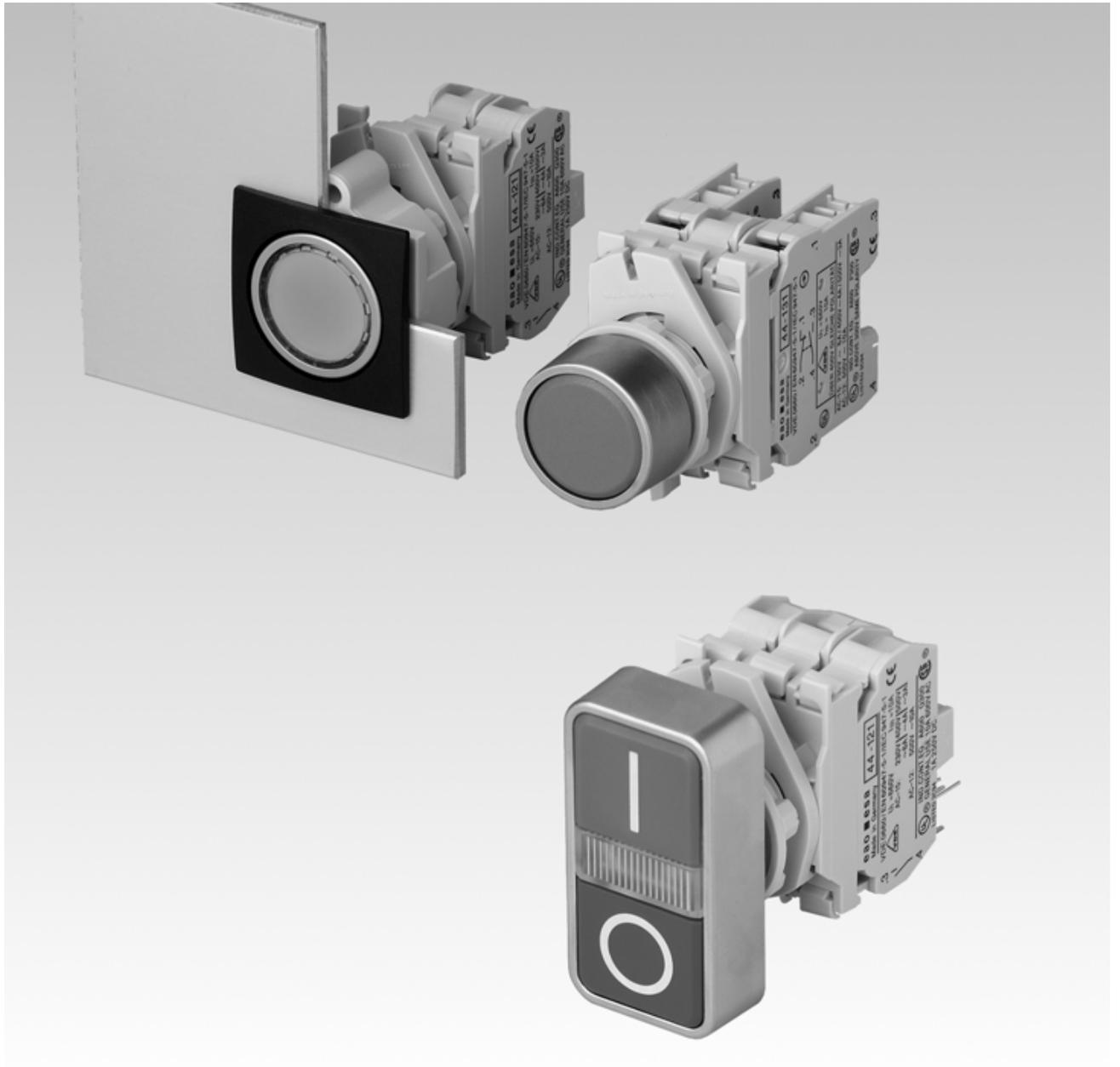


## EAO Product Information

Series 44



## Index

### Series 44

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# Description

## CE

Series 44 is a high-quality product that has been manufactured and tested according to the most up-to-date international and national regulations and standards. Our products are marked with the CE sign in accordance with the directive for low voltages.

## General notes

Series 44, a modular system of control units, offers the user numerous combinations with its wide range of actuator elements for pushbuttons, emergency-OFF pushbuttons, rotary and keylock switches, interlocking pushbuttons, potentiometer drives, illuminated pushbuttons and indicators. At the front the actuators feature an IP 65 protection class and can be supplied with matt grey or matt chrome front rings.

The switching elements can be supplied for fitting on front adapters or for fitting on base adapters, so that each control or indication point can be made to fit the requirements of the most varied conditions of usage, such as in industrial and mechanical engineering, marine and rail-vehicle construction, systems engineering and the construction of control mechanisms.

## Design

The system consists of actuators, front or base adapters, switching elements, lamp elements, pre-switching elements and lamp transformers. The connection between the actuator elements and the various function elements is done by means of a latch click-stop connection through the front adapter for front attachment.

For base attachment the various function elements are click-stopped on to the base adapter.

For pushbuttons with front attachment, further switching elements in the 2nd level can be click-stopped on to the 1st level of switching elements (tandem arrangement).

## Mounting

The control pushbuttons and indicators of Series 44 are designed to be fitted in a mounting hole of 22.5 mm diameter in accordance with IEC 947-5-1 and VDE 0660. The actuators can be inserted in mounting holes with or without recess for the anti-twisting device and are self-holding which means that they can be fitted quickly and easily in the front panel (one-person fitting).

For details of mounting and dismantling see page 287.

## Keylock switches

Standard lock with integrated cap. 1 standard number 9500. Without specifications for the lock number we supply standard number 9500. For locks with defined lock number, add after the type number (code 01-10). Further lock numbers on request. Two keys are supplied for each keylock switch.

Spare keys can be ordered under Type No. 44-919 (provided the lock number is quoted).

## Protection provisions

When the actuator elements are installed in metallic front panels and housings, they should not be incorporated in the protection provision. When installed in insulated housing, the "protection insulation" provision is preserved.

## Terminals

All function elements have shockproof screw terminals (finger safety in accordance with DIN/VDE 0106, part 100 and VBG 4) and have openings to guide a screwdriver. When delivered, the screw terminals are open, thus guaranteeing safe and fast installation.

The lamp transformer has screw terminals as primary-terminal and as secondary connection connecting leads with multi-core cable ends. The designation for terminal connections accords with DIN EN 50013.

Connection cross-sections: single core - 0.50 mm<sup>2</sup> to 2.5 mm<sup>2</sup>  
 multiple core - 0.75 mm<sup>2</sup> to 1.5 mm<sup>2</sup>  
 multiple core with multi-core cable ends  
 - 0.50 mm<sup>2</sup> to 1.5 mm<sup>2</sup>

## Marking

The marking plate for illuminated pushbuttons, indicators or markable pushbuttons can be provided with pictograms conforming to ISO-R 369 or with lettering. (See page 355.).

## Illumination

Incandescent lamps, neon lamps or light-emitting diodes (multi-LEDs) with Ba9s lampholder assure perfect illumination of the indicators and illuminated pushbuttons.

## Supply

The units are supplied as single components.

## Specimen order

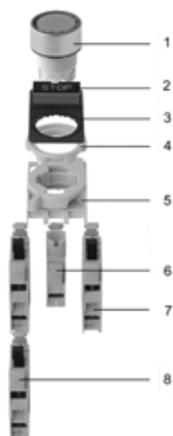
### Indicator front mounting

- actuator plastic matt chrome, red	1 x 44-750.22
- front adapter	1 x 44-900
- lamp element	1 x 44-524
- incandescent lamp 6 V	1 x 10-1406.1369

All dimensions in mm

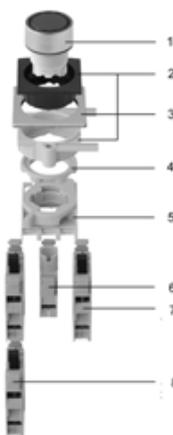
All rights are reserved to make changes to technical data.

## illuminated pushbutton / front mounting



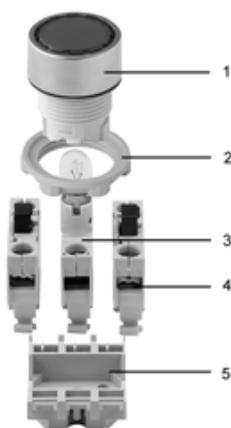
- 1 actuator
- 2 label for label support
- 3 label support
- 4 fixing nut
- 5 front adapter
- 6 lamp element
- 7 switching element 1. level
- 8 switching element 2. level

## illuminated pushbutton for flush mounting / front mounting



- 1 actuator
- 2 front bezel-set for flush mounting
- 3 front panel
- 4 fixing nut
- 5 front adapter
- 6 lamp element
- 7 switching element 1. level
- 8 switching element 2. level

## illuminated pushbutton / base mounting (separated mounting)

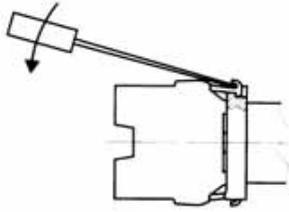


- 1 actuator
- 2 fixing nut
- 3 lamp element
- 4 switching element
- 5 base adaptor

## Switching element

Dismantling a switching element with a screwdriver

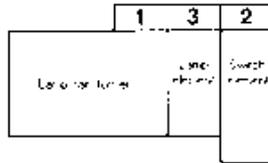
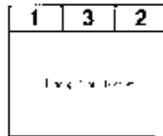
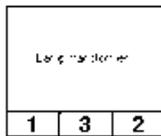
To dismantle switching elements, lamp elements or lamp transformer, slightly lift the latching arm with the tip of a screwdriver.



## Lamp transformer

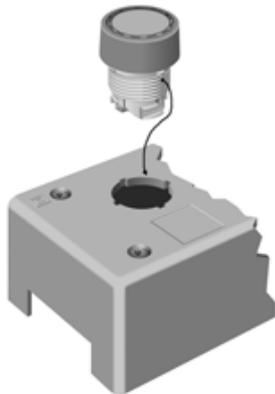
Methods of mounting  
on base adaptor

on front adaptor

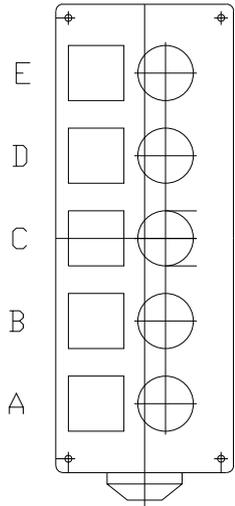


## Housing

Tip for mounting:



Mount the actuator so that the anti-rotation lug faces the square area next to the mounting hole.



Base adaptors are included in the housing.

In the ends of the housing are cable entries 22.5 mm dia., fitted with an inlet grommet at one end.

A second grommet is supplied in the housing.

In addition, a special screw gland M20 can be supplied (see spare parts and accessories)

Opening designations

A, B, C, D and E

Opening A is nearest to the inlet grommet

## indicator complete full face illumination not for marking



filament lamp page 329

LED page 329

	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>indicator complete full face illumination not for marking</b>	plastic matt chrome	colourless, clear	<b>44-750.27.000</b>	1	1	1	0,025
		yellow	<b>44-750.24.000</b>	1	1	1	0,025
		green	<b>44-750.25.000</b>	1	1	1	0,025
		red	<b>44-750.22.000</b>	1	1	1	0,025

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## indicator complete front illumination for marking



filament lamp page 329

LED page 329

	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>indicator complete front illumination for marking</b> with text plate translucent white	plastic matt chrome	yellow	<b>44-751.24.000</b>	1	1	1	0,025
		green	<b>44-751.25.000</b>	1	1	1	0,025
		red	<b>44-751.22.000</b>	1	1	1	0,025
		white	<b>44-751.29.000</b>	1	1	1	0,025

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## pushbutton complete



	switching action	contacts	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>pushbutton complete</b>	momentary action	1 NO	plastic matt chrome	yellow	<b>44-701.24.010</b>	4	2	1	0,030
				green	<b>44-701.25.010</b>	4	2	1	0,030
				white	<b>44-701.29.010</b>	4	2	1	0,030
	maintained action	1 NC + 1 NO	plastic matt chrome	red	<b>44-701.22.001</b>	3	2	1	0,030
				black	<b>44-701.20.100</b>	2	2	1	0,037
				1 NO	plastic matt chrome	green	<b>44-702.25.010</b>	6	2
				black	<b>44-702.20.100</b>	5	2	1	0,037

contacts : normally closed = NC, normally open = NO, 1 normally closed = 1 NC, 1 normally open = 1 NO  
 circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## illuminated pushbutton complete for marking



 filament lamp page 329  
 LED page 329

	switching action	contacts	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions			
<b>illuminated pushbutton complete for marking</b>	momentary action	1 NO	plastic matt chrome	yellow	<b>44-746.24.010</b>	8	3	1	0,040		
				green	<b>44-746.25.010</b>	8	3	1	0,040		
		1 NC	plastic matt chrome	red	<b>44-746.22.001</b>	7	3	1	0,040		
	maintained action	1 NC + 1 NO	plastic matt chrome	white	<b>44-746.29.100</b>	9	3	1	0,047		
				1 NO	plastic matt chrome	green	<b>44-747.25.010</b>	10	3	1	0,040
						white	<b>44-747.29.100</b>	11	3	1	0,047

contacts : 1 normally closed = 1 NC, 1 normally open = 1 NO, normally closed = NC, normally open = NO  
 circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## emergency stop switch complete



	unlocking	switching action	contacts	50 mm dia. Typ-Nr.	37 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>emergency stop switch complete</b> red mushroom-head cap, yellow shaft	twist to release	MA	1 NC	<b>44-710.001</b>		12	4	2	0,057
foolproof, red mushroom-head cap, yellow shaft standard lock 9500	twist to release	MA	1 NC		<b>44-712.001</b>	12	5	2	0,047
	key to release	MA	1 NC		<b>44-713.001</b>	12	5	2	0,083

switching action : maintained action = MA

contacts : 1 normally closed = 1 NC

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## key lock complete 2 positions



	switching action	contacts	key removable in	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>key lock complete 2 positions</b> position 0: basic position position I: maintained action standard lock 9500	MA	1 NC + 1 NO	0	plastic matt chrome	<b>44-730.21.100</b>	13	6	1	0,075
			0-I	plastic matt chrome	<b>44-730.22.100</b>	13	6	1	0,075

switching action : maintained action = MA

contacts : normally closed = NC, normally open = NO

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## key lock complete 3 positions



	switching action	contacts	key removable in	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>key lock complete 3 positions</b> position 0: basic position position I + II: maintained action standard lock 9500	maintained - 0 - maintained	2 NO	I-0-II	plastic matt chrome	<b>44-734.25.020</b>	14	7	1	0,078

switching action

contacts : normally open = NO

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## selector switch complete 2 positions



	switching action	contacts	lever	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>selector switch complete 2 positions</b> position 0: basic position position I: maintained action	MA	1 NC + 1 NO	black	plastic matt chrome	<b>44-720.20.100</b>	15	8	1	0,045

switching action : maintained action = MA

contacts : normally closed = NC, normally open = NO

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## selector switch complete 3 positions



	switching action	contacts	lever	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>selector switch complete 3 positions</b> position 0: basic position position I + II: maintained action	maintained - 0 - maintained	1 NO + 1 NO	black	plastic matt chrome	<b>44-724.20.020</b>	16	9	1	0,048

switching action : maintained action = MA

contacts : normally open = NO

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## control switch



	Funciothn	Contacts	Color of Operating part	Ø 22,5 mm Typ-Nr.	
<b>Control Switch</b> 2 positions without latch positon	I	2x 1 NC + 1 NO	black	<b>44-800.2</b>	0,048
<b>Control Switch</b> 4 positions without latch positon	I	4x 1 NC + 1 NO	black	<b>44-800.4</b>	0,048
<b>Control Switch</b> 8 positions without latch positon without lever guidance (omni directional)	I	4x 1 NC + 1 NO	black	<b>44-800.8</b>	0,048

## indicator actuator, full face illumination not for marking



- 🛒 filament lamp page 329
- 🛒 LED page 329
- 🛒 front adapter page 327
- 🛒 lamp element for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 lamp for base mounting page 329

	front ring	colour of lens	28.2 mm dia. Typ-Nr.	technical drawing	mounting dimensions	(E-2)
<b>indicator actuator, full face illumination not for marking</b>	plastic matt grey	blue	<b>44-750.66</b>	10	1	0,008
		colourless, clear	<b>44-750.67</b>	10	1	0,008
		yellow	<b>44-750.64</b>	10	1	0,008
		green	<b>44-750.65</b>	10	1	0,008
		red	<b>44-750.62</b>	10	1	0,008
	plastic matt chrome	blue	<b>44-750.26</b>	10	1	0,008
		colourless, clear	<b>44-750.27</b>	10	1	0,008
		yellow	<b>44-750.24</b>	10	1	0,008
		green	<b>44-750.25</b>	10	1	0,008
		red	<b>44-750.22</b>	10	1	0,008

technical drawings from page 334, mounting dimensions from page 347

## indicator actuator, front illumination for flush mounting for marking



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- 🛒 LED page 329
- 🛒 front adapter page 327
- 🛒 lamp element for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 lamp for base mounting page 329

	front ring	colour of lens	28.2 mm dia. Typ-Nr.	technical drawing	mounting dimensions	
<b>indicator actuator, front illumination for flush mounting for marking</b>	plastic matt grey	blue	<b>44-751.66</b>	11	1	0,007
		yellow	<b>44-751.64</b>	11	1	0,007
		green	<b>44-751.65</b>	11	1	0,007
		red	<b>44-751.62</b>	11	1	0,007
		white	<b>44-751.69</b>	11	1	0,007
	plastic matt chrome	blue	<b>44-751.26</b>	11	1	0,007
		yellow	<b>44-751.24</b>	11	1	0,007
		green	<b>44-751.25</b>	11	1	0,007
		red	<b>44-751.22</b>	11	1	0,007
		white	<b>44-751.29</b>	11	1	0,007

technical drawings from page 334, mounting dimensions from page 347

## pushbutton actuator not for marking



- ☞ front adapter page 327
- ☞ slow-make switching element stackable for front mounting page 327
- ☞ slow-make switching element not stackable for front mounting page 328
- ☞ base adaptor page 328
- ☞ slow-make switching element not stackable for base mounting page 328

	construction	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	(E-3)		
<b>pushbutton actuator not for marking</b>	front ring flush	M	plastic matt grey	blue	<b>44-701.66</b>	17	12	1	0,013		
				yellow	<b>44-701.64</b>	17	12	1	0,013		
				green	<b>44-701.65</b>	17	12	1	0,013		
				red	<b>44-701.62</b>	17	12	1	0,013		
				black	<b>44-701.60</b>	17	12	1	0,013		
				white	<b>44-701.69</b>	17	12	1	0,013		
			plastic matt chrome	blue	<b>44-701.26</b>	17	12	1	0,013		
				yellow	<b>44-701.24</b>	17	12	1	0,013		
				green	<b>44-701.25</b>	17	12	1	0,013		
				red	<b>44-701.22</b>	17	12	1	0,013		
				black	<b>44-701.20</b>	17	12	1	0,013		
				white	<b>44-701.29</b>	17	12	1	0,013		
			front ring raised	M	plastic matt grey	blue	<b>44-703.66</b>	17	12	1	0,015
						yellow	<b>44-703.64</b>	17	12	1	0,015
	green	<b>44-703.65</b>				17	12	1	0,015		
	red	<b>44-703.62</b>				17	12	1	0,015		
	black	<b>44-703.60</b>				17	12	1	0,015		
	white	<b>44-703.69</b>				17	12	1	0,015		
	plastic matt chrome	blue			<b>44-703.26</b>	17	12	1	0,015		
		yellow			<b>44-703.24</b>	17	12	1	0,015		
		green			<b>44-703.25</b>	17	12	1	0,015		
		red			<b>44-703.22</b>	17	12	1	0,015		
		black			<b>44-703.20</b>	17	12	1	0,015		
		white			<b>44-703.29</b>	17	12	1	0,015		
	with knob high	M			plastic matt grey	blue	<b>44-704.66</b>	17	12	1	0,015
						yellow	<b>44-704.64</b>	17	12	1	0,015
			green	<b>44-704.65</b>		17	12	1	0,015		
red			<b>44-704.62</b>	17		12	1	0,015			
black			<b>44-704.60</b>	17		12	1	0,015			
white			<b>44-704.69</b>	17		12	1	0,015			
plastic matt chrome			blue	<b>44-704.26</b>	17	12	1	0,015			
			yellow	<b>44-704.24</b>	17	12	1	0,015			
			green	<b>44-704.25</b>	17	12	1	0,015			
			red	<b>44-704.22</b>	17	12	1	0,015			
			black	<b>44-704.20</b>	17	12	1	0,015			
			white	<b>44-704.29</b>	17	12	1	0,015			

Continued on next page

	construction	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions			
up to 3 switching elements max.	front ring flush	MA	plastic matt grey	blue	<b>44-702.66</b>	18	12	1	0,013		
				yellow	<b>44-702.64</b>	18	12	1	0,013		
				green	<b>44-702.65</b>	18	12	1	0,013		
				red	<b>44-702.62</b>	18	12	1	0,013		
				black	<b>44-702.60</b>	18	12	1	0,013		
				white	<b>44-702.69</b>	18	12	1	0,013		
				plastic matt chrome	blue	<b>44-702.26</b>	18	12	1	0,013	
			yellow	<b>44-702.24</b>	18	12	1	0,013			
			green	<b>44-702.25</b>	18	12	1	0,013			
			red	<b>44-702.22</b>	18	12	1	0,013			
			black	<b>44-702.20</b>	18	12	1	0,013			
			white	<b>44-702.29</b>	18	12	1	0,013			
			front ring raised	MA	plastic matt grey	blue	<b>44-705.66</b>	18	12	1	0,015
						yellow	<b>44-705.64</b>	18	12	1	0,015
	green	<b>44-705.65</b>				18	12	1	0,015		
	red	<b>44-705.62</b>				18	12	1	0,015		
	black	<b>44-705.60</b>				18	12	1	0,015		
	white	<b>44-705.69</b>				18	12	1	0,015		
	plastic matt chrome	blue				<b>44-705.26</b>	18	12	1	0,015	
	yellow	<b>44-705.24</b>			18	12	1	0,015			
	green	<b>44-705.25</b>			18	12	1	0,015			
	red	<b>44-705.22</b>			18	12	1	0,015			
	black	<b>44-705.20</b>			18	12	1	0,015			
	white	<b>44-705.29</b>			18	12	1	0,015			
	with knob high	MA			plastic matt grey	blue	<b>44-706.66</b>	18	12	1	0,015
						yellow	<b>44-706.64</b>	18	12	1	0,015
			green	<b>44-706.65</b>		18	12	1	0,015		
			red	<b>44-706.62</b>		18	12	1	0,015		
			black	<b>44-706.60</b>		18	12	1	0,015		
			white	<b>44-706.69</b>		18	12	1	0,015		
plastic matt chrome			blue	<b>44-706.26</b>	18	12	1	0,015			
			yellow	<b>44-706.24</b>	18	12	1	0,015			
			green	<b>44-706.25</b>	18	12	1	0,015			
			red	<b>44-706.22</b>	18	12	1	0,015			
			black	<b>44-706.20</b>	18	12	1	0,015			
			white	<b>44-706.29</b>	18	12	1	0,015			

switching action : momentary action = M, maintained action = MA

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## pushbutton actuator for marking

colour of lens is determined by the colour of text plate



- 🛒 marking plate page 322
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>pushbutton actuator for marking</b>	M	plastic matt grey	clear	<b>44-701.67</b>	17	13	1	0,012
		plastic matt chrome	clear	<b>44-701.27</b>	17	13	1	0,012
up to 3 switching elements max.	MA	plastic matt grey	clear	<b>44-702.67</b>	18	13	1	0,012
		plastic matt chrome	clear	<b>44-702.27</b>	18	13	1	0,012

switching action : momentary action = M, maintained action = MA

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## illuminated pushbutton actuator for marking



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- 🛒 LED page 329
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- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 lamp element for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328
- 🛒 lamp for base mounting page 329

	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	Ⓜ
<b>illuminated pushbutton actuator for marking</b>	M	plastic matt grey	blue	<b>44-746.66</b>	19	14	1	0,012
			yellow	<b>44-746.64</b>	19	14	1	0,012
			green	<b>44-746.65</b>	19	14	1	0,012
			red	<b>44-746.62</b>	19	14	1	0,012
			white	<b>44-746.69</b>	19	14	1	0,012
		plastic matt chrome	blue	<b>44-746.26</b>	19	14	1	0,012
			yellow	<b>44-746.24</b>	19	14	1	0,012
			green	<b>44-746.25</b>	19	14	1	0,012
			red	<b>44-746.22</b>	19	14	1	0,012
			white	<b>44-746.29</b>	19	14	1	0,012
with text plate translucent white, up to max. 3 switching elements	MA	plastic matt grey	blue	<b>44-747.66</b>	20	14	1	0,012
			yellow	<b>44-747.64</b>	20	14	1	0,012
			green	<b>44-747.65</b>	20	14	1	0,012
			red	<b>44-747.62</b>	20	14	1	0,012
			white	<b>44-747.69</b>	20	14	1	0,012
		plastic matt chrome	blue	<b>44-747.26</b>	20	14	1	0,012
			yellow	<b>44-747.24</b>	20	14	1	0,012
			green	<b>44-747.25</b>	20	14	1	0,012
			red	<b>44-747.22</b>	20	14	1	0,012
			white	<b>44-747.29</b>	20	14	1	0,012

switching action : momentary action = M, maintained action = MA

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## double pushbutton actuator



- 🛒 filament lamp page 329
- 🛒 LED page 329
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 lamp element for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328
- 🛒 lamp for base mounting page 329

	switching action	marking	front bezel	colour of lens	□ 29.5 x 56 mm Typ-Nr.	technical drawing mounting dimensions		
<b>double pushbutton actuator</b>	M	I + 0	plastic matt grey	green + red	<b>44-771.6</b>	15	3	0,018
			plastic matt chrome	green + red	<b>44-771.2</b>	15	3	0,018
		without	plastic matt grey	green + red	<b>44-770.6</b>	15	3	0,018
			plastic matt chrome	green + red	<b>44-770.2</b>	15	3	0,018

switching action : momentary action = M  
 technical drawings from page 334, mounting dimensions from page 347

Arrangement of switching element corresponds to the designation of the front adaptor



## emergency stop switch actuator

up to 3 switching elements max. in 1. level



- 🛒 label for emergency stop switch page 331
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

		switching action	37 mm dia. Typ-Nr.	50 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>emergency stop switch actuator</b>	unlocking	MA	<b>44-711</b>		21	16	2	0,035
	twist to release			<b>44-710</b>	21	16	2	0,040

switching action : maintained action = MA

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## emergency stop switch actuator foolproof

up to 3 switching elements max. in 1. level



- 🛒 label for emergency stop switch page 331
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

	unlocking	switching action	37 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>emergency stop switch actuator foolproof</b>	twist to release	MA	<b>44-712</b>	21	17	2	0,040
as per EN 418, red mushroom-head cap, yellow shaft, unlocking in direction of arrow, standard lock 9500, other lock numbers on request	key to release	MA	<b>44-713</b>	21	17	2	0,066

switching action : maintained action = MA

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## pushbutton actuator with mushroom-head cap



- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

	switching action	front ring	colour of mushroom-head cap	50 mm dia. Typ-Nr.	circuit drawing				technical drawing				mounting dimensions			
<b>pushbutton actuator with mushroom-head cap</b>	M	plastic matt grey	green	<b>44-707.65</b>	17	18	2	0,028								
			red	<b>44-707.62</b>	17	18	2	0,028								
			black	<b>44-707.60</b>	17	18	2	0,028								
		plastic matt chrome	green	<b>44-707.25</b>	17	18	2	0,028								
			red	<b>44-707.22</b>	17	18	2	0,028								
			black	<b>44-707.20</b>	17	18	2	0,028								

switching action : momentary action = M

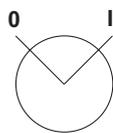
circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## keylock switch actuator 2 positions

up to 3 switching elements max. in 1. level



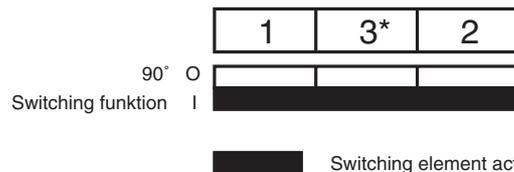
- 🛒 front adaptor page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328



	switching action	key removable in	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>keylock switch actuator 2 positions</b>	M	0	plastic matt grey	<b>44-732.61</b>	23	19	1	0,051
			plastic matt chrome	<b>44-732.21</b>	23	19	1	0,051
position 0: basic position position I: maintained action 90° standard lock 9500 other lock numbers on request	MA	0	plastic matt grey	<b>44-730.61</b>	22	19	1	0,051
			plastic matt chrome	<b>44-730.21</b>	22	19	1	0,051
	0 + I	0	plastic matt grey	<b>44-730.62</b>	22	19	1	0,051
			plastic matt chrome	<b>44-730.22</b>	22	19	1	0,051

switching action : maintained action = MA, momentary action = M  
circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

with 2 positions  
Arrangement of switching element  
corresponds to marking of front adaptor



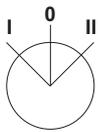
\*By using of not stackable, switching elements please cover the outside positions 1 and 2 of frontadaptor.

## keylock switch actuator 3 positions

up to 3 switching elements max. in 1. level



- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328



	switching action	key removable in	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>keylock switch actuator 3 positions</b>	momentary - 0 - momentary	0	plastic matt grey	<b>44-735.61</b>	24	19	1	0,051
			plastic matt chrome	<b>44-735.21</b>	24	19	1	0,051
position 0: basic position position I + II: maintained action 60° standard lock 9500 other lock numbers on request	maintained - 0 - maintained	0	plastic matt grey	<b>44-734.61</b>	27	19	1	0,051
			plastic matt chrome	<b>44-734.21</b>	27	19	1	0,051
		0 + II	plastic matt grey	<b>44-734.64</b>	27	19	1	0,051
			plastic matt chrome	<b>44-734.24</b>	27	19	1	0,051
		I + 0	plastic matt grey	<b>44-734.63</b>	27	19	1	0,051
			plastic matt chrome	<b>44-734.23</b>	27	19	1	0,051
I + 0 + II	plastic matt grey	<b>44-734.65</b>	27	19	1	0,051		
	plastic matt chrome	<b>44-734.25</b>	27	19	1	0,051		
position 0: basic position position I: momentary action 60° position II: maintained action 60° standard lock 9500 other lock numbers on request	momentary - 0 - maintained	0	plastic matt grey	<b>44-737.61</b>	26	19	1	0,051
			plastic matt chrome	<b>44-737.21</b>	26	19	1	0,051
		0 + II	plastic matt grey	<b>44-737.64</b>	26	19	1	0,051
			plastic matt chrome	<b>44-737.24</b>	26	19	1	0,051
position 0: basic position position I: maintained action 60° position II: momentary action 60° standard lock 9500 other lock numbers on request	maintained - 0 - momentary	0	plastic matt grey	<b>44-736.61</b>	25	19	1	0,051
			plastic matt chrome	<b>44-736.21</b>	25	19	1	0,051
		I + 0	plastic matt grey	<b>44-736.63</b>	25	19	1	0,051
			plastic matt chrome	<b>44-736.23</b>	25	19	1	0,051

switching action: maintained action = MA, momentary action = M, 0 = basic position  
circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

with 3 positions  
Arrangement of switching element corresponds to marking of front adaptor



Switching function 2x60°

■ Switching element actuated

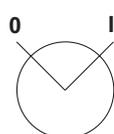
\*By using of not stackable, switching elements please cover the outside positions 1 and 2 of frontadapter.

## selector switch actuator 2 positions

up to 3 switching elements max. in 1. level



- front adapter page 327
- slow-make switching element stackable for front mounting page 327
- slow-make switching element not stackable for front mounting page 328
- base adaptor page 328
- slow-make switching element not stackable for base mounting page 328



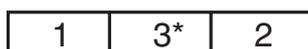
	switching action	lever	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>selector switch actuator 2 positions</b>	M	grey	plastic matt grey	<b>44-722.68</b>	29	20	1	0,021
		black	plastic matt chrome	<b>44-722.20</b>	29	20	1	0,021
position 0: basic position position I: maintained action 90°	MA	grey	plastic matt grey	<b>44-720.68</b>	28	20	1	0,021
		red	plastic matt grey	<b>44-720.62</b>	28	20	1	0,021
		plastic matt chrome	<b>44-720.22</b>	28	20	1	0,021	
		black	plastic matt chrome	<b>44-720.20</b>	28	20	1	0,021

switching action : maintained action = MA, momentary action = M

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

with 2 positions

Arrangement of switching element corresponds to marking of front adaptor



Switching element actuated

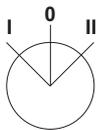
\*By using of not stockable, switching elements please cover the outside positions 1 and 2 of frontadapter..

## selector switch actuator 3 positions

up to 3 switching elements max. in 1. level



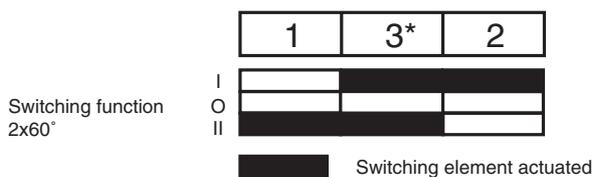
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328



	switching action	lever	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>selector switch actuator 3 positions</b>	momentary - 0 - momentary	grey	plastic matt grey	<b>44-725.68</b>	31	20	1	0,021
		black	plastic matt chrome	<b>44-725.20</b>	31	20	1	0,021
position 0: basic position position I + II: maintained action 60°	maintained - 0 - maintained	grey	plastic matt grey	<b>44-724.68</b>	30	20	1	0,021
		black	plastic matt chrome	<b>44-724.20</b>	30	20	1	0,021
position 0: basic position position I: momentary action 60° position II: maintained action 60°	momentary - 0 - maintained	grey	plastic matt grey	<b>44-727.68</b>	33	20	1	0,021
		black	plastic matt chrome	<b>44-727.20</b>	33	20	1	0,021
position 0: basic position position I: maintained action 60° position II: momentary action 60°	maintained - 0 - momentary	grey	plastic matt grey	<b>44-726.68</b>	32	20	1	0,021
		black	plastic matt chrome	<b>44-726.20</b>	32	20	1	0,021

switching action: maintained action = MA, momentary action = M, 0 = basic position  
 circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

with 3 positions  
 Arrangement of switching element  
 corresponds to marking of front adaptor



\*By using of not stockable, switching elements please cover the outside positions 1 and 2 of frontadapter.

## interlocking pushbutton actuator

up to 3 switching elements max. in 1. level



- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

	front ring	colour of rotation knob	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>interlocking pushbutton actuator</b>	plastic matt grey	grey	<b>44-742.68</b>	34	21	1	0,020
		red	<b>44-742.62</b>	34	21	1	0,020
	plastic matt chrome	red	<b>44-742.22</b>	34	21	1	0,020
		black	<b>44-742.20</b>	34	21	1	0,020

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## potentiometer-drive



	construction	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>potentiometer-drive</b>	without potentiometer	plastic matt grey	<b>44-744.60</b>		22	1	0,016
		plastic matt chrome	<b>44-744.20</b>		22	1	0,016
standard 10 kOhm others on request, resistance value as per IEC 63, series E3	with potentiometer 10 kΩ	plastic matt grey	<b>44-745.60-10K1</b>	35	22	1	0,030
		plastic matt chrome	<b>44-745.20-10K1</b>	35	22	1	0,030

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## enclosure fitted with pushbuttons

for each mounting place 2 switching elements, 1 normally closed + 1 normally open



	fitting	switching action	symbol on the lens	colour of housing	72 x 84 mm Typ-Nr.	72 x 117 mm Typ-Nr.	technical drawing	
<b>enclosure fitted with pushbuttons</b>	1 pushbutton green	M	mom	light grey	<b>44-001.8-01</b>		23	0,205
	1 pushbutton red	M	0	light grey	<b>44-001.8-02</b>		23	0,206
	2 pushbuttons green + red	M	green: I; red: 0	light grey		<b>44-002.8-04</b>	23	0,247

switching action : momentary action = M

technical drawings from page 334

## enclosure fitted with emergency stop switch

for each mounting place 2 switching elements, 1 normally closed + 1 normally open



	fitting	unlocking	switching action	colour of housing	72 x 84 mm Typ-Nr.	technical drawing	
<b>enclosure fitted with emergency stop switch</b> front protection IP 65	1 emergency stop switch foolproof 37 mm dia.	twist to release	MA	yellow	<b>44-001.4-05</b>	23	0,234
	1 emergency stop switch 50 mm dia.	twist to release	MA	yellow	<b>44-001.4-03</b>	23	0,234

switching action : maintained action = MA

technical drawings from page 334

## indicator actuator full face illumination for flush mounting not for marking

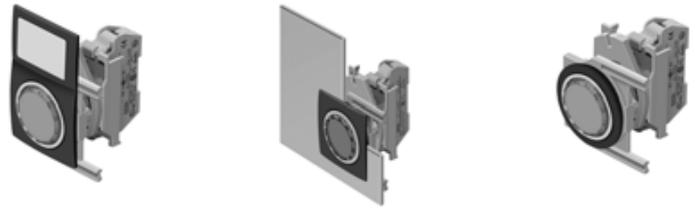


- 🛒 filament lamp page 329
- 🛒 LED page 329
- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adapter page 327
- 🛒 lamp element for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 lamp for base mounting page 329

	front ring	colour of lens	28.2 mm dia. Typ-Nr.	technical drawing mounting dimensions		
<b>indicator actuator full face illumination for flush mounting not for marking</b>	plastic matt grey	blue	<b>44-750.66</b>	24	4	0,008
		colourless, clear	<b>44-750.67</b>	24	4	0,008
		yellow	<b>44-750.64</b>	24	4	0,008
		green	<b>44-750.65</b>	24	4	0,008
		red	<b>44-750.62</b>	24	4	0,008
	plastic matt chrome	blue	<b>44-750.26</b>	24	4	0,008
		colourless, clear	<b>44-750.27</b>	24	4	0,008
		yellow	<b>44-750.24</b>	24	4	0,008
		green	<b>44-750.25</b>	24	4	0,008
		red	<b>44-750.22</b>	24	4	0,008

technical drawings from page 334, mounting dimensions from page 347

## indicator actuator, front illumination for flush mounting for marking



- 🛒 filament lamp page 329
- 🛒 LED page 329
- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 front adapter page 327
- 🛒 lamp element for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 lamp for base mounting page 329

	front ring	colour of lens	28.2 mm dia. Typ-Nr.	technical drawing	mounting dimensions	tech
<b>indicator actuator, front illumination for flush mounting for marking</b>	plastic matt grey	blue	<b>44-751.66</b>	24	4	0,007
		yellow	<b>44-751.64</b>	24	4	0,007
		green	<b>44-751.65</b>	24	4	0,007
		red	<b>44-751.62</b>	24	4	0,007
		white	<b>44-751.69</b>	24	4	0,007
	plastic matt chrome	blue	<b>44-751.26</b>	24	4	0,007
		yellow	<b>44-751.24</b>	24	4	0,007
		green	<b>44-751.25</b>	24	4	0,007
		red	<b>44-751.22</b>	24	4	0,007
		white	<b>44-751.29</b>	24	4	0,007

technical drawings from page 334, mounting dimensions from page 347

## pushbutton actuator for flush mounting not for marking



- ☞ front bezel set for flush mounting without label support page 322
- ☞ front bezel set for flush mounting with label support page 323
- ☞ label for front bezel set for flush mounting with label support page 323
- ☞ front adapter page 327
- ☞ slow-make switching element stackable for front mounting page 327
- ☞ slow-make switching element not stackable for front mounting page 328
- ☞ base adaptor page 328
- ☞ slow-make switching element not stackable for base mounting page 328

	construction	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions			
<b>pushbutton actuator for flush mounting not for marking</b>	front ring flush	M	plastic matt grey	blue	<b>44-701.66</b>	17	25	4	0,013		
				yellow	<b>44-701.64</b>	17	25	4	0,013		
				green	<b>44-701.65</b>	17	25	4	0,013		
				red	<b>44-701.62</b>	17	25	4	0,013		
				black	<b>44-701.60</b>	17	25	4	0,013		
				white	<b>44-701.69</b>	17	25	4	0,013		
				plastic matt chrome	blue	<b>44-701.26</b>	17	25	4	0,013	
			yellow	<b>44-701.24</b>	17	25	4	0,013			
			green	<b>44-701.25</b>	17	25	4	0,013			
			red	<b>44-701.22</b>	17	25	4	0,013			
			black	<b>44-701.20</b>	17	25	4	0,013			
			white	<b>44-701.29</b>	17	25	4	0,013			
			front ring raised	M	plastic matt grey	blue	<b>44-703.66</b>	17	25	4	0,015
						yellow	<b>44-703.64</b>	17	25	4	0,015
	green	<b>44-703.65</b>				17	25	4	0,015		
	red	<b>44-703.62</b>			17	25	4	0,015			
	black	<b>44-703.60</b>			17	25	4	0,015			
	white	<b>44-703.69</b>			17	25	4	0,015			
	plastic matt chrome		blue	<b>44-703.26</b>	17	25	4	0,015			
			yellow	<b>44-703.24</b>	17	25	4	0,015			
green			<b>44-703.25</b>	17	25	4	0,015				
red			<b>44-703.22</b>	17	25	4	0,015				
black			<b>44-703.20</b>	17	25	4	0,015				
white			<b>44-703.29</b>	17	25	4	0,015				

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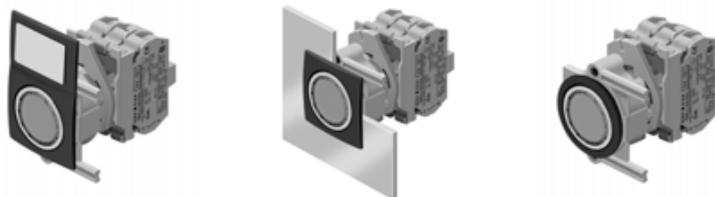
	construction	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions					
<b>pushbutton actuator for flush mounting not for marking</b>	with knob high	M	plastic matt grey	blue	<b>44-704.66</b>	17	25	4	0,015				
				yellow	<b>44-704.64</b>	17	25	4	0,015				
				green	<b>44-704.65</b>	17	25	4	0,015				
				red	<b>44-704.62</b>	17	25	4	0,015				
				black	<b>44-704.60</b>	17	25	4	0,015				
				white	<b>44-704.69</b>	17	25	4	0,015				
			plastic matt chrome	blue	<b>44-704.26</b>	17	25	4	0,015				
				yellow	<b>44-704.24</b>	17	25	4	0,015				
				green	<b>44-704.25</b>	17	25	4	0,015				
				red	<b>44-704.22</b>	17	25	4	0,015				
				black	<b>44-704.20</b>	17	25	4	0,015				
				white	<b>44-704.29</b>	17	25	4	0,015				
				up to 3 switching elements max.	front ring flush	MA	plastic matt grey	blue	<b>44-702.66</b>	18	25	4	0,013
								yellow	<b>44-702.64</b>	18	25	4	0,013
green	<b>44-702.65</b>	18	25					4	0,013				
red	<b>44-702.62</b>	18	25					4	0,013				
black	<b>44-702.60</b>	18	25					4	0,013				
white	<b>44-702.69</b>	18	25					4	0,013				
plastic matt chrome	blue	<b>44-702.26</b>	18				25	4	0,013				
	yellow	<b>44-702.24</b>	18				25	4	0,013				
	green	<b>44-702.25</b>	18				25	4	0,013				
	red	<b>44-702.22</b>	18				25	4	0,013				
	black	<b>44-702.20</b>	18				25	4	0,013				
	white	<b>44-702.29</b>	18				25	4	0,013				
up to 3 switching elements max.	front ring raised	MA	plastic matt grey	blue	<b>44-705.66</b>	18	25	4	0,015				
				yellow	<b>44-705.64</b>	18	25	4	0,015				
				green	<b>44-705.65</b>	18	25	4	0,015				
				red	<b>44-705.62</b>	18	25	4	0,015				
				black	<b>44-705.60</b>	18	25	4	0,015				
				white	<b>44-705.69</b>	18	25	4	0,015				
			plastic matt chrome	blue	<b>44-705.26</b>	18	25	4	0,015				
				yellow	<b>44-705.24</b>	18	25	4	0,015				
				green	<b>44-705.25</b>	18	25	4	0,015				
				red	<b>44-705.22</b>	18	25	4	0,015				
				black	<b>44-705.20</b>	18	25	4	0,015				
				white	<b>44-705.29</b>	18	25	4	0,015				
up to 3 switching elements max.	with knob high	MA	plastic matt grey	blue	<b>44-706.66</b>	18	25	4	0,015				
				yellow	<b>44-706.64</b>	18	25	4	0,015				
				green	<b>44-706.65</b>	18	25	4	0,015				
				red	<b>44-706.62</b>	18	25	4	0,015				
				black	<b>44-706.60</b>	18	25	4	0,015				
				white	<b>44-706.69</b>	18	25	4	0,015				
			plastic matt chrome	blue	<b>44-706.26</b>	18	25	4	0,015				
				yellow	<b>44-706.24</b>	18	25	4	0,015				
				green	<b>44-706.25</b>	18	25	4	0,015				
				red	<b>44-706.22</b>	18	25	4	0,015				
				black	<b>44-706.20</b>	18	25	4	0,015				
				white	<b>44-706.29</b>	18	25	4	0,015				

switching action : momentary action = M, maintained action = MA

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## pushbutton actuator for flush mounting for marking

colour of lens is determined by the colour of text plate



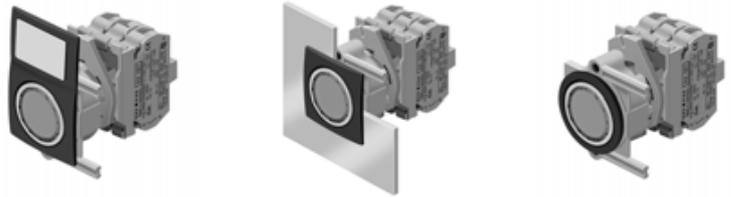
- 🛒 marking plate page 322
- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>pushbutton actuator for flush mounting for marking</b>	M	plastic matt grey	clear	<b>44-701.67</b>	17	26	4	0,012
		plastic matt chrome	clear	<b>44-701.27</b>	17	26	4	0,012
up to 3 switching elements max.	MA	plastic matt grey	clear	<b>44-702.67</b>	18	26	4	0,012
		plastic matt chrome	clear	<b>44-702.27</b>	18	26	4	0,012

switching action : momentary action = M, maintained action = MA

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## illuminated pushbutton actuator for flush mounting for marking



- 🛒 filament lamp page 329
- 🛒 LED page 329
- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 lamp element for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328
- 🛒 lamp for base mounting page 329

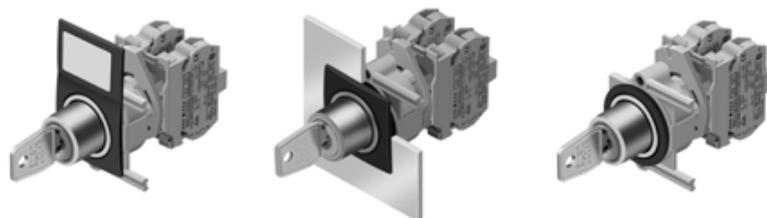
	switching action	front ring	colour of lens	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	tech
<b>illuminated pushbutton actuator for flush mounting for marking</b>	M	plastic matt grey	blue	<b>44-746.66</b>	19	26	4	0,012
			yellow	<b>44-746.64</b>	19	26	4	0,012
			green	<b>44-746.65</b>	19	26	4	0,012
			red	<b>44-746.62</b>	19	26	4	0,012
			white	<b>44-746.69</b>	19	26	4	0,012
		plastic matt chrome	blue	<b>44-746.26</b>	19	26	4	0,012
			yellow	<b>44-746.24</b>	19	26	4	0,012
			green	<b>44-746.25</b>	19	26	4	0,012
			red	<b>44-746.22</b>	19	26	4	0,012
			white	<b>44-746.29</b>	19	26	4	0,012
with text plate translucent white, up to max. 3 switching elements	MA	plastic matt grey	blue	<b>44-747.66</b>	20	26	4	0,012
			yellow	<b>44-747.64</b>	20	26	4	0,012
			green	<b>44-747.65</b>	20	26	4	0,012
			red	<b>44-747.62</b>	20	26	4	0,012
			white	<b>44-747.69</b>	20	26	4	0,012
		plastic matt chrome	blue	<b>44-747.26</b>	20	26	4	0,012
			yellow	<b>44-747.24</b>	20	26	4	0,012
			green	<b>44-747.25</b>	20	26	4	0,012
			red	<b>44-747.22</b>	20	26	4	0,012
			white	<b>44-747.29</b>	20	26	4	0,012

switching action : momentary action = M, maintained action = MA

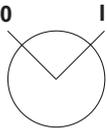
circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## keylock switch actuator 2 positions for flush mounting

up to 3 switching elements max. in 1. level



- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adaptor page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

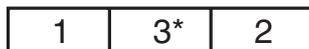
	switching action	key removable in	front ring	28.2 mm dia. Typ-Nr.	circuit drawing			technical drawing			mounting dimensions		
<b>keylock switch actuator 2 positions for flush mounting</b>	M	0	plastic matt grey	<b>44-732.61</b>	23	27	4	0,051					
			plastic matt chrome	<b>44-732.21</b>	23	27	4	0,051					
position 0: basic position position I: maintained action 90° standard lock 9500 other lock numbers on request	MA	0	plastic matt grey	<b>44-730.61</b>	22	27	4	0,051					
			plastic matt chrome	<b>44-730.21</b>	22	27	4	0,051					
		0 + I	plastic matt grey	<b>44-730.62</b>	22	27	4	0,051					
			plastic matt chrome	<b>44-730.22</b>	22	27	4	0,051					

switching action : maintained action = MA, momentary action = M

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

with 2 positions

Arrangement of switching element  
corresponds to marking of front adaptor



90° O

Switching funktion I

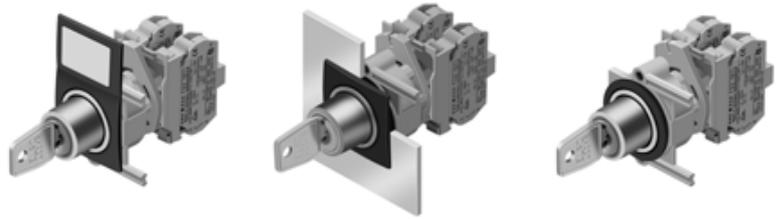


Switching element actuated

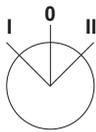
\*By using of not stockable, switching elements please cover the outside positions 1 and 2 of frontadaptor.

## keylock switch actuator 3 positions for flush mounting

up to 3 switching elements max. in 1. level



- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adaptor page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

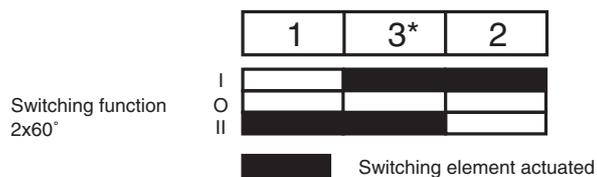


	switching action	key removable in	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>keylock switch actuator 3 positions for flush mounting</b>	momentary - 0 - momentary	0	plastic matt grey	<b>44-735.61</b>	24	27	4	0,051
			plastic matt chrome	<b>44-735.21</b>	24	27	4	0,051
position 0: basic position position I + II: maintained action 60° standard lock 9500 other lock numbers on request	maintained - 0 - maintained	0	plastic matt grey	<b>44-734.61</b>	27	27	4	0,051
			plastic matt chrome	<b>44-734.21</b>	27	27	4	0,051
		0 + II	plastic matt grey	<b>44-734.64</b>	27	27	4	0,051
			plastic matt chrome	<b>44-734.24</b>	27	27	4	0,051
		I + 0	plastic matt grey	<b>44-734.63</b>	27	27	4	0,051
			plastic matt chrome	<b>44-734.23</b>	27	27	4	0,051
I + 0 + II	plastic matt grey	<b>44-734.65</b>	27	27	4	0,051		
	plastic matt chrome	<b>44-734.25</b>	27	27	4	0,051		
position 0: basic position position I: momentary action 60° position II: maintained action 60° standard lock 9500 other lock numbers on request	momentary - 0 - maintained	0	plastic matt grey	<b>44-737.61</b>	26	27	4	0,051
			plastic matt chrome	<b>44-737.21</b>	26	27	4	0,051
		0 + II	plastic matt grey	<b>44-737.64</b>	26	27	4	0,051
			plastic matt chrome	<b>44-737.24</b>	26	27	4	0,051
position 0: basic position position I: maintained action 60° position II: momentary action 60° standard lock 9500 other lock numbers on request	maintained - 0 - momentary	0	plastic matt grey	<b>44-736.61</b>	25	27	4	0,051
			plastic matt chrome	<b>44-736.21</b>	25	27	4	0,051
		I + 0	plastic matt grey	<b>44-736.63</b>	25	27	4	0,051
			plastic matt chrome	<b>44-736.23</b>	25	27	4	0,051

switching action: maintained action = MA, momentary action = M, 0 = basic position

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

with 3 positions  
Arrangement of switching element corresponds to marking of front adaptor



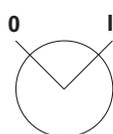
\*By using of not stockable, switching elements please cover the outside positions 1 and 2 of frontadapter.

## selector switch actuator 2 positions for flush mounting

up to 3 switching elements max. in 1. level



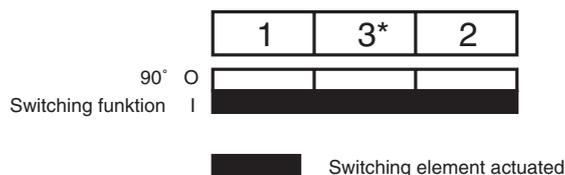
- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adaptor page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328



	switching action				circuit drawing	technical drawing	mounting dimensions	
		lever	front ring	28.2 mm dia. Typ-Nr.				
<b>selector switch actuator 2 positions for flush mounting</b>	M	grey	plastic matt grey	<b>44-722.68</b>	29	28	4	0,021
		black	plastic matt chrome	<b>44-722.20</b>	29	28	4	0,021
position 0: basic position position I: maintained action 90°	MA	grey	plastic matt grey	<b>44-720.68</b>	28	28	4	0,021
		red	plastic matt grey	<b>44-720.62</b>	28	28	4	0,021
			plastic matt chrome	<b>44-720.22</b>	28	28	4	0,021
		black	plastic matt chrome	<b>44-720.20</b>	28	28	4	0,021

switching action : maintained action = MA, momentary action = M  
circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

with 2 positions  
Arrangement of switching element corresponds to marking of front adaptor



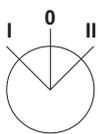
\*By using of not stockable, switching elements please cover the outside positions 1 and 2 of frontadapter.

## selector switch actuator 3 positions for flush mounting

up to 3 switching elements max. in 1. level



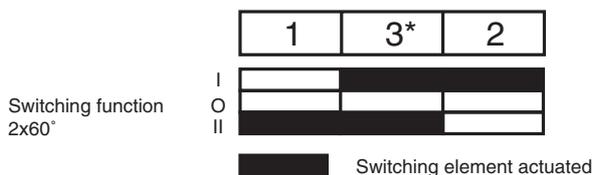
- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328



	switching action	lever	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>selector switch actuator 3 positions for flush mounting</b>	momentary - 0 - momentary	grey	matt grey	<b>44-725.68</b>	31	28	4	0,021
		black	matt chrome	<b>44-725.20</b>	31	28	4	0,021
position 0: basic position position I + II: maintained action 60°	maintained - 0 - maintained	grey	matt grey	<b>44-724.68</b>	30	28	4	0,021
		black	matt chrome	<b>44-724.20</b>	30	28	4	0,021
position 0: basic position position I: momentary action 60° position II: maintained action 60°	momentary - 0 - maintained	grey	matt grey	<b>44-727.68</b>	33	28	4	0,021
		black	matt chrome	<b>44-727.20</b>	33	28	4	0,021
position 0: basic position position I: maintained action 60° position II: momentary action 60°	maintained - 0 - momentary	grey	matt grey	<b>44-726.68</b>	32	28	4	0,021
		black	matt chrome	<b>44-726.20</b>	32	28	4	0,021

switching action: : maintained action = MA, momentary action = M, 0 = basic position  
 circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

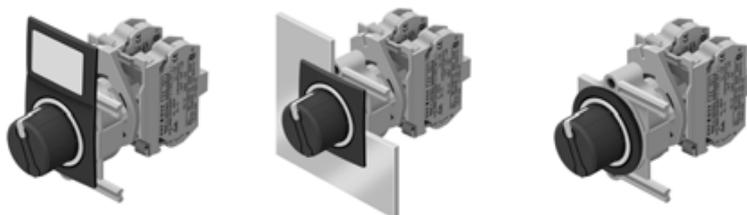
with 3 positions  
 Arrangement of switching element corresponds to marking of front adaptor



\* By using of not stockable, switching elements please cover the outside positions 1 and 2 of frontadaptor.

## interlocking pushbutton actuator for flush mounting

up to 3 switching elements max. in 1. level



- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323
- 🛒 front adapter page 327
- 🛒 slow-make switching element stackable for front mounting page 327
- 🛒 slow-make switching element not stackable for front mounting page 328
- 🛒 base adaptor page 328
- 🛒 slow-make switching element not stackable for base mounting page 328

	front ring	colour of rotation knob	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>interlocking pushbutton actuator for flush mounting</b>	plastic matt grey	grey	<b>44-742.68</b>	34	29	4	0,020
		red	<b>44-742.62</b>	34	29	4	0,020
	plastic matt chrome	red	<b>44-742.22</b>	34	29	4	0,020
		black	<b>44-742.20</b>	34	29	4	0,020

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## potentiometer-drive for flush mounting



- 🛒 front bezel set for flush mounting without label support page 322
- 🛒 front bezel set for flush mounting with label support page 323
- 🛒 label for front bezel set for flush mounting with label support page 323

	construction	front ring	28.2 mm dia. Typ-Nr.	circuit drawing	technical drawing	mounting dimensions	
<b>potentiometer-drive for flush mounting</b>	without potentiometer	plastic matt grey	<b>44-744.60</b>		30	4	0,016
		plastic matt chrome	<b>44-744.20</b>		30	4	0,016
standard 10 kOhm others on request, resistance value as per IEC 63, series E3	with potentiometer 10 kΩ	plastic matt grey	<b>44-745.60-10K1</b>	35	30	4	0,030
		plastic matt chrome	<b>44-745.20-10K1</b>	35	30	4	0,030

circuit drawings from page 348, technical drawings from page 334, mounting dimensions from page 347

## at front

### lens

for illuminated version

	shape	lens	colour	28.2 mm dia. Typ-Nr.	
<b>lens</b> for indicator front illumination, illuminated pushbutton	flat	transparent	blue	<b>44-966.6</b>	0,001
			colourless, clear	<b>44-966.7</b>	0,001
			yellow	<b>44-966.4</b>	0,001
			green	<b>44-966.5</b>	0,001
			red	<b>44-966.2</b>	0,001



### marking plate

	marking plate	colour	part no.	
<b>marking plate</b> for pushbutton for marking	opaque	blue	<b>44-961.6</b>	0,001
		yellow	<b>44-961.4</b>	0,001
		green	<b>44-961.5</b>	0,001
		red	<b>44-961.2</b>	0,001
		black	<b>44-961.0</b>	0,001
for pushbuttons for marking, illuminated pushbuttons, indicators front illumination	translucent	white	<b>44-962.9</b>	0,001



see inscription

### front bezel set for flush mounting without label support

	use	material	colour	 36 x 36 mm Typ-Nr.	35.5 mm dia. Typ-Nr.	technical drawing	
<b>front bezel set for flush mounting without label support</b>	for illuminated-/pushbutton, selector- and keylock switch, interlocking pushbutton the mounting depth extends for 12 mm	plastic	black	<b>44-946.03</b>	<b>44-946.03-A</b>	31	0,010
	for indicator, potentiometer the mounting depth extends for 3 mm	plastic	black	<b>44-946.01</b>	<b>44-946.01-A</b>	31	0,006



technical drawings from page 334

## front bezel set for flush mounting with label support

	use	material	colour	36 x 60 mm Typ-Nr.	technical drawing	
<b>front bezel set for flush mounting with label support</b>	for illuminated-/pushbutton, selector- and keylock switch, interlocking pushbutton the mounting depth extends for 12 mm	plastic	black	<b>44-946.04</b>	31	0,011
	for indicator, potentiometer the mounting depth extends for 3 mm	plastic	black	<b>44-946.02</b>	31	0,007



technical drawings from page 334

## label for front bezel set for flush mounting with label support

	colour	27 x 18 mm Typ-Nr.	
<b>label for front bezel set for flush mounting with label support</b> of plastic, 2 layers (alu/black), autoadhesive	aluminium colourless	<b>44-946</b>	0,001
of plastic, 2 layers (black/white), autoadhesive	black	<b>44-946.0</b>	0,001



see inscription

## lens cap

for indicator full face illumination

	lens cap	colour	part no.	
<b>lens cap</b> of plastic incl. sealing ring	transparent	blue	<b>44-965.6</b>	0,003
		colourless, clear	<b>44-965.7</b>	0,003
		yellow	<b>44-965.4</b>	0,003
		green	<b>44-965.5</b>	0,003
		red	<b>44-965.2</b>	0,003



## lock cap

	colour	part no.	
<b>lock cap</b> Protection when used under adverse ambient conditions. Remove gasket from the actuator. Cannot be used with the label support.	grey	<b>44-921.08</b>	0,004
	black	<b>44-921.00</b>	0,004



## legend plate

	30 x 60 mm Typ-Nr.	technical drawing	
<b>legend plate</b> aluminium anodized, for engraving, for protection IP 40	<b>44-955</b>	32	0,001



technical drawings from page 334

## label for enclosure

	colour	19 x 19 mm Typ-Nr.	0,001
<b>label for enclosure</b> of plastic, aluminium plated, unmarked, adhesive	aluminium colourless	<b>44-963</b>	0,001



## label for label support

	colour	13 x 26 mm Typ-Nr.	0,001
<b>label for label support</b>	aluminium anodized, black	<b>44-960</b>	0,001



see inscription

## label support without label

label to be ordered separatly

	colour	29.5 x 49.5 mm Typ-Nr.	technical drawing	0,002
<b>label support without label</b> of plastic, remove sealing ring from actuator	grey	<b>44-944.08</b>	33	0,002
	black	<b>44-944.00</b>	33	0,002



technical drawings from page 334

## label support with label

	colour	29.5 x 49.5 mm Typ-Nr.	technical drawing	0,002
<b>label support with label</b> of plastic, label unmarked, remove sealing ring from actuator	grey	<b>44-945.08</b>	33	0,002
	black	<b>44-945.00</b>	33	0,002



technical drawings from page 334

## front ring

for illuminated-/pushbutton actuator

	material	colour	part no.	0,002
<b>front ring</b>	plastic	matt grey	<b>44-967.6</b>	0,002
		matt chrome	<b>44-967.2</b>	0,002



## front ring raised

for pushbutton actuator

	material	colour	part no.	0,003
<b>front ring raised</b>	plastic	matt grey	<b>44-968.6</b>	0,003
		matt chrome	<b>44-968.2</b>	0,003



## protective cover

only for pushbutton with front ring flush mounted

	part no.	technical drawing	
<b>protective cover</b> hinged, transparent, with means for sealing, front panel thickness up to 3 mm max. Remove anti-twisting nose at the actuator. Fits with types 44-701..., 44-702..., 44-746..., 44-747...	<b>44-922</b>	34	0,007



technical drawings from page 334

## protective cap

only for pushbutton with front ring flush mounted

	colour	part no.	
<b>protective cap</b> silicone, protection when used under adverse ambient conditions, remove gasket from the actuator. Cannot be used with the label support.	colourless, transparent	<b>44-917.07</b>	0,002



## blind plug

	colour	28.2 mm dia. Typ-Nr.	technical drawing	
<b>blind plug</b> lamp transformer can be mounted with front adaptor	grey	<b>44-915</b>	35	0,008



technical drawings from page 334

## enclosure

incl. base adaptor for base mounting

	mounting spaces	colour	part no.	technical drawing	
<b>enclosure</b>	1 mounting place	light grey	<b>44-001.8</b>	23	0,175
	2 mounting places	light grey	<b>44-002.8</b>	23	0,199
	3 mounting places	light grey	<b>44-003.8</b>	23	0,252
	5 mounting places	light grey	<b>44-005.8</b>	23	0,332



technical drawings from page 334

## cable gland PG 16

for enclosure

	part no.	
<b>cable gland M 20</b> with nut and sealing fixing area 7...13 mm dia.	<b>44-956</b>	0,009



## spare key

	part no.	 kg
<b>spare key</b> for standard lock 9500, for other lock numbers complete the part no.	<b>44-919</b>	0,007



## assembling

### reducing ring

for mounting in 30.5 mm drill

	colour	part no.	 kg
<b>reducing ring</b>	aluminium natural anodized	<b>44-925</b>	0,003



### mounting tool

	part no.	 kg
<b>mounting tool</b> for fixing nut, transparent lenses, lens caps and illumination	<b>44-935</b>	0,0



## at back

### front adapter

for front mounting

	use	part no.	technical drawing	
<b>front adapter</b> marked	for switching element with 1 contact element	<b>44-901</b>	36	0,007
	for switching element with 2 contact elements	<b>44-902</b>	36	0,007
	for switching element in 2 levels with 3 contact elements	<b>44-903</b>	36	0,007
not marked	for switching element/lamp element	<b>44-900</b>	36	0,007



technical drawings from page 334

Typ No.	Diagram
44-900	
44-901	
44-902	
44-903	

Frontadapter beschriftet: Ordnungsziffern für Anschlussbezeichnung nach DIN EN 50013, Funktionsziffern befinden sich auf den Schaltelementen neben den Schraubklemmanschlüssen.

### slow-make switching element stackable for front mounting

for front adaptor

	contacts	material of contacts	connection method	part no.	circuit drawing	technical drawing	
<b>slow-make switching element stackable for front mounting</b> forced opening according IEC 947-5-1, DIN VDE 0660 or EN 60947-5-1	1 NO	gold/silver	ST	<b>44-162</b>	36	37	0,014
		hard silver	ST	<b>44-161</b>	36	37	0,014
	1 NC	gold/silver	ST	<b>44-152</b>	38	37	0,014
		hard silver	ST	<b>44-151</b>	38	37	0,014
	1 NC + 1 NO	gold/silver	ST	<b>44-132</b>	37	37	0,017
		hard silver	ST	<b>44-131</b>	37	37	0,017
not to use with emergency stop switch	1 NC + 1 normally open, overlapping	hard silver	ST	<b>44-141</b>	39	37	0,017



circuit drawings from page 348, technical drawings from page 334

## slow-make switching element not stackable for front mounting

for front adaptor

	contacts	material of contacts	connection method	part no.	circuit drawing	technical drawing	
<b>slow-make switching element not stackable for front mounting</b> sealing und spacer	1 NO	hard silver	ST	<b>44-121</b>	36	37	0,010
forced opening according IEC 947-5-1, DIN VDE 0660 or EN 60 947-5-1	1 NC	hard silver	ST	<b>44-111</b>	38	37	0,010



circuit drawings from page 348, technical drawings from page 334

## lamp element for front mounting

	connection method	part no.	circuit drawing	technical drawing	
<b>lamp element for front mounting</b> lamp socket Ba9s, max. 2.6 W	ST	<b>44-524</b>	1	38	0,011



circuit drawings from page 348, technical drawings from page 334

## base adaptor

	part no.	
<b>base adaptor</b>	<b>44-905</b>	0,006



Typ No. Diagram

44 - 905 

1	3	2
---	---	---

## slow-make switching element not stackable for base mounting

for base adaptor

	contacts	material of contacts	connection method	part no.	circuit drawing	technical drawing	
<b>slow-make switching element not stackable for base mounting</b> sealing und spacer	1 NO	hard silver	ST	<b>44-221</b>	36	39	0,010
forced opening according IEC 947-5-1, DIN VDE 0660 or EN 60 947-5-1	1 NC	hard silver	ST	<b>44-211</b>	38	39	0,010



circuit drawings from page 348, technical drawings from page 334

## lamp for base mounting

	connection method	part no.	circuit drawing	technical drawing	
<b>lamp for base mounting</b> lamp socket Ba9s, max. 2.6 W	ST	<b>44-525</b>	1	40	0,011



circuit drawings from page 348, technical drawings from page 334

## blind element

for mounting of lamp transformer

	part no.	technical drawing	
<b>blind element</b>	<b>44-940</b>	41	0,008



technical drawings from page 334

## for illumination

### Filament lamp

	voltage/current	part no.	
<b>Filament lamp</b> base Ba9s	6 VAC/DC/200 mA 1.2 W	<b>10-1406.1369</b>	0,002
	24 VAC/DC/50 mA 1.2 W	<b>10-1412.1279</b>	0,002
at spiral form 2 x CC - 2 F	110-130 VAC/DC/20 mA 2.4 W	<b>10-1423.1179</b>	0,002
at spiral form CC - 2 F	60 VAC/DC/20 mA 1.2 W	<b>10-1420.1179</b>	0,002



### LED

	number of chips	voltage/current	colour	part no.	
<b>LED</b> base Ba9s <b>Note:</b> <b>For optimal illumination</b> <b>we strongly recommend</b> <b>using our new single-</b> <b>chip LEDs.</b>  <b>For new designs, only</b> <b>the new single-chip</b> <b>LEDs should be chosen.</b> <b>They can be found on</b> <b>page 669.</b>	8	24 VDC/19 mA	yellow	<b>10-6412.3164</b>	0,003
			green	<b>10-6412.3165</b>	0,003
			red	<b>10-6412.3162</b>	0,003



**resistor diode element**

	number of diodes	alternating service voltage	mounting method	connection method	part no.	technical drawing	
<b>resistor diode element</b> for incandescent lamp 130 V/2.4 W 1 N 4007	1	Ue = 220-240 VAC	front or base	ST	<b>44-614.11</b>	42	0,009
	2	Ue = 220-240 VAC	front	ST	<b>44-614.21</b>	42	0,015
for incandescent lamp 60 V/1.2 W 1 N 4007	1	Ue = 110-125 VAC	front or base	ST	<b>44-614.12</b>	42	0,009
	2	Ue = 110-125 VAC	front	ST	<b>44-614.22</b>	42	0,015



technical drawings from page 334

**diode element**

	number of diodes	connection method	part no.	technical drawing	
<b>diode element</b> 1 N 4007, for front or base mounting	1	ST	<b>44-612.1</b>	42	0,009
	2	ST	<b>44-612.2</b>	42	0,011



technical drawings from page 334

**lamp transformer**

	operation voltage	connection method	part no.	technical drawing	
<b>lamp transformer</b> short-circuit proof, 1.2 VA, 50/60 Hz, for front or base mounting	125/24 V	ST	<b>44-975</b>	43	0,102
	125/6 V	ST	<b>44-970</b>	43	0,102
	230/24 V	ST	<b>44-976</b>	43	0,102
	230/6 V	ST	<b>44-971</b>	43	0,102
	400/24 V	ST	<b>44-977</b>	43	0,102
	400/6 V	ST	<b>44-972</b>	43	0,102



connection method: screw terminal = ST  
 screw terminal for primary connection, for secondary connection wire tails with core-end sleeves  
 technical drawings from page 334

**capacitor**

for lamp voltage reduction

	value	part no.	
<b>capacitor</b> use with 60 V/20 mA, 50 Hz lamp voltage	230 V/0.27 μF	<b>44-958.090</b>	0,002



Please keep to the country specific security rules.

## series resistor

for lamp voltage reduction

	value	part no.	
<b>series resistor</b> for incandescent lamp 110-130 V/2.4 W	230 V/6.8 kΩ	<b>44-957.060</b>	0,002
for incandescent lamp 60 V/1.2 W	110 V/2.7 kΩ	<b>44-957.010</b>	0,002
	125 V/3.3 kΩ	<b>44-957.020</b>	0,002
	145 V/4.7 kΩ	<b>44-957.030</b>	0,002
	230 V/8.2 kΩ	<b>44-957.040</b>	0,002
	240 V/10 kΩ	<b>44-957.050</b>	0,002



Please keep to the country specific security rules.

## terminal plate empty

for fitting with series resistors and capacitors

	no. of spaces	part no.	
<b>terminal plate empty</b>	5 spaces 62.5 x 60 x 15 mm	<b>44-959.05</b>	0,025
	10 spaces 125 x 60 x 15 mm	<b>44-959.10</b>	0,045
	15 spaces 187.5 x 60 x 15 mm	<b>44-959.15</b>	0,090
	20 spaces 250 x 60 x 15 mm	<b>44-959.20</b>	0,106



## for emergency stop switch

### label for emergency stop switch

	marking	Ø 90 mm Typ-Nr.	Ø 60 mm Typ-Nr.	Ø 45 mm Typ-Nr.	
<b>label for emergency stop switch</b> front protection IP 65 when protection foil is removed, yellow, self-adhesiv	ARRET D'URGENCE	<b>44-949.3</b>			0,009
			<b>44-950.3</b>		0,004
				<b>44-951.3</b>	0,002
	Emergency Stop		<b>44-950.2</b>		0,004
		<b>44-949.2</b>		<b>44-951.2</b>	0,002
					0,009
	emergency stop	<b>44-949.1</b>			0,009
				<b>44-951.1</b>	0,002
			<b>44-950.1</b>		0,004
	without	<b>44-949</b>			0,009
			<b>44-950</b>		0,004
				<b>44-951</b>	0,002



### enclosure for emergency stop switch

incl. base adaptor for base mounting

	mounting spaces	colour	part no.	technical drawing	
<b>enclosure for emergency stop switch</b>	1 mounting place	yellow	<b>44-001.4</b>	23	0,174



technical drawings from page 334

### cable gland PG 16/M 20

for enclosure

	part no.	
<b>cable gland PG16/M 20</b> with nut and sealing fixing area 7...13 mm dia.	<b>44-956</b>	0,009



## slow-make switching element

### switching system

#### switching system

The double-break switching system can be supplied for the following switching functions: 1 normally closed, 1 normally open or 1 changeover contact with or without overlap.

The normally closed contacts have forced opening according to DIN 0660, IEC 947-5-1 and DIN VDE 0113.

The switching element exhibits high reliability due to its H-contact system with relative friction. The normally open and normally closed contacts can be used electrically separated.

The standard version is ideal for high breaking capacities. For lower capacities a special version can be supplied.

### material

#### material of contacts

standard version: Ag-Ni alloy

special version: gold/silver

#### plastics

UL listed, Cd-free

#### switching element

PC, PA 6.6 self-extinguishing

### mechanical characteristics

#### actuating force

per switching element  $\leq 5$  N

(illuminated) pushbutton actuator  $\leq 10$  N

emergency stop switch actuator  $\leq 20$  N

emergency stop switch actuator foolproof  $\leq 70$  N

double pushbutton  $\leq 12$  N per contact surface

#### actuating travel

approx. 6 mm

#### resistance to climate

humidity and heat, constant as per DIN IEC 68 Teil 2-3

humidity and heat, cyclic as per DIN IEC 68 Teil 2-30

#### storage temperature

-40°C to +70°C

#### mechanical life

slow-make switching element  $10 \times 10^6$  switching operations

pushbutton momentary action  $5 \times 10^6$  switching operations

pushbutton maintained action  $1 \times 10^6$  cycles of operation

Illuminated pushbutton momentary action  $3 \times 10^6$  switching operations

Illuminated pushbutton maintained action  $1 \times 10^6$  cycles of operation

interlocking pushbutton  $2 \times 10^5$  switching operations

emergency button not foolproof  $1 \times 10^5$  switch rating

emergency button

foolproof 6050 switch rating

keylock switch  $2 \times 10^5$  cycles of operation

selector switch  $2 \times 10^5$  cycles of operation

double pushbutton  $2 \times 10^5$  switching operations per contact surface

#### resistance to shock

40 g (duration 6 ms) as per IEC 68-2-27

#### resistance to vibration

sinusoidal, 5 g at 10-500 Hz as per IEC 68-2-6

#### ambient air temperature

-25°C as per DIN EN 60068-2-1

+60°C as per DIN EN 60068-2-2

#### degree of protection

actuators at front and enclosure IP 65 for IEC 529/DIN 40050

### electrical characteristics

#### rated insulation voltage

U<sub>i</sub>:

slow-make switching element: 660 V

lamp element 250 V

lamp transformer: 660 V

degree of pollution: 3

#### rated voltage

U<sub>e</sub>:

AC-15:

120 V~6A

230 V~6A

400 V~4A

500 V~3A

600 V~1,2A

DC-13:

24 V - 3A

60 V - 1,3A

120 V - 0,6A

250 V - 0,3A

#### rated impulse withstand voltage

U<sub>imp</sub>:

lamp element: 2,5 kV

lamp transformer: 6 kV

slow-make switching element: 6 kV

1 NC + 1 NO without overlap:

U<sub>e</sub> > 400 V, same polarity

U<sub>imp</sub> = 4000 V

1 NC + 1 NO with overlap:

U<sub>e</sub> > 250 V, same polarity

U<sub>imp</sub> = 4000 V

#### rated current

(resistive)I<sub>e</sub>:

AC-12: 500 V ~5 A

DC-12:

24 V - 10 A

60 V - 8 A

125 V - 3 A

250 V - 1 A

#### contact resistance

starting value (initial)  $\leq 50$  mΩ

#### electrical life

AC-15: 400 V ~2 A:  $1 \times 10^6$  switching operations

#### continuous thermal current I<sub>th2</sub>

I<sub>th2</sub> = 10 A

#### short-circuit protection

max. series fuse to be provided 10 A gL

lamp transformer: short-circuit-proof

## rules

### approvals

- VDE-Reg.-No. 5310
- UL
- CSA
- German Lloyd
- VDE
- CE (declaration of conformity)

## actuator

## material

### adapter and enclosure

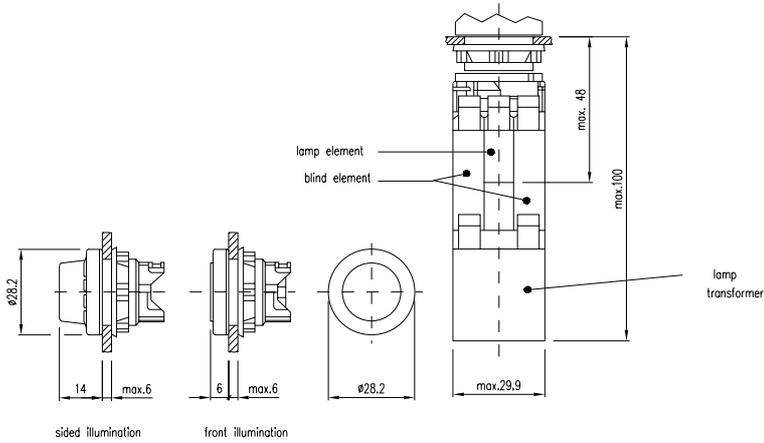
PC

### front parts

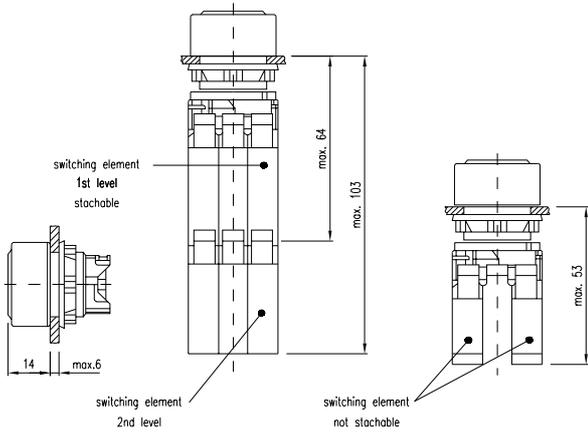
PA 6, PA 12, PC, chromium-plated ABS

## technical drawings

1 indicator complete full face illumination not for marking, indicator complete front illumination for marking  
page 289, 289

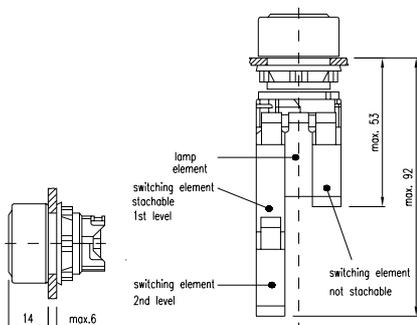


2 pushbutton complete  
page 290



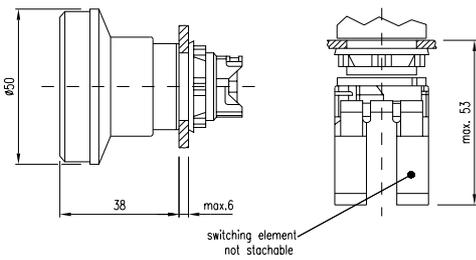
3 illuminated pushbutton complete for marking  
page 290

lamp element



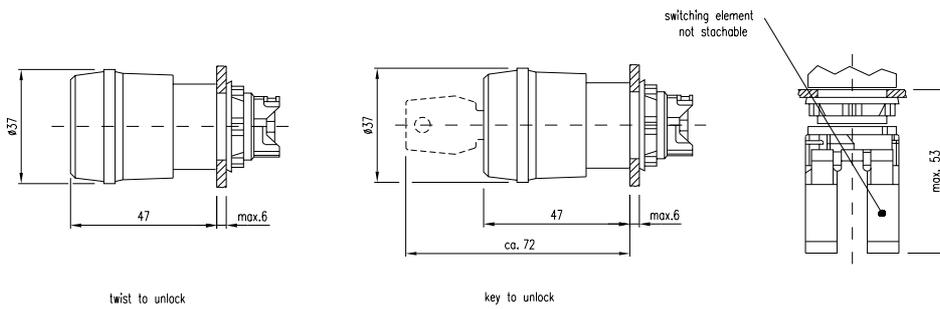
## 4 emergency stop switch complete

page 291



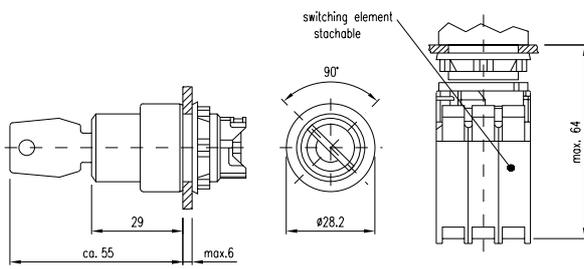
## 5 emergency stop switch complete

page 291



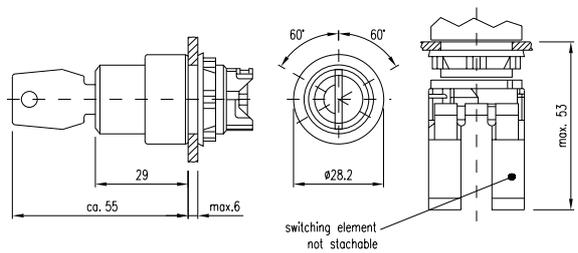
## 6 key lock complete 2 positions

page 291



## 7 key lock complete 3 positions

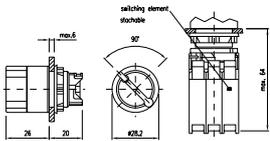
page 292



## 8 selector switch complete 2 positions

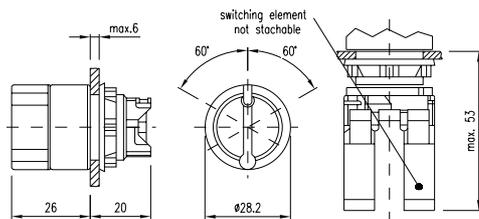
page 292

switching element



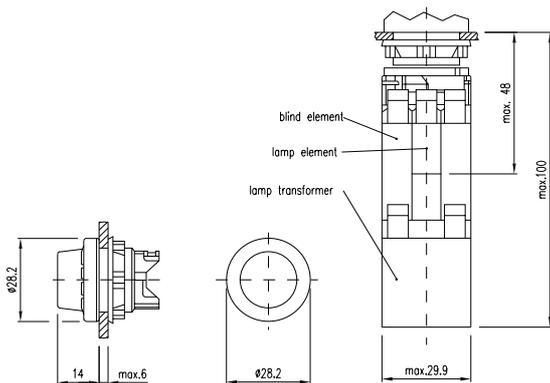
## 9 selector switch complete 3 positions

page 293



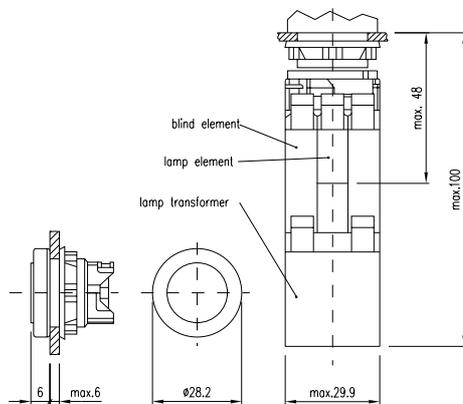
## 10 indicator actuator, full face illumination not for marking

page 294

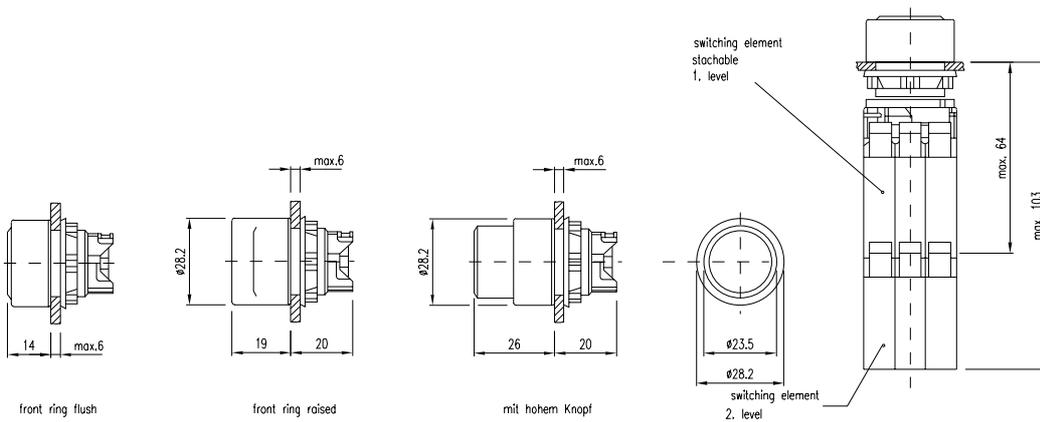


## 11 indicator actuator, front illumination for flush mounting for marking

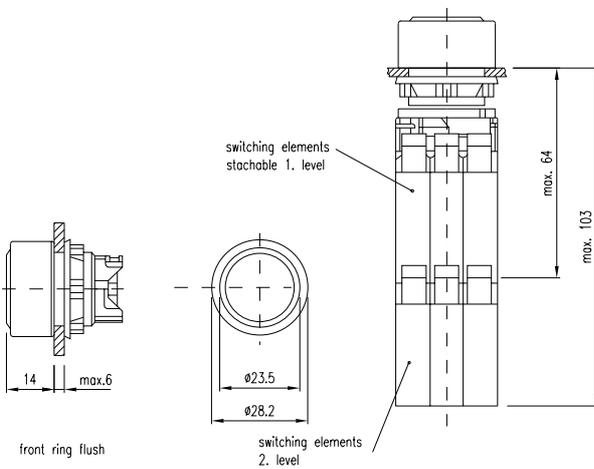
page 295



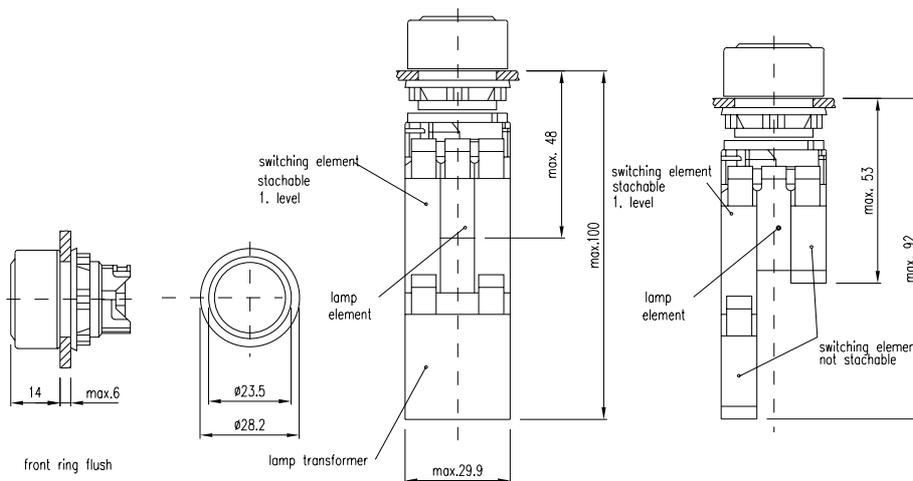
## 12 pushbutton actuator not for marking page 296



## 13 pushbutton actuator for marking page 298

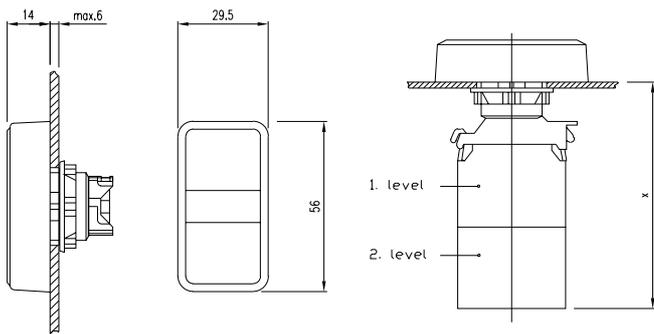


## 14 illuminated pushbutton actuator for marking page 299



## 15 double pushbutton actuator

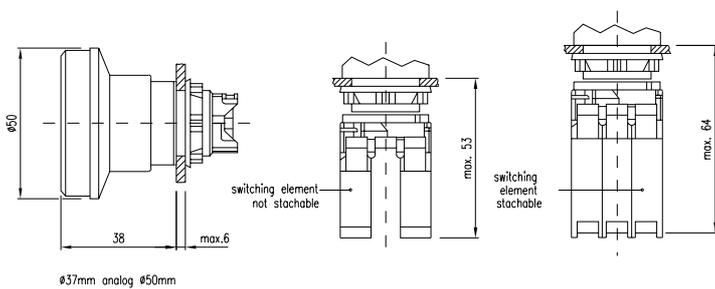
page 300



mounting-depth x	1. level	2. level
max. 53mm	44-111/ 44-121	-
max. 64mm	44-111- 44-162	-
max. 92mm	44-131- 44-162	44-111/ 44-121
max. 100mm	44-131- 44-162	44-970- 44-977
max. 103mm	44-131- 44-162	44-131- 44-162

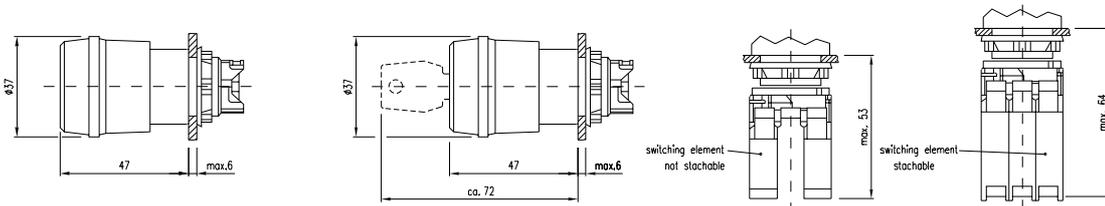
## 16 emergency stop switch actuator

page 301



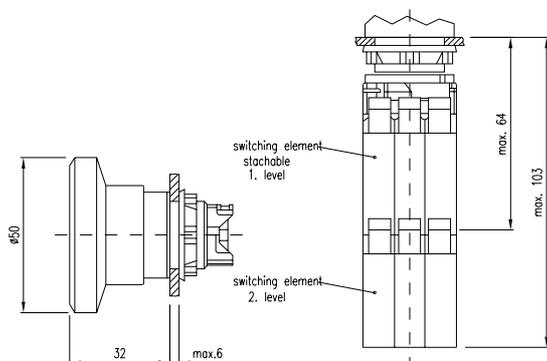
## 17 emergency stop switch actuator foolproof

page 302

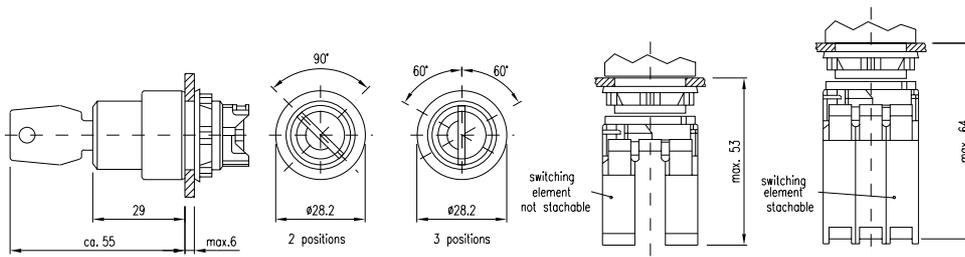


## 18 pushbutton actuator with mushroom-head cap

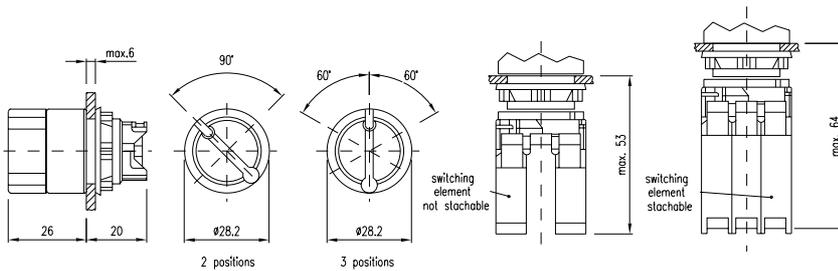
page 303



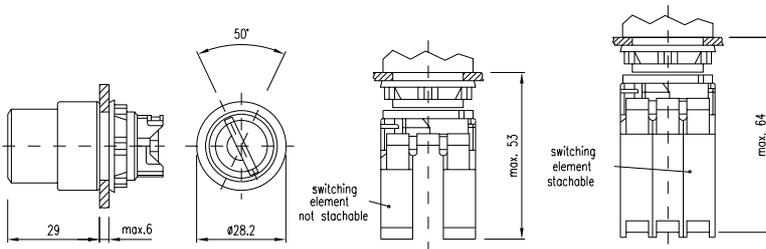
**19 keylock switch actuator 2 positions, keylock switch actuator 3 positions**  
page 304, 305



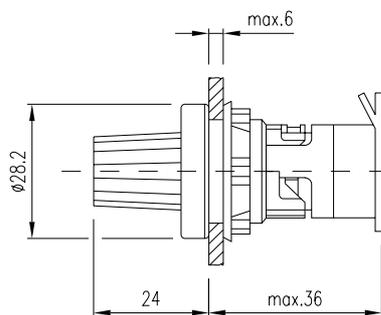
**20 selector switch actuator 2 positions, selector switch actuator 3 positions**  
page 306, 307



**21 interlocking pushbutton actuator**  
page 308



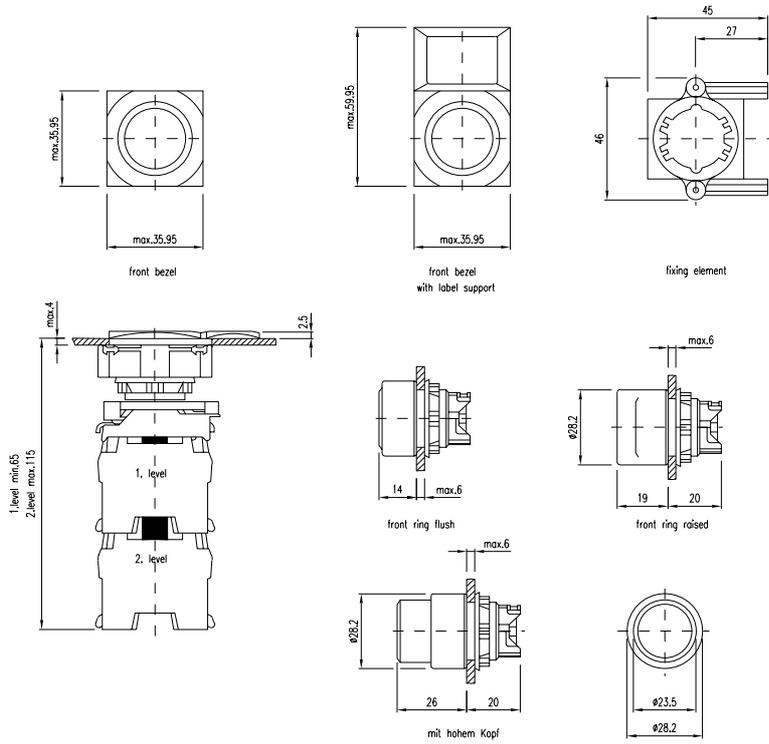
**22 potentiometer-drive**  
page 308



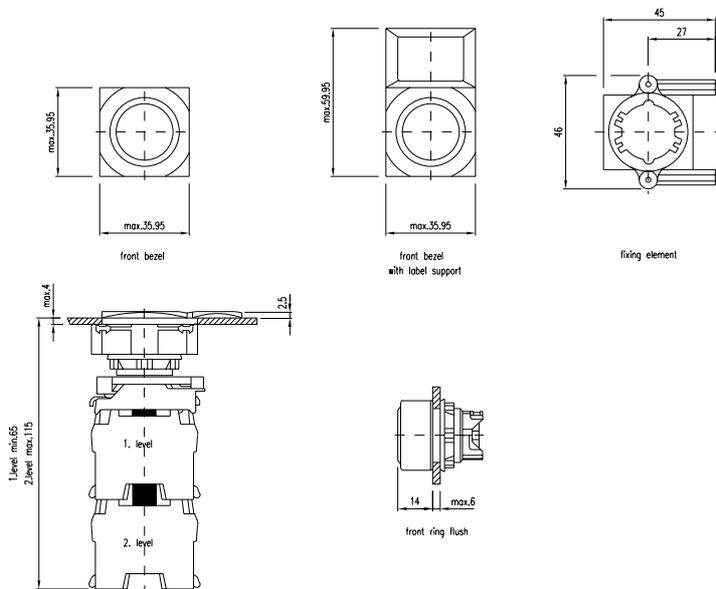
for potentiometer No. 47-745



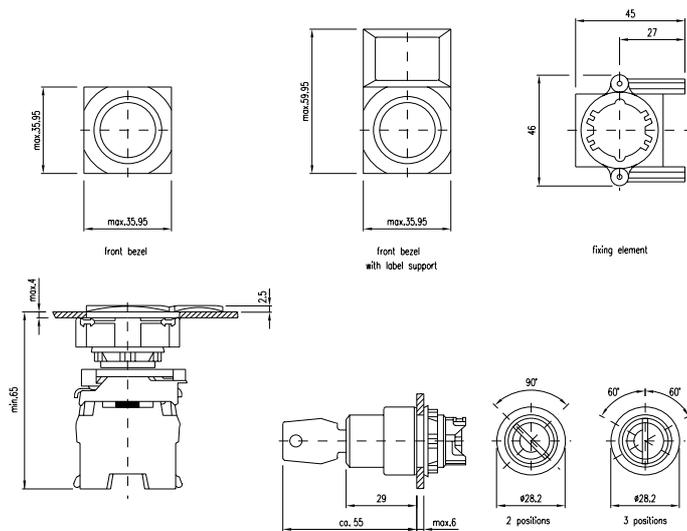
## 25 pushbutton actuator for flush mounting not for marking page 312



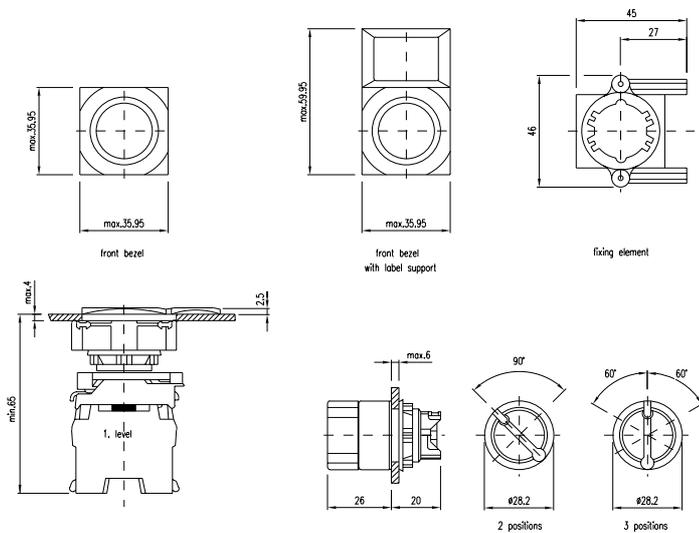
## 26 pushbutton actuator for flush mounting for marking, illuminated pushbutton actuator for flush mounting for marking page 314, 315



**27 keylock switch actuator 2 positions for flush mounting , keylock switch actuator 3 positions for flush mounting**  
page 316, 317

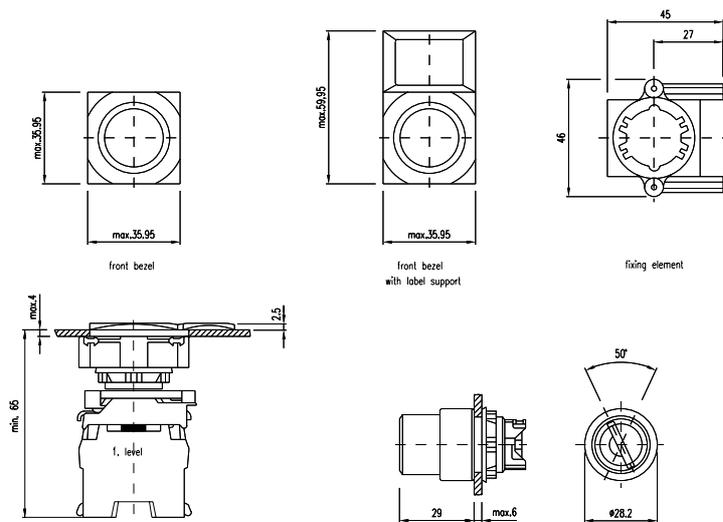


**28 selector switch actuator 2 positions for flush mounting , selector switch actuator 3 positions for flush mounting**  
page 318, 319



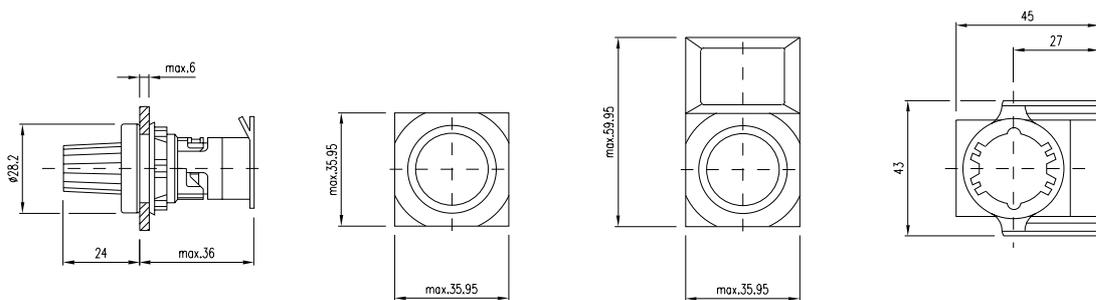
## 29 interlocking pushbutton actuator for flush mounting

page 320



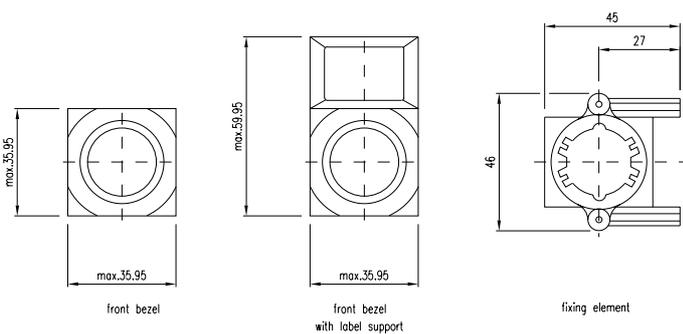
## 30 potentiometer-drive for flush mounting

page 321



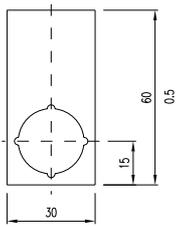
## 31 front bezel set for flush mounting without label support, front bezel set for flush mounting with label support

page 322, 323



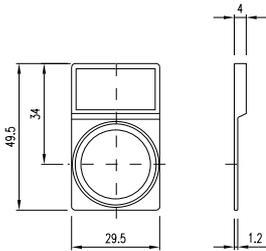
### 32 legend plate

page 323



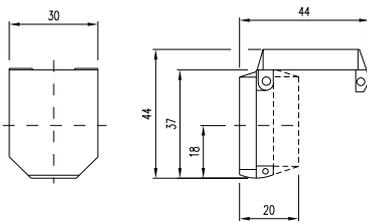
### 33 label support without label, label support with label

page 324, 324



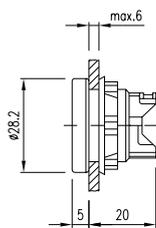
### 34 protective cover

page 325



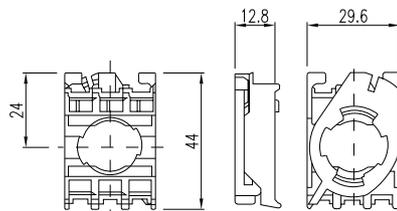
### 35 blind plug

page 325

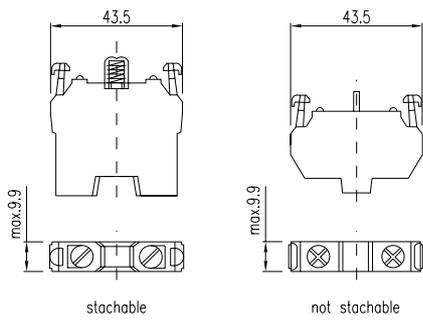


### 36 front adapter

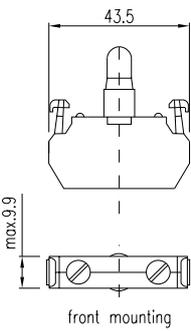
page 327



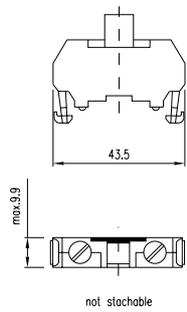
**37 slow-make switching element stackable for front mounting, slow-make switching element not stackable for front mounting**  
page 327, 327



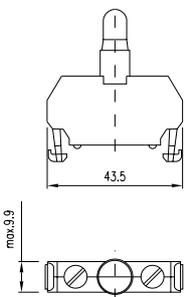
**38 lamp element for front mounting**  
page 328



**39 slow-make switching element not stackable for base mounting**  
page 328

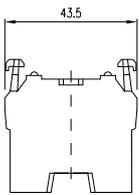


**40 lamp for base mounting**  
page 328



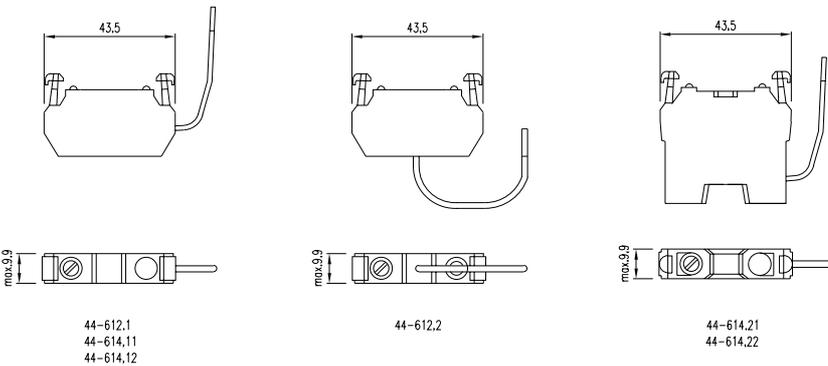
## 41 blind element

page 329



## 42 resistor diode element, diode element

page 329, 330



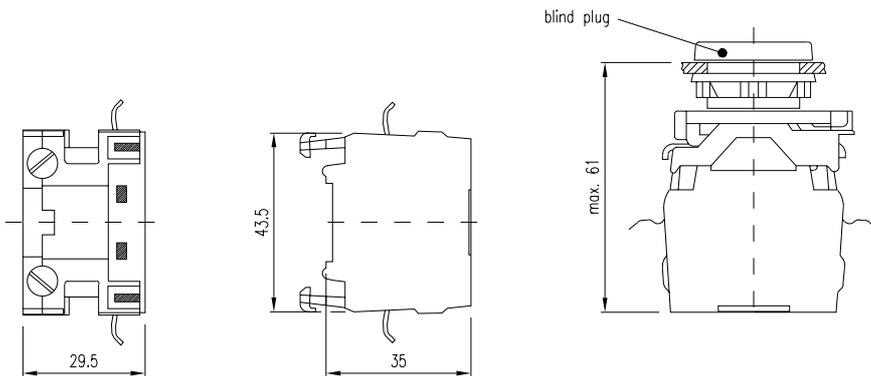
44-612.1  
44-614.11  
44-614.12

44-612.2

44-614.21  
44-614.22

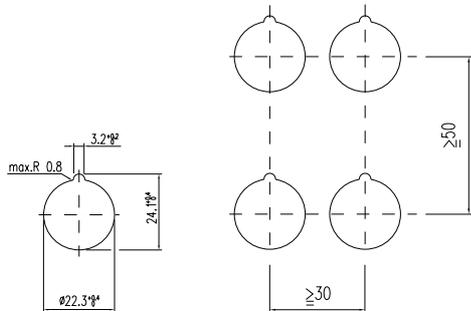
## 43 lamp transformer

page 330

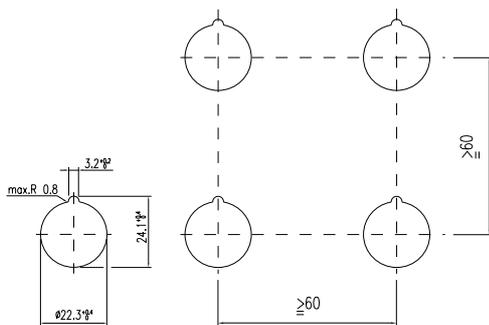


## mounting dimensions

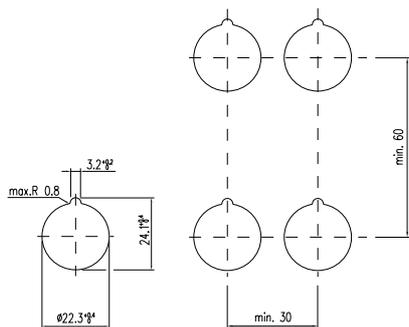
1 indicator complete full face illumination not for marking, indicator complete front illumination for marking, pushbutton complete, illuminated pushbutton complete for marking, key lock complete 2 positions, key lock complete 3 positions, selector switch complete 2 positions, selector switch complete 3 positions, indicator actuator, full face illumination not for marking, indicator actuator, front illumination for marking, pushbutton actuator not for marking, pushbutton actuator for marking, illuminated pushbutton actuator for marking, keylock switch actuator 2 positions, keylock switch actuator 3 positions, selector switch actuator 2 positions, selector switch actuator 3 positions, interlocking pushbutton actuator, potentiometer-drive  
 page 289, 289, 290, 290, 291, 292, 292, 293, 294, 295, 296, 298, 299, 304, 305, 306, 307, 308, 308



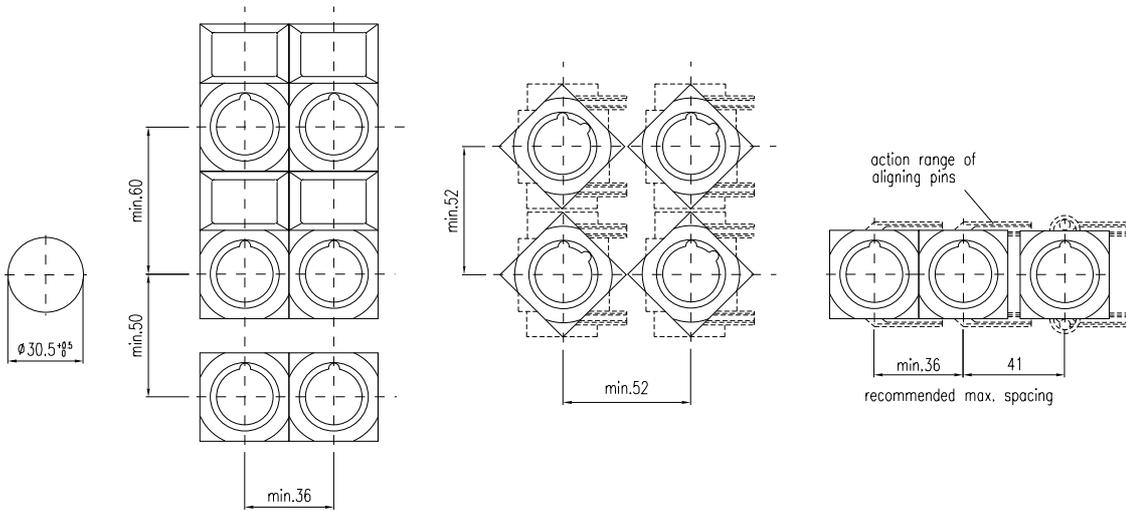
2 emergency stop switch complete, emergency stop switch actuator, emergency stop switch actuator foolproof, pushbutton actuator with mushroom-head cap  
 page 291, 301, 302, 303



3 double pushbutton actuator  
 page 300



4 indicator actuator full face illumination for flush mounting not for marking, indicator actuator, front illumination for flush mounting for marking, pushbutton actuator for flush mounting not for marking, pushbutton actuator for flush mounting for marking, illuminated pushbutton actuator for flush mounting for marking, keylock switch actuator 2 positions for flush mounting, keylock switch actuator 3 positions for flush mounting, selector switch actuator 2 positions for flush mounting, selector switch actuator 3 positions for flush mounting, interlocking pushbutton actuator for flush mounting, potentiometer-drive for flush mounting  
 page 310, 311, 312, 314, 315, 316, 317, 318, 319, 320, 321

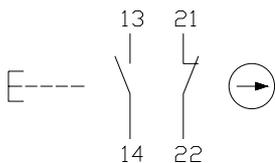


## circuit drawings

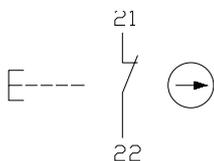
**1 indicator complete full face illumination not for marking, indicator complete front illumination for marking, lamp element for front mounting, lamp for base mounting**  
 page 289, 289, 328, 328



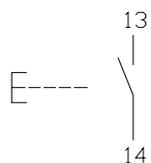
**2 pushbutton complete**  
 page 290



**3 pushbutton complete**  
 page 290

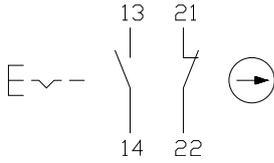


**4 pushbutton complete**  
 page 290



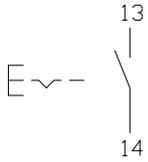
## 5 pushbutton complete

page 290



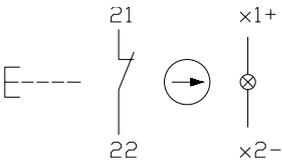
## 6 pushbutton complete

page 290



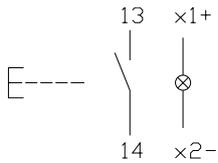
## 7 illuminated pushbutton complete for marking

page 290



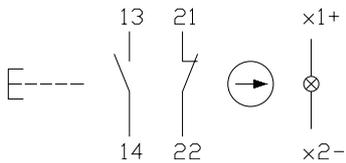
## 8 illuminated pushbutton complete for marking

page 290



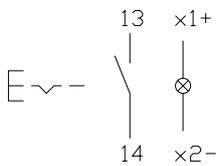
## 9 illuminated pushbutton complete for marking

page 290



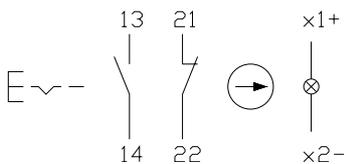
## 10 illuminated pushbutton complete for marking

page 290



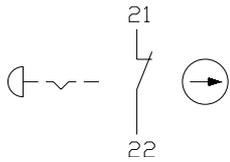
## 11 illuminated pushbutton complete for marking

page 290



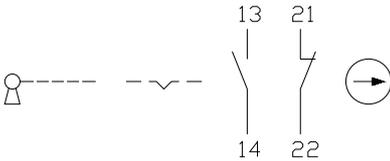
## 12 emergency stop switch complete

page 291



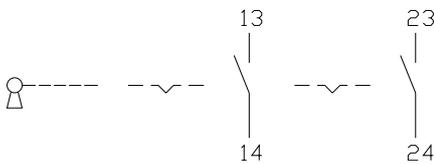
## 13 key lock complete 2 positions

page 291



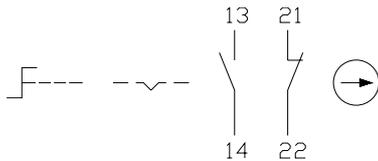
## 14 key lock complete 3 positions

page 292



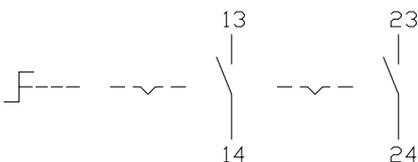
## 15 selector switch complete 2 positions

page 292



## 16 selector switch complete 3 positions

page 293



## 17 pushbutton actuator not for marking, pushbutton actuator for marking, pushbutton actuator with mushroom-head cap, pushbutton actuator for flush mounting not for marking, pushbutton actuator for flush mounting for marking

page 296, 298, 303, 312, 314

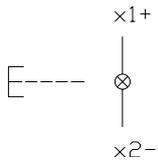


## 18 pushbutton actuator not for marking, pushbutton actuator for marking, pushbutton actuator for flush mounting not for marking, pushbutton actuator for flush mounting for marking

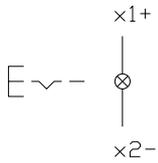
page 296, 298, 312, 314



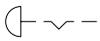
**19 illuminated pushbutton actuator for marking, illuminated pushbutton actuator for flush mounting for marking**  
page 299, 315



**20 illuminated pushbutton actuator for marking, illuminated pushbutton actuator for flush mounting for marking**  
page 299, 315,



**21 emergency stop switch actuator, emergency stop switch actuator foolproof**  
page 301, 302



**22 keylock switch actuator 2 positions, keylock switch actuator 2 positions for flush mounting**  
page 304, 316



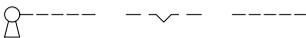
**23 keylock switch actuator 2 positions, keylock switch actuator 2 positions for flush mounting**  
page 304, 316



**24 keylock switch actuator 3 positions, keylock switch actuator 3 positions for flush mounting**  
page 305, 317



**25 keylock switch actuator 3 positions, keylock switch actuator 3 positions for flush mounting**  
page 305, 317



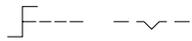
**26 keylock switch actuator 3 positions, keylock switch actuator 3 positions for flush mounting**  
page 305, 317,



**27 keylock switch actuator 3 positions, keylock switch actuator 3 positions for flush mounting**  
page 305, 317



**28 selector switch actuator 2 positions, selector switch actuator 2 positions for flush mounting**  
page 306, 318



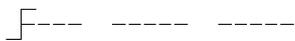
**29 selector switch actuator 2 positions, selector switch actuator 2 positions for flush mounting**  
page 306, 318,



**30 selector switch actuator 3 positions, selector switch actuator 3 positions for flush mounting**  
page 307, 319



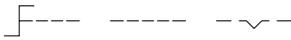
**31 selector switch actuator 3 positions, selector switch actuator 3 positions for flush mounting**  
page 307, 319



**32 selector switch actuator 3 positions, selector switch actuator 3 positions for flush mounting**  
page 307, 319



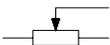
**33 selector switch actuator 3 positions , selector switch actuator 3 positions for flush mounting**  
page 307, 319



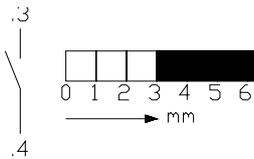
**34 interlocking pushbutton actuator, interlocking pushbutton actuator for flush mounting**  
page 308, 320



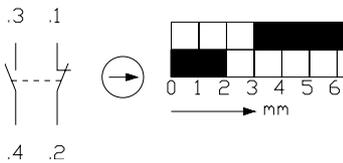
**35 potentiometer-drive, potentiometer-drive for flush mounting**  
page 308, 321



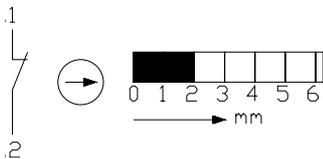
**36 slow-make switching element stackable for front mounting, slow-make switching element not stackable for front mounting, slow-make switching element not stackable for base mounting**  
page 327, 327, 328



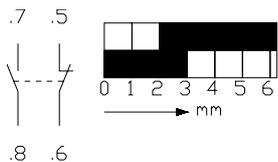
**37 slow-make switching element stackable for front mounting**  
page 327



**38 slow-make switching element stackable for front mounting, slow-make switching element not stackable for front mounting, slow-make switching element not stackable for base mounting**  
page 327, 327, 328

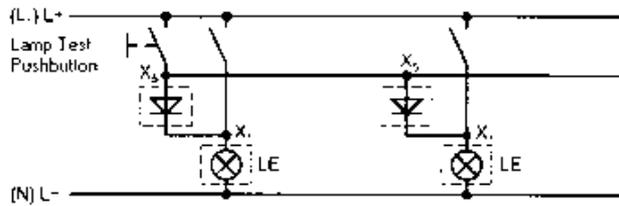


**39 slow-make switching element stackable for front mounting**  
page 327

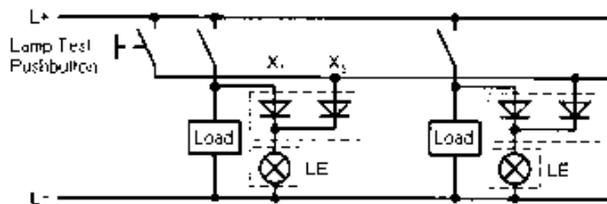


## Switching examples for the central lamp test

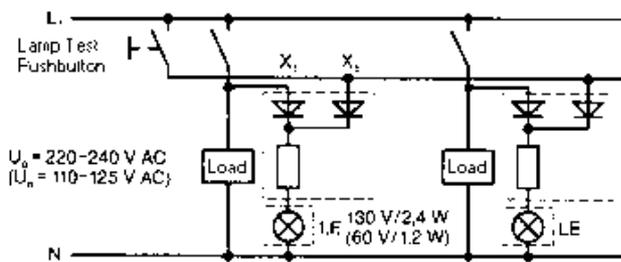
### Application of the diode element with 1 diode



### Application of the diode element with 2 diodes



### Application of the diode resistance element with lamp test

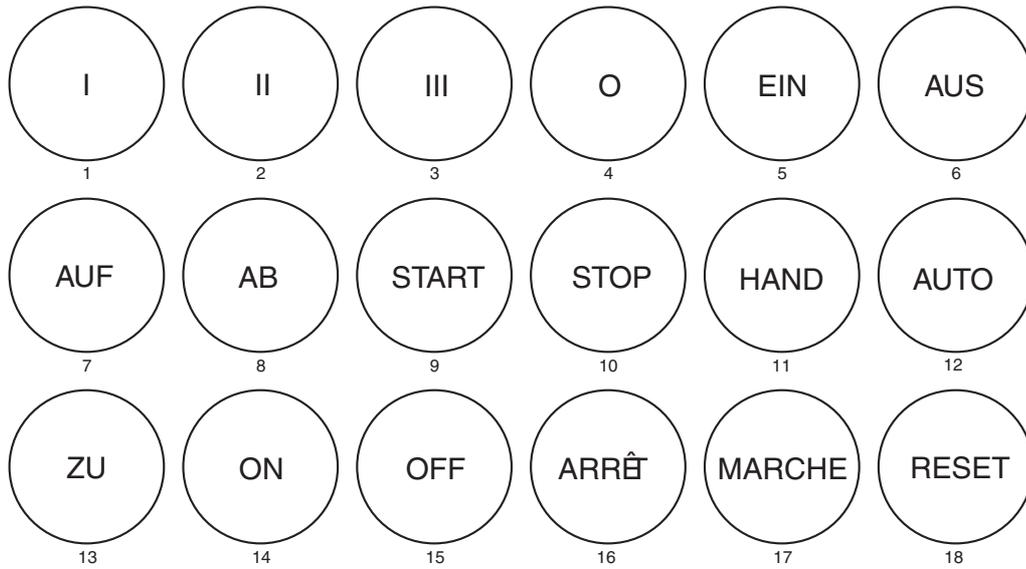


#### Note:

- Only apply incandescent lamps with special data!  
 Incandescent lamp 130V/2,4 W with spiral form 2 x CC-2F; Typ-N44-952.130  
 Incandescent lamp 60 V/1,2 W with spiral form CC-2F; Typ-N44-952.60
- maximum environmental temperature 40°C for Part-Nr. 44-614.11 und 44-614.21
- For base mounting the connection wire which juts out in the middle must be placed so that it does not interfere with the actuator system.

## Standard texts for text plates

Text-Nr.



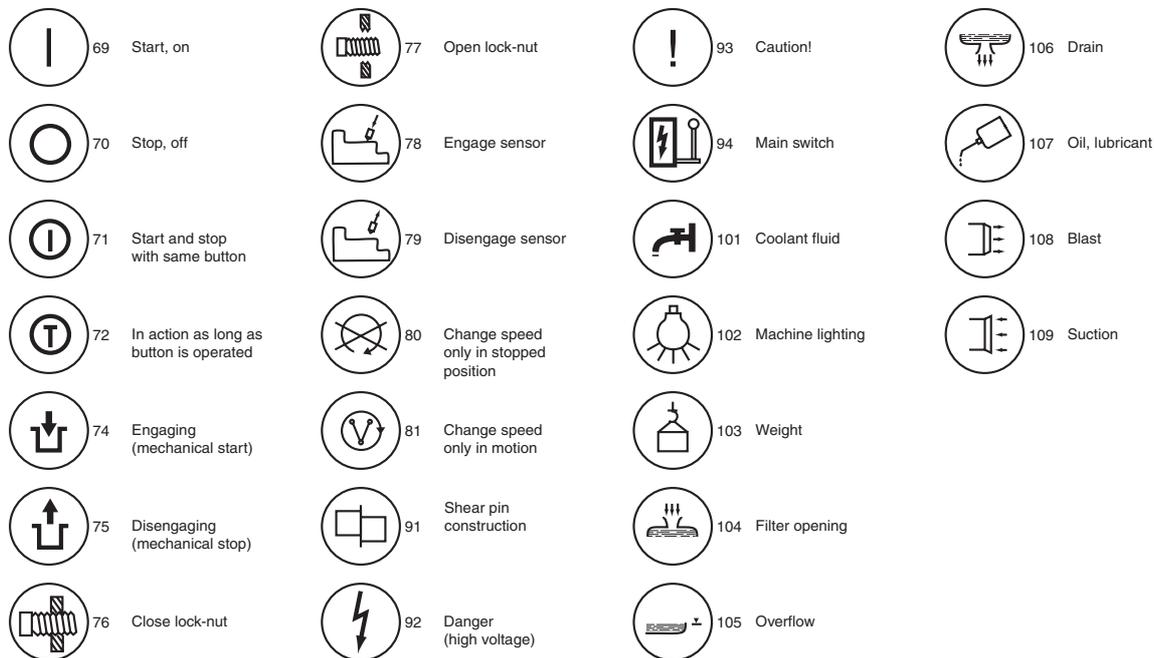
## Symbols as per ISO R 369 for text plates

### Symbol No.

	1	Direction of linear rectilinear motion (also for $\rightarrow \updownarrow$ )		13	Direction of spindle rotation		29	Decrease of value (speed, for instance)		49	Cooling pump
	2	Linear motion in in 2 directions (also for $\updownarrow$ )		14	One revolution		30	Speed of planing cut		50	Lubricant pump
	3	Interrupted linear motion (also for $\leftarrow \rightarrow \updownarrow$ )		15	Number of revolutions per minute (spindle speed)		31	Speed of turning cut		51	Hydraulic system pump
	4	Limited linear motion (also for $\leftarrow \updownarrow$ )		16	Feed		32	Speed of drilling cut		52	Hydraulic motor
	5	Limited linear motion and return		17	Feed per revolution		33	Speed of milling cut (similar symbol for speed of grinding)		53	Tracer
	6	Oscillating linear motion (continuous)		18	Feed per minute		34	Conventional milling		61	Stepless regulation
	7	Direction of continuous rotation (right)		19	Reduced feed		35	Climb milling (down milling)		62	Adjustable
	7a	Direction of continuous rotation (left)		20	Rapid feed		41	Electric motor		63.1	Look or tighten
	8	Rotation in 2 directions		21	Normal feed		42	Rectangular work table or slide element		63.2	Look or tighten
	9	Direction of interrupted rotation (right)		22	Direction of feed (orientation not specified)		43	Round work table or rotating element		64.1	Unlock, unclamp
	9a	Direction of interrupted rotation (left)		24	Transverse feed		44	Turning spindle		64.2	Chuck open
	10	Limited rotation (right)		25	Vertical feed		45	Drilling spindle		65	Brake on
	10a	Limited rotation (left)		26	Rapid traverse		46	Milling spindle		66	Brake off
	11	Limited rotation and return		27	Threading		47	Grinding spindle		67	Automatic (or semi-automatic) cycle
	12	Oscillating rotary movement (continuous)		28	Increase of value (speed, for instance)		48	Pump (general symbol)		68	Hand control

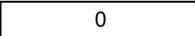
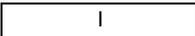
## Symbols as per ISO R 369 for textplates

### Symbol No.



## Marking for labels

label black anodized

Text-No.	Text-No.	Text-No.
 T 01	<b>Forwards</b> T 14	<b>Set up</b> T 22
 T 02	<b>Reverse</b> T 15	<b>Raise</b> T 23
 T 03	<b>Right</b> T 16	<b>Lower</b> T 24
 T 04	<b>Left</b> T 17	<b>Hand</b> T 25
<b>OFF</b> T 10	<b>Halt</b> T 18	<b>STOP</b> T 26
<b>ON</b> T 11	<b>Close</b> T 19	<b>START</b> T 27
<b>Up</b> T 12	<b>Fast</b> T 20	<b>HAND/AUTO</b> T 28
<b>Down</b> T 13	<b>Slow</b> T 21	<b>OFF/ON</b> T 29

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