

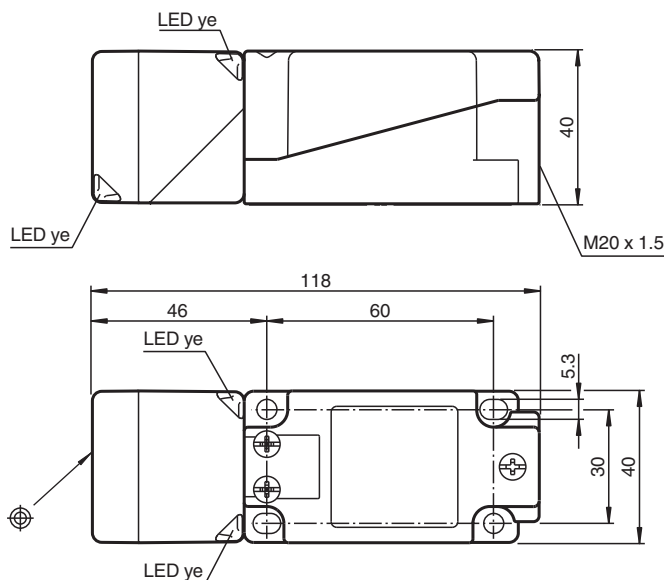


## Inductive sensor NBN30-U1K-N0

- 30 mm non-flush
- NAMUR output
- Polarity reversal protected
- Sensor head bidirectional and rotatable



### Dimensions



### Technical Data

#### General specifications

|                            |       |                      |
|----------------------------|-------|----------------------|
| Switching function         |       | Normally closed (NC) |
| Output type                |       | NAMUR                |
| Rated operating distance   | $s_n$ | 30 mm                |
| Installation               |       | non-flush            |
| Assured operating distance | $s_a$ | 0 ... 24.3 mm        |
| Actual operating distance  | $s_r$ | 27 ... 33 mm typ.    |
| Reduction factor $r_{AI}$  |       | 0.45                 |
| Reduction factor $r_{Cu}$  |       | 0.42                 |
| Reduction factor $r_{304}$ |       | 0.79                 |
| Output type                |       | 2-wire               |

#### Nominal ratings

|                     |       |                                      |
|---------------------|-------|--------------------------------------|
| Nominal voltage     | $U_o$ | 8.2 V ( $R_i$ approx. 1 k $\Omega$ ) |
| Switching frequency | $f$   | 0 ... 150 Hz                         |

## Technical Data

|                                                 |   |                                                                                                                                                      |
|-------------------------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hysteresis                                      | H | 1 ... 15 % typ. 5 %                                                                                                                                  |
| Reverse polarity protection                     |   | reverse polarity protected                                                                                                                           |
| Short-circuit protection                        |   | yes                                                                                                                                                  |
| Current consumption                             |   |                                                                                                                                                      |
| Measuring plate not detected                    |   | min. 3 mA                                                                                                                                            |
| Measuring plate detected                        |   | ≤ 1 mA                                                                                                                                               |
| Switching state indicator                       |   | LED, yellow                                                                                                                                          |
| <b>Safety-relevant product characteristics</b>  |   |                                                                                                                                                      |
| MTTF <sub>d</sub>                               |   | 1660 a                                                                                                                                               |
| Mission Time (T <sub>M</sub> )                  |   | 20 a                                                                                                                                                 |
| Diagnostic Coverage (DC)                        |   | 0 %                                                                                                                                                  |
| <b>Compliance with standards and directives</b> |   |                                                                                                                                                      |
| Standard conformity                             |   |                                                                                                                                                      |
| NAMUR                                           |   | EN 60947-5-6:2000<br>IEC 60947-5-6:1999                                                                                                              |
| Electromagnetic compatibility                   |   | NE 21:2007                                                                                                                                           |
| Standards                                       |   | EN IEC 60947-5-2                                                                                                                                     |
| <b>Approvals and certificates</b>               |   |                                                                                                                                                      |
| IECEx approval                                  |   |                                                                                                                                                      |
| Equipment protection level Ga                   |   | IECEx PTB 11.0021X                                                                                                                                   |
| Equipment protection level Gb                   |   | IECEx PTB 11.0021X                                                                                                                                   |
| Equipment protection level Da                   |   | IECEx PTB 11.0021X                                                                                                                                   |
| Equipment protection level Mb                   |   | IECEx PTB 11.0021X                                                                                                                                   |
| ATEX approval                                   |   |                                                                                                                                                      |
| Equipment protection level Ga                   |   | PTB 00 ATEX 2032 X                                                                                                                                   |
| Equipment protection level Gb                   |   | PTB 00 ATEX 2032 X                                                                                                                                   |
| Equipment protection level Da                   |   | PTB 00 ATEX 2032 X                                                                                                                                   |
| 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: 8.2 V DC |
| Ordinary Location                               |   | E87056                                                                                                                                               |
| Hazardous Location                              |   | E501628                                                                                                                                              |
| Control drawing                                 |   | 116-0451                                                                                                                                             |
| CCC approval                                    |   |                                                                                                                                                      |
| Hazardous Location                              |   | 2020322315002303                                                                                                                                     |
| CML approval                                    |   | on request                                                                                                                                           |
| ANZEx                                           |   | 19.3001X                                                                                                                                             |
| Marine approval                                 |   | DNVGL TAA00001A5                                                                                                                                     |
| <b>Ambient conditions</b>                       |   |                                                                                                                                                      |
| Ambient temperature                             |   | -25 ... 100 °C (-13 ... 212 °F)                                                                                                                      |
| Storage temperature                             |   | -40 ... 100 °C (-40 ... 212 °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> , stripped insulation length: 7 mm                                                                                         |
| Minimum core cross-section                      |   | without wire end ferrules 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>                                                          |
| Maximum core cross-section                      |   | without wire end ferrules 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>                                                           |
| Connection (system side)                        |   | screw terminals, M20 x 1.5 cable gland, usable thread length 9.1 mm, screw-in depth max. 9.1 mm                                                      |
| Housing material                                |   | PA                                                                                                                                                   |
| Sensing face                                    |   | PA                                                                                                                                                   |
| Degree of protection                            |   | IP66 / IP68 / IP69K                                                                                                                                  |

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

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 **PEPPERL+FUCHS**

Technical Data

|                           |                                     |
|---------------------------|-------------------------------------|
| Mass                      | 225 g                               |
| Dimensions                |                                     |
| Height                    | 40 mm                               |
| Width                     | 40 mm                               |
| Length                    | 118 mm                              |
| Note                      | Tightening torque: 1.8 Nm (housing) |
| General information       |                                     |
| Use in the hazardous area | see instruction manuals             |

Connection Assignment

