



Model Number

NBB20-U1-UU

Features

- Sensor head bidirectional and rotatable
- NO/NC selectable
- Comfort series
- 20 mm flush

Accessories

MHW 01

Modular mounting bracket

Technical Data

General specifications

| | | |
|------------------------------|-------|------------------------------|
| Switching function | | Normally open/closed (NO/NC) |
| Output type | | Two-wire |
| Rated operating distance | s_n | 20 mm |
| Installation | | flush |
| Output polarity | | AC/DC |
| Assured operating distance | s_a | 0 ... 16.2 mm |
| Actual operating distance | s_r | 18 ... 22 mm |
| Reduction factor r_{Al} | | 0.4 |
| Reduction factor r_{Cu} | | 0.3 |
| Reduction factor r_{304} | | 0.77 |
| Reduction factor r_{Fe} | | 1 |
| Reduction factor r_{Brass} | | 0.43 |
| Output type | | 2-wire |

Nominal ratings

| | | |
|--------------------------------------|-------|---|
| Switching frequency | f | AC, 0 ... 30 Hz DC, 0 ... 100 Hz |
| Hysteresis | H | 1 ... 10 typ. 5 % |
| Reverse polarity protection | | reverse polarity tolerant |
| Short-circuit protection | | pulsing |
| Voltage drop | U_d | ≤ 5 V (typ. 2V) DC operation ≤ 8 V (typ. 3 V) AC operation |
| Momentary current (20 ms, 0.1 Hz) | | 0 ... 3000 mA |
| Operating current | I_L | 5 ... 500 mA |
| Off-state current | I_r | ≤ 1.5 mA |
| Time delay before availability | t_v | ≤ 300 ms |
| Operating voltage indicator | | LED, green |
| Switching state indicator | | LED, yellow |
| Error indicator | | flashes when overcurrent |

Functional safety related parameters

| | |
|--------------------------|-------|
| MTTF _d | 540 a |
| Mission Time (T_M) | 20 a |
| Diagnostic Coverage (DC) | 0 % |

Electrical specifications

| | | |
|-------------------------|-------|-----------------------------------|
| Rated operating voltage | U_e | 24 ... 250 V DC / 24 ... 230 V AC |
| Operating voltage | U_B | 20 ... 300 V DC / 20 ... 253 V AC |

Ambient conditions

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

Mechanical specifications

| | |
|----------------------------|---|
| Connection type | terminal compartment |
| Information for connection | A maximum of two conductors with the same core cross section may be mounted on one terminal connection! tightening torque 1.2 Nm + 10 % up to 2.5 mm ² |
| Core cross-section | |
| Minimum core cross-section | without wire end ferrule 0.5 mm ² , with connector sleeves 0.34 mm ² |
| Maximum core cross-section | without wire end ferrule 2.5 mm ² , with connector sleeves 1.5 mm ² |
| Housing material | PA 6.6 / metal |
| Sensing face | PA 6.6 |
| Housing base | plastic |
| Degree of protection | IP67 |

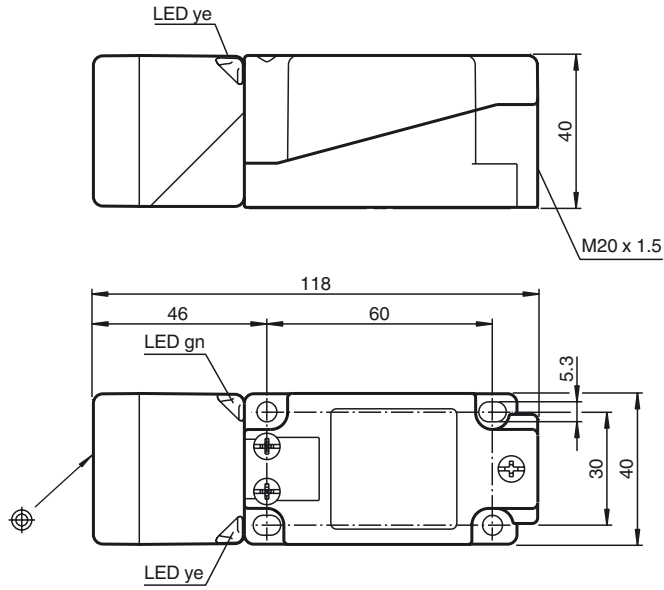
Compliance with standards and directives

| | |
|---------------------|---|
| 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 |

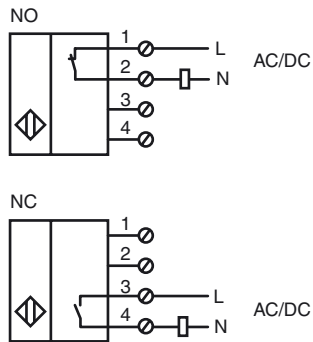
Approvals and certificates

| | |
|---------------------------------|---|
| Protection class | II |
| Rated insulation voltage | U_i 230 V |
| Rated impulse withstand voltage | U_{imp} 2.5 kV |
| UL approval | cULus Listed, General Purpose "For use in NFPA 79 Applications only" For overcurrent protection, install a fuse with a rated current of max. 3 A and at least 300 V AC/DC |
| CCC approval | Ue 75VDC - 250VDC Ue 75VAC - 230VAC |

Dimensions



Electrical Connection



Note

The sensor is designed for individual operation. A series connection of sensors is not permissible.