EAO – Your Expert Partner for
Human Machine Interfaces

EAO Product Information

Series 51

eao

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Product Information

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

Mounting
All switch actuators are mounted from the front by pushing them through the mounting hole in the front panel. They are then fixed from the back with a fixing nut and the mounting tool Typ-Nr. 01-907. Max. tightening torque 50 Ncm.
For switching elements we offer plug-in bases, which when soldered to a PCB enable a plug-in connection to the button. The rectangular actuators for raised are provided with an anti-twisting device.

Lenses
The flat or concave lenses are available in various colours, as well as translucent or transparent. Round lenses for flush mounting equipment are available in aluminium also.
Because of production related reasons, the colours of anodized aluminium parts can vary slightly.

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

Illumination
The T1 $^{3}/_{4}$ Midget Groove incandescent (filament) lamp (6 ... 48 V) ensures perfect illumination of the lenses, which are supplied in various colours.
T1 $^{3}/_{4}$ Midget Groove Single-LED (6, 12, 24, 28, 48 V) are also available in blue, green, red, white or yellow.
Luminosity and wave length scattering caused by technologie used in the LED manufacturing processes may lead to visual differences in our products.
For supply voltages above 48 V, it is necessary to use a voltage reduction element (external series resistor or transformer).

Position indication
The status of a maintained action switch can be determinded by the position of the lens.

Keylock switch
Standard lock (Index D). Standard lock number is 311. If the lock number is not specified, we will supply standard number 311.
An additional 134 special locks (Index X) are available on request.
Master keys for lock numbers 311 ... 445 may be ordered by quoting Typ-Nr. 31-989.300. Two keys are supplied with each keylock switch.
Spare keys (Index D) for standard locks may be ordered by quoting Typ-Nr. 31-989.xxx (please state the lock number).

Specimen order

Indicator :

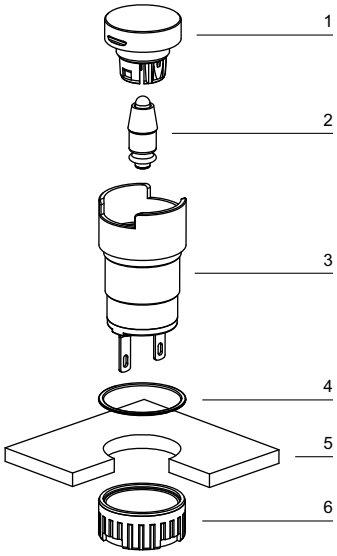
- Indicator actuator, 18 x 24 mm, soldering terminal	31-040.005

Essential accessories :

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

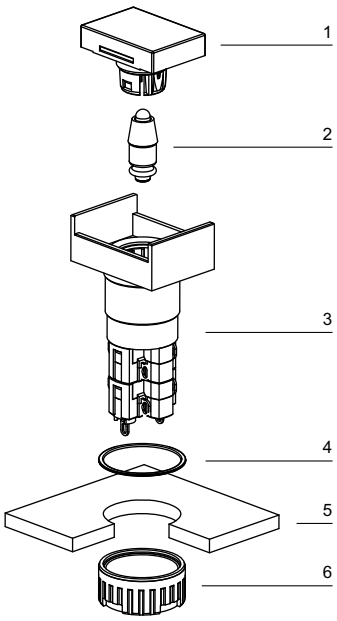
We reserve the right to modify technical data
All dimensions in mm

Indicator round, raised mounting



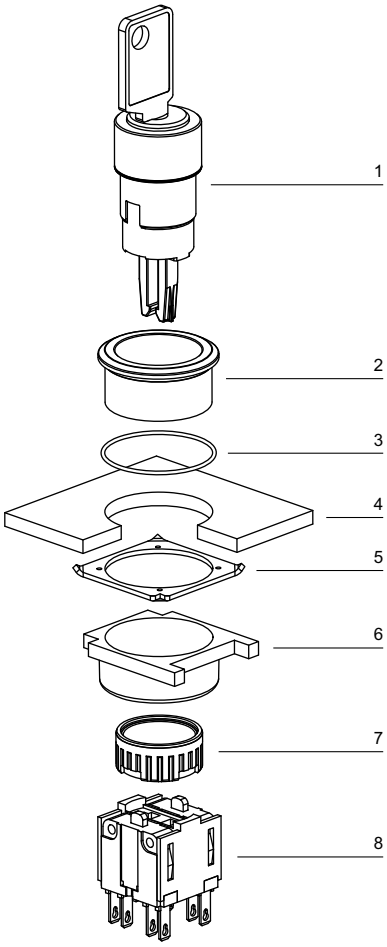
1 Lens
2 LED
3 Indicator housing
4 Sealing
5 Front plate
6 Fixing nut

Illuminated pushbutton, raised mounting



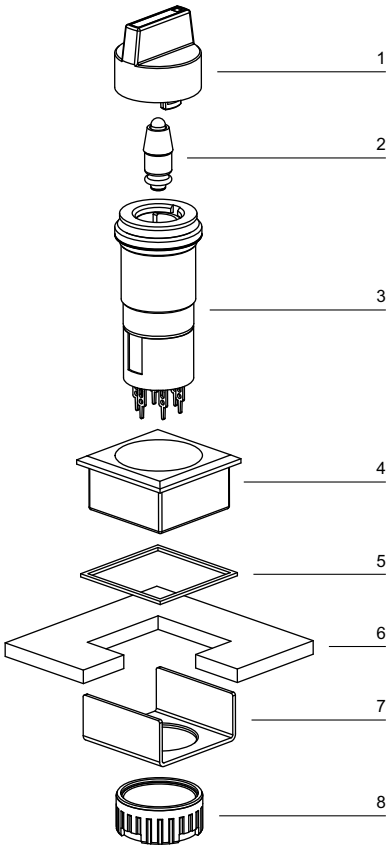
1 Lens
2 LED
3 Switch housing
4 Sealing
5 Front plate
6 Fixing nut

Keylock switch round, flush mounting



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

Selector switch square, flush mounting



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

Indicator actuator

Essential Accessories:

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

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

Indicators fit also in mounting hole no. 2
Diode (1N 4007): D = Diode, - = without
Terminals: UT = Universal terminal, S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)
Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

Illuminated pushbutton actuator

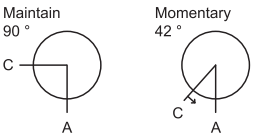
Essential Accessories:

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

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

Illuminated pushbutton fit also in mounting hole no. 2
Switching system: LL = Low level switching element, SA = Snap-action switching element
Contacts: NC = Normally closed, NO = Normally open
Diode (1N 4007): - = without, D = Diode
Switching action: MA = Maintained action, M = Momentary action
Terminals: UT = Universal terminal, H = Combined terminal: Solder-/ Universal (at contact/ at diode), S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)
Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

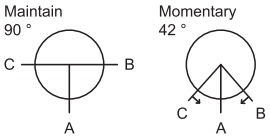
Keylock switch 2 positions



	Front protection	Switching system	Contacts	Switching action	Terminals	Key remove	⌷ 18 x 18 mm Typ-Nr.	⌷ 18 x 24 mm Typ-Nr.	Ø 18 mm Typ-Nr.	Component layout	Mounting dimensions	Technical drawing	Circuit drawing	kg
Keylock switch 2 positions Position A : Basic position Position C : Maintained action Standard lock 311 Front : Plastic black	IP 65	LL	1 NC + 1 NO	MA	UT	A	**51-445.036D**	**51-405.036D**	**51-415.036D**	4	2	14	76	0.017
						C	**51-448.036D**	**51-408.036D**	**51-418.036D**	4	2	14	76	0.017
						C + A	**51-442.036D**	**51-402.036D**	**51-412.036D**	4	2	14	76	0.017
			2 NO	MA	UT	A	**51-444.036D**	**51-404.036D**	**51-414.036D**	4	2	14	77	0.017
						C	**51-447.036D**	**51-407.036D**	**51-417.036D**	4	2	14	77	0.017
						C + A	**51-441.036D**	**51-401.036D**	**51-411.036D**	4	2	14	77	0.017
		SA	1 NC + 1 NO	MA	S	A	**51-255.025D2**	**51-295.025D2**	**51-235.025D2**		2	14	72	0.016
						C	**51-355.025D2**	**51-395.025D2**	**51-335.025D2**		2	14	72	0.016
						C + A	**51-155.025D2**	**51-195.025D2**	**51-135.025D2**		2	14	72	0.016
					S1	A	**51-255.022D**	**51-295.022D**	**51-235.022D**		2	14	72	0.016
						C	**51-355.022D**	**51-395.022D**	**51-335.022D**		2	14	72	0.016
						C + A	**51-155.022D**	**51-195.022D**	**51-135.022D**		2	14	72	0.016
			2 NC + 2 NO	MA	S	A	**51-256.025D2**	**51-296.025D2**	**51-236.025D2**		2	14	73	0.016
						C	**51-356.025D2**	**51-396.025D2**	**51-336.025D2**		2	14	73	0.016
						C + A	**51-156.025D2**	**51-196.025D2**	**51-136.025D2**		2	14	73	0.016
			3 NC + 3 NO	MA	S	A	**51-257.025D2**	**51-297.025D2**	**51-237.025D2**		2	14	74	0.016
						C	**51-357.025D2**	**51-397.025D2**	**51-337.025D2**		2	14	74	0.016
						C + A	**51-157.025D2**	**51-197.025D2**	**51-137.025D2**		2	14	74	0.016
			4 NC + 4 NO	MA	S	A	**51-258.025D2**	**51-298.025D2**	**51-238.025D2**		2	14	75	0.016
						C	**51-358.025D2**	**51-398.025D2**	**51-338.025D2**		2	14	75	0.016
						C + A	**51-158.025D2**	**51-198.025D2**	**51-138.025D2**		2	14	75	0.016
Position A : Basic position Position C : Momentary action Standard lock 311 Front : Plastic black	IP 65	LL	1 NC + 1 NO	M	UT	A	**51-458.036D**	**51-428.036D**	**51-438.036D**	4	2	14	70	0.017
			2 NO	M	UT	A	**51-457.036D**	**51-427.036D**	**51-437.036D**	4	2	14	71	0.017
		SA	1 NC + 1 NO	M	S	A	**51-145.025D2**	**51-495.025D2**	**51-141.025D2**		2	14	66	0.016
					S1	A	**51-145.022D**	**51-495.022D**	**51-141.022D**		2	14	66	0.016
			2 NC + 2 NO	M	S	A	**51-146.025D2**	**51-496.025D2**	**51-142.025D2**		2	14	67	0.016
			3 NC + 3 NO	M	S	A	**51-147.025D2**	**51-497.025D2**	**51-143.025D2**		2	14	68	0.016
			4 NC + 4 NO	M	S	A	**51-148.025D2**	**51-498.025D2**	**51-144.025D2**		2	14	69	0.016

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

Keylock switch 3 positions



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

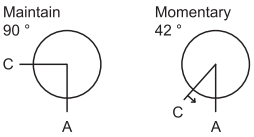
Other lock numbers on request
Switching system: SA = Snap-action switching element
Contacts: NC = Normally closed, NO = Normally open
Switching action: MA = Maintained action, M = Momentary action
Terminals: S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)
Mounting dimensions from page 41, Technical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

Selector switch 2 positions

illuminative

Essential Accessories:

Lever, raised mounting page 24
Single-LED page 30



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

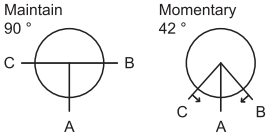
Switching system: LL = Low level switching element, SA = Snap-action switching element
Contacts: NC = Normally closed, NO = Normally open
Diode (1N 4007): - = without, D = Diode
Switching action: MA = Maintained action, M = Momentary action
Terminals: UT = Universal terminal, H = Combined terminal: Solder-/ Universal (at contact/ at diode), S = Soldering terminal, S1 = Soldering terminal (also pluggable 2.8 x 0.5 mm)
Component layout from page 40, Mounting dimensions from page 41, Technical drawing from page 42, Circuit drawing from page 47

Selector switch 3 positions

illuminative

Essential Accessories:

Lever, raised mounting page 24
Single-LED page 30



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

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

Indicator actuator, flush mounting

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

Essential Accessories:

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

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

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

Illuminated pushbutton actuator, flush mounting

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

Essential Accessories:

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

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

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

Keylock switch actuator 2 positions, flush mounting

Essential Accessories:

Front bezel set for Keylock switch, flush mounting page 26

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

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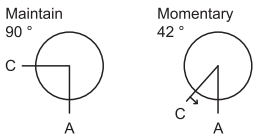

Front protection	Switching system	Contacts	Switching action	Terminals	Key remove	⌑ 24 x 24 mm Typ-Nr.	⌑ 24 x 30 mm Typ-Nr.	Ø 25 mm Typ-Nr.	Component layout	Mounting dimensions	Technical drawing	Circuit drawing	kg
Position A : Basic position Position C : Maintained action Standard lock 311 Front : Plastic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

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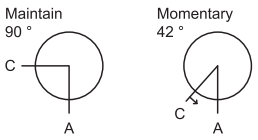


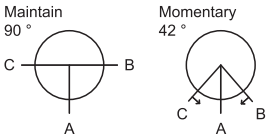
Front protection	Switching system	Contacts	Switching action	Terminals	Key remove	⧠ 24 x 24 mm Typ-Nr.	⧠ 24 x 30 mm Typ-Nr.	Ø 25 mm Typ-Nr.	Component layout	Mounting dimensions	Technical drawing	Circuit drawing	kg
Position A : Basic position Position C : Momentary action Standard lock 311 Front : Plastic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

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

Keylock switch actuator 3 positions, flush mounting

Essential Accessories:

Front bezel set for Keylock switch, flush mounting page 26

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

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

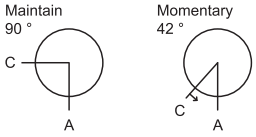
Selector switch actuator 2 positions, flush mounting

illuminative

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

Essential Accessories:

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



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

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

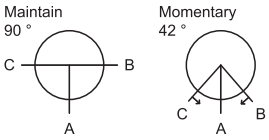
Selector switch actuator 3 positions, flush mounting

illuminative

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

Essential Accessories:

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



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

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

Front

Lens plastic, raised mounting

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

Lens plastic, flush mounting

mat

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

Lens plastic with symbol, flush mounting

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

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

Marking plate for lens round plastic, flush mounting

can be hot stamped

	Marking plate	Typ-Nr.	kg
Marking plate for lens round plastic, flush mounting only applicable with Lens round Typ-Nr. 61-9642.X	Plastic colourless transparent	**61-9707.7**	0.001

Lens metal with spot, flush mounting

mat

	Lens	Ø 25 mm Typ-Nr.	kg
Lens metal with spot, flush mounting	Aluminium black flush	**61-9841.0A**	0.002
	Aluminium blue flush	**61-9841.6A**	0.002
	Aluminium gold flush	**61-9841.4A**	0.002
	Aluminium natural flush	**61-9841.8A**	0.002
	Aluminium olive-green flush	**61-9841.5A**	0.002
	Aluminium red flush	**61-9841.2A**	0.002

Lens metal, flush mounting

mat

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

Mushroom-head cap, flush mounting

	Mushroom had cap	Ø 32 mm Typ-Nr.	kg
Mushroom-head cap, flush mounting	Plastic black opaque	**61-9593.0**	0.004
	Plastic green opaque	**61-9593.5**	0.004
	Plastic red opaque	**61-9593.2**	0.004
	Plastic yellow opaque	**61-9593.4**	0.004

Front bezel square for selector switch, raised mounting

	Front bezel	Typ-Nr.	kg
Front bezel square for selector switch, raised mounting 24 x 24 mm	Plastic black	**52-950.0**	0.001
26 x 26 mm	Plastic black	**52-952.0**	0.001

Lever, raised mounting

with bar and marking dot

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

Lever, flush mounting

with bar and marking dot

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

Legend frame

for devices 25 mm dia., flush mounting

	Typ-Nr.	Technical drawing	kg
Legend frame 30 x 50 mm, adhesive, Aluminium black	**61-9980.0**	10	0.001

Technical drawing from page 42

Legend plate insert

for Legend frame 61-9980.0

	Typ-Nr.	kg
Legend plate insert 14.5 x 23.5 mm, adhesive, Aluminium black	**704.968.1**	0.001
14.5 x 23.5 mm, adhesive, Aluminium natural	**704.968.0**	0.001

Front bezel set for Indicators and Illuminated pushbutton, flush mounting

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

Mounting dimensions from page 41

Front bezel set for Mushroom-head pushbutton, flush mounting

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

Mounting dimensions from page 41

Front bezel set for Keylock switch, flush mounting

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

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

Front bezel set for Selector switch, flush mounting

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

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

Front protective cap

for flush - level lenses only for protection IP 68

	Front protective cap	Typ-Nr.	kg
Front protective cap for front bezel set 24 x 30 mm, flush mounting	Silicone natural transparent	**61-9927.2**	0.001
for front bezel set 25 mm dia., flush mounting	Silicone natural transparent	**84-9103.7**	0.001

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

Protective cover, raised mounting

	⧠ 18 x 18 mm Typ-Nr.	⧈ 18 x 24 mm Typ-Nr.	Technical drawing	kg
Protective cover, raised mounting hinged, transparent, with means for sealing	**51-920**		2	0.002
		51-925	3	0.002

Technical drawing from page 42

Protective cover, flush mounting

	⧠ 24 x 24 mm Typ-Nr.	⧈ 24 x 30 mm Typ-Nr.	Ø 25 mm Typ-Nr.	Mounting dimensions	Technical drawing	kg
Protective cover, flush mounting hinged, transparent, with means for sealing	**61-9921.0**			3	7	0.006
		61-9922.0		3	8	0.006
slide by side, with means not for sealing			**61-9924.0**	3	9	0.006

Mounting dimensions from page 41, Technical drawing from page 42

Blind plug, raised mounting

	Blind plug	⧠ 18 x 18 mm Typ-Nr.	⧈ 18 x 24 mm Typ-Nr.	Ø 18 mm Typ-Nr.	Mounting dimensions	kg
Blind plug, raised mounting	Plastic black	**51-948.0**	**51-947.0**	**51-949.0**	1	0.003

Blind plugs fit also in mounting holes no. 2
Mounting dimensions from page 41

Blind plug, flush mounting

	Blind plug	⧠ 24 x 24 mm Typ-Nr.	⧈ 24 x 30 mm Typ-Nr.	Ø 25 mm Typ-Nr.	Mounting dimensions	Technical drawing	kg
Blind plug, flush mounting	Plastic black	**61-9451.0**	**61-9452.0**		3		0.006
				61-9453.0	3	11	0.006

Mounting dimensions from page 41, Technical drawing from page 42

Master key

	Typ-Nr.	kg
Master key Lock numbers 311 ... 445 (DOM)	**31-989.300**	0.006

Spare key

	Typ-Nr.	kg
Spare key Key lock switch, standard lock 311 (DOM)	**31-989.311**	0.006

Other lock numbers on request

EMC Key protection cap

	Typ-Nr.	kg
EMC Key protection cap Plastic black, for lock type DOM	**31-985.0**	0.005

Backside

PCB plug-in base

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

PCB plug-in base Pins right-angle : With the extendable mounting the distance between plug-in base and PCB can be varied up to 3 mm.
Terminals: P = PCB terminal
Component layout from page 40

Multi-plug housing

	Typ-Nr.	kg
Multi-plug housing for Switching block	**51-943.0**	0.005

Flat receptacle

	Typ-Nr.	kg
Flat receptacle 2.0 x 0.5 mm for Universal terminal	**31-945**	0.001
2.8 x 0.5 mm for Multi-plug housing	**51-943.1**	0.001
2.8 x 0.5 mm for Plug-in terminal	**31-946**	0.001

Insulation sleeve

	Typ-Nr.	kg
Insulation sleeve Cover Plug-in terminals for snap-action switching element 2.8 mm	**01-928**	0.001
for Flat receptacle 31-945	**31-928**	0.001
for Flat receptacle 31-946	**31-929**	0.001

Terminal cover

	Typ-Nr.	kg
Terminal cover	**01-929**	0.010

Illumination

Filament lamp

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

Single-LED

	Socket	Light colour	Operating voltage/-current	Typ-Nr.	kg
Single-LED	T1 $^3/_4$ MG	blue	12 VAC/DC, 7/14 mA	**10-2J09.1066**	0.002
			24 VAC/DC, 7/14 mA	**10-2J12.1066**	0.002
			28 VAC/DC, 7/14 mA	**10-2J13.1066**	0.002
			48 VAC/DC, 4/8 mA	**10-2J19.1046**	0.002
			6 VDC, 15 mA	**10-2J06.3146**	0.002
		green	12 VAC/DC, 4/7 mA	**10-2J09.1065**	0.002
			24 VAC/DC, 4/7 mA	**10-2J12.1065**	0.002
			28 VAC/DC, 4/7 mA	**10-2J13.1065**	0.002
			48 VAC/DC, 2/4 mA	**10-2J19.1045**	0.002
			6 VDC, 7 mA	**10-2J06.3145**	0.002
		red	12 VAC/DC, 7/14 mA	**10-2J09.1062**	0.002
			24 VAC/DC, 7/14 mA	**10-2J12.1062**	0.002
			28 VAC/DC, 7/14 mA	**10-2J13.1062**	0.002
			48 VAC/DC, 4/8 mA	**10-2J19.1042**	0.002
			6 VDC, 15 mA	**10-2J06.3142**	0.002
		white diffuse	12 VAC/DC, 7/14 mA	**10-2J09.1069**	0.002
			24 VAC/DC, 7/14 mA	**10-2J12.1069**	0.002
			28 VAC/DC, 7/14 mA	**10-2J13.1069**	0.002
			48 VAC/DC, 4/8 mA	**10-2J19.1049**	0.002
			6 VDC, 15 mA	**10-2J06.3149**	0.002
		yellow	12 VAC/DC, 7/14 mA	**10-2J09.1064**	0.002
			24 VAC/DC, 7/14 mA	**10-2J12.1064**	0.002
			28 VAC/DC, 7/14 mA	**10-2J13.1064**	0.002
			48 VAC/DC, 4/8 mA	**10-2J19.1044**	0.002
			6 VDC, 15 mA	**10-2J06.3144**	0.002

Note:
AC operation through halve-wave rectifier possible, slight flickering can occure.

Series resistor

for lamp voltage reduction

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

Please keep to the country specific security rules.

Terminal plate empty

for fitting with series resistors

	Typ-Nr.	kg
Terminal plate empty 10 spaces 125 x 60 x 15 mm	**02-912.2**	0.045
15 spaces 187.5 x 60 x 15 mm	**02-912.3**	0.090
20 spaces 250 x 60 x 15 mm	**02-912.4**	0.095
5 spaces 62.5 x 60 x 15 mm	**02-912.1**	0.025

Assembling

Fixing nut

	Typ-Nr.	kg
Fixing nut Metal, specifically for keylock switches	**31-991**	0.005

Anti-twist ring

for Key lock- and Selector switch

	Typ-Nr.	kg
Anti-twist ring	**51-910**	0.001

Lens remover

	Typ-Nr.	kg
Lens remover for flush mounting	**61-9730.0**	0.011
for raised mounting	**02-905**	0.011

Lamp remover

	Typ-Nr.	kg
Lamp remover	**61-9740.0**	0.003

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

Mounting tool

	Typ-Nr.	kg
Mounting tool	**01-907**	0.020

Dismantling tool

	Typ-Nr.	kg
Dismantling tool for dismantling of Lens, Lens holder and Switching element block	**51-938**	0.027

Flat receptacle remover

	Typ-Nr.	kg
Flat receptacle remover for removing the Flat receptacle of the Multi-plug in housing	**51-943.9**	0.001

Actuator with snap-action switching element

Switching system

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

Material

Material of contact
Gold plated silver

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

Actuator housing
Polyetherimide, self-extinguishing

Mechanical characteristics

Terminals
Snap-action switching element with tinned soldering terminals at the sides:
Max. wire diameter 2 wires à 1.2 mm
Max. wire cross-section of stranded cable 1 x 1 mm²

Snap-action switching element with axial soldering terminals, which can also be used as plug-in terminals 2.8 x 0.5 mm:
Max. wire diameter 2 wires of 1 mm
Max. wire cross-section of stranded cable 2 of 0.75 mm² or 1 x 1.0 mm²

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

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

Actuating travel
Illuminated pushbutton 3 mm

Keylock-/selector switch actuator 2 positions:
1x ca. 42° deflection momentary action
1x ca. 90° deflection maintained action

Rebound time
≤5ms

Mechanical lifetime

Momentary action	2 million cycles of operation
Maintained action	1 million cycles of operation
Keylock switch	50 000 cycles of operation

Electrical characteristics

Standards
IEC 61058, EN 61058

Rated voltage
250 VAC/VDC

Rated current
5 A

Contact resistance
Starting value (initial) ≤50 mΩ

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

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

Switch rating
250 VAC, 5 A (cosϕ 1)
250 VAC, 3 A (cosϕ 0,3)

Switch rating AC (cosϕ 0,7)

Voltage	125 VAC	250 VAC
Current	3 A	2 A

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

Voltage	24 VDC	60 VDC	110 VDC	220 VDC
Current	2 A	0.7 A	0.2 A	0.1 A

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

Protection class
II

Environmental conditions

Storage temperature
-40 °C ... +85 °C

Service temperature
-25 °C ... +55 °C
For indicators and illuminated pushbuttons mounted as a block, make sure the heat can escape freely.

Protection degree
IP 65 front side, as per IEC 60529

Shock resistance
(Single impacts, semi-sinusoidal)
15 g for 11 ms, as per IEC 60512-4-3, IEC 60068-2-27

Vibration resistance
(Sinusoidal)
10 g at 10 Hz ... 1500 Hz, amplitude 1.5 mm, as per IEC 60512-4-4, IEC 60068-2-6

Climate resistance
Standard condition, as per IEC 60068-2-3 and 2-30
Changing condition, as per IEC 60068-2-14 and 2-33

Approvals

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

Declaration of conformity
CE

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

Switching system

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

Material

Material of contact
Gold plated hardsilver

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

Actuator housing
Polyetherimide, self-extinguishing

Mechanical characteristics

Terminals
Soldering terminal which can also be used as plug-in terminal 2.8 x 0.5 mm:
Max. wire diameter 2 wires of 1 mm
Max. wire cross-section of stranded cable 2 x 0.75 mm²

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

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

Rebound time
≤5ms

Mechanical lifetime

Keylock switch	50 000 cycles of operation
Selector switch	100 000 cycles of operation

Electrical characteristics

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

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

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

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

Protection class
II

Environmental conditions

Storage temperature
-40 °C ... +85 °C

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

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

Approvals

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

Declaration of conformity
CE

Actuator with low level switching element

Switching system

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

Material

Material of contact
Gold plated

Switch housing
Polysulfone, heat-resistant and self-extinguishing

Actuator housing
Polyetherimide, self-extinguishing

Mechanical characteristics

Terminals
The universal terminals permit these units to be mounted on printed circuit boards (PCB). These terminals can also be used as soldering or plug-in terminals.
For these terminals we can also supply a plug-in base which, when soldered on to the board, enables the switch to be plugged in.
Soldering terminal:
Max. wire diameter 2 wires à 0.8 mm
Max. wire cross-section of stranded cable 1x 0.75 mm²

Plug-in terminal 2.0 x 0.5 mm

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

Actuating force
3 N ... 3,5 N

Actuating travel
Illuminated pushbutton 3 mm
Keylock-/selector switch actuator 2 positions:
1x ca. 42° deflection momentary action
1x ca. 90° deflection maintained action

Rebound time
Typ. <100 µs

Mechanical lifetime

Momentary action	5 million cycles of operation
Maintained action	1 million cycles of operation
Keylock switch	50 000 cycles of operation

Electrical characteristics

Contact resistance
Starting value (initial) ≤50 mΩ

Electrostatic breakdown value
≤15 KV (Keylock switch)

Switch rating
10 µA, 100 µV to 100 mA at 42 VAC/VDC

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

Environmental conditions

Storage temperature
-40 °C ... +85 °C

Service temperature
-25 °C ... +55 °C
For indicators and illuminated pushbuttons mounted as a block, make sure the heat can escape freely.

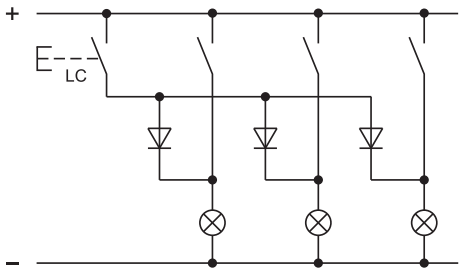
Protection degree
IP 65 front side, as per IEC 60529

Shock resistance
(Single impacts, semi-sinusoidal)
15 g for 11 ms, as per IEC 60512-4-3, IEC 60068-2-27

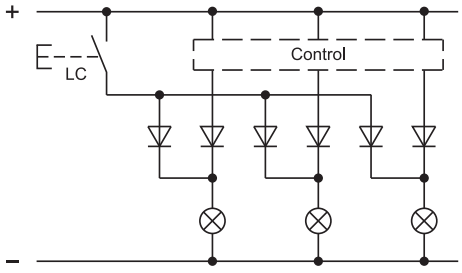
Diode element

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

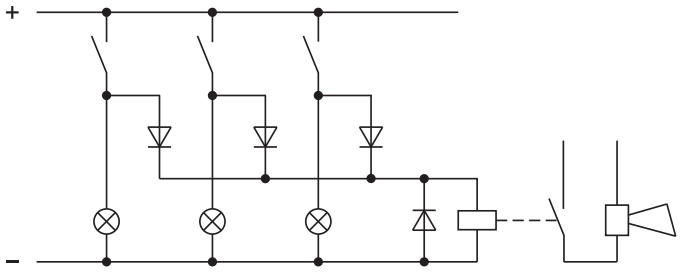
Lamp check



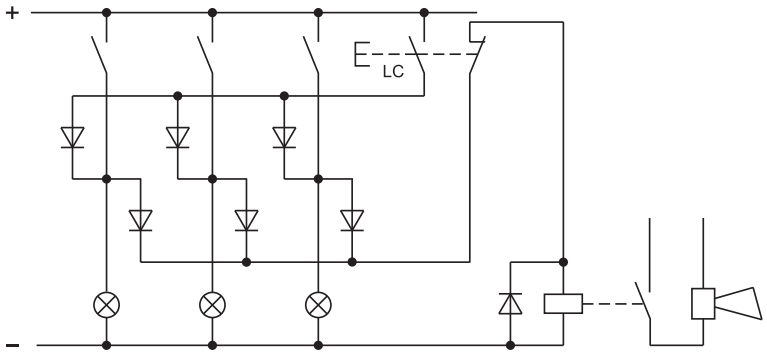
Lamp check with blocking diodes



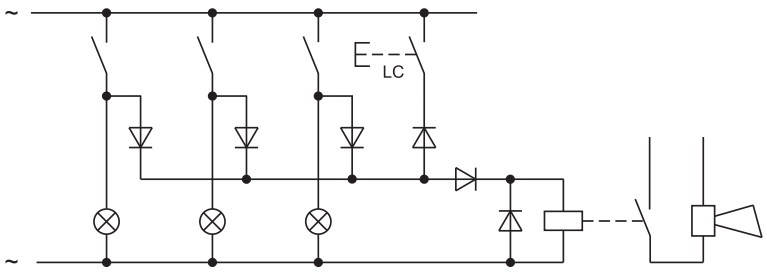
Alarm circuit from fault annunciation system



Lamp check and alarm circuit



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



LC = Lamp Check

Suppressor circuits

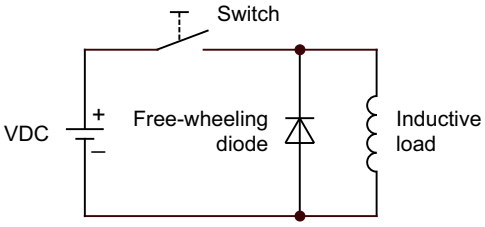
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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

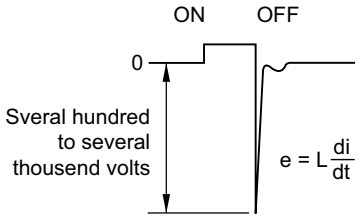
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (VR) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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

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

Switching with inductive load
Fig. 1



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



General notes

1. Engraving
In addition to the most commonly used world languages, in DIN 1451-3 close spacing, other typefaces are available as Scandinavian, Slavic, Greek, Russian and Polish.
Red, blue and black lenses are filled with white colour. Other colour lenses are filled in black.
Standard height of letters is 2 mm. If the height is not specified, we will supply 2 mm engraved letters.

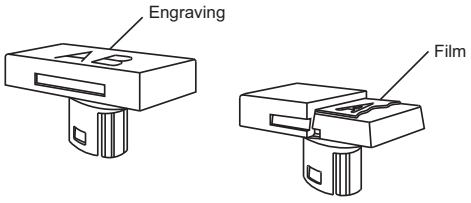
2. Hot stamping
For larger series it is worth considering markings by means of hot stamping We will pleased to advise you.
For letters and figures, typefaces with 2.5 mm, 3 mm and 4 mm are available.

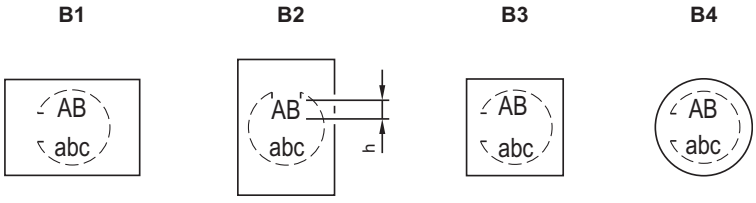
3. Film inserts
Instead of using engraving the lenses can be fitted with transparent film inserts, as an alternative. For this purpose, though, it is advisible to use transparent lenses.
In the case of use of a smoke-black lens the fitted film becomes readable only if the lamp is on.
The film thickness is 0.2 mm.
Important : Consider pushbutton mounting orientation befor specifying engraving characters !

Lenses for indicators and illuminated pushbuttons, raised mounting

All dimensions in mm

Front size (Lens)	Film insert max. size	Height of letters h	Number of lines	Number of (target value) capital letters per line	Number of (target value) small letters per line	Image
18 dia. (15.8 dia.)	12.8 dia.	2	3	6	6	B4
		3	2	5	6	B4
		4	2	3	4	B4
		5	1	2	3	B4
		6	1	2	3	B4
		8	1	2	2	B4
18 x 18 (15.3 x 15.3)	12.7 x 12.7	2	4	7 - 8	8	B3
		3	3	6 - 7	7	B3
		4	2	4 - 5	5	B3
		5	2	3 - 4	4	B3
		6	1	3	3 - 4	B3
		8	1	2 - 3	2 - 3	B3
18 x 24 (15.3 x 21.5)	12.7 x 18.7	2	4	11	12	B1
			5	7 - 8	8	B2
		3	3	9 -10	10 - 11	B1
			4	6 - 7	7	B2
		4	2	7	7 - 8	B1
			3	4 - 5	5	B2
		5	2	5 - 6	6	B1
				3 - 4	4	B2
		6	1	4 - 5	5	B1
			2	3	3 - 4	B2
		8	1	3 - 4	3 - 4	B1
				2 - 3	2 - 3	B2

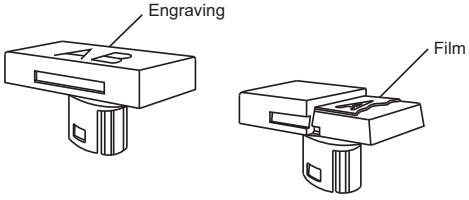


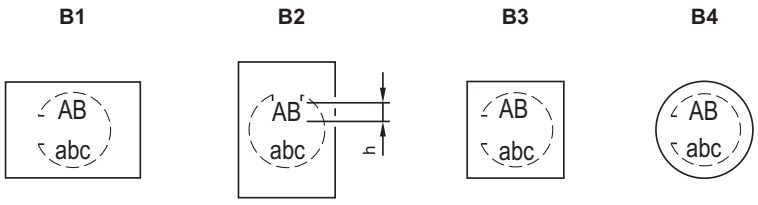


Lenses for indicators and illuminated pushbuttons, flush mounting

All dimensions in mm

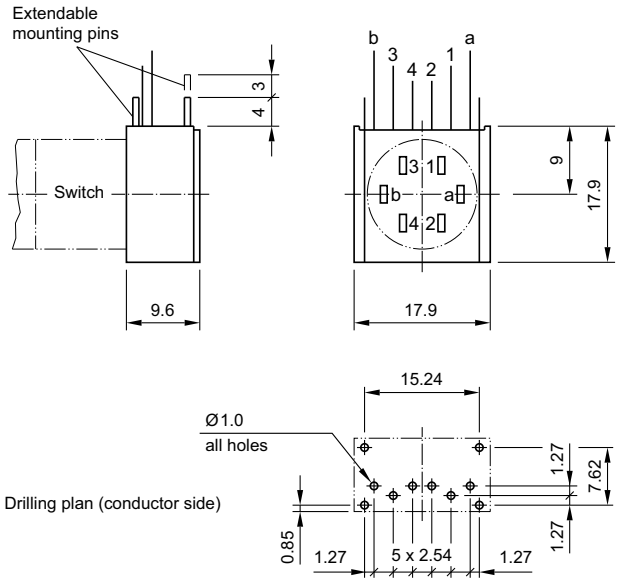
Front size (Lens)	Film insert max. size	Height of letters h	Number of lines	Number of (target value) capital letters per line	Number of (target value) small letters per line	Image
24 x 24 (18 x 18)	15.1 x 15.1	2	4	8 - 9	9	B3
		3	3	7 - 8	8	B3
		4	2	4 - 5	5	B3
		5	2	4	4 - 5	B3
		6	1	4	4	B3
		8	1	2 - 3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



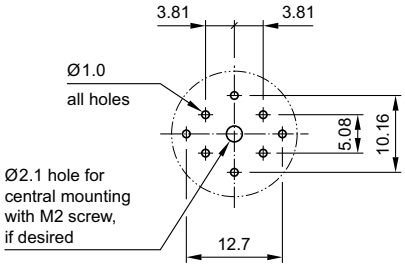


Component layout

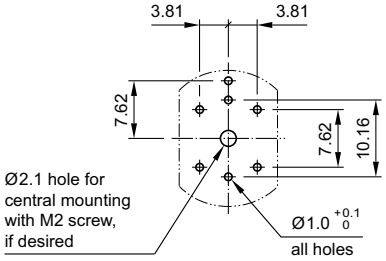
1 PCB plug-in base page 28



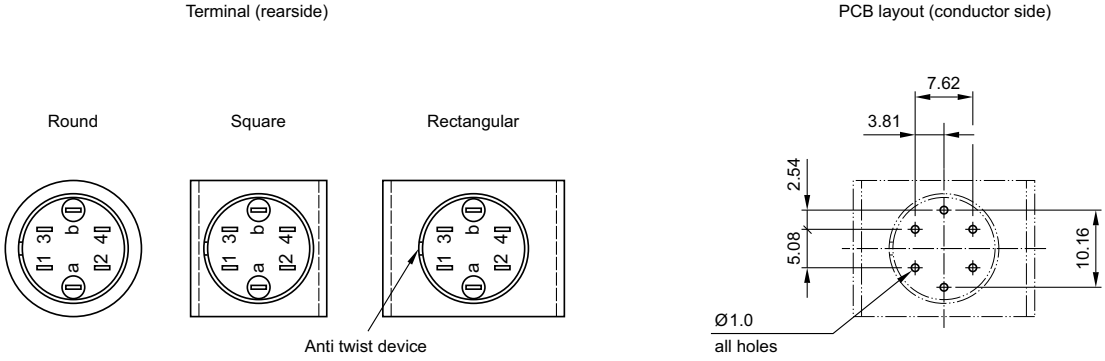
2 PCB plug-in base page 28



3 PCB plug-in base page 28



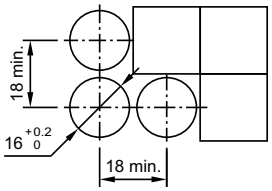
4 Indicator actuator page 7 **| Illuminated pushbutton actuator** page 8 **| Keylock switch 2 positions** page 9 **| Selector switch 2 positions** page 11 **| Indicator actuator, flush mounting** page 13 **| Illuminated pushbutton actuator, flush mounting** page 14 **| Keylock switch actuator 2 positions,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



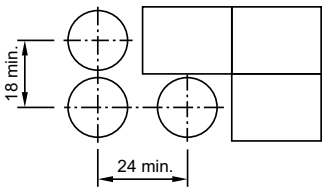
Mounting dimensions

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

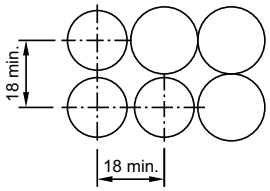
18 x 18 mm



18 x 24 mm

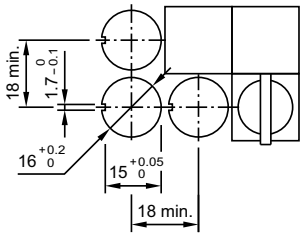


Ø18 mm

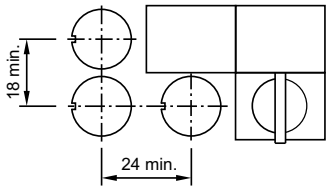


2 Keylock switch 2 positions page 9 **| Keylock switch 3 positions** page 10 **| Selector switch 2 positions** page 11 **| Selector switch 3 positions** page 12

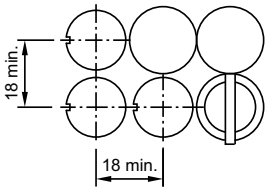
18 x 18 mm



18 x 24 mm

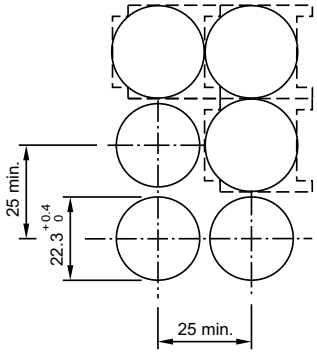


Ø18 mm

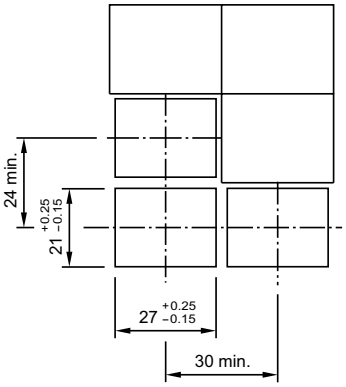


3 Indicator actuator, flush mounting page 13 **| Illuminated pushbutton actuator, flush mounting** page 14 **| Keylock switch actuator 2 positions, flush mounting** page 15 **| Keylock switch actuator 3 positions, flush mounting** page 18 **| Selector switch actuator 2 positions, flush mounting** page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

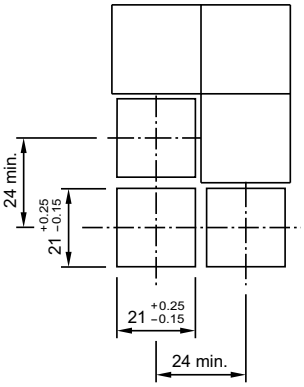
Ø25 mm



24 x 30 mm

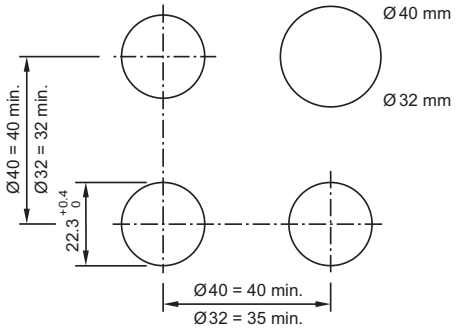


24 x 24 mm



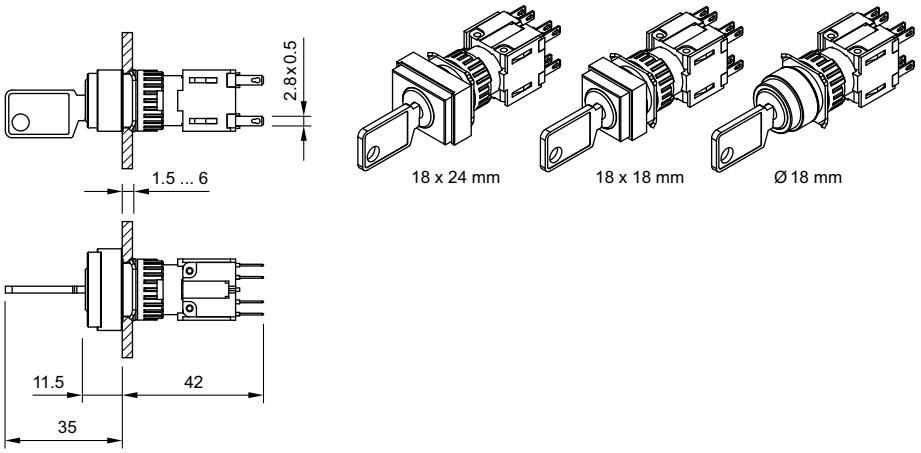
- Hole spacing min. 26 mm / min. 26 mm by using of the round front protective cap 84-9103.7
- Hole spacing min. 31 mm / min. 25 mm by using of the rectangular front protectice cap 61-9927.2

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

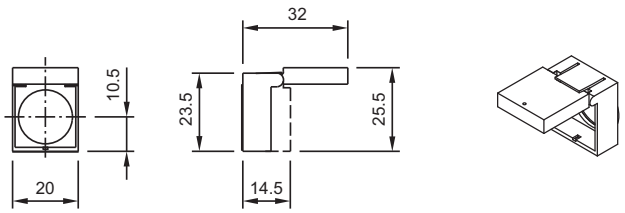


Technical drawing

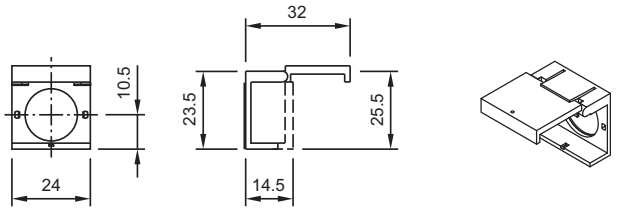
1 Keylock switch 3 positions page 10



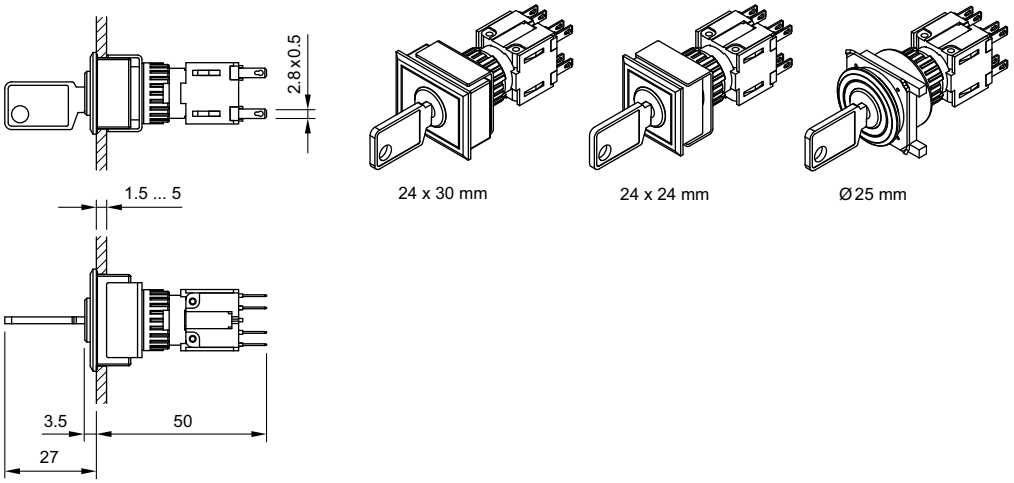
2 Protective cover, raised mounting page 27



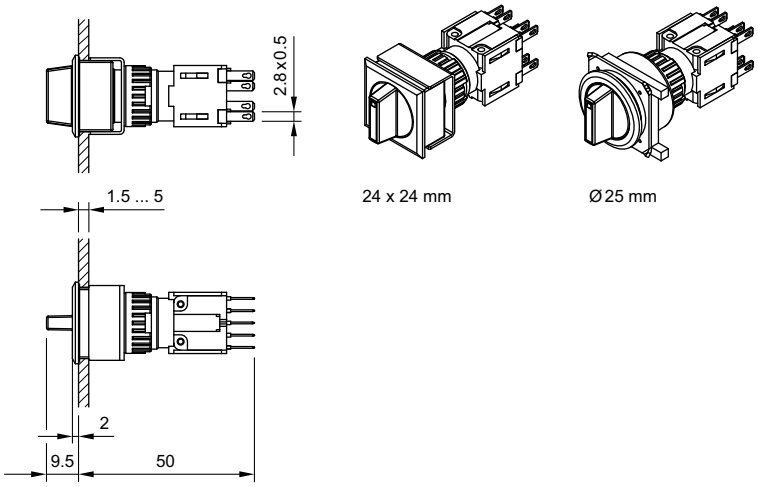
3 Protective cover, raised mounting page 27



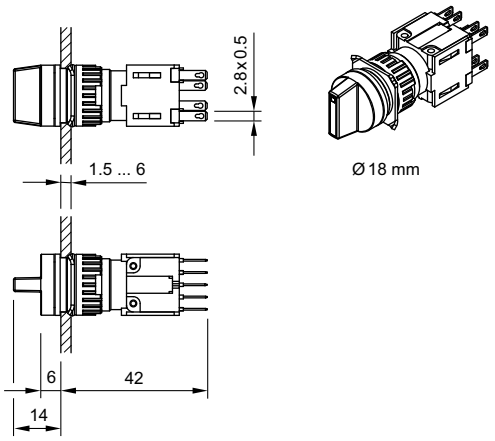
4 Keylock switch actuator 3 positions, flush mounting page 18



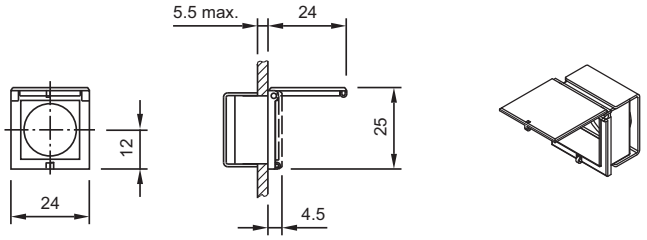
5 Selector switch actuator 3 positions, flush mounting page 20



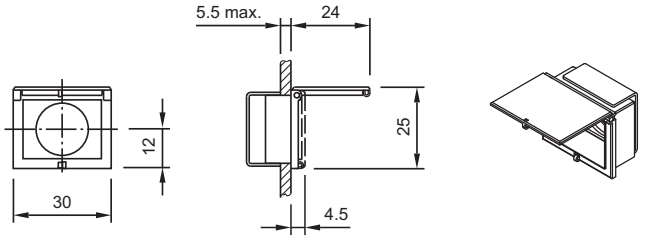
6 Selector switch 3 positions page 12



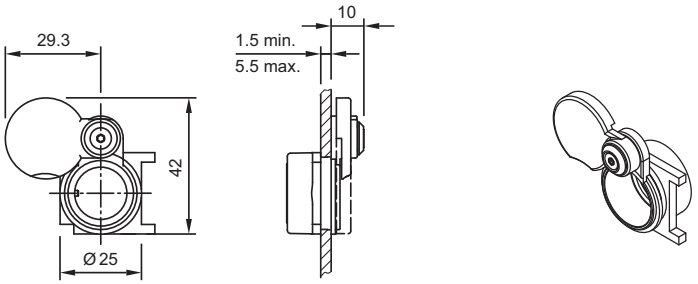
7 Protective cover, flush mounting page 27



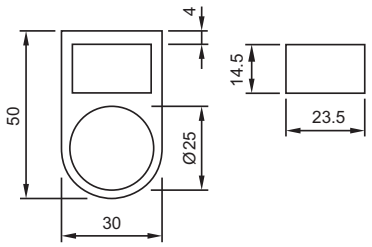
8 Protective cover, flush mounting page 27



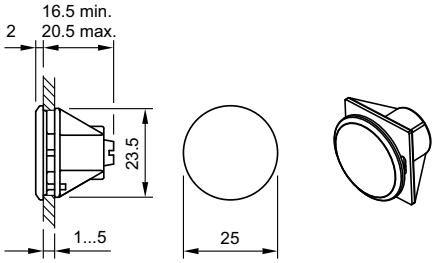
9 Protective cover, flush mounting page 27



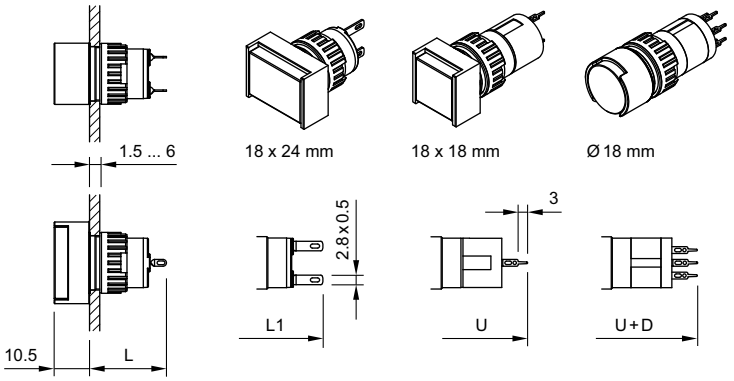
10 Legend frame page 24



11 Blind plug, flush mounting page 27

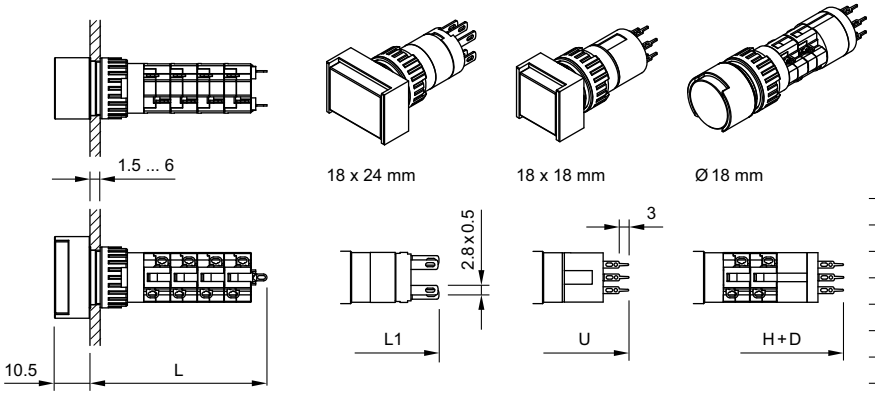


12 Indicator actuator page 7



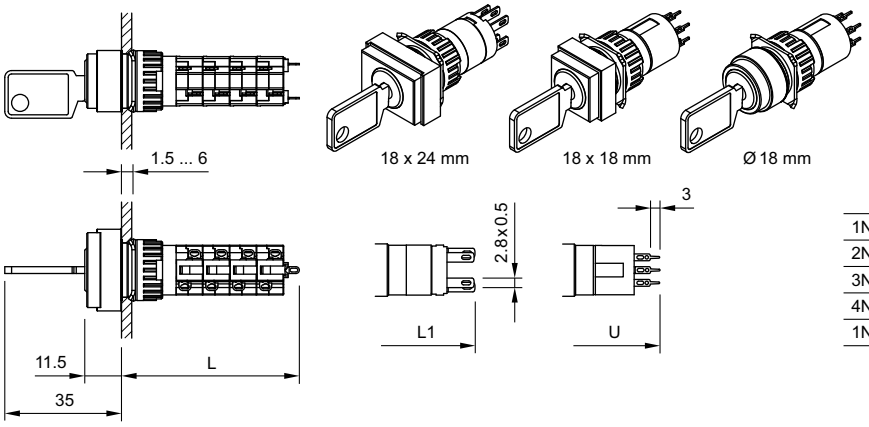
Soldering terminal	Soldering terminal (also plugable)	Universal terminal	Universal terminal + diodes
L	L1	U	U+D
23	26	35	-
1D, 2D			35

13 Illuminated pushbutton actuator page 8



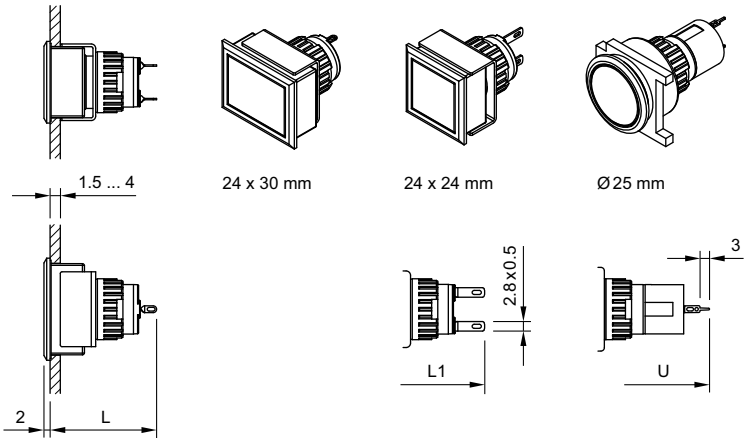
	Soldering terminal L	Soldering terminal (also pluggable) L1	Universal terminal U	Combined terminal + diodes H+D
1NC+1NO	28	36	-	-
2NC+2NO	35.5	-	-	-
3NC+3NO	43	-	-	-
4NC+4NO	50.5	-	-	-
1NC+1NO+D	-	-	-	43.5
2NO+2NC+D	-	-	-	51
1NC, 1NO, 1NC+1NO, 2NC, 2NO			35	-

14 Keylock switch 2 positions page 9



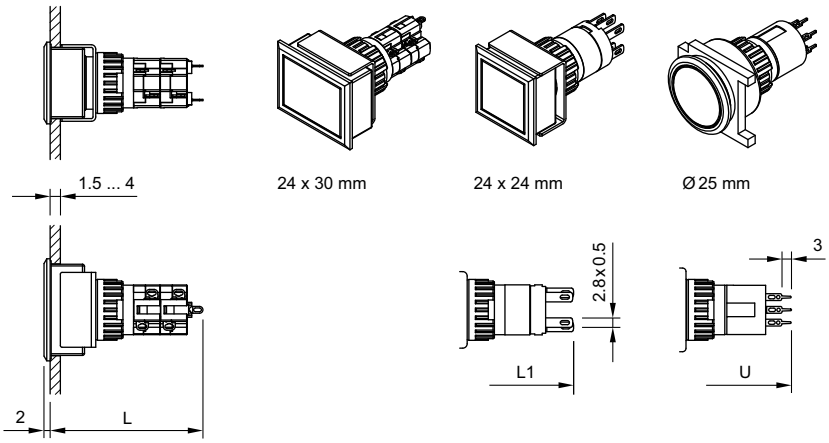
	Soldering terminal L	Soldering terminal (also pluggable) L1	Universal terminal U
1NC+1NO	26.5	36	-
2NC+2NO	34	-	-
3NC+3NO	41.5	-	-
4NC+4NO	49	-	-
1NC, 1NO, 1NC+1NO, 2NC, 2NO			35.5

15 Indicator actuator, flush mounting page 13



Soldering terminal	Soldering terminal (also pluggable)	Universal terminal
L	L1	U
31	34	44

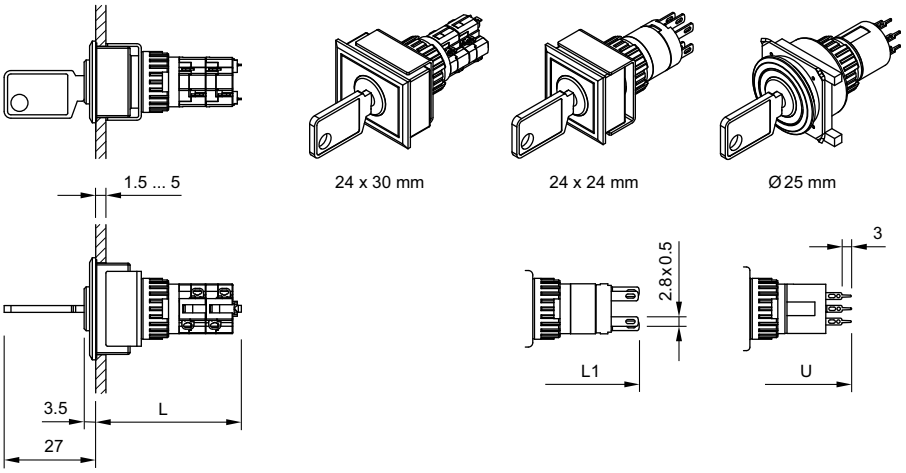
16 Illuminated pushbutton actuator, flush mounting page 14



	L	L1	U
1NC+1NO	36.5	44	-
2NC+2NO	44	-	-
3NC+3NO	51.5	-	-
4NC+4NO	59	-	-
1NC, 1NO, 1NC+1NO, 2NC, 2NO			44

Soldering terminal | Soldering terminal (also pluggable) | Universal termnal

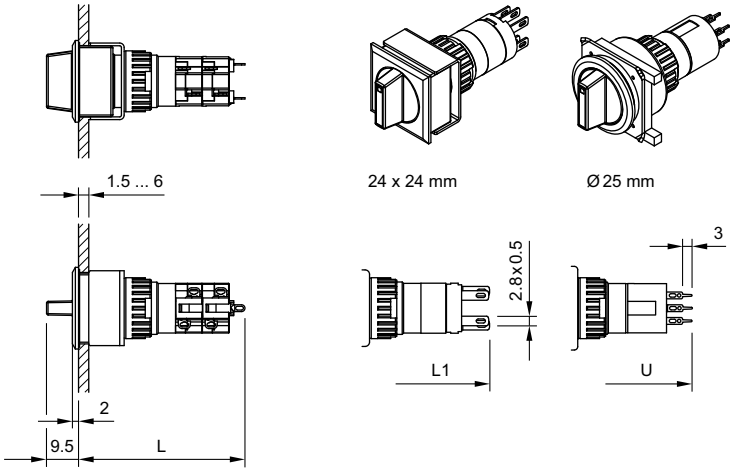
17 Keylock switch actuator 2 positions, flush mounting page 15



	L	L1	U
1NC+1NO	35	44.5	-
2NC+2NO	42.5	-	-
3NC+3NO	50	-	-
4NC+4NO	57.5	-	-
1NC, 1NO, 1NC+1NO, 2NC, 2NO			44.5

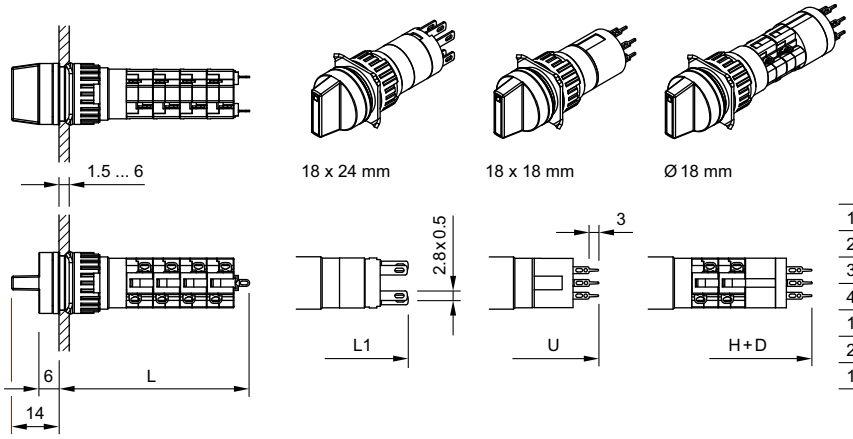
Soldering terminal | Soldering terminal (also pluggable) | Universal terminal

18 Selector switch actuator 2 positions, flush mounting page 19



	L	L1	U
	Soldering terminal	Soldering terminal (also pluggable)	Universal terminal
1NC+1NO	41	48	-
2NC+2NO	48.5	-	-
3NC+3NO	56	-	-
4NC+4NO	63.5	-	-
1NC, 1NO, 1NC+1NO, 2NC, 2NO			48

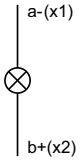
19 Selector switch 2 positions page 11



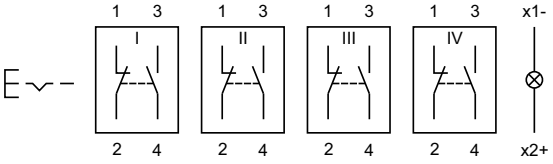
	L	L1	U	H+D
	Soldering terminal	Soldering terminal (also pluggable)	Universal terminal	Combined terminal + diodes
1NC+1NO	32	36	-	-
2NC+2NO	39.5	-	-	-
3NC+3NO	47	-	-	-
4NC+4NO	54.5	-	-	-
1NC+1NO+D	-	-	-	43.5
2NC+2NO+D	-	-	-	51
1NC, 1NO, 1NC+1NO, 2NC, 2NO			39	-

Circuit drawing

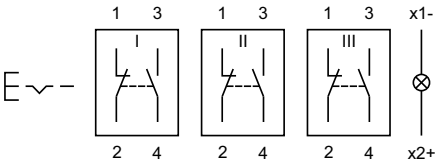
1 Indicator actuator page 7 **| Indicator actuator, flush mounting** page 13



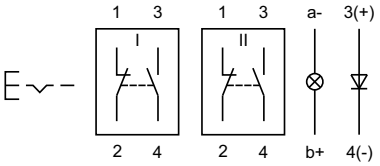
2 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



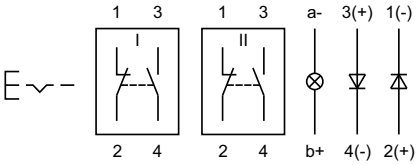
3 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



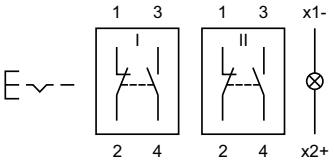
4 Illuminated pushbutton actuator page 8



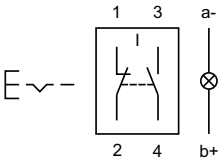
5 Illuminated pushbutton actuator page 8



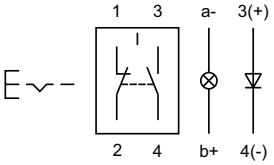
6 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



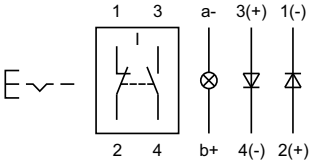
7 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



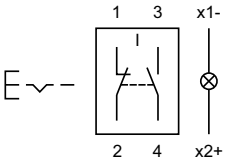
8 Illuminated pushbutton actuator page 8



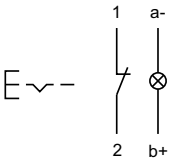
9 Illuminated pushbutton actuator page 8



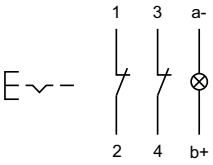
10 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



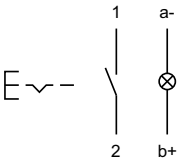
11 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



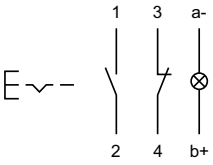
12 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



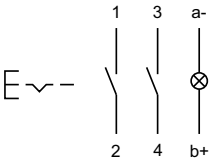
13 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



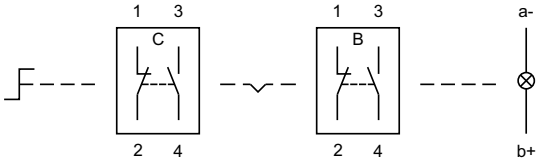
14 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



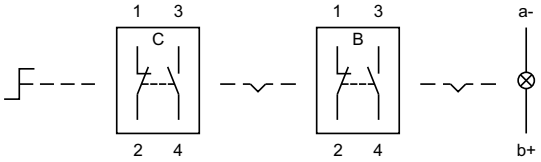
15 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



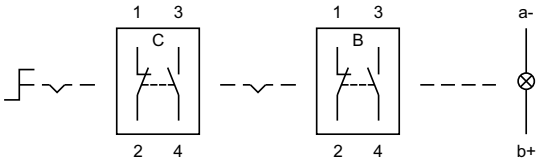
16 Selector switch 3 positions page 12 **| Selector switch actuator 3 positions, flush mounting** page 20



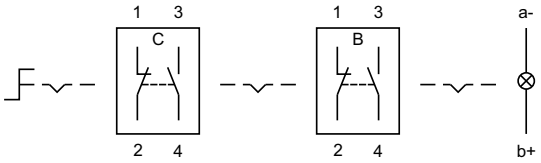
17 Selector switch 3 positions page 12 **| Selector switch actuator 3 positions, flush mounting** page 20



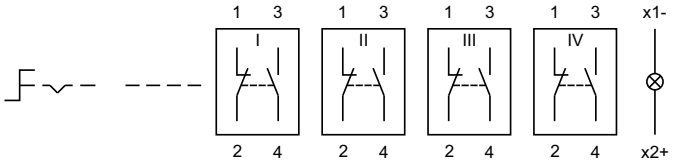
18 Selector switch 3 positions page 12 **| Selector switch actuator 3 positions, flush mounting** page 20



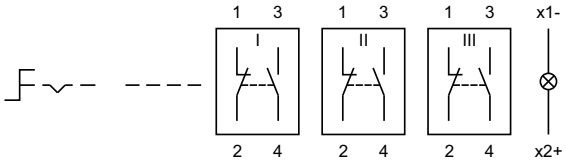
19 Selector switch 3 positions page 12 **| Selector switch actuator 3 positions, flush mounting** page 20



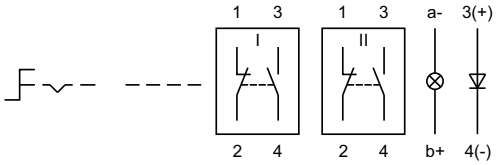
20 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



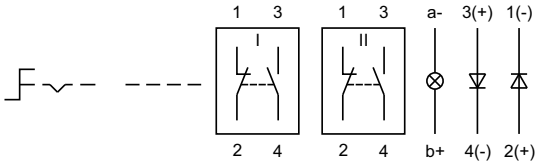
21 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



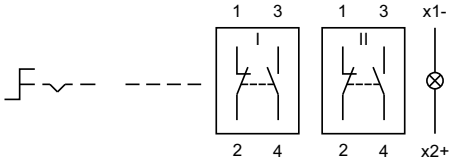
22 Selector switch 2 positions page 11



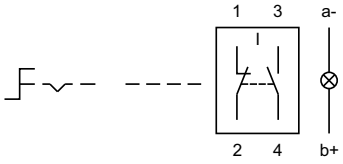
23 Selector switch 2 positions page 11



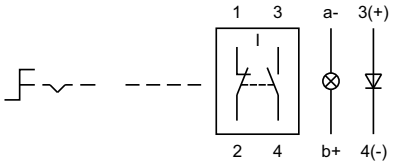
24 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



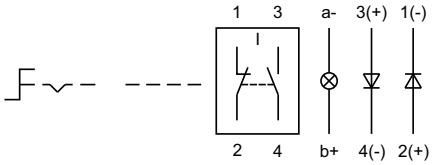
25 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



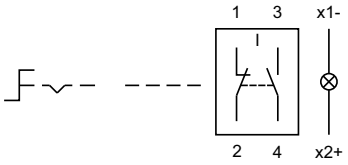
26 Selector switch 2 positions page 11



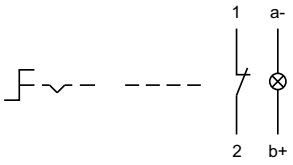
27 Selector switch 2 positions page 11



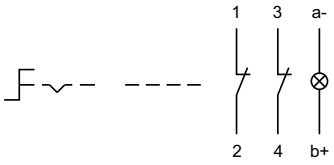
28 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



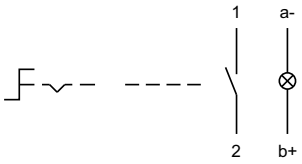
29 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



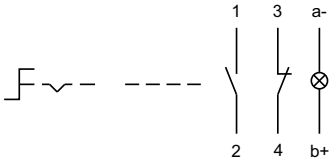
30 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



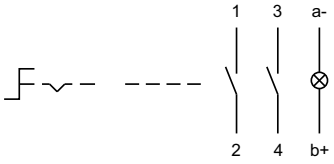
31 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



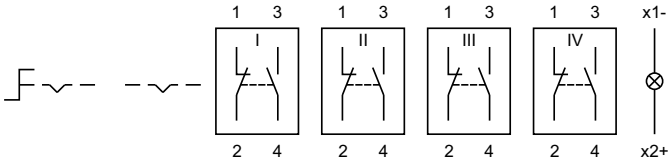
32 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



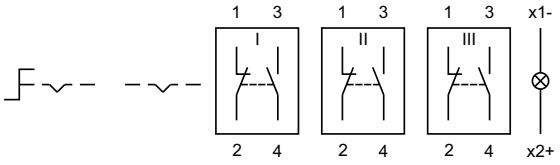
33 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



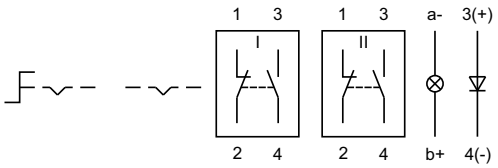
34 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



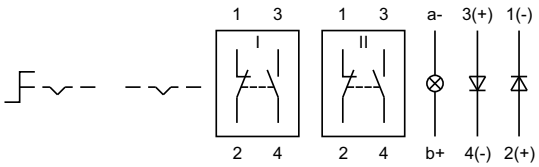
35 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



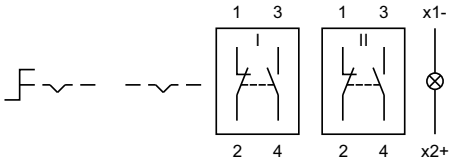
36 Selector switch 2 positions page 11



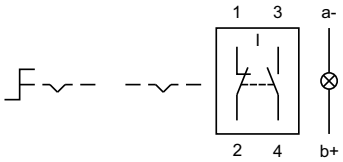
37 Selector switch 2 positions page 11



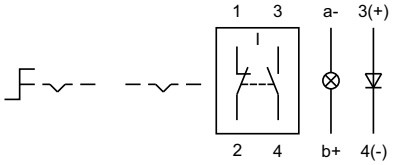
38 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



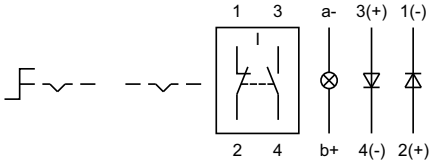
39 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



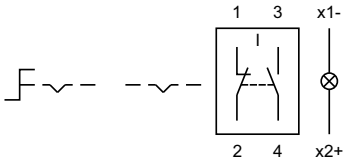
40 Selector switch 2 positions page 11



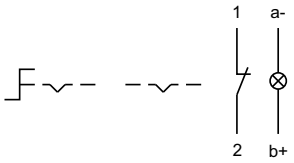
41 Selector switch 2 positions page 11



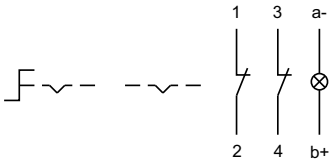
42 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



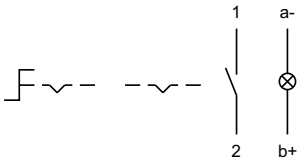
43 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



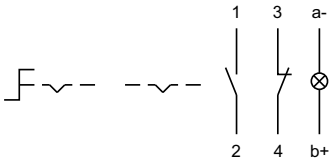
44 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



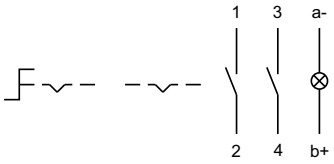
45 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



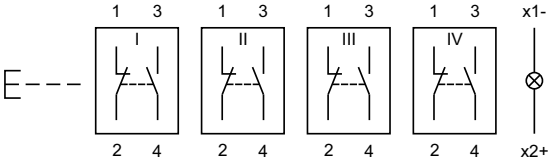
46 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



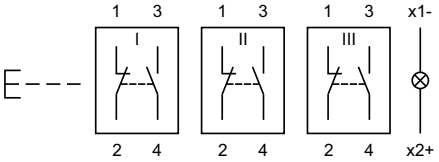
47 Selector switch 2 positions page 11 **| Selector switch actuator 2 positions, flush mounting** page 19



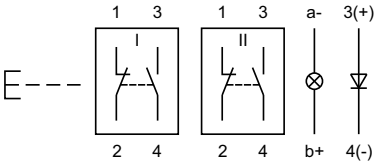
48 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



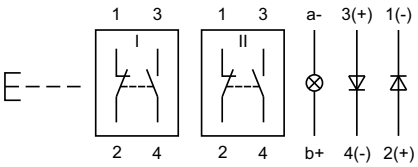
49 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



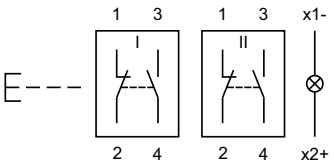
50 Illuminated pushbutton actuator page 8



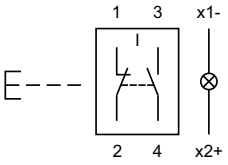
51 Illuminated pushbutton actuator page 8



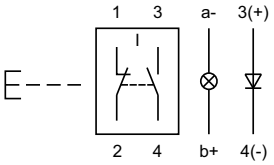
52 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



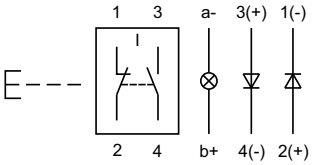
53 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



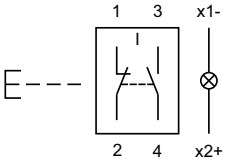
54 Illuminated pushbutton actuator page 8



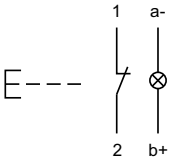
55 Illuminated pushbutton actuator page 8



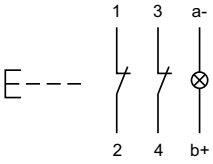
56 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



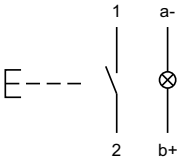
57 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



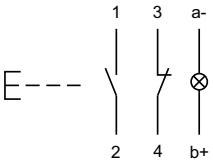
58 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



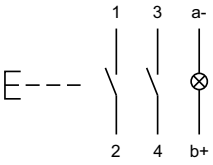
59 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



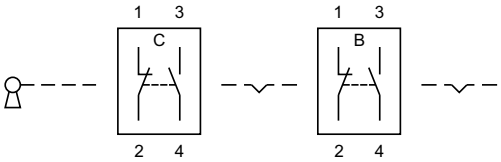
60 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



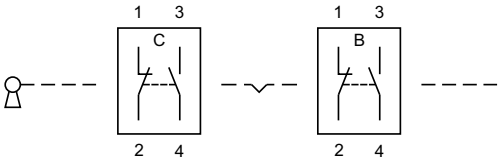
61 Illuminated pushbutton actuator page 8 **| Illuminated pushbutton actuator, flush mounting** page 14



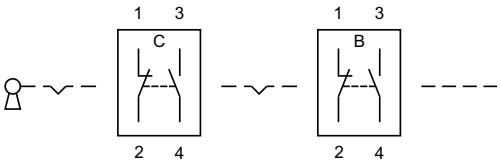
62 Keylock switch 3 positions page 10 **| Keylock switch actuator 3 positions, flush mounting** page 18



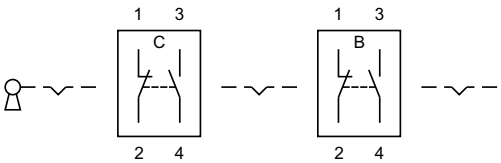
63 Keylock switch 3 positions page 10 **| Keylock switch actuator 3 positions, flush mounting** page 18



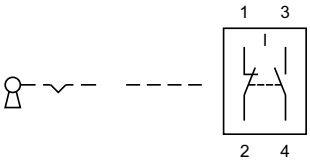
64 Keylock switch 3 positions page 10 **| Keylock switch actuator 3 positions, flush mounting** page 18



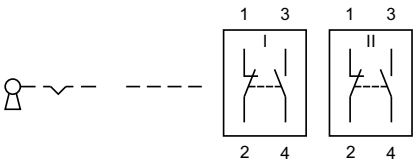
65 Keylock switch 3 positions page 10 **| Keylock switch actuator 3 positions, flush mounting** page 18



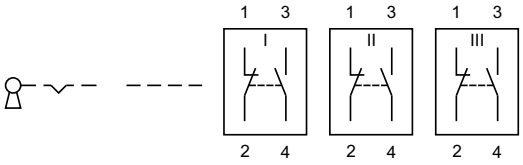
66 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



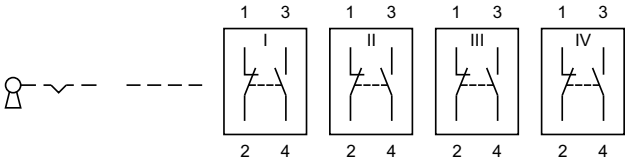
67 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



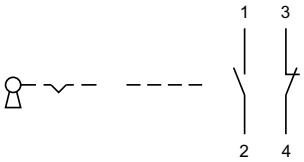
68 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



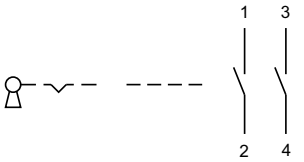
69 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



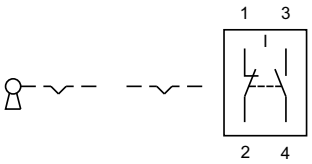
70 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



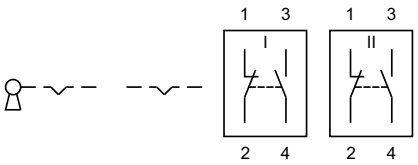
71 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



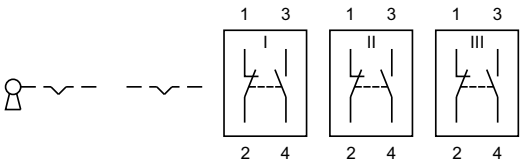
72 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



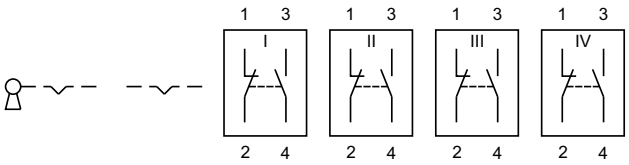
73 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



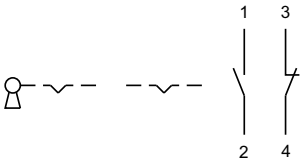
74 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



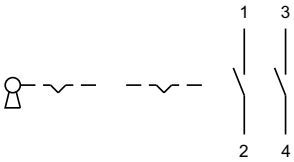
75 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



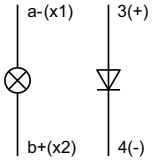
76 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



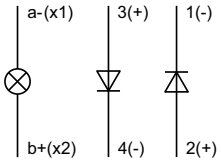
77 Keylock switch 2 positions page 9 **| Keylock switch actuator 2 positions, flush mounting** page 15



78 Indicator actuator page 7



79 Indicator actuator page 7



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