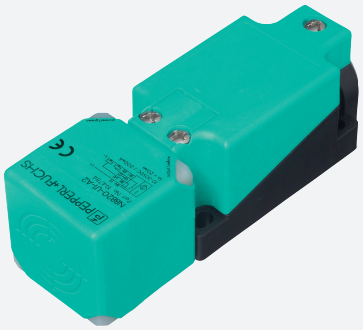
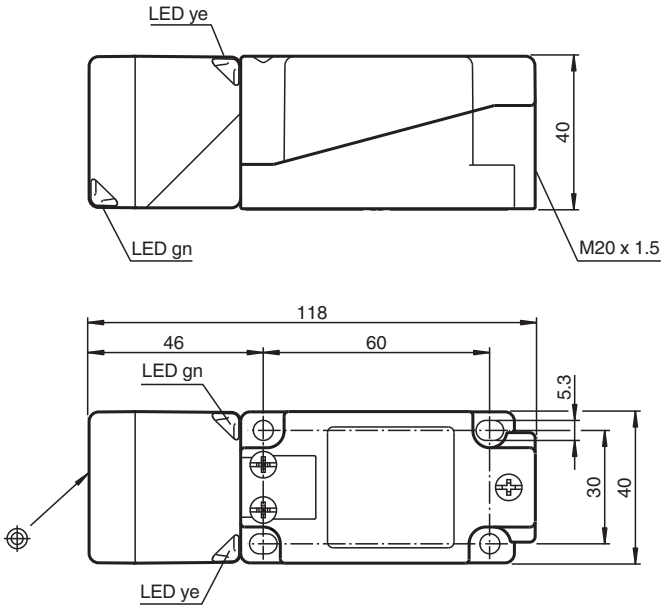


Inductive sensor

NBB20-U1K-E2-3G-3D

- Sensor head bidirectional and rotatable
- 4 LEDs indicator for 360° visibility
- 20 mm flush
- 3-wire DC
- 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

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Technical Data

Reduction factor r_{304}		0.74
Reduction factor r_{Brass}		0.41
Output type		3-wire
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 µA
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 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012
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
Marine approval		DNVGL TAA0000160
Ambient conditions		
Ambient temperature		-25 ... 85 °C (-13 ... 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 %

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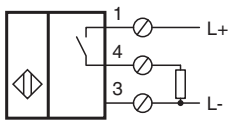
Technical Data

Core cross section	up to 2.5 mm² , stripped insulation length: 7 mm
Minimum core cross-section	min. 0.5 mm² (incl. wire-end ferrules when using flexible conductors)
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
Note	Tightening torque: 1.8 Nm (housing)
General information	
Use in the hazardous area	see instruction manuals

Connection



Accessories

	**MHW 01**	Modular mounting bracket

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