

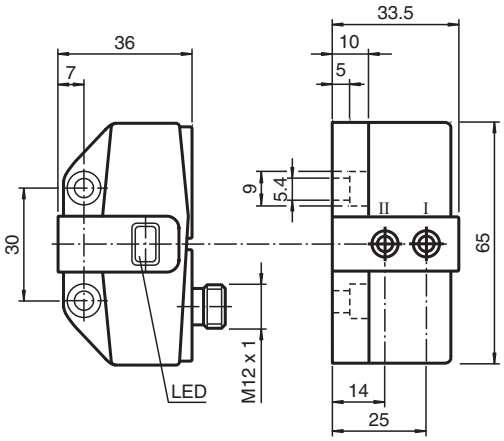
# Inductive sensor

# 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 $r_{Al}$ | | 0.5 |
| Reduction factor $r_{Cu}$ | | 0.45 |
| Reduction factor $r_{304}$ | | 1 |
| Reduction factor $r_{St37}$ | | 1.2 |
| Node type | | A/B node |
| AS-Interface specification | | V3.0 |
| Required gateway specification | | ≥ 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 | $I_0$ | ≤ 35 mA |

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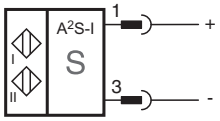
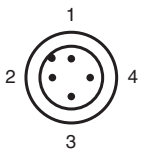
| | | |
|---|---|---|
| **Functional safety related parameters** | | |
| $MTTF_d$ | | 842 a |
| Mission Time ($T_M$) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| **Indicators/operating means** | | |
| LED PWR | | AS-Interface voltage; LED green |
| LED IN | | switching state (input); LED yellow |
| **Electrical specifications** | | |
| Rated operating voltage | $U_e$ | 26.5 ... 31.6 V from AS-Interface |
| Rated operating current | $I_e$ | 100 mA |
| **Compliance with standards and directives** | | |
| Standard conformity | | |
| Electromagnetic compatibility | | EN 50295:1999-10 |
| Standards | | EN IEC 60947-5-2 |
| **Approvals and certificates** | | |
| 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: 31.9 V DC |
| CSA approval | | cCSAus Listed, General Purpose |
| CCC approval | | CCC approval / marking not required for products rated ≤36 V |
| **Ambient conditions** | | |
| Ambient temperature | | -25 ... 70 °C (-13 ... 158 °F) |
| **Mechanical specifications** | | |
| Connection (system side) | | 4-pin, M12 x 1 connector |
| Connector housing | | metal |
| Housing material | | PBT |
| Degree of protection | | IP67 |
| Tightening torque, fastening screws | | ≤ 5 Nm |
| Dimensions | | |
| Height | | 33.5 mm |
| Width | | 65 mm |
| Length | | 36 mm |

## Connection




## Connection Assignment

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## 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 [1] (0=damped; 1=undamped) |
| D3 | switch output sensor 2 [1] (0=damped; 1=undamped) |

**Parameter bit**

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

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

2) Default setting: NC

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