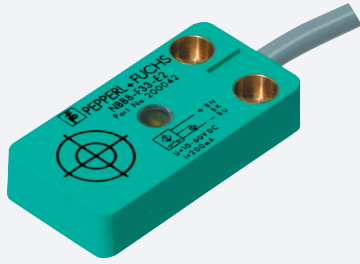


## Inductive sensor

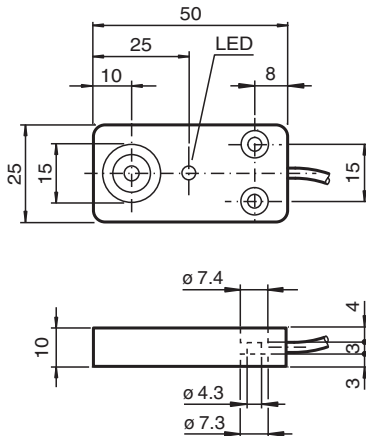
### NBB8-F33-E3-M



- Extended temperature range  
-40 ... +85 °C
- E1-Type approval
- Increased operating distance
- Increased noise immunity 100 V/m



## Dimensions



## Technical Data

| General specifications            |                |                            |
|-----------------------------------|----------------|----------------------------|
| Switching function                |                | Normally closed (NC)       |
| Output type                       |                | PNP                        |
| Rated operating distance          | s <sub>n</sub> | 8 mm                       |
| Installation                      |                | flush                      |
| Output polarity                   |                | DC                         |
| Assured operating distance        | s <sub>a</sub> | 0 ... 6.48 mm              |
| Reduction factor r <sub>Al</sub>  |                | 0.3                        |
| Reduction factor r <sub>Cu</sub>  |                | 0.2                        |
| Reduction factor r <sub>304</sub> |                | 0.6                        |
| Output type                       |                | 3-wire                     |
| Nominal ratings                   |                |                            |
| Operating voltage                 | U <sub>B</sub> | 5 ... 60 V                 |
| Switching frequency               | f              | 0 ... 350 Hz               |
| Hysteresis                        | H              | typ. 5 %                   |
| Reverse polarity protection       |                | reverse polarity protected |
| Short-circuit protection          |                | pulsing                    |
| Voltage drop                      | U <sub>d</sub> | ≤ 2 V                      |

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

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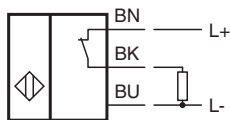
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 **PEPPERL+FUCHS**

Technical Data

|                                          |       |                                                   |
|------------------------------------------|-------|---------------------------------------------------|
| Operating current                        | $I_L$ | 0 ... 200 mA                                      |
| Off-state current                        | $I_r$ | 0 ... 0.1 mA                                      |
| No-load supply current                   | $I_0$ | ≤ 10 mA                                           |
| Time delay before availability           | $t_v$ | ≤ 80 ms                                           |
| Switching state indicator                |       | LED yellow                                        |
| Functional safety related parameters     |       |                                                   |
| MTTF <sub>d</sub>                        |       | 1140 a                                            |
| Mission Time (T <sub>M</sub> )           |       | 20 a                                              |
| Diagnostic Coverage (DC)                 |       | 0 %                                               |
| Compliance with standards and directives |       |                                                   |
| Standard conformity                      |       |                                                   |
| Standards                                |       | EN IEC 60947-5-2                                  |
| Approvals and certificates               |       |                                                   |
| CCC approval                             |       | Certified by China Compulsory Certification (CCC) |
| E1 Type approval                         |       | 10R-04                                            |
| Ambient conditions                       |       |                                                   |
| Ambient temperature                      |       | -40 ... 85 °C (-40 ... 185 °F)                    |
| Storage temperature                      |       | -40 ... 85 °C (-40 ... 185 °F)                    |
| Mechanical specifications                |       |                                                   |
| Connection type                          |       | cable PUR , 2 m                                   |
| Core cross section                       |       | 0.5 mm <sup>2</sup>                               |
| Housing material                         |       | PBT                                               |
| Sensing face                             |       | PBT                                               |
| Degree of protection                     |       | IP67 / IP69K                                      |
| Dimensions                               |       |                                                   |
| Height                                   |       | 25 mm                                             |
| Width                                    |       | 50 mm                                             |
| Length                                   |       | 10 mm                                             |
| Note                                     |       | Tightening torque: 5 Nm                           |

Connection Assignment



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Mounting

Emitted interference and interference immunity in accordance with motor vehicle directive 2006/28/EG (e1 Type approval)  
Interference immunity in accordance with DIN ISO 11452-2: 100 V/m  
Frequency band 20 MHz up to 2 GHz

Mains-borne interference in accordance with ISO 7637-2: Pulse

|                   |     |     |     |     |     |     |    |
|-------------------|-----|-----|-----|-----|-----|-----|----|
|                   | 1   | 2a  | 2b  | 3a  | 3b  | 4   | 5  |
| Severity level    | III | III | III | III | III | III | IV |
| Failure criterion | C   | A   | C   | A   | A   | A   | C  |

|                |                        |
|----------------|------------------------|
| EN 61000-4-2:  | CD: 8 kV / AD: 15 kV   |
| Severity level | IV IV                  |
| EN 61000-4-3:  | 30 V/m (80...2500 MHz) |
| Severity level | IV                     |
| EN 61000-4-4:  | 2 kV                   |
| Severity level | III                    |
| EN 61000-4-6:  | 10 V (0.01...80 MHz)   |
| Severity level | III                    |
| EN 55011:      | Class A                |

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