

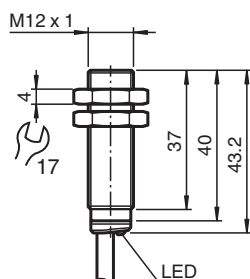
## Inductive sensor

NBB2-12GM40-E2-5M-PUR-Y0188

- 2 mm flush
- Extended temperature range  
-40 ... +85 °C
- Extended operating voltage range
- Flexible use with versatile mounting opportunities



## Dimensions



## Technical Data

### General specifications

|                              |       |                                                                             |
|------------------------------|-------|-----------------------------------------------------------------------------|
| Switching function           |       | Normally open (NO)                                                          |
| 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>12 mm x 12 mm x 1 mm |
| Reduction factor $r_{Al}$    |       | 0.29                                                                        |
| Reduction factor $r_{Cu}$    |       | 0.23                                                                        |
| Reduction factor $r_{304}$   |       | 0.78                                                                        |
| Reduction factor $r_{Brass}$ |       | 0.42                                                                        |
| Output type                  |       | 3-wire                                                                      |

### Nominal ratings

|                                |       |                            |
|--------------------------------|-------|----------------------------|
| Operating voltage              | $U_B$ | 5 ... 36 V                 |
| Switching frequency            | $f$   | 0 ... 3500 Hz              |
| Hysteresis                     | $H$   | typ. 5 %                   |
| Reverse polarity protection    |       | reverse polarity protected |
| Short-circuit protection       |       | pulsing                    |
| Voltage drop                   | $U_d$ | $\leq 1$ V                 |
| Operating current              | $I_L$ | 0 ... 200 mA               |
| Off-state current              | $I_r$ | max. 20 $\mu$ A            |
| No-load supply current         | $I_0$ | $\leq 10$ mA               |
| Time delay before availability | $t_v$ | $\leq 10$ ms               |
| Switching state indicator      |       | LED, yellow                |

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

 **PEPPERL+FUCHS**

## Technical Data

### Functional safety related parameters

|                                |  |        |
|--------------------------------|--|--------|
| MTTF <sub>d</sub>              |  | 1721 a |
| Mission Time (T <sub>M</sub> ) |  | 20 a   |
| Diagnostic Coverage (DC)       |  | 0 %    |

### Conformity

|                 |  |                              |
|-----------------|--|------------------------------|
| PWIS conformity |  | VDMA 24364-A1/B2/C1/T100°C-W |
|-----------------|--|------------------------------|

### Compliance with standards and directives

|                     |  |                  |
|---------------------|--|------------------|
| Standard conformity |  |                  |
| Standards           |  | EN IEC 60947-5-2 |

### Approvals and certificates

|                                 |                  |                                                              |
|---------------------------------|------------------|--------------------------------------------------------------|
| Protection class                |                  | II                                                           |
| Rated insulation voltage        | U <sub>i</sub>   | 36 V                                                         |
| Rated impulse withstand voltage | U <sub>imp</sub> | 500 V                                                        |
| UL approval                     |                  | cULus Listed, General Purpose, Class 2 Power Source          |
| CCC approval                    |                  | CCC approval / marking not required for products rated ≤36 V |

### Ambient conditions

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

### Mechanical specifications

|                      |   |                             |
|----------------------|---|-----------------------------|
| Connection type      |   | cable                       |
| Housing material     |   | brass , white bronze coated |
| Sensing face         |   | PBT , green                 |
| Degree of protection |   | IP65 / IP66 / IP67 / IP68   |
| Cable                |   |                             |
| Wire end ferrules    |   | yes                         |
| Cable diameter       |   | 4.3 mm ± 0.15 mm            |
| Bending radius       |   | > 10 x cable diameter       |
| Material             |   | PUR                         |
| Color                |   | black                       |
| Number of cores      |   | 3                           |
| Core cross section   |   | 0.34 mm <sup>2</sup>        |
| Length               | L | 5 m                         |
| Mass                 |   | 149 g                       |
| Dimensions           |   |                             |
| Length               |   | 43 mm                       |
| Diameter             |   | 12 mm                       |
| Mounting             |   | with nuts, M12              |
| Tightening torque    |   | 0 ... 10 Nm                 |

### General information

|                   |  |                                    |
|-------------------|--|------------------------------------|
| Scope of delivery |  | Supplied with two nuts and washers |
|-------------------|--|------------------------------------|

## Connection

