

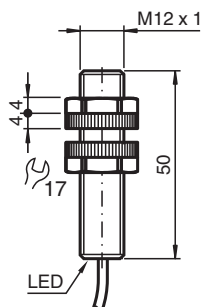


## Inductive sensor NBN7-12GK50-E2-M

- 7 mm non-flush
- Extended temperature range  
-40 ... +85 °C
- Increased noise immunity 100 V/m
- E1-Type approval
- 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	$s_n$	7 mm
Installation		non-flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 5.67 mm
Reduction factor $r_{Al}$		0.5
Reduction factor $r_{Cu}$		0.4
Reduction factor $r_{304}$		0.7
Reduction factor $r_{Brass}$		0.5
Output type		3-wire

#### Nominal ratings

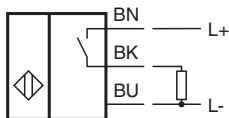
Operating voltage	$U_B$	5 ... 60 V
Switching frequency	$f$	0 ... 1500 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Inductive overvoltage protection		yes
Surge suppression		yes
Voltage drop	$U_d$	$\leq 2$ V
Rated insulation voltage	$U_{Bis}$	60 V

Release date: 2025-06-05 Date of issue: 2025-06-05 Filename: 248864\_eng.pdf

## Technical Data

Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 6 $\mu$ A at 25 °C
No-load supply current	$I_0$	$\leq$ 7 mA
Time delay before availability	$t_v$	$\leq$ 200 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 IEC 60947-5-2
<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
Housing material		PBT
Sensing face		PBT
Degree of protection		IP68 / IP69K
<b>Cable</b>		
Wire end ferrules		yes
Cable diameter		6 mm $\pm$ 0.2 mm
Bending radius		> 6 x cable diameter
Material		PUR
Color		black
Number of cores		3
Core cross section		0.75 mm <sup>2</sup>
Length	L	2 m
Mass		110 g
<b>Dimensions</b>		
Length		50 mm
Diameter		12 mm

## Connection Assignment



## 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 3a 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