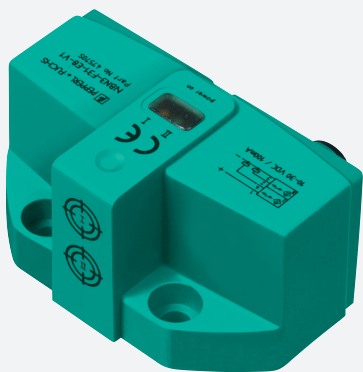




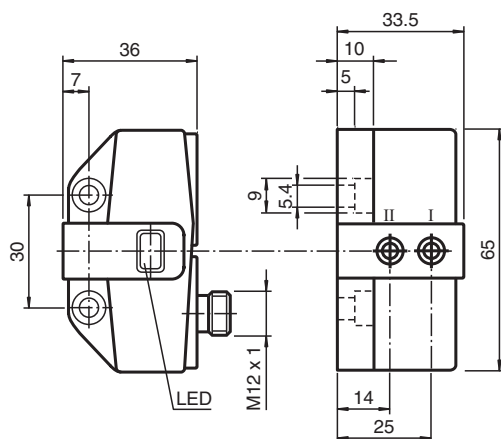
## Inductive sensor NCN3-F31-B3B-V1

- Direct mounting on standard actuators
- A/B node with extended addressing possibility for up to 62 nodes
- Mode of operation, programmable
- Degree of protection IP67
- Communication monitoring, turn-off

Valve positioner and valve control module



### Dimensions



### Technical Data

#### General specifications

|                                |       |                                           |
|--------------------------------|-------|-------------------------------------------|
| Switching function             |       | Normally open/closed (NO/NC) programmable |
| Output type                    |       | AS-Interface                              |
| Rated operating distance       | $s_n$ | 3 mm                                      |
| Installation                   |       | flush mountable                           |
| Assured operating distance     | $s_a$ | 0 ... 2.43 mm                             |
| Reduction factor $r_{AI}$      |       | 0.5                                       |
| Reduction factor $r_{Cu}$      |       | 0.45                                      |
| Reduction factor $r_{304}$     |       | 1                                         |
| Reduction factor $r_{Si37}$    |       | 1.2                                       |
| Node type                      |       | A/B node                                  |
| AS-Interface specification     |       | V3.0                                      |
| Required gateway specification |       | $\geq V2.1$                               |

#### Nominal ratings

|                        |       |                                     |
|------------------------|-------|-------------------------------------|
| Operating voltage      | $U_B$ | 26.5 ... 31.9 V via AS-i bus system |
| Switching frequency    | $f$   | 0 ... 100 Hz                        |
| No-load supply current | $I_0$ | $\leq 35$ mA                        |

Release date: 2024-05-28 Date of issue: 2024-06-02 Filename: 226324\_eng.pdf

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

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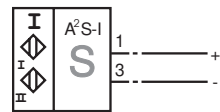
**PEPPERL+FUCHS**

Technical Data

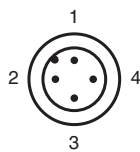
|                                                 |                |                                                              |
|-------------------------------------------------|----------------|--------------------------------------------------------------|
| <b>Functional safety related parameters</b>     |                |                                                              |
| MTTF <sub>d</sub>                               |                | 842 a                                                        |
| Mission Time (T <sub>M</sub> )                  |                | 20 a                                                         |
| Diagnostic Coverage (DC)                        |                | 0 %                                                          |
| <b>Indicators/operating means</b>               |                |                                                              |
| LED PWR                                         |                | AS-Interface voltage; LED green                              |
| LED IN                                          |                | switching state (input); LED yellow                          |
| <b>Electrical specifications</b>                |                |                                                              |
| Rated operating voltage                         | U <sub>e</sub> | 26.5 ... 31.6 V from AS-Interface                            |
| Rated operating current                         | I <sub>e</sub> | 100 mA                                                       |
| <b>Compliance with standards and directives</b> |                |                                                              |
| Standard conformity                             |                |                                                              |
| Electromagnetic compatibility                   |                | EN 50295:1999-10                                             |
| Standards                                       |                | EN IEC 60947-5-2                                             |
| <b>Approvals and certificates</b>               |                |                                                              |
| UL approval                                     |                | cULus Listed, General Purpose                                |
| CSA approval                                    |                | cCSAus Listed, General Purpose                               |
| CCC approval                                    |                | CCC approval / marking not required for products rated ≤36 V |
| <b>Ambient conditions</b>                       |                |                                                              |
| Ambient temperature                             |                | -25 ... 70 °C (-13 ... 158 °F)                               |
| <b>Mechanical specifications</b>                |                |                                                              |
| Connection (system side)                        |                | 4-pin, M12 x 1 connector                                     |
| Connector housing                               |                | metal                                                        |
| Housing material                                |                | PBT                                                          |
| Degree of protection                            |                | IP67                                                         |
| Tightening torque, fastening screws             |                | 4 Nm ... 5 Nm                                                |
| <b>Dimensions</b>                               |                |                                                              |
| Height                                          |                | 33.5 mm                                                      |
| Width                                           |                | 65 mm                                                        |
| Length                                          |                | 36 mm                                                        |

Connection

B3B-V1



Connection Assignment



Release date: 2024-05-28 Date of issue: 2024-06-02 Filename: 226324\_eng.pdf

## Additional Information

### Programming Instructions

|          |                                                         |
|----------|---------------------------------------------------------|
| Address  | 00 preset, alterable via Busmaster or programming units |
| IO-code  | D                                                       |
| ID-code  | A                                                       |
| ID1-code | 7                                                       |
| ID2-code | E                                                       |

### Data bit

|     |                                                                |
|-----|----------------------------------------------------------------|
| Bit | Function                                                       |
| D0  | not used                                                       |
| D1  | not used                                                       |
| D2  | switch output sensor 1 <sup>1)</sup><br>(0=damped; 1=undamped) |
| D3  | switch output sensor 2 <sup>1)</sup><br>(0=damped; 1=undamped) |

### Parameter bit

|     |                                                                    |
|-----|--------------------------------------------------------------------|
| Bit | Function                                                           |
| P0  | Watchdog (0=inactive; 1=active)                                    |
| P1  | switching element function sensor II <sup>2)</sup><br>0=NO; 1= NC) |
| P2  | switching element function sensor I <sup>2)</sup><br>0=NO; 1= NC)  |
| P3  | not used                                                           |

<sup>1)</sup> Applies to NC function  
(P1/P2=1; preset), with NO  
function (P1/P2=0) reversed characteristics

<sup>2)</sup> Default setting: NC