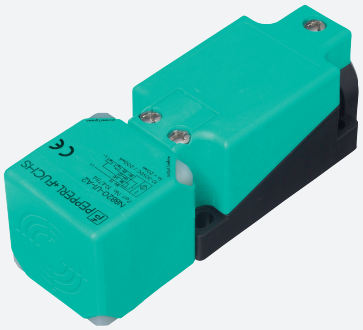
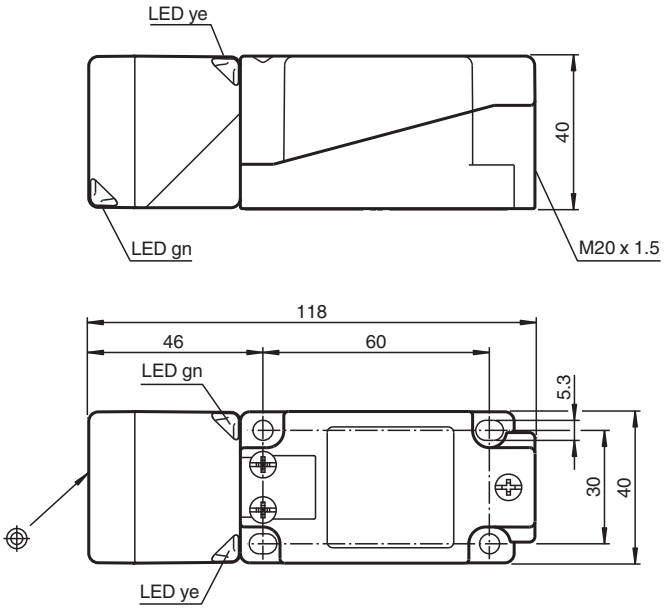


Inductive sensor

NBB15-U1K-E2-3G-3D

- 15 mm flush
- Sensor head bidirectional and rotatable
- 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	15 mm
Installation		flush
Output polarity		DC
Assured operating distance	s_a	0 ... 12.15 mm
Actual operating distance	s_r	13.5 ... 16.5 mm typ. 15 mm
Reduction factor r_{Al}		0.33
Reduction factor r_{Cu}		0.3
Reduction factor r_{304}		0.74
Reduction factor r_{Brass}		0.41
Output type		3-wire

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Technical Data

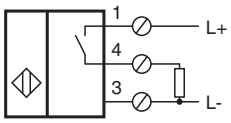
Nominal ratings		
Operating voltage	U_B	10 ... 30 V
Switching frequency	f	0 ... 200 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	U_d	≤ 2 V
Voltage drop at I_L		
Voltage drop I_L = 1 mA, switching element on	U_d	0.5 ... 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		
$MTTF_d$		1242 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)
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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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



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