

# 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.





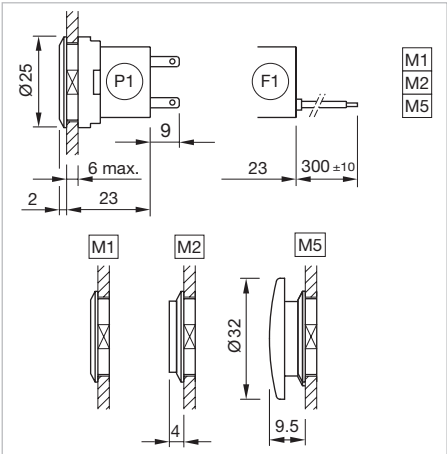
|                                                  |            |
|--------------------------------------------------|------------|
| <b>Overview</b>                                  |            |
| <b>Flush design</b>                              |            |
| Indicator                                        | 758        |
| Illuminated pushbutton                           | 760        |
| Pushbutton                                       | 764        |
| Indicator with halo illumination                 | 768        |
| Pushbutton with halo illumination                | 770        |
| Indicator with halo illumination (multi-colour)  | 772        |
| Pushbutton with halo illumination (multi-colour) | 773        |
| <b>Raised design</b>                             |            |
| Emergency-stop switch                            | 774        |
| Stop switch                                      | 776        |
| <b>Accessories</b>                               | <b>778</b> |
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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)

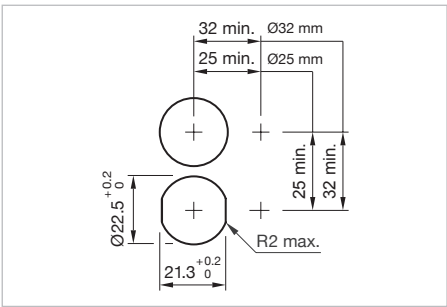
|  |                             |          |
|--|-----------------------------|----------|
|  | <b>Lens</b>                 | page 778 |
|  | <b>Actuator</b>             |          |
|  | <b>Fixing nut</b>           |          |
|  | <b>Illumination element</b> | page 785 |

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   |
|------------------|-------------------------------------------------------------|------------------|----------|
|                  | <b>Indicator actuator standard, Front dimension Ø 25 mm</b> |                  |          |
| IP 40            | Plastic black                                               | <b>84-3100.0</b> | 0.004 kg |
| IP 67            | 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**

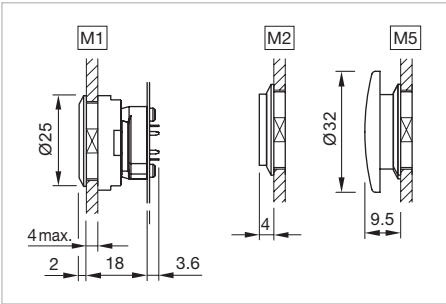
**Mounting flange**  
*page 791*

**LED**  
*page 793*

**Illumination element**  
*page 790*

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

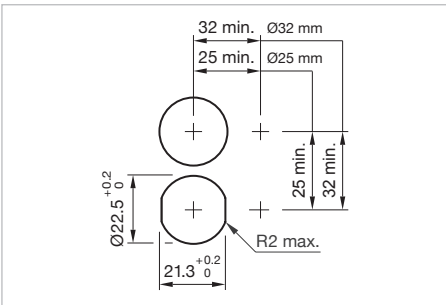
To obtain a complete unit, please select the red components from the pages shown.



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

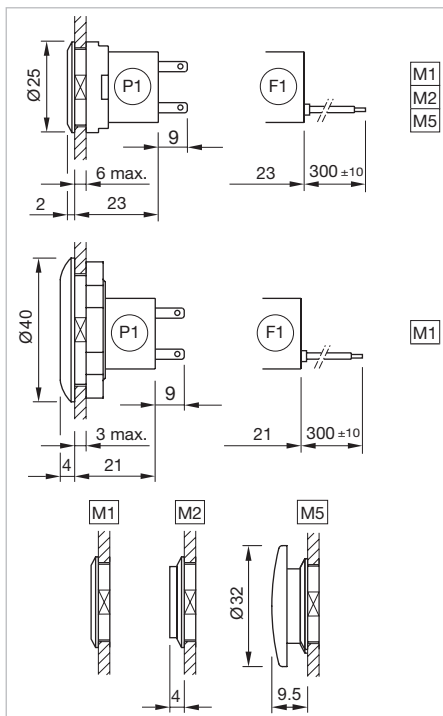
| Front protection                                                                    | Front ring                                                      | Part No.                   | Weight                    |
|-------------------------------------------------------------------------------------|-----------------------------------------------------------------|----------------------------|---------------------------|
|  | <b>Indicator actuator PCB standard, Front dimension Ø 25 mm</b> |                            |                           |
|                                                                                     | IP 40                                                           | Plastic black              | <b>84-3100.0</b> 0.004 kg |
|                                                                                     | IP 67                                                           | Plastic black              | <b>84-0100.0</b> 0.003 kg |
|                                                                                     |                                                                 | Aluminium natural anodized | <b>84-0200.7</b> 0.008 kg |

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## Illuminated pushbutton standard



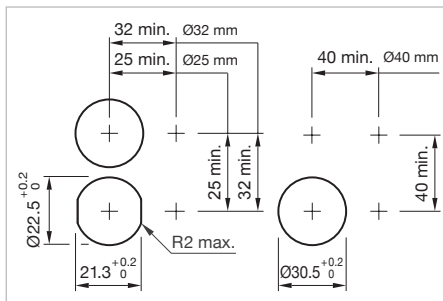
Product can differ from the current configuration.



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

### Additional Information

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



Mounting cut-outs [mm]

Equipment consisting of (schematic overview)



**Lens**

page 778



### Actuator



### Fixing nut



**Switching element**

page 787

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.

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

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

Switching action: B = Momentary

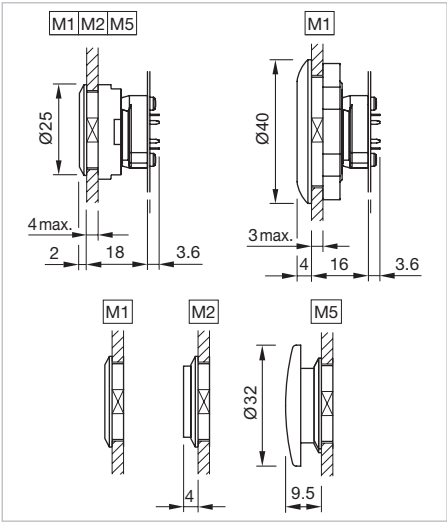


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Illuminated pushbutton PCB standard

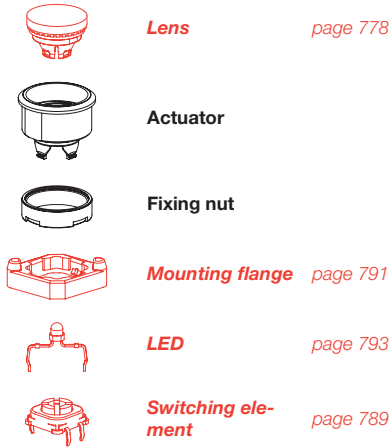


Product can differ from the current configuration.



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

Equipment consisting of (schematic overview)

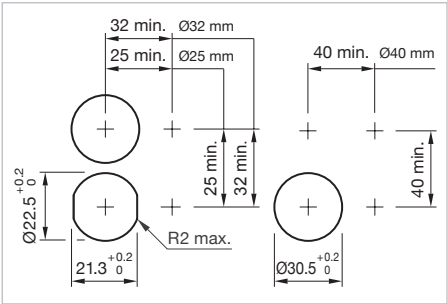


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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

Additional Information

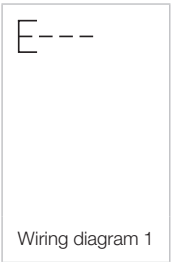
- Illuminated lens, non-illuminated bezel
- The colour of anodized aluminium parts can vary due to technical production reasons



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                | 84-1221.7 | 1              | 0.022 kg |
|                  | <b>Illuminated pushbutton actuator PCB standard, Front dimension Ø 25 mm</b> |                  |           |                |          |
| IP 40            | Plastic black                                                                | B                | 84-2101.0 | 1              | 0.004 kg |
| IP 67            | Plastic black                                                                | B                | 84-1101.0 | 1              | 0.003 kg |
|                  | Aluminium black anodized                                                     | B                | 84-1201.0 | 1              | 0.008 kg |
|                  | Aluminium red anodized                                                       | B                | 84-1201.2 | 1              | 0.008 kg |
|                  | Aluminium gold anodized                                                      | B                | 84-1201.4 | 1              | 0.008 kg |
|                  | Aluminium olive-green anodized                                               | B                | 84-1201.5 | 1              | 0.008 kg |
|                  | Aluminium blue anodized                                                      | B                | 84-1201.6 | 1              | 0.008 kg |
|                  | Aluminium natural anodized                                                   | B                | 84-1201.7 | 1              | 0.008 kg |

Switching action: B = Momentary



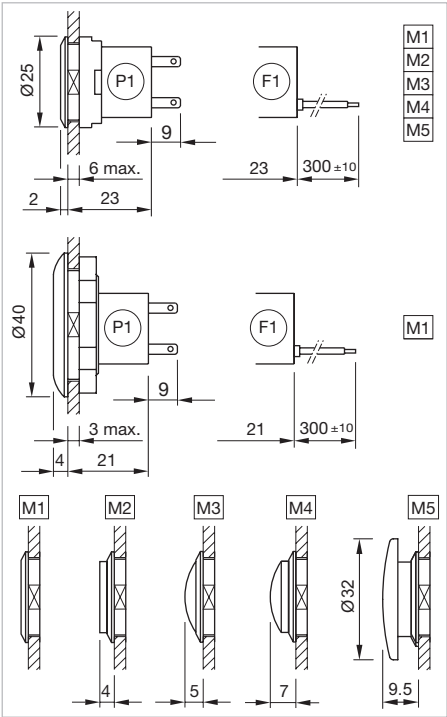
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# 84 Flush design

## Pushbutton standard

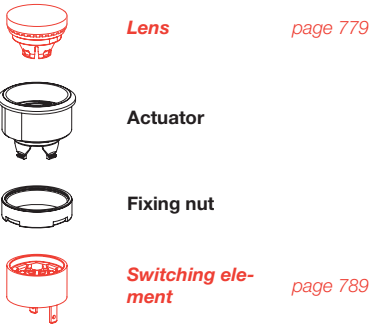


Product can differ from the current configuration.



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)

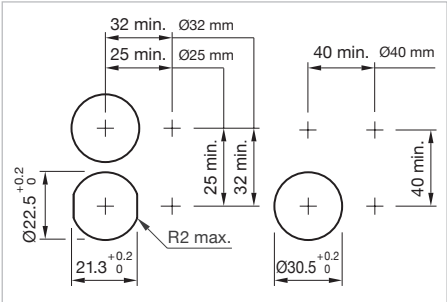


Each Part Number listed below includes all the black components shown in the 3D-drawing.

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 <math>\varnothing 40</math> 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   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------|-----------|----------------|----------|
| <div></div> <div>Pushbutton actuator standard, Front dimension Ø 25 mm</div> |                                |                  |           |                |          |
| IP 40                                                                                                                                                         | Plastic black                  | B                | 84-2101.0 | 1              | 0.004 kg |
| IP 67                                                                                                                                                         | Plastic black                  | B                | 84-1101.0 | 1              | 0.003 kg |
|                                                                                                                                                               | Aluminium black anodized       | B                | 84-1201.0 | 1              | 0.008 kg |
|                                                                                                                                                               | Aluminium red anodized         | B                | 84-1201.2 | 1              | 0.008 kg |
|                                                                                                                                                               | Aluminium gold anodized        | B                | 84-1201.4 | 1              | 0.008 kg |
|                                                                                                                                                               | Aluminium olive-green anodized | B                | 84-1201.5 | 1              | 0.008 kg |
|                                                                                                                                                               | Aluminium blue anodized        | B                | 84-1201.6 | 1              | 0.008 kg |
|                                                                                                                                                               | Aluminium natural anodized     | B                | 84-1201.7 | 1              | 0.008 kg |

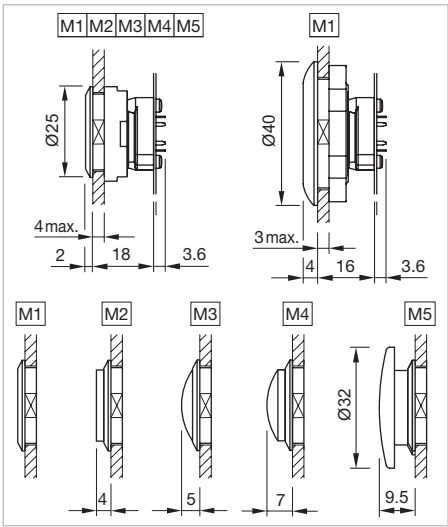
Switching action: B = Momentary



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)

**Lens**page 779

**Actuator**

**Fixing nut**

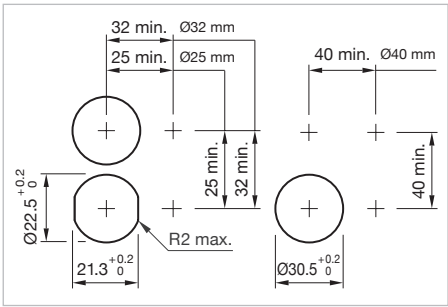
**Mounting flange**page 791

**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.

- 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   |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|------------------|-----------|----------------|----------|
| <div></div> <div>Pushbutton actuator PCB standard, Front dimension Ø 25 mm</div> |                                |                  |           |                |          |
| IP 40                                                                                                                                                             | Plastic black                  | B                | 84-2101.0 | 1              | 0.004 kg |
| IP 67                                                                                                                                                             | Plastic black                  | B                | 84-1101.0 | 1              | 0.003 kg |
|                                                                                                                                                                   | Aluminium black anodized       | B                | 84-1201.0 | 1              | 0.008 kg |
|                                                                                                                                                                   | Aluminium red anodized         | B                | 84-1201.2 | 1              | 0.008 kg |
|                                                                                                                                                                   | Aluminium gold anodized        | B                | 84-1201.4 | 1              | 0.008 kg |
|                                                                                                                                                                   | Aluminium olive-green anodized | B                | 84-1201.5 | 1              | 0.008 kg |
|                                                                                                                                                                   | Aluminium blue anodized        | B                | 84-1201.6 | 1              | 0.008 kg |
|                                                                                                                                                                   | Aluminium natural anodized     | B                | 84-1201.7 | 1              | 0.008 kg |

Switching action: B = Momentary

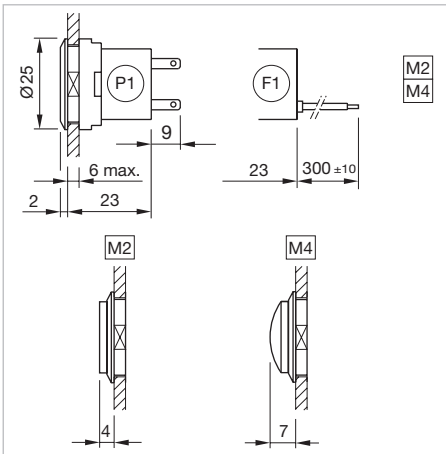


84 Flush design

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

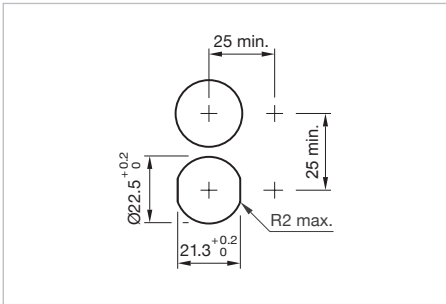
Equipment consisting of (schematic overview)

|  |                             |          |
|--|-----------------------------|----------|
|  | <b>Lens</b>                 | page 780 |
|  | <b>Actuator</b>             |          |
|  | <b>Fixing nut</b>           |          |
|  | <b>Illumination element</b> | page 785 |

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   |
|-----------------------------------------------------------------------------|--|-----------|----------|
|                                                                             |  |           |          |
| Indicator actuator with halo illumination standard, Front dimension Ø 25 mm |  |           |          |
| Plastic colourless translucent                                              |  | 84-0090.7 | 0.006 kg |

Indicator with halo illumination PCB standard, IP 67

Equipment consisting of (schematic overview)

**Lens**  
*page 780*

**Actuator**

**Fixing nut**

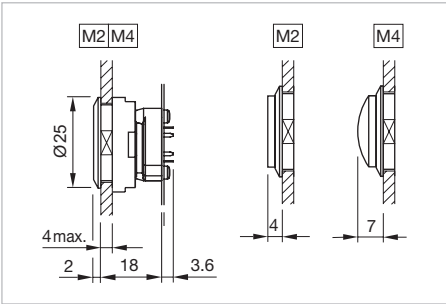
**Mounting flange**  
*page 791*

**LED**  
*page 793*

**Illumination element**  
*page 790*

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

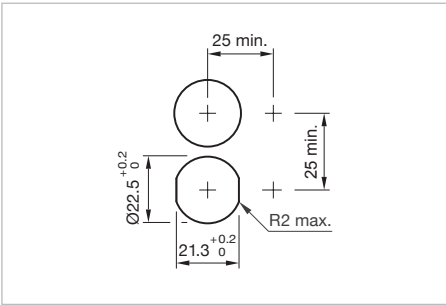
To obtain a complete unit, please select the red components from the pages shown.



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

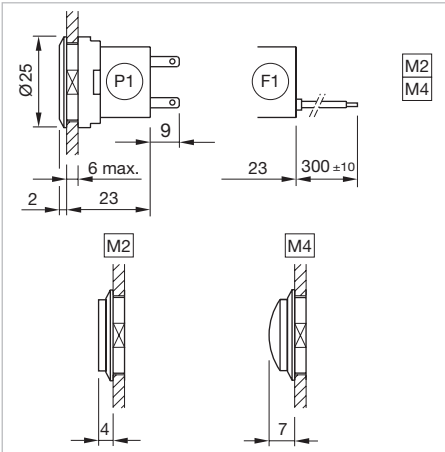
| Front ring                                                                             |  | Part No.         | Weight   |
|----------------------------------------------------------------------------------------|--|------------------|----------|
|     |  |                  |          |
| <b>Indicator actuator with halo illumination PCB standard, Front dimension Ø 25 mm</b> |  |                  |          |
| Plastic colourless translucent                                                         |  | <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)

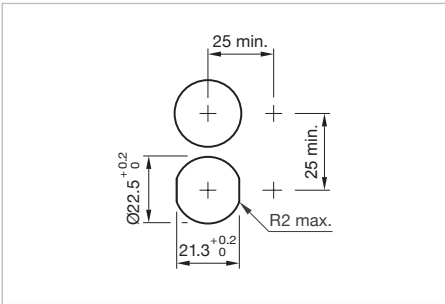
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|--|-------------------|----------|
|  | Lens              | page 780 |
|  | Actuator          |          |
|  | Fixing nut        |          |
|  | Switching element | page 787 |

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   |
|--------------------------------|------------------------------------------------------------------------------|-----------|----------------|----------|
|                                | Pushbutton actuator with halo illumination standard, Front dimension Ø 25 mm |           |                |          |
| Plastic colourless translucent | B                                                                            | 84-1091.7 | 1              | 0.006 kg |

Switching action: B = Momentary

E---

Wiring diagram 1

Pushbutton with halo illumination PCB standard, IP 67

Equipment consisting of (schematic overview)

**Lens**  
*page 780*

**Actuator**

**Fixing nut**

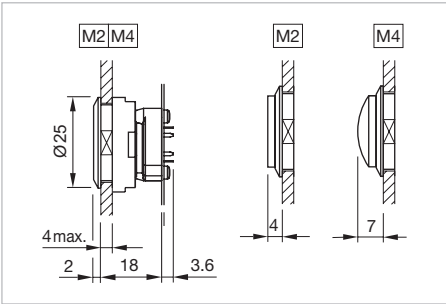
**Mounting flange**  
*page 791*

**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.



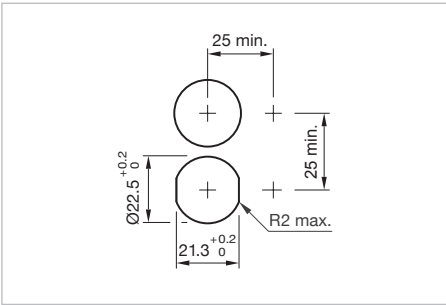
Dimensions [mm]  
M2 = Lens raised above bezel,  
M4 = Lens convexe raised above bezel



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   |
|-------------------------------------------------------------------------------------|------------------|-----------|----------------|----------|
|  |                  |           |                |          |
| Pushbutton actuator with halo illumination PCB standard, Front dimension Ø 25 mm    |                  |           |                |          |
| Plastic colourless translucent                                                      | B                | 84-1091.7 | 1              | 0.006 kg |

Switching action: B = Momentary

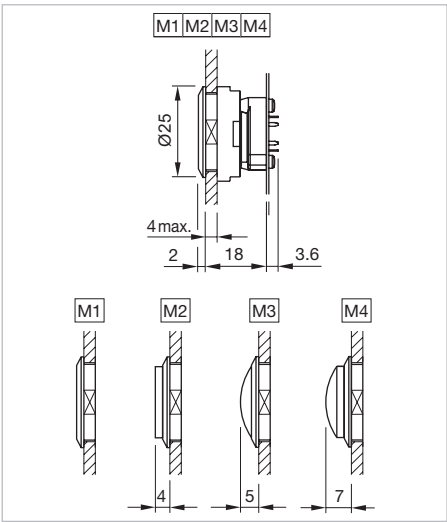
E---

Wiring diagram 1

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)

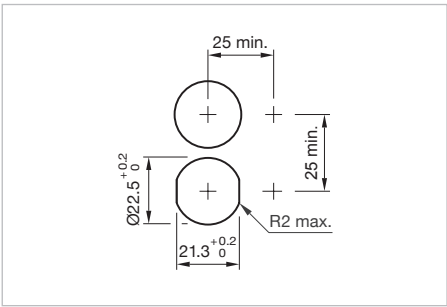
|  |                             |          |
|--|-----------------------------|----------|
|  | <b>Lens</b>                 | page 778 |
|  | <b>Actuator</b>             |          |
|  | <b>Befestigungsmutter</b>   |          |
|  | <b>Mounting flange</b>      | page 791 |
|  | <b>Single-LED</b>           | page 793 |
|  | <b>Illumination element</b> | 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.

Additional Information

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



Mounting cut-outs [mm]

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

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

Equipment consisting of (schematic overview)

**Lens**  
page 778

**Actuator**

**Fixing nut**

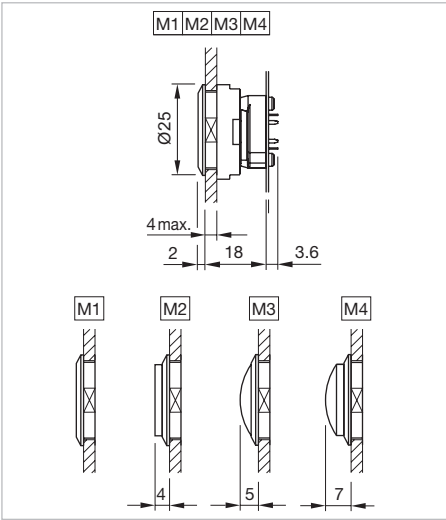
**Mounting flange**  
page 791

**LED**  
page 793

**Switching element**  
page 789

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

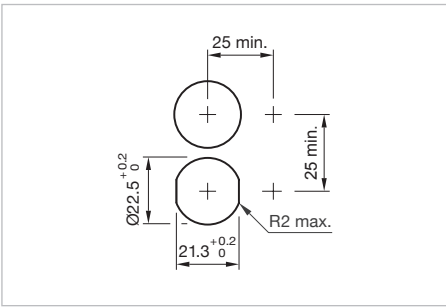
To obtain a complete unit, please select the red components from the pages shown.



Dimensions [mm]  
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   |
|----------------------------------------------------------------------------------------|------------------|-----------|----------------|----------|
|     |                  |           |                |          |
| Pushbutton actuator with halo illumination (multi-colour) PCB, Front dimension Ø 25 mm |                  |           |                |          |
| Plastic colourless transparent                                                         | B                | 84-1081.7 | 1              | 0.006 kg |

Switching action: B = Momentary



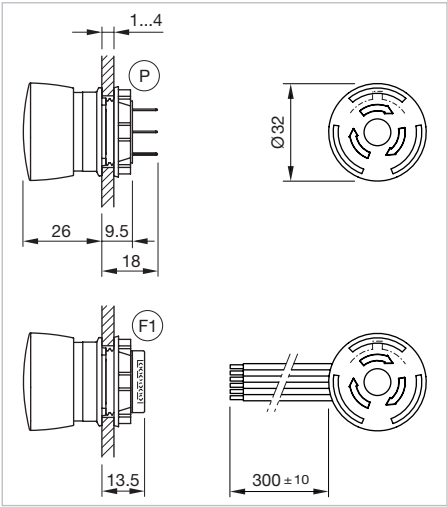
Wiring diagram 1

# 84 Raised design

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

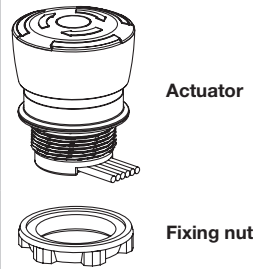


Product can differ from the current configuration.



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

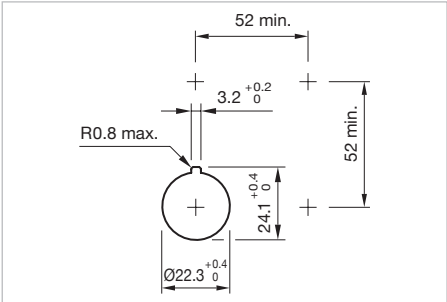
### Equipment consisting of (schematic overview)



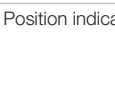
Each Part Number listed below includes all the black components shown in the 3D-drawing.

### 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

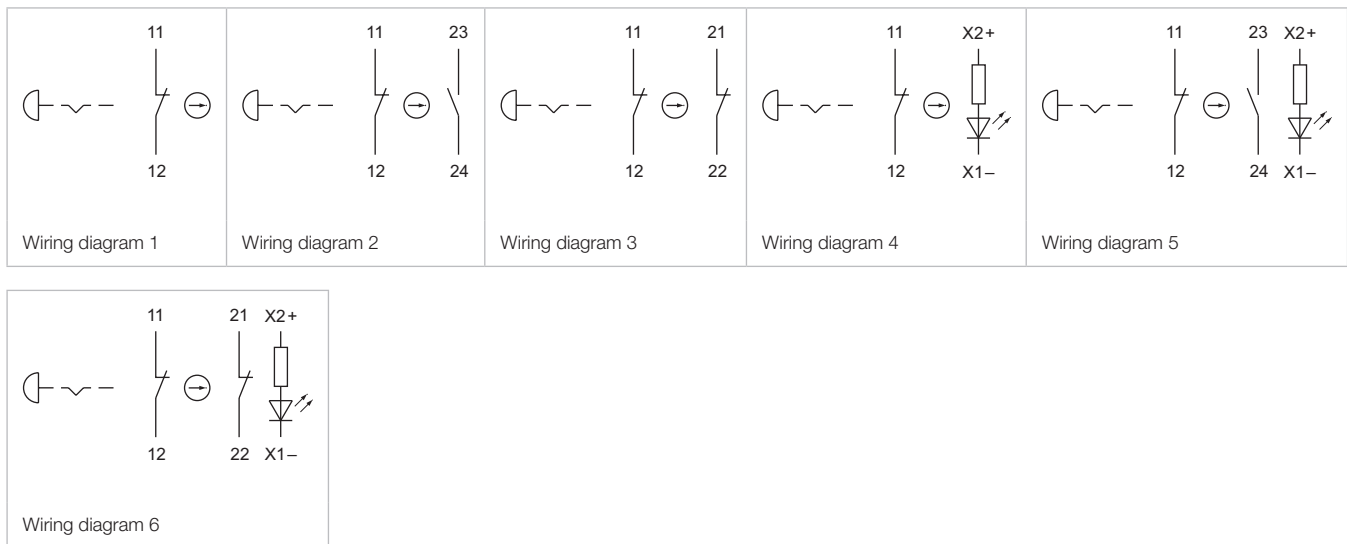


Mounting cut-outs [mm]

| Product attribute                                                                  | LED colour     | Contacts    | Terminal          | Part No.            | Component layout | Wiring diagram | Weight   |
|------------------------------------------------------------------------------------|----------------|-------------|-------------------|---------------------|------------------|----------------|----------|
|  | Single-LED red | 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 |
|                                                                                    |                | 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 |
|  | Single-LED red | 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 |
|                                                                                    |                | 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 |

| Product attribute                                                                                                                                                            | LED colour     | Contacts    | Terminal          | Part No.            | Component layout | Wiring diagram | Weight   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|-------------|-------------------|---------------------|------------------|----------------|----------|
|  <b>Emergency-stop switch complete, foolproof EN IEC 60947-5-5, Front dimension Ø 32 mm</b> |                |             |                   |                     |                  |                |          |
| 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

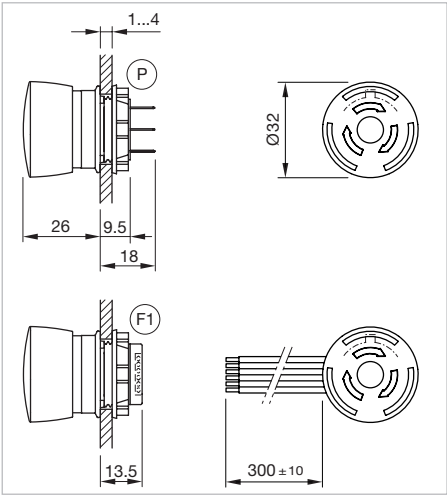


84 Raised design

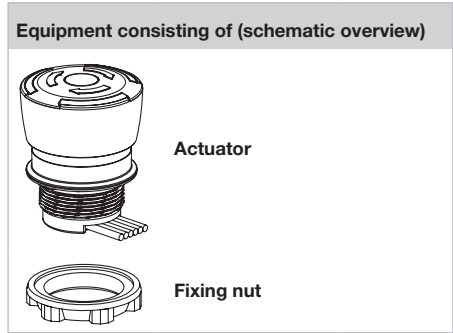
Stop switch complete grey, IP 65



Product can differ from the current configuration.



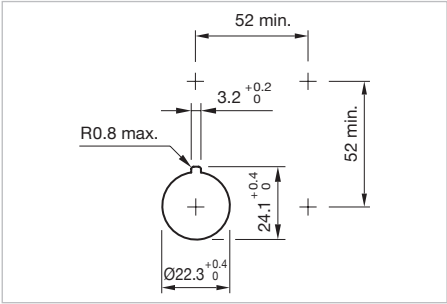
Dimensions [mm]  
F1 = Flat ribbon cable,  
P = Plug-in terminal 2.8 x 0.5 mm



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

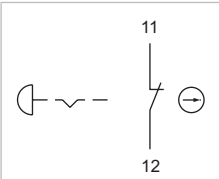


Mounting cut-outs [mm]

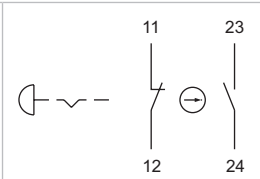
| LED colour                                                                          | Contacts                                           | Terminal          | Part No.     | Compo-<br>nent layout | Wiring<br>diagram | Weight   |
|-------------------------------------------------------------------------------------|----------------------------------------------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

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

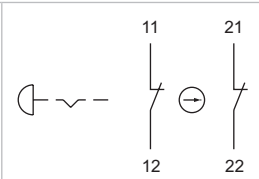
Contacts: NC = Normally closed, NO = Normally open  
The component layouts you will find from page 803



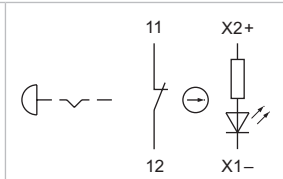
Wiring diagram 1



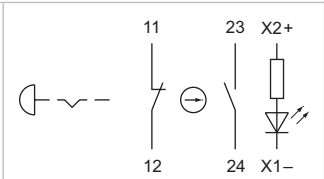
Wiring diagram 2



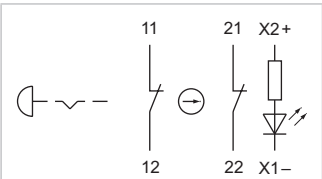
Wiring diagram 3



Wiring diagram 4



Wiring diagram 5



Wiring diagram 6

# 84 Accessories

## Front

### Lens plastic

#### Additional Information

- Lens profile flat

| Product attribute                                                                                     | Dimension | Lens                   | Mounting type      | Part No.           | Weight   |
|-------------------------------------------------------------------------------------------------------|-----------|------------------------|--------------------|--------------------|----------|
|  <b>Lens plastic</b> |           |                        |                    |                    |          |
| 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 |
|                                                                                                       |           | 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   |
|--------------------------------------------------------------------------------------------------------------------------|------------------|----------|
|  <b>Legend plate for lens plastic</b> |                  |          |
| 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   | 84-7201.400 | 0.003 kg |
|                                                                                                                    |           | Aluminium olive-green anodized | level with bezel   | 84-7201.500 | 0.003 kg |
|                                                                                                                    |           | Aluminium blue anodized        | level with bezel   | 84-7201.600 | 0.003 kg |
|                                                                                                                    |           | Aluminium natural anodized     | level with bezel   | 84-7201.800 | 0.003 kg |
|                                                                                                                    |           | Aluminium black anodized       | raised above bezel | 84-7205.000 | 0.003 kg |
|                                                                                                                    |           | Aluminium red anodized         | raised above bezel | 84-7205.200 | 0.003 kg |
|                                                                                                                    |           | Aluminium gold anodized        | raised above bezel | 84-7205.400 | 0.003 kg |
|                                                                                                                    |           | Aluminium olive-green anodized | raised above bezel | 84-7205.500 | 0.003 kg |
|                                                                                                                    |           | Aluminium blue anodized        | raised above bezel | 84-7205.600 | 0.003 kg |
|                                                                                                                    |           | Aluminium natural anodized     | raised above bezel | 84-7205.800 | 0.003 kg |
| <div></div> <div>Lens metal</div> |           |                                |                    |             |          |
| convex (domed)                                                                                                     | Ø 19.7 mm | Aluminium black anodized       | level with bezel   | 84-7202.000 | 0.003 kg |
|                                                                                                                    |           | Aluminium red anodized         | level with bezel   | 84-7202.200 | 0.003 kg |
|                                                                                                                    |           | Aluminium gold anodized        | level with bezel   | 84-7202.400 | 0.003 kg |
|                                                                                                                    |           | Aluminium olive-green anodized | level with bezel   | 84-7202.500 | 0.003 kg |
|                                                                                                                    |           | Aluminium blue anodized        | level with bezel   | 84-7202.600 | 0.003 kg |
|                                                                                                                    |           | Aluminium natural anodized     | level with bezel   | 84-7202.800 | 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   |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------|--------------------------------|--------------------|--------------|----------|
| <div></div> <div>Lens metall for halo illumination</div> |           |                                |                    |              |          |
| flat                                                                                                                                       | Ø 19.7 mm | Aluminium black anodized       | raised above bezel | 84-7205.000A | 0.003 kg |
|                                                                                                                                            |           | Aluminium red anodized         | raised above bezel | 84-7205.200A | 0.003 kg |
|                                                                                                                                            |           | Aluminium gold anodized        | raised above bezel | 84-7205.400A | 0.003 kg |
|                                                                                                                                            |           | Aluminium olive-green anodized | raised above bezel | 84-7205.500A | 0.003 kg |
|                                                                                                                                            |           | Aluminium blue anodized        | raised above bezel | 84-7205.600A | 0.003 kg |
|                                                                                                                                            |           | Aluminium natural anodized     | raised above bezel | 84-7205.800A | 0.003 kg |
| <div></div> <div>Lens metall for halo illumination</div> |           |                                |                    |              |          |
| convex (domed)                                                                                                                             | Ø 19.7 mm | Aluminium black anodized       | raised above bezel | 84-7202.000A | 0.004 kg |
|                                                                                                                                            |           | Aluminium red anodized         | raised above bezel | 84-7202.200A | 0.004 kg |
|                                                                                                                                            |           | Aluminium gold anodized        | raised above bezel | 84-7202.400A | 0.004 kg |
|                                                                                                                                            |           | Aluminium olive-green anodized | raised above bezel | 84-7202.500B | 0.004 kg |
|                                                                                                                                            |           | Aluminium blue anodized        | raised above bezel | 84-7202.600A | 0.004 kg |
|                                                                                                                                            |           | Aluminium natural anodized     | raised above bezel | 84-7202.800A | 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   |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|--------------------|---------------|---------------------|----------|
| <br><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 |
| <br><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 |
| <br><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 |
| <br><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 |

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   |
|-------------------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|----------|
|  <b>Mushroom-head cap, Front dimension Ø 32 mm</b> |                   |                     |          |
| 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   |
|-----------------------------------------------------------------------------------------------------------------|------------|-------------|------------------|----------|
|  <b>Front protective cap</b> |            |             |                  |          |
| 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   |
|---------------------------------------------------------------------------------------------------------|-----------|----------------|---------------|------------------|----------|
|  <b>Legend frame</b> |           |                |               |                  |          |
| 30 x 50 x 0.75 mm                                                                                       | Aluminium | black anodized | adhesive      | <b>61-9980.0</b> | 0.001 kg |

## Legend plate

### Additional Information

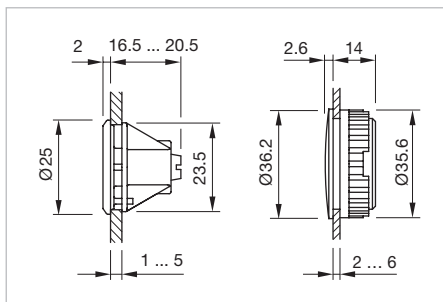
- For legend frame Part No. 61-9980.0
- The colour of anodized aluminium parts can vary due to technical production reasons

| Dimension                                                                                                             | Material  | Colour           | Mounting type | Part No.         | Weight   |
|-----------------------------------------------------------------------------------------------------------------------|-----------|------------------|---------------|------------------|----------|
|  <b>Legend plate for legend frame</b> |           |                  |               |                  |          |
| 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   |
|-------------------------------------------------------------------------------------------------------|-----------|------------------|----------|--------|------------------|----------|
|  <b>Blind plug</b> |           |                  |          |        |                  |          |
| 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 |
|  <b>Blind plug</b> |           |                  |          |        |                  |          |
|                                                                                                       | Ø 36 mm   | Ø 30.5 mm        | Plastic  | black  | <b>704.964.8</b> | 0.007 kg |

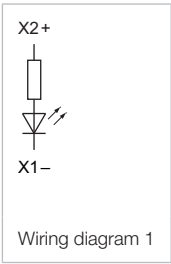
## Rear side

## 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

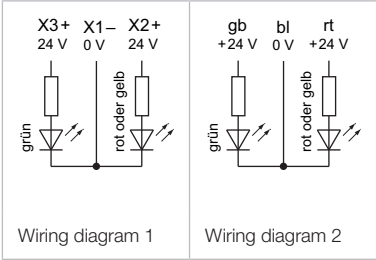
| Protection degree                                                                                               | LED colour        | Operating voltage | Operation current | Terminal          | Part No.            | Wiring diagram | Weight   |
|-----------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|-------------------|---------------------|----------------|----------|
|  <b>Illumination element</b>  |                   |                   |                   |                   |                     |                |          |
| 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 |
|  <b>Illumination element</b> |                   |                   |                   |                   |                     |                |          |
| 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 |



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   |
|--------------------------------------------------------------------------------------------------------------------------------------------|----------------------------|-------------------|-------------------|-------------------|---------------------|----------------|----------|
|  <b>Illumination element with bi-colour illumination</b> |                            |                   |                   |                   |                     |                |          |
| 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 |
|  <b>Illumination element with bi-colour illumination</b> |                            |                   |                   |                   |                     |                |          |
| 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 |

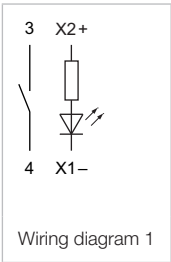


**Switching element with illumination****Additional Information**

- 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   |
|--------------------------------------------------------------------------------------------------------------------------------|-------------------|-------------------|-------------------|----------|-------------------|---------------------|----------------|----------|
|  <b>Switching element with illumination</b>   |                   |                   |                   |          |                   |                     |                |          |
| 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 |
|  <b>Switching element with illumination</b> |                   |                   |                   |          |                   |                     |                |          |
| 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

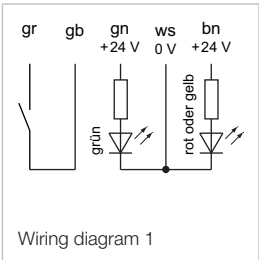


Switching element bi-colour

- 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   |
|-------------------------------------------------------------------------------------|----------------------------|-------------------|-------------------|----------|-------------------|--------------|----------------|----------|
|  | Bi-colour LED red/green    | 24 VDC ±10 %      | 20 mA             | 1 NO     | Flat ribbon cable | 84-8515.8640 | 1              | 0.015 kg |
|                                                                                     | Bi-colour LED yellow/green | 24 VDC ±10 %      | 20 mA             | 1 NO     | Flat ribbon cable | 84-8515.7640 | 1              | 0.015 kg |

Contacts: NO = Normally open

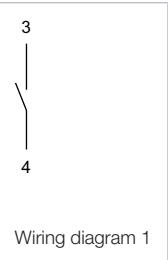


Switching element without illumination

- 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

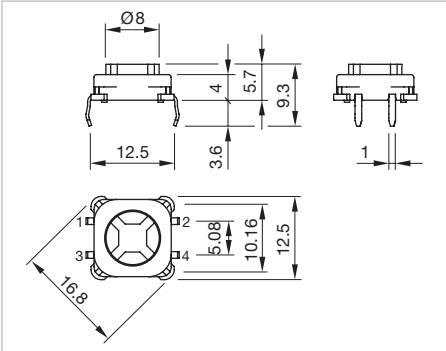
| Protection degree                                                                                                               | Contacts | Terminal          | Part No.     | Wiring diagram | Weight   |
|---------------------------------------------------------------------------------------------------------------------------------|----------|----------------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

Contacts: NO = Normally open



Switching element PCB illuminative

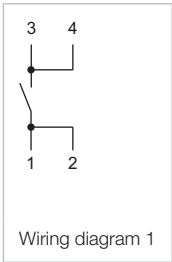
- Additional Information**
- The customer has to decide what series resistor shall be used to the LED
  - LED and mounting flange to be ordered separately



Dimensions [mm]

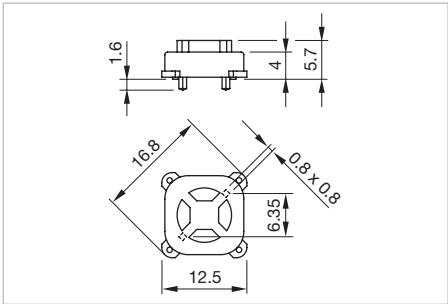
| Contacts                                                                                                                                           | Terminal | Switching action | Part No.   | Component layout | Wiring diagram | Weight   |
|----------------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|------------|------------------|----------------|----------|
| <div></div> <div>Switching element PCB mounting illuminative</div> |          |                  |            |                  |                |          |
| 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

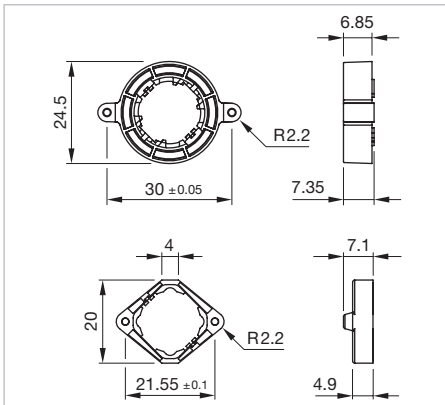
- Additional Information**
- The customer has to decide what series resistor shall be used to the LED
  - LED and mounting flange to be ordered separately



Dimensions [mm]

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

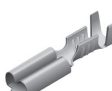
The component layouts you will find from page 803

**Mounting flange**

Dimensions [mm]

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

**Flat receptacle**

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

**Insulation sleeve**

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

Plug

Additional Information

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

| Part No.                                                                                         | Weight   |
|--------------------------------------------------------------------------------------------------|----------|
|  <div>Plug</div> |          |
| 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   |
|-----------------------------------------------------------------------------------------------------|----------------------|-----------------|------------------|----------------------|----------|
|  <b>Single-LED</b> |                      |                 |                  |                      |          |
| 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   |
|----------------------------------------------------------------------------------------------------------|----------------------|-----------------|-----------------|----------------------|----------|
|  <b>Bi-colour-LED</b> |                      |                 |                 |                      |          |
| 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 |

Emergency-stop and Stop pushbutton

Emergency-stop legend

Additional Information

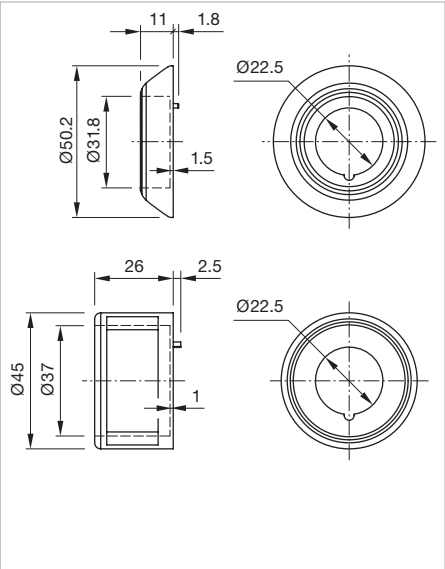
- Front panel thickness 3 mm max.

| Dimension                                                                                        | Mounting cut-out | Marking         | Colour | Part No.         | Weight   |
|--------------------------------------------------------------------------------------------------|------------------|-----------------|--------|------------------|----------|
| <br>Ø 59 x 1 mm | 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   |
|----------------------------------------------------------------------------------------------|-----------|------------------|-----------|----------|--------|----------------|----------|
| <br>IP 65 | 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 |
| <div><b>E-stop protective shroud</b></div> |           |                  |                |          |                 |                |          |
| IP 40                                                                                                                       | Ø 45 mm   | Ø 22.5 mm        |                | Metal    | yellow RAL 1003 | <b>84-909</b>  | 0.021 kg |

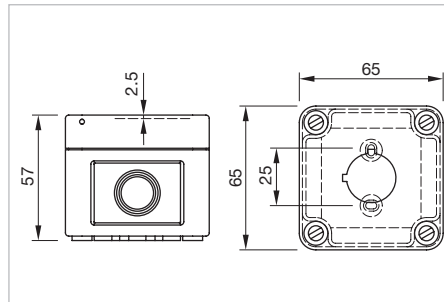
### Fixing nut

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

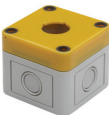
### Emergency-stop enclosure, IP 66

#### 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



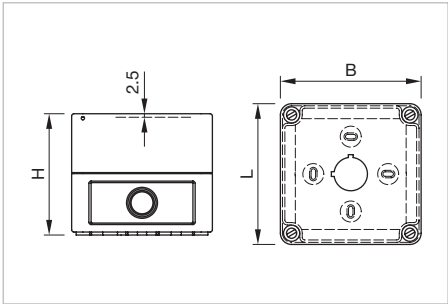
Dimensions [mm]

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

Stop switch enclosure, IP 66

Additional Information

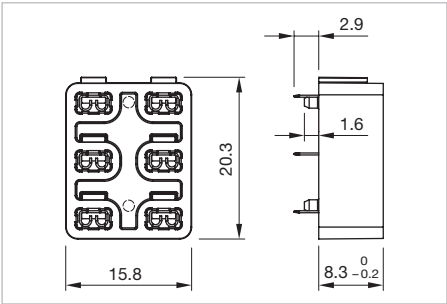
- Cover lead-sealable



Dimensions [mm]

| Product attribute                                                                                       | Dimension                | Material | Colour                 | Part No.         | Weight   |
|---------------------------------------------------------------------------------------------------------|--------------------------|----------|------------------------|------------------|----------|
| <br><b>Enclosure</b>   |                          |          |                        |                  |          |
| 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 |
| <br><b>Enclosure</b>  |                          |          |                        |                  |          |
| 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 |
| <br><b>Enclosure</b> |                          |          |                        |                  |          |
| 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 |
| <br><b>Enclosure</b> |                          |          |                        |                  |          |
| 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 |
| <br><b>Enclosure</b> |                          |          |                        |                  |          |
| 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   |
|-----------------------------------------------------------------------------------------------------------|-------|----------|----------|------------------|----------|
|  <b>PCB plug-in base</b> |       |          |          |                  |          |
| 20.3 x 15.8 x 8.3 mm                                                                                      | axial | PCB      | 84-920   | 5                | 0.003 kg |

The component layouts you will find from page 803

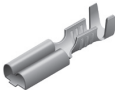
Cable gland, IP 68

Additional Information

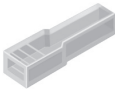
- With traction relief

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

Flat receptacle

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

Insulation sleeve

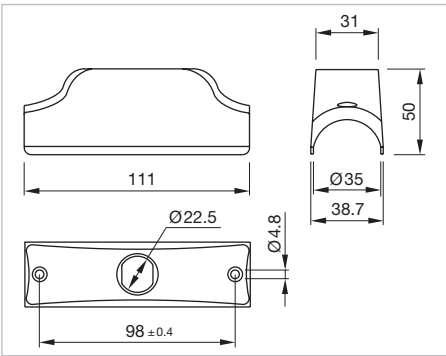
| Product attribute                                                                                            | Part No.      | Weight   |
|--------------------------------------------------------------------------------------------------------------|---------------|----------|
| <br><b>Insulation sleeve</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



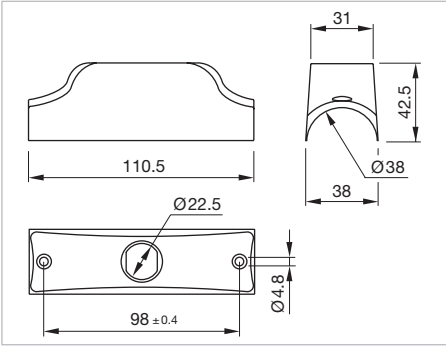
Dimensions [mm]

| Material                                                                                                                            | Colour                | Part No.          | Weight   |
|-------------------------------------------------------------------------------------------------------------------------------------|-----------------------|-------------------|----------|
| <div><div>Housing pole mounting 35 mm</div></div> |                       |                   |          |
| Plastic                                                                                                                             | 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



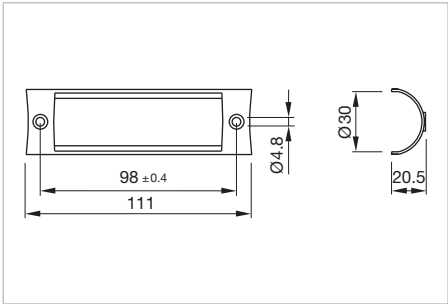
Dimensions [mm]

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

Adaptor reducing to 30 mm

Additional Information

- For housing, pole mounting 35 mm dia.



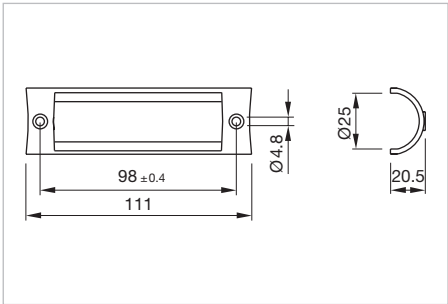
Dimensions [mm]

| Material                                                                         | Colour                           | Part No.         | Weight   |
|----------------------------------------------------------------------------------|----------------------------------|------------------|----------|
|  | <b>Adaptor reducing to 30 mm</b> |                  |          |
|                                                                                  | 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.



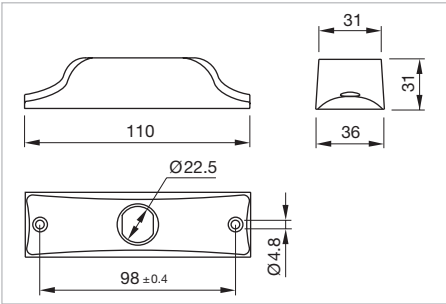
Dimensions [mm]

| Material                                                                           | Colour                           | Part No.         | Weight   |
|------------------------------------------------------------------------------------|----------------------------------|------------------|----------|
|  | <b>Adaptor reducing to 25 mm</b> |                  |          |
|                                                                                    | 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   |
|-------------------------------------------------------------------------------------------------------------------------------|-----------------|------------------|----------|
| <div></div> <div>Housing wall mounting</div> |                 |                  |          |
| Plastic                                                                                                                       | yellow RAL 1023 | <b>84-9800.4</b> | 0.024 kg |
|                                                                                                                               | grey RAL 7016   | <b>84-9800.8</b> | 0.024 kg |

Mounting

Mounting tool

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

Dismantling tool

Additional Information

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

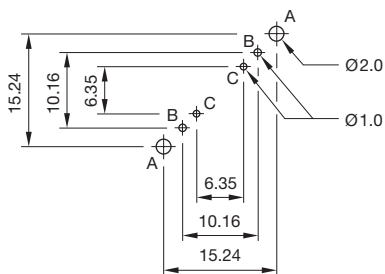
| Part No.                                                                                                                                | Weight   |
|-----------------------------------------------------------------------------------------------------------------------------------------|----------|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



## Single-LED

### Drilling plan (element side)

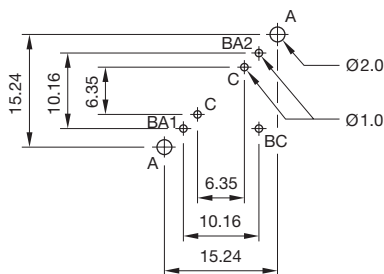
- A Fixing holes for mounting flange (92-960.0)
- B Holes for LED
- C Holes for centering pins



## Bi-colour-LED

### Drilling plan (element side)

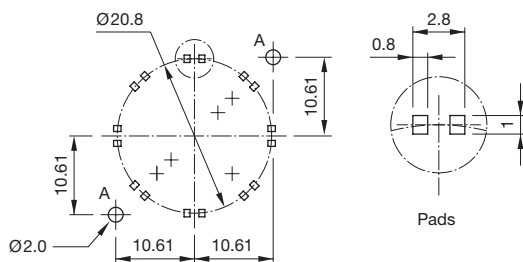
- A Fixing holes for mounting flange (92-960.0)
- B Holes for Bi-colour LED:  
BA1 (green) + BA2 (yellow or red) = Anodes, BC = Cathode
- C Holes for centering pins



## Hyper mini Top-LED

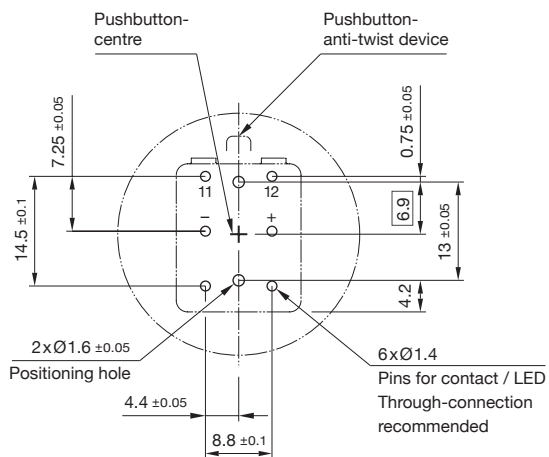
### Drilling plan (element side)

- 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 $U_o$

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 cosφ 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

# 84 Technical data

## 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

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## 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

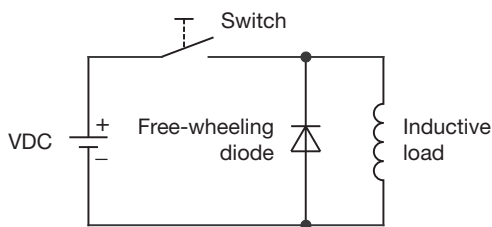
When switching inductive loads such as relays, DC motors, and DC solenoids, it is always important to absorb surges (e.g. with a diode) to protect the contacts. When these inductive loads are switched off, a counter emf can severely damage switch contacts and greatly shorten lifetime.

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.

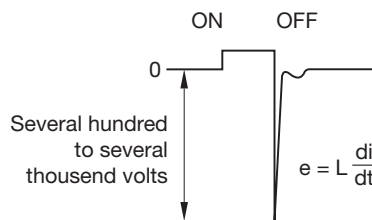
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage ( $V_R$ ) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum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

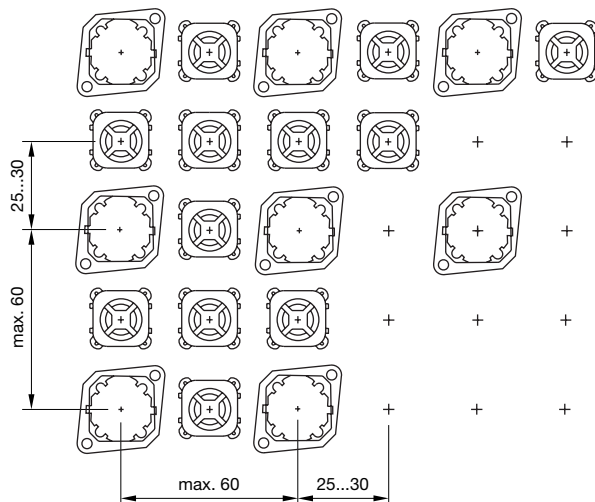
Switching with inductive load  
Fig. 1



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.

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