



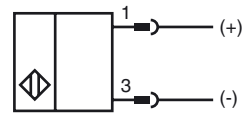
**Model Number**

NBB20-L2-B3B-V1

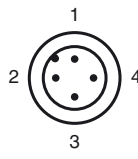
**Features**

- 20 mm embeddable
- A/B slave with extended addressing possibility for up to 62 slaves
- Sensor head bidirectional and rotatable
- NO/NC programmable
- Oscillator monitoring
- On/Off delay (disconnectable)

**Connection**



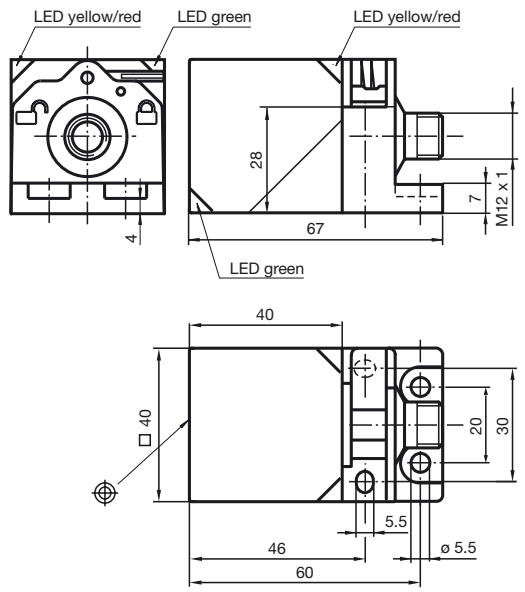
**Pinout**



**Accessories**

- V1-G**  
4-pin, M12 female field-attachable connector
- V1-W**  
4-pin, M12 female field-attachable connector
- V1-G-2M-PUR**  
Cable socket, M12, 4-pin, PUR cable
- V1-W-2M-PUR**  
Cable socket, M12, 4-pin, PUR cable
- MHW 01**  
Modular mounting bracket
- MH 02-L**  
Mounting aid

**Dimensions**



**Technical Data**

<b>General specifications</b>		
Switching element function		NO/NC programmable
Rated operating distance	$s_n$	20 mm
Installation		embeddable
Output polarity		AS-Interface
Assured operating distance	$s_a$	0 ... 16.2 mm
Reduction factor $r_{Al}$		0.33
Reduction factor $r_{Cu}$		0.31
Reduction factor $r_{303}$		0.74
Reduction factor $r_{Brass}$		0.41
Slave type		A/B slave
AS-Interface specification		V3.0
Required master specification		$\geq$ V2.1
<b>Nominal ratings</b>		
Operating voltage	$U_B$	26.5 ... 31.9 V via AS-i bus system
Switching frequency	$f$	0 ... 150 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protected		reverse polarity protected
No-load supply current	$I_0$	$\leq$ 40 mA
Operating voltage display		LED, green
Indication of the switching state		LED, yellow
Fault indication		LED, red
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		1330 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Ambient conditions</b>		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
<b>Mechanical specifications</b>		
Connection type		Device connector M12 x 1 , 4-pin
Housing material		PA
Sensing face		PA
Protection degree		IP69K
Mass		130 g
<b>Compliance with standards and directives</b>		
Standard conformity		
Standards		EN 60947-5-2:2007 IEC 60947-5-2:2007

**Approvals and certificates**

UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Products with a maximum operating voltage of $\leq$ 36 V do not bear a CCC marking because they do not require approval.

Release date: 2011-07-25 14:23 Date of issue: 2011-07-25 226318\_eng.xml

**Programming Instructions**

Adress 00 preset, alterable  
via Busmaster  
or programming units

IO-Code 0  
ID-Code A  
ID1-Code 7  
ID2-Code E

**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	ON / Off delay activated* / deactivated
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

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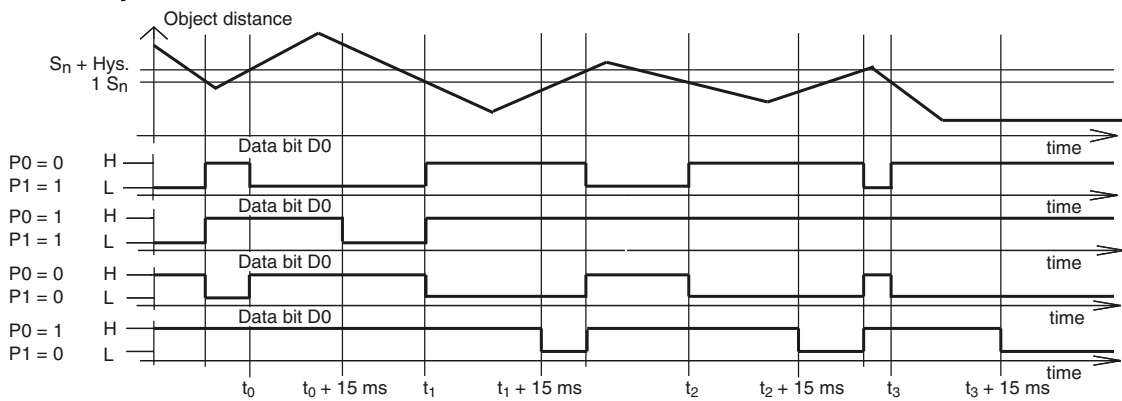
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Indication depending on the operation mode

Symptoms	green LED (POWER)	red LED (FAULT)	Data bit D2
normal operation	on	off	1
Oscillator defect	flashing	flashing	0
no communication	off	on	1

On/off delay:



The on/off delay is preset and switched on (P0=1). On delay approx.15 ms, when P0=1 and NO function (P1=1). Off delay approx.15 ms, when P0=1 and NC function (P1=0).