

# Inductive sensor

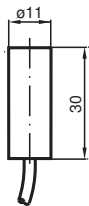
## NJ2-11-N



- 2 mm flush
- Usable up to SIL 2 acc. to IEC 61508



## Dimensions



## Technical Data

### General specifications

|                            |       |                      |
|----------------------------|-------|----------------------|
| Switching function         |       | Normally closed (NC) |
| Output type                |       | NAMUR                |
| Rated operating distance   | $s_n$ | 2 mm                 |
| Installation               |       | flush                |
| Assured operating distance | $s_a$ | 0 ... 1.62 mm        |
| Actual operating distance  | $s_r$ | 1.8 ... 2.2 mm       |
| Reduction factor $r_{Al}$  |       | 0.4                  |
| Reduction factor $r_{Cu}$  |       | 0.3                  |
| Reduction factor $r_{304}$ |       | 0.85                 |
| Output type                |       | 2-wire               |

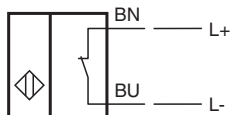
### Nominal ratings

|                 |       |                                      |
|-----------------|-------|--------------------------------------|
| Nominal voltage | $U_o$ | 8.2 V ( $R_i$ approx. 1 k $\Omega$ ) |
|-----------------|-------|--------------------------------------|

## Technical Data

|                                                 |   |                                                                                             |
|-------------------------------------------------|---|---------------------------------------------------------------------------------------------|
| Switching frequency                             | f | 0 ... 3000 Hz                                                                               |
| Hysteresis                                      | H | 0.5 ... 3.5 typ. 2 %                                                                        |
| Current consumption                             |   |                                                                                             |
| Measuring plate not detected                    |   | min. 3 mA                                                                                   |
| Measuring plate detected                        |   | ≤ 1 mA                                                                                      |
| <b>Functional safety related parameters</b>     |   |                                                                                             |
| Safety Integrity Level (SIL)                    |   | SIL 2                                                                                       |
| MTTF <sub>d</sub>                               |   | 5887 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                                                     |
| 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>               |   |                                                                                             |
| FM approval                                     |   |                                                                                             |
| Control drawing                                 |   | 116-0165                                                                                    |
| UL approval                                     |   |                                                                                             |
| Ordinary Location                               |   | E87056                                                                                      |
| Hazardous Location                              |   | E501628                                                                                     |
| Control drawing                                 |   | 116-0452                                                                                    |
| CCC approval                                    |   | CCC approval / marking not required for products rated ≤36 V                                |
| <b>Ambient conditions</b>                       |   |                                                                                             |
| Ambient temperature                             |   | -25 ... 100 °C (-13 ... 212 °F)                                                             |
| <b>Mechanical specifications</b>                |   |                                                                                             |
| Connection type                                 |   | cabl PVC , 2 m                                                                              |
| Core cross-section                              |   | 0.34 mm <sup>2</sup>                                                                        |
| Housing material                                |   | PVDF                                                                                        |
| Sensing face                                    |   | PVDF                                                                                        |
| Degree of protection                            |   | IP68                                                                                        |
| Cable                                           |   |                                                                                             |
| Bending radius                                  |   | > 10 x cable diameter                                                                       |
| <b>General information</b>                      |   |                                                                                             |
| Use in the hazardous area                       |   | see instruction manuals                                                                     |

## Connection



## Accessories

|                                                                                     |              |                        |
|-------------------------------------------------------------------------------------|--------------|------------------------|
|  | <b>BF 11</b> | Mounting flange, 11 mm |
|-------------------------------------------------------------------------------------|--------------|------------------------|