

Inductive sensor

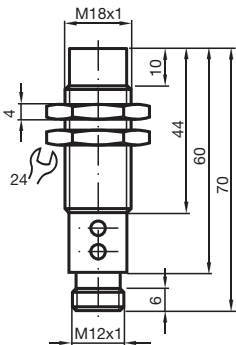
NCN8-18GM60-B3B-V1



- Comfort series
- A/B slave with extended addressing possibility for up to 62 slaves
- Cylindrical
- NO/NC selectable
- Stability control warning
- Installation help
- On/Off delay (disconnectable)
- Oscillator monitoring



Dimensions



Technical Data

General specifications

| | | |
|-------------------------------|-------|---|
| Switching function | | Normally open/closed (NO/NC) programmable |
| Output type | | AS-Interface |
| Rated operating distance | s_n | 8 mm |
| Installation | | non-flush |
| Assured operating distance | s_a | 0 ... 6.48 mm |
| Actual operating distance | s_r | 7.2 ... 8.8 mm typ. 8 mm |
| Reduction factor r_{AI} | | 0.42 |
| Reduction factor r_{Cu} | | 0.4 |
| Reduction factor r_{304} | | 0.72 |
| Slave type | | A/B slave |
| AS-Interface specification | | V3.0 |
| Required master specification | | \geq V2.1 |

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

Pepperl+Fuchs Group
www.pepperl-fuchs.com

USA: +1 330 486 0001
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111
fa-info@de.pepperl-fuchs.com

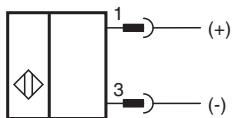
Singapore: +65 6779 9091
fa-info@sg.pepperl-fuchs.com

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Technical Data

| | | |
|--|--------|--|
| Output type | 2-wire | |
| Nominal ratings | | |
| Operating voltage | U_B | 26.5 ... 31.9 V via AS-i bus system |
| Switching frequency | f | 0 ... 100 Hz |
| Hysteresis | H | 1 ... 15 typ. 5 % |
| Reverse polarity protection | | reverse polarity protected |
| Voltage drop at I_L | | |
| Voltage drop $I_L = 20$ mA, switching element on | U_d | 3.4 ... 5 V typ. 4.3 V |
| Time delay before availability | t_v | ≤ 1000 ms |
| Operating voltage indicator | | dual-LED, green |
| Switching state indicator | | dual-LED, yellow/red |
| Error indicator | | dual-LED, red |
| Functional safety related parameters | | |
| MTTF _d | | 926 a |
| Mission Time (T_M) | | 20 a |
| Diagnostic Coverage (DC) | | 0 % |
| Compliance with standards and directives | | |
| Standard conformity | | |
| Electromagnetic compatibility | | EN 50295:1999-10 |
| Standards | | |
| | | EN 60947-5-2:2007 IEC 60947-5-2:2007 |
| Approvals and certificates | | |
| UL approval | | cULus Listed, General Purpose |
| 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) |
| Storage temperature | | -40 ... 85 °C (-40 ... 185 °F) |
| Mechanical specifications | | |
| Connection type | | Connector plug M12 x 1 , 4-pin |
| Housing material | | Stainless steel 1.4305 / AISI 303 |
| Sensing face | | PBT |
| Degree of protection | | IP67 |

Connection



Connection Assignment



Wire colors in accordance with EN 60947-5-2

| | | |
|---|----|---------|
| 1 | BN | (brown) |
| 2 | WH | (white) |
| 3 | BU | (blue) |
| 4 | BK | (black) |

Additional Information

Programming Instructions

Adress 00 preset, alterable
via Busmaster
or programming units

IO-Code 0
ID-Code A
ID1-Code 7
ID2-Code E

Data bit

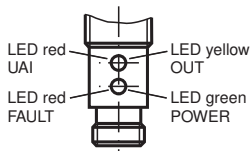
| Bit | Function |
|-----|------------------------------|
| D0 | Switching state |
| D1 | Prefailure message (dynamic) |
| D2 | Oscillator monitoring |
| D3 | Object too close |

Parameter bit


| Bit | Function |
|-----|--|
| P0 | ON / Off delay activated* / deactivated |
| P1 | Switching element function NO* / NC |
| P2 | not used |
| P3 | not used |

*Standard setting

Indicators





Accessories

| | | |
|---|--------------|------------------------|
|  | BF 18 | Mounting flange, 18 mm |
|---|--------------|------------------------|

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Accessories

| | | |
|---|---------------------------|--|
|  | <p>V1-W-2M-PUR</p> | <p>Female cordset, M12, 4-pin, PUR cable</p> |
|  | <p>V1-G-2M-PUR</p> | <p>Female cordset, M12, 4-pin, PUR cable</p> |

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Additional Information

Indication depending on the distance to the object and switching element function (P1)

| Distance to the object | Function | Parameter P1 | yellow LED (OUT) | red LED (UAI) | Data bit D0 | Data bit D3 |
|------------------------|----------|--------------|------------------|---------------|-------------|-------------|
| $> 1.2 S_n$ | NO | 1 | off | off | 0 | 1 |
| $1 S_n - 1.2 S_n$ | | 1 | off | flashing | 0 | 1 |
| $0.8 S_n - 1 S_n$ | | 1 | flashing | flashing | 1 | 1 |
| $0.1 S_n - 0.8 S_n$ | | 1 | on | off | 1 | 1 |
| $0 S_n - 0.1 S_n$ | | 1 | flashing | flashing | 1 | 0 |
| $> 1,2 S_n$ | NC | 0 | on | off | 1 | 1 |
| $1 S_n - 1.2 S_n$ | | 0 | flashing | flashing | 1 | 1 |
| $0.8 S_n - 1 S_n$ | | 0 | off | flashing | 0 | 1 |
| $0.1 S_n - 0.8 S_n$ | | 0 | off | off | 0 | 1 |
| $0 S_n - 0.1 S_n$ | | 0 | off | flashing | 1 | 0 |

Indication depending on the operation mode

| Symptoms | green LED (POWER) | red LED (FAULT) | Data bit D2 |
|-------------------|-------------------|-----------------|-------------|
| normal operation | on | off | 1 |
| oscillator defect | flashing | flashing | 0* |
| no communication | off | on | 1 |

*: D0, D1, D3 will be set to 0

Dynamic pre-fault indication:

While normal operation D1=1. If the switch is damped critically, i.e. the object has passed uncompletely the unsafe sensing range of $0.8 S_n - 1.2 s_n$ during damping, changes D1 to 0 and signals that an adjustment is necessary. See the following diagram:

Monitoring "object too near":

D3 serves as signalling: Object too near to the sensor, danger of damage, adjustment necessary. In normal mode D3=1. If the object reaches the $0 - 0.1 s_n$ range, D3=0. If the object leaves this range, D3=1.

On/off delay:

The on/off delay is preset and switched on (P0=1). On delay approx. 15 ms, when P0=1 and NO function (P1=1). Off delay approx. 15 ms, when P0=1 and NC function (P1=0).