



## Inductive sensor NBN50-L2K-A0-V1

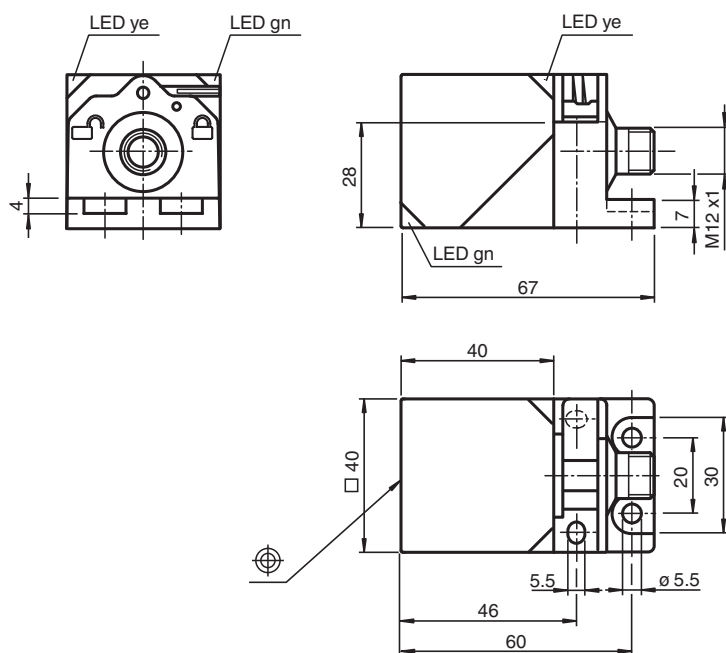
- 50 mm non-flush
- Active Shielding Technology
- 4-wire DC
- Sensor head bidirectional and rotatable
- Quick mounting bracket
- 4 LEDs indicator for 360° visibility



### 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

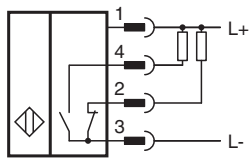
#### General specifications

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

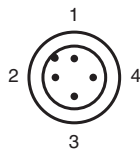
## Technical Data

|                                                 |       |                                                                                                                                                                                         |
|-------------------------------------------------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 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 IEC 60947-5-2                                                                                                                                                                        |
| <b>Approvals and certificates</b>               |       |                                                                                                                                                                                         |
| UL approval                                     |       | cULus Listed<br>Load Type: General Purpose<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 $\leq 36$ 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                                                                                                                                                                          |
| Housing material                                |       | PA                                                                                                                                                                                      |
| Sensing face                                    |       | PA                                                                                                                                                                                      |
| Degree of protection                            |       | IP68 / IP69                                                                                                                                                                             |
| Connector                                       |       |                                                                                                                                                                                         |
| Threading                                       |       | M12 x 1                                                                                                                                                                                 |
| Number of pins                                  |       | 4                                                                                                                                                                                       |
| Mass                                            |       | 130 g                                                                                                                                                                                   |
| Dimensions                                      |       |                                                                                                                                                                                         |
| Height                                          |       | 40 mm                                                                                                                                                                                   |
| Width                                           |       | 40 mm                                                                                                                                                                                   |
| Length                                          |       | 67 mm                                                                                                                                                                                   |

Connection



Connection Assignment



Wire colors in accordance with EN 60947-5-2

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