     |                   | 3               | 17    | 66    | 0.027 |
| S1                                                                                                                                                                                                                             | A                |                                                                                                            |             |                      |             |                      | <b>51-145.022DF</b>     |                         |                      |                  | 3                   | 17                | 66              | 0.027 |       |       |
| 2 NC + 2 NO                                                                                                                                                                                                                    | M                |                                                                                                            |             |                      | S           | A                    | <b>51-146.025D2F</b>    |                         |                      |                  | 3                   | 17                | 67              | 0.027 |       |       |
| 3 NC + 3 NO                                                                                                                                                                                                                    | M                |                                                                                                            |             |                      | S           | A                    | <b>51-147.025D2F</b>    |                         |                      |                  | 3                   | 17                | 68              | 0.027 |       |       |
| 4 NC + 4 NO                                                                                                                                                                                                                    | M                | S                                                                                                          | A           | <b>51-148.025D2F</b> |             |                      |                         | 3                       | 17                   | 69               | 0.027               |                   |                 |       |       |       |

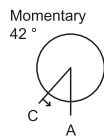
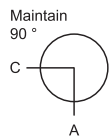
Continuation see next page



|                                                                                                             |                                                                                                            |                  |                  |             |                  |           |               |                         |                         |                    |                  |                     |                   |                 |       |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------|------------------|-----------|---------------|-------------------------|-------------------------|--------------------|------------------|---------------------|-------------------|-----------------|-------|
| <div>Maintain<br/>90 °</div>                                                                                | <div>Momentary<br/>42 °</div>                                                                              | Front protection | Switching system | Contacts    | Switching action | Terminals | Key remove    | Ø 24 x 24 mm<br>Typ-Nr. | Ø 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
| Position A : Basic position<br>Position C : Maintained action<br>Standard lock 311<br>Front : Plastic black | IP 65                                                                                                      | LL               | 1 NC + 1 NO      | MA          | UT               | A         |               | 51-405.036DF            |                         | 4                  | 3                | 17                  | 76                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C         |               | 51-408.036DF            |                         | 4                  | 3                | 17                  | 76                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C + A     |               | 51-402.036DF            |                         | 4                  | 3                | 17                  | 76                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  | 2 NO             | MA          | UT               | A         |               | 51-404.036DF            |                         | 4                  | 3                | 17                  | 77                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C         |               | 51-407.036DF            |                         | 4                  | 3                | 17                  | 77                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C + A     |               | 51-401.036DF            |                         | 4                  | 3                | 17                  | 77                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  | SA               | 1 NC + 1 NO | MA               | S         | A             |                         | 51-295.025D2F           |                    |                  | 3                   | 17                | 72              | 0.029 |
|                                                                                                             |                                                                                                            |                  |                  |             |                  |           | C             |                         | 51-395.025D2F           |                    |                  | 3                   | 17                | 72              | 0.029 |
|                                                                                                             |                                                                                                            |                  |                  |             |                  |           | C + A         |                         | 51-195.025D2F           |                    |                  | 3                   | 17                | 72              | 0.029 |
|                                                                                                             |                                                                                                            |                  |                  | S1          | A                |           | 51-295.022DF  |                         |                         | 3                  | 17               | 72                  | 0.029             |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C                |           | 51-395.022DF  |                         |                         | 3                  | 17               | 72                  | 0.029             |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C + A            |           | 51-195.022DF  |                         |                         | 3                  | 17               | 72                  | 0.029             |                 |       |
|                                                                                                             |                                                                                                            | 2 NC + 2 NO      | MA               | S           | A                |           | 51-296.025D2F |                         |                         | 3                  | 17               | 73                  | 0.029             |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C                |           | 51-396.025D2F |                         |                         | 3                  | 17               | 73                  | 0.029             |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C + A            |           | 51-196.025D2F |                         |                         | 3                  | 17               | 73                  | 0.029             |                 |       |
|                                                                                                             |                                                                                                            |                  | 3 NC + 3 NO      | MA          | S                | A         |               | 51-297.025D2F           |                         |                    | 3                | 17                  | 74                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C         |               | 51-397.025D2F           |                         |                    | 3                | 17                  | 74                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C + A     |               | 51-197.025D2F           |                         |                    | 3                | 17                  | 74                | 0.029           |       |
| 4 NC + 4 NO                                                                                                 | MA                                                                                                         | S                | A                |             | 51-298.025D2F    |           |               | 3                       | 17                      | 75                 | 0.029            |                     |                   |                 |       |
|                                                                                                             |                                                                                                            |                  | C                |             | 51-398.025D2F    |           |               | 3                       | 17                      | 75                 | 0.029            |                     |                   |                 |       |
|                                                                                                             |                                                                                                            |                  | C + A            |             | 51-198.025D2F    |           |               | 3                       | 17                      | 75                 | 0.029            |                     |                   |                 |       |
|                                                                                                             | Position A : Basic position<br>Position C : Momentary action<br>Standard lock 311<br>Front : Plastic black | IP 65            | LL               | 1 NC + 1 NO | M                | UT        | A             |                         | 51-428.036DF            |                    | 4                | 3                   | 17                | 70              | 0.029 |
|                                                                                                             |                                                                                                            |                  |                  | 2 NO        | M                | UT        | A             |                         | 51-427.036DF            |                    | 4                | 3                   | 17                | 71              | 0.029 |
|                                                                                                             |                                                                                                            |                  | SA               | 1 NC + 1 NO | M                | S         | A             |                         | 51-495.025D2F           |                    |                  | 3                   | 17                | 66              | 0.029 |
| S1                                                                                                          |                                                                                                            |                  |                  |             |                  | A         |               | 51-495.022DF            |                         |                    | 3                | 17                  | 66                | 0.029           |       |
| 2 NC + 2 NO                                                                                                 |                                                                                                            |                  |                  | M           | S                | A         |               | 51-496.025D2F           |                         |                    | 3                | 17                  | 67                | 0.029           |       |
|                                                                                                             |                                                                                                            |                  |                  |             | 3 NC + 3 NO      | M         | S             | A                       |                         | 51-497.025D2F      |                  |                     | 3                 | 17              | 68    |
| 4 NC + 4 NO                                                                                                 | M                                                                                                          | S                | A                |             | 51-498.025D2F    |           |               | 3                       | 17                      | 69                 | 0.029            |                     |                   |                 |       |
| Position A : Basic position<br>Position C : Maintained action<br>Standard lock 311<br>Front : Plastic black | IP 65                                                                                                      | LL               | 1 NC + 1 NO      | MA          | UT               | A         |               |                         | 51-415.036DF            | 4                  | 3                | 17                  | 76                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C         |               |                         | 51-418.036DF            | 4                  | 3                | 17                  | 76                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C + A     |               |                         | 51-412.036DF            | 4                  | 3                | 17                  | 76                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  | 2 NO             | MA          | UT               | A         |               |                         | 51-414.036DF            | 4                  | 3                | 17                  | 77                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C         |               |                         | 51-417.036DF            | 4                  | 3                | 17                  | 77                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C + A     |               |                         | 51-411.036DF            | 4                  | 3                | 17                  | 77                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  | SA               | 1 NC + 1 NO | MA               | S         | A             |                         |                         | 51-235.025D2F      | 3                | 17                  | 72                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  |           | C             |                         |                         | 51-335.025D2F      | 3                | 17                  | 72                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  |           | C + A         |                         |                         | 51-135.025D2F      | 3                | 17                  | 72                | 0.026           |       |
|                                                                                                             |                                                                                                            |                  |                  | S1          | A                |           |               | 51-235.022DF            | 3                       | 17                 | 72               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C                |           |               | 51-335.022DF            | 3                       | 17                 | 72               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C + A            |           |               | 51-135.022DF            | 3                       | 17                 | 72               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            | 2 NC + 2 NO      | MA               | S           | A                |           |               | 51-236.025D2F           | 3                       | 17                 | 73               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C                |           |               | 51-336.025D2F           | 3                       | 17                 | 73               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C + A            |           |               | 51-136.025D2F           | 3                       | 17                 | 73               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            |                  | 3 NC + 3 NO      | MA          | S                | A         |               |                         | 51-237.025D2F           | 3                  | 17               | 74                  | 0.026             |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C         |               |                         | 51-337.025D2F           | 3                  | 17               | 74                  | 0.026             |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             |                  | C + A     |               |                         | 51-137.025D2F           | 3                  | 17               | 74                  | 0.026             |                 |       |
|                                                                                                             |                                                                                                            | 4 NC + 4 NO      | MA               | S           | A                |           |               | 51-238.025D2F           | 3                       | 17                 | 75               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C                |           |               | 51-338.025D2F           | 3                       | 17                 | 75               | 0.026               |                   |                 |       |
|                                                                                                             |                                                                                                            |                  |                  |             | C + A            |           |               | 51-138.025D2F           | 3                       | 17                 | 75               | 0.026               |                   |                 |       |

Continuation see next page

Continued from previous page



|                                                                                                            | Front protection | Switching system | Contacts    | Switching action | Terminals | Key remove | 24 x 24 mm<br>Typ-Nr. | 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr.   | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
|------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------|------------------|-----------|------------|-----------------------|-----------------------|----------------------|------------------|---------------------|-------------------|-----------------|-------|
| Position A : Basic position<br>Position C : Momentary action<br>Standard lock 311<br>Front : Plastic black | IP 65            | LL               | 1 NC + 1 NO | M                | UT        | A          |                       |                       | <b>51-438.036DF</b>  | 4                | 3                   | 17                | 70              | 0.026 |
|                                                                                                            |                  |                  | 2 NO        | M                | UT        | A          |                       |                       | <b>51-437.036DF</b>  | 4                | 3                   | 17                | 71              | 0.026 |
|                                                                                                            |                  | SA               | 1 NC + 1 NO | M                | S         | A          |                       |                       | <b>51-141.025D2F</b> | 3                | 17                  | 66                | 0.026           |       |
|                                                                                                            |                  |                  |             |                  | S1        | A          |                       |                       | <b>51-141.022DF</b>  | 3                | 17                  | 66                | 0.026           |       |
|                                                                                                            |                  |                  | 2 NC + 2 NO | M                | S         | A          |                       |                       | <b>51-142.025D2F</b> | 3                | 17                  | 67                | 0.026           |       |
|                                                                                                            |                  |                  | 3 NC + 3 NO | M                | S         | A          |                       |                       | <b>51-143.025D2F</b> | 3                | 17                  | 68                | 0.026           |       |
|                                                                                                            |                  |                  | 4 NC + 4 NO | M                | S         | A          |                       |                       | <b>51-144.025D2F</b> | 3                | 17                  | 69                | 0.026           |       |

Other lock numbers on request

Switching system: LL = Low level switching element, SA = Snap-action switching element

Contacts: NC = Normally closed, NO = Normally open

Switching action: MA = Maintained action, M = Momentary action

Terminals: UT = Universal terminal, S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Keylock switch actuator 3 positions, flush mounting



### Essential Accessories:

Front bezel set for Keylock switch, flush mounting page 26

| <div> <div>Maintain<br/>90°</div> <div>Momentary<br/>42°</div> </div>                                                                                                              | Front protection | Switching system | Contacts    | Switching action | Terminals | Key remove | Ø 24 x 24 mm<br>Typ-Nr. | Ø 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr.  | Mounting dimensions |                 |    |       |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------|------------------|-----------|------------|-------------------------|-------------------------|---------------------|---------------------|-----------------|----|-------|
|                                                                                                                                                                                    |                  |                  |             |                  |           |            |                         |                         |                     | Technical drawing   | Circuit drawing | kg |       |
| <b>Keylock switch actuator 3 positions, flush mounting</b><br>Position C : Maintained action<br>Position A : Basic position<br>Position B : Maintained action<br>Standard lock 311 | IP 65            | SA               | 2 NC + 2 NO | MA-0-MA          | S1        | A          | <b>51-381.022DF</b>     | <b>51-361.022DF</b>     | <b>51-371.022DF</b> | 3                   | 4               | 65 | 0.027 |
|                                                                                                                                                                                    |                  |                  |             |                  |           | C + B      | <b>51-383.022DF</b>     | <b>51-363.022DF</b>     | <b>51-373.022DF</b> | 3                   | 4               | 65 | 0.027 |
|                                                                                                                                                                                    |                  |                  |             |                  |           | C+A+B      | <b>51-382.022DF</b>     | <b>51-362.022DF</b>     | <b>51-372.022DF</b> | 3                   | 4               | 65 | 0.027 |
| Position C : Maintained action<br>Position A : Basic position<br>Position B : Momentary action<br>Standard lock 311                                                                | IP 65            | SA               | 2 NC + 2 NO | MA-0-M           | S1        | A          | <b>51-385.022DF</b>     | <b>51-365.022DF</b>     | <b>51-375.022DF</b> | 3                   | 4               | 64 | 0.027 |
|                                                                                                                                                                                    |                  |                  |             |                  |           | C + A      | <b>51-386.022DF</b>     | <b>51-366.022DF</b>     | <b>51-376.022DF</b> | 3                   | 4               | 64 | 0.027 |
| Position C : Momentary action<br>Position A : Basic position<br>Position B : Maintained action<br>Standard lock 311                                                                | IP 65            | SA               | 2 NC + 2 NO | M-0-MA           | S1        | A          | <b>51-387.022DF</b>     | <b>51-367.022DF</b>     | <b>51-377.022DF</b> | 3                   | 4               | 62 | 0.027 |
|                                                                                                                                                                                    |                  |                  |             |                  |           | A + B      | <b>51-388.022DF</b>     | <b>51-368.022DF</b>     | <b>51-378.022DF</b> | 3                   | 4               | 62 | 0.027 |
| Position C : Momentary action<br>Position A : Basic position<br>Position B : Momentary action<br>Standard lock 311                                                                 | IP 65            | SA               | 2 NC + 2 NO | M-0-M            | S1        | A          | <b>51-384.022DF</b>     | <b>51-364.022DF</b>     | <b>51-374.022DF</b> | 3                   | 4               | 63 | 0.027 |

Other lock numbers on request

Switching system: SA = Snap-action switching element

Contacts: NC = Normally closed, NO = Normally open

Switching action: MA = Maintained action, M = Momentary action

Terminals: S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Selector switch actuator 2 positions, flush mounting

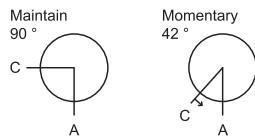
illuminative

Actuators usable for front dimensions: 24 x 24 mm | 25 mm dia.



### Essential Accessories:

- Front bezel set for Selector switch, flush mounting page 26
- Lever, flush mounting page 24
- Single-LED page 30



|                                                                                                                              | Front protection | Switching system | Contacts    | Switching action | Terminals | Typ-Nr.            | Component layout | Mounting dimensions | Technical drawing | Circuit drawing |       |
|------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------|------------------|-----------|--------------------|------------------|---------------------|-------------------|-----------------|-------|
| <b>Selector switch actuator 2 positions, flush mounting</b><br>Position A : Basic position<br>Position C : Maintained action | IP 65            | LL               | 1 NC        | MA               | UT        | <b>52-476.036</b>  | 4                | 3                   | 18                | 43              | 0.007 |
|                                                                                                                              |                  |                  | 1 NC + 1 NO | MA               | UT        | <b>52-473.036</b>  | 4                | 3                   | 18                | 46              | 0.007 |
|                                                                                                                              |                  |                  | 1 NO        | MA               | UT        | <b>52-475.036</b>  | 4                | 3                   | 18                | 45              | 0.007 |
|                                                                                                                              |                  |                  | 2 NC        | MA               | UT        | <b>52-472.036</b>  | 4                | 3                   | 18                | 44              | 0.007 |
|                                                                                                                              |                  |                  | 2 NO        | MA               | UT        | <b>52-471.036</b>  | 4                | 3                   | 18                | 47              | 0.007 |
|                                                                                                                              |                  | SA               | 1 NC + 1 NO | MA               | S         | <b>52-271.0252</b> |                  | 3                   | 18                | 42              | 0.006 |
|                                                                                                                              |                  |                  |             |                  | S1        | <b>52-271.022</b>  |                  | 3                   | 18                | 39              | 0.006 |
|                                                                                                                              |                  |                  | 2 NC + 2 NO | MA               | S         | <b>52-272.0252</b> |                  | 3                   | 18                | 38              | 0.006 |
|                                                                                                                              |                  |                  | 3 NC + 3 NO | MA               | S         | <b>52-273.0252</b> |                  | 3                   | 18                | 35              | 0.006 |
|                                                                                                                              |                  |                  | 4 NC + 4 NO | MA               | S         | <b>52-274.0252</b> |                  | 3                   | 18                | 34              | 0.006 |
| Position A : Basic position<br>Position C : Momentary action                                                                 | IP 65            | LL               | 1 NC        | M                | UT        | <b>52-436.036</b>  | 4                | 3                   | 18                | 29              | 0.007 |
|                                                                                                                              |                  |                  | 1 NC + 1 NO | M                | UT        | <b>52-433.036</b>  | 4                | 3                   | 18                | 32              | 0.007 |
|                                                                                                                              |                  |                  | 1 NO        | M                | UT        | <b>52-435.036</b>  | 4                | 3                   | 18                | 31              | 0.007 |
|                                                                                                                              |                  |                  | 2 NC        | M                | UT        | <b>52-432.036</b>  | 4                | 3                   | 18                | 30              | 0.007 |
|                                                                                                                              |                  |                  | 2 NO        | M                | UT        | <b>52-431.036</b>  | 4                | 3                   | 18                | 33              | 0.007 |
|                                                                                                                              |                  | SA               | 1 NC + 1 NO | M                | S         | <b>52-131.0252</b> |                  | 3                   | 18                | 28              | 0.006 |
|                                                                                                                              |                  |                  |             |                  | S1        | <b>52-131.022</b>  |                  | 3                   | 18                | 25              | 0.006 |
|                                                                                                                              |                  |                  | 2 NC + 2 NO | M                | S         | <b>52-132.0252</b> |                  | 3                   | 18                | 24              | 0.006 |
|                                                                                                                              |                  |                  | 3 NC + 3 NO | M                | S         | <b>52-133.0252</b> |                  | 3                   | 18                | 21              | 0.006 |
|                                                                                                                              |                  |                  | 4 NC + 4 NO | M                | S         | <b>52-134.0252</b> |                  | 3                   | 18                | 20              | 0.006 |

Switching system: LL = Low level switching element, SA = Snap-action switching element

Contacts: NC = Normally closed, NO = Normally open

Switching action: MA = Maintained action, M = Momentary action

Terminals: UT = Universal terminal, S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)

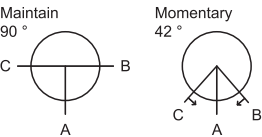
Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

Selector switch actuator 3 positions, flush mounting

illuminative  
Actuators usable for front dimensions:  $\varnothing$  24 x 24 mm | 25 mm dia.



- Essential Accessories:**
- Front bezel set for Selector switch, flush mounting page 26
  - Lever, raised mounting page 24
  - Single-LED page 30



|                                                                                                                                                                | Front protection | Switching system | Contacts    | Switching action | Terminals | Typ-Nr.            | Mounting dimensions | Technical drawing | Circuit drawing |       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------|------------------|-------------|------------------|-----------|--------------------|---------------------|-------------------|-----------------|-------|
| <b>Selector switch actuator 3 positions, flush mounting</b><br>Position C : Maintained action<br>Position A : Basic position<br>Position B : Maintained action | IP 40            | SA               | 2 NC + 2 NO | MA-0-MA          | S1        | <b>52-571.022A</b> | 3                   | 5                 | 19              | 0.015 |
|                                                                                                                                                                |                  |                  |             | M-0-MA           | S1        | <b>52-574.022A</b> | 3                   | 5                 | 17              | 0.015 |
| Position C : Momentary action<br>Position A : Basic position<br>Position B : Momentary action                                                                  | IP 40            | SA               | 2 NC + 2 NO | MA-0-M           | S1        | <b>52-573.022A</b> | 3                   | 5                 | 18              | 0.015 |
|                                                                                                                                                                |                  |                  |             | M-0-M            | S1        | <b>52-572.022A</b> | 3                   | 5                 | 16              | 0.015 |

Switching system: SA = Snap-action switching element  
Contacts: NC = Normally closed, NO = Normally open  
Switching action: MA = Maintained action, M = Momentary action  
Terminals: S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)  
Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

## Front

## Lens plastic, raised mounting

|                                                               | Lens                   | ⌀ 18 x 18 mm<br>Typ-Nr. | ⌀ 18 x 24 mm<br>Typ-Nr. | Ø 18 mm<br>Typ-Nr. |  |
|---------------------------------------------------------------|------------------------|-------------------------|-------------------------|--------------------|-------------------------------------------------------------------------------------|
| <b>Lens plastic, raised mounting</b><br>concave, illuminative | blue transparent       | 51-954.6                | 51-904.6                |                    | 0.001                                                                               |
|                                                               | colourless transparent | 51-954.7                | 51-904.7                |                    | 0.001                                                                               |
|                                                               | green transparent      | 51-954.5                | 51-904.5                |                    | 0.001                                                                               |
|                                                               | orange transparent     | 51-954.3                | 51-904.3                |                    | 0.001                                                                               |
|                                                               | red transparent        | 51-954.2                | 51-904.2                |                    | 0.001                                                                               |
|                                                               | yellow transparent     | 51-954.4                | 51-904.4                |                    | 0.001                                                                               |
| flush, illuminative                                           | blue transparent       | 51-953.6                | 51-903.6                | 51-933.6           | 0.001                                                                               |
|                                                               | colourless transparent | 51-953.7                | 51-903.7                | 51-933.7           | 0.001                                                                               |
|                                                               | green transparent      | 51-953.5                | 51-903.5                | 51-933.5           | 0.001                                                                               |
|                                                               | orange transparent     | 51-953.3                | 51-903.3                | 51-933.3           | 0.001                                                                               |
|                                                               | red transparent        | 51-953.2                | 51-903.2                | 51-933.2           | 0.001                                                                               |
|                                                               | smoked transparent     | 51-953.1                | 51-903.1                | 51-933.1           | 0.001                                                                               |
|                                                               | yellow transparent     | 51-953.4                | 51-903.4                | 51-933.4           | 0.001                                                                               |
| flush, illuminative<br>(not recommended for film insert)      | blue translucent       | 51-951.6                | 51-901.6                | 51-931.6           | 0.001                                                                               |
|                                                               | colourless transparent | 51-955.7                | 51-905.7                | 51-935.7           | 0.001                                                                               |
|                                                               | green translucent      | 51-951.5                | 51-901.5                | 51-931.5           | 0.001                                                                               |
|                                                               | green transparent      | 51-955.5                | 51-905.5                | 51-935.5           | 0.001                                                                               |
|                                                               | orange translucent     | 51-951.3                | 51-901.3                | 51-931.3           | 0.001                                                                               |
|                                                               | red translucent        | 51-951.2                | 51-901.2                | 51-931.2           | 0.001                                                                               |
|                                                               | red transparent        | 51-955.2                | 51-905.2                | 51-935.2           | 0.001                                                                               |
|                                                               | white translucent      | 51-951.9                | 51-901.9                | 51-931.9           | 0.001                                                                               |
|                                                               | yellow translucent     | 51-951.4                | 51-901.4                | 51-931.4           | 0.001                                                                               |
|                                                               | yellow transparent     | 51-955.4                | 51-905.4                | 51-935.4           | 0.001                                                                               |
| flush, non-illuminative                                       | black opaque           | 51-951.0                | 51-901.0                | 51-931.0           | 0.001                                                                               |
|                                                               | grey opaque            | 51-951.8                | 51-901.8                | 51-931.8           | 0.001                                                                               |
| concave, illuminative<br>(not recommended for film insert)    | colourless transparent |                         | 51-906.7                |                    | 0.001                                                                               |
|                                                               | green transparent      |                         | 51-906.5                |                    | 0.001                                                                               |
|                                                               | red transparent        |                         | 51-906.2                |                    | 0.001                                                                               |
|                                                               | yellow transparent     |                         | 51-906.4                |                    | 0.001                                                                               |



## Lens plastic, flush mounting

mat

|                                                     | Lens                         | ⌀ 24 x 24 mm<br>Typ-Nr. | ⌀ 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. |  |
|-----------------------------------------------------|------------------------------|-------------------------|-------------------------|--------------------|---------------------------------------------------------------------------------------|
| <b>Lens plastic, flush mounting</b><br>illuminative | blue transparent flush       | 61-9671.6               | 61-9681.6               | 61-9642.6          | 0.002                                                                                 |
|                                                     | colourless transparent flush | 61-9671.7               | 61-9681.7               | 61-9642.7          | 0.002                                                                                 |
|                                                     | green transparent flush      | 61-9671.5               | 61-9681.5               | 61-9642.5          | 0.002                                                                                 |
|                                                     | orange transparent flush     | 61-9671.3               | 61-9681.3               | 61-9642.3          | 0.002                                                                                 |
|                                                     | red transparent flush        | 61-9671.2               | 61-9681.2               | 61-9642.2          | 0.002                                                                                 |
|                                                     | smoked transparent flush     | 61-9671.1               | 61-9681.1               | 61-9642.1          | 0.002                                                                                 |
|                                                     | yellow transparent flush     | 61-9671.4               | 61-9681.4               | 61-9642.4          | 0.002                                                                                 |
| non-illuminative                                    | black opaque flush           | 61-9771.0               | 61-9781.0               |                    | 0.002                                                                                 |
|                                                     | grey opaque flush            | 61-9771.8               | 61-9781.8               |                    | 0.002                                                                                 |
|                                                     | white translucent flush      | 61-9771.9               | 61-9781.9               |                    | 0.002                                                                                 |



## Lens plastic with symbol, flush mounting

|                                                                         | Symbol   | Lens                   | Ø 25 mm<br>Typ-Nr. |  |
|-------------------------------------------------------------------------|----------|------------------------|--------------------|-------------------------------------------------------------------------------------|
| Lens plastic with symbol, flush mounting<br>flush - level, illuminative | ON/OFF   | blue transparent       | <b>61-9643.602</b> | 0.002                                                                               |
|                                                                         |          | colourless transparent | <b>61-9643.702</b> | 0.002                                                                               |
|                                                                         |          | green transparent      | <b>61-9643.502</b> | 0.002                                                                               |
|                                                                         |          | red transparent        | <b>61-9643.202</b> | 0.002                                                                               |
|                                                                         | Ring     | blue transparent       | <b>61-9643.601</b> | 0.002                                                                               |
|                                                                         |          | colourless transparent | <b>61-9643.701</b> | 0.002                                                                               |
|                                                                         |          | green transparent      | <b>61-9643.501</b> | 0.002                                                                               |
|                                                                         |          | orange transparent     | <b>61-9643.301</b> | 0.002                                                                               |
|                                                                         |          | red transparent        | <b>61-9643.201</b> | 0.002                                                                               |
|                                                                         |          | yellow transparent     | <b>61-9643.401</b> | 0.002                                                                               |
|                                                                         | Stand by | blue transparent       | <b>61-9643.603</b> | 0.002                                                                               |
|                                                                         |          | colourless transparent | <b>61-9643.703</b> | 0.002                                                                               |
|                                                                         |          | green transparent      | <b>61-9643.503</b> | 0.002                                                                               |
|                                                                         |          | red transparent        | <b>61-9643.203</b> | 0.002                                                                               |



The silvery coat is being applied on the lens (screen print) with an additional protective lacquer.

## Marking plate for lens round plastic, flush mounting

can be hot stamped

|                                                                                                           | Marking plate                  | Typ-Nr.          |  |
|-----------------------------------------------------------------------------------------------------------|--------------------------------|------------------|-------------------------------------------------------------------------------------|
| Marking plate for lens round plastic, flush mounting<br>only applicable with Lens round Typ-Nr. 61-9642.X | Plastic colourless transparent | <b>61-9707.7</b> | 0.001                                                                               |



## Lens metal with spot, flush mounting

mat

|                                      | Lens                        | Ø 25 mm<br>Typ-Nr. |  |
|--------------------------------------|-----------------------------|--------------------|---------------------------------------------------------------------------------------|
| Lens metal with spot, flush mounting | Aluminium black flush       | <b>61-9841.0A</b>  | 0.002                                                                                 |
|                                      | Aluminium blue flush        | <b>61-9841.6A</b>  | 0.002                                                                                 |
|                                      | Aluminium gold flush        | <b>61-9841.4A</b>  | 0.002                                                                                 |
|                                      | Aluminium natural flush     | <b>61-9841.8A</b>  | 0.002                                                                                 |
|                                      | Aluminium olive-green flush | <b>61-9841.5A</b>  | 0.002                                                                                 |
|                                      | Aluminium red flush         | <b>61-9841.2A</b>  | 0.002                                                                                 |





**Lens metal, flush mounting**

mat

|                                             | Lens                  | Ø 25 mm<br>Typ-Nr. |  |
|---------------------------------------------|-----------------------|--------------------|-------------------------------------------------------------------------------------|
| <b>Lens metal, flush mounting</b><br>convex | Aluminium black       | <b>61-9842.0</b>   | 0.003                                                                               |
|                                             | Aluminium blue        | <b>61-9842.6</b>   | 0.003                                                                               |
|                                             | Aluminium gold        | <b>61-9842.4</b>   | 0.003                                                                               |
|                                             | Aluminium natural     | <b>61-9842.8</b>   | 0.003                                                                               |
|                                             | Aluminium olive-green | <b>61-9842.5</b>   | 0.003                                                                               |
|                                             | Aluminium red         | <b>61-9842.2</b>   | 0.003                                                                               |
| flush                                       | Aluminium black       | <b>61-9841.0</b>   | 0.002                                                                               |
|                                             | Aluminium blue        | <b>61-9841.6</b>   | 0.002                                                                               |
|                                             | Aluminium gold        | <b>61-9841.4</b>   | 0.002                                                                               |
|                                             | Aluminium natural     | <b>61-9841.8</b>   | 0.002                                                                               |
|                                             | Aluminium olive-green | <b>61-9841.5</b>   | 0.002                                                                               |
|                                             | Aluminium red         | <b>61-9841.2</b>   | 0.002                                                                               |

**Mushroom-head cap, flush mounting**

|                                          | Mushroom had cap      | Ø 32 mm<br>Typ-Nr. |  |
|------------------------------------------|-----------------------|--------------------|-------------------------------------------------------------------------------------|
| <b>Mushroom-head cap, flush mounting</b> | Plastic black opaque  | <b>61-9593.0</b>   | 0.004                                                                               |
|                                          | Plastic green opaque  | <b>61-9593.5</b>   | 0.004                                                                               |
|                                          | Plastic red opaque    | <b>61-9593.2</b>   | 0.004                                                                               |
|                                          | Plastic yellow opaque | <b>61-9593.4</b>   | 0.004                                                                               |

**Front bezel square for selector switch, raised mounting**

|                                                                              | Front bezel   | Typ-Nr.         |  |
|------------------------------------------------------------------------------|---------------|-----------------|---------------------------------------------------------------------------------------|
| <b>Front bezel square for selector switch, raised mounting</b><br>24 x 24 mm | Plastic black | <b>52-950.0</b> | 0.001                                                                                 |
| 26 x 26 mm                                                                   | Plastic black | <b>52-952.0</b> | 0.001                                                                                 |



**Lever, raised mounting**

with bar and marking dot

|                                               | Lever         | Bar colour | Typ-Nr.          | 50 kg |
|-----------------------------------------------|---------------|------------|------------------|-------|
| <b>Lever, raised mounting</b><br>illuminative | Plastic black | blue       | <b>52-928.60</b> | 0.001 |
|                                               |               | green      | <b>52-928.50</b> | 0.001 |
|                                               |               | orange     | <b>52-928.30</b> | 0.001 |
|                                               |               | red        | <b>52-928.20</b> | 0.001 |
|                                               |               | yellow     | <b>52-928.40</b> | 0.001 |
|                                               | Plastic grey  | blue       | <b>52-929.60</b> | 0.001 |
|                                               |               | green      | <b>52-929.50</b> | 0.001 |
|                                               |               | orange     | <b>52-929.30</b> | 0.001 |
|                                               |               | red        | <b>52-929.20</b> | 0.001 |
|                                               |               | yellow     | <b>52-929.40</b> | 0.001 |
| non-illuminative                              | Plastic black | black      | <b>52-928.0</b>  | 0.001 |
|                                               | Plastic grey  | grey       | <b>52-929.8</b>  | 0.001 |
|                                               |               | white      | <b>52-929.9</b>  | 0.001 |

**Lever, flush mounting**

with bar and marking dot

|                                              | Lever         | Bar colour | Typ-Nr.           | 50 kg |
|----------------------------------------------|---------------|------------|-------------------|-------|
| <b>Lever, flush mounting</b><br>illuminative | Plastic black | blue       | <b>61-9028.60</b> | 0.001 |
|                                              |               | green      | <b>61-9028.50</b> | 0.001 |
|                                              |               | orange     | <b>61-9028.30</b> | 0.001 |
|                                              |               | red        | <b>61-9028.20</b> | 0.001 |
|                                              |               | yellow     | <b>61-9028.40</b> | 0.001 |
|                                              | Plastic grey  | blue       | <b>61-9029.60</b> | 0.001 |
|                                              |               | green      | <b>61-9029.50</b> | 0.001 |
|                                              |               | orange     | <b>61-9029.30</b> | 0.001 |
|                                              |               | red        | <b>61-9029.20</b> | 0.001 |
|                                              |               | yellow     | <b>61-9029.40</b> | 0.001 |
| non-illuminative                             | Plastic black | black      | <b>61-9028.0</b>  | 0.001 |
|                                              |               | white      | <b>61-9028.9</b>  | 0.001 |
|                                              | Plastic grey  | grey       | <b>61-9029.8</b>  | 0.001 |
|                                              |               | white      | <b>61-9029.9</b>  | 0.001 |

**Legend frame**

for devices 25 mm dia., flush mounting

|                                                              | Typ-Nr.          | Technical drawing | 50 kg |
|--------------------------------------------------------------|------------------|-------------------|-------|
| <b>Legend frame</b><br>30 x 50 mm, adhesive, Aluminium black | <b>61-9980.0</b> | 10                | 0.001 |



Technical drawing from page 42

## Legend plate insert

for Legend frame 61-9980.0

|                                             | Typ-Nr.          |  |
|---------------------------------------------|------------------|-------------------------------------------------------------------------------------|
| <b>Legend plate insert</b>                  | <b>704.968.1</b> | 0.001                                                                               |
| 14.5 x 23.5 mm, adhesive, Aluminium black   |                  |                                                                                     |
| 14.5 x 23.5 mm, adhesive, Aluminium natural | <b>704.968.0</b> | 0.001                                                                               |



## Front bezel set for Indicators and Illuminated pushbutton, flush mounting

|                                                                                  |                       | Ø 24 x 24 mm<br>Typ-Nr. | Ø 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. | Mounting dimensions |  |
|----------------------------------------------------------------------------------|-----------------------|-------------------------|-------------------------|--------------------|---------------------|-------------------------------------------------------------------------------------|
| <b>Front bezel set for Indicators and Illuminated pushbutton, flush mounting</b> | Front bezel           |                         |                         |                    |                     |                                                                                     |
|                                                                                  | Plastic black         | <b>61-9930.0</b>        | <b>61-9931.0</b>        | <b>61-9933.10</b>  | 3                   | 0.008                                                                               |
|                                                                                  | Plastic silver        | <b>61-9930.4</b>        | <b>61-9931.4</b>        |                    | 3                   | 0.008                                                                               |
|                                                                                  | Aluminium black       |                         |                         | <b>61-9933.1</b>   | 3                   | 0.006                                                                               |
|                                                                                  | Aluminium blue        |                         |                         | <b>61-9933.6</b>   | 3                   | 0.006                                                                               |
|                                                                                  | Aluminium gold        |                         |                         | <b>61-9933.4</b>   | 3                   | 0.006                                                                               |
|                                                                                  | Aluminium natural     |                         |                         | <b>61-9933.0</b>   | 3                   | 0.006                                                                               |
|                                                                                  | Aluminium olive-green |                         |                         | <b>61-9933.5</b>   | 3                   | 0.006                                                                               |
|                                                                                  | Aluminium red         |                         |                         | <b>61-9933.2</b>   | 3                   | 0.006                                                                               |



Mounting dimensions from page 41

## Front bezel set for Mushroom-head pushbutton, flush mounting

|                                                                     |                       | Ø 40 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. | Mounting dimensions |  |
|---------------------------------------------------------------------|-----------------------|--------------------|--------------------|---------------------|---------------------------------------------------------------------------------------|
| <b>Front bezel set for Mushroom-head pushbutton, flush mounting</b> | Front bezel           |                    |                    |                     |                                                                                       |
|                                                                     | Aluminium natural     | <b>61-9934.8</b>   |                    | 4                   | 0.013                                                                                 |
|                                                                     | Aluminium black       |                    | <b>61-9933.1</b>   | 4                   | 0.006                                                                                 |
|                                                                     | Aluminium blue        |                    | <b>61-9933.6</b>   | 4                   | 0.006                                                                                 |
|                                                                     | Aluminium gold        |                    | <b>61-9933.4</b>   | 4                   | 0.006                                                                                 |
|                                                                     | Aluminium natural     |                    | <b>61-9933.0</b>   | 4                   | 0.006                                                                                 |
|                                                                     | Aluminium olive-green |                    | <b>61-9933.5</b>   | 4                   | 0.006                                                                                 |
|                                                                     | Aluminium red         |                    | <b>61-9933.2</b>   | 4                   | 0.006                                                                                 |
|                                                                     | Plastic black         |                    | <b>61-9933.10</b>  | 4                   | 0.008                                                                                 |



Mounting dimensions from page 41

## Front bezel set for Keylock switch, flush mounting

|                                                           | Front bezel           | ⌀ 24 x 24 mm<br>Typ-Nr. | ⌀ 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. | Mounting dimensions |  |
|-----------------------------------------------------------|-----------------------|-------------------------|-------------------------|--------------------|---------------------|-------------------------------------------------------------------------------------|
| <b>Front bezel set for Keylock switch, flush mounting</b> | Plastic black         | <b>61-9930.0</b>        | <b>61-9931.0</b>        | <b>61-9932.10</b>  | 3                   | 0.008                                                                               |
|                                                           | Plastic silver        | <b>61-9930.4</b>        | <b>61-9931.4</b>        |                    | 3                   | 0.008                                                                               |
|                                                           | Aluminium black       |                         |                         | <b>61-9932.1</b>   | 3                   | 0.006                                                                               |
|                                                           | Aluminium blue        |                         |                         | <b>61-9932.6</b>   | 3                   | 0.006                                                                               |
|                                                           | Aluminium gold        |                         |                         | <b>61-9932.4</b>   | 3                   | 0.006                                                                               |
|                                                           | Aluminium natural     |                         |                         | <b>61-9932.0</b>   | 3                   | 0.006                                                                               |
|                                                           | Aluminium olive-green |                         |                         | <b>61-9932.5</b>   | 3                   | 0.006                                                                               |
|                                                           | Aluminium red         |                         |                         | <b>61-9932.2</b>   | 3                   | 0.006                                                                               |



With the round front bezel sets Ø25 mm the anti-twist ring is part of the sales-package.  
Mounting dimensions from page 41

## Front bezel set for Selector switch, flush mounting

|                                                            | Front bezel           | ⌀ 24 x 24 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. | Mounting dimensions |  |
|------------------------------------------------------------|-----------------------|-------------------------|--------------------|---------------------|---------------------------------------------------------------------------------------|
| <b>Front bezel set for Selector switch, flush mounting</b> | Plastic black         | <b>61-9936.0</b>        |                    | 3                   | 0.007                                                                                 |
|                                                            | Aluminium black       |                         | <b>61-9932.1</b>   | 3                   | 0.006                                                                                 |
|                                                            | Aluminium blue        |                         | <b>61-9932.6</b>   | 3                   | 0.006                                                                                 |
|                                                            | Aluminium gold        |                         | <b>61-9932.4</b>   | 3                   | 0.006                                                                                 |
|                                                            | Aluminium natural     |                         | <b>61-9932.0</b>   | 3                   | 0.006                                                                                 |
|                                                            | Aluminium olive-green |                         | <b>61-9932.5</b>   | 3                   | 0.006                                                                                 |
|                                                            | Aluminium red         |                         | <b>61-9932.2</b>   | 3                   | 0.006                                                                                 |
|                                                            | Plastic black         |                         | <b>61-9932.10</b>  | 3                   | 0.008                                                                                 |



With the round front bezel sets Ø25 mm the anti-twist ring is part of the sales-package.  
Mounting dimensions from page 41

## Front protective cap

for flush - level lenses only for protection IP 68

|                                                                               | Front protective cap         | Typ-Nr.          |  |
|-------------------------------------------------------------------------------|------------------------------|------------------|---------------------------------------------------------------------------------------|
| <b>Front protective cap</b><br>for front bezel set 24 x 30 mm, flush mounting | Silicone natural transparent | <b>61-9927.2</b> | 0.001                                                                                 |
| for front bezel set 25 mm dia., flush mounting                                | Silicone natural transparent | <b>84-9103.7</b> | 0.001                                                                                 |



## ATTENTION

when using the front protection cover for push buttons the external sealing in the front bezel set and the silicone bellows in the actuator are to be removed !

## Protective cover, raised mounting

|                                                                                         | Ø 18 x 18 mm<br>Typ-Nr. | Ø 18 x 24 mm<br>Typ-Nr. | Technical drawing |       |
|-----------------------------------------------------------------------------------------|-------------------------|-------------------------|-------------------|-------|
| <b>Protective cover, raised mounting</b><br>hinged, transparent, with means for sealing | <b>51-920</b>           |                         | 2                 | 0.002 |
|                                                                                         |                         | <b>51-925</b>           | 3                 | 0.002 |



Technical drawing from page 42

## Protective cover, flush mounting

|                                                                                        | Ø 24 x 24 mm<br>Typ-Nr. | Ø 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing |       |
|----------------------------------------------------------------------------------------|-------------------------|-------------------------|--------------------|---------------------|-------------------|-------|
| <b>Protective cover, flush mounting</b><br>hinged, transparent, with means for sealing | <b>61-9921.0</b>        |                         |                    | 3                   | 7                 | 0.006 |
|                                                                                        |                         | <b>61-9922.0</b>        |                    | 3                   | 8                 | 0.006 |
| slide by side, with means not for sealing                                              |                         |                         | <b>61-9924.0</b>   | 3                   | 9                 | 0.006 |



Mounting dimensions from page 41, Technical drawing from page 42

## Blind plug, raised mounting

|                                    | Blind plug    | Ø 18 x 18 mm<br>Typ-Nr. | Ø 18 x 24 mm<br>Typ-Nr. | Ø 18 mm<br>Typ-Nr. | Mounting dimensions |       |
|------------------------------------|---------------|-------------------------|-------------------------|--------------------|---------------------|-------|
| <b>Blind plug, raised mounting</b> | Plastic black | <b>51-948.0</b>         | <b>51-947.0</b>         | <b>51-949.0</b>    | 1                   | 0.003 |

Blind plugs fit also in mounting holes no. 2

Mounting dimensions from page 41



## Blind plug, flush mounting

|                                   | Blind plug    | Ø 24 x 24 mm<br>Typ-Nr. | Ø 24 x 30 mm<br>Typ-Nr. | Ø 25 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing |       |
|-----------------------------------|---------------|-------------------------|-------------------------|--------------------|---------------------|-------------------|-------|
| <b>Blind plug, flush mounting</b> | Plastic black | <b>61-9451.0</b>        | <b>61-9452.0</b>        |                    | 3                   |                   | 0.006 |
|                                   |               |                         |                         | <b>61-9453.0</b>   | 3                   | 11                | 0.006 |



Mounting dimensions from page 41, Technical drawing from page 42

## Master key

|                                                     | Typ-Nr.           |  kg |
|-----------------------------------------------------|-------------------|----------------------------------------------------------------------------------------|
| <b>Master key</b><br>Lock numbers 311 ... 445 (DOM) | <b>31-989.300</b> | 0.006                                                                                  |



## Spare key

|                                                              | Typ-Nr.           |  kg |
|--------------------------------------------------------------|-------------------|----------------------------------------------------------------------------------------|
| <b>Spare key</b><br>Key lock switch, standard lock 311 (DOM) | <b>31-989.311</b> | 0.006                                                                                  |



Other lock numbers on request

## EMC Key protection cap

|                                                                   | Typ-Nr.         |  kg |
|-------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------|
| <b>EMC Key protection cap</b><br>Plastic black, for lock type DOM | <b>31-985.0</b> | 0.005                                                                                  |



## Backside

## PCB plug-in base

|                                                                                              | Terminals | Typ-Nr.       | Component layout |  kg |
|----------------------------------------------------------------------------------------------|-----------|---------------|------------------|------------------------------------------------------------------------------------------|
| <b>PCB plug-in base</b><br>16.4 mm dia. x 9.8 mm for Low level switching element, Pins axial | P         | <b>31-940</b> | 2                | 0.002                                                                                    |
| 17.8 x 12.9 mm x 9.8 mm for Snap-action switching element 2.8 mm, Pins axial                 | P         | <b>31-942</b> | 3                | 0.002                                                                                    |
| 17.9 x 17.9 x 8.4 mm for Low level switching element, Pins bent at right-angle               | P         | <b>31-941</b> | 1                | 0.004                                                                                    |



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

Terminals: P = PCB terminal

Component layout from page 40

## Multi-plug housing

|                                                  | Typ-Nr.         |  kg |
|--------------------------------------------------|-----------------|------------------------------------------------------------------------------------------|
| <b>Multi-plug housing</b><br>for Switching block | <b>51-943.0</b> | 0.005                                                                                    |



## Flat receptacle

|                                     | Typ-Nr.         |  |
|-------------------------------------|-----------------|-------------------------------------------------------------------------------------|
| <b>Flat receptacle</b>              | <b>31-945</b>   | 0.001                                                                               |
| 2.0 x 0.5 mm for Universal terminal |                 |                                                                                     |
| 2.8 x 0.5 mm for Multi-plug housing | <b>51-943.1</b> | 0.001                                                                               |
| 2.8 x 0.5 mm for Plug-in terminal   | <b>31-946</b>   | 0.001                                                                               |



## Insulation sleeve

|                                                                  | Typ-Nr.       |  |
|------------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Insulation sleeve</b>                                         | <b>01-928</b> | 0.001                                                                               |
| Cover Plug-in terminals for snap-action switching element 2.8 mm |               |                                                                                     |
| for Flat receptacle 31-945                                       | <b>31-928</b> | 0.001                                                                               |
| for Flat receptacle 31-946                                       | <b>31-929</b> | 0.001                                                                               |



## Terminal cover

|                       | Typ-Nr.       |  |
|-----------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Terminal cover</b> | <b>01-929</b> | 0.010                                                                               |



## Illumination

### Filament lamp

|                      | Socket    | Operating voltage/-current | Typ-Nr.             |  |
|----------------------|-----------|----------------------------|---------------------|---------------------------------------------------------------------------------------|
| <b>Filament lamp</b> | T1 3/4 MG | 12 VAC/DC, 75 mA           | <b>10-1309.1309</b> | 0.001                                                                                 |
|                      |           | 14 VAC/DC, 80 mA           | <b>10-1310.1319</b> | 0.001                                                                                 |
|                      |           | 18 VAC/DC, 40 mA           | <b>10-1311.1249</b> | 0.001                                                                                 |
|                      |           | 24 VAC/DC, 35 mA           | <b>10-1312.1229</b> | 0.001                                                                                 |
|                      |           | 28 VAC/DC, 30 mA           | <b>10-1313.1209</b> | 0.001                                                                                 |
|                      |           | 28 VAC/DC, 40 mA           | <b>10-1313.1249</b> | 0.001                                                                                 |
|                      |           | 36 VAC/DC, 20 mA           | <b>10-1316.1179</b> | 0.001                                                                                 |
|                      |           | 36 VAC/DC, 30 mA           | <b>10-1316.1209</b> | 0.001                                                                                 |
|                      |           | 48 VAC/DC, 20 mA           | <b>10-1319.1179</b> | 0.001                                                                                 |
|                      |           | 48 VAC/DC, 25 mA           | <b>10-1319.1199</b> | 0.001                                                                                 |
|                      |           | 6 VAC/DC, 120 mA           | <b>10-1306.1349</b> | 0.001                                                                                 |
|                      |           | 6.3 VAC/DC, 200 mA         | <b>10-1307.1369</b> | 0.001                                                                                 |



## Single-LED

|            | Socket    | Light colour  | Operating voltage/-current | Typ-Nr.      |  |
|------------|-----------|---------------|----------------------------|--------------|-------------------------------------------------------------------------------------|
| Single-LED | T1 3/4 MG | blue          | 12 VAC/DC, 7/14 mA         | 10-2J09.1066 | 0.002                                                                               |
|            |           |               | 24 VAC/DC, 7/14 mA         | 10-2J12.1066 | 0.002                                                                               |
|            |           |               | 28 VAC/DC, 7/14 mA         | 10-2J13.1066 | 0.002                                                                               |
|            |           |               | 48 VAC/DC, 4/8 mA          | 10-2J19.1046 | 0.002                                                                               |
|            |           |               | 6 VDC, 15 mA               | 10-2J06.3146 | 0.002                                                                               |
|            |           | green         | 12 VAC/DC, 4/7 mA          | 10-2J09.1065 | 0.002                                                                               |
|            |           |               | 24 VAC/DC, 4/7 mA          | 10-2J12.1065 | 0.002                                                                               |
|            |           |               | 28 VAC/DC, 4/7 mA          | 10-2J13.1065 | 0.002                                                                               |
|            |           |               | 48 VAC/DC, 2/4 mA          | 10-2J19.1045 | 0.002                                                                               |
|            |           |               | 6 VDC, 7 mA                | 10-2J06.3145 | 0.002                                                                               |
|            |           | red           | 12 VAC/DC, 7/14 mA         | 10-2J09.1062 | 0.002                                                                               |
|            |           |               | 24 VAC/DC, 7/14 mA         | 10-2J12.1062 | 0.002                                                                               |
|            |           |               | 28 VAC/DC, 7/14 mA         | 10-2J13.1062 | 0.002                                                                               |
|            |           |               | 48 VAC/DC, 4/8 mA          | 10-2J19.1042 | 0.002                                                                               |
|            |           |               | 6 VDC, 15 mA               | 10-2J06.3142 | 0.002                                                                               |
|            |           | white diffuse | 12 VAC/DC, 7/14 mA         | 10-2J09.1069 | 0.002                                                                               |
|            |           |               | 24 VAC/DC, 7/14 mA         | 10-2J12.1069 | 0.002                                                                               |
|            |           |               | 28 VAC/DC, 7/14 mA         | 10-2J13.1069 | 0.002                                                                               |
|            |           |               | 48 VAC/DC, 4/8 mA          | 10-2J19.1049 | 0.002                                                                               |
|            |           |               | 6 VDC, 15 mA               | 10-2J06.3149 | 0.002                                                                               |
|            |           | yellow        | 12 VAC/DC, 7/14 mA         | 10-2J09.1064 | 0.002                                                                               |
|            |           |               | 24 VAC/DC, 7/14 mA         | 10-2J12.1064 | 0.002                                                                               |
|            |           |               | 28 VAC/DC, 7/14 mA         | 10-2J13.1064 | 0.002                                                                               |
|            |           |               | 48 VAC/DC, 4/8 mA          | 10-2J19.1044 | 0.002                                                                               |
|            |           |               | 6 VDC, 15 mA               | 10-2J06.3144 | 0.002                                                                               |



Note:

AC operation through half-wave rectifier possible, slight flickering can occur.

## Series resistor

for lamp voltage reduction

|                                                                  | Operating voltage | Typ-Nr.  |  |
|------------------------------------------------------------------|-------------------|----------|---------------------------------------------------------------------------------------|
| <b>Series resistor</b><br>10 kΩ, for filament lamp 48 VAC, 25 mA | 230/240 V         | 02-904.7 | 0.003                                                                                 |
| 2.7 kΩ, for filament lamp 48 VAC, 25 mA                          | 110 V             | 02-904.0 | 0.003                                                                                 |
| 3.3 kΩ, for filament lamp 48 VAC, 25 mA                          | 125 V             | 02-904.1 | 0.003                                                                                 |
| 4.7 kΩ, for filament lamp 48 VAC, 25 mA                          | 145 V             | 02-904.3 | 0.003                                                                                 |



Please keep to the country specific security rules.

## Terminal plate empty

for fitting with series resistors

|                                                           | Typ-Nr.  |  |
|-----------------------------------------------------------|----------|---------------------------------------------------------------------------------------|
| <b>Terminal plate empty</b><br>10 spaces 125 x 60 x 15 mm | 02-912.2 | 0.045                                                                                 |
| 15 spaces 187.5 x 60 x 15 mm                              | 02-912.3 | 0.090                                                                                 |
| 20 spaces 250 x 60 x 15 mm                                | 02-912.4 | 0.095                                                                                 |
| 5 spaces 62.5 x 60 x 15 mm                                | 02-912.1 | 0.025                                                                                 |





**Assembling****Fixing nut**

|                                                               | Typ-Nr.       |  |
|---------------------------------------------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Fixing nut</b><br>Metal, specifically for keylock switches | <b>31-991</b> | 0.005                                                                               |

**Anti-twist ring**

for Key lock- and Selector switch

|                        | Typ-Nr.       |  |
|------------------------|---------------|-------------------------------------------------------------------------------------|
| <b>Anti-twist ring</b> | <b>51-910</b> | 0.001                                                                               |

**Lens remover**

|                                           | Typ-Nr.          |  |
|-------------------------------------------|------------------|-------------------------------------------------------------------------------------|
| <b>Lens remover</b><br>for flush mounting | <b>61-9730.0</b> | 0.011                                                                               |
| for raised mounting                       | <b>02-905</b>    | 0.011                                                                               |

**Lamp remover**

|                     | Typ-Nr.          |  |
|---------------------|------------------|---------------------------------------------------------------------------------------|
| <b>Lamp remover</b> | <b>61-9740.0</b> | 0.003                                                                                 |

**CAUTION**

A switching process might be released when replacing the lamp/LED !

**Mounting tool**

|                      | Typ-Nr.       |  |
|----------------------|---------------|---------------------------------------------------------------------------------------|
| <b>Mounting tool</b> | <b>01-907</b> | 0.020                                                                                 |

**Dismantling tool**

|                                                                                             | Typ-Nr.       |  |
|---------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------------------------|
| <b>Dismantling tool</b><br>for dismantling of Lens, Lens holder and Switching element block | <b>51-938</b> | 0.027                                                                                 |



Flat receptacle remover

|                                                                                                 |                 |                                                                                        |
|-------------------------------------------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------|
|                                                                                                 | Typ-Nr.         |  kg |
| <b>Flat receptacle remover</b><br>for removing the Flat receptacle of the Multi-plug in housing | <b>51-943.9</b> | 0.001                                                                                  |



## Actuator with snap-action switching element

### Switching system

Self-cleaning, double-break, snap action switching system (with contact gap 2 x 0.5 mm).  
1 normally closed or 1 normally open contact per element.  
Snap-action switching elements with soldering terminals at the sides: up to 4 switching element can be on a pushbutton (max. 4 normally closed and 4 normally open contacts).  
Snap-action switching element with axial plug-in terminals 2.8 mm stachable, only 1 switching element can be on a pushbutton.

### Material

#### Material of contact

Gold plated silver

#### Switch housing

Axial soldering-/plug-in terminal 2.8 mm:  
Diallylphthalate DAP, Polyamide 66, Polysulfone, heat-resistant and self-extinguishing.  
Soldering terminal: PA 6.6 Ultramid

#### Actuator housing

Polyetherimide, self-extinguishing

### Mechanical characteristics

#### Terminals

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

Max. wire diameter 2 wires à 1.2 mm

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

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

Max. wire diameter 2 wires of 1 mm

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

#### Actuating torque

2.5 Ncm ... 5.5 Ncm, depending on the number of switching elements. Measured at the key or lever of the keylock- or selector switch.

#### Actuating force

4 N ... 6 N, depending on the number of switching elements

#### Actuating travel

Illuminated pushbutton 3 mm

Keylock-/selector switch actuator 2 positions:

1x ca. 42° deflection momentary action

1x ca. 90° deflection maintained action

#### Rebound time

≤5ms

#### Mechanical lifetime

Momentary action 2 million cycles of operation

Maintained action 1 million cycles of operation

Keylock switch 50 000 cycles of operation

### Electrical characteristics

#### Standards

IEC 61058, EN 61058

#### Rated voltage

250 VAC/VDC

#### Rated current

5 A

#### Contact resistance

Starting value (initial) ≤50 mΩ

#### Electrostatic discharge (ESD)

≤15 KV (Keylock switch)

#### Conventional free air thermal current

5 A

The maximum current in continuous operation and at ambient temperature not exceeding the quoted maximum values.

#### Switch rating

250 VAC, 5 A (cosφ 1)

250 VAC, 3 A (cosφ 0,3)

Switch rating AC (cosφ 0,7)

Voltage 125 VAC 250 VAC

Current 3 A 2 A

Switch rating DC (inductive) L:R = 30 ms

Voltage 24 VDC 60 VDC 110 VDC 220 VDC

Current 2 A 0.7 A 0.2 A 0.1 A

#### Electric strength

2500 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC 60512-2-11

#### Protection class

II

### Environmental conditions

#### Storage temperature

-40 °C ... +85 °C

#### Service temperature

-25 °C ... +55 °C

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

#### Protection degree

IP 65 front side, as per IEC 60529

#### Shock resistance

(Single impacts, semi-sinusoidal)

15 g for 11 ms, as per IEC 60512-4-3, IEC 60068-2-27

#### Vibration resistance

(Sinusoidal)

10 g at 10 Hz ... 1500 Hz, amplitude 1.5 mm, as per IEC 60512-4-4, IEC 60068-2-6

#### Climate resistance

Standard condition, as per IEC 60068-2-3 and 2-30

Changing condition, as per IEC 60068-2-14 and 2-33

### Approvals

#### Approbations

CB (IEC 61058)

CSA

ENEC (EN 61058)

Germanischer Lloyd

UL

Declaration of conformity  
CE

## Actuator with snap-action switching element block (Keylock- and Selector switch 3 positions)

### Switching system

Self-cleaning, double-break, snap action switching system  
1 normally closed or 1 normally open contact per element.

### Material

**Material of contact**  
Gold plated hardsilver

**Switch housing**  
Diallylphthalate (DAP), heat-resistant and self-extinguishing

**Actuator housing**  
Polyetherimide, self-extinguishing

### Mechanical characteristics

**Terminals**  
Soldering terminal which can also be used as plug-in terminal  
2.8 x 0.5 mm:  
Max. wire diameter 2 wires of 1 mm  
Max. wire cross-section of stranded cable 2 x 0.75 mm<sup>2</sup>

**Actuating torque**  
2.5 Ncm ... 5.5 Ncm, depending on the number of switching elements. Measured at the key or lever of the keylock- or selector switch.

**Actuating travel**  
Keylock-/selector switch actuator with 3 positions  
2x ca. 42° deflection momentary action  
2x ca. 90° deflection maintained action

**Rebound time**  
≤5ms

**Mechanical lifetime**  
Keylock switch 50 000 cycles of operation  
Selector switch 100 000 cycles of operation

### Electrical characteristics

**Electrostatic discharge (ESD)**  
≤15 KV (Keylock switch)

**Conventional free air thermal current**  
5 A  
The maximum current in continuous operation and at ambient temperature not exceeding the quoted maximum values.

**Switch rating**  
250 VAC, 5 A (cosφ 0,75)

**Electric strength**  
2500 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC 60512-2-11

**Protection class**  
II

### Environmental conditions

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

**Service temperature**  
-25 °C ... +55 °C  
for selector switches mounted as a block, make sure the heat can escape freely

**Protection degree**  
Front side, as per IEC 60529  
IP 65 keylock switch  
IP 40 selector switch

### Approvals

**Approbations**  
CB (IEC 61058)  
CSA  
ENEC (EN 61058)  
Germanischer Lloyd  
UL

**Declaration of conformity**  
CE

## Actuator with low level switching element

### Switching system

This low level switching element was designed for switching low powers in electronic circuits. The mechanism assures reliable switching of loads ranging from a few µA / µV up to 100 mA / 42 VAC/ DC.  
Single-break momentary contact, as normally open or normally closed with 4 independent points of contact. 2 momentary contacts per switching element; combination of normally open and normally closed is possible.  
Special features are the long life, extremely short rebound time and stable contact resistance.

### Material

**Material of contact**  
Gold plated

**Switch housing**  
Polysulfone, heat-resistant and self-extinguishing

**Actuator housing**  
Polyetherimide, self-extinguishing

### Mechanical characteristics

**Terminals**  
The universal terminals permit these units to be mounted on printed circuit boards (PCB). These terminals can also be used as soldering or plug-in terminals.  
For these terminals we can also supply a plug-in base which, when soldered on to the board, enables the switch to be plugged in.  
Soldering terminal:  
Max. wire diameter 2 wires à 0.8 mm  
Max. wire cross-section of stranded cable 1x 0.75 mm<sup>2</sup>

Plug-in terminal 2.0 x 0.5 mm

**Actuating torque**  
2.5 Ncm ... 5.5 Ncm, measured at the key or lever of the keylock- or selector switch

**Actuating force**

3 N ... 3,5 N

**Actuating travel**

Illuminated pushbutton 3 mm

Keylock-/selector switch actuator 2 positions:

1x ca. 42° deflection momentary action

1x ca. 90° deflection maintained action

**Rebound time**

Typ. <100 µs

**Mechanical lifetime**

Momentary action 5 million cycles of operation

Maintained action 1 million cycles of operation

Keylock switch 50 000 cycles of operation

## Electrical characteristics

**Contact resistance**

Starting value (initial) ≤50 mΩ

**Electrostatic breakdown value**

≤15 kV (Keylock switch)

**Switch rating**

10 µA, 100 µV to 100 mA at 42 VAC/VDC

**Electric strength**

2500 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC 60512-2-11

## Environmental conditions

**Storage temperature**

-40 °C ... +85 °C

**Service temperature**

-25 °C ... +55 °C

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

**Protection degree**

IP 65 front side, as per IEC 60529

**Shock resistance**

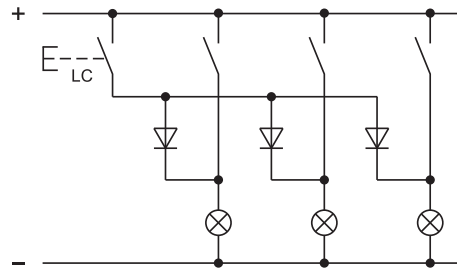
(Single impacts, semi-sinusoidal)

15 g for 11 ms, as per IEC 60512-4-3, IEC 60068-2-27

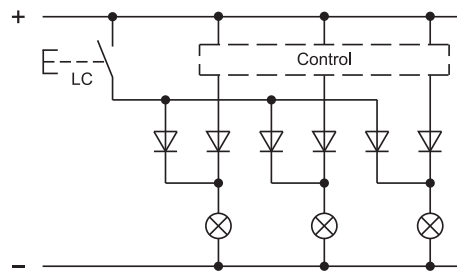
## Diode element

When indicators and illuminated pushbuttons equipped with diodes, the user is able to perform a lamp check or wire an alarm circuit simply with a considerable saving of space.

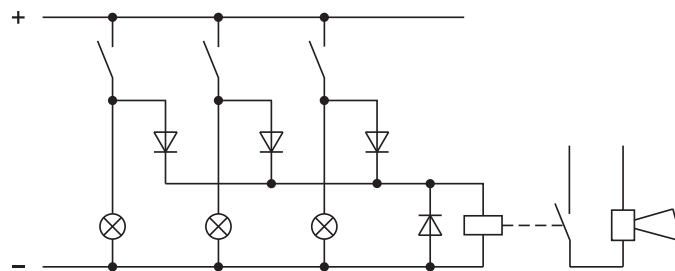
Lamp check



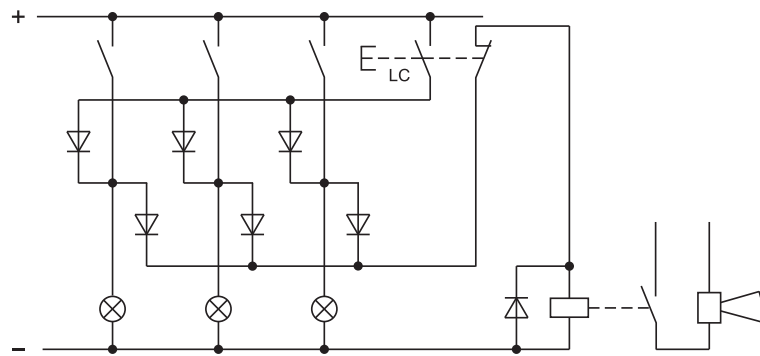
Lamp check with blocking diodes



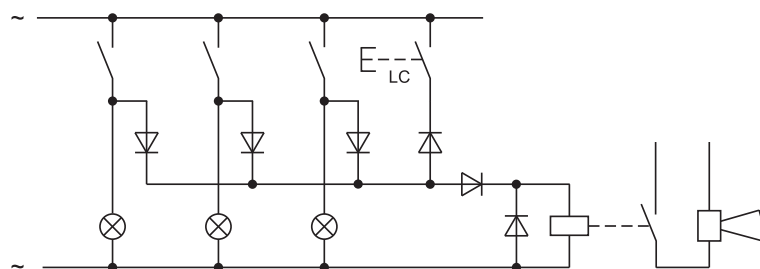
Alarm circuit from fault annunciation system



Lamp check and alarm circuit



Lamp check and alarm circuit with only one diode and AC voltage



LC = Lamp Check

## Suppressor circuits

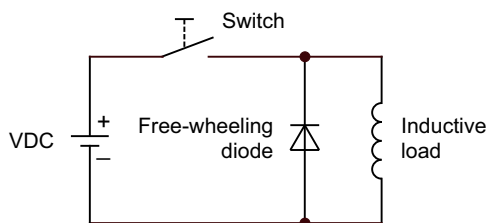
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

Fig. 1 shows an inductive load with a free-wheeling diode connected in parallel. This free-wheeling diode provides a path for the inductor current to flow when the current is interrupted by the switch. Without this free-wheeling diode, the voltage across the coil will be limited only by dielectric breakdown voltages of the circuit or parasitic elements of the coil. This voltage can be kilovolts in amplitude even when nominal circuit voltages are low (e.g. 12 VDC) see Fig. 2.

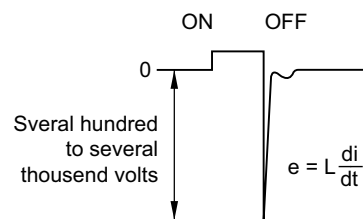
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (VR) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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

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

Switching with inductive load  
Fig. 1



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



General notes

1. Engraving

In addition to the most commonly used world languages, in DIN 1451-3 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 be pleased to advise you.  
For letters and figures, typefaces with 2.5 mm, 3 mm and 4 mm are available.

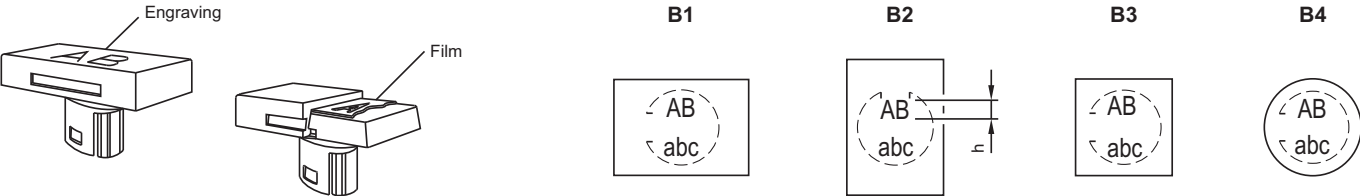
3. Film inserts

Instead of using engraving the lenses can be fitted with transparent film inserts, as an alternative. For this purpose, though, it is advisable to use transparent lenses.  
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.  
**Important :** Consider pushbutton mounting orientation before 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 (target value) capital letters per line | Number of (target value) small letters per line | Image |
|--------------------------|-----------------------|---------------------|-----------------|---------------------------------------------------|-------------------------------------------------|-------|
| 18 dia.<br>(15.8 dia.)   | 12.8 dia.             | 2                   | 3               | 6                                                 | 6                                               | B4    |
|                          |                       | 3                   | 2               | 5                                                 | 6                                               | B4    |
|                          |                       | 4                   | 2               | 3                                                 | 4                                               | B4    |
|                          |                       | 5                   | 1               | 2                                                 | 3                                               | B4    |
|                          |                       | 6                   | 1               | 2                                                 | 3                                               | B4    |
|                          |                       | 8                   | 1               | 2                                                 | 2                                               | B4    |
| 18 x 18<br>(15.3 x 15.3) | 12.7 x 12.7           | 2                   | 4               | 7 - 8                                             | 8                                               | B3    |
|                          |                       | 3                   | 3               | 6 - 7                                             | 7                                               | B3    |
|                          |                       | 4                   | 2               | 4 - 5                                             | 5                                               | B3    |
|                          |                       | 5                   | 2               | 3 - 4                                             | 4                                               | B3    |
|                          |                       | 6                   | 1               | 3                                                 | 3 - 4                                           | B3    |
|                          |                       | 8                   | 1               | 2 - 3                                             | 2 - 3                                           | B3    |
| 18 x 24<br>(15.3 x 21.5) | 12.7 x 18.7           | 2                   | 4               | 11                                                | 12                                              | B1    |
|                          |                       |                     | 5               | 7 - 8                                             | 8                                               | B2    |
|                          |                       | 3                   | 3               | 9 - 10                                            | 10 - 11                                         | B1    |
|                          |                       |                     | 4               | 6 - 7                                             | 7                                               | B2    |
|                          |                       | 4                   | 2               | 7                                                 | 7 - 8                                           | B1    |
|                          |                       |                     | 3               | 4 - 5                                             | 5                                               | B2    |
|                          |                       | 5                   | 2               | 5 - 6                                             | 6                                               | B1    |
|                          |                       |                     |                 | 3 - 4                                             | 4                                               | B2    |
|                          |                       | 6                   | 1               | 4 - 5                                             | 5                                               | B1    |
|                          |                       |                     | 2               | 3                                                 | 3 - 4                                           | B2    |
|                          |                       | 8                   | 1               | 3 - 4                                             | 3 - 4                                           | B1    |
|                          |                       |                     |                 | 2 - 3                                             | 2 - 3                                           | B2    |

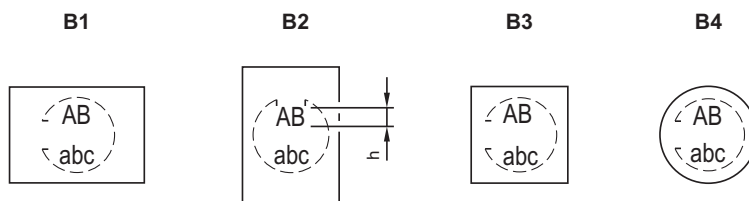
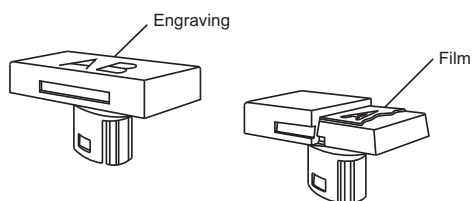




## Lenses for indicators and illuminated pushbuttons, flush mounting

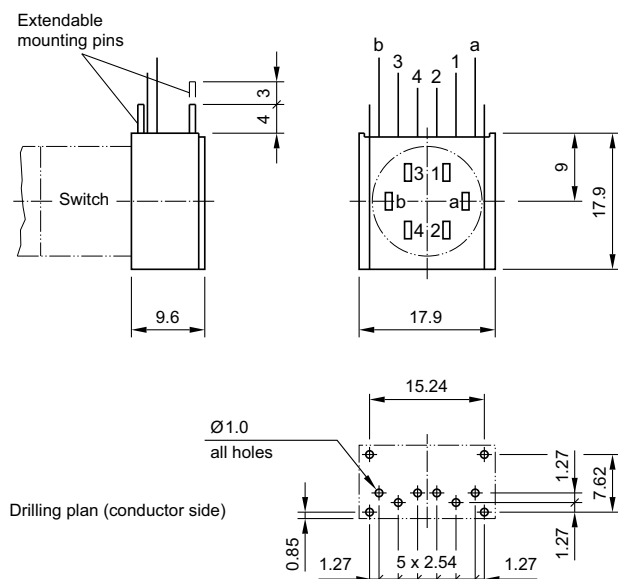
All dimensions in mm

| Front size<br>(Lens)   | Film insert<br>max. size | Height of letters<br>h | Number of lines | Number of (target value)<br>capital letters per line | Number of (target value)<br>small letters per line | Image |
|------------------------|--------------------------|------------------------|-----------------|------------------------------------------------------|----------------------------------------------------|-------|
| 24 x 24<br>(18 x 18)   | 15.1 x 15.1              | 2                      | 4               | 8 - 9                                                | 9                                                  | B3    |
|                        |                          | 3                      | 3               | 7 - 8                                                | 8                                                  | B3    |
|                        |                          | 4                      | 2               | 4 - 5                                                | 5                                                  | B3    |
|                        |                          | 5                      | 2               | 4                                                    | 4 - 5                                              | B3    |
|                        |                          | 6                      | 1               | 4                                                    | 4                                                  | B3    |
|                        |                          | 8                      | 1               | 2 - 3                                                | 2 - 3                                              | B3    |
| 24 x 30<br>(18 x 24)   | 15.1 x 21                | 2                      | 4               | 12                                                   | 13                                                 | B1    |
|                        |                          |                        | 5               | 8 - 9                                                | 9                                                  | B2    |
|                        |                          | 3                      | 3               | 10 - 11                                              | 11 - 12                                            | B1    |
|                        |                          |                        | 4               | 7 - 8                                                | 8                                                  | B2    |
|                        |                          | 4                      | 2               | 7                                                    | 8                                                  | B1    |
|                        |                          |                        | 3               | 4 - 5                                                | 5                                                  | B2    |
|                        |                          | 5                      | 2               | 5 - 6                                                | 6                                                  | B1    |
|                        |                          |                        |                 | 4                                                    | 4 - 5                                              | B2    |
|                        |                          | 6                      | 1               | 4 - 5                                                | 5                                                  | B1    |
|                        |                          |                        | 2               | 3                                                    | 3 - 4                                              | B2    |
|                        |                          | 8                      | 1               | 3 - 4                                                | 3 - 4                                              | B1    |
|                        |                          |                        |                 | 2 - 3                                                | 2 - 3                                              | B2    |
| 25 dia.<br>(19.7 dia.) | Marking plate            | 2                      | 3               | 6                                                    | 6                                                  | B4    |
|                        |                          | 3                      | 2               | 5                                                    | 6                                                  | B4    |
|                        |                          | 4                      | 2               | 3                                                    | 4                                                  | B4    |
|                        |                          | 5                      | 1               | 2                                                    | 3                                                  | B4    |
|                        |                          | 6                      | 1               | 2                                                    | 3                                                  | B4    |
|                        |                          | 8                      | 1               | 2                                                    | 2                                                  | B4    |

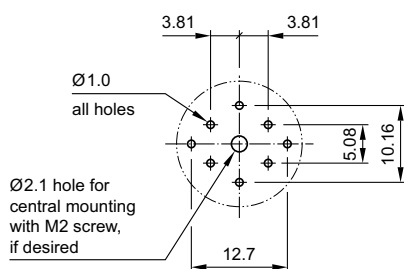


## Component layout

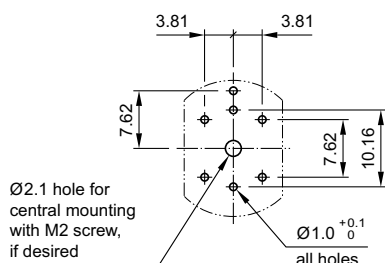
### 1 PCB plug-in base page 28



### 2 PCB plug-in base page 28



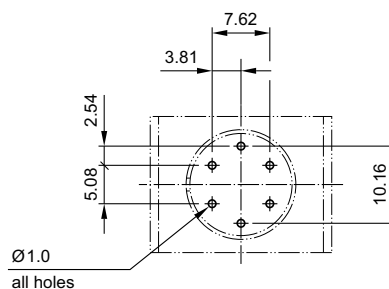
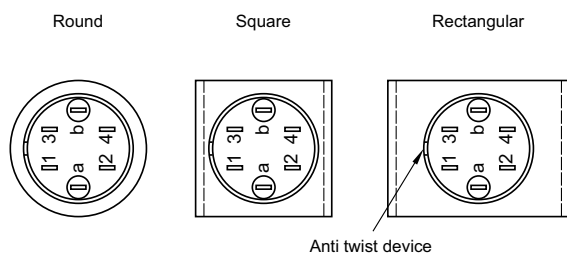
### 3 PCB plug-in base page 28



4 Indicator actuator page 7 | Illuminated pushbutton actuator page 8 | Keylock switch 2 positions page 9 | Selector switch 2 positions page 11 | Indicator actuator, flush mounting page 13 | Illuminated pushbutton actuator, flush mounting page 14 | Keylock switch actuator 2 positions, flush mounting page 15 | Selector switch actuator 2 positions, flush mounting page 19

Terminal (rearside)

PCB layout (conductor side)



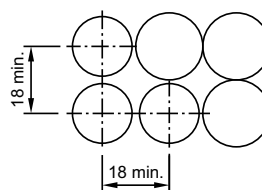
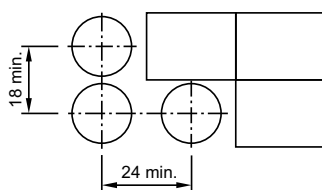
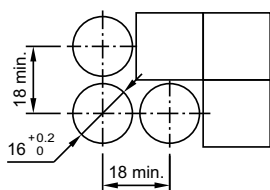
## Mounting dimensions

**1 Indicator actuator** page 7 | **Illuminated pushbutton actuator** page 8 | **Blind plug, raised mounting** page 27

18 x 18 mm

18 x 24 mm

Ø18 mm

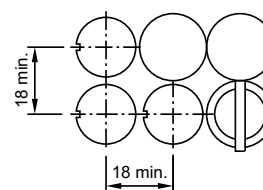
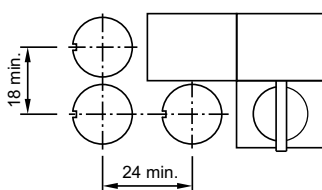
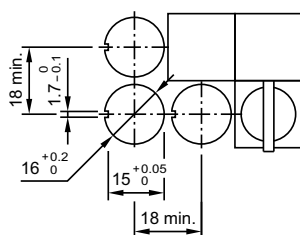


**2 Keylock switch 2 positions** page 9 | **Keylock switch 3 positions** page 10 | **Selector switch 2 positions** page 11 | **Selector switch 3 positions** page 12

18 x 18 mm

18 x 24 mm

Ø18 mm

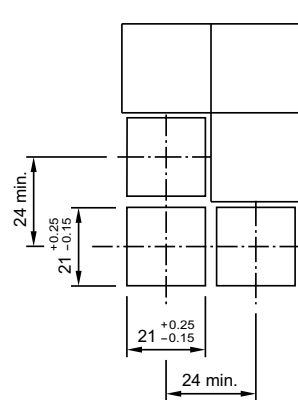
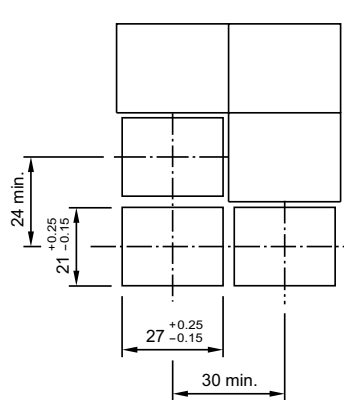
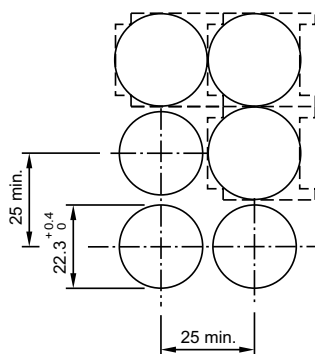


**3 Indicator actuator, flush mounting** page 13 | **Illuminated pushbutton actuator, flush mounting** page 14 | **Keylock switch actuator 2 positions, flush mounting** page 15 | **Keylock switch actuator 3 positions, flush mounting** page 18 | **Selector switch actuator 2 positions, flush mounting** page 19 | **Selector switch actuator 3 positions, flush mounting** page 20 | **Front bezel set for Indicators and Illuminated pushbutton, flush mounting** page 25 | **Front bezel set for Keylock switch, flush mounting** page 26 | **Front bezel set for Selector switch, flush mounting** page 26 | **Protective cover, flush mounting** page 27 | **Blind plug, flush mounting** page 27

Ø25 mm

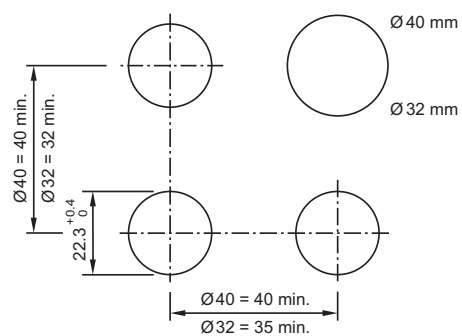
24 x 30 mm

24 x 24 mm



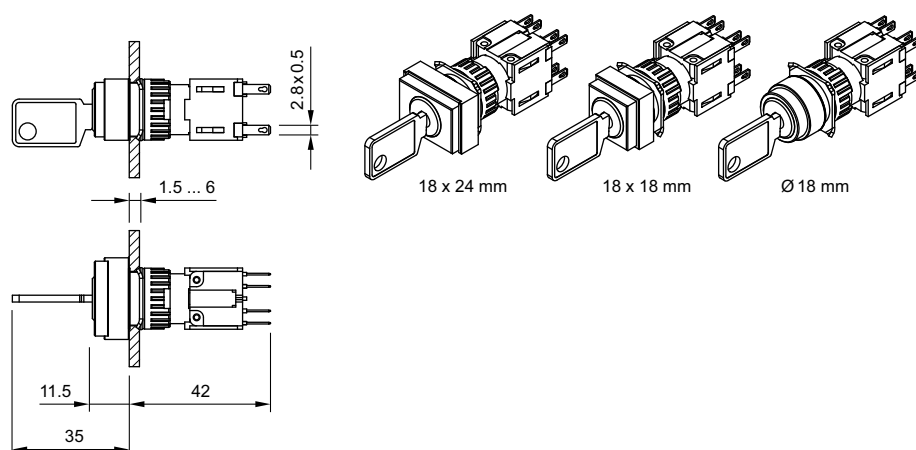
- Hole spacing min. 26 mm / min. 26 mm by using of the round front protective cap 84-9103.7
- Hole spacing min. 31 mm / min. 25 mm by using of the rectangular front protectice cap 61-9927.2

## 4 Front bezel set for Mushroom-head pushbutton, flush mounting page 25

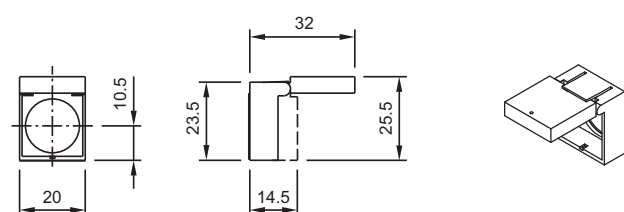


## Technical drawing

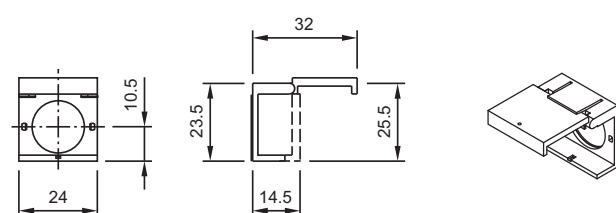
### 1 Keylock switch 3 positions page 10



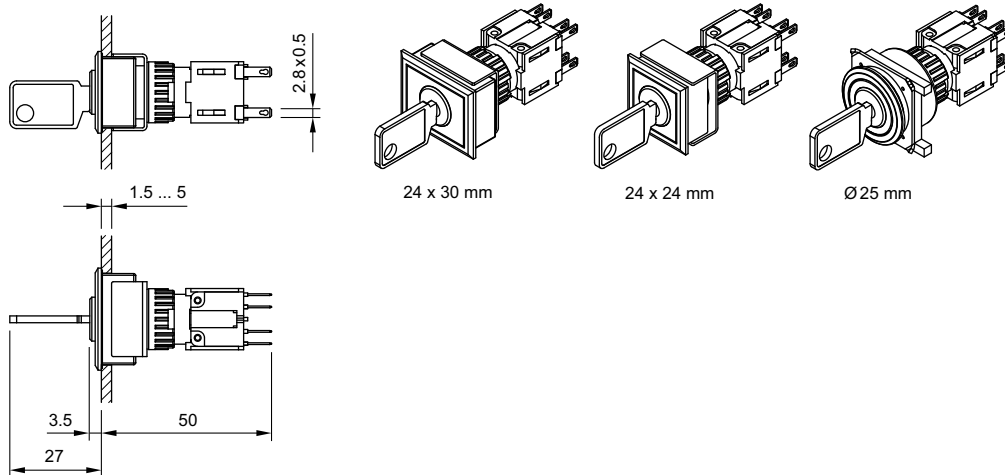
### 2 Protective cover, raised mounting page 27



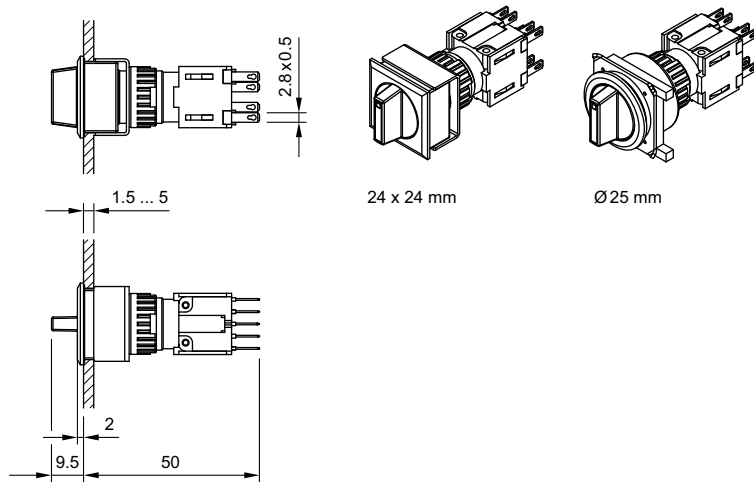
### 3 Protective cover, raised mounting page 27



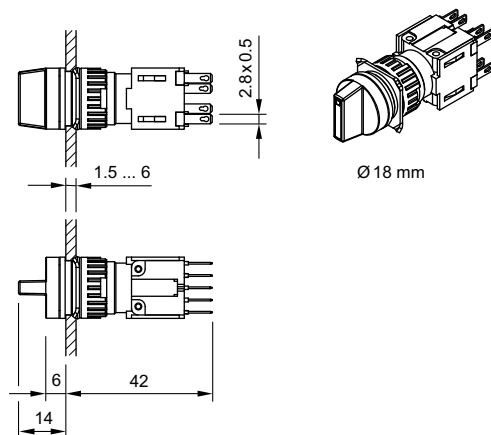
## 4 Keylock switch actuator 3 positions, flush mounting page 18



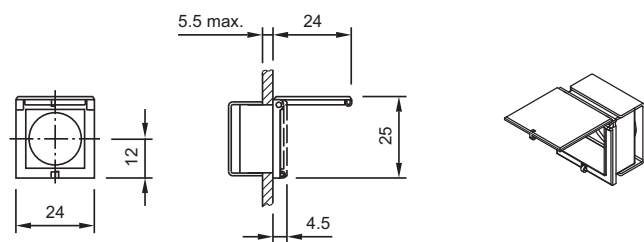
## 5 Selector switch actuator 3 positions, flush mounting page 20



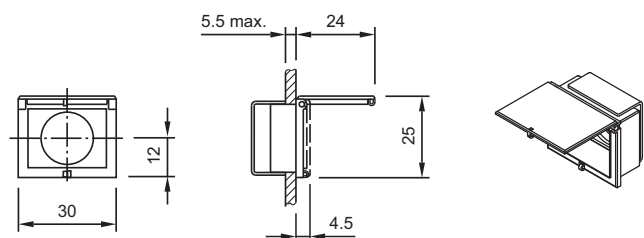
## 6 Selector switch 3 positions page 12



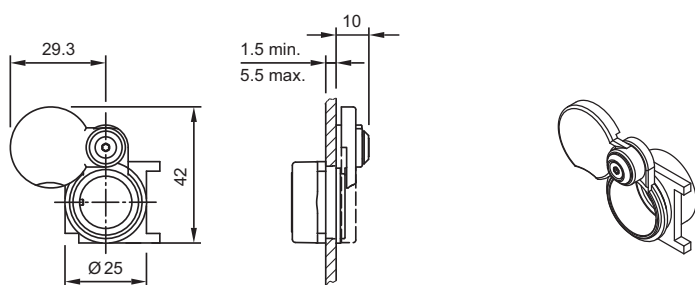
**7 Protective cover, flush mounting** page 27



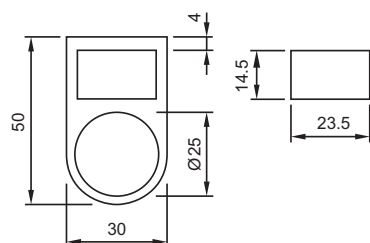
**8 Protective cover, flush mounting** page 27



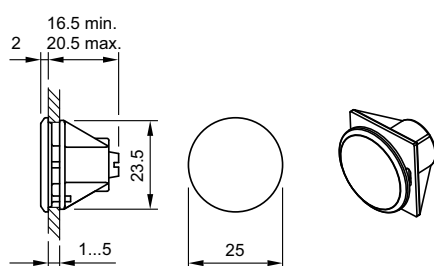
**9 Protective cover, flush mounting** page 27



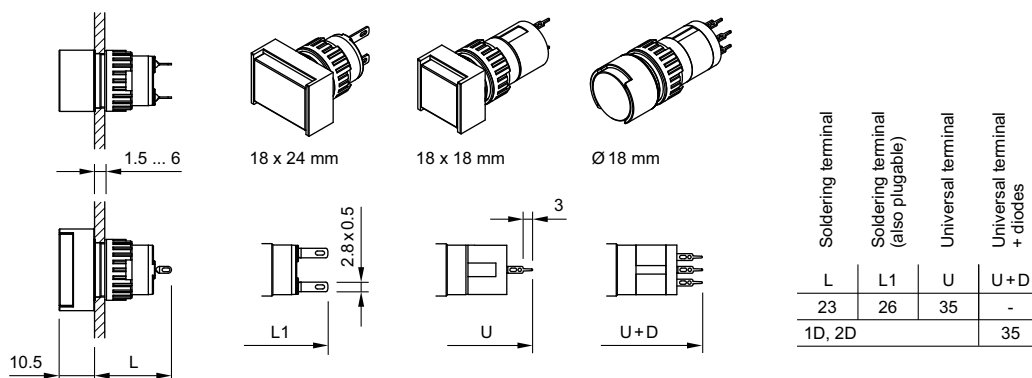
**10 Legend frame** page 24



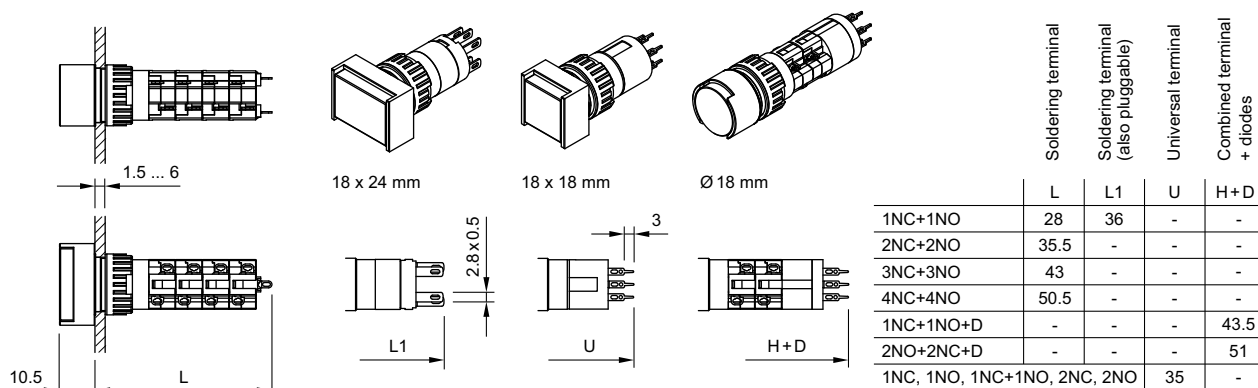
**11 Blind plug, flush mounting** page 27



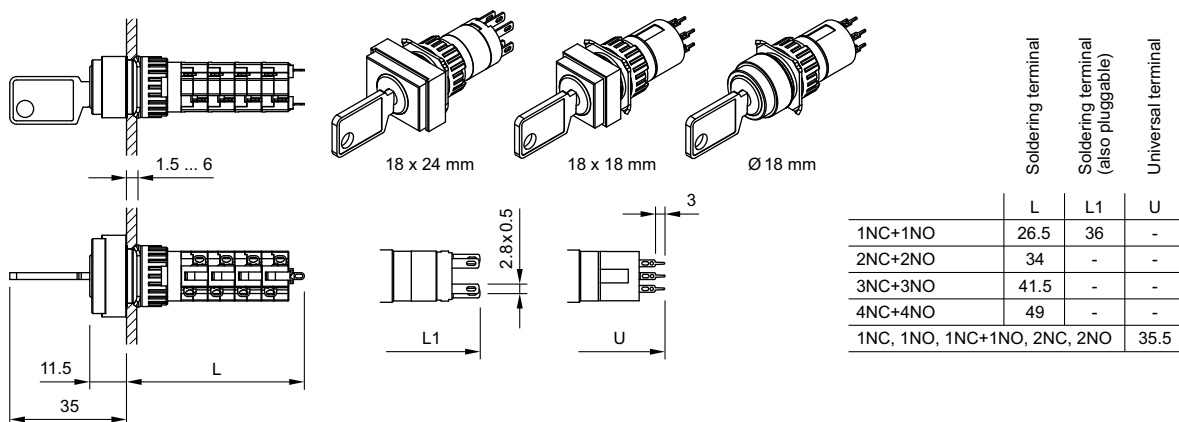
## 12 Indicator actuator page 7



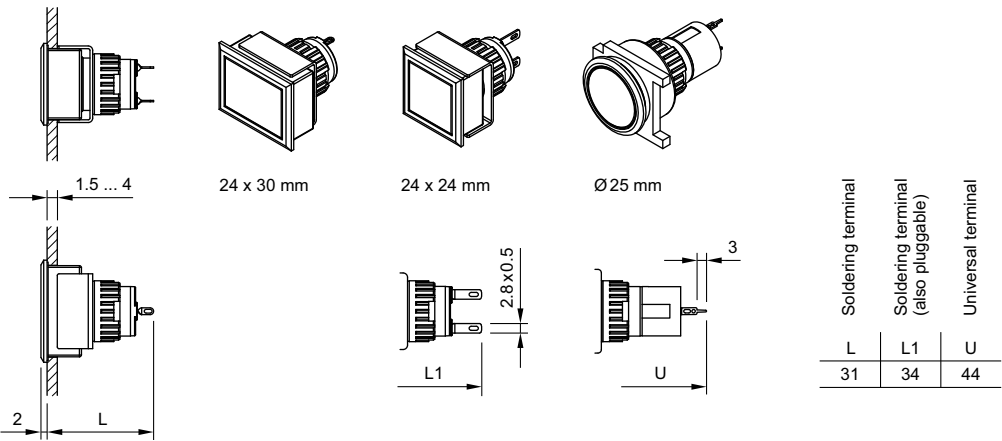
## 13 Illuminated pushbutton actuator page 8



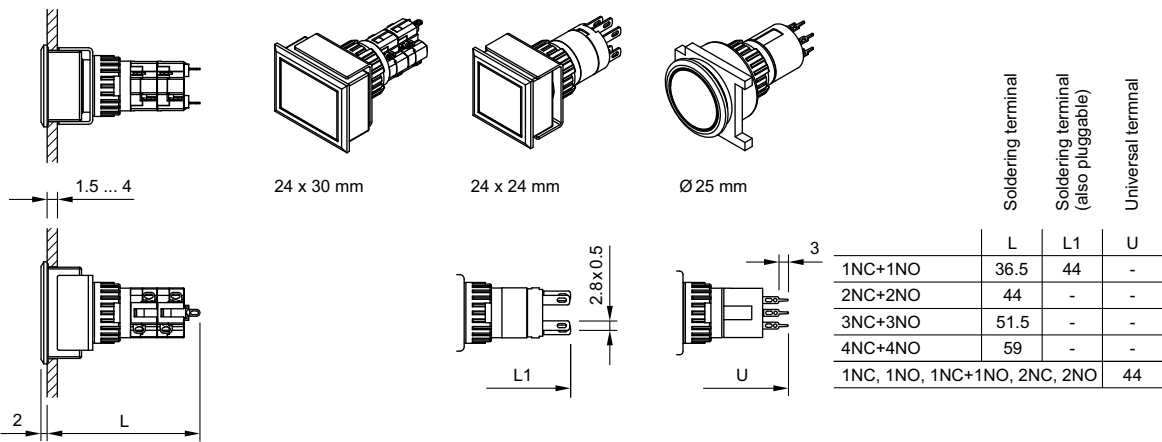
## 14 Keylock switch 2 positions page 9



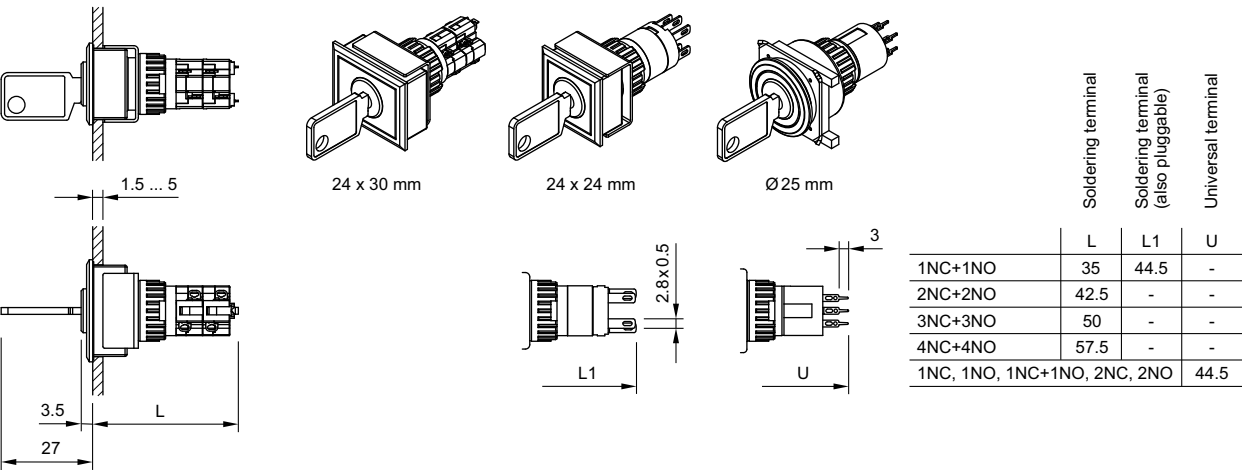
15 Indicator actuator, flush mounting page 13



16 Illuminated pushbutton actuator, flush mounting page 14

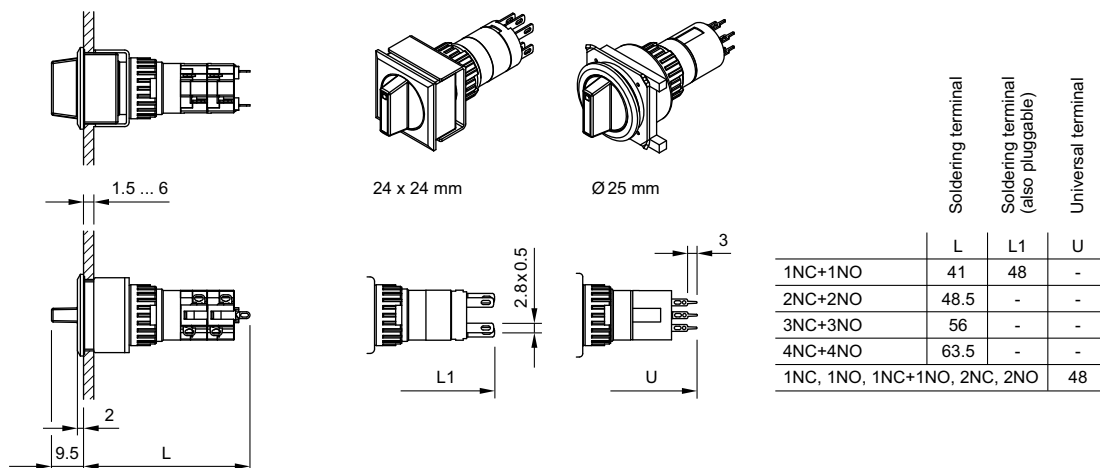


17 Keylock switch actuator 2 positions, flush mounting page 15

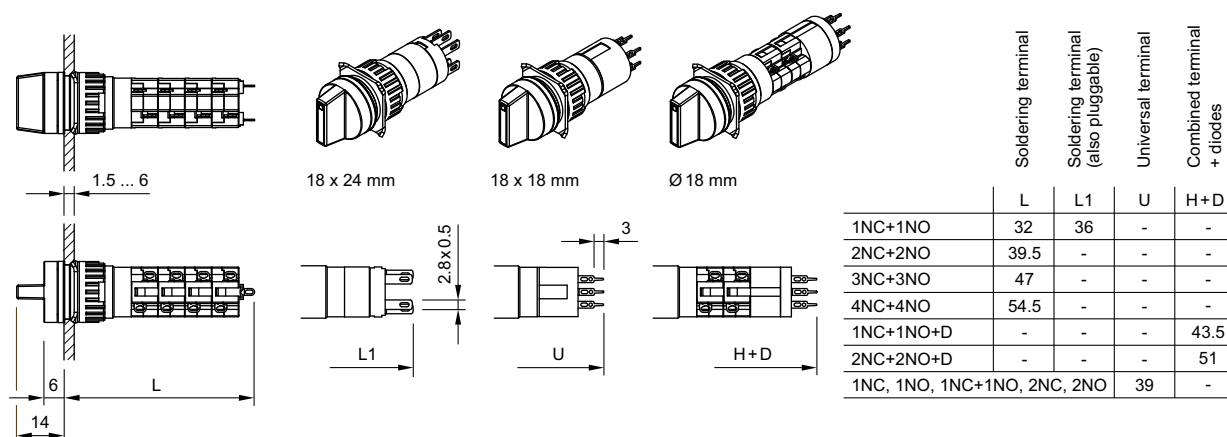




## 18 Selector switch actuator 2 positions, flush mounting page 19

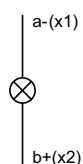


## 19 Selector switch 2 positions page 11

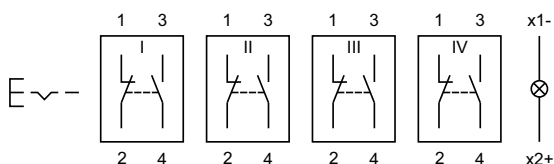


## Circuit drawing

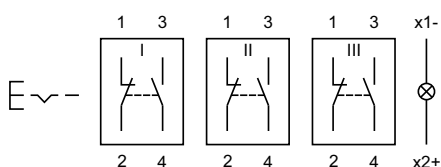
### 1 Indicator actuator page 7 | Indicator actuator, flush mounting page 13



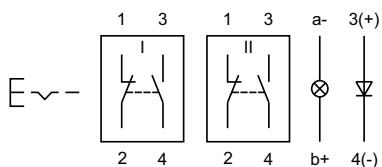
### 2 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



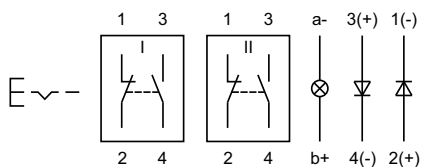
### 3 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



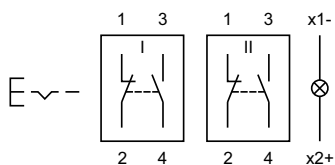
## 4 Illuminated pushbutton actuator page 8



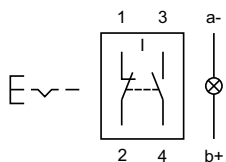
## 5 Illuminated pushbutton actuator page 8



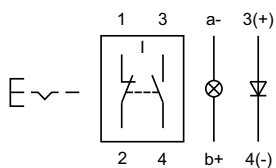
## 6 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



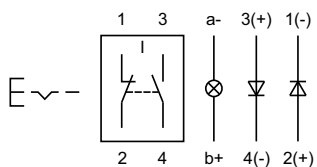
## 7 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



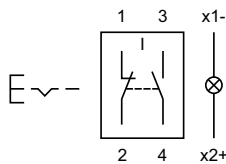
## 8 Illuminated pushbutton actuator page 8



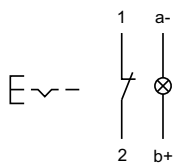
## 9 Illuminated pushbutton actuator page 8



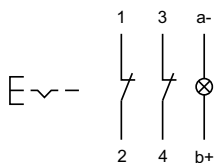
## 10 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



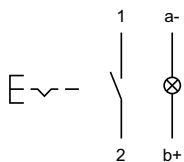
## 11 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



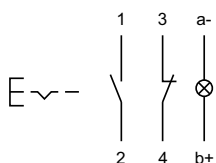
**12 Illuminated pushbutton actuator** page 8 | **Illuminated pushbutton actuator, flush mounting** page 14



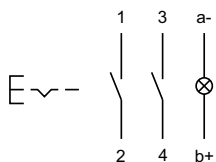
**13 Illuminated pushbutton actuator** page 8 | **Illuminated pushbutton actuator, flush mounting** page 14



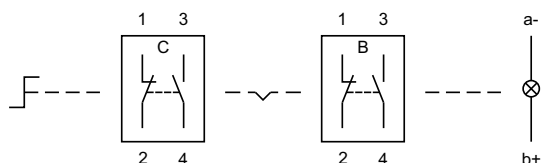
**14 Illuminated pushbutton actuator** page 8 | **Illuminated pushbutton actuator, flush mounting** page 14



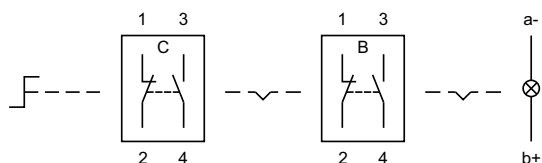
**15 Illuminated pushbutton actuator** page 8 | **Illuminated pushbutton actuator, flush mounting** page 14



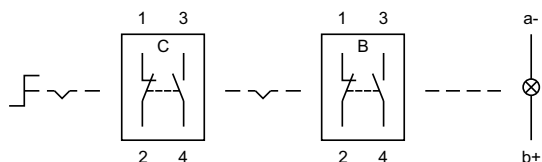
**16 Selector switch 3 positions** page 12 | **Selector switch actuator 3 positions, flush mounting** page 20



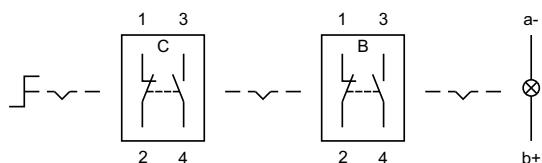
**17 Selector switch 3 positions** page 12 | **Selector switch actuator 3 positions, flush mounting** page 20



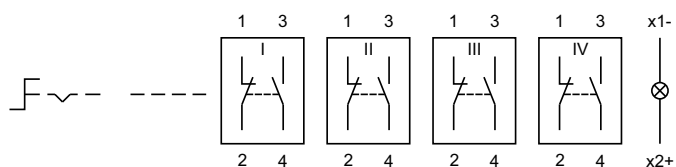
**18 Selector switch 3 positions** page 12 | **Selector switch actuator 3 positions, flush mounting** page 20



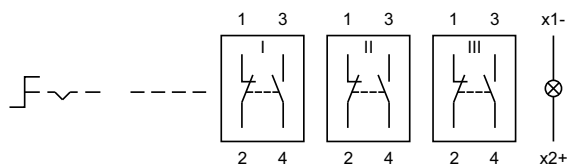
**19 Selector switch 3 positions** page 12 | **Selector switch actuator 3 positions, flush mounting** page 20



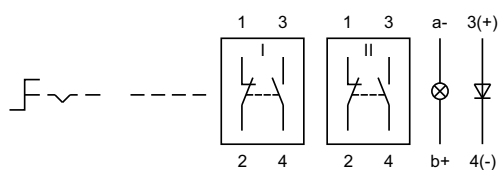
**20 Selector switch 2 positions** page 11 | **Selector switch actuator 2 positions, flush mounting** page 19



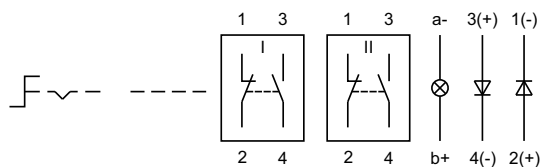
**21 Selector switch 2 positions** page 11 | **Selector switch actuator 2 positions, flush mounting** page 19



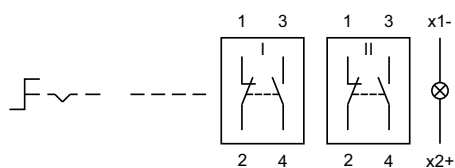
**22 Selector switch 2 positions** page 11



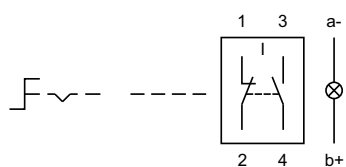
**23 Selector switch 2 positions** page 11



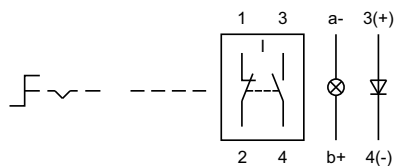
**24 Selector switch 2 positions** page 11 | **Selector switch actuator 2 positions, flush mounting** page 19



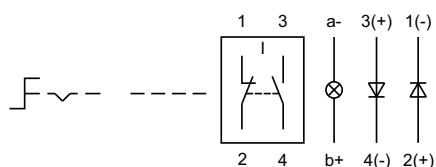
**25 Selector switch 2 positions** page 11 | **Selector switch actuator 2 positions, flush mounting** page 19



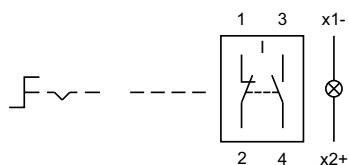
**26 Selector switch 2 positions** page 11



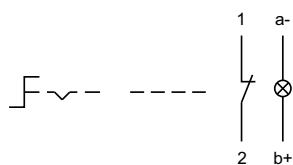
**27 Selector switch 2 positions** page 11



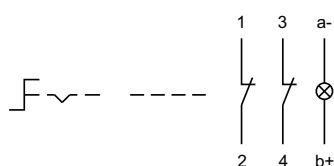
28 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



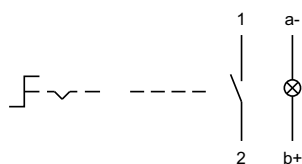
29 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



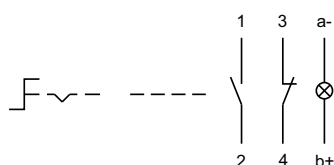
30 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



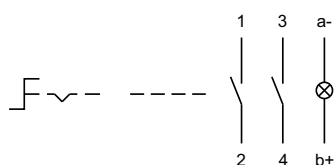
31 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



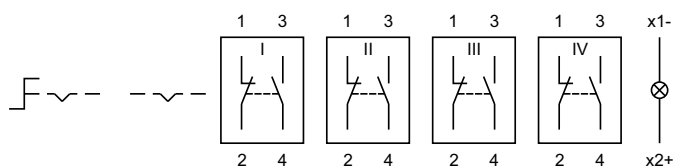
32 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



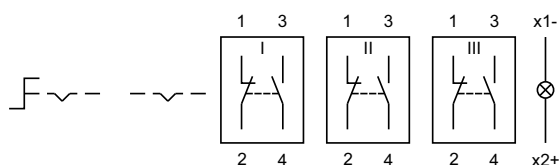
33 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



34 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



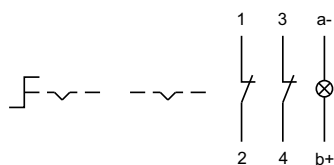
35 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



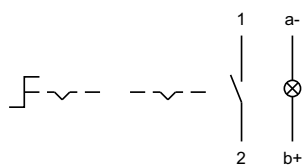
The diagram shows a function  $F$  on the left, represented by a horizontal line with a small vertical step down at the left end. This is followed by a dashed line. To the right of the dashed line are two square boxes. The first box is labeled '1' at the top left and '3' at the top right. Inside, a horizontal dashed line is at the bottom, and a vertical dashed line is on the left. The second box is labeled '1' at the top left and '3' at the top right. Inside, a horizontal dashed line is at the bottom, and a vertical dashed line is on the left. To the right of the second box is a vertical line with a circle containing a cross at the top, labeled 'x1-' at the top and 'x2+' at the bottom.

The diagram shows a four-point function with external legs labeled  $a^-$  and  $b^+$ . It consists of a box diagram (with vertices labeled 1, 2, 3, 4) and a bubble diagram (with a loop on the  $b^+$  leg).

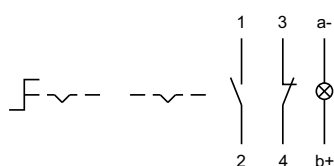
44 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



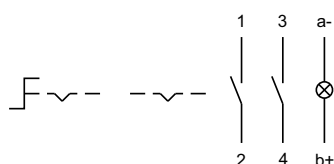
45 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



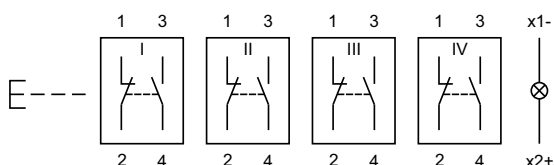
46 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



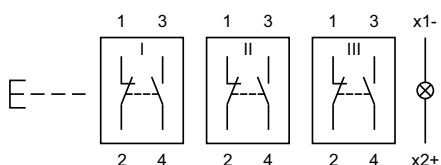
47 Selector switch 2 positions page 11 | Selector switch actuator 2 positions, flush mounting page 19



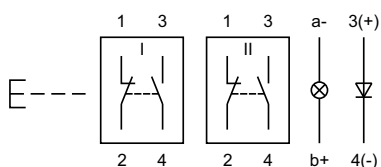
48 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



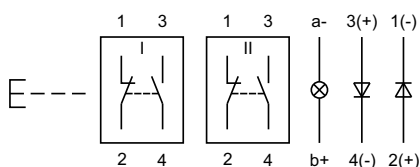
49 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



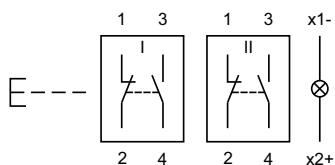
50 Illuminated pushbutton actuator page 8



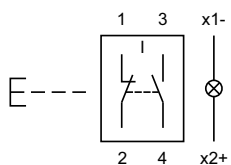
51 Illuminated pushbutton actuator page 8



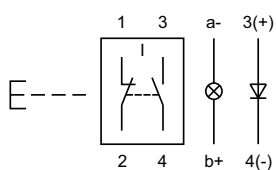
52 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



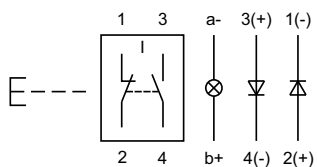
53 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



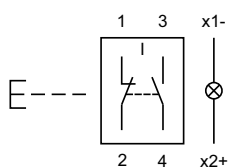
54 Illuminated pushbutton actuator page 8



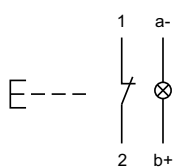
55 Illuminated pushbutton actuator page 8



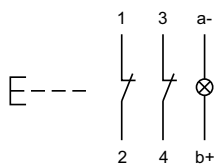
56 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



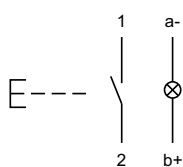
57 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



58 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14

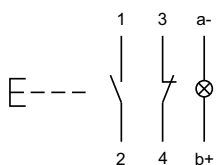


59 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14

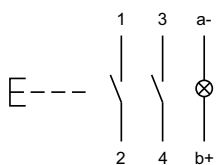




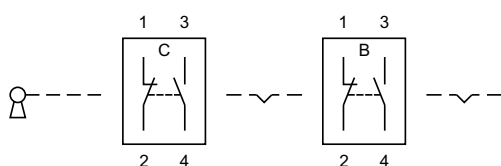
60 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



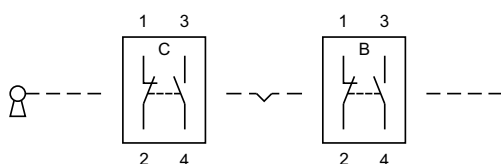
61 Illuminated pushbutton actuator page 8 | Illuminated pushbutton actuator, flush mounting page 14



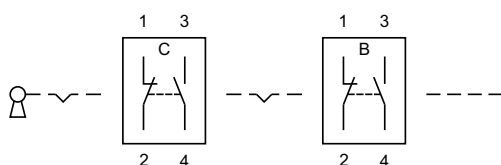
62 Keylock switch 3 positions page 10 | Keylock switch actuator 3 positions, flush mounting page 18



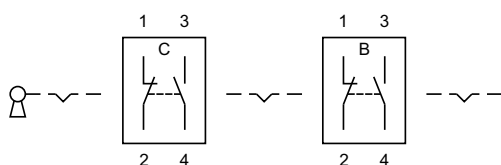
63 Keylock switch 3 positions page 10 | Keylock switch actuator 3 positions, flush mounting page 18



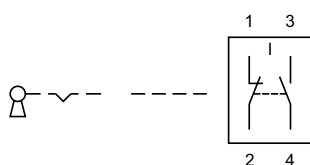
64 Keylock switch 3 positions page 10 | Keylock switch actuator 3 positions, flush mounting page 18



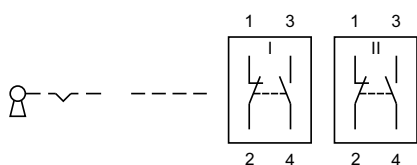
65 Keylock switch 3 positions page 10 | Keylock switch actuator 3 positions, flush mounting page 18



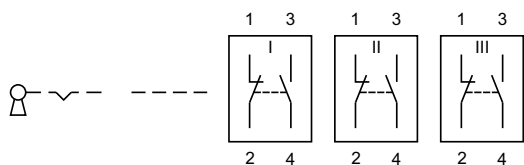
66 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



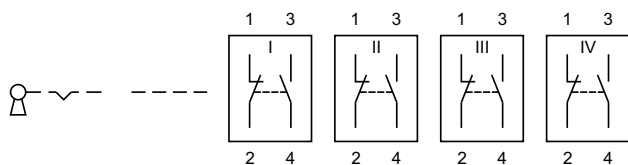
67 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



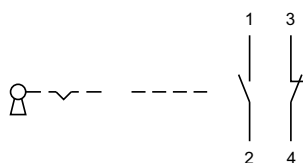
68 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



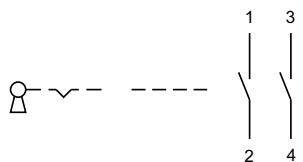
69 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



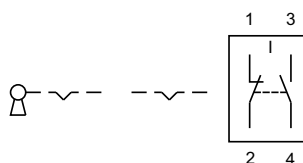
70 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



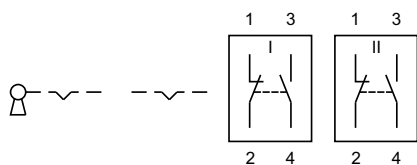
71 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



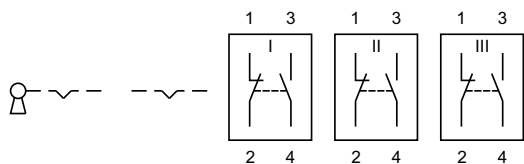
72 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



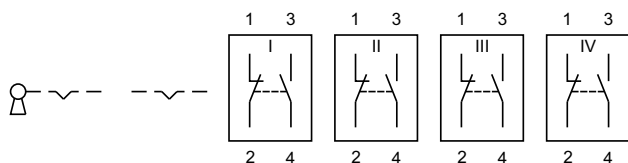
73 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



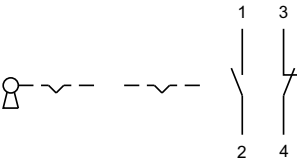
74 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



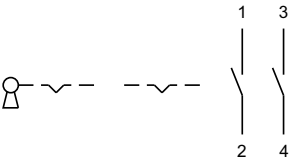
75 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



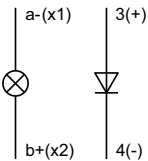
76 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



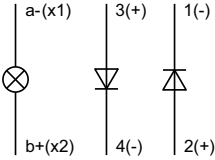
77 Keylock switch 2 positions page 9 | Keylock switch actuator 2 positions, flush mounting page 15



78 Indicator actuator page 7



79 Indicator actuator page 7



# Index from Typ-Nr.

| Typ-Nr.            | Page | Typ-Nr.             | Page | Typ-Nr.             | Page |
|--------------------|------|---------------------|------|---------------------|------|
| 01-907 .....       | 31   | 51-040.002 .....    | 7    | 51-156.025D2 .....  | 9    |
| 01-928 .....       | 29   | 51-040.005 .....    | 7    | 51-156.025D2F ..... | 15   |
| 01-929 .....       | 29   | 51-041.006 .....    | 7    | 51-157.025D2 .....  | 9    |
| 02-904.0 .....     | 30   | 51-050.002 .....    | 7    | 51-157.025D2F ..... | 15   |
| 02-904.1 .....     | 30   | 51-050.002F .....   | 13   | 51-158.025D2 .....  | 9    |
| 02-904.3 .....     | 30   | 51-050.005 .....    | 7    | 51-158.025D2F ..... | 15   |
| 02-904.7 .....     | 30   | 51-050.005F .....   | 13   | 51-195.022D .....   | 9    |
| 02-905 .....       | 31   | 51-051.006 .....    | 7    | 51-195.022DF .....  | 16   |
| 02-912.1 .....     | 30   | 51-051.006F .....   | 13   | 51-195.025D2 .....  | 9    |
| 02-912.2 .....     | 30   | 51-121.022 .....    | 8    | 51-195.025D2F ..... | 16   |
| 02-912.3 .....     | 30   | 51-121.0252 .....   | 8    | 51-196.025D2 .....  | 9    |
| 02-912.4 .....     | 30   | 51-122.0252 .....   | 8    | 51-196.025D2F ..... | 16   |
| 10-1306.1349 ..... | 29   | 51-123.0252 .....   | 8    | 51-197.025D2 .....  | 9    |
| 10-1307.1369 ..... | 29   | 51-124.0252 .....   | 8    | 51-197.025D2F ..... | 16   |
| 10-1309.1309 ..... | 29   | 51-131.022 .....    | 8    | 51-198.025D2 .....  | 9    |
| 10-1310.1319 ..... | 29   | 51-131.0252 .....   | 8    | 51-198.025D2F ..... | 16   |
| 10-1311.1249 ..... | 29   | 51-132.0252 .....   | 8    | 51-235.022D .....   | 9    |
| 10-1312.1229 ..... | 29   | 51-133.0252 .....   | 8    | 51-235.022DF .....  | 16   |
| 10-1313.1209 ..... | 29   | 51-134.0252 .....   | 8    | 51-235.025D2 .....  | 9    |
| 10-1313.1249 ..... | 29   | 51-135.022D .....   | 9    | 51-235.025D2F ..... | 16   |
| 10-1316.1179 ..... | 29   | 51-135.022DF .....  | 16   | 51-236.025D2 .....  | 9    |
| 10-1316.1209 ..... | 29   | 51-135.025D2 .....  | 9    | 51-236.025D2F ..... | 16   |
| 10-1319.1179 ..... | 29   | 51-135.025D2F ..... | 16   | 51-237.025D2 .....  | 9    |
| 10-1319.1199 ..... | 29   | 51-136.025D2 .....  | 9    | 51-237.025D2F ..... | 16   |
| 10-2J06.3142 ..... | 30   | 51-136.025D2F ..... | 16   | 51-238.025D2 .....  | 9    |
| 10-2J06.3144 ..... | 30   | 51-137.025D2 .....  | 9    | 51-238.025D2F ..... | 16   |
| 10-2J06.3145 ..... | 30   | 51-137.025D2F ..... | 16   | 51-255.022D .....   | 9    |
| 10-2J06.3146 ..... | 30   | 51-138.025D2 .....  | 9    | 51-255.022DF .....  | 15   |
| 10-2J06.3149 ..... | 30   | 51-138.025D2F ..... | 16   | 51-255.025D2 .....  | 9    |
| 10-2J09.1062 ..... | 30   | 51-141.022D .....   | 9    | 51-255.025D2F ..... | 15   |
| 10-2J09.1064 ..... | 30   | 51-141.022DF .....  | 17   | 51-256.025D2 .....  | 9    |
| 10-2J09.1065 ..... | 30   | 51-141.025D2 .....  | 9    | 51-256.025D2F ..... | 15   |
| 10-2J09.1066 ..... | 30   | 51-141.025D2F ..... | 17   | 51-257.025D2 .....  | 9    |
| 10-2J09.1069 ..... | 30   | 51-142.025D2 .....  | 9    | 51-257.025D2F ..... | 15   |
| 10-2J12.1062 ..... | 30   | 51-142.025D2F ..... | 17   | 51-258.025D2 .....  | 9    |
| 10-2J12.1064 ..... | 30   | 51-143.025D2 .....  | 9    | 51-258.025D2F ..... | 15   |
| 10-2J12.1065 ..... | 30   | 51-143.025D2F ..... | 17   | 51-261.022 .....    | 8    |
| 10-2J12.1066 ..... | 30   | 51-144.025D2 .....  | 9    | 51-261.0252 .....   | 8    |
| 10-2J12.1069 ..... | 30   | 51-144.025D2F ..... | 17   | 51-262.0252 .....   | 8    |
| 10-2J13.1062 ..... | 30   | 51-145.022D .....   | 9    | 51-263.0252 .....   | 8    |
| 10-2J13.1064 ..... | 30   | 51-145.022DF .....  | 15   | 51-264.0252 .....   | 8    |
| 10-2J13.1065 ..... | 30   | 51-145.025D2 .....  | 9    | 51-271.022 .....    | 8    |
| 10-2J13.1066 ..... | 30   | 51-145.025D2F ..... | 15   | 51-271.0252 .....   | 8    |
| 10-2J13.1069 ..... | 30   | 51-146.025D2 .....  | 9    | 51-272.0252 .....   | 8    |
| 10-2J19.1042 ..... | 30   | 51-146.025D2F ..... | 15   | 51-273.0252 .....   | 8    |
| 10-2J19.1044 ..... | 30   | 51-147.025D2 .....  | 9    | 51-274.0252 .....   | 8    |
| 10-2J19.1045 ..... | 30   | 51-147.025D2F ..... | 15   | 51-281.022 .....    | 8    |
| 10-2J19.1046 ..... | 30   | 51-148.025D2 .....  | 9    | 51-281.022F .....   | 14   |
| 10-2J19.1049 ..... | 30   | 51-148.025D2F ..... | 15   | 51-281.0252 .....   | 8    |
| 31-928 .....       | 29   | 51-151.022 .....    | 8    | 51-281.0252F .....  | 14   |
| 31-929 .....       | 29   | 51-151.022F .....   | 14   | 51-282.0252 .....   | 8    |
| 31-940 .....       | 28   | 51-151.0252 .....   | 8    | 51-282.0252F .....  | 14   |
| 31-941 .....       | 28   | 51-151.0252F .....  | 14   | 51-283.0252 .....   | 8    |
| 31-942 .....       | 28   | 51-152.0252 .....   | 8    | 51-283.0252F .....  | 14   |
| 31-945 .....       | 29   | 51-152.0252F .....  | 14   | 51-284.0252 .....   | 8    |
| 31-946 .....       | 29   | 51-153.0252 .....   | 8    | 51-284.0252F .....  | 14   |
| 31-985.0 .....     | 28   | 51-153.0252F .....  | 14   | 51-295.022D .....   | 9    |
| 31-989.300 .....   | 28   | 51-154.0252 .....   | 8    | 51-295.022DF .....  | 16   |
| 31-989.311 .....   | 28   | 51-154.0252F .....  | 14   | 51-295.025D2 .....  | 9    |
| 31-991 .....       | 31   | 51-155.022D .....   | 9    | 51-295.025D2F ..... | 16   |
| 51-030.002 .....   | 7    | 51-155.022DF .....  | 15   | 51-296.025D2 .....  | 9    |
| 51-030.005 .....   | 7    | 51-155.025D2 .....  | 9    | 51-296.025D2F ..... | 16   |
| 51-031.006 .....   | 7    | 51-155.025D2F ..... | 15   | 51-297.025D2 .....  | 9    |

# Index from Typ-Nr.

| Typ-Nr.       | Page | Typ-Nr.       | Page | Typ-Nr.       | Page |
|---------------|------|---------------|------|---------------|------|
| 51-297.025D2F | 16   | 51-385.022D   | 10   | 51-442.036DF  | 15   |
| 51-298.025D2  | 9    | 51-385.022DF  | 18   | 51-444.036D   | 9    |
| 51-298.025D2F | 16   | 51-386.022D   | 10   | 51-444.036DF  | 15   |
| 51-335.022D   | 9    | 51-386.022DF  | 18   | 51-445.036D   | 9    |
| 51-335.022DF  | 16   | 51-387.022D   | 10   | 51-445.036DF  | 15   |
| 51-335.025D2  | 9    | 51-387.022DF  | 18   | 51-447.036D   | 9    |
| 51-335.025D2F | 16   | 51-388.022D   | 10   | 51-447.036DF  | 15   |
| 51-336.025D2  | 9    | 51-388.022DF  | 18   | 51-448.036D   | 9    |
| 51-336.025D2F | 16   | 51-395.022D   | 9    | 51-448.036DF  | 15   |
| 51-337.025D2  | 9    | 51-395.022DF  | 16   | 51-451.036    | 8    |
| 51-337.025D2F | 16   | 51-395.025D2  | 9    | 51-451.036F   | 14   |
| 51-338.025D2  | 9    | 51-395.025D2F | 16   | 51-452.036    | 8    |
| 51-338.025D2F | 16   | 51-396.025D2  | 9    | 51-452.036F   | 14   |
| 51-355.022D   | 9    | 51-396.025D2F | 16   | 51-453.036    | 8    |
| 51-355.022DF  | 15   | 51-397.025D2  | 9    | 51-453.036F   | 14   |
| 51-355.025D2  | 9    | 51-397.025D2F | 16   | 51-455.036    | 8    |
| 51-355.025D2F | 15   | 51-398.025D2  | 9    | 51-455.036F   | 14   |
| 51-356.025D2  | 9    | 51-398.025D2F | 16   | 51-456.036    | 8    |
| 51-356.025D2F | 15   | 51-401.036D   | 9    | 51-456.036F   | 14   |
| 51-357.025D2  | 9    | 51-401.036DF  | 16   | 51-457.036D   | 9    |
| 51-357.025D2F | 15   | 51-402.036D   | 9    | 51-457.036DF  | 15   |
| 51-358.025D2  | 9    | 51-402.036DF  | 16   | 51-458.036D   | 9    |
| 51-358.025D2F | 15   | 51-404.036D   | 9    | 51-458.036DF  | 15   |
| 51-361.022D   | 10   | 51-404.036DF  | 16   | 51-461.036    | 8    |
| 51-361.022DF  | 18   | 51-405.036D   | 9    | 51-462.036    | 8    |
| 51-362.022D   | 10   | 51-405.036DF  | 16   | 51-463.036    | 8    |
| 51-362.022DF  | 18   | 51-407.036D   | 9    | 51-465.036    | 8    |
| 51-363.022D   | 10   | 51-407.036DF  | 16   | 51-466.036    | 8    |
| 51-363.022DF  | 18   | 51-408.036D   | 9    | 51-471.036    | 8    |
| 51-364.022D   | 10   | 51-408.036DF  | 16   | 51-472.036    | 8    |
| 51-364.022DF  | 18   | 51-411.036D   | 9    | 51-473.036    | 8    |
| 51-365.022D   | 10   | 51-411.036DF  | 16   | 51-475.036    | 8    |
| 51-365.022DF  | 18   | 51-412.036D   | 9    | 51-476.036    | 8    |
| 51-366.022D   | 10   | 51-412.036DF  | 16   | 51-481.036    | 8    |
| 51-366.022DF  | 18   | 51-414.036D   | 9    | 51-481.036F   | 14   |
| 51-367.022D   | 10   | 51-414.036DF  | 16   | 51-482.036    | 8    |
| 51-367.022DF  | 18   | 51-415.036D   | 9    | 51-482.036F   | 14   |
| 51-368.022D   | 10   | 51-415.036DF  | 16   | 51-483.036    | 8    |
| 51-368.022DF  | 18   | 51-417.036D   | 9    | 51-483.036F   | 14   |
| 51-371.022D   | 10   | 51-417.036DF  | 16   | 51-485.036    | 8    |
| 51-371.022DF  | 18   | 51-418.036D   | 9    | 51-485.036F   | 14   |
| 51-372.022D   | 10   | 51-418.036DF  | 16   | 51-486.036    | 8    |
| 51-372.022DF  | 18   | 51-421.036    | 8    | 51-486.036F   | 14   |
| 51-373.022D   | 10   | 51-422.036    | 8    | 51-495.022D   | 9    |
| 51-373.022DF  | 18   | 51-423.036    | 8    | 51-495.022DF  | 16   |
| 51-374.022D   | 10   | 51-425.036    | 8    | 51-495.025D2  | 9    |
| 51-374.022DF  | 18   | 51-426.036    | 8    | 51-495.025D2F | 16   |
| 51-375.022D   | 10   | 51-427.036D   | 9    | 51-496.025D2  | 9    |
| 51-375.022DF  | 18   | 51-427.036DF  | 16   | 51-496.025D2F | 16   |
| 51-376.022D   | 10   | 51-428.036D   | 9    | 51-497.025D2  | 9    |
| 51-376.022DF  | 18   | 51-428.036DF  | 16   | 51-497.025D2F | 16   |
| 51-377.022D   | 10   | 51-431.036    | 8    | 51-498.025D2  | 9    |
| 51-377.022DF  | 18   | 51-432.036    | 8    | 51-498.025D2F | 16   |
| 51-378.022D   | 10   | 51-433.036    | 8    | 51-701.006    | 7    |
| 51-378.022DF  | 18   | 51-435.036    | 8    | 51-702.006    | 7    |
| 51-381.022D   | 10   | 51-436.036    | 8    | 51-703.006    | 7    |
| 51-381.022DF  | 18   | 51-437.036D   | 9    | 51-704.006    | 7    |
| 51-382.022D   | 10   | 51-437.036DF  | 17   | 51-705.0292   | 8    |
| 51-382.022DF  | 18   | 51-438.036D   | 9    | 51-706.0292   | 8    |
| 51-383.022D   | 10   | 51-438.036DF  | 17   | 51-707.0292   | 8    |
| 51-383.022DF  | 18   | 51-441.036D   | 9    | 51-708.0292   | 8    |
| 51-384.022D   | 10   | 51-441.036DF  | 15   | 51-709.0292   | 8    |
| 51-384.022DF  | 18   | 51-442.036D   | 9    | 51-710.0292   | 8    |

# Index from Typ-Nr.

| Typ-Nr.     | Page | Typ-Nr.     | Page | Typ-Nr.     | Page |
|-------------|------|-------------|------|-------------|------|
| 51-711.0292 | 8    | 51-933.4    | 21   | 52-432.036  | 19   |
| 51-712.0292 | 8    | 51-933.5    | 21   | 52-433.036  | 11   |
| 51-713.0292 | 8    | 51-933.6    | 21   | 52-433.036  | 19   |
| 51-714.0292 | 8    | 51-933.7    | 21   | 52-435.036  | 11   |
| 51-715.0292 | 8    | 51-935.2    | 21   | 52-435.036  | 19   |
| 51-716.0292 | 8    | 51-935.4    | 21   | 52-436.036  | 11   |
| 51-717.0292 | 8    | 51-935.5    | 21   | 52-436.036  | 19   |
| 51-718.0292 | 8    | 51-935.7    | 21   | 52-471.036  | 11   |
| 51-719.0292 | 8    | 51-938      | 31   | 52-471.036  | 19   |
| 51-720.0292 | 8    | 51-943.0    | 28   | 52-472.036  | 11   |
| 51-741.006  | 7    | 51-943.1    | 29   | 52-472.036  | 19   |
| 51-742.006  | 7    | 51-943.9    | 32   | 52-473.036  | 11   |
| 51-743.0292 | 8    | 51-947.0    | 27   | 52-473.036  | 19   |
| 51-744.0292 | 8    | 51-948.0    | 27   | 52-475.036  | 11   |
| 51-745.0292 | 8    | 51-949.0    | 27   | 52-475.036  | 19   |
| 51-746.0292 | 8    | 51-951.0    | 21   | 52-476.036  | 11   |
| 51-747.0292 | 8    | 51-951.2    | 21   | 52-476.036  | 19   |
| 51-748.0292 | 8    | 51-951.3    | 21   | 52-571.022A | 12   |
| 51-749.0292 | 8    | 51-951.4    | 21   | 52-571.022A | 20   |
| 51-750.0292 | 8    | 51-951.5    | 21   | 52-572.022A | 12   |
| 51-901.0    | 21   | 51-951.6    | 21   | 52-572.022A | 20   |
| 51-901.2    | 21   | 51-951.8    | 21   | 52-573.022A | 12   |
| 51-901.3    | 21   | 51-951.9    | 21   | 52-573.022A | 20   |
| 51-901.4    | 21   | 51-953.1    | 21   | 52-574.022A | 12   |
| 51-901.5    | 21   | 51-953.2    | 21   | 52-574.022A | 20   |
| 51-901.6    | 21   | 51-953.3    | 21   | 52-743.0292 | 11   |
| 51-901.8    | 21   | 51-953.4    | 21   | 52-744.0292 | 11   |
| 51-901.9    | 21   | 51-953.5    | 21   | 52-745.0292 | 11   |
| 51-903.1    | 21   | 51-953.6    | 21   | 52-746.0292 | 11   |
| 51-903.2    | 21   | 51-953.7    | 21   | 52-747.0292 | 11   |
| 51-903.3    | 21   | 51-954.2    | 21   | 52-748.0292 | 11   |
| 51-903.4    | 21   | 51-954.3    | 21   | 52-749.0292 | 11   |
| 51-903.5    | 21   | 51-954.4    | 21   | 52-750.0292 | 11   |
| 51-903.6    | 21   | 51-954.5    | 21   | 52-928.0    | 24   |
| 51-903.7    | 21   | 51-954.6    | 21   | 52-928.20   | 24   |
| 51-904.2    | 21   | 51-954.7    | 21   | 52-928.30   | 24   |
| 51-904.3    | 21   | 51-955.2    | 21   | 52-928.40   | 24   |
| 51-904.4    | 21   | 51-955.4    | 21   | 52-928.50   | 24   |
| 51-904.5    | 21   | 51-955.5    | 21   | 52-928.60   | 24   |
| 51-904.6    | 21   | 51-955.7    | 21   | 52-929.20   | 24   |
| 51-904.7    | 21   | 52-131.022  | 11   | 52-929.30   | 24   |
| 51-905.2    | 21   | 52-131.022  | 19   | 52-929.40   | 24   |
| 51-905.4    | 21   | 52-131.0252 | 11   | 52-929.50   | 24   |
| 51-905.5    | 21   | 52-131.0252 | 19   | 52-929.60   | 24   |
| 51-905.7    | 21   | 52-132.0252 | 11   | 52-929.8    | 24   |
| 51-906.2    | 21   | 52-132.0252 | 19   | 52-929.9    | 24   |
| 51-906.4    | 21   | 52-133.0252 | 11   | 52-950.0    | 23   |
| 51-906.5    | 21   | 52-133.0252 | 19   | 52-952.0    | 23   |
| 51-906.7    | 21   | 52-134.0252 | 11   | 61-9028.0   | 24   |
| 51-910      | 31   | 52-134.0252 | 19   | 61-9028.20  | 24   |
| 51-920      | 27   | 52-271.022  | 11   | 61-9028.30  | 24   |
| 51-925      | 27   | 52-271.022  | 19   | 61-9028.40  | 24   |
| 51-931.0    | 21   | 52-271.0252 | 11   | 61-9028.50  | 24   |
| 51-931.2    | 21   | 52-271.0252 | 19   | 61-9028.60  | 24   |
| 51-931.3    | 21   | 52-272.0252 | 11   | 61-9028.9   | 24   |
| 51-931.4    | 21   | 52-272.0252 | 19   | 61-9029.20  | 24   |
| 51-931.5    | 21   | 52-273.0252 | 11   | 61-9029.30  | 24   |
| 51-931.6    | 21   | 52-273.0252 | 19   | 61-9029.40  | 24   |
| 51-931.8    | 21   | 52-274.0252 | 11   | 61-9029.50  | 24   |
| 51-931.9    | 21   | 52-274.0252 | 19   | 61-9029.60  | 24   |
| 51-933.1    | 21   | 52-431.036  | 11   | 61-9029.8   | 24   |
| 51-933.2    | 21   | 52-431.036  | 19   | 61-9029.9   | 24   |
| 51-933.3    | 21   | 52-432.036  | 11   | 61-9451.0   | 27   |

# Index from Typ-Nr.

| Typ-Nr.     | Page | Typ-Nr.    | Page | Typ-Nr. | Page |
|-------------|------|------------|------|---------|------|
| 61-9452.0   | 27   | 61-9842.2  | 23   |         |      |
| 61-9453.0   | 27   | 61-9842.4  | 23   |         |      |
| 61-9593.0   | 23   | 61-9842.5  | 23   |         |      |
| 61-9593.2   | 23   | 61-9842.6  | 23   |         |      |
| 61-9593.4   | 23   | 61-9842.8  | 23   |         |      |
| 61-9593.5   | 23   | 61-9921.0  | 27   |         |      |
| 61-9642.1   | 21   | 61-9922.0  | 27   |         |      |
| 61-9642.2   | 21   | 61-9924.0  | 27   |         |      |
| 61-9642.3   | 21   | 61-9927.2  | 26   |         |      |
| 61-9642.4   | 21   | 61-9930.0  | 25   |         |      |
| 61-9642.5   | 21   | 61-9930.0  | 26   |         |      |
| 61-9642.6   | 21   | 61-9930.4  | 25   |         |      |
| 61-9642.7   | 21   | 61-9930.4  | 26   |         |      |
| 61-9643.201 | 22   | 61-9931.0  | 25   |         |      |
| 61-9643.202 | 22   | 61-9931.0  | 26   |         |      |
| 61-9643.203 | 22   | 61-9931.4  | 25   |         |      |
| 61-9643.301 | 22   | 61-9931.4  | 26   |         |      |
| 61-9643.401 | 22   | 61-9932.0  | 26   |         |      |
| 61-9643.501 | 22   | 61-9932.0  | 26   |         |      |
| 61-9643.502 | 22   | 61-9932.1  | 26   |         |      |
| 61-9643.503 | 22   | 61-9932.1  | 26   |         |      |
| 61-9643.601 | 22   | 61-9932.10 | 26   |         |      |
| 61-9643.602 | 22   | 61-9932.10 | 26   |         |      |
| 61-9643.603 | 22   | 61-9932.2  | 26   |         |      |
| 61-9643.701 | 22   | 61-9932.2  | 26   |         |      |
| 61-9643.702 | 22   | 61-9932.4  | 26   |         |      |
| 61-9643.703 | 22   | 61-9932.4  | 26   |         |      |
| 61-9671.1   | 21   | 61-9932.5  | 26   |         |      |
| 61-9671.2   | 21   | 61-9932.5  | 26   |         |      |
| 61-9671.3   | 21   | 61-9932.6  | 26   |         |      |
| 61-9671.4   | 21   | 61-9932.6  | 26   |         |      |
| 61-9671.5   | 21   | 61-9933.0  | 25   |         |      |
| 61-9671.6   | 21   | 61-9933.0  | 25   |         |      |
| 61-9671.7   | 21   | 61-9933.1  | 25   |         |      |
| 61-9681.1   | 21   | 61-9933.1  | 25   |         |      |
| 61-9681.2   | 21   | 61-9933.10 | 25   |         |      |
| 61-9681.3   | 21   | 61-9933.10 | 25   |         |      |
| 61-9681.4   | 21   | 61-9933.2  | 25   |         |      |
| 61-9681.5   | 21   | 61-9933.2  | 25   |         |      |
| 61-9681.6   | 21   | 61-9933.4  | 25   |         |      |
| 61-9681.7   | 21   | 61-9933.4  | 25   |         |      |
| 61-9707.7   | 22   | 61-9933.5  | 25   |         |      |
| 61-9730.0   | 31   | 61-9933.5  | 25   |         |      |
| 61-9740.0   | 31   | 61-9933.6  | 25   |         |      |
| 61-9771.0   | 21   | 61-9933.6  | 25   |         |      |
| 61-9771.8   | 21   | 61-9934.8  | 25   |         |      |
| 61-9771.9   | 21   | 61-9936.0  | 26   |         |      |
| 61-9781.0   | 21   | 61-9980.0  | 24   |         |      |
| 61-9781.8   | 21   | 704.968.0  | 25   |         |      |
| 61-9781.9   | 21   | 704.968.1  | 25   |         |      |
| 61-9841.0   | 23   | 84-9103.7  | 26   |         |      |
| 61-9841.0A  | 22   |            |      |         |      |
| 61-9841.2   | 23   |            |      |         |      |
| 61-9841.2A  | 22   |            |      |         |      |
| 61-9841.4   | 23   |            |      |         |      |
| 61-9841.4A  | 22   |            |      |         |      |
| 61-9841.5   | 23   |            |      |         |      |
| 61-9841.5A  | 22   |            |      |         |      |
| 61-9841.6   | 23   |            |      |         |      |
| 61-9841.6A  | 22   |            |      |         |      |
| 61-9841.8   | 23   |            |      |         |      |
| 61-9841.8A  | 22   |            |      |         |      |
| 61-9842.0   | 23   |            |      |         |      |

|                |                         |
|----------------|-------------------------|
|                | <b>EAO AG</b>           |
|                | Tannwaldstrasse 88      |
|                | 4601 Olten, Switzerland |
| <b>E-mail</b>  | info@eao.com            |
| <b>Website</b> | www.eao.com             |
|                | <b>Austria</b>          |
| Phone          | +49 201 85 87 0         |
| Fax            | +49 201 85 87 210       |
| E-mail         | sales.ede@eao.com       |
|                | <b>Belgium</b>          |
| Phone          | +32 3 777 82 36         |
| Fax            | +32 3 777 84 19         |
| E-mail         | sales.ebl@eao.com       |
|                | <b>China</b>            |
| Phone          | +852 27 86 91 41        |
| Fax            | +852 27 86 95 61        |
| E-mail         | sales.ehk@eao.com       |
|                | <b>France</b>           |
| Phone          | +33 1 64 43 37 37       |
| Fax            | +33 1 64 43 37 49       |
| E-mail         | sales.esa@eao.com       |
|                | <b>Germany</b>          |
| Phone          | +49 201 85 87 0         |
| Fax            | +49 201 85 87 210       |
| E-mail         | sales.ede@eao.com       |
|                | <b>Italy</b>            |
| Phone          | +39 035 481 0189        |
| Fax            | +39 035 481 3786        |
| E-mail         | sales.eit@eao.com       |
|                | <b>Japan</b>            |
| Phone          | +81 3 5444 5411         |
| Fax            | +81 3 5444 0345         |
| E-mail         | sales.esj@eao.com       |
|                | <b>Netherlands</b>      |
| Phone          | +31 78 653 17 00        |
| Fax            | +31 78 653 17 99        |
| E-mail         | sales.enl@eao.com       |
|                | <b>Sweden</b>           |
| Phone          | +46 8 683 86 60         |
| Fax            | +46 8 724 29 12         |
| E-mail         | sales.esw@eao.com       |
|                | <b>Switzerland</b>      |
| Phone          | +41 62 388 95 00        |
| Fax            | +41 62 388 95 55        |
| E-mail         | sales.ech@eao.com       |
|                | <b>United Kingdom</b>   |
| Phone          | +44 1444 236 000        |
| Fax            | +44 1444 236 641        |
| E-mail         | sales.euk@eao.com       |
|                | <b>USA</b>              |
| Phone          | +1 203 877 4577         |
| Fax            | +1 203 877 3694         |
| E-mail         | sales.eus@eao.com       |
|                | <b>Other Countries</b>  |
| Phone          | +41 62 286 92 10        |
| Fax            | +41 62 296 21 62        |
| E-mail         | info@eao.com            |





**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331