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Series 04

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General Notes

Series 04, a modular switching system, offers users a wide range of possible combinations. A broad variety of actuators is available, round or square in shape, for use as pushbuttons, illuminated pushbuttons, keylock switches or lever-operated switches, and indicators. Other special actuators, such as mushroom heads or emergency stop switches and buzzers can also be supplied.

Configuration

Max. 3 switching elements, as snap-action or slow-make switches, can be clipped as modules to each actuator. Each switching element is equipped with 1 or 2 independent switching system with normally closed or normally open contact. The standard contact material is hard silver.

Mounting

The pushbuttons of series 04 can be pushed through the mounting hole 22,5 mm dia. or, with a suitable adaptor, can be mounted in a hole 30,5 mm dia.

Terminals

The switching elements and the lamp blocks can be supplied with screw or plug-in terminals.

Lenses

Lenses of transparent plastic or aluminium are available in various standard colours.

Marking

For engravings, hot stamping, film inserts with standard legends or symbols, see page 327.

Illumination

Illuminated pushbuttons or indicators can be supplied with lamps Ba 9s (6-130 V), Multi-LED lamps Ba 9s (6, 15, 24, 48 V) or with neon lamps Ba 9s.

Position indicating

When a switch with maintained action is actuated, the lens remains in the depressed position mechanically. The state of the switch is apparent at all times from the position of the lens.

Number structure

704.XXX.X

— Lens colour

— Switch variant

704.9XX.X

Switching element

Example:

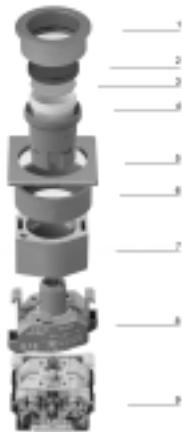
-Illuminated pushbutton; round, momentary action, plastic front ring, black; lens red
704.029.2

-Snap-action switching element, 1 normally open contact, screw terminals, hard silver
704.900.1

All dimensions in mm.

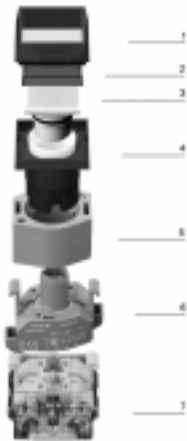
We reserve the right to modify technical data.

illuminated pushbutton for flush mounting



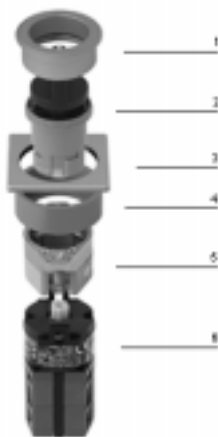
- 1 front bezel set for flush mounting
- 2 lens
- 3 text panel
- 4 actuator housing
- 5 front plate
- 6 pressure ring
- 7 bayonet flange
- 8 lamp element
- 9 switching element

illuminated pushbutton



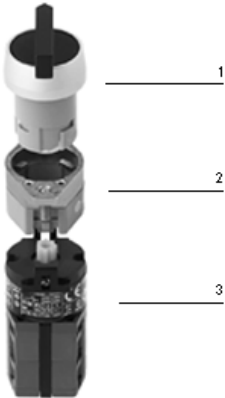
- 1 front bezel
- 2 lens
- 3 lens holder
- 4 actuator housing
- 5 bayonet flange
- 6 lamp element
- 7 switching element

rotary switch for flush mounting



- 1 front bezel set for flush mounting
- 2 rotary switch actuator
- 3 front panel
- 4 pressure ring
- 5 mounting flange
- 6 rotary switch element

rotary switch

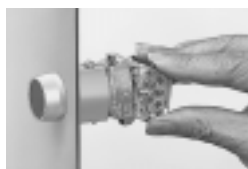


- 1 rotary switch actuator
- 2 mounting flange
- 3 rotary switch element

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The actuator is inserted from the front through the mounting opening 22.5 mm dia. and locked at the rear with the bayonet flange by twisting. For fixing and positioning the screws provided in the flange have to be screwed in (max. torque 25 Ncm). For prepared front panels with a 30.5 mm dia. opening we can offer a reducing ring.



The switching elements (max. 3) or transformers can easily be snapped in position without tools. Lamps, neon lamps or Multi-Led lamps, as well as marking caps can be inserted or fitted from the front.



We can supply switching elements with terminal labels inserted .



To dismantle the switches or transformers one arm of the snap-on system is eased up with a screwdriver so that the snapped-on parts can be easily removed.

Rotary switch



Actuator

Mounting instructions, installation in Ø 22.5 mm hole

Step 1

Mounting the actuator element

1. Insert actuator from the front into the mounting hole Ø 22.5 mm.
2. Push mounting flange onto the actuator from the back and latch with bayonet.
3. Screw flange on with the two threaded pins.
4. Put lever into the reference position (9 o'clock).



Rotary switch element

Step 2

Snap rotary switch onto the actuator:

1. First check switch number with circuit diagram.
2. Put switching position of the cam at 9 o'clock.
3. Snap rotary switch element onto the mounting flange, pay attention to the position of the driver.
4. Check to see that the two snap-action legs have engaged.
5. Check the switching action in accordance with the switching sequence.

indicator compact full face illumination



recommended accessories:

incandescent lamp → 293; neon lamp → 294; LED → 294

| | illumination | lens cap/markung cap | colour of lens cap | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|--|-----------------------------|--------------------|---------------------|-----------------|-------------------|--------------------|-------|
| indicator compact full face illumination with built-in series resistor (125/60 V) and plastic lens cap | for incandescent lamp 60 V, max. 2.6 W | translucent diffuser | blue | 704.024.6 | 1 | 1 | 1 | 0,025 |
| | | | clear | 704.024.7 | 1 | 1 | 1 | 0,025 |
| | | | green | 704.024.5 | 1 | 1 | 1 | 0,025 |
| | | | red | 704.024.2 | 1 | 1 | 1 | 0,025 |
| | | | yellow | 704.024.4 | 1 | 1 | 1 | 0,025 |
| with built-in series resistor (220/130 V) and plastic lens cap | for incandescent lamp 130 V, max. 2.6 W | translucent diffuser | blue | 704.022.6 | 1 | 1 | 1 | 0,025 |
| | | | clear | 704.022.7 | 1 | 1 | 1 | 0,025 |
| | | | green | 704.022.5 | 1 | 1 | 1 | 0,025 |
| | | | red | 704.022.2 | 1 | 1 | 1 | 0,025 |
| | | | yellow | 704.022.4 | 1 | 1 | 1 | 0,025 |
| with plastic lens cap | for incandescent lamp max.2.6 W, or for Multi-LED lamp | translucent diffuser | blue | 704.020.6 | 1 | 1 | 1 | 0,020 |
| | | | clear | 704.020.7 | 1 | 1 | 1 | 0,020 |
| | | | green | 704.020.5 | 1 | 1 | 1 | 0,020 |
| | | | red | 704.020.2 | 1 | 1 | 1 | 0,020 |
| | | | yellow | 704.020.4 | 1 | 1 | 1 | 0,020 |
| | for neon lamp, max. 250 V | transparent ribbed diffuser | blue | 704.021.6 | 1 | 1 | 1 | 0,020 |
| | | | clear | 704.021.7 | 1 | 1 | 1 | 0,020 |
| | | | green | 704.021.5 | 1 | 1 | 1 | 0,020 |
| | | | red | 704.021.2 | 1 | 1 | 1 | 0,020 |
| | | | yellow | 704.021.4 | 1 | 1 | 1 | 0,020 |

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

indicator/flasher full face illumination



recommended accessories:

incandescent lamp → 293; neon lamp → 294; LED → 294

flasher element → 291

| | colour of front bezel/ ring | lens cap/marketing cap | colour of lens cap | \varnothing 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|--------------------------------|-------------------------|--------------------|---|------------------------|-----------------|-------------------|--------------------|-------|
| indicator/flasher full face illumination with plastic lens cap and front bezel, for incandescent lamp or Multi-LED | black | transparent/translucent | blue | 704.199.6 | | 1 | 2 | 2 | 0,050 |
| | | | clear | 704.199.7 | | 1 | 2 | 2 | 0,050 |
| | | | green | 704.199.5 | | 1 | 2 | 2 | 0,050 |
| | | | red | 704.199.2 | | 1 | 2 | 2 | 0,050 |
| | | | yellow | 704.199.4 | | 1 | 2 | 2 | 0,050 |
| | grey | transparent/translucent | blue | 704.200.6 | | 1 | 2 | 2 | 0,050 |
| | | | clear | 704.200.7 | | 1 | 2 | 2 | 0,050 |
| | | | green | 704.200.5 | | 1 | 2 | 2 | 0,050 |
| | | | red | 704.200.2 | | 1 | 2 | 2 | 0,050 |
| | | | yellow | 704.200.4 | | 1 | 2 | 2 | 0,050 |
| with plastic lens cap, for incandescent lamp or Multi-LED | without | transparent/translucent | blue | | 704.000.6 | 1 | 2 | 2 | 0,050 |
| | | | clear | | 704.000.7 | 1 | 2 | 2 | 0,050 |
| | | | green | | 704.000.5 | 1 | 2 | 2 | 0,050 |
| | | | red | | 704.000.2 | 1 | 2 | 2 | 0,050 |
| | | | yellow | | 704.000.4 | 1 | 2 | 2 | 0,050 |
| with plastic lens cap, for neon lamp | without | transparent, ribbed | blue | | 704.001.6 | 1 | 2 | 2 | 0,050 |
| | | | clear | | 704.001.7 | 1 | 2 | 2 | 0,050 |
| | | | green | | 704.001.5 | 1 | 2 | 2 | 0,050 |
| | | | red | | 704.001.2 | 1 | 2 | 2 | 0,050 |
| | | | yellow | | 704.001.4 | 1 | 2 | 2 | 0,050 |

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

indicator/flasher front illumination



recommended accessories:

incandescent lamp → 293; neon lamp → 294; LED → 294

flasher element → 291


| | colour of front bezel/ring | lens/markings foil | colour of lens | \varnothing 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|----------------------------|-------------------------|----------------|---|------------------------|-----------------|-------------------|--------------------|-------|
| indicator/flasher front illumination with plastic lens and front bezel, for incandescent lamp or Multi-LED | black | transparent/translucent | blue | 704.206.6 | | 1 | 2 | 2 | 0,050 |
| | | | clear | 704.206.7 | | 1 | 2 | 2 | 0,050 |
| | | | green | 704.206.5 | | 1 | 2 | 2 | 0,050 |
| | | | red | 704.206.2 | | 1 | 2 | 2 | 0,050 |
| | | | yellow | 704.206.4 | | 1 | 2 | 2 | 0,050 |
| | grey | transparent/translucent | blue | 704.202.6 | | 1 | 2 | 2 | 0,050 |
| | | | clear | 704.202.7 | | 1 | 2 | 2 | 0,050 |
| | | | green | 704.202.5 | | 1 | 2 | 2 | 0,050 |
| | | | red | 704.202.2 | | 1 | 2 | 2 | 0,050 |
| | | | yellow | 704.202.4 | | 1 | 2 | 2 | 0,050 |
| with plastic lens and front bezel, for neon lamp | black | transparent, ribbed | blue | 704.207.6 | | 1 | 2 | 2 | 0,050 |
| | | | clear | 704.207.7 | | 1 | 2 | 2 | 0,050 |
| | | | green | 704.207.5 | | 1 | 2 | 2 | 0,050 |
| | | | red | 704.207.2 | | 1 | 2 | 2 | 0,050 |
| | | | yellow | 704.207.4 | | 1 | 2 | 2 | 0,050 |
| | grey | transparent, ribbed | blue | 704.203.6 | | 1 | 2 | 2 | 0,050 |
| | | | clear | 704.203.7 | | 1 | 2 | 2 | 0,050 |
| | | | green | 704.203.5 | | 1 | 2 | 2 | 0,050 |
| | | | red | 704.203.2 | | 1 | 2 | 2 | 0,050 |
| | | | yellow | 704.203.4 | | 1 | 2 | 2 | 0,050 |
| with plastic lens and front ring, for incandescent lamp or multi-LED | black | transparent/translucent | blue | | 704.006.6 | 1 | 2 | 2 | 0,050 |
| | | | clear | | 704.006.7 | 1 | 2 | 2 | 0,050 |
| | | | green | | 704.006.5 | 1 | 2 | 2 | 0,050 |
| | | | red | | 704.006.2 | 1 | 2 | 2 | 0,050 |
| | | | yellow | | 704.006.4 | 1 | 2 | 2 | 0,050 |
| | grey | transparent/translucent | blue | | 704.002.6 | 1 | 2 | 2 | 0,050 |
| | | | clear | | 704.002.7 | 1 | 2 | 2 | 0,050 |
| | | | green | | 704.002.5 | 1 | 2 | 2 | 0,050 |
| | | | red | | 704.002.2 | 1 | 2 | 2 | 0,050 |
| | | | yellow | | 704.002.4 | 1 | 2 | 2 | 0,050 |
| with plastic lens and front ring, for neon lamp | black | transparent, ribbed | blue | | 704.007.6 | 1 | 2 | 2 | 0,050 |
| | | | clear | | 704.007.7 | 1 | 2 | 2 | 0,050 |
| | | | green | | 704.007.5 | 1 | 2 | 2 | 0,050 |
| | | | red | | 704.007.2 | 1 | 2 | 2 | 0,050 |
| | | | yellow | | 704.007.4 | 1 | 2 | 2 | 0,050 |
| | grey | transparent, ribbed | blue | | 704.003.6 | 1 | 2 | 2 | 0,050 |
| | | | clear | | 704.003.7 | 1 | 2 | 2 | 0,050 |
| | | | green | | 704.003.5 | 1 | 2 | 2 | 0,050 |
| | | | red | | 704.003.2 | 1 | 2 | 2 | 0,050 |
| | | | yellow | | 704.003.4 | 1 | 2 | 2 | 0,050 |


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

pushbutton actuator



recommended accessories:

 switching element → 290

| | switching action | material/colour of front bezel/ring | material/colour of lens | 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  | |
|---------------------|------------------|--|-------------------------|---------------------|---------------------|------------------|-------------------|--------------------|---|-------|
| pushbutton actuator | main | aluminium, natural | aluminium, black | | 704.041.0 | 2 | 3 | 2 | 0,040 | |
| | | | aluminium, blue | | 704.041.6 | 2 | 3 | 2 | 0,040 | |
| | | | aluminium, green | | 704.041.5 | 2 | 3 | 2 | 0,040 | |
| | | | aluminium, natural | | 704.041.8 | 2 | 3 | 2 | 0,040 | |
| | | | aluminium, red | | 704.041.2 | 2 | 3 | 2 | 0,040 | |
| | | | aluminium, yellow | | 704.041.4 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, black | | 704.042.0 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, blue | | 704.042.6 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, clear | | 704.042.7 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, green | | 704.042.5 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, red | | 704.042.2 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, yellow | | 704.042.4 | 2 | 3 | 2 | 0,040 | |
| | | aluminium, natural with protective cover | plastic, black | | 704.043.0 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, blue | | 704.043.6 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, clear | | 704.043.7 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, green | | 704.043.5 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, red | | 704.043.2 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, yellow | | 704.043.4 | 2 | 3 | 2 | 0,040 | |
| | | plastic, black | plastic, black | 704.239.0 | 704.039.0 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, blue | 704.239.6 | 704.039.6 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, clear | 704.239.7 | 704.039.7 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, green | 704.239.5 | 704.039.5 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, red | 704.239.2 | 704.039.2 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, yellow | 704.239.4 | 704.039.4 | 2 | 3 | 2 | 0,040 | |
| | | plastic, grey | plastic, black | 704.240.0 | 704.040.0 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, blue | 704.240.6 | 704.040.6 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, clear | 704.240.7 | 704.040.7 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, green | 704.240.5 | 704.040.5 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, red | 704.240.2 | 704.040.2 | 2 | 3 | 2 | 0,040 | |
| | | | plastic, yellow | 704.240.4 | 704.040.4 | 2 | 3 | 2 | 0,040 | |
| | | mom | aluminium, natural | aluminium, black | | 704.011.0 | 3 | 3 | 2 | 0,040 |
| | | | | aluminium, blue | | 704.011.6 | 3 | 3 | 2 | 0,040 |
| | | | | aluminium, green | | 704.011.5 | 3 | 3 | 2 | 0,040 |

To be continued on next side

| | switching action | material/colour of front bezel/ring | material/colour of lens | \varnothing 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | \varnothing mm | |
|----------------------------|------------------|--|-------------------------|---|------------------------|------------------|-------------------|--------------------|---------------------|-------|
| pushbutton actuator | mom | aluminium, natural | aluminium, natural | | 704.011.8 | 3 | 3 | 2 | 0,040 | |
| | | | aluminium, red | | 704.011.2 | 3 | 3 | 2 | 0,040 | |
| | | | aluminium, yellow | | 704.011.4 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, black | | 704.012.0 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, blue | | 704.012.6 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, clear | | 704.012.7 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, green | | 704.012.5 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, red | | 704.012.2 | 3 | 3 | 2 | 0,040 | |
| | | plastic, yellow | | 704.012.4 | 3 | 3 | 2 | 0,040 | | |
| | | aluminium, natural with protective cover | plastic, black | | 704.013.0 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, blue | | 704.013.6 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, clear | | 704.013.7 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, green | | 704.013.5 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, red | | 704.013.2 | 3 | 3 | 2 | 0,040 | |
| | | plastic, black | plastic, yellow | | 704.013.4 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, black | 704.209.0 | 704.009.0 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, blue | 704.209.6 | 704.009.6 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, clear | 704.209.7 | 704.009.7 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, green | 704.209.5 | 704.009.5 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, red | 704.209.2 | 704.009.2 | 3 | 3 | 2 | 0,040 | |
| | | plastic, grey | plastic, yellow | 704.209.4 | 704.009.4 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, black | 704.210.0 | 704.010.0 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, blue | 704.210.6 | 704.010.6 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, clear | 704.210.7 | 704.010.7 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, green | 704.210.5 | 704.010.5 | 3 | 3 | 2 | 0,040 | |
| | | | plastic, red | 704.210.2 | 704.010.2 | 3 | 3 | 2 | 0,040 | |
| | | | | plastic, yellow | 704.210.4 | 704.010.4 | 3 | 3 | 2 | 0,040 |

switching action: main = maintained action, mom = momentary action

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

illuminated pushbutton actuator




recommended accessories:

incandescent lamp → 293; neon lamp → 294; LED → 294

switching element → 290

| | switching action | material/colour of front bezel/ ring | material/colour of lens | ⌀ 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|---|------------------|--|-------------------------|-----------------------------|------------------------|-----------------|-------------------|--------------------|-------|
| | | | | | | | | | |
| illuminated pushbutton actuator with plastic lens | main | aluminium, natural | plastic, blue | | 704.062.6 | 4 | 4 | 2 | 0,056 |
| | | | plastic, clear | | 704.062.7 | 4 | 4 | 2 | 0,056 |
| | | | plastic, green | | 704.062.5 | 4 | 4 | 2 | 0,056 |
| | | | plastic, red | | 704.062.2 | 4 | 4 | 2 | 0,056 |
| | | | plastic, yellow | | 704.062.4 | 4 | 4 | 2 | 0,056 |
| | | aluminium, natural with protective cover | plastic, blue | | 704.063.6 | 4 | 4 | 2 | 0,056 |
| | | | plastic, clear | | 704.063.7 | 4 | 4 | 2 | 0,056 |
| | | | plastic, green | | 704.063.5 | 4 | 4 | 2 | 0,056 |
| | | | plastic, red | | 704.063.2 | 4 | 4 | 2 | 0,056 |
| | | plastic, black | plastic, blue | 704.259.6 | 704.059.6 | 4 | 4 | 2 | 0,056 |
| | | | plastic, clear | 704.259.7 | 704.059.7 | 4 | 4 | 2 | 0,056 |
| | | | plastic, green | 704.259.5 | 704.059.5 | 4 | 4 | 2 | 0,056 |
| | | | plastic, red | 704.259.2 | 704.059.2 | 4 | 4 | 2 | 0,056 |
| | | | plastic, yellow | 704.259.4 | 704.059.4 | 4 | 4 | 2 | 0,056 |
| | | plastic, grey | plastic, blue | 704.260.6 | 704.060.6 | 4 | 4 | 2 | 0,056 |
| | | | plastic, clear | 704.260.7 | 704.060.7 | 4 | 4 | 2 | 0,056 |
| | plastic, green | | 704.260.5 | 704.060.5 | 4 | 4 | 2 | 0,056 | |
| | plastic, red | | 704.260.2 | 704.060.2 | 4 | 4 | 2 | 0,056 | |
| | plastic, yellow | | 704.260.4 | 704.060.4 | 4 | 4 | 2 | 0,056 | |
| | mom | aluminium, natural | plastic, blue | | 704.032.6 | 5 | 4 | 2 | 0,056 |
| | | | plastic, clear | | 704.032.7 | 5 | 4 | 2 | 0,056 |
| | | | plastic, green | | 704.032.5 | 5 | 4 | 2 | 0,056 |
| | | | plastic, red | | 704.032.2 | 5 | 4 | 2 | 0,056 |
| | | | plastic, yellow | | 704.032.4 | 5 | 4 | 2 | 0,056 |
| | | aluminium, natural with protective cover | plastic, blue | | 704.033.6 | 5 | 4 | 2 | 0,056 |
| | | | plastic, clear | | 704.033.7 | 5 | 4 | 2 | 0,056 |
| | | | plastic, green | | 704.033.5 | 5 | 4 | 2 | 0,056 |
| | | | plastic, red | | 704.033.2 | 5 | 4 | 2 | 0,056 |
| plastic, black | | plastic, blue | 704.229.6 | 704.029.6 | 5 | 4 | 2 | 0,056 | |
| | | plastic, clear | 704.229.7 | 704.029.7 | 5 | 4 | 2 | 0,056 | |
| | | plastic, green | 704.229.5 | 704.029.5 | 5 | 4 | 2 | 0,056 | |

To be continued on next side

| | switching action | material/colour of front bezel/ ring | material/colour of lens | 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|---|------------------|---|-------------------------|------------------------|------------------------|-----------------|-------------------|--------------------|---|
| illuminated pushbutton actuator with plastic lens | mom | plastic, black | plastic, red | 704.229.2 | 704.029.2 | 5 | 4 | 2 | 0,056 |
| | | | plastic, yellow | 704.229.4 | 704.029.4 | 5 | 4 | 2 | 0,056 |
| | | plastic, grey | plastic, blue | 704.230.6 | 704.030.6 | 5 | 4 | 2 | 0,056 |
| | | | plastic, clear | 704.230.7 | 704.030.7 | 5 | 4 | 2 | 0,056 |
| | | | plastic, green | 704.230.5 | 704.030.5 | 5 | 4 | 2 | 0,056 |
| | | | plastic, red | 704.230.2 | 704.030.2 | 5 | 4 | 2 | 0,056 |
| | | | plastic, yellow | 704.230.4 | 704.030.4 | 5 | 4 | 2 | 0,056 |


switching action: main = maintained action, mom = momentary action


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325


emergency stop switch actuator



recommended accessories:

 switching element for emergency stop switch → 291

 label for emergency stop switch → 296

| | switching action | unlocking | material of front ring | marking of mushroom-head cap | 40 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|--|------------------|------------------|------------------------|---------------------------------|------------------------|-----------------|-------------------|--------------------|---|
| emergency stop switch actuator with red mushroom head, unlocking clockwise. | main | twist to release | aluminium | arrows | 704.075.2 | 6 | 5 | 3 | 0,047 |
| | | | | stop | 704.075.3 | 6 | 5 | 3 | 0,047 |
| | | | plastic | arrows | 704.074.2 | 6 | 5 | 3 | 0,047 |
| | | | | stop | 704.074.3 | 6 | 5 | 3 | 0,047 |
| with red mushroom head, standard lock 251 unlocking clockwise. | main | key to release | aluminium | without | 704.078.0 | 6 | 6 | 3 | 0,063 |
| | | | plastic | without | 704.076.0 | 6 | 6 | 3 | 0,063 |

switching action: main = maintained action

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

emergency stop switch actuator foolproof



recommended accessories:

switching element for emergency stop switch → 291

label for emergency stop switch → 296

| | switching action | | | 37 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|---|------------------|-----------------------------|--|---------------------|-----------------|-------------------|--------------------|-------|
| emergency stop switch actuator foolproof as per EN 418 red mushroom-head cap, yellow actuator, standard lock no. 9500 unlocking anti-clockwise. max. 2 switching elements for clipping | main | unlocking key to release | marking of mushroom-head cap arrows | 704.066.2 | 6 | 8 | 4 | 0,300 |
| as per EN 418 red mushroom-head cap, yellow actuator, unlocking anti-clockwise. max. 2 switching elements for clipping | main | twist to release | arrows | 704.064.2 | 6 | 7 | 4 | 0,300 |


switching action: main = maintained action


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

pushbutton actuator with mushroom-head cap



recommended accessories:

 switching element → 290

| | switching action | material of front ring | colour of mushroom-head cap | 40 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|--|------------------|------------------------|-----------------------------|---------------------|-----------------|-------------------|--------------------|---|
| pushbutton actuator with mushroom-head cap | main | aluminium anodized | black | 704.073.0 | 2 | 5 | 3 | 0,044 |
| | | | green | 704.073.5 | 2 | 5 | 3 | 0,044 |
| | | | red | 704.073.2 | 2 | 5 | 3 | 0,044 |
| | | | yellow | 704.073.4 | 2 | 5 | 3 | 0,044 |
| | | plastic | black | 704.072.0 | 2 | 5 | 3 | 0,044 |
| | | | green | 704.072.5 | 2 | 5 | 3 | 0,044 |
| | | | red | 704.072.2 | 2 | 5 | 3 | 0,044 |
| | | | yellow | 704.072.4 | 2 | 5 | 3 | 0,044 |
| | mom | aluminium anodized | black | 704.071.0 | 3 | 5 | 3 | 0,044 |
| | | | green | 704.071.5 | 3 | 5 | 3 | 0,044 |
| | | | red | 704.071.2 | 3 | 5 | 3 | 0,044 |
| | | | yellow | 704.071.4 | 3 | 5 | 3 | 0,044 |
| | | plastic | black | 704.070.0 | 3 | 5 | 3 | 0,044 |
| | | | green | 704.070.5 | 3 | 5 | 3 | 0,044 |
| | | | red | 704.070.2 | 3 | 5 | 3 | 0,044 |
| | | | yellow | 704.070.4 | 3 | 5 | 3 | 0,044 |


switching action: main = maintained action, mom = momentary action


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325


illuminated pushbutton actuator with mushroom-head cap



recommended accessories:

 incandescent lamp → 293; neon lamp → 294; LED → 294

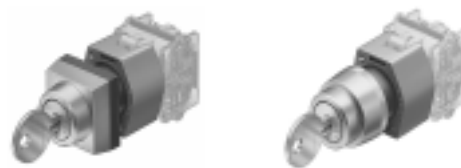
 switching element → 290

| | switching action | material of front ring | colour of mushroom-head cap | 40 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|---|------------------|------------------------|-----------------------------|---------------------|-----------------|-------------------|--------------------|---|
| illuminated pushbutton actuator with mushroom-head cap | main | plastic | blue | 704.086.6 | 4 | 9 | 3 | 0,044 |
| | | | clear | 704.086.7 | 4 | 9 | 3 | 0,044 |
| | | | green | 704.086.5 | 4 | 9 | 3 | 0,044 |
| | | | red | 704.086.2 | 4 | 9 | 3 | 0,044 |
| | | | yellow | 704.086.4 | 4 | 9 | 3 | 0,044 |
| | mom | plastic | blue | 704.084.6 | 5 | 9 | 3 | 0,044 |
| | | | clear | 704.084.7 | 5 | 9 | 3 | 0,044 |
| | | | green | 704.084.5 | 5 | 9 | 3 | 0,044 |
| | | | red | 704.084.2 | 5 | 9 | 3 | 0,044 |
| | | | yellow | 704.084.4 | 5 | 9 | 3 | 0,044 |

switching action: main = maintained action, mom = momentary action

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

keylock switch actuator 2 positions



recommended accessories:

switching element → 290

| | switching action | key removable in | 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | | |
|---|------------------|---|---------------------|---------------------|------------------|-------------------|--------------------|-------|-------|
| maint. 90° | mom | A | 704.343.0 | 704.123.0 | 7 | 10 | 2 | 0,070 | |
| mom. 42° | | keylock switch actuator 2 positions pos. A: basic position pos. B: momentary action 42° standard lock 251, other lock numbers on request | | | | | | | |
| pos. C +B: maintained action 90° standard lock 251, other lock numbers on request | | main | B | 704.340.0 | 704.120.0 | 8 | 10 | 2 | 0,070 |
| pos. C +B: maintained action 90° standard lock 251, other lock numbers on request | C | | 704.341.0 | 704.121.0 | 8 | 10 | 2 | 0,070 | |
| | C+B | | 704.342.0 | 704.122.0 | 8 | 10 | 2 | 0,070 | |

switching action: main = maintained action, mom = momentary action

spare key 704.989 can be ordered. Indicate lock no.

description see page 257

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

keylock switch actuator 3 positions



recommended accessories:

switching element → 290

| | switching action | key removable in | 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|------------------|------------------|---------------------|---------------------|-----------------|-------------------|--------------------|-------|
| maint. 90° | main-0-main | C+A+B | 704.333.0 | 704.113.0 | 12 | 10 | 2 | 0,070 |
| keylock switch actuator 3 positions pos. C + B: maintained position 90° pos. A: basic position standard lock 251, other lock numbers on request | | | | | | | | |
| maint./mom. 42° | main-0-main | A | 704.334.0 | 704.114.0 | 12 | 10 | 2 | 0,070 |
| | | C+B | 704.336.0 | 704.116.0 | 12 | 10 | 2 | 0,070 |
| pos. C + B: momentary action 42° pos. A: basic position standard lock 251, other lock numbers on request | mom-0-mom | A | 704.335.0 | 704.115.0 | 9 | 10 | 2 | 0,070 |
| | | | | | | | | |
| pos. C: maintained action 42° pos. A: basic position pos. B: momentary action 42° standard lock 251, other lock numbers on request | main-0-mom | C | 704.337.0 | 704.117.0 | 11 | 10 | 2 | 0,070 |
| | | C + A | 704.344.0 | 704.124.0 | 11 | 10 | 2 | 0,070 |
| pos. C: momentary action 42° pos. A: basic position pos. B: maintained action 42° standard lock 251, other lock numbers on request | mom-0-main | A | 704.338.0 | 704.118.0 | 10 | 10 | 2 | 0,070 |
| | | | | | | | | |

switching action: mom = momentary action, main = maintained action, 0 = basic position

spare key 704.989 can be ordered. Indicate lock no.

[description see page 257](#)

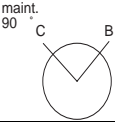
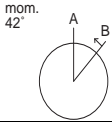


[technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325](#)

selector switch actuator 2 positions, lever short



recommended accessories:

switching element → 290

|   | switching action | lever | front bezel/ring |  30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|---|------------------|-------|------------------|---|------------------------|-----------------|-------------------|--------------------|---|
| | | | | | | | | | |
| selector switch actuator 2 positions, lever short pos. A: basic position pos. B: momentary action 42° | mom | black | plastic, grey | | 704.412.0 | 13 | 11 | 2 | 0,045 |
| | | | aluminium | | 704.413.0 | 13 | 11 | 2 | 0,045 |
| pos. C + B: maintained action 90° | main | black | plastic, grey | 704.512.0 | | 13 | 11 | 2 | 0,045 |
| | | | aluminium | | 704.411.0 | 14 | 11 | 2 | 0,045 |
| | | | plastic, grey | 704.510.0 | 704.410.0 | 14 | 11 | 2 | 0,045 |

switching action: main = maintained action, mom = momentary action

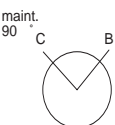
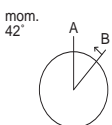


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

selector switch actuator 2 positions, lever long



recommended accessories:

switching element → 290

|   | switching action | lever | front bezel/ring |  30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|---|------------------|-------|------------------|---|------------------------|-----------------|-------------------|--------------------|---|
| | | | | | | | | | |
| selector switch actuator 2 positions, lever long pos. A: basic position pos. B: momentary action 42° | mom | black | aluminium | | 704.103.0 | 13 | 12 | 5 | 0,045 |
| | | | plastic, grey | 704.302.0 | 704.102.0 | 13 | 12 | 5 | 0,045 |
| pos. C + B: maintained action 90° | main | black | aluminium | | 704.101.0 | 14 | 12 | 5 | 0,045 |
| | | | plastic, grey | 704.300.0 | 704.100.0 | 14 | 12 | 5 | 0,045 |

switching action: main = maintained action, mom = momentary action

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

selector switch actuator 3 positions, short lever



recommended accessories:

switching element → 290

| | switching action | lever | front bezel/ring | 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|---|------------------|-------|------------------|----------------------------|------------------------|-----------------|-------------------|--------------------|-------|
| | | | | | | | | | |
| selector switch actuator 3 positions, short lever pos. C + B: maintained action 42° pos. A: basic position | main-0-main | black | aluminium | | 704.403.0 | 19 | 11 | 2 | 0,045 |
| | | | plastic, grey | 704.502.0 | 704.402.0 | 19 | 11 | 2 | 0,045 |
| pos. C + B: momentary action 42° pos. A: basic position | mom-0-mom | black | aluminium | | 704.405.0 | 16 | 11 | 2 | 0,045 |
| | | | plastic, grey | 704.504.0 | 704.404.0 | 16 | 11 | 2 | 0,045 |
| pos. C: maintained action 42° pos. A: basic position pos. B: momentary action 42° | main-0-mom | black | aluminium | | 704.407.0 | 18 | 11 | 2 | 0,045 |
| | | | plastic, grey | 704.506.0 | 704.406.0 | 18 | 11 | 2 | 0,045 |
| pos. C: momentary action 42° pos. A: basic position pos. B: maintained action 42° | mom-0-main | black | aluminium | | 704.409.0 | 17 | 11 | 2 | 0,045 |
| | | | plastic, grey | 704.508.0 | 704.408.0 | 15 | 11 | 2 | 0,045 |

switching action: main = maintained action, mom = momentary action, 0 = basic position

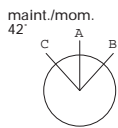
technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

selector switch actuator 3 positions, lever long



recommended accessories:

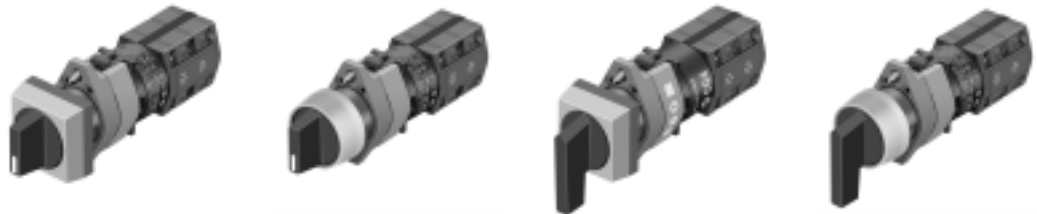
switching element → 290



| | switching action | lever | front bezel/ring | 30 x 30 mm part no. | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|------------------|-------|------------------|---------------------|---------------------|-----------------|-------------------|--------------------|-------|
| selector switch actuator 3 positions, lever long pos. C + B: maintained action 42° pos. A: basic position | main-0-main | black | aluminium | | 704.093.0 | 19 | 12 | 5 | 0,045 |
| | | | plastic, grey | 704.292.0 | 704.092.0 | 19 | 12 | 5 | 0,045 |
| pos. C + B: momentary action 42° pos. A: basic position | mom-0-mom | black | aluminium | | 704.095.0 | 16 | 12 | 5 | 0,045 |
| | | | plastic, grey | 704.294.0 | 704.094.0 | 16 | 12 | 5 | 0,045 |
| pos. C: maintained action 42° pos. A: basic position pos. B: momentary action 42° | main-0-mom | black | aluminium | | 704.097.0 | 18 | 12 | 5 | 0,045 |
| | | | plastic, grey | 704.296.0 | 704.096.0 | 18 | 12 | 5 | 0,045 |
| pos. C: momentary action 42° pos. A: basic position pos. B: maintained action 42° | mom-0-main | black | aluminium | | 704.099.0 | 17 | 12 | 5 | 0,045 |
| | | | plastic, grey | 704.298.0 | 704.098.0 | 17 | 12 | 5 | 0,045 |

switching action: mom = momentary action, main = maintained action, 0 = basic position
 technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

rotary selector switch actuator



recommended accessories:

rotary selector switch element 30° → 292; rotary selector switch element 45° → 292; rotary selector switch element 60° → 292; rotary selector switch element 90° → 293

| | lever | front bezel/ring | 30 x 30 mm part no. | 29 mm dia. part no. | technical drawing | mounting dimension | |
|--|-------|-------------------|---------------------|---------------------|-------------------|--------------------|--|
| rotary selector switch actuator | long | aluminium natural | | 704-101.1KN | 13 | 6 | |
| | | plastic, grey | 704-300.1KN | | 13 | 6 | |
| | short | aluminium natural | | 704-411.1KN | 13 | 6 | |
| | | plastic, grey | 704-510.1KN | | 13 | 6 | |

hint: 0-position: 9 o'clock
 technical drawing as of page 312, mounting dimensions as of page 319

buzzer



recommended accessories:

-

| | operation voltage | front cap | connection method | 29 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|------------------------|-------------------|-----------------------|-------------------|---------------------|-----------------|-------------------|--------------------|-------|
| buzzer IP 65 | 24 VDC | brass chromium-plated | PT | 14-810.902 | 20 | 14 | 2 | 0,016 |
| | | plastic, black | PT | 14-810.002 | 20 | 14 | 2 | 0,016 |

connection method: PT = plug-in terminal

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

indicator/flasher for flush mounting



recommended accessories:

incandescent lamp → 293; neon lamp → 294; LED → 294

flasher element → 291


| | illumination | colour of front ring | lens/markings foil | colour of lens | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|---|------------------------------------|----------------------|-------------------------|----------------|---------------------|-----------------|-------------------|--------------------|-------|
| indicator/flasher for flush mounting with aluminium front ring and plastic lens | for incandescent lamp or Multi-LED | aluminium natural | transparent/translucent | blue | 704.002.618 | 1 | 15 | 7 | 0,061 |
| | | | | clear | 704.002.718 | 1 | 15 | 7 | 0,061 |
| | | | | green | 704.002.518 | 1 | 15 | 7 | 0,061 |
| | | | | red | 704.002.218 | 1 | 15 | 7 | 0,061 |
| | | | | yellow | 704.002.418 | 1 | 15 | 7 | 0,061 |


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

pushbutton actuator for flush mounting



recommended accessories:

 switching element → 290

| | switching action | material/colour of front ring | material/colour of lens | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|--|--------------------|-------------------------------|-------------------------|---------------------|------------------|--------------------|--------------------|---|
| pushbutton actuator for flush mounting | main | aluminium natural | aluminium, black | 704.041.018 | 2 | 16 | 7 | 0,051 |
| | | | aluminium, blue | 704.041.618 | 2 | 16 | 7 | 0,051 |
| | | | aluminium, green | 704.041.518 | 2 | 16 | 7 | 0,051 |
| | | | aluminium, natural | 704.041.818 | 2 | 16 | 7 | 0,051 |
| | | | aluminium, red | 704.041.218 | 2 | 16 | 7 | 0,051 |
| | | | aluminium, yellow | 704.041.418 | 2 | 16 | 7 | 0,051 |
| | | | plastic, black | 704.042.018 | 2 | 16 | 7 | 0,051 |
| | | | plastic, blue | 704.042.618 | 2 | 16 | 7 | 0,051 |
| | | | plastic, clear | 704.042.718 | 2 | 16 | 7 | 0,051 |
| | | | plastic, green | 704.042.518 | 2 | 16 | 7 | 0,051 |
| | | | plastic, red | 704.042.218 | 2 | 16 | 7 | 0,051 |
| | | | plastic, yellow | 704.042.418 | 2 | 16 | 7 | 0,051 |
| | | | mom | aluminium natural | aluminium, black | 704.011.018 | 3 | 16 |
| | aluminium, blue | 704.011.618 | | | 3 | 16 | 7 | 0,051 |
| | aluminium, green | 704.011.518 | | | 3 | 16 | 7 | 0,051 |
| | aluminium, natural | 704.011.818 | | | 3 | 16 | 7 | 0,051 |
| | aluminium, red | 704.011.218 | | | 3 | 16 | 7 | 0,051 |
| | aluminium, yellow | 704.011.418 | | | 3 | 16 | 7 | 0,051 |
| | plastic, black | 704.012.018 | | | 3 | 16 | 7 | 0,051 |
| | plastic, blue | 704.012.618 | | | 3 | 16 | 7 | 0,051 |
| | plastic, clear | 704.012.718 | | | 3 | 16 | 7 | 0,051 |
| | plastic, green | 704.012.518 | | | 3 | 16 | 7 | 0,051 |
| | plastic, red | 704.012.218 | | | 3 | 16 | 7 | 0,051 |
| | plastic, yellow | 704.012.418 | | | 3 | 16 | 7 | 0,051 |


switching action: main = maintained action, mom = momentary action


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

illuminated pushbutton actuator for flush mounting



recommended accessories:

 incandescent lamp → 293; neon lamp → 294; LED → 294

 switching element → 290

| | switching action | material/colour of front ring | material/colour of lens | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension |  |
|---|------------------|-------------------------------|-------------------------|------------------------|-----------------|-------------------|--------------------|---|
| illuminated pushbutton actuator for flush mounting | main | aluminium natural | plastic, blue | 704.062.618 | 4 | 17 | 7 | 0,067 |
| | | | plastic, clear | 704.062.718 | 4 | 17 | 7 | 0,067 |
| | | | plastic, green | 704.062.518 | 4 | 17 | 7 | 0,067 |
| | | | plastic, red | 704.062.218 | 4 | 17 | 7 | 0,067 |
| | | | plastic, yellow | 704.062.418 | 4 | 17 | 7 | 0,067 |
| | mom | aluminium natural | plastic, blue | 704.032.618 | 5 | 17 | 7 | 0,067 |
| | | | plastic, clear | 704.032.718 | 5 | 17 | 7 | 0,067 |
| | | | plastic, green | 704.032.518 | 5 | 17 | 7 | 0,067 |
| | | | plastic, red | 704.032.218 | 5 | 17 | 7 | 0,067 |
| | | | plastic, yellow | 704.032.418 | 5 | 17 | 7 | 0,067 |

switching action: main = maintained action, mom = momentary action

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

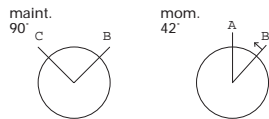
keylock switch actuator with 2 positions for flush mounting



recommended accessories:

switching element → 290

anti-twisting ring for flush mounting → 296



| | switching action | key removable in | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|---|------------------|------------------|---------------------|-----------------|-------------------|--------------------|-------|
| keylock switch actuator with 2 positions for flush mounting pos. A: basic position pos. B: momentary action 42° standard lock 251, other lock numbers on request | mom | A | 704.123.018 | 7 | 18 | 7 | 0,099 |
| pos. C +B: maintained action 90° standard lock 251, other lock numbers on request | main | B | 704.120.018 | 8 | 18 | 7 | 0,099 |
| | | C | 704.121.018 | 8 | 18 | 7 | 0,099 |
| | | C+B | 704.122.018 | 8 | 18 | 7 | 0,099 |

switching action: main = maintained action, mom = momentary action

description see page 257

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

To be continued on next side

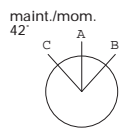
keylock switch actuator 3 positions for flush mounting



recommended accessories:

switching element → 290

anti-twisting ring for flush mounting → 296



| | switching action | key removable in | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|---|------------------|------------------|---------------------|-----------------|-------------------|--------------------|-------|
| keylock switch actuator 3 positions for flush mounting pos. C + B: maintained position 90° pos. A: basic position standard lock 251, other lock numbers on request | main-0-main | C+A+B | 704.113.018 | 12 | 18 | 7 | 0,099 |
| pos. C + B: momentary action 42° pos. A: basic position standard lock 251, other lock numbers on request | main-0-main | A | 704.114.018 | 12 | 18 | 7 | 0,099 |
| | | C+B | 704.116.018 | 12 | 18 | 7 | 0,099 |
| pos. C: maintained action 42° pos. A: basic position pos. B: momentary action 42° standard lock 251, other lock numbers on request | mom-0-mom | A | 704.115.018 | 9 | 18 | 7 | 0,099 |
| | | C + A | 704.117.018 | 11 | 18 | 7 | 0,099 |
| pos. C: momentary action 42° pos. A: basic position pos. B: maintained action 42° standard lock 251, other lock numbers on request | main-0-mom | C | 704.124.018 | 11 | 18 | 7 | 0,099 |
| | | C + A | 704.118.018 | 10 | 18 | 7 | 0,099 |

switching action: main = maintained action, mom = momentary action, 0 = basic position

[description see page 257](#)

[technical drawing as of page 312](#), [mounting dimensions as of page 319](#), [circuit drawing as of page 325](#)

selector switch actuator 2 positions for flush mounting, short lever



recommended accessories:

switching element → 290

anti-twisting ring for flush mounting → 296

| | switching action | lever | front ring | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|------------------|--------------|-------------------|---------------------|-----------------|-------------------|--------------------|-------|
| <p>selector switch actuator 2 positions for flush mounting, long lever pos. A: basic position pos. B: momentary action 42° pos. C + B: maintained action 90°</p> | mom | short, black | aluminium natural | 704.413.018 | 13 | 19 | 7 | 0,056 |
| | main | short, black | aluminium natural | 704.411.018 | 14 | 19 | 7 | 0,056 |

switching action: main = maintained action, mom = momentary action

[technical drawing as of page 312](#), [mounting dimensions as of page 319](#), [circuit drawing as of page 325](#)

selector switch actuator 2 positions for flush mounting, long lever



recommended accessories:

switching element → 290

anti-twisting ring for flush mounting → 296

| | switching action | lever | front ring | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|------------------|--------------|--------------------|---------------------|-----------------|-------------------|--------------------|-------|
| <p>selector switch actuator 2 positions for flush mounting, long lever pos. A: basic position pos. B: momentary action 42° pos. C + B: maintained action 90°</p> | mom | long, black | aluminium natural | 704.103.018 | 13 | 19 | 7 | 0,056 |
| | main | short, black | aluminium, natural | 704.101.018 | 14 | 19 | 7 | 0,056 |

To be continued on next side

switching action: main = maintained action, mom = momentary action

[technical drawing as of page 312](#), [mounting dimensions as of page 319](#), [circuit drawing as of page 325](#)

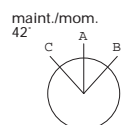
selector switch actuator 3 positions for flush mounting, short lever



recommended accessories:

switching element → 290

anti-twisting ring for flush mounting → 296



| | switching action | lever | front ring | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|--|------------------|--------------|-------------------|---------------------|-----------------|-------------------|--------------------|-------|
| selector switch actuator 2 positions for flush mounting, short lever pos. C + B: maintained action 42° pos. A: basic position | main-0-main | short, black | aluminium natural | 704.403.018 | 19 | 19 | 7 | 0,056 |
| pos. C + B: momentary action 42° pos. A: basic position | mom-0-mom | short, black | aluminium natural | 704.405.018 | 16 | 19 | 7 | 0,056 |
| pos. C: maintained action 42° pos. A: basic position pos. B: momentary action 42° | main-0-mom | short, black | aluminium natural | 704.407.018 | 18 | 19 | 7 | 0,056 |
| pos. C: momentary action 42° pos. A: basic position pos. B: maintained action 42° | mom-0-main | short, black | aluminium natural | 704.409.018 | 17 | 19 | 7 | 0,056 |

switching action: main = maintained action, mom = momentary action, 0 = basic position

technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

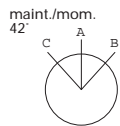
selector switch actuator 3 positions for flush mounting, long lever



recommended accessories:

switching element → 290

anti-twisting ring for flush mounting → 296



| | switching action | lever | front ring | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|---|------------------|-------------|-------------------|---------------------|-----------------|-------------------|--------------------|-------|
| selector switch actuator 3 positions for flush mounting, long lever pos. C + B: maintained action 42° pos. A: basic position | main-0-main | long, black | aluminium natural | 704.093.018 | 19 | 19 | 8 | 0,056 |
| pos. C + B: momentary action 42° pos. A: basic position | mom-0-mom | long, black | aluminium natural | 704.095.018 | 16 | 19 | 8 | 0,056 |
| pos. C: maintained action 42° pos. A: basic position pos. B: momentary action 42° | main-0-mom | long, black | aluminium natural | 704.097.018 | 18 | 19 | 8 | 0,056 |
| pos. C: momentary action 42° pos. A: basic position pos. B: maintained action 42° | mom-0-main | long, black | aluminium natural | 704.099.018 | 17 | 19 | 8 | 0,056 |


switching action: mom = momentary action, main = maintained action, 0 = basic position


technical drawing as of page 312, mounting dimensions as of page 319, circuit drawing as of page 325

rotary selector switch actuator for flush mounting



recommended accessories:

 rotary selector switch element 30° → 292; rotary selector switch element 45° → 292; rotary selector switch element 60° → 292; rotary selector switch element 90° → 293


| | lever | front ring | 35 mm dia. part no. | technical drawing | mounting dimension |  |
|---|-------|-------------------|----------------------|-------------------|--------------------|---|
| rotary selector switch actuator for flush mounting | long | aluminium natural | 704.101.118KN | 20 | 9 | 0,056 |
| | short | aluminium natural | 704.411.118KN | 20 | 9 | 0,056 |

[technical drawing as of page 312.](#) [mounting dimensions as of page 319](#)

key insert switch actuator 2 positions for flush mounting



recommended accessories:

 switching element → 290

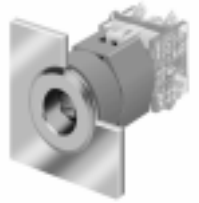
| | switching action | 35 mm dia. part no. | technical drawing | mounting dimension |  |
|--|------------------|---------------------|-------------------|--------------------|---|
| key insert switch actuator 2 positions for flush mounting | 0-main 90° | 704.101.0x28 | 21 | 7 | 0,500 |
| | 0-mom 42° | 704.103.0x28 | 21 | 7 | 0,500 |

switching action: mom = momentary action, main = maintained action, 0 = basic position
 x = letter for customized dimension of the rotor. At ordering please add dimensional drawing of rotor.

max. dimensions of the rotor 9x9 mm, inner circle 8

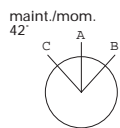
[technical drawing as of page 312.](#) [mounting dimensions as of page 319](#)

key insert switch actuator 3 positions for flush mounting



recommended accessories:

switching element → 290



| | switching action | 35 mm dia. part no. | technical drawing | mounting dimension | |
|--|---------------------|---------------------|-------------------|--------------------|-------|
| key insert switch actuator 3 positions for flush mounting | main 42°-0-main 42° | 704.093.0x28 | 21 | 7 | 0,500 |
| | main 42°-0-mom 42° | 704.097.0x28 | 21 | 7 | 0,500 |
| | mom 42°-0-main 42° | 704.099.0x28 | 21 | 7 | 0,500 |
| | mom 42°-0-mom 42° | 704.095.0x28 | 21 | 7 | 0,500 |

switching action: main = maintained action, mom = momentary action, 0 = basic position
 x = letter for customized dimension of the rotor. At ordering please add dimensional drawing of rotor.
 max. dimensions of the rotor 9x9 mm, inner circle 8
[technical drawing as of page 312](#), [mounting dimensions as of page 319](#)

buzzer for flush mounting



recommended accessories:



-

| | operation voltage | front cap | connection method | 35 mm dia. part no. | circuit drawing | technical drawing | mounting dimension | |
|----------------------------------|-------------------|-----------------------|-------------------|---------------------|-----------------|-------------------|--------------------|-------|
| buzzer for flush mounting | 24 VDC | brass chromium-plated | PT | 14-810.918 | 20 | 22 | 7 | 0,016 |
| | | plastic black | PT | 14-810.910 | 20 | 22 | 7 | 0,016 |

connection method: PT = plug-in terminal
[technical drawing as of page 312](#), [mounting dimensions as of page 319](#), [circuit drawing as of page 325](#)



at front

front bezel-set for flush mounting



| | use | material | colour | 35 mm dia. part no. | mounting dimension |  | |
|---|---------------------------|--------------------|---------|------------------------|--------------------|---|---|
| front bezel-set for flush mounting | for indicator, pushbutton | aluminium anodized | black | 704.955.0 | 7 | 0,016 |  |
| | | | natural | 704.955.1 | 7 | 0,016 | |
| | | stainless steel | natural | 704.955.9 | 7 | 0,016 | |

[mounting dimensions as of page 319](#)

legend plate



| | front dimension | part no. |  | |
|--|---|------------------|---|---|
| legend plate adhesive, aluminium anodized, natural, can also be engraved | 30 x 42 mm for 22.5 mm dia. mounting hole | 704.962.0 | 0,002 |  |
| | 42 x 42 mm for 22.5 mm dia. mounting hole | 704.962.5 | 0,003 | |
| | 42 x 48 mm for 30,5 mm dia. mounting hole | 704.962.6 | 0,004 | |
| | 48 x 48 mm for 22.5 mm dia. mounting hole | 704.962.7 | 0,004 | |

protective cover

| | use | 29 mm dia. part no. | technical drawing |  | |
|--|--------------------------------------|------------------------|-------------------|---|---|
| protective cover hinged, transparent, with means for sealing | for pushbuttons | 704.925.0 | 23 | 0,007 |  |
| | for selector switch short/long lever | 704.925.2 | 23 | 0,007 | |



[technical drawing as of page 312](#)

protective cover for flush mounting

| | use | 35 mm dia. part no. |  | |
|--|---|------------------------|---|---|
| protective cover for flush mounting hinged, transparent, with means for sealing aluminium anodized, natural | for pushbutton, selector switch short lever | 704.928.38 | 0,009 |  |
| | for pushbuttons | 704.928.18 | 0,009 | |



protective front ring

for pushbutton/indicator front illumination



| | material | Ø 29 mm part no. |  | |
|--|----------------------|---------------------|---|---|
| protective front ring with transparent silicone membrane temperature resistance: -40°C to +85°C | aluminium anodized | 704.600.3 | 0,005 |  |
| with transparent silicone membrane (to resist sea water) temperature resistance: -40°C to +85°C | brass, nickel plated | 704.600.2 | 0,005 | |

protective front ring for flush mounting

for pushbutton/indicator

| | material | Ø 35 mm part no. |  | |
|---|-----------------------------|---------------------|---|---|
| protective front ring for flush mounting with transparent silicone membrane | aluminium anodized, black | 704.955.4 | 0,005 |  |
| | aluminium anodized, natural | 704.955.3 | 0,005 | |



blind plug

| | colour | 30 x 30 mm part no. | 28 mm dia. part no. | mounting dimension |  | |
|-------------------|--------|------------------------|------------------------|--------------------|---|---|
| blind plug | black | | 704.960.7 | 2 | 0,004 |  |
| | | 704.964.7 | | 2 | 0,009 | |

mounting dimensions as of page 319

spare key


standard lock 251, others available on request

| | part no. |  | |
|------------------|------------------|---|---|
| spare key | 704.989.0 | 0,006 |  |

[description see page 257](#)

at back

switching element

| switching element | switching system | contacts | connection method | material of contacts | part no. | circuit drawing | technical drawing |  |
|-------------------|------------------|-----------|-------------------|----------------------|------------------|-----------------|-------------------|---|
| switching element | SA | 1NC | PT 6,3 | hard silver | 704.905.2 | 21 | 24 | 0,021 |
| | | | SCH | gold/silver | 704.901.2 | 21 | 24 | 0,021 |
| | | | | hard silver | 704.900.2 | 21 | 24 | 0,021 |
| | | | | silver/palladium | 704.902.2 | 21 | 24 | 0,021 |
| | | 1NC + 1NO | PT 6,3 | hard silver | 704.905.5 | 24 | 24 | 0,028 |
| | | | SCH | gold/silver | 704.901.5 | 24 | 24 | 0,028 |
| | | | | hard silver | 704.900.5 | 24 | 24 | 0,028 |
| | | | | silver/palladium | 704.902.5 | 24 | 24 | 0,028 |
| | | 1NO | PT 6,3 | hard silver | 704.905.1 | 22 | 24 | 0,021 |
| | | | SCH | gold/silver | 704.901.1 | 22 | 24 | 0,021 |
| | | | | hard silver | 704.900.1 | 22 | 24 | 0,021 |
| | | | | silver/palladium | 704.902.1 | 22 | 24 | 0,021 |
| | | 2NC | PT 6,3 | hard silver | 704.905.4 | 23 | 24 | 0,028 |
| | | | SCH | gold/silver | 704.901.4 | 23 | 24 | 0,028 |
| | | | | hard silver | 704.900.4 | 23 | 24 | 0,028 |
| | | | | silver/palladium | 704.902.4 | 23 | 24 | 0,028 |
| | | 2NO | PT 6,3 | hard silver | 704.905.3 | 25 | 24 | 0,028 |
| | | | SCH | gold/silver | 704.901.3 | 25 | 24 | 0,028 |
| | hard silver | | | 704.900.3 | 25 | 24 | 0,028 | |
| | silver/palladium | | | 704.902.3 | 25 | 24 | 0,028 | |
| | T | 1NC | PT 6,3 | hard silver | 704.915.2 | 21 | 24 | 0,021 |
| | | | SCH | gold/silver | 704.911.2 | 21 | 24 | 0,021 |
| | | | | hard silver | 704.910.2 | 21 | 24 | 0,021 |
| | | | | silver/palladium | 704.912.2 | 21 | 24 | 0,021 |
| | | 1NC + 1NO | PT 6,3 | hard silver | 704.915.5 | 24 | 24 | 0,028 |
| | | | SCH | gold/silver | 704.911.5 | 24 | 24 | 0,028 |
| | | | | hard silver | 704.910.5 | 24 | 24 | 0,028 |
| | | | | silver/palladium | 704.912.5 | 24 | 24 | 0,028 |
| | | 1NO | PT 6,3 | hard silver | 704.915.1 | 22 | 24 | 0,021 |
| | | | SCH | gold/silver | 704.911.1 | 22 | 24 | 0,021 |
| | | | | hard silver | 704.910.1 | 22 | 24 | 0,021 |
| | | | | silver/palladium | 704.912.1 | 22 | 24 | 0,021 |
| | | 2NC | PT 6,3 | hard silver | 704.915.4 | 23 | 24 | 0,028 |
| | | | SCH | gold/silver | 704.911.4 | 23 | 24 | 0,028 |
| | | | | hard silver | 704.910.4 | 23 | 24 | 0,028 |
| | | | | silver/palladium | 704.912.4 | 23 | 24 | 0,028 |
| 2NO | | PT 6,3 | hard silver | 704.915.3 | 25 | 24 | 0,285 | |
| | | SCH | gold/silver | 704.911.3 | 25 | 24 | 0,028 | |
| | hard silver | | 704.910.3 | 25 | 24 | 0,028 | | |
| | silver/palladium | | 704.912.3 | 25 | 24 | 0,028 | | |




switching system: SA = snap-action switching element, T = slow-make switching element

connection method: PT 6,3 = plug-in terminal 6.3 mm, SCH = screw terminal

contacts: NC = normally closed, NO = normally open

technical drawing as of page 312, circuit drawing as of page 325


switching element for emergency stop switch

| | switching system | contacts | connection method | material of contacts | part no. | circuit drawing | technical drawing |  |
|--|------------------|-----------|-------------------|----------------------|------------------|-----------------|-------------------|---|
| switching element for emergency stop switch | T | 1NC | PT 6,3 | hard silver | 704.915.2 | 21 | 24 | 0,021 |
| | | | SCH | gold/silver | 704.911.2 | 21 | 24 | 0,021 |
| | | | | hard silver | 704.910.2 | 21 | 24 | 0,021 |
| | | | | silver/palladium | 704.912.2 | 21 | 24 | 0,021 |
| | | 1NC + 1NO | PT 6,3 | hard silver | 704.915.5 | 24 | 24 | 0,028 |
| | | | SCH | gold/silver | 704.911.5 | 24 | 24 | 0,028 |
| | | | | hard silver | 704.910.5 | 24 | 24 | 0,028 |
| | | | | silver/palladium | 704.912.5 | 24 | 24 | 0,028 |
| | | 1NO | PT 6,3 | hard silver | 704.915.1 | 22 | 24 | 0,021 |
| | | | SCH | gold/silver | 704.911.1 | 22 | 24 | 0,021 |
| | | | | hard silver | 704.910.1 | 22 | 24 | 0,021 |
| | | | | silver/palladium | 704.912.1 | 22 | 24 | 0,021 |
| | 2NC | PT 6,3 | hard silver | 704.915.4 | 23 | 24 | 0,028 | |
| | | SCH | gold/silver | 704.911.4 | 23 | 24 | 0,028 | |
| | | | hard silver | 704.910.4 | 23 | 24 | 0,028 | |
| | | | silver/palladium | 704.912.4 | 23 | 24 | 0,028 | |
| | 2NO | PT 6,3 | hard silver | 704.915.3 | 25 | 24 | 0,285 | |
| | | SCH | gold/silver | 704.911.3 | 25 | 24 | 0,028 | |
| | | | hard silver | 704.910.3 | 25 | 24 | 0,028 | |
| | | | silver/palladium | 704.912.3 | 25 | 24 | 0,028 | |



switching system: T = slow-make switching element
 connection method: PT 6,3 = plug-in terminal 6.3 mm, SCH = screw terminal
 contacts: NC = normally closed, NO = normally open
 technical drawing as of page 312, circuit drawing as of page 325


flasher element

| | operation voltage | connection method | part no. | technical drawing |  |
|--|----------------------------|-------------------|------------------|-------------------|---|
| flasher element lamp voltage 130 V, 20 mA ambient temperature 0-50°C flasher frequency 1.5 Hz pulse ratio 1:1 | 230 VAC +6%/-10%, 50-60 Hz | SCH | 704.943.0 | 25 | 0,024 |
| lamp voltage 24 V; 10 mA-85 mA ambient temperature 0-50°C flasher frequency 1.5 Hz pulse ratio 1:1 | 24 VDC +/-15% | SCH | 704.943.5 | 25 | 0,024 |
| lamp voltage 60 V, 33 mA ambient temperature 0-50°C flasher frequency 1.5 Hz pulse ratio 1:1 | 115 VAC +/-10%, 50-60 Hz | SCH | 704.943.1 | 25 | 0,024 |




connection method: SCH = screw terminal
 typical applications see page 326
 technical drawing as of page 312

rotary selector switch element 30°

| | contacts | start / end position | part no. | connecting diagrams | | |
|------------------------------------|-------------|----------------------|-----------|---------------------|---|--|
| rotary selector switch element 30° | 9 (1 pole) | a/i | 704-8A236 | 1 |  | |
| | 10 (1 pole) | a/k | 704-8A237 | 2 | | |
| | 11 (1 pole) | a/l | 704-8A238 | 3 | | |
| | 12 (1 pole) | a/m | 704-8A239 | 4 | | |
| | | a/without limit | 704-8A639 | 4 | | |


connecting diagrams as of page 321

rotary selector switch element 45°

| | contacts | start / end position | weight (g) | part no. | connecting diagrams | |
|------------------------------------|------------|----------------------|------------|-----------|---------------------|---|
| rotary selector switch element 45° | 7 (1 pole) | a/g | | 704-8A234 | 5 |  |
| | 7 (2 pole) | a/g | | 704-8A254 | 6 | |
| | 8 (1 pole) | a/h | | 704-8A235 | 5 | |
| | 8 (2 pole) | a/h | | 704-8A255 | 6 | |



connecting diagrams as of page 321

rotary selector switch element 60°

| | contacts | start / end position | part no. | connecting diagrams | | |
|------------------------------------|-----------------------------|----------------------|-----------|---------------------|---|--|
| rotary selector switch element 60° | 3 (1 pole) | a/c | 704-8A230 | 7 |  | |
| | 3 (1 pole, d. c. separated) | a/c | 704-8A730 | 18 | | |
| | 3 (2 pole) | a/c | 704-8A250 | 8 | | |
| | 3 (3 pole) | a/c | 704-8A270 | 9 | | |
| | 4 (1 pole) | a/d | 704-8A231 | 10 | | |
| | 4 (1 pole, d. c. separated) | a/d | 704-8A731 | 19 | | |
| | 4 (2 pole) | a/d | 704-8A251 | 11 | | |
| | 4 (3 pole) | a/d | 704-8A271 | 12 | | |
| | 5 (1 pole) | a/e | 704-8A232 | 13 | | |
| | 5 (2 pole) | a/e | 704-8A252 | 14 | | |
| | 5 (3 pole) | a/e | 704-8A272 | 15 | | |
| | 6 (1 pole) | a/f | 704-8A233 | 16 | | |
| | 6 (2 pole) | a/f | 704-8A253 | 17 | | |



connecting diagrams as of page 321

rotary selector switch element 90°


| | contacts | start / end position | part no. | connecting diagrams |  | |
|---|------------|----------------------|------------------|---------------------|---|---|
| rotary selector switch element 90° | 4 (1 pole) | a/d | 704-8A226 | - | |  |
| | | a/without limit | 704-8A225 | - | | |

connecting diagrams as of page 321

terminal cover



| | use | part no. |  | |
|-----------------------|--------------------|------------------|---|---|
| terminal cover | for screw terminal | 704.964.5 | 0,003 |  |

terminal marking



| | Inscription | part no. | | |
|---|-------------|------------------|--|---|
| terminal marking 1 NC + 1 NO (for 1. or 2. switching element) | 13/21 33/41 | 704.965.9 | |  |
| | 22/14 42/34 | 704.966.0 | | |
| 1 NC + 1 NO (for 3. or 4. switching element) | 53/61 73/81 | 704.966.1 | | |
| | 62/54 82/74 | 704.966.2 | | |
| 2 NC (for 1. or 2. switching element) | 11/21 31/41 | 704.965.5 | | |
| | 22/12 42/32 | 704.965.6 | | |
| 2 NC (for 3. or 4. switching element) | 51/61 71/81 | 704.965.7 | | |
| | 62/52 82/72 | 704.965.8 | | |
| 2 NO (for 1. or 2. switching element) | 13/23 33/43 | 704.965.1 | | |
| | 24/14 44/34 | 704.965.2 | | |
| 2 NO (for 3. or 4. switching element) | 53/63 73/83 | 704.965.3 | | |
| | 64/54 84/74 | 704.965.4 | | |

for illumination



incandescent lamp

| | voltage/current | part no. |  | |
|---------------------------------------|-----------------|---------------------------------|---|---|
| incandescent lamp base Ba9s | 6 AC/DC/200 mA | 10-1406.1369 (700.000.0) | 0,002 |  |
| | 12 AC/DC/100 mA | 10-1409.1329 (700.000.1) | 0,002 | |
| | 24 AC/DC/50 mA | 10-1412.1279 (700.000.2) | 0,002 | |
| | 36 AC/DC/56 mA | 10-1416.1289 (700.000.3) | 0,002 | |
| | 48 AC/DC/42 mA | 10-1419.1249 (700.000.4) | 0,002 | |
| | 60 AC/DC/33 mA | 10-1420.1219 (700.000.5) | 0,002 | |
| | 110 AC/DC/22 mA | 10-1422.1179 (700.000.6) | 0,002 | |
| | 130 AC/DC/20 mA | 10-1424.1179 (700.000.7) | 0,002 | |



neon lamp

| | voltage/current | colour | part no. |  | |
|------------------------|-----------------|--------|----------------------------------|---|---|
| neon lamp base Ba9s | 115 AC/0.7 mA | red | 10-7423.2012 (700.001.0) | 0,002 |  |
| | 230 AC/1.2 mA | green | 10-7425.2015 (700.001.15) | 0,002 | |
| | 230 AC/1.5 mA | red | 10-7425.2022 (700.001.1) | 0,002 | |

LED

| | number of chips | voltage/current | colour | part no. |  | |
|------------------|-----------------|---------------------|---------------------|---------------------|---|---|
| LED base Ba9s | 1 chip | 24 VDC/14 mA | white | 10-2412.3139 | 0,002 |  |
| | | 28 VDC/14 mA | white | 10-2413.3139 | 0,002 | |
| | 8 chips | 6 VDC/80 mA | green | 10-6406.3315 | 0,002 | |
| | | | red | 10-6406.3312 | 0,002 | |
| | | | yellow | 10-6406.3314 | 0,002 | |
| | | 12 VDC/40 mA | green | 10-6409.3245 | 0,002 | |
| | | | red | 10-6409.3242 | 0,002 | |
| | | | yellow | 10-6409.3244 | 0,002 | |
| | | 24 VDC/19 mA | green | 10-6412.3165 | 0,002 | |
| | | | red | 10-6412.3162 | 0,002 | |
| | | | yellow | 10-6412.3164 | 0,002 | |
| | 28 VDC/19 mA | green | 10-6413.3165 | 0,002 | | |
| | | red | 10-6413.3162 | 0,002 | | |
| | | yellow | 10-6413.3164 | 0,002 | | |
| | 48 VDC/16 mA | green | 10-6419.3155 | 0,002 | | |
| red | | 10-6419.3152 | 0,002 | | | |
| yellow | | 10-6419.3154 | 0,002 | | | |



diode block

| | connection method | part no. | circuit drawing | technical drawing |  | |
|-------------------------|-------------------|------------------|-----------------|-------------------|---|---|
| diode block 1 N 4007 | SCH | 704.942.5 | 26 | 26 | 0,019 |  |

connection method: SCH = screw terminal

technical drawing as of page 312, circuit drawing as of page 325



lamp transformer

| | operation voltage | connection method | part no. | circuit drawing | technical drawing |  | |
|--|-------------------|-------------------|------------------|-----------------|-------------------|---|---|
| lamp transformer for lamp rating 24 V/50 mA SEV class 2a, 1.2 VA, 50/60 Hz | 115/24 VAC | SCH | 704.970.3 | 27 | 27 | 0,100 |  |
| | 230/24 VAC | SCH | 704.970.4 | 27 | 27 | 0,100 | |
| | 400/24 VAC | SCH | 704.970.5 | 27 | 27 | 0,100 | |
| | 440/24 VAC | SCH | 704.970.6 | 27 | 27 | 0,100 | |

connection method: SCH = screw terminal

technical drawing as of page 312, circuit drawing as of page 325



capacitor block

| | operation voltage | connection method | part no. | circuit drawing | technical drawing |  | |
|---|-------------------|-------------------|------------------|-----------------|-------------------|---|---|
| capacitor block for lamp voltage 130 V/20 mA, 50 Hz | 230/130 VAC | SCH | 704.942.0 | 28 | 26 | 0,018 |  |

connection method: SCH = screw terminal

[technical drawing as of page 312](#), [circuit drawing as of page 325](#)



resistor block

| | operation voltage | connection method | part no. | circuit drawing | technical drawing |  | |
|--|-------------------|-------------------|------------------|-----------------|-------------------|---|--|
| resistor block for lamp rating 130 V/20 mA | 230/130 V | SCH | 704.941.0 | 29 | 26 | 0,017 |  |
| for lamp rating 60 V/33 mA | 125/60 V | SCH | 704.941.5 | 29 | 26 | 0,006 | |

connection method: SCH = screw terminal

[technical drawing as of page 312](#), [circuit drawing as of page 325](#)



resistor diode block

| | operation voltage | connection method | part no. | circuit drawing | technical drawing |  | |
|--|-------------------|-------------------|------------------|-----------------|-------------------|---|---|
| resistor diode block for lamp rating 130 V/20 mA | 230/130 V | SCH | 704.941.9 | 30 | 26 | 0,017 |  |

connection method: SCH = screw terminal



[technical drawing as of page 312](#), [circuit drawing as of page 325](#)

capacitor

| | value | part no. |  | |
|---|-------------|------------------|---|---|
| capacitor use with 130 V/20 mA, 50 Hz lamp rating | 230 V/130 V | 700.003.0 | 0,004 |  |

Wire in accordance with local electrical safety regulations.



series resistor

| | value | part no. |  | |
|--|-------------|------------------|---|---|
| series resistor use with 130 V/20 mA lamp rating | 230 V/130 V | 704.904.4 | 0,004 |  |



Wire in accordance with local electrical safety regulations.

for emergency stop switch


label for emergency stop switch

| | marking | part no. |  | |
|--|----------------------------|------------------|---|---|
| label for emergency stop switch yellow | ARRET D'URGENCE 60 mm dia. | 704.963.7 | 0,011 |  |
| | Emergency Stop 60 mm dia. | 704.963.6 | 0,011 | |
| | Emergency Stop 90 mm dia. | 704.963.1 | 0,011 | |
| | NOT-AUS 60 mm dia. | 704.963.5 | 0,011 | |
| | NOT-AUS 90 mm dia. | 704.963.0 | 0,011 | |

protective shroud for emergency stop switch



| | colour | part no. |  | |
|---|---------|------------------|---|--|
| protective shroud for emergency stop switch of aluminium anodized | natural | 704.927.0 | 0,500 |  |
| | yellow | 704.927.4 | 0,500 | |

enclosure for emergency stop switch



| | part no. | | |
|---|-------------------|--|---|
| enclosure for emergency stop switch colour yellow | 704.944.33 | |  |

assembling

anti-twisting ring for flush mounting

| | part no. |  | |
|--|------------------|---|---|
| anti-twisting ring for flush mounting | 704.954.0 | 0,002 |  |



reducing ring

| | colour | part no. |  | |
|---|------------------|------------------|---|---|
| reducing ring for mounting of pushbutton 22.5 mm dia. in mounting hole 30.5 mm dia. | black anodized | 704.960.0 | 0,004 |  |
| | natural anodized | 704.960.8 | 0,004 | |

mounting plate



| | part no. |  | |
|---|------------------|---|---|
| mounting plate for separate mounting of lamp transformer, resistor block or capacitor block | 704.940.8 | 0,006 |  |

snap-on base



| | DIN mounting rail | part no. |  | |
|--|-------------------|------------------|---|---|
| snap-on base for clipping, for separate mounting of lamp transformer, resistor block or capacitor block | 46277 p. 1 | 704.940.9 | 0,006 |  |
| | 46277 p. 3 | 704.941.1 | 0,006 | |

reinforcement plate



for thin front panels and plastic case

| | part no. |  | |
|----------------------------|------------------|---|--|
| reinforcement plate | 704.960.9 | 0,014 |  |



lens remover

| | part no. |  | |
|---|------------------|---|---|
| lens remover for pushbuttons for flush mounting | 700.006.0 | 0,003 |  |



lamp remover

| | part no. |  | |
|---------------------|------------------|---|---|
| lamp remover | 700.004.0 | 0,003 |  |



mounting tool for indicator

| | part no. |  | |
|------------------------------------|------------------|---|---|
| mounting tool for indicator | 700.005.0 | 0,020 |  |

mounting tool for key insert switch



| | part no. |  | |
|--|------------------|---|---|
| mounting tool for key insert switch | 704.990.0 | 0,020 |  |

for indicator compact**indicator actuator for indicator compact**



| | colour | 29 mm dia. part no. | circuit drawing |  | |
|--|--------|------------------------|-----------------|---|---|
| indicator actuator for indicator compact with series resistor for 110/125 V and incandescent lamp 60 V/33 mA | grey | 704.642.2 | 1 | 0,009 |  |
| with series resistor for 220/240 V and incandescent lamp 130 V/20 mA | grey | 704.642.1 | 1 | 0,020 | |
| without built-in series resistor | grey | 704.642.0 | 1 | 0,006 | |

circuit drawing as of page 325



lens cap round, plastic

| | shape | lens cap | colour | 29 mm dia. part no. |  | |
|--------------------------------|-------|-------------|-------------------|------------------------|---|---|
| lens cap round, plastic | flat | transparent | blue | 704.603.6 | 0,003 |  |
| | | | colourless, clear | 704.603.7 | 0,003 | |
| | | | green | 704.603.5 | 0,003 | |
| | | | red | 704.603.2 | 0,003 | |
| | | | yellow | 704.603.4 | 0,003 | |



marking cap for lens cap round

| | marking cap | colour | 29 mm dia. part no. |  | |
|---------------------------------------|---------------------|-------------------|------------------------|---|---|
| marking cap for lens cap round | translucent, ribbed | white | 704.608.9 | 0,002 |  |
| for neon lamps and LED's | transparent, ribbed | colourless, clear | 704.608.7 | 0,002 | |



for indicator round, front illumination**indicator actuator round, front illumination**

| | colour | 29 mm dia. part no. |  | |
|---|--------|------------------------|---|---|
| indicator actuator round, front illumination | grey | 704.633.1 | 0,020 |  |



lens round, plastic

| | shape | lens | colour | 29 mm dia. part no. |  | |
|----------------------------|-------|-------------|-------------------|------------------------|---|---|
| lens round, plastic | flat | transparent | blue | 704.602.6 | 0,001 |  |
| | | | colourless, clear | 704.602.7 | 0,001 | |
| | | | green | 704.602.5 | 0,001 | |
| | | | red | 704.602.2 | 0,001 | |
| | | | yellow | 704.602.4 | 0,001 | |



marking foil for lens round plastic

| | front shape | marking plate | colour | part no. |  | |
|--|-------------|---------------------|-------------------|------------------|---|---|
| marking foil for lens round plastic | round | translucent | white | 704.609.9 | 0,001 |  |
| for neon lamps | round | transparent, ribbed | colourless, clear | 704.609.7 | 0,001 | |

lens round raised plastic

| | shape | lens | colour | 29 mm dia. part no. |  | |
|----------------------------------|-------|-------------|-------------------|---------------------|---|---|
| lens round raised plastic | flat | transparent | colourless, clear | 704.611.7 | 0,002 |  |
| | | | green | 704.611.5 | 0,002 | |
| | | | red | 704.611.2 | 0,002 | |
| | | | yellow | 704.611.4 | 0,002 | |



marking cap for lens round raised

| | front shape | marking cap | colour | part no. |  | |
|--|-------------|---------------------|-------------------|------------------|---|--|
| marking cap for lens round raised | round | translucent, ribbed | white | 704.610.9 | 0,001 |  |
| | round | transparent, ribbed | colourless, clear | 704.610.7 | 0,001 | |



front ring

| | material | colour | 29 mm dia. part no. |  | |
|-------------------|--------------------|------------------|---------------------|---|---|
| front ring | aluminium anodized | black | 704.600.1A | 0,005 |  |
| | | natural | 704.600.1 | 0,005 | |
| | plastic | black | 704.600.0 | 0,003 | |
| | | chromium-plated | 704.600.4 | 0,003 | |
| | | light grey | 704.600.6 | 0,003 | |
| stainless steel | natural | 704.600.9 | 0,006 | | |
| front ring raised | plastic | light grey | 704.600.7 | 0,003 | |

bayonet flange

| | material | part no. |  | |
|-----------------------|----------|------------------|---|---|
| bayonet flange | metal | 704.960.5 | 0,025 |  |
| | plastic | 704.950.5 | 0,015 | |



lamp block

| | connection method | part no. | circuit drawing |  | |
|------------|-------------------|-----------|-----------------|---|---|
| lamp block | PT | 704.950.1 | 1 | 0,016 |  |
| | SCH | 704.950.0 | 1 | 0,016 | |



connection method: PT = plug-in terminal, SCH = screw terminal
 circuit drawing as of [page 325](#)

for indicator square, front illumination

indicator actuator square, front illumination



| | colour | \varnothing 30 x 30 mm part no. |  | |
|---|--------|---|---|---|
| indicator actuator square, front illumination | black | 704.733.0 | 0,020 |  |
| | grey | 704.733.1 | 0,020 | |

lens square, plastic



| | shape | lens | colour | \varnothing 30 x 30 mm part no. |  | |
|----------------------|-------|-------------|-------------------|---|---|---|
| lens square, plastic | flat | transparent | blue | 704.702.6 | 0,001 |  |
| | | | colourless, clear | 704.702.7 | 0,001 | |
| | | | green | 704.702.5 | 0,001 | |
| | | | red | 704.702.2 | 0,001 | |
| | | | yellow | 704.702.4 | 0,001 | |

lens holder



for lens square

| | lens holder | colour | part no. |  | |
|--|-------------|--------|-----------|---|---|
| lens holder can be marked for neon lamps | translucent | white | 704.709.9 | 0,003 |  |
| | transparent | clear | 704.709.7 | 0,003 | |



marking foil for lens square

| | front shape | colour | part no. |  | |
|--|-------------|-------------------|-----------|---|---|
| marking foil for lens square can be hot pressed | square | colourless, clear | 704.706.7 | 0,001 |  |



front bezel

| | front shape | material | colour | part no. |  | |
|-------------|-------------|----------|-----------------|------------------|---|---|
| front bezel | square | plastic | black | 704.701.0 | 0,002 |  |
| | | | chromium-plated | 704.701.4 | 0,002 | |
| | | | grey | 704.701.6 | 0,002 | |

bayonet flange

| | material | part no. |  | |
|----------------|----------|------------------|---|---|
| bayonet flange | metal | 704.960.5 | 0,025 |  |
| | plastic | 704.950.5 | 0,015 | |



lamp block

| | connection method | part no. | circuit drawing |  | |
|------------|-------------------|------------------|-----------------|---|---|
| lamp block | PT | 704.950.1 | 1 | 0,016 |  |
| | SCH | 704.950.0 | 1 | 0,016 | |

connection method: PT = plug-in terminal, SCH = screw terminal
 circuit drawing as of [page 325](#)



for indicator round, full face illumination

indicator actuator round, full face illumination



| | colour | 29 mm dia. part no. | circuit drawing |  | |
|--|--------|------------------------|-----------------|---|---|
| indicator actuator round, full face illumination | grey | 704.630.1 | - | 0,020 |  |

circuit drawing as of [page 325](#)



lens cap round, plastic

| | shape | lens cap | colour | 29 mm dia. part no. |  | |
|--------------------------------|-------|-------------|-------------------|------------------------|---|---|
| lens cap round, plastic | flat | transparent | blue | 704.603.6 | 0,003 |  |
| | | | colourless, clear | 704.603.7 | 0,003 | |
| | | | green | 704.603.5 | 0,003 | |
| | | | red | 704.603.2 | 0,003 | |
| | | | yellow | 704.603.4 | 0,003 | |



marking cap for lens cap round

| | marking cap | colour | 29 mm dia. part no. |  | |
|---|---------------------|-------------------|------------------------|---|---|
| marking cap for lens cap round for neon lamps and LED's | translucent, ribbed | white | 704.608.9 | 0,002 |  |
| | transparent, ribbed | colourless, clear | 704.608.7 | 0,002 | |

bayonet flange

| | material | part no. |  | |
|-----------------------|----------|------------------|---|--|
| bayonet flange | metal | 704.960.5 | 0,025 |  |
| | plastic | 704.950.5 | 0,015 | |



lamp block

| | connection method | part no. | circuit drawing |  | |
|-------------------|-------------------|------------------|-----------------|---|---|
| lamp block | PT | 704.950.1 | 1 | 0,016 |  |
| | SCH | 704.950.0 | 1 | 0,016 | |



connection method: PT = plug-in terminal, SCH = screw terminal
 circuit drawing as of [page 325](#)

for indicator square, full face illumination

indicator actuator square, full face illumination



| | colour | 30 x 30 mm part no. |  | |
|---|--------|---------------------|---|---|
| indicator actuator square, full face illumination | black | 704.730.0 | 0,005 |  |
| | grey | 704.730.1 | 0,005 | |

lens cap square, plastic



| | shape | lens cap | colour | 30 x 30 mm part no. |  | |
|--------------------------|-------|-------------|-------------------|---------------------|---|---|
| lens cap square, plastic | flat | transparent | blue | 704.703.6 | 0,003 |  |
| | | | colourless, clear | 704.703.7 | 0,003 | |
| | | | green | 704.703.5 | 0,003 | |
| | | | red | 704.703.2 | 0,003 | |
| | | | yellow | 704.703.4 | 0,003 | |

diffusor cap



for lens cap square

| | colour | 30 x 30 mm part no. |  | |
|-------------------------------|--------|---------------------|---|---|
| diffusor cap can be marked | white | 704.708.9 | 0,004 |  |
| for neon lamp | clear | 704.708.7 | 0,004 | |



marking foil for lens square

| | front shape | colour | part no. |  | |
|--|-------------|-------------------|------------------|---|---|
| marking foil for lens square can be hot pressed | square | colourless, clear | 704.706.7 | 0,001 |  |

bayonet flange

| | material | part no. |  | |
|----------------|----------|------------------|---|---|
| bayonet flange | metal | 704.960.5 | 0,025 |  |
| | plastic | 704.950.5 | 0,015 | |



lamp block

| | connection method | part no. | circuit drawing |  | |
|------------|-------------------|-----------|-----------------|---|---|
| lamp block | PT | 704.950.1 | 1 | 0,016 |  |
| | SCH | 704.950.0 | 1 | 0,016 | |

connection method: PT = plug-in terminal, SCH = screw terminal
 circuit drawing as of [page 325](#)



for illuminated-/pushbutton round

illuminated-/pushbutton actuator round



| | switching action | colour | 29 mm dia. part no. |  | |
|--|------------------|--------|------------------------|---|--|
| illuminated-/pushbutton actuator round | main | grey | 704.632.1 | 0,009 |  |
| | mom | grey | 704.631.1 | 0,009 | |

switching action: main = maintained action, mom = momentary action



lens round, plastic

| | shape | lens | colour | 29 mm dia. part no. |  | |
|---------------------|-------|-------------|-------------------|------------------------|---|---|
| lens round, plastic | flat | transparent | blue | 704.602.6 | 0,001 |  |
| | | | colourless, clear | 704.602.7 | 0,001 | |
| | | | green | 704.602.5 | 0,001 | |
| | | | red | 704.602.2 | 0,001 | |
| | | | yellow | 704.602.4 | 0,001 | |



marking foil for lens round plastic

| | front shape | marking plate | colour | part no. |  | |
|---|-------------|---------------------|-------------------|-----------|---|---|
| marking foil for lens round plastic for neon lamps | round | translucent | white | 704.609.9 | 0,001 |  |
| | round | transparent, ribbed | colourless, clear | 704.609.7 | 0,001 | |



lens round, metal

| | shape | lens | colour | 29 mm dia. part no. |  | |
|--------------------------------------|-----------------|--------------------|------------------|------------------------|---|---|
| lens round, metal for pushbuttons | flat | aluminium anodized | black | 704.601.0 | 0,001 |  |
| | | | blue | 704.601.6 | 0,001 | |
| | | | green | 704.601.5 | 0,001 | |
| | | | natural | 704.601.8 | 0,001 | |
| | | | red | 704.601.2 | 0,001 | |
| | | | yellow | 704.601.4 | 0,001 | |
| | stainless steel | natural | 704.601.9 | 0,001 | | |



lens metal round with window

| | shape | lens | colour | part no. |  | |
|------------------------------|-------|--------------------|---------|-------------------|---|---|
| lens metal round with window | flat | aluminium anodized | black | 704.601.01 | 0,001 |  |
| | | | natural | 704.601.81 | 0,001 | |
| | | stainless steel | natural | 704.601.91 | 0,001 | |

mushroom-head cap

| | mushroom | colour | 40 mm dia. part no. |  | |
|-------------------|-------------|--------|------------------------|---|--|
| mushroom-head cap | transparent | blue | 704.614.6 | 0,007 |  |
| | | clear | 704.614.7 | 0,007 | |
| | | green | 704.614.5 | 0,007 | |
| | | red | 704.614.2 | 0,007 | |
| | | yellow | 704.614.4 | 0,007 | |



marking plate for mushroom-head cap

| | front shape | marking plate | colour | part no. |  | |
|-------------------------------------|-------------|---------------|--------|------------------|---|---|
| marking plate for mushroom-head cap | round | translucent | white | 704.609.9 | 0,001 |  |



front ring

| | material | colour | 29 mm dia. part no. |  | |
|-------------------|--------------------|-----------------|------------------------|---|---|
| front ring | aluminium anodized | black | 704.600.1A | 0,005 |  |
| | | natural | 704.600.1 | 0,005 | |
| | plastic | black | 704.600.0 | 0,003 | |
| | | chromium-plated | 704.600.4 | 0,003 | |
| | | light grey | 704.600.6 | 0,003 | |
| front ring raised | stainless steel | natural | 704.600.9 | 0,006 |  |
| | plastic | light grey | 704.600.7 | 0,003 | |

bayonet flange

| | material | part no. |  | |
|----------------|----------|------------------|---|---|
| bayonet flange | metal | 704.960.5 | 0,025 |  |
| | plastic | 704.950.5 | 0,015 | |



lamp block

| | connection method | part no. | circuit drawing |  | |
|------------|-------------------|------------------|-----------------|---|---|
| lamp block | PT | 704.950.1 | 1 | 0,016 |  |
| | SCH | 704.950.0 | 1 | 0,016 | |

connection method: PT = plug-in terminal, SCH = screw terminal
 circuit drawing as of [page 325](#)


for illuminated-/pushbutton square

illuminated-/pushbutton actuator square

| | switching action | colour | \varnothing 30 x 30 mm part no. |  | |
|---|------------------|--------|---|---|---|
| illuminated-/pushbutton actuator square | main | black | 704.732.0 | 0,008 |  |
| | | grey | 704.732.1 | 0,008 | |
| | mom | black | 704.731.0 | 0,008 | |
| | | grey | 704.731.1 | 0,008 | |



switching action: main = maintained action, mom = momentary action

lens square, plastic



| | shape | lens | colour | \varnothing 30 x 30 mm part no. |  | |
|----------------------|-------|-------------|-------------------|---|---|---|
| lens square, plastic | flat | transparent | blue | 704.702.6 | 0,001 |  |
| | | | colourless, clear | 704.702.7 | 0,001 | |
| | | | green | 704.702.5 | 0,001 | |
| | | | red | 704.702.2 | 0,001 | |
| | | | yellow | 704.702.4 | 0,001 | |

lens holder



for lens square

| | lens holder | colour | part no. |  | |
|-------------------------------------|-------------|--------|------------------|---|---|
| lens holder can be marked | translucent | white | 704.709.9 | 0,003 |  |
| for neon lamps | transparent | clear | 704.709.7 | 0,003 | |



marking foil for lens square

| | front shape | colour | part no. |  | |
|---|-------------|-------------------|------------------|---|---|
| marking foil for lens square can be hot pressed | square | colourless, clear | 704.706.7 | 0,001 |  |



front bezel

| | front shape | material | colour | part no. |  | |
|--------------------|-------------|----------|-----------------|------------------|---|---|
| front bezel | square | plastic | black | 704.701.0 | 0,002 |  |
| | | | chromium-plated | 704.701.4 | 0,002 | |
| | | | grey | 704.701.6 | 0,002 | |

bayonet flange

| | material | part no. |  | |
|-----------------------|----------|------------------|--|---|
| bayonet flange | metal | 704.960.5 | 0,025 |  |
| | plastic | 704.950.5 | 0,015 | |

lamp block

| | connection method | part no. | circuit drawing |  | |
|-------------------|-------------------|------------------|-----------------|---|---|
| lamp block | PT | 704.950.1 | 1 | 0,016 |  |
| | SCH | 704.950.0 | 1 | 0,016 | |

connection method: PT = plug-in terminal, SCH = screw terminal
 circuit drawing as of [page 325](#)

snap-action switching element

switching system

The double-break, snap-action switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact.

The snap-action switching element is fitted with self-cleaning contacts.

Up to 3 switching elements can be snapped to each actuator.

material

material of contacts

hardsilver, gold/silver, silver/palladium (for aggressive atmospheres)

switching element

polycarbonate PC

mechanical characteristics

actuating force

11-20 N \pm 1 N

depending on the number of switching elements, 1 to 3 elements

ambient air temperature

min. -25°C (-40° with restriction)

max. with illumination: +80°C

max. with neon lamp +80°C

max. with LED: +55°C

max. with incandescent lamp: +40°C

(as per DIN IEC 68-)

connection method

screw terminals

plug-in terminals 6.3 x 0.8 mm:

max. wire cross-section: 2 x 2.5 mm²

max. wire cross-section of stranded cable: 2 x 1.5 mm².

For switches with plug-in terminals it is necessary to provide insulation sockets and to maintain a spacing of 65 mm between rows.

mechanical life

with 1 switching element as per IEC 337-1/2:

pushbuttons:

maintained action 1,5 million cycles of operation

momentary action 3 million cycles of operation

selector switch:

maintained action 1,25 million cycles of operation

momentary action 2,5 million cycles of operation

emergency stop switch: \geq 50'000 cycles of operation

key lock switch:

maintained action 25'000 cycles of operation

momentary action 50'000 cycles of operation

rebound time

\leq 3 ms

resistance to shock

(single impacts, semi-sinusoidal)

10 g for 11 ms as per IEC 68-2-27

resistance to vibration

(sinusoidal)

10 g at 10-2000 Hz, amplitude 1 mm as per IEC 68-2-6

starting torque

screws at the mounting flange: max. 25 Ncm

screws at switching element: max. 50 Ncm

storage temperature

-40°C to + 85°C

(as per DIN IEC 68-)

travel

5.8 \pm 0.2 mm

electrical characteristics

continuous thermal current Ith₂

10 A

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

electric strength

3750 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC 512-2-11.

insulation resistance

\geq 10¹¹ Ω between open contacts at 100 VDC, as per IEC 512-2-10.

rated insulation voltage

500 VAC/600 VDC as per VDE 0100, group C

rules

The switches comply with the "Rules for low-voltage switching devices" VDE 0660, parts 200, 201, 202, 207 as well as with IEC Publication 337-1.

switch rating max.

at switch rating AC for gold-, silver- and hard silver contacts service category AC-15 as per EN60947-5-1

(cos ϕ = 0,7)

| | | | |
|----------|---------|---------|---------|
| voltage: | 230 VAC | 400 VAC | 500 VAC |
|----------|---------|---------|---------|

| | | | |
|----------|-----|-----|-------|
| current: | 6 A | 4 A | 2,5 A |
|----------|-----|-----|-------|

at switch rating DC for gold-, silver- and hard silver contacts service category DC as per EN60947-5-1

L/R=100 ms at P \geq 50 W and if P<50 W then L/R=2 x P

L/R stands for time constant in ms

P stands for time constant in watt

| | | | |
|----------|--------|--------|---------|
| voltage: | 24 VDC | 60 VDC | 110 VDC |
|----------|--------|--------|---------|

| | | | |
|----------|------|-----|-----|
| current: | 10 A | 3 A | 1 A |
|----------|------|-----|-----|

switch rating min.

gold/silver contacts:

| | | | |
|----------|-----|------|-------|
| voltage: | 5 V | 24 V | 110 V |
|----------|-----|------|-------|

| | | | |
|----------|-------|------|------|
| current: | 15 mA | 5 mA | 2 mA |
|----------|-------|------|------|

hard silver contacts :

| | | |
|----------|--------|---------|
| voltage: | 24 VDC | 110 VDC |
|----------|--------|---------|

| | | |
|----------|-------|-------|
| current: | 50 mA | 10 mA |
|----------|-------|-------|

volume resistance

starting value \leq 50 m Ω as per IEC 512-2-4

approvals

- SEV 500 VAC/10 A
- CSA 300 VAC
- UL 600 VAC HD
- Lloyds Marine Register
- German Navy SAK page no.3337 on request
- German Lloyd
- VDE 500 VAC/3 A
- CE

slow-make switching element

switching system

The double-break, slow-make switching element is equipped with one or two independent contact systems, acting as normally open or normally closed contact.

Slow-make contacts with forced action are ideal for high switch ratings. Up to 3 switching elements can be snapped to each actuator.

Up to 3 switching elements can be snapped to each actuator.

Technical Data

material

material of contacts

hardsilver, gold/silver, silver/palladium (for aggressive atmospheres)

switching element

polycarbonate PC

mechanical characteristics

actuating force

13-36 N ± 1 N

depending on the number of switching elements, 1 to 3 elements

ambient air temperature

min. -25°C (-40° with restriction)

max. with illumination: +80°C

max. with neon lamp +80°C

max. with LED: +55°C

max. with incandescent lamp: +40°C

(as per DIN IEC 68-)

connection method

screw terminals

plug-in terminals 6.3 x 0.8 mm:

max. wire cross-section: 2 x 2.5 mm²

max. wire cross-section of stranded cable: 2 x 1.5 mm².

For switches with plug-in terminals it is necessary to provide insulation sockets and to maintain a spacing of 65 mm between rows.

mechanical life

with 1 switching element as per IEC 337-1/2:

pushbuttons:

maintained action 1,5 million cycles of operation

momentary action 3 million cycles of operation

selector switch:

maintained action 1,25 million cycles of operation

momentary action 2,5 million cycles of operation

emergency stop switch: ≥ 50'000 cycles of operation

key lock switch:

maintained action 25'000 cycles of operation

momentary action 50'000 cycles of operation"

rebound time

≤ 1 ms

starting torque

screws at the mounting flange: max. 25 Ncm

screws at switching element: max. 50 Ncm

storage temperature

-40°C to + 85°C

(as per DIN IEC 68-)

electrical characteristics

continuous thermal current I_{th2}

10 A

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

electric strength

3750 VAC, 50 Hz, 1 min. between all terminals and earth, as per IEC 512-2-11.

insulation resistance

≥ 10¹¹ Ω between open contacts at 100 VDC, as per IEC 512-2-10.

rated insulation voltage

500 VAC/600 VDC as per VDE 0100, group C

rules

The switches comply with the "Rules for low-voltage switching devices" VDE 0660, parts 200, 201, 202, 207 as well as with IEC Publication 337-1.

switch rating max.

at switch rating AC for gold-, silver- and hard silver contacts service category AC-15 as per EN60947-5-1

(cos φ = 0,7)

| | | | |
|----------|---------|---------|---------|
| voltage: | 230 VAC | 400 VAC | 500 VAC |
|----------|---------|---------|---------|

| | | | |
|----------|-----|-----|-----|
| current: | 7 A | 5 A | 4 A |
|----------|-----|-----|-----|

at switch rating DC for gold-, silver- and hard silver contacts service category DC as per EN60947-5-1

WR=100 ms at P≥50 W and

WR=2 x P ms<50 W

WOP stands for switch rating in watt

| | | | |
|----------|--------|--------|---------|
| voltage: | 24 VDC | 60 VDC | 110 VDC |
|----------|--------|--------|---------|

| | | | |
|----------|------|-----|-------|
| current: | 10 A | 5 A | 2,5 A |
|----------|------|-----|-------|

switch rating min.

gold/silver contacts:

| | | |
|----------|--------|---------|
| voltage: | 24 VDC | 110 VDC |
|----------|--------|---------|

| | | |
|----------|-------|------|
| current: | 10 mA | 2 mA |
|----------|-------|------|

hard silver contacts:

| | | |
|----------|--------|---------|
| voltage: | 24 VDC | 110 VDC |
|----------|--------|---------|

| | | |
|----------|-------|-------|
| current: | 50 mA | 10 mA |
|----------|-------|-------|

volume resistance

starting value ≤ 50 mΩ as per IEC 512-2-4

approvals

- SEV 500 VAC/10 A
- CSA 300 VAC
- UL 600 VAC HD
- Lloyds Marine Register
- German Navy SAK page no.3337 on request
- German Lloyd
- VDE 500 VAC/3 A
- CE

buzzer

buzzer system

system

Piezo disc

material

alarm buzzer case

polyamide

front cap

plastic: polyamide

metal: nickel-plated brass

sea-water proof

mechanical characteristics

connection method

plug-in terminal 2.8 x 0.5 mm

degree of protection

IP 65 as per IEC 529

operating temperature

-25°C to + 50°C

storage temperature

-25°C to + 50°C

(as per DIN IEC 68-)

Technical Data

electrical characteristics

frequency (tone)

ca.2.8 kHz continuous tone only

operation voltage/current

operation voltage: 24 VDC \pm 10%
operation current: \leq 25 mA

sound pressure

95 db (A) \pm 8 at a distance of 0.1 m

actuator

material

actuator case

polycarbonate, polyamide

front ring

polyamide, aluminium or chromium-plated nickel steel

mounting flange

polyethylene terephthalate

mechanical characteristics

actuating force

snap-action switching element: 11-20 N \pm 1 N
slow-make switching element: 13-36 N \pm 1 N
depending on the number of snap-action elements

ambient air temperature

min. -25°C
max. without illumination: +80°C
max. with neon lamp: +80°C
max. with LED: +55°C
max. with incandescent lamp: +55°C
(as per DIN IEC 68-)

degree of protection

front as per IEC 529: IP 65

mechanical life

with 1 switching element as per IEC 337-1/2:

pushbutton: \geq 3 million operations
selector switch: \geq 2.5 million operations
Emergency stop switch: \geq 50'000 operations
keylock switch: \geq 50'000 operations

storage temperature

-30°C to +85°C
(as per DIN IEC 68-)

travel

5.8 \pm 0.2 mm

electrical characteristics

rules

The switches comply with the "Rules for low-voltage switching devices" VDE 0660, parts 200, 201, 202, 207 as well as with IEC Publication 337-1.

rotary selector switch element

mechanical characteristics

number of contacts

1 to 16 max. normally open contacts
(contact positioning to the rotary plan)

number of positions

1 to 8 positions max.

standard type of Kraus + Naimer

- CG 4 hardsilver contacts with 1 μ gold layer
- CG 4-1 hardsilver contacts with 35 μ gold layer

switching angle

Switching position a (90°) is basic position
maintained action switching angle
12 x 30° max.
8 x 45° max.
6 x 60° max.
4 x 90° max.
momentary action with release 24°
(provide at the beginning or at the end)

electrical characteristics

DC 1, resistive circuits T = 1 ms

1 contact in line

| | | | | | | |
|-------------------------|------|-----|-----|-----|-----|-------|
| permissible voltage | 24 | 48 | 60 | 110 | 220 | 440 V |
| rated service current I | 10,0 | 6,0 | 2,5 | 0,7 | 0,3 | 0,2 A |

2 contacts in line

| | | | | | | |
|-------------------------|------|-----|-----|-----|-----|-------|
| permissible voltage | 48 | 95 | 120 | 220 | 440 | 660 V |
| rated service current I | 10,0 | 6,0 | 2,5 | 0,7 | 0,3 | 0,2 A |

3 contacts in line

| | | | | | |
|-------------------------|------|-----|-----|-----|-------|
| permissible voltage | 70 | 140 | 180 | 330 | 660 V |
| rated service current I | 10,0 | 6,0 | 2,5 | 0,7 | 0,3 A |

4 contacts in line

| | | | | |
|-------------------------|------|-----|-----|-------|
| permissible voltage | 95 | 190 | 240 | 440 V |
| rated service current I | 10,0 | 6,0 | 2,5 | 0,7 A |

5 contacts in line

| | | | | |
|-------------------------|------|-----|-----|-------|
| permissible voltage | 120 | 240 | 300 | 550 V |
| rated service current I | 10,0 | 6,0 | 2,5 | 0,7 A |

6 contacts in line

| | | | | |
|-------------------------|------|-----|-----|-------|
| permissible voltage | 144 | 290 | 360 | 660 V |
| rated service current I | 10,0 | 6,0 | 2,5 | 0,7 A |

8 contacts in line

| | | | |
|-------------------------|------|-----|-------|
| permissible voltage | 190 | 350 | 450 V |
| rated service current I | 10,0 | 6,0 | 2,5 A |

inductive circuits T = 50 ms

1 contact in line

| | | | | | |
|-------------------------|-----|-----|-----|-----|-------|
| permissible voltage | 24 | 3 | 48 | 60 | 110 V |
| rated service current I | 6,0 | 3,0 | 1,0 | 0,7 | 0,3 A |

2 contacts in line

| | | | | | |
|-------------------------|-----|-----|-----|-----|-------|
| permissible voltage | 48 | 60 | 95 | 120 | 220 V |
| rated service current I | 6,0 | 3,0 | 1,0 | 0,7 | 0,3 A |

3 contacts in line

| | | | | | |
|-------------------------|-----|-----|-----|-----|-------|
| permissible voltage | 72 | 90 | 140 | 180 | 330 V |
| rated service current I | 6,0 | 3,0 | 1,0 | 0,7 | 0,3 A |

4 contacts in line

| | | | | | |
|-------------------------|-----|-----|-----|-----|-------|
| permissible voltage | 96 | 120 | 190 | 240 | 440 V |
| rated service current I | 6,0 | 3,0 | 1,0 | 0,7 | 0,3 A |

5 contacts in line

| | | | | | |
|-------------------------|-----|-----|-----|-----|-------|
| permissible voltage | 120 | 150 | 240 | 300 | 550 V |
| rated service current I | 6,0 | 3,0 | 1,0 | 0,7 | 0,3 A |

6 contacts in line

| | | | | | |
|-------------------------|-----|-----|-----|-----|-------|
| permissible voltage | 144 | 180 | 290 | 360 | 660 V |
| rated service current I | 6,0 | 3,0 | 1,0 | 0,7 | 0,3 A |

8 contacts in line

| | | | | | |
|-------------------------|-----|-----|-----|-------|-------|
| permissible voltage | 190 | 240 | 350 | 450 V | |
| rated service current I | 6,0 | 3,0 | 1,0 | 0,7 | 0,3 A |

rated service current I₀

10 A

AC 21 switching of resistive load with low overload

AC 1 non or bad inductive load

AC 22 switching of mixed resistive and inductive load with low overload

AC 11 switching of magnetic drives, contactors, valves, draw-in magnet

rated service voltage

IEC 500 V
UL 300 V
SEV 380 V
CEE 24 380 V

resistance/motor load

CEE 24 4/2 A

short-circuit-proof

max. insurance (gL-characteristics) 10 A
conditional rated short-circuit current 3 kA

thermic rated current I_{th_2}

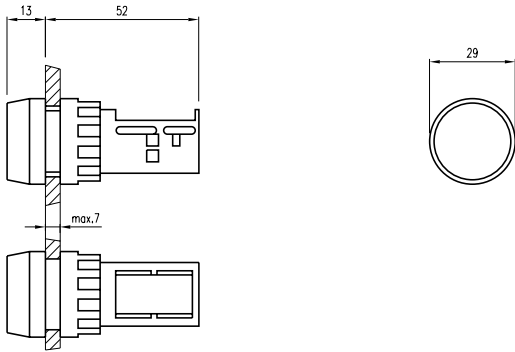
10 A

0

technical drawing

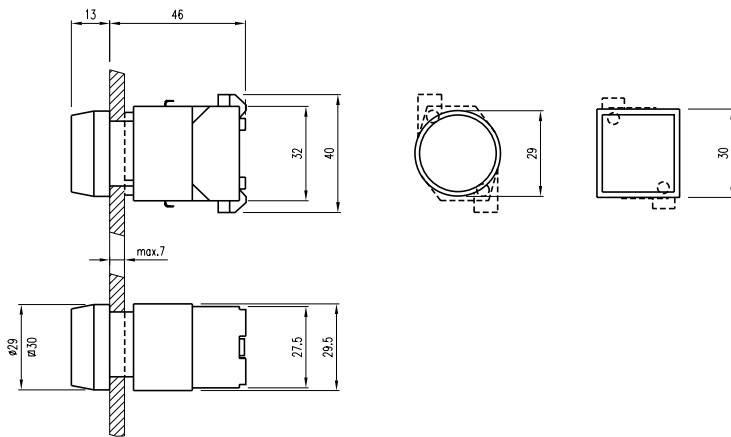
1 indicator compact full face illumination

page 262



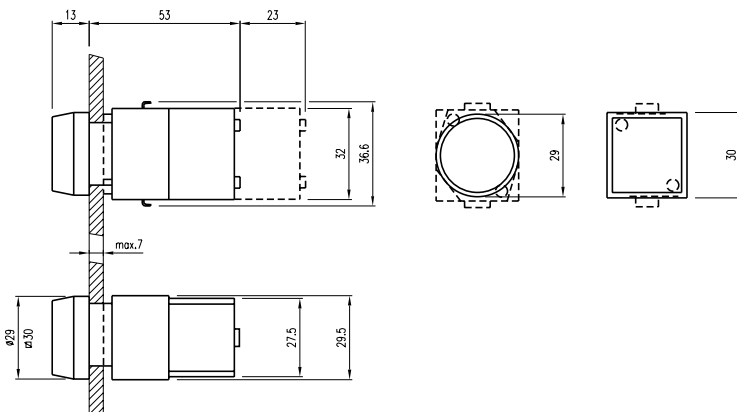
2 indicator/flasher full face illumination, indicator/flasher front illumination

page 263, 264



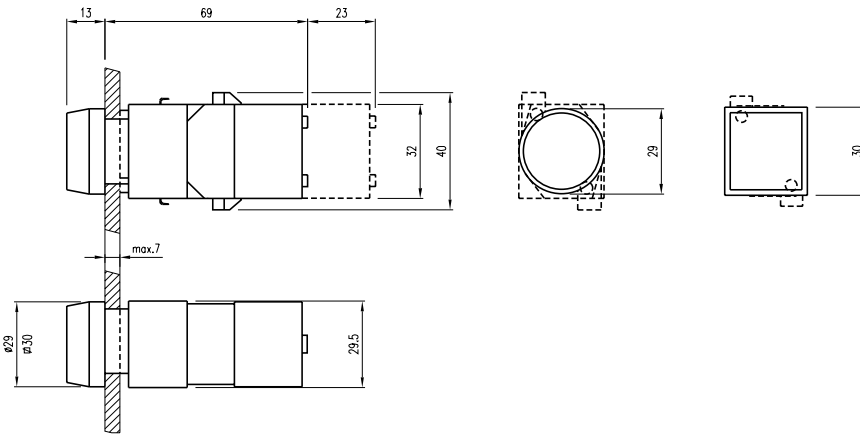
3 pushbutton actuator

page 265



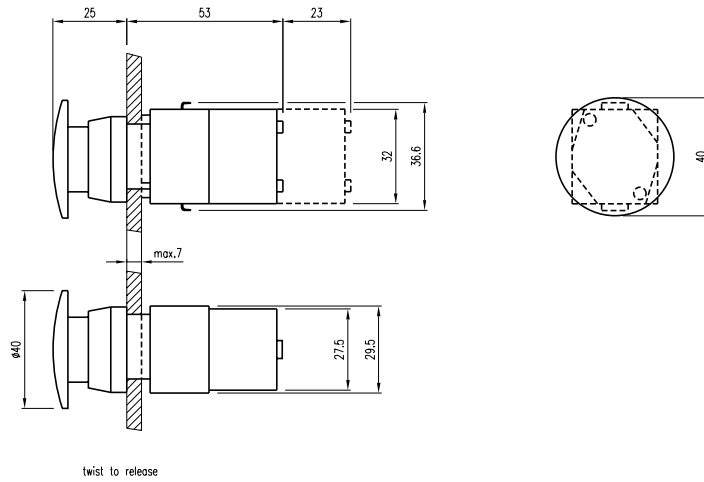
4 illuminated pushbutton actuator

page 267



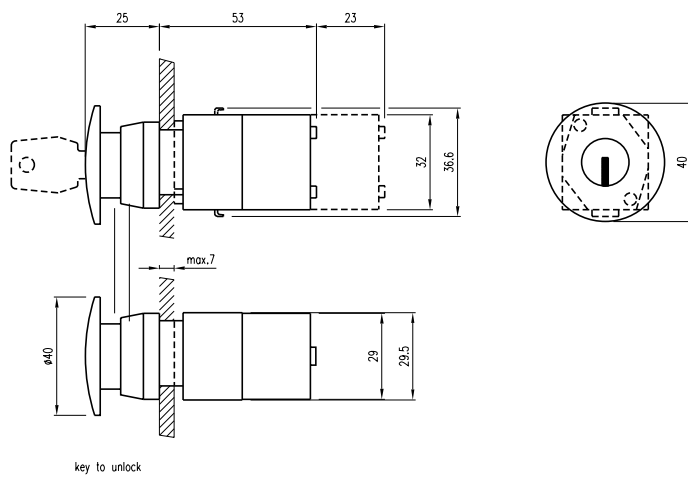
5 emergency stop switch actuator, pushbutton actuator with mushroom-head cap

page 268, 270

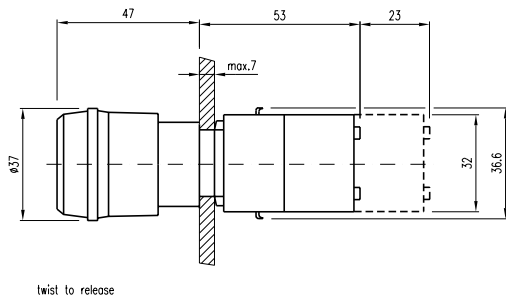


6 emergency stop switch actuator

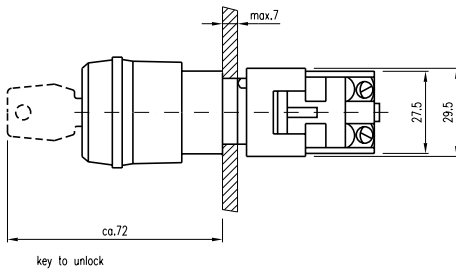
page 268



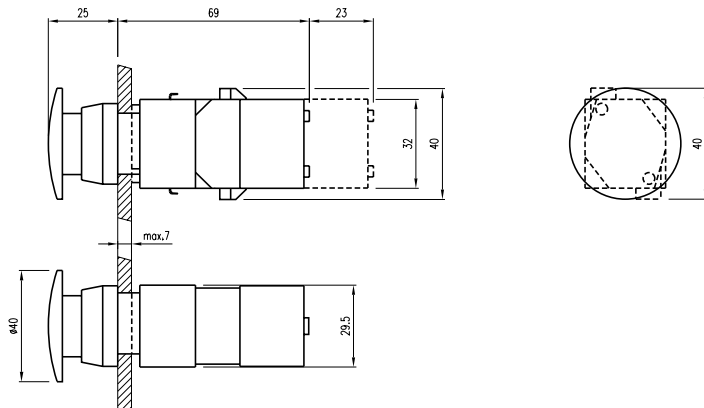
7 emergency stop switch actuator foolproof
page 269



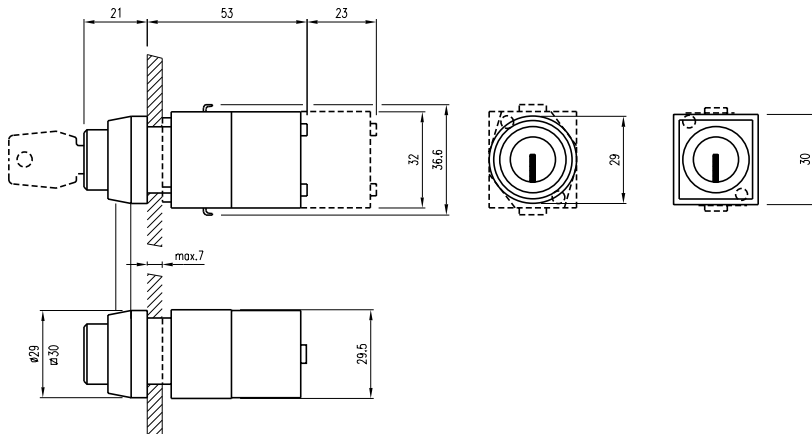
8 emergency stop switch actuator foolproof
page 269



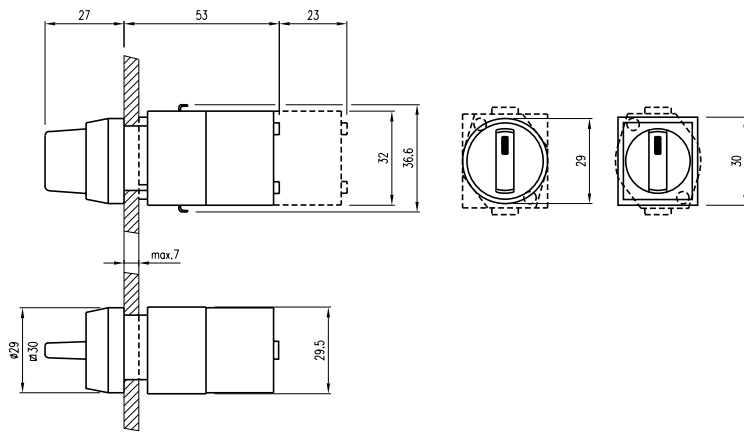
9 illuminated pushbutton actuator with mushroom-head cap
page 271



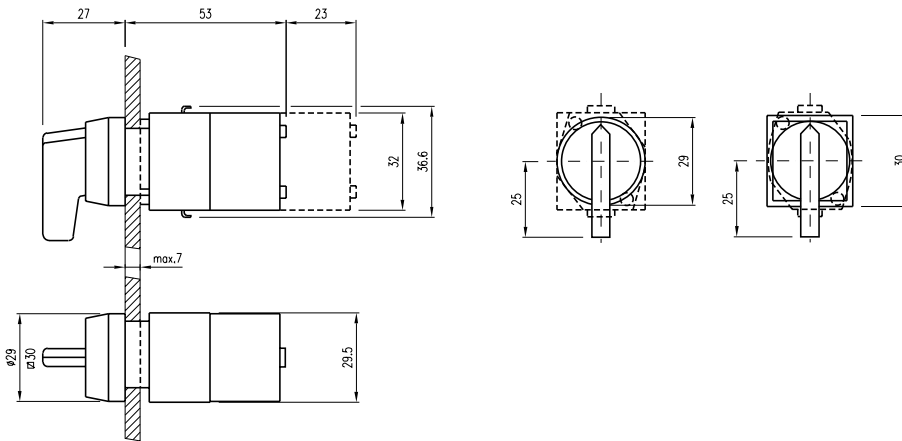
10 keylock switch actuator 2 positions, keylock switch actuator 3 positions
page 272, 273



11 selector switch actuator 2 positions, lever short, selector switch actuator 3 positions, short lever
page 274, 275

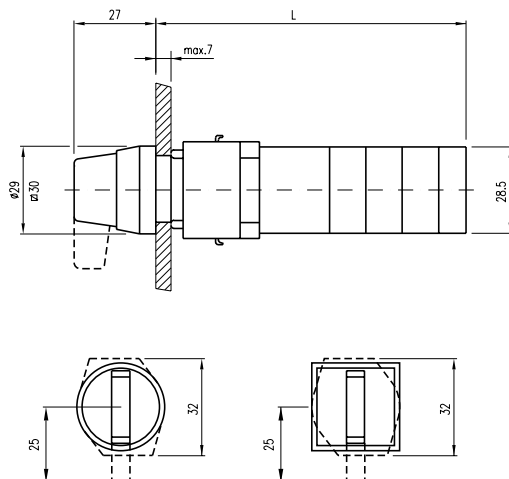


12 selector switch actuator 2 positions, lever long, selector switch actuator 3 positions, lever long
page 274, 276

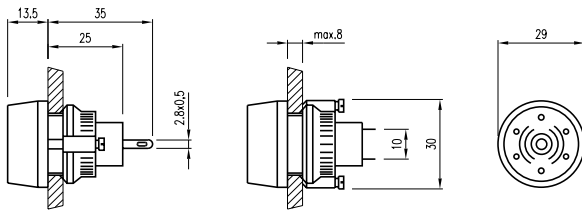


13 rotary selector switch actuator
page 276

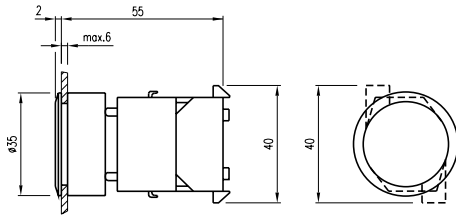
| No. of elements | Depths | L |
|-----------------|--------|---|
| | CG 4 | |
| 1 | 66,5 | |
| 2 | 78,5 | |
| 3 | 90,5 | |
| 4 | 102,5 | |
| 5 | 114,5 | |
| 6 | 126,5 | |
| 7 | 138,5 | |
| 8 | 150,5 | |



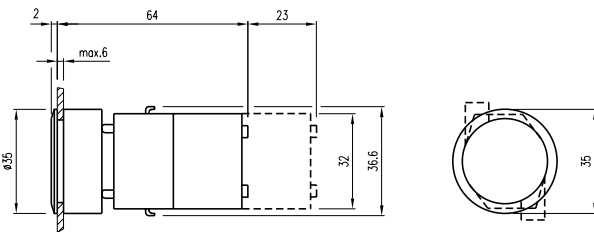
14 buzzer
page 277



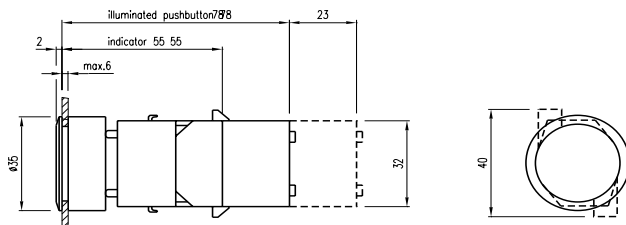
15 indicator/flasher for flush mounting
page 278



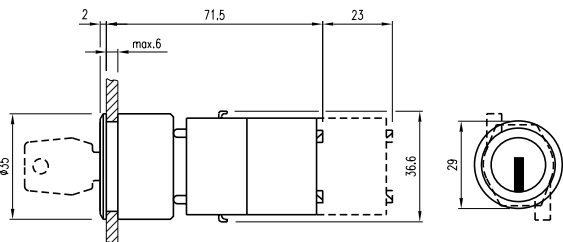
16 pushbutton actuator for flush mounting
page 279



17 illuminated pushbutton actuator for flush mounting
page 280

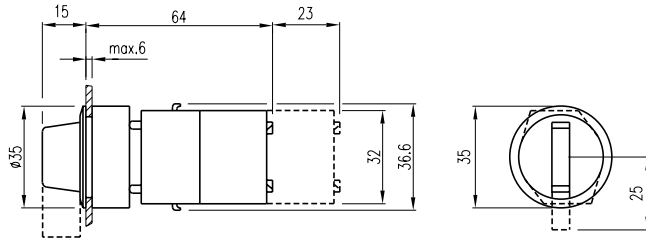


18 keylock switch actuator with 2 positions for flush mounting, keylock switch actuator 3 positions for flush mounting
page 281, 282



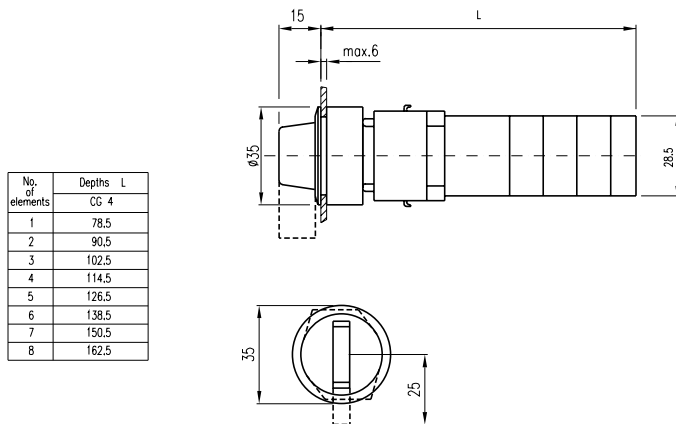
19 selector switch actuator 2 positions for flush mounting, short lever, selector switch actuator 2 positions for flush mounting, long lever, selector switch actuator 3 positions for flush mounting, short lever, selector switch actuator 3 positions for flush mounting, long lever

page 283, 284, 285



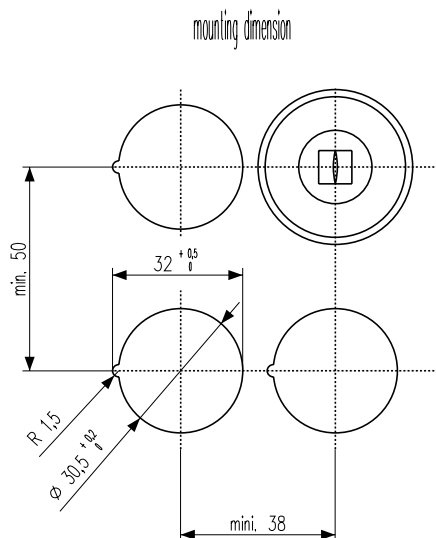
20 rotary selector switch actuator for flush mounting

page 286

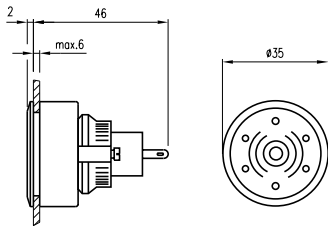


21 key insert switch actuator 2 positions for flush mounting, key insert switch actuator 3 positions for flush mounting

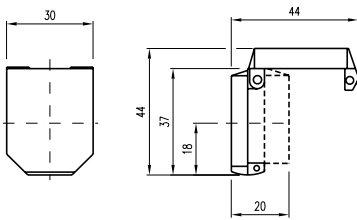
page 286, 287



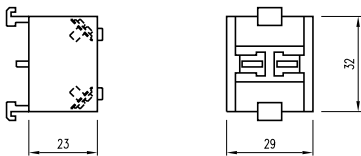
22 buzzer for flush mounting
page 287



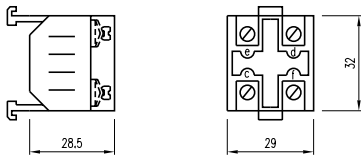
23 protective cover
page 288



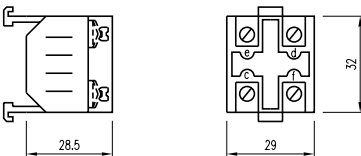
24 switching element, switching element for emergency stop switch
page 290, 291



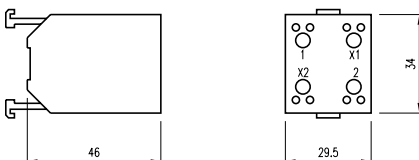
25 flasher element
page 291



26 diode block, capacitor block, resistor block, resistor diode block
page 294, 295

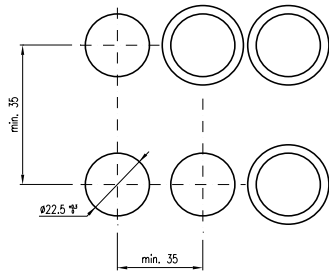


27 lamp transformer
page 294

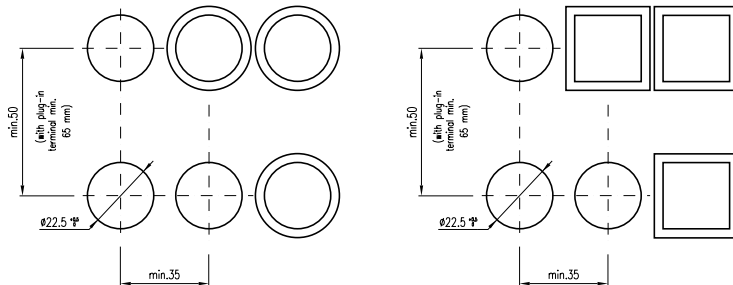


mounting dimension

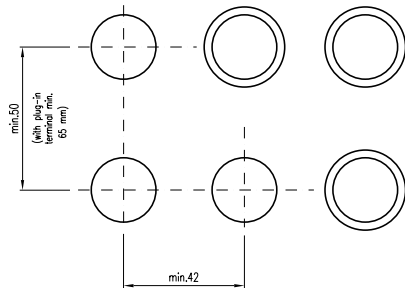
1 indicator compact full face illumination page 262



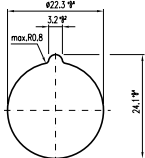
2 indicator/flasher full face illumination, indicator/flasher front illumination, pushbutton actuator, illuminated pushbutton actuator, keylock switch actuator 2 positions, keylock switch actuator 3 positions, selector switch actuator 2 positions, lever short, selector switch actuator 3 positions, short lever, buzzer, blind plug page 263, 264, 265, 267, 272, 273, 274, 275, 277, 289



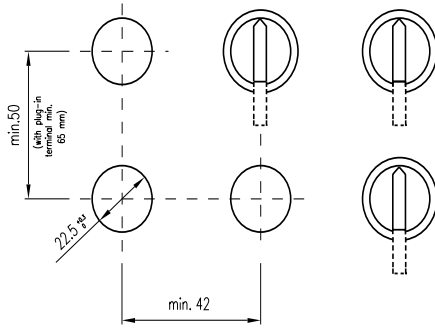
3 emergency stop switch actuator, pushbutton actuator with mushroom-head cap, illuminated pushbutton actuator with mushroom-head cap page 268, 270, 271



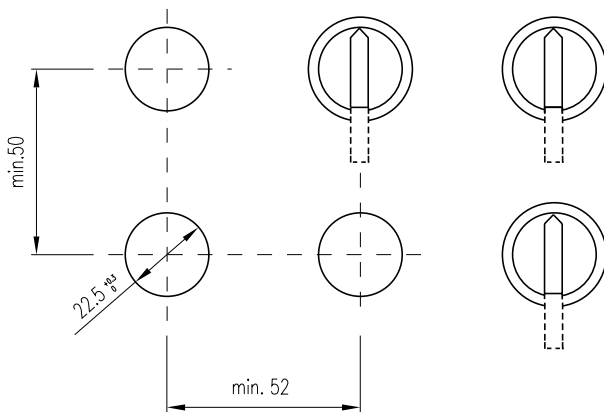
4 emergency stop switch actuator foolproof page 269



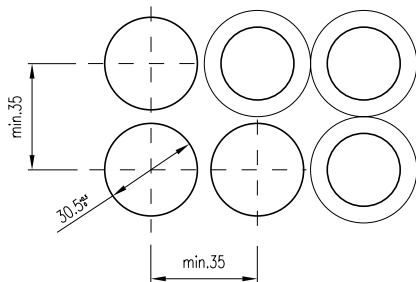
5 selector switch actuator 2 positions, lever long, selector switch actuator 3 positions, lever long
page 274, 276



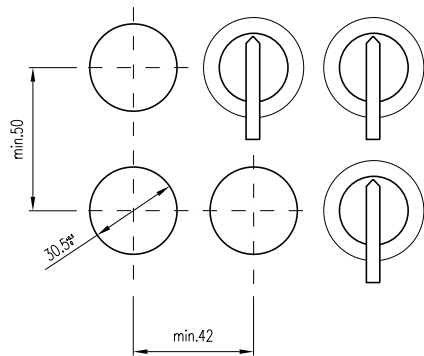
6 rotary selector switch actuator
page 276



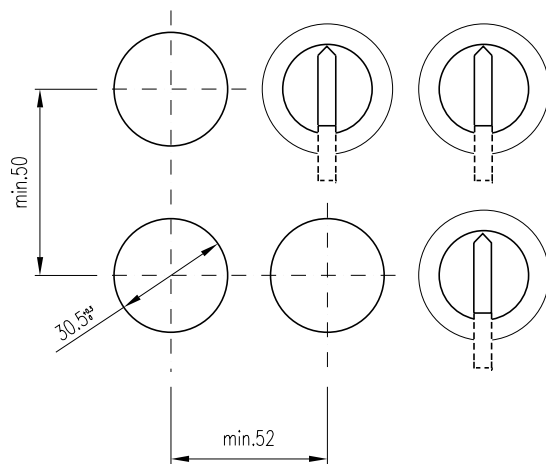
7 indicator/flasher for flush mounting, pushbutton actuator for flush mounting, illuminated pushbutton actuator for flush mounting, keylock switch actuator with 2 positions for flush mounting, keylock switch actuator 3 positions for flush mounting, selector switch actuator 2 positions for flush mounting, short lever, selector switch actuator 2 positions for flush mounting, long lever, selector switch actuator 2 positions for flush mounting, short lever, key insert switch actuator 2 positions for flush mounting, key insert switch actuator 3 positions for flush mounting, buzzer for flush mounting, front bezel-set for flush mounting
page 278, 279, 280, 281, 282, 283, 284, 286, 287, 288



8 selector switch actuator 3 positions for flush mounting, long lever
page 285

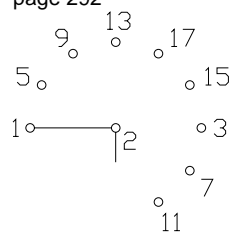


9 rotary selector switch actuator for flush mounting
page 286

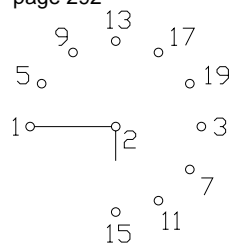


connecting diagrams

1 rotary selector switch element 30°
page 292

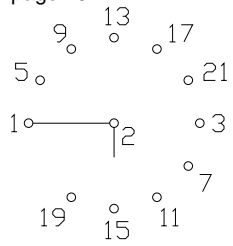


2 rotary selector switch element 30°
page 292



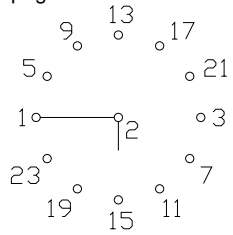
3 rotary selector switch element 30°

page 292



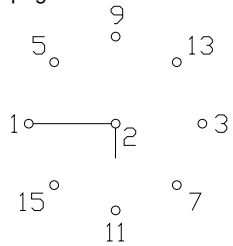
4 rotary selector switch element 30°

page 292



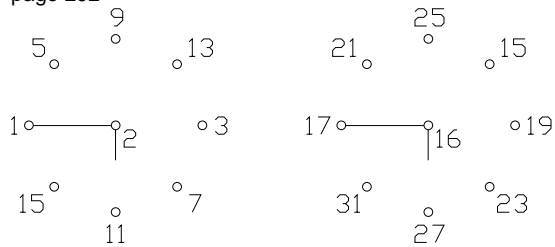
5 rotary selector switch element 45°

page 292



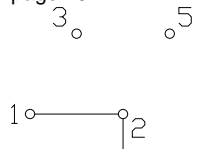
6 rotary selector switch element 45°

page 292



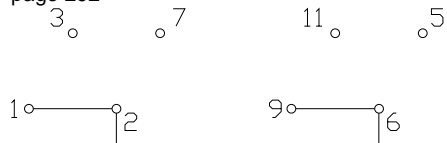
7 rotary selector switch element 60°

page 292



8 rotary selector switch element 60°

page 292



9 rotary selector switch element 60°

page 292

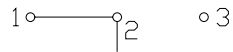
5_o 9_o 7_o 11_o 15_o 17_o



10 rotary selector switch element 60°

page 292

5_o 7_o



11 rotary selector switch element 60°

page 292

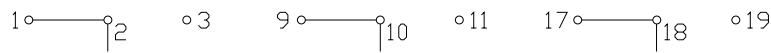
5_o 7_o 13_o 15_o



12 rotary selector switch element 60°

page 292

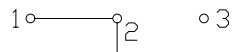
5_o 7_o 13_o 15_o 21_o 23_o



13 rotary selector switch element 60°

page 292

5_o 9_o



7_o

14 rotary selector switch element 60°

page 292

5_o 9_o 17_o 11_o



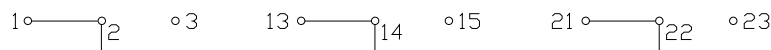
7_o

19_o

15 rotary selector switch element 60°

page 292

5_o 9_o 17_o 11_o 25_o 29_o



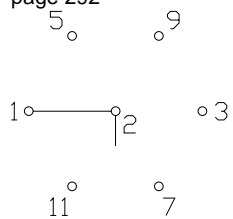
7_o

19_o

27_o

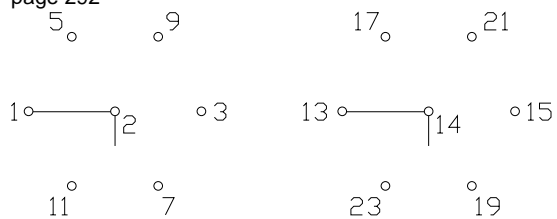
16 rotary selector switch element 60°

page 292



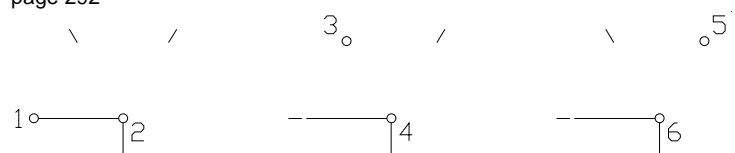
17 rotary selector switch element 60°

page 292



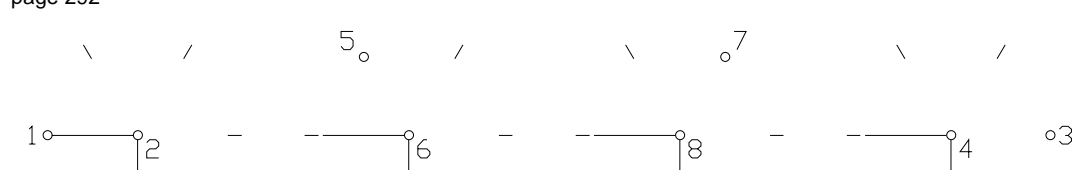
18 rotary selector switch element 60°

page 292



19 rotary selector switch element 60°

page 292



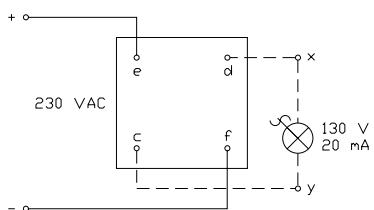
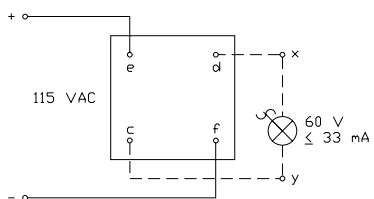
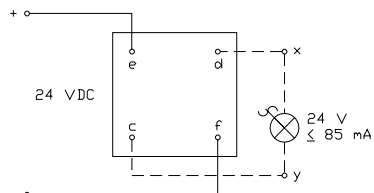
| | circuit drawing |
|----|-----------------|
| 1 | |
| 2 | |
| 3 | |
| 4 | |
| 5 | |
| 6 | |
| 7 | |
| 8 | |
| 9 | |
| 10 | |
| 11 | |
| 12 | |
| 13 | |
| 14 | |
| 15 | |
| 16 | |
| 17 | |
| 18 | |
| 19 | |
| 20 | |

| | circuit drawing |
|----|-----------------|
| 21 | |
| 22 | |
| 23 | |
| 24 | |
| 25 | |
| 26 | |
| 27 | |
| 28 | |
| 29 | |
| 30 | |

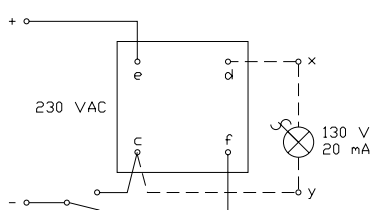
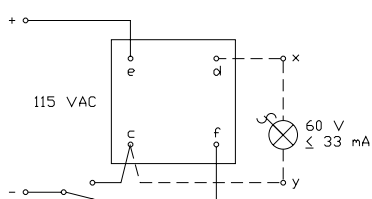
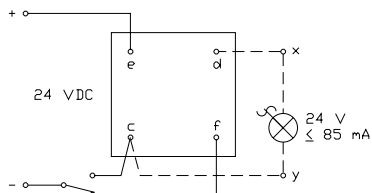
Flasher element

Applications

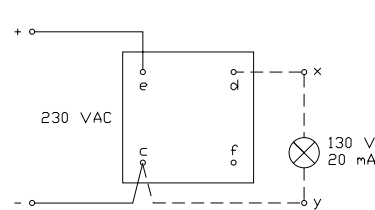
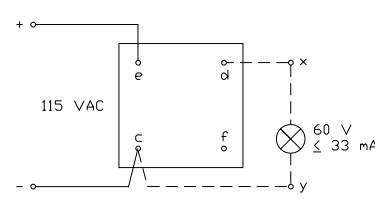
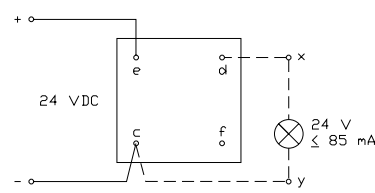
Circuit for flashing light switchable to continuous light



Circuit for flashing light



Circuit for continuous light



Important: Terminals c and f may not be in circuit at the same time!

1. Engraving

Typefaces

In addition to the most commonly used world languages (see DIN 1451) with close spacing, the following typefaces are available: Scandinavian, Slavian, Greek, Russian.

Coloured filling of engraving

Engraved marking caps and plates have the engraving filled with black or white. Letters to be engraved should be specified on a separate order sheet. (Obtainable from us on request.)

Special symbols

A list of the special symbols available can be supplied on request.

2. Hot stamping

Standard legends and ISO symbols are hot stamped. For large batches it is worth while to have the lettering produced by hot stamping. We will be pleased to advise you.

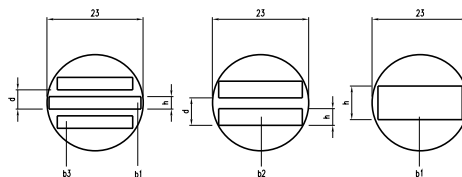
3. Film inserts (for square front only)

Instead of using engraving, the lenses can be fitted with transparent film inserts.

Film dimensions

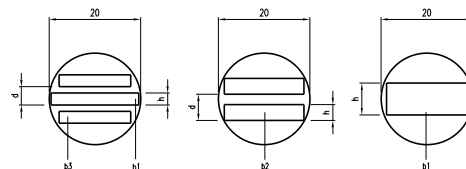
Indicator max. 24,5 x 24,5 mm
Illuminated pushbutton max. 21,5 x 21,5 mm

Indicator Engraving of marking cap



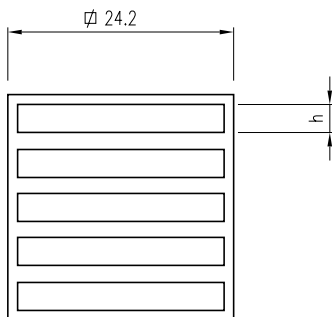
| Height of letters h mm | Number of lines | Number of letters per line (approx.) | | | Line spacing b |
|---------------------------|-----------------|--------------------------------------|----|----|----------------|
| | | b1 | b2 | b3 | |
| 3 | 3 | 11 | 10 | 9 | 4,6 |
| 4 | 2 | 8 | 7 | - | 6,6 |
| 8 | 1 | 4 | - | - | - |

Pushbutton/illuminated pushbutton Engraving of marking cap



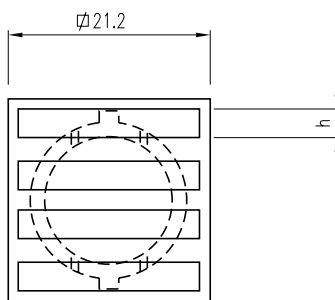
| Height of letters h mm | Number of lines | Number of letters per line (approx.) | | | Line spacing b |
|---------------------------|-----------------|--------------------------------------|----|----|----------------|
| | | b1 | b2 | b3 | |
| 3 | 3 | 9 | 9 | 7 | 4,6 |
| 4 | 2 | 7 | 6 | - | 6,6 |
| 8 | 1 | 3 | - | - | - |

Indicator Engraving of diffusor cap



| Height of letters h mm | Thickness of letters | Number of lines | Number of capital letters | Number of small letters |
|------------------------|----------------------|-----------------|---------------------------|-------------------------|
| 2,5 | 0,4 | 6 | 13 | 14 |
| 3 | 0,4 | 5 | 11 | 12 |
| 4 | 0,5 | 4 | 8 | 8-9 |
| 5 | 0,5 | 3 | 6-7 | 7 |
| 6 | 0,6 | 2 | 5-6 | 6 |
| 8 | 0,6 | 1 | 4 | 4-5 |

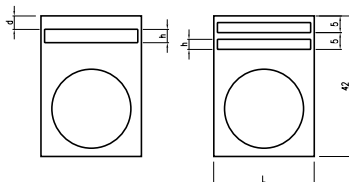
Pushbutton/illuminated pushbutton Engraving of lens holder



| Height of letters h mm | Thickness of letters | Number of lines | Number of capital letters | Number of small letters |
|------------------------|----------------------|-----------------|---------------------------|-------------------------|
| 2,5 | 0,4 | 5 | 9 | 9-10 |
| 3 | 0,4 | 4 | 7-8 | 8 |
| 4 | 0,5 | 3 | 5-6 | 6 |
| 5 | 0,5 | 2 | 4-5 | 4-5 |
| 6 | 0,6 | 2 | 3-4 | 4 |
| 8 | 0,6 | 1 | 2-3 | 3 |

Caution! When engraving, make sure lens holder is positioned as shown.

Engraving of label



| Height of letters h mm | Number of lines | Number of letters per line (approx.) | | Line spacing |
|------------------------|-----------------|--------------------------------------|-----------|--------------|
| | | L = 30 mm | L = 42 mm | |
| 3 | 2 | 14 | 20 | 4,5 |
| 4 | 1 | 10 | 14 | 4 |
| 8 | 1 | 5 | 7 | 2 |

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