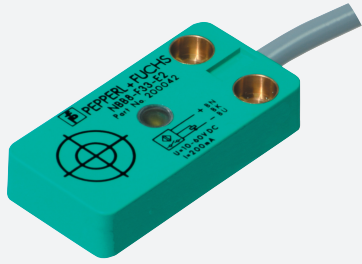


# Inductive sensor

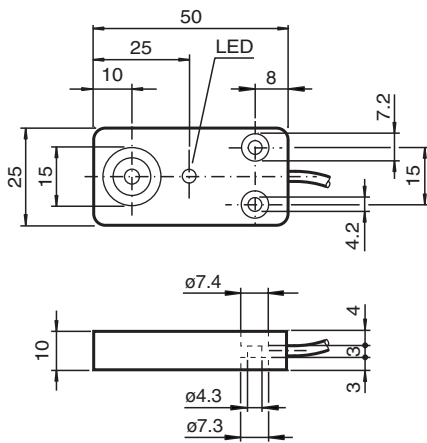
## NBB8-F33-E1-M



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



### Dimensions



### Technical Data

General specifications		
Switching function		Normally closed (NC)
Output type		NPN
Rated operating distance	$s_n$	8 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 6.48 mm
Reduction factor $r_{Al}$		0.3
Reduction factor $r_{Cu}$		0.2
Reduction factor $r_{304}$		0.6
Output type		3-wire
Nominal ratings		
Operating voltage	$U_B$	5 ... 60 V
Switching frequency	$f$	0 ... 350 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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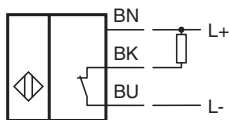
Singapore: +65 6779 9091  
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 PEPPERL+FUCHS

## Technical Data

Voltage drop	$U_d$	$\leq 2 \text{ V}$
Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	0 ... 0.1 mA
No-load supply current	$I_0$	$\leq 10 \text{ mA}$
Time delay before availability	$t_v$	$\leq 80 \text{ ms}$
Switching state indicator		LED yellow
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		1150 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>		
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		0.5 mm <sup>2</sup>
Housing material		PBT
Sensing face		PBT
Degree of protection		IP67 / IP69K
Note		Tightening torque: 5 Nm

## Connection



## Mounting

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 5  
 Severity level III III III III III III IV  
 Failure criterion C A C A A A C

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