



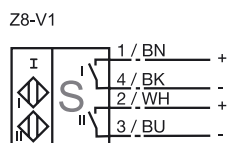
**Model Number**

NBN3-F31-Z8-V1

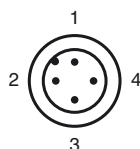
**Features**

- Direct mounting on standard actuators
- Compact and stable housing
- Fixed setting
- Satisfies machinery directive

**Connection**



**Pinout**



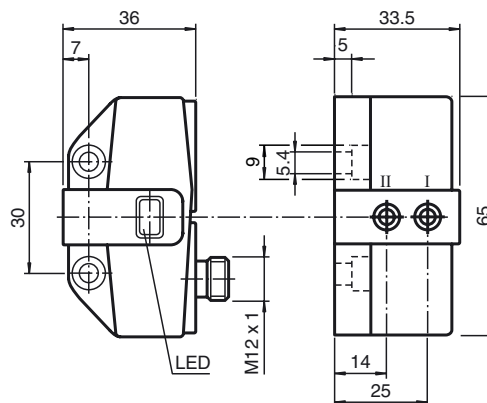
Wire colors in accordance with EN 60947-5-2

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

**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
- V1-G**

**Dimensions**



**Technical Data**

**General specifications**

|                            |                      |
|----------------------------|----------------------|
| Switching element function | Dual (NO)            |
| Rated operating distance   | $s_n$ 3 mm           |
| Installation               | embeddable mountable |
| Output polarity            | DC                   |
| Assured operating distance | $s_a$ 0 ... 2.43 mm  |
| Reduction factor $r_{Al}$  | 0.5                  |
| Reduction factor $r_{Cu}$  | 0.4                  |
| Reduction factor $r_{304}$ | 1                    |
| Reduction factor $r_{317}$ | 1.1                  |

**Nominal ratings**

|                                   |       |                        |
|-----------------------------------|-------|------------------------|
| Operating voltage                 | $U_B$ | 6 ... 60 V DC          |
| Switching frequency               | $f$   | 0 ... 500 Hz           |
| Hysteresis                        | $H$   | typ. 5 %               |
| Reverse polarity protected        |       | tolerant               |
| Short-circuit protection          |       | no                     |
| Voltage drop                      | $U_d$ | $\leq 6$ V             |
| Operating current                 | $I_L$ | 4 ... 100 mA           |
| Lowest operating current          | $I_m$ | 4 mA                   |
| Off-state current                 | $I_r$ | 0 ... 1 mA typ. 0.7 mA |
| Indication of the switching state |       | LED, yellow            |

**Limit data**

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

**Functional safety related parameters**

|                                |       |
|--------------------------------|-------|
| MTTF <sub>d</sub>              | 590 a |
| Mission Time (T <sub>M</sub> ) | 20 a  |
| Diagnostic Coverage (DC)       | 0 %   |

**Ambient conditions**

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

**Mechanical specifications**

|                          |                          |
|--------------------------|--------------------------|
| Connection (system side) | connector M12 x 1, 4-pin |
| Housing material         | PBT                      |
| Sensing face             | PBT                      |
| Protection degree        | IP67                     |

**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) |

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Subject to modifications without notice

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