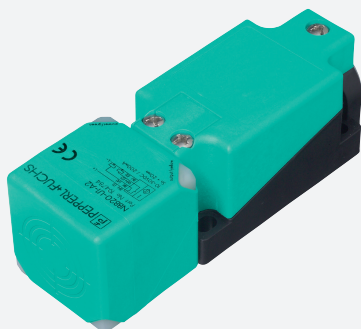
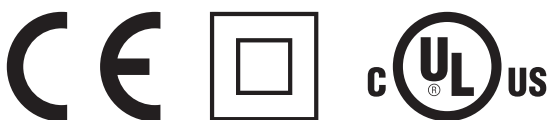




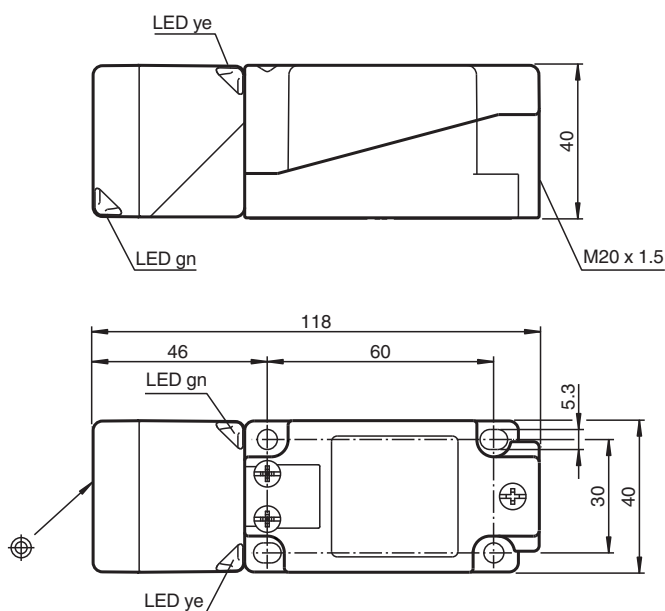
## Inductive sensor NRB20-U1-A2

- Sensor head bidirectional and rotatable
- 20 mm flush
- Reduction factor = 1
- Magnetic field resistant
- 4 LEDs indicator for 360° visibility

Inductive sensor



### Dimensions



### Technical Data

#### General specifications

|                            |       |                         |
|----------------------------|-------|-------------------------|
| Switching function         |       | complementary           |
| Output type                |       | PNP                     |
| 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 typ. 20 mm |
| Reduction factor $r_{AI}$  |       | 1                       |

Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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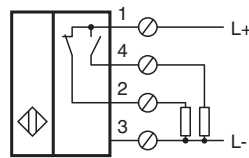
**PEPPERL+FUCHS**

## Technical Data

|                                                 |           |                                                                                                                                            |
|-------------------------------------------------|-----------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Reduction factor $r_{Cu}$                       |           | 1                                                                                                                                          |
| Reduction factor $r_{304}$                      |           | 1                                                                                                                                          |
| Reduction factor $r_{Si37}$                     |           | 1                                                                                                                                          |
| Output type                                     |           | 4-wire                                                                                                                                     |
| <b>Nominal ratings</b>                          |           |                                                                                                                                            |
| Operating voltage                               | $U_B$     | 10 ... 30 V DC                                                                                                                             |
| Switching frequency                             | $f$       | 0 ... 440 Hz                                                                                                                               |
| Hysteresis                                      | $H$       | 3 ... 15 %                                                                                                                                 |
| Reverse polarity protection                     |           | reverse polarity protected                                                                                                                 |
| Short-circuit protection                        |           | pulsing                                                                                                                                    |
| Voltage drop                                    | $U_d$     | $\leq 2.5$ V                                                                                                                               |
| Operating current                               | $I_L$     | 0 ... 200 mA                                                                                                                               |
| Off-state current                               | $I_r$     | 0 ... 0.5 mA typ. 0.01 mA                                                                                                                  |
| No-load supply current                          | $I_0$     | $\leq 25$ mA                                                                                                                               |
| Time delay before availability                  | $t_v$     | 15 ms                                                                                                                                      |
| Constant magnetic field                         | $B$       | 200 mT                                                                                                                                     |
| Alternating magnetic field                      | $B$       | 200 mT                                                                                                                                     |
| Operating voltage indicator                     |           | LED, green                                                                                                                                 |
| Switching state indicator                       |           | LED, yellow                                                                                                                                |
| <b>Functional safety related parameters</b>     |           |                                                                                                                                            |
| MTTF <sub>d</sub>                               |           | 1123 a                                                                                                                                     |
| Mission Time ( $T_M$ )                          |           | 20 a                                                                                                                                       |
| Diagnostic Coverage (DC)                        |           | 0 %                                                                                                                                        |
| <b>Compliance with standards and directives</b> |           |                                                                                                                                            |
| Standard conformity                             |           |                                                                                                                                            |
| Standards                                       |           | EN 60947-5-2:2007<br>EN 60947-5-2/A1:2012<br>IEC 60947-5-2:2007<br>IEC 60947-5-2 AMD 1:2012                                                |
| <b>Approvals and certificates</b>               |           |                                                                                                                                            |
| Protection class                                |           | II                                                                                                                                         |
| Rated insulation voltage                        | $U_i$     | 60 V                                                                                                                                       |
| Rated impulse withstand voltage                 | $U_{imp}$ | 800 V                                                                                                                                      |
| UL approval                                     |           | cULus Listed, General Purpose                                                                                                              |
| 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                                 |           | screw terminals                                                                                                                            |
| Information for connection                      |           | A maximum of two conductors with the same core cross section may be mounted on one terminal connection!<br>tightening torque 1.2 Nm + 10 % |
| Core cross-section                              |           | up to 2.5 mm <sup>2</sup>                                                                                                                  |
| Minimum core cross-section                      |           | without wire end ferrule 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>                                                 |
| Maximum core cross-section                      |           | without wire end ferrule 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>                                                  |
| Housing material                                |           | PA/metal with epoxy powder coating                                                                                                         |
| Sensing face                                    |           | PA 6 Grivory GVN-35H                                                                                                                       |
| Housing base                                    |           | plastic                                                                                                                                    |
| Degree of protection                            |           | IP67                                                                                                                                       |
| Mass                                            |           | 225 g                                                                                                                                      |
| Note                                            |           | Tightening torque: 1.8 Nm (housing)                                                                                                        |

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Connection



Accessories

|                                                                                   |                    |                                          |
|-----------------------------------------------------------------------------------|--------------------|------------------------------------------|
|  | <b>MHW 01</b>      | Modular mounting bracket                 |
|  | <b>MH 04-2681F</b> | Mounting aid for VariKont, +U1+ and +U9* |

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