

# Inductive sensor NBN50-U1K-A0



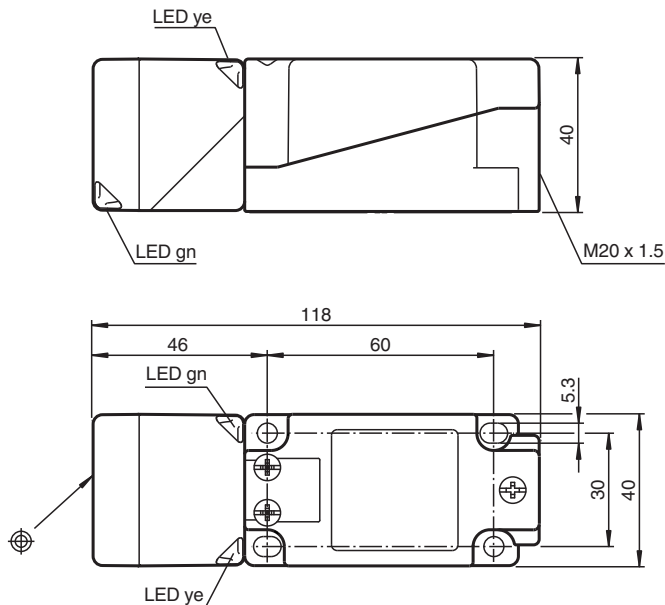
- 50 mm non-flush
- Active Shielding Technology
- 4-wire DC
- Sensor head bidirectional and rotatable
- 4 LEDs indicator for 360° visibility



## Function

Inductive sensors with active shielding technology detect in addition to the damping element also the installation environment. As a result, they keep the operating distance constantly high, regardless of the installation situation and the installation material.

## Dimensions



## Technical Data

### General specifications

|                          |       |               |
|--------------------------|-------|---------------|
| Switching function       |       | complementary |
| Output type              |       | NPN           |
| Rated operating distance | $s_n$ | 50 mm         |
| Installation             |       | non-flush     |
| Output polarity          |       | DC            |

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

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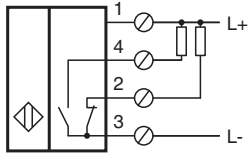
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## Technical Data



|   |       |  |
|---|-------|--|
| Assured operating distance                      | $s_a$ | 0 ... 40.5 mm  |
| Actual operating distance                       | $s_r$ | 45 ... 55 mm typ.  |
| Reduction factor $r_{Al}$                       |       | 0.5  |
| Reduction factor $r_{Cu}$                       |       | 0.49   |
| Reduction factor $r_{304}$                      |       | 0.78   |
| Reduction factor $r_{Brass}$                    |       | 0.55   |
| Output type                                     |       | 4-wire   |
| <b>Nominal ratings</b>                          |       |  |
| Operating voltage                               | $U_B$ | 10 ... 30 V DC   |
| Switching frequency                             | $f$   | 0 ... 40 Hz  |
| Hysteresis                                      | $H$   | typ. 5 %   |
| Reverse polarity protection                     |       | reverse polarity protected   |
| Short-circuit protection                        |       | pulsing  |
| Voltage drop                                    | $U_d$ | $\leq 2$ V   |
| Operating current                               | $I_L$ | 0 ... 200 mA   |
| Off-state current                               | $I_r$ | 0 ... 0.5 mA   |
| No-load supply current                          | $I_o$ | $\leq 20$ mA   |
| Time delay before availability                  | $t_v$ | 80 ms  |
| Operating voltage indicator                     |       | LED, green   |
| Switching state indicator                       |       | LED, yellow  |
| <b>Functional safety related parameters</b>     |       |  |
| MTTF <sub>d</sub>                               |       | 940 a  |
| Mission Time ( $T_M$ )                          |       | 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>               |       |  |
| UL approval                                     |       | cULus Listed, General Purpose  |
| 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                                 |       | 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 mm <sup>2</sup>  |
| Minimum core cross-section                      |       | without wire end ferrule 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>   |
| Maximum core cross-section                      |       | without wire end ferrule 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>  |
| Housing material                                |       | PA   |
| Sensing face                                    |       | PA   |
| Housing base                                    |       | plastic  |
| Degree of protection                            |       | IP68 / IP69  |
| Mass  |       | 225 g  |
| Note  |       | Tightening torque: 1.8 Nm (housing)  |

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**Connection**



**Accessories**

|   |                         |  |
|---|-------------------------|--|
|  | <p><b>V1-M20-80</b></p> | <p>Receptacles, M12/M20; plastic version</p> |
|  | <p><b>MHW 01</b></p>    | <p>Modular mounting bracket</p>              |

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