



## Inductive sensor NBN40-U1-A2-M

- Sensor head bidirectional and rotatable
- 40 mm non-flush
- E1-Type approval
- Extended temperature range  
-40 ... +85 °C
- 4 LEDs indicator for 360° visibility



### Dimensions



### Technical Data

#### General specifications

|                              |       |               |
|------------------------------|-------|---------------|
| Switching function           |       | complementary |
| Output type                  |       | PNP           |
| Rated operating distance     | $s_n$ | 40 mm         |
| Installation                 |       | non-flush     |
| Output polarity              |       | DC            |
| Assured operating distance   | $s_a$ | 0 ... 32.4 mm |
| Actual operating distance    | $s_r$ | 36 ... 44 mm  |
| Reduction factor $r_{Al}$    |       | 0.34          |
| Reduction factor $r_{Cu}$    |       | 0.3           |
| Reduction factor $r_{304}$   |       | 0.81          |
| Reduction factor $r_{St37}$  |       | 1             |
| Reduction factor $r_{Brass}$ |       | 0.4           |

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

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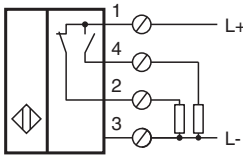
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**PEPPERL+FUCHS**

## Technical Data

|                                          |                |                                                                                                                                            |
|------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Output type                              |                | 4-wire                                                                                                                                     |
| Nominal ratings                          |                |                                                                                                                                            |
| Operating voltage                        | U <sub>B</sub> | 10 ... 60 V DC                                                                                                                             |
| Switching frequency                      | f              | 0 ... 150 Hz                                                                                                                               |
| Hysteresis                               | H              | typ. 5 %                                                                                                                                   |
| Reverse polarity protection              |                | reverse polarity protected                                                                                                                 |
| Short-circuit protection                 |                | pulsing                                                                                                                                    |
| Voltage drop                             | U <sub>d</sub> | ≤ 2 V                                                                                                                                      |
| Operating current                        | I <sub>L</sub> | 0 ... 200 mA                                                                                                                               |
| Off-state current                        | I <sub>r</sub> | 0 ... 0.5 mA                                                                                                                               |
| No-load supply current                   | I <sub>0</sub> | ≤ 20 mA                                                                                                                                    |
| Operating voltage indicator              |                | LED, green                                                                                                                                 |
| Switching state indicator                |                | LED, yellow                                                                                                                                |
| Functional safety related parameters     |                |                                                                                                                                            |
| MTTF <sub>d</sub>                        |                | 680 a                                                                                                                                      |
| Mission Time (T <sub>M</sub> )           |                | 20 a                                                                                                                                       |
| Diagnostic Coverage (DC)                 |                | 0 %                                                                                                                                        |
| Compliance with standards and directives |                |                                                                                                                                            |
| Standard conformity                      |                |                                                                                                                                            |
| Standards                                |                | EN IEC 60947-5-2                                                                                                                           |
| Approvals and certificates               |                |                                                                                                                                            |
| UL approval                              |                | cULus Listed, General Purpose                                                                                                              |
| CCC approval                             |                | Certified by China Compulsory Certification (CCC)                                                                                          |
| E1 Type approval                         |                | 10R-04                                                                                                                                     |
| Ambient conditions                       |                |                                                                                                                                            |
| Ambient temperature                      |                | -40 ... 85 °C (-40 ... 185 °F)                                                                                                             |
| Mechanical specifications                |                |                                                                                                                                            |
| Connection type                          |                | screw terminals                                                                                                                            |
| Information for connection               |                | A maximum of two conductors with the same core cross section may be mounted on one terminal connection!<br>tightening torque 1.2 Nm + 10 % |
| Core cross section                       |                | up to 2.5 mm²                                                                                                                              |
| Minimum core cross-section               |                | without wire end ferrules 0.5 mm² , with connector sleeves 0.34 mm²                                                                        |
| Maximum core cross-section               |                | without wire end ferrules 2.5 mm² , with connector sleeves 1.5 mm²                                                                         |
| Housing material                         |                | PA/metal with epoxy powder coating                                                                                                         |
| Sensing face                             |                | PA-GF35                                                                                                                                    |
| Housing base                             |                | plastic                                                                                                                                    |
| Degree of protection                     |                | IP68 / IP69K                                                                                                                               |
| Mass                                     |                | 225 g                                                                                                                                      |
| Dimensions                               |                |                                                                                                                                            |
| Height                                   |                | 40 mm                                                                                                                                      |
| Width                                    |                | 40 mm                                                                                                                                      |
| Length                                   |                | 118 mm                                                                                                                                     |
| Note                                     |                | Tightening torque: 1.8 Nm (housing)                                                                                                        |

Connection



Mounting

Emitted interference and interference immunity in accordance with motor vehicle directive 2006/28/EG (e1 Type approval)  
Interference immunity in accordance with DIN ISO 11452-2: 100 V/m  
Frequency band 20 MHz up to 2 GHz

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

|                   |     |     |     |     |     |     |    |
|-------------------|-----|-----|-----|-----|-----|-----|----|
|                   | 1   | 2a  | 2b  | 3 a | 3b  | 4   | 5  |
| Severity level    | III | III | III | III | III | III | IV |
| Failure criterion | C   | A   | C   | A   | A   | A   | C  |

|                |                        |
|----------------|------------------------|
| EN 61000-4-2:  | CD: 8 kV / AD: 15 kV   |
| Severity level | IV                     |
| EN 61000-4-3:  | 30 V/m (80...2500 MHz) |
| Severity level | IV                     |
| EN 61000-4-4:  | 2 kV                   |
| Severity level | III                    |
| EN 61000-4-6:  | 10 V (0.01...80 MHz)   |
| Severity level | III                    |
| EN 55011:      | Class A                |

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