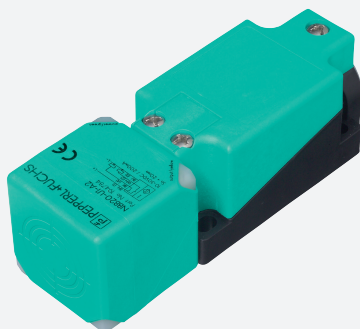


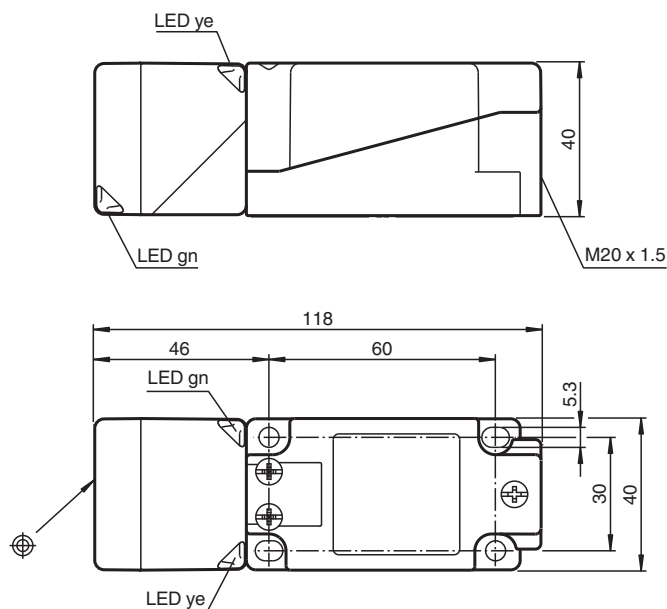


Inductive sensor NBB20-U1K-E2-3G-3D

- 20 mm flush
- Sensor head bidirectional and rotatable
- 3-wire DC
- 4 LEDs indicator for 360° visibility
- ATEX/IECEx Zone 2/22



Dimensions



Technical Data

General specifications

Switching function		Normally open (NO)
Output type		PNP
Rated operating distance	s_n	20 mm
Installation		flush
Output polarity		DC
Assured operating distance	s_a	0 ... 16.2 mm
Actual operating distance	s_r	18 ... 22 mm typ. 20 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
Output type		3-wire

Release date: 2025-06-12 Date of issue: 2025-06-15 Filename: 70126059_eng.pdf

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

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PEPPERL+FUCHS

Technical Data

Nominal ratings

Operating voltage	U_B	10 ... 30 V DC
Switching frequency	f	0 ... 150 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	U_d	≤ 2 V
Voltage drop at I_L		
Voltage drop $I_L = 1$ mA, switching element on	U_d	0.5 ... 2.3 V typ. 0.9 V
Voltage drop $I_L = 10$ mA, switching element on	U_d	0.8 ... 2.2 V typ. 1.4 V
Voltage drop $I_L = 20$ mA, switching element on	U_d	0.9 ... 2.3 V typ. 1.5 V
Voltage drop $I_L = 50$ mA, switching element on	U_d	0.9 ... 2.5 V typ. 1.6 V
Voltage drop $I_L = 100$ mA, switching element on	U_d	1 ... 2.6 V typ. 1.8 V
Voltage drop $I_L = 200$ mA, switching element on	U_d	1.2 ... 2.8 V typ. 2 V
Operating current	I_L	0 ... 200 mA
Off-state current	I_r	0 ... 0.5 mA typ. 0.01 mA
Off-state current $T_U = 40$ °C, switching element off		≤ 100 μ A
No-load supply current	I_0	≤ 20 mA
Time delay before availability	t_v	80 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow

Functional safety related parameters

MTTF _d	1510 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

IECEx approval	
Equipment protection level Gc (ec)	IECEx TUR 21.0019X
Equipment protection level Dc (tc)	IECEx TUR 21.0020X
ATEX approval	
Equipment protection level Gc (ec)	TÜV 20 ATEX 8525 X
Equipment protection level Dc (tc)	TÜV 20 ATEX 8526 X
UL approval	cULus Listed, General Purpose
CCC approval	
Hazardous Location	2024322315005962 2024322315005982
Marine approval	DNVGL TAA0000160

Ambient conditions

Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
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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 , stripped insulation length: 7 mm
Minimum core cross-section	min. 0.5 mm ² (incl. wire-end ferrules when using flexible conductors)

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 **PEPPERL+FUCHS**

Technical Data

Maximum core cross-section		max. 2.5 mm² (incl. wire-end ferrules when using flexible conductors)
Connection (system side)		screw terminals , M20 x 1.5 cable gland , usable thread length 9.1 mm , screw-in depth max. 9.1 mm
Housing material		PA
Sensing face		PA
Degree of protection		IP68 / IP69K
Mass		225 g
Dimensions		
Height		40 mm
Width		40 mm
Length		118 mm
Note		Tightening torque: 1.8 Nm (housing)
General information		
Use in the hazardous area		see instruction manuals

Connection Assignment

