

# Series 84

## Characteristics

The compact 22.5 mm Series 84 is especially suited for:

- Flush design
- Raised design
- PCB mounting

The extremely small mounting depth makes this series highly suited for installation in flat, narrow casings. In combination with PCB fitting, Series 84 offers optional HALO illumination with attractive combination options and a wide variety of designs.

## Functions

The Series 84 incorporates the following functions:

- Indicator
- Pushbutton
- Illuminated pushbutton
- E-STOP switch

## Market segments

The EAO Series 84 is especially suited for applications in the segments:

- Public transport
- Machinery and Automation
- Construction machines and special-purpose vehicles
- Lifting and moving
- Panel building
- Medicinal technology
- Laboratory and measuring equipment

Please refer to the EAO website to obtain detailed information regarding this series [www.products.eao.com](http://www.products.eao.com)  
Configure a product to your exact needs and request a quotation.





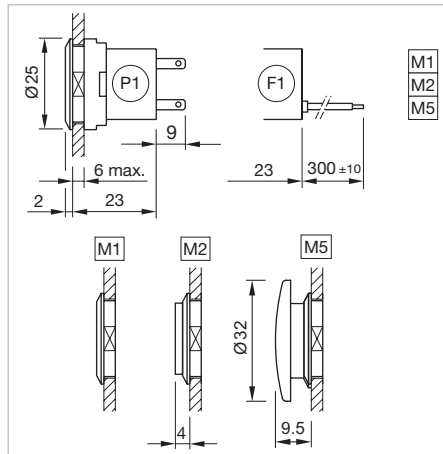
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# 84 Flush design

## Indicator standard

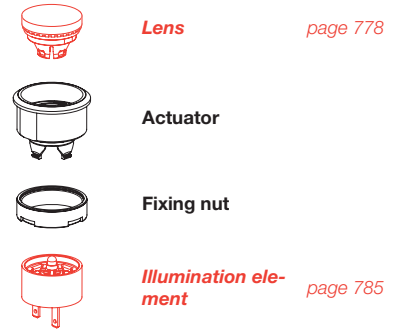


Product can differ from the current configuration.



Dimensions [mm]  
 F1 = Flat ribbon cable,  
 P1 = Plug-in terminal 2.8 x 0.8 mm,  
 M1 = Lens level with bezel,  
 M2 = Lens raised above bezel,  
 M5 = Mushroom-head cap

### Equipment consisting of (schematic overview)

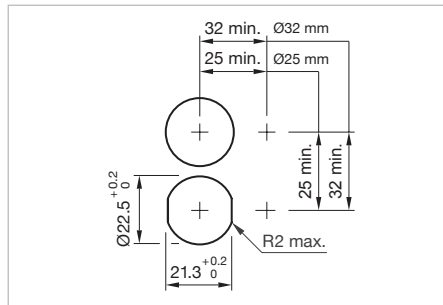


Each Part Number listed below includes all the black components shown in the 3D-drawing.


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

### Additional Information

- Illuminated lens, non-illuminated bezel
- The colour of anodized aluminium parts can vary due to technical production reasons



Mounting cut-outs [mm]

Front protection	Front ring	Part No.	Weight
 <p><b>Indicator actuator standard, Front dimension Ø 25 mm</b></p>	Plastic black	<b>84-3100.0</b>	0.004 kg
	Plastic black	<b>84-0100.0</b>	0.003 kg
	Aluminium natural anodized	<b>84-0200.7</b>	0.008 kg



## Indicator PCB standard

### Equipment consisting of (schematic overview)



**Lens** page 778



**Actuator**



**Fixing nut**



**Mounting flange** page 791



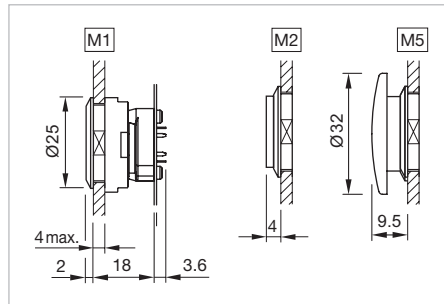
**LED** page 793



**Illumination element** page 790

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

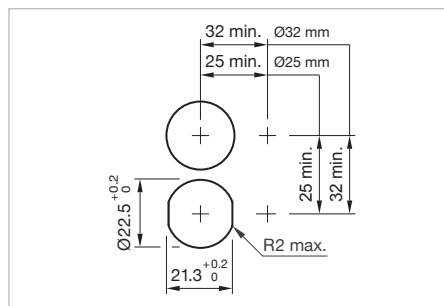
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
 M1 = Lens level with bezel  
 M2 = Lens raised above bezel  
 M5 = Mushroom-head cap




Product can differ from the current configuration.



Mounting cut-outs [mm]

### Additional Information

- Illuminated lens, non-illuminated bezel
- The colour of anodized aluminium parts can vary due to technical production reasons

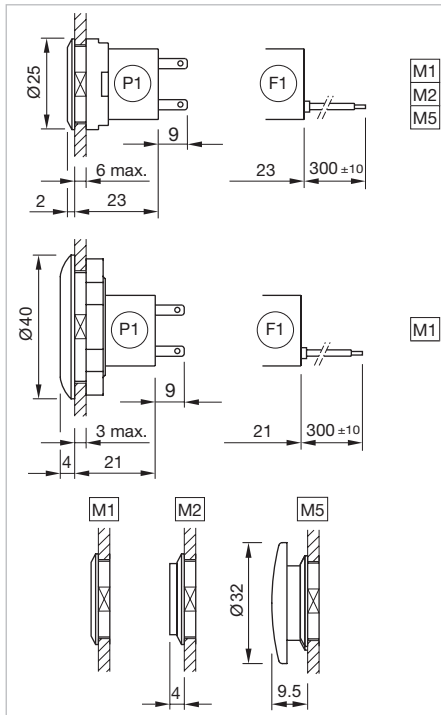
Front protection	Front ring	Part No.	Weight
 <p><b>Indicator actuator PCB standard, Front dimension Ø 25 mm</b></p>	Plastic black	<b>84-3100.0</b>	0.004 kg
	Plastic black	<b>84-0100.0</b>	0.003 kg
	Aluminium natural anodized	<b>84-0200.7</b>	0.008 kg

# 84 Flush design

## Illuminated pushbutton standard

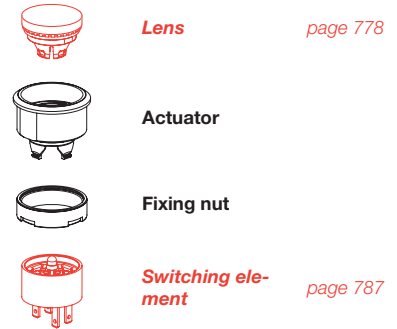


Product can differ from the current configuration.



Dimensions [mm]  
 F1 = Flat ribbon cable,  
 P1 = Plug-in terminal 2.8 x 0.8 mm,  
 M1 = Lens level with bezel,  
 M2 = Lens raised above bezel,  
 M5 = Mushroom-head cap

### Equipment consisting of (schematic overview)

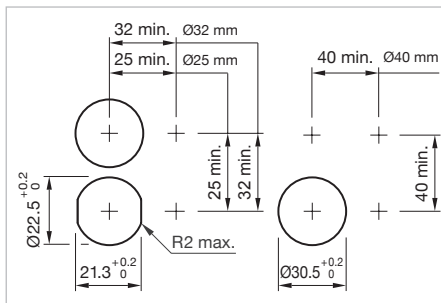


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

### Additional Information

- Illuminated lens, non-illuminated bezel
- The colour of anodized aluminium parts can vary due to technical production reasons



Mounting cut-outs [mm]

Front protection	Front ring	Switching action	Part No.	Wiring diagram	Weight
	<b>Illuminated pushbutton standard, Front dimension Ø 40 mm</b>				
IP 67	Aluminium natural anodized	B	<b>84-1221.7</b>	1	0.022 kg
	<b>Illuminated pushbutton standard, Front dimension Ø 25 mm</b>				
IP 40	Plastic black	B	<b>84-2101.0</b>	1	0.004 kg
IP 67	Plastic black	B	<b>84-1101.0</b>	1	0.003 kg
	Aluminium black anodized	B	<b>84-1201.0</b>	1	0.008 kg
	Aluminium red anodized	B	<b>84-1201.2</b>	1	0.008 kg

Front protection	Front ring	Switching action	Part No.	Wiring diagram	Weight
IP 67	Aluminium gold anodized	B	<b>84-1201.4</b>	1	0.008 kg
	Aluminium olive-green anodized	B	<b>84-1201.5</b>	1	0.008 kg
	Aluminium blue anodized	B	<b>84-1201.6</b>	1	0.008 kg
	Aluminium natural anodized	B	<b>84-1201.7</b>	1	0.008 kg

Switching action: B = Momentary



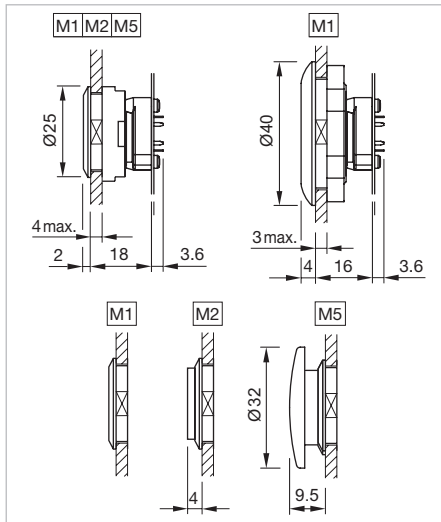
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# 84 Flush design

## Illuminated pushbutton PCB standard

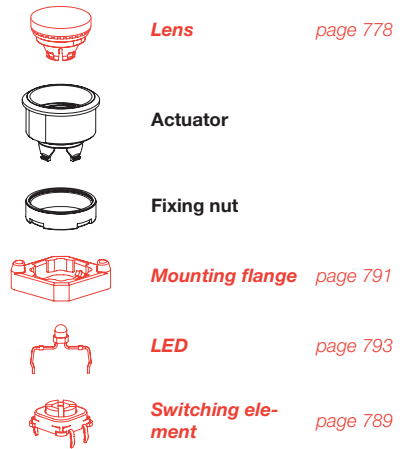


Product can differ from the current configuration.



Dimensions [mm]  
 M1 = Lens level with bezel,  
 M2 = Lens raised above bezel,  
 M5 = Mushroom-head cap

### Equipment consisting of (schematic overview)

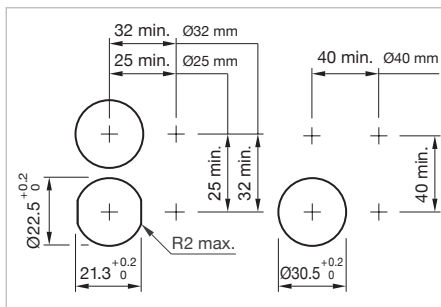


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

### Additional Information

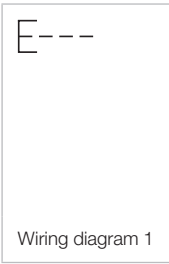
- Illuminated lens, non-illuminated bezel
- The colour of anodized aluminium parts can vary due to technical production reasons



Mounting cut-outs [mm]

Front protection	Front ring	Switching action	Part No.	Wiring diagram	Weight
	<b>Illuminated pushbutton actuator PCB standard, Front dimension Ø 40 mm</b>				
IP 67	Aluminium natural anodized	B	<b>84-1221.7</b>	1	0.022 kg
	<b>Illuminated pushbutton actuator PCB standard, Front dimension Ø 25 mm</b>				
IP 40	Plastic black	B	<b>84-2101.0</b>	1	0.004 kg
IP 67	Plastic black	B	<b>84-1101.0</b>	1	0.003 kg
	Aluminium black anodized	B	<b>84-1201.0</b>	1	0.008 kg
	Aluminium red anodized	B	<b>84-1201.2</b>	1	0.008 kg
	Aluminium gold anodized	B	<b>84-1201.4</b>	1	0.008 kg
	Aluminium olive-green anodized	B	<b>84-1201.5</b>	1	0.008 kg
	Aluminium blue anodized	B	<b>84-1201.6</b>	1	0.008 kg
	Aluminium natural anodized	B	<b>84-1201.7</b>	1	0.008 kg

Switching action: B = Momentary



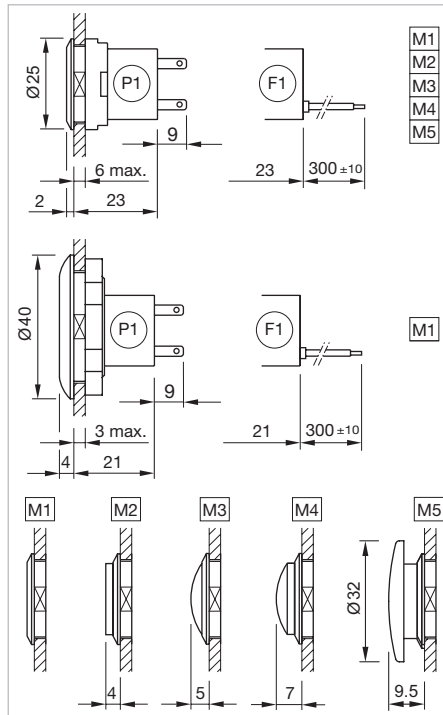
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# 84 Flush design

## Pushbutton standard

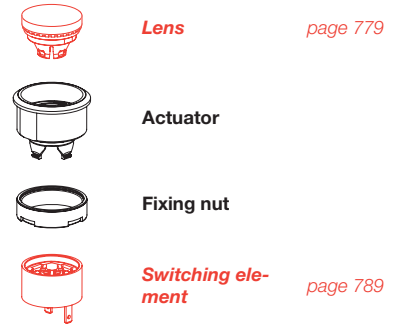


Product can differ from the current configuration.



Dimensions [mm]  
 F1 = Flat ribbon cable,  
 P1 = Plug-in terminal 2.8 x 0.8 mm,  
 M1 = Lens level with bezel,  
 M2 = Lens raised above bezel,  
 M3 = Lens konvexe level with bezel,  
 M4 = Lens konvexe raised above bezel,  
 M5 = Mushroom-head cap

### Equipment consisting of (schematic overview)

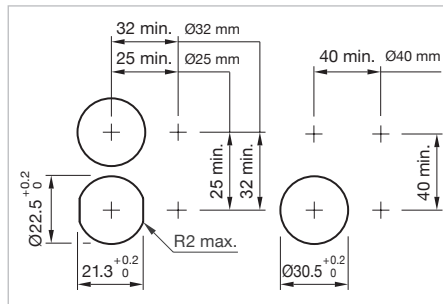


Each Part Number listed below includes all the black components shown in the 3D-drawing.


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


### Additional Information

- Non-illuminated lens and bezel
- The colour of anodized aluminium parts can vary due to technical production reasons



Mounting cut-outs [mm]

Front protection	Front ring	Switching action	Part No.	Wiring diagram	Weight
					
<b>Pushbutton actuator standard, Front dimension Ø 40 mm</b>					
IP 67	Aluminium natural anodized	B	84-1221.7	1	0.022 kg

Front protection	Front ring	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Pushbutton actuator standard, Front dimension Ø 25 mm</b></p>					
IP 40	Plastic black	B	<b>84-2101.0</b>	1	0.004 kg
IP 67	Plastic black	B	<b>84-1101.0</b>	1	0.003 kg
	Aluminium black anodized	B	<b>84-1201.0</b>	1	0.008 kg
	Aluminium red anodized	B	<b>84-1201.2</b>	1	0.008 kg
	Aluminium gold anodized	B	<b>84-1201.4</b>	1	0.008 kg
	Aluminium olive-green anodized	B	<b>84-1201.5</b>	1	0.008 kg
	Aluminium blue anodized	B	<b>84-1201.6</b>	1	0.008 kg
	Aluminium natural anodized	B	<b>84-1201.7</b>	1	0.008 kg

Switching action: B = Momentary



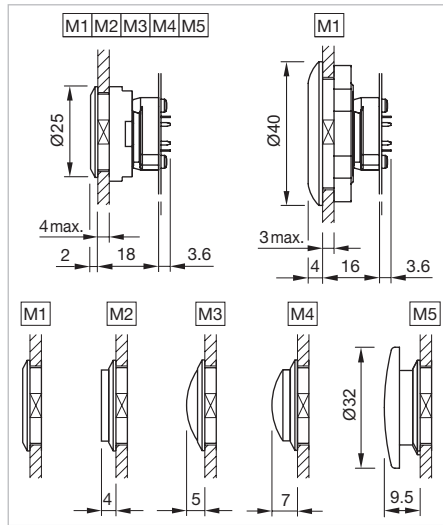
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- ST

# 84 Flush design

## Pushbutton PCB standard



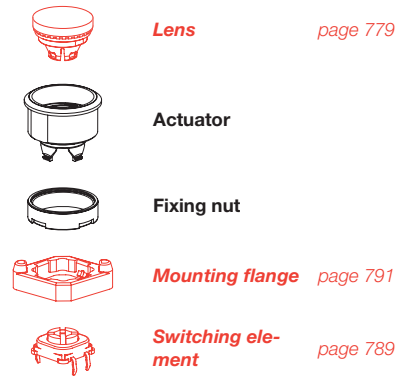
Product can differ from the current configuration.



Dimensions [mm]

F1 = Flat ribbon cable,  
 P1 = Plug-in terminal 2.8 x 0.8 mm,  
 M1 = Lens level with bezel,  
 M2 = Lens raised above bezel,  
 M3 = Lens konvexe level with bezel,  
 M4 = Lens konvexe raised above bezel,  
 M5 = Mushroom-head cap

### Equipment consisting of (schematic overview)

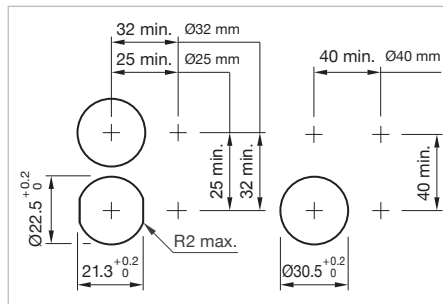


Each Part Number listed below includes all the black components shown in the 3D-drawing.


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

### Additional Information


- Non-illuminated lens and bezel
- The colour of anodized aluminium parts can vary due to technical production reasons



Mounting cut-outs [mm]

Front protection	Front ring	Switching action	Part No.	Wiring diagram	Weight
					
<b>Pushbutton actuator PCB standard, Front dimension Ø 40 mm</b>					
IP 67	Aluminium natural anodized	B	84-1221.7	1	0.022 kg



Front protection	Front ring	Switching action	Part No.	Wiring diagram	Weight
 <p><b>Pushbutton actuator PCB standard, Front dimension Ø 25 mm</b></p>					
IP 40	Plastic black	B	<b>84-2101.0</b>	1	0.004 kg
IP 67	Plastic black	B	<b>84-1101.0</b>	1	0.003 kg
	Aluminium black anodized	B	<b>84-1201.0</b>	1	0.008 kg
	Aluminium red anodized	B	<b>84-1201.2</b>	1	0.008 kg
	Aluminium gold anodized	B	<b>84-1201.4</b>	1	0.008 kg
	Aluminium olive-green anodized	B	<b>84-1201.5</b>	1	0.008 kg
	Aluminium blue anodized	B	<b>84-1201.6</b>	1	0.008 kg
	Aluminium natural anodized	B	<b>84-1201.7</b>	1	0.008 kg

Switching action: B = Momentary



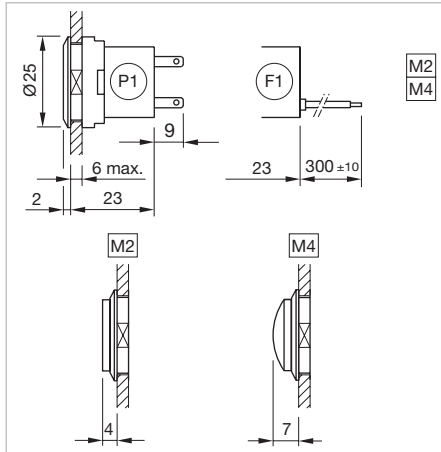
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# 84 Flush design

## Indicator with halo illumination standard, IP 67

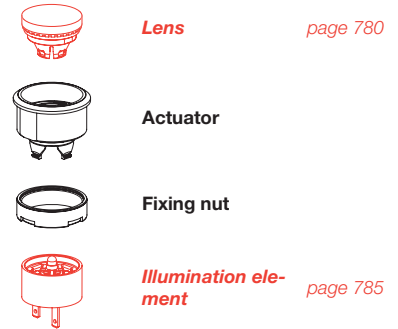


Product can differ from the current configuration.



Dimensions [mm]  
 F1 = Flat ribbon cable,  
 P1 = Plug-in terminal 2.8 x 0.8 mm,  
 M2 = Lens raised above bezel,  
 M4 = Lens convexe raised above bezel

### Equipment consisting of (schematic overview)

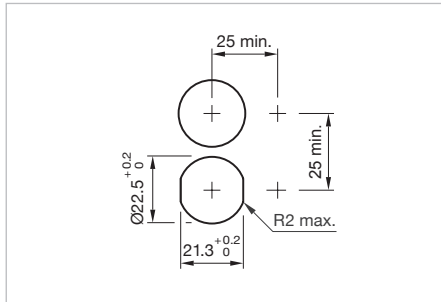


Each Part Number listed below includes all the black components shown in the 3D-drawing.


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

### Additional Information

- Front bezel illuminated
- Accessories for halo illumination: Essential lenses Part No. 84-7202.x00A and 84-7205.x00A









Mounting cut-outs [mm]

Front ring	Part No.	Weight
 <p><b>Indicator actuator with halo illumination standard, Front dimension Ø 25 mm</b></p> <p>Plastic colourless translucent</p>	<b>84-0090.7</b>	0.006 kg

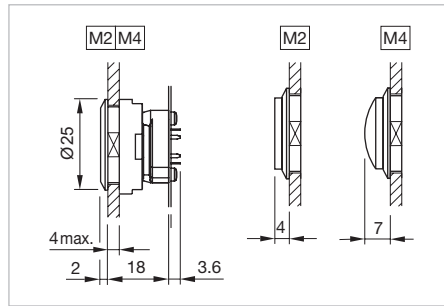
## Indicator with halo illumination PCB standard, IP 67

### Equipment consisting of (schematic overview)

	<b>Lens</b>	<i>page 780</i>
	<b>Actuator</b>	
	<b>Fixing nut</b>	
	<b>Mounting flange</b>	<i>page 791</i>
	<b>LED</b>	<i>page 793</i>
	<b>Illumination element</b>	<i>page 790</i>

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

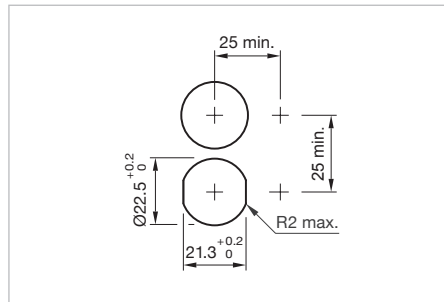
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
M2 = Lens raised above bezel,  
M4 = Lens convex raised above bezel




Product can differ from the current configuration.



Mounting cut-outs [mm]

### Additional Information

- Front bezel illuminated
- Accessories for halo illumination: Essential lenses Part No. 84-7202.x00A and 84-7205.x00A

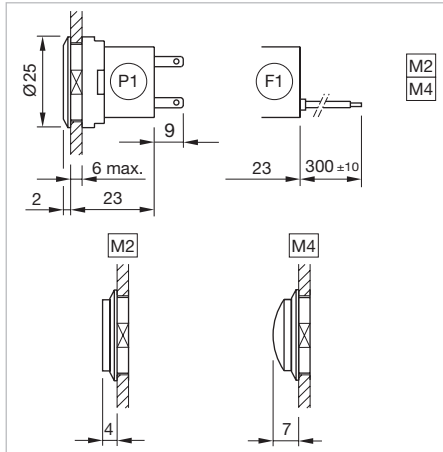
Front ring	Part No.	Weight
 <p><b>Indicator actuator with halo illumination PCB standard, Front dimension Ø 25 mm</b></p> <p>Plastic colourless translucent</p>	<b>84-0090.7</b>	0.006 kg

# 84 Flush design

## Pushbutton actuator with halo illumination standard, IP 67

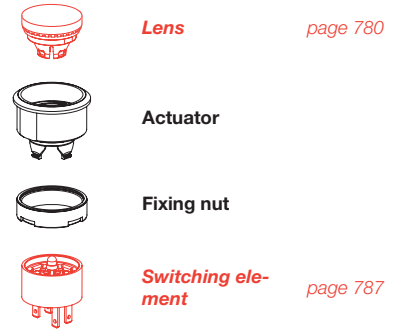


Product can differ from the current configuration.



Dimensions [mm]  
 F1 = Flat ribbon cable,  
 P1 = Plug-in terminal 2.8 x 0.8 mm,  
 M2 = Lens raised above bezel,  
 M4 = Lens convexe raised above bezel

### Equipment consisting of (schematic overview)

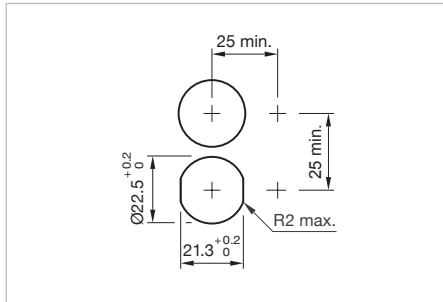


Each Part Number listed below includes all the black components shown in the 3D-drawing.


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

### Additional Information

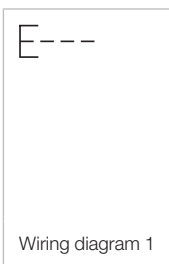
- Front bezel illuminated
- Accessories for halo illumination: Essential lenses Part No. 84-7202.x00A and 84-7205.x00A



Mounting cut-outs [mm]

Front ring	Switching action	Part No.	Wiring diagram	Weight
				
<b>Pushbutton actuator with halo illumination standard, Front dimension Ø 25 mm</b>				
Plastic colourless translucent	B	84-1091.7	1	0.006 kg







Switching action: B = Momentary



Wiring diagram 1

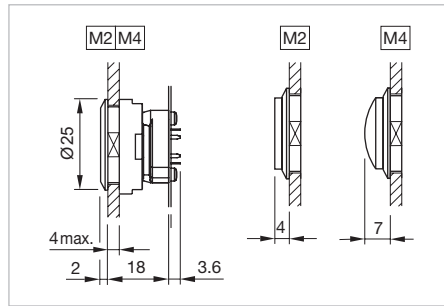
## Pushbutton with halo illumination PCB standard, IP 67

### Equipment consisting of (schematic overview)

-  **Lens** page 780
-  **Actuator**
-  **Fixing nut**
-  **Mounting flange** page 791
-  **LED** page 793
-  **Switching element** page 789

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.



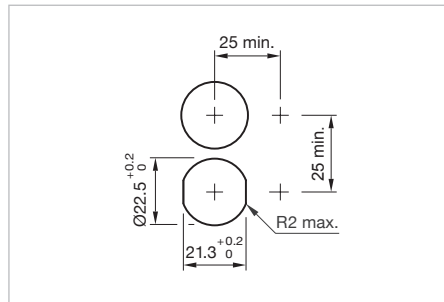
Dimensions [mm]  
 M2 = Lens raised above bezel,  
 M4 = Lens convex raised above bezel




Product can differ from the current configuration.

### Additional Information

- Front bezel illuminated
- Accessories for halo illumination: Essential lenses Part No. 84-7202.x00A and 84-7205.x00A



Mounting cut-outs [mm]

Front ring	Switching action	Part No.	Wiring diagram	Weight
				
<b>Pushbutton actuator with halo illumination PCB standard, Front dimension Ø 25 mm</b>				
Plastic colourless translucent	B	<b>84-1091.7</b>	1	0.006 kg

Switching action: B = Momentary

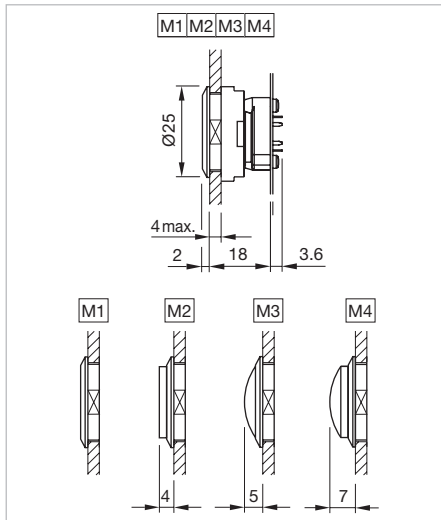


# 84 Flush design

## Indicator with halo illumination (multi-colour) PCB, IP 67

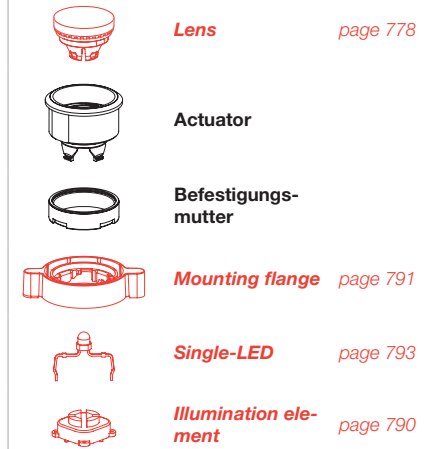


Product can differ from the current configuration.



Dimensions [mm]  
 M1 = Lens level with bezel,  
 M2 = Lens raised above bezel,  
 M3 = Lens konvexe level with bezel,  
 M4 = Lens konvexe raised above bezel

### Equipment consisting of (schematic overview)

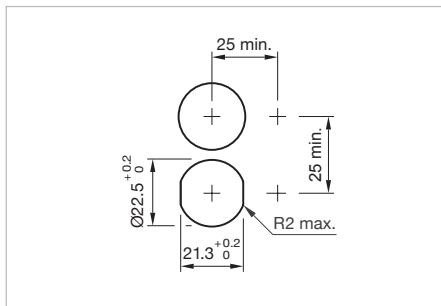


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

### Additional Information

- The LEDs are not part of delivery.  
 Recommendation: Osram Hyper Mini TOPLED

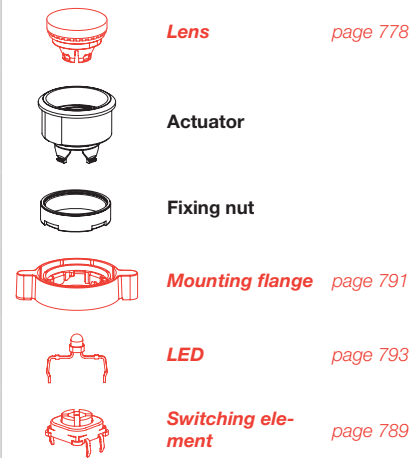


Mounting cut-outs [mm]

Front ring	Part No.	Weight
 <p><b>Indicator actuator with halo illumination (multi-colour) PCB, Front dimension Ø 25 mm</b></p>		
Plastic colourless transparent	<b>84-0080.7</b>	0.006 kg

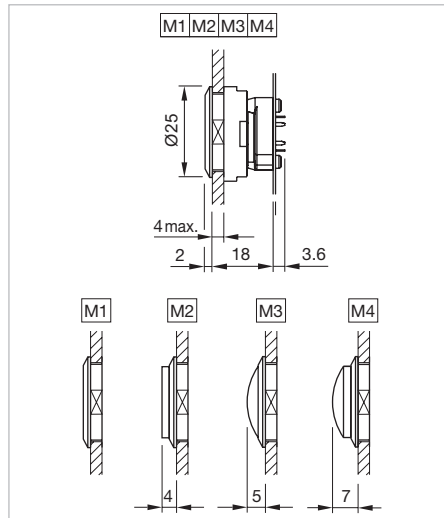
## Pushbutton actuator with halo illumination (multi-colour) PCB, IP 67

### 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.

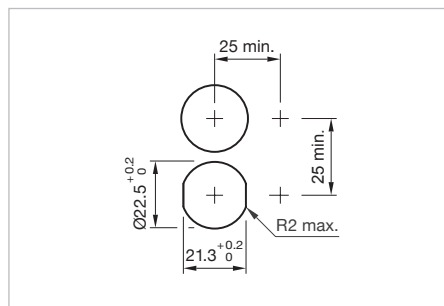


Dimensions [mm]

M1 = Lens level with bezel,  
 M2 = Lens raised above bezel,  
 M3 = Lens konvexe level with bezel,  
 M4 = Lens konvexe raised above bezel




Product can differ from the current configuration.



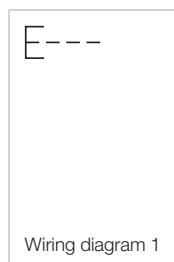
Mounting cut-outs [mm]

### Additional Information

- The LEDs are not part of delivery.  
 Recommendation: Osram Hyper Mini TOPLED

Front ring	Switching action	Part No.	Wiring diagram	Weight
				
<b>Pushbutton actuator with halo illumination (multi-colour) PCB, Front dimension Ø 25 mm</b>				
Plastic colourless transparent	B	84-1081.7	1	0.006 kg

Switching action: B = Momentary



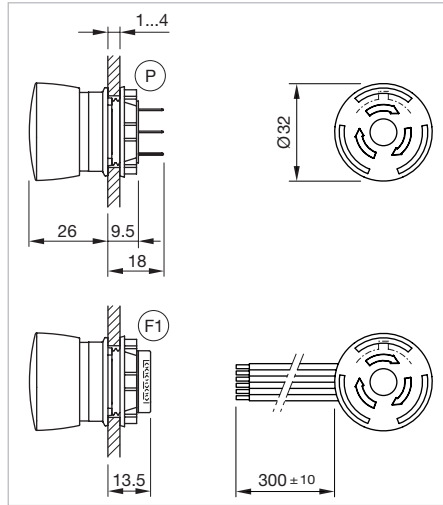
Wiring diagram 1

# 84 Raised design

Emergency-stop switch complete, foolproof EN IEC 60947-5-5, IP 65

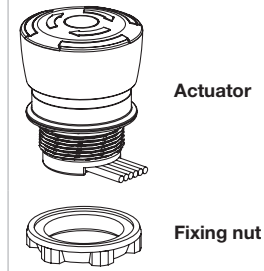


Product can differ from the current configuration.



Dimensions [mm]  
 F1 = Flat ribbon cable,  
 P = Plug-in terminal 2.8 x 0.5 mm

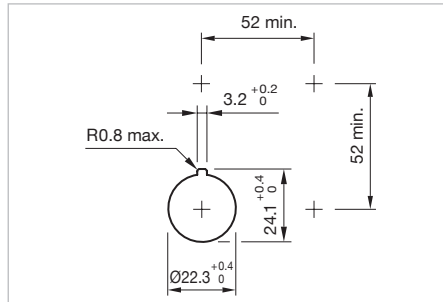
Equipment consisting of (schematic overview)




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

### Additional Information

- Lens plastic red
- Switching action maintain
- Twist to unlock clockwise
- Application as per DIN EN ISO 13850 and EN 60204-1
- Standard version: Flat ribbon-cable length 300 mm or plug-in terminal 2.8 x 0.5 mm
- Other options on request: Customisation of flat ribbon-cable and connectors
- Luminosity and wave length scattering caused by LED manufacturing processes may cause slight variations in the illumination




Mounting cut-outs [mm]

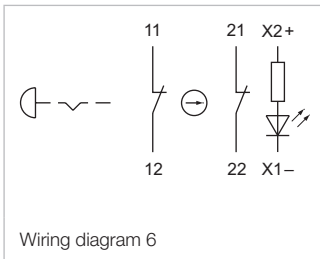
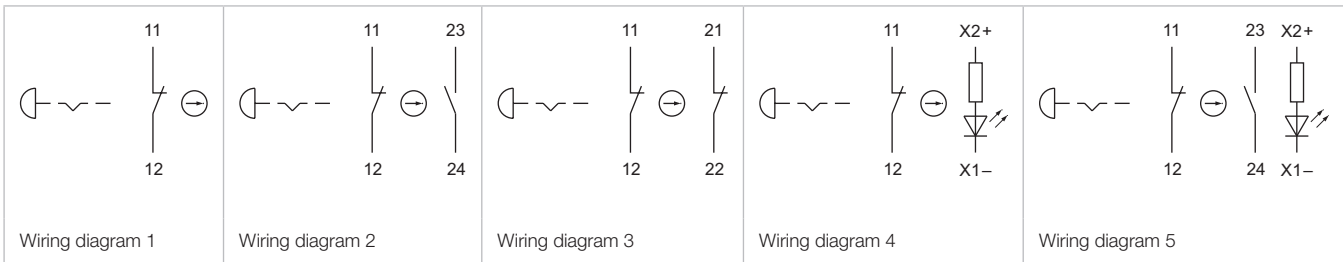
Product attribute	LED colour	Contacts	Terminal	Part No.	Component layout	Wiring diagram	Weight
	Position indication ring green	1 NC	Flat ribbon cable	<b>84-5120.0040</b>	1	1	0.036 kg
		1 NC + 1 NO	Flat ribbon cable	<b>84-5130.0040</b>	1	2	0.036 kg
		2 NC	Flat ribbon cable	<b>84-5140.0040</b>	1	3	0.036 kg
	Single-LED red	1 NC	Flat ribbon cable	<b>84-5121.2B40</b>	1	4	0.036 kg
		1 NC + 1 NO	Flat ribbon cable	<b>84-5131.2B40</b>	1	5	0.036 kg
		2 NC	Flat ribbon cable	<b>84-5141.2B40</b>	1	6	0.036 kg
Position indication ring black		1 NC	Flat ribbon cable	<b>84-5020.0040</b>	1	1	0.036 kg
		1 NC + 1 NO	Flat ribbon cable	<b>84-5030.0040</b>	1	2	0.036 kg
		2 NC	Flat ribbon cable	<b>84-5040.0040</b>	1	3	0.036 kg
	Single-LED red	1 NC	Flat ribbon cable	<b>84-5021.2B40</b>	1	4	0.036 kg
		1 NC + 1 NO	Flat ribbon cable	<b>84-5031.2B40</b>	1	5	0.036 kg
		2 NC	Flat ribbon cable	<b>84-5041.2B40</b>	1	6	0.036 kg

### Emergency-stop switch complete, foolproof EN IEC 60947-5-5, Front dimension Ø 32 mm



Product attribute	LED colour	Contacts	Terminal	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Emergency-stop switch complete, foolproof EN IEC 60947-5-5, Front dimension Ø 32 mm</b></p>							
Position indication ring green		1 NC	Plug 2.8 x 0.5 mm	<b>84-5120.0020</b>	2	1	0.028 kg
		1 NC + 1 NO	Plug 2.8 x 0.5 mm	<b>84-5130.0020</b>	2	2	0.028 kg
		2 NC	Plug 2.8 x 0.5 mm	<b>84-5140.0020</b>	2	3	0.028 kg
	Single-LED red	1 NC	Plug 2.8 x 0.5 mm	<b>84-5121.2B20</b>	2	3	0.028 kg
		1 NC + 1 NO	Plug 2.8 x 0.5 mm	<b>84-5131.2B20</b>	2	5	0.028 kg
		2 NC	Plug 2.8 x 0.5 mm	<b>84-5141.2B20</b>	2	6	0.028 kg
Position indication ring black		1 NC	Plug 2.8 x 0.5 mm	<b>84-5020.0020</b>	2	1	0.028 kg
		1 NC + 1 NO	Plug 2.8 x 0.5 mm	<b>84-5030.0020</b>	2	2	0.028 kg
		2 NC	Plug 2.8 x 0.5 mm	<b>84-5040.0020</b>	2	3	0.028 kg
	Single-LED red	1 NC	Plug 2.8 x 0.5 mm	<b>84-5021.2B20</b>	2	4	0.028 kg
		1 NC + 1 NO	Plug 2.8 x 0.5 mm	<b>84-5031.2B20</b>	2	5	0.028 kg
		2 NC	Plug 2.8 x 0.5 mm	<b>84-5041.2B20</b>	2	6	0.028 kg

Contacts: NC = Normally closed, NO = Normally open  
 The component layouts you will find from page 803

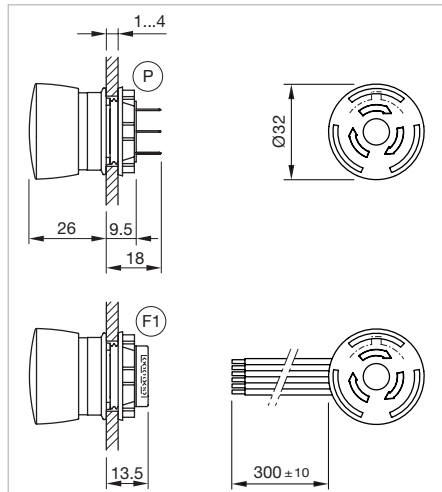


# 84 Raised design

## Stop switch complete grey, IP 65

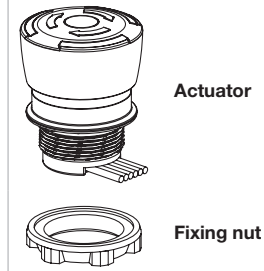


Product can differ from the current configuration.



Dimensions [mm]  
 F1 = Flat ribbon cable,  
 P = Plug-in terminal 2.8 x 0.5 mm

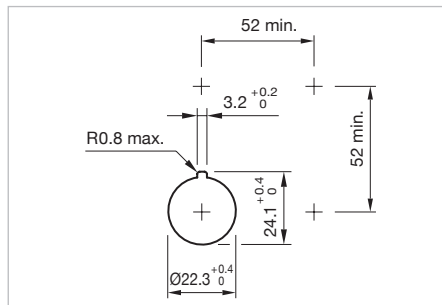
### Equipment consisting of (schematic overview)




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


### Additional Information

- Lens plastic grey
- Switching action maintain
- Position indication ring black
- Twist to unlock clockwise
- Standard version: Flat ribbon-cable length 300 mm or plug-in terminal 2.8 x 0.5 mm
- Other options on request: Customisation of flat ribbon-cable and connectors
- Luminosity and wave length scattering caused by LED manufacturing processes may cause slight variations in the illumination

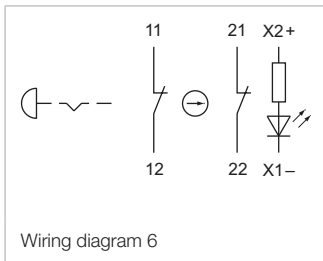
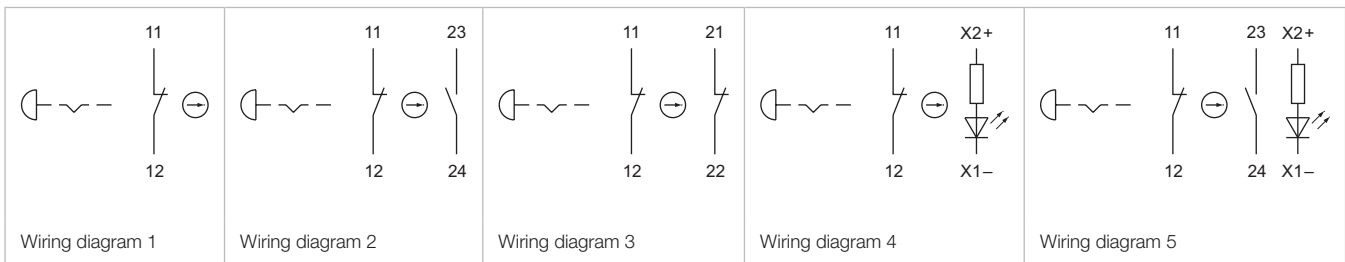


Mounting cut-outs [mm]

LED colour	Contacts	Terminal	Part No.	Component layout	Wiring diagram	Weight	
 <b>Stop switch complete grey, Front dimension Ø 32 mm</b>	1 NC	Flat ribbon cable	<b>84-6820.0040</b>	1	1	0.036 kg	
	1 NC + 1 NO	Flat ribbon cable	<b>84-6830.0040</b>	1	2	0.036 kg	
	2 NC	Flat ribbon cable	<b>84-6840.0040</b>	1	3	0.036 kg	
	Single-LED red	1 NC	Flat ribbon cable	<b>84-6821.2B40</b>	1	4	0.036 kg
		1 NC + 1 NO	Flat ribbon cable	<b>84-6831.2B40</b>	1	5	0.036 kg
		2 NC	Flat ribbon cable	<b>84-6841.2B40</b>	1	6	0.036 kg

LED colour	Contacts	Terminal	Part No.	Component layout	Wiring diagram	Weight	
 <p><b>Stop switch complete grey, Front dimension Ø 32 mm</b></p>	1 NC	Plug 2.8 x 0.5 mm	<b>84-6820.0020</b>	2	1	0.028 kg	
	1 NC + 1 NO	Plug 2.8 x 0.5 mm	<b>84-6830.0020</b>	2	2	0.028 kg	
	2 NC	Plug 2.8 x 0.5 mm	<b>84-6840.0020</b>	2	3	0.028 kg	
	Single-LED red	1 NC	Plug 2.8 x 0.5 mm	<b>84-6821.2B20</b>	2	4	0.028 kg
		1 NC + 1 NO	Plug 2.8 x 0.5 mm	<b>84-6831.2B20</b>	2	5	0.028 kg
		2 NC	Plug 2.8 x 0.5 mm	<b>84-6841.2B20</b>	2	6	0.028 kg

Contacts: NC = Normally closed, NO = Normally open  
 The component layouts you will find from page 803




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## Front

### Lens plastic

#### Additional Information


- Lens profile flat

Product attribute	Dimension	Lens	Mounting type	Part No.	Weight
 <p><b>Lens plastic</b></p>					
illuminative	Ø 19.7 mm	red transparent	level with bezel	<b>84-7111.200</b>	0.001 kg
		orange transparent	level with bezel	<b>84-7111.300</b>	0.001 kg
		yellow transparent	level with bezel	<b>84-7111.400</b>	0.001 kg
		green transparent	level with bezel	<b>84-7111.500</b>	0.001 kg
		blue transparent	level with bezel	<b>84-7111.600</b>	0.001 kg
		colourless transparent	level with bezel	<b>84-7111.700</b>	0.001 kg
non-illuminative	Ø 19.7 mm	black opaque	level with bezel	<b>84-7121.000</b>	0.001 kg
		grey opaque	level with bezel	<b>84-7121.800</b>	0.001 kg
illuminative	Ø 19.7 mm	red transparent	raised above bezel	<b>84-7115.200</b>	0.001 kg
		orange transparent	raised above bezel	<b>84-7115.300</b>	0.001 kg
		yellow transparent	raised above bezel	<b>84-7115.400</b>	0.001 kg
		green transparent	raised above bezel	<b>84-7115.500</b>	0.001 kg
		blue transparent	raised above bezel	<b>84-7115.600</b>	0.001 kg
		colourless transparent	raised above bezel	<b>84-7115.700</b>	0.001 kg
non-illuminative	Ø 19.7 mm	black opaque	raised above bezel	<b>84-7125.000</b>	0.001 kg
non-illuminative	Ø 19.7 mm	grey opaque	raised above bezel	<b>84-7125.800</b>	0.001 kg

### Marking plate


#### Additional Information

- Can be hot stamped

Marking plate	Part No.	Weight
 <p><b>Legend plate for lens plastic</b></p>		
Plastic colourless transparent	<b>61-9707.7</b>	0.001 kg


**Lens plastic with symbol**
**Additional Information**

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


Dimension	Lens	Mounting type	Symbol	Part No.	Weight
 <b>Lens plastic with symbol</b>					
Ø 19.7 mm	red transparent	level with bezel	Ring	<b>84-7111.201</b>	0.002 kg
	orange transparent	level with bezel	Ring	<b>84-7111.301</b>	0.002 kg
	yellow transparent	level with bezel	Ring	<b>84-7111.401</b>	0.002 kg
	green transparent	level with bezel	Ring	<b>84-7111.501</b>	0.002 kg
	blue transparent	level with bezel	Ring	<b>84-7111.601</b>	0.002 kg
	colourless transparent	level with bezel	Ring	<b>84-7111.701</b>	0.002 kg
 <b>Lens plastic with symbol</b>					
Ø 19.7 mm	red transparent	level with bezel	ON/OFF	<b>84-7111.202</b>	0.002 kg
	green transparent	level with bezel	ON/OFF	<b>84-7111.502</b>	0.002 kg
	blue transparent	level with bezel	ON/OFF	<b>84-7111.602</b>	0.002 kg
	colourless transparent	level with bezel	ON/OFF	<b>84-7111.702</b>	0.002 kg
 <b>Lens plastic with symbol</b>					
Ø 19.7 mm	red transparent	level with bezel	Stand by	<b>84-7111.203</b>	0.002 kg
	green transparent	level with bezel	Stand by	<b>84-7111.503</b>	0.002 kg
	blue transparent	level with bezel	Stand by	<b>84-7111.603</b>	0.002 kg
	colourless transparent	level with bezel	Stand by	<b>84-7111.703</b>	0.002 kg

**Lens metal**
**Additional Information**

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

Product attribute	Dimension	Lens	Mounting type	Part No.	Weight
 <b>Lens metal</b>					
flat	Ø 25 mm	Aluminium black anodized	level with bezel	<b>84-7201.000</b>	0.003 kg
	Ø 19.7 mm	Aluminium red anodized	level with bezel	<b>84-7201.200</b>	0.003 kg



# 84 Accessories

Product attribute	Dimension	Lens	Mounting type	Part No.	Weight
flat	Ø 19.7 mm	Aluminium gold anodized	level with bezel	<b>84-7201.400</b>	0.003 kg
		Aluminium olive-green anodized	level with bezel	<b>84-7201.500</b>	0.003 kg
		Aluminium blue anodized	level with bezel	<b>84-7201.600</b>	0.003 kg
		Aluminium natural anodized	level with bezel	<b>84-7201.800</b>	0.003 kg
		Aluminium black anodized	raised above bezel	<b>84-7205.000</b>	0.003 kg
		Aluminium red anodized	raised above bezel	<b>84-7205.200</b>	0.003 kg
		Aluminium gold anodized	raised above bezel	<b>84-7205.400</b>	0.003 kg
		Aluminium olive-green anodized	raised above bezel	<b>84-7205.500</b>	0.003 kg
		Aluminium blue anodized	raised above bezel	<b>84-7205.600</b>	0.003 kg
		Aluminium natural anodized	raised above bezel	<b>84-7205.800</b>	0.003 kg
 <p><b>Lens metal</b></p>					
convex (domed)	Ø 19.7 mm	Aluminium black anodized	level with bezel	<b>84-7202.000</b>	0.003 kg
		Aluminium red anodized	level with bezel	<b>84-7202.200</b>	0.003 kg
		Aluminium gold anodized	level with bezel	<b>84-7202.400</b>	0.003 kg
		Aluminium olive-green anodized	level with bezel	<b>84-7202.500</b>	0.003 kg
		Aluminium blue anodized	level with bezel	<b>84-7202.600</b>	0.003 kg
		Aluminium natural anodized	level with bezel	<b>84-7202.800</b>	0.003 kg

## Lens for halo illumination

### Additional Information





- Lens profile flat or convex (domed)
- The colour of anodized aluminium parts can vary due to technical production reasons

Product attribute	Dimension	Lens	Mounting type	Part No.	Weight
 <p><b>Lens metal for halo illumination</b></p>					
flat	Ø 19.7 mm	Aluminium black anodized	raised above bezel	<b>84-7205.000A</b>	0.003 kg
		Aluminium red anodized	raised above bezel	<b>84-7205.200A</b>	0.003 kg
		Aluminium gold anodized	raised above bezel	<b>84-7205.400A</b>	0.003 kg
		Aluminium olive-green anodized	raised above bezel	<b>84-7205.500A</b>	0.003 kg
		Aluminium blue anodized	raised above bezel	<b>84-7205.600A</b>	0.003 kg
		Aluminium natural anodized	raised above bezel	<b>84-7205.800A</b>	0.003 kg
 <p><b>Lens metal for halo illumination</b></p>					
convex (domed)	Ø 19.7 mm	Aluminium black anodized	raised above bezel	<b>84-7202.000A</b>	0.004 kg
		Aluminium red anodized	raised above bezel	<b>84-7202.200A</b>	0.004 kg
		Aluminium gold anodized	raised above bezel	<b>84-7202.400A</b>	0.004 kg
		Aluminium olive-green anodized	raised above bezel	<b>84-7202.500B</b>	0.004 kg
		Aluminium blue anodized	raised above bezel	<b>84-7202.600A</b>	0.004 kg
		Aluminium natural anodized	raised above bezel	<b>84-7202.800A</b>	0.004 kg

**Lens for stop request pushbutton**

**Additional Information**

- Lens profile flat
- With raised labelling symbol, TSI compliant
- The colour of anodized aluminium parts can vary due to technical production reasons

Dimension	Lens	Mounting type	Symbol	Part No.	Weight
	<b>Lens metal for halo illumination with raised symbol</b>				
Ø 19.7 mm	Aluminium natural anodized	raised above bezel	Door open	<b>84-7205.804A</b>	0.003 kg
	<b>Lens metal for halo illumination with raised symbol</b>				
Ø 19.7 mm	Aluminium natural anodized	raised above bezel	Wheelchair	<b>84-7205.805A</b>	0.003 kg
	<b>Lens metal for halo illumination with raised symbol</b>				
Ø 19.7 mm	Aluminium natural anodized	raised above bezel	Baby carriage	<b>84-7205.806A</b>	0.003 kg
	<b>Lens metal for halo illumination with raised symbol</b>				
Ø 19.7 mm	Aluminium natural anodized	raised above bezel	Bell	<b>84-7205.808A</b>	0.003 kg


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# 84 Accessories

## Lens metal with dot


### Additional Information

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

Product attribute	Dimension	Lens	Mounting type	Part No.	Weight
					
<b>Lens metal with dot</b>					
illuminative	Ø 19.7 mm	Aluminium black anodized	level with bezel	<b>84-7211.000</b>	0.002 kg
		Aluminium red anodized	level with bezel	<b>84-7211.200</b>	0.002 kg
		Aluminium gold anodized	level with bezel	<b>84-7211.400</b>	0.002 kg
		Aluminium olive-green anodized	level with bezel	<b>84-7211.500</b>	0.002 kg
		Aluminium blue anodized	level with bezel	<b>84-7211.600</b>	0.002 kg
		Aluminium natural anodized	level with bezel	<b>84-7211.800</b>	0.002 kg
		Aluminium black anodized	raised above bezel	<b>84-7215.000</b>	0.002 kg
		Aluminium red anodized	raised above bezel	<b>84-7215.200</b>	0.002 kg
		Aluminium gold anodized	raised above bezel	<b>84-7215.400</b>	0.002 kg
		Aluminium olive-green anodized	raised above bezel	<b>84-7215.500</b>	0.002 kg
		Aluminium blue anodized	raised above bezel	<b>84-7215.600</b>	0.002 kg
		Aluminium natural anodized	raised above bezel	<b>84-7215.800</b>	0.002 kg




**Mushroom-head cap**

Product attribute	Mushroom-head cap	Part No.	Weight
 <p><b>Mushroom-head cap, Front dimension Ø 32 mm</b></p>			
illuminative	Plastic blue	<b>84-7114.600A</b>	0.004 kg
non-illuminative	Plastic black	<b>84-7124.000A</b>	0.004 kg
	Plastic red	<b>84-7124.200A</b>	0.004 kg
	Plastic yellow	<b>84-7124.400A</b>	0.004 kg
	Plastic green	<b>84-7124.500A</b>	0.004 kg
	Plastic blue	<b>84-7124.600A</b>	0.004 kg

**Front protective cap, IP 68**

**Additional Information**


- For flat lense profil only
- When using the front protection cover the external sealing in the actuator has to be removed

Material	Colour	Optics	Part No.	Weight
 <p><b>Front protective cap</b></p>				
Silicone	colourless	transparent	<b>84-9103.7</b>	0.001 kg

**Legend frame**

**Additional Information**

- For devices with front dimension Ø 25 mm, flush design
- The colour of anodized aluminium parts can vary due to technical production reasons


Dimension	Material	Colour	Mounting type	Part No.	Weight
 <p><b>Legend frame</b></p>					
30 x 50 x 0.75 mm	Aluminium	black anodized	adhesive	<b>61-9980.0</b>	0.001 kg

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## Legend plate

### Additional Information

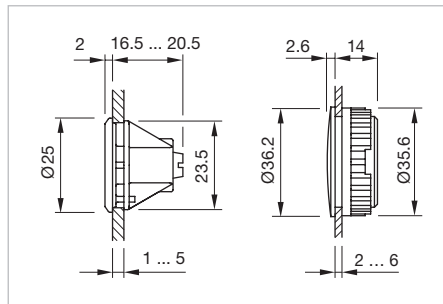
- For legend frame Part No. 61-9980.0
- The colour of anodized aluminium parts can vary due to technical production reasons

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


## Blind plug, IP 65

### Additional Information

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



Dimensions [mm]



Product attribute	Dimension	Mounting cut-out	Material	Colour	Part No.	Weight
 <p><b>Blind plug</b></p>						
with this print version of the panel thickness is reduced to 2.5 mm max.	Ø 25 mm	Ø 22.5 mm	Plastic	black	<b>61-9453.0</b>	0.006 kg
 <p><b>Blind plug</b></p>						
	Ø 36 mm	Ø 30.5 mm	Plastic	black	<b>704.964.8</b>	0.007 kg

Rear side

**Illumination element, IP 40**

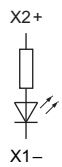
**Additional Information**

- LED and built-in resistor included
- Standard version: Cable length 300 mm with insulated ferrule, plug-in terminal 2.8 x 0.8 mm
- Other options on request: Customisation of cable and connectors, rear side fully sealed (IP 67)
- Protection degree (rear side): IP 40, upgrade to IP 67 with plug Part No. 84-900 possible. With applications where strong vibrations occur, the plugs may become loose
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

Protection degree	LED colour	Operating voltage	Operation current	Terminal	Part No.	Wiring diagram	Weight
 <p><b>Illumination element</b></p>							
IP 40	Single-LED red	12 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.2320</b>	1	0.005 kg
	Single-LED orange	12 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.3320</b>	1	0.005 kg
	Single-LED yellow	12 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.4320</b>	1	0.005 kg
	Single-LED green	12 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.5320</b>	1	0.005 kg
	Single-LED blue	12 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.6320</b>	1	0.005 kg
	Single-LED white	12 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.9320</b>	1	0.005 kg
	Single-LED red	24 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.2620</b>	1	0.005 kg
	Single-LED orange	24 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.3620</b>	1	0.005 kg
	Single-LED yellow	24 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.4620</b>	1	0.005 kg
	Single-LED green	24 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.5620</b>	1	0.005 kg
	Single-LED blue	24 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.6620</b>	1	0.005 kg
	Single-LED white	24 VDC ±10 %	10 mA	Plug 2.8 x 0.8 mm	<b>84-8001.9620</b>	1	0.005 kg
 <p><b>Illumination element</b></p>							
IP 40	Single-LED red	12 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.2340</b>	1	0.010 kg
	Single-LED orange	12 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.3340</b>	1	0.010 kg
	Single-LED yellow	12 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.4340</b>	1	0.010 kg
	Single-LED green	12 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.5340</b>	1	0.010 kg
	Single-LED blue	12 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.6340</b>	1	0.010 kg
	Single-LED white	12 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.9340</b>	1	0.010 kg
	Single-LED red	24 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.2640</b>	1	0.010 kg
	Single-LED orange	24 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.3640</b>	1	0.010 kg
	Single-LED yellow	24 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.4640</b>	1	0.010 kg
	Single-LED green	24 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.5640</b>	1	0.010 kg
	Single-LED blue	24 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.6640</b>	1	0.010 kg
	Single-LED white	24 VDC ±10 %	10 mA	Flat ribbon cable	<b>84-8001.9640</b>	1	0.010 kg

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# 84 Accessories



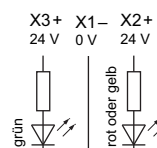
Wiring diagram 1

## Illumination element bi-colour

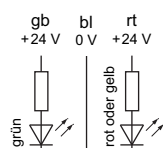
### Additional Information

- LED and built-in resistor included
- Standard version: Cable length 300 mm with insulated ferrule, plug-in terminal 2.8 x 0.8 mm
- Other options on request: Customisation of cable and connectors, rear side fully sealed (IP 67).
- Best illumination level will be reached with aluminium lens with spot, Part No. 84-7215.x00 and 84-7211.x00
- Protection degree (rear side): IP 40, upgrade to IP 67 with plug Part No. 84-900 possible. With applications where strong vibrations occur, the plugs may become loose
- Cable connection IP 67, rear side fully sealed. The illumination element of the cable version cannot be disconnected from the actuator any longer
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

Protection degree	LED colour	Operating voltage	Operation current	Terminal	Part No.	Wiring diagram	Weight
<p><b>Illumination element with bi-colour illumination</b></p>							
IP 40	Bi-colour LED red/green	24 VDC ±10 %	20 mA	Plug 2.8 x 0.8 mm	<b>84-8005.8620</b>	1	0.005 kg
	Bi-colour LED yellow/green	24 VDC ±10 %	20 mA	Plug 2.8 x 0.8 mm	<b>84-8005.7620</b>	1	0.005 kg
<p><b>Illumination element with bi-colour illumination</b></p>							
IP 67	Bi-colour LED yellow/green	24 VDC ±10 %	20 mA	Flat ribbon cable	<b>84-8005.7640</b>	2	0.011 kg
	Bi-colour LED red/green	24 VDC ±10 %	20 mA	Flat ribbon cable	<b>84-8005.8640</b>	2	0.011 kg





Wiring diagram 1



Wiring diagram 2

**Switching element with illumination**
**Additional Information**

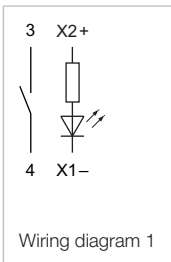
- LED and built-in resistor included
- Standard version: Cable length 300 mm with insulated ferrule, plug-in terminal 2.8 x 0.8 mm
- Other options on request: Customisation of cable and connectors, rear side fully sealed (IP 67)
- Protection degree (rear side): IP 40, upgrade to IP 67 with plug Part No. 84-900 possible. With applications where strong vibrations occur, the plugs may become loose
- Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

Protection degree	LED colour	Operating voltage	Operation current	Contacts	Terminal	Part No.	Wiring diagram	Weight
 <p><b>Switching element with illumination</b></p>								
IP 40	Single-LED red	12 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.2320</b>	1	0.006 kg
	Single-LED orange	12 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.3320</b>	1	0.006 kg
	Single-LED yellow	12 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.4320</b>	1	0.006 kg
	Single-LED green	12 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.5320</b>	1	0.006 kg
	Single-LED blue	12 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.6320</b>	1	0.006 kg
	Single-LED white	12 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.9320</b>	1	0.006 kg
	Single-LED red	24 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.2620</b>	1	0.006 kg
	Single-LED orange	24 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.3620</b>	1	0.006 kg
	Single-LED yellow	24 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.4620</b>	1	0.006 kg
	Single-LED green	24 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.5620</b>	1	0.006 kg
	Single-LED blue	24 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.6620</b>	1	0.006 kg
	Single-LED white	24 VDC ±10 %	10 mA	1 NO	Plug 2.8 x 0.8 mm	<b>84-8511.9620</b>	1	0.006 kg
	 <p><b>Switching element with illumination</b></p>							
IP 40	Single-LED red	12 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.2340</b>	1	0.015 kg
	Single-LED orange	12 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.3340</b>	1	0.015 kg
	Single-LED yellow	12 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.4340</b>	1	0.015 kg
	Single-LED green	12 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.5340</b>	1	0.015 kg
	Single-LED blue	12 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.6340</b>	1	0.015 kg
	Single-LED white	12 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.9340</b>	1	0.015 kg
	Single-LED red	24 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.2640</b>	1	0.015 kg
	Single-LED orange	24 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.3640</b>	1	0.015 kg
	Single-LED yellow	24 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.4640</b>	1	0.015 kg
	Single-LED green	24 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.5640</b>	1	0.015 kg
	Single-LED blue	24 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.6640</b>	1	0.015 kg
	Single-LED white	24 VDC ±10 %	10 mA	1 NO	Flat ribbon cable	<b>84-8511.9640</b>	1	0.015 kg

Contacts: NO = Normally open

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## Switching element bi-colour

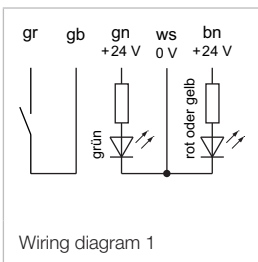
- Additional Information**
- LED and built-in resistor included
  - Protection degree IP 67, rear side fully sealed. The switching element cannot be disconnected from the actuator any longer
  - Best illumination level will be reached with aluminium lens with spot, Part No. 84-7215.x00 and 84-7211.x00
  - Standard version: Cable length 300 mm with insulated ferrule
  - Other options on request: Customisation of cable and connectors
  - Luminosity and wave length variations caused by LED manufacturing processes may cause slight differences regarding the illumination

Protection degree	LED colour	Operating voltage	Operation current	Contacts	Terminal	Part No.	Wiring diagram	Weight
IP 67	Bi-colour LED red/green	24 VDC ±10 %	20 mA	1 NO	Flat ribbon cable	<b>84-8515.8640</b>	1	0.015 kg
	Bi-colour LED yellow/green	24 VDC ±10 %	20 mA	1 NO	Flat ribbon cable	<b>84-8515.7640</b>	1	0.015 kg



Switching element with bi-colour illumination



Contacts: NO = Normally open



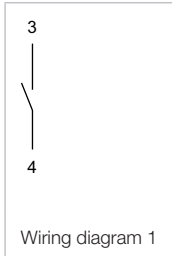
**Switching element without illumination**

**Additional Information**

- Standard version: Cable length 300 mm with insulated ferrule, plug-in terminal 2.8 x 0.8 mm
- Other options on request: Customisation of cable and connectors, rear side fully sealed (IP 67)
- Protection degree (rear side): IP 40, upgrade to IP 67 with plug Part No. 84-900 possible. With applications where strong vibrations occur, the plugs may become loose

Protection degree	Contacts	Terminal	Part No.	Wiring diagram	Weight
 <b>Switching element without illumination</b>					
IP 40	1 NO	Plug 2.8 x 0.8 mm	<b>84-8510.0020</b>	1	0.005 kg
 <b>Switching element without illumination</b>					
IP 40	1 NO	Flat ribbon cable	<b>84-8510.0040</b>	1	0.010 kg

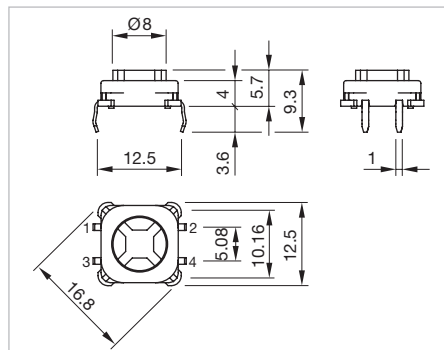
Contacts: NO = Normally open



**Switching element PCB illuminative**


**Additional Information**

- The customer has to decide what series resistor shall be used to the LED
- LED and mounting flange to be ordered separately

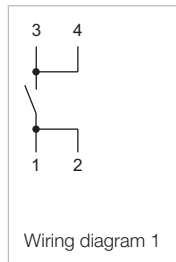


Dimensions [mm]

# 84 Accessories

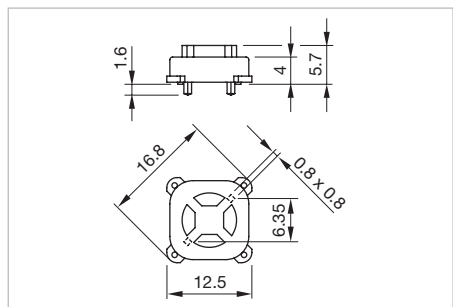
Contacts	Terminal	Switching action	Part No.	Component layout	Wiring diagram	Weight
 <p><b>Switching element PCB mounting illuminative</b></p>						
1 NO	PCB	B	92-851.342	3	1	0.001 kg

Contacts: NO = Normally open  
 Switching action: B = Momentary  
 The component layouts you will find from page 803




## Illumination element PCB

- Additional Information**
- The customer has to decide what series resistor shall be used to the LED
  - LED and mounting flange to be ordered separately



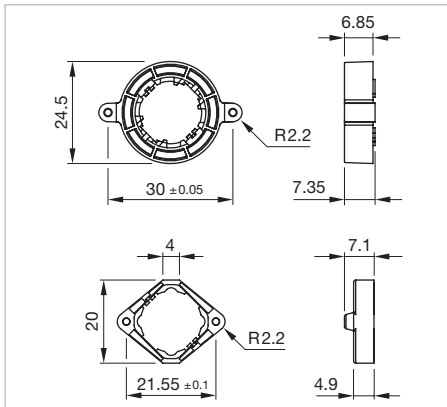
Dimensions [mm]

Terminal	Part No.	Component layout	Weight
 <p><b>Illumination element PCB mounting</b></p>			
PCB	92-800.042	4	0.001 kg



The component layouts you will find from page 803



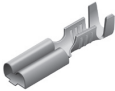
**Mounting flange**



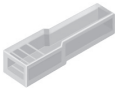
Dimensions [mm]

Product attribute	Part No.	Weight
 <p><b>Mounting flange</b></p> <p>Halo illumination (illuminated multi-color bezel)</p>	<b>84-960.0</b>	0.001 kg
 <p><b>Mounting flange</b></p> <p>Standard version</p>	<b>92-960.0</b>	0.001 kg

**Flat receptacle**

Product attribute	Part No.	Weight
 <p><b>Flat receptacle</b></p> <p>2.8 x 0.8 mm plug-in terminal</p>	<b>84-9420</b>	0.001 kg

**Insulation sleeve**

Product attribute	Part No.	Weight
 <p><b>Insulation sleeve</b></p> <p>for flat receptacle 2.8 mm</p>	<b>31-929</b>	0.001 kg


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# 84 Accessories

## Plug


### Additional Information

- For back protection IP67 of switching elements and illumination elements. Two plugs are necessary per element

Part No.	Weight
 <b>Plug</b>	
84-900	0.001 kg


**Illumination**
**Single-LED, T1 Bi-Pin**
**Additional Information**

- The customer has to decide what series resistor shall be used to the LED
- Luminosity and wave length scattering caused by LED manufacturing processes may cause slight variations in the illumination

LED colour	Forward voltage typ.	Lumi. intensity	Dom. wavelength	Part No.	Weight
 <p><b>Single-LED</b></p>					
Single-LED red	2.1 VDC @ 20 mA	200 mcd	625 nm	<b>10-2602.3202L</b>	0.001 kg
Single-LED orange	2.1 VDC @ 20 mA	220 mcd	590 nm	<b>10-2602.3203L</b>	0.001 kg
Single-LED yellow	3.3 VDC @ 20 mA	500 mcd	570 nm	<b>10-2602.3204L</b>	0.001 kg
Single-LED green	3.5 VDC @ 20 mA	250 mcd	525 nm	<b>10-2602.3205L</b>	0.001 kg
Single-LED blue	3.5 VDC @ 20 mA	450 mcd	470 nm	<b>10-2602.3206L</b>	0.001 kg
Single-LED white	3.3 VDC @ 20 mA	600 mcd	x=0.29/y=0.31 nm	<b>10-2602.3209L</b>	0.001 kg

**Bi-colour-LED, T1 Bi-Pin**
**Additional Information**

- The customer has to decide what series resistor shall be used to the LED
- Luminosity and wave length scattering caused by LED manufacturing processes may cause slight variations in the illumination

LED colour	Forward voltage typ.	Lumi. intensity	Dom. wavelength	Part No.	Weight
 <p><b>Bi-colour-LED</b></p>					
Bi-colour LED red/green	2.0/3.2 VDC @ 20 mA	310/800 mcd	625/528 nm	<b>10-2603.308AL</b>	0.001 kg
Bi-colour LED yellow/green	2.0/3.2 VDC @ 20 mA	350/750 mcd	591/528 nm	<b>10-2603.308CL</b>	0.001 kg


# 84 Accessories

## Emergency-stop and Stop pushbutton

### Emergency-stop legend

#### Additional Information

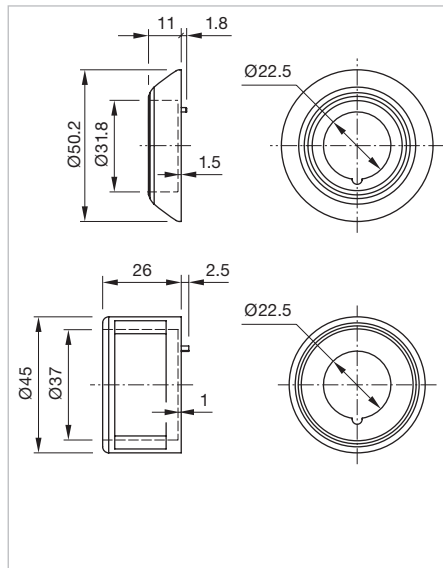
- Front panel thickness 3 mm max.

Dimension	Mounting cut-out	Marking	Colour	Part No.	Weight
 <b>Emergency-stop legend</b>	Ø 22.5 mm	NOT AUS	yellow	<b>704.963.5</b>	0.011 kg
		EMERGENCY STOP	yellow	<b>704.963.6</b>	0.011 kg
		ARRET D'URGENCE	yellow	<b>704.963.7</b>	0.011 kg
		NOT HALT	yellow	<b>704.963.8</b>	0.011 kg
Ø 90 x 1 mm	Ø 22.5 mm	NOT AUS	yellow	<b>704.963.0</b>	0.011 kg
		EMERGENCY STOP	yellow	<b>704.963.1</b>	0.011 kg
		ARRET D'URGENCE	yellow	<b>704.963.2</b>	0.011 kg
		NOT HALT	yellow	<b>704.963.3</b>	0.011 kg


### E-stop protective shroud


#### Additional Information

- Front panel thickness 1 ... 3 mm
- With anti-twist device
- When using a protective shroud the e-stop or stop-switch has to be turned by 180° to be mounted. See dimensional drawing
- The protection shroud Part No. 84-909 is not suitable for a proper use of emergency-stop. It can obstruct a spontaneous operation of the emergency-stop switch



Dimensions [mm]

Front protection	Dimension	Mounting cut-out	Marking	Material	Colour	Part No.	Weight
 <b>E-stop protective shroud</b>	Ø 50 mm	Ø 22.5 mm		Plastic	yellow	<b>84-902</b>	0.006 kg
			NOT - AUS	Plastic	yellow	<b>84-902A</b>	0.006 kg

Front protection	Dimension	Mounting cut-out	Marking	Material	Colour	Part No.	Weight
IP 65	Ø 50 mm	Ø 22.5 mm	EMERGENCY STOP	Plastic	yellow	<b>84-902B</b>	0.006 kg
			NOT - HALT	Plastic	yellow	<b>84-902D</b>	0.006 kg
 <p><b>E-stop protective shroud</b></p>							
IP 40	Ø 45 mm	Ø 22.5 mm		Metal	yellow RAL 1003	<b>84-909</b>	0.021 kg

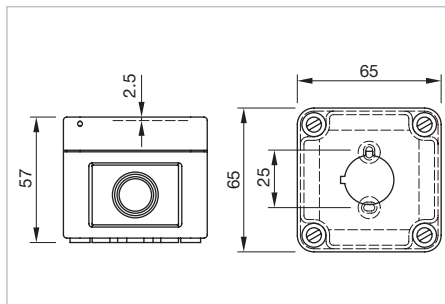
**Fixing nut**

Product attribute	Dimension	Material	Colour	Part No.	Weight
 <p><b>Fixing nut</b></p>					
For limited-space applications	Ø 28 mm	Plastic	black	<b>84-905</b>	0.002 kg
 <p><b>Fixing nut</b></p>					
Standard delivery	Ø 30 mm	Plastic	black	<b>84-908</b>	0.002 kg

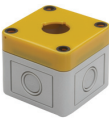
**Emergency-stop enclosure, IP 66**

**Additional Information**

- Bottom grey similar RAL 7035; cover lead-sealable, yellow similar RAL 1004
- With mounting cut-out Ø22.5 mm, with anti-twist device
- Openings for cable gland M16 or M20



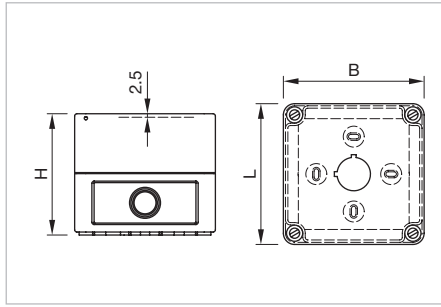
Dimensions [mm]

Dimension	Part No.	Weight
 <p><b>Emergency-stop enclosure</b></p>		
65 x 65 x 57 mm	<b>84-910</b>	0.099 kg






## Stop switch enclosure, IP 66

### Additional Information

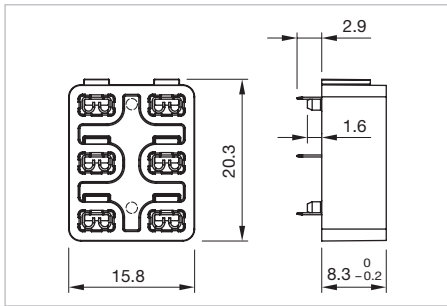
- Cover lead-sealable




Dimensions [mm]

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

**PCB plug-in base**



Dimensions [mm]


Dimension	Pins	Terminal	Part No.	Component layout	Weight
 <p><b>PCB plug-in base</b></p>					
20.3 x 15.8 x 8.3 mm	axial	PCB	<b>84-920</b>	5	0.003 kg

The component layouts you will find from page 803

**Cable gland, IP 68**

**Additional Information**

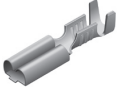
- With traction relief

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

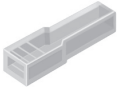
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# 84 Accessories

## Flat receptacle

Product attribute	Part No.	Weight
 <b>Flat receptacle</b>		
2.8 x 0.5 mm plug-in terminal	<b>31-946</b>	0.001 kg

## Insulation sleeve

Product attribute	Part No.	Weight
 <b>Insulation sleeve</b>		
for flat receptacle 2.8 mm	<b>31-929</b>	0.001 kg

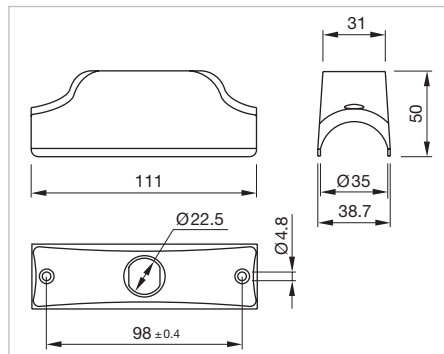


Stop request pushbutton


Housing pole mounting 35 mm

Additional Information

- Please note: The cut-out of the pole must read min. 22 mm and needs to be aligned with the switch
- Screws are not contained in the scope of supply



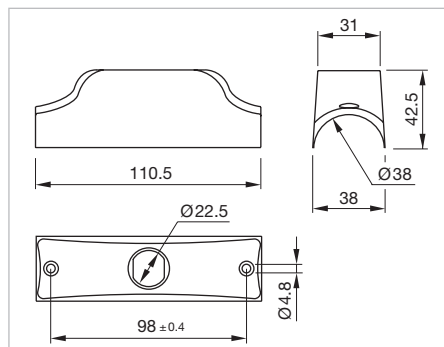
Dimensions [mm]

Material	Colour	Part No.	Weight
 <p><b>Housing pole mounting 35 mm</b></p>	yellow RAL 1023	<b>84-9500.4</b>	0.035 kg
	traffic blue RAL 5017	<b>84-9500.6A</b>	0.035 kg
	grey RAL 7016	<b>84-9500.8</b>	0.035 kg


Housing pole mounting 38 mm

Additional Information

- Please note: The cut-out of the pole must read min. 22 mm and needs to be aligned with the switch
- Screws are not contained in the scope of supply



Dimensions [mm]

Material	Colour	Part No.	Weight
 <p><b>Housing pole mounting 38 mm</b></p>	yellow RAL 1023	<b>84-9600.4</b>	0.030 kg
	grey RAL 7016	<b>84-9600.8</b>	0.030 kg

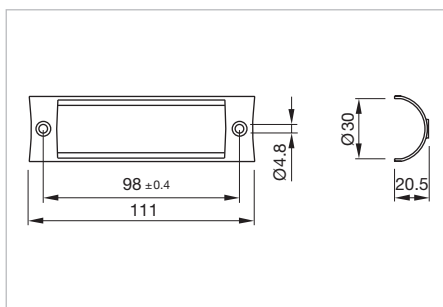
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# 84 Accessories


## Adaptor reducing to 30 mm

### Additional Information

- For housing, pole mounting 35 mm dia.



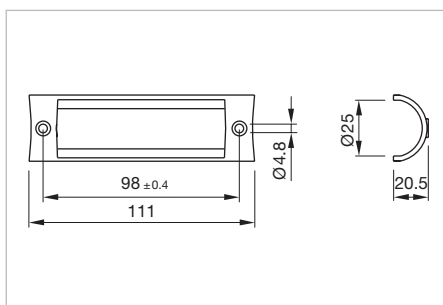
Dimensions [mm]

Material	Colour	Part No.	Weight
 <p><b>Adaptor reducing to 30 mm</b></p>			
Plastic	yellow RAL 1023	<b>84-9700.4</b>	0.024 kg
	grey RAL 7016	<b>84-9700.8</b>	0.024 kg


## Adaptor reducing to 25 mm

### Additional Information

- For housing, pole mounting 35 mm dia.



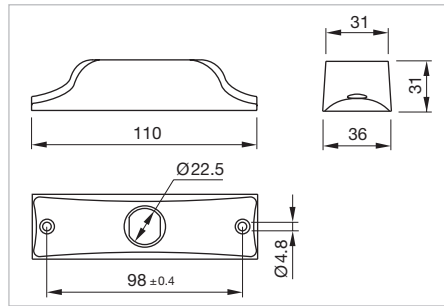
Dimensions [mm]

Material	Colour	Part No.	Weight
 <p><b>Adaptor reducing to 25 mm</b></p>			
Plastic	yellow RAL 1023	<b>84-9300.4</b>	0.008 kg
	grey RAL 7016	<b>84-9300.8</b>	0.008 kg


**Housing wall mounting**

**Additional Information**

- Please note: The cut-out of the pole must read min. 22 mm and needs to be aligned with the switch
- Screws are not contained in the scope of supply





Dimensions [mm]

Material	Colour	Part No.	Weight
 <p><b>Housing wall mounting</b></p>	yellow RAL 1023	<b>84-9800.4</b>	0.024 kg
	grey RAL 7016	<b>84-9800.8</b>	0.024 kg

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## Mounting


### Mounting tool

Product attribute	Part No.	Weight
 <p><b>Mounting tool</b></p> <p>for tightening or loosening the fixing nut, for emergency-stop and stop-switch</p>	<b>84-996</b>	0.014 kg
 <p><b>Mounting tool</b></p> <p>for tightening or loosening of fixing nut, for Indicator and Pushbutton</p>	<b>84-997</b>	0.027 kg

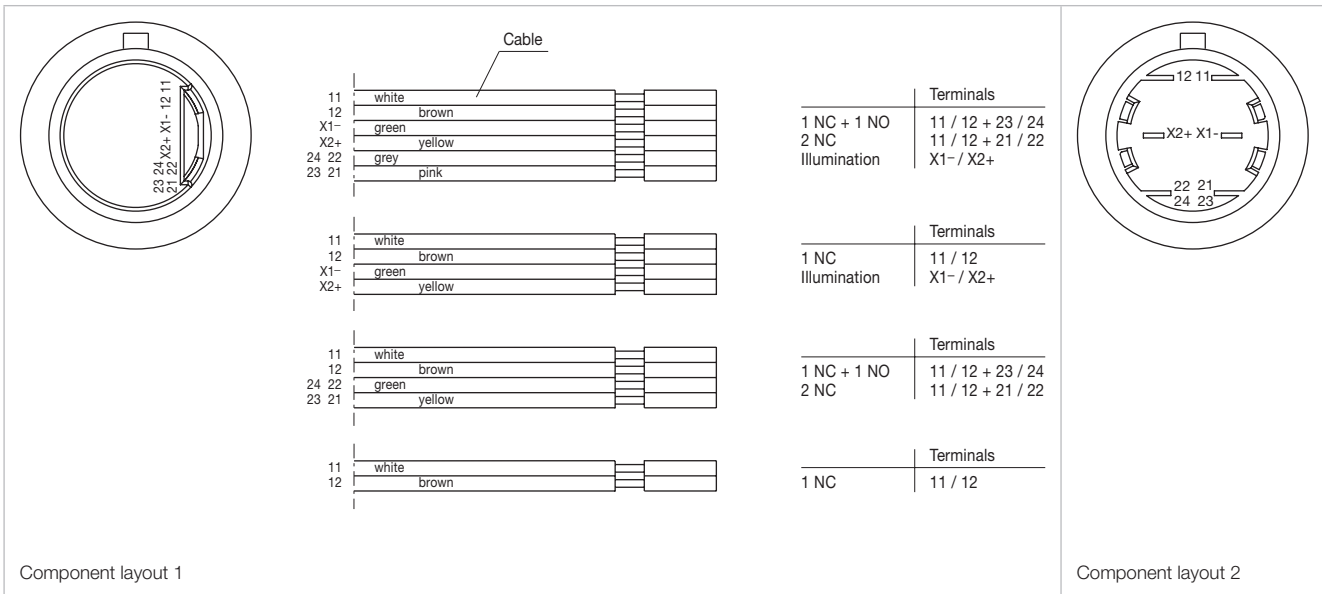
### Dismantling tool

#### Additional Information

- For actuator dismantling of switching element, illumination element and mounting flange

Part No.	Weight
 <p><b>Combined dismantling tool</b></p>	
<b>84-918</b>	0.008 kg

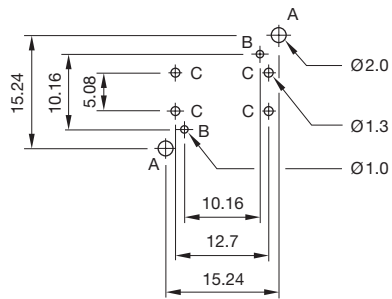
## Drawings



### Single-LED

Drilling plan (element side)

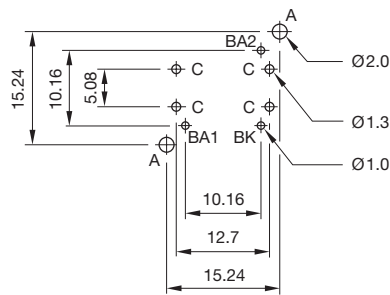
- A Fixing holes for mounting flange (92-960.0)
- B Holes for LED
- C Holes for contact pins
- Pad max. Ø 2.5 mm
- Through-connection recommended



### Bi-colour-LED

Drilling plan (element side)

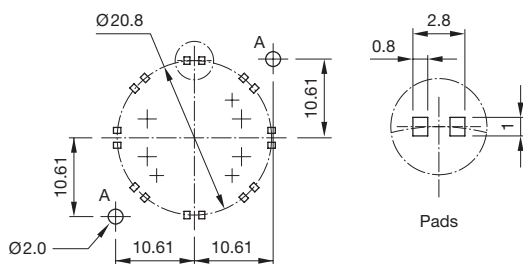
- A Fixing holes for mounting flange (92-960.0)
- B Holes for Bi-colour LED:
- BA1 (green) + BA2 (yellow or red) = Anodes, BK = Cathode
- C Holes for contact pins
- Pad max. Ø 2.5 mm
- Through-connection recommended



### Hyper mini Top-LED

Drilling plan (element side)

- A Fixing holes for mounting flange (84-960.0)

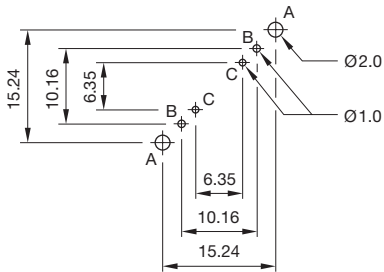


Component layout 3

## Single-LED

Drilling plan (element side)

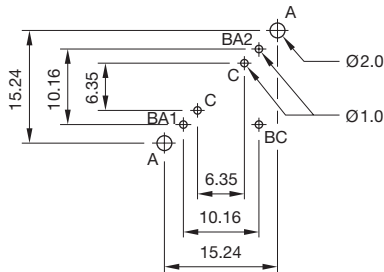
- A Fixing holes for mounting flange (92-960.0)
- B Holes for LED
- C Holes for centering pins



## Bi-colour-LED

Drilling plan (element side)

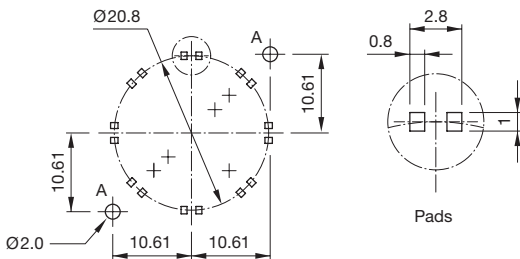
- A Fixing holes for mounting flange (92-960.0)
- B Holes for Bi-colour LED:  
BA1 (green) + BA2 (yellow or red) = Anodes, BC = Cathode
- C Holes for centering pins



## Hyper mini Top-LED

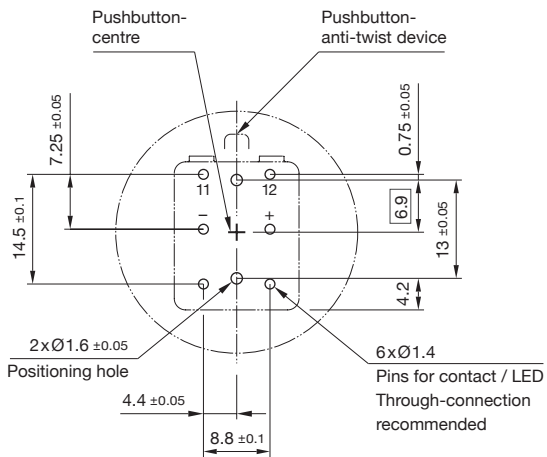
Drilling plan (element side)

- A Fixing holes for mounting flange (84-960.0)



Component layout 4

Drilling plan (element side)



Component layout 5

**Emergency-stop**
**Switching system**

The double-break switching system can be supplied for the following switching functions:

1 Normally closed, 2 Normally closed, 1 Normally closed + 1 Normally open.

The Normally closed contacts have forced opening according to EN IEC 60947-5-1

**Material**
**Connection cable**

Polyvinylchloride (PVC), operating temperature up to +65 °C

**Mushroom-head cap**

Polybutylenterephthalate (PBT), as per UL 94 V0 (red items)

**Actuator housing**

Polyamide (PA 66), as per UL 94 V0, Flat ribbon cable-cover  
Polyamide (PA 6.6), as per UL 94 V0

**Material of contact**

Silver alloy gold plated

**Mechanical characteristics**
**Front panel thickness**

Standard 1 ... 4 mm  
with EMERGENCY-STOP protective shroud Part No. 84-902  
1 ... 3 mm

**Mounting cut-outs**

Ø22.5 mm as per EN IEC 60947-5-1 with anti-twist device

**Terminals**

Soldering terminals 2.8 x 0.5 mm (solderable), CuSn6 tin-plated  
Flat ribbon cable 2-, 4-, or 6-poles 0.35 mm<sup>2</sup> (AWG 22)

**Tightening torque**

Fixing nut 80 Ncm

**Actuating force**

22 N ±4 N

**Actuating travel**

approx. 4 mm to release the internal operation part

**Mechanical lifetime**

≥ 50 000 cycles of operations

**Electrical characteristics**
**Standards**

The devices comply with: EN IEC 60947-5-1, EN IEC 60947-5-5 (EMERGENCY-STOP), DIN EN ISO 13850, EN IEC 60204

**Illumination**

LED red with pole reversal, constant current source  
Operation Voltage 5 VDC ... 30 VDC  
Current consumption 9.7 mA ... 12.4 mA

**Rated Operational Voltage  $U_e$** 

250 VAC, as per EN IEC 60947-1

**Rated Insulation Voltage  $U_i$** 

250 V, as per EN IEC 60947-1

**Rated Impulse Withstand Voltage  $U_{imp}$** 

2.5 kV, as per EN IEC 60947-1

**Contact resistance**

New state ≤ 50 mΩ, as per DIN IEC 60512-2-3

**Isolation resistance**

> 10<sup>11</sup> Ω between the open contacts at 500 VDC, as per DIN IEC 60512-3-1

**Electrical life**

≥ 50 000 cycles of operations (inductive cos φ 0.4), as per EN IEC 60947-5-1

Voltage	120 VAC	240 VAC	125 VDC	250 VDC
Current	3 A	1.5 A	0.55 A	0.27 A

Reduced load ≥ 50 000 cycles of operations (resistive)

Voltage	1 VAC/DC	42 VAC/DC
Current	100 mA	200 mA

**Conventional free air thermal current  $I_{th}$** 

5 A, as per EN IEC 60947-5-1

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

**Switch rating**

Switch rating AC with silver contact (gold plated), service category AC-15, as per EN IEC 60947-5-1

Voltage	120 VAC	240 VAC
Current	3 A	1.5 A

Switch rating DC for silver contact (gold plated), service category DC-13, as per EN IEC 60947-5-1

Voltage (VDC)	12 VDC	24 VDC	48 VDC	60 VDC	125 VDC	250 VDC
Current Plug	5 A	4 A	2.1 A	1.7 A	0.55 A	0.27 A
Current Cable	3 A	3 A	2.1 A	1.7 A	0.55 A	0.27 A

**Recommended minimum operational data**

Silver contacts (gold plated)

Voltage	1 VAC/DC
Current	1 mA

**Electric strength**

500 VAC, 50 Hz, 1 min, as per DIN IEC 60512-2

**Rated conditional short-circuit current**

1000 A, type of short-circuit unit 6 A gG, as per EN IEC 60947-5-1

**Protection class**

Class II, as per EN IEC 60947-5

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## Overvoltage category

II, as per EN IEC 60947-1

## Degree of pollution

3, as per EN IEC 60947-1

## Environmental conditions

### Storage temperature

-25 °C ... +80 °C

### Operating temperature

-25 °C ... +65 °C

### Front protection

IP 65, as per EN IEC 60529

### Shock resistance

(semi-sinusoidal)

max. 150 m/s<sup>2</sup>, pulse width 11 ms, 3-axis,  
as per EN IEC 60068-2-27

### Vibration resistance

(sinusoidal)

max. 50 m/s<sup>2</sup> at 10 Hz ... 500 Hz, 10 cycles, 3-axis,  
as per EN IEC 60068-2-6

## Climate resistance

Damp heat, cyclic

96 hours, +25 °C/97 %, +55 °C/93 % relative humidity,  
as per EN IEC 60068-2-30

Damp heat, steady

56 days, +40 °C/93 % relative humidity,  
as per EN IEC 60068-2-78

Dry heat

96 hours, +70 °C, as per EN IEC 60068-2-2

Low temperature

96 hours, -40 °C, as per EN IEC 60068-2-1

Saline mist

96 Stunden, +35 °C in chemical solution NaCl,  
as per EN IEC 60068-2-11

## Approvals

### Approbations

CB (IEC 60947)

UL

NFF

### Declaration of conformity

CE

## Switching element illuminated pushbutton

### Switching system

Short-travel switching system with 2 independent contact points  
and tactile operation.

Guarantees reliable switching even of very light loads.  
Fitted with 1 normally open contact.

### Material

### Connection cable

Polyvinylchloride (PVC), short-time heat-resistant up to 105 °C

### Material of contact

Silver alloy gold plated

### Switching element

Thermoplastic polyester (PET, PBT), as per UL 94 V0 and  
Polyacetale (POM), as per UL 94 HB

### Mechanical characteristics

#### Terminals

Plug-in terminals 2.8 x 0.8 mm (solderable)

Flat ribbon cable 0.5 mm<sup>2</sup>

PCB terminal

#### Actuating force

4.0 N ± 0.2 N (measured at the lens)

### Actuating travel

~0.5 mm

### Rebound time

≤ 1 ms

### Resistance to heat of soldering

260 °C, 5 s (PCB assembly)

350 °C, 10 s (when using a soldering iron)

as per EN IEC 60068-2-20

### Mechanical lifetime

≥ 1 million cycles of operations

## Electrical characteristics

### Illumination

Single-Chip LED, green, orange, red, yellow, white and blue

Operation Voltage 12 VDC 24 VDC

Current consumption 10 mA 10 mA

### Contact resistance

Starting value (initial) ≤ 100 mΩ, as per DIN IEC 60512-2

### Isolation resistance

≥ 1 GΩ between all terminals at 100 VDC,  
as per DIN IEC 60512-3-1



**Electrical life**

as per EN IEC 60512-5

5 million cycles of operation	24 VAC, 50 mA at 480 Ω
5 million cycles of operation	24 VAC, 100 mA at 240 Ω
2 million cycles of operation	42 VAC, 50 mA at 840 Ω
2 million cycles of operation	42 VAC, 100 mA at 420 Ω
300 000 cycles of operation	42 VAC, 100 mA at $\cos\varphi$ 0.4
250 000 cycles of operation	42 VAC, 200 mA at $\cos\varphi$ 0.395
1 million cycles of operation	12 VDC, 250 mA at 48 Ω
1 million cycles of operation	24 VDC, 50 mA at 480 Ω
1 million cycles of operation	24 VDC, 100 mA at 240 Ω
5 million cycles of operation	42 VDC, 25 mA at 1680 Ω
1.5 million cycles of operation	42 VDC, 50 mA at 840 Ω
100 000 cycles of operation	42 VDC, 100 mA at 420 Ω
500 000 cycles of operation	24 VDC, 200 mA at L/R = 30 ms
300 000 cycles of operation	42 VDC, 100 mA at L/R = 30 ms
100 000 cycles of operation	42 VDC, 200 mA at L/R = 30 ms

**Switch rating**

Voltage 50 mVAC/DC ... 42 VAC/DC

Current 10 µA ... 100 mA

Power max. 2 W

**Electric strength**

500 VAC, 50 Hz, 1 min, as per DIN IEC 60512-2

**Environmental conditions**
**Storage temperature**

-40 °C ... +85 °C

**Operating temperature**

-25 °C ... +70 °C

**Protection degree**

Back protection:

IP 40, standard version

IP 67, fully sealed version, with mounted actuator only.

**Shock resistance**

(semi-sinusoidal)

 max. 100 m/s<sup>2</sup>, pulse width 11 ms, 3-axis,

as per EN IEC 60068-2-27

**Vibration resistance**

(sinusoidal)

 max. 50 m/s<sup>2</sup> at 10 Hz ... 500 Hz, 10 cycles, 3-axis,

as per EN IEC 60068-2-6

**Actuator**
**Material**
**Lens**

Polycarbonate (PC), as per UL 94 V2 or Aluminium anodised

**Actuator housing**

Polyetherimid (PEI), as per UL 94 V0 or Aluminium anodised

**Mechanical characteristics**
**Mounting cut-outs**

Ø 22.5 mm and Ø 30.5 mm

**Tightening torque**

Fixing nut max. 80 Ncm

**Actuating force**

4.0 N ± 0.2 N (measured at the lens)

**Actuating travel**

Total switching travel 1.2 mm

**Mechanical lifetime**

≥ 1 million cycles of operations

**Electrical characteristics**
**Electrostatic breakdown value**

Plastic case ≥ 15 kV

Aluminium case ≥ 5 kV

as per IEC 61000-4-2, mounted in plastic front panel

**Environmental conditions**
**Storage temperature**

-40 °C ... +85 °C

**Operating temperature**

-25 °C ... +70 °C

**Front protection**

IP 67 and IP40, as per EN IEC 60529

**Climate resistance**

Damp heat, cyclic

96 hours, +25 °C/97 %, +55 °C/93 % relative humidity,

as per EN IEC 60068-2-30

Damp heat, state

56 days, +40 °C/93 % relative humidity,

as per EN IEC 60068-2-78

Rapid change of temperature

100 cycles, -40 °C ... +80 °C, as per EN IEC 60068-2-14

**Approvals**
**Approbations**

EBC

NFF

**Declaration of conformity**

CE

TSI/PRM

# 84 Technical data

## Lens plastic with symbols

### Chemical and mechanical tests

1. Wipe resistance according to EN 61058-1 section 8.9  
(Petrol/gasoline, distilled water, diluted alcohol)
2. Graffiti-Killer Test
3. Railway cleaning agents (Walo)
4. Damp/dry heat durability
5. UV test according to EN 60068-2-5 / 56 days
6. Mechanical life time 2 Mio. Operations (abrasive test)

*EAO reserves the right to alter specifications without further notice.*

**Suppressor circuits**

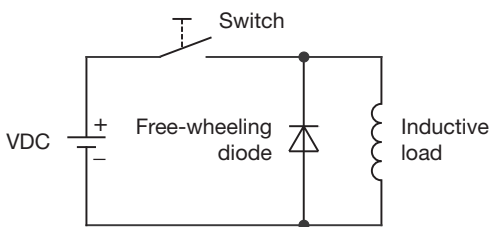
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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

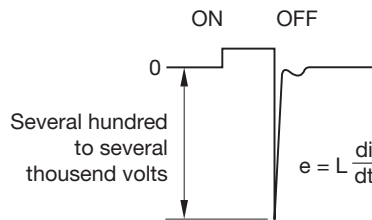
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage ( $V_R$ ) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum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

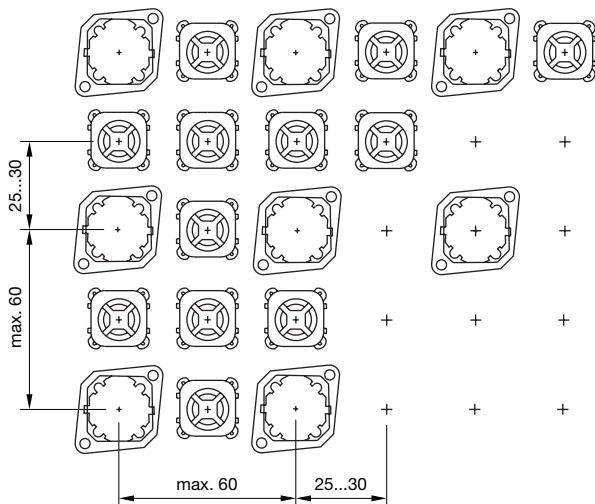
Switching with inductive load  
Fig. 1



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



**Arrangement mounting flange for switching- and illumination element, PCB mounting**



The arrangement of the mounting flanges and their number is determined by the size of the front panel or PCB. To ensure uniform, tactile switching, we recommend a layout of the flanges as per adjacent sketch.

For large PCBs with several switching elements we recommend the following procedure:

1. Fit the actuator to the front panel.
2. Clip the mounting flange to the rear of the intended actuator.
3. Screw the PCB with the components soldered to it to the assembled mounting flange.

This arrangement applies to PCBs 1.6 mm thick.

**Dismantling mounting flange**

The tool Part No. 84-998 must be used for removing the mounting flange from the actuator. Before removing the flange, the PCB fixing screws must be loosened.

## Index from Part No.

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10-2602.3203L	793	84-3100.0	758	84-7201.500	780	84-8511.3320	787
10-2602.3204L	793	84-3100.0	759	84-7201.600	780	84-8511.3340	787
10-2602.3205L	793	84-5020.0020	775	84-7201.800	780	84-8511.3620	787
10-2602.3206L	793	84-5020.0040	774	84-7202.000	780	84-8511.3640	787
10-2602.3209L	793	84-5021.2B20	775	84-7202.000A	780	84-8511.4320	787
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61-9481.6	797	84-5040.0040	774	84-7202.600	780	84-8511.5640	787
61-9707.7	778	84-5041.2B20	775	84-7202.600A	780	84-8511.6320	787
61-9980.0	783	84-5041.2B40	774	84-7202.800	780	84-8511.6340	787
704.945.1	796	84-5120.0020	775	84-7202.800A	780	84-8511.6620	787
704.945.2	796	84-5120.0040	774	84-7205.000	780	84-8511.6640	787
704.945.3	796	84-5121.2B20	775	84-7205.000A	780	84-8511.9320	787
704.945.4	796	84-5121.2B40	774	84-7205.200	780	84-8511.9340	787
704.945.5	796	84-5130.0020	775	84-7205.200A	780	84-8511.9620	787
704.945.6	797	84-5130.0040	774	84-7205.400	780	84-8511.9640	787
704.963.0	794	84-5131.2B20	775	84-7205.400A	780	84-8515.7640	788
704.963.1	794	84-5131.2B40	774	84-7205.500	780	84-8515.8640	788
704.963.2	794	84-5140.0020	775	84-7205.500A	780	84-900	792
704.963.3	794	84-5140.0040	774	84-7205.600	780	84-902	794
704.963.5	794	84-5141.2B20	775	84-7205.600A	780	84-902A	794
704.963.6	794	84-5141.2B40	774	84-7205.800	780	84-902B	795
704.963.7	794	84-6820.0020	777	84-7205.800A	780	84-902D	795
704.963.8	794	84-6820.0040	776	84-7205.804A	781	84-905	795
704.964.8	784	84-6821.2B20	777	84-7205.805A	781	84-908	795
704.968.0	784	84-6821.2B40	776	84-7205.806A	781	84-909	795
704.968.1	784	84-6830.0020	777	84-7205.808A	781	84-910	795
84-0080.7	772	84-6830.0040	776	84-7211.000	782	84-9103.7	783
84-0090.7	768	84-6831.2B20	777	84-7211.200	782	84-918	802
84-0090.7	769	84-6831.2B40	776	84-7211.400	782	84-920	797
84-0100.0	758	84-6840.0020	777	84-7211.500	782	84-9300.4	800
84-0100.0	759	84-6840.0040	776	84-7211.600	782	84-9300.8	800
84-0200.7	758	84-6841.2B20	777	84-7211.800	782	84-9420	791
84-0200.7	759	84-6841.2B40	776	84-7215.000	782	84-9500.4	799
84-1081.7	773	84-7111.200	778	84-7215.200	782	84-9500.6A	799
84-1091.7	770	84-7111.201	779	84-7215.400	782	84-9500.8	799
84-1091.7	771	84-7111.202	779	84-7215.500	782	84-960.0	791
84-1101.0	760	84-7111.203	779	84-7215.600	782	84-9600.4	799
84-1101.0	762	84-7111.300	778	84-7215.800	782	84-9600.8	799
84-1101.0	765	84-7111.301	779	84-8001.2320	785	84-9700.4	800
84-1101.0	767	84-7111.400	778	84-8001.2340	785	84-9700.8	800
84-1201.0	760	84-7111.401	779	84-8001.2620	785	84-9800.4	801
84-1201.0	762	84-7111.500	778	84-8001.2640	785	84-9800.8	801
84-1201.0	765	84-7111.501	779	84-8001.3320	785	84-996	802
84-1201.0	767	84-7111.502	779	84-8001.3340	785	84-997	802
84-1201.2	760	84-7111.503	779	84-8001.3620	785	92-800.042	790
84-1201.2	762	84-7111.600	778	84-8001.3640	785	92-851.342	790
84-1201.2	765	84-7111.601	779	84-8001.4320	785	92-960.0	791
84-1201.2	767	84-7111.602	779	84-8001.4340	785		
84-1201.4	761	84-7111.603	779	84-8001.4620	785		
84-1201.4	762	84-7111.700	778	84-8001.4640	785		
84-1201.4	765	84-7111.701	779	84-8001.5320	785		
84-1201.4	767	84-7111.702	779	84-8001.5340	785		
84-1201.5	761	84-7111.703	779	84-8001.5620	785		
84-1201.5	762	84-7114.600A	783	84-8001.5640	785		
84-1201.5	765	84-7115.200	778	84-8001.6320	785		
84-1201.5	767	84-7115.300	778	84-8001.6340	785		
84-1201.6	761	84-7115.400	778	84-8001.6620	785		
84-1201.6	762	84-7115.500	778	84-8001.6640	785		
84-1201.6	765	84-7115.600	778	84-8001.9320	785		
84-1201.6	767	84-7115.700	778	84-8001.9340	785		
84-1201.7	761	84-7121.000	778	84-8001.9620	785		
84-1201.7	762	84-7121.800	778	84-8001.9640	785		
84-1201.7	765	84-7124.000A	783	84-8005.7620	786		
84-1201.7	767	84-7124.200A	783	84-8005.7640	786		
84-1221.7	760	84-7124.400A	783	84-8005.8620	786		
84-1221.7	762	84-7124.500A	783	84-8005.8640	786		
84-1221.7	764	84-7124.600A	783	84-8510.0020	789		
84-1221.7	766	84-7125.000	778	84-8510.0040	789		
84-2101.0	760	84-7125.800	778	84-8511.2320	787		
84-2101.0	762	84-7201.000	779	84-8511.2340	787		
84-2101.0	765	84-7201.200	779	84-8511.2620	787		

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



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