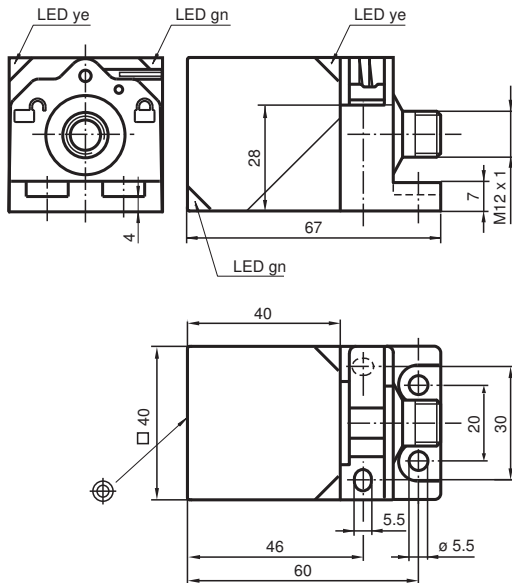


## Inductive sensor NBB20-L2-A2-V1-M

- Sensor head bidirectional and rotatable
- 20 mm flush
- E1-Type approval
- Extended temperature range  
-40 ... +85 °C
- 4 LEDs indicator for 360° visibility



### Dimensions



### Technical Data

#### General specifications

Switching function		complementary
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 $r_{Al}$		0.34
Reduction factor $r_{Cu}$		0.32
Reduction factor $r_{304}$		0.77
Reduction factor $r_{St37}$		1
Reduction factor $r_{Brass}$		0.43
Output type		4-wire

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

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**PF** PEPPERL+FUCHS

## Technical Data

### Nominal ratings

Operating voltage	$U_B$	10 ... 60 V DC
Switching frequency	f	0 ... 200 Hz
Hysteresis	H	typ. 5 %
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
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>		695 a
Mission Time (T <sub>M</sub> )		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

UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		Certified by China Compulsory Certification (CCC)
E1 Type approval		10R-04

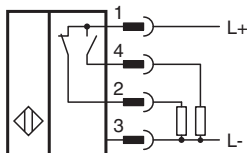
### Ambient conditions

Ambient temperature		-40 ... 85 °C (-40 ... 185 °F)
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### Mechanical specifications

Connection type		Connector plug M12 x 1 , 4-pin
Housing material		PA-GF35
Sensing face		PA-GF35
Degree of protection		IP69K
Cable		
Cable diameter		3.3 mm $\pm$ 0.15 mm
Mass		130 g

## Connection







## Mounting

Emitted interference and interference immunity in accordance with motor vehicle directive 2006/28/EG (e1 Type approval)  
 Interference immunity in accordance with DIN ISO 11452-2: 100 V/m  
 Frequency band 20 MHz up to 2 GHz

Mains-borne interference in accordance with ISO 7637-2: Pulse 1 2a 2b 3a 3b 4 5  
 Severity level III III III III III III IV  
 Failure criterion C A C A A A C

EN 61000-4-2: CD: 8 kV / AD: 15 kV  
 Severity level IV IV  
 EN 61000-4-3: 30 V/m (80...2500 MHz)  
 Severity level IV  
 EN 61000-4-4: 2 kV  
 Severity level III  
 EN 61000-4-6: 10 V (0.01...80 MHz)  
 Severity level III  
 EN 55011: Class A

## Accessories

	<b>V1-G-2M-PUR</b>	Female cordset single-ended M12 straight A-coded, 4-pin, PUR cable grey
	<b>V1-W-2M-PUR</b>	Female cordset single-ended M12 angled A-coded, 4-pin, PUR cable grey
	<b>MHW 01</b>	Modular mounting bracket
	<b>V1-M20-80</b>	Receptacles, M12/M20; plastic version

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