

## Series 51

*Versatile. Attractive and compact.*

<https://eao.com/>



# 51 Information about the Series

## Key advantages

- Compact construction
- Various configuration options
- Reliable and proven
- Timeless and modern design
- Raised or flush mounting
- Low back panel depth (Stop Switch)

## Typical application areas

- Food and beverages
- Special vehicles
- Buildings services and automation
- Public transportation
- Medical engineering

## Functions

- Pushbutton
- Illuminated pushbutton
- Selector switch
- Keylock switch
- Indicator
- Stop switch

## Design

- Flush
- Raised

## IP front protection

- IP65

## Raitings

- 42 VAC (100 mA)
- 250 VAC (5 A)

## Mounting cut-outs

- Ø 16.2 mm
- Ø 22.3 mm
- 21.2 mm x 21.2 mm
- 21.2 mm x 27.2 mm

## Terminal

- Soldering terminal
- Plug-in terminal
- Soldering/plug-in terminal
- PCB (with PCB plug-in base)

## Lens Material

- Aluminium
- Plastic

## Markings

- Engraving
- Laser marking
- Hot stamping
- Film insert/marketing plate
- Pad printing
- Screen print

## Approvals

- CB (IEC 61058)
- CSA
- CQC
- ENEC (EN 61058)
- DNV GL (vormals Germanischer Lloyd)
- UL

## Conformities

- CE
- 2014/30/EU (EMC)
- 2014/35/EU (LVD)
- 2011/65/EU (RoHS)
- 2006/42/EU (MD)



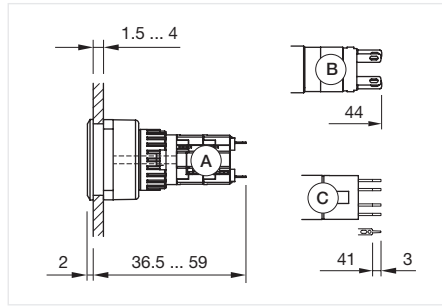
<b>Flush design</b>		
Pushbutton round	574	01
Illuminated pushbutton square	577	02
Illuminated pushbutton rectangular	580	03
Illuminated pushbutton round	583	04
Selector switch 2 positions square	586	09
Selector switch 2 positions round	589	14
Keylock switch 2 positions square	592	17
Keylock switch 2 positions rectangular	595	18
Keylock switch 2 positions round	598	19
Keylock switch 3 positions square	601	22
Keylock switch 3 positions rectangular	603	31
Keylock switch 3 positions round	605	41
Indicator square	607	45
Indicator rectangular	609	51
Indicator round	611	56
<b>Raised design</b>		
Illuminated pushbutton square	613	57
Illuminated pushbutton rectangular	616	61
Illuminated pushbutton round	619	70
Mushroom-head pushbutton	622	71
Selector switch 2 positions, round	624	82
Selector switch 3 positions, round	628	84
Keylock switch 2 positions square	630	92
Keylock switch 2 positions rectangular	633	96
Keylock switch 2 positions round	636	
Keylock switch 3 positions square	639	
Keylock switch 3 positions rectangular	641	
Keylock switch 3 positions round	643	
Indicator square	645	
Indicator rectangular	647	
Indicator round	649	
Stop switch	651	
<b>Components</b>	653	
<b>Accessories</b>	662	
<b>Technical data</b>	669	
<b>Marking</b>	674	
<b>Application guidelines</b>	675	

# 51 Flush design

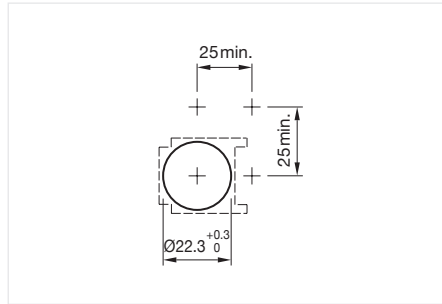
## Pushbutton round, IP65



Product can differ from the current configuration.

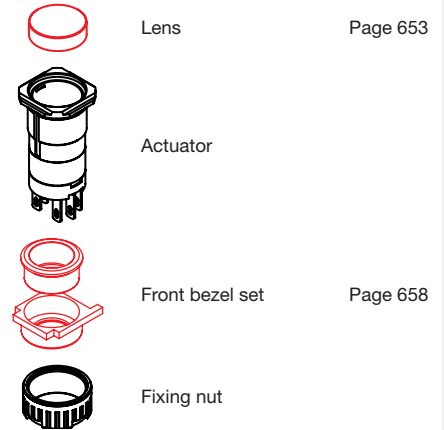


Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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 pages shown.

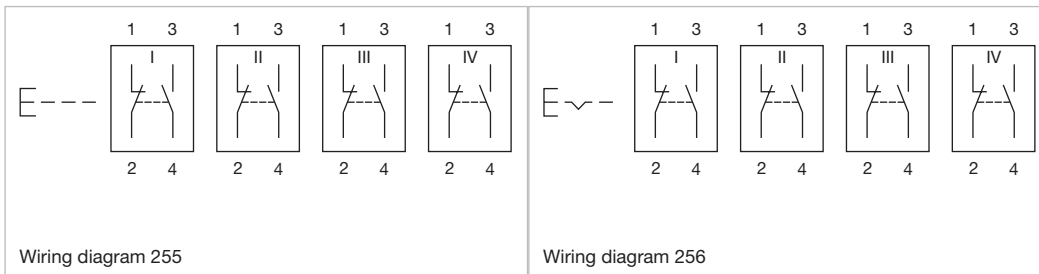
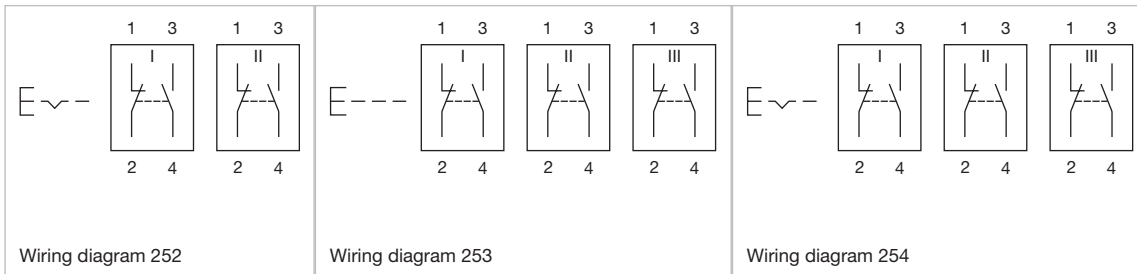
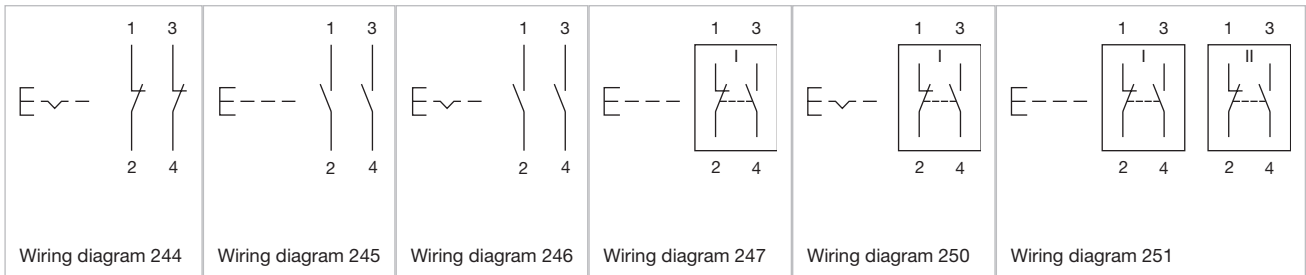
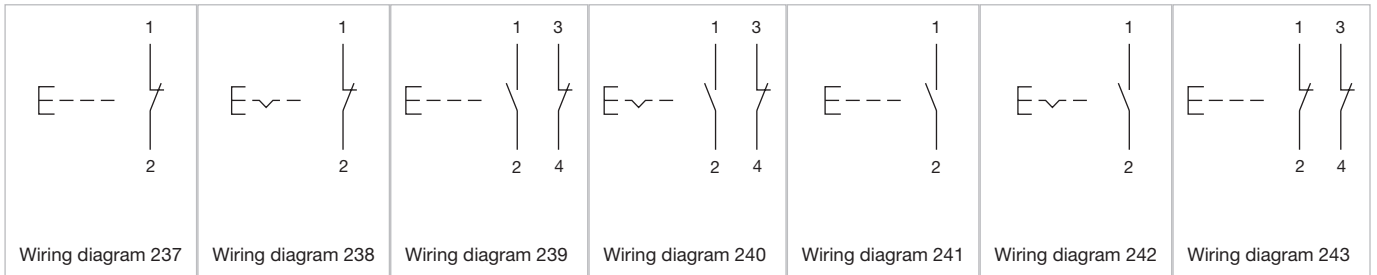


Actuator, Front dimension Ø 25 mm

Switching action	Contacts	Terminal	Switching system	Part No.	Wiring diagram	Component Layout
Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-151.022F	247	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-151.0252F	247	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-152.0252F	251	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-153.0252F	253	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-154.0252F	255	27
Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-281.022F	250	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-281.0252F	250	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-282.0252F	252	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-283.0252F	254	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-284.0252F	256	27
Momentary	2 NO	Universal terminal	Low-level element	51-451.036F	245	27
	2 NC	Universal terminal	Low-level element	51-452.036F	243	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-453.036F	239	27
	1 NO	Universal terminal	Low-level element	51-455.036F	241	27
	1 NC	Universal terminal	Low-level element	51-456.036F	237	27
Maintained	2 NO	Universal terminal	Low-level element	51-481.036F	246	27
	2 NC	Universal terminal	Low-level element	51-482.036F	244	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-483.036F	240	27
	1 NO	Universal terminal	Low-level element	51-485.036F	242	27
	1 NC	Universal terminal	Low-level element	51-486.036F	238	27

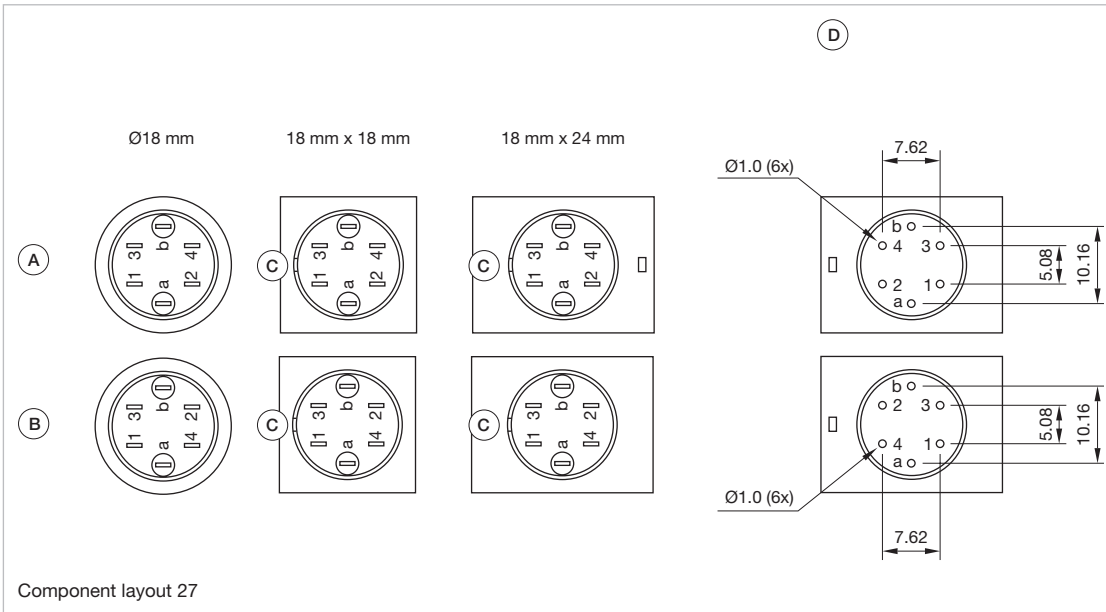
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams



# 51 Flush design

## Component layouts



- Dimensions [mm]  
 A = Universal terminal (rear side)  
 B = Plug-in terminal (rear side)  
 C = Anti twist device  
 D = Drilling plan



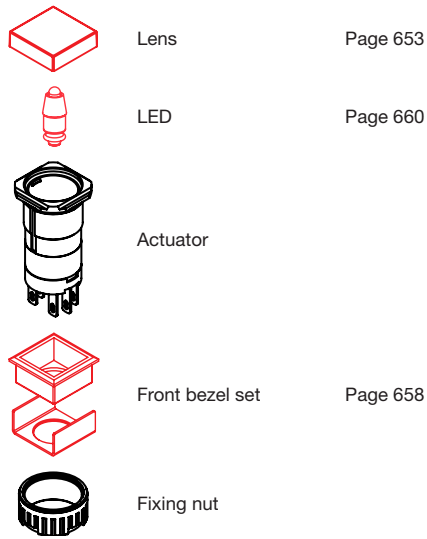
EAO Downloads.  
[www.eao.com/downloads](http://www.eao.com/downloads)  
*EAO creates possibilities. Since 1947.*



On our website you can download technical data, assembly instructions, catalogs, brochures and much more.

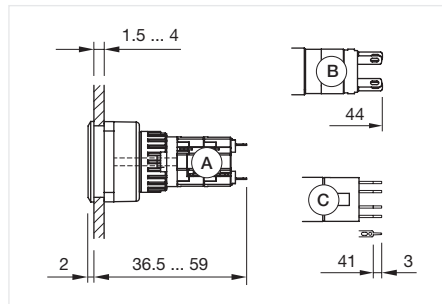
## Illuminated pushbutton square, IP65

### Equipment consisting of (schematic overview)



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

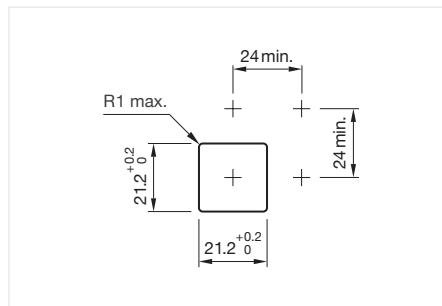
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



Mounting cut-outs [mm]



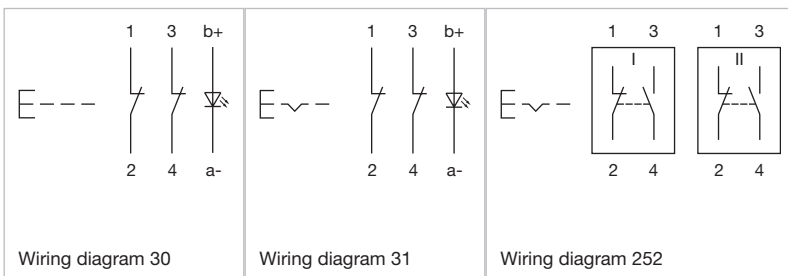
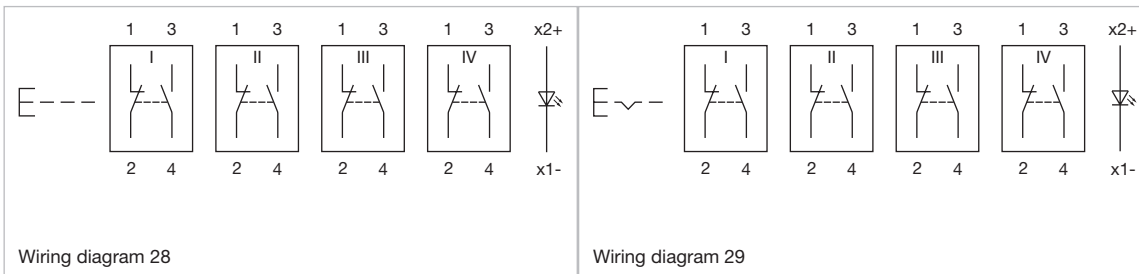
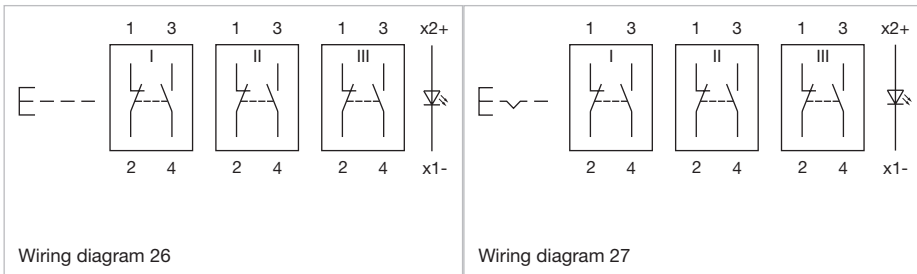
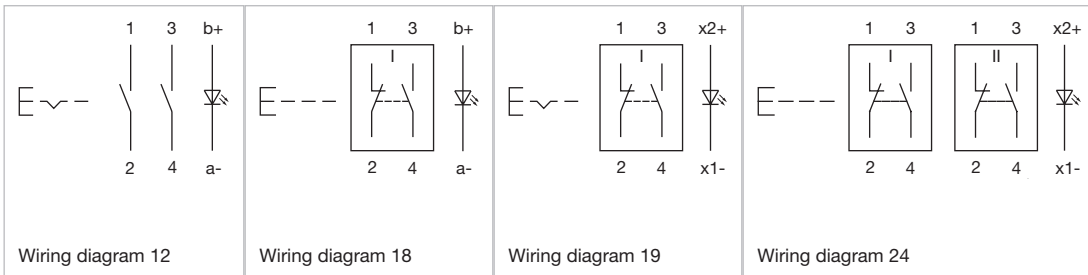
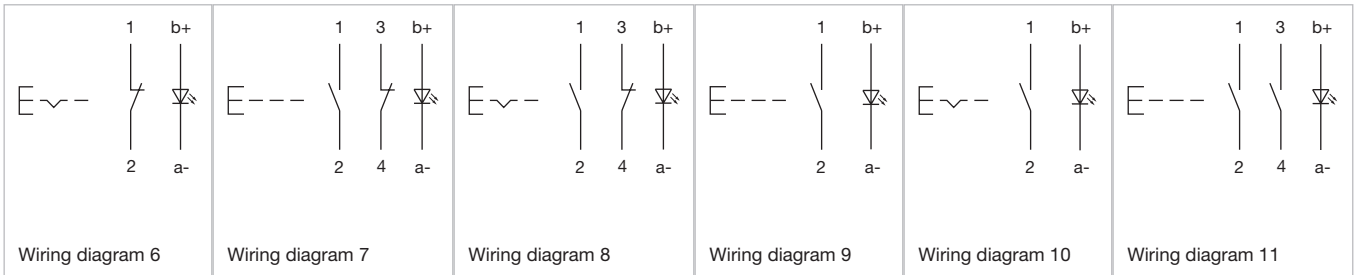
Actuator, Front dimension 24 mm x 24 mm

Switching action	Contacts	Terminal	Switching system	Part No.	Wiring diagram	Component Layout
Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-151.022F	18	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-151.0252F	18	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-152.0252F	24	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-153.0252F	26	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-154.0252F	28	27
Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-281.022F	19	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-281.0252F	19	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-282.0252F	25	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-283.0252F	27	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-284.0252F	29	27
Momentary	2 NO	Universal terminal	Low-level element	51-451.036F	11	27
	2 NC	Universal terminal	Low-level element	51-452.036F	30	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-453.036F	7	27
	1 NO	Universal terminal	Low-level element	51-455.036F	9	27
	1 NC	Universal terminal	Low-level element	51-456.036F	11	27
Maintained	2 NO	Universal terminal	Low-level element	51-481.036F	12	27
	2 NC	Universal terminal	Low-level element	51-482.036F	31	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-483.036F	8	27
	1 NO	Universal terminal	Low-level element	51-485.036F	10	27
	1 NC	Universal terminal	Low-level element	51-486.036F	6	27

Contacts: NC = Normally closed, NO = Normally open

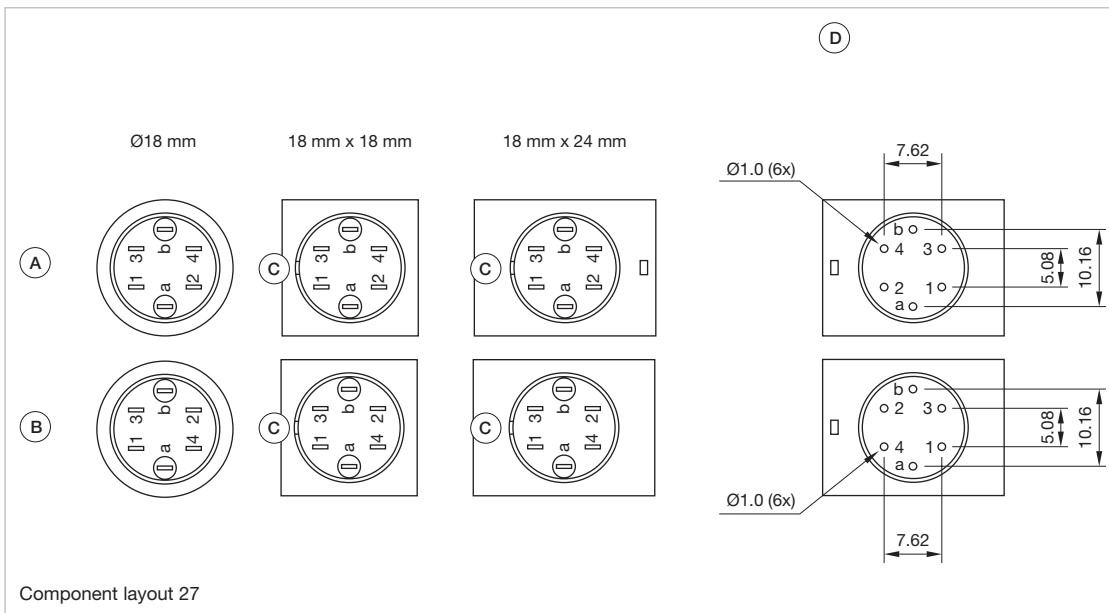
# 51 Flush design

## Wiring diagrams





## Component layouts



Dimensions [mm]

A = Universal terminal (rear side)

B = Plug-in terminal (rear side)

C = Anti twist device

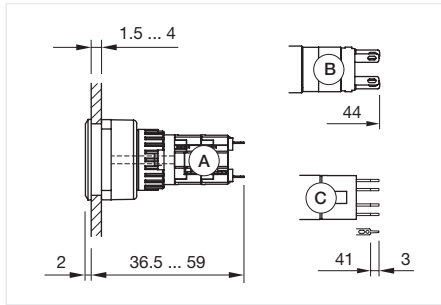
D = Drilling plan

# 51 Flush design

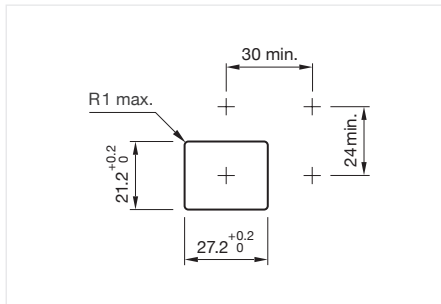
## Illuminated pushbutton rectangular, IP65



Product can differ from the current configuration.

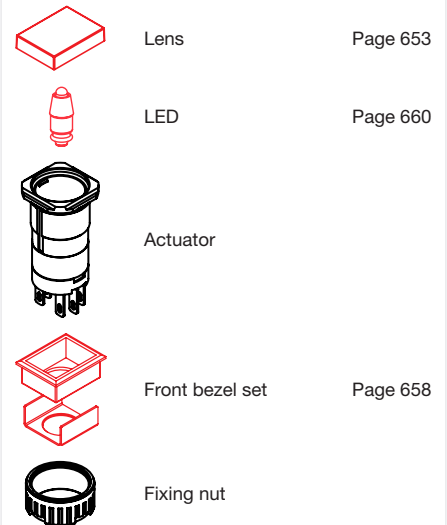


Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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 pages shown.

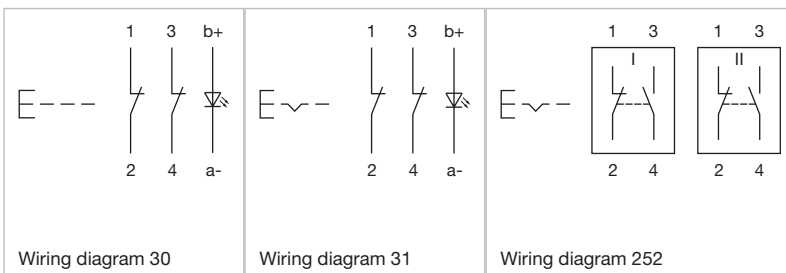
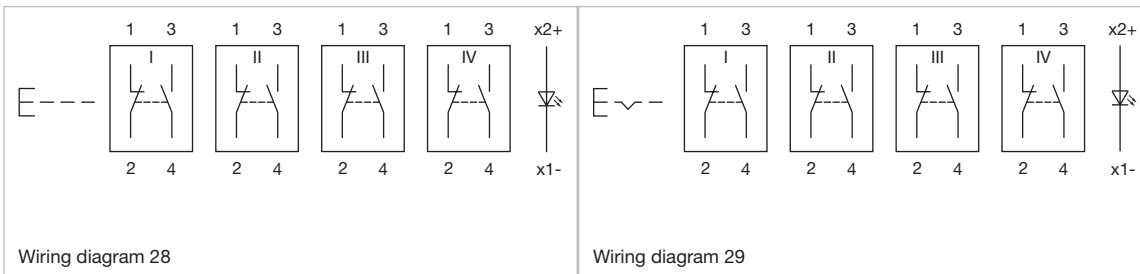
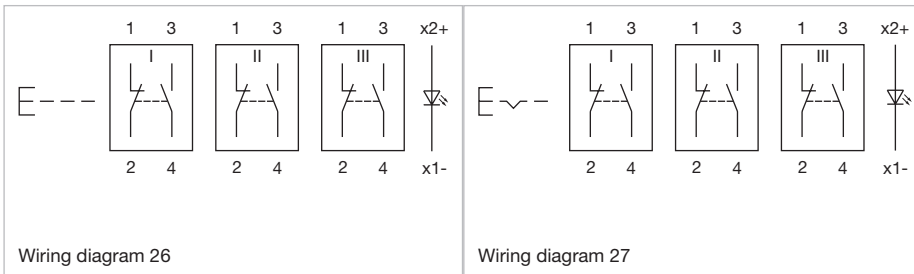
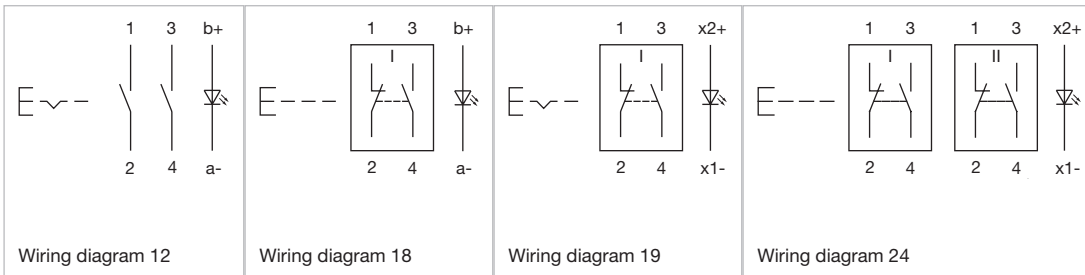
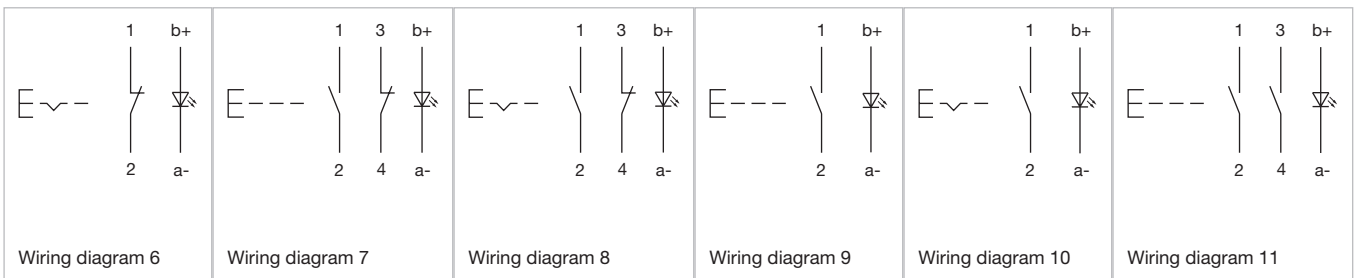


Actuator, Front dimension 30 mm x 24 mm

Switching action	Contacts	Terminal	Switching system	Part No.	Wiring diagram	Component Layout
Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-151.022F	18	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-151.0252F	18	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-152.0252F	24	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-153.0252F	26	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-154.0252F	28	27
Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-281.022F	19	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-281.0252F	19	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-282.0252F	25	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-283.0252F	27	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-284.0252F	29	27
Momentary	2 NO	Universal terminal	Low-level element	51-451.036F	11	27
	2 NC	Universal terminal	Low-level element	51-452.036F	30	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-453.036F	7	27
	1 NO	Universal terminal	Low-level element	51-455.036F	9	27
	1 NC	Universal terminal	Low-level element	51-456.036F	11	27
Maintained	2 NO	Universal terminal	Low-level element	51-481.036F	12	27
	2 NC	Universal terminal	Low-level element	51-482.036F	31	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-483.036F	8	27
	1 NO	Universal terminal	Low-level element	51-485.036F	10	27
	1 NC	Universal terminal	Low-level element	51-486.036F	6	27

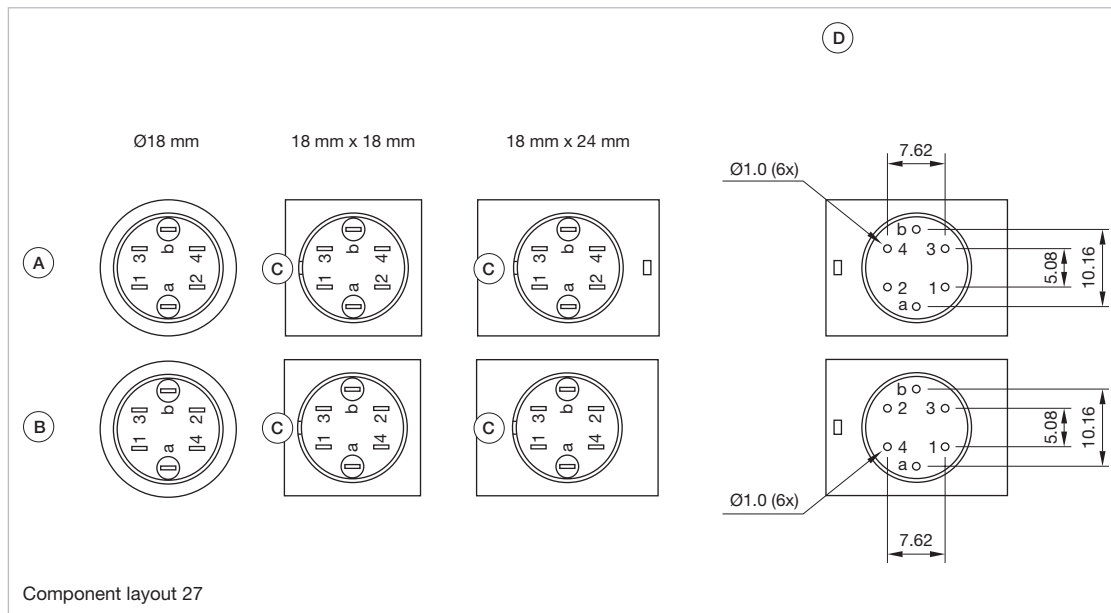
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams



# 51 Flush design

## Component layouts



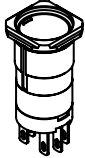
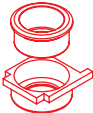




Component layout 27

- Dimensions [mm]  
 A = Universal terminal (rear side)  
 B = Plug-in terminal (rear side)  
 C = Anti twist device  
 D = Drilling plan

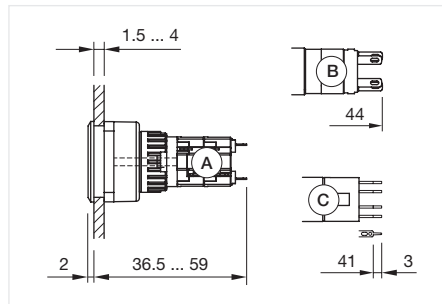
## Illuminated pushbutton round, IP65

### Equipment consisting of (schematic overview)

-  Lens Page 653
-  LED Page 660
-  Actuator
-  Front bezel set Page 658
-  Anti-twist ring Page 659
-  Fixing nut

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

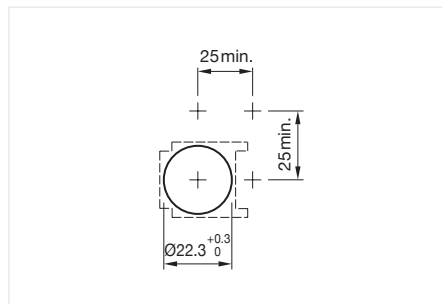
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



Mounting cut-outs [mm]



Actuator, Front dimension Ø 25 mm

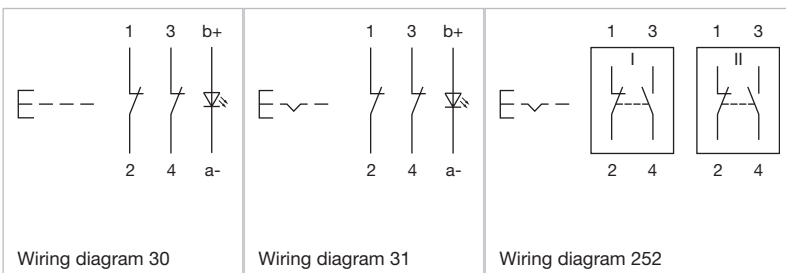
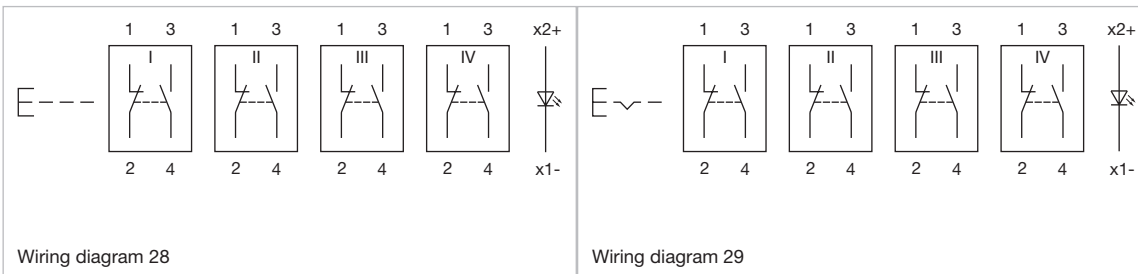
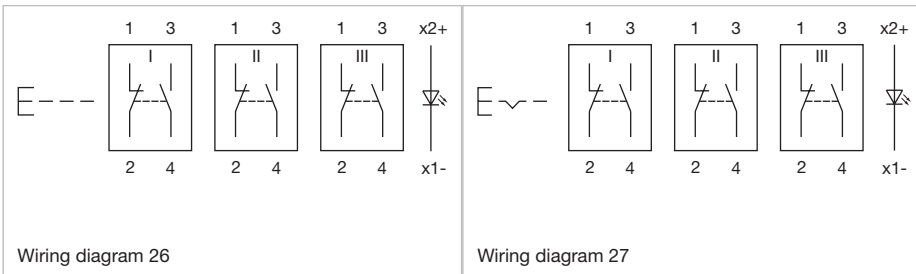
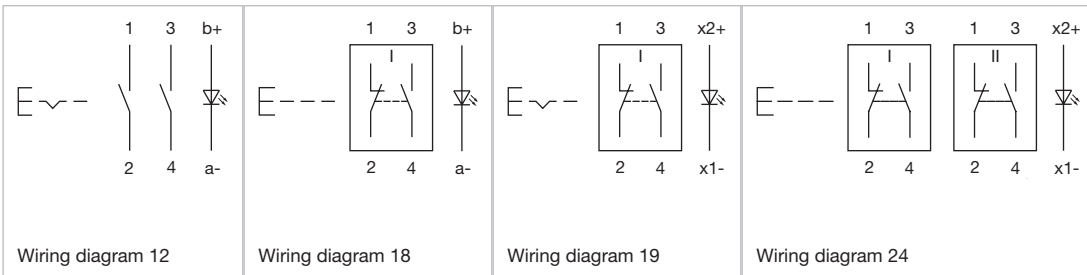
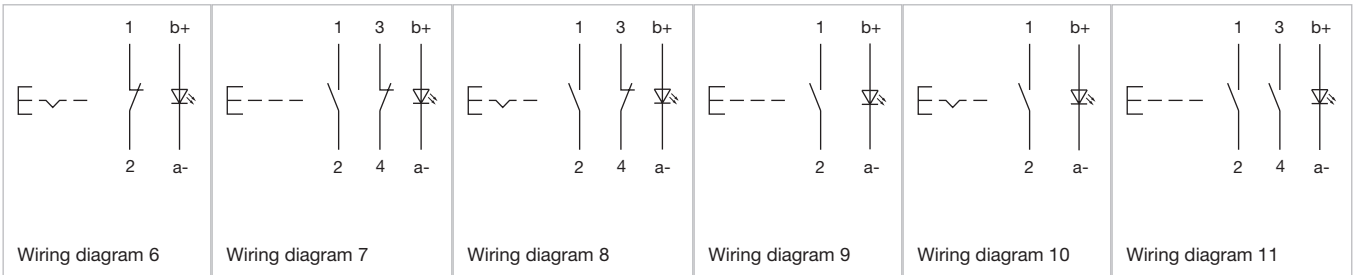
Switching action	Contacts	Terminal	Switching system	Part No.	Wiring diagram	Component Layout
Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-151.022F	18	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-151.0252F	18	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-152.0252F	24	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-153.0252F	26	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-154.0252F	28	27
Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	51-281.022F	19	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	51-281.0252F	19	27
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	51-282.0252F	25	27
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	51-283.0252F	27	27
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	51-284.0252F	29	27
Momentary	2 NO	Universal terminal	Low-level element	51-451.036F	11	27
	2 NC	Universal terminal	Low-level element	51-452.036F	30	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-453.036F	7	27
	1 NO	Universal terminal	Low-level element	51-455.036F	9	27
	1 NC	Universal terminal	Low-level element	51-456.036F	11	27
Maintained	2 NO	Universal terminal	Low-level element	51-481.036F	12	27
	2 NC	Universal terminal	Low-level element	51-482.036F	31	27
	1 NC / 1 NO	Universal terminal	Low-level element	51-483.036F	8	27
	1 NO	Universal terminal	Low-level element	51-485.036F	10	27
	1 NC	Universal terminal	Low-level element	51-486.036F	6	27

Contacts: NC = Normally closed, NO = Normally open

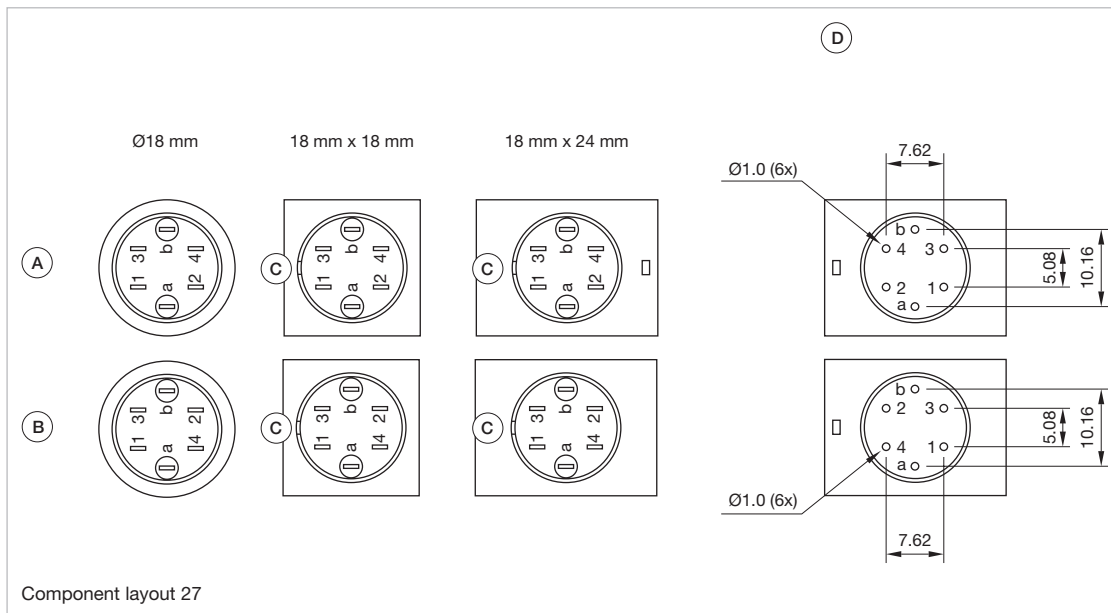
01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 51 Flush design

## Wiring diagrams



## Component layouts



Component layout 27


Dimensions [mm]

A = Universal terminal (rear side)

B = Plug-in terminal (rear side)

C = Anti twist device


D = Drilling plan




## Follow us.

# We are on LinkedIn!

*EAO creates possibilities. Since 1947.*






**Come take a look at our LinkedIn profile today!** Be sure to give us a follow so that you can fully interact with us.

<https://www.linkedin.com/company/eao/>

www.eao.com



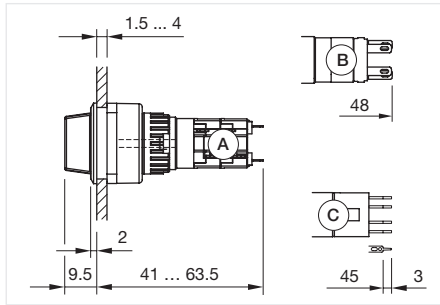
Your Expert Partner for Human Machine Interfaces

# 51 Flush design

## Selector switch 2 positions square, IP65



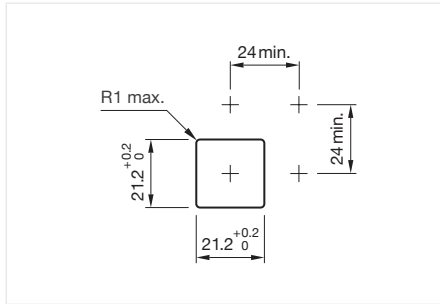
Product can differ from the current configuration.



Dimensions [mm]  
 A = Solder terminal  
 B = Solder terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm

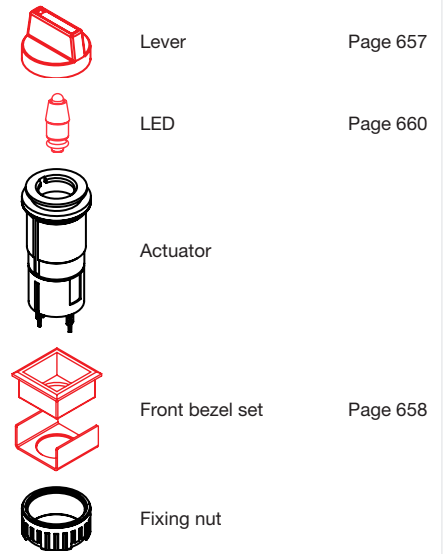
### General information

- Illuminative



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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 pages shown.



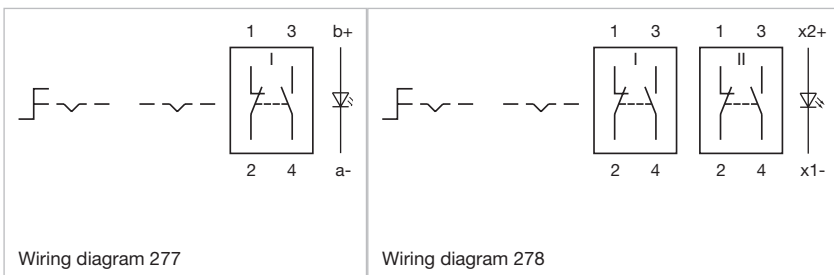
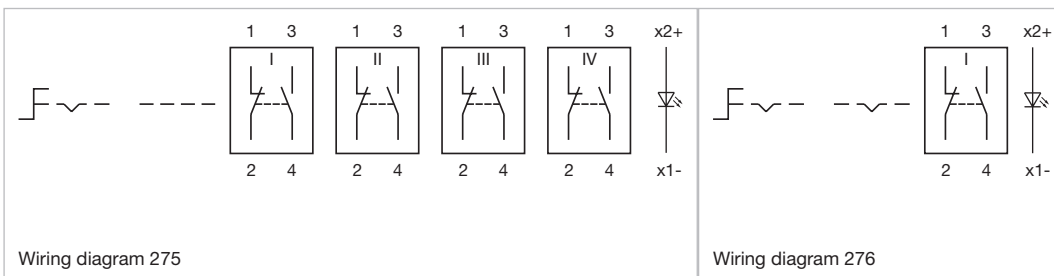
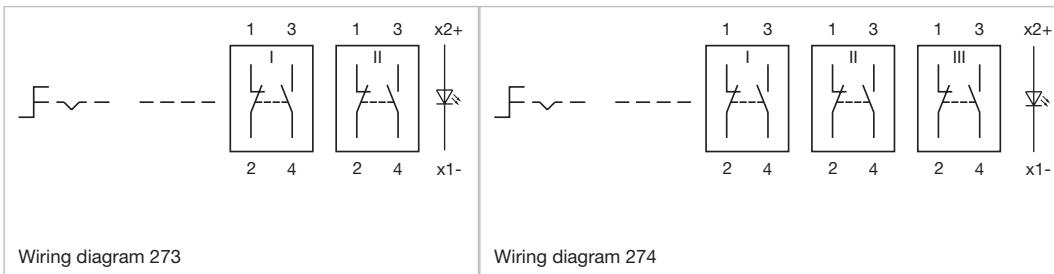
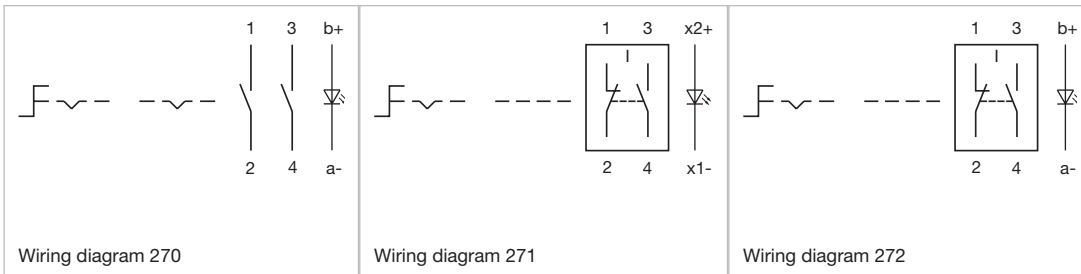
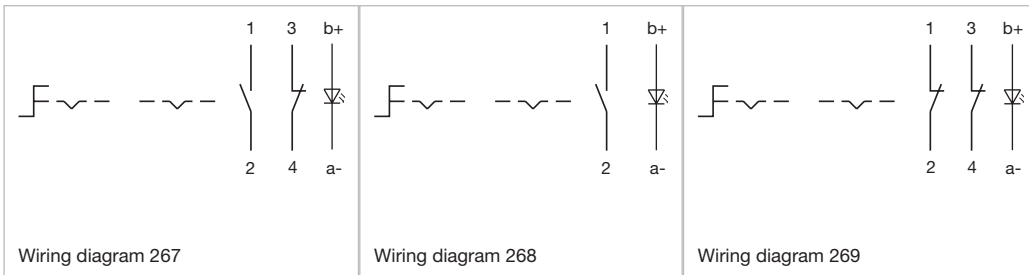
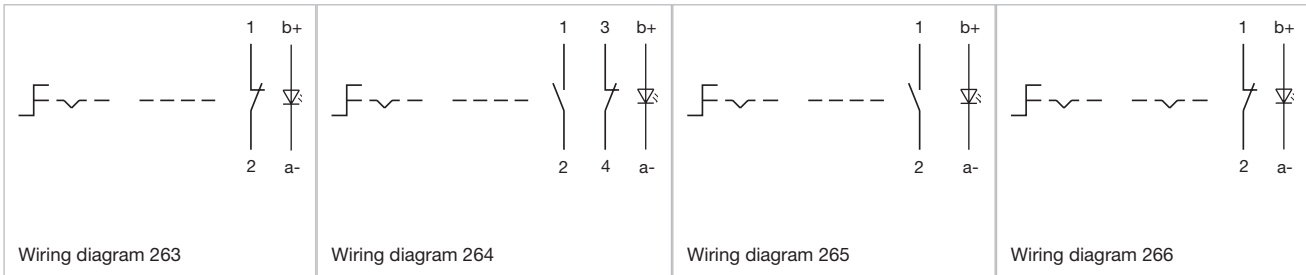
Actuator, Front dimension 24 mm x 24 mm

Switching action	Terminal	Switching system	Contacts	Switching angle	Part No.	Wiring diagram	Component Layout
Rest - Momentary	Plug-in terminal	Snap-action switching element	1 NC / 1 NO	42° right	52-131.022	272	
	Soldering terminal	Snap-action switching element	1 NC / 1 NO	42° right	52-131.0252	271	
	Soldering terminal	Snap-action switching element	2 NC / 2 NO	42° right	52-132.0252	273	
	Soldering terminal	Snap-action switching element	3 NC / 3 NO	42° right	52-133.0252	274	
	Soldering terminal	Snap-action switching element	4 NC / 4 NO	42° right	52-134.0252	275	
Rest - Maintained	Plug-in terminal	Snap-action switching element	1 NC / 1 NO	90° right	52-271.022	277	
	Soldering terminal	Snap-action switching element	1 NC / 1 NO	90° right	52-271.0252	276	
	Soldering terminal	Snap-action switching element	2 NC / 2 NO	90° right	52-272.0252	278	
	Soldering terminal	Snap-action switching element	3 NC / 3 NO	90° right	52-273.0252	279	
	Soldering terminal	Snap-action switching element	4 NC / 4 NO	90° right	52-274.0252	280	
Rest - Momentary	Universal terminal	Low-level element	1 NC / 1 NO	42° right	52-433.036	264	27
	Universal terminal	Low-level element	1 NO	42° right	52-435.036	265	27
	Universal terminal	Low-level element	1 NC	42° right	52-436.036	263	27
Rest - Maintained	Universal terminal	Low-level element	2 NO	90° right	52-471.036	270	27
	Universal terminal	Low-level element	2 NC	90° right	52-472.036	269	27
	Universal terminal	Low-level element	1 NC / 1 NO	90° right	52-473.036	267	27
	Universal terminal	Low-level element	1 NO	90° right	52-475.036	268	27
	Universal terminal	Low-level element	1 NC	90° right	52-476.036	266	27

Contacts: NC = Normally closed, NO = Normally open

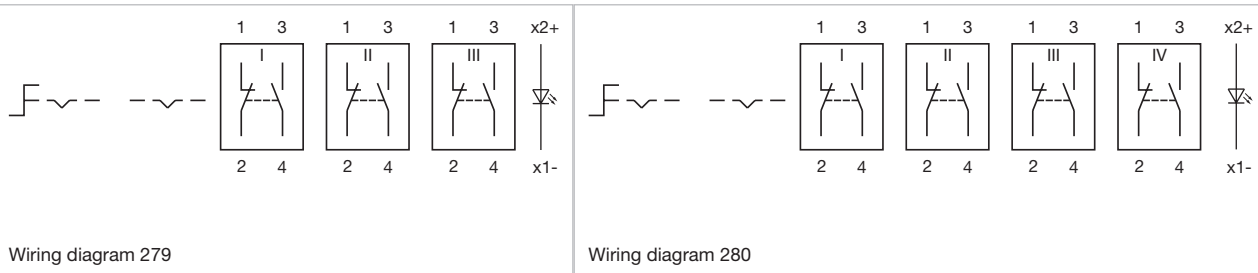


## Wiring diagrams

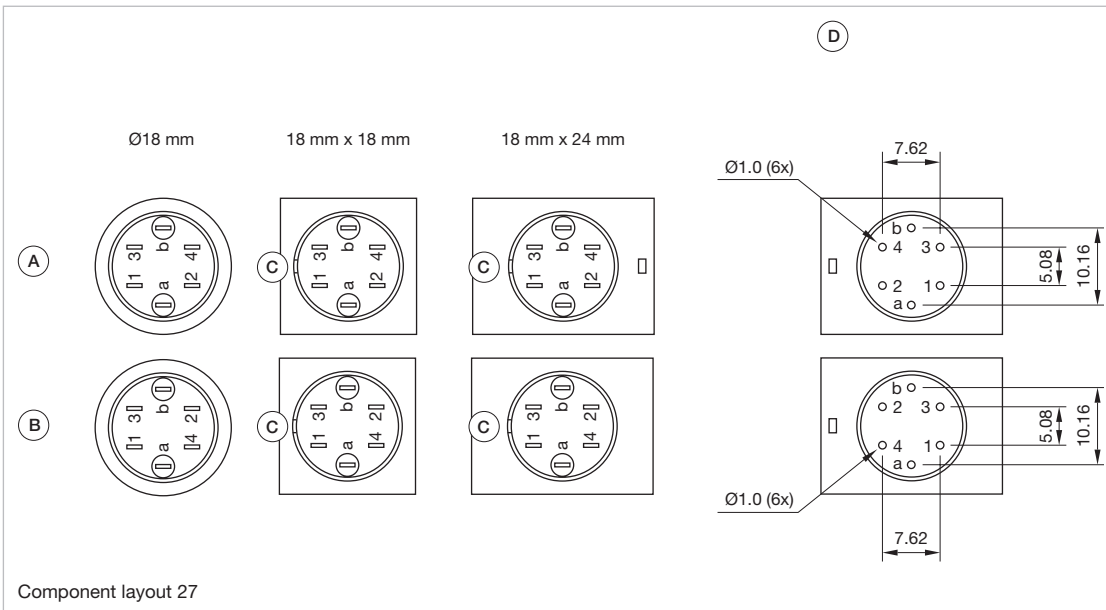


# 51 Flush design

## Wiring diagrams





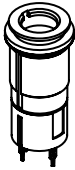



## Component layouts



- Dimensions [mm]  
 A = Universal terminal (rear side)  
 B = Plug-in terminal (rear side)  
 C = Anti twist device  
 D = Drilling plan

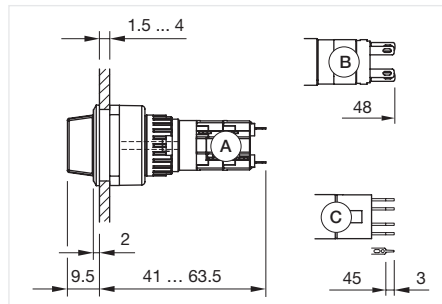
## Selector switch 2 positions round, IP65

### Equipment consisting of (schematic overview)

-  Lever Page 657
-  LED Page 660
-  Actuator
-  Front bezel set Page 658
-  Anti-twist ring Page 659
-  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 pages shown.



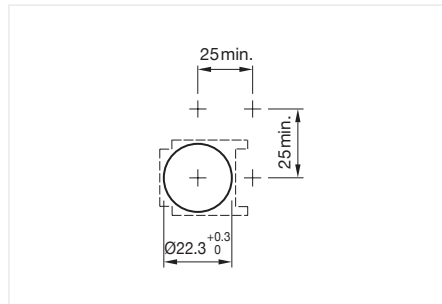
Dimensions [mm]  
 A = Solder terminal  
 B = Solder terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



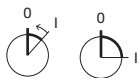
Product can differ from the current configuration.

### General information

- Illuminative



Mounting cut-outs [mm]



Actuator, Front dimension Ø 25 mm

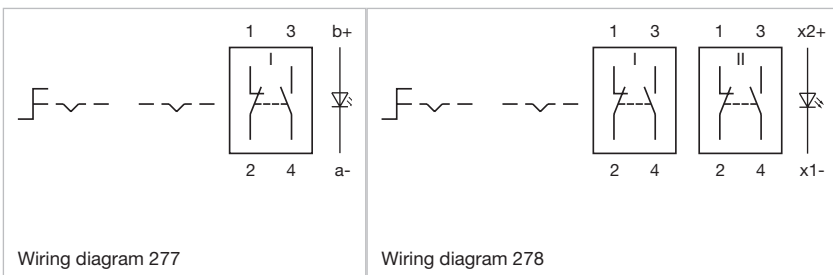
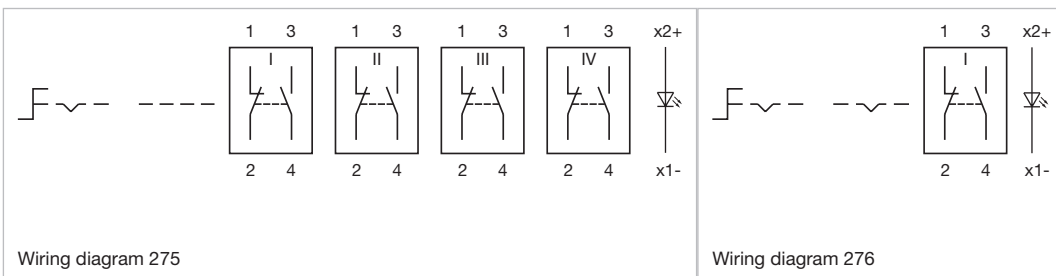
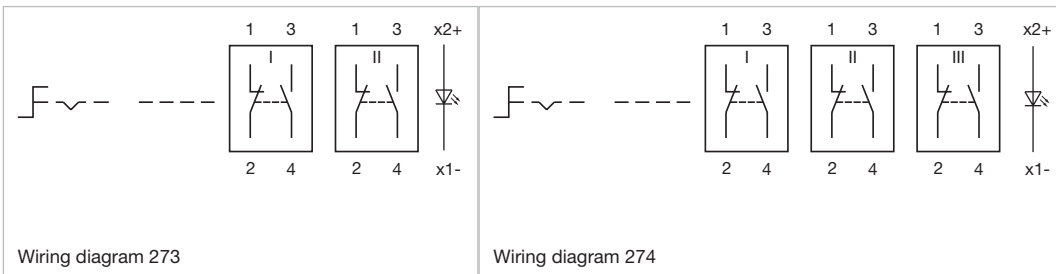
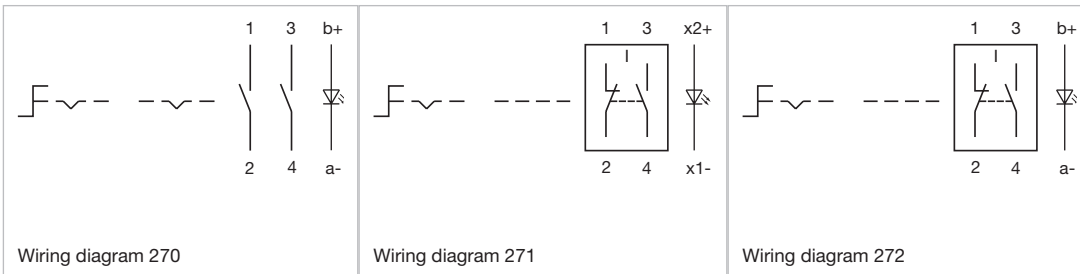
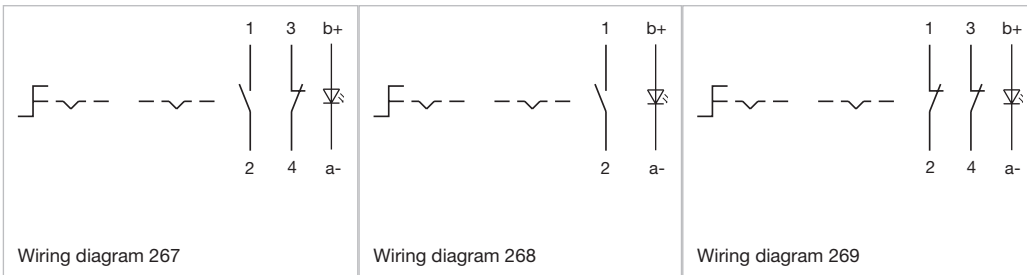
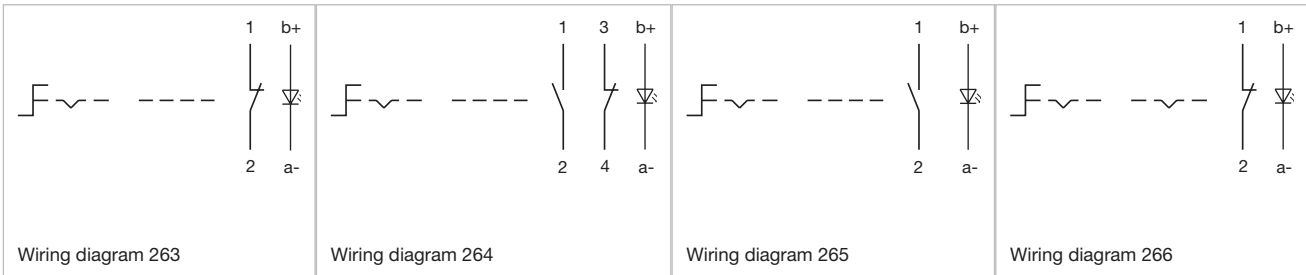
Switching action	Terminal	Switching system	Contacts	Switching angle	Part No.	Wiring diagram	Component Layout
Rest - Momentary	Plug-in terminal	Snap-action switching element	1 NC / 1 NO	42° right	52-131.022	272	
	Soldering terminal	Snap-action switching element	1 NC / 1 NO	42° right	52-131.0252	271	
	Soldering terminal	Snap-action switching element	2 NC / 2 NO	42° right	52-132.0252	273	
	Soldering terminal	Snap-action switching element	3 NC / 3 NO	42° right	52-133.0252	274	
	Soldering terminal	Snap-action switching element	4 NC / 4 NO	42° right	52-134.0252	275	
Rest - Maintained	Plug-in terminal	Snap-action switching element	1 NC / 1 NO	90° right	52-271.022	277	
	Soldering terminal	Snap-action switching element	1 NC / 1 NO	90° right	52-271.0252	276	
	Soldering terminal	Snap-action switching element	2 NC / 2 NO	90° right	52-272.0252	278	
	Soldering terminal	Snap-action switching element	3 NC / 3 NO	90° right	52-273.0252	279	
	Soldering terminal	Snap-action switching element	4 NC / 4 NO	90° right	52-274.0252	280	
Rest - Momentary	Universal terminal	Low-level element	1 NC / 1 NO	42° right	52-433.036	264	27
	Universal terminal	Low-level element	1 NO	42° right	52-435.036	265	27
	Universal terminal	Low-level element	1 NC	42° right	52-436.036	263	27
Rest - Maintained	Universal terminal	Low-level element	2 NO	90° right	52-471.036	270	27
	Universal terminal	Low-level element	2 NC	90° right	52-472.036	269	27
	Universal terminal	Low-level element	1 NC / 1 NO	90° right	52-473.036	267	27
	Universal terminal	Low-level element	1 NO	90° right	52-475.036	268	27
	Universal terminal	Low-level element	1 NC	90° right	52-476.036	266	27

Contacts: NC = Normally closed, NO = Normally open

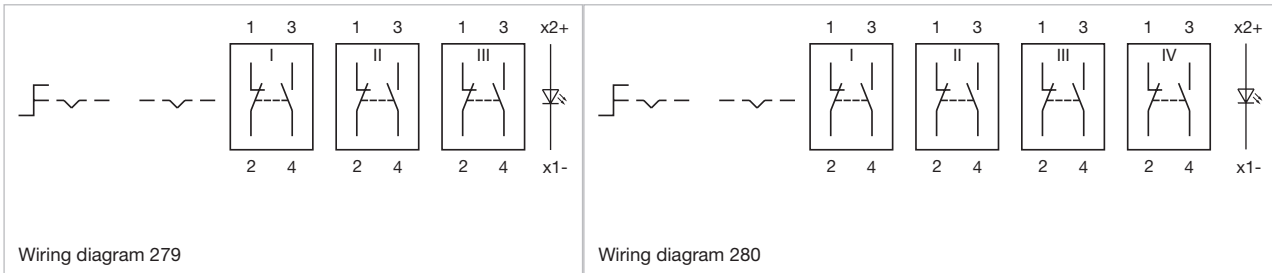
01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 51 Flush design

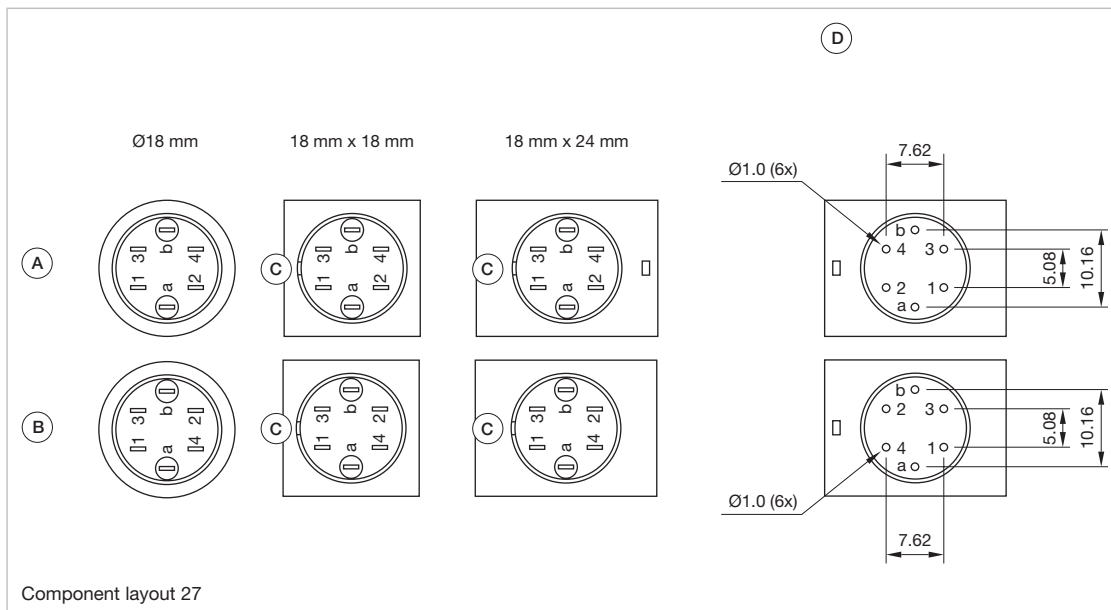
## Wiring diagrams



## Wiring diagrams



## Component layouts



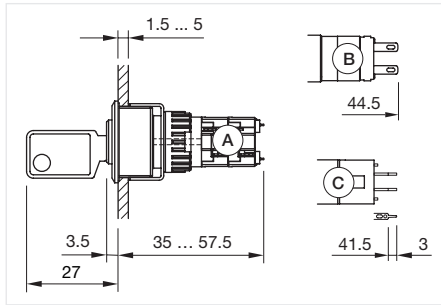
Dimensions [mm]  
 A = Universal terminal (rear side)  
 B = Plug-in terminal (rear side)  
 C = Anti twist device  
 D = Drilling plan

# 51 Flush design

## Keylock switch 2 positions square, IP65

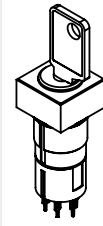


Product can differ from the current configuration.



Dimensions [mm]  
 A = Solder terminal  
 B = Solder terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm

### Equipment consisting of (schematic overview)



Actuator



Front bezel set



Fixing nut

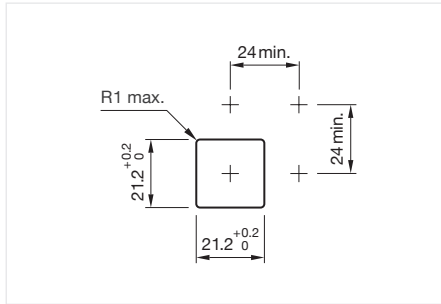
Page 658

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

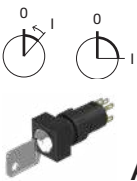
To obtain a complete unit, please select the red components from the pages shown.

### General information

- Standard lock: DOM 311



Mounting cut-outs [mm]



### Actuator, Front dimension 24 mm x 24 mm

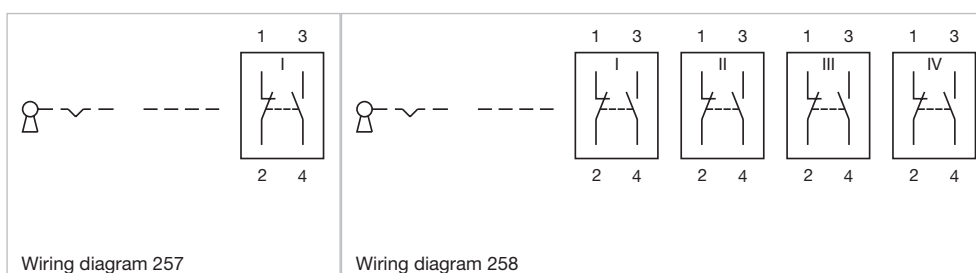
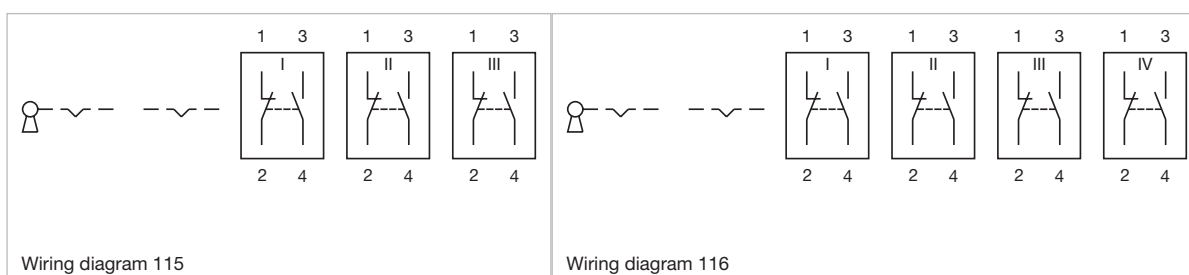
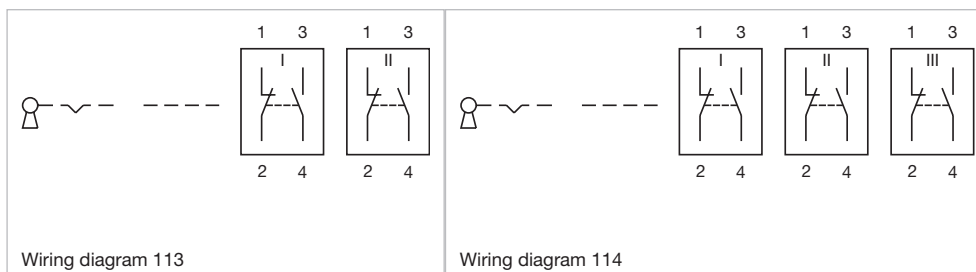
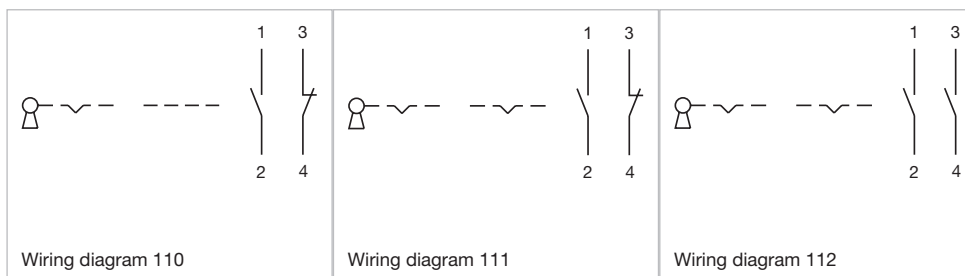
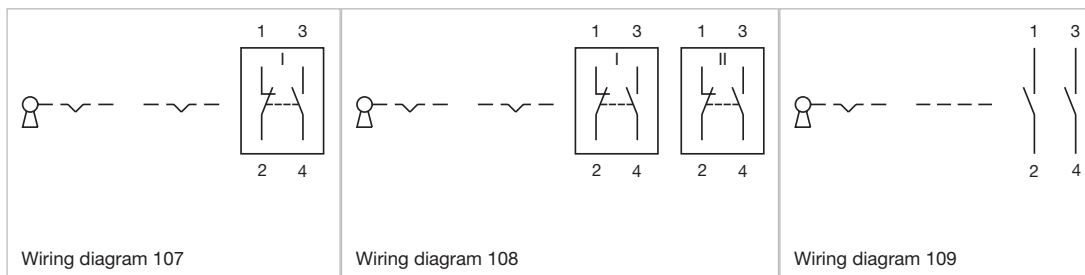
Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	42° right	51-145.022DF	257	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	42° right	51-145.025D2F	257	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	42° right	51-146.025D2F	113	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	42° right	51-147.025D2F	114	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	42° right	51-148.025D2F	258	
Rest (a) - Maintained (a)	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-155.022DF	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-155.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-156.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-157.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-158.025D2F	116	
Rest (a) - Maintained	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-255.022DF	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-255.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-256.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-257.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-258.025D2F	116	
Rest - Maintained (a)	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-355.022DF	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-355.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-356.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-357.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-358.025D2F	116	
Rest (a) - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-441.036DF	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-442.036DF	111	27

Contacts: NC = Normally closed, NO = Normally open  
 a = Key remove

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Maintained	2 NO	Universal terminal	Low-level element	90° right	51-444.036DF	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-445.036DF	111	27
Rest - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-447.036DF	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-448.036DF	111	27
Rest (a) - Momentary	2 NO	Universal terminal	Low-level element	42° right	51-457.036DF	109	27
	1 NC / 1 NO	Universal terminal	Low-level element	42° right	51-458.036DF	110	27

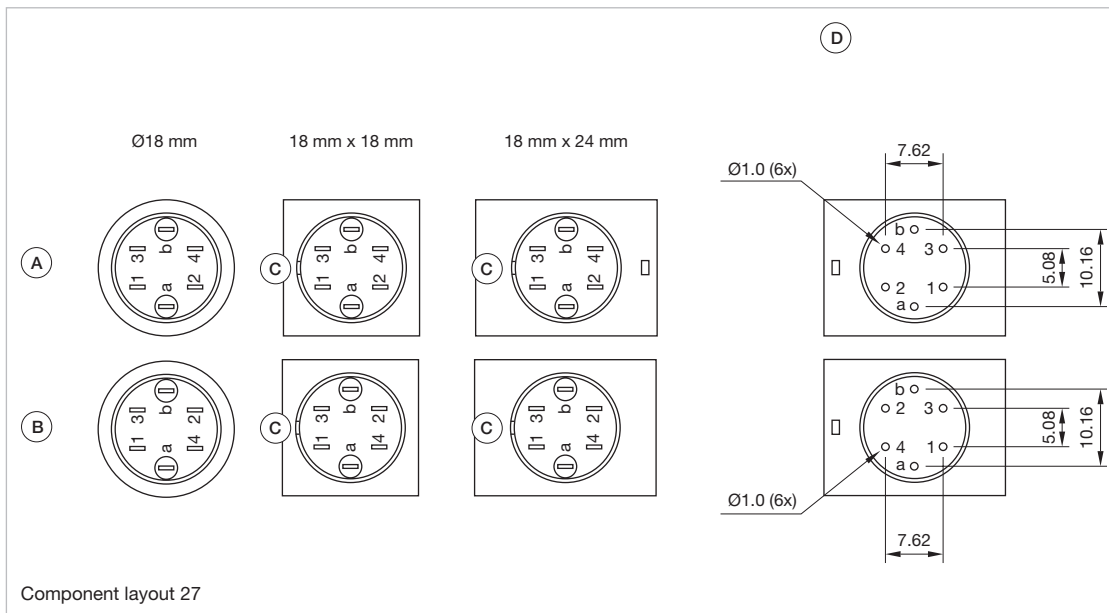
Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

## Wiring diagrams



# 51 Flush design

## Component layouts



- Dimensions [mm]  
 A = Universal terminal (rear side)  
 B = Plug-in terminal (rear side)  
 C = Anti twist device  
 D = Drilling plan

Green Touch.  
 Offering sustainability.  
*EAO creates possibilities. Since 1947.*



*As a successful company with production sites around the world, EAO is actively committed to the effective implementation of a sustainable environmental policy.*

We act responsibly. In our environmental focus, we set benchmarks for ourselves, our products and our customers. Throughout our entire value chain, we think and work in a way that is resource-efficient and environmentally-friendly. When selecting our components and raw materials, we ensure that we have partnerships in place with certified manufacturers and that we adhere to EC guidelines on hazardous materials (RoHS).

**eao** ■

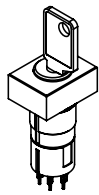
www.eao.com

Your Expert Partner for Human Machine Interfaces



## Keylock switch 2 positions rectangular, IP65

### Equipment consisting of (schematic overview)



Actuator



Front bezel set

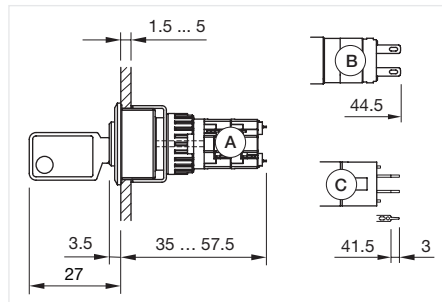
Page 658



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 pages shown.



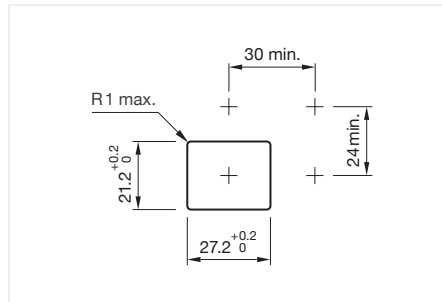
Dimensions [mm]  
 A = Solder terminal  
 B = Solder terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



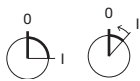
Product can differ from the current configuration.

### General information

- Standard lock: DOM 311



Mounting cut-outs [mm]



Actuator, Front dimension 30 mm x 24 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Maintained (a)	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-195.022DF	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-195.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-196.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-197.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-198.025D2F	116	
Rest (a) - Maintained	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-295.022DF	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-295.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-296.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-297.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-298.025D2F	116	
Rest - Maintained (a)	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-395.022DF	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-395.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-396.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-397.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-398.025D2F	116	
Rest (a) - Momentary	1 NC / 1 NO	Soldering terminal	Snap-action switching element	42° right	51-495.022DF	257	27
Rest (a) - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-401.036DF	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-402.036DF	111	27
Rest (a) - Maintained	2 NO	Universal terminal	Low-level element	90° right	51-404.036DF	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-405.036DF	111	27
Rest - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-407.036DF	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-408.036DF	111	27

Contacts: NC = Normally closed, NO = Normally open  
 a = Key remove

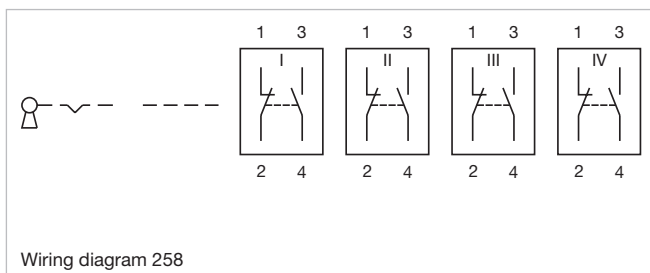
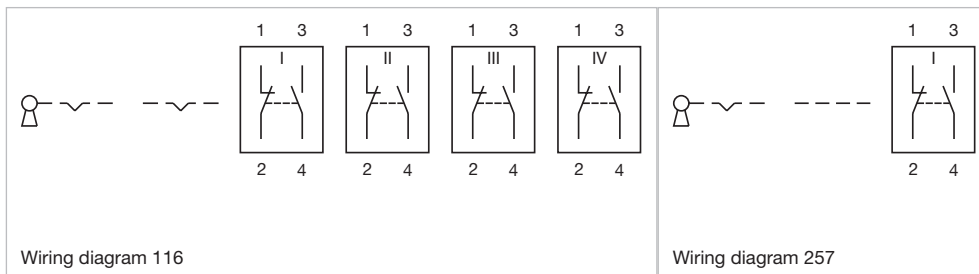
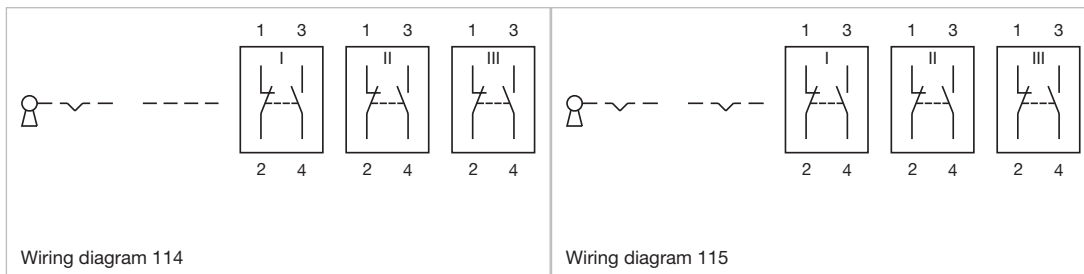
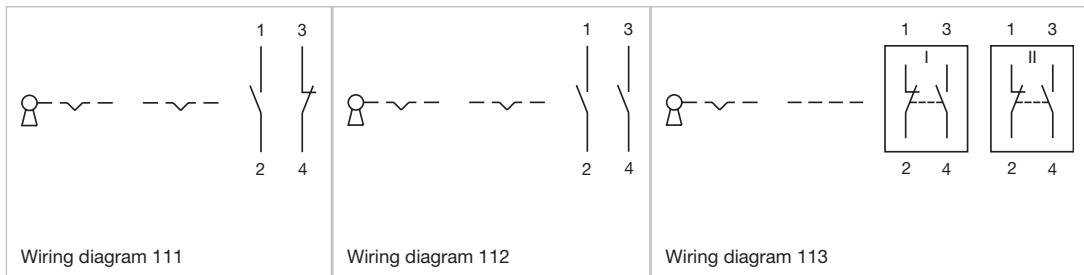
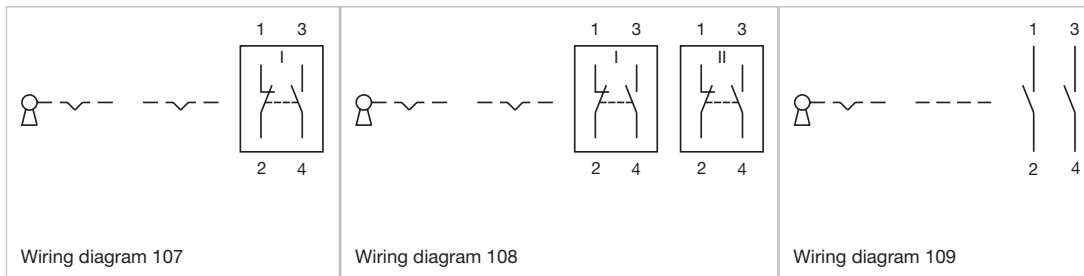
01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 51 Flush design

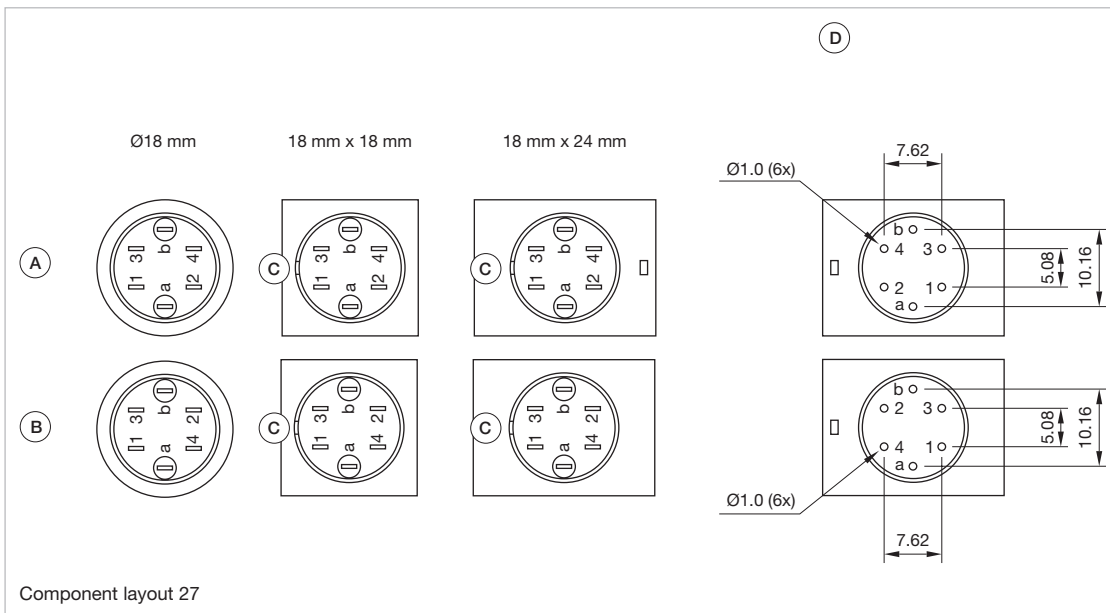
Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Momentary	2 NO	Universal terminal	Low-level element	42° right	51-427.036DF	109	27
	1 NC / 1 NO	Universal terminal	Low-level element	42° right	51-428.036DF	116	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	42° right	51-495.025D2F	257	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	42° right	51-496.025D2F	113	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	42° right	51-497.025D2F	114	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	42° right	51-498.025D2F	258	

Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

## Wiring diagrams



## Component layouts



Component layout 27

Dimensions [mm]

A = Universal terminal (rear side)

B = Plug-in terminal (rear side)

C = Anti twist device

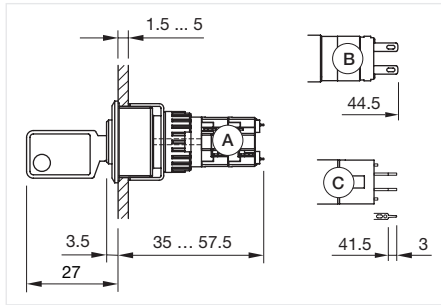
D = Drilling plan

# 51 Flush design

## Keylock switch 2 positions round, IP65



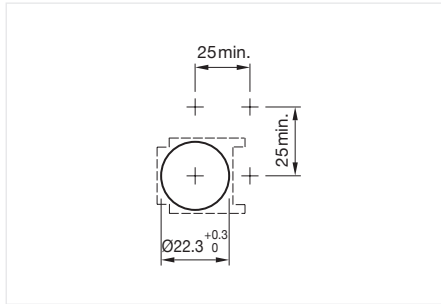
Product can differ from the current configuration.



Dimensions [mm]  
 A = Solder terminal  
 B = Solder terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm

### General information

- Standard lock: DOM 311



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



Actuator



Front bezel set

Page 658



Anti-twist ring

Page 659



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 pages shown.



Actuator, Front dimension Ø 25 mm

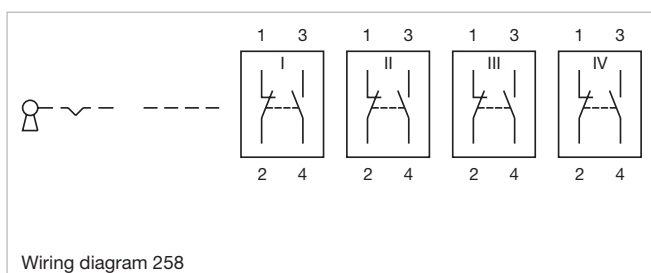
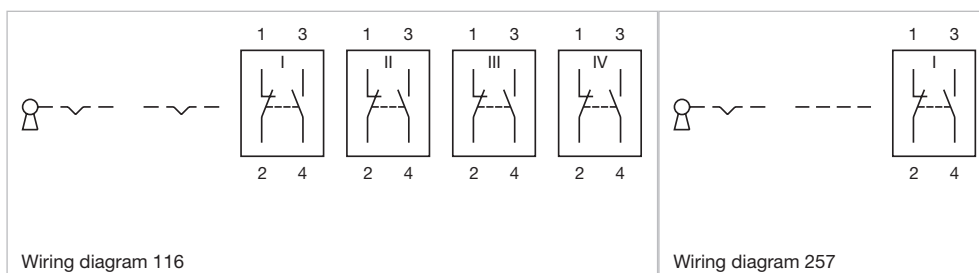
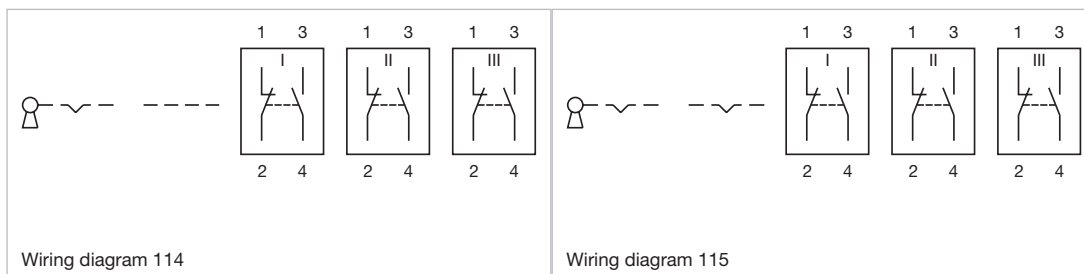
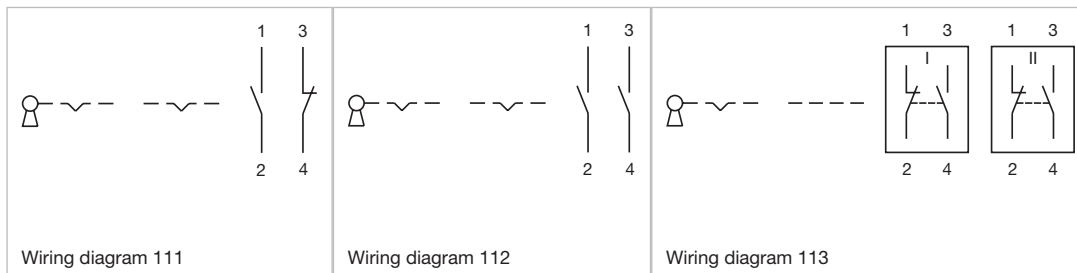
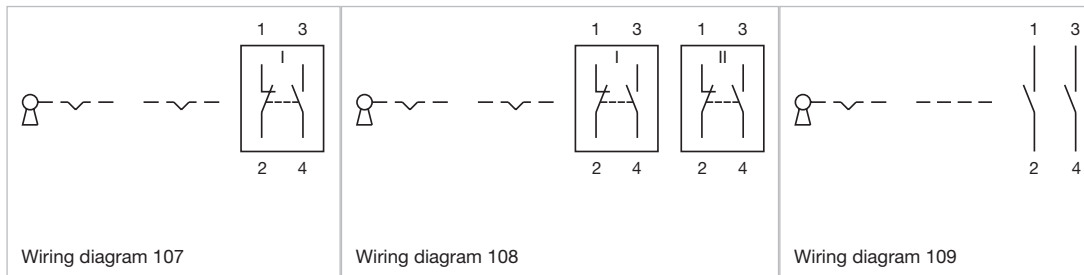
Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Maintained (a)	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-135.022DF	107	
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-135.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-136.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-137.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-138.025D2F	116	
Rest (a) - Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	42° right	51-141.022DF	257	
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	42° right	51-141.025D2F	257	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	42° right	51-142.025D2F	113	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	42° right	51-143.025D2F	114	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	42° right	51-144.025D2F	258	
Rest (a) - Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-235.022DF	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-236.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-237.025D2F	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-238.025D2F	116	
Rest - Maintained (a)	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-335.022DF	107	
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-335.025D2F	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-336.025D2F	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-337.025D2F	115	
Rest (a) - Maintained (a)	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-338.025D2F	116	
	2 NO	Universal terminal	Low-level element	90° right	51-411.036DF	112	27
Rest (a) - Maintained (a)	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-412.036DF	111	27
	2 NO	Universal terminal	Low-level element	90° right	51-414.036DF	112	27

Contacts: NC = Normally closed, NO = Normally open  
 a = Key remove

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Maintained	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-415.036DF	111	27
Rest - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-417.036DF	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-418.036DF	111	27
Rest (a) - Momentary	2 NO	Universal terminal	Low-level element	42° right	51-437.036DF	109	27
	1 NC / 1 NO	Universal terminal	Low-level element	42° right	51-438.036DF	116	27

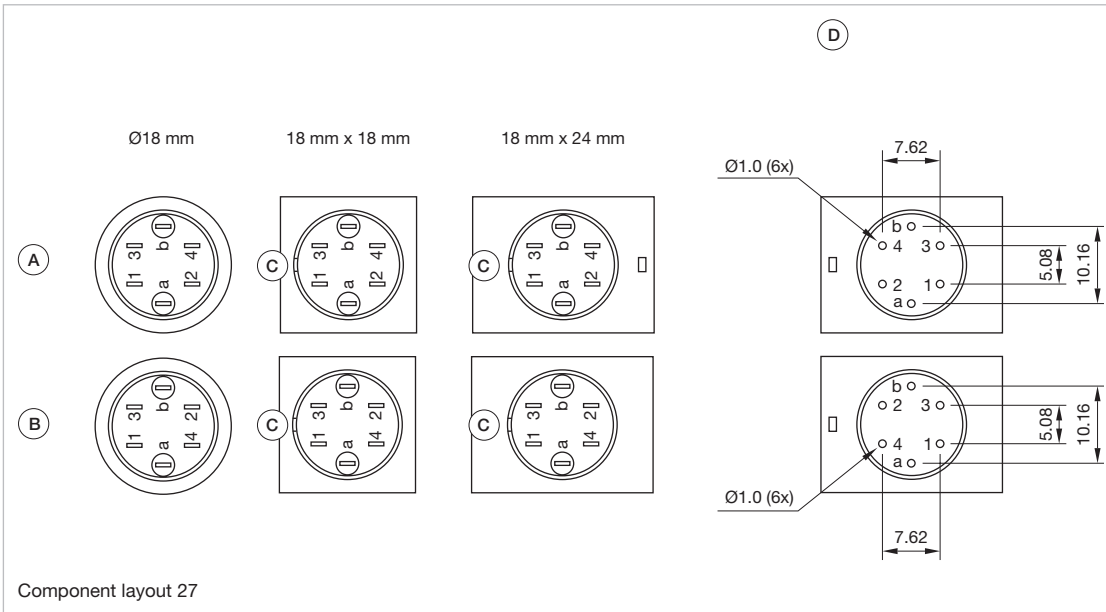
Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

## Wiring diagrams



# 51 Flush design

## Component layouts



Dimensions [mm]

A = Universal terminal (rear side)

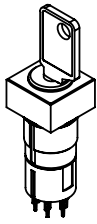
B = Plug-in terminal (rear side)

C = Anti twist device

D = Drilling plan

## Keylock switch 3 positions square, IP65

Equipment consisting of (schematic overview)



Actuator

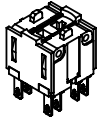


Front bezel set

Page 658



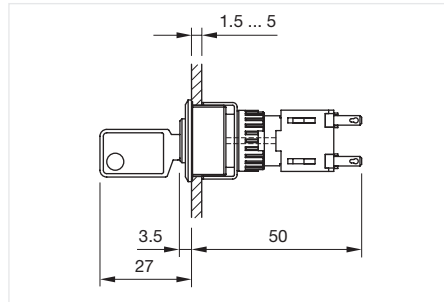
Fixing nut



Switching element

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

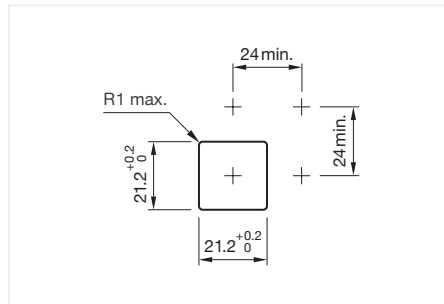
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



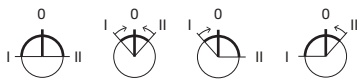
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Standard lock: DOM 311

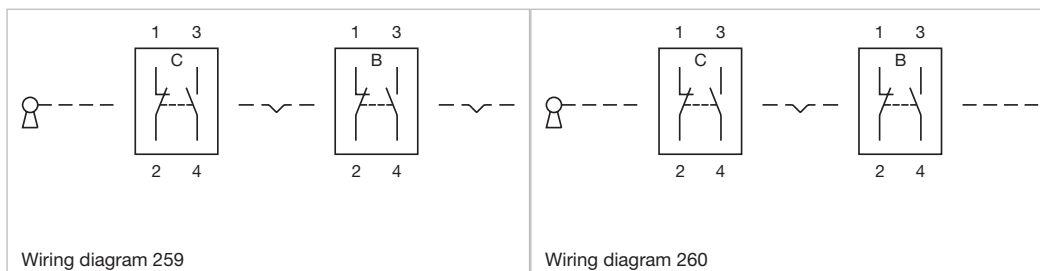


### Actuator, Front dimension 24 mm x 24 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram
Maintained - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-381.F22DF	262
Maintained (a) - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-382.F22DF	262
Maintained (a) - Rest - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-383.F22DF	262
Momentary - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 42° right	51-384.F22DF	260
Momentary - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-385.F22DF	259
Momentary - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-386.F22DF	259
Maintained - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-387.F22DF	261
Maintained (a) - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-388.F22DF	261

Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

### Wiring diagrams

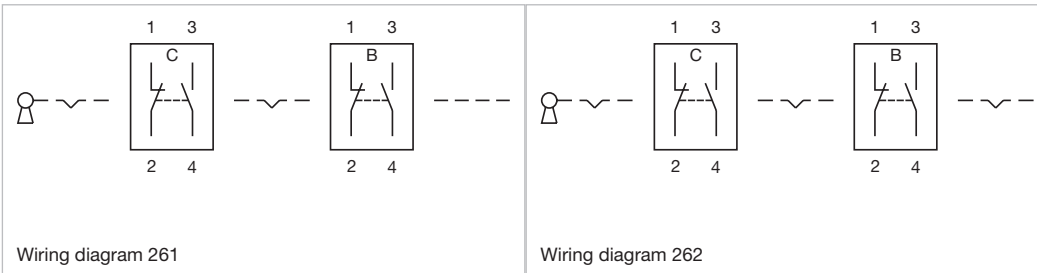


Wiring diagram 259

Wiring diagram 260

# 51 Flush design

## Wiring diagrams



[Come take a look at our YouTube profile today!](https://www.youtube.com/user/eaoswitches) Be sure to give us a follow so that you can fully interact with us.

<https://www.youtube.com/user/eaoswitches>

[www.eao.com](http://www.eao.com)

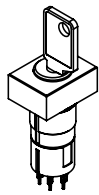
**eao** ■

Your Expert Partner for Human Machine Interfaces



## Keylock switch 3 positions rectangular, IP65

Equipment consisting of (schematic overview)



Actuator

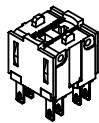


Front bezel set

Page 658



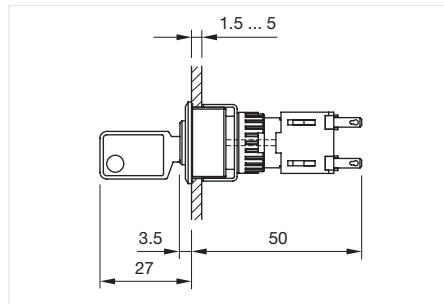
Fixing nut



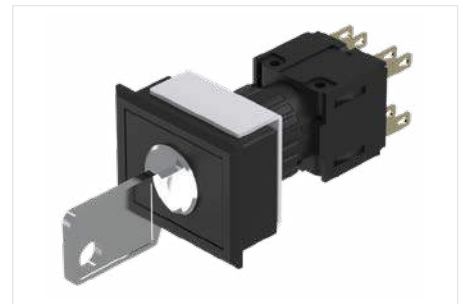
Switching element

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 pages shown.



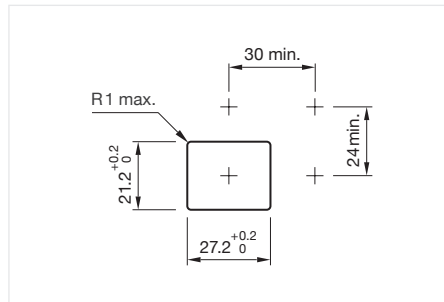
Dimensions [mm]



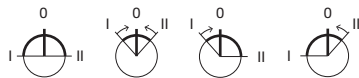
Product can differ from the current configuration.

### General information

- Standard lock: DOM 311



Mounting cut-outs [mm]

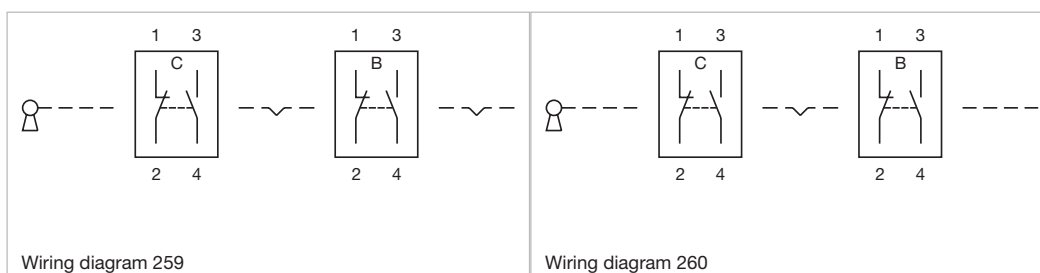


### Actuator, Front dimension 30 mm x 24 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram
Maintained - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-361.F22DF	262
Maintained (a) - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-362.F22DF	262
Maintained (a) - Rest - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-363.F22DF	262
Momentary - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 42° right	51-364.F22DF	260
Momentary - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-365.F22DF	259
Momentary - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-366.F22DF	259
Maintained - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-367.F22DF	261
Maintained (a) - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-368.F22DF	261

Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

### Wiring diagrams

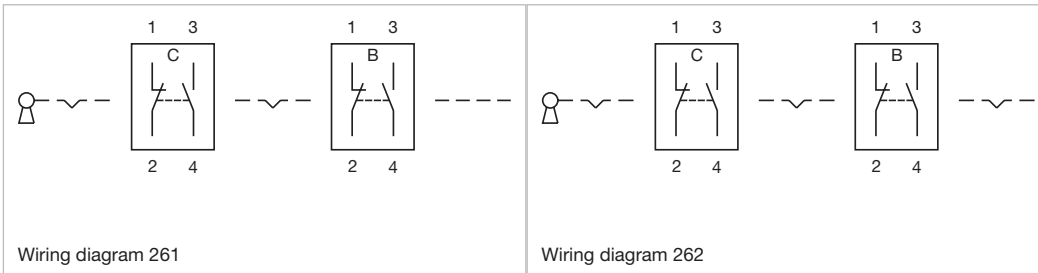


Wiring diagram 259

Wiring diagram 260

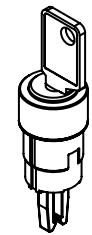
# 51 Flush design

## Wiring diagrams



## Keylock switch 3 positions round, IP65

### Equipment consisting of (schematic overview)



Actuator



Front bezel set

Page 658

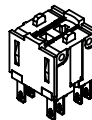


Anti-twist ring

Page 659



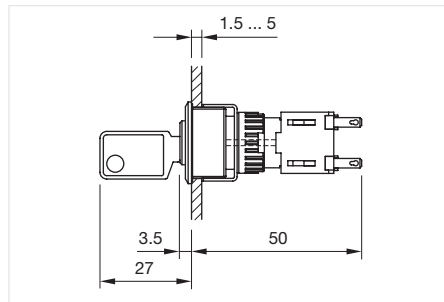
Fixing nut



Switching element

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

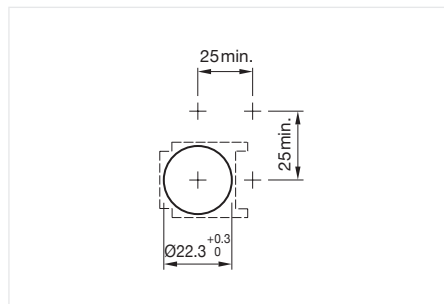
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]



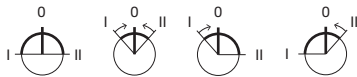
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Standard lock: DOM 311



### Actuator, Front dimension Ø 25 mm

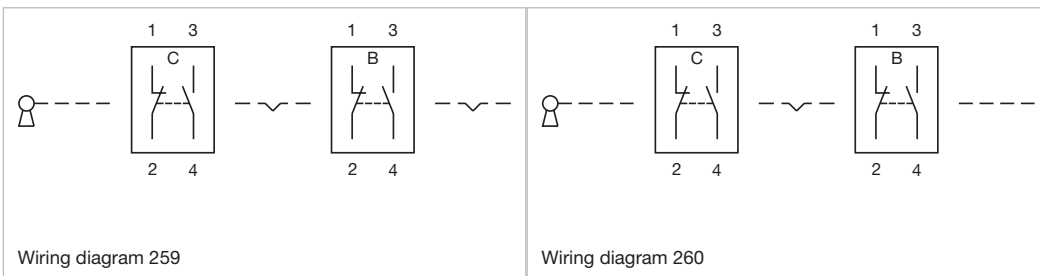
Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram
Maintained - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-371.F22DF	262
Maintained (a) - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-372.F22DF	262
Maintained (a) - Rest - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-373.F22DF	262
Momentary - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 42° right	51-374.F22DF	260
Momentary - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-376.F22DF	259
Maintained - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-377.F22DF	261
Maintained (a) - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-378.F22DF	261
Momentary - Rest - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-375.F22DF	259

Contacts: NC = Normally closed, NO = Normally open  
a = Key remove

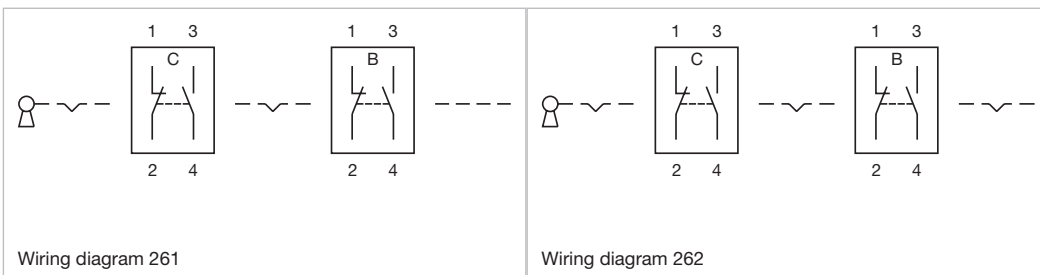
01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 51 Flush design

## Wiring diagrams



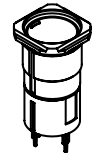




## Wiring diagrams



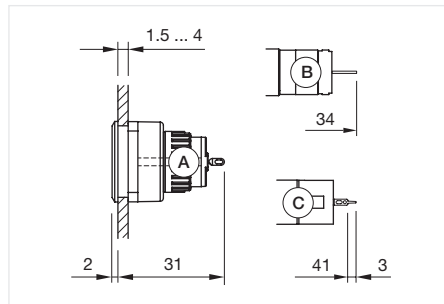
## Indicator square, IP65

### Equipment consisting of (schematic overview)

-  Lens Page 653
-  LED Page 660
-  Actuator
-  Front bezel set Page 658
-  Fixing nut

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

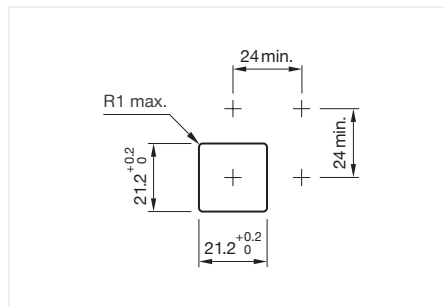
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



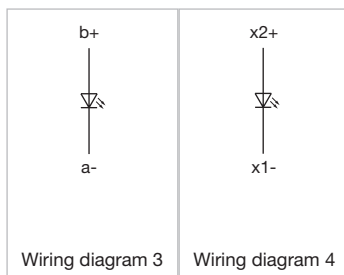
Mounting cut-outs [mm]



Actuator, Front dimension 24 mm x 24 mm

Terminal	Part No.	Wiring diagram	Component Layout
Plug-in terminal	51-050.002F	4	105
Soldering terminal	51-050.005F	4	105
Universal terminal	51-051.006F	3	105

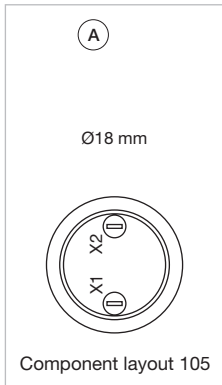
### Wiring diagrams



01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 51 Flush design

## Component layouts



Dimensions [mm]  
A = Terminals (rear side)

## Indicator rectangular, IP65

### Equipment consisting of (schematic overview)



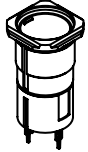
Lens

Page 653



LED

Page 660



Actuator



Front bezel set

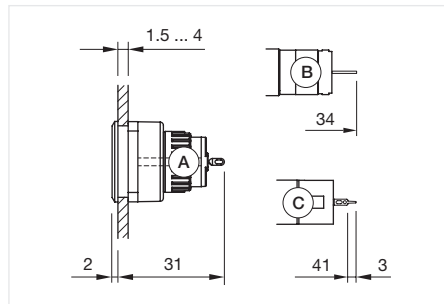
Page 658



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 pages shown.

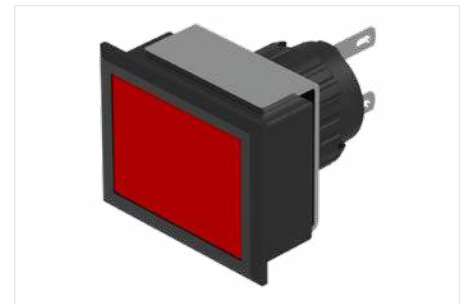


Dimensions [mm]

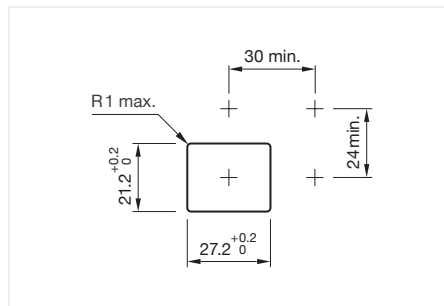
A = Solder terminal

B = Plug-in terminal 2.8 mm x 0.5 mm

C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



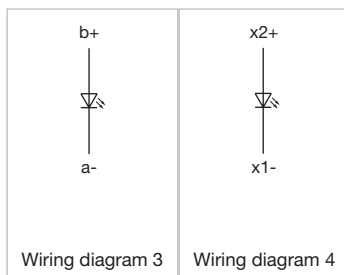
Mounting cut-outs [mm]



Actuator, Front dimension 30 mm x 24 mm

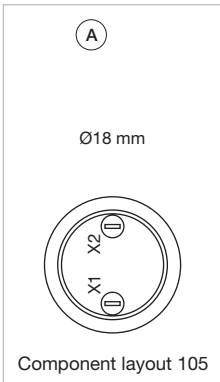
Terminal	Part No.	Wiring diagram	Component Layout
Plug-in terminal	51-050.002F	4	105
Soldering terminal	51-050.005F	4	105
Universal terminal	51-051.006F	3	105

## Wiring diagrams



# 51 Flush design

## Component layouts



Dimensions [mm]  
A = Terminals (rear side)



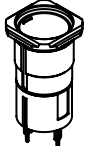
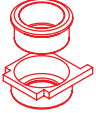




[On our website you can download technical data, assembly instructions, catalogs, brochures and much more.](http://www.eao.com/downloads)



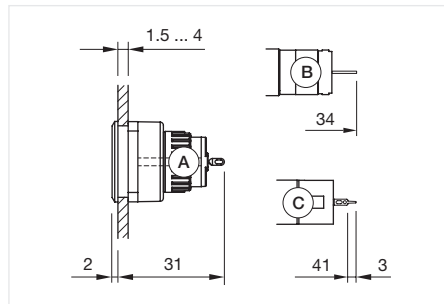
## Indicator round, IP65

### Equipment consisting of (schematic overview)

-  Lens Page 653
-  LED Page 660
-  Actuator
-  Front bezel set Page 658
-  Anti-twist ring Page 659
-  Fixing nut

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

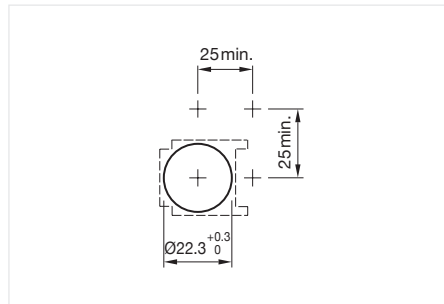
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



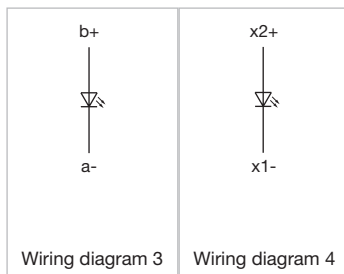
Mounting cut-outs [mm]



Actuator, Front dimension Ø 25 mm

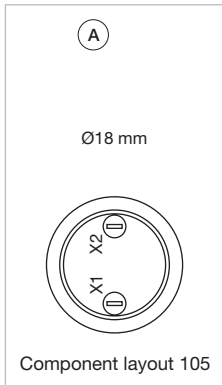
Terminal	Part No.	Wiring diagram	Component Layout
Plug-in terminal	51-050.002F	4	105
Soldering terminal	51-050.005F	4	105
Universal terminal	51-051.006F	3	105

### Wiring diagrams



# 51 Flush design

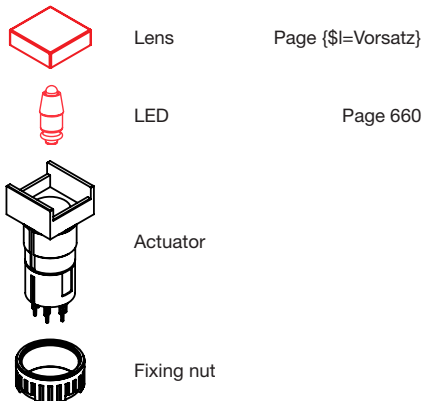
## Component layouts



Dimensions [mm]  
A = Terminals (rear side)

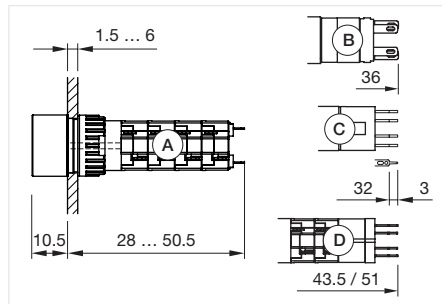
## Illuminated pushbutton square, IP65

### Equipment consisting of (schematic overview)



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

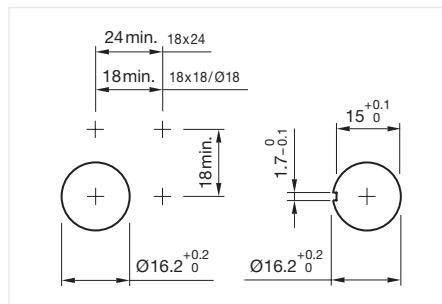
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm  
 D = Universal-Solder terminal



Product can differ from the current configuration.



Mounting cut-outs [mm]



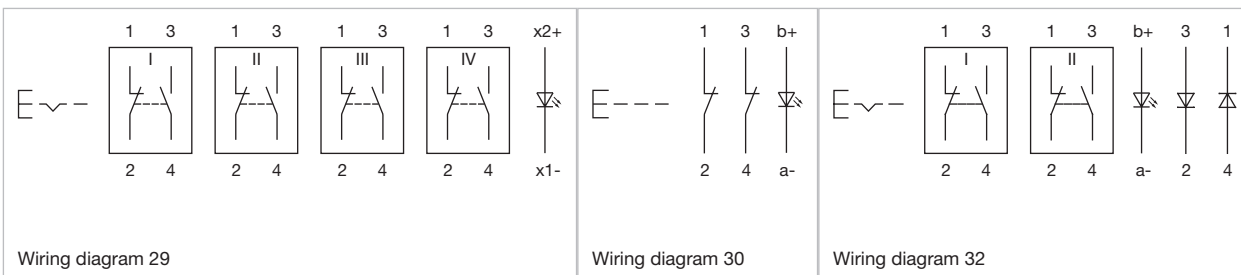
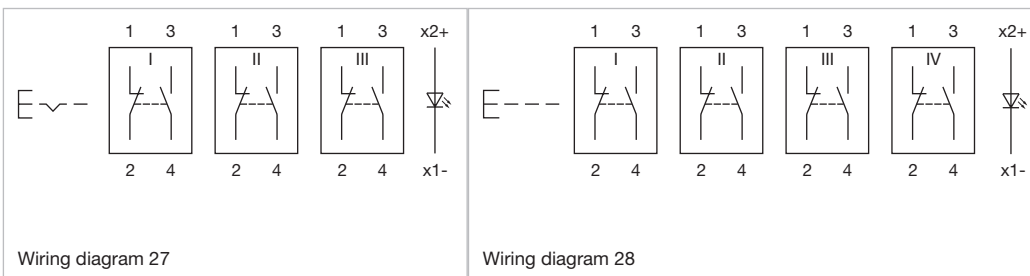
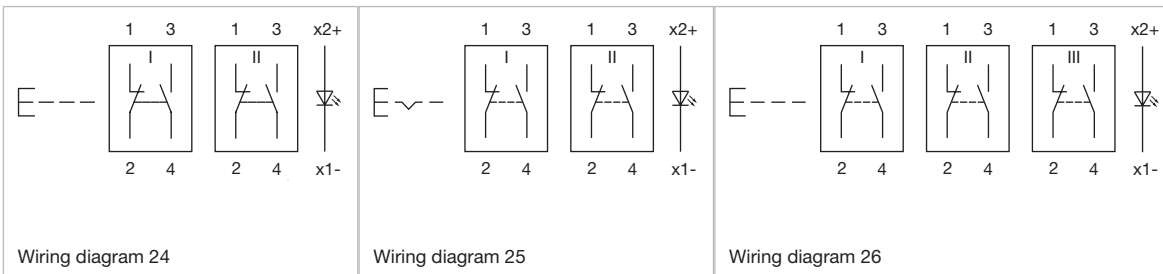
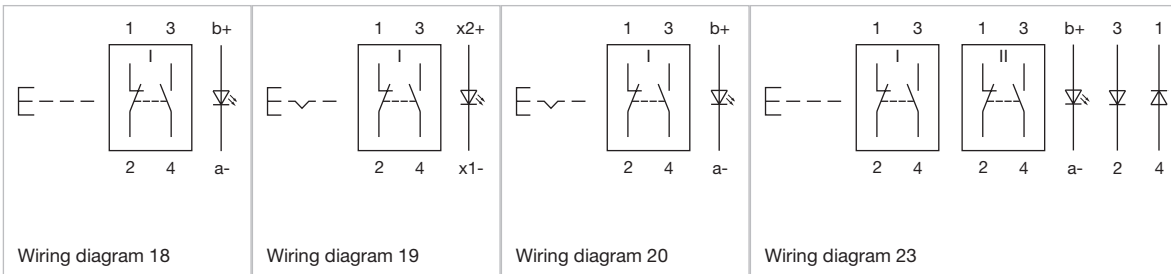
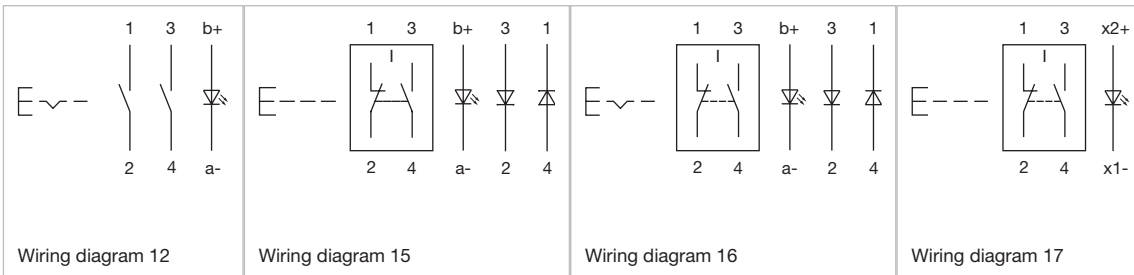
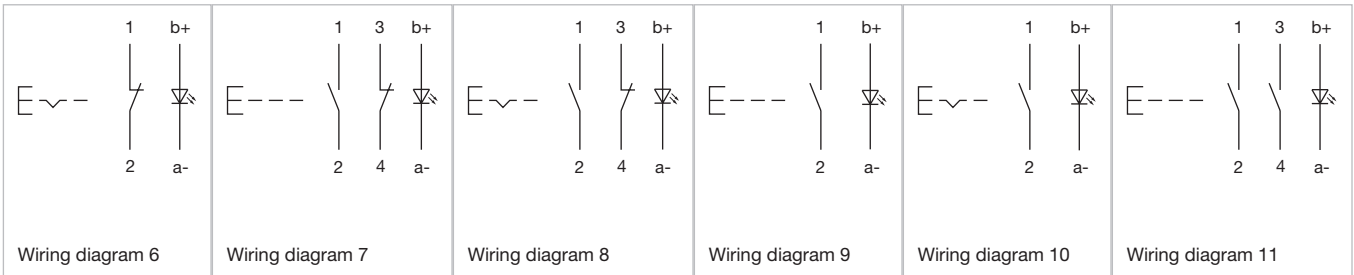
### Actuator, Front dimension 18 mm x 18 mm

Switching action	Contacts	Terminal	Switching system	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element		51-151.022	20	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element		51-151.0252	17	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element		51-152.0252	24	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element		51-153.0252	26	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element		51-154.0252	28	
Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element		51-281.022	18	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element		51-281.0252	19	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element		51-282.0252	25	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element		51-283.0252	27	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element		51-284.0252	29	
Momentary	2 NO	Universal terminal	Low-level element		51-451.036	11	27
	2 NC	Universal terminal	Low-level element		51-452.036	30	27
	1 NC / 1 NO	Universal terminal	Low-level element		51-453.036	7	27
	1 NO	Universal terminal	Low-level element		51-455.036	9	27
Maintained	2 NO	Universal terminal	Low-level element		51-481.036	12	27
	1 NC / 1 NO	Universal terminal	Low-level element		51-483.036	8	27
	1 NO	Universal terminal	Low-level element		51-485.036	10	27
	1 NC	Universal terminal	Low-level element		51-486.036	6	27
Momentary	1 NC / 1 NO	Universal soldering terminal	Snap-action switching element	2	51-710.0292	15	
	2 NC / 2 NO	Universal soldering terminal	Snap-action switching element	2	51-712.0292	23	
Maintained	1 NC / 1 NO	Universal soldering terminal	Snap-action switching element	2	51-718.0292	16	
	2 NC / 2 NO	Universal soldering terminal	Snap-action switching element	2	51-720.0292	32	

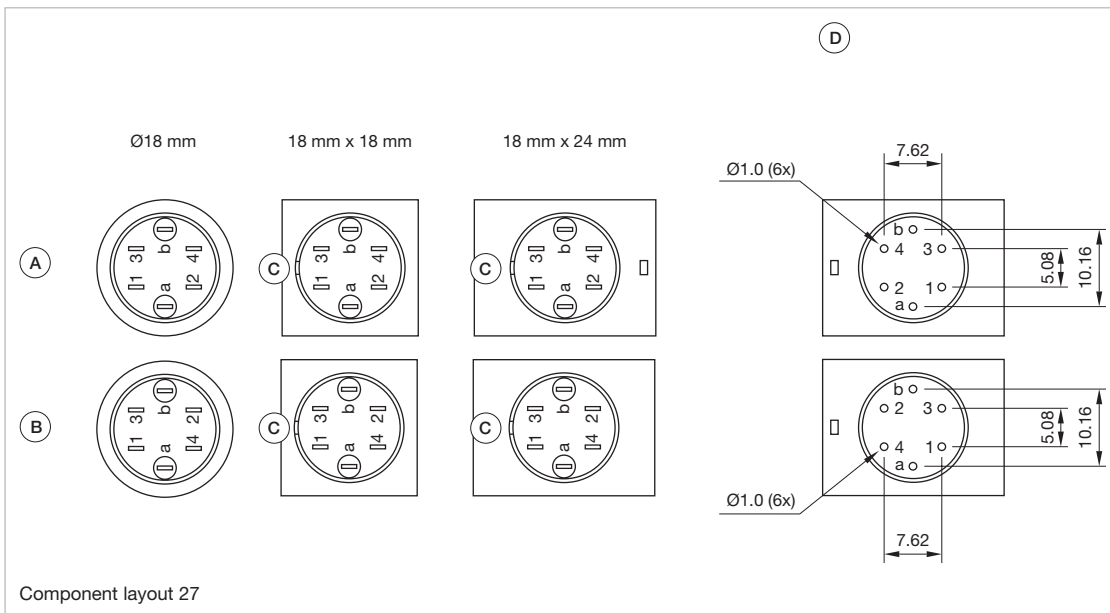
Contacts: NC = Normally closed, NO = Normally open

# 51 Raised design

## Wiring diagrams



## Component layouts



Component layout 27

Dimensions [mm]

A = Universal terminal (rear side)

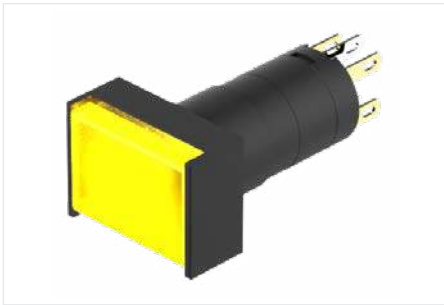
B = Plug-in terminal (rear side)

C = Anti twist device

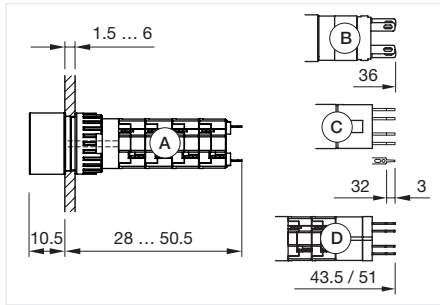
D = Drilling plan

# 51 Raised design

## Illuminated pushbutton rectangular, IP65

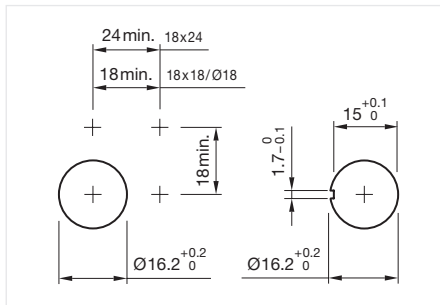


Product can differ from the current configuration.



Dimensions [mm]

- A = Solder terminal
- B = Plug-in terminal 2.8 mm x 0.5 mm
- C = Universal terminal 2.0 mm x 0.5 mm
- D = Universal-Solder terminal



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



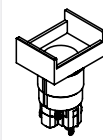
Lens

Page 653



LED

Page 660



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 pages shown.

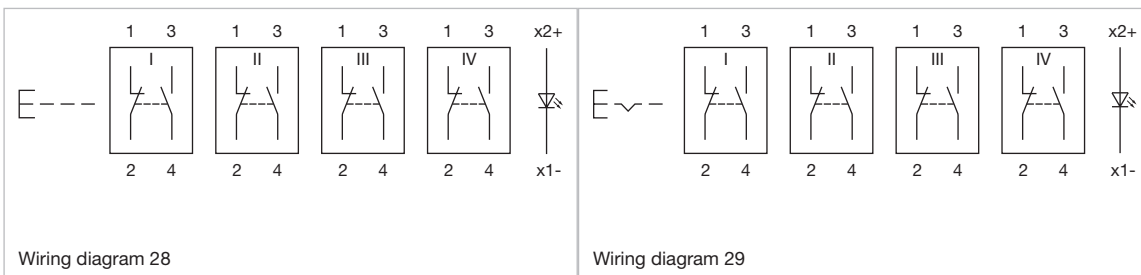
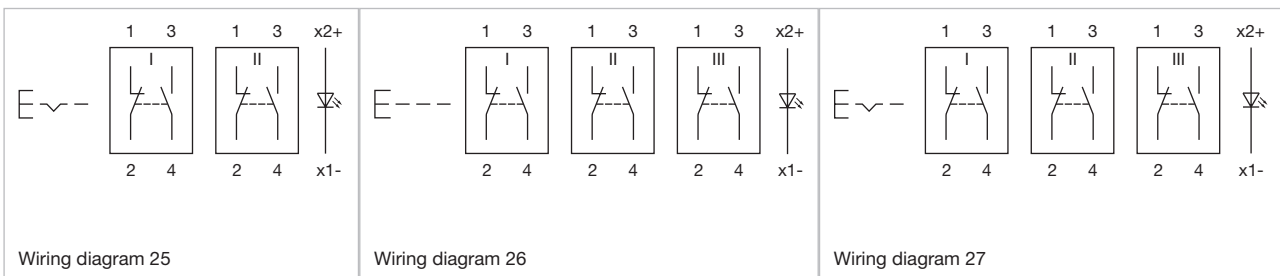
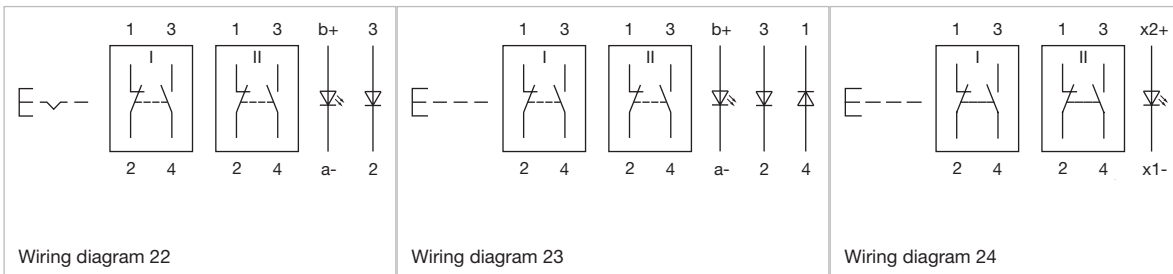
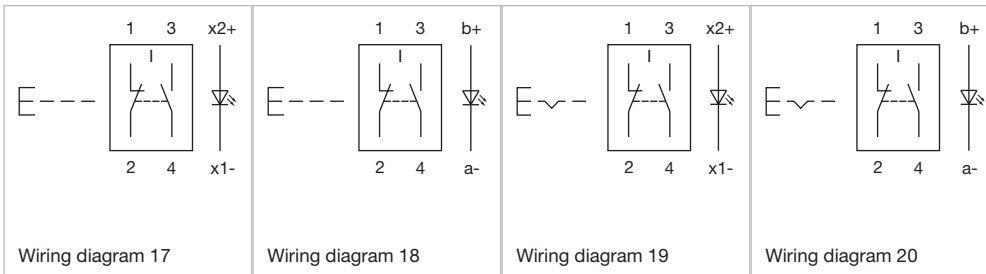
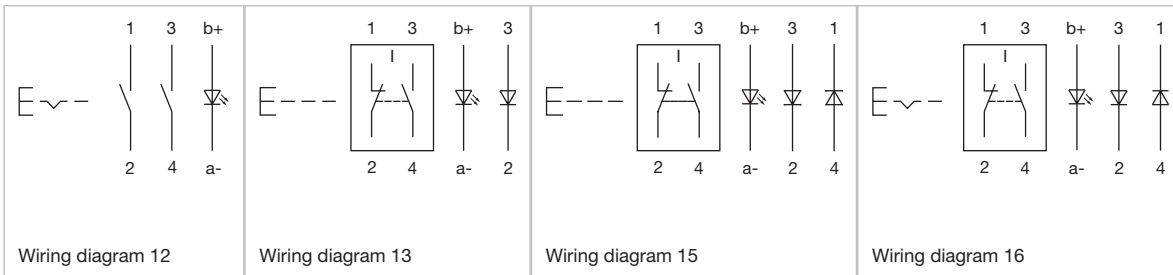
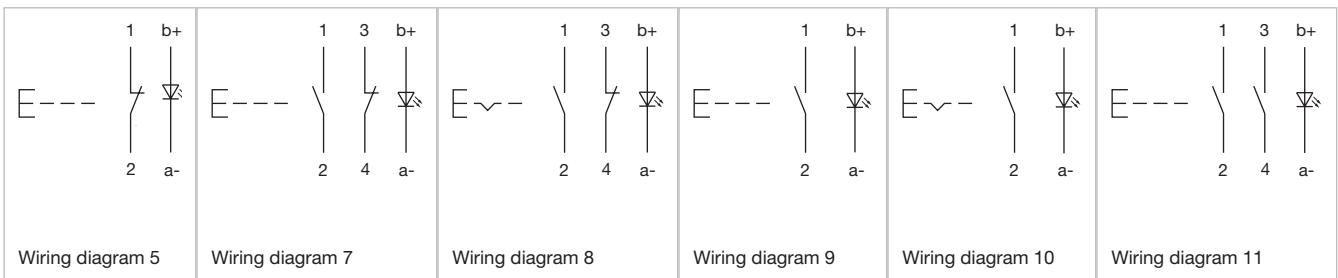


Actuator, Front dimension 24 mm x 18 mm

Switching action	Contacts	Terminal	Switching system	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element		51-121.022	20	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element		51-121.0252	17	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element		51-122.0252	24	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element		51-123.0252	26	
Maintained	4 NC / 4 NO	Soldering terminal	Snap-action switching element		51-124.0252	28	
	1 NC / 1 NO	Plug-in terminal	Snap-action switching element		51-261.022	18	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element		51-261.0252	19	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element		51-262.0252	25	
Momentary	3 NC / 3 NO	Soldering terminal	Snap-action switching element		51-263.0252	27	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element		51-264.0252	29	
	2 NO	Universal terminal	Low-level element		51-421.036	11	27
	2 NC	Universal terminal	Low-level element		51-422.036	30	27
	1 NC / 1 NO	Universal terminal	Low-level element		51-423.036	7	27
Maintained	1 NO	Universal terminal	Low-level element		51-425.036	9	27
	1 NC	Universal terminal	Low-level element		51-426.036	5	27
	2 NO	Universal terminal	Low-level element		51-461.036	12	27
	1 NC / 1 NO	Universal terminal	Low-level element		51-463.036	8	27
	1 NO	Universal terminal	Low-level element		51-465.036	10	27
Momentary	1 NC / 1 NO	Universal soldering terminal	Snap-action switching element	1	51-705.0292	13	
	1 NC / 1 NO	Universal soldering terminal	Snap-action switching element	2	51-706.0292	15	
	2 NC / 2 NO	Universal soldering terminal	Snap-action switching element	1	51-707.0292	32	
	2 NC / 2 NO	Universal soldering terminal	Snap-action switching element	2	51-708.0292	23	
	Maintained	1 NC / 1 NO	Universal soldering terminal	Snap-action switching element	2	51-714.0292	16
2 NC / 2 NO		Universal soldering terminal	Snap-action switching element	1	51-715.0292	22	
2 NC / 2 NO		Universal soldering terminal	Snap-action switching element	2	51-716.0292	32	

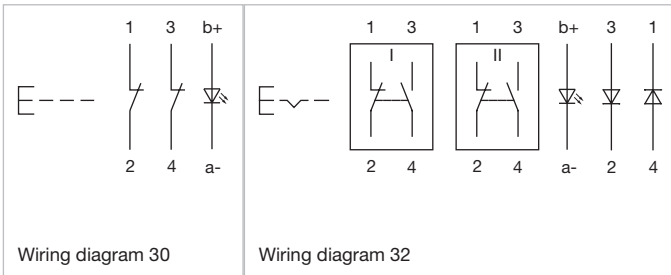
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams

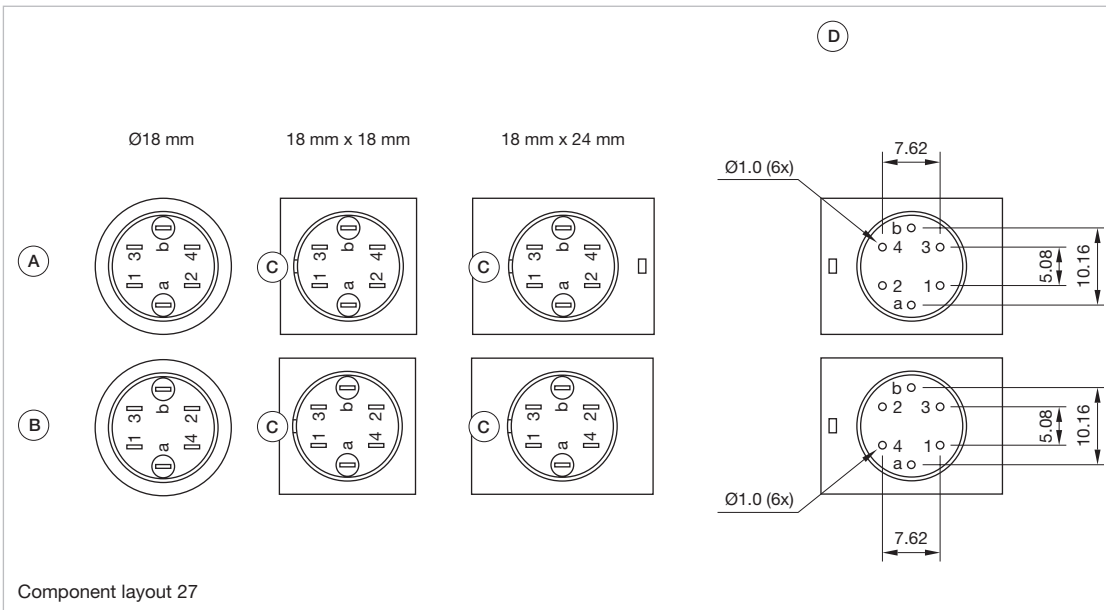


# 51 Raised design

## Wiring diagrams



## Component layouts

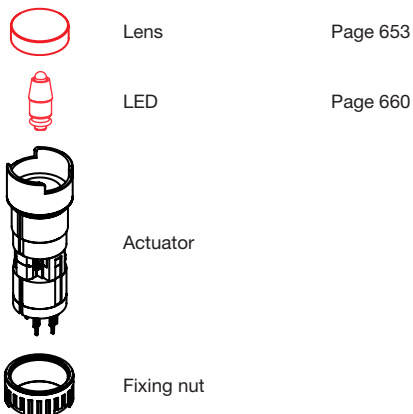


- Dimensions [mm]  
 A = Universal terminal (rear side)  
 B = Plug-in terminal (rear side)  
 C = Anti twist device  
 D = Drilling plan



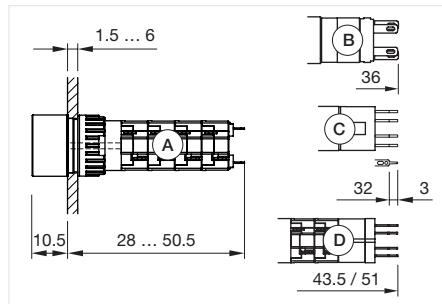
## Illuminated pushbutton round, IP65

### Equipment consisting of (schematic overview)



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

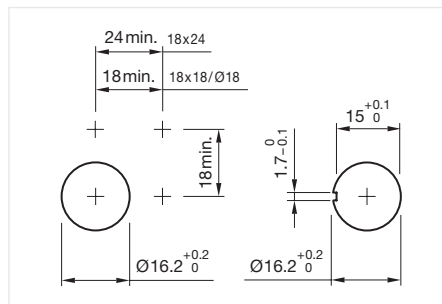
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm  
 D = Universal-Solder terminal



Product can differ from the current configuration.



Mounting cut-outs [mm]



Actuator, Front dimension Ø 18 mm

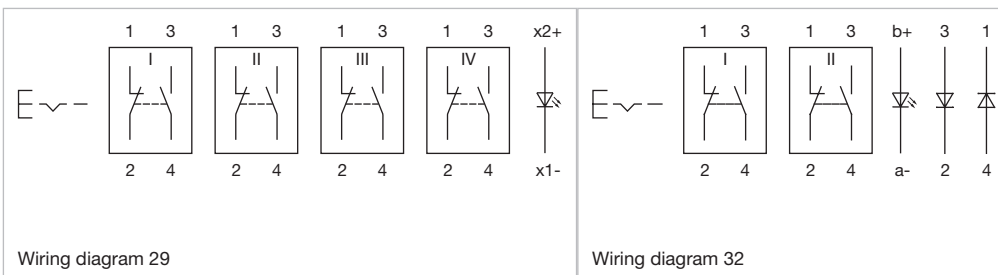
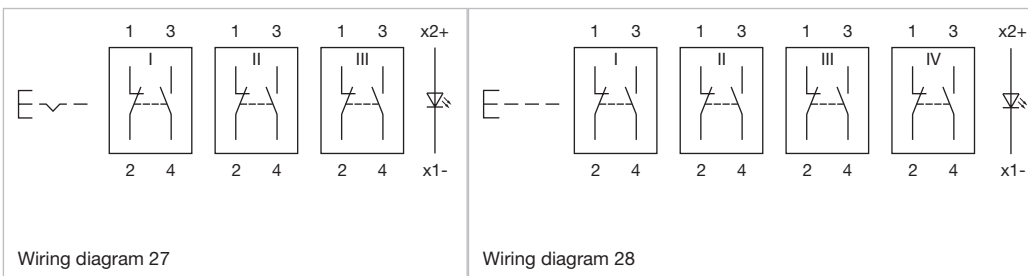
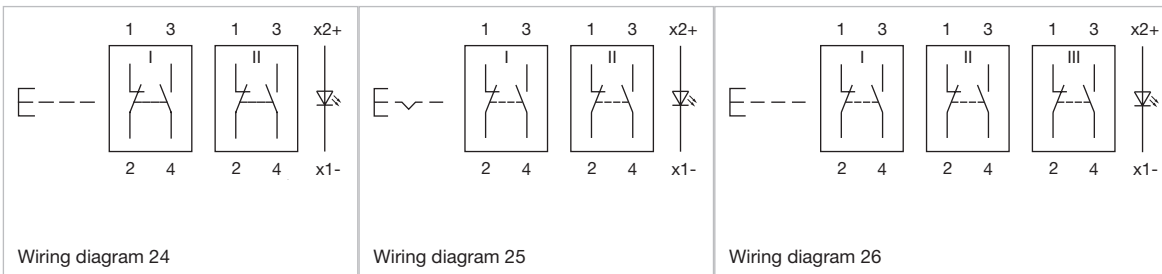
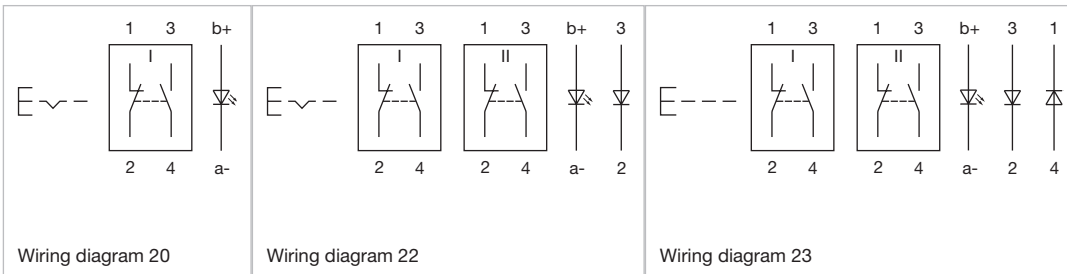
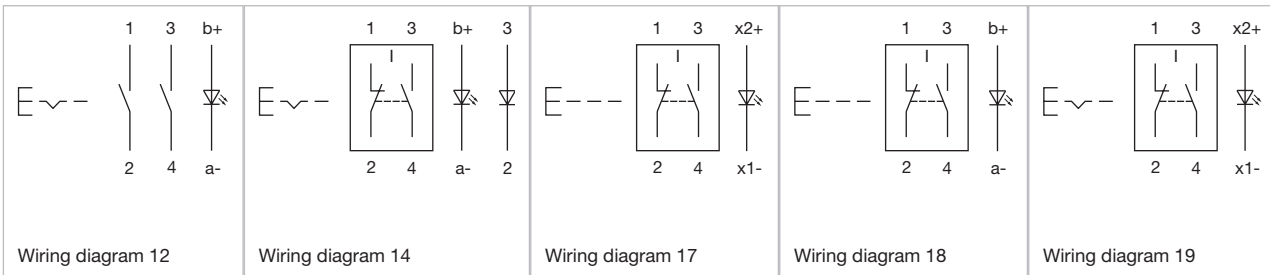
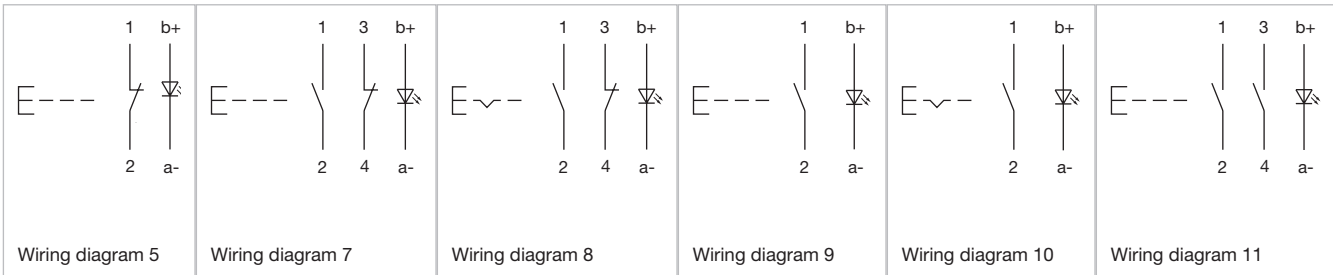
Switching action	Contacts	Terminal	Switching system	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element		51-131.022	20	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element		51-131.0252	17	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element		51-132.0252	24	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element		51-133.0252	26	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element		51-134.0252	28	
Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element		51-271.022	18	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element		51-271.0252	19	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element		51-272.0252	25	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element		51-273.0252	27	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element		51-274.0252	29	
Momentary	2 NO	Universal terminal	Low-level element		51-431.036	11	27
	1 NC / 1 NO	Universal terminal	Low-level element		51-433.036	7	27
	1 NO	Universal terminal	Low-level element		51-435.036	9	27
	1 NC	Universal terminal	Low-level element		51-436.036	5	27
Maintained	2 NO	Universal terminal	Low-level element		51-471.036	12	27
	1 NC / 1 NO	Universal terminal	Low-level element		51-473.036	8	27
	1 NO	Universal terminal	Low-level element		51-475.036	10	27
Momentary	2 NC / 2 NO	Universal soldering terminal	Snap-action switching element	2	51-746.0292	23	
Maintained	1 NC / 1 NO	Universal soldering terminal	Snap-action switching element	1	51-747.0292	14	
	2 NC / 2 NO	Universal soldering terminal	Snap-action switching element	1	51-749.0292	22	
	2 NC / 2 NO	Universal soldering terminal	Snap-action switching element	2	51-750.0292	32	

Contacts: NC = Normally closed, NO = Normally open

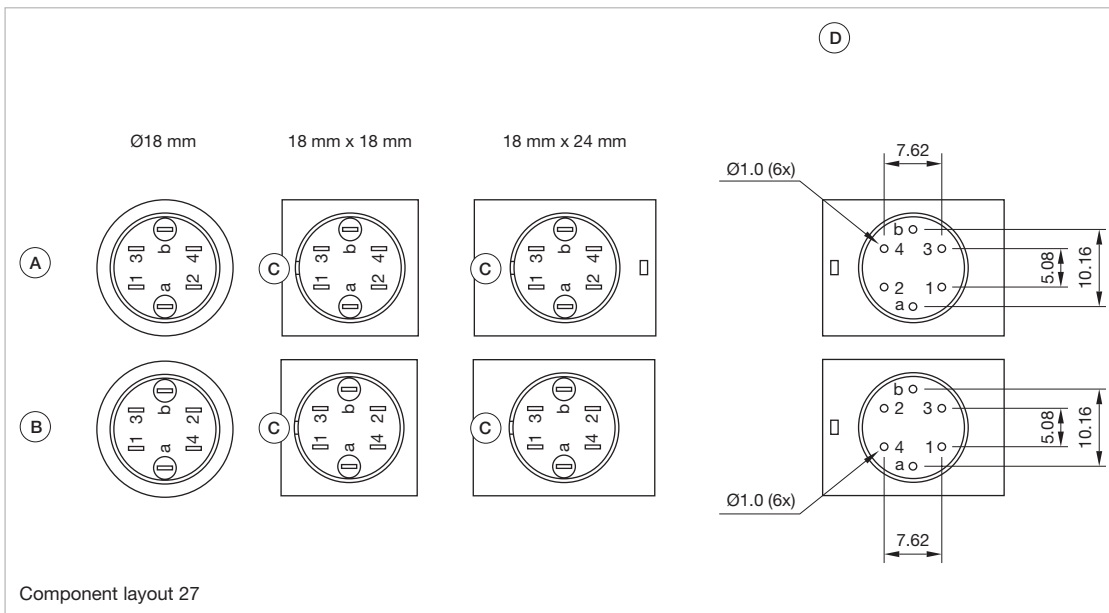
01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 51 Raised design

## Wiring diagrams



## Component layouts



Component layout 27


Dimensions [mm]

A = Universal terminal (rear side)

B = Plug-in terminal (rear side)

C = Anti twist device


D = Drilling plan




## Follow us.

# We are on LinkedIn!

*EAO creates possibilities. Since 1947.*






**[Come take a look at our LinkedIn profile today!](https://www.linkedin.com/company/eao/)** *Be sure to give us a follow so that you can fully interact with us.*

<https://www.linkedin.com/company/eao/>

[www.eao.com](http://www.eao.com)



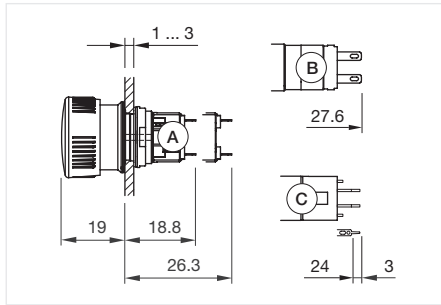
Your Expert Partner for Human Machine Interfaces

# 51 Raised design

## Mushroom-head pushbutton, IP65

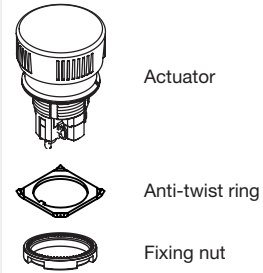


Product can differ from the current configuration.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm

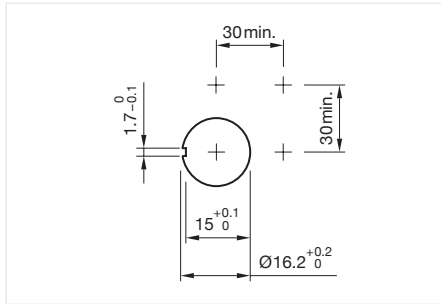
### Equipment consisting of (schematic overview)



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

### General information

- If the anti-twist ring is not used the panel thickness increases to 4 mm



Mounting cut-outs [mm]

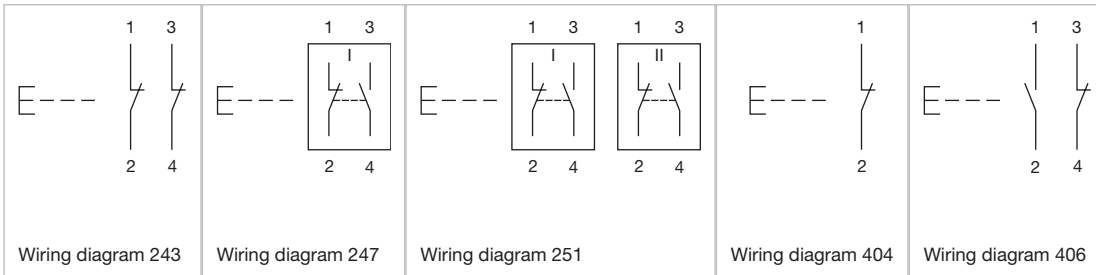


Actuator, Front dimension Ø 24,5 mm

Contacts	Terminal	Lens colour	Switching system	Part No.	Wiring diagram
2 NC	Universal terminal	Red	Low-level element	51-152.0262	243
	Universal terminal	Yellow	Low-level element	51-152.0264	243
	Universal terminal	Blue	Low-level element	51-152.0266	243
1 NC / 1 NO	Plug-in terminal	Red	Snap-action switching element	51-153.0222	247
	Plug-in terminal	Yellow	Snap-action switching element	51-153.0224	247
	Plug-in terminal	Blue	Snap-action switching element	51-153.0226	247
	Universal terminal	Red	Low-level element	51-153.0262	406
	Universal terminal	Yellow	Low-level element	51-153.0264	406
	Universal terminal	Blue	Low-level element	51-153.0266	406
	Soldering terminal	Red	Snap-action switching element	51-156.0252	247
	Soldering terminal	Yellow	Snap-action switching element	51-156.0254	247
	Soldering terminal	Blue	Snap-action switching element	51-156.0256	247
1 NC	Universal terminal	Red	Low-level element	51-156.0262	247
	Universal terminal	Yellow	Low-level element	51-156.0264	404
	Universal terminal	Blue	Low-level element	51-156.0266	404
2 NC / 2 NO	Soldering terminal	Red	Snap-action switching element	51-159.0252	251
	Soldering terminal	Yellow	Snap-action switching element	51-159.0254	251
	Soldering terminal	Blue	Snap-action switching element	51-159.0256	251

Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams



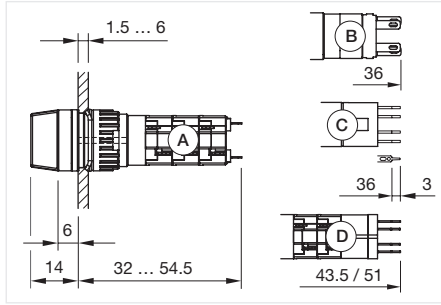
01
02
03
04
09
14
17
18
19
22
31
41
45
<b>51</b>
56
57
61
70
71
82
84
92
96

# 51 Raised design

## Selector switch 2 positions, round, IP65



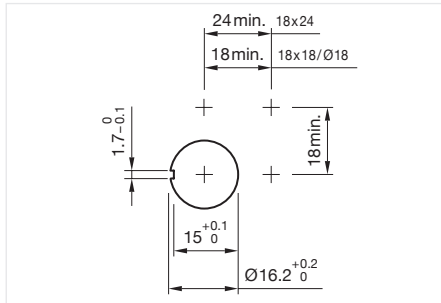
Product can differ from the current configuration.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm  
 D = Universal-Solder terminal

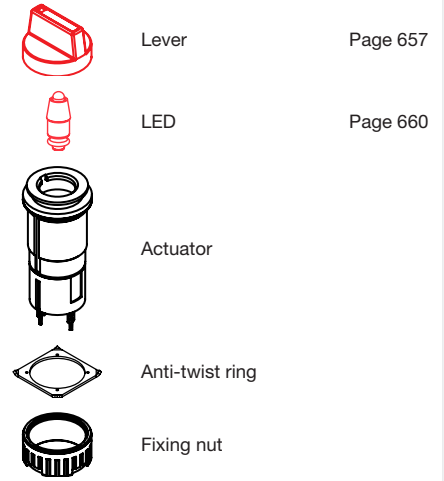
### General information

- Illuminative



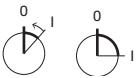
Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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 pages shown.



Actuator, Front dimension Ø 18 mm

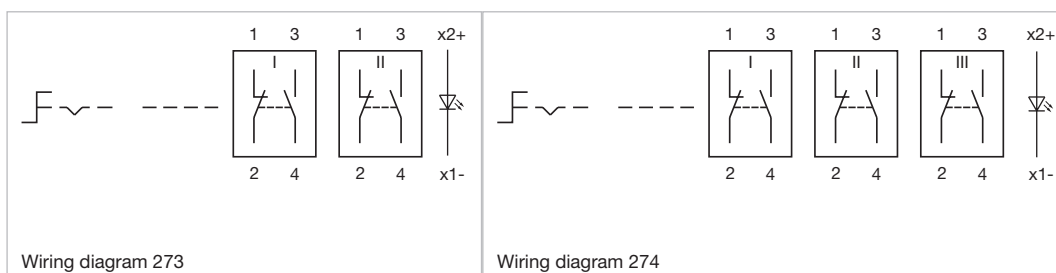
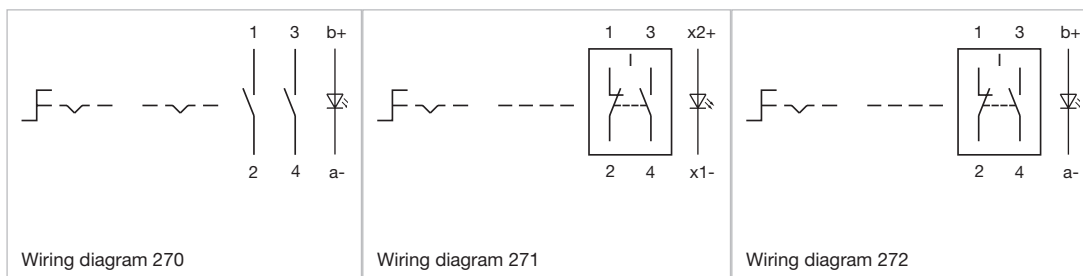
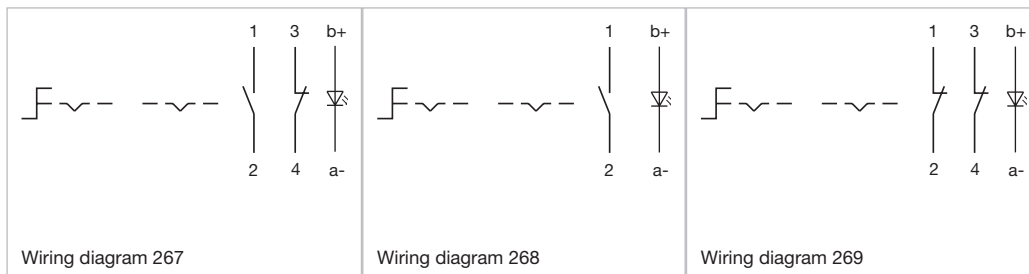
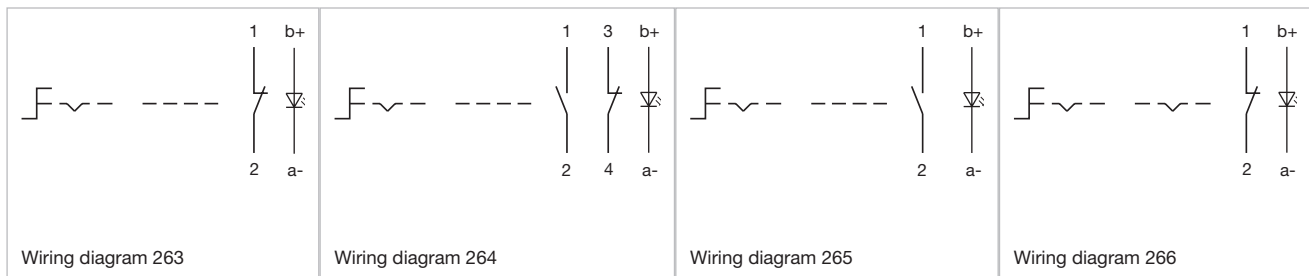
Switching action	Terminal	Switching system	Contacts	Switching angle	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Rest - Momentary	Plug-in terminal	Snap-action switching element	1 NC / 1 NO	42° right		52-131.022	272	
	Soldering terminal	Snap-action switching element	1 NC / 1 NO	42° right		52-131.0252	271	
	Soldering terminal	Snap-action switching element	2 NC / 2 NO	42° right		52-132.0252	273	
	Soldering terminal	Snap-action switching element	3 NC / 3 NO	42° right		52-133.0252	274	
	Soldering terminal	Snap-action switching element	4 NC / 4 NO	42° right		52-134.0252	275	
Rest - Maintained	Plug-in terminal	Snap-action switching element	1 NC / 1 NO	90° right		52-271.022	277	
	Soldering terminal	Snap-action switching element	1 NC / 1 NO	90° right		52-271.0252	276	
	Soldering terminal	Snap-action switching element	2 NC / 2 NO	90° right		52-272.0252	278	
	Soldering terminal	Snap-action switching element	3 NC / 3 NO	90° right		52-273.0252	279	
	Soldering terminal	Snap-action switching element	4 NC / 4 NO	90° right		52-274.0252	280	
Rest - Momentary	Universal terminal	Low-level element	1 NC / 1 NO	42° right		52-433.036	264	27

Contacts: NC = Normally closed, NO = Normally open

Switching action	Terminal	Switching system	Contacts	Switching angle	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Rest - Momentary	Universal terminal	Low-level element	1 NO	42° right		52-435.036	265	27
	Universal terminal	Low-level element	1 NC	42° right		52-436.036	263	27
Rest - Maintained	Universal terminal	Low-level element	2 NO	90° right		52-471.036	270	27
	Universal terminal	Low-level element	2 NC	90° right		52-472.036	269	27
	Universal terminal	Low-level element	1 NC / 1 NO	90° right		52-473.036	267	27
	Universal terminal	Low-level element	1 NO	90° right		52-475.036	268	27
	Universal terminal	Low-level element	1 NC	90° right		52-476.036	266	27
Rest - Momentary	Universal soldering terminal	Snap-action switching element	2 NC / 2 NO	42° right	1	52-745.0292	281	
Rest - Maintained	Universal soldering terminal	Snap-action switching element	1 NC / 1 NO	90° right	1	52-747.0292	282	
	Universal soldering terminal	Snap-action switching element	2 NC / 2 NO	90° right	1	52-749.0292	283	
	Universal soldering terminal	Snap-action switching element	2 NC / 2 NO	90° right	2	52-750.0292	284	

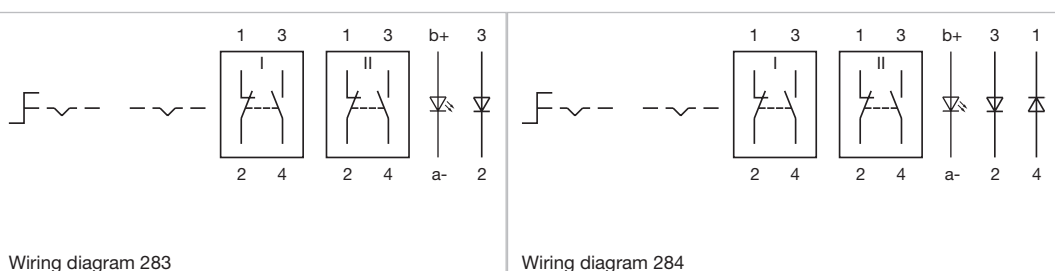
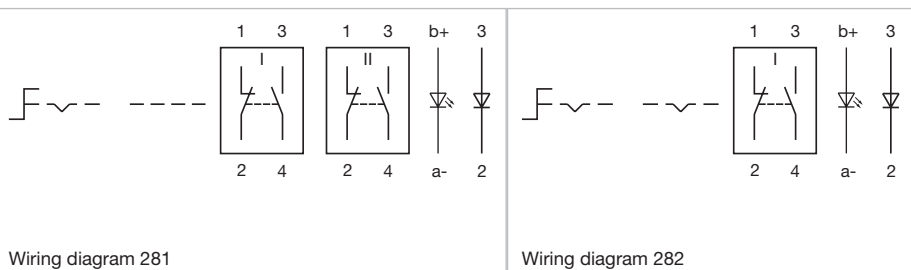
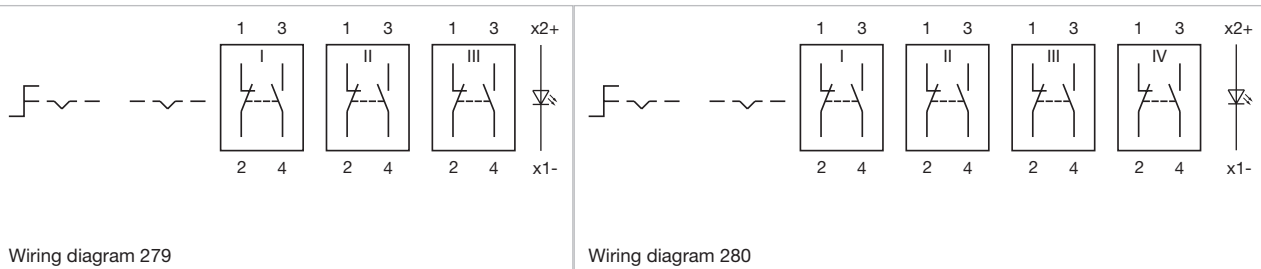
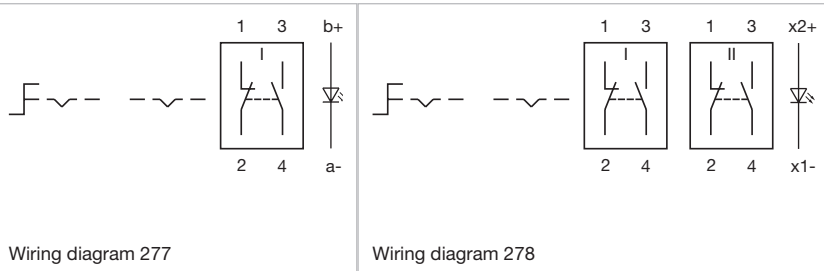
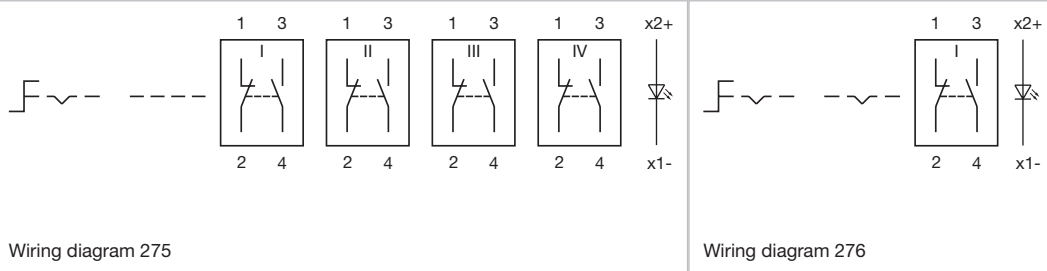
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams



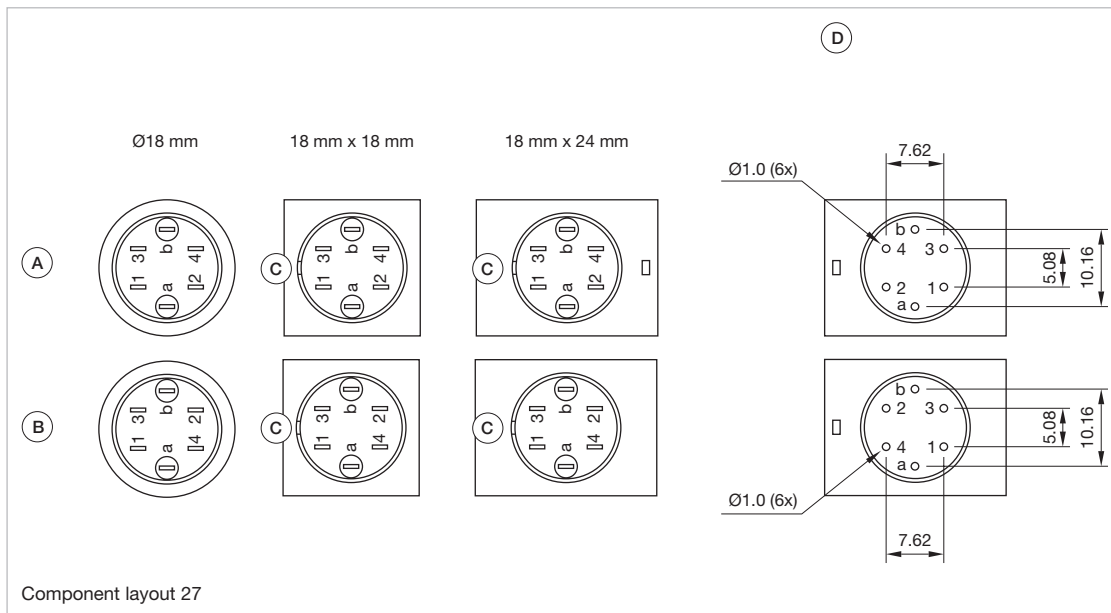
# 51 Raised design

## Wiring diagrams





## Component layouts



Component layout 27

Dimensions [mm]

A = Universal terminal (rear side)

B = Plug-in terminal (rear side)

C = Anti twist device

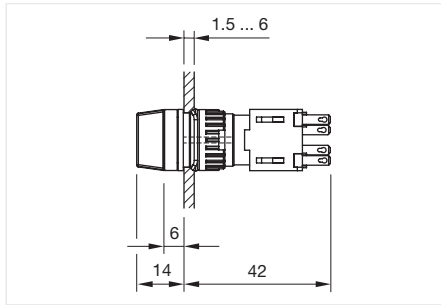
D = Drilling plan

# 51 Raised design

## Selector switch 3 positions, round, IP65



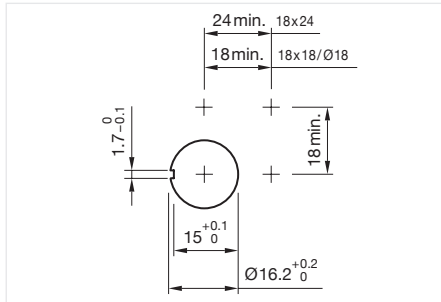
Product can differ from the current configuration.



Dimensions [mm]

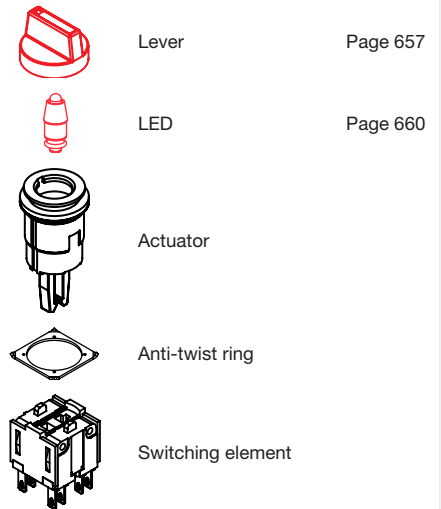
### General information

- Illuminative



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



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 pages shown.

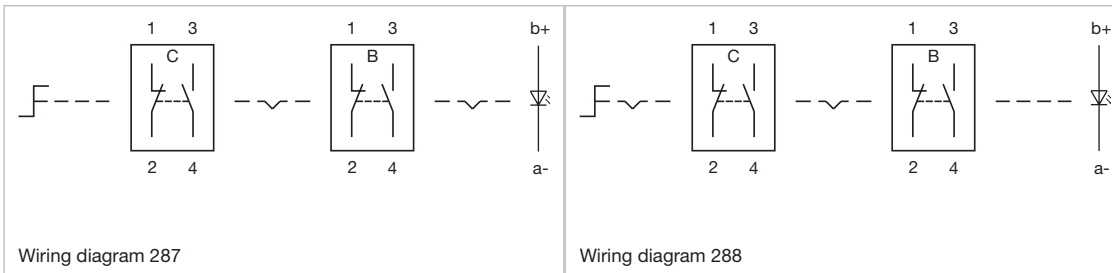
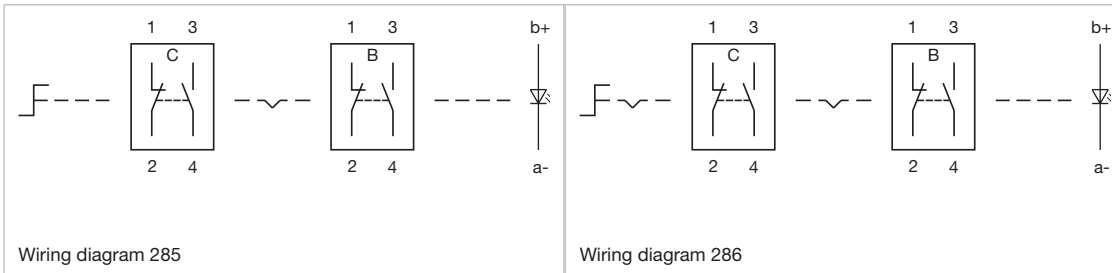


Actuator, Front dimension Ø 18 mm

Switching action	Terminal	Switching system	Contacts	Switching angle	Part No.	Wiring diagram
Maintained - Rest - Maintained	Plug-in terminal	Snap-action switching element	2 NC / 2 NO	90° left / 90° right	52-571.F22A	288
Momentary - Rest - Momentary	Plug-in terminal	Snap-action switching element	2 NC / 2 NO	42° left / 42° right	52-572.F22A	285
Momentary - Rest - Maintained	Plug-in terminal	Snap-action switching element	2 NC / 2 NO	42° left / 90° right	52-573.F22A	287
Maintained - Rest - Momentary	Plug-in terminal	Snap-action switching element	2 NC / 2 NO	90° left / 42° right	52-574.F22A	286

Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams



EAO Downloads.  
[www.eao.com/downloads](http://www.eao.com/downloads)  
*EAO creates possibilities. Since 1947.*



On our website you can download technical data, assembly instructions, catalogs, brochures and much more.

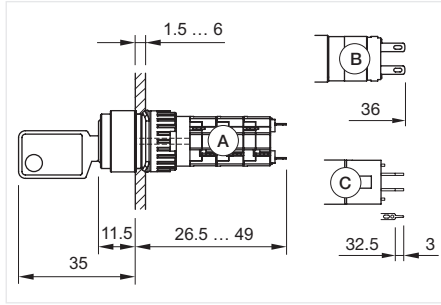
- 01
- 02
- 03
- 04
- 09
- 14
- 17
- 18
- 19
- 22
- 31
- 41
- 45
- 51**
- 56
- 57
- 61
- 70
- 71
- 82
- 84
- 92
- 96

# 51 Raised design

## Keylock switch 2 positions square, IP65

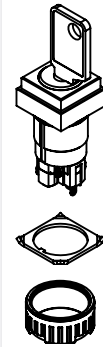


Product can differ from the current configuration.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm

### Equipment consisting of (schematic overview)



Actuator

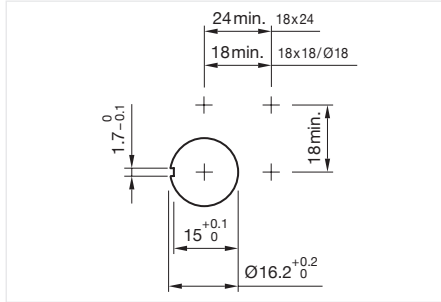
Anti-twist ring

Fixing nut

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

### General information

- Standard lock: DOM 311
- Front plastic black



Mounting cut-outs [mm]



### Actuator, Front dimension 18 mm x 18 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	42° right	51-145.022D	257	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	42° right	51-145.025D2	257	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	42° right	51-146.025D2	113	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	42° right	51-148.025D2	258	
Rest (a) - Maintained (a)	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-155.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-155.025D2	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-156.025D2	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-157.025D2	115	
Rest (a) - Maintained	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-158.025D2	116	
	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-255.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-255.025D2	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-256.025D2	108	
Rest (a) - Maintained (a)	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-257.025D2	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-258.025D2	116	
	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-355.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-355.025D2	107	
Rest - Maintained (a)	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-356.025D2	108	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-358.025D2	116	
	2 NO	Universal terminal	Low-level element	90° right	51-441.036D	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-442.036D	111	27
Rest (a) - Maintained	2 NO	Universal terminal	Low-level element	90° right	51-444.036D	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-445.036D	111	27

a = Key remove

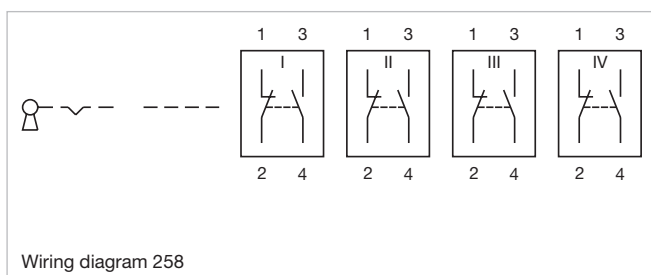
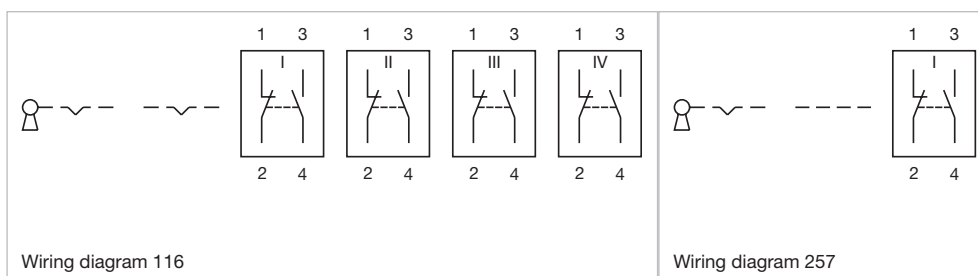
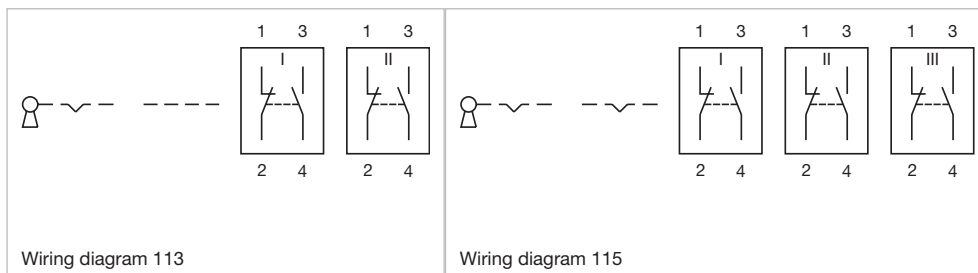
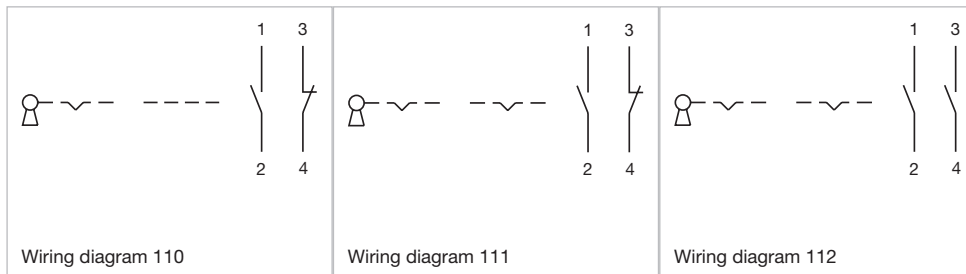
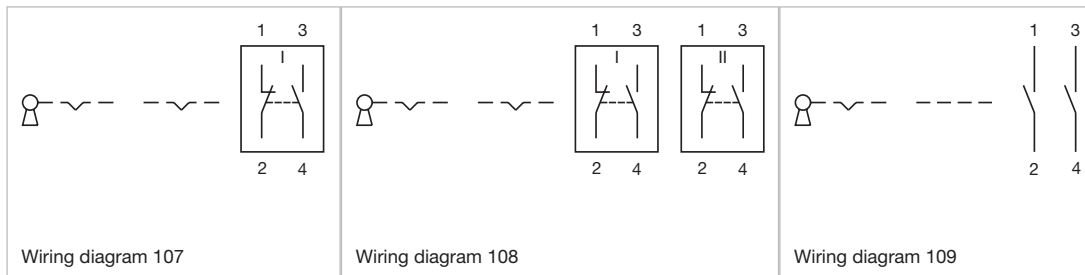
Contacts: NC = Normally closed, NO = Normally open

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest - Maintained (a)	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-448.036D	111	27
Rest (a) - Momentary	2 NO	Universal terminal	Low-level element	42° right	51-457.036D	109	27
	1 NC / 1 NO	Universal terminal	Low-level element	42° right	51-458.036D	110	27

a = Key remove

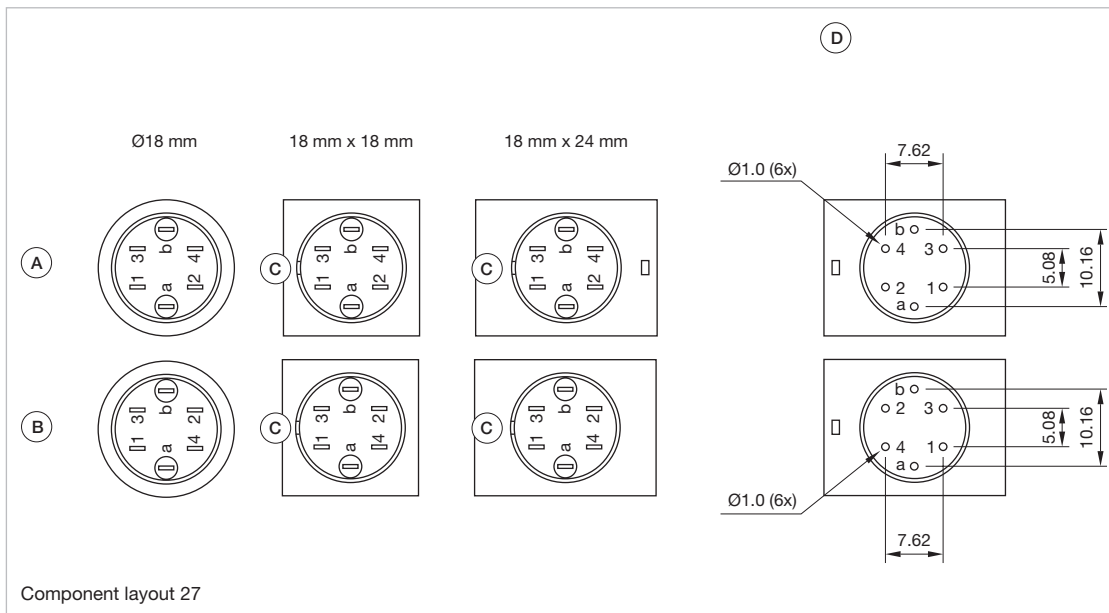
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams



# 51 Raised design

## Component layouts



Dimensions [mm]

A = Universal terminal (rear side)

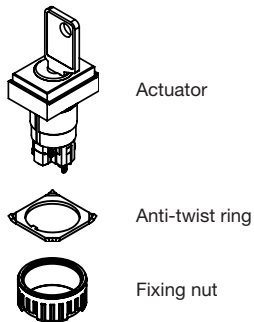
B = Plug-in terminal (rear side)

C = Anti twist device

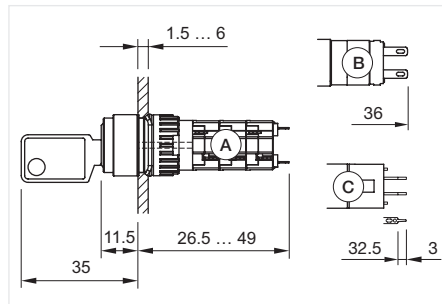
D = Drilling plan

## Keylock switch 2 positions rectangular, IP65

### Equipment consisting of (schematic overview)



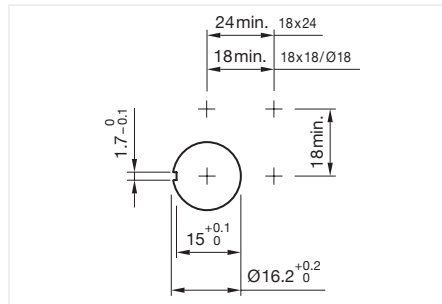
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



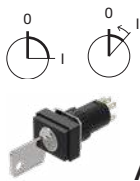
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Standard lock: DOM 311
- Front plastic black



### Actuator, Front dimension 24 mm x 18 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Maintained (a)	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-195.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-195.025D2	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-196.025D2	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-197.025D2	115	
Rest (a) - Maintained	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-198.025D2	116	
	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-295.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-295.025D2	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-296.025D2	108	
Rest - Maintained (a)	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-297.025D2	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-298.025D2	116	
	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-395.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-395.025D2	107	
Rest (a) - Momentary	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-396.025D2	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-397.025D2	115	
Rest (a) - Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	42° right	51-495.022D	257	27
Rest (a) - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-401.036D	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-402.036D	111	27
Rest (a) - Maintained	2 NO	Universal terminal	Low-level element	90° right	51-404.036D	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-405.036D	111	27
Rest - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-407.036D	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-408.036D	111	27
Rest (a) - Momentary	2 NO	Universal terminal	Low-level element	42° right	51-427.036D	109	27

a = Key remove

Contacts: NC = Normally closed, NO = Normally open

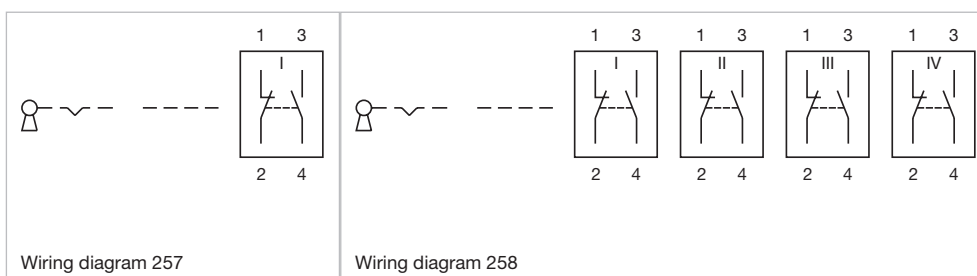
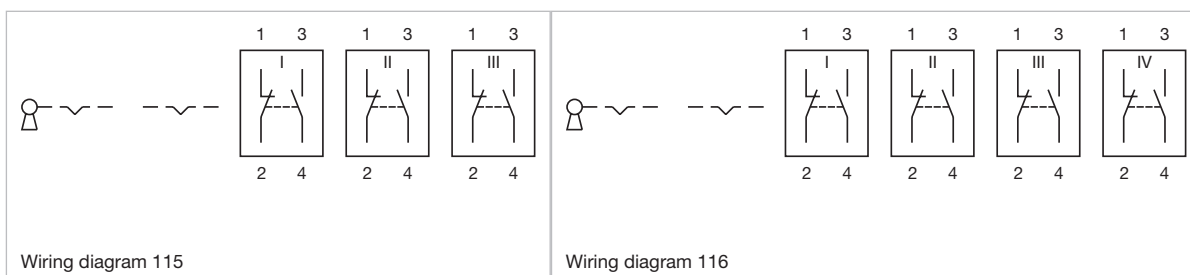
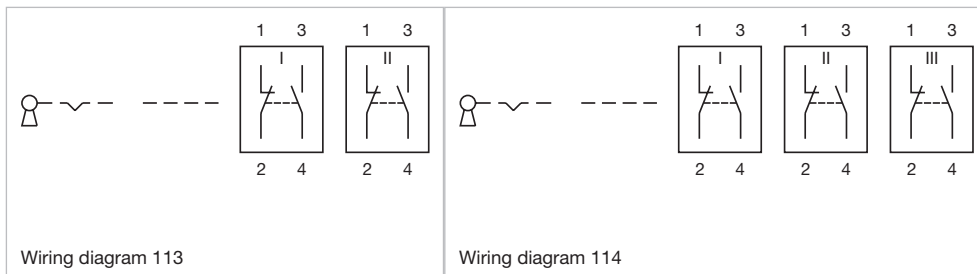
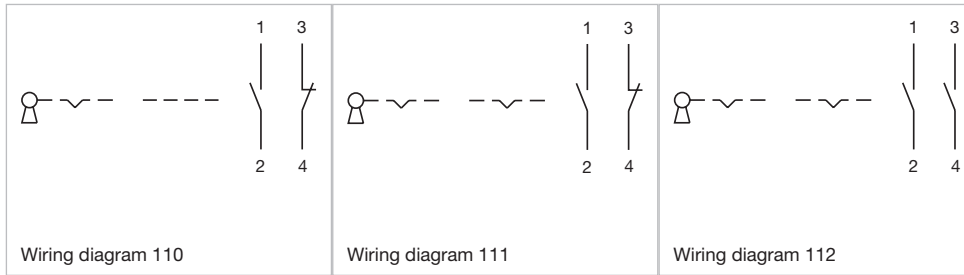
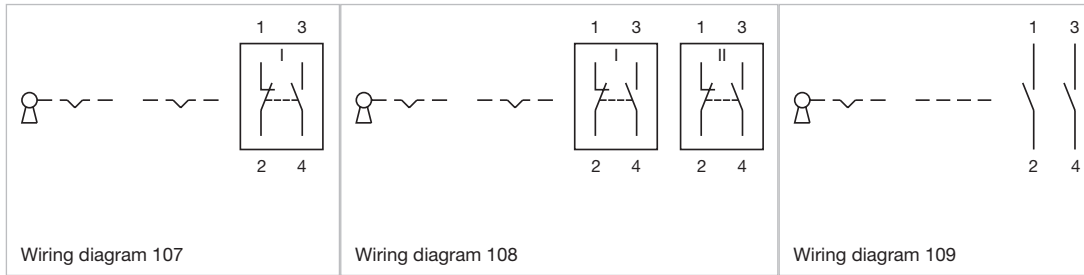
# 51 Raised design

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Momentary	1 NC / 1 NO	Universal terminal	Low-level element	42° right	51-428.036D	110	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	42° right	51-495.025D2	257	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	42° right	51-496.025D2	113	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	42° right	51-497.025D2	114	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	42° right	51-498.025D2	258	

a = Key remove

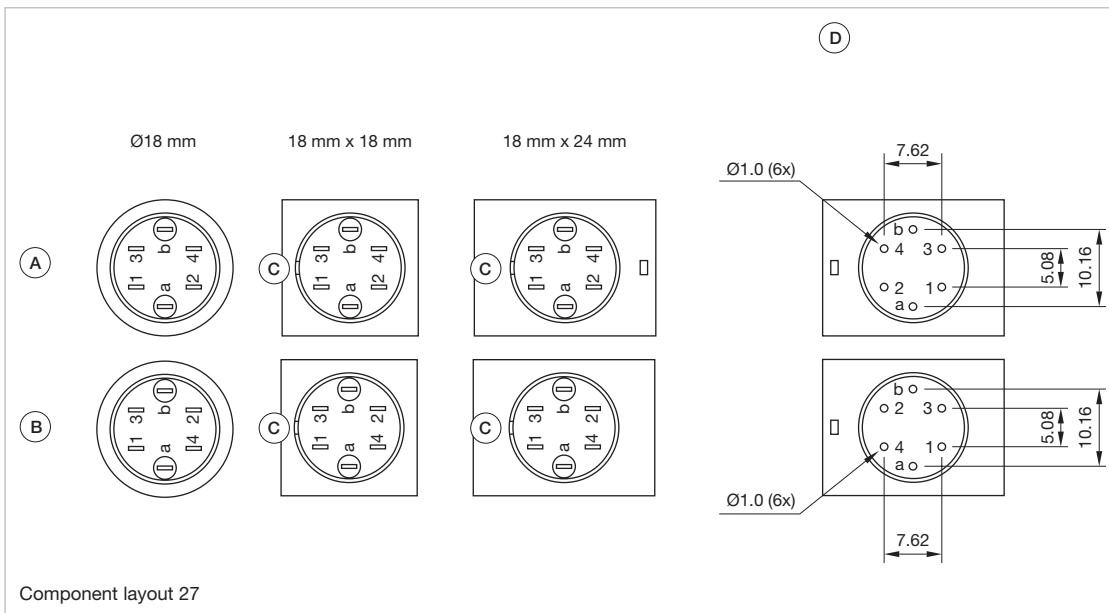
Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams





## Component layouts



Component layout 27

Dimensions [mm]

A = Universal terminal (rear side)

B = Plug-in terminal (rear side)

C = Anti twist device

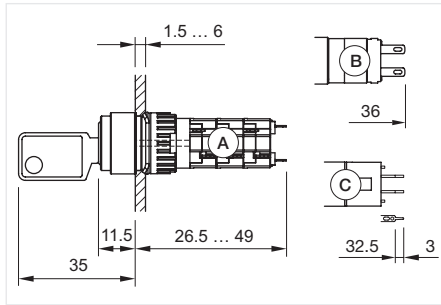
D = Drilling plan

# 51 Raised design

## Keylock switch 2 positions round, IP65

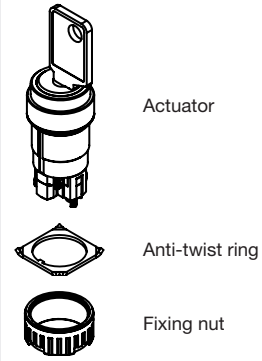


Product can differ from the current configuration.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm

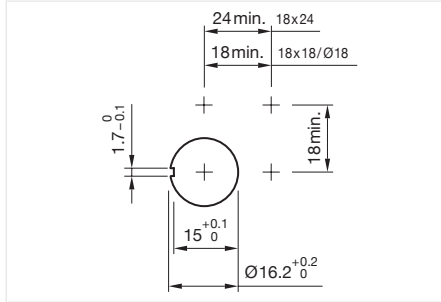
### Equipment consisting of (schematic overview)



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

### General information

- Standard lock: DOM 311
- Front plastic black



Mounting cut-outs [mm]



### Actuator, Front dimension Ø 18 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Maintained (a)	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-135.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-135.025D2	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-136.025D2	108	
	3 NC / 3 NO	Soldering terminal	Snap-action switching element	90° right	51-137.025D2	115	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-138.025D2	116	
Rest (a) - Momentary	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	42° right	51-141.022D	257	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	42° right	51-141.025D2	257	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	42° right	51-142.025D2	113	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	42° right	51-144.025D2	258	
Rest (a) - Maintained	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-235.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-235.025D2	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-236.025D2	108	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-238.025D2	116	
Rest - Maintained (a)	1 NC / 1 NO	Plug-in terminal	Snap-action switching element	90° right	51-335.022D	107	27
	1 NC / 1 NO	Soldering terminal	Snap-action switching element	90° right	51-335.025D2	107	
	2 NC / 2 NO	Soldering terminal	Snap-action switching element	90° right	51-336.025D2	108	
	4 NC / 4 NO	Soldering terminal	Snap-action switching element	90° right	51-338.025D2	116	
Rest (a) - Maintained (a)	2 NO	Universal terminal	Low-level element	90° right	51-411.036D	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-412.036D	111	27
Rest (a) - Maintained	2 NO	Universal terminal	Low-level element	90° right	51-414.036D	112	27
	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-415.036D	111	27
Rest - Maintained (a)	1 NC / 1 NO	Universal terminal	Low-level element	90° right	51-418.036D	111	27

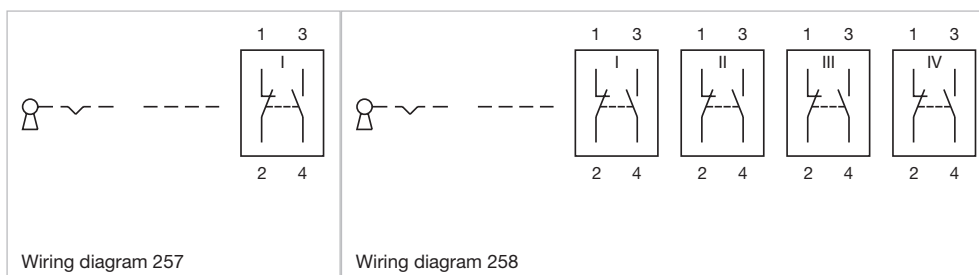
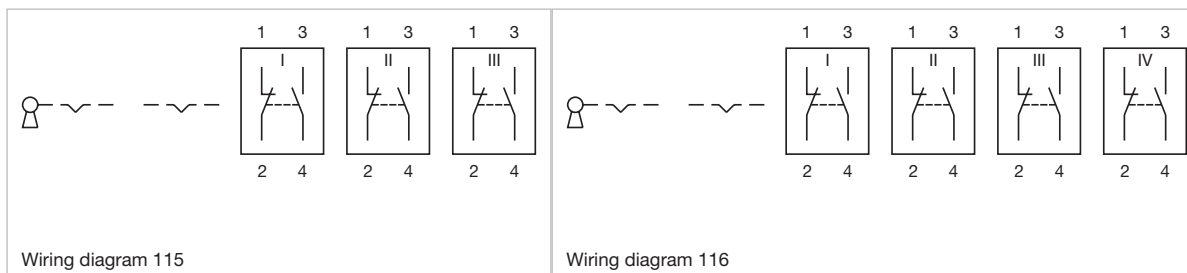
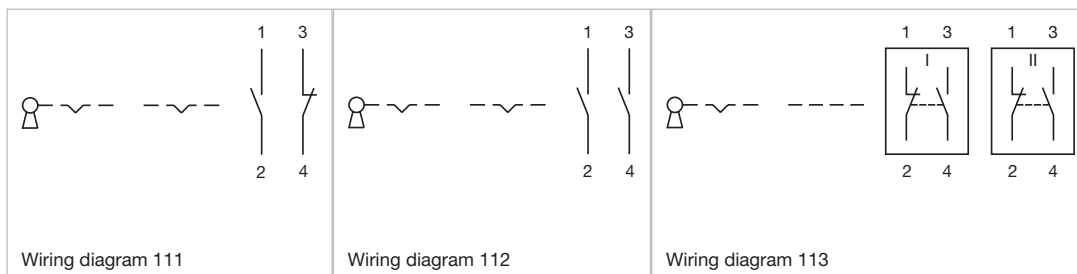
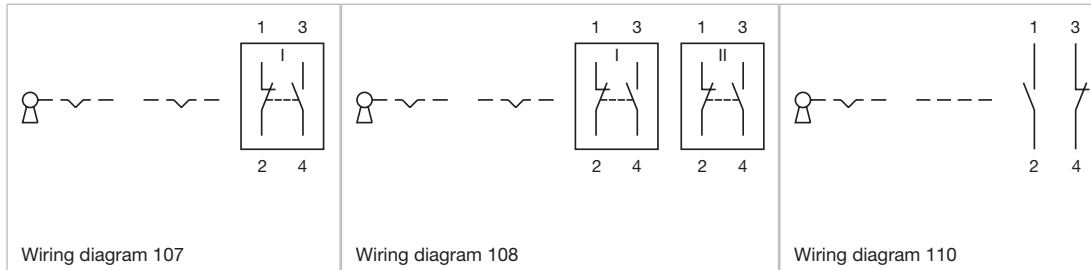
a = Key remove  
 Contacts: NC = Normally closed, NO = Normally open

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram	Component Layout
Rest (a) - Momentary	1 NC / 1 NO	Universal terminal	Low-level element	42° right	51-438.036D	110	27

a = Key remove

Contacts: NC = Normally closed, NO = Normally open

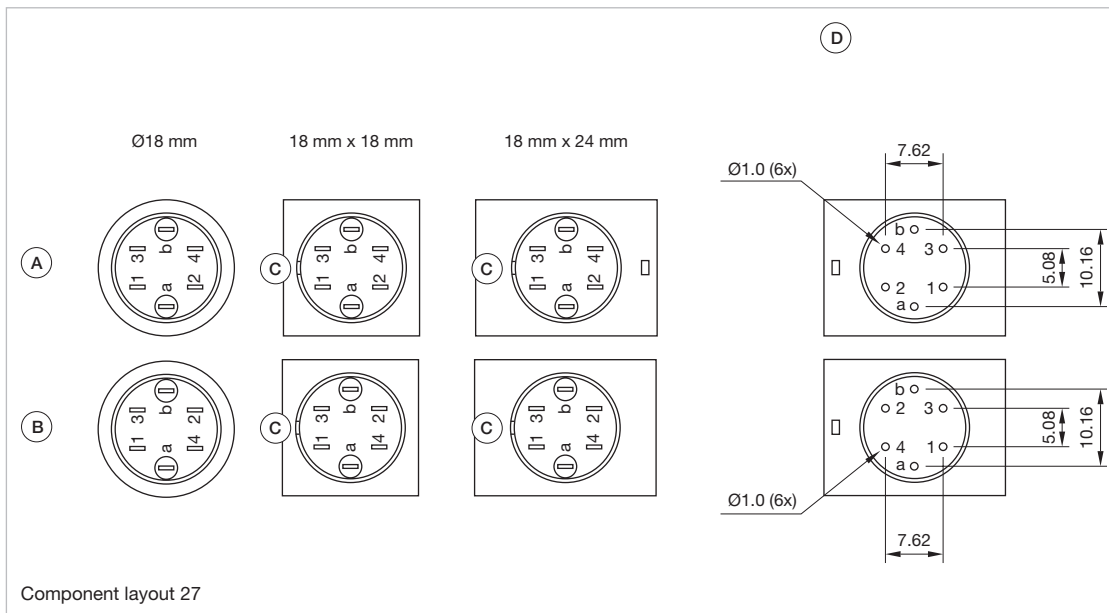
## Wiring diagrams



01  
02  
03  
04  
09  
14  
17  
18  
19  
22  
31  
41  
45  
51  
56  
57  
61  
70  
71  
82  
84  
92  
96

# 51 Raised design

## Component layouts



Dimensions [mm]  
 A = Universal terminal (rear side)  
 B = Plug-in terminal (rear side)  
 C = Anti twist device  
 D = Drilling plan



**EAO.**  
**Award winning.**  
*EAO creates possibilities. Since 1947.*



**EAO provides outstanding design** – based almost exclusively on functional and technological considerations.

EAO's products and solutions have won numerous design awards over the years.

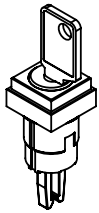
[www.eao.com](http://www.eao.com)

**eao** ■

Your Expert Partner for Human Machine Interfaces

## Keylock switch 3 positions square, IP65

Equipment consisting of (schematic overview)



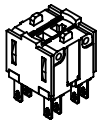
Actuator



Anti-twist ring

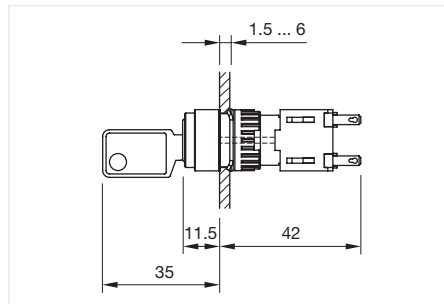


Fixing nut

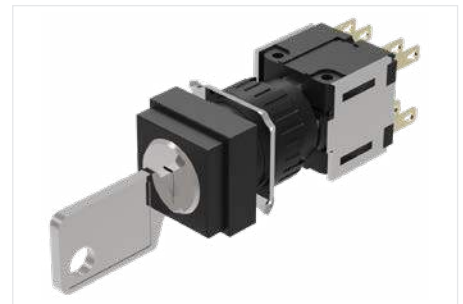


Switching element

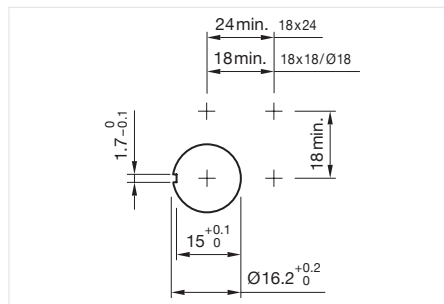
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



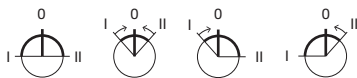
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Standard lock: DOM 311
- Front plastic black



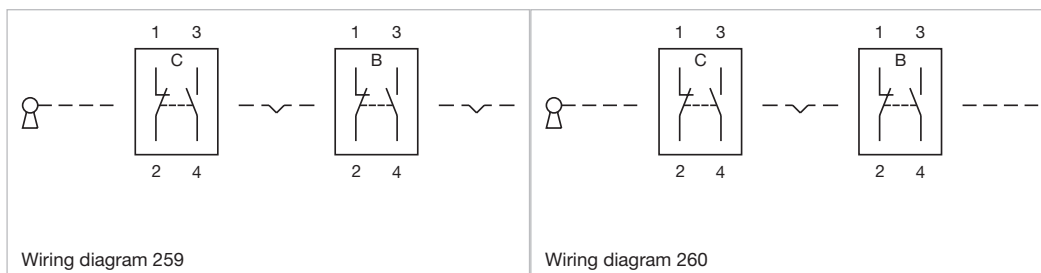
Actuator, Front dimension 18 mm x 18 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram
Maintained - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-381.F22D	262
Maintained (a) - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-382.F22D	262
Momentary - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 42° right	51-384.F22D	260
Momentary - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-385.F22D	259
Maintained (a) - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-388.F22D	261

a = Key remove

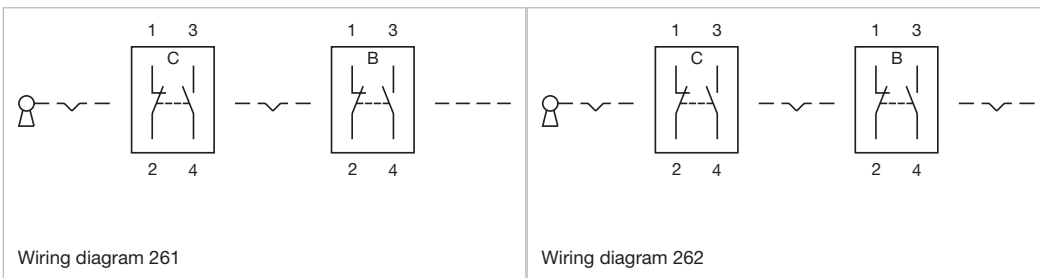
Contacts: NC = Normally closed, NO = Normally open

### Wiring diagrams



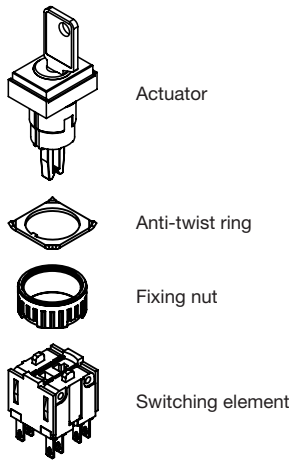
# 51 Raised design

## Wiring diagrams

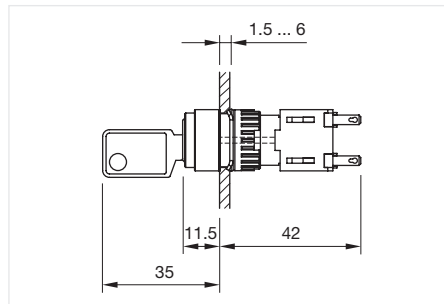


## Keylock switch 3 positions rectangular, IP65

### Equipment consisting of (schematic overview)



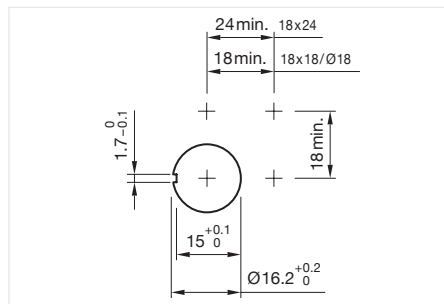
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Standard lock: DOM 311
- Front plastic black



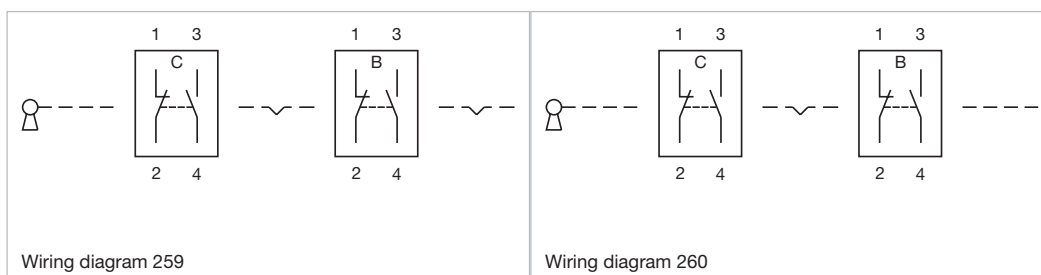
Actuator, Front dimension 24 mm x 18 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram
Maintained - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-361.F22D	262
Maintained (a) - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-362.F22D	262
Maintained (a) - Rest - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-363.F22D	262
Momentary - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 42° right	51-364.F22D	260
Momentary - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-365.F22D	259
Momentary - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-366.F22D	259

a = Key remove

Contacts: NC = Normally closed, NO = Normally open

### Wiring diagrams

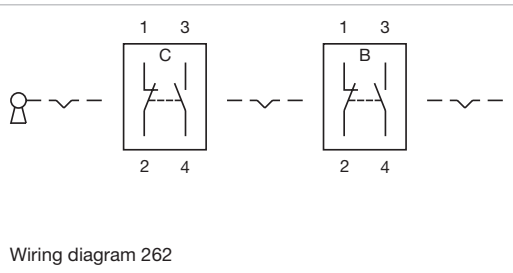


Wiring diagram 259

Wiring diagram 260

# 51 Raised design

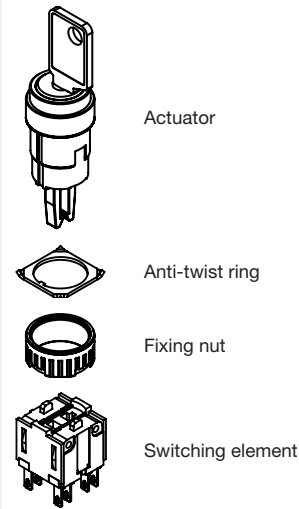
## Wiring diagrams



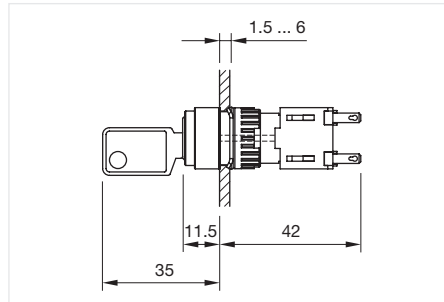


## Keylock switch 3 positions round, IP65

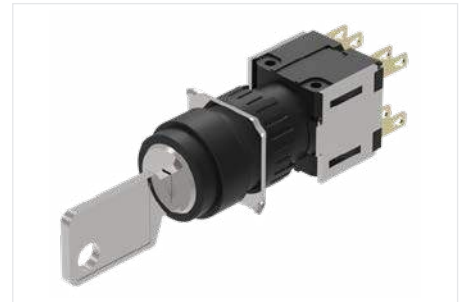
### Equipment consisting of (schematic overview)



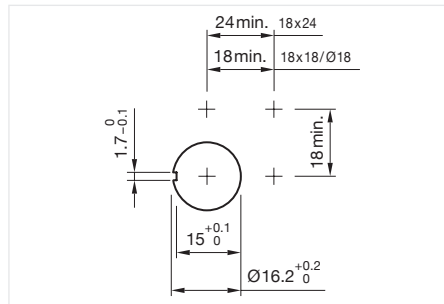
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]



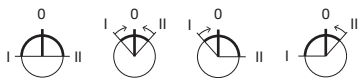
Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Standard lock: DOM 311
- Front plastic black



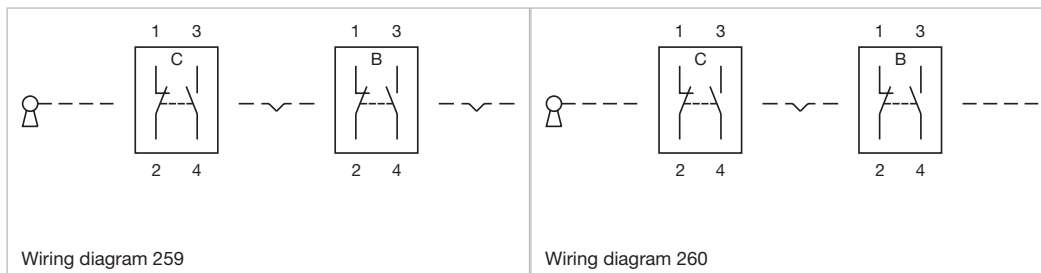
### Actuator, Front dimension Ø 18 mm

Switching action	Contacts	Terminal	Switching system	Switching angle	Part No.	Wiring diagram
Maintained - Rest (a) - Maintained	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-371.F22D	262
Maintained (a) - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-372.F22D	262
Maintained (a) - Rest - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 90° right	51-373.F22D	262
Momentary - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 42° right	51-374.F22D	260
Momentary - Rest (a) - Maintained (a)	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	42° left / 90° right	51-376.F22D	259
Maintained - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-377.F22D	261
Maintained (a) - Rest (a) - Momentary	2 NC / 2 NO	Plug-in terminal	Snap-action switching element	90° left / 42° right	51-378.F22D	261

a = Key remove

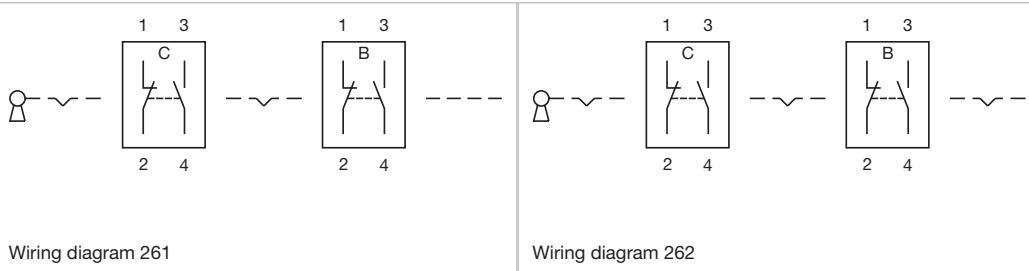
Contacts: NC = Normally closed, NO = Normally open

### Wiring diagrams



# 51 Raised design

## Wiring diagrams



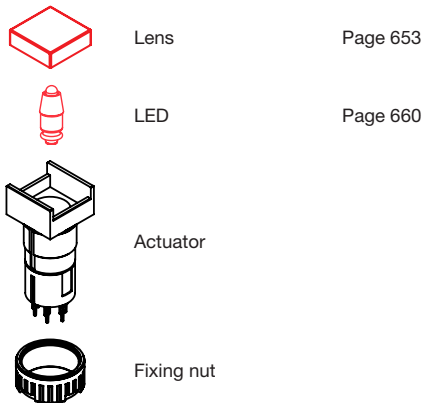
EAO Downloads.  
[www.eao.com/downloads](http://www.eao.com/downloads)  
*EAO creates possibilities. Since 1947.*



[On our website you can download technical data, assembly instructions, catalogs, brochures and much more.](http://www.eao.com/downloads)

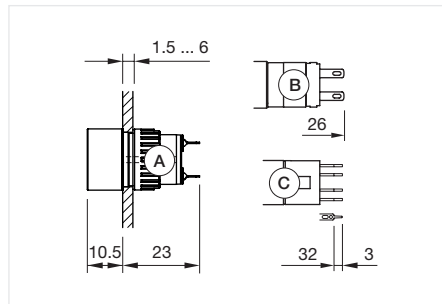
## Indicator square, IP65

### Equipment consisting of (schematic overview)



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

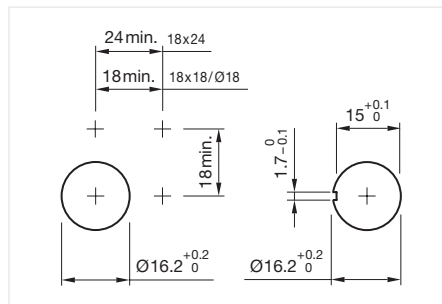
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



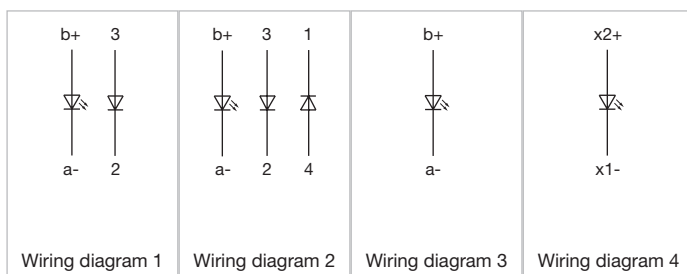
Mounting cut-outs [mm]



Actuator, Front dimension 18 mm x 18 mm

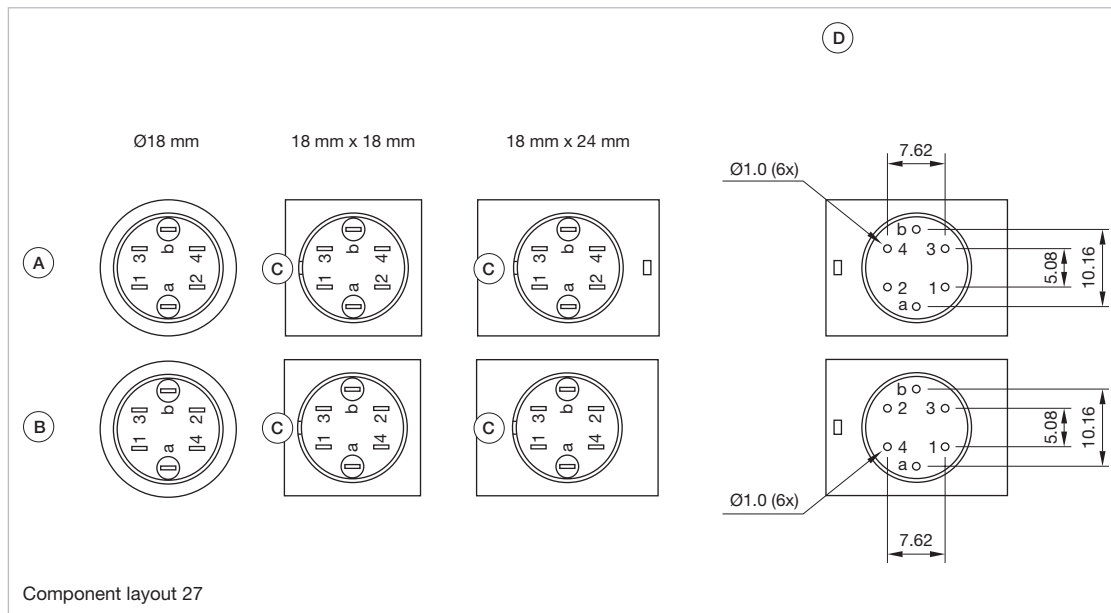
Terminal	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Plug-in terminal		51-050.002	4	
Soldering terminal		51-050.005	4	
Universal terminal		51-051.006	3	27
	1	51-703.006	1	27
	2	51-704.006	2	27

### Wiring diagrams



# 51 Raised design

## Component layouts



Dimensions [mm]

A = Universal terminal (rear side)

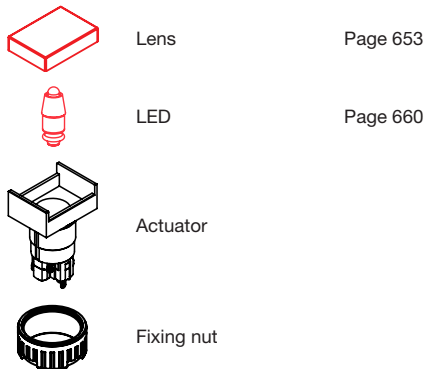
B = Plug-in terminal (rear side)

C = Anti twist device

D = Drilling plan

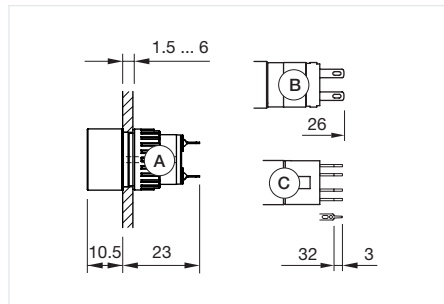
## Indicator rectangular, IP65

### Equipment consisting of (schematic overview)



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

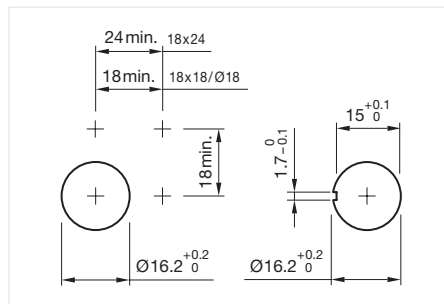
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



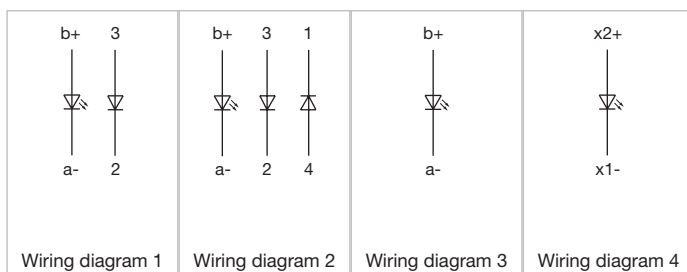
Mounting cut-outs [mm]



Actuator, Front dimension 24 mm x 18 mm

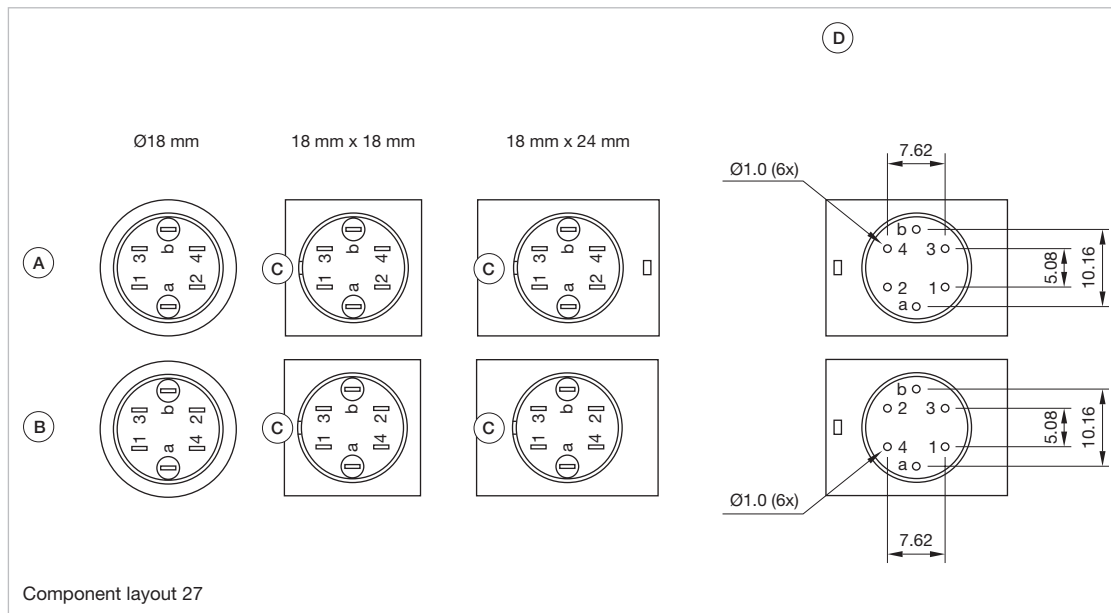
Terminal	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Plug-in terminal		51-040.002	4	
Soldering terminal		51-040.005	4	
Universal terminal		51-041.006	3	27
	1	51-701.006	1	27
	2	51-702.006	2	27

### Wiring diagrams



# 51 Raised design

## Component layouts



Dimensions [mm]

A = Universal terminal (rear side)

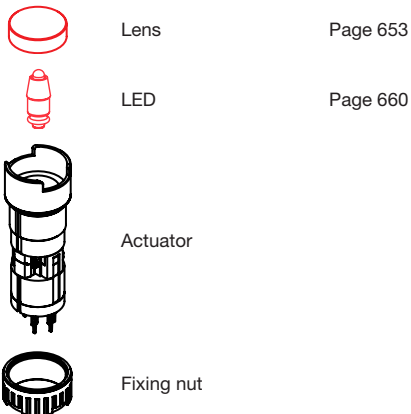
B = Plug-in terminal (rear side)

C = Anti twist device

D = Drilling plan

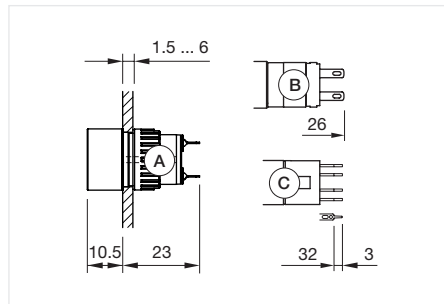
## Indicator round, IP65

### Equipment consisting of (schematic overview)



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

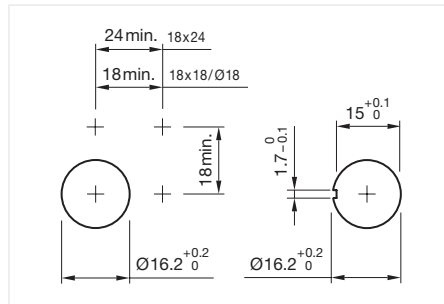
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



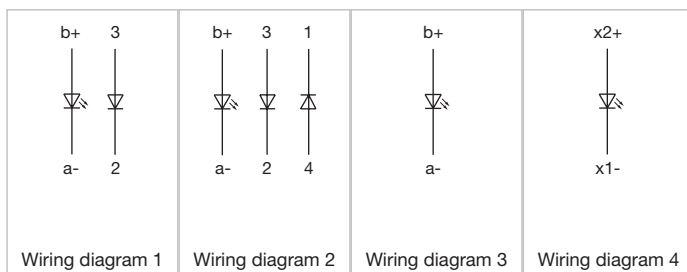
Mounting cut-outs [mm]



Actuator, Front dimension Ø 18 mm

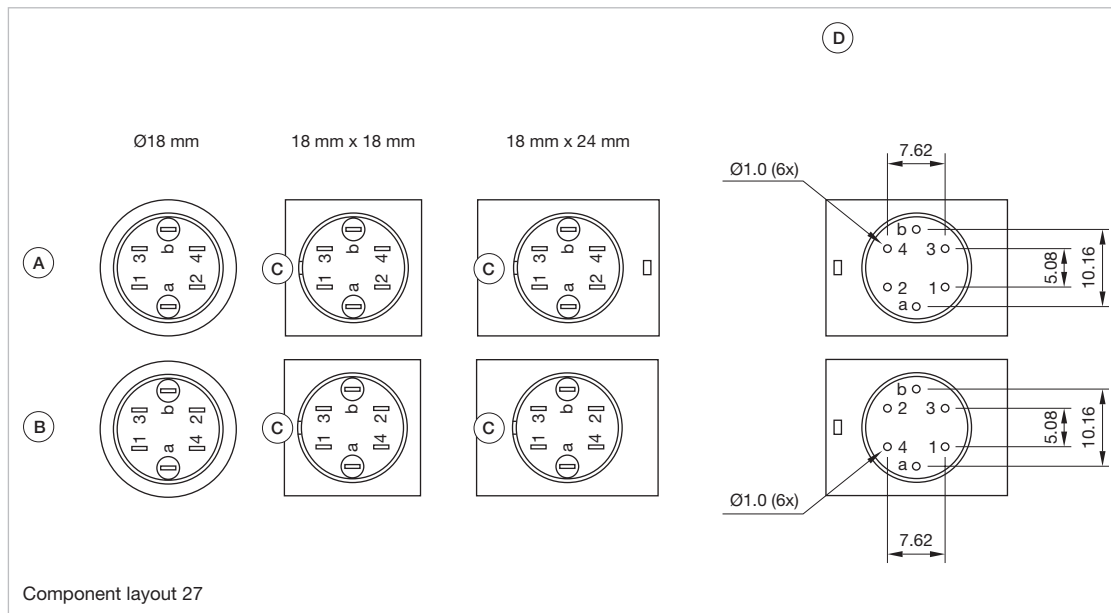
Terminal	Diode 1N4007	Part No.	Wiring diagram	Component Layout
Plug-in terminal		51-030.002	4	
Soldering terminal		51-030.005	4	
Universal terminal		51-031.006	3	27
	1	51-741.006	1	27
	2	51-742.006	2	27

### Wiring diagrams



# 51 Raised design

## Component layouts



Dimensions [mm]

A = Universal terminal (rear side)

B = Plug-in terminal (rear side)

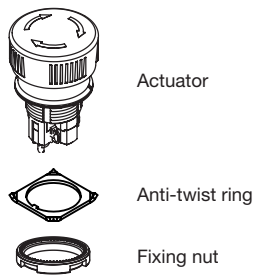
C = Anti twist device

D = Drilling plan

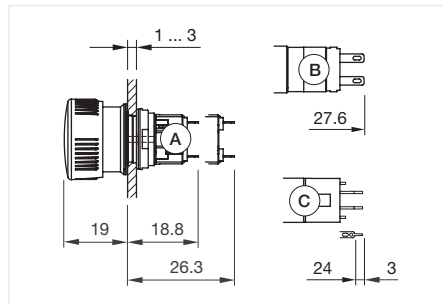


## Stop switch, IP65

### Equipment consisting of (schematic overview)



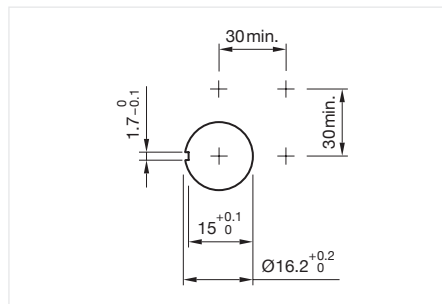
Each Part Number listed below includes all the black components shown in the 3D-drawing.



Dimensions [mm]  
 A = Solder terminal  
 B = Plug-in terminal 2.8 mm x 0.5 mm  
 C = Universal terminal 2.0 mm x 0.5 mm



Product can differ from the current configuration.



Mounting cut-outs [mm]

### General information

- Marking arrows



Actuator, Front dimension Ø 24,5 mm

Contacts	Terminal	Lens colour	Switching system	Part No.	Wiring diagram
2 NC	Universal terminal	Red	Low-level element	51-252.026	292
	Universal terminal	Black	Low-level element	51-252.0260	292
	Universal terminal	Yellow	Low-level element	51-252.0264	292
	Universal terminal	Green	Low-level element	51-252.0265	292
	Universal terminal	Blue	Low-level element	51-252.0266	292
	Universal terminal	Grey	Low-level element	51-252.0268	292
1 NC / 1 NO	Plug-in terminal	Red	Snap-action switching element	51-253.022	289
	Plug-in terminal	Black	Snap-action switching element	51-253.0220	289
	Plug-in terminal	Yellow	Snap-action switching element	51-253.0224	289
	Plug-in terminal	Green	Snap-action switching element	51-253.0225	289
	Plug-in terminal	Blue	Snap-action switching element	51-253.0226	289
	Plug-in terminal	Grey	Snap-action switching element	51-253.0228	289
	Universal terminal	Red	Low-level element	51-253.026	293
	Universal terminal	Black	Low-level element	51-253.0260	293
	Universal terminal	Yellow	Low-level element	51-253.0264	293
	Universal terminal	Green	Low-level element	51-253.0265	293
	Universal terminal	Blue	Low-level element	51-253.0266	293
	Universal terminal	Grey	Low-level element	51-253.0268	293
	Soldering terminal	Red	Snap-action switching element	51-256.025	289
	Soldering terminal	Black	Snap-action switching element	51-256.0250	289
	Soldering terminal	Yellow	Snap-action switching element	51-256.0254	289
	Soldering terminal	Green	Snap-action switching element	51-256.0255	289
	Soldering terminal	Blue	Snap-action switching element	51-256.0256	289
	Soldering terminal	Grey	Snap-action switching element	51-256.0258	289
1 NC	Universal terminal	Red	Low-level element	51-256.026	291
	Universal terminal	Black	Low-level element	51-256.0260	291

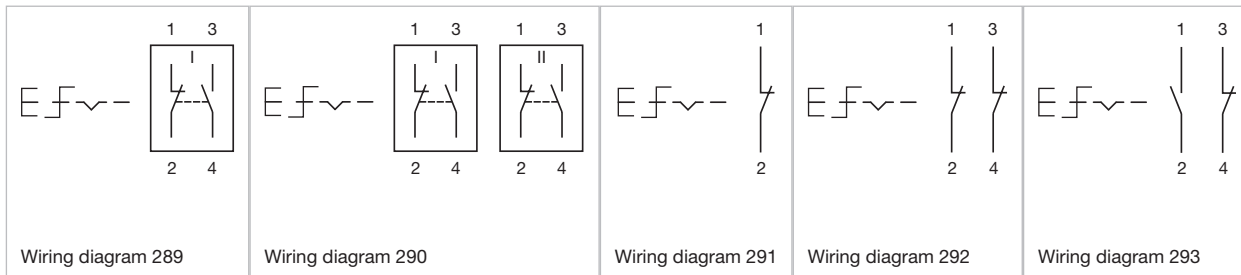
Contacts: NC = Normally closed, NO = Normally open

# 51 Raised design

Contacts	Terminal	Lens colour	Switching system	Part No.	Wiring diagram
1 NC	Universal terminal	Yellow	Low-level element	51-256.0264	291
	Universal terminal	Green	Low-level element	51-256.0265	291
	Universal terminal	Blue	Low-level element	51-256.0266	291
	Universal terminal	Grey	Low-level element	51-256.0268	291
2 NC / 2 NO	Soldering terminal	Red	Snap-action switching element	51-259.025	290
	Soldering terminal	Black	Snap-action switching element	51-259.0250	290
	Soldering terminal	Yellow	Snap-action switching element	51-259.0254	290
	Soldering terminal	Green	Snap-action switching element	51-259.0255	290
	Soldering terminal	Blue	Snap-action switching element	51-259.0256	290
	Soldering terminal	Grey	Snap-action switching element	51-259.0258	290

Contacts: NC = Normally closed, NO = Normally open

## Wiring diagrams





Lens square, raised design

Product attributes	Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
	Plastic	Smokey black	transparent	flush	illuminative	15,3 mm x 15,3 mm	51-953.1
	Plastic	Red	transparent	flush	illuminative	15,3 mm x 15,3 mm	51-953.2
	Plastic	Orange	transparent	flush	illuminative	15,3 mm x 15,3 mm	51-953.3
	Plastic	Yellow	transparent	flush	illuminative	15,3 mm x 15,3 mm	51-953.4
	Plastic	Green	transparent	flush	illuminative	15,3 mm x 15,3 mm	51-953.5
	Plastic	Blue	transparent	flush	illuminative	15,3 mm x 15,3 mm	51-953.6
	Plastic	Colourless	transparent	flush	illuminative	15,3 mm x 15,3 mm	51-953.7
Not recommended for film insert	Plastic	Red	translucent	flush	illuminative	15,3 mm x 15,3 mm	51-951.2
	Plastic	Orange	translucent	flush	illuminative	15,3 mm x 15,3 mm	51-951.3
	Plastic	Yellow	translucent	flush	illuminative	15,3 mm x 15,3 mm	51-951.4
	Plastic	Green	translucent	flush	illuminative	15,3 mm x 15,3 mm	51-951.5
	Plastic	Blue	translucent	flush	illuminative	15,3 mm x 15,3 mm	51-951.6
	Plastic	White	translucent	flush	illuminative	15,3 mm x 15,3 mm	51-951.9
	Plastic	Black	opaque	flush	non illuminative	15,3 mm x 15,3 mm	51-951.0
	Plastic	Grey	opaque	flush	non illuminative	15,3 mm x 15,3 mm	51-951.8
	Plastic	Red	transparent	concave	illuminative	15,3 mm x 15,3 mm	51-954.2
	Plastic	Orange	transparent	concave	illuminative	15,3 mm x 15,3 mm	51-954.3
	Plastic	Yellow	transparent	concave	illuminative	15,3 mm x 15,3 mm	51-954.4
	Plastic	Green	transparent	concave	illuminative	15,3 mm x 15,3 mm	51-954.5
	Plastic	Blue	transparent	concave	illuminative	15,3 mm x 15,3 mm	51-954.6
	Plastic	Colourless	transparent	concave	illuminative	15,3 mm x 15,3 mm	51-954.7



EAO Downloads.  
[www.eao.com/downloads](http://www.eao.com/downloads)  
*EAO creates possibilities. Since 1947.*



[On our website you can download technical data, assembly instructions, catalogs, brochures and much more.](http://www.eao.com/downloads)

# 51 Components



Lens rectangular, raised design

Product attributes	Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
	Plastic	Smokey black	transparent	flush	illuminative	15,3 mm x 21,5 mm	51-903.1
	Plastic	Red	transparent	flush	illuminative	15,3 mm x 21,5 mm	51-903.2
	Plastic	Orange	transparent	flush	illuminative	15,3 mm x 21,5 mm	51-903.3
	Plastic	Yellow	transparent	flush	illuminative	15,3 mm x 21,5 mm	51-903.4
	Plastic	Green	transparent	flush	illuminative	15,3 mm x 21,5 mm	51-903.5
	Plastic	Blue	transparent	flush	illuminative	15,3 mm x 21,5 mm	51-903.6
	Plastic	Colourless	transparent	flush	illuminative	15,3 mm x 21,5 mm	51-903.7
Not recommended for film insert	Plastic	Red	translucent	flush	illuminative	15,3 mm x 21,5 mm	51-901.2
	Plastic	Orange	translucent	flush	illuminative	15,3 mm x 21,5 mm	51-901.3
	Plastic	Yellow	translucent	flush	illuminative	15,3 mm x 21,5 mm	51-901.4
	Plastic	Green	translucent	flush	illuminative	15,3 mm x 21,5 mm	51-901.5
	Plastic	Blue	translucent	flush	illuminative	15,3 mm x 21,5 mm	51-901.6
	Plastic	White	translucent	flush	illuminative	15,3 mm x 21,5 mm	51-901.9
	Plastic	Black	opaque	flush	non illuminative	15,3 mm x 21,5 mm	51-901.0
	Plastic	Grey	opaque	flush	non illuminative	15,3 mm x 21,5 mm	51-901.8
	Plastic	Red	transparent	concave	illuminative	15,3 mm x 21,5 mm	51-904.2
	Plastic	Orange	transparent	concave	illuminative	15,3 mm x 21,5 mm	51-904.3
	Plastic	Yellow	transparent	concave	illuminative	15,3 mm x 21,5 mm	51-904.4
	Plastic	Green	transparent	concave	illuminative	15,3 mm x 21,5 mm	51-904.5
	Plastic	Blue	transparent	concave	illuminative	15,3 mm x 21,5 mm	51-904.6
	Plastic	Colourless	transparent	concave	illuminative	15,3 mm x 21,5 mm	51-904.7



Lens round, raised design

Product attributes	Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
	Plastic	Smokey black	transparent	flush	illuminative	Ø 15,8 mm	51-933.1
	Plastic	Red	transparent	flush	illuminative	Ø 15,8 mm	51-933.2
	Plastic	Yellow	transparent	flush	illuminative	Ø 15,8 mm	51-933.4
	Plastic	Green	transparent	flush	illuminative	Ø 15,8 mm	51-933.5
	Plastic	Blue	transparent	flush	illuminative	Ø 15,8 mm	51-933.6
	Plastic	Colourless	transparent	flush	illuminative	Ø 15,8 mm	51-933.7
Not recommended for film insert	Plastic	Red	translucent	flush	illuminative	Ø 15,8 mm	51-931.2
	Plastic	Yellow	translucent	flush	illuminative	Ø 15,8 mm	51-931.4
	Plastic	Blue	translucent	flush	illuminative	Ø 15,8 mm	51-931.6
	Plastic	White	translucent	flush	illuminative	Ø 15,8 mm	51-931.9
	Plastic	Black	opaque	flush	non illuminative	Ø 15,8 mm	51-931.0
	Plastic	Grey	opaque	flush	non illuminative	Ø 15,8 mm	51-931.8



**Lens square, flush design**

Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
Plastic	Smokey black	transparent	flush	illuminative	18 mm x 18 mm	61-9671.1
	Red	transparent	flush	illuminative	18 mm x 18 mm	61-9671.2
	Orange	transparent	flush	illuminative	18 mm x 18 mm	61-9671.3
	Yellow	transparent	flush	illuminative	18 mm x 18 mm	61-9671.4
	Green	transparent	flush	illuminative	18 mm x 18 mm	61-9671.5
	Blue	transparent	flush	illuminative	18 mm x 18 mm	61-9671.6
	Colourless	transparent	flush	illuminative	18 mm x 18 mm	61-9671.7
	Black	opaque	flush	non illuminative	18 mm x 18 mm	61-9771.0
	White	translucent	flush	non illuminative	18 mm x 18 mm	61-9771.9



**Lens rectangular, flush design**

Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
Plastic	Smokey black	transparent	flush	illuminative	18 mm x 24 mm	61-9681.1
	Red	transparent	flush	illuminative	18 mm x 24 mm	61-9681.2
	Orange	transparent	flush	illuminative	18 mm x 24 mm	61-9681.3
	Yellow	transparent	flush	illuminative	18 mm x 24 mm	61-9681.4
	Green	transparent	flush	illuminative	18 mm x 24 mm	61-9681.5
	Blue	transparent	flush	illuminative	18 mm x 24 mm	61-9681.6
	Colourless	transparent	flush	illuminative	18 mm x 24 mm	61-9681.7
	Black	opaque	flush	non illuminative	18 mm x 24 mm	61-9781.0
	White	translucent	flush	non illuminative	18 mm x 24 mm	61-9781.9



**Lens round, flush design**

Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
Plastic	Smokey black	transparent	flush	illuminative	Ø 19,7 mm	61-9642.1
	Red	transparent	flush	illuminative	Ø 19,7 mm	61-9642.2
	Orange	transparent	flush	illuminative	Ø 19,7 mm	61-9642.3
	Yellow	transparent	flush	illuminative	Ø 19,7 mm	61-9642.4
	Green	transparent	flush	illuminative	Ø 19,7 mm	61-9642.5
	Blue	transparent	flush	illuminative	Ø 19,7 mm	61-9642.6
	Colourless	transparent	flush	illuminative	Ø 19,7 mm	61-9642.7

# 51 Components



**Lens plastic with symbol**

Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Symbol	Dimensions	Part No.
Plastic	Red	transparent	flush	illuminative	Ring	Ø 19,7 mm	61-9643.201
	Orange	transparent	flush	illuminative	Ring	Ø 19,7 mm	61-9643.301
	Yellow	transparent	flush	illuminative	Ring	Ø 19,7 mm	61-9643.401
	Green	transparent	flush	illuminative	Ring	Ø 19,7 mm	61-9643.501
	Blue	transparent	flush	illuminative	Ring	Ø 19,7 mm	61-9643.601
	Colourless	transparent	flush	illuminative	Ring	Ø 19,7 mm	61-9643.701
	Red	transparent	flush	illuminative	ON/OFF	Ø 19,7 mm	61-9643.202
	Green	transparent	flush	illuminative	ON/OFF	Ø 19,7 mm	61-9643.502
	Blue	transparent	flush	illuminative	ON/OFF	Ø 19,7 mm	61-9643.602
	Colourless	transparent	flush	illuminative	ON/OFF	Ø 19,7 mm	61-9643.702
	Red	transparent	flush	illuminative	Standby	Ø 19,7 mm	61-9643.203
	Green	transparent	flush	illuminative	Standby	Ø 19,7 mm	61-9643.503
	Blue	transparent	flush	illuminative	Standby	Ø 19,7 mm	61-9643.603
	Colourless	transparent	flush	illuminative	Standby	Ø 19,7 mm	61-9643.703

## Additional information

- The silvery coat is being applied on the lens (screen print) with an additional protective lacquer. Further information see Technical data



**Lens metal**

Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
Aluminium	Black	opaque	flush	non illuminative	Ø 19,7 mm	61-9841.0
	Red	opaque	flush	non illuminative	Ø 19,7 mm	61-9841.2
	Gold	opaque	flush	non illuminative	Ø 19,7 mm	61-9841.4
	Olive green	opaque	flush	non illuminative	Ø 19,7 mm	61-9841.5
	Blue	opaque	flush	non illuminative	Ø 19,7 mm	61-9841.6
	Nature	opaque	flush	non illuminative	Ø 19,7 mm	61-9841.8
	Black	opaque	convex	non illuminative	Ø 19,7 mm	61-9842.0
	Red	opaque	convex	non illuminative	Ø 19,7 mm	61-9842.2
	Olive green	opaque	convex	non illuminative	Ø 19,7 mm	61-9842.5
	Nature	opaque	convex	non illuminative	Ø 19,7 mm	61-9842.8

## Additional information

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



**Lens metal with spot**

Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Dimensions	Part No.
Aluminium	Black	opaque	flush	illuminative	Ø 19,7 mm	61-9841.0A
	Red	opaque	flush	illuminative	Ø 19,7 mm	61-9841.2A
	Gold	opaque	flush	illuminative	Ø 19,7 mm	61-9841.4A
	Olive green	opaque	flush	illuminative	Ø 19,7 mm	61-9841.5A
	Blue	opaque	flush	illuminative	Ø 19,7 mm	61-9841.6A
	Nature	opaque	flush	illuminative	Ø 19,7 mm	61-9841.8A

## Additional information

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



## Mushroom-head cap

Lens material	Lens colour	Lens optics	Lens shape	Lens illumination	Part No.
Plastic	Black	opaque	flush	non illuminative	61-9593.0
	Red	opaque	flush	non illuminative	61-9593.2



## Lever raised design

Lever material	Lever colour	Lever illumination	Lever bar colour	Lever shape	Part No.
plastic	Black	illuminative	Red	short	52-928.20
	Black	illuminative	Orange	short	52-928.30
	Black	illuminative	Yellow	short	52-928.40
	Black	illuminative	Green	short	52-928.50
	Black	illuminative	Blue	short	52-928.60
	Grey	illuminative	Red	short	52-929.20
	Grey	illuminative	Orange	short	52-929.30
	Grey	illuminative	Yellow	short	52-929.40
	Grey	illuminative	Green	short	52-929.50
	Grey	illuminative	Blue	short	52-929.60
	Black	non illuminative	Black	short	52-928.0
	Black	non illuminative	White	short	52-928.9
	Grey	non illuminative	Grey	short	52-929.8
	Grey	non illuminative	White	short	52-929.9

### Additional information

- With bar and marking dot



## Lever flush design

Lever material	Lever colour	Lever illumination	Lever bar colour	Part No.
plastic	Black	illuminative	Red	61-9028.20
	Black	illuminative	Yellow	61-9028.40
	Black	illuminative	Green	61-9028.50
	Black	illuminative	Blue	61-9028.60
	Grey	illuminative	Red	61-9029.20
	Grey	illuminative	Orange	61-9029.30
	Grey	illuminative	Yellow	61-9029.40
	Black	illuminative	White	61-9028.9
	Black	non illuminative	Black	61-9028.0
	Grey	non illuminative	Grey	61-9029.8

### Additional information

- With bar and marking dot

# 51 Components



## Marking plate

Marking plate material	Marking plate colour	Marking plate optics	Marking plate illumination	Part No.
Plastic	Colourless	transparent	illuminative	61-9707.7

### Additional information

- Can be hot stamped

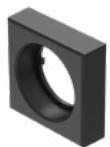


## Front bezel set flush design

Product attributes	Front bezel material	Front bezel colour	Front bezel surface	Mounting cut-out	Dimensions	Part No.
For indicator illuminated pushbutton and keylock switch	Plastic	Black		21 mm x 21 mm	24 mm x 24 mm	61-9930.0
	Plastic	Silver		21 mm x 21 mm	24 mm x 24 mm	61-9930.4
	Plastic	Black		21 mm x 27 mm	24 mm x 30 mm	61-9931.0
	Plastic	Silver		21 mm x 27 mm	24 mm x 30 mm	61-9931.4
For indicator, illuminated pushbutton, mushroom-head pushbutton and keylock switch	Aluminium	Nature	anodised	Ø 22.3 mm	Ø 25 mm	61-9933.0
	Aluminium	Black	anodised	Ø 22.3 mm	Ø 25 mm	61-9933.1
	Aluminium	Red	anodised	Ø 22.3 mm	Ø 25 mm	61-9933.2
	Aluminium	Gold	anodised	Ø 22.3 mm	Ø 25 mm	61-9933.4
	Aluminium	Olive	anodised	Ø 22.3 mm	Ø 25 mm	61-9933.5
	Aluminium	Blue	anodised	Ø 22.3 mm	Ø 25 mm	61-9933.6
	Plastic	Black		Ø 22.3 mm	Ø 25 mm	61-9933.10
For selector switch	Aluminium	Nature	anodised	Ø 22.3 mm	Ø 25 mm	61-9932.0
	Aluminium	Black	anodised	Ø 22.3 mm	Ø 25 mm	61-9932.1
	Aluminium	Red	anodised	Ø 22.3 mm	Ø 25 mm	61-9932.2
	Aluminium	Gold	anodised	Ø 22.3 mm	Ø 25 mm	61-9932.4
	Aluminium	Olive	anodised	Ø 22.3 mm	Ø 25 mm	61-9932.5
	Aluminium	Blue	anodised	Ø 22.3 mm	Ø 25 mm	61-9932.6
	Plastic	Black	anodised	Ø 22.3 mm	Ø 25 mm	61-9932.10
	Plastic	Black		21 mm x 21 mm	24 mm x 24 mm	61-9936.0

### Additional information

- Pitch of the front plate mounting holes must agree with the printed circuit board holes Ø 3.5 mm
- The colour of anodised aluminium parts can vary due to technical production reasons



## Front bezel Lever switch

Front bezel material	Front bezel colour	Dimensions	Part No.
Plastic	Black	24 mm x 24 mm	52-950.0
	Black	26 mm x 26 mm	52-952.0





## Front bezel set mushroom head pushbutton

Front bezel material	Front bezel colour	Front bezel type	Dimensions	Part No.
Aluminium	Nature	flush	Ø 40 mm	61-9934.8

### Additional information

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



{Sd=Verdrehsicherungsring}

## Anti-twist ring

Material	Mounting cut-out	Part No.
metal	Ø 16.2 mm	51-910
	Ø 22.3 mm	61-9912.0

- 01
- 02
- 03
- 04
- 09
- 14
- 17
- 18
- 19
- 22
- 31
- 41
- 45
- 51**
- 56
- 57
- 61
- 70
- 71
- 82
- 84
- 92
- 96

# 51 Components

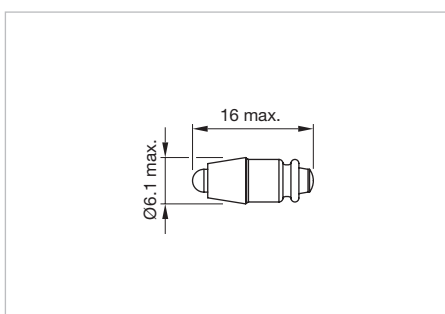


Single-LED, T1 3/4 MG

Illumination colour	Operating voltage	Operation current	Lumi. Intensity	Dom. Wavelength	Part No.	Wiring diagram
Red	6 V DC +10%	15 mA ±15 %	350 mcd	630 nm	10-2J06.3142	55
	12 V AC/DC +10%	7 - 14 mA ±15 %	330 mcd	630 nm	10-2J09.1062	55
	24 V AC/DC +10%	7 - 14 mA ±15 %	330 mcd	630 nm	10-2J12.1062	55
	28 V AC/DC +10%	7 - 14 mA ±15 %	330 mcd	630 nm	10-2J13.1062	55
	48 V AC/DC +10%	4 - 8 mA ±15 %	200 mcd	630 nm	10-2J19.1042	55
Yellow	6 V DC +10%	15 mA ±15 %	300 mcd	587 nm	10-2J06.3144	55
	12 V AC/DC +10%	7 - 14 mA ±15 %	280 mcd	587 nm	10-2J09.1064	55
	24 V AC/DC +10%	7 - 14 mA ±15 %	280 mcd	587 nm	10-2J12.1064	55
	28 V AC/DC +10%	7 - 14 mA ±15 %	280 mcd	587 nm	10-2J13.1064	55
	48 V AC/DC +10%	4 - 8 mA ±15 %	180 mcd	587 nm	10-2J19.1044	55
Green	6 V DC +10%	7 mA ±15 %	1050 mcd	525 nm	10-2J06.3145	55
	12 V AC/DC +10%	4 - 7 mA ±15 %	1050 mcd	525 nm	10-2J09.1065	55
	24 V AC/DC +10%	4 - 7 mA ±15 %	1050 mcd	525 nm	10-2J12.1065	55
	28 V AC/DC +10%	4 - 7 mA ±15 %	1050 mcd	525 nm	10-2J13.1065	55
	48 V AC/DC +10%	2 - 4 mA ±15 %	600 mcd	525 nm	10-2J19.1045	55
Blue	6 V DC +10%	15 mA ±15 %	680 mcd	470 nm	10-2J06.3146	55
	12 V AC/DC +10%	4 - 14 mA ±15 %	650 mcd	470 nm	10-2J09.1066	55
	24 V AC/DC +10%	7 - 14 mA ±15 %	650 mcd	470 nm	10-2J12.1066	55
	28 V AC/DC +10%	7 - 14 mA ±15 %	650 mcd	470 nm	10-2J13.1066	55
	48 V AC/DC +10%	4 - 8 mA ±15 %	400 mcd	470 nm	10-2J19.1046	55
White	6 V DC +10%	6 mA ±15 %	900 mcd	x: 0.31 / y: 0.32 nm	10-2J06.3149	55
	12 V AC/DC +10%	3 - 6 mA ±15 %	900 mcd	x: 0.31 / y: 0.32 nm	10-2J09.1069	55
	24 V AC/DC +10%	2,5 - 5 mA ±15 %	750 mcd	x: 0.31 / y: 0.32 nm	10-2J12.1069	55
	28 V AC/DC +10%	2,5 - 5 mA ±15 %	750 mcd	x: 0.31 / y: 0.32 nm	10-2J13.1069	55
	48 V AC/DC +10%	2 - 4 mA ±15 %	600 mcd	x: 0.31 / y: 0.32 nm	10-2J19.1049	55
Red / Green	24 V AC/DC +10%	15/14 mA ±15 %	600/630 mcd	625 / 525 nm	10-A312.314A	171

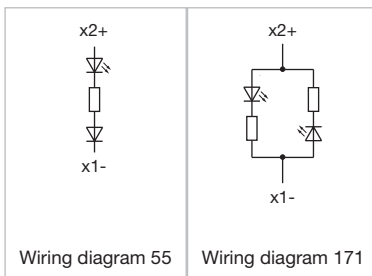
## Additional information

- Due to high surface temperatures, the series resistor must not be soldered directly to the terminals of the equipment (use a terminal plate)
- When using AC/DC types with AC operation, slight flickering can occur
- The luminous intensity stated is for when used with DC
- Electrical and optical data are measured at 25 °C
- The specified versions are built with a protection diode (half wave rectifier) in series and the LED
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination. The customer has to decide what resistor shall be used to the LED
- Where supply voltages are over 48 V, a voltage-reduction element (external protective series resistor) must be used.



Dimensions [mm]

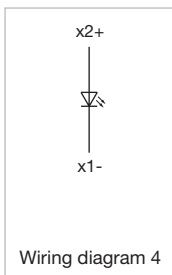
## Wiring diagrams



**Filament lamp**

Operating voltage	Operation current	Part No.	Wiring diagram
12 V AC/DC	75 mA $\pm$ 10 %	10-1309.1309	4
14 V AC/DC	80 mA $\pm$ 10 %	10-1310.1319	4
24 V AC/DC	35 mA $\pm$ 10 %	10-1312.1229	4
28 V AC/DC	40 mA $\pm$ 10 %	10-1313.1249	4
36 V AC/DC	30 mA $\pm$ 10 %	10-1316.1209	4
48 V AC/DC	25 mA $\pm$ 10 %	10-1319.1199	4

## Wiring diagrams



# 51 Accessories

## Front side

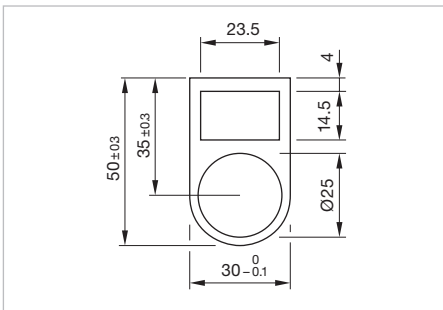


Legend frame

Dimensions	Material	Colour	Surface	Mounting type	Part No.
30 mm x 50 mm	aluminium	Black	anodised	adhesive	61-9980.0

### Additional information

- For devices with front dimension  $\varnothing$  25 mm, flush design
- The colour of anodised aluminium parts can vary due to technical production reasons



Dimensions [mm]



Legend plate

Dimensions	Material	Colour	Surface	Mounting type	Part No.
14.5 mm x 23.5 mm	aluminium	Nature	anodised	adhesive	704.968.0
	aluminium	Black	anodised	adhesive	704.968.1

### Additional information

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



Blind plug raised design

Dimensions	Material	Colour	Mounting cut-out	Part No.
18 mm x 24 mm	plastic	Black	$\varnothing$ 16.2 mm	51-947.0
18 mm x 18 mm	plastic	Black	$\varnothing$ 16.2 mm	51-948.0
$\varnothing$ 18 mm	plastic	Black	$\varnothing$ 16.2 mm	51-949.0

### Additional information

- Blind plugs fit also in mounting cut-outs with anti-twist device

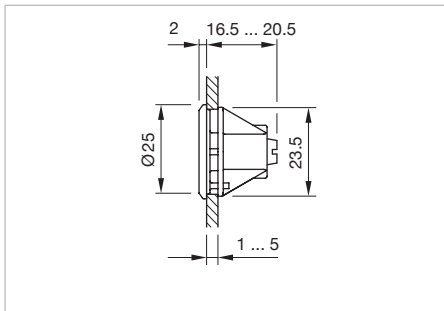


## Blind plug flush design

Dimensions	Material	Colour	Mounting cut-out	Part No.
24 mm x 24 mm	plastic	Black	21 mm x 21 mm	61-9451.0
24 mm x 30 mm	plastic	Black	21 mm x 27 mm	61-9452.0
Ø 25 mm	plastic	Black	Ø 25 mm	61-9453.0

### Additional information

- Please note that bigger minimum distances are necessary



Dimensions [mm]  
for Part No. 61-9453.0



## EMC key protection cap

Product attributes	Material	Colour	Part No.
For standard lock: DOM	plastic	Black	31-985.0



## Spare key

Product attributes	Material	Part No.
Standard lock: DOM 311	metal	31-989.311

### Additional information

- Optional lock numbers on request



## Master key

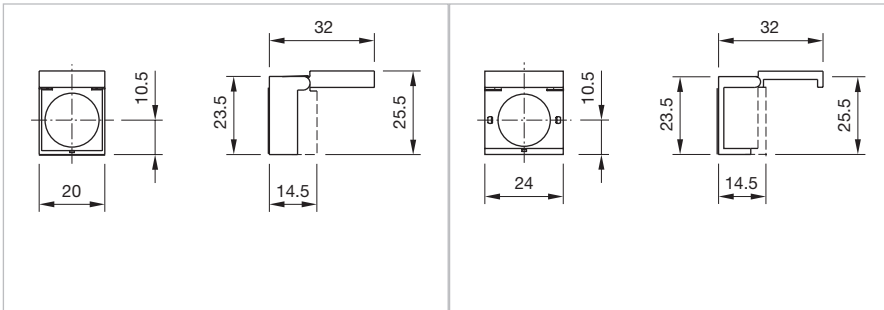
Product attributes	Material	Part No.
For standard lock: DOM 311 ... 445	metal	31-989.300

# 51 Accessories



## Protective cover raised design

Product attributes	Dimensions	Material	Colour	Optics	Part No.
Hinged, with means for sealing	18 mm x 18 mm	plastic	Colourless	transparent	51-920
	18 mm x 24 mm	plastic	Colourless	transparent	51-925



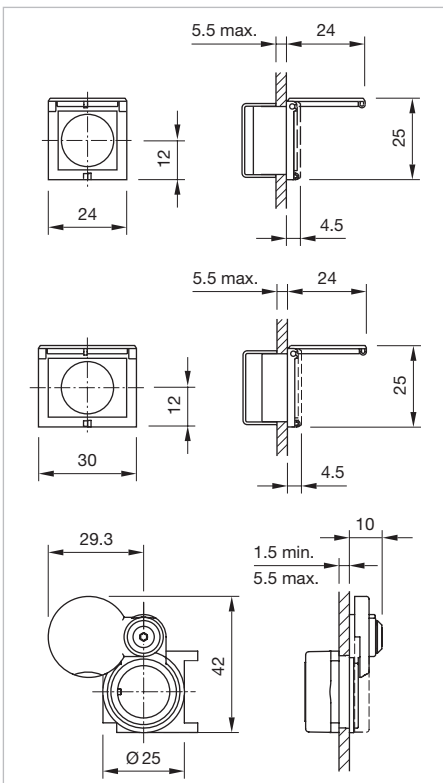
Dimensions [mm]

Dimensions [mm]



## Protective cover flush design

Product attributes	Dimensions	Material	Colour	Optics	Mounting cut-out	Part No.
Hinged, with means for sealing, for device with front dimension 24 mm x 24 mm	24 mm x 24 mm	plastic	Colourless	transparent	21 mm x 21 mm	61-9921.0
Hinged, with means for sealing, for device with front dimension 24 mm x 30 mm	30 mm x 24 mm	plastic	Colourless	transparent	27 mm x 21 mm	61-9922.0
Slide by side, without cover locking hole, for device with front dimension Ø 25 mm	Ø 25 mm	plastic	Colourless	transparent	Ø 22.3 mm	61-9924.0



Dimensions [mm]

## Rear side



### Flat receptacle

Product attributes	Material	Part No.
2.0 x 0.5 mm plug-in terminal	metal	31-945
2.8 x 0.5 mm plug-in terminal	metal	31-946
2.8 x 0.5 mm in combination with multi-plug housing	metal	51-943.1



### Insulation sleeve

Product attributes	Material	Part No.
For flat receptacle 2.0 mm	plastic	31-928
For flat receptacle 2.8 mm	plastic	31-929
Cover plug-in terminals for snap-action switching element 2.8 mm	plastic	01-928



### Terminal cover

Product attributes	Material	Part No.
For snap-action switching element	plastic	01-929



### Side terminal plate empty

Product attributes	Dimensions	Part No.
5 spaces	62.5 mm x 15 mm x 60 mm	02-912.1
10 spaces	125 mm x 15 mm x 60 mm	02-912.2
15 spaces	187.6 mm x 15 mm x 60 mm	02-912.3
20 spaces	250 mm x 15 mm x 60 mm	02-912.4



### Multi-plug housing

Product attributes	Part No.
For switching block	51-943.0

# 51 Accessories

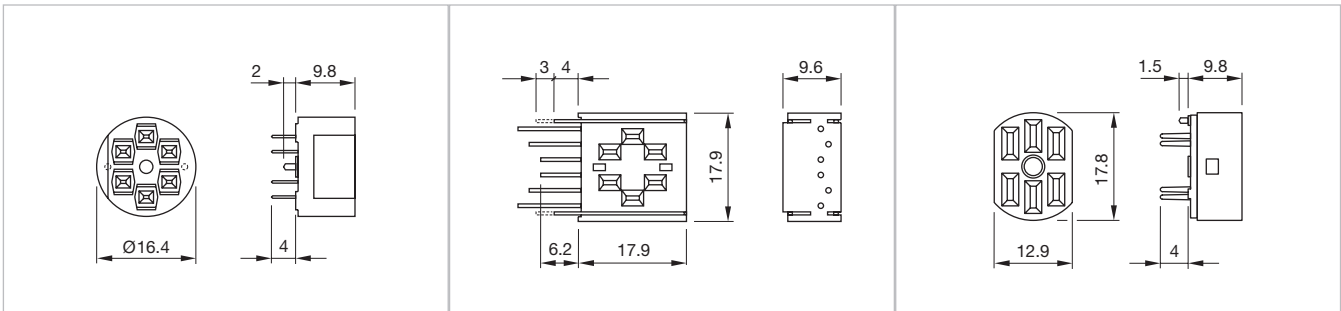


## PCB plug-in base

Product attributes	Terminal	Pins	Part No.	Component Layout
For low level switching element	PCB terminal	Axial	31-940	3
	PCB terminal	90° angled	31-941	2
For snap-action switching element 2.8 mm	PCB terminal	Axial	31-942	4

### 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

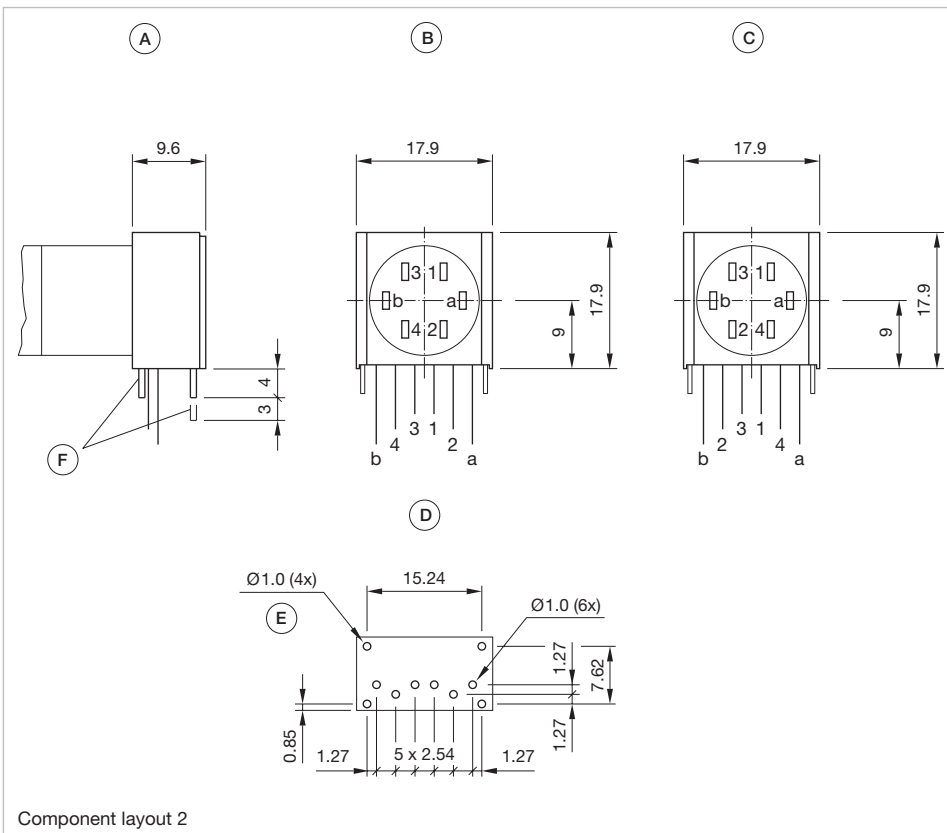


Dimensions [mm]  
for Part No. 31-940

Dimensions [mm]  
for Part No. 31-941

Dimensions [mm]  
for Part No. 31-942

## Component layouts

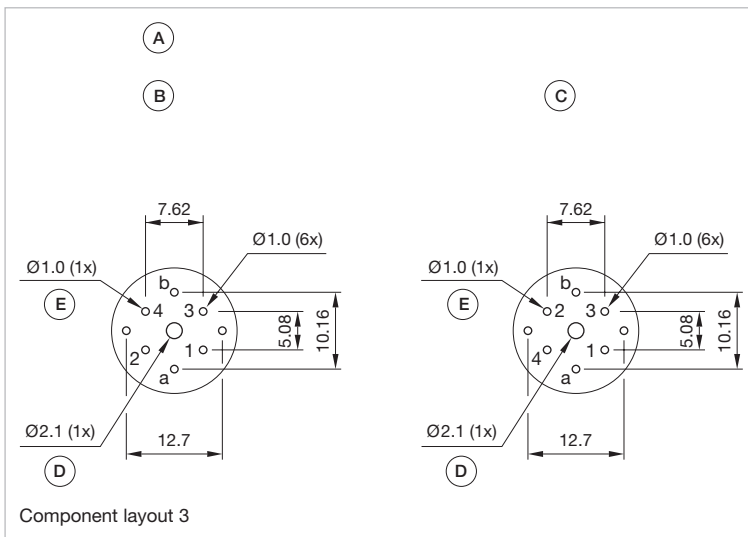


Component layout 2

- Dimensions [mm]  
 A = Socket 90° angled  
 B = Occupancy plan (component side)  
 C = Occupancy plan diode block  
 D = Drilling plan (component side)  
 E = non-metallic  
 F = Extendable mounting pins



## Component layouts



Dimensions [mm]

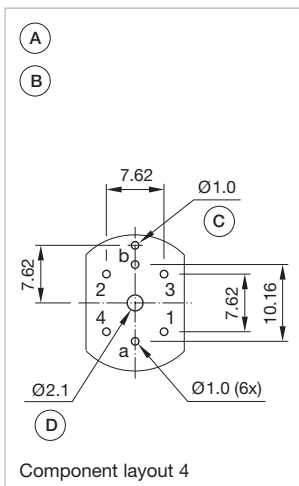
A = Axial socket

B = Drilling-/occupancy plan (component side)

C = Drilling-/occupancy plan diode block

D = for central mounting with M2 screw, if desired

E = non-metallic



Dimensions [mm]

A = Axial socket

B = Drilling-/occupancy plan (component side)

C = non-metallic

D = for central mounting with M2 screw, if desired



### Series resistor

Operating voltage	Resistance	Part No.
110 V AC	2.7 kOhm	02-904.0
125 V AC	3.3 kOhm	02-904.1
145 V AC	4.7 kOhm	02-904.3
240 V AC	10 kOhm	02-904.7

#### Additional information

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

# 51 Accessories

## Mounting



**Fixing nut**

Product attributes	Dimensions	Material	Colour	Part No.
Special recommended for keylock switches	Ø 16 mm	metal	Silver	31-991
Standard delivery		plastic	Black	51-991



**Mounting tool**

Product attributes	Dimensions	Material	Part No.
For tightening or loosening of the fixing nut Ø 16 mm	Ø 16 mm	metal	01-907



**Dismantling tool**

Product attributes	Part No.
For dismantling of lens, lens holder and switching element block	51-938



**Lens remover**

Product attributes	Material	Part No.
For raised design	metal	02-905
For flush design	metal / plastic	61-9730.0



**Lamp remover**

Product attributes	Material	Part No.
A switching action may occur when replacing the lamp	plastic	61-9740.0



**Mounting tool**

Product attributes	Dimensions	Material	Part No.
For tightening or loosening of the fixing nut Ø 16 mm	Ø 16 mm	metal	01-907

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

### Switching system

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

### Material

**Material of contact**  
Gold plated hardsilver

**Switch housing**  
Plastic, heat-resistant and self-extinguishing

**Actuator housing**  
Plastic, self-extinguishing

### Mechanical characteristics

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

**Tightening torque**  
For fixing nut max. 0.5 Nm

**Actuating torque**  
0.025 Nm ... 0.055 Nm, depending on the number of switching elements. Measured at the key or lever of the keylock- or selector switch.

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

**Mechanical lifetime**  
Keylock switch 50 000 cycles of operation  
Selector switch 100 000 cycles of operation

### Electrical characteristics

**Electrostatic discharge (ESD)**  
≤ 15 kV (Keylock switch)

**Thermal current I<sup>th</sup>**  
5 A

**Switching voltage and switching current**  
250 VAC, 5 A (cos φ 0.75)

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

**Protection class**  
II

### Ambient conditions

**Storage temperature**  
-40 °C ... +85 °C

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

**Protection degree**  
Front side, as per IEC 60529  
IP65 keylock switch  
IP40 selector switch

### Approvals

**Approbations**  
CB (IEC 61058-1)  
CSA  
CQC  
ENEC (EN 61058-1)  
DNV GL (previously Germanischer Lloyd)  
UL

**Conformities**  
CE  
2014/30/EC (EMC)  
2014/35/EC (LVD)  
2011/65/EC (RoHS)

# 51 Technical data

## 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  $\mu\text{A}/\mu\text{V}$  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

Plastic, heat-resistant and self-extinguishing

#### Actuator housing

Plastic, self-extinguishing

### Mechanical characteristics

#### Terminals

The universal terminals permit these units to be mounted on printed circuit boards (PCB). These terminals can also be used as soldering or plug-in terminals.

For these terminals we can also supply a plug-in base which, when soldered on to the board, enables the switch to be plugged in.

#### Soldering terminal

Max. wire diameter 2 wires à 1 mm

Max. wire cross-section of stranded cable 2 x 0.75 mm<sup>2</sup>

Plug-in terminal 2.0 mm x 0.5 mm

#### Tightening torque

For fixing nut max. 0.5 Nm

#### Actuating torque

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

#### Actuating force

1.8 N ... 3.5 N

#### Actuating travel

Illuminated pushbutton 3 mm

Keylock-/selector switch actuator 2 positions

1 x ca. 42° deflection momentary action

1 x ca. 90° deflection maintained action

#### Mechanical lifetime

Momentary action 5 million cycles of operation

Maintained action 1 million cycles of operation

Keylock switch 50 000 cycles of operation

### Electrical characteristics

#### Electrostatic breakdown value

≤ 15 KV (Keylock switch)

#### Switching voltage and switching current

100 mA at 42 VAC/VDC

#### Electric strength

2500 VAC, 50 Hz, 1 minute between all terminals and earth, as per IEC 61058-1, part 15

### Ambient conditions

#### Storage temperature

-40 °C ... +85 °C

#### Operating temperature

-25 °C ... +55 °C

For indicators and illuminated pushbuttons mounted as a block, make sure the heat can escape freely.

#### Protection degree

IP65 front side, as per DIN/EN 60529

#### Shock resistance

(Single impacts, semi-sinusoidal)

15 g for 11 ms, as per DIN/EN 60512-4-3, DIN/EN 60068-2-27

## 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 and 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 is not stackable, only 1 switching element can be on a pushbutton.

### Material

#### Material of contact

Gold plated silver

#### Switch housing

Axial soldering-/plug-in terminal 2.8 mm  
Plastic, heat-resistant and self-extinguishing.

Soldering terminal: Plastic

#### Actuator housing

Plastic, self-extinguishing

### Mechanical characteristics

#### Terminals

Snap-action switching element with tinned soldering terminals at the sides

Max. wire diameter 2 wires à 1.2 mm

Max. wire cross-section of stranded cable 1 x 1 mm<sup>2</sup>

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

Max. wire diameter 2 wires of 1 mm

Max. wire cross-section of stranded cable 2 of 0.75 mm<sup>2</sup> or 1 x 1.0 mm<sup>2</sup>

#### Tightening torque

For fixing nut max. 0.5 Nm

#### Actuating torque

0.025 Nm ... 0.055 Nm, depending on the number of switching elements. Measured at the key or lever of the keylock- or selector switch.

#### Actuating force

1.8 N ... 6 N, depending on the number of switching elements

### Actuating travel

Illuminated pushbutton 3 mm

Keylock-/selector switch actuator 2 positions

1 x ca. 42° deflection momentary action

1 x ca. 90° deflection maintained action

### Mechanical lifetime

Momentary action 2 million cycles of operation

Maintained action 1 million cycles of operation

Keylock switch 50 000 cycles of operation

### Electrical characteristics

#### Standards

EN/IEC 61058-1

#### Rated voltage

250 VAC/VDC

#### Rated current

5 A

#### Electrostatic discharge (ESD)

≤ 15 KV (Keylock switch)

#### Thermal current I<sub>th</sub>

5 A

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

#### Switching voltage and switching current

250 VAC, 5 A (ohmic)

250 VAC, 2 A (inductive, cos(φ) = 0.7)

125 VAC, 3 A (inductive, cos(φ) = 0.7)

220 VDC, 0.1 A (inductive, L:R = 30 ms)

110 VDC, 0.2 A (inductive, L:R = 30 ms)

60 VDC, 0.7 A (inductive, L:R = 30 ms)

24 VDC, 2 A (inductive, L:R = 30 ms)

#### Electric strength

2500 VAC, 50 Hz, 1 minute between all terminals and earth, as per IEC 61058-1, part 15

#### Protection class

II

#### Electrical lifetime

50 000 cycles of operation

# 51 Technical data

## Ambient 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

IP65 front side, as per DIN EN 60529

### Shock resistance

(Single impacts, semi-sinusoidal)

15g for 11 ms, as per DIN EN 60512-4-3, DIN EN 60068-2-27

### Vibration resistance

(Sinusoidal)

10g at 10Hz ... 1500 Hz, amplitude 0.75 mm, as per DIN EN 60512-4-4, DIN EN 60068-2-6

### Climate resistance

Standard condition, as per DIN EN 60068-2-30

Changing condition, as per DIN EN 60068-2-14

## Approvals

### Approbations

CB (IEC 61058-1)

CSA

CQC

ENEC (EN 61058-1)

DNV GL (previously Germanischer Lloyd)

UL

### Conformities

CE

2014/30/EC (EMC)

2014/35/EC (LVD)

2011/65/EC (RoHS)

## Stop Switch

### Switching system

#### Switching element SE16 with solder terminal

Self-cleaning, double-break snap-action switching system

1 NC contact and 1 NO contact per switching element.

Available with up to two switching elements (2 NC contact and 2 NO contact)

#### Switching element SE 2.8 mm with solder-/ plug-in terminal

Self-cleaning, double-break snap-action switching system

(1 NC contact and 1 NO contact)

#### Low-level switching element with universal terminal

Single-break momentary contact switch system. Two contacts per switching element with a combination of NC and NO contacts

### Material

#### Actuator housing

Plastic

#### Lens

Plastic

#### Actuator

Plastic

### Label

Plastic

### Switching element

Solder terminal Polyamide (PA 6.6)

Solder-/plug-in interterminal Diallyl Phthalate (DAP), Polyamide (PA), Polysulfone (PSU)

Universal terminal Polysulfone (PSU)

### Contact material

Snap action solder terminal gold-plated silver

Snap action plug-in/solder terminal gold-plated silver

Low-level plug-in/solder/PCB terminal gold-plated

### Mechanical characteristics

#### Terminals

Plug-in terminal, 2.8 mm × 0.5 mm

Universal terminal with 2.0 × 0.5 mm

Solder and PCB terminal

#### Tightening torque

For fixing nut max. 0.5 Nm

#### Actuating force

1.8 ... 6 N (depending on the switching element)

## Mechanical lifetime

100 000 cycles of operation

## Electrical characteristics

### Switching voltage and switching current

Solder terminal	250 VAC, 5 A (ohmic) 24 VDC, 2 A (inductive, L:R = 30ms)
Plug-in terminal	250 VAC, 5 A (ohmic) 24 VDC, 2 A (inductive, L:R = 30ms)
Universal terminal	42 VAC/DC, 100 mA

## Ambient conditions

### Storage temperature

-40 °C ... +85 °C

### Operating temperature

-25 °C ... +55 °C

### Protection degree

IP65 front side

EAO reserves the right to alter specifications without further notice.

## Approvals

### Approbations

UL  
CSA  
CB (IEC 61058-1)  
ENEC (EN 61058-1)

### Conformities

CE  
2006/42/EC (MD)  
2011/65/EC (RoHS)

Approvals are not valid for Stop switches with low-level switching element.

01

02

03

04

09

14

17

18

19

22

31

41

45

**51**

56

57

61

70

71

82

84

92

96

# 51 Marking

## 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. Red, blue and black lenses are filled with white colour. Other colour lenses are filled in black. Standard height of letters is 2 mm. If the height is not specified, we will supply 2 mm engraved letters.

### 2. Hot stamping

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

### 3. Film inserts

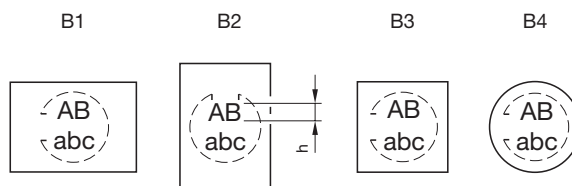
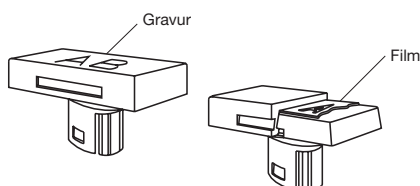
Instead of using engraving the lenses can be fitted with transparent film inserts, as an alternative. For this purpose, though, it is advisable to use transparent lenses. In the case of use of a smoke-black lens the fitted film becomes readable only if the lamp is on. The film thickness is 0.2 mm.

**Important: Consider pushbutton mounting orientation before specifying engraving characters!**

## Lenses for indicators and illuminated pushbuttons, raised mounting

All dimensions in mm

Front size (Lens)	Film insert max. size	Height of letters h	Number of lines	Number of capital letters per line (target value)	Number of small letters per line (target value)	Image
18 x 24 (12.8 x 18.8)	12.7 x 18.7	2.5	3	9	10	B1
		3	3	8	8	B1
		4	2	5	6	B1
		5	2	4	5	B1
		6	1	4	4	B1
		8	1	3	3	B1
		2.5	5	6	7	B2
		3	4	5	6	B2
		4	3	4	4	B2
		5	3	3	3	B2
		6	2	2	3	B2
		8	1	2	2	B2
18 x 18 (12.8 x 12.8)	12.7 x 12.7	2.5	3	6	7	B3
		3	3	5	6	B3
		4	2	4	4	B3
		5	2	3	3	B3
		6	1	2	3	B3
		8	1	2	2	B3
Ø 18 (Ø 15.8)	Ø 12.8	2.5	3	4-5	5-6	B4
		3	3	2-4	3-5	B4
		4	2	2-3	3-4	B4
		5	2	1-2	2-3	B4
		6	1	2	3	B4
		8	1	2	2	B4

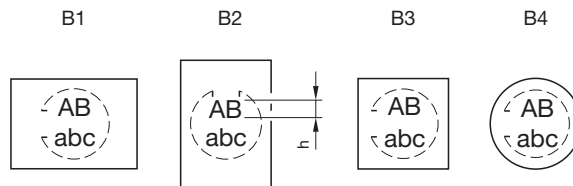
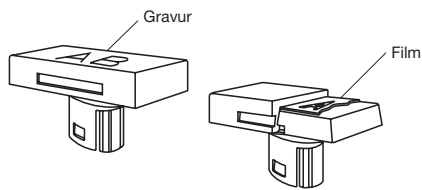




## Lenses for indicators and illuminated pushbuttons, raised mounting

All dimensions in mm

Front size (Lens)	Film insert max. size	Height of letters h	Number of lines	Number of capital letters per line (target value)	Number of small letters per line (target value)	Image
18 x 24 (12.8 x 18.8)	15.1 x 21	2.5	4	10	11	B1
		3	3	8	9	B1
		4	2	6	7	B1
		5	2	5	6	B1
		6	1	4	5	B1
		8	1	3	3	B1
		2.5	5	7	8	B2
		3	4	6	7	B2
		4	3	5	5	B2
		5	3	4	4	B2
		6	2	3	3	B2
		8	2	2	2	B2
18 x 18 (12.8 x 12.8)	15.1 x 15.1	2.5	4	7	8	B3
		3	3	6	7	B3
		4	2	5	5	B3
		5	2	4	4	B3
		6	1	3	3	B3
		8	1	2	2	B3
Ø 18 (Ø 15.8)	Ø 15.6	2.5	3	6-7	6-8	B4
		3	3	4-6	5-7	B4
		4	2	4	4-5	B4
		5	2	2-3	3	B4
		6	1	2	2-3	B4
		8	1	2	2-3	B4



# 51 Application guidelines

## 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.

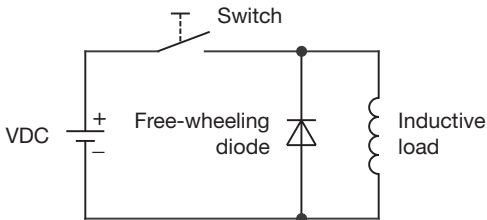
Fig. 1 shows an inductive load with a free-wheeling diode connected in parallel. This free-wheeling diode provides a path for the inductor current to flow when the current is interrupted by the switch. Without this free-wheeling diode, the voltage across the coil will be limited only by dielectric breakdown voltages of the circuit or parasitic elements of the coil. This voltage can be kilo-

volts in amplitude even when nominal circuit voltages are low (e.g. 12VDC) 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 ( $V_R$ ) 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

