



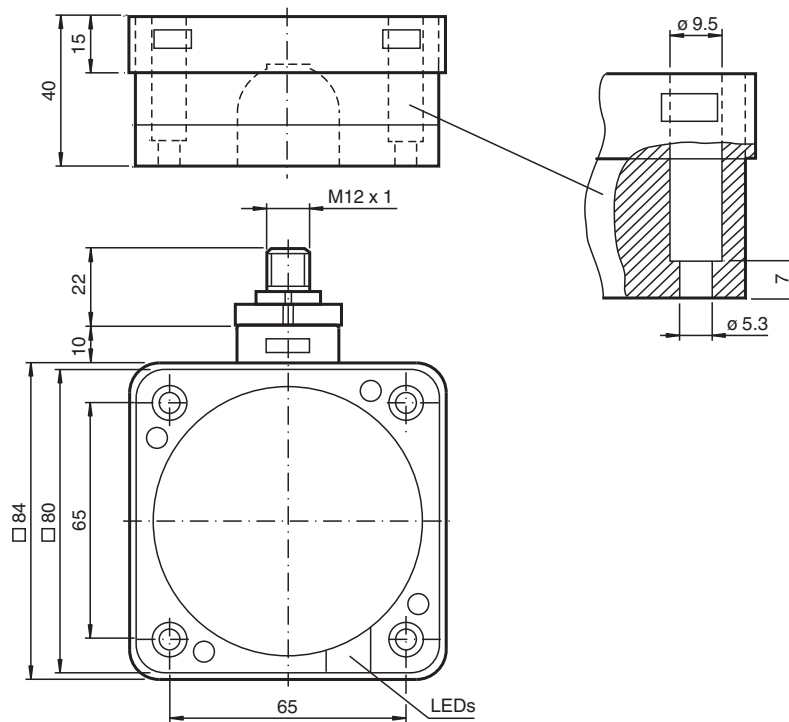
# Inductive sensor

## NRB50-FP-E2-C-P3-V1

- 50 mm flush
- Reduction factor = 1
- Weld Immune
- Short-term interference suppression magnetic fields



### Dimensions



### Technical Data

#### General specifications

Switching function		Normally open (NO)
Output type		PNP
Rated operating distance	$s_n$	50 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 40.5 mm
Reduction factor $r_{Al}$		1
Reduction factor $r_{Cu}$		1
Reduction factor $r_{304}$		1
Reduction factor $r_{St37}$		1
Output type		3-wire

#### Nominal ratings

Operating voltage	$U_B$	10 ... 30 V DC
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Refer to "General Notes Relating to Pepperl+Fuchs Product Information".

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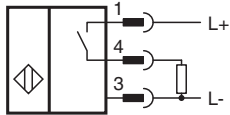
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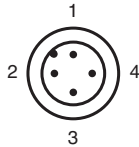
## Technical Data

Switching frequency	f	0 ... 1 Hz
Hysteresis	H	typ. 3 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	U <sub>d</sub>	≤ 3 V
Temperature drift		± 10 % at 0 ... 50 °C (32 ... 122 °F) ± 20 % at -25 ... 0 °C (-13 ... 32 °F) and 50 ... 70 °C (122 ... 158 °F)
Rated insulation voltage	U <sub>BIS</sub>	50 V
Operating current	I <sub>L</sub>	0 ... 200 mA
Off-state current	I <sub>r</sub>	0 ... 0.5 mA
No-load supply current	I <sub>0</sub>	≤ 20 mA
Time delay before availability	t <sub>v</sub>	≤ 300 ms
Constant magnetic field	B	5 mT
Alternating magnetic field	B	5 mT
Tuning-out		typ. 50 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow
<b>Functional safety related parameters</b>		
MTTF <sub>d</sub>		944 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 Circuitry: Class 2 Power Source Enclosure Type Rating: Type 1 Supply/Switching Voltage: 30 V DC Output Switching Current: 200 mA
CCC approval		CCC approval / marking not required for products rated ≤36 V
<b>Ambient conditions</b>		
Ambient temperature		-25 ... 70 °C (-13 ... 158 °F)
<b>Mechanical specifications</b>		
Connection type		Connector plug
Housing material		PBT/metal
Sensing face		PBT, PTFE coated
Housing base		PBT
Degree of protection		IP68
Connector		
Threading		M12 x 1
Number of pins		4
Dimensions		
Height		40 mm
Width		84 mm
Length		84 mm

## Connection



## Connection Assignment



Wire colors in accordance with EN 60947-5-2

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

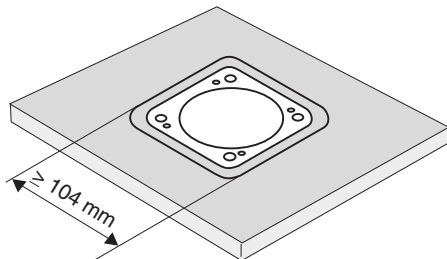
## Mounting

These sensors are particularly suitable for embedded installation in floor conveyor systems. The installation of the switch in a metal base plate provides it with considerable protection against mechanical damage.

Care should be taken to ensure that the cut out in the base plate is at least 104 mm x 104 mm and that the sensor is positioned centrally within this cut out.

The active surface of the sensor must not be recessed with respect to the front face of the base plate.

The high switching distance guarantees safe detection and thus control of the floor conveyor system.



### Caution!

After removal of the metal screen the proximity switch can no longer be mounted as an embedded installation.

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