



### Model Number

NRN75-FP-A2-C-P3-V1

### Features

- 75 mm non-flush
- Reduction factor = 1
- Weld Immune

### Accessories

#### V1-G

Female connector, M12, 4-pin, field attachable

#### V1-W

Female cordset, M12, 4-pin, field attachable

#### V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

#### V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

## Technical Data

### General specifications

|                            |       |             |       |
|----------------------------|-------|-------------|-------|
| Switching element function |       | PNP         | NO/NC |
| Rated operating distance   | $s_n$ | 75 mm       |       |
| Installation               |       | non-flush   |       |
| Output polarity            |       | DC          |       |
| Assured operating distance | $s_a$ | 0 ... 55 mm |       |
| Reduction factor $r_{Al}$  |       | 1           |       |
| Reduction factor $r_{Cu}$  |       | 1           |       |
| Reduction factor $r_{304}$ |       | 1           |       |
| Reduction factor $r_{S37}$ |       | 1           |       |

### Nominal ratings

|                                |           |                            |
|--------------------------------|-----------|----------------------------|
| Operating voltage              | $U_B$     | 10 ... 30 V DC             |
| Switching frequency            | $f$       | 0 ... 1 Hz                 |
| Hysteresis                     | $H$       | typ. 3 %                   |
| Reverse polarity protection    |           | reverse polarity protected |
| Short-circuit protection       |           | pulsing                    |
| Voltage drop                   | $U_d$     | $\leq 3$ V                 |
| Rated insulation voltage       | $U_{BIS}$ | 50 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>              | 824 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

### Ambient conditions

|                     |  |
|---------------------|--|
| Ambient temperature | 0 ... 50 °C (32 ... 122 °F) ( $\pm 10$ % changing operating distance)    |
|                     | -25 ... 70 °C (-13 ... 158 °F) ( $\pm 20$ % changing operating distance) |

### Mechanical specifications

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

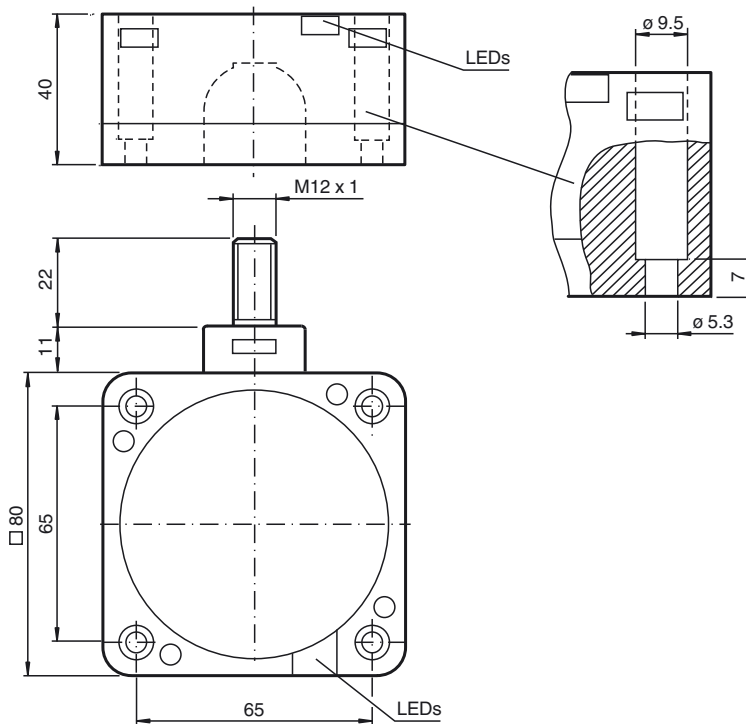
### Compliance with standards and directives

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

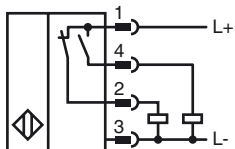
### Approvals and certificates

|              |  |
|--------------|--|
| UL approval  | cULus Listed, General Purpose                                      |
| CSA approval | cCSAus Listed, General Purpose                                     |
| CCC approval | CCC approval / marking not required for products rated $\leq 36$ V |

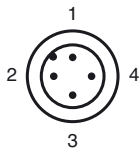
## Dimensions



**Electrical Connection**



**Pinout**



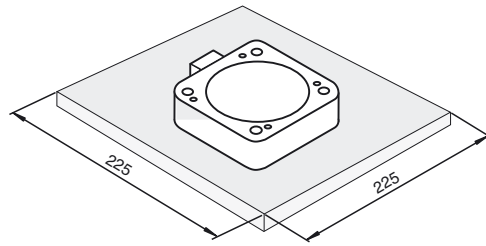
Wire colors in accordance with EN 60947-5-2

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

**Installation Hint**

These sensors are also suitable for mounting on metal. The stated switching distance is achieved with a metal base plate, min. dimensions 225 mm x 225 mm.

When mounted on a non-metallic base plate the switching distance is reduced by approx. 10 %.





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