

# Inductive sensor

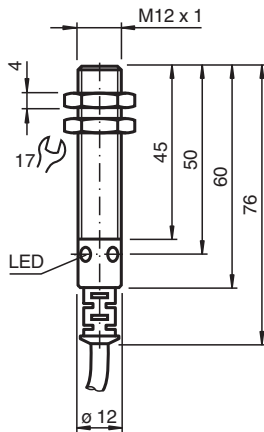
## NBB4-12GM45-E3-M



- Basic series
- 4 mm flush
- Increased operating distance
- Extended temperature range  
-40 ... +85 °C
- E1-Type approval
- Increased noise immunity 100 V/m



### 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
Reduction factor $r_{Al}$		0.45
Reduction factor $r_{Cu}$		0.35
Reduction factor $r_{304}$		0.7
Output type		3-wire

#### Nominal ratings

Operating voltage	$U_B$	10 ... 60 V
Switching frequency	$f$	0 ... 800 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing

Release date: 2020-12-10 Date of issue: 2020-12-10 Filename: 233862\_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

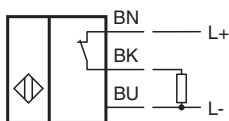
Singapore: +65 6779 9091  
fa-info@sg.pepperl-fuchs.com

 PEPPERL+FUCHS

## Technical Data

Voltage drop	$U_d$	$\leq 2.5$ 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 $\mu$ A
No-load supply current	$I_0$	$\leq 15$ mA
Time delay before availability	$t_v$	$\leq 5$ ms
Switching state indicator		LED, yellow
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		1560 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 IEC 60947-5-2:2007
<b>Approvals and certificates</b>		
Protection class		II
Rated insulation voltage	$U_i$	60 V
Rated impulse withstand voltage	$U_{imp}$	800 V
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)
<b>Mechanical specifications</b>		
Connection type		cable PUR , 2 m
Core cross-section		0.75 mm <sup>2</sup>
Housing material		brass, nickel-plated
Sensing face		PBT
Degree of protection		IP69K
Mass		120 g

## Connection Assignment



Release date: 2020-12-10 Date of issue: 2020-12-10 Filename: 233862\_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

 PEPPERL+FUCHS


## Safety Information

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  
 Severity level III III III III III III  
 Failure criterion C A C A A A

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>EXG-12</b>	Quick mounting bracket with dead stop
---	---------------	---------------------------------------

Release date: 2020-12-10 Date of issue: 2020-12-10 Filename: 233862\_eng.pdf