

# Inductive sensor

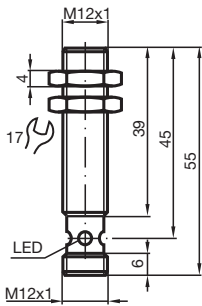
## NRB4-12GM40-E2-C-V1



- Reduction factor = 1
- Magnetic field resistant
- Weld Immune



### Dimensions



### Technical Data

#### General specifications

|                             |       |                    |
|-----------------------------|-------|--------------------|
| Switching function          |       | Normally open (NO) |
| Output type                 |       | PNP                |
| Rated operating distance    | $s_n$ | 4 mm               |
| Installation                |       | flush              |
| Output polarity             |       | DC                 |
| Assured operating distance  | $s_a$ | 0 ... 3.24 mm      |
| Reduction factor $r_{Al}$   |       | 1                  |
| Reduction factor $r_{Cu}$   |       | 1                  |
| Reduction factor $r_{304}$  |       | 1                  |
| Reduction factor $r_{St37}$ |       | 1                  |
| Output type                 |       | 3-wire             |

#### Nominal ratings

|                   |       |                |
|-------------------|-------|----------------|
| Operating voltage | $U_B$ | 10 ... 30 V DC |
|-------------------|-------|----------------|

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

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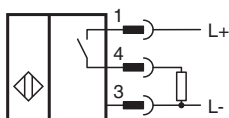
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## Technical Data

|                                                 |           |                                                                                             |
|-------------------------------------------------|-----------|---------------------------------------------------------------------------------------------|
| Switching frequency                             | f         | 0 ... 2000 Hz                                                                               |
| Hysteresis                                      | H         | typ. 5 %                                                                                    |
| Reverse polarity protection                     |           | reverse polarity protected                                                                  |
| Short-circuit protection                        |           | pulsing                                                                                     |
| Voltage drop                                    | $U_d$     | $\leq 2$ V                                                                                  |
| Rated insulation voltage                        | $U_{BIS}$ | 60 V                                                                                        |
| Operating current                               | $I_L$     | 0 ... 200 mA                                                                                |
| Off-state current                               | $I_r$     | 0 ... 0.5 mA typ. 0.1 $\mu$ A at 25 °C                                                      |
| No-load supply current                          | $I_0$     | $\leq 14$ mA                                                                                |
| Time delay before availability                  | $t_v$     | max. 15 ms                                                                                  |
| Constant magnetic field                         | B         | 200 mT                                                                                      |
| Alternating magnetic field                      | B         | 200 mT                                                                                      |
| Switching state indicator                       |           | Multihole-LED, yellow                                                                       |
| <b>Functional safety related parameters</b>     |           |                                                                                             |
| MTTF <sub>d</sub>                               |           | 1393 a                                                                                      |
| Mission Time (T <sub>M</sub> )                  |           | 20 a                                                                                        |
| Diagnostic Coverage (DC)                        |           | 0 %                                                                                         |
| <b>Compliance with standards and directives</b> |           |                                                                                             |
| 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 |
| <b>Approvals and certificates</b>               |           |                                                                                             |
| Protection class                                |           | II                                                                                          |
| Rated insulation voltage                        | $U_i$     | 60 V                                                                                        |
| Rated impulse withstand voltage                 | $U_{imp}$ | 800 V                                                                                       |
| UL approval                                     |           | cULus Listed, General Purpose<br>Class 2 power source                                       |
| CCC approval                                    |           | CCC approval / marking not required for products rated $\leq 36$ V                          |
| <b>Ambient conditions</b>                       |           |                                                                                             |
| Ambient temperature                             |           | -25 ... 70 °C (-13 ... 158 °F)                                                              |
| Storage temperature                             |           | -40 ... 85 °C (-40 ... 185 °F)                                                              |
| <b>Mechanical specifications</b>                |           |                                                                                             |
| Connection type                                 |           | Connector plug M12 x 1 , 4-pin                                                              |
| Housing material                                |           | Brass, PTFE coated                                                                          |
| Sensing face                                    |           | PPS                                                                                         |
| Degree of protection                            |           | IP67                                                                                        |
| Mass                                            |           | 15 g                                                                                        |
| <b>General information</b>                      |           |                                                                                             |
| Scope of delivery                               |           | 2 self locking nuts in scope of delivery                                                    |

## Connection




## Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

## Accessories

|                                                                                   |                      |                                                                                                                                                                                                 |
|-----------------------------------------------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>BF 12</b>         | Mounting flange, 12 mm                                                                                                                                                                          |
|  | <b>V1-G-OR2M-POC</b> | Female cordset single-ended M12 straight A-coded, 4-pin, POC cable welding-bead resistant orange, suitable for robotic applications, torsion resistant, oil resistant, molecularly cross-linked |

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