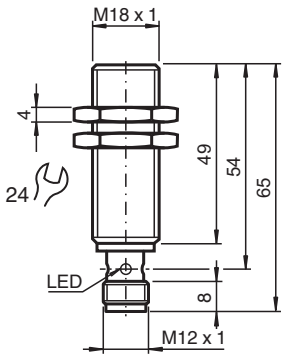


# Inductive sensor

## NBB8-18GM50-A0-V1-M1

- 8 mm flush
- Increased operating distance
- Extended temperature range -40 ... +85 °C
- With increased sealing, protection class IP68 / IP69K
- E1-Type approval

## Dimensions




## Technical Data

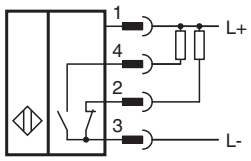
| | | |
|---|---|---|
| **General specifications** | | |
| Switching function | | complementary |
| Output type | | NPN |
| Rated operating distance | $s_n$ | 8 mm |
| Installation | | flush |
| Output polarity | | DC |
| Assured operating distance | $s_a$ | 0 ... 6.48 mm |
| Actuating element | | mild steel, e. g. 1.0037, SR235JR (formerly St37-2)<br>24 mm x 24 mm x 1 mm |
| Reduction factor $r_{Al}$ | | 0.4 |
| Reduction factor $r_{Cu}$ | | 0.3 |
| Reduction factor $r_{304}$ | | 0.7 |
| Reduction factor $r_{Brass}$ | | 0.45 |
| Output type | | 4-wire |
| **Nominal ratings** | | |
| Operating voltage | $U_B$ | 7 ... 30 V |
| Switching frequency | f | 0 ... 1600 Hz |
| Hysteresis | H | typ. 5% |
| Reverse polarity protection | | reverse polarity protected |
| Short-circuit protection | | pulsing |
| Voltage drop | $U_d$ | ≤ 2 V |

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## Technical Data

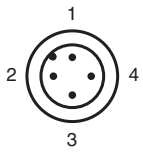
| | | |
|---|---|---|
| Operating current | $I_L$ | 0 ... 200 mA |
| Off-state current | $I_r$ | 0 ... 0.5 mA typ. 4 µA at 25 °C |
| No-load supply current | $I_0$ | ≤ 10 mA |
| Time delay before availability | $t_v$ | ≤ 100 ms |
| Switching state indicator | | LED, yellow |
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 1484 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>Supply/Switching Voltage: 30 V DC<br>Output Switching Current: 200 mA |
| CCC approval | | CCC approval / marking not required for products rated ≤36 V |
| E1 Type approval | | 10R-04 |
| **Ambient conditions** | | |
| Ambient temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| **Mechanical specifications** | | |
| Connection type | | Connector plug |
| Housing material | | brass, nickel-plated |
| Sensing face | | PBT |
| Degree of protection | | IP68 / IP69K |
| Connector | | |
| Threading | | M12 x 1 |
| Number of pins | | 4 |
| Mass | | 45 g |
| Dimensions | | |
| Length | | 65 mm |
| Diameter | | 18 mm |
| **General information** | | |
| Scope of delivery | | 2 self locking nuts in scope of delivery |

## Connection Assignment




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## Connection Assignment




Wire colors in accordance with EN 60947-5-2

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

## Technical Features

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

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

| | |
|---|---|
| EN 61000-4-2: | CD: 8 kV / AD: 15 kV |
| Severity level | IV IV |
| EN 61000-4-3: | 36 V/m (80...2500 MHz) |
| Severity level | IV |
| EN 61000-4-4: | 2 kV |
| Severity level | III |
| EN 61000-4-6: | 30 V (0.01...80 MHz) |
| Severity level | III |
| EN 55011: | Class A |

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