



**EAO Product Information**

Series 03



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## Product Information

### General notes

The pushbuttons of series 03 are noteworthy for the robust design of their case, their operational reliability and the large marking and illuminated area. The pushbuttons contain one or two separately operating snap-action switching elements.

The illuminated pushbuttons 03, with two independent lamps, permit different modes of indication.

- Indication of two different functions.
- Indication in two colours of two different functions.
- Enhanced reliability of indication with two lamps.

Furthermore, Series 03 can be equipped with two switching systems operating independently or mechanically interlocked.

### Switches with free choice of bezel

The free choice of bezel enables users to match switches to suit different purposes. These bezels protect against unintentional switching. Standard bezels can be obtained in black.

### Mounting

The switches, which are pushed into the opening in the panel from the front, are fixed with a plastic sleeve with a maximum effort of 20 Ncm.

### Lenses

The flat lenses, made of polymethyl methacrylate, are obtainable in various colours, as well as transparent and translucent. For Series 03 we can supply lenses in two colours or for separately operated switching mechanisms (2 lenses per switch). Also a number of special lenses are available with special illumination facilities, e.g. for dark rooms. All lenses can be exchanged without affecting the switch position.

### Marking

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

### Illumination

The T6.8 incandescent (filament) lamp (6...48 V, 1.2 W) ensures perfect illumination of the lenses, which are supplied in various colours.

T6.8 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 the 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).

### Keylock switch

Standard lock number is YB1. If the lock number is not specified, we will supply standard number YB1.

Additional 9 lock numbers are available on request.

Two keys are supplied with each keylock switch.

Spare keys for standard locks may be ordered by quoting Typ-Nr. 02-989.

### Number structure

Nomenclature in accordance with ' IEC 61058 TEST REPORT '. The certification document we dispatch to them on demands.

## Specimen order

### Illuminated pushbutton :

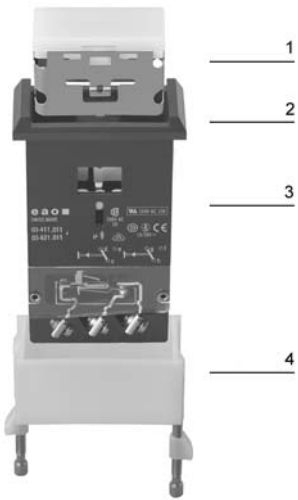
- 1x Illuminated pushbutton actuator, 24 x 48 mm, 03-624.011  
2 change over contacts, momentary action, screw terminal

### Essential accessories :

- 2x Lens halved plastic colourless, transparent 03-943.7
- 2x Holder halved, farblos 03-922.7
- 2x Diffusor plate halved 03-926
- 1x Front bezel flush, black 03-965.0
- 2x Single-LED, T6.8, 24 VAC/DC, white diffuse 10-2K12.1079

*We reserve the right to modify technical data  
All dimensions in mm*

## Pushbutton illuminated, raised mounting








- 1 Lens
- 2 Front bezel
- 3 Switch housing
- 4 Fixing bezel

## Indicator actuator



### Essential Accessories:

-  Diffuser plate one-part page 19
-  Front bezel flush page 19
-  Holder one-part page 18
-  Lens one-part, uni-colour for Pushbutton and Illuminated pushbutton one-part page 16
-  Single-LED page 21


|   | Front protection | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|---|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Indicator actuator</b><br>two independent lamp bases | IP 40            | PT 2.8    | <b>03-021.002</b>       | 1                   | 1                 | 2               | 0.045   |
|   |                  | PT 4.8    | <b>03-021.003</b>       | 1                   | 1                 | 2               | 0.045   |
|   |                  | ST        | <b>03-021.001</b>       | 1                   | 1                 | 2               | 0.045   |


Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal  
 Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Buzzer actuator



### Essential Accessories:

-  Front bezel raised page 19

|  | Front protection | Front cap     | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|--|------------------|---------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Buzzer actuator</b><br>Operation voltage : 10 ... 50 VAC, 10 ... 75 VDC | IP 40            | Plastic black | ST        | <b>03-810.001</b>       | 1                   | 2                 | 1               | 0.060   |

Further information in the Technical Data and Typical Applications



Terminals: ST = Screw terminal


Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Pushbutton actuator one-part



### Essential Accessories:

-  Front bezel flush page 19
-  Lens one-part, uni-colour for Pushbutton and Illuminated pushbutton one-part page 16

|                                     | Front protection | Switching system | Contacts | Switching action | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|-------------------------------------|------------------|------------------|----------|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Pushbutton actuator one-part</b> | IP 40            | SA               | 1 C      | MA               | PT 2.8    | <b>03-613.012</b>       | 1                   | 5                 | 7               | 0.055   |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-613.013</b>       | 1                   | 5                 | 7               | 0.055   |
|                                     |                  |                  |          |                  | ST        | <b>03-613.011</b>       | 1                   | 5                 | 7               | 0.055   |
|                                     |                  |                  |          | M                | PT 2.8    | <b>03-611.012</b>       | 1                   | 5                 | 8               | 0.055   |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-611.013</b>       | 1                   | 5                 | 8               | 0.055   |
|                                     |                  |                  |          |                  | ST        | <b>03-611.011</b>       | 1                   | 5                 | 8               | 0.055   |
|                                     |                  |                  | 2 C      | MA               | PT 2.8    | <b>03-614.012</b>       | 1                   | 5                 | 3               | 0.065   |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-614.013</b>       | 1                   | 5                 | 3               | 0.065   |
|                                     |                  |                  |          |                  | ST        | <b>03-614.011</b>       | 1                   | 5                 | 3               | 0.065   |
|                                     |                  |                  |          | M                | PT 2.8    | <b>03-612.012</b>       | 1                   | 5                 | 9               | 0.065   |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-612.013</b>       | 1                   | 5                 | 9               | 0.065   |
|                                     |                  |                  |          |                  | ST        | <b>03-612.011</b>       | 1                   | 5                 | 9               | 0.065   |
|                                     |                  |                  |          | M-MA             | PT 2.8    | <b>03-615.012</b>       | 1                   | 5                 | 6               | 0.065   |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-615.013</b>       | 1                   | 5                 | 6               | 0.065   |
|                                     |                  |                  |          |                  | ST        | <b>03-615.011</b>       | 1                   | 5                 | 6               | 0.065   |

Switching system: SA = Snap-action switching element

Contacts: C = Changeover

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



Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal


Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Pushbutton actuator two-part



### Essential Accessories:

-  Front bezel flush page 19
-  Lens halved for Pushbutton two-part page 15

|   | Front protection | Switching system | Contacts | Switching action | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|---|------------------|------------------|----------|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Pushbutton actuator two-part</b><br>independent changeover | IP 40            | SA               | 2 C      | MA               | PT 2.8    | <b>03-622.012</b>       | 1                   | 5                 | 10              | 0.065   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-622.013</b>       | 1                   | 5                 | 10              | 0.065   |
|   |                  |                  |          |                  | ST        | <b>03-622.011</b>       | 1                   | 5                 | 10              | 0.065   |
|   |                  |                  |          | M                | PT 2.8    | <b>03-621.012</b>       | 1                   | 5                 | 12              | 0.065   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-621.013</b>       | 1                   | 5                 | 12              | 0.065   |
|   |                  |                  |          |                  | ST        | <b>03-621.011</b>       | 1                   | 5                 | 12              | 0.065   |
|   |                  |                  |          | M-MA             | PT 2.8    | <b>03-623.012</b>       | 1                   | 5                 | 11              | 0.065   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-623.013</b>       | 1                   | 5                 | 11              | 0.065   |
|   |                  |                  |          |                  | ST        | <b>03-623.011</b>       | 1                   | 5                 | 11              | 0.065   |

Switching system: SA = Snap-action switching element

Contacts: C = Changeover

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

Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal



Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30




## Pushbutton actuator locked mechanically



### Essential Accessories:

-  Front bezel flush page 19
-  Lens halved for Pushbutton and Illuminated pushbutton locked mechanically page 15

|  | Front protection | Switching system | Contacts | Switching action | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|--|------------------|------------------|----------|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Pushbutton actuator locked mechanically</b> | IP 40            | SA               | 2 C      | MA               | PT 2.8    | <b>03-629.012</b>       | 1                   | 9                 | 10              | 0.075   |
|  |                  |                  |          |                  | PT 4.8    | <b>03-629.013</b>       | 1                   | 9                 | 10              | 0.075   |
|  |                  |                  |          |                  | ST        | <b>03-629.011</b>       | 1                   | 9                 | 10              | 0.075   |

Switching system: SA = Snap-action switching element

Contacts: C = Changeover

Switching action: MA = Maintained action






Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal


Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Illuminated pushbutton actuator one-part



### Essential Accessories:

-  Diffuser plate one-part page 19
-  Front bezel flush page 19
-  Holder one-part page 18
-  Lens one-part, uni-colour for Pushbutton and Illuminated pushbutton one-part page 16
-  Single-LED page 21

|   | Front protection | Switching system | Contacts | Switching action | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|---|------------------|------------------|----------|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Illuminated pushbutton actuator one-part</b><br>two independent lamp bases | IP 40            | SA               | 1 C      | MA               | PT 2.8    | <b>03-618.012</b>       | 1                   | 5                 | 5               | 0.070   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-618.013</b>       | 1                   | 5                 | 5               | 0.070   |
|   |                  |                  |          |                  | ST        | <b>03-618.011</b>       | 1                   | 5                 | 5               | 0.070   |
|   |                  |                  |          | M                | PT 2.8    | <b>03-616.012</b>       | 1                   | 5                 | 13              | 0.070   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-616.013</b>       | 1                   | 5                 | 13              | 0.070   |
|   |                  |                  |          |                  | ST        | <b>03-616.011</b>       | 1                   | 5                 | 13              | 0.070   |
|   |                  |                  | 2 C      | MA               | PT 2.8    | <b>03-619.012</b>       | 1                   | 5                 | 4               | 0.075   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-619.013</b>       | 1                   | 5                 | 4               | 0.075   |
|   |                  |                  |          |                  | ST        | <b>03-619.011</b>       | 1                   | 5                 | 4               | 0.075   |
|   |                  |                  |          | M                | PT 2.8    | <b>03-617.012</b>       | 1                   | 5                 | 15              | 0.075   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-617.013</b>       | 1                   | 5                 | 15              | 0.075   |
|   |                  |                  |          |                  | ST        | <b>03-617.011</b>       | 1                   | 5                 | 15              | 0.075   |
|   |                  |                  |          | M-MA             | PT 2.8    | <b>03-620.012</b>       | 1                   | 5                 | 14              | 0.075   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-620.013</b>       | 1                   | 5                 | 14              | 0.075   |
|   |                  |                  |          |                  | ST        | <b>03-620.011</b>       | 1                   | 5                 | 14              | 0.075   |

Switching system: SA = Snap-action switching element

Contacts: C = Changeover

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






Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal


Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Illuminated pushbutton actuator two-part



### Essential Accessories:

-  Diffuser plate halved page 18
-  Front bezel flush page 19
-  Holder halved page 18
-  Lens halved for Pushbutton two-part page 15
-  Single-LED page 21

|   | Front protection | Switching system | Contacts | Switching action | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|---|------------------|------------------|----------|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Illuminated pushbutton actuator two-part</b><br>two independent lamp bases | IP 40            | SA               | 1 C      | MA               | PT 2.8    | <b>03-628.012</b>       | 1                   | 5                 | 5               | 0.075   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-628.013</b>       | 1                   | 5                 | 5               | 0.075   |
|   |                  |                  |          |                  | ST        | <b>03-628.011</b>       | 1                   | 5                 | 5               | 0.075   |
|   |                  |                  |          | M                | PT 2.8    | <b>03-627.012</b>       | 1                   | 5                 | 13              | 0.075   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-627.013</b>       | 1                   | 5                 | 13              | 0.075   |
|   |                  |                  |          |                  | ST        | <b>03-627.011</b>       | 1                   | 5                 | 13              | 0.075   |
| two independent lamp bases<br>independent changeover                          | IP 40            | SA               | 2 C      | MA               | PT 2.8    | <b>03-625.012</b>       | 1                   | 5                 | 16              | 0.080   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-625.013</b>       | 1                   | 5                 | 16              | 0.080   |
|   |                  |                  |          |                  | ST        | <b>03-625.011</b>       | 1                   | 5                 | 16              | 0.080   |
|   |                  |                  |          | M                | PT 2.8    | <b>03-624.012</b>       | 1                   | 5                 | 18              | 0.080   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-624.013</b>       | 1                   | 5                 | 18              | 0.080   |
|   |                  |                  |          |                  | ST        | <b>03-624.011</b>       | 1                   | 5                 | 18              | 0.080   |
|   |                  |                  |          | M-MA             | PT 2.8    | <b>03-626.012</b>       | 1                   | 5                 | 17              | 0.080   |
|   |                  |                  |          |                  | PT 4.8    | <b>03-626.013</b>       | 1                   | 5                 | 17              | 0.080   |
|   |                  |                  |          |                  | ST        | <b>03-626.011</b>       | 1                   | 5                 | 17              | 0.080   |

Switching system: SA = Snap-action switching element

Contacts: C = Changeover

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






Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal


Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Illuminated pushbutton actuator locked mechanically



### Essential Accessories:

-  Diffuser plate halved page 18
-  Front bezel flush page 19
-  Holder halved page 18
-  Lens halved for Pushbutton and Illuminated pushbutton locked mechanically page 15
-  Single-LED page 21

|  | Front protection | Switching system | Contacts | Switching action | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |  |
|--|------------------|------------------|----------|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|---|
| <b>Illuminated pushbutton actuator locked mechanically</b><br>two independent lamp bases | IP 40            | SA               | 2 C      | MA               | PT 2.8    | <b>03-631.012</b>       | 1                   | 9                 | 16              | 0.090   |
|  |                  |                  |          |                  | PT 4.8    | <b>03-631.013</b>       | 1                   | 9                 | 16              | 0.090   |
|  |                  |                  |          |                  | ST        | <b>03-631.011</b>       | 1                   | 9                 | 16              | 0.090   |
|  |                  |                  |          | M                | PT 2.8    | <b>03-630.012</b>       | 1                   | 9                 | 18              | 0.090   |
|  |                  |                  |          |                  | PT 4.8    | <b>03-630.013</b>       | 1                   | 9                 | 18              | 0.090   |
|  |                  |                  |          |                  | ST        | <b>03-630.011</b>       | 1                   | 9                 | 18              | 0.090   |
|  |                  |                  |          | M-MA             | PT 2.8    | <b>03-632.012</b>       | 1                   | 9                 | 17              | 0.090   |
|  |                  |                  |          |                  | PT 4.8    | <b>03-632.013</b>       | 1                   | 9                 | 17              | 0.090   |
|  |                  |                  |          |                  | ST        | <b>03-632.011</b>       | 1                   | 9                 | 17              | 0.090   |

Switching system: SA = Snap-action switching element

Contacts: C = Changeover

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



Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal

Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Mushroom-pushbutton actuator



### Essential Accessories:

-  Front bezel flush page 19
-  Mushroom-head cap page 18

|                                     | Front protection | Switching system | Contacts | Switching action | Terminals | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |       |
|-------------------------------------|------------------|------------------|----------|------------------|-----------|-------------------------|---------------------|-------------------|-----------------|-------|
| <b>Mushroom-pushbutton actuator</b> | IP 40            | SA               | 1 C      | MA               | PT 2.8    | <b>03-613.012</b>       | 1                   | 8                 | 5               | 0.055 |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-613.013</b>       | 1                   | 8                 | 5               | 0.055 |
|                                     |                  |                  |          |                  | ST        | <b>03-613.011</b>       | 1                   | 8                 | 5               | 0.055 |
|                                     |                  |                  |          | M                | PT 2.8    | <b>03-611.012</b>       | 1                   | 8                 | 13              | 0.055 |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-611.013</b>       | 1                   | 8                 | 13              | 0.055 |
|                                     |                  |                  |          |                  | ST        | <b>03-611.011</b>       | 1                   | 8                 | 13              | 0.055 |
|                                     |                  |                  | 2 C      | MA               | PT 2.8    | <b>03-614.012</b>       | 1                   | 8                 | 4               | 0.065 |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-614.013</b>       | 1                   | 8                 | 4               | 0.065 |
|                                     |                  |                  |          |                  | ST        | <b>03-614.011</b>       | 1                   | 8                 | 4               | 0.065 |
|                                     |                  |                  |          | M                | PT 2.8    | <b>03-612.012</b>       | 1                   | 8                 | 15              | 0.065 |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-612.013</b>       | 1                   | 8                 | 15              | 0.065 |
|                                     |                  |                  |          |                  | ST        | <b>03-612.011</b>       | 1                   | 8                 | 15              | 0.065 |
|                                     |                  |                  |          | M-MA             | PT 2.8    | <b>03-615.012</b>       | 1                   | 8                 | 14              | 0.065 |
|                                     |                  |                  |          |                  | PT 4.8    | <b>03-615.013</b>       | 1                   | 8                 | 14              | 0.065 |
|                                     |                  |                  |          |                  | ST        | <b>03-615.011</b>       | 1                   | 8                 | 14              | 0.065 |

Switching system: SA = Snap-action switching element

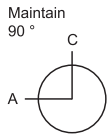
Contacts: C = Changeover

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

Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal

Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Keylock switch actuator 2 positions



|   | Front protection | Switching action | Switching system | Contacts | Key remove | Terminals | 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |       |
|---|------------------|------------------|------------------|----------|------------|-----------|-----------------------|---------------------|-------------------|-----------------|-------|
| <b>Keylock switch actuator 2 positions</b><br>Position A : lockable, actuated or non-actuated<br>Standard lock YB1<br>Front plastic grey    | IP 40            | M-MA             | SA               | 2 C      | A          | PT 2.8    | <b>03-692.012</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | PT 4.8    | <b>03-692.013</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | ST        | <b>03-692.011</b>     | 1                   | 6                 | 19              | 0.065 |
| Position A : lockable, actuated or non-actuated<br>Standard lock YB1<br>Front plastic grey<br>(usable with Protective cover Typ-Nr. 03-925) | IP 40            | M-MA             | SA               | 2 C      | A          | PT 2.8    | <b>03-198.012</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | PT 4.8    | <b>03-198.013</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | ST        | <b>03-198.011</b>     | 1                   | 6                 | 19              | 0.065 |
| Position A : lockable, actuated<br>Standard lock YB1<br>Front plastic grey  | IP 40            | M-MA             | SA               | 2 C      | A          | PT 2.8    | <b>03-690.012</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | PT 4.8    | <b>03-690.013</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | ST        | <b>03-690.011</b>     | 1                   | 6                 | 19              | 0.065 |
| Position A : lockable, non-actuated<br>Position C : actuated, key not removeable<br>Standard lock YB1<br>Front plastic grey                 | IP 40            | M-MA             | SA               | 2 C      | A          | PT 2.8    | <b>03-695.012</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | PT 4.8    | <b>03-695.013</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | ST        | <b>03-695.011</b>     | 1                   | 6                 | 19              | 0.065 |
| Position A : lockable, non-actuated<br>Standard lock YB1<br>Front plastic grey  | IP 40            | M-MA             | SA               | 2 C      | A          | PT 2.8    | <b>03-691.012</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | PT 4.8    | <b>03-691.013</b>     | 1                   | 6                 | 19              | 0.065 |
|   |                  |                  |                  |          |            | ST        | <b>03-691.011</b>     | 1                   | 6                 | 19              | 0.065 |

After turning the key 90° clockwise, the switch can be operated.

In the unlocked positions the switch always performs a momentary action.

Keylock front bezel for switches Typ-Nr. 03-690.01x, 03-691.01x und 03-692.01x are not part of delivery, they have to be order separately

Other lock numbers on request

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

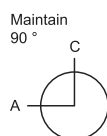
Switching system: SA = Snap-action switching element

Contacts: C = Changeover

Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal

Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Mushroom-head keylock switch actuator 2 positions



|   | Front protection | Switching action | Switching system | Contacts | Terminals | Key remove | □ 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | Circuit drawing |       |
|---|------------------|------------------|------------------|----------|-----------|------------|-------------------------|---------------------|-------------------|-----------------|-------|
| <b>Mushroom-head keylock switch actuator 2 positions</b><br>Position A : lockable, actuated<br>Standard lock YB1<br>Mushroom-head cap plastic red | IP 40            | M-MA             | SA               | 2 C      | PT 2.8    | A          | <b>03-199.012</b>       | 1                   | 7                 | 19              | 0.065 |
|   |                  |                  |                  |          | PT 4.8    | A          | <b>03-199.013</b>       | 1                   | 7                 | 19              | 0.065 |
|   |                  |                  |                  |          | ST        | A          | <b>03-199.011</b>       | 1                   | 7                 | 19              | 0.065 |

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

Switching system: SA = Snap-action switching element

Contacts: C = Changeover


Terminals: PT 2.8 = Plug-in terminal 2.8 mm, PT 4.8 = Plug-in terminal 4.8 mm, ST = Screw terminal

Mounting dimensions from page 27, Technical drawing from page 27, Circuit drawing from page 30

## Front

### Lens halved for Pushbutton two-part


Order 2 lenses

|   | Lens                           | □ 24 x 48 mm<br>Typ-Nr. |  |
|---|--------------------------------|-------------------------|---|
| <b>Lens halved for Pushbutton two-part</b><br>18 x 19 mm, illuminative<br>(not recommended for film insert), ribbed | Plastic blue translucent       | <b>03-921.6</b>         | 0.005   |
|   | Plastic colourless translucent | <b>03-921.7</b>         | 0.005   |
|   | Plastic green translucent      | <b>03-921.5</b>         | 0.005   |
|   | Plastic orange translucent     | <b>03-921.3</b>         | 0.005   |
|   | Plastic red translucent        | <b>03-921.2</b>         | 0.005   |
|   | Plastic smoked translucent     | <b>03-921.1</b>         | 0.005   |
|   | Plastic white translucent      | <b>03-921.9</b>         | 0.005   |
|   | Plastic yellow translucent     | <b>03-921.4</b>         | 0.005   |
| 18 x 19 mm, illuminative<br>(use Holder for film insert)  | Plastic colourless transparent | <b>03-943.7</b>         | 0.005   |
| 18 x 19 mm, non-illuminative  | Plastic black opaque           | <b>03-921.0</b>         | 0.005   |
|   | Plastic grey opaque            | <b>03-921.8</b>         | 0.005   |
| 18 x 38 mm, illuminative<br>with black rim (prevents lateral light escape), (use Holder for film insert)            | Plastic colourless transparent | <b>03-953.7</b>         | 0.005   |
|   | Plastic smoked transparent     | <b>03-954.1</b>         | 0.005   |



### Lens halved for Pushbutton and Illuminated pushbutton locked mechanically


Order 2 lenses

|   | Lens                           | □ 24 x 48 mm<br>Typ-Nr. |  |
|---|--------------------------------|-------------------------|---|
| <b>Lens halved for Pushbutton and Illuminated pushbutton locked mechanically</b><br>18 x 19 mm, illuminative<br>(not recommended for film insert), ribbed | Plastic blue translucent       | <b>03-923.6</b>         | 0.003   |
|   | Plastic colourless transparent | <b>03-923.7</b>         | 0.003   |
|   | Plastic green translucent      | <b>03-923.5</b>         | 0.003   |
|   | Plastic orange translucent     | <b>03-923.3</b>         | 0.003   |
|   | Plastic red translucent        | <b>03-923.2</b>         | 0.003   |
|   | Plastic white translucent      | <b>03-923.9</b>         | 0.003   |
|   | Plastic yellow translucent     | <b>03-923.4</b>         | 0.003   |
|   | 18 x 19 mm, non-illuminative   | Plastic black opaque    | <b>03-923.0</b>   |
| Plastic grey opaque   |                                | <b>03-923.8</b>         | 0.003   |





## Lens one-part, uni-colour for Pushbutton and Illuminated pushbutton one-part

|  | Lens                           | ⌀ 24 x 48 mm<br>Typ-Nr. | <br>kg |
|--|--------------------------------|-------------------------|---|
| <b>Lens one-part, uni-colour for Pushbutton and Illuminated pushbutton one-part</b><br>18 x 38 mm, illuminative (use Holder for film insert) | Plastic colourless transparent | <b>03-941.7</b>         | 0.009   |
| 18 x 38 mm, illuminative<br>(not recommended for film insert), ribbed  | Plastic blue translucent       | <b>03-901.6</b>         | 0.009   |
|  | Plastic colourless translucent | <b>03-901.7</b>         | 0.009   |
|  | Plastic green translucent      | <b>03-901.5</b>         | 0.009   |
|  | Plastic orange translucent     | <b>03-901.3</b>         | 0.009   |
|  | Plastic red translucent        | <b>03-901.2</b>         | 0.009   |
|  | Plastic smoked translucent     | <b>03-901.1</b>         | 0.009   |
|  | Plastic yellow translucent     | <b>03-901.4</b>         | 0.009   |
| 18 x 38 mm, illuminative<br>with black rim (prevents lateral light escape), (use Holder for film insert)                                     | Plastic colourless transparent | <b>03-946.7</b>         | 0.009   |
|  | Plastic smoked transparent     | <b>03-947.1</b>         | 0.009   |
| 18 x 38 mm, non-illuminative   | Plastic black opaque           | <b>03-901.0</b>         | 0.009   |
|  | Plastic grey opaque            | <b>03-901.8</b>         | 0.009   |
|  | Plastic white translucent      | <b>03-901.9</b>         | 0.009   |




## Lens one-part, bi-colour for Pushbutton and Illuminated pushbutton one-part

|   | Lens  | □ 24 x 48 mm<br>Typ-Nr. |  |
|---|---|-------------------------|---|
| <b>Lens one-part, bi-colour for Pushbutton and Illuminated pushbutton one-part</b><br>18 x 38 mm, illuminative<br>with black rim (prevents lateral light escape),<br>(use Holder for film insert) | Plastic colourless-colourless transparent   | <b>03-951.7/7</b>       | 0.010   |
|   | Plastic smoked-smoked transparent           | <b>03-952.1/1</b>       | 0.010   |
| 18 x 38 mm, illuminative<br>with light barrier (not recommended for film<br>insert), ribbed   | Plastic black-blue opaque-translucent       | <b>03-902.0/6</b>       | 0.010   |
|   | Plastic black-colourless opaque-translucent | <b>03-902.0/7</b>       | 0.010   |
|   | Plastic black-green opaque-translucent      | <b>03-902.0/5</b>       | 0.010   |
|   | Plastic black-orange opaque-translucent     | <b>03-902.0/3</b>       | 0.010   |
|   | Plastic black-red opaque-translucent        | <b>03-902.0/2</b>       | 0.010   |
|   | Plastic black-yellow opaque-translucent     | <b>03-902.0/4</b>       | 0.010   |
|   | Plastic blue-blue translucent               | <b>03-902.6/6</b>       | 0.010   |
|   | Plastic blue-colourless translucent         | <b>03-902.6/7</b>       | 0.010   |
|   | Plastic blue-white translucent              | <b>03-902.6/9</b>       | 0.010   |
|   | Plastic colourless-colourless translucent   | <b>03-902.7/7</b>       | 0.010   |
|   | Plastic colourless-white translucent        | <b>03-902.7/9</b>       | 0.010   |
|   | Plastic green-blue translucent              | <b>03-902.5/6</b>       | 0.010   |
|   | Plastic green-colourless translucent        | <b>03-902.5/7</b>       | 0.010   |
|   | Plastic green-green translucent             | <b>03-902.5/5</b>       | 0.010   |
|   | Plastic green-white translucent             | <b>03-902.5/9</b>       | 0.010   |
|   | Plastic grey-blue opaque-translucent        | <b>03-902.6/8</b>       | 0.010   |
|   | Plastic grey-colourless opaque-translucent  | <b>03-902.7/8</b>       | 0.010   |
|   | Plastic grey-green opaque-translucent       | <b>03-902.5/8</b>       | 0.010   |
|   | Plastic grey-orange opaque-translucent      | <b>03-902.3/8</b>       | 0.010   |
|   | Plastic grey-red opaque-translucent         | <b>03-902.2/8</b>       | 0.010   |
|   | Plastic grey-yellow opaque-translucent      | <b>03-902.4/8</b>       | 0.010   |
|   | Plastic orange-blue translucent             | <b>03-902.3/6</b>       | 0.010   |
|   | Plastic orange-colourless translucent       | <b>03-902.3/7</b>       | 0.010   |
|   | Plastic orange-green translucent            | <b>03-902.3/5</b>       | 0.010   |
|   | Plastic orange-orange translucent           | <b>03-902.3/3</b>       | 0.010   |
|   | Plastic orange-white translucent            | <b>03-902.3/9</b>       | 0.010   |
|   | Plastic orange-yellow translucent           | <b>03-902.3/4</b>       | 0.010   |
|   | Plastic red-blue translucent                | <b>03-902.2/6</b>       | 0.010   |
|   | Plastic red-colourless translucent          | <b>03-902.2/7</b>       | 0.010   |
|   | Plastic red-green translucent               | <b>03-902.2/5</b>       | 0.010   |
|   | Plastic red-orange translucent              | <b>03-902.2/3</b>       | 0.010   |
|   | Plastic red-red translucent                 | <b>03-902.2/2</b>       | 0.010   |
|   | Plastic red-white translucent               | <b>03-902.2/9</b>       | 0.010   |
|   | Plastic red-yellow translucent              | <b>03-902.2/4</b>       | 0.010   |
| Plastic smoked-smoked translucent   | <b>03-902.1/1</b>                           | 0.010                   |   |
| Plastic yellow-blue translucent   | <b>03-902.4/6</b>                           | 0.010                   |   |
| Plastic yellow-colourless translucent   | <b>03-902.4/7</b>                           | 0.010                   |   |
| Plastic yellow-green translucent  | <b>03-902.4/5</b>                           | 0.010                   |   |
| Plastic yellow-weiss translucent  | <b>03-902.4/9</b>                           | 0.010                   |   |
| Plastic yellow-yellow translucent   | <b>03-902.4/4</b>                           | 0.010                   |   |
| 18 x 38 mm, illuminative<br>with light barrier (use Holder for film insert)   | Plastic colourless-colourless transparent   | <b>03-942.7/7</b>       | 0.010   |
| 18 x 38 mm, non-illuminative, ribbed  | Plastic black-black opaque                  | <b>03-902.0/0</b>       | 0.010   |
|   | Plastic black-grey opaque                   | <b>03-902.0/8</b>       | 0.010   |
|   | Plastic black-white opaque-translucent      | <b>03-902.0/9</b>       | 0.010   |
|   | Plastic grey-grey opaque                    | <b>03-902.8/8</b>       | 0.010   |
|   | Plastic grey-white opaque-translucent       | <b>03-902.8/9</b>       | 0.010   |
|   | Plastic white-white translucent             | <b>03-902.9/9</b>       | 0.010   |




## Mushroom-head cap

use Front bezel flush

|                          | Mushroom had cap      | ⌀ 24 x 48 mm<br>Typ-Nr. |  |
|--------------------------|-----------------------|-------------------------|---|
| <b>Mushroom-head cap</b> | Plastic black opaque  | <b>03-930.0</b>         | 0.018   |
|                          | Plastic green opaque  | <b>03-930.5</b>         | 0.018   |
|                          | Plastic red opaque    | <b>03-930.2</b>         | 0.018   |
|                          | Plastic yellow opaque | <b>03-930.4</b>         | 0.018   |



## Keylock front bezel


|   | Keylock front bezel           | Typ-Nr.         |  |
|---|-------------------------------|-----------------|---|
| <b>Keylock front bezel</b><br>Keylock switch Typ-Nr. 03-690, 03-691, 03-692 | Plastic grey                  | <b>03-980.1</b> | 0.010   |
|   | Keylock switch Typ-Nr. 03-695 | <b>03-982.1</b> | 0.010   |



Standard lock YB1, other lock numbers on request

## Holder halved


for use with film insert; order 2 Holders

|   | Holder                         | Typ-Nr.         |  |
|---|--------------------------------|-----------------|---|
| <b>Holder halved</b><br>for Lens halved : Typ-Nr. 03-943.7<br>for Lens one-part, two-coloured : Typ-Nr. 03-951.7/7 and 03-952.1/1 | Plastic blue translucent       | <b>03-922.6</b> | 0.001   |
|   | Plastic colourless translucent | <b>03-922.7</b> | 0.001   |
|   | Plastic green translucent      | <b>03-922.5</b> | 0.001   |
|   | Plastic orange translucent     | <b>03-922.3</b> | 0.001   |
|   | Plastic red translucent        | <b>03-922.2</b> | 0.001   |
|   | Plastic white translucent      | <b>03-922.9</b> | 0.001   |
|   | Plastic yellow translucent     | <b>03-922.4</b> | 0.001   |



## Holder one-part

for use with film insert

|  | Holder                         | Typ-Nr.         |  |
|--|--------------------------------|-----------------|---|
| <b>Holder one-part</b><br>for Lens one-part, unicoloured : Typ-Nr. 03-941.7, 03-946.7 and 03-947.1 | Plastic blue translucent       | <b>03-908.6</b> | 0.001   |
|  | Plastic colourless translucent | <b>03-908.7</b> | 0.001   |
|  | Plastic green translucent      | <b>03-908.5</b> | 0.001   |
|  | Plastic orange translucent     | <b>03-908.3</b> | 0.001   |
|  | Plastic red translucent        | <b>03-908.2</b> | 0.001   |
|  | Plastic white translucent      | <b>03-908.9</b> | 0.001   |
|  | Plastic yellow translucent     | <b>03-908.4</b> | 0.001   |



## Diffuser plate halved


for film insert; order 2 Diffuser plates

|  | Typ-Nr.       |  |
|--|---------------|---|
| <b>Diffuser plate halved</b><br>for Lens halved and Lens one-part, two-coloured<br>Lettering only visible when illuminated | <b>03-926</b> | 0.001   |





## Diffuser plate one-part

for film insert

|   | Typ-Nr.       |  |
|---|---------------|---|
| <b>Diffuser plate one-part</b><br>for Lens one-part, unicoloured<br>Lettering only visible when illuminated | <b>03-909</b> | 0.001   |



## Front bezel flush

|                          | Front bezel   |  24 x 48 mm<br>Typ-Nr. |  |
|--------------------------|---------------|---|---|
| <b>Front bezel flush</b> | Plastic black | <b>03-965.0</b>   | 0.001   |



## Front bezel raised

|   | Front bezel   |  24 x 48 mm<br>Typ-Nr. |  |
|---|---------------|---|---|
| <b>Front bezel raised</b><br>Lens only removable with Lens remover Typ-Nr. 98-969 | Plastic black | <b>03-967.0</b>   | 0.001   |





## Light barrier

|                      | Typ-Nr.       |  |
|----------------------|---------------|---|
| <b>Light barrier</b> | <b>03-907</b> | 0.002   |



## Protective cover

use with Front bezel flush Typ-Nr. 03-965.0

|  |  24 x 48 mm<br>Typ-Nr. | Technical drawing |  |
|--|---|-------------------|---|
| <b>Protective cover</b><br>hinged, transparent, with means for sealing | <b>03-925</b>   | 3                 | 0.001   |



Technical drawing from page 27

## Sprayproof cover

use Front bezel flush

|  | Front protection | 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | Technical drawing | kg    |
|--|------------------|-----------------------|---------------------|-------------------|-------|
| <b>Sprayproof cover</b><br>three-part, PVC (-20 °C ... +60 °C) | IP 65            | <b>03-924</b>         | 2                   | 4                 | 0.005 |



Mounting dimensions from page 27, Technical drawing from page 27

## Blind plug

|                   | Blind plug    | 24 x 48 mm<br>Typ-Nr. | Mounting dimensions | kg    |
|-------------------|---------------|-----------------------|---------------------|-------|
| <b>Blind plug</b> | Plastic black | <b>03-949.0</b>       | 1                   | 0.005 |
|                   | Plastic grey  | <b>03-949.8</b>       | 1                   | 0.005 |



Mounting dimensions from page 27

## Spare key

|                                       | Typ-Nr.           | kg    |
|---------------------------------------|-------------------|-------|
| <b>Spare key</b><br>Standard lock YB1 | <b>02-989.001</b> | 0.001 |



Other lock numbers on request

## Backside

### Terminal cover


|   | Typ-Nr.       | kg    |
|---|---------------|-------|
| <b>Terminal cover</b><br>all connection methods | <b>03-929</b> | 0.007 |



## Illumination

### Filament lamp


order 2 Filament lamps

| Filament lamp | Socket | Operating voltage/-current | Typ-Nr.             |  |
|---------------|--------|----------------------------|---------------------|---|
| Filament lamp | T6.8   | 12 VAC/DC, 100 mA          | <b>10-1209.1329</b> | 0.001   |
|               |        | 12 VAC/DC, 50 mA           | <b>10-1209.1279</b> | 0.001   |
|               |        | 24 VAC/DC, 25 mA           | <b>10-1212.1199</b> | 0.001   |
|               |        | 24 VAC/DC, 50 mA           | <b>10-1212.1279</b> | 0.001   |
|               |        | 28 VAC/DC, 40 mA           | <b>10-1213.1249</b> | 0.001   |
|               |        | 30 VAC/DC, 40 mA           | <b>10-1214.1249</b> | 0.001   |
|               |        | 36 VAC/DC, 35 mA           | <b>10-1216.1229</b> | 0.001   |
|               |        | 48 VAC/DC, 25 mA           | <b>10-1219.1199</b> | 0.001   |
|               |        | 6 VAC/DC, 200 mA           | <b>10-1206.1369</b> | 0.001   |



### Single-LED

order 2 LED's

| Single-LED | Socket | Light colour  | Operating voltage/-current | Typ-Nr.             |  |
|------------|--------|---------------|----------------------------|---------------------|---|
| Single-LED | T6.8   | blue          | 12 VAC/DC, 9/17 mA         | <b>10-2K09.1076</b> | 0.002   |
|            |        |               | 24 VAC/DC, 9/17 mA         | <b>10-2K12.1076</b> | 0.002   |
|            |        |               | 28 VAC/DC, 9/17 mA         | <b>10-2K13.1076</b> | 0.002   |
|            |        |               | 48 VAC/DC, 4/8 mA          | <b>10-2K19.1056</b> | 0.002   |
|            |        |               | 6 VDC, 17 mA               | <b>10-2K06.3156</b> | 0.002   |
|            |        | green         | 12 VAC/DC, 9/17 mA         | <b>10-2K09.1075</b> | 0.002   |
|            |        |               | 24 VAC/DC, 9/17 mA         | <b>10-2K12.1075</b> | 0.002   |
|            |        |               | 28 VAC/DC, 9/17 mA         | <b>10-2K13.1075</b> | 0.002   |
|            |        |               | 48 VAC/DC, 4/8 mA          | <b>10-2K19.1055</b> | 0.002   |
|            |        |               | 6 VDC, 17 mA               | <b>10-2K06.3155</b> | 0.002   |
|            |        | red           | 12 VAC/DC, 9/17 mA         | <b>10-2K09.1072</b> | 0.002   |
|            |        |               | 24 VAC/DC, 9/17 mA         | <b>10-2K12.1072</b> | 0.002   |
|            |        |               | 28 VAC/DC, 9/17 mA         | <b>10-2K13.1072</b> | 0.002   |
|            |        |               | 48 VAC/DC, 4/8 mA          | <b>10-2K19.1052</b> | 0.002   |
|            |        |               | 6 VDC, 17 mA               | <b>10-2K06.3152</b> | 0.002   |
|            |        | white diffuse | 12 VAC/DC, 9/17 mA         | <b>10-2K09.1079</b> | 0.002   |
|            |        |               | 24 VAC/DC, 9/17 mA         | <b>10-2K12.1079</b> | 0.002   |
|            |        |               | 28 VAC/DC, 9/17 mA         | <b>10-2K13.1079</b> | 0.002   |
|            |        |               | 48 VAC/DC, 4/8 mA          | <b>10-2K19.1059</b> | 0.002   |
|            |        |               | 6 VDC, 17 mA               | <b>10-2K06.3159</b> | 0.002   |
|            |        | yellow        | 12 VAC/DC, 9/17 mA         | <b>10-2K09.1074</b> | 0.002   |
|            |        |               | 24 VAC/DC, 9/17 mA         | <b>10-2K12.1074</b> | 0.002   |
|            |        |               | 28 VAC/DC, 9/17 mA         | <b>10-2K13.1074</b> | 0.002   |
|            |        |               | 48 VAC/DC, 4/8 mA          | <b>10-2K19.1054</b> | 0.002   |
|            |        |               | 6 VDC, 17 mA               | <b>10-2K06.3154</b> | 0.002   |




Note:

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

## Series resistor

for lamp voltage reduction


|  | Operation voltage | Typ-Nr.         |  |
|--|-------------------|-----------------|---|
| <b>Series resistor</b><br>10 kΩ, for filament lamp 48 VAC, 25 mA | 230/240 V         | <b>02-904.7</b> | 0.003   |
| 2.7 kΩ, for filament lamp 48 VAC, 25 mA                          | 110 V             | <b>02-904.0</b> | 0.003   |
| 3.3 kΩ, for filament lamp 48 VAC, 25 mA                          | 125 V             | <b>02-904.1</b> | 0.003   |
| 4.7 kΩ, for filament lamp 48 VAC, 25 mA                          | 145 V             | <b>02-904.3</b> | 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 | <b>02-912.2</b> | 0.045   |
| 15 spaces 187.5 x 60 x 15 mm                              | <b>02-912.3</b> | 0.090   |
| 20 spaces 250 x 60 x 15 mm                                | <b>02-912.4</b> | 0.095   |
| 5 spaces 62.5 x 60 x 15 mm                                | <b>02-912.1</b> | 0.025   |



## Assembling

### Lens remover

|  | Typ-Nr.       |  |
|--|---------------|---|
| <b>Lens remover</b><br>for flush front bezel | <b>02-905</b> | 0.011   |
| for raised front bezel                       | <b>98-968</b> | 0.004   |



### 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 !

## Actuator with snap-action switching element

### Switching system

1 or 2 self-cleaning, snap-action switching elements.  
1 or 2 double-throw contacts.

### Material

#### Material of contact

Standard version:  
Silver (U >20 V)  
Special versions: (on request)  
Gold/Silver 700 Au/300 Ag (U <50 V)  
Silver/Palladium 700 Ag/300 Pd (U >20 V) for atmospheres containing sulphur

#### Switch housing

Thermosetting material, heat-resistant

#### Indicator housing

Polyamide

### Mechanical characteristics

#### Terminals

Screw terminal (with self-lifting clip):  
max. wire cross-section, 2 x 2.5 mm<sup>2</sup>  
max. wire cross-section of stranded cable, 2 x 1.5 mm<sup>2</sup>

Plug-in terminal 2.8 x 0.8 mm:  
max. wire cross-section of stranded cable, 1 mm<sup>2</sup> can also be used as soldering terminal  
max. wire cross-section, 2 x 1 mm<sup>2</sup>  
max. wire cross-section of stranded cable: 2 x 0.75 mm<sup>2</sup>

Plug-in terminal 4.8 x 0.8 mm:  
max. wire cross-section of stranded cable, 2.5 mm<sup>2</sup> can also be used as soldering terminal  
max. wire cross-section: 2 x 1 mm<sup>2</sup>  
max. wire cross-section of stranded cable, 2 x 0.75 mm<sup>2</sup>

#### Actuating force

6 N ... 12 N

#### Actuating travel

5 mm

#### Mechanical lifetime

Momentary action 2 million operations  
Maintained action 1 million operations

#### Storage temperature

-30 °C ... +85 °C

### Electrical characteristics

#### Standards

The switches comply with the "Standards for low-voltage switching devices" EN IEC 61058-1

#### Rated insulation voltage

400 VAC/440 VDC, as per IEC 61058-1

#### Conventional free air thermal current

10 A

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

#### Switch rating

400 VAC, 10 A, cosφ 0.95, as per IEC 61058-1  
250 VAC, 10 A, as per UL

#### Electric strength

2500 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC 61058-1

### Environmental conditions

#### Storage temperature

-30 °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

Front side IP 40, IP 65 with spray cover, as per IEC 60529

#### Vibration resistance

10 g at 10-2000 Hz, amplitude 1.0 mm, as per IEC 60068-2-6

### Approvals

#### Approbations

CB (IEC 61058)  
CSA  
ENEC (EN 61058)  
Germanischer Lloyd  
UL  
VDE

#### Declaration of conformity

CE  
RoHS

## Buzzer

### Buzzer system

#### System

Contactless electronic buzzer with IC oscillator

### Material

#### Alarm buzzer case

Duroplastic

#### Front cap

Polycarbonate (PC)

#### Front bezel

Polymethylacrylate

### Mechanical characteristics

#### Terminals

Screw terminal

#### Operating temperature

-25 °C ... +55 °C

#### Storage temperature

-40 °C ... +85 °C

#### Front protection

IP 40



## Electrical characteristics

### Frequency (tone)

Approx. 2.8 kHz

### Sound pressure

85 dB (A)  $\pm$ 8 dB at a distance of 0.1 m

Volume variable with a 1 M $\Omega$  potentiometer or corresponding fixed resistor

### Operation Voltage/Current

typical

10 ... 55 VAC    10 ... 75 VDC

25 mA            15 mA

## Approvals

### Approbations

CB (IEC 61058)

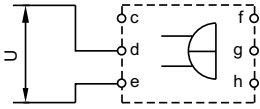
ENEC (EN 61058)

### Declaration of conformity

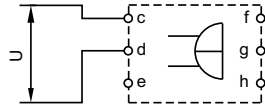
CE

RoHS

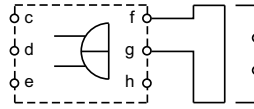
## Buzzer



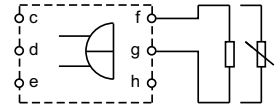
1. Supply voltage I  
 Continous tone  
 U = 10 - 35 VAC  
 U = 10 - 50 VDC



2. Supply voltage II  
 Continous tone  
 U = 35 - 55 VAC  
 U = 35 - 75 VDC



3. Intermittent tone  
 Interval approx. 3 Hz



4. Volume control

## 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 3 mm. If the height is not specified, we will supply 3 mm engraved letters.

### 2. Hot stamping

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

For letters and figures, typefaces with 2.5 mm, 3 mm and 4 mm are available.

### 3. Film inserts

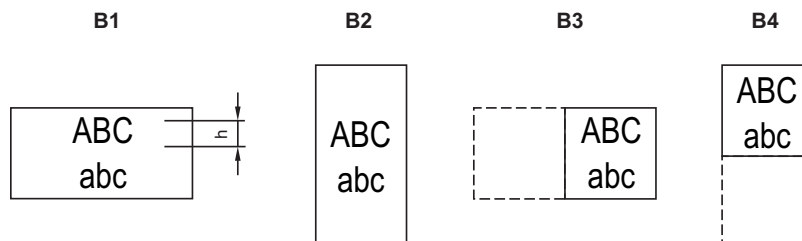
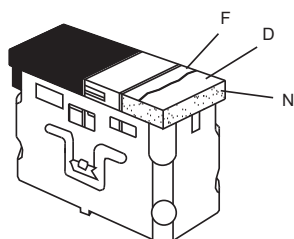
Instead of using engraving the lenses can be fitted with transparent film inserts, as an alternative. For this purpose, though, it is advisable to use lenses without ripped pattern. In the case of use of a smoke-black lens the fitted film becomes readable only if the lamp is on.

The film (F) is inserted in the cap. To ensure even illumination a diffuser (D) is recommended, which is inserted beneath the film. If, on the other hand, the diffuser is inserted above the film, the lettering only becomes legible when the lamp is alight. To hold the film and diffuser in position, the use of a holder (N) is advised.

The film thickness is 0.2 mm.

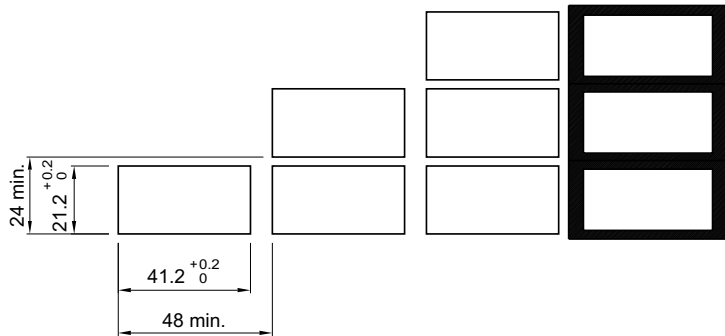
All dimensions in mm

| Lens size | 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 x 38   | 14.3 x 34.3           | 3                   | 4               | 16  | 18  | B1    |
|           |                       |                     | 8               | 6   | 8   | B2    |
| 18 x 19   | 14.3 x 15.6           | 3                   | 4               | 7 - 8   | 9 - 10  | B3    |
|           |                       |                     |                 |   |   | B4    |
| 18 x 38   | 14.3 x 34.3           | 4                   | 2               | 11  | 13  | B1    |
|           |                       |                     | 4               | 4   | 5   | B2    |
| 18 x 19   | 14.3 x 15.6           | 4                   | 2               | 5   | 6   | B3    |
|           |                       |                     |                 |   |   | B4    |
| 18 x 38   | 14.3 x 34.3           | 5                   | 2               | 8   | 10  | B1    |
|           |                       |                     | 4               | 3   | 4   | B2    |
| 18 x 19   | 14.3 x 15.6           | 5                   | 2               | 4   | 4   | B3    |
|           |                       |                     |                 |   |   | B4    |
| 18 x 38   | 14.3 x 34.3           | 6                   | 1               | 7   | 9   | B1    |
|           |                       |                     | 3               | 3   | 3   | B2    |
| 18 x 19   | 14.3 x 15.6           | 6                   | 1               | 3   | 4   | B3    |
|           |                       |                     |                 |   |   | B4    |
| 18 x 38   | 14.3 x 34.3           | 8                   | 1               | 5   | 6   | B1    |
|           |                       |                     | 2               | 2   | 2   | B2    |
| 18 x 19   | 14.3 x 15.6           | 8                   | 1               | 2   | 2   | B3    |
|           |                       |                     |                 |   |   | B4    |

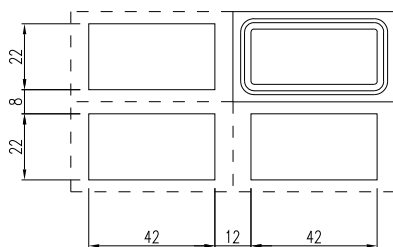


## Mounting dimensions

1 Indicator actuator page 5 | Buzzer actuator page 5 | Pushbutton actuator one-part page 6 | Pushbutton actuator two-part page 7 | Pushbutton actuator locked mechanically page 8 | Illuminated pushbutton actuator one-part page 9 | Illuminated pushbutton actuator two-part page 10 | Illuminated pushbutton actuator locked mechanically page 11 | Mushroom-pushbutton actuator page 12 | Keylock switch actuator 2 positions page 13 | Mushroom-head keylock switch actuator 2 positions page 14 | Blind plug page 20

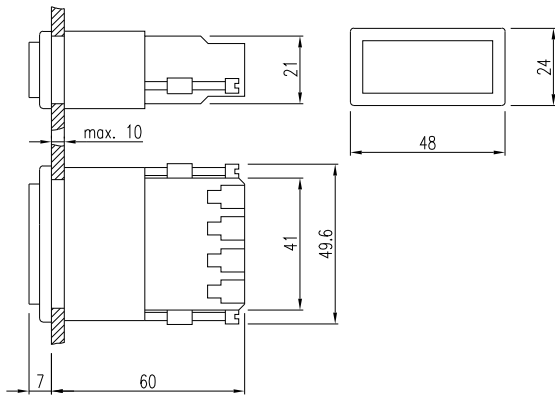


## 2 Sprayproof cover page 20

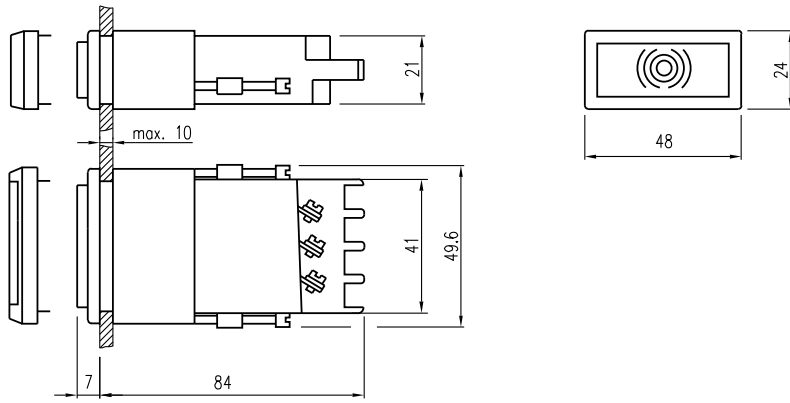


## Technical drawing

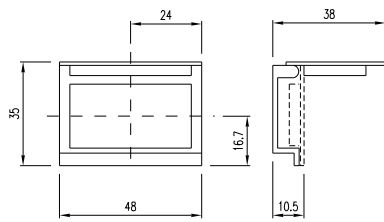
### 1 Indicator actuator page 5



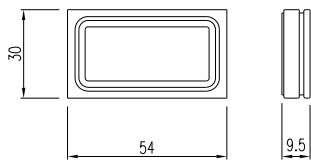
## 2 Buzzer actuator page 5



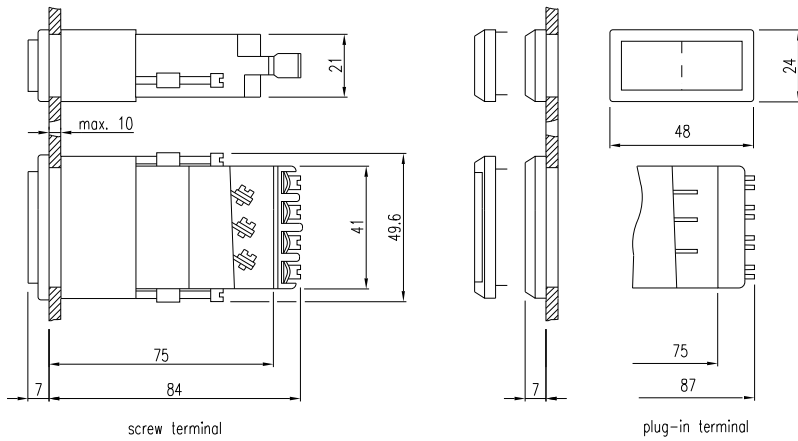
## 3 Protective cover page 19



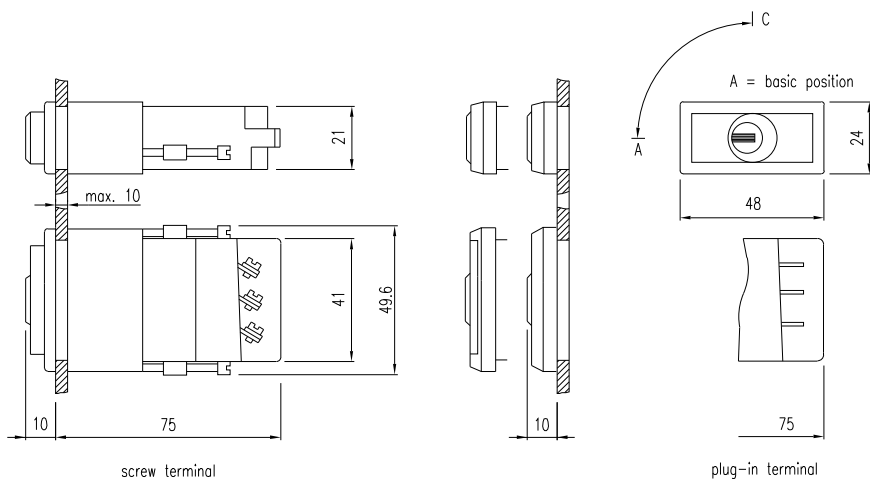
## 4 Sprayproof cover page 20



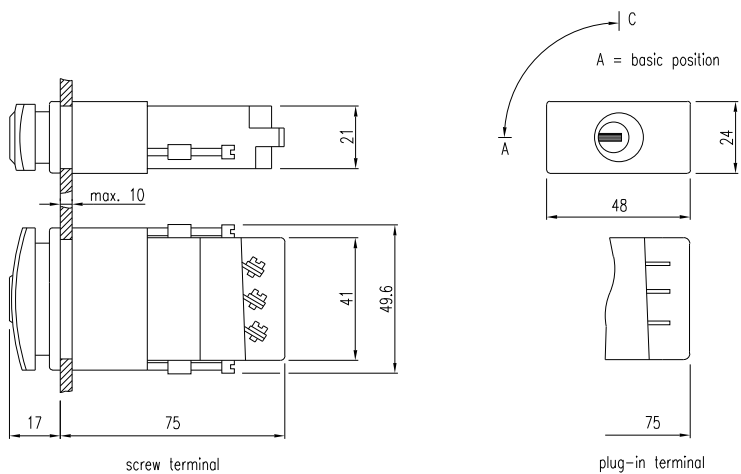
## 5 Pushbutton actuator one-part page 6 | Pushbutton actuator two-part page 7 | Illuminated pushbutton actuator one-part page 9 | Illuminated pushbutton actuator two-part page 10



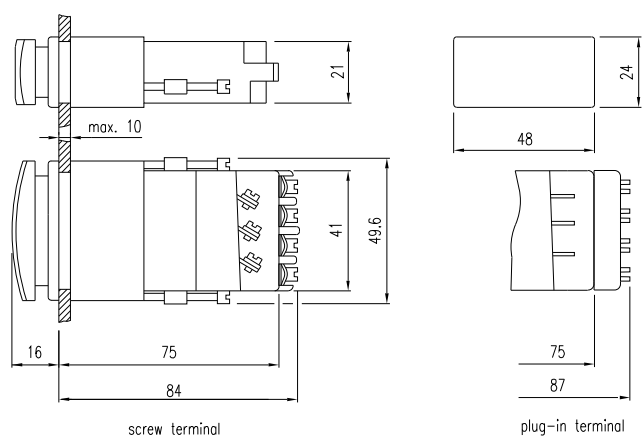
## 6 Keylock switch actuator 2 positions page 13



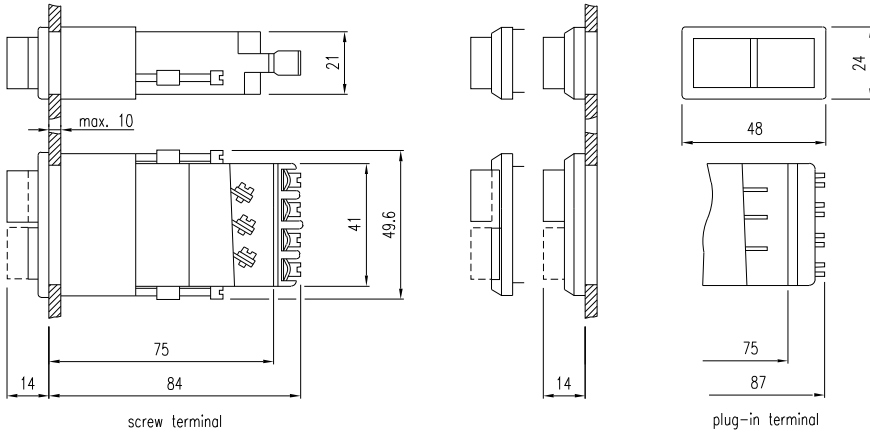
## 7 Mushroom-head keylock switch actuator 2 positions page 14



## 8 Mushroom-pushbutton actuator page 12

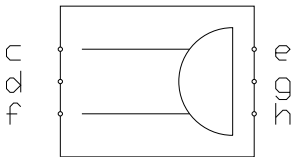


9 Pushbutton actuator locked mechanically page 8 | Illuminated pushbutton actuator locked mechanically page 11

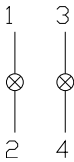


## Circuit drawing

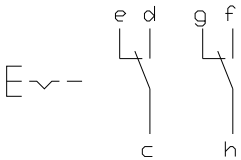
1 Buzzer actuator page 5



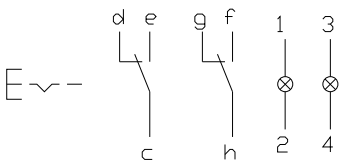
2 Indicator actuator page 5



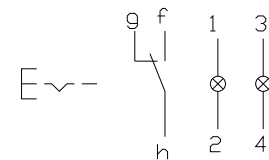
3 Pushbutton actuator one-part page 6



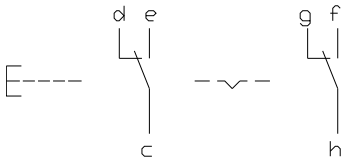
4 Illuminated pushbutton actuator one-part page 9 | Mushroom-pushbutton actuator page 12



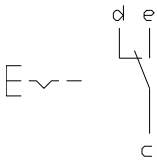
5 Illuminated pushbutton actuator one-part page 9 | Illuminated pushbutton actuator two-part page 10 | Mushroom-pushbutton actuator page 12



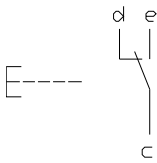
**6 Pushbutton actuator one-part** page 6



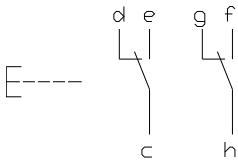
**7 Pushbutton actuator one-part** page 6



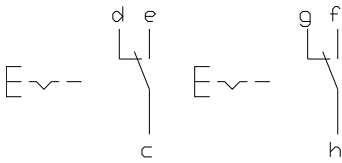
**8 Pushbutton actuator one-part** page 6



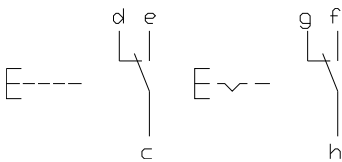
**9 Pushbutton actuator one-part** page 6



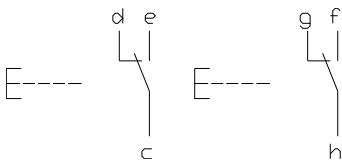
**10 Pushbutton actuator two-part** page 7 | **Pushbutton actuator locked mechanically** page 8



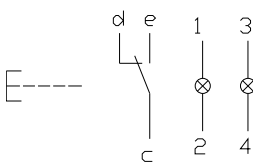
**11 Pushbutton actuator two-part** page 7



**12 Pushbutton actuator two-part** page 7

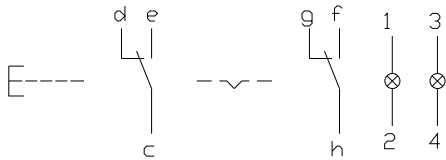


**13 Illuminated pushbutton actuator one-part** page 9 | **Illuminated pushbutton actuator two-part** page 10 | **Mushroom-pushbutton actuator** page 12

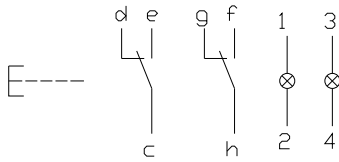




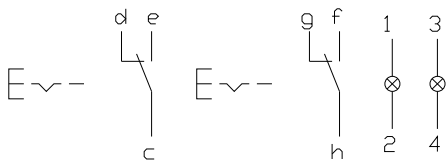
**14 Illuminated pushbutton actuator one-part** page 9 | **Mushroom-pushbutton actuator** page 12



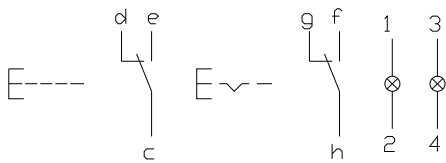
**15 Illuminated pushbutton actuator one-part** page 9 | **Mushroom-pushbutton actuator** page 12



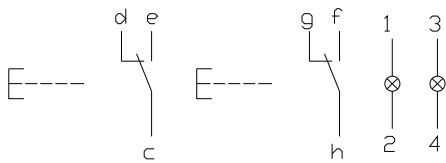
**16 Illuminated pushbutton actuator two-part** page 10 | **Illuminated pushbutton actuator locked mechanically** page 11



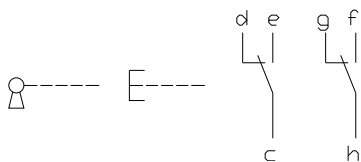
**17 Illuminated pushbutton actuator two-part** page 10 | **Illuminated pushbutton actuator locked mechanically** page 11



**18 Illuminated pushbutton actuator two-part** page 10 | **Illuminated pushbutton actuator locked mechanically** page 11



**19 Keylock switch actuator 2 positions** page 13 | **Mushroom-head keylock switch actuator 2 positions** page 14



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| 03-923.5     | 15   | 98-968       | 22   |         |      |
| 03-923.6     | 15   |              |      |         |      |
| 03-923.7     | 15   |              |      |         |      |
| 03-923.8     | 15   |              |      |         |      |
| 03-923.9     | 15   |              |      |         |      |
| 03-924       | 20   |              |      |         |      |
| 03-925       | 19   |              |      |         |      |
| 03-926       | 18   |              |      |         |      |
| 03-929       | 20   |              |      |         |      |
| 03-930.0     | 18   |              |      |         |      |
| 03-930.2     | 18   |              |      |         |      |
| 03-930.4     | 18   |              |      |         |      |
| 03-930.5     | 18   |              |      |         |      |
| 03-941.7     | 16   |              |      |         |      |
| 03-942.7/7   | 17   |              |      |         |      |
| 03-943.7     | 15   |              |      |         |      |
| 03-946.7     | 16   |              |      |         |      |
| 03-947.1     | 16   |              |      |         |      |
| 03-949.0     | 20   |              |      |         |      |
| 03-949.8     | 20   |              |      |         |      |
| 03-951.7/7   | 17   |              |      |         |      |
| 03-952.1/1   | 17   |              |      |         |      |
| 03-953.7     | 15   |              |      |         |      |
| 03-954.1     | 15   |              |      |         |      |
| 03-965.0     | 19   |              |      |         |      |
| 03-967.0     | 19   |              |      |         |      |
| 03-980.1     | 18   |              |      |         |      |
| 03-982.1     | 18   |              |      |         |      |
| 10-1206.1369 | 21   |              |      |         |      |
| 10-1209.1279 | 21   |              |      |         |      |
| 10-1209.1329 | 21   |              |      |         |      |
| 10-1212.1199 | 21   |              |      |         |      |
| 10-1212.1279 | 21   |              |      |         |      |
| 10-1213.1249 | 21   |              |      |         |      |
| 10-1214.1249 | 21   |              |      |         |      |
| 10-1216.1229 | 21   |              |      |         |      |
| 10-1219.1199 | 21   |              |      |         |      |
| 10-2K06.3152 | 21   |              |      |         |      |
| 10-2K06.3154 | 21   |              |      |         |      |
| 10-2K06.3155 | 21   |              |      |         |      |
| 10-2K06.3156 | 21   |              |      |         |      |
| 10-2K06.3159 | 21   |              |      |         |      |
| 10-2K09.1072 | 21   |              |      |         |      |
| 10-2K09.1074 | 21   |              |      |         |      |
| 10-2K09.1075 | 21   |              |      |         |      |
| 10-2K09.1076 | 21   |              |      |         |      |
| 10-2K09.1079 | 21   |              |      |         |      |
| 10-2K12.1072 | 21   |              |      |         |      |
| 10-2K12.1074 | 21   |              |      |         |      |
| 10-2K12.1075 | 21   |              |      |         |      |
| 10-2K12.1076 | 21   |              |      |         |      |
| 10-2K12.1079 | 21   |              |      |         |      |
| 10-2K13.1072 | 21   |              |      |         |      |



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