



### Model Number

**NBB2-8GM40-A2-V1**

### Features

- 2 mm flush
- Increased operating distance
- Extended temperature range -40 ... +85 °C

### Accessories

#### BF 8

Mounting flange, 8 mm

#### V1-G

Female connector, M12, 4-pin, field attachable

#### V1-W

Female connector, M12, 4-pin, field attachable

#### V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

#### V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

#### EXG-08

Quick mounting bracket with dead stop

## 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                                                             |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>8 mm x 8 mm x 1 mm |
| Reduction factor $r_{Al}$    |       | 0.4                                                                       |
| Reduction factor $r_{Cu}$    |       | 0.3                                                                       |
| Reduction factor $r_{304}$   |       | 0.75                                                                      |
| Reduction factor $r_{Brass}$ |       | 0.45                                                                      |
| Output type                  |       | 4-wire                                                                    |

### Nominal ratings

|                                |       |                            |
|--------------------------------|-------|----------------------------|
| Operating voltage              | $U_B$ | 5 ... 30 V                 |
| Switching frequency            | $f$   | 0 ... 6000 Hz              |
| Hysteresis                     | $H$   | typ. 5%                    |
| Reverse polarity protection    |       | reverse polarity protected |
| Short-circuit protection       |       | pulsing                    |
| Voltage drop                   | $U_d$ | ≤ 1.5 V                    |
| Operating current              | $I_L$ | 0 ... 100 mA               |
| Off-state current              | $I_r$ | 0 ... 0.2 mA               |
| No-load supply current         | $I_0$ | ≤ 10 mA                    |
| Time delay before availability | $t_v$ | ≤ 100 ms                   |
| Switching state indicator      |       | Multihole-LED, yellow      |

### Functional safety related parameters

|                          |       |
|--------------------------|-------|
| MTTF <sub>d</sub>        | 960 a |
| Mission Time ( $T_M$ )   | 20 a  |
| Diagnostic Coverage (DC) | 0 %   |

### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -40 ... 85 °C (-40 ... 185 °F) |
| Storage temperature | -40 ... 85 °C (-40 ... 185 °F) |

### Mechanical specifications

|                      |                               |
|----------------------|-------------------------------|
| Connection type      | Connector plug M12 x 1, 4-pin |
| Housing material     | brass, nickel-plated          |
| Sensing face         | LCP                           |
| Degree of protection | IP67                          |
| Mass                 | 20 g                          |

### General information

|                   |                     |
|-------------------|---------------------|
| Scope of delivery | 2 hex nuts included |
|-------------------|---------------------|

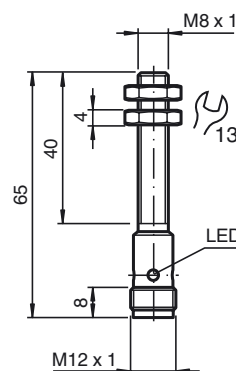
### Compliance with standards and directives

|                     |                                                                                             |
|---------------------|---------------------------------------------------------------------------------------------|
| 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 |

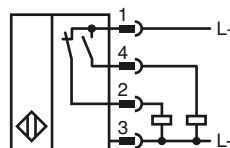
### Approvals and certificates

|              |                                                              |
|--------------|--------------------------------------------------------------|
| UL approval  | cULus Listed, General Purpose, Class 2 Power Source          |
| CCC approval | CCC approval / marking not required for products rated ≤36 V |

## Dimensions



## Electrical Connection





Pinout



Wire colors in accordance with EN 60947-5-2

|   |    |         |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue)  |
| 4 | BK | (black) |