



### Model Number

NBB2-F29-A2-5M

### Features

- 2 mm flush
- 4-wire DC

## Technical Data

### General specifications

|                            |       |               |
|----------------------------|-------|---------------|
| Switching function         |       | complementary |
| Output type                |       | PNP           |
| Rated operating distance   | $s_n$ | 2 mm          |
| Installation               |       | flush         |
| Output polarity            |       | DC            |
| Assured operating distance | $s_a$ | 0 ... 1.62 mm |
| Reduction factor $r_{AI}$  |       | 0.4           |
| Reduction factor $r_{CU}$  |       | 0.3           |
| Reduction factor $r_{304}$ |       | 0.7           |
| Output type                |       | 4-wire        |

### Nominal ratings

|                             |       |                                        |
|-----------------------------|-------|----------------------------------------|
| Operating voltage           | $U_B$ | 4.75 ... 30 V DC                       |
| Switching frequency         | $f$   | 0 ... 1000 Hz                          |
| Hysteresis                  | $H$   | typ. 5 %                               |
| Reverse polarity protection |       | reverse polarity protected             |
| Short-circuit protection    |       | pulsing                                |
| Voltage drop                | $U_d$ | $\leq 2$ V                             |
| Operating current           | $I_L$ | 0 ... 100 mA                           |
| Off-state current           | $I_r$ | 0 ... 0.5 mA typ. 0.1 $\mu$ A at 25 °C |
| No-load supply current      | $I_0$ | $\leq 15$ mA                           |
| Switching state indicator   |       | LED, yellow                            |

### Functional safety related parameters

|                          |        |
|--------------------------|--------|
| MTTF <sub>d</sub>        | 1680 a |
| Mission Time ( $T_M$ )   | 20 a   |
| Diagnostic Coverage (DC) | 0 %    |

### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 70 °C (-13 ... 158 °F) |
| Storage temperature | -40 ... 85 °C (-40 ... 185 °F) |

### Mechanical specifications

|                      |                       |
|----------------------|-----------------------|
| Connection type      | cable PVC, 5 m        |
| Core cross-section   | 0.14 mm <sup>2</sup>  |
| Housing material     | Ryton R4              |
| Sensing face         | Ryton R4              |
| Degree of protection | IP67                  |
| Cable                |                       |
| Cable diameter       | 3 mm + 0.3 mm         |
| Bending radius       | > 10 x cable diameter |

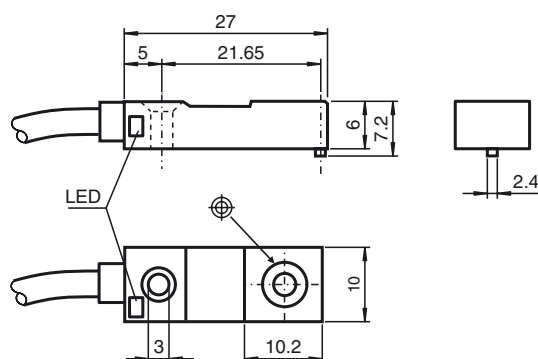
### Compliance with standards and directives

|                     |                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------|
| Standard conformity |                                                                                             |
| Standards           | EN 60947-5-2:2007<br>EN 60947-5-2/A1:2012<br>IEC 60947-5-2:2007<br>IEC 60947-5-2 AMD 1:2012 |

### Approvals and certificates

|              |                                                                    |
|--------------|--------------------------------------------------------------------|
| UL approval  | cULus Listed, General Purpose                                      |
| CSA approval | cCSAus Listed, General Purpose                                     |
| CCC approval | CCC approval / marking not required for products rated $\leq 36$ V |

## Dimensions



## Electrical Connection

