



Model Number

NBB20-L2-A0-V1

Features

- Sensor head bidirectional and rotatable
- 20 mm flush
- 4-wire DC
- Quick mounting bracket
- IP69K Protected

Accessories

V1-G

Female connector, M12, 4-pin, field attachable

V1-W

Female connector, M12, 4-pin, field attachable

V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

MHW 01

Modular mounting bracket

MH 02-L

Mounting aid

Technical Data

General specifications

| | | |
|------------------------------|-------|---------------|
| Switching function | | complementary |
| Output type | | NPN |
| Rated operating distance | s_n | 20 mm |
| Installation | | flush |
| Output polarity | | DC |
| Assured operating distance | s_a | 0 ... 16.2 mm |
| Actual operating distance | s_r | 18 ... 22 mm |
| Reduction factor r_{Al} | | 0.33 |
| Reduction factor r_{Cu} | | 0.31 |
| Reduction factor r_{304} | | 0.74 |
| Reduction factor r_{Brass} | | 0.41 |
| Output type | | 4-wire |

Nominal ratings

| | | |
|--------------------------------|-------|----------------------------|
| Operating voltage | U_B | 10 ... 30 V DC |
| Switching frequency | f | 0 ... 440 Hz |
| Hysteresis | H | typ. 5 % |
| Reverse polarity protection | | reverse polarity protected |
| Short-circuit protection | | pulsing |
| Voltage drop | U_d | ≤ 2 V |
| Design data | | |
| Operating current | I_L | 0 ... 200 mA |
| Off-state current | I_r | 0 ... 0.5 mA |
| No-load supply current | I_0 | ≤ 20 mA |
| Time delay before availability | t_v | 80 ms |
| Operating voltage indicator | | LED, green |
| Switching state indicator | | LED, yellow |

Functional safety related parameters

| | |
|--------------------------|--------|
| MTTF _d | 1230 a |
| Mission Time (T_M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Ambient conditions

| | |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 85 °C (-13 ... 185 °F) |
| Storage temperature | -40 ... 85 °C (-40 ... 185 °F) |

Mechanical specifications

| | |
|----------------------|-------------------------------|
| Connection type | Connector plug M12 x 1, 4-pin |
| Housing material | PA |
| Sensing face | PA |
| Degree of protection | IP69K |

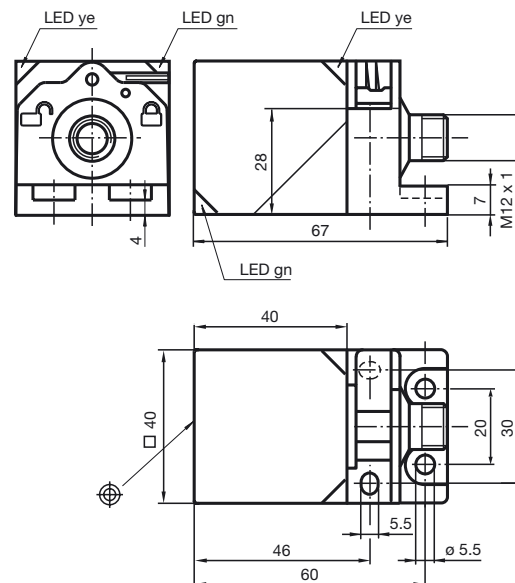
Compliance with standards and directives

| | |
|---------------------|---|
| Standard conformity | |
| Standards | EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012 |

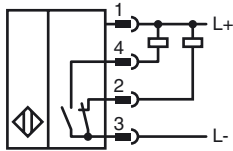
Approvals and certificates

| | |
|---------------------------------|--|
| Protection class | II |
| Rated insulation voltage | U_i 253 V |
| Rated impulse withstand voltage | U_{imp} 4000 V |
| UL approval | cULus Listed, General Purpose |
| CCC approval | CCC approval / marking not required for products rated ≤ 36 V |

Dimensions



Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

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