



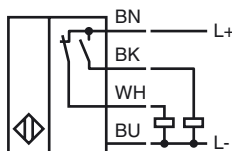
### Model Number

NBB2-F29-A2-5M

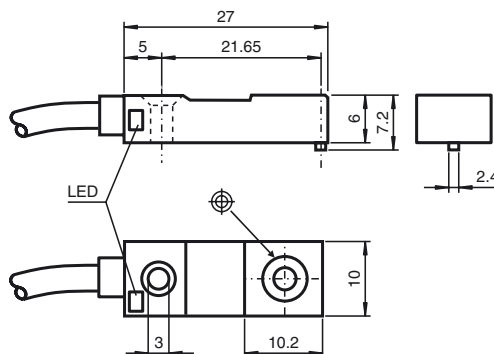
### Features

- 2 mm embeddable
- 4-wire DC

### Connection



### Dimensions



### Technical Data

#### General specifications

|                            |            |               |
|----------------------------|------------|---------------|
| Switching element function | PNP        | NO/NC         |
| Rated operating distance   | $s_n$      | 2 mm          |
| Installation               | embeddable |               |
| Output polarity            | DC         |               |
| Assured operating distance | $s_a$      | 0 ... 1.62 mm |
| Reduction factor $r_{Al}$  | 0.4        |               |
| Reduction factor $r_{Cu}$  | 0.3        |               |
| Reduction factor $r_{304}$ | 0.7        |               |

#### Nominal ratings

|                                   |                            |  |
|-----------------------------------|----------------------------|--|
| Operating voltage                 | $U_B$                      | 4.75 ... 30 V DC                       |
| Switching frequency               | $f$                        | 0 ... 1000 Hz                          |
| Hysteresis                        | $H$                        | typ. 5 %                               |
| Reverse polarity protected        | 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                           |
| Indication of the switching state | 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) |
|---------------------|--------------------------------|

#### 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             |
| Protection degree  | IP67                 |

#### Compliance with standards and directives

|                     |   |
|---------------------|---|
| Standard conformity |   |
| Standards           | EN 60947-5-2:2007<br>IEC 60947-5-2:2007 |

#### Approvals and certificates

|              |  |
|--------------|--|
| UL approval  | cULus Listed, General Purpose  |
| CSA approval | cCSAus Listed, General Purpose   |
| CCC approval | Products with a maximum operating voltage of $\leq 36$ V do not bear a CCC marking because they do not require approval. |