

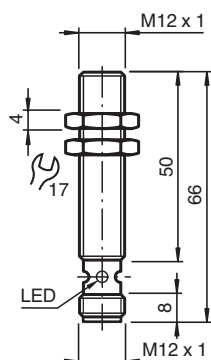


Inductive sensor NBB4-12GM50-E3-V1-M

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



Dimensions



Technical Data

General specifications

Switching function		Normally closed (NC)
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}		0.45
Reduction factor r_{Cu}		0.35
Reduction factor r_{304}		0.75
Reduction factor r_{Brass}		0.45
Output type		3-wire

Nominal ratings

Operating voltage	U_B	5 ... 60 V
Switching frequency	f	0 ... 2500 Hz
Hysteresis	H	typ. 5%
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing

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

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Technical Data

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 μA 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		Multihole-LED, yellow

Functional safety related parameters

MTTF _d		1000.5 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

UL approval		cULus Listed Load Type: General Purpose Circuitry: Class 2 Power Source Supply/Switching Voltage: 60 V DC Output Switching Current: 200 mA
CSA approval		cCSAus Listed, General Purpose, Class 2 Power Source
CCC approval		Certified by China Compulsory Certification (CCC)
E1 Type approval		10R-06

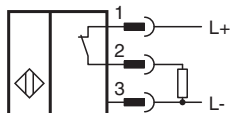
Ambient conditions

Ambient temperature		-40 ... 85 °C (-40 ... 185 °F)
Storage temperature		-40 ... 85 °C (-40 ... 185 °F)

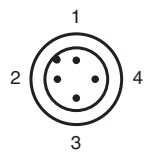
Mechanical specifications

Connection type		Connector plug
Housing material		brass, nickel-plated
Sensing face		PBT
Degree of protection		IP68 / IP69K
Connector		
Threading		M12 x 1
Number of pins		3
Mass		20 g
Dimensions		
Length		66 mm
Diameter		12 mm

Connection Assignment



Connection Assignment



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)

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
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

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