

## Capacitive sensor CBN2-F46-E1

- 2 mm non-flush
- 3-wire DC
- Flat housing
- Mounting slots for cable ties
- Thru-holes for screw mounting



## Dimensions



## Technical Data

### General specifications

|                            |       |                      |
|----------------------------|-------|----------------------|
| Switching function         |       | Normally closed (NC) |
| Output type                |       | NPN                  |
| Rated operating distance   | $s_n$ | 2 mm                 |
| Installation               |       | non-flush            |
| Output polarity            |       | DC                   |
| Assured operating distance | $s_a$ | 1 ... 1.4 mm         |
| Output type                |       | 3-wire               |

### Nominal ratings

|                         |  |               |
|-------------------------|--|---------------|
| Installation conditions |  |               |
| B                       |  | 0 mm          |
| C                       |  | 5 mm          |
| F                       |  | 20 mm / 50 mm |

Release date: 2025-06-11 Date of issue: 2025-06-11 Filename: 051969\_eng.pdf

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

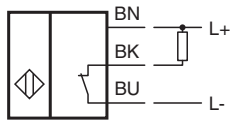
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PEPPERL+FUCHS**

## Technical Data

|                                                        |       |                                                                             |
|--------------------------------------------------------|-------|-----------------------------------------------------------------------------|
| Operating voltage                                      | $U_B$ | 10 ... 30 V DC                                                              |
| Switching frequency                                    | $f$   | 0 ... 10 Hz                                                                 |
| Hysteresis                                             | $H$   | 1 ... 10 % typ. 5 %                                                         |
| Reverse polarity protection                            |       | reverse polarity protected                                                  |
| Short-circuit protection                               |       | pulsing                                                                     |
| Voltage drop                                           | $U_d$ | $\leq 2$ V                                                                  |
| Voltage drop at $I_L$                                  |       |                                                                             |
| Voltage drop $I_L = 10$ mA, switching element on       | $U_d$ | 0.8 ... 2.2 V typ. 1.4 V                                                    |
| Operating current                                      | $I_L$ | 0 ... 100 mA                                                                |
| Lowest operating current                               | $I_m$ | 0 mA                                                                        |
| Off-state current                                      | $I_r$ | 0 ... 0.5 mA typ. 0.01 mA                                                   |
| Off-state current $T_U = 40$ °C, switching element off |       | $\leq 100$ $\mu$ A                                                          |
| No-load supply current                                 | $I_0$ | $\leq 15$ mA                                                                |
| Time delay before availability                         | $t_v$ | $\leq 50$ ms                                                                |
| Switching state indicator                              |       | LED, yellow                                                                 |
| <b>Functional safety related parameters</b>            |       |                                                                             |
| MTTF <sub>d</sub>                                      |       | 2940 a                                                                      |
| Mission Time ( $T_M$ )                                 |       | 20 a                                                                        |
| Diagnostic Coverage (DC)                               |       | 0 %                                                                         |
| <b>Compliance with standards and directives</b>        |       |                                                                             |
| Standard conformity                                    |       |                                                                             |
| Standards                                              |       | EN IEC 60947-5-2                                                            |
| <b>Approvals and certificates</b>                      |       |                                                                             |
| UL approval                                            |       | cULus Listed<br>Load Type: General Purpose<br>Enclosure Type Rating: Type 1 |
| CCC approval                                           |       | CCC approval / marking not required for products rated $\leq 36$ V          |
| <b>Ambient conditions</b>                              |       |                                                                             |
| Ambient temperature                                    |       | -25 ... 70 °C (-13 ... 158 °F)                                              |
| Storage temperature                                    |       | -40 ... 85 °C (-40 ... 185 °F)                                              |
| <b>Mechanical specifications</b>                       |       |                                                                             |
| Connection type                                        |       | cable                                                                       |
| Housing material                                       |       | PBT                                                                         |
| Sensing face                                           |       | PBT                                                                         |
| Degree of protection                                   |       | IP67                                                                        |
| Cable                                                  |       |                                                                             |
| Wire end ferrules                                      |       | yes                                                                         |
| Cable diameter                                         |       | 3.5 mm $\pm$ 0.2 mm                                                         |
| Bending radius                                         |       | > 10 x cable diameter                                                       |
| Material                                               |       | PVC                                                                         |
| Color                                                  |       | grey                                                                        |
| Number of cores                                        |       | 3                                                                           |
| Core cross section                                     |       | 0.14 mm <sup>2</sup>                                                        |
| Length                                                 | $L$   | 2 m                                                                         |
| <b>Dimensions</b>                                      |       |                                                                             |
| Height                                                 |       | 5 mm                                                                        |
| Width                                                  |       | 50 mm                                                                       |
| Length                                                 |       | 25 mm                                                                       |

## Connection Assignment



## Installation Conditions

