

# EAO – Your Expert Partner for Human Machine Interfaces

82-4151.2134 - Illuminated pushbutton 16 mm stainless-steel, maintained

## 82-4151.2134 - Illuminated pushbutton 16 mm stainless-steel, maintained 24V green LED



Configuration number : 82-10-000186

### Mounting

|                  |         |
|------------------|---------|
| Design           | flush   |
| Mounting cut-out | Ø 16 mm |

### Front

|                      |                 |
|----------------------|-----------------|
| Front shape          | round           |
| Front ring shape     | flush           |
| Front dimension      | Ø 18 mm         |
| Front bezel material | Stainless steel |

### Other Attributes

|                       |            |
|-----------------------|------------|
| LED operating voltage | 24 V AC/DC |
| Weight                | 0.018 kg   |
| Operation current     | 10 mA      |

### Operating-/Indication part

|                   |                  |
|-------------------|------------------|
| Lens optics       | Ring illuminated |
| Lens material     | Stainless steel  |
| Lens profile      | flat             |
| Lens illumination | illuminative     |
| Lens colour       | Stainless steel  |

### IP-Rating

|                  |              |
|------------------|--------------|
| Front protection | IP 65, IP 67 |
|------------------|--------------|

### Connection Method

|          |                     |
|----------|---------------------|
| Terminal | Solder 2.8 x 0.5 mm |
|----------|---------------------|

### Actuator

|                  |            |
|------------------|------------|
| Switching action | Maintained |
|------------------|------------|

### Switching element

|                   |                               |
|-------------------|-------------------------------|
| Switching current | 3 A                           |
| Contact material  | Silver                        |
| Contacts          | 1 C                           |
| Switching system  | Snap-action switching element |
| Switching voltage | 240 V AC/DC                   |

### Illumination

|              |                     |
|--------------|---------------------|
| Illumination | Ring with green LED |
|--------------|---------------------|

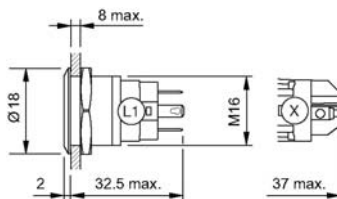
### Function

|                        |
|------------------------|
| Illuminated pushbutton |
|------------------------|

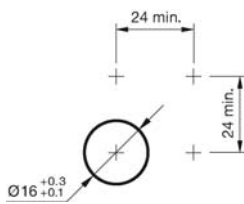
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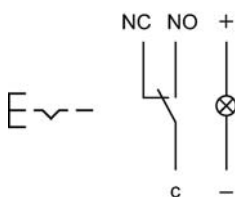
## Dimensions



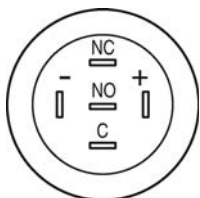
## Mounting cut-outs



## Wiring diagram



## Component layout



## Legend

Switching action: C = Maintained

Contacts: C = Changeover

**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**

Polyamide 66 (PA66)

**Contact material**

Silver alloy  
Silver contacts gold-plated

**Mechanical characteristics**
**Mounting cut-out**

Ø 16 mm +0.3/+0.1 mm  
Ø 19 mm +0.3/+0.1 mm  
Ø 22 mm +0.3/+0.1 mm

**Terminals**

Soldering/plug-in terminals 2.8 x 0.5 mm  
Screw terminal

**Tightening torque**

5 Nm min. – 12 Nm max. for fixing nut

**Actuating force**

4 ... 7 N

**Actuating travel**

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 sek.

**Electrical characteristics**
**Rated Operational Voltage  $U_e$** 

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 | Consumption |
|-------------|-----------|---------|-------------|
| 6 VAC/DC    | ±10 %     | 15 mA   | 0.1 W       |
| 12 VAC/DC   | ±10 %     | 14 mA   | 0.17 W      |
| 24 VAC/DC   | ±10 %     | 10 mA   | 0.24 W      |
| 110 VAC     | ±10 %     | 2 mA    | 0.22 W      |
| 230 VAC     | ±10 %     | 1.3 mA  | 0.29 W      |

**Contact resistance**

<50 mΩ

**Electrical life**

50 000 cycles of operation (full load)

**Switch rating IEC 60947-5-1 (Silver contacts)**

Switch rating AC cosφ 0.3 service categorie AC-15

| Voltage | Current |
|---------|---------|
| 24 VAC  | 1 A     |
| 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   |
| 110 VDC | 0.2 A   |
| 220 VDC | 0.1 A   |

**Switch rating UL 508 (Silver contacts)**

Switch rating AC cosφ 0.75 ... 0.8)

| Voltage | Current |
|---------|---------|
| 120 VAC | 5 A     |
| 240 VAC | 3 A     |

Switch rating DC

| Voltage | Current |
|---------|---------|
| 24 VDC  | 1 A     |

**Recommended minimum operational data**

according to DIN EN 60947-5-4

|         | Silver contacts | Silver contacts gold-plated |
|---------|-----------------|-----------------------------|
| Voltage | 17 VAC/DC       | 1 VAC/DC                    |
| Current | 50 mA           | 5 mA                        |

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

5 A

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

**Electrical strength**

1500 VAC, 50 Hz 1 min. between life terminals and ground

**Isolation resistance**

500 VDC at min. 10 MΩ according to IEC 60512-2

## Environmental conditions

### Storage temperature

-40 °C ... +80 °C

### Operating temperature

-30 °C ... +70 °C

### Front protection

IP 65 and IP 67, as per IEC 60529

### Impact resistance

IK 10, as per IEC 62262

### Shock resistance

max. 500 m/s<sup>2</sup> according to IEC 60068-2-27

### Degree of pollution

2, as per EN IEC 60947-1

### Vibration resistance

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

## Climate resistance

Damp heat, 21 days according to IEC 60512-11

Stainless steel and aluminium versions:

Saline mist, 96 hours according to IEC 60512-11

Brass versions:

Saline mist, 24 hours according to IEC 60512-11

## Approvals

### Approbations

CB

UL

C UL

CCC

### Declaration of conformity

CE

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