

# Inductive sensor

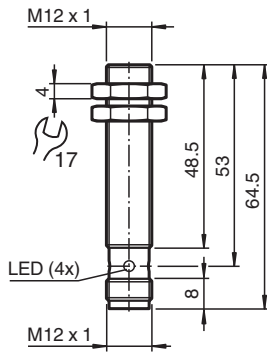
## NBB2-12GM50-A2-V1



- 2 mm flush
- Extended temperature range  
-40 ... +85 °C
- Extended operating voltage range
- Flexible use with versatile mounting opportunities
- Extremely high switching frequency



### Dimensions



### Technical Data

#### General specifications

Switching function	complementary	
Output type	PNP	
Rated operating distance	$s_n$	2 mm
Installation	flush	
Output polarity	DC	
Assured operating distance	$s_a$	0 ... 1.62 mm
Actuating element	mild steel, e. g. 1.0037, SR235JR (formerly St37-2) 12 mm x 12 mm x 1 mm	
Reduction factor $r_{Al}$	0.29	
Reduction factor $r_{Cu}$	0.23	
Reduction factor $r_{304}$	0.78	
Reduction factor $r_{Brass}$	0.42	
Output type	4-wire	

#### Nominal ratings

Operating voltage	$U_B$	6 ... 36 V
Switching frequency	$f$	0 ... 3500 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection	reverse polarity protected	
Short-circuit protection	pulsing	
Voltage drop	$U_d$	$\leq 1$ V

Release date: 2025-09-30 Date of issue: 2025-09-30 Filename: 326161-0029\_eng.pdf

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

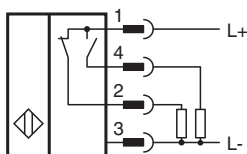
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

**PF** PEPPERL+FUCHS

## Technical Data

Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	max. 20 $\mu$ A
No-load supply current	$I_0$	$\leq$ 15 mA
Time delay before availability	$t_v$	$\leq$ 10 ms
Switching state indicator		Multihole-LED, yellow
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		1193 a
Mission Time (T <sub>M</sub> )		20 a
Diagnostic Coverage (DC)		0 %
<b>Conformity</b>		
PWIS conformity		VDMA 24364-A1/B2/C1/T100°C-W
<b>Compliance with standards and directives</b>		
Standard conformity		
Standards		EN IEC 60947-5-2
<b>Approvals and certificates</b>		
Protection class		II
Rated insulation voltage	$U_i$	36 V
Rated impulse withstand voltage	$U_{imp}$	500 V
UL approval		cULus Listed Load Type: General Purpose Circuitry: Class 2 Power Source Enclosure Type Rating: Type 1 Supply/Switching Voltage: 36 V DC Output Switching Current: 200 mA
CCC approval		CCC approval / marking not required for products rated $\leq$ 36 V
Marine approval		DNVGL TAA00003AK
<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		Connector plug
Housing material		brass , white bronze coated
Sensing face		PBT , green
Degree of protection		IP65 / IP66 / IP67 / IP68
Connector		
Threading		M12 x 1
Number of pins		4
Mass		29 g
Dimensions		
Length		64.5 mm
Diameter		12 mm
Mounting		with nuts, M12
Tightening torque		$\leq$ 10 Nm
<b>General information</b>		
Scope of delivery		2 self locking nuts in scope of delivery

## Connection Assignment



## Connection Assignment

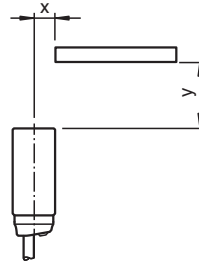
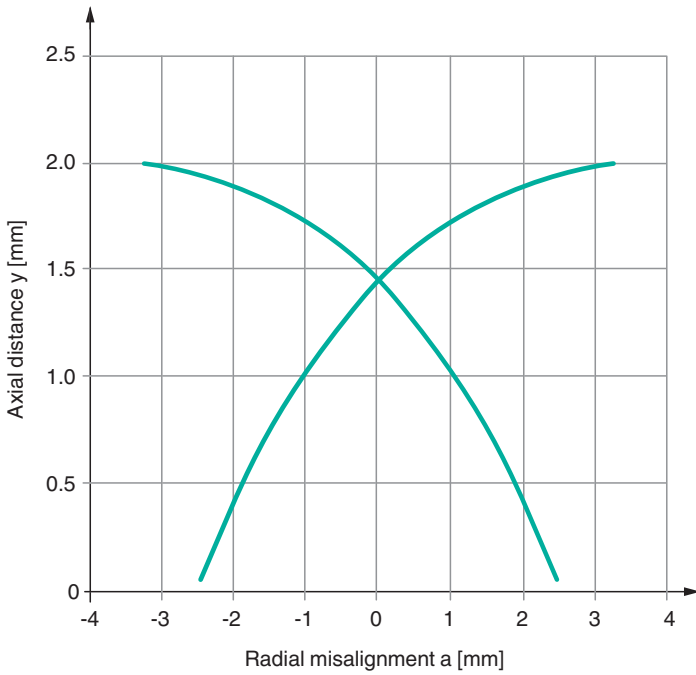


Wire colors in accordance with EN 60947-5-2

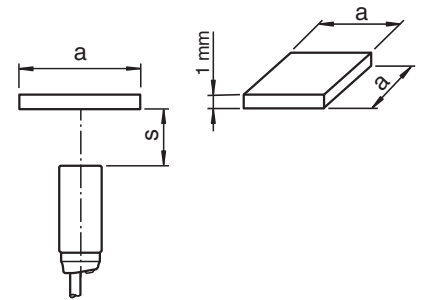
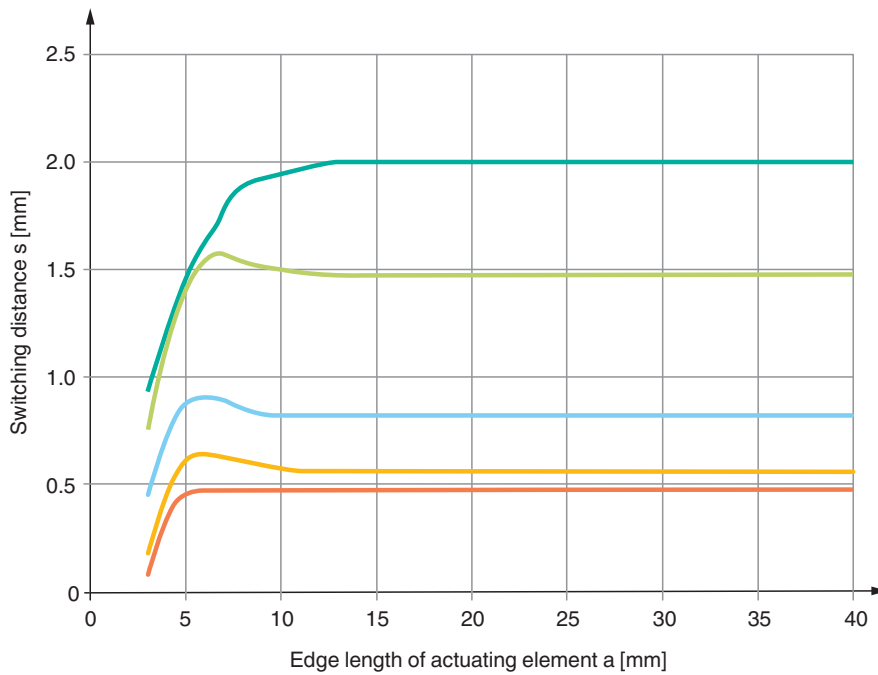
1		BN	(brown)
2		WH	(white)
3		BU	(blue)
4		BK	(black)

**Characteristic Curve**

**Actuation by radial approach (standard target)**



**Switching distance depending on the actuating element**



- Steel
- Stainless steel
- Brass
- Aluminum
- Copper

Release date: 2025-09-30 Date of issue: 2025-09-30 Filename: 326161-0029\_eng.pdf

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