

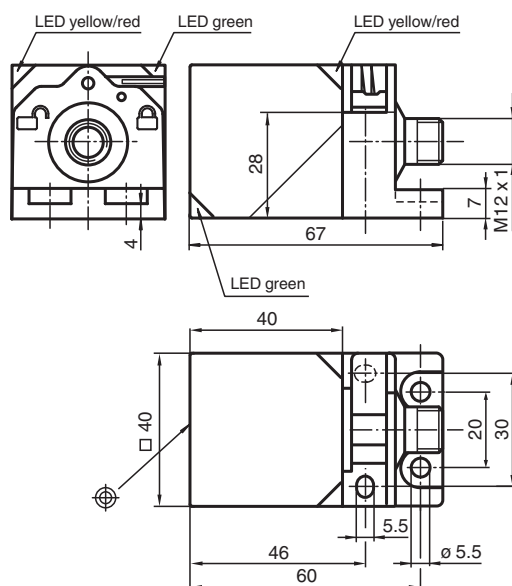


Inductive sensor NBB20-L2-B3B-V1

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



Dimensions



Technical Data

General specifications

Switching function	Normally open/closed (NO/NC) programmable	
Output type	AS-Interface	
Rated operating distance	s_n	20 mm
Installation	flush	
Assured operating distance	s_a	0 ... 16.2 mm
Reduction factor r_{Al}	0.33	
Reduction factor r_{Cu}	0.31	
Reduction factor r_{304}	0.74	
Reduction factor r_{Brass}	0.41	
Node type	A/B node	
AS-Interface specification	V3.0	
Required gateway specification	$\geq V2.1$	
Output type	2-wire	

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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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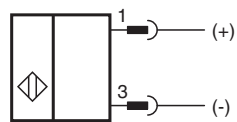
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Technical Data

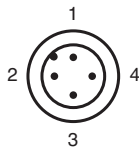
Nominal ratings		
Operating voltage	U_B	26.5 ... 31.9 V via AS-i bus system
Switching frequency	f	0 ... 150 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protection		reverse polarity protected
No-load supply current	I_0	≤ 40 mA
Time delay before availability	t_v	≤ 1000 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow
Error indicator		LED, red
Functional safety related parameters		
MTTF _d		1330 a
Mission Time (T _M)		20 a
Diagnostic Coverage (DC)		0 %
Compliance with standards and directives		
Standard conformity		
Standards		EN IEC 60947-5-2
Approvals and certificates		
UL approval		cULus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤ 36 V
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		Connector plug
Housing material		PA
Sensing face		PA
Degree of protection		IP69K
Connector		
Threading		M12 x 1
Number of pins		4
Mass		130 g
Dimensions		
Height		40 mm
Width		40 mm
Length		67 mm

Connection



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Connection Assignment



Additional Information

Programming Instructions

Address 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 ¹⁾ (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 ²⁾ (0 = NC; 1 = NO)
P2	not used
P3	not used

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

Operation

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).