



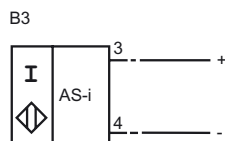
### Model Number

NBB20+U5A+B3

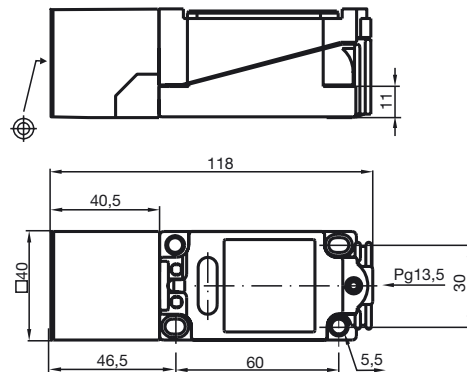
### Features

- Basic series
- 20 mm flush
- NO/NC programmable
- Adjustable sensor head
- Oscillator monitoring

### Connection



### Dimensions



### Technical Data

#### General specifications

|                            |       |                    |
|----------------------------|-------|--------------------|
| Switching element function |       | NO/NC programmable |
| Rated operating distance   | $s_n$ | 20 mm              |
| Installation               |       | flush              |
| Output polarity            |       | AS-Interface       |
| Assured operating distance | $s_a$ | 0 ... 16.2 mm      |
| Reduction factor $r_{AI}$  |       | 0.4                |
| Reduction factor $r_{Cu}$  |       | 0.35               |
| Reduction factor $r_{304}$ |       | 0.85               |

#### Nominal ratings

|                                   |       |                                     |
|-----------------------------------|-------|-------------------------------------|
| Operating voltage                 | $U_B$ | 26.5 ... 31.9 V via AS-i bus system |
| Switching frequency               | $f$   | 0 ... 150 Hz                        |
| Hysteresis                        | $H$   | 1 ... 15 typ. 5 %                   |
| Reverse polarity protected        |       | reverse polarity protected          |
| No-load supply current            | $I_0$ | $\leq 25$ mA                        |
| Operating voltage display         |       | LED, green                          |
| Indication of the switching state |       | LED, yellow                         |

#### Standard conformity

|           |                         |
|-----------|-------------------------|
| Standards | IEC / EN 60947-5-2:2004 |
|-----------|-------------------------|

#### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 70 °C (-13 ... 158 °F) |
| Storage temperature | -40 ... 85 °C (-40 ... 185 °F) |

#### Mechanical specifications

|                    |                           |
|--------------------|---------------------------|
| Core cross-section | up to 1.5 mm <sup>2</sup> |
| Housing material   | PBT                       |
| Sensing face       | PBT                       |
| Protection degree  | IP68                      |

**Programming Instructions**

Address 00 preset, alterable  
via Busmaster or  
programming units  
IO-Code 1  
ID-Code 1

**Data bit**

**Bit Function**

D0 switching state<sup>1)</sup>  
(0 = damped; 1 = undamped)  
D1 not used  
D2 oscillator monitoring  
(0= oscillator defective,  
1=normal operation)  
D3 not used

**Parameter bit**

**Bit Function**

P0 not used  
P1 switching element function<sup>2)</sup>  
(0 = NC; 1 = NO)  
P2 not used  
P3 not used

<sup>1)</sup> Applies to NO funktion (P1 = 1; preset),  
with NC funktion (P1 = 0) reversed characteristics  
<sup>2)</sup> Default setting: NO