

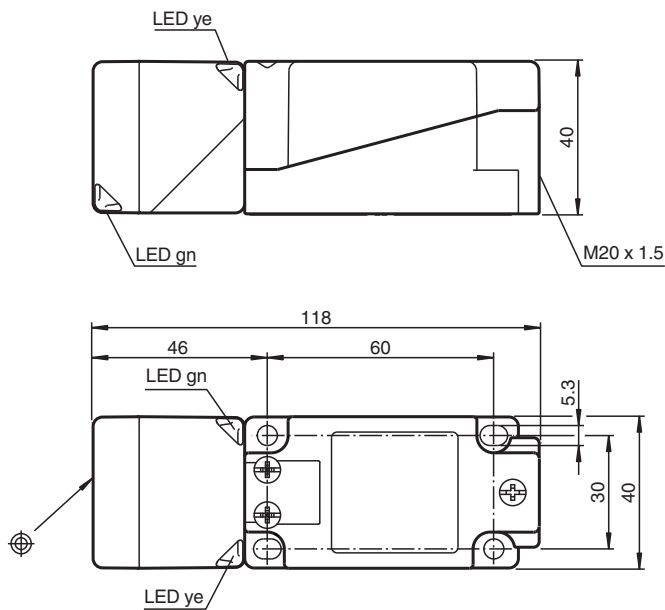
Inductive sensor

NBB20-U1-B3B

- Sensor head bidirectional and rotatable
- 20 mm flush
- A/B slave with extended addressing possibility for up to 62 slaves
- Adjustable sensor head
- 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
Actual operating distance	s_r	18 ... 22 mm typ. 20 mm
Reduction factor r_{AI}		0.4
Reduction factor r_{Cu}		0.35

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

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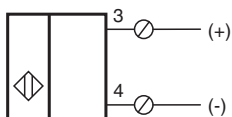
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PEPPERL+FUCHS

Technical Data

Reduction factor r_{304}		0.85
Slave type		A/B slave
AS-Interface specification		V3.0
Required master specification		\geq V2.1
Output type		2-wire
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 protection		reverse polarity protected
No-load supply current	I_0	\leq 25 mA
Time delay before availability	t_v	\leq 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 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		CCC approval / marking not required for products rated \leq 36 V
Ambient conditions		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications		
Connection type		screw terminals
Information for connection		A maximum of two conductors with the same core cross section may be mounted on one terminal connection! tightening torque 1.2 Nm + 10 %
Core cross-section		up to 2.5 mm ²
Minimum core cross-section		without wire end ferrule 0.5 mm ² , with connector sleeves 0.34 mm ²
Maximum core cross-section		without wire end ferrule 2.5 mm ² , with connector sleeves 1.5 mm ²
Housing material		PA/metal with epoxy powder coating
Sensing face		PBT
Housing base		plastic
Degree of protection		IP68 / IP69K

Connection



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

Accessories

	V1-M20-80	Receptacles, M12/M20; plastic version
	MHW 01	Modular mounting bracket

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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).