Series 14

Characteristics
The compact 22.5 mm Series 14 enables space-saving installations and is especially suited for:

- Flush design
- Raised design
- PCB (with adaptor)

The low level switching element is laid out for low current applications.

Functions
The Series 14 incorporates the following functions:

- Indicator
- Pushbutton
- Illuminated pushbutton
- Mushroom-head pushbutton
- Keylock switch
- Selector switch
- Buzzer

Market segments
The EAO Series 14 is especially suited for applications in the segments:

- Public transportation
- Machinery and Automation
- Construction machines and special-purpose vehicles
- Lifting and moving
- Panel building

Please refer to the EAO website to obtain detailed information regarding this series **www.products.eao.com**
Configure a product to your exact needs and request a quotation.

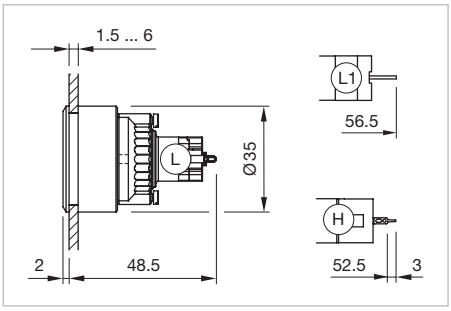
Overview

Flush design	
Indicator	4
Buzzer	5
Illuminated pushbutton	6
Mushroom-head pushbutton	9
Keylock switch	14
Selector switch	16
Raised design	
Indicator	18
Buzzer	20
Illuminated pushbutton	21
Mushroom-head pushbutton	24
Keylock switch	29
Selector switch	31
Accessories	**33**
Drawings	**55**
Technical data	**56**
Marking	**59**
Application guidelines	**63**
Index	**64**

14 Flush design

Indicator, IP 67

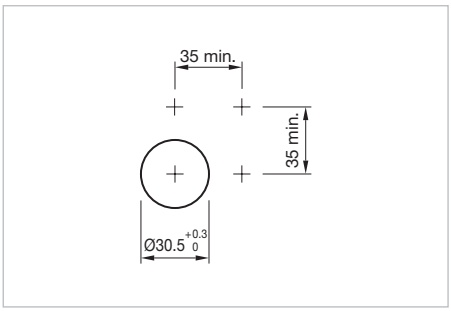
Product can differ from the current configuration.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm

Additional Information

- For front dimension Ø 35 mm
- For LED element fitting information see «Application guidelines»



Mounting cut-outs [mm]

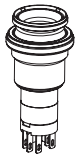
Equipment consisting of (schematic overview)

Front bezel set *page 38*

Lens *page 33*

Marking plate *page 36*

Single-LED *page 48*



Actuator

Part of front bezel set

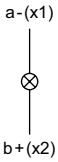
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the page s shown.

Terminal	Part No.	Component layout	Wiring diagram	Weight
Indicator actuator				
Solder 2.8 x 0.5 mm	**14-040.002**		1	0.050 kg
Solder	**14-040.005**		1	0.050 kg
Universal 2.0 x 0.5 mm	**14-041.006**	1	1	0.050 kg

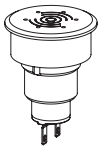
The component layouts you will find from page 55



Wiring diagram 1

Buzzer, IP 40

Equipment consisting of (schematic overview)

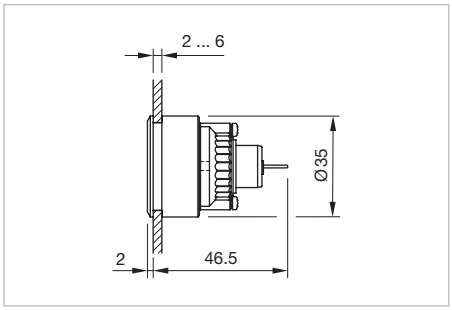


Buzzer

Pressure ring

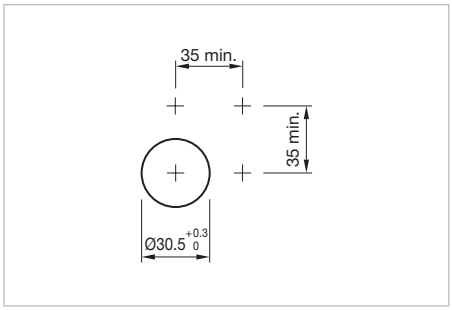
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]

Product can differ from the current configuration.

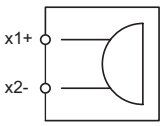


Mounting cut-outs [mm]

Additional Information

- Further information see «Technical data»
- The colour of anodized aluminium parts can vary due to technical production reasons
- For PCB application use adaptor Part-No. 31-942

Operating voltage	Front cap	Terminal	Part No.	Wiring diagram	Weight
Buzzer, Front dimension Ø 35 mm					
24 VDC	Aluminium black anodized	Solder 2.8 x 0.5 mm	**14-810.910**	1	0.016 kg
	Aluminium natural anodiset	Solder 2.8 x 0.5 mm	**14-810.918**	1	0.016 kg

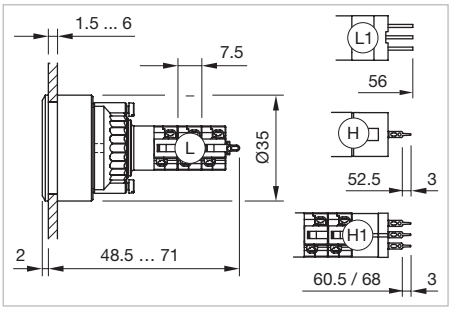


Wiring diagram 1

14 Flush design

Illuminated pushbutton, IP 67

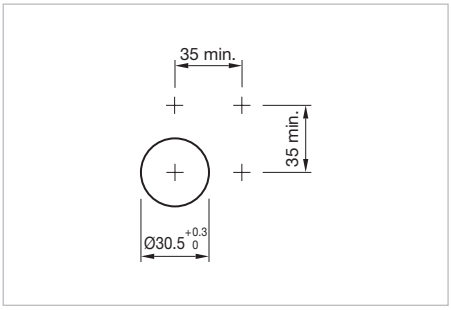
Product can differ from the current configuration.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm,
H1 = Universal-Solder terminal

Additional Information

- For front dimension Ø 35 mm
- For LED element fitting information see «Application guidelines»



Mounting cut-outs [mm]

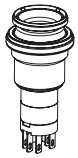
Equipment consisting of (schematic overview)

Front bezel set *page 38*

Lens *page 33*

Marking plate *page 36*

Single-LED *page 48*



Actuator

Part of front bezel set

Fixing nut

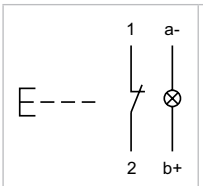
Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the page s shown.

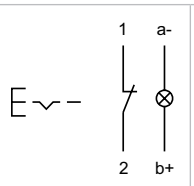
Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
Illuminated pushbutton actuator								
Low-level element	1 NC		B	Universal 2.0 x 0.5 mm	**14-436.036**	1	1	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-476.036**	1	2	0.015 kg
	1 NC + 1 NO		B	Universal 2.0 x 0.5 mm	**14-433.036**	1	3	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-473.036**	1	4	0.015 kg
	1 NO		B	Universal 2.0 x 0.5 mm	**14-435.036**	1	5	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-475.036**	1	6	0.015 kg
	2 NC		B	Universal 2.0 x 0.5 mm	**14-432.036**	1	7	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-472.036**	1	8	0.015 kg
	2 NO		B	Universal 2.0 x 0.5 mm	**14-431.036**	1	9	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-471.036**	1	10	0.015 kg
Snap-action switching element	1 NC + 1 NO	1	B	Universal-Solder	**14-743.0292**	1	11	0.014 kg
			C	Universal-Solder	**14-747.0292**	1	12	0.014 kg
		2	B	Universal-Solder	**14-744.0292**	1	13	0.014 kg
			C	Universal-Solder	**14-748.0292**	1	14	0.014 kg
			B	Solder 2.8 x 0.5 mm	**14-131.022**		24	0.013 kg
			B	Solder	**14-131.0252**		15	0.013 kg
			C	Solder 2.8 x 0.5 mm	**14-271.022**		25	0.013 kg
			C	Solder	**14-271.0252**		16	0.013 kg
	2 NC + 2 NO	2	B	Universal-Solder	**14-746.0292**	1	17	0.016 kg
			B	Solder	**14-132.0252**		18	0.015 kg

Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Snap-action switching element	2 NC + 2 NO		C	Solder	**14-272.0252**		19	0.015 kg
	3 NC + 3 NO		B	Solder	**14-133.0252**		20	0.017 kg
			C	Solder	**14-273.0252**		21	0.017 kg
	4 NC + 4 NO		B	Solder	**14-134.0252**		22	0.019 kg
			C	Solder	**14-274.0252**		23	0.019 kg

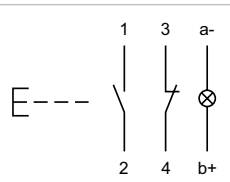
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



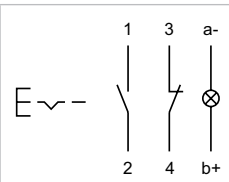
Wiring diagram 1



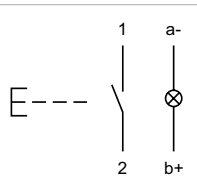
Wiring diagram 2



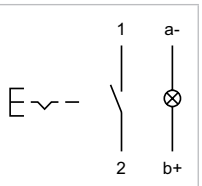
Wiring diagram 3



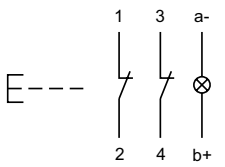
Wiring diagram 4



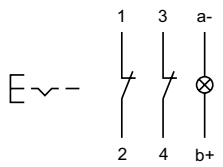
Wiring diagram 5



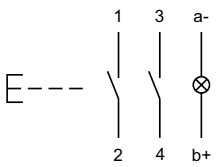
Wiring diagram 6



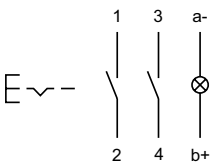
Wiring diagram 7



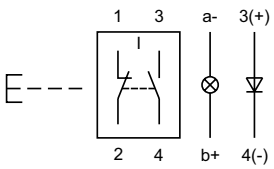
Wiring diagram 8



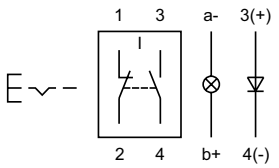
Wiring diagram 9



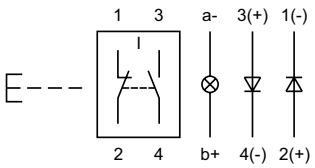
Wiring diagram 10



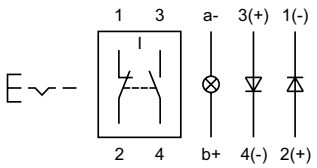
Wiring diagram 11



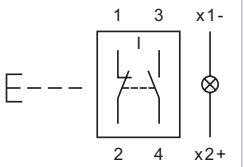
Wiring diagram 12



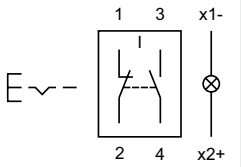
Wiring diagram 13



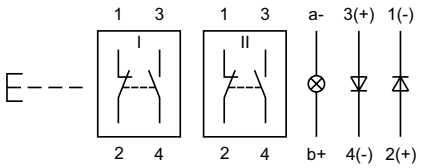
Wiring diagram 14



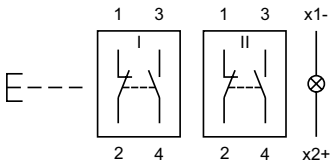
Wiring diagram 15



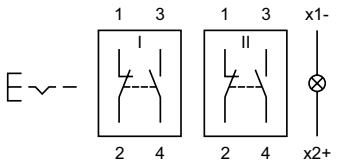
Wiring diagram 16



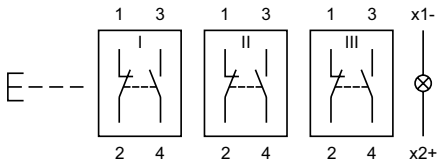
Wiring diagram 17



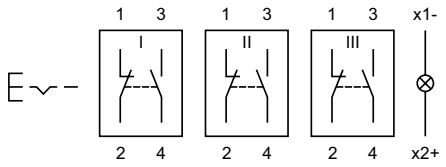
Wiring diagram 18



Wiring diagram 19

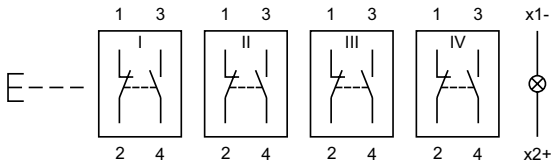


Wiring diagram 20

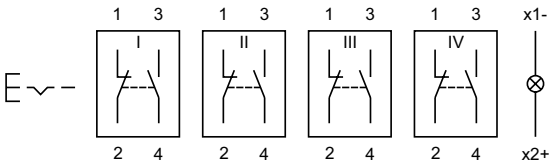


Wiring diagram 21

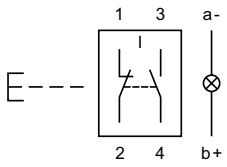
14 Flush design



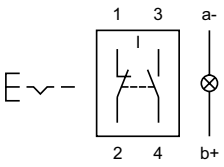
Wiring diagram 22



Wiring diagram 23



Wiring diagram 24



Wiring diagram 25

Mushroom-head pushbutton, IP 67

Equipment consisting of (schematic overview)

Mushroom-head cap *page 35*

Front bezel set *page 38*

Marking plate *page 37*

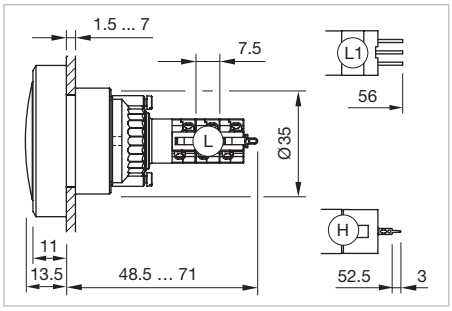
Actuator

Part of front bezel set

Fixing nut

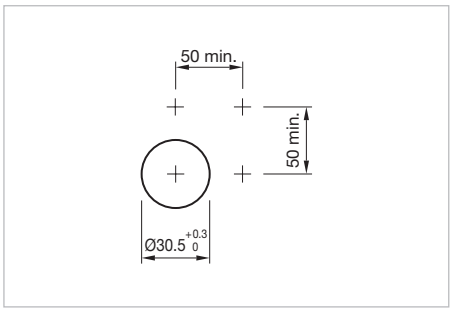
Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the page s shown.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm

Product can differ from the current configuration.



Mounting cut-outs [mm]

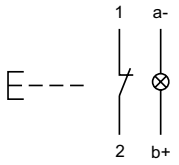
Additional Information

- For front dimension Ø 50 mm
- To obtain IP 67 use marking plate Part No. 704.609.9

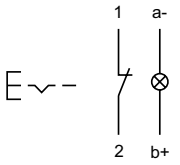
Switching system	Contacts	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
Low-level element	1 NC	B	Universal 2.0 x 0.5 mm	**14-436.036**	1	1	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-476.036**	1	2	0.015 kg
	1 NC + 1 NO	B	Universal 2.0 x 0.5 mm	**14-433.036**	1	3	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-473.036**	1	4	0.015 kg
	1 NO	B	Universal 2.0 x 0.5 mm	**14-435.036**	1	5	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-475.036**	1	6	0.015 kg
	2 NC	B	Universal 2.0 x 0.5 mm	**14-432.036**	1	7	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-472.036**	1	8	0.015 kg
	2 NO	B	Universal 2.0 x 0.5 mm	**14-431.036**	1	9	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-471.036**	1	10	0.015 kg
Snap-action switching element	1 NC + 1 NO	B	Solder	**14-131.0252**		11	0.013 kg
		B	Solder 2.8 x 0.5 mm	**14-131.022**		19	0.013 kg
		C	Solder	**14-271.0252**		12	0.013 kg
		B	Solder 2.8 x 0.5 mm	**14-271.022**		20	0.013 kg
	2 NC + 2 NO	B	Solder	**14-132.0252**		13	0.013 kg
		C	Solder	**14-272.0252**		14	0.013 kg
	3 NC + 3 NO	B	Solder	**14-133.0252**		15	0.013 kg
		C	Solder	**14-273.0252**		16	0.013 kg
	4 NC + 4 NO	B	Solder	**14-134.0252**		17	0.013 kg
		C	Solder	**14-274.0252**		18	0.013 kg

Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55

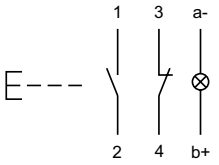
14 Flush design



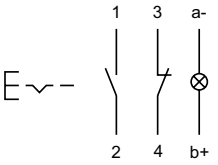
Wiring diagram 1



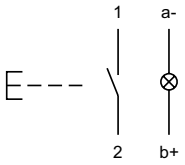
Wiring diagram 2



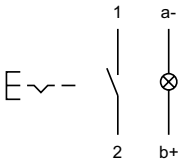
Wiring diagram 3



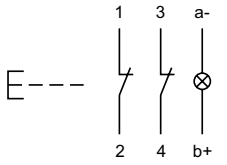
Wiring diagram 4



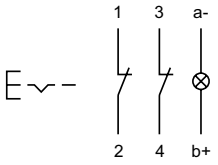
Wiring diagram 5



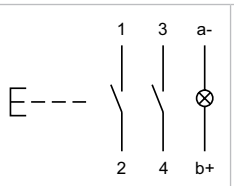
Wiring diagram 6



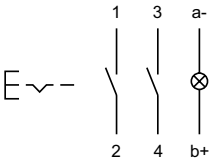
Wiring diagram 7



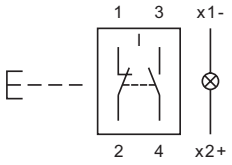
Wiring diagram 8



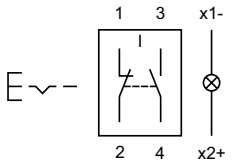
Wiring diagram 9



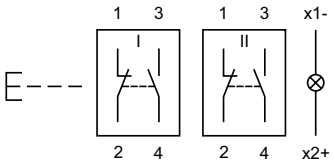
Wiring diagram 10



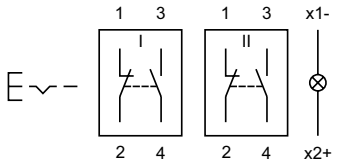
Wiring diagram 11



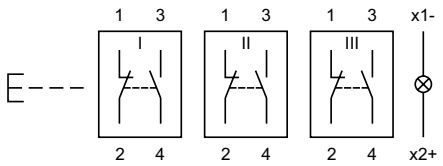
Wiring diagram 12



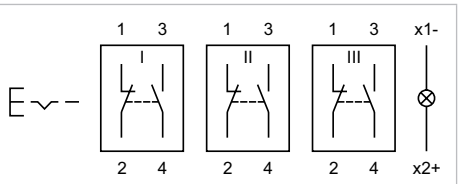
Wiring diagram 13



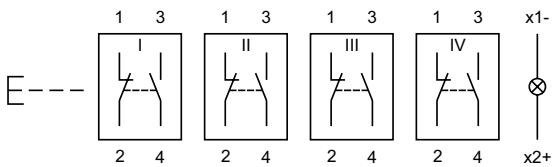
Wiring diagram 14



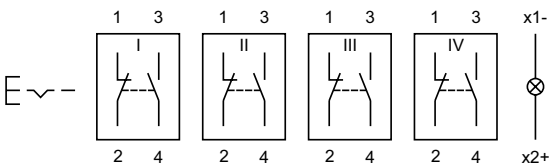
Wiring diagram 15



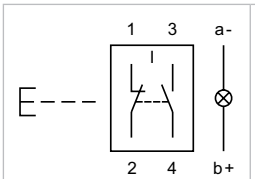
Wiring diagram 16



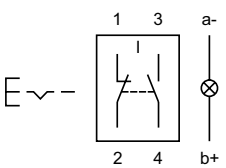
Wiring diagram 17



Wiring diagram 18



Wiring diagram 19



Wiring diagram 20

Illuminated mushroom head pushbutton, IP 67

Equipment consisting of (schematic overview)

Mushroom-head cap *page 36*

Front bezel set *page 38*

Marking plate *page 37*

Single-LED *page 48*

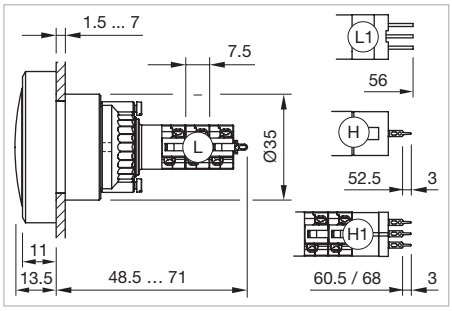
Actuator

Part of front bezel set

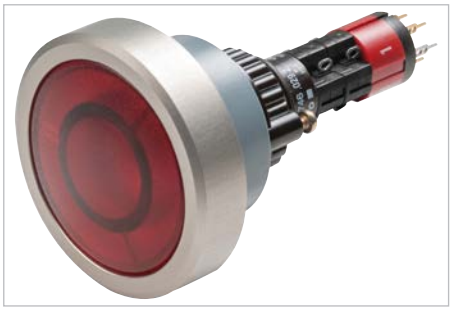
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

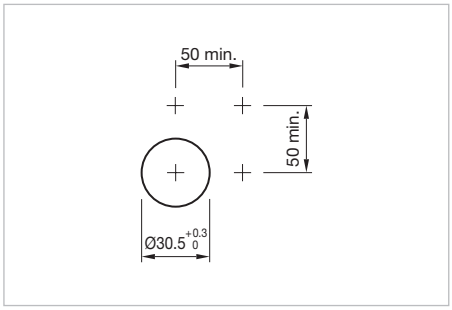
To obtain a complete unit, please select the red components from the page s shown.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm,
H1 = Universal-Solder terminal



Product can differ from the current configuration.



Mounting cut-outs [mm]

Additional Information

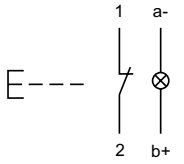
- For front dimension Ø 50 mm
- For LED element fitting information see «Application guidelines»
- To obtain IP 67 use marking plate Part No. 704.609.9

Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
Low-level element	1 NC		B	Universal 2.0 x 0.5 mm	**14-436.036**	1	1	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-476.036**	1	2	0.015 kg
	1 NC + 1 NO		B	Universal 2.0 x 0.5 mm	**14-433.036**	1	3	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-473.036**	1	4	0.015 kg
	1 NO		B	Universal 2.0 x 0.5 mm	**14-435.036**	1	5	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-475.036**	1	6	0.015 kg
	2 NC		B	Universal 2.0 x 0.5 mm	**14-432.036**	1	7	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-472.036**	1	8	0.015 kg
	2 NO		B	Universal 2.0 x 0.5 mm	**14-431.036**	1	9	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-471.036**	1	10	0.015 kg
Snap-action switching element	1 NC + 1 NO	1	B	Universal 2.0 x 0.5 mm	**14-743.0292**	1	11	0.014 kg
			C	Universal 2.0 x 0.5 mm	**14-747.0292**	1	12	0.014 kg
		2	B	Universal 2.0 x 0.5 mm	**14-744.0292**	1	13	0.014 kg
			C	Universal 2.0 x 0.5 mm	**14-748.0292**	1	14	0.014 kg
			B	Solder	**14-131.0252**		15	0.013 kg
			B	Solder 2.8 x 0.5 mm	**14-131.022**		24	0.013 kg
			C	Solder	**14-271.0252**		16	0.013 kg
			C	Solder 2.8 x 0.5 mm	**14-271.022**		25	0.013 kg
	2 NC + 2 NO	2	B	Universal 2.0 x 0.5 mm	**14-746.0292**	1	17	0.014 kg

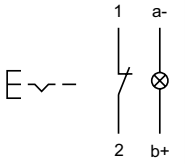
14 Flush design

Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Snap-action switching element	2 NC + 2 NO		B	Solder	**14-132.0252**		18	0.013 kg
			C	Solder	**14-272.0252**		19	0.013 kg
	3 NC + 3 NO		B	Solder	**14-133.0252**		20	0.013 kg
			C	Solder	**14-273.0252**		21	0.013 kg
	4 NC + 4 NO		B	Solder	**14-134.0252**		22	0.013 kg
			C	Solder	**14-274.0252**		23	0.013 kg

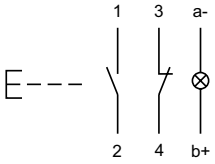
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



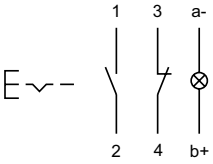
Wiring diagram 1



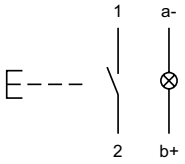
Wiring diagram 2



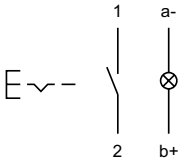
Wiring diagram 3



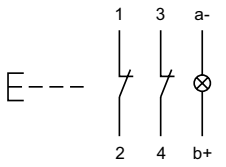
Wiring diagram 4



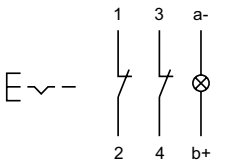
Wiring diagram 5



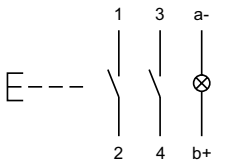
Wiring diagram 6



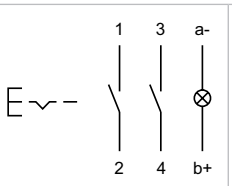
Wiring diagram 7



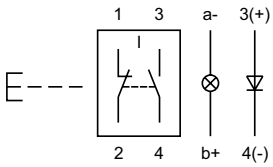
Wiring diagram 8



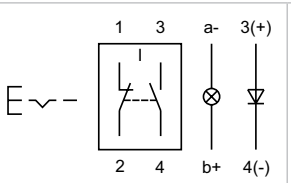
Wiring diagram 9



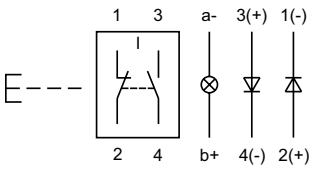
Wiring diagram 10



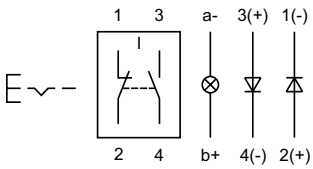
Wiring diagram 11



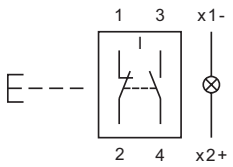
Wiring diagram 12



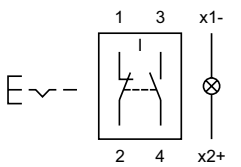
Wiring diagram 13



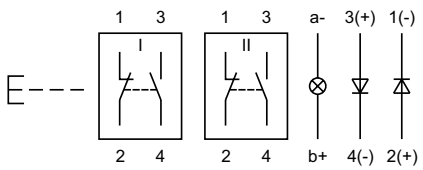
Wiring diagram 14



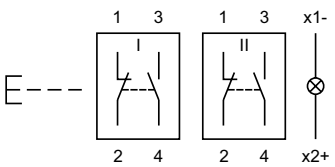
Wiring diagram 15



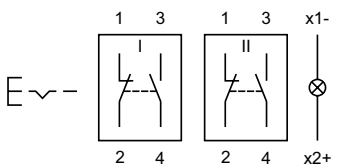
Wiring diagram 16



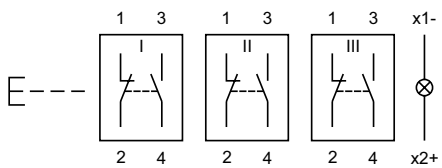
Wiring diagram 17



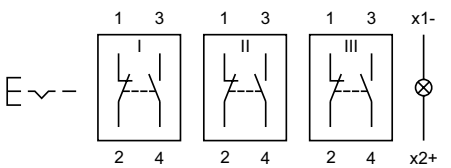
Wiring diagram 18



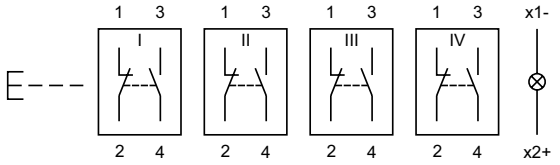
Wiring diagram 19



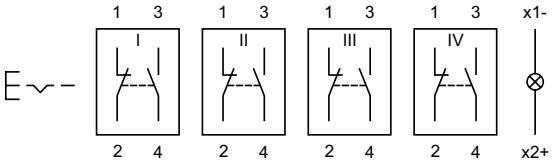
Wiring diagram 20



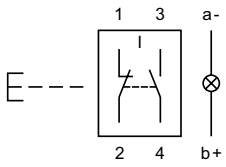
Wiring diagram 21



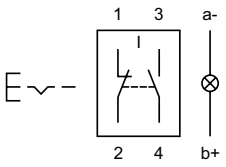
Wiring diagram 22



Wiring diagram 23



Wiring diagram 24

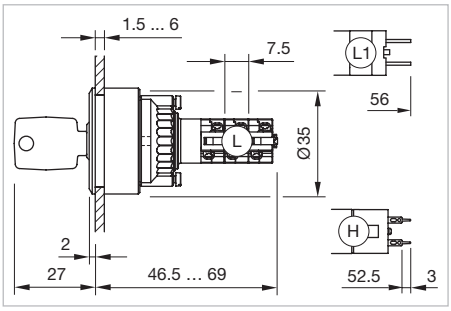


Wiring diagram 25

14 Flush design

Keylock switch 2 positions, IP 65

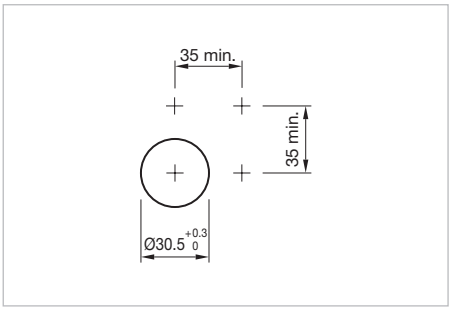
Product can differ from the current configuration.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm

Additional Information

- For front dimension Ø 35 mm
- Front plastic black
- The standard lock: KABA 1001
- Two keys are supplied with each key lock switch
- Optional lock numbers on request

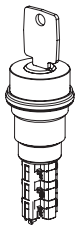


Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Front bezel set *page 38*

Anti-twist ring *page 51*



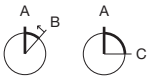
Actuator

Part of front bezel set

Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the page s shown.

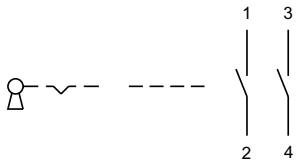


Switching positions (A = Rest, B = Momentary, C = Maintained)

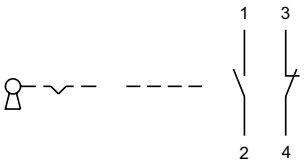
Switching system	Contacts	Switching action	Switching angle	Key remove	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Keylock switch actuator 2 positions									
Low-level element	2 NO	A - B	B = 42°	A	Universal 2.0 x 0.5 mm	**14-437.036K**	1	1	0.030 kg
	1 NC + 1 NO	A - B	B = 42°	A	Universal 2.0 x 0.5 mm	**14-438.036K**	1	2	0.030 kg
		A - C	C = 90°	A + C	Universal 2.0 x 0.5 mm	**14-412.036K**	1	3	0.030 kg
				A	Universal 2.0 x 0.5 mm	**14-415.036K**	1	3	0.030 kg
				C	Universal 2.0 x 0.5 mm	**14-418.036K**	1	3	0.030 kg
	2 NO	A - C	C = 90°	A + C	Universal 2.0 x 0.5 mm	**14-411.036K**	1	4	0.030 kg
				A	Universal 2.0 x 0.5 mm	**14-414.036K**	1	4	0.030 kg
				C	Universal 2.0 x 0.5 mm	**14-417.036K**	1	4	0.030 kg
Snap-action switching element	1 NC + 1 NO	A - B	B = 42°	A	Solder 2.8 x 0.5 mm	**14-141.022K**		5	0.029 kg
				A	Solder	**14-141.025K2**		5	0.029 kg
	2 NC + 2 NO	A - B	B = 42°	A	Solder	**14-142.025K2**		6	0.031 kg
	3 NC + 3 NO	A - B	B = 42°	A	Solder	**14-143.025K2**		7	0.033 kg
	4 NC + 4 NO	A - B	B = 42°	A	Solder	**14-144.025K2**		8	0.035 kg
	1 NC + 1 NO	A - C	C = 90°	A + C	Solder	**14-135.025K2**		9	0.029 kg
				A	Solder	**14-235.025K2**		9	0.029 kg
				C	Solder	**14-335.025K2**		9	0.029 kg
				A + C	Solder 2.8 x 0.5 mm	**14-135.022K**		9	0.029 kg
				A	Solder 2.8 x 0.5 mm	**14-235.022K**		9	0.029 kg

Switching system	Contacts	Switching action	Switching angle	Key remove	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Snap-action switching element	1 NC + 1 NO	A - C	C = 90°	C	Solder 2.8 x 0.5 mm	**14-335.022K**		9	0.029 kg
	2 NC + 2 NO	A - C	C = 90°	A + C	Solder	**14-136.025K2**		10	0.031 kg
				A	Solder	**14-236.025K2**		10	0.031 kg
				C	Solder	**14-336.025K2**		10	0.031 kg
	3 NC + 3 NO	A - C	C = 90°	A + C	Solder	**14-137.025K2**		11	0.033 kg
				A	Solder	**14-237.025K2**		11	0.033 kg
				C	Solder	**14-337.025K2**		11	0.033 kg
	4 NC + 4 NO	A - C	C = 90°	A + C	Solder	**14-138.025K2**		12	0.035 kg
				A	Solder	**14-238.025K2**		12	0.035 kg
				C	Solder	**14-338.025K2**		12	0.035 kg

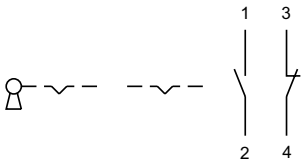
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 15



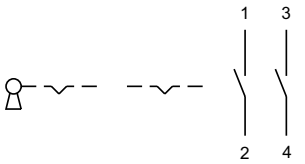
Wiring diagram 1



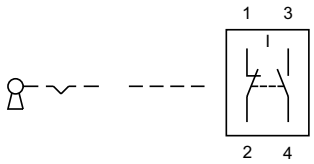
Wiring diagram 2



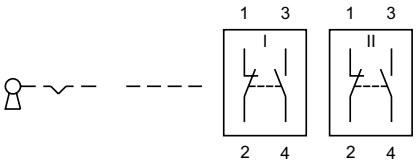
Wiring diagram 3



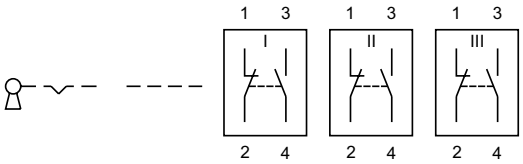
Wiring diagram 4



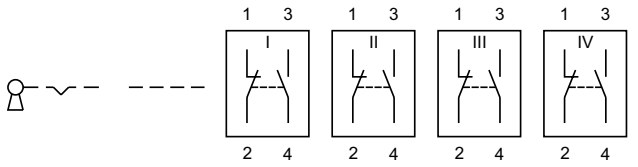
Wiring diagram 5



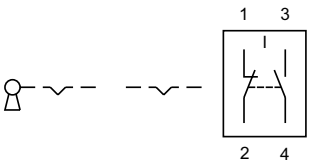
Wiring diagram 6



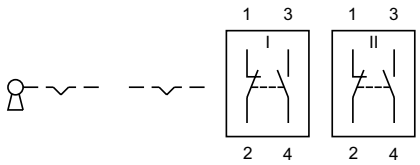
Wiring diagram 7



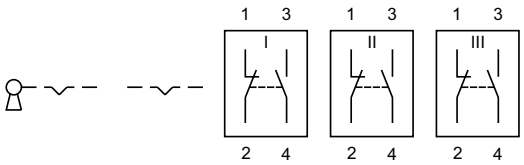
Wiring diagram 8



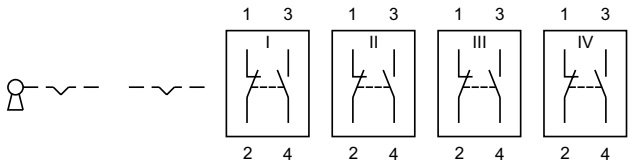
Wiring diagram 9



Wiring diagram 10



Wiring diagram 11

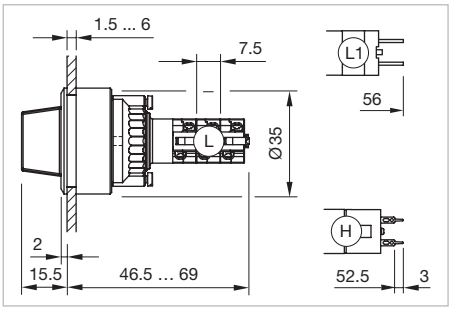


Wiring diagram 12

14 Flush design

Selector switch 2 positions, IP 67

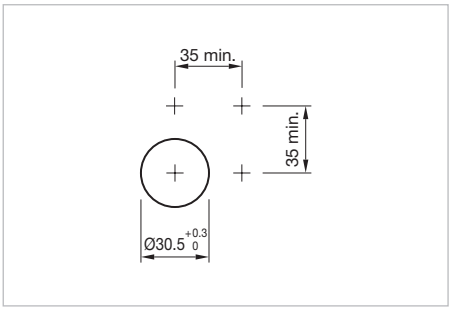
Product can differ from the current configuration.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm

Additional Information

- For front dimension Ø 35 mm
- Non-illuminative

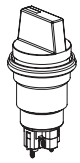


Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Front bezel set *page 38*

Anti-twist ring *page 51*



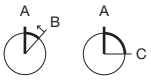
Actuator

Part of front bezel set

Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

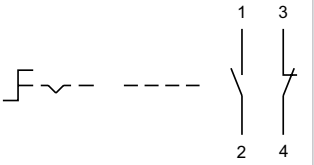
To obtain a complete unit, please select the red components from the page s shown.



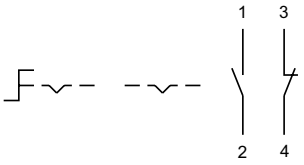
Switching positions (A = Rest, B = Momentary, C = Maintained)

Lever	Switching system	Contacts	Switching action	Switching angle	Terminal	Part No.	Component layout	Wiring diagram	Weight
Selector switch actuator 2 positions									
Plastic black short	Low-level element	1 NC + 1 NO	A - B	B = 42°	Universal 2.0 x 0.5 mm	**14-517.0360**	1	1	0.025 kg
			A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-522.0360**	1	2	0.025 kg
		2 NC	A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-521.0360**	1	3	0.025 kg
		2 NO	A - B	B = 42°	Universal 2.0 x 0.5 mm	**14-515.0360**	1	4	0.025 kg
			A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-520.0360**	1	5	0.025 kg
	Snap-action switching element	1 NC + 1 NO	A - B	B = 42°	Solder 2.8 x 0.5 mm	**14-501.0220**		6	0.024 kg
			A - B	B = 42°	Solder	**14-501.02502**		6	0.024 kg
			A - C	C = 90°	Solder 2.8 x 0.5 mm	**14-506.0220**		7	0.024 kg
			A - C	C = 90°	Solder	**14-506.02502**		7	0.024 kg
		2 NC + 2 NO	A - B	B = 42°	Solder	**14-502.02502**		8	0.026 kg
			A - C	C = 90°	Solder	**14-507.02502**		9	0.026 kg
		3 NC + 3 NO	A - B	B = 42°	Solder	**14-503.02502**		10	0.028 kg
			A - C	C = 90°	Solder	**14-508.02502**		11	0.028 kg
		4 NC + 4 NO	A - C	C = 90°	Solder	**14-509.02502**		12	0.030 kg

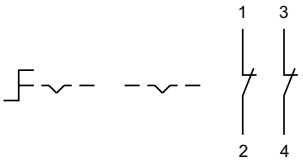
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



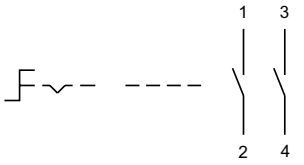
Wiring diagram 1



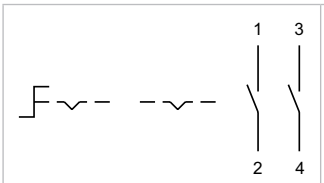
Wiring diagram 2



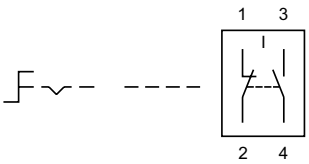
Wiring diagram 3



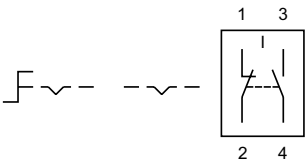
Wiring diagram 4



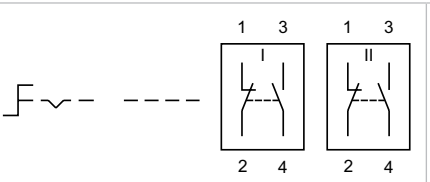
Wiring diagram 5



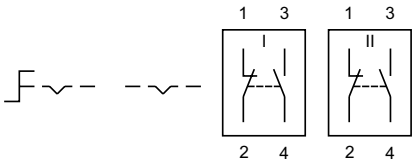
Wiring diagram 6



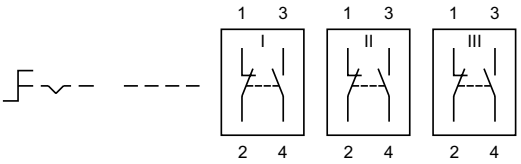
Wiring diagram 7



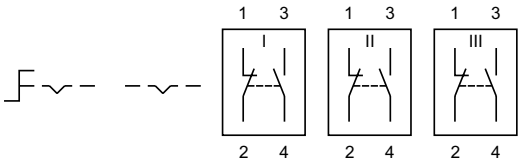
Wiring diagram 8



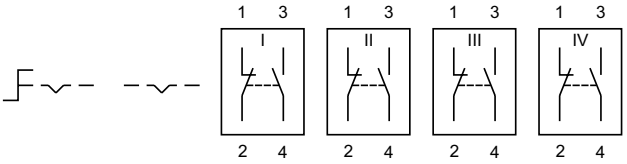
Wiring diagram 9



Wiring diagram 10



Wiring diagram 11

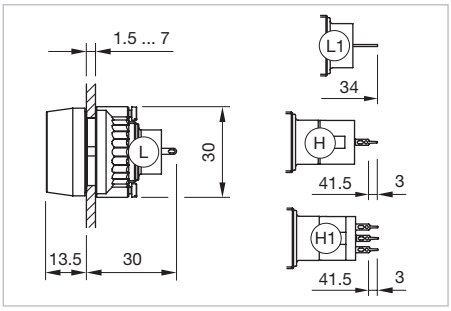


Wiring diagram 12

14 Raised design

Indicator full face illumination, IP 67

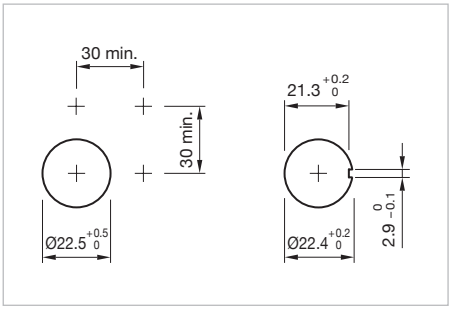
Product can differ from the current configuration.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm,
H1 = Universal-Solder terminal

Additional Information

- For front dimension Ø 29 mm
- For LED element fitting information see «Application guidelines»



Mounting cut-outs [mm]
Other mounting cut-outs see «Drawings»

Equipment consisting of (schematic overview)

Lens cap *page 35*

Marking cap *page 37*

Single-LED *page 48*

Actuator

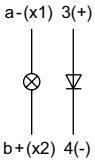
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

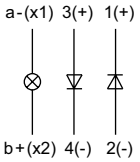
To obtain a complete unit, please select the red components from the page s shown.

Diode 1N4007	Terminal	Part No.	Component layout	Wiring diagram	Weight
Indicator actuator full-face illumination					
1	Universal 2.0 x 0.5 mm	**14-741.006**	1	1	0.011 kg
2	Universal 2.0 x 0.5 mm	**14-742.006**	1	2	0.011 kg
	Solder 2.8 x 0.5 mm	**14-030.002**		3	0.010 kg
	Solder	**14-030.005**		3	0.010 kg
	Universal 2.0 x 0.5 mm	**14-031.006**	1	3	0.011 kg

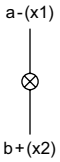
The component layouts you will find from page 55



Wiring diagram 1



Wiring diagram 2



Wiring diagram 3

Indicator front illumination, IP 67

Equipment consisting of (schematic overview)

Front ring *page 39*

Lens *page 33*

Marking plate *page 36*

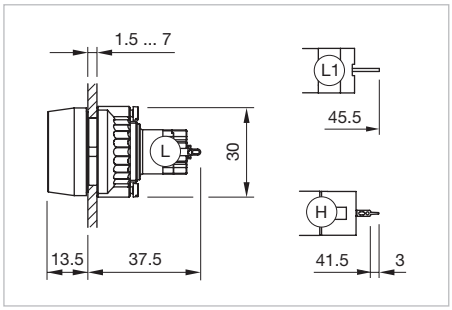
Single-LED *page 48*

Actuator

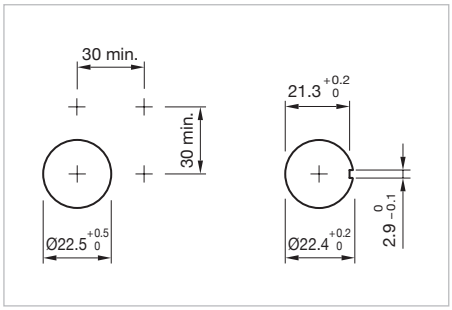
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the page s shown.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm



Mounting cut-outs [mm]
Other mounting cut-outs see «Drawings»

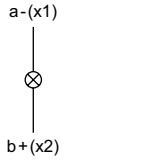
Product can differ from the current configuration.

Additional Information

- For front dimension Ø 29 mm
- For LED element fitting information see «Application guidelines»

Terminal	Part No.	Component layout	Wiring diagram	Weight
Indicator actuator front illumination				
Solder 2.8 x 0.5 mm	**14-040.002**		1	0.050 kg
Solder	**14-040.005**		1	0.050 kg
Universal 2.0 x 0.5 mm	**14-041.006**	1	1	0.050 kg

The component layouts you will find from page 55

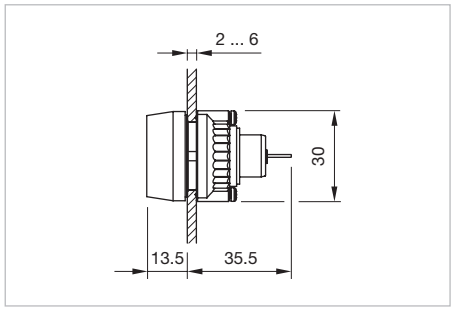


Wiring diagram 1

14 Raised design

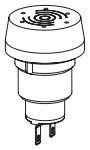
Buzzer, IP 65

Product can differ from the current configuration.



Dimensions [mm]

Equipment consisting of (schematic overview)



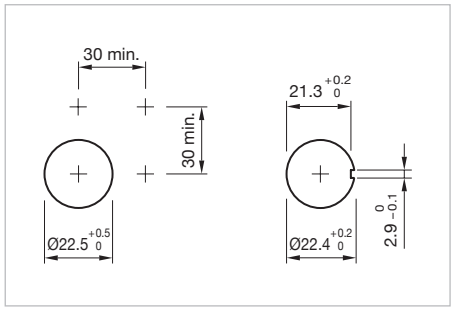
Buzzer

Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

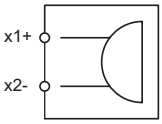
Additional Information

- Further information see «Technical data»
- For PCB application use adaptor Part-No. 31-942



Mounting cut-outs [mm]
Other mounting cut-outs see «Drawings»

Operating voltage	Front cap	Terminal	Part No.	Wiring diagram	Weight
Buzzer, Front dimension Ø 29 mm					
24 VDC	Plastic black	Solder 2.8 x 0.5 mm	**14-810.002**	1	0.016 kg
	Brass nickel-plated	Solder 2.8 x 0.5 mm	**14-810.902**	1	0.016 kg



Wiring diagram 1

Illuminated pushbutton, IP 67

Equipment consisting of (schematic overview)

Front ring *page 39*

Lens *page 33*

Marking plate *page 36*

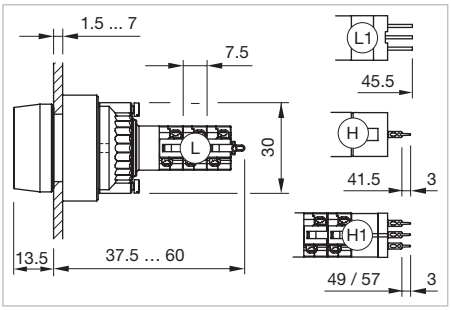
Single-LED *page 48*

Actuator

Fixing nut

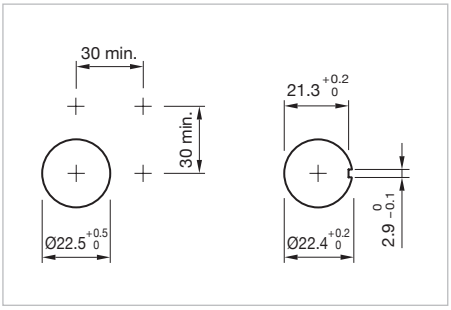
Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the page s shown.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm,
H1 = Universal-Solder terminal

Product can differ from the current configuration.



Mounting cut-outs [mm]
Other mounting cut-outs see «Drawings»

Additional Information

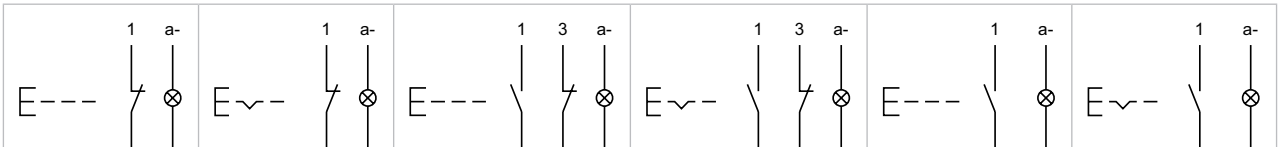
- For front dimension Ø 29 mm
- For LED element fitting information see «Application guidelines»

Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
Illuminated pushbutton actuator								
Low-level element	1 NC		B	Universal 2.0 x 0.5 mm	**14-436.036**	1	1	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-476.036**	1	2	0.015 kg
	1 NC + 1 NO		B	Universal 2.0 x 0.5 mm	**14-433.036**	1	3	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-473.036**	1	4	0.015 kg
	1 NO		B	Universal 2.0 x 0.5 mm	**14-435.036**	1	5	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-475.036**	1	6	0.015 kg
	2 NC		B	Universal 2.0 x 0.5 mm	**14-432.036**	1	7	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-472.036**	1	8	0.015 kg
	2 NO		B	Universal 2.0 x 0.5 mm	**14-431.036**	1	9	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-471.036**	1	10	0.015 kg
Snap-action switching element	1 NC + 1 NO	1	B	Universal-Solder	**14-743.0292**	1	11	0.014 kg
			C	Universal-Solder	**14-747.0292**	1	12	0.014 kg
		2	B	Universal-Solder	**14-744.0292**	1	13	0.014 kg
			C	Universal-Solder	**14-748.0292**	1	14	0.014 kg
			B	Solder 2.8 x 0.5 mm	**14-131.022**		24	0.013 kg
			B	Solder	**14-131.0252**		15	0.013 kg
			C	Solder 2.8 x 0.5 mm	**14-271.022**		25	0.013 kg
			C	Solder	**14-271.0252**		16	0.013 kg
	2 NC + 2 NO	2	B	Universal-Solder	**14-746.0292**	1	17	0.016 kg
			B	Solder	**14-132.0252**		18	0.015 kg

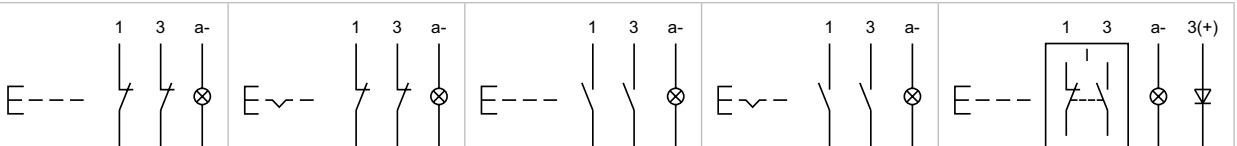
14 Raised design

Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Snap-action switching element	2 NC + 2 NO		C	Solder	**14-272.0252**		19	0.015 kg
	3 NC + 3 NO		B	Solder	**14-133.0252**		20	0.017 kg
			C	Solder	**14-273.0252**		21	0.017 kg
	4 NC + 4 NO		B	Solder	**14-134.0252**		22	0.019 kg
			C	Solder	**14-274.0252**		23	0.019 kg

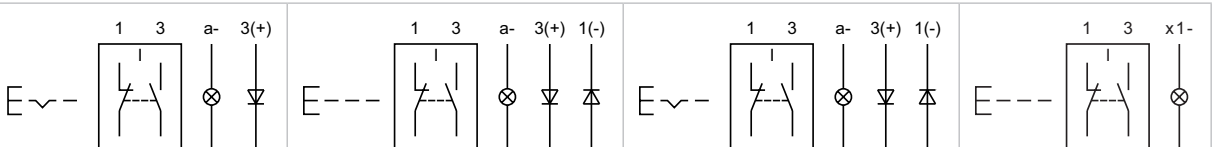
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



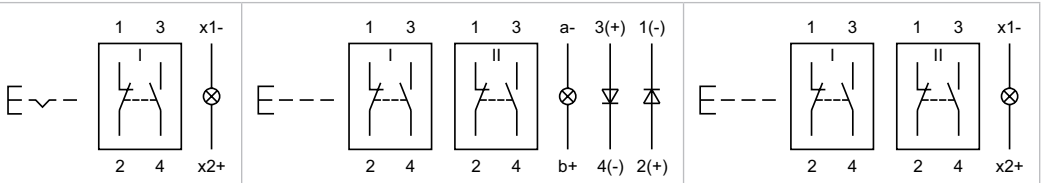
Wiring diagram 1 | Wiring diagram 2 | Wiring diagram 3 | Wiring diagram 4 | Wiring diagram 5 | Wiring diagram 6



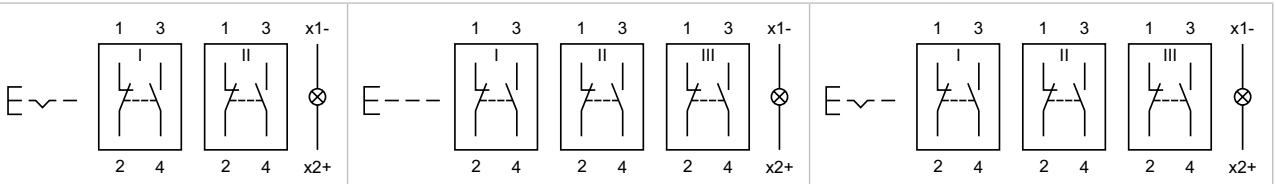
Wiring diagram 7 | Wiring diagram 8 | Wiring diagram 9 | Wiring diagram 10 | Wiring diagram 11



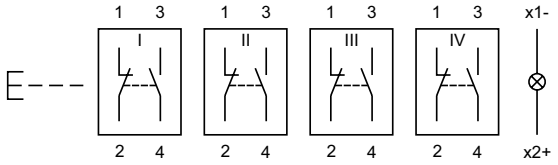
Wiring diagram 12 | Wiring diagram 13 | Wiring diagram 14 | Wiring diagram 15



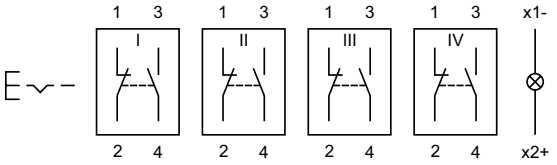
Wiring diagram 16 | Wiring diagram 17 | Wiring diagram 18



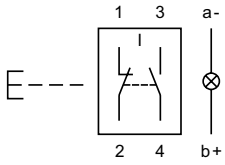
Wiring diagram 19 | Wiring diagram 20 | Wiring diagram 21



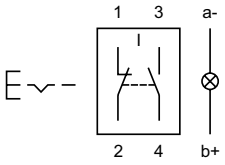
Wiring diagram 22



Wiring diagram 23



Wiring diagram 24

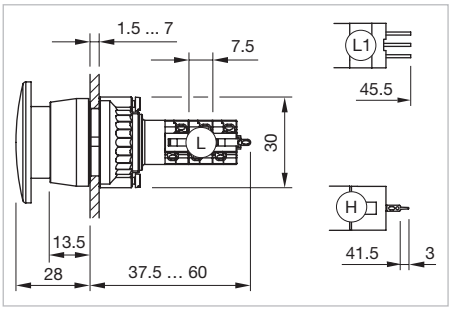


Wiring diagram 25

14 Raised design

Mushroom-head pushbutton, IP 67

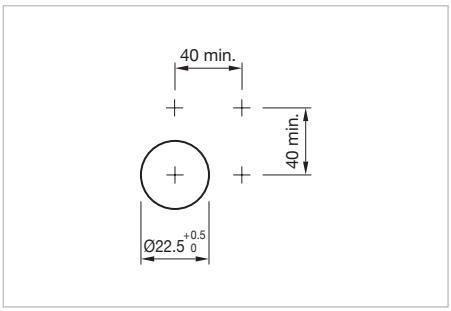
Product can differ from the current configuration.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm

Additional Information

- For front dimension Ø 40 mm



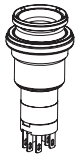
Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Mushroom-head cap *page 35*

Front ring *page 39*

Marking plate *page 37*



Actuator

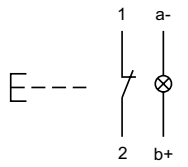
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.

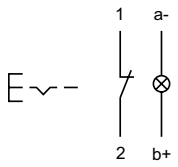
To obtain a complete unit, please select the red components from the page s shown.

Switching system	Contacts	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
Mushroom-head pushbutton actuator							
Low-level element	1 NC	B	Universal 2.0 x 0.5 mm	**14-436.036**	1	1	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-476.036**	1	2	0.015 kg
	1 NC + 1 NO	B	Universal 2.0 x 0.5 mm	**14-433.036**	1	3	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-473.036**	1	4	0.015 kg
	1 NO	B	Universal 2.0 x 0.5 mm	**14-435.036**	1	5	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-475.036**	1	6	0.015 kg
	2 NC	B	Universal 2.0 x 0.5 mm	**14-432.036**	1	7	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-472.036**	1	8	0.015 kg
	2 NO	B	Universal 2.0 x 0.5 mm	**14-431.036**	1	9	0.015 kg
		C	Universal 2.0 x 0.5 mm	**14-471.036**	1	10	0.015 kg
Snap-action switching element	1 NC + 1 NO	B	Solder 2.8 x 0.5 mm	**14-131.022**		19	0.013 kg
		B	Solder	**14-131.0252**		11	0.013 kg
		C	Solder 2.8 x 0.5 mm	**14-271.022**		20	0.013 kg
		C	Solder	**14-271.0252**		12	0.013 kg
	2 NC + 2 NO	B	Solder	**14-132.0252**		13	0.015 kg
		C	Solder	**14-272.0252**		14	0.015 kg
	3 NC + 3 NO	B	Solder	**14-133.0252**		15	0.017 kg
		C	Solder	**14-273.0252**		16	0.017 kg
	4 NC + 4 NO	B	Solder	**14-134.0252**		17	0.019 kg
		C	Solder	**14-274.0252**		18	0.019 kg

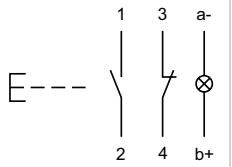
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



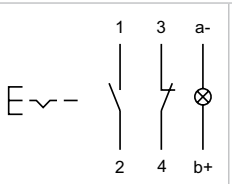
Wiring diagram 1



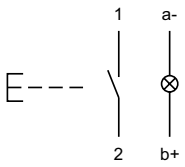
Wiring diagram 2



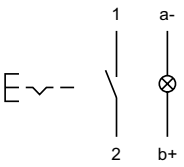
Wiring diagram 3



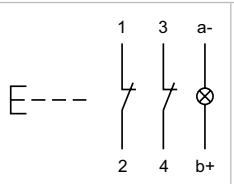
Wiring diagram 4



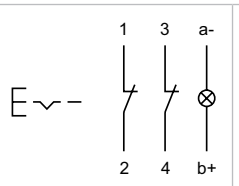
Wiring diagram 5



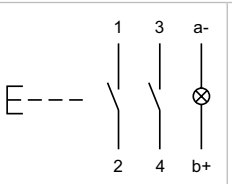
Wiring diagram 6



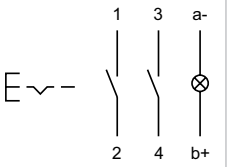
Wiring diagram 7



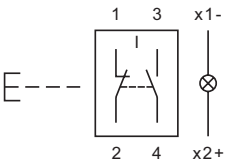
Wiring diagram 8



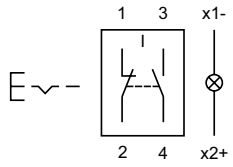
Wiring diagram 9



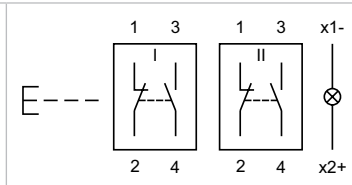
Wiring diagram 10



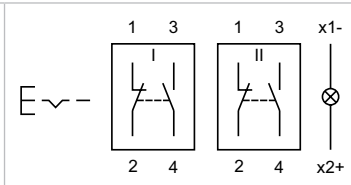
Wiring diagram 11



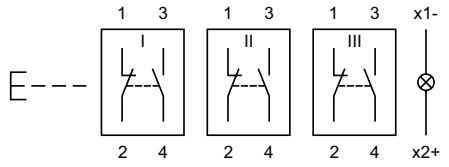
Wiring diagram 12



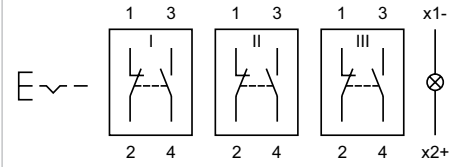
Wiring diagram 13



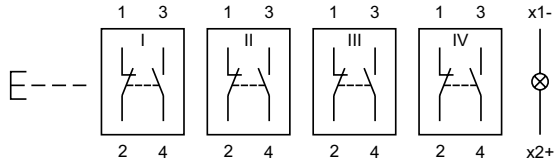
Wiring diagram 14



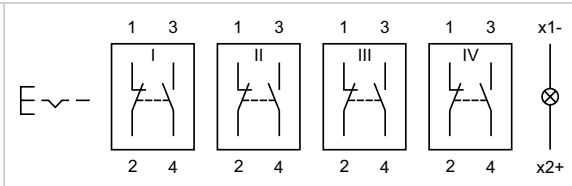
Wiring diagram 15



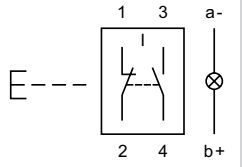
Wiring diagram 16



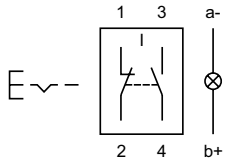
Wiring diagram 17



Wiring diagram 18



Wiring diagram 19

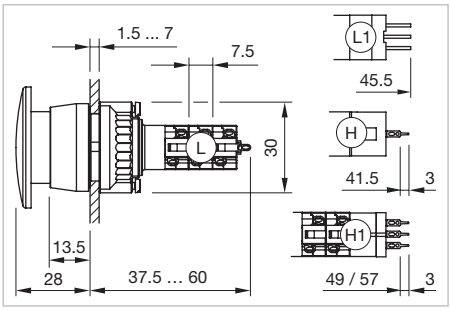


Wiring diagram 20

14 Raised design

Illuminated mushroom head pushbutton, IP 67

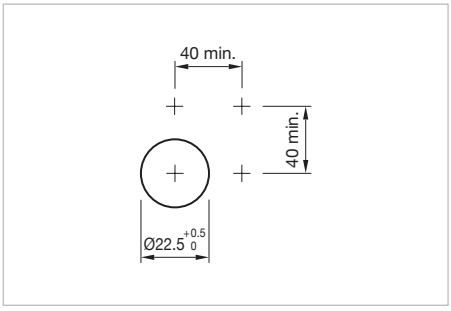
Product can differ from the current configuration.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm,
H1 = Universal-Solder terminal

Additional Information

- For front dimension Ø 29 mm
- For LED element fitting information see «Application guidelines»



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)

Mushroom-head cap *page 35*

Front ring *page 39*

Marking plate *page 37*

Single-LED *page 48*

Actuator

Fixing nut

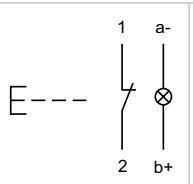
Each Part Number listed below includes all the black components shown in the 3D-drawing.

To obtain a complete unit, please select the red components from the page s shown.

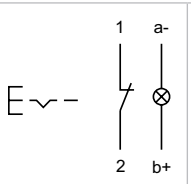
Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Component layout	Wiring diagram	Weight
Mushroom-head pushbutton actuator illuminated								
Low-level element	1 NC		B	Universal 2.0 x 0.5 mm	**14-436.036**	1	1	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-476.036**	1	2	0.015 kg
	1 NC + 1 NO		B	Universal 2.0 x 0.5 mm	**14-433.036**	1	3	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-473.036**	1	4	0.015 kg
	1 NO		B	Universal 2.0 x 0.5 mm	**14-435.036**	1	5	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-475.036**	1	6	0.015 kg
	2 NC		B	Universal 2.0 x 0.5 mm	**14-432.036**	1	7	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-472.036**	1	8	0.015 kg
	2 NO		B	Universal 2.0 x 0.5 mm	**14-431.036**	1	9	0.015 kg
			C	Universal 2.0 x 0.5 mm	**14-471.036**	1	10	0.015 kg
Snap-action switching element	1 NC + 1 NO	1	B	Universal-Solder	**14-743.0292**	1	11	0.014 kg
			C	Universal-Solder	**14-747.0292**	1	12	0.014 kg
		2	B	Universal-Solder	**14-744.0292**	1	13	0.014 kg
			C	Universal-Solder	**14-748.0292**	1	14	0.014 kg
			B	Solder 2.8 x 0.5 mm	**14-131.022**		24	0.013 kg
			B	Solder	**14-131.0252**		15	0.013 kg
			C	Solder 2.8 x 0.5 mm	**14-271.022**		25	0.013 kg
			C	Solder	**14-271.0252**		16	0.013 kg
	2 NC + 2 NO	2	B	Universal-Solder	**14-746.0292**	1	17	0.016 kg
			B	Solder	**14-132.0252**		18	0.015 kg
			C	Solder	**14-272.0252**		19	0.015 kg

Switching system	Contacts	Diode 1N4007	Switching action	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Snap-action switching element	3 NC + 3 NO		B	Solder	**14-133.0252**		20	0.017 kg
			C	Solder	**14-273.0252**		21	0.017 kg
	4 NC + 4 NO		B	Solder	**14-134.0252**		22	0.019 kg
			C	Solder	**14-274.0252**		23	0.019 kg

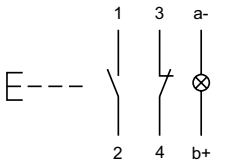
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



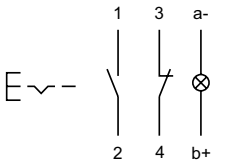
Wiring diagram 1



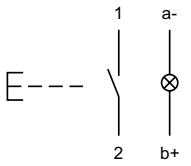
Wiring diagram 2



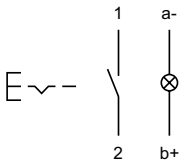
Wiring diagram 3



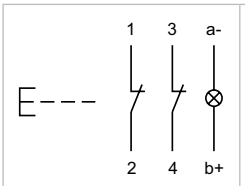
Wiring diagram 4



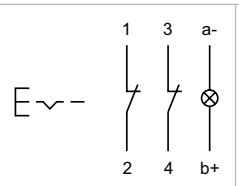
Wiring diagram 5



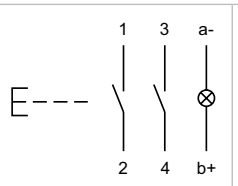
Wiring diagram 6



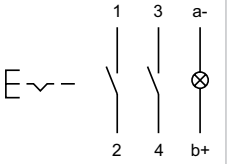
Wiring diagram 7



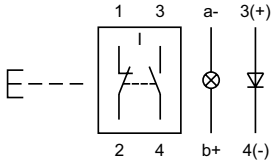
Wiring diagram 8



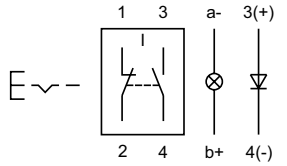
Wiring diagram 9



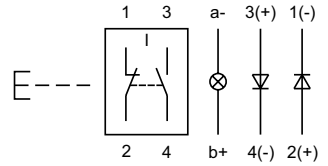
Wiring diagram 10



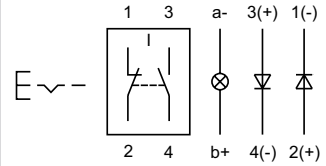
Wiring diagram 11



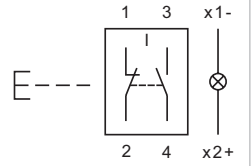
Wiring diagram 12



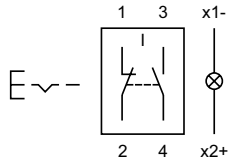
Wiring diagram 13



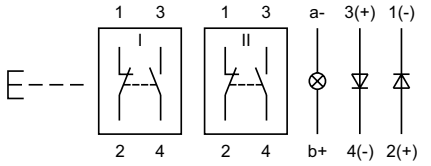
Wiring diagram 14



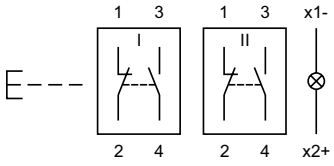
Wiring diagram 15



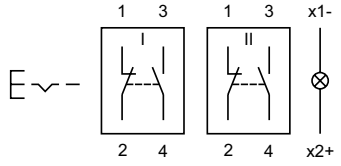
Wiring diagram 16



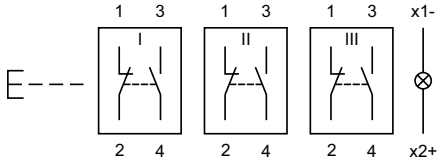
Wiring diagram 17



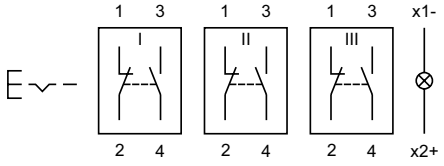
Wiring diagram 18



Wiring diagram 19

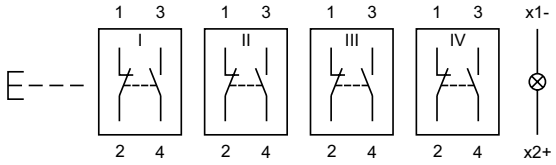


Wiring diagram 20

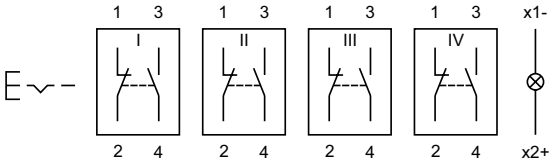


Wiring diagram 21

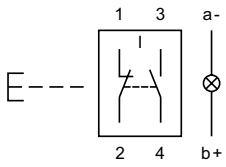
14 Raised design



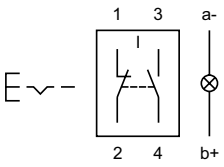
Wiring diagram 22



Wiring diagram 23



Wiring diagram 24

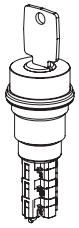


Wiring diagram 25

Keylock switch 2 positions, IP 65

Equipment consisting of (schematic overview)

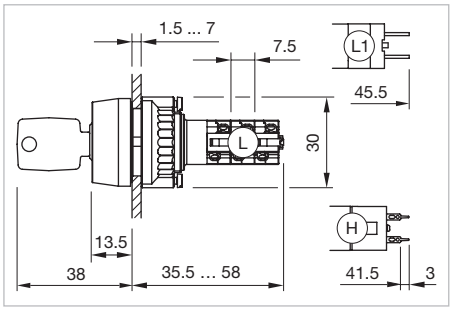
Front ring



Actuator

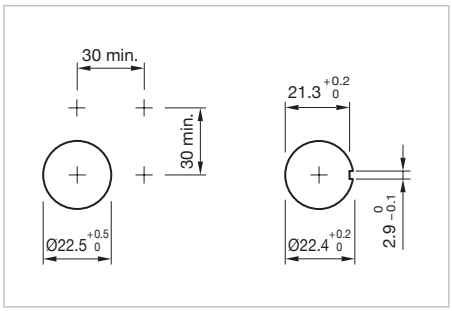
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm

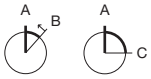
Product can differ from the current configuration.



Mounting cut-outs [mm]
Other mounting cut-outs see «Drawings»

Additional Information

- Front plastic black
- Frontring aluminium natural anodized
- The standard lock: KABA 1001
- Two keys are supplied with each key lock switch
- Optional lock numbers on request
- The colour of anodized aluminium parts can vary due to technical production reasons



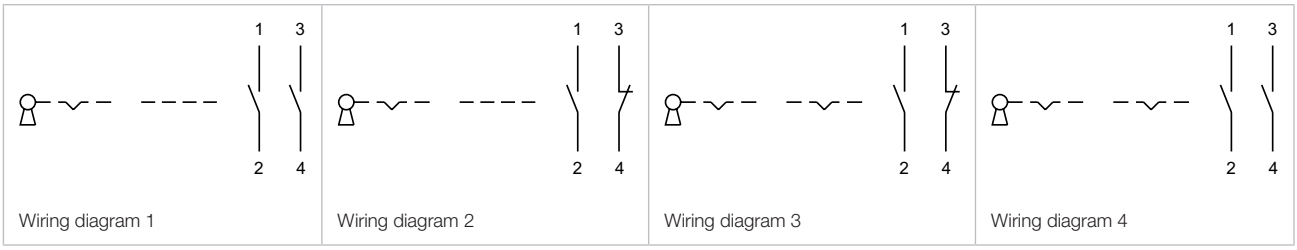
Switching positions (A = Rest, B = Momentary, C = Maintained)

Switching system	Contacts	Switching action	Switching angle	Key remove	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Keylock switch actuator 2 positions, Front dimension Ø 29 mm									
Low-level element	2 NO	A - B	B = 42°	A	Universal 2.0 x 0.5 mm	**14-437.036K**	1	1	0.030 kg
	1 NC + 1 NO	A - B	B = 42°	A	Universal 2.0 x 0.5 mm	**14-438.036K**	1	2	0.030 kg
		A - C	C = 90°	A + C	Universal 2.0 x 0.5 mm	**14-412.036K**	1	3	0.030 kg
				A	Universal 2.0 x 0.5 mm	**14-415.036K**	1	3	0.030 kg
				C	Universal 2.0 x 0.5 mm	**14-418.036K**	1	3	0.030 kg
	2 NO	A - C	C = 90°	A + C	Universal 2.0 x 0.5 mm	**14-411.036K**	1	4	0.030 kg
				A	Universal 2.0 x 0.5 mm	**14-414.036K**	1	4	0.030 kg
				C	Universal 2.0 x 0.5 mm	**14-417.036K**	1	4	0.030 kg
Snap-action switching element	1 NC + 1 NO	A - B	B = 42°	A	Solder 2.8 x 0.5 mm	**14-141.022K**		5	0.029 kg
				A	Solder	**14-141.025K2**		5	0.029 kg
	2 NC + 2 NO	A - B	B = 42°	A	Solder	**14-142.025K2**		6	0.031 kg
	3 NC + 3 NO	A - B	B = 42°	A	Solder	**14-143.025K2**		7	0.033 kg
	4 NC + 4 NO	A - B	B = 42°	A	Solder	**14-144.025K2**		8	0.035 kg
	1 NC + 1 NO	A - C	C = 90°	A + C	Solder	**14-135.025K2**		9	0.029 kg
				A	Solder	**14-235.025K2**		9	0.029 kg
				C	Solder	**14-335.025K2**		9	0.029 kg

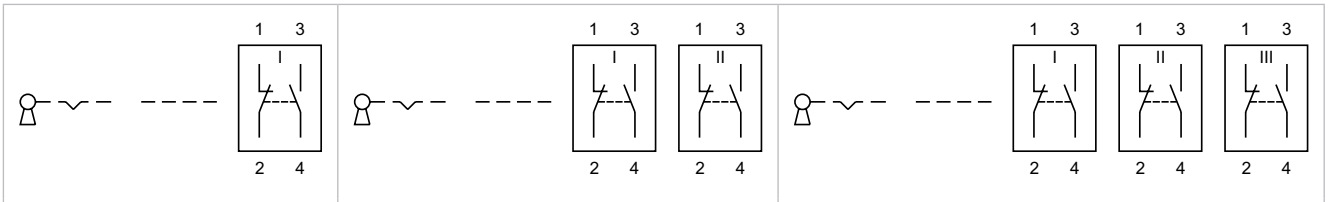
14 Raised design

Switching system	Contacts	Switching action	Switching angle	Key remove	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Snap-action switching element	1 NC + 1 NO	A - C	C = 90°	A + C	Solder 2.8 x 0.5 mm	**14-135.022K**		9	0.029 kg
				A	Solder 2.8 x 0.5 mm	**14-235.022K**		9	0.029 kg
				C	Solder 2.8 x 0.5 mm	**14-335.022K**		9	0.029 kg
	2 NC + 2 NO	A - C	C = 90°	A + C	Solder	**14-136.025K2**		10	0.031 kg
				A	Solder	**14-236.025K2**		10	0.031 kg
				C	Solder	**14-336.025K2**		10	0.031 kg
	3 NC + 3 NO	A - C	C = 90°	A + C	Solder	**14-137.025K2**		11	0.033 kg
				A	Solder	**14-237.025K2**		11	0.033 kg
				C	Solder	**14-337.025K2**		11	0.033 kg
	4 NC + 4 NO	A - C	C = 90°	A + C	Solder	**14-138.025K2**		12	0.035 kg
				A	Solder	**14-238.025K2**		12	0.035 kg
				C	Solder	**14-338.025K2**		12	0.035 kg

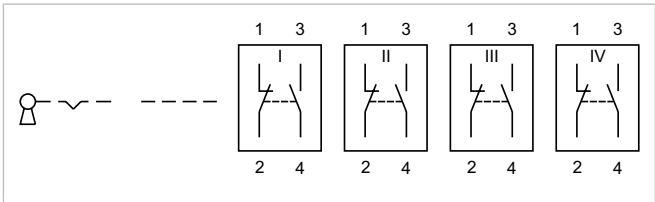
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



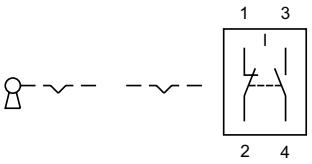
Wiring diagram 1 | Wiring diagram 2 | Wiring diagram 3 | Wiring diagram 4



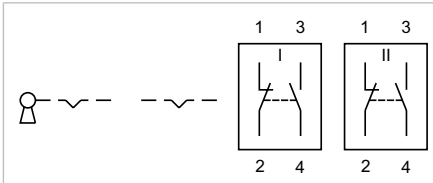
Wiring diagram 5 | Wiring diagram 6 | Wiring diagram 7



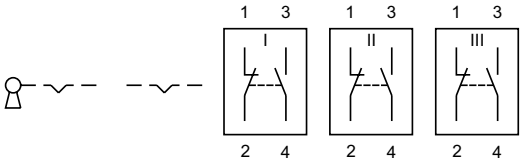
Wiring diagram 8



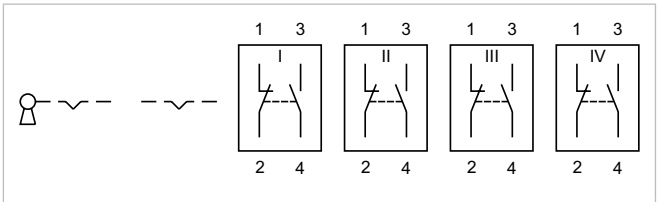
Wiring diagram 9



Wiring diagram 10



Wiring diagram 11



Wiring diagram 12

Selector switch 2 positions, IP 67

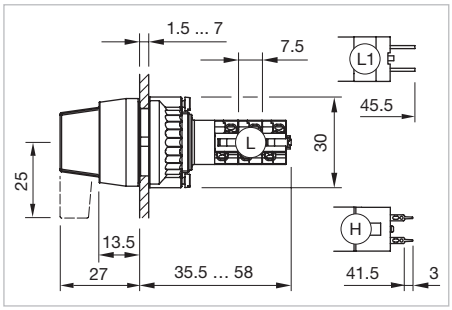
Equipment consisting of (schematic overview)

Front ring

Actuator

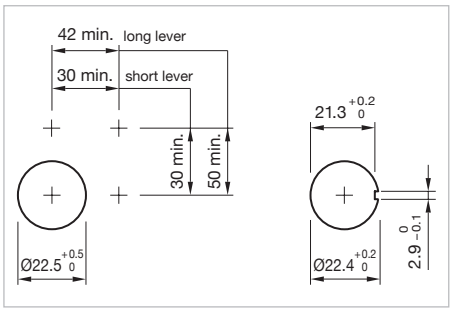
Fixing nut

Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]
L = Solder terminal,
L1 = Solder terminal 2.8 x 0.5 mm,
H = Universal terminal 2.0 x 0.5 mm

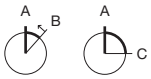
Product can differ from the current configuration.



Mounting cut-outs [mm]
Other mounting cut-outs see «Drawings»

Additional Information

- Non-illuminative
- Frontring aluminium natural anodized
- The colour of anodized aluminium parts can vary due to technical production reasons



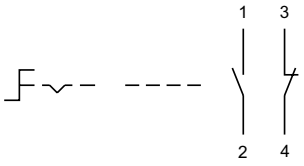
Switching positions (A = Rest, B = Momentary, C = Maintained)

Lever	Switching system	Contacts	Switching action	Switching angle	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Selector switch actuator 2 positions, Front dimension Ø 29 mm									
Plastic black short	Low-level element	1 NC + 1 NO	A - B	B = 42°	Universal 2.0 x 0.5 mm	**14-517.0360**	1	1	0.025 kg
			A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-522.0360**	1	2	0.025 kg
		2 NC	A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-521.0360**	1	3	0.025 kg
		2 NO	A - B	B = 42°	Universal 2.0 x 0.5 mm	**14-515.0360**	1	4	0.025 kg
			A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-520.0360**	1	5	0.025 kg
	Snap-action swit-ching element	1 NC + 1 NO	A - B	B = 42°	Solder 2.8 x 0.5 mm	**14-501.0220**		6	0.024 kg
			A - B	B = 42°	Solder	**14-501.02502**		6	0.024 kg
			A - C	C = 90°	Solder 2.8 x 0.5 mm	**14-506.0220**		7	0.024 kg
			A - C	C = 90°	Solder	**14-506.02502**		7	0.024 kg
		2 NC + 2 NO	A - B	B = 42°	Solder	**14-502.02502**		8	0.026 kg
			A - C	C = 90°	Solder	**14-507.02502**		9	0.026 kg
		3 NC + 3 NO	A - B	B = 42°	Solder	**14-503.02502**		10	0.028 kg
			A - C	C = 90°	Solder	**14-508.02502**		11	0.028 kg
		4 NC + 4 NO	A - C	C = 90°	Solder	**14-509.02502**		12	0.030 kg

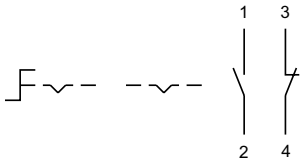
14 Raised design

Lever	Switching system	Contacts	Switching action	Switching angle	Terminal	Part No.	Compo-nent layout	Wiring diagram	Weight
Selector switch actuator 2 positions, Front dimension Ø 29 mm									
Plastic black long	Low-level element	1 NC + 1 NO	A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-572.0360**	1	2	0.025 kg
		2 NO	A - C	C = 90°	Universal 2.0 x 0.5 mm	**14-570.0360**	1	5	0.025 kg
	Snap-action swit-ching element	1 NC + 1 NO	A - C	C = 90°	Solder 2.8 x 0.5 mm	**14-556.0220**		7	0.024 kg
			A - C	C = 90°	Solder	**14-556.02502**		7	0.024 kg
		2 NC + 2 NO	A - C	C = 90°	Solder	**14-557.02502**		9	0.026 kg

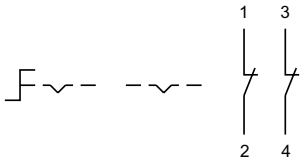
Contacts: NC = Normally closed, NO = Normally open
Switching action: B = Momentary, C = Maintain
The component layouts you will find from page 55



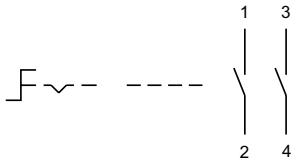
Wiring diagram 1



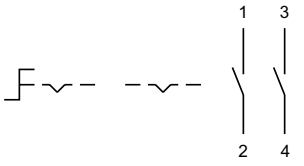
Wiring diagram 2



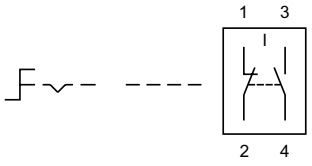
Wiring diagram 3



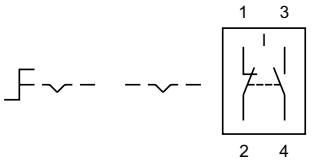
Wiring diagram 4



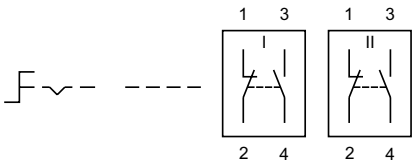
Wiring diagram 5



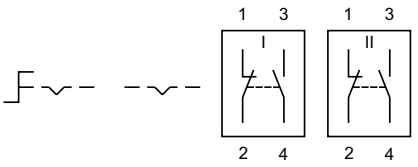
Wiring diagram 6



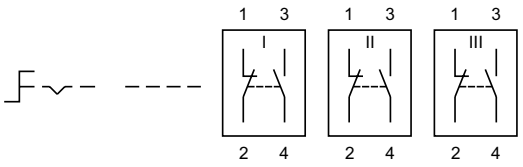
Wiring diagram 7



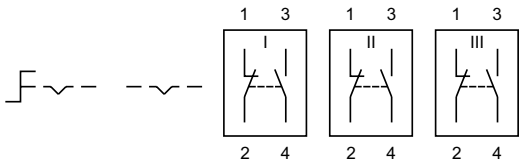
Wiring diagram 8



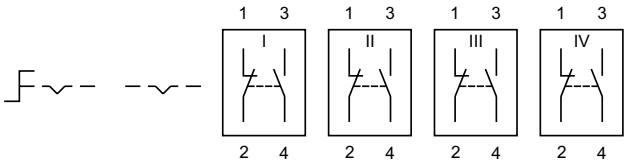
Wiring diagram 9



Wiring diagram 10



Wiring diagram 11



Wiring diagram 12

Front

Lens plastic

Additional Information

- To obtain IP 67 use marking plate Part No. 704.609.X

Product attribute	Dimension	Lens	Symbol	Part No.	Weight
Lens plastic round flat					
non-illuminative	Ø 23.7 mm	black opaque		**704.602.0**	0.001 kg
illuminative	Ø 23.7 mm	red transparent		**704.602.2**	0.001 kg
		yellow transparent		**704.602.4**	0.001 kg
		green transparent		**704.602.5**	0.001 kg
		blue transparent		**704.602.6**	0.001 kg
		colourless transparent		**704.602.7**	0.001 kg
Lens plastic round flat					
illuminative	Ø 23.7 mm	colourless transparent	Ring	**704.602.7A01**	0.001 kg

Lens plastic encreased

Additional Information

- To obtain IP 67 use marking plate Part No. 704.610.X

Product attribute	Dimension	Lens	Part No.	Weight
Lens plastic round encreased				
illuminative	Ø 23.7 mm	red transparent	**704.611.2**	0.002 kg
		yellow transparent	**704.611.4**	0.002 kg
		green transparent	**704.611.5**	0.002 kg
		colourless transparent	**704.611.7**	0.002 kg

14 Accessories

Lens metal with dot

Additional Information

- To obtain IP 67 use marking plate Part No. 704.609.X
- The colour of anodized aluminium parts can vary due to technical production reasons

Product attribute	Dimension	Lens	Part No.	Weight
Lens metal with spot round				
illuminative	Ø 23.7 mm	Aluminium black anodized	**704.601.01**	0.001 kg
		Aluminium red anodized	**704.601.21**	0.001 kg
		Aluminium gold anodized	**704.601.41**	0.001 kg
		Aluminium olive-green anodized	**704.601.51**	0.001 kg
		Aluminium blue anodized	**704.601.61**	0.001 kg
		Aluminium natural anodized	**704.601.81**	0.001 kg
		Stainless-steel natural	**704.601.91**	0.001 kg

Lens metal

Additional Information

- To obtain IP 67 use marking plate Part No. 704.609.X
- The colour of anodized aluminium parts can vary due to technical production reasons

Product attribute	Dimension	Lens	Part No.	Weight
Lens metal round				
non-illuminative	Ø 23.7 mm	Aluminium black anodized	**704.601.0**	0.001 kg
		Aluminium red anodized	**704.601.2**	0.001 kg
		Aluminium gold anodized	**704.601.4**	0.001 kg
		Aluminium olive-green anodized	**704.601.5**	0.001 kg
		Aluminium blue anodized	**704.601.6**	0.001 kg
		Aluminium natural anodized	**704.601.8**	0.001 kg
		Stainless-steel natural	**704.601.9**	0.001 kg

Lens cap, Plastic

Additional Information

- To obtain IP 67 use marking plate Part No. 704.608.X

Product attribute	Lens cap	Part No.	Weight
Lens cap round, Front dimension Ø 29 mm			
illuminative	Plastic red	**704.603.2**	0.003 kg
	Plastic yellow	**704.603.4**	0.003 kg
	Plastic green	**704.603.5**	0.003 kg
	Plastic blue	**704.603.6**	0.003 kg
	Plastic colourless	**704.603.7**	0.003 kg

Mushroom-head cap, Plastic

Additional Information

- To obtain IP 67 use marking plate Part No. 704.609.9

Mushroom-head cap	Part No.	Weight
Mushroom-head cap, Front dimension Ø 40 mm		
black opaque	**704.604.0**	0.001 kg
red opaque	**704.604.2**	0.001 kg
yellow opaque	**704.604.4**	0.001 kg
green opaque	**704.604.5**	0.001 kg

Mushroom-head cap illuminated, Plastic

Additional Information

- To obtain IP 67 use marking plate Part No. 704.609.9

Mushroom-head cap	Part No.	Weight
Mushroom-head cap illuminated, Front dimension Ø 40 mm		
red transparent	**704.614.2**	0.007 kg
yellow transparent	**704.614.4**	0.007 kg
green transparent	**704.614.5**	0.007 kg
blue transparent	**704.614.6**	0.007 kg
colourless transparent	**704.614.7**	0.007 kg

Marking plate

Marking plate illumination	Marking plate	Part No.	Weight
Marking plate for lens plastic and metal			
non-illuminative	black opaque	**704.609.0**	0.001 kg
Marking plate for lens plastic and metal			
LED	colourless transparent ripped	**704.609.7**	0.001 kg
Marking plate for lens plastic and metal			
LED and filament lamp	white translucent	**704.609.9**	0.001 kg
Legend plate for lens plastic			
Halo illumination	white translucent	**704.609.9A01**	0.001 kg

Marking plate mushroom-head cap

Marking plate	Part No.	Weight
Marking plate for mushroom-head cap		
white translucent	**704.609.9**	0.001 kg

Marking cap lens encreased

Marking cap illumination	Marking cap	Part No.	Weight
Marking cap for lens plastic encreased			
LED	colourless transparent ripped	**704.610.7**	0.001 kg
Marking cap for lens plastic encreased			
LED and filament lamp	white translucent	**704.610.9**	0.001 kg

Marking cap for lens cap, Plastic

Marking cap illumination	Marking cap	Part No.	Weight
Marking cap for lens cap			
LED	colourless transparent ripped	**704.608.7**	0.002 kg
Marking cap for lens cap			
LED and filament lamp	white translucent	**704.608.9**	0.002 kg

14 Accessories

Front bezel set

Additional Information

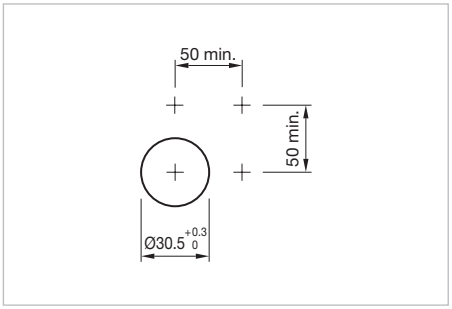
- The colour of anodized aluminium parts can vary due to technical production reasons

Mounting cut-out	Front ring	Part No.	Weight
Front bezel set, flush design, Front dimension Ø 35 mm			
Ø 30.5 mm	Aluminium black anodized	**14-955.0**	0.015 kg
	Aluminium natural anodized	**14-955.1**	0.015 kg
	Stainless-steel natural	**14-955.9**	0.033 kg

Front bezel mushroom

Additional Information

- The colour of anodized aluminium parts can vary due to technical production reasons



Mounting cut-outs [mm]

Mounting cut-out	Front ring	Part No.	Weight
Front bezel set for mushroom-head pushbutton, flush design, Front dimension Ø 50 mm			
Ø 30.5 mm	Aluminium natural anodized	**14-958.8**	0.042 kg
	Aluminium black anodized	**14-958.0**	0.042 kg

Front bezel set with protective membrane, IP 67

Additional Information

- For Illuminated pushbutton for front protection IP 67
- Front ring to be mounted with a torque of 40 Ncm onto actuator
- Before assembling remove the flat gasket of the switch
- The colour of anodized aluminium parts can vary due to technical production reasons

Product attribute	Front ring	Part No.	Weight
Front bezel set with protective membrane, flush design, Front dimension Ø 35 mm			
with transparent silicone membrane	Aluminium natural anodized	**14-955.3**	0.015 kg
	Aluminium black anodized	**14-955.4**	0.015 kg
with transparent silicone membrane, resistant to sea water	Stainless-steel natural	**14-955.9E**	0.033 kg

Front ring

Additional Information

- The colour of anodized aluminium parts can vary due to technical production reasons

Front ring	Part No.	Weight
Front ring, Front dimension Ø 29 mm		
Plastic black	**704.600.0**	0.003 kg
Aluminium natural anodized	**704.600.1**	0.005 kg
Aluminium black anodized	**704.600.1A**	0.005 kg
Plastic light-grey	**704.600.6**	0.003 kg
Stainless-steel natural	**704.600.9**	0.006 kg

14 Accessories

Front ring for mushroom-head pushbutton

Additional Information

- The colour of anodized aluminium parts can vary due to technical production reasons

Front ring	Part No.	Weight
Front ring for mushroom-head pushbutton, Front dimension Ø 29 mm		
Plastic black	**704.600.0**	0.003 kg
Aluminium natural anodized	**704.600.1**	0.005 kg
Aluminium black anodized	**704.600.1A**	0.005 kg
Plastic light-grey	**704.600.6**	0.003 kg
Stainless-steel natural	**704.600.9**	0.006 kg

Front protective cap, IP 68

Additional Information

- For Indicator and Illuminated pushbutton for IP 68 protection

Product attribute	Material	Colour	Optics	Part No.	Weight
Front protective cap					
only together with lenses Part No. 704.602.X, 704.601.X and front rings Part No. 704.600.X	Silicone	colourless	transparent	**704.953.0**	0.002 kg

Front protective ring, IP 67

Additional Information

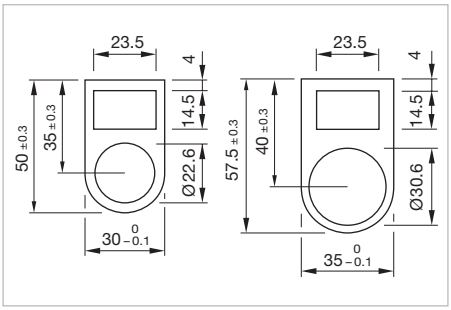
- For Illuminated pushbutton with front illumination for IP 67 protection
- Front protective ring to be mounted with a torque of 40 Ncm onto actuator

Product attribute	Material	Colour	Part No.	Weight
Front protective ring				
with transparent silicone membrane (extent resistant to sea water), temperature resistance -40 °C ... +85 °C	Brass	chrome	**704.600.2**	0.005 kg
with transparent silicone membrane (extent resistant to sea water), temperature resistance -40 °C ... +85 °C	Aluminium	natural anodized	**704.600.3**	0.005 kg
with transparent Pebax membrane, temperature resistance -40 °C ... +85 °C	Aluminium	natural anodized	**704.600.5/A**	0.005 kg

Legend frame

Additional Information

- The colour of anodized aluminium parts can vary due to technical production reasons



Dimensions [mm]

Product attribute	Dimension	Material	Colour	Mounting type	Part No.	Weight
Legend frame						
for raised design	30 x 50 x 0.75 mm	Aluminium	black anodized	adhesive	**704.968.2**	0.001 kg
for flush design	35 x 57.5 x 0.75 mm	Aluminium	black anodized	adhesive	**704.968.3**	0.001 kg

14 Accessories

Legend plate

Additional Information

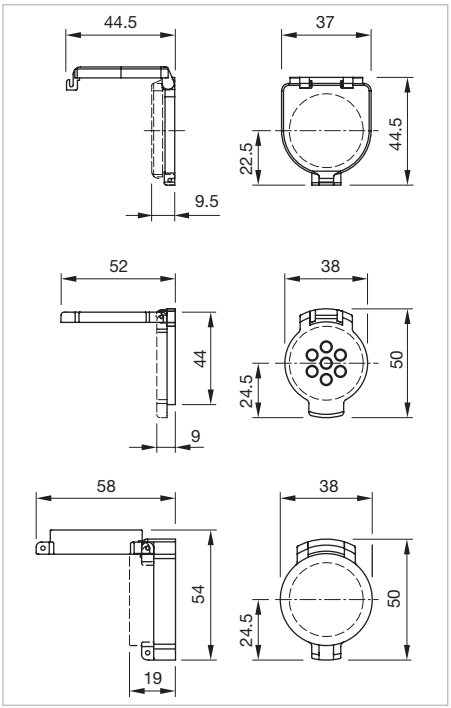
- For legend frame Part No.704.968.2 and 704.968.3
- The colour of anodized aluminium parts can vary due to technical production reasons

Dimension	Material	Colour	Mounting type	Part No.	Weight
Legend plate for legend frame					
14.5 x 23.5 mm	Aluminium	natural anodized	adhesive	**704.968.0**	0.001 kg
		black anodized	adhesive	**704.968.1**	0.001 kg

Protective cover flush design, IP 65

Additional Information

- Hinged
- Front panel thickness reduces by 2 mm
- The dimensions of the mounting cut-outs are shown in the product details
- Please note that bigger minimum distances are necessary
- The colour of anodized aluminium parts can vary due to technical production reasons



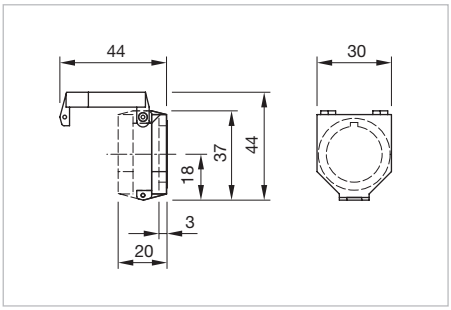
Dimensions [mm]

Product attribute	Mounting cut-out	Material	Colour	Optics	Part No.	Weight
Protective cover round, flush design						
with means for sealing, for pushbutton	Ø 30.5 mm	Plastic	colourless	transparent	**704.925.7**	0.006 kg
Protective cover round, flush design						
not with means for sealing, with spring fitted, with window, for pushbutton	Ø 30.5 mm	Aluminium	natural anodized		**704.928.18**	0.019 kg
Protective cover round, flush design						
with means for sealing, for pushbutton and selector switch short lever	Ø 30.5 mm	Aluminium	natural anodized		**704.928.28**	0.019 kg
Protective cover round, flush design						
with means for sealing, for pushbutton and selector switch short lever	Ø 30.5 mm	Aluminium	natural anodized		**704.928.38**	0.019 kg

Protection cover, raised design, IP 65

Additional Information

- Hinged, with means for sealing
- Protection cover Part No. 704.925.2 only for selector switches in basic position A applicable
- Front panel thickness reduces by 3 mm
- The dimensions of the mounting cut-outs are shown in the product details
- Please note that bigger minimum distances are necessary



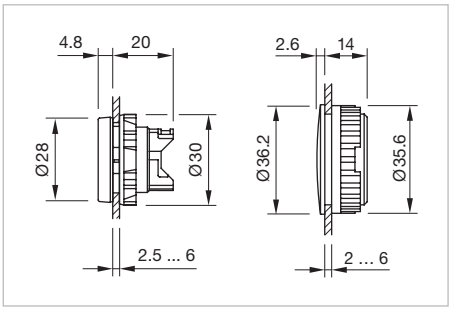
Dimensions [mm]

Product attribute	Mounting cut-out	Material	Optics	Part No.	Weight
Protection cover round, raised design					
for pushbutton	Ø 22.5 mm	Plastic	transparent	**704.925.0**	0.007 kg
with spring fitted, for pushbutton	Ø 22.5 mm	Plastic	transparent	**704.925.3**	0.007 kg
Protection cover round, raised design					
for selector switch	Ø 22.5 mm	Plastic	transparent	**704.925.2**	0.007 kg

Blind plug, IP 65

Additional Information

- The dimensions of the mounting cut-outs are shown in the product details
- Please note that bigger minimum distances are necessary



Dimensions [mm]

Dimension	Mounting cut-out	Material	Colour	Part No.	Weight
Blind plug					
Ø 28 mm	Ø 22.5 mm	Plastic	black	**704.960.4**	0.004 kg
Blind plug					
Ø 36 mm	Ø 30.5 mm	Plastic	black	**704.964.8**	0.007 kg

Spare key

Additional Information

- For standard lock: KABA 1001
- Optional lock numbers on request

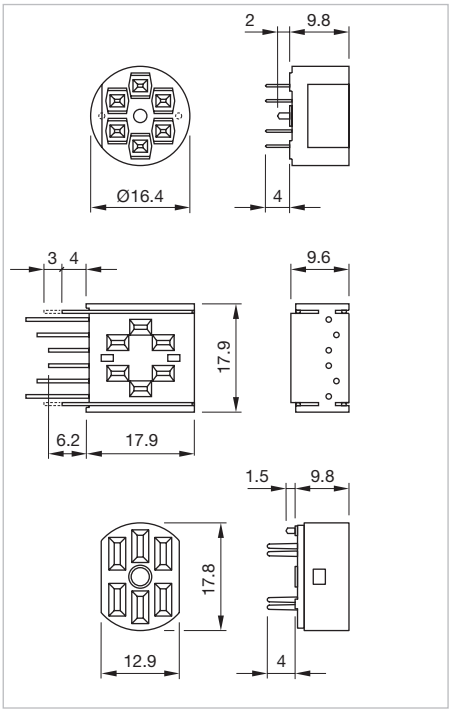
Part No.	Weight
Spare key	
14-987.1001	0.006 kg

Rear side

PCB plug-in base

Additional Information

- 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



Abmessungen [mm]

Product attribute	Pins	Terminal	Part No.	Component layout	Weight
PCB plug-in base					
for low level switching element	axial	PCB	**31-940**	2	0.002 kg
PCB plug-in base					
for low level switching element	right-angled	PCB	**31-941**	3	0.004 kg
PCB plug-in base					
for snap-action switching element 2.8 mm	axial	PCB	**31-942**	4	0.002 kg

The component layouts you will find from page 55

Flat receptacle

Product attribute	Part No.	Weight
Flat receptacle		
2.0 x 0.5 mm plug-in terminal	**31-945**	0.001 kg
Flat receptacle		
2.8 x 0.5 mm plug-in terminal	**31-946**	0.001 kg

Insulation sleeve

Product attribute	Part No.	Weight
Insulation sleeve		
Cover plug-in terminals for snap-action switching element 2.8 mm	**01-928**	0.001 kg
Insulation sleeve		
for flat receptacle 2.0 mm	**31-928**	0.001 kg
Insulation sleeve		
for flat receptacle 2.8 mm	**31-929**	0.001 kg

Terminal cover

Additional Information

- For snap-action switching element

Part No.	Weight
Terminal cover for snap-action switching element 16	
01-929	0.010 kg

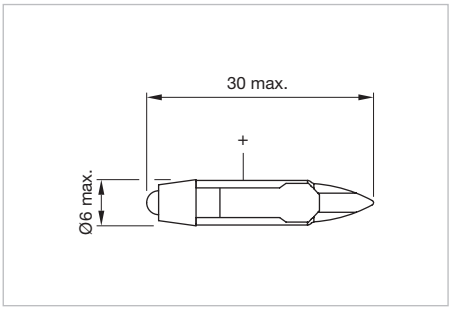
14 Accessories

Illumination

Single-LED, T5.5

Additional Information

- For LED element fitting information see «Application guidelines»
- When using AC/DC types with AC operation, slight flickering can occure
- Luminous intensity data of the LEDs on direct voltage
- Electrical and optical data are measured at 25 °C
- The specified versions are built with a protection diode (halve wave rectifier) in series and the LED
- Luminosity and wave length scattering caused by LED manufacturing processes may cause slight variations in the illumination
- For supply voltages above 48V, a voltage reduction element (external series resistor or transformer) must be used
- Due to high surface temperatures, the series resistors must be soldered directly to the terminals of the equipment (use a terminal plate)



Dimensions [mm]

LED colour	Operating voltage	Operation current	Lumi. intensity	Dom. wavelength	Part No.	Weight
Single-LED						
red	6 VDC +10 %	15 mA ±15 %	350 mcd	630 nm	**10-2106.3142**	0.001 kg
	12 VAC/DC +10 %	7/14 mA ±15 %	330 mcd	630 nm	**10-2109.1062**	0.001 kg
	24 VAC/DC +10 %	7/14 mA ±15 %	330 mcd	630 nm	**10-2112.1062**	0.001 kg
	28 VAC/DC +10 %	7/14 mA ±15 %	330 mcd	630 nm	**10-2113.1062**	0.001 kg
	48 VAC/DC +10 %	4/8 mA ±15 %	200 mcd	630 nm	**10-2119.1042**	0.001 kg
yellow	6 VDC +10 %	15 mA ±15 %	300 mcd	587 nm	**10-2106.3144**	0.001 kg
	12 VAC/DC +10 %	7/14 mA ±15 %	280 mcd	587 nm	**10-2109.1064**	0.001 kg
	24 VAC/DC +10 %	7/14 mA ±15 %	280 mcd	587 nm	**10-2112.1064**	0.001 kg
	28 VAC/DC +10 %	7/14 mA ±15 %	280 mcd	587 nm	**10-2113.1064**	0.001 kg
	48 VAC/DC +10 %	4/8 mA ±15 %	180 mcd	587 nm	**10-2119.1044**	0.001 kg
green	6 VDC +10 %	7 mA ±15 %	1050 mcd	525 nm	**10-2106.3145**	0.001 kg
	12 VAC/DC +10 %	4/7 mA ±15 %	1050 mcd	525 nm	**10-2109.1065**	0.001 kg
	24 VAC/DC +10 %	4/7 mA ±15 %	1050 mcd	525 nm	**10-2112.1065**	0.001 kg
	28 VAC/DC +10 %	4/7 mA ±15 %	1050 mcd	525 nm	**10-2113.1065**	0.001 kg
	48 VAC/DC +10 %	2/4 mA ±15 %	600 mcd	525 nm	**10-2119.1045**	0.001 kg
blue	6 VDC +10 %	15 mA ±15 %	680 mcd	470 nm	**10-2106.3146**	0.001 kg
	12 VAC/DC +10 %	7/14 mA ±15 %	650 mcd	470 nm	**10-2109.1066**	0.001 kg
	24 VAC/DC +10 %	7/14 mA ±15 %	650 mcd	470 nm	**10-2112.1066**	0.001 kg
	28 VAC/DC +10 %	7/14 mA ±15 %	650 mcd	470 nm	**10-2113.1066**	0.001 kg
	48 VAC/DC +10 %	4/8 mA ±15 %	400 mcd	470 nm	**10-2119.1046**	0.001 kg

LED colour	Operating voltage	Operation current	Lumi. intensity	Dom. wavelength	Part No.	Weight
white	6 VDC +10 %	6 mA ±15 %	900 mcd	x0.31/y0.32 nm	**10-2106.3149**	0.001 kg
	12 VAC/DC +10 %	3/6 mA ±15 %	900 mcd	x0.31/y0.32 nm	**10-2109.1069**	0.001 kg
	24 VAC/DC +10 %	2.5/5 mA ±15 %	750 mcd	x0.31/y0.32 nm	**10-2112.1069**	0.001 kg
	28 VAC/DC +10 %	2.5/5 mA ±15 %	750 mcd	x0.31/y0.32 nm	**10-2113.1069**	0.001 kg
	48 VAC/DC +10 %	2/4 mA ±15 %	600 mcd	x0.31/y0.32 nm	**10-2119.1049**	0.001 kg

Filament lamp, T5.5

Filament lamp

Operating voltage	Operation current	Part No.	Weight
6 VAC/DC	200 mA	**10-1106.1369**	0.001 kg
12 VAC/DC	50 mA	**10-1109.1279**	0.001 kg
12 VAC/DC	100 mA	**10-1109.1329**	0.001 kg
24 VAC/DC	25 mA	**10-1112.1199**	0.001 kg
24 VAC/DC	50 mA	**10-1112.1279**	0.001 kg
28 VAC/DC	40 mA	**10-1113.1249**	0.001 kg
30 VAC/DC	40 mA	**10-1114.1249**	0.001 kg
36 VAC/DC	35 mA	**10-1116.1229**	0.001 kg
48 VAC/DC	25 mA	**10-1119.1199**	0.001 kg

Series resistor

Additional Information

- Only for filament lamp 48 VAC, 25 mA
- For lamp voltage reduction
- Keep to the country specific safety instructions
- Due to high surface temperatures, the series resistor must not be soldered directly to the terminals of the equipment (use a terminal plate)

Series resistor

Operating voltage	Resistance	Part No.	Weight
110 VAC	2.7 kOhm	**02-904.0**	0.003 kg
125 VAC	3.3 kOhm	**02-904.1**	0.003 kg
145 VAC	4.7 kOhm	**02-904.3**	0.003 kg
240 VAC	10 kOhm	**02-904.7**	0.003 kg

14 Accessories

Terminal plate empty

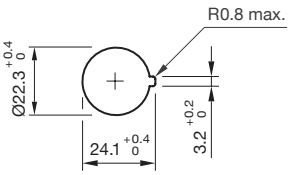
Additional Information

- For fitting with series resistors

Product attribute	Dimension	Part No.	Weight
Terminal plate empty			
5 spaces	62.5 x 60 x 15 mm	**02-912.1**	0.025 kg
10 spaces	125 x 60 x 15 mm	**02-912.2**	0.045 kg
15 spaces	187.6 x 60 x 15 mm	**02-912.3**	0.090 kg
20 spaces	250 x 60 x 15 mm	**02-912.4**	0.095 kg

Mounting

Positioning insert



Mounting cut-outs [mm]

Part No.	Weight
Positioning insert	
14-910	0.001 kg

Anti-twist ring

Part No.	Weight
Anti-twist ring, flush design	
704.954.0	0.002 kg

14 Accessories

Reducing ring

Additional Information

- You need to install two reduction rings
- For mounting of Ø 22.5 mm device into Ø 30.5 mm mounting cut-out
- The colour of anodized aluminium parts can vary due to technical production reasons

Material	Colour	Part No.	Weight
Reducing ring			
Aluminium	black anodized	**704.960.0**	0.004 kg
	natural anodized	**704.960.8**	0.004 kg

Lens plug

Additional Information

- For mounting and dismantling of lens round, flush design

Part No.	Weight
Lens plug for round lens, flush design	
700.006.0	0.003 kg

Lamp remover

Additional Information

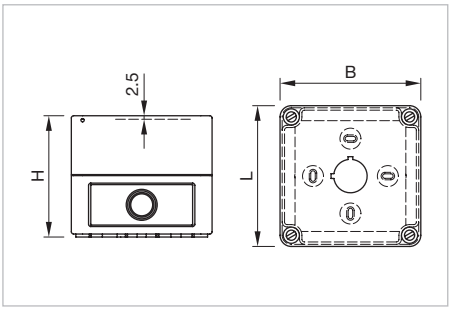
▲ **Caution:** A switching process might be released when replacing the lamp

Part No.	Weight
Lamp remover	
02-906	0.002 kg

Enclosure, IP 66

Additional Information

- Cover lead-sealable
- Openings for cable gland M16 or M20



Dimensions [mm]

Product attribute	Dimension	Material	Colour	Part No.	Weight
Enclosure					
with mounting cut-out 1 x Ø 22.5 mm, with anti-twist device	L 94 x B 94 x H 81 mm	Plastic	grey, similar RAL 7035	**704.945.1**	0.211 kg
Enclosure					
with mounting cut-out 2 x Ø 22.5 mm, with anti-twist device	L 130 x B 94 x H 81 mm	Plastic	grey, similar RAL 7035	**704.945.2**	0.251 kg
Enclosure					
with mounting cut-out 3 x Ø 22.5 mm, with anti-twist device	L 180 x B 94 x H 81 mm	Plastic	grey, similar RAL 7035	**704.945.3**	0.313 kg
Enclosure					
with mounting cut-out 4 x Ø 22.5 mm, with anti-twist device	L 180 x B 182 x H 110 mm	Plastic	grey, similar RAL 7035	**704.945.4**	0.572 kg
Enclosure					
with mounting cut-out 6 x Ø 22.5 mm, with anti-twist device	L 180 x B 182 x H 110 mm	Plastic	grey, similar RAL 7035	**704.945.5**	0.568 kg

14 Accessories

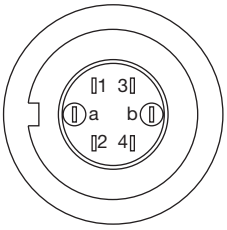
Cable gland, IP 68

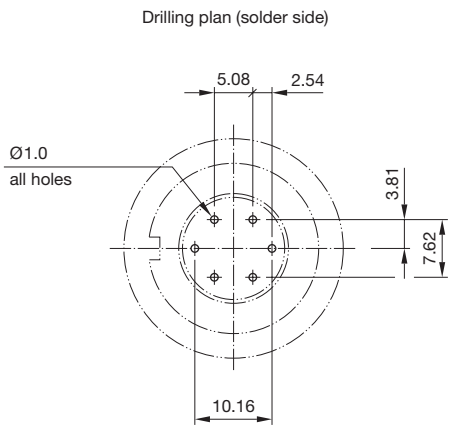
Additional Information

- With traction relief

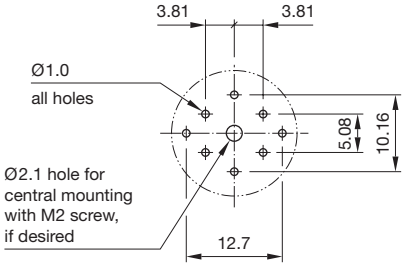
Product attribute	Thread	Material	Colour	Part No.	Weight
Cable gland					
Clamping range Ø 6 ... 12 mm, thread length 9 mm	M20 x 1.5	Plastic	grey	**704.945.6**	0.011 kg
Clamping range Ø 4 ... 10 mm, thread length 8 mm	M16 x 1.5	Plastic	grey	**61-9481.6**	0.007 kg

Drawings

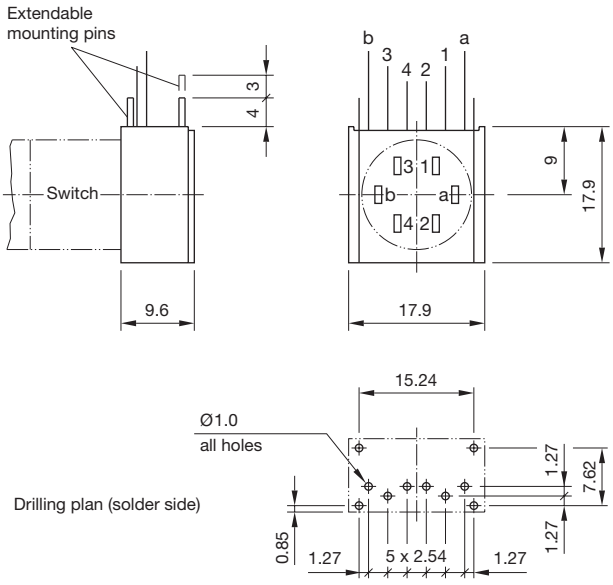




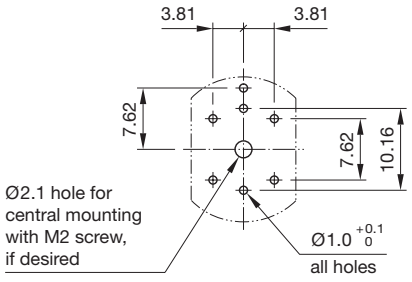
Component layout 1



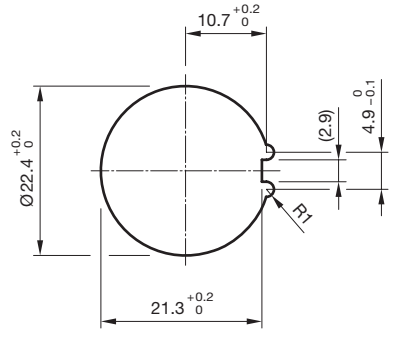
Component layout 2



Component layout 3



Component layout 4



Mounting cut-outs 1

14 Technical data

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 stackable, only 1 switching element can be on a pushbutton.

Material

Material of contact
Gold plated silver

Switch housing
Plug-in-/soldering terminal
Diallylphthalate DAP, Polyamide 66, Polysulfone, heat-resistant and self-extinguishing
Soldering terminal: PA 6.6 Ultramide

Actuator housing
Polyamide

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 1x 1 mm²

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

Soldering terminal:
Max. wire diameter 2 wires of 1 mm
Max. wire cross-section of stranded cable 2 x 0.75 mm² or 1 x 1.0 mm²

Tightening torque
for fixing nut max. 25 Ncm

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

Actuating force
Maintain 5 N … 8 N
Momentary 3 N … 6 N
depending on the number of switching elements

Actuating travel
Illuminated pushbutton: 3 mm

Switch actuator 2 positions:
Momentary action 1 x ca. 42° deflection momentary action
Maintained action 1 x ca. 90° deflection maintained action

Rebound time
≤ 5 ms

Mechanical lifetime
Momentary action 2 million Cycles of operation
Maintained action 1 million Cycles of operation

Electrical characteristics

Standards
The devices comply with: EN IEC 61058-1

Rated voltage
250 VAC as per EN IEC 61058-1-15

Contact resistance
New state ≤ 50 mΩ as per DIN IEC 60512-2-4

Electrostatic discharge (ESD)
Keylock switch 15 kV

Rated current
5 A

Conventional free air thermal current I_{th}
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	12 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
3000 VAC, 50 Hz, 1 min. between all terminals and earth, as per EN IEC 61058-1-15

Isolation resistance
> 7 MΩ between the opend contats at 500 VDC, as per EN IEC 61058-1-15 (reinforced insulation)

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
as per EN IEC 60529
Indicator front side IP 67
Illuminated pushbutton front side IP 67
Mushroom-head pushbutton front side IP 67
Selector switch front side IP 67
Keylock switch IP 65 front side

Shock resistance
(semi-sinusoidal)
max. 150 m/s², pulse width 11 ms, 3-axis, as per EN IEC 60068-2-27

Vibration resistance
(sinusoidal)
max. 100 m/s² at 10 Hz … 500 Hz, as per EN IEC 60068-2-6

Climate resistance
Damp heat state as per EN IEC 60068-2-30
Damp heat cyclic as per EN IEC 60068-2-78

Approvals

Approbations
CB (IEC 61058)
CSA
CQC
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
Polyamide

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 of 1 mm
Max. wire cross-section of stranded cable 2 x 0.75 mm²
Plug-in terminal: 2.0 x 0.5 mm

Tightening torque
for fixing nut max. 25 Ncm

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

Actuating force
3 … 4 N, depending on the number of switching elements

Actuating travel
Illuminated pushbutton: 3 mm

Switch actuator 2 positions:
Momentary action 1 x ca. 42° deflection momentary action
Maintained action 1 x ca. 90° deflection maintained action

Rebound time
typical < 100 µs

Mechanical lifetime
Momentary action 5 million cycles of operation
Maintained action 1 million cycles of operation

Electrical characteristics

Contact resistance
New state ≤ 50 mΩ as per DIN IEC 60512-2-4

Electrostatic discharge (ESD)
Keylock switch 15 kV

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

Electric strength
3000 VAC, 50 Hz, 1 min. between all terminals and earth, as per EN IEC 61058-1-15

Protection class
II

14 Technical data

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
as per EN IEC 60529
Indicator front side IP 67
Illuminated pushbutton front side IP 67
Mushroom-head pushbutton front side IP 67
Selector switch front side IP 67
Keylock switch IP 65 front side

Shock resistance
(semi-sinusoidal)
max. 150 m/s², pulse width 11 ms, 3-axis, as per EN IEC 60068-2-27

Buzzer

Buzzer system

System
Piezo disc

Material

Buzzer case
Polyamide

Front cap
Plastic Polyamide
Metal Nickel-plated brass (sea-water proof)

Mechanical characteristics

Terminals
Plug-in terminal 2.8 x 0.5 mm

Tightening torque
for fixing nut max. 25 Ncm

Electrical characteristics

Frequency (tone)
approx. 2.8 kHz continuous tone only

Sound pressure
95 db (A) ±8 dB at a distance of 0.1 m

Operation Voltage/Current
Operation Voltage 24 VDC ±10 %
Operation Current ≤ 25 mA

Environmental conditions

Storage temperature
-40 °C … +85 °C

Operating temperature
-25 °C … +55 °C

Protection degree
as per EN IEC 60529, frontside
Buzzer flush design front side IP 40
Buzzer raised design front side IP 65

Approvals

Approbations
CQC
EMC

Declaration of conformity
CE

EAO reserves the right to alter specifications without further notice.

General notes

1. Engraving

In addition to the most commonly used world languages, in DIN1451-3 close spacing, other typefaces are available as Scandinavian, Slavic, Greek, Russian and Polish. The engraved marking caps and plates are filled with black or white colour. Standard height of letters is 3 mm. If the height is not specified, we will supply 3 mm engraved letters.

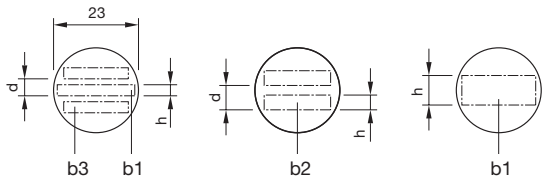
2. Hot stamping

Standard legends and ISO symbols are hot stamped. For larger series it is worth considering markings by means of hot stamping. We will pleased to advise you.

Engraving marking cap for Indicator round, full face illumination

All dimensions in mm

Height of letters	Number of lines	Number of letters per line (target value)			Line spacing
h		b1	b2	b3	d
3	3	11	10	9	4.6
4	2	8	7	–	6.6
8	1	4	–	–	–

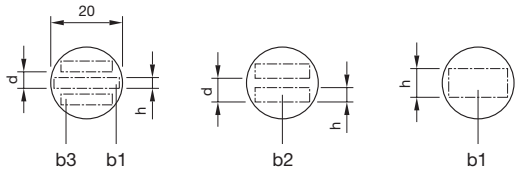


The gap between two words results in each case a letter less.

Engraving marking cap for Indicator and illuminated Pushbutton round, front illumination

All dimensions in mm

Height of letters	Number of lines	Number of letters per line (target value)			Line spacing
h		b1	b2	b3	d
3	3	9	9	7	4.6
4	2	7	6	–	6.6
8	1	3	–	–	–



The gap between two words results in each case a letter less.

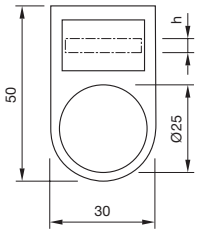
14 Marking

Engraving legend plates

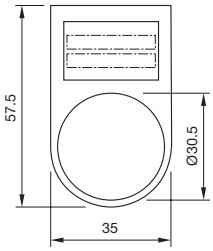
All dimensions in mm

Dimension	Devices mounting style	Height of letters	Number of lines	Number of letters per line (target value)	Image
		h			
30 x 50	round, raised	3	2	12	B1
30 x 50	round, raised	4	1	7	B1
30 x 50	round, raised	8	1	4	B1
35 x 57.5	round, flush	3	2	12	B2
35 x 57.5	round, flush	4	1	7	B2
35 x 57.5	round, flush	8	1	4	B2

B1



B2



The gap between two words results in each case a letter less.

Standard texts for marking plates and marking caps for Indicator and Illuminated Pushbutton

Height of letters 6 mm

I **Part No. 704.609.912001**	II **Part No. 704.609.912002**	III **Part No. 704.609.912003**	O **Part No. 704.609.912004**
EIN **Part No. 704.609.912005**	AUS **Part No. 704.609.912006**	AUF **Part No. 704.609.912007**	AB **Part No. 704.609.912008**
START **Part No. 704.609.912009**	STOP **Part No. 704.609.912010**	HAND **Part No. 704.609.912011**	AUTO **Part No. 704.609.912012**
ZU **Part No. 704.609.912013**	ON **Part No. 704.609.912014**	OFF **Part No. 704.609.912015**	ARRET **Part No. 704.609.912016**
MARCHE **Part No. 704.609.912017**	RESET **Part No. 704.609.912018**		

Symbols for marking plates and marking caps for Indicator and Illuminated Pushbutton

All marking plates with the printed article-numbers are available for flat lenses, marking cap only on request.

Part No. 704.609.910001 Direction of linear rectilinear motion (also for ⟶ ⇅)	**Part No. 704.609.910002** Linear motion in 2 directions (also for ↕)	**Part No. 704.609.910003** Interrupted linear motion ⇅ (also for ⟵ ⟵ ⇅)	**Part No. 704.609.910004** Limited linear motion (also for ⟵ ⇅)
Part No. 704.609.910005 Limited linear motion and return	**Part No. 704.609.910006** Oscillating linear motion (continuous)	**Part No. 704.609.910007** Direction of continuous rotation (right)	**Part No. 704.609.9100071** Direction of continuous rotation (left)
Part No. 704.609.910008 Rotation in 2 directions	**Part No. 704.609.910009** Direction of interrupted rotation (right)	**Part No. 704.609.9100091** Direction of interrupted rotation (left)	**Part No. 704.609.910010** Limited rotation (right)
Part No. 704.609.9100101 Limited rotation (left)	**Part No. 704.609.910011** Limited rotation and return	**Part No. 704.609.910012** Oscillating rotary movement (continuous)	**Part No. 704.609.910013** Direction of spindle rotation
Part No. 704.609.910014 One revolution	**Part No. 704.609.910015** Number of revolutions per minute (spindle speed)	**Part No. 704.609.910016** Feed	**Part No. 704.609.910017** Feed per revolution
Part No. 704.609.910018 Feed per minute	**Part No. 704.609.910019** Reduced feed	**Part No. 704.609.910020** Rapid feed	**Part No. 704.609.910021** Normal feed
Part No. 704.609.910022 Direction of feed (orientation not specified)	**Part No. 704.609.910024** Transverse feed	**Part No. 704.609.910025** Vertical feed	**Part No. 704.609.910026** Rapid traverse
Part No. 704.609.910027 Threading	**Part No. 704.609.910028** Increase of value (speed, for instance)	**Part No. 704.609.910029** Decrease of value (speed, for instance)	**Part No. 704.609.910030** Speed of planing cut
Part No. 704.609.910031 Speed of turning cut	**Part No. 704.609.910032** Speed of drilling cut	**Part No. 704.609.910033** Speed of milling cut (similar symbol for speed of grinding)	**Part No. 704.609.910034** Conventional milling
Part No. 704.609.910035 Climb milling (down milling)	**Part No. 704.609.910041** Electric motor	**Part No. 704.609.910042** Rectangular work table or slide element	**Part No. 704.609.910043** Round work table or rotating element
Part No. 704.609.910044 Turning spindle	**Part No. 704.609.910045** Drilling spindle	**Part No. 704.609.910046** Milling spindle	**Part No. 704.609.910047** Schleifscheibenfutter
Part No. 704.609.910048 Pump (general symbol)	**Part No. 704.609.910049** Cooling pump	**Part No. 704.609.910050** Lubricant pump	**Part No. 704.609.910051** Hydraulic system pump
Part No. 704.609.910052 Hydraulic motor	**Part No. 704.609.910053** Tracer	**Part No. 704.609.910061** Stepless regulation	**Part No. 704.609.910062** Adjustable

14 Marking

Part No. 704.609.9100631 Lock or tighten	**Part No. 704.609.9100632** Lock or tighten	**Part No. 704.609.9100641** Unlock, unclamp	**Part No. 704.609.9100642** Unlock, unclamp
Part No. 704.609.910065 Brake on	**Part No. 704.609.910066** Brake off	**Part No. 704.609.910067** Automatic (or semi-automatic) cycle	**Part No. 704.609.910068** Hand control
Part No. 704.609.910069 Start, on	**Part No. 704.609.910070** Stop, off	**Part No. 704.609.910071** Start and stop with same button	**Part No. 704.609.910072** In action as long as button is operated
Part No. 704.609.910074 Engaging (mechanical start)	**Part No. 704.609.910075** Disengaging (mechanical stop)	**Part No. 704.609.910076** Close lock-nut	**Part No. 704.609.910077** Open lock-nut
Part No. 704.609.910078 Engage sensor	**Part No. 704.609.910079** Disengage sensor	**Part No. 704.609.910080** Change speed only in stopped position	**Part No. 704.609.910081** Change speed only in motion
Part No. 704.609.910091 Shear pin construction	**Part No. 704.609.910092** Danger (high voltage)!	**Part No. 704.609.910093** Caution!	**Part No. 704.609.910094** Main switch
Part No. 704.609.910101 Coolant fluid	**Part No. 704.609.910102** Machine lighting	**Part No. 704.609.910103** Weight	**Part No. 704.609.910104** Filter opening
Part No. 704.609.910105 Overflow	**Part No. 704.609.910106** Drain	**Part No. 704.609.910107** Oil, lubricant	**Part No. 704.609.910108** Blast
Part No. 704.609.910109 Suction			

Suppressor circuits

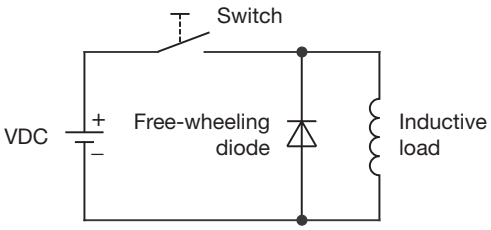
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e. g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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.

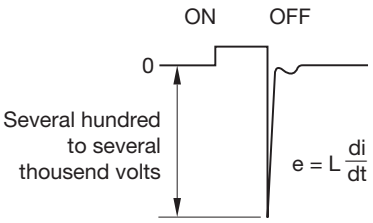
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (VR) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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

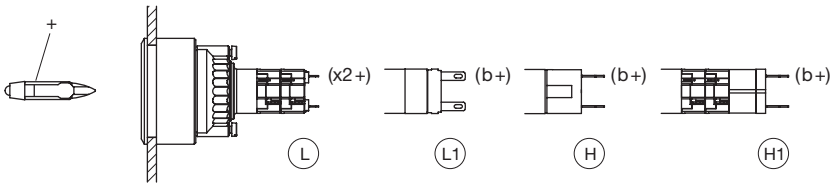


Counter EMF
over load without free-wheeling diode
Fig. 2



LED polarity

When fitting the LED elements the polarity has to correspond with the respective terminals, (+) goes to +.



L = Solder terminal, L1 = Solder terminal 2.0 x 0.5 mm
H = Universal terminal, H1 = Universal-Solder terminal

14 Index

Index from Part No.

Part No.	Page
01-928	47
01-929	47
02-904.0	49
02-904.1	49
02-904.3	49
02-904.7	49
02-906	52
02-912.1	50
02-912.2	50
02-912.3	50
02-912.4	50
10-1106.1369	49
10-1109.1279	49
10-1109.1329	49
10-1112.1199	49
10-1112.1279	49
10-1113.1249	49
10-1114.1249	49
10-1116.1229	49
10-1119.1199	49
10-2106.3142	48
10-2106.3144	48
10-2106.3145	48
10-2106.3146	48
10-2106.3149	49
10-2109.1062	48
10-2109.1064	48
10-2109.1065	48
10-2109.1066	48
10-2109.1069	49
10-2112.1062	48
10-2112.1064	48
10-2112.1065	48
10-2112.1066	48
10-2112.1069	49
10-2113.1062	48
10-2113.1064	48
10-2113.1065	48
10-2113.1066	48
10-2113.1069	49
10-2119.1042	48
10-2119.1044	48
10-2119.1045	48
10-2119.1046	48
10-2119.1049	49
14-030.002	18
14-030.005	18
14-031.006	18
14-040.002	4
14-040.002	19
14-040.005	4
14-040.005	19
14-041.006	4
14-041.006	19
14-131.022	6
14-131.022	9
14-131.022	11
14-131.022	21
14-131.022	24
14-131.022	26
14-131.0252	6
14-131.0252	9
14-131.0252	11
14-131.0252	21
14-131.0252	24
14-131.0252	26
14-132.0252	6
14-132.0252	9
14-132.0252	12
14-132.0252	21
14-132.0252	24
14-132.0252	26
14-133.0252	7
14-133.0252	9
14-133.0252	12
14-133.0252	22
14-133.0252	24
14-133.0252	27
14-134.0252	7
14-134.0252	9
14-134.0252	12
14-134.0252	22
14-134.0252	24
14-134.0252	27
14-135.022K	14
14-135.022K	30
14-135.025K2	14
14-135.025K2	29
14-136.025K2	15
14-136.025K2	30
14-137.025K2	15
14-137.025K2	30
14-138.025K2	15
14-138.025K2	30
14-141.022K	14
14-141.022K	29
14-141.025K2	14
14-141.025K2	29
14-142.025K2	14
14-142.025K2	29
14-143.025K2	14
14-143.025K2	29
14-144.025K2	14
14-144.025K2	29
14-235.022K	14
14-235.022K	30
14-235.025K2	14
14-235.025K2	29
14-236.025K2	15
14-236.025K2	30
14-237.025K2	15
14-237.025K2	30
14-238.025K2	15
14-238.025K2	30
14-271.022	6
14-271.022	9
14-271.022	11
14-271.022	21
14-271.022	24
14-271.022	26
14-271.0252	6
14-271.0252	9
14-271.0252	11
14-271.0252	21
14-271.0252	24
14-271.0252	26
14-272.0252	7
14-272.0252	9
14-272.0252	12
14-272.0252	22
14-272.0252	24
14-272.0252	26
14-273.0252	7
14-273.0252	9
14-273.0252	12
14-273.0252	22
14-273.0252	24
14-273.0252	27
14-274.0252	7
14-274.0252	9
14-274.0252	12
14-274.0252	22
14-274.0252	24
14-274.0252	27
14-335.022K	15
14-335.022K	30
14-335.025K2	14
14-335.025K2	29
14-336.025K2	15
14-336.025K2	30
14-337.025K2	15
14-337.025K2	30
14-338.025K2	15
14-338.025K2	30
14-411.036K	14
14-411.036K	29
14-412.036K	14
14-412.036K	29
14-414.036K	14
14-414.036K	29
14-415.036K	14
14-415.036K	29
14-417.036K	14
14-417.036K	29
14-418.036K	14
14-418.036K	29
14-431.036	6
14-431.036	9
14-431.036	11
14-431.036	21
14-431.036	24
14-431.036	26
14-432.036	6
14-432.036	9
14-432.036	11
14-432.036	21
14-432.036	24
14-432.036	26
14-433.036	6
14-433.036	9
14-433.036	11
14-433.036	21
14-433.036	24
14-433.036	26
14-435.036	6
14-435.036	9
14-435.036	11
14-435.036	21
14-435.036	24
14-435.036	26
14-436.036	6
14-436.036	9
14-436.036	11
14-436.036	21
14-436.036	24
14-436.036	26
14-437.036K	14
14-437.036K	29
14-438.036K	14
14-438.036K	29
14-471.036	6
14-471.036	9
14-471.036	11
14-471.036	21
14-471.036	24
14-471.036	26
14-472.036	6
14-472.036	9
14-472.036	11
14-472.036	21
14-472.036	24
14-472.036	26
14-473.036	6
14-473.036	9
14-473.036	11
14-473.036	21
14-473.036	24
14-473.036	26
14-475.036	6
14-475.036	9
14-475.036	11
14-475.036	21
14-475.036	24
14-475.036	26
14-476.036	6
14-476.036	9
14-476.036	11
14-476.036	21
14-476.036	24
14-476.036	26
14-501.0220	16
14-501.0220	31
14-501.02502	16
14-501.02502	31
14-502.02502	16
14-502.02502	31
14-503.02502	16
14-503.02502	31
14-506.0220	16
14-506.0220	31
14-506.02502	16
14-506.02502	31
14-507.02502	16
14-507.02502	31
14-508.02502	16
14-508.02502	31
14-509.02502	16
14-509.02502	31
14-515.0360	16
14-515.0360	31
14-517.0360	16
14-517.0360	31
14-520.0360	16
14-520.0360	31
14-521.0360	16
14-521.0360	31
14-522.0360	16
14-522.0360	31
14-556.0220	32
14-556.02502	32
14-557.02502	32
14-570.0360	32
14-572.0360	32
14-741.006	18
14-742.006	18
14-743.0292	6
14-743.0292	11
14-743.0292	21
14-743.0292	26
14-744.0292	6
14-744.0292	11
14-744.0292	21
14-744.0292	26
14-746.0292	6
14-746.0292	11
14-746.0292	21
14-746.0292	26
14-747.0292	6
14-747.0292	11
14-747.0292	21
14-747.0292	26
14-748.0292	6
14-748.0292	11
14-748.0292	21
14-748.0292	26
14-810.002	20
14-810.902	20
14-810.910	5
14-810.918	5
14-910	51
14-955.0	38
14-955.1	38
14-955.3	39
14-955.4	39
14-955.9	38
14-955.9E	39
14-958.0	38
14-958.8	38
14-987.1001	45
31-928	47
31-929	47
31-940	46
31-941	46
31-942	46
31-945	47
31-946	47
61-9481.6	54
700.006.0	52
704.600.0	39
704.600.0	40
704.600.1	39
704.600.1	40
704.600.1A	39
704.600.1A	40
704.600.2	41
704.600.3	41
704.600.5/A	41
704.600.6	39
704.600.6	40
704.600.9	39
704.600.9	40
704.601.0	34
704.601.01	34
704.601.2	34
704.601.21	34
704.601.4	34
704.601.41	34
704.601.5	34
704.601.51	34
704.601.6	34
704.601.61	34
704.601.8	34
704.601.81	34
704.601.9	34
704.601.91	34
704.602.0	33
704.602.2	33
704.602.4	33
704.602.5	33
704.602.6	33
704.602.7	33
704.602.7A01	33
704.603.2	35
704.603.4	35
704.603.5	35
704.603.6	35
704.603.7	35
704.604.0	35
704.604.2	35
704.604.4	35
704.604.5	35
704.608.7	37
704.608.9	37
704.609.0	36
704.609.7	36
704.609.9	36
704.609.9	37
704.609.9A01	36
704.610.7	37
704.610.9	37
704.611.2	33
704.611.4	33
704.611.5	33
704.611.7	33
704.614.2	36
704.614.4	36
704.614.5	36
704.614.6	36
704.614.7	36
704.925.0	44
704.925.2	44
704.925.3	44
704.925.7	43
704.928.18	43
704.928.28	43
704.928.38	43
704.945.1	53
704.945.2	53
704.945.3	53
704.945.4	53
704.945.5	53
704.945.6	54
704.953.0	40
704.954.0	51
704.960.0	52
704.960.4	44
704.960.8	52
704.964.8	44
704.968.0	42
704.968.1	42
704.968.2	41
704.968.3	41

OCEAN CHIPS
Океан Электроники
Поставка электронных компонентов

Компания «Океан Электроники» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Поставка оригинальных импортных электронных компонентов напрямую с производств Америки, Европы и Азии, а так же с крупнейших складов мира;
- Широкая линейка поставок активных и пассивных импортных электронных компонентов (более 30 млн. наименований);
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Помощь Конструкторского Отдела и консультации квалифицированных инженеров;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Поставка электронных компонентов под контролем ВП;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- При необходимости вся продукция военного и аэрокосмического назначения проходит испытания и сертификацию в лаборатории (по согласованию с заказчиком);
- Поставка специализированных компонентов военного и аэрокосмического уровня качества (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Actel, Aeroflex, Peregrine, VPT, Syfer, Eurofarad, Texas Instruments, MS Kennedy, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Компания «Океан Электроники» является официальным дистрибьютором и эксклюзивным представителем в России одного из крупнейших производителей разъемов военного и аэрокосмического назначения «**JONHON**», а так же официальным дистрибьютором и эксклюзивным представителем в России производителя высокотехнологичных и надежных решений для передачи СВЧ сигналов «**FORSTAR**».

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