

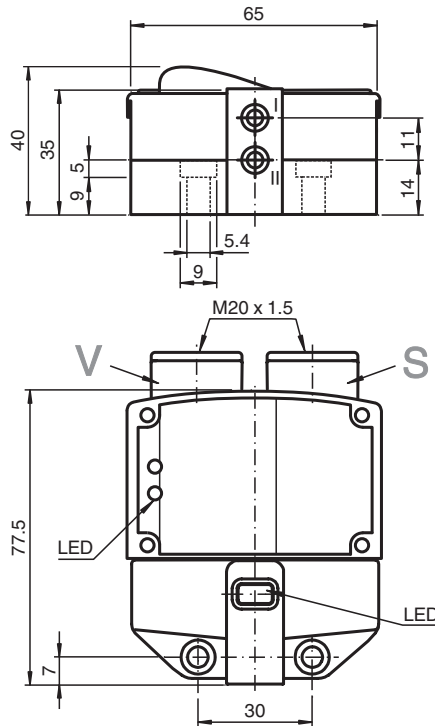
Inductive sensor

NCN3-F31K-N4-B13-S

- Direct mounting on standard actuators
- Fixed setting
- Screw terminals
- Usable up to SIL 2 acc. to IEC 61508
- LEDs for switching state of sensor and solenoid valve
- Valve LEDs disconnectable
- 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 8.5 mm x 8.5 mm x 0.5 mm | |
| Reduction factor r_{AI} | 0.5 | |

Release date: 2023-01-25 Date of issue: 2023-01-25 Filename: 281187_eng.pdf

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

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PF 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 |
| Nominal ratings | | |
| Nominal voltage | U_o | 8.2 V (R_i approx. 1 k Ω) |
| 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 | | ≥ 3 mA |
| Measuring plate detected | | ≤ 1 mA |
| Time delay before availability | t_v | ≤ 1.1 ms |
| Switching state indicator | | LED, yellow |
| Valve status indicator | | LED, yellow |
| Functional safety related parameters | | |
| Safety Integrity Level (SIL) | | SIL 2 |
| MTTF _d | | 1470 a |
| Mission Time (T_M) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| Valve circuit | | |
| Voltage | | max. 32 V DC |
| Current | | max. 240 mA |
| Short-circuit protection | | no |
| Reverse polarity protection | | yes, with reversed output LED is out of function, therefore more power for solenoid valve |
| Compliance with standards and directives | | |
| Standard conformity | | |
| NAMUR | | EN 60947-5-6:2000 IEC 60947-5-6:1999 |
| Electromagnetic compatibility | | NE 21:2007 |
| Standards | | EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012 |
| Approvals and certificates | | |
| IECEx approval | | |
| Equipment protection level Ga | | IECEx TUN 17.0021X |
| Equipment protection level Gb | | 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 Gc (ic) | | PF13CERT2895 X |
| UL approval | | |
| Ordinary Location | | E87056 |
| Hazardous Location | | E501628 |
| Control drawing | | 116-0456 |
| CCC approval | | |
| Hazardous Location | | 2020322315002262 |
| NEPSI approval | | |
| NEPSI certificate | | GYJ19.1410X |

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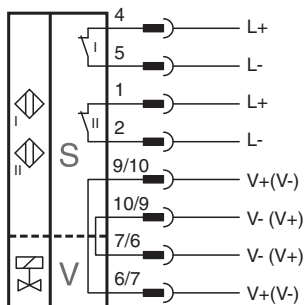
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PEPPERL+FUCHS

Technical Data

| Ambient conditions | |
|-------------------------------------|--|
| Ambient temperature | -25 ... 100 °C (-13 ... 212 °F) |
| Storage temperature | -40 ... 100 °C (-40 ... 212 °F) |
| Mechanical specifications | |
| Connection (system side) | Screw terminals, tightening torque min. 0.5 Nm Stripped length 7 mm usable thread length 11.5 mm screw-in depth max. 11.5 mm |
| Core cross section (system side) | rigid: 0.14 ... 2.5 mm ² flexible: 0.14 ... 1.5 mm ² flexible with core-end sleeve: 0.25 ... 1.5 mm ² |
| Connection (valve side) | like connection (system side) |
| Core cross section (valve side) | like core cross section (system side) |
| Housing material | PBT |
| Sensing face | PBT |
| Degree of protection | IP67 |
| Tightening torque, fastening screws | 4 Nm ... 5 Nm |
| Tightening torque, housing screws | 1 Nm |
| Tightening torque, cable gland | M20 x 1.5 ; max. 7 Nm |
| Note | LED switch-off |
| General information | |
| Use in the hazardous area | see instruction manuals |

Connection









Additional Information

Interruption of LED:

In the case of a polarity reversal of the valve circuit connection/s, the valve status display does not function, i.e. such that low power valves can (also) be connected.

Accessories

| | | |
|---|---------------|--------------------------|
|  | BT65A | Activator for F31 series |
|  | BT65B | Activator for F31 series |
|  | BT65X | Activator for F31 series |
|  | BT115A | Activator for F31 series |
|  | BT115B | Activator for F31 series |
|  | BT115X | Activator for F31 series |

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