

Series 82  
*Robust and attractive.*

<https://eao.com/82>



# 82 Information about the Series

## Key advantages

- Vandal-resistant: Impact resistant to IK10
- Front protection up to IP67
- Gold contacts available for low voltages and currents
- Optional illumination and laser markings
- Excellent tactile feedback
- Long service life: > 1 million cycles of operation
- Stainless steel anodised aluminium or brass coloured switches
- 16 mm, 19 mm or 22 mm mounting

## Typical application areas

- Exposed public areas: e.g. ticketing and vending machines
- Industrial: Machinery and factory equipment
- Lifting and moving: Elevators and people movers
- Building management: Access control and security systems
- Audio and video equipment
- Medical equipment
- Food Industry (corrosion and acid resistant versions available on request)

## Functions

- Pushbutton
- Illuminated pushbutton
- Indicator

## Design

- Flush

## IP front protection

- IP65
- IP67

## Raitings

- 24 VAC / DC (0.2 A)
- 42 VAC (100 mA)
- 240 VAC / DC (3 A)

## Mounting cut-outs

- Ø 16 mm
- Ø 19 mm
- Ø 22.3 mm

## Terminal

- Plug-in terminal
- Screw terminal

## Lens Material

- Aluminium
- Stainless steel
- Brass

## Markings

- Laser marking

## Approvals

- CB
- UL
- C UL
- CCC

## Conformities

- CE
- 2014/35/EU (LVD)
- 2011/65/EU (RoHS)



<b>Flush design</b>	
Pushbutton Ø 19 mm, stainless steel 304, silver contact	4
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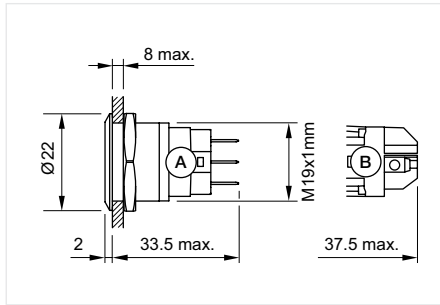
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# 82 Flush design

## Pushbutton Ø 19 mm, stainless steel 304, silver contact, IP65, IP67



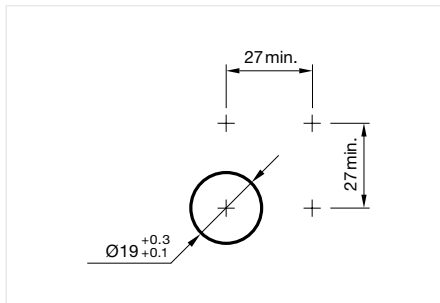
Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

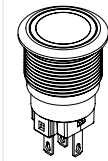
### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



Actuator



Seal



Fixing nut

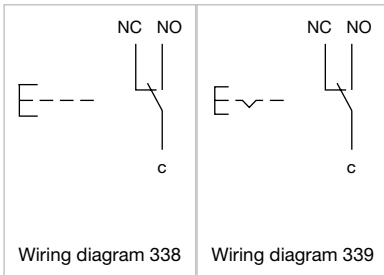
Each Part Number listed below includes all the black components shown in the 3D-drawing.



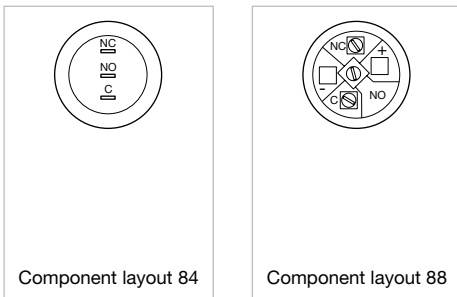
### Pushbutton

Switching action	Lens shape	Terminal	Switching voltage	Symbol	Part No.	Wiring diagram	Component Layout
Maintained	flush	Screw terminal	240 V		82-5152.2000	339	88
Momentary	flush	Screw terminal	240 V		82-5152.1000	338	88
Maintained	flush	Soldering terminal	240 V		82-5151.2000	339	84
Momentary	flush	Soldering terminal	240 V		82-5151.1000	338	84
	flush	Soldering terminal	240 V	ON/OFF	82-5151.1000.B001	338	84
	flush	Soldering terminal	240 V	Standby	82-5151.1000.B002	338	84
	flush	Soldering terminal	240 V	Light	82-5151.1000.B003	338	84
	flush	Soldering terminal	240 V	Info	82-5151.1000.B004	338	84
	flush	Soldering terminal	240 V	Bell	82-5151.1000.B005	338	84
	flush	Soldering terminal	240 V	Door open	82-5151.1000.B006	338	84
Maintained	flush	Soldering terminal	240 V	ON/OFF	82-5151.2000.B001	339	84
	flush	Soldering terminal	240 V	Standby	82-5151.2000.B002	339	84
	flush	Soldering terminal	240 V	Light	82-5151.2000.B003	339	84
	flush	Soldering terminal	240 V	Info	82-5151.2000.B004	339	84
	flush	Soldering terminal	240 V	Bell	82-5151.2000.B005	339	84
	flush	Soldering terminal	240 V	Door open	82-5151.2000.B006	339	84
Momentary	flush	Screw terminal	240 V	ON/OFF	82-5152.1000.B001	338	88
	flush	Screw terminal	240 V	Standby	82-5152.1000.B002	338	88
	flush	Screw terminal	240 V	Light	82-5152.1000.B003	338	88
	flush	Screw terminal	240 V	Info	82-5152.1000.B004	338	88
	flush	Screw terminal	240 V	Bell	82-5152.1000.B005	338	88
	flush	Screw terminal	240 V	Door open	82-5152.1000.B006	338	88
Maintained	flush	Screw terminal	240 V	ON/OFF	82-5152.2000.B001	339	88
	flush	Screw terminal	240 V	Standby	82-5152.2000.B002	339	88
	flush	Screw terminal	240 V	Light	82-5152.2000.B003	339	88
	flush	Screw terminal	240 V	Info	82-5152.2000.B004	339	88
	flush	Screw terminal	240 V	Bell	82-5152.2000.B005	339	88
	flush	Screw terminal	240 V	Door open	82-5152.2000.B006	339	88


**Wiring diagrams**




**Component layouts**



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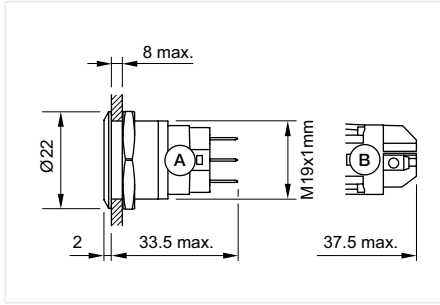
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# 82 Flush design

## Pushbutton Ø 19 mm, stainless steel 304, gold contact, IP65, IP67

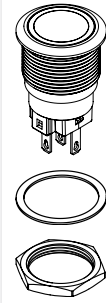


Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

### Equipment consisting of (schematic overview)



Actuator

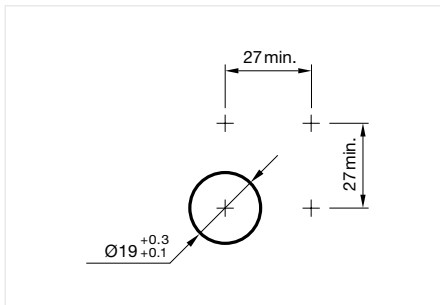
Seal

Fixing nut

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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



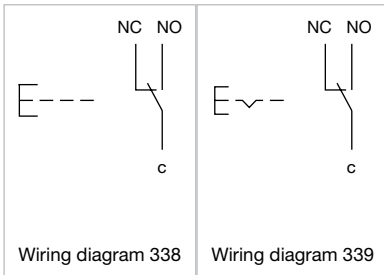
Mounting cut-outs [mm]



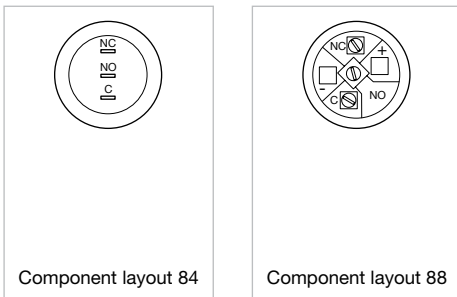
### Pushbutton

Switching action	Lens shape	Terminal	Switching voltage	Symbol	Part No.	Wiring diagram	Component Layout
Maintained	flush	Screw terminal	24 V		82-5154.2000	339	88
Momentary	flush	Screw terminal	24 V		82-5154.1000	338	88
Maintained	flush	Soldering terminal	24 V		82-5153.2000	339	84
Momentary	flush	Soldering terminal	24 V		82-5153.1000	338	84
	flush	Soldering terminal	24 V	ON/OFF	82-5153.1000.B001	338	84
	flush	Soldering terminal	24 V	Standby	82-5153.1000.B002	338	84
	flush	Soldering terminal	24 V	Light	82-5153.1000.B003	338	84
	flush	Soldering terminal	24 V	Info	82-5153.1000.B004	338	84
	flush	Soldering terminal	24 V	Bell	82-5153.1000.B005	338	84
	flush	Soldering terminal	24 V	Door open	82-5153.1000.B006	338	84
Maintained	flush	Soldering terminal	24 V	ON/OFF	82-5153.2000.B001	339	84
	flush	Soldering terminal	24 V	Standby	82-5153.2000.B002	339	84
	flush	Soldering terminal	24 V	Light	82-5153.2000.B003	339	84
	flush	Soldering terminal	24 V	Info	82-5153.2000.B004	339	84
	flush	Soldering terminal	24 V	Bell	82-5153.2000.B005	339	84
	flush	Soldering terminal	24 V	Door open	82-5153.2000.B006	339	84
Momentary	flush	Screw terminal	24 V	ON/OFF	82-5154.1000.B001	338	88
	flush	Screw terminal	24 V	Standby	82-5154.1000.B002	338	88
	flush	Screw terminal	24 V	Light	82-5154.1000.B003	338	88
	flush	Screw terminal	24 V	Info	82-5154.1000.B004	338	88
	flush	Screw terminal	24 V	Bell	82-5154.1000.B005	338	88
	flush	Screw terminal	24 V	Door open	82-5154.1000.B006	338	88
Maintained	flush	Screw terminal	24 V	ON/OFF	82-5154.2000.B001	339	88
	flush	Screw terminal	24 V	Standby	82-5154.2000.B002	339	88
	flush	Screw terminal	24 V	Light	82-5154.2000.B003	339	88
	flush	Screw terminal	24 V	Info	82-5154.2000.B004	339	88
	flush	Screw terminal	24 V	Bell	82-5154.2000.B005	339	88
	flush	Screw terminal	24 V	Door open	82-5154.2000.B006	339	88

## Wiring diagrams



## Component layouts



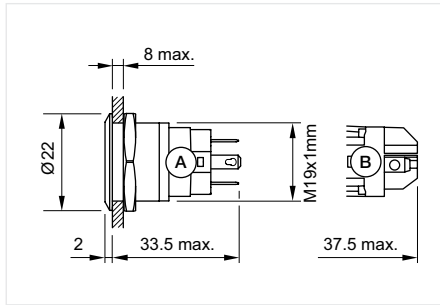
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# 82 Flush design

## Illuminated pushbutton Ø 19 mm, stainless steel 304, silver contact, IP65, IP67

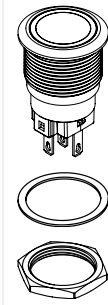


Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

### Equipment consisting of (schematic overview)



Actuator

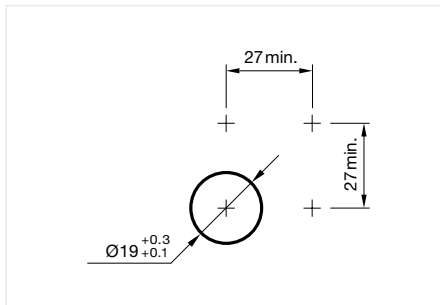
Seal

Fixing nut

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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



Mounting cut-outs [mm]



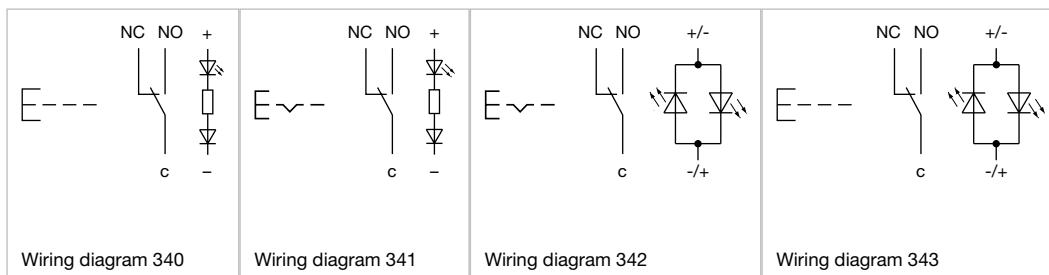
### Illuminated pushbutton

Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Maintained	White	flush	Screw terminal	Ring	240 V	24 AC/DC	82-5152.2154	341	87
	Yellow	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.2144	341	87
	Green	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.2134	341	87
	Blue	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.2124	341	87
	Red	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.2114	341	87
Momentary	White	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.1154	340	87
	Yellow	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.1144	340	87
	Green	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.1134	340	87
	Blue	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.1124	340	87
	Red	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.1114	340	87
Maintained	White	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.2154	341	85
	Yellow	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.2144	341	85
	Green	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.2134	341	85
	Blue	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.2124	341	85
	Red	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.2114	341	85
Momentary	White	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.1154	340	85
	Yellow	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.1144	340	85
	Green	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.1134	340	85
	Blue	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.1124	340	85
	Red	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.1114	340	85

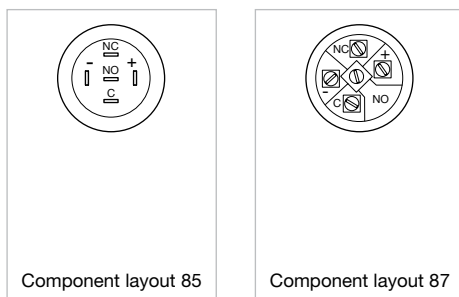


Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Maintained	Red / Green	flush	Screw terminal	Dot	240 V	24 V DC	82-5152.22A4	342	87
	Red / Green	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.21A4	342	87
Momentary	Red / Green	flush	Screw terminal	Dot	240 V	24 V DC	82-5152.12A4	343	87
	Red / Green	flush	Screw terminal	Ring	240 V	24 V DC	82-5152.11A4	343	87
Maintained	Red / Green	flush	Soldering terminal	Dot	240 V	24 V DC	82-5151.22A4	342	85
	Red / Green	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.21A4	342	85
Momentary	Red / Green	flush	Soldering terminal	Dot	240 V	24 V DC	82-5151.12A4	343	85
	Red / Green	flush	Soldering terminal	Ring	240 V	24 V DC	82-5151.11A4	343	85

## Wiring diagrams



## Component layouts

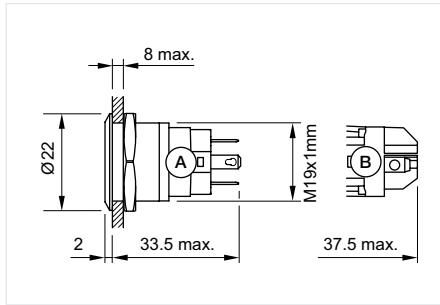


# 82 Flush design

## Illuminated pushbutton Ø 19 mm, stainless steel 304, gold contact, IP65, IP67

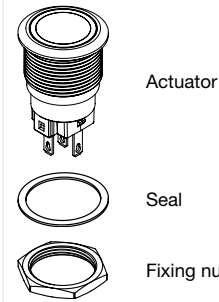


Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

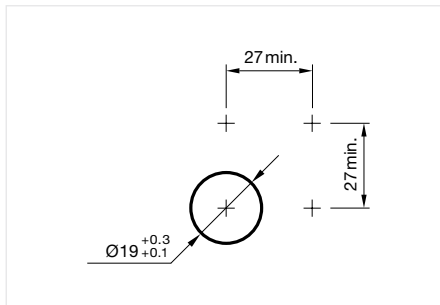
### Equipment consisting of (schematic overview)



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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



Mounting cut-outs [mm]

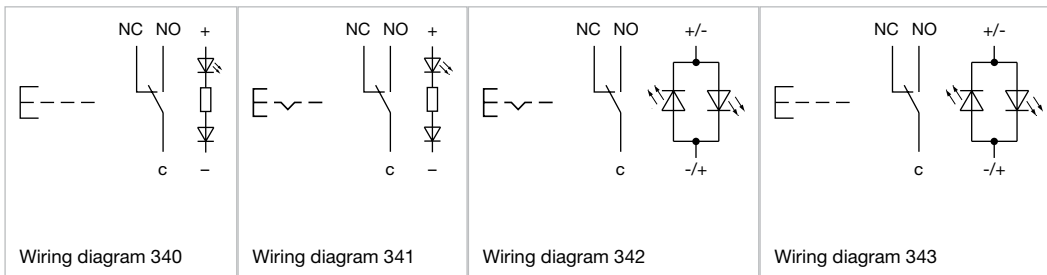


### Illuminated pushbutton

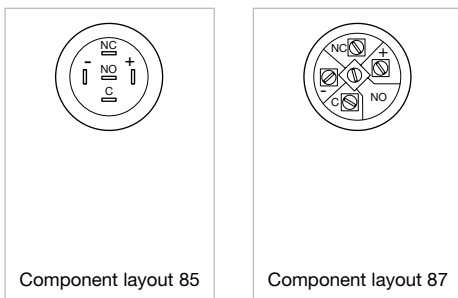
Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Maintained	Yellow	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.2144	341	87
	Green	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.2134	341	87
	Blue	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.2124	341	87
	Red	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.2114	341	87
Momentary	White	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.1154	340	87
	Yellow	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.1144	340	87
	Green	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.1134	340	87
	Blue	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.1124	340	87
	Red	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.1114	340	87
Maintained	White	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.2154	341	85
	Yellow	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.2144	341	85
	Green	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.2134	341	85
	Blue	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.2124	341	85
	Red	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.2114	341	85
Momentary	White	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.1154	340	85
	Yellow	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.1144	340	85
	Green	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.1134	340	85
	Blue	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.1124	340	85
	Red	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.1114	340	85
Maintained	Red / Green	flush	Screw terminal	Dot	24 V	24 V DC	82-5154.22A4	342	87

Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Maintained	Red / Green	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.21A4	342	87
Momentary	Red / Green	flush	Screw terminal	Dot	24 V	24 V DC	82-5154.12A4	343	87
	Red / Green	flush	Screw terminal	Ring	24 V	24 V DC	82-5154.11A4	343	87
Maintained	Red / Green	flush	Soldering terminal	Dot	24 V	24 V DC	82-5153.22A4	342	85
	Red / Green	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.21A4	342	85
Momentary	Red / Green	flush	Soldering terminal	Dot	24 V	24 V DC	82-5153.12A4	343	85
	Red / Green	flush	Soldering terminal	Ring	24 V	24 V DC	82-5153.11A4	343	85

## Wiring diagrams



## Component layouts

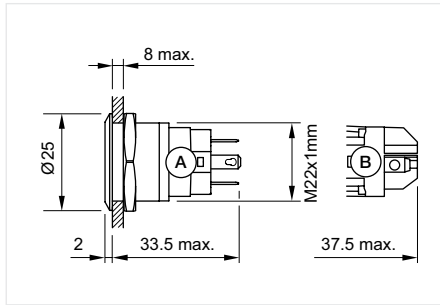


# 82 Flush design

## Illuminated pushbutton Ø 22 mm, stainless steel 304, silver contact, IP65, IP67

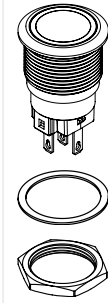


Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

### Equipment consisting of (schematic overview)



Actuator

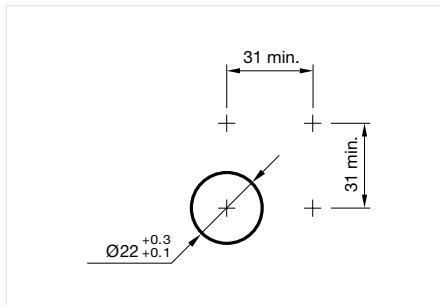
Seal

Fixing nut

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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



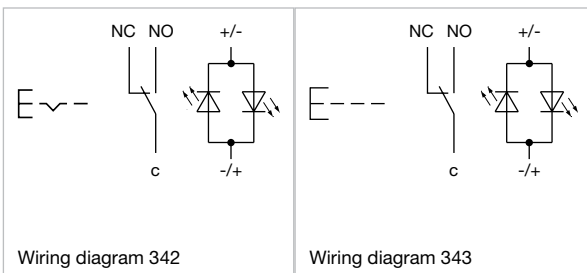
Mounting cut-outs [mm]



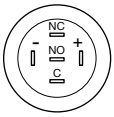
### Illuminated pushbutton

Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Maintained	Red / Green	flush	Screw terminal	Dot	240 V	24 V AC/DC	82-6152.22A4	342	87
	Red / Green	flush	Screw terminal	Ring	240 V	24 V AC/DC	82-6152.21A4	342	87
Momentary	Red / Green	flush	Screw terminal	Dot	240 V	24 V AC/DC	82-6152.12A4	343	87
	Red / Green	flush	Screw terminal	Ring	240 V	24 V AC/DC	82-6152.11A4	343	87
Maintained	Red / Green	flush	Soldering terminal	Dot	240 V	24 V AC/DC	82-6151.22A4	342	85
	Red / Green	flush	Soldering terminal	Ring	240 V	24 V AC/DC	82-6151.21A4	342	85
Momentary	Red / Green	flush	Soldering terminal	Dot	240 V	24 V AC/DC	82-6151.12A4	343	85
	Red / Green	flush	Soldering terminal	Ring	240 V	24 V AC/DC	82-6151.11A4	343	85

### Wiring diagrams



## Component layouts



Component layout 85



Component layout 87



**Robust and attractive.**  
*The optimised Series 82.*

Now with gold-plated silver contacts for low-level applications available.

- Impact resistant to IK10
- Front protection IP67
- Low-level applications possible
- Optional illumination and laser marking
- Excellent tactile feedback
- Long service life

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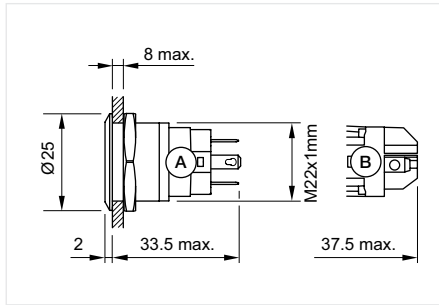
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# 82 Flush design

## Illuminated pushbutton Ø 22 mm, stainless steel 304, gold contact, IP65, IP67

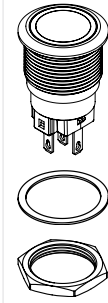


Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

### Equipment consisting of (schematic overview)



Actuator

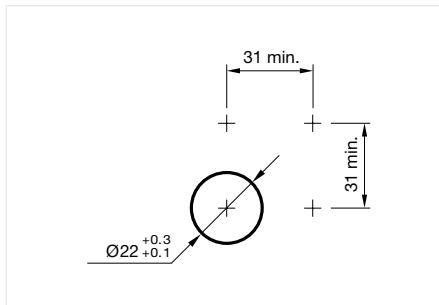
Seal

Fixing nut

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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



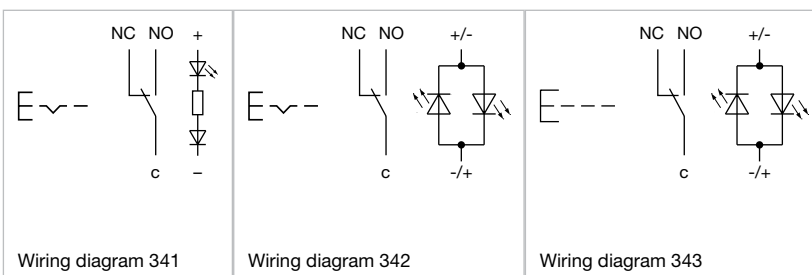
Mounting cut-outs [mm]



### Illuminated pushbutton

Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Maintained	White	flush	Screw terminal	Ring	24 V	24 V DC	82-6154.2154	341	87
	Red / Green	flush	Screw terminal	Dot	24 V	24 V DC	82-6154.22A4	342	87
	Red / Green	flush	Screw terminal	Ring	24 V	24 V DC	82-6154.21A4	342	87
Momentary	Red / Green	flush	Screw terminal	Dot	24 V	24 V DC	82-6154.12A4	343	87
	Red / Green	flush	Screw terminal	Ring	24 V	24 V DC	82-6154.11A4	343	87
Maintained	Red / Green	flush	Soldering terminal	Dot	24 V	24 V DC	82-6153.22A4	342	85
	Red / Green	flush	Soldering terminal	Ring	24 V	24 V DC	82-6153.21A4	342	85
Momentary	Red / Green	flush	Soldering terminal	Dot	24 V	24 V DC	82-6153.12A4	343	85
	Red / Green	flush	Soldering terminal	Ring	24 V	24 V DC	82-6153.11A4	343	85

### Wiring diagrams

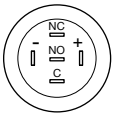


Wiring diagram 341

Wiring diagram 342

Wiring diagram 343

## Component layouts



Component layout 85



Component layout 87

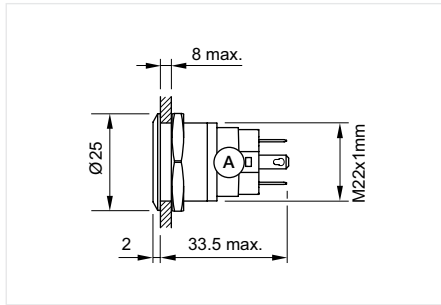
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- 82**
- 84
- 92
- 96

# 82 Flush design

## Illuminated pushbutton Ø 22 mm, stainless steel 316L, IP65, IP67

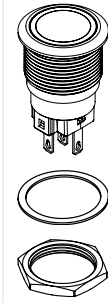


Product can differ from the current configuration.



Dimensions [mm]

### Equipment consisting of (schematic overview)



Actuator

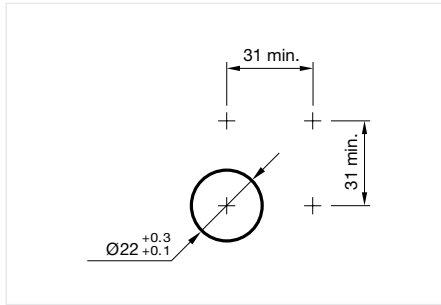
Seal

Fixing nut

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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



Mounting cut-outs [mm]

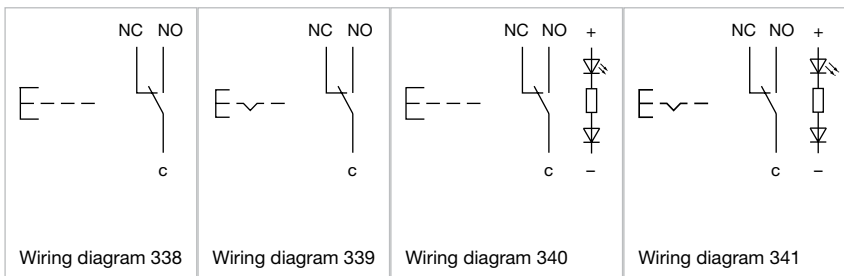


### Illuminated pushbutton

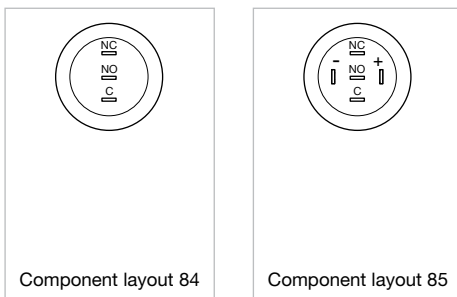
Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Momentary	Red	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.1114	340	85
	Blue	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.1124	340	85
	Green	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.1134	340	85
	White	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.1154	340	85
Maintained	Red	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.2114	341	85
	Blue	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.2124	341	85
	Green	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.2134	341	85
	White	flush	Plug-in terminal	Ring (Tritan)	36 V	24 V DC (LED)	82-6651.2154	341	85
Momentary		flush	Plug-in terminal		36 V		82-6651.1000	338	84
Maintained		flush	Plug-in terminal		36 V		82-6651.2000	339	84



## Wiring diagrams



## Component layouts



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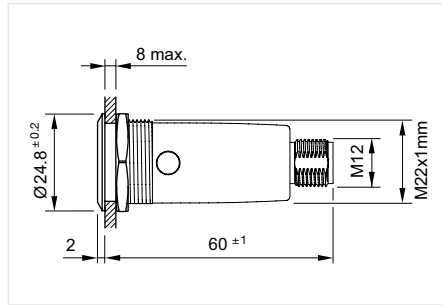
On our website you can download technical data, assembly instructions, catalogs, brochures and much more.

# 82 Flush design

## Pushbutton, illuminated pushbutton with M12 connector, Ø 22 mm, stainless steel 316L, IP65, IP67



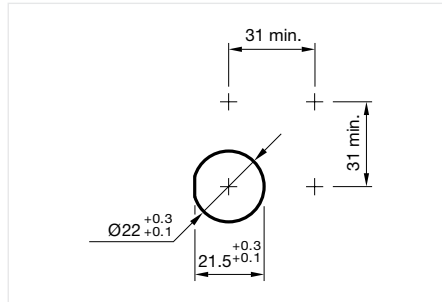
Product can differ from the current configuration.



Dimensions [mm]

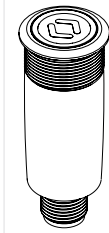
### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



Mounting cut-outs [mm]

### Equipment consisting of (schematic overview)



Actuator



Seal



Fixing nut

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



Pushbutton

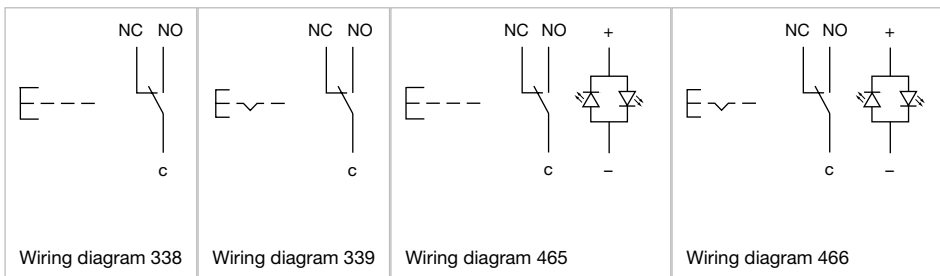
Switching action	Lens shape	Terminal	Switching voltage	Part No.	Wiring diagram	Component Layout
Maintained	flush	M12 connector (5 pins)	35 V	82-6657.1000	338	108
Momentary	flush	M12 connector (5 pins)	35 V	82-6657.2000	339	108



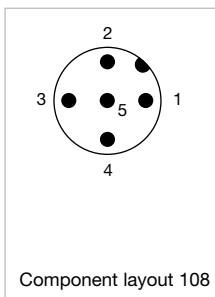
Illuminated pushbutton

Switching action	Illumination colour	Lens shape	Terminal	Shape of illumination	Switching voltage	Operating voltage	Part No.	Wiring diagram	Component Layout
Momentary	Red	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.1114	466	108
	Blue	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.1124	466	108
	Green	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.1134	466	108
	White	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.1154	466	108
Maintained	Red	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.2114	466	108
	Blue	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.2124	466	108
	Green	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.2134	466	108
	White	flush	M12 connector (5 pins)	Ring (Tritan)	35 V	24 V DC (LED)	82-6657.2154	466	108

## Wiring diagrams



## Component layouts



- 1 = NC
- 2 = LED+
- 3 = Common
- 4 = LED-
- 5 = NO
- A-Coded

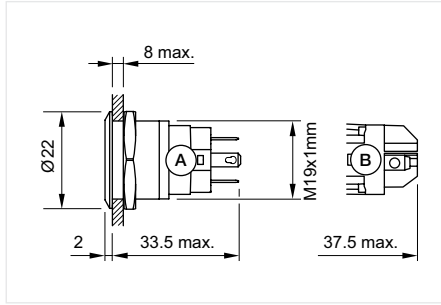
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- 82**
- 84
- 92
- 96

# 82 Flush design

## Indicator 19 mm, stainless steel 304, IP65, IP67

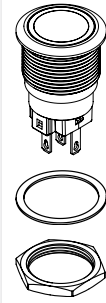


Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

### Equipment consisting of (schematic overview)



Actuator

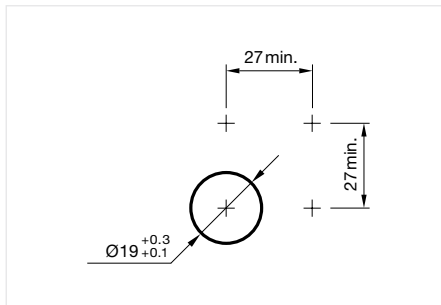
Seal

Fixing nut

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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



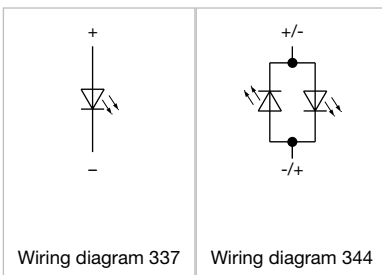
Mounting cut-outs [mm]



Indicator

Illumination colour	Shape of illumination	Lens shape	Operating voltage	Operation current	Terminal	Part No.	Wiring diagram	Component Layout
Red / Green	Dot	flush	24 V AC/DC	7 mA	Screw terminal	82-5152.02A4	337	89
	Ring	flush	24 V AC/DC	7 mA	Screw terminal	82-5152.01A4	337	89
	Dot	flush	24 V AC/DC	7 mA	Soldering terminal	82-5151.02A4	344	86
	Ring	flush	24 V AC/DC	7 mA	Soldering terminal	82-5151.01A4	344	86

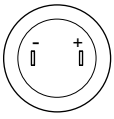
### Wiring diagrams



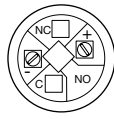
Wiring diagram 337

Wiring diagram 344

Component layouts



Component layout 86



Component layout 89

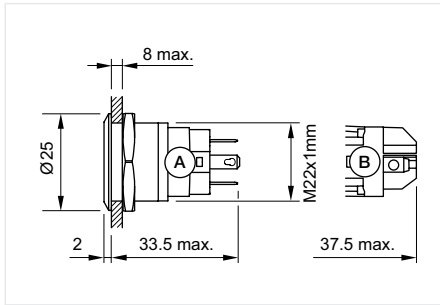
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**82**  
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# 82 Flush design

## Indicator 22 mm, stainless steel 304, IP65, IP67

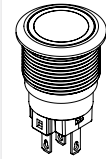


Product can differ from the current configuration.



Dimensions [mm]  
A = Solder terminal  
B = Screw terminal

### Equipment consisting of (schematic overview)



Actuator



Seal

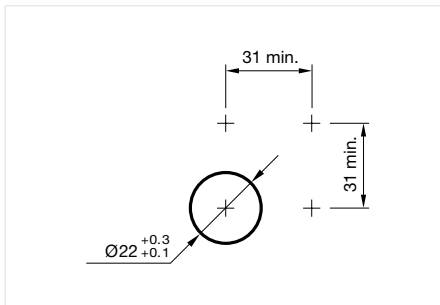


Fixing nut

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

### General information

- The laser 2D-technology can mark all stainless steel versions with flat lenses - flush-mounting as well as raised versions.



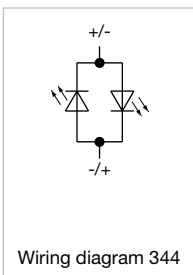
Mounting cut-outs [mm]



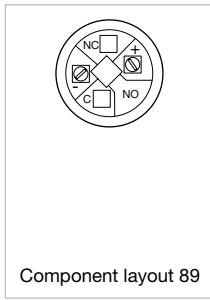
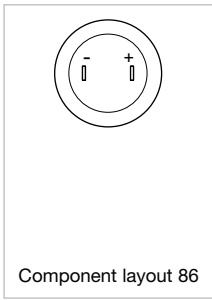
Indicator

Illumination colour	Shape of illumination	Lens shape	Operating voltage	Operation current	Terminal	Part No.	Wiring diagram	Component Layout
Red / Green	Dot	flush	24 V AC/DC	7 mA	Screw terminal	82-6152.02A4	344	89
	Ring	flush	24 V AC/DC	7 mA	Screw terminal	82-6152.01A4	344	89
	Dot	flush	24 V AC/DC	7 mA	Soldering terminal	82-6151.02A4	344	86
	Ring	flush	24 V AC/DC	7 mA	Soldering terminal	82-6151.01A4	344	86

## Wiring diagrams



## Component layouts



- 01
- 02
- 03
- 04
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- 70
- 71
- 82**
- 84
- 92
- 96

# 82 Accessories

## Front side



**Blind plug**

Dimensions	Material	Part No.
Ø 16 mm	Stainless steel	82-907
Ø 19 mm	Stainless steel	82-908
Ø 22 mm	Stainless steel	82-909



**Protective cap**

Product attributes	Dimensions	Material	Colour	Optics	Part No.
For button Ø 19 mm	Ø 19 mm	Silicone	Colourless	transparent	82-911.1
For button Ø 22 mm	Ø 22 mm	Silicone	Colourless	transparent	82-912.1

### Additional information

- Suitable for indicator, pushbutton and illuminated pushbutton with flush design and lens flat/level with front ring
- The exterior flush seal must be removed before mounting the protective cap
- Up to 300 000 actuations possible



Rear side



**Flat receptacle**

Product attributes	Material	Part No.
2.8 x 0.5 mm plug-in terminal	Metal	31-946



**Insulation sleeve**

Product attributes	Material	Part No.
For flat receptacle 2.8 mm	Plastic	31-929

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# 82 Accessories

## Mounting



Fixing nut

Dimensions	Material	Part No.
Ø 16 mm	Metal	31-991
Ø 19 mm	Metal	82-902
Ø 22 mm	Metal	82-903



Fixing nut 6-sides stainless steel

Dimensions	Material	Part No.
Ø 16 mm	Metal	82-916
Ø 19 mm	Metal	82-917
Ø 22 mm	Metal	82-918



Seal

Abmessungen	Material	Part No.
Ø 16 mm	Plastic	82-913
Ø 19 mm	Plastic	82-914
Ø 22 mm	Plastic	82-915



Mounting tool

Product attributes	Dimensions	Material	Part No.
For tightening or loosening of the fixing nut Ø 16 mm	Ø 16 mm	Metal	01-907
For tightening or loosening of the fixing nut Ø 19 mm	Ø 19 mm	Metal	82-905
For tightening or loosening of the fixing nut Ø 22 mm	Ø 22 mm	Metal	84-997

## Indicator, Pushbutton, Illuminated pushbutton

### Switching system

Snap-action changeover contact normally closed/normally open.  
Switching function momentary or maintain.

### Material

#### Housing

Stainless-steel  
Stainless-steel chrome-coloured  
Brass gold-coloured  
Aluminium natural anodized

#### Terminal housing

Plastic

#### Contact material

Silver alloy

### Mechanical characteristics

#### Terminals

Plug-in terminal 2.8 mm x 0.5 mm  
Screw terminal, Cable wire size min. 0.5 mm<sup>2</sup>/max. 1.5 mm<sup>2</sup>  
Connector M12, screw connection with A-coding

#### Tightening torque

0.5 Nm min. ... 1.2 Nm max. for fixing nut  
0.1 Nm for screw terminal  
0.6 Nm max. for connector M12

#### Actuating force

4 ... 7 N

#### Actuating travel

Approx. 3 mm

#### Mechanical lifetime

Pushbutton momentary 1 Mio. cycles of operation  
Pushbutton maintain 500 000 cycles of operation

#### Resistance to heat of soldering

Hand-soldering max. 260 °C, 3 sec.

### Electrical characteristics

#### Rated Operational Voltage $U_o$

250 VAC

#### Rated Insulation Voltage $U_i$

250 V

### Illumination

LED red, green, blue, yellow and white  
LED and series resistor with polarity protection are built in.

LED-Voltage	Tolerance	Current
6 VAC/DC	± 10 %	7 mA
12 VAC/DC	± 10 %	7 mA
24 VAC/DC	± 10 %	7 mA
110 VAC	± 10 %	2 mA
230 VAC	± 10 %	1.5 mA

### Electrical life

50 000 cycles of operation

### Switching voltage and switching current as per IEC 60947-5-1 (Silver contacts)

Service categorie AC-15

Voltage	Current
24 VAC	1 A
35 VAC	1 A (M12 version)
110 VAC	1 A
220 VAC	0.5 A

### Switch rating DC service categorie DC-13 (Silver contacts)

Voltage	Current
24 VDC	0.7 A
35 VDC	0.5 A (M12 version)
110 VDC	0.2 A
220 VDC	0.1 A

### Switching voltage and switching current as per UL 508 (Silver contacts)

cos φ 0.75 ... 0.8)

Voltage	Current
120 VAC	5 A
240 VAC	3 A
24 VDC	1 A

### Operational data

Silver contacts

	Minimum Values
Voltage	17 VAC/DC
Current	50 mA VAC/DC

Silver contacts gold-plated

	Minimum Values
Voltage	1 VAC/DC
Current	5 mA VAC/DC

### Thermal current $I_{th}$

5 A

### Electrical strength

1500 VAC, 50 Hz 1 minute between life terminals and ground

# 82 Technical data

## Ambient conditions

### Storage temperature

-40 °C ... +80 °C

### Operating temperature

-30 °C ... +70 °C

### Protection degree

IP65 and IP67 front side, as per IEC 60529

IP67 rear side (M12 version), with mounted M12 mating connector

### Impact resistance

IK10, as per IEC 62262

### Shock resistance

Max. 500 m/s<sup>2</sup> as per IEC 60068-2-27

### Degree of pollution

2, as per EN IEC 60947-1

### Vibration resistance

10...500Hz, amplitude 1.5mm p-p according to IEC 60068-2-6

## Climate resistance

Damp heat, 21 days as per EN 60068-2

Stainless steel and aluminium versions (without symbol):

Saline mist, 96 hours as per EN 60068-2-11

Brass versions (without symbol):

Saline mist, 24 hours as per EN 60068-2-11

## Approvals

### Approbations (without M12 versions)

CB

UL

C UL

CCC

### Conformities

CE

2014/35/EC (LVD)

2011/65/EC (RoHS)

## General notes

### 1. Laser marking

Using laser technology, the Series 82 stainless steel version can be marked with almost any symbol or text in any language.

Laser marking is very resistant, hardly fades and is exceptionally durable. These are the ideal characteristics of vandal-resistant indicators, pushbuttons and illuminated pushbuttons.

### 2. Versions

The laser 2D-technology can mark all stainless steel versions with flush lenses – flush-mounting as well as raised versions.

### 3. Symbols, colours

Basically, all symbols and texts can be marked in all languages.

Therefore, we need electronic DXF-file only. All symbols or texts are marked in anthracite/dark grey.

### 4. Part number

Each symbol is given a continuous number. It will be combined with the configured part number to get the complete part number, see overview part number system.

### 5. Standard symbols

Several standard icons are available:

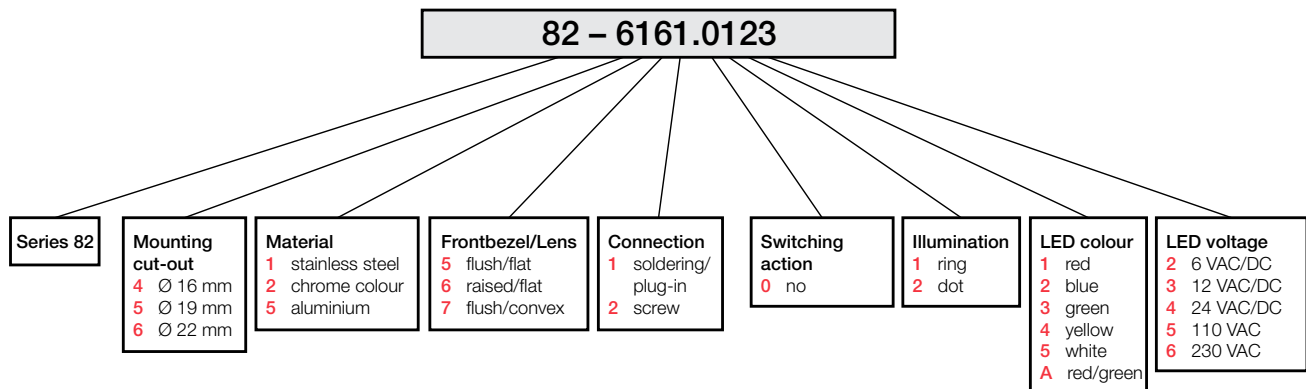
On/Off Part No. B001	Standby Part No. B002	Light Part No. B003	Info Part No. B004	Bell Part No. B005	Door open Part No. B006	Door close Part No. B007
Telephone Part No. B008	Hand control Part No. B009	Arrow right Part No. B010	Arrow left Part No. B011	Arrow up Part No. B012	Arrow down Part No. B013	Help Part No. B014
SOS Part No. B015	EIN Part No. B016	AUS Part No. B017	AUF Part No. B018	AB Part No. B019	ON Part No. B020	OFF Part No. B021
UP Part No. B022	DOWN Part No. B023	START Part No. B024	STOP Part No. B025	AUTO Part No. B026	ENTER Part No. B027	RESET Part No. B028
1 Part No. B029	2 Part No. B030	3 Part No. B031	4 Part No. B032	5 Part No. B033	6 Part No. B034	7 Part No. B035
8 Part No. B036	9 Part No. B037	0 Part No. B038	* Part No. B039	# Part No. B040	+ Part No. B041	- Part No. B042

# 82 Order examples

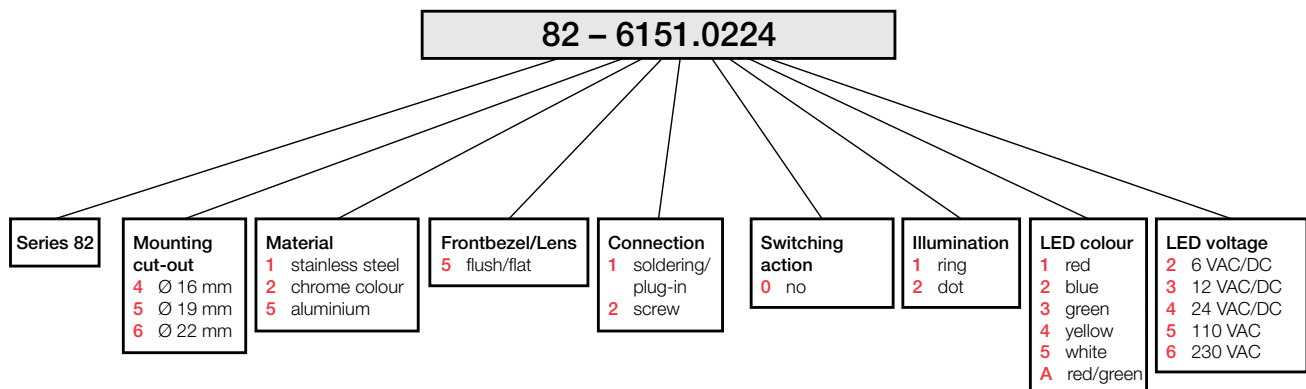
## Part number system

Series	Diameter		Material		Bezel/Lens		Connection/SE Contacts		Switching action		Illumination		LED colour		LED voltage		Laser Engraving	
82	4	16 mm	1	Stainless steel	5	flush/flat	1	Solder/Silver	0	Indicator	0	no LED	0	no LED	0	no LED	B001	On/Off
	5	19 mm	2	Chrome colour	6	flush/raised flat	2	Srew/Silver	1	Momentary	1	Ring	1	red	2	6VAC/DC	B002	Standby
	6	22 mm	5	Aluminium natural anodized	7	flush/convex	3	Solder/Gold plated	2	Maintained	2	Dot	2	blue	3	12VAC/DC	B003	Light
							4	Screw/Gold plated					3	green	4	24VAC/DC	B004	Info
													4	yellow	5	110VAC	B005	Bell
													5	white	6	230VAC	B006	Door open
												A	red/green			BXXX	Any other symbol	

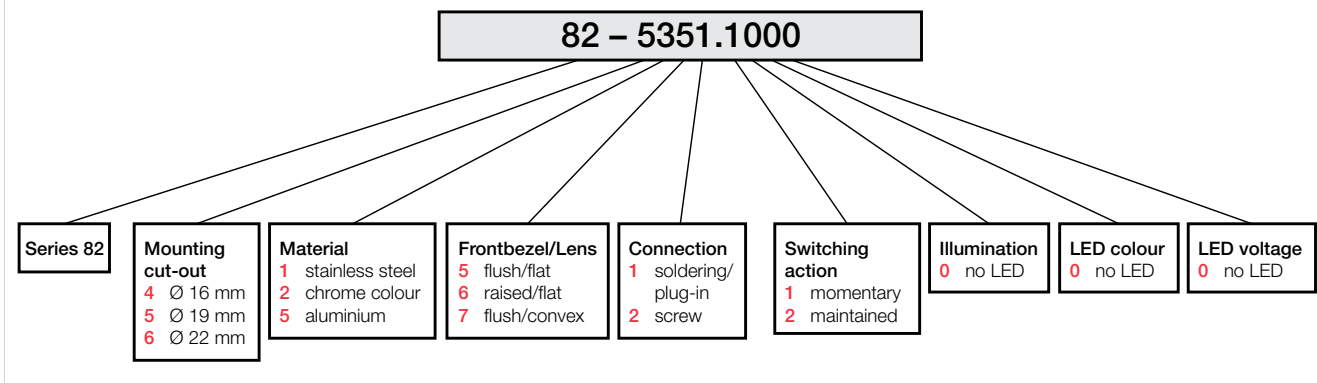
### Order example for indicator with ring illumination



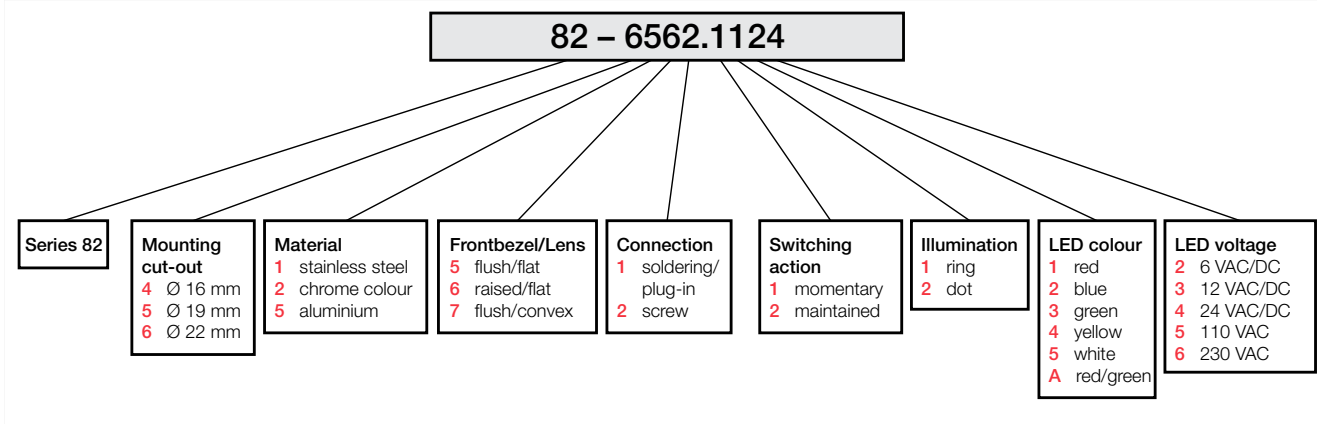
### Order example for indicator with dot illumination



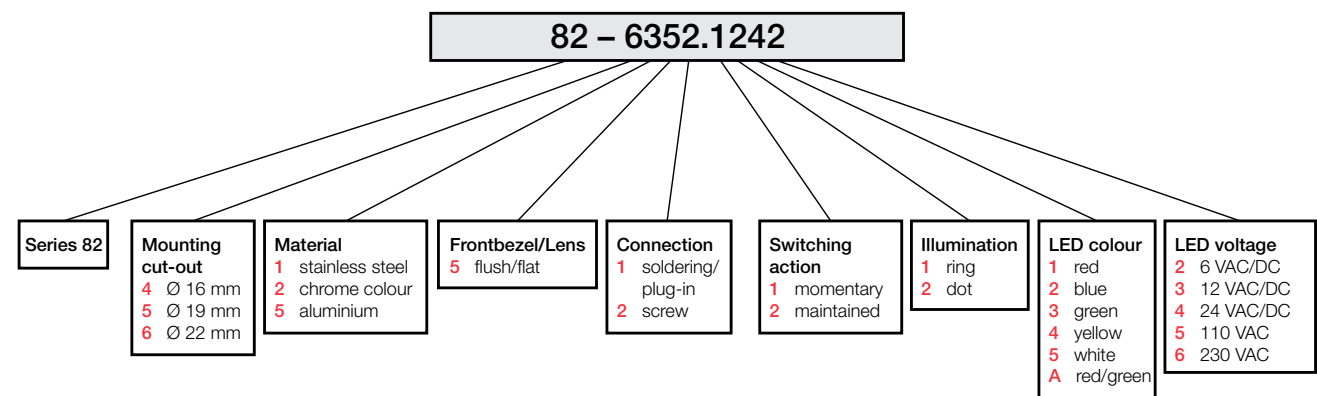
## Order example for pushbutton



## Order example for illuminated pushbutton ring illumination



## Order example for illuminated pushbutton dot illumination



# 82 Application guidelines

## Suppressor circuits

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

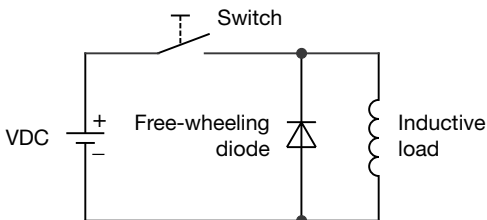
Fig. 1 shows an inductive load with a free-wheeling diode connected in parallel. This free-wheeling diode provides a path for the inductor current to flow when the current is interrupted by the switch. Without this free-wheeling diode, the voltage across the coil will be limited only by dielectric breakdown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

volts in amplitude even when nominal circuit voltages are low (e.g. 12VDC) see Fig. 2.

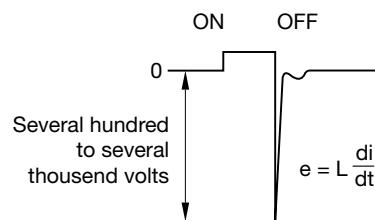
The free-wheeling diode should be chosen so that the reverse breakdown voltage is greater than the voltage driving the inductive load. The DC blocking voltage (VR) of the free-wheeling diode can be found in the datasheet of a diode. The forward current should be equal or greater than the maximum current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

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

Switching with inductive load  
Fig. 1



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



### Earthing required for applications from 60 V AC/DC

For applications with an operating voltage from 60 V AC/DC upwards, metal panels and metal buttons must be permanently earthed with an earth conductor (1,5 mm<sup>2</sup>) with yellow and green sheathing.



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82-5151.1000	4	82-5153.2000.B005	6	82-902	26
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82-5151.2000.B002	4	82-5154.1114	10		
82-5151.2000.B003	4	82-5154.1124	10		
82-5151.2000.B004	4	82-5154.1134	10		
82-5151.2000.B005	4	82-5154.1144	10		
82-5151.2000.B006	4	82-5154.1154	10		
82-5151.2114	8	82-5154.11A4	11		
82-5151.2124	8	82-5154.12A4	11		
82-5151.2134	8	82-5154.2000	6		
82-5151.2144	8	82-5154.2000.B001	6		
82-5151.2154	8	82-5154.2000.B002	6		
82-5151.21A4	9	82-5154.2000.B003	6		
82-5151.22A4	9	82-5154.2000.B004	6		
82-5152.01A4	20	82-5154.2000.B005	6		
82-5152.02A4	20	82-5154.2000.B006	6		
82-5152.1000	4	82-5154.2114	10		
82-5152.1000.B001	4	82-5154.2124	10		
82-5152.1000.B002	4	82-5154.2134	10		
82-5152.1000.B003	4	82-5154.2144	10		
82-5152.1000.B004	4	82-5154.21A4	11		
82-5152.1000.B005	4	82-5154.22A4	10		
82-5152.1000.B006	4	82-6151.01A4	22		
82-5152.1114	8	82-6151.02A4	22		
82-5152.1124	8	82-6151.11A4	12		
82-5152.1134	8	82-6151.12A4	12		
82-5152.1144	8	82-6151.21A4	12		
82-5152.1154	8	82-6151.22A4	12		
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82-5152.12A4	9	82-6152.02A4	22		
82-5152.2000	4	82-6152.11A4	12		
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82-5152.2000.B002	4	82-6152.21A4	12		
82-5152.2000.B003	4	82-6152.22A4	12		
82-5152.2000.B004	4	82-6153.11A4	14		
82-5152.2000.B005	4	82-6153.12A4	14		
82-5152.2000.B006	4	82-6153.21A4	14		
82-5152.2114	8	82-6153.22A4	14		
82-5152.2124	8	82-6154.11A4	14		
82-5152.2134	8	82-6154.12A4	14		
82-5152.2144	8	82-6154.2154	14		
82-5152.2154	8	82-6154.21A4	14		
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82-5153.1000.B003	6	82-6651.1154	16		
82-5153.1000.B004	6	82-6651.2000	16		
82-5153.1000.B005	6	82-6651.2114	16		
82-5153.1000.B006	6	82-6651.2124	16		
82-5153.1114	10	82-6651.2134	16		
82-5153.1124	10	82-6651.2154	16		
82-5153.1134	10	82-6657.1000	18		
82-5153.1144	10	82-6657.1114	18		
82-5153.1154	10	82-6657.1124	18		
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