

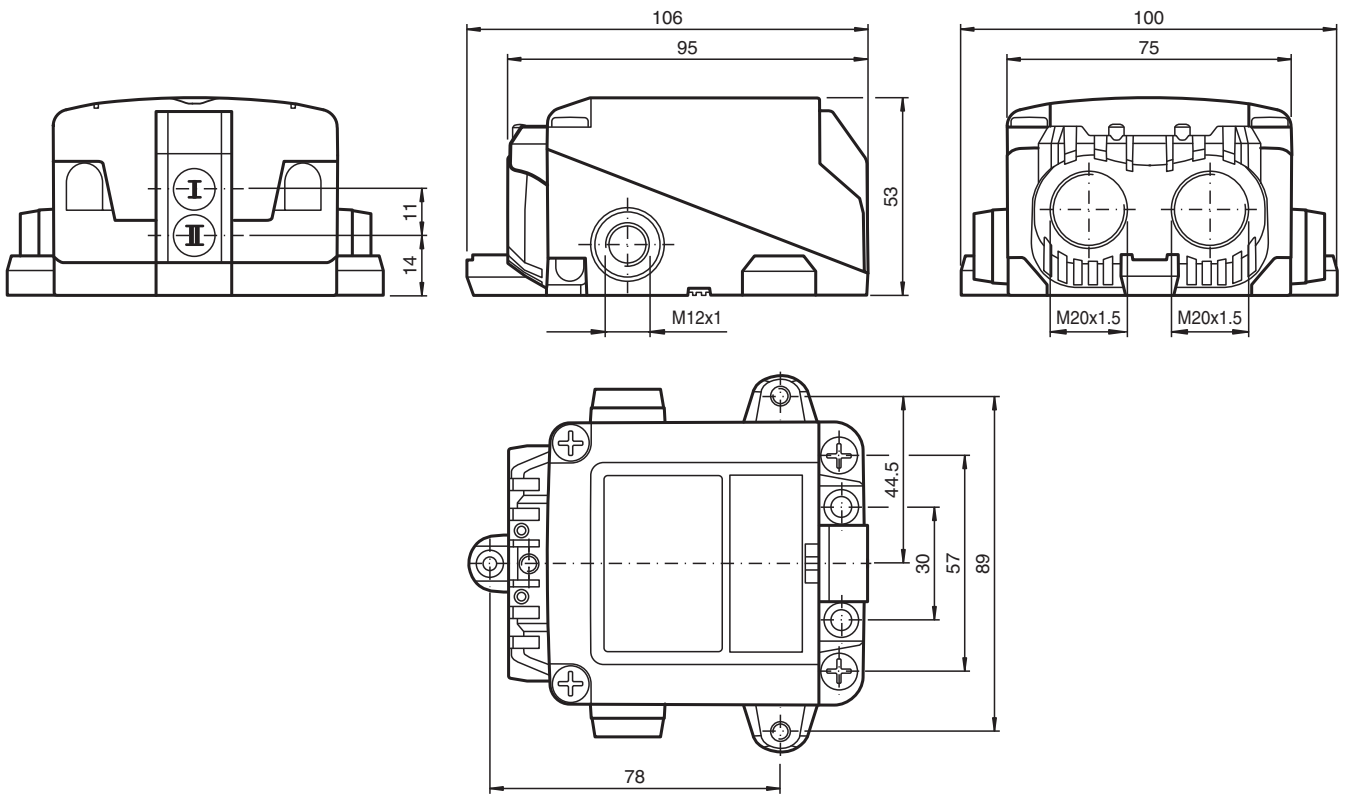


Inductive sensor NCN3-F31K2-N5-B33-S

- Direct mounting on standard actuators
- ATEX & IECEx certifications
- Usable up to SIL 2 acc. to IEC 61508
- Weatherproof housing for outdoor applications
- LEDs for switching state of sensor and solenoid valve
- Plug-in terminals
- 2:1 transfer method
- Temperature range
-40 ... 100 °C (-40 ... 212 °F)
- 2 solenoid valves can be connected



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 For assured operating distance s_{ar} see Manual Functional Safety. |
| Actual operating distance | s_r 2.7 ... 3.3 mm typ. |

Release date: 2025-07-02 Date of issue: 2025-07-02 Filename: 243640_eng.pdf

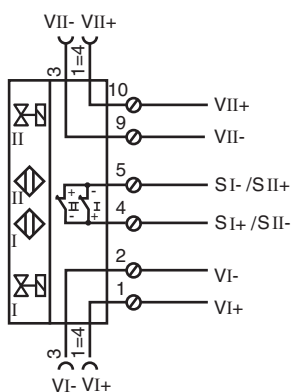
Technical Data

| | | |
|---|---|---|
| Actuating element | Stainless steel 1.4305 / AISI 303 8.5 mm x 8.5 mm x 0.5 mm | |
| Reduction factor r_{Al} | | 0.4 |
| Reduction factor r_{Cu} | | 0.4 |
| Reduction factor r_{304} | | 0.7 |
| Reduction factor r_{St137} | | 1 |
| Reduction factor r_{Brass} | | 0.5 |
| 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 % |
| 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 | | 1730 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 IEC 60947-5-2 |
| Approvals and certificates | | |
| IECEx approval | | |
| Equipment protection level Ga | | IECEx TUR 17.0055X |
| Equipment protection level Gb | | IECEx TUR 17.0055X |
| Equipment protection level Mb | | IECEx TUR 17.0055X |
| ATEX approval | | |
| Equipment protection level Ga | | TÜV 17 ATEX 8125 X |
| Equipment protection level Gb | | TÜV 17 ATEX 8125 X |
| Equipment protection level Gc (ic) | | PF13CERT2895 X |
| UL approval | | |
| | | cULus Listed Load Type: General Purpose Circuitry: Class 2 Power Source Enclosure Type Rating: Type 1 Supply/Switching Voltage: 30 V DC |
| Ordinary Location | | E87056 |
| Hazardous Location | | E501628 |
| Control drawing | | 116-0455 |
| CCC approval | | |
| Hazardous Location | | 2020322315002305 |

Technical Data

| | |
|-------------------------------------|---|
| KCC approval | |
| Hazardous Location | 23-AV4BO-0113X |
| Ambient conditions | |
| Ambient temperature | -40 ... 100 °C (-40 ... 212 °F) |
| Storage temperature | -40 ... 100 °C (-40 ... 212 °F) |
| Mechanical specifications | |
| Connection type | screw terminals |
| Connection (system side) | Screw terminals, tightening torque min. 0.5 Nm Stripped length 7 mm , M20 x 1.5 cable gland , usable thread length 13.5 mm , screw-in depth max. 13.5 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) | 4-pin, M12 x 1 socket |
| Core cross section (valve side) | like core cross section (system side) |
| Housing material | rugged, translucent polycarbonate (PC) optimised for outdoor use |
| Housing base | PC |
| Degree of protection | IP66 / IP67 / IP69 |
| Tightening torque, fastening screws | ≤ 5 Nm |
| Tightening torque, housing screws | 1.5 Nm |
| Tightening torque, cable gland | M20 x 1.5 ; ≤ 7 Nm |
| Tightening torque, stopping plug | 1 Nm |
| Dimensions | |
| Height | 53 mm |
| Width | 100 mm |
| Length | 106 mm |
| Note | LED switch-off |
| General information | |
| Use in the hazardous area | see instruction manuals |

Connection Assignment



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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.