



## Model Number

NBN8-12GM50-A2-V1-M1

## Features

- 8 mm non-flush
- Increased operating distance
- Extended temperature range  
-40 ... +85 °C
- With increased sealing, protection  
class  
IP68 / IP69K
- E1-Type approval

## Accessories

### BF 12

Mounting flange, 12 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

## Technical Data

### General specifications

|                              |       |                                                                             |
|------------------------------|-------|-----------------------------------------------------------------------------|
| Switching function           |       | complementary                                                               |
| Output type                  |       | PNP                                                                         |
| Rated operating distance     | $s_n$ | 8 mm                                                                        |
| Installation                 |       | non-flush                                                                   |
| Output polarity              |       | DC                                                                          |
| Assured operating distance   | $s_a$ | 0 ... 6.48 mm                                                               |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>24 mm x 24 mm x 1 mm |
| Reduction factor $r_{Al}$    |       | 0.5                                                                         |
| Reduction factor $r_{Cu}$    |       | 0.45                                                                        |
| Reduction factor $r_{304}$   |       | 0.7                                                                         |
| Reduction factor $r_{Brass}$ |       | 0.5                                                                         |
| Output type                  |       | 4-wire                                                                      |

### Nominal ratings

|                                |       |                                      |
|--------------------------------|-------|--------------------------------------|
| Operating voltage              | $U_B$ | 7 ... 30 V                           |
| Switching frequency            | $f$   | 0 ... 1200 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 ... 200 mA                         |
| Off-state current              | $I_r$ | 0 ... 0.5 mA typ. 4 $\mu$ A at 25 °C |
| No-load supply current         | $I_0$ | $\leq 10$ mA                         |
| Time delay before availability | $t_v$ | $\leq 100$ ms                        |
| Switching state indicator      |       | Multihole-LED, yellow                |

### Functional safety related parameters

|                          |        |
|--------------------------|--------|
| MTTF <sub>d</sub>        | 1484 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 M12 x 1, 4-pin |
| Housing material     | brass, nickel-plated     |
| Sensing face         | PBT                      |
| Degree of protection | IP68 / IP69K             |
| Mass                 | 18 g                     |

### General information

|                   |                                          |
|-------------------|------------------------------------------|
| Scope of delivery | 2 self locking nuts in scope of delivery |
|-------------------|------------------------------------------|

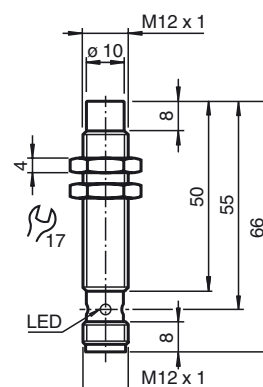
### Compliance with standards and directives

|                     |                                                                                                               |
|---------------------|---------------------------------------------------------------------------------------------------------------|
| 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<br>EN 12895: 2015 |

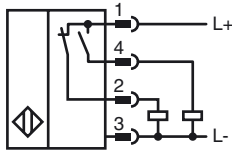
### Approvals and certificates

|                  |                                                                    |
|------------------|--------------------------------------------------------------------|
| UL approval      | cULus Listed, General Purpose, Class 2 Power Source                |
| CCC approval     | CCC approval / marking not required for products rated $\leq 36$ V |
| E1 Type approval | 10R-04                                                             |

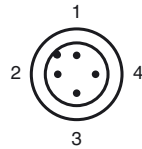
## Dimensions



## Electrical Connection



## Pinout



Wire colors in accordance with EN 60947-5-2

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

## Installation Hint

Mains-borne interference in accordance with ISO 7637-2:

|                   |     |     |     |     |     |     |
|-------------------|-----|-----|-----|-----|-----|-----|
| Pulse             | 1   | 2a  | 2b  | 3a  | 3b  | 4   |
| Severity level    | III | III | III | III | III | III |
| Failure criterion | A   | A   | C   | A   | A   | C   |

EN 61000-4-2: CD: 8 kV / AD: 15 kV  
Severity level IV IV

EN 61000-4-3: 36 V/m (80...2500 MHz)  
Severity level IV

EN 61000-4-4: 2 kV  
Severity level III

EN 61000-4-6: 30 V (0.01...80 MHz)  
Severity level III

EN 55011: Class A