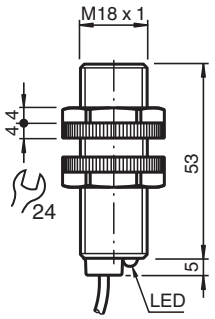


# Inductive sensor

## NBN12-18GK50-E2-M

- 12 mm non-flush
- Extended temperature range -40 ... +85 °C
- E1-Type approval
- Increased noise immunity 100 V/m
- With increased sealing, protection class IP68 / IP69K
- Highly shock and vibration resistant

## Dimensions




## Technical Data

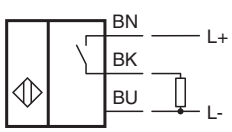
| | | |
|---|---|---|
| **General specifications** | | |
| Switching function | | Normally open (NO) |
| Output type | | PNP |
| Rated operating distance | $s_n$ | 12 mm |
| Installation | | non-flush |
| Output polarity | | DC |
| Assured operating distance | $s_a$ | 0 ... 9.72 mm |
| Reduction factor $r_{Al}$ | | 0.5 |
| Reduction factor $r_{Cu}$ | | 0.45 |
| Reduction factor $r_{304}$ | | 0.7 |
| Reduction factor $r_{Brass}$ | | 0.5 |
| Output type | | 3-wire |
| **Nominal ratings** | | |
| Operating voltage | $U_B$ | 5 ... 60 V |
| Switching frequency | f | 0 ... 1500 Hz |
| Hysteresis | H | type 5 % |
| Reverse polarity protection | | reverse polarity protected |
| Short-circuit protection | | pulsing |
| Inductive overvoltage protection | | yes |
| Surge suppression | | yes |
| Voltage drop | $U_d$ | ≤ 2 V |

Release date: 2025-09-04 Date of issue: 2025-09-04 Filename: 248872_eng.pdf

## Technical Data

| | | |
|---|---|---|
| Rated insulation voltage | $U_{BIS}$ | 60 V |
| Operating current | $I_L$ | 0 ... 200 mA |
| Off-state current | $I_r$ | 0 ... 0.5 mA typ. 6 µA at 25 °C |
| No-load supply current | $I_0$ | ≤ 7 mA |
| Time delay before availability | $t_v$ | ≤ 220 ms |
| Switching state indicator | | LED, yellow |
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 1055 a |
| Mission Time ($T_M$) | | 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<br>Load Type: General Purpose<br>Circuitry: Class 2 Power Source<br>Enclosure Type Rating: Type 1<br>Supply/Switching Voltage: 60 V DC<br>Output Switching Current: 200 mA |
| CSA approval | | cCSAus Listed, General Purpose, Class 2 Power Source |
| CCC approval | | Certified by China Compulsory Certification (CCC) |
| E1 Type approval | | 10R-06 |
| **Ambient conditions** | | |
| Ambient temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| **Mechanical specifications** | | |
| Connection type | | cable |
| Housing material | | PBT |
| Sensing face | | PBT |
| Degree of protection | | IP68 / IP69K |
| Cable | | |
| Wire end ferrules | | yes |
| Cable diameter | | 6 mm ± 0.2 mm |
| Bending radius | | > 6 x cable diameter |
| Material | | PUR |
| Color | | black |
| Number of cores | | 3 |
| Core cross section | | 0.75 $mm^2$ |
| Length | L | 2 m |
| Mass | | 120 g |
| Dimensions | | |
| Length | | 58 mm |
| Diameter | | 18 mm |

## Connection Assignment




Release date: 2025-09-04 Date of issue: 2025-09-04 Filename: 248872_eng.pdf

## Technical Features

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 | III |
| Failure criterion | C | A | C | A | A | A | B |

| | | |
|---|---|---|
| EN 61000-4-2: | CD: 8 kV / | AD: 15 kV |
| Severity level | IV | 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 | |

Release date: 2025-09-04 Date of issue: 2025-09-04 Filename: 248872_eng.pdf