



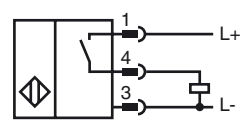
**Model Number**

NBB20-L2-E2-C-V1

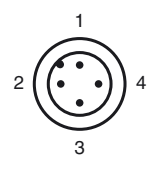
**Features**

- 20 mm embeddable
- 3-wire DC
- Weld Immune
- Quick mounting bracket
- 4-way LED indicator

**Connection**



**Pinout**



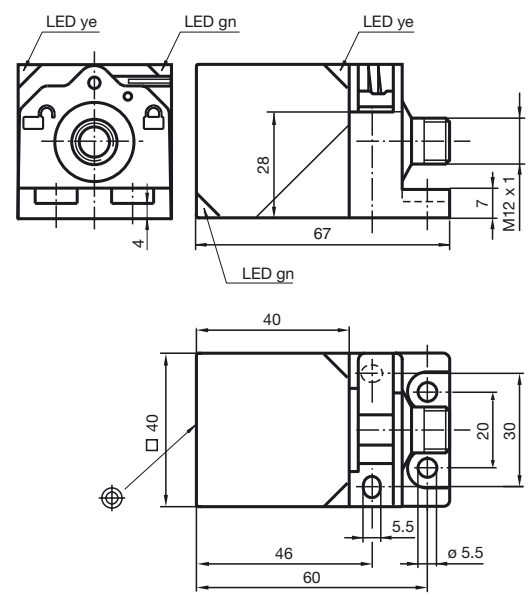
Wire colors in accordance with EN 60947-5-2

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

**Accessories**

- V1-G**  
4-pin, M12 female field-attachable connector
- V1-W**  
4-pin, M12 female field-attachable connector
- V1-G-2M-PUR**  
Cable socket, M12, 4-pin, PUR cable
- V1-W-2M-PUR**  
Cable socket, M12, 4-pin, PUR cable
- MHW 01**  
Modular mounting bracket
- MH 02-L**  
Subject to modifications without notice

**Dimensions**



**Technical Data**

General specifications	
Switching element function	PNP NO
Rated operating distance	$s_n$ 20 mm
Installation	embeddable
Output polarity	DC
Assured operating distance	$s_a$ 0 ... 16.2 mm
Reduction factor $r_{Al}$	0.33
Reduction factor $r_{Cu}$	0.31
Reduction factor $r_{303}$	0.74
Reduction factor $r_{Brass}$	0.41
Nominal ratings	
Operating voltage	$U_B$ 10 ... 30 V DC
Switching frequency	$f$ 0 ... 10 Hz
Hysteresis	$H$ typ. 5 %
Reverse polarity protected	reverse polarity protected
Short-circuit protection	pulsing
Voltage drop	$U_d$ $\leq$ 3 V
Operating current	$I_L$ 0 ... 200 mA
Off-state current	$I_r$ 0 ... 0.5 mA
No-load supply current	$I_0$ $\leq$ 20 mA
Operating voltage display	LED, green
Indication of the switching state	LED, yellow
Functional safety related parameters	
MTTF <sub>d</sub>	1170 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %
Ambient conditions	
Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Storage temperature	-25 ... 85 °C (-13 ... 185 °F)
Mechanical specifications	
Connection type	Device connector M12 x 1 , 4-pin
Housing material	PA
Sensing face	PA
Protection degree	IP69K
Mass	130 g
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	$U_i$ 253 V
Design-impulse-voltage withstand	$U_{imp}$ 4000 V
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Products with a maximum operating voltage of $\leq$ 36 V do not bear a CCC marking because they do not require approval.

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