

# Inductive sensor

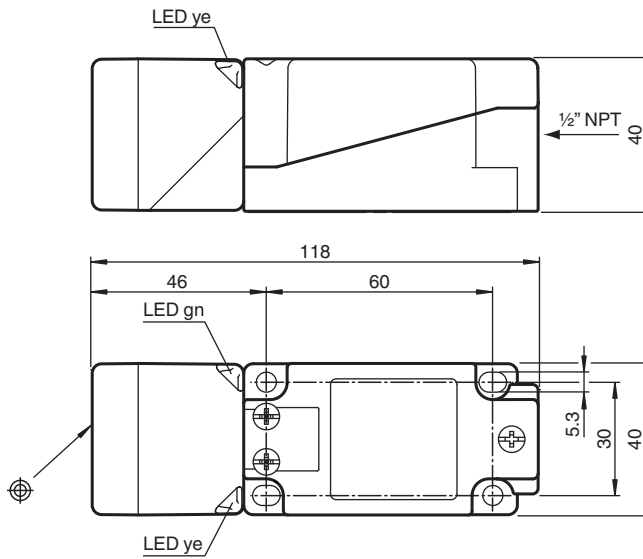
## NBB20-U2-UU



- Sensor head bidirectional and rotatable
- NO/NC selectable
- Comfort series



### Dimensions



### Technical Data

#### General specifications

Switching function		Normally open/closed (NO/NC)
Output type		Two-wire
Rated operating distance	$s_n$	20 mm
Installation		flush
Output polarity		AC/DC
Assured operating distance	$s_a$	0 ... 16.2 mm
Actual operating distance	$s_r$	18 ... 22 mm
Reduction factor $r_{AI}$		0.4
Reduction factor $r_{Cu}$		0.3

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

Pepperl+Fuchs Group  
www.pepperl-fuchs.com

USA: +1 330 486 0001  
fa-info@us.pepperl-fuchs.com

Germany: +49 621 776 1111  
fa-info@de.pepperl-fuchs.com

Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

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## Technical Data

Reduction factor $r_{304}$		0.77
Reduction factor $r_{Fe}$		1
Reduction factor $r_{Brass}$		0.43
Output type		2-wire
<b>Nominal ratings</b>		
Switching frequency	f	AC, 0 ... 30 Hz DC, 0 ... 100 Hz
Hysteresis	H	1 ... 10 typ. 5 %
Reverse polarity protection		reverse polarity tolerant
Short-circuit protection		pulsing
Voltage drop	$U_d$	≤ 5 V (typ. 2V) DC operation ≤ 8 V (typ. 3 V) AC operation
Momentary current (20 ms, 0.1 Hz)		0 ... 3000 mA
Operating current	$I_L$	5 ... 500 mA
Rated operating current	$I_e$	500 mA 50/60 Hz
Lowest operating current	$I_m$	5 mA
Off-state current	$I_r$	≤ 1.5 mA
Usage category		AC12 , AC140 , DC12 , DC13
Time delay before availability	$t_v$	≤ 300 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow
Error indicator		flashes when overcurrent
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		540 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Electrical specifications</b>		
Rated operating voltage	$U_e$	24 ... 250 V DC / 24 ... 230 V AC
Operating voltage	$U_B$	20 ... 275 V DC / 20 ... 253 V AC
<b>Compliance with standards and directives</b>		
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
<b>Approvals and certificates</b>		
Protection class		II
Rated insulation voltage	$U_i$	230 V
Rated impulse withstand voltage	$U_{imp}$	2.5 kV
UL approval		cULus Listed, General Purpose "For use in NFPA 79 Applications only" For overcurrent protection, install a fuse with a rated current of max. 3 A and at least 300 V AC/DC
CCC approval		Ue 75VDC - 250VDC Ue 75VAC - 230VAC
<b>Ambient conditions</b>		
Ambient temperature		-25 ... 85 °C (-13 ... 185 °F)
Storage temperature		-25 ... 85 °C (-13 ... 185 °F)
Pollution degree		3
<b>Mechanical specifications</b>		
Connection type		terminal compartment
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 ferrule 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>
Maximum core cross-section		without wire end ferrule 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>

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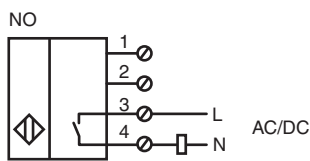
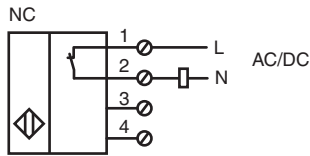
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**Technical Data**

Housing material	PA 6.6 / metal
Sensing face	PA 6.6
Housing base	plastic
Degree of protection	IP67
Mass	255 g

**Connection**



**Accessories**

	<b>MHW 01</b>	Modular mounting bracket
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## Connection

### Note

The sensor is designed for individual operation. A series or parallel connection of sensors is not permissible.