



## Model Number

NCB50-FP-A2-P1-V1

## Features

- 50 mm flush
- 4-wire DC

## Accessories

### V1-G

Female connector, M12, 4-pin, field attachable

### V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

### V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

### V1-W

Female connector, M12, 4-pin, field attachable

## Technical Data

### General specifications

|                            |       |               |       |
|----------------------------|-------|---------------|-------|
| Switching element function |       | PNP           | NO/NC |
| Rated operating distance   | $s_n$ | 50 mm         |       |
| Installation               |       | flush         |       |
| Output polarity            |       | DC            |       |
| Assured operating distance | $s_a$ | 0 ... 40.5 mm |       |
| Reduction factor $r_{Al}$  |       | 0.38          |       |
| Reduction factor $r_{Cu}$  |       | 0.35          |       |
| Reduction factor $r_{304}$ |       | 0.83          |       |

### Nominal ratings

|                                |       |                            |
|--------------------------------|-------|----------------------------|
| Operating voltage              | $U_B$ | 10 ... 60 V DC             |
| Switching frequency            | $f$   | 0 ... 80 Hz                |
| Hysteresis                     | $H$   | typ. 3 %                   |
| Reverse polarity protection    |       | reverse polarity protected |
| Short-circuit protection       |       | pulsing                    |
| Voltage drop                   | $U_d$ | $\leq 3$ V                 |
| Operating current              | $I_L$ | 0 ... 200 mA               |
| Off-state current              | $I_r$ | 0 ... 0.5 mA               |
| No-load supply current         | $I_0$ | $\leq 20$ mA               |
| Time delay before availability | $t_v$ | $\leq 300$ ms              |
| Operating voltage indicator    |       | LED, green                 |
| Switching state indicator      |       | LED, yellow                |

### Functional safety related parameters

|                          |       |
|--------------------------|-------|
| MTTF <sub>d</sub>        | 680 a |
| Mission Time ( $T_M$ )   | 20 a  |
| Diagnostic Coverage (DC) | 0 %   |

### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 70 °C (-13 ... 158 °F) |
| Storage temperature | -25 ... 85 °C (-13 ... 185 °F) |

### Mechanical specifications

|                      |                          |
|----------------------|--------------------------|
| Connection type      | Connector M12 x 1, 4-pin |
| Housing material     | PBT                      |
| Sensing face         | PBT                      |
| Housing base         | PBT                      |
| Degree of protection | IP68                     |

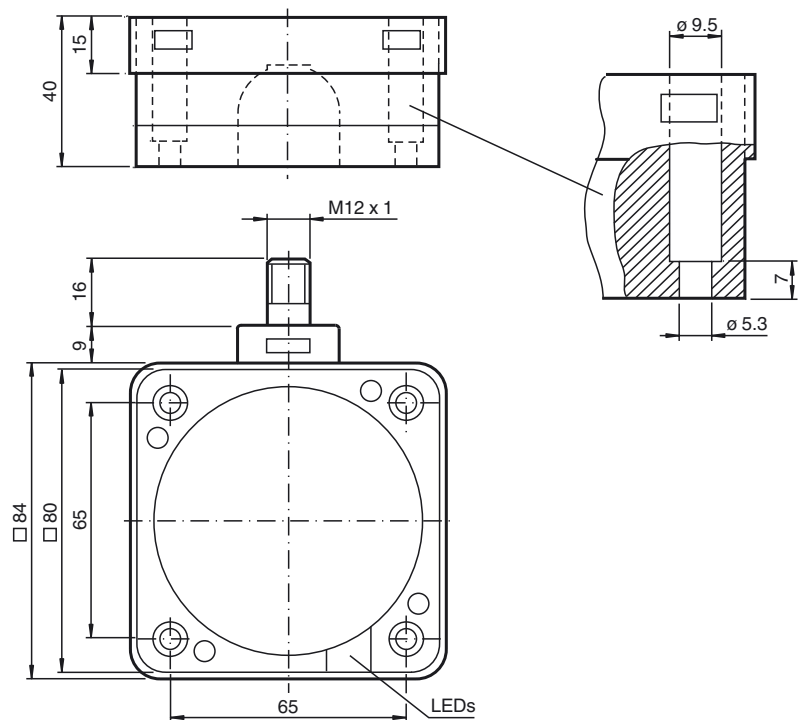
### Compliance with standards and directives

|                     |   |
|---------------------|---|
| Standard conformity |   |
| Standards           | EN 60947-5-2:2007<br>IEC 60947-5-2:2007 |

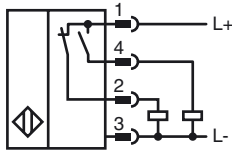
### Approvals and certificates

|              |   |
|--------------|---|
| UL approval  | cULus Listed, General Purpose                     |
| CSA approval | cCSAus Listed, General Purpose                    |
| CCC approval | Certified by China Compulsory Certification (CCC) |

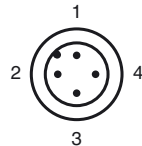
## Dimensions



**Electrical Connection**



**Pinout**



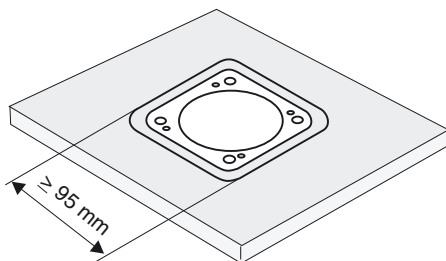
Wire colors in accordance with EN 60947-5-2

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

**Installation Hint**

These sensors are especially designed for embeddable mounting in conveyor floors. Due to its precise location in metal base plates the sensor is afforded a high degree of mechanical protection. No clearance is required between the sensor and the base plate, avoiding the need for protective guarding to prevent possible foot injury.

The large sensing range ensures positive detection, and thus provides consistent control and monitoring of the conveyor.



**Warning!**  
Once the metal screening has been removed, the sensor can no longer be embeddable mounted.

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