



### Model Number

NBB4-12GS50-EI

### Features

- 4 mm flush
- Extended temperature range  
-40 ... +85 °C
- Digital current output

### Accessories

#### BF 12

Mounting flange, 12 mm

#### EXG-12

Quick mounting bracket with dead stop

## Technical Data

### General specifications

|                              |       |                                                                             |
|------------------------------|-------|-----------------------------------------------------------------------------|
| Output type                  |       | Digital current output                                                      |
| Rated operating distance     | $s_n$ | 4 mm                                                                        |
| Installation                 |       | flush                                                                       |
| Output polarity              |       | DC                                                                          |
| Assured operating distance   | $s_a$ | 0 ... 3.24 mm                                                               |
| Actuating element            |       | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>12 mm x 12 mm x 1 mm |
| Reduction factor $r_{Al}$    |       | 0.3                                                                         |
| Reduction factor $r_{Cu}$    |       | 0.2                                                                         |
| Reduction factor $r_{304}$   |       | 0.65                                                                        |
| Reduction factor $r_{Brass}$ |       | 0.35                                                                        |
| Output type                  |       | 3-wire                                                                      |

### Nominal ratings

|                                |       |                            |
|--------------------------------|-------|----------------------------|
| Operating voltage              | $U_B$ | 9 ... 16 V DC              |
| Switching frequency            | $f$   | 0 ... 1400 Hz              |
| Hysteresis                     | $H$   | 2 ... 15 %                 |
| Reverse polarity protection    |       | reverse polarity protected |
| Short-circuit protection       |       | yes                        |
| Temperature drift              |       | ≤ 10 %                     |
| Time delay before availability | $t_v$ | ≤ 5 ms                     |
| Load resistor                  |       | 100 ... 250 Ohm            |
| Switching state indicator      |       | LED, yellow                |

### Functional safety related parameters

|                                |        |
|--------------------------------|--------|
| MTTF <sub>d</sub>              | 1601 a |
| Mission Time (T <sub>M</sub> ) | 20 a   |
| Diagnostic Coverage (DC)       | 0 %    |

### Digital output

|             |                                                                           |
|-------------|---------------------------------------------------------------------------|
| Output type | object detected: 18,5 mA ± 1,5 mA<br>object not detected: 5,5 mA ± 1,5 mA |
|-------------|---------------------------------------------------------------------------|

### Ambient conditions

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

### Mechanical specifications

|                      |                                             |
|----------------------|---------------------------------------------|
| Connection type      | Cable connector PUR, 1.1 m<br>AMP Superseal |
| Core cross-section   | 3 x 0.34 mm <sup>2</sup>                    |
| Housing material     | Stainless steel                             |
| Sensing face         | PBT                                         |
| Degree of protection | IP68 / IP69K                                |

### General information

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

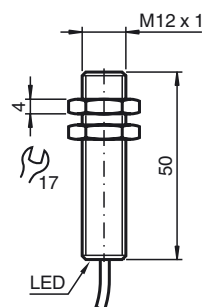
### Compliance with standards and directives

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

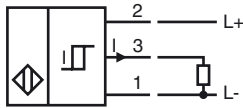
### Approvals and certificates

|             |                                                     |
|-------------|-----------------------------------------------------|
| UL approval | cULus Listed, General Purpose, Class 2 Power Source |
|-------------|-----------------------------------------------------|

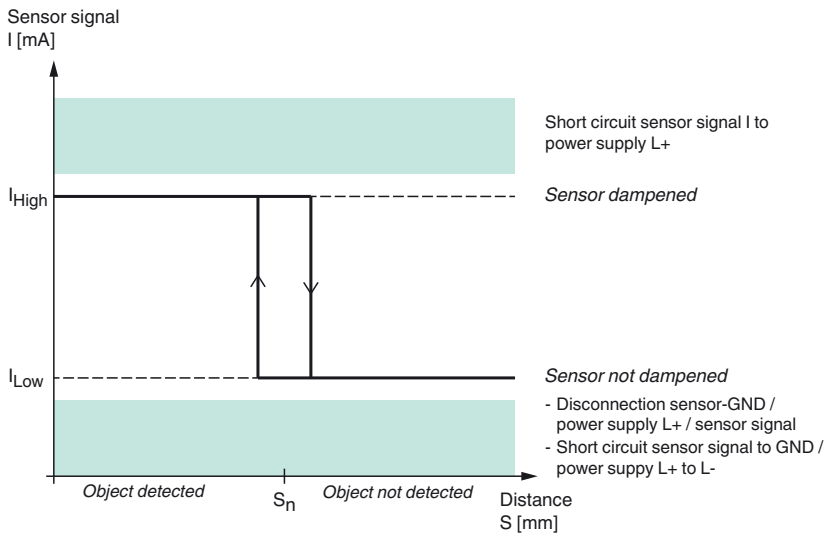
## Dimensions



Electrical Connection



Characteristic Curves



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