



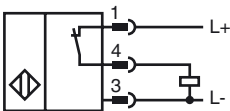
Model Number

NBB4-F1-E3-V3

Features

- 4 mm flush
- 3-wire DC

Connection



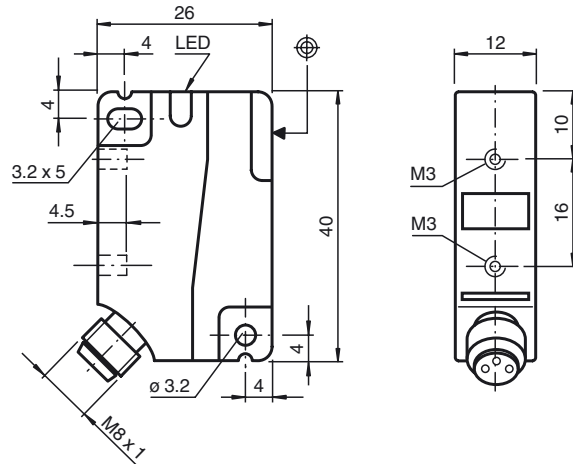
Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
3	BU	(blue)
4	BK	(black)

Dimensions



Technical Data

General specifications

Switching element function	PNP	NC
Rated operating distance	s_n	4 mm
Installation	flush	
Output polarity	DC	
Assured operating distance	s_a	0 ... 3.24 mm
Reduction factor r_{AI}	0.4	
Reduction factor r_{Cu}	0.45	
Reduction factor r_{304}	0.8	
Reduction factor r_{Brass}	0.55	

Nominal ratings

Operating voltage	U_B	10 ... 30 V DC
Switching frequency	f	0 ... 1400 Hz
Hysteresis	H	typ. 5%
Reverse polarity protected	reverse polarity protected	
Short-circuit protection	pulsing	
Voltage drop	U_d	≤ 2.5 V
Rated insulation voltage	U_{BIS}	60 V
Operating current	I_L	0 ... 250 mA
Off-state current	I_r	0 ... 0.01 mA typ. 0.1 μ A at 25 °C
No-load supply current	I_0	≤ 15 mA
Indication of the switching state	LED, yellow	

Functional safety related parameters

MTTF _d	1640 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Ambient conditions

Ambient temperature	-25 ... 70 °C (-13 ... 158 °F)
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Mechanical specifications

Connection type	Device connector M8 x 1, 3-pin
Housing material	PA
Sensing face	PA
Protection degree	IP67
Tightening torque, fastening screws	Threading M3 max: 1.1 Nm

Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

Protection class	II
Rated insulation voltage	U_i 60 V
Design-impulse-voltage withstand	U_{imp} 800 V
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Products with a maximum operating voltage of ≤ 36 V do not bear a CCC marking because they do not require approval.

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