

# Inductive sensor

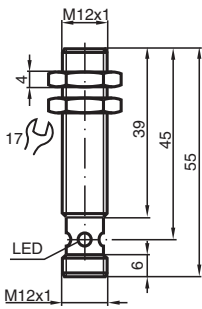
## NRB3-12GM40-E2-C-V1



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



### Dimensions



### Technical Data

| General specifications      |       |                            |
|-----------------------------|-------|----------------------------|
| Switching function          |       | Normally open (NO)         |
| Output type                 |       | PNP                        |
| Rated operating distance    | $s_n$ | 3 mm                       |
| Installation                |       | flush                      |
| Output polarity             |       | DC                         |
| Assured operating distance  | $s_a$ | 0 ... 2.43 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             |
| Switching frequency         | $f$   | 0 ... 2000 Hz              |
| Hysteresis                  | $H$   | typ. 5 %                   |
| Reverse polarity protection |       | reverse polarity protected |

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

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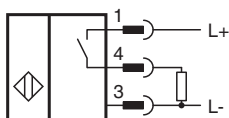
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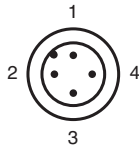
## Technical Data

|                                                 |           |                                                                                                                                                           |
|-------------------------------------------------|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Short-circuit protection                        |           | pulsing                                                                                                                                                   |
| Voltage drop                                    | $U_d$     | $\leq 2 \text{ V}$                                                                                                                                        |
| 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 $\mu\text{A}$ at 25 °C                                                                                                              |
| No-load supply current                          | $I_0$     | $\leq 14 \text{ mA}$                                                                                                                                      |
| 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>                               |           | 1140.2 a                                                                                                                                                  |
| Mission Time (T <sub>M</sub> )                  |           | 20 a                                                                                                                                                      |
| Diagnostic Coverage (DC)                        |           | 0 %                                                                                                                                                       |
| <b>Compliance with standards and directives</b> |           |                                                                                                                                                           |
| Standard conformity                             |           |                                                                                                                                                           |
| Standards                                       |           | EN IEC 60947-5-2                                                                                                                                          |
| <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<br>Circuitry: Class 2 Power Source<br>Enclosure Type Rating: Type 1<br>Supply/Switching Voltage: 30 V DC<br>Output Switching Current: 200 mA |
| CCC approval                                    |           | CCC approval / marking not required for products rated $\leq 36 \text{ V}$                                                                                |
| <b>Ambient conditions</b>                       |           |                                                                                                                                                           |
| Ambient temperature                             |           | -40 ... 85 °C (-40 ... 185 °F)                                                                                                                            |
| Storage temperature                             |           | -40 ... 85 °C (-40 ... 185 °F)                                                                                                                            |
| <b>Mechanical specifications</b>                |           |                                                                                                                                                           |
| Connection type                                 |           | Connector plug                                                                                                                                            |
| Housing material                                |           | Brass, PTFE coated                                                                                                                                        |
| Sensing face                                    |           | PPS                                                                                                                                                       |
| Degree of protection                            |           | IP67                                                                                                                                                      |
| Connector                                       |           |                                                                                                                                                           |
| Threading                                       |           | M12 x 1                                                                                                                                                   |
| Number of pins                                  |           | 3                                                                                                                                                         |
| Mass                                            |           | 15 g                                                                                                                                                      |
| Dimensions                                      |           |                                                                                                                                                           |
| Length                                          |           | 55 mm                                                                                                                                                     |
| Diameter                                        |           | 12 mm                                                                                                                                                     |
| <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) |