



### Model Number

NBN3-F31-Z8-K-K

### Features

- Direct mounting on standard actuators
- Compact and stable housing
- Fixed setting
- LEDs for switching state of sensor and solenoid valve

### Accessories

#### BT65A

Activator for F31 series

#### BT65X

Activator for F31 series

#### BT115A

Activator for F31 series

#### BT115X

Activator for F31 series

#### BT65B

Activator for F31 series

#### BT115B

Activator for F31 series

## Technical Data

### General specifications

|                             |       |                          |
|-----------------------------|-------|--------------------------|
| Switching function          |       | 2 x normally open (NO)   |
| Output type                 |       | Two-wire                 |
| Rated operating distance    | $s_n$ | 3 mm                     |
| Installation                |       | flush mountable          |
| Output polarity             |       | DC                       |
| Assured operating distance  | $s_a$ | 0 ... 2.43 mm            |
| Actual operating distance   | $s_r$ | 2.7 ... 3.3 mm typ. 3 mm |
| Reduction factor $r_{AI}$   |       | 0.5                      |
| Reduction factor $r_{Cu}$   |       | 0.4                      |
| Reduction factor $r_{304}$  |       | 1                        |
| Reduction factor $r_{St37}$ |       | 1.1                      |
| Output type                 |       | 4-wire                   |

### Nominal ratings

|                                |       |                             |
|--------------------------------|-------|-----------------------------|
| Operating voltage              | $U_B$ | 6 ... 60 V DC               |
| Switching frequency            | $f$   | 0 ... 500 Hz                |
| Hysteresis                     | $H$   | typ. 5 %                    |
| Reverse polarity protection    |       | reverse polarity tolerant   |
| Short-circuit protection       |       | pulsing                     |
| Voltage drop                   | $U_d$ | $\leq 5.5$ V                |
| Operating current              | $I_L$ | 4 ... 100 mA                |
| Lowest operating current       | $I_m$ | 4 mA                        |
| Off-state current              | $I_r$ | 0.5 ... 0.9 mA typ. 0.65 mA |
| Time delay before availability | $t_v$ | $\leq 40$ ms                |
| Switching state indicator      |       | LED, yellow                 |

### Limit data

|                                     |        |
|-------------------------------------|--------|
| Tightening torque, fastening screws | 0.4 Nm |
|-------------------------------------|--------|

### Functional safety related parameters

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 570 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

### Valve circuit

|                             |   |
|-----------------------------|---|
| Voltage                     | max. 32 V DC  |
| Current                     | max. 240 mA   |
| Short-circuit protection    | no  |
| Reverse polarity protection | yes, with reversed output LED is out of function, therefore more power for solenoid valve |

### Ambient conditions

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

### Mechanical specifications

|                                  |                      |
|----------------------------------|----------------------|
| Connection (system side)         | PVC cable 5 m        |
| Core cross-section (system side) | 0.75 mm <sup>2</sup> |
| Housing material                 | PBT                  |
| Sensing face                     | PBT                  |
| Degree of protection             | IP67                 |
| Mass                             | 642 g                |

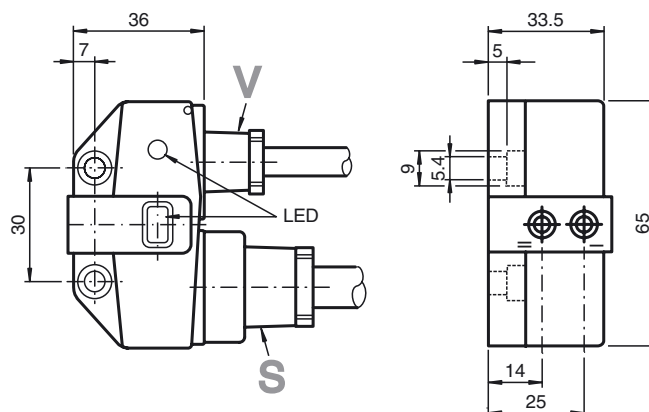
### Compliance with standards and directives

|                     |   |
|---------------------|---|
| Standard conformity |   |
| Standards           | EN 60947-5-2:2007<br>EN 60947-5-2/A1:2012<br>IEC 60947-5-2:2007<br>IEC 60947-5-2 AMD 1:2012 |

### Approvals and certificates

|              |   |
|--------------|---|
| UL approval  | cULus Listed, General Purpose, Class 2 Power Source |
| CCC approval | Certified by China Compulsory Certification (CCC)   |

## Dimensions



Electrical Connection

