

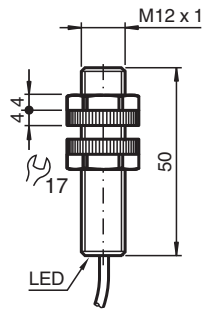


## Inductive sensor NBB4-12GK50-E2-M

- 4 mm flush
- E1-Type approval
- Increased noise immunity 100 V/m
- Extended temperature range  
-40 ... +85 °C
- With increased sealing, protection class  
IP68 / IP69K
- Highly shock and vibration resistant



### Dimensions



### Technical Data

General specifications		
Switching function		Normally open (NO)
Output type		PNP
Rated operating distance	$s_n$	4 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 3.24 mm
Actuating element		mild steel, e. g. 1.0037, SR235JR (formerly St37-2) 12 mm x 12 mm x 1 mm
Reduction factor $r_{Al}$		0.35
Reduction factor $r_{Cu}$		0.25
Reduction factor $r_{304}$		0.7
Reduction factor $r_{Brass}$		0.4
Output type		3-wire
Nominal ratings		
Operating voltage	$U_B$	5 ... 60 V
Switching frequency	$f$	0 ... 2500 Hz

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

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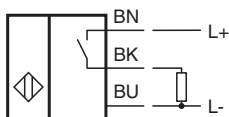
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## Technical Data

Hysteresis	H	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Inductive overvoltage protection		yes
Surge suppression		yes
Voltage drop	$U_d$	$\leq 2 \text{ V}$
Rated insulation voltage	$U_{BIS}$	60 V
Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 0.1 $\mu\text{A}$ at 25 °C
No-load supply current	$I_0$	$\leq 7 \text{ mA}$
Time delay before availability	$t_v$	$\leq 200 \text{ ms}$
Switching state indicator		LED, yellow
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		1006 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<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>		
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
<b>Ambient conditions</b>		
Ambient temperature		-40 ... 85 °C (-40 ... 185 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)
<b>Mechanical specifications</b>		
Connection type		cable PUR , 2 m
Core cross section		3 x 0.75 mm <sup>2</sup>
Housing material		PBT
Sensing face		PBT
Degree of protection		IP68 / IP69K
Cable		
Cable diameter		6 mm $\pm$ 0.2 mm
Bending radius		> 6 x cable diameter , cable in motion
Mass		110 g

## Connection




## Technical Features

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   3 a   3b   4   5  
 Severity level     III   III   III   III   III   III   III  
 Failure criterion   C   A   C   A   A   A   B

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

	<p><b>BF 12</b></p>	<p>Mounting flange, 12 mm</p>
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