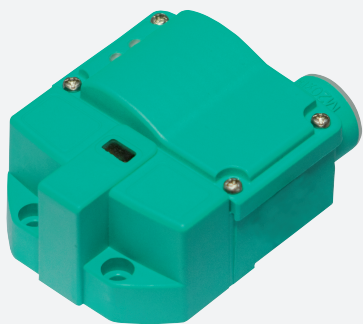


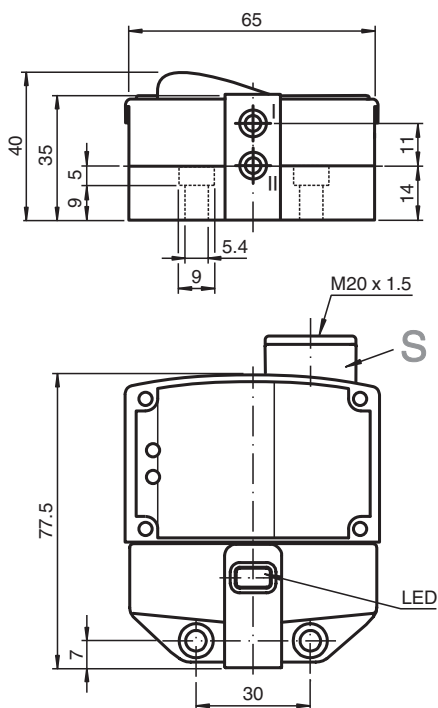


## Inductive sensor NCN3-F31K-N4

- Direct mounting on standard actuators
- Fixed setting
- ATEX & IECEx certifications



### Dimensions



### Technical Data

#### General specifications

|                            |       |                                                               |
|----------------------------|-------|---------------------------------------------------------------|
| Switching function         |       | 2 x normally closed (NC)                                      |
| Output type                |       | NAMUR                                                         |
| Rated operating distance   | $s_n$ | 3 mm                                                          |
| Installation               |       | flush mountable                                               |
| Assured operating distance | $s_a$ | 0 ... 2.4 mm                                                  |
| Actual operating distance  | $s_r$ | 2.7 ... 3.3 mm typ.                                           |
| Actuating element          |       | Stainless steel 1.4305 / AISI 303<br>8.5 mm x 8.5 mm x 0.5 mm |
| Reduction factor $r_{AI}$  |       | 0.5                                                           |

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

## Technical Data

|                                                 |       |                                                                                                                                                      |
|-------------------------------------------------|-------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reduction factor $r_{Cu}$                       |       | 0.4                                                                                                                                                  |
| Reduction factor $r_{304}$                      |       | 1                                                                                                                                                    |
| Reduction factor $r_{St37}$                     |       | 1.3                                                                                                                                                  |
| Reduction factor $r_{Brass}$                    |       | 0.6                                                                                                                                                  |
| Output type                                     |       | 2-wire                                                                                                                                               |
| <b>Nominal ratings</b>                          |       |                                                                                                                                                      |
| Nominal voltage                                 | $U_o$ | 8.2 V ( $R_i$ approx. 1 k $\Omega$ )                                                                                                                 |
| Switching frequency                             | $f$   | 0 ... 3 kHz                                                                                                                                          |
| Hysteresis                                      | $H$   | typ. 5 %                                                                                                                                             |
| Reverse polarity protection                     |       | reverse polarity protected                                                                                                                           |
| Short-circuit protection                        |       | yes                                                                                                                                                  |
| Suitable for 2:1 technology                     |       | yes , Reverse polarity protection diode not required                                                                                                 |
| Current consumption                             |       |                                                                                                                                                      |
| Measuring plate not detected                    |       | $\geq 3$ mA                                                                                                                                          |
| Measuring plate detected                        |       | $\leq 1$ mA                                                                                                                                          |
| Time delay before availability                  | $t_v$ | $\leq 1.1$ ms                                                                                                                                        |
| Switching state indicator                       |       | LED, yellow                                                                                                                                          |
| <b>Functional safety related parameters</b>     |       |                                                                                                                                                      |
| Safety Integrity Level (SIL)                    |       | SIL 2                                                                                                                                                |
| MTTF <sub>d</sub>                               |       | 1470 a                                                                                                                                               |
| Mission Time ( $T_M$ )                          |       | 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 TUN 17.0021X                                                                                                                                   |
| Equipment protection level Gb                   |       | IECEx TUN 17.0021X                                                                                                                                   |
| Equipment protection level Da                   |       | IECEx TUN 17.0021X                                                                                                                                   |
| Equipment protection level Mb                   |       | IECEx TUN 17.0021X                                                                                                                                   |
| ATEX approval                                   |       |                                                                                                                                                      |
| Equipment protection level Ga                   |       | TÜV 99 ATEX 1479 X                                                                                                                                   |
| Equipment protection level Gb                   |       | TÜV 99 ATEX 1479 X                                                                                                                                   |
| Equipment protection level Da                   |       | TÜV 99 ATEX 1479 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                                 |       | 116-0456                                                                                                                                             |
| CCC approval                                    |       |                                                                                                                                                      |
| Hazardous Location                              |       | 2020322315002262                                                                                                                                     |
| NEPSI approval                                  |       |                                                                                                                                                      |
| NEPSI certificate                               |       | GYJ19.1410X                                                                                                                                          |
| <b>Ambient conditions</b>                       |       |                                                                                                                                                      |
| Ambient temperature                             |       | -25 ... 100 °C (-13 ... 212 °F)                                                                                                                      |
| Storage temperature                             |       | -40 ... 100 °C (-40 ... 212 °F)                                                                                                                      |
| <b>Mechanical specifications</b>                |       |                                                                                                                                                      |

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Technical Data

|                                   |                                                                                                                                               |
|-----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Connection (system side)          | Cage tension spring terminals<br>Stripped length 7 mm<br>M20 x 1.5 cable gland<br>usable thread length 11.5 mm<br>screw-in depth max. 11.5 mm |
| Core cross section (system side)  | Flexible: 0.2 ... 1.5 mm <sup>2</sup><br>rigid: 0.2 ... 2.5 mm <sup>2</sup>                                                                   |
| Housing material                  | PBT                                                                                                                                           |
| Sensing face                      | PBT                                                                                                                                           |
| Degree of protection              | IP67                                                                                                                                          |
| Tightening torque, housing screws | 1 Nm                                                                                                                                          |
| Tightening torque, cable gland    | M20 x 1.5 ; max. 7 Nm                                                                                                                         |
| Dimensions                        |                                                                                                                                               |
| Height                            | 35.5 mm                                                                                                                                       |
| Width                             | 65 mm                                                                                                                                         |
| Length                            | 77.5 mm                                                                                                                                       |
| General information               |                                                                                                                                               |
| Use in the hazardous area         | see instruction manuals                                                                                                                       |

Connection Assignment

