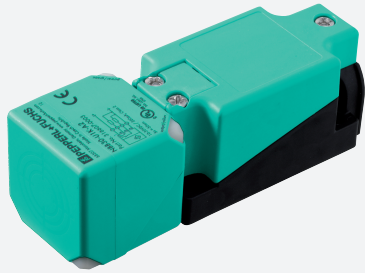


# Inductive sensor

## NBB30-U1K-A2



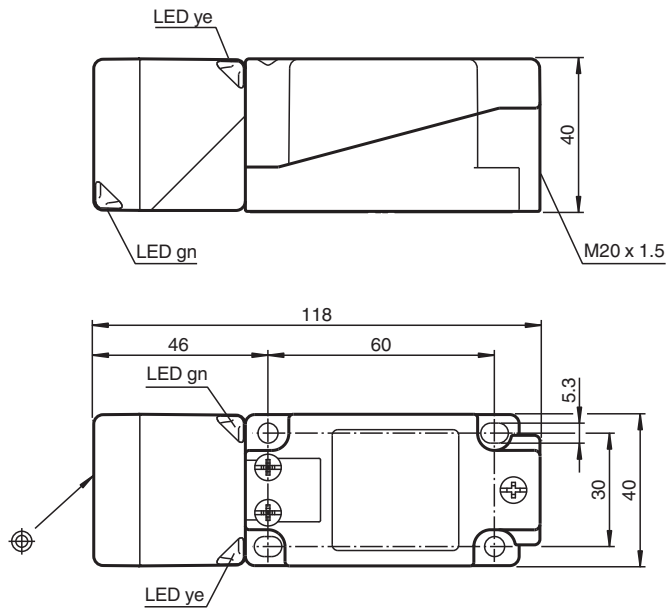
- 30 mm flush
- Active Shielding Technology
- 4-wire DC
- Sensor head bidirectional and rotatable
- 4 LEDs indicator for 360° visibility



### Function

Inductive sensors with active shielding technology detect in addition to the damping element also the installation environment. As a result, they keep the operating distance constantly high, regardless of the installation situation and the installation material.

### Dimensions



### Technical Data

#### General specifications

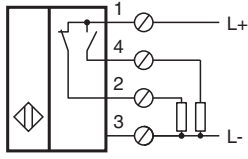
Switching function		complementary
Output type		PNP
Rated operating distance	$s_n$	30 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 24.3 mm
Actual operating distance	$s_r$	27 ... 33 mm typ.
Reduction factor $r_{Al}$		0.4
Reduction factor $r_{Cu}$		0.37

Release date: 2025-06-06 Date of issue: 2025-06-06 Filename: 316607-0003\_eng.pdf

## Technical Data

Reduction factor $r_{304}$		0.76
Reduction factor $r_{Brass}$		0.46
Output type		4-wire
<b>Nominal ratings</b>		
Operating voltage	$U_B$	10 ... 30 V DC
Switching frequency	$f$	0 ... 60 Hz
Hysteresis	$H$	typ. 2 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 2$ V
Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	0 ... 0.5 mA
No-load supply current	$I_0$	$\leq 20$ mA
Time delay before availability	$t_v$	80 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		899 a
Mission Time ( $T_M$ )		20 a
Diagnostic Coverage (DC)		0 %
<b>Compliance with standards and directives</b>		
Standard conformity		
Standards		EN IEC 60947-5-2
<b>Approvals and certificates</b>		
UL approval		cULus Listed Load Type: General Purpose Circuitry: Class 2 Power Source Enclosure Type Rating: Type 1 Supply/Switching Voltage: 30 V DC Output Switching Current: 200 mA
CCC approval		CCC approval / marking not required for products rated $\leq 36$ V
<b>Ambient conditions</b>		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
<b>Mechanical specifications</b>		
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 <sup>2</sup>
Minimum core cross-section		without wire end ferrules 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>
Maximum core cross-section		without wire end ferrules 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>
Housing material		PA
Sensing face		PA
Housing base		plastic
Degree of protection		IP68 / IP69
Mass		225 g
Dimensions		
Height		40 mm
Width		40 mm
Length		118 mm
Note		Tightening torque: 1.8 Nm (housing)

## Connection



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