



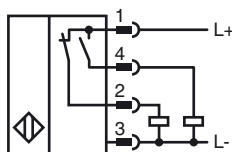
**Model Number**

NBB20-L2-A2-V1

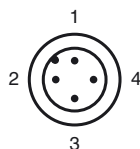
**Features**

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

**Connection**



**Pinout**



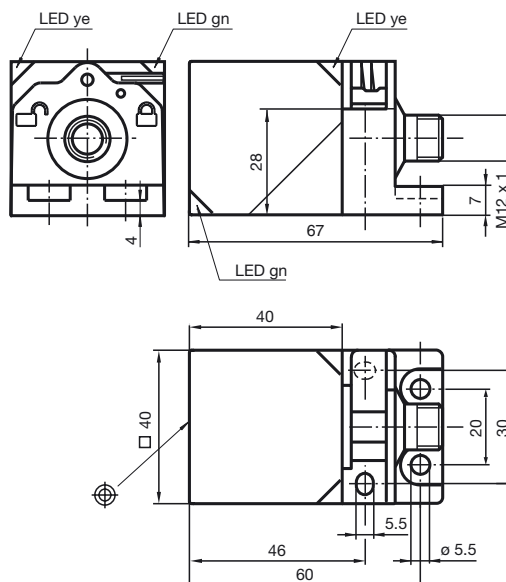
Wire colors in accordance with EN 60947-5-2

- |   |    |         |
|---|----|---------|
| 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**  
Mounting aid

**Dimensions**



**Technical Data**

**General specifications**

Switching element function	PNP	NO/NC
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 ... 150 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protected		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 2$ 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>	1230 a
Mission Time ( $T_M$ )	20 a
Diagnostic Coverage (DC)	0 %

**Ambient conditions**

Ambient temperature	-25 ... 85 °C (-13 ... 185 °F)
Storage temperature	-40 ... 85 °C (-40 ... 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.

Release date: 2011-08-19 10:04 Date of issue: 2011-08-19 187548\_eng.xml