



Model Number
NBB20-L2-A2-V1-M

Features

- Sensor head bidirectional and rotatable
- 20 mm flush
- E1-Type approval
- Extended temperature range -40 ... +85 °C
- 4 LEDs indicator for 360° visibility

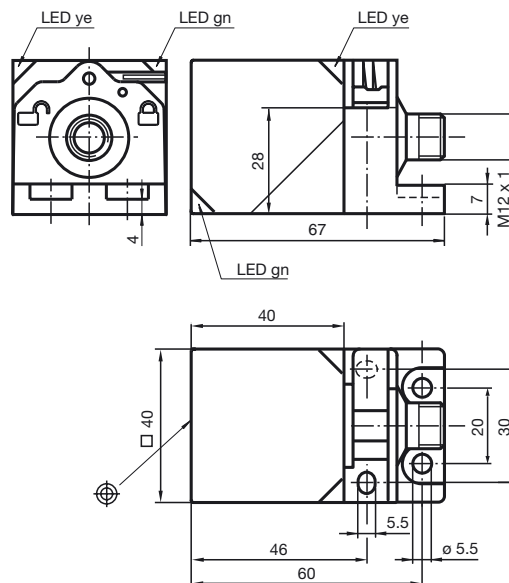
Accessories

- V1-G**
Female connector, M12, 4-pin, field attachable
- V1-W**
Female connector, M12, 4-pin, field attachable
- V1-G-2M-PUR**
Female cordset, M12, 4-pin, PUR cable
- V1-W-2M-PUR**
Female cordset, M12, 4-pin, PUR cable
- MHW 01**
Modular mounting bracket
- V1-M20-80**
Receptacles, M12/M20; plastic version

Technical Data

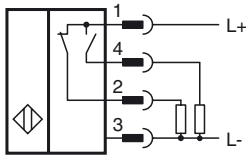
General specifications	
Switching function	complementary
Output type	PNP
Rated operating distance	s_n 20 mm
Installation	flush
Output polarity	DC
Assured operating distance	s_a 0 ... 16.2 mm
Actual operating distance	s_r 18 ... 22 mm typ. 20 mm
Reduction factor r_{Al}	0.34
Reduction factor r_{Cu}	0.32
Reduction factor r_{304}	0.77
Reduction factor r_{St37}	1
Reduction factor r_{Brass}	0.43
Output type	4-wire
Nominal ratings	
Operating voltage	U_B 10 ... 60 V DC
Switching frequency	f 0 ... 200 Hz
Hysteresis	H typ. 5 %
Reverse polarity protection	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 indicator	LED, green
Switching state indicator	LED, yellow
Functional safety related parameters	
MTTF _d	695 a
Mission Time (T_M)	20 a
Diagnostic Coverage (DC)	0 %
Ambient conditions	
Ambient temperature	-40 ... 85 °C (-40 ... 185 °F)
Mechanical specifications	
Connection type	Connector plug M12 x 1, 4-pin
Housing material	PA-GF35
Sensing face	PA-GF35
Degree of protection	IP69K
Cable	
Cable diameter	3.3 mm \pm 0.15 mm
Mass	130 g
Compliance with standards and directives	
Standard conformity	
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012
Approvals and certificates	
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)
E1 Type approval	10R-04

Dimensions



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Electrical Connection



Installation Hint

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	3 a	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