



Model Number
NBB20-U1-A0-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
MHW 01
Modular mounting bracket

Technical Data

General specifications

Switching element function		NPN	NO/NC
Rated operating distance	s_n	20 mm	
Installation		flush	
Output polarity		DC	
Assured operating distance	s_a	0 ... 16.2 mm	
Reduction factor r_{Al}		0.34	
Reduction factor r_{Cu}		0.32	
Reduction factor r_{304}		0.77	
Reduction factor r_{S37}		1	
Reduction factor r_{Brass}		0.43	

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	≤ 2 V	
Operating current	I_L	0 ... 200 mA	
Off-state current	I_r	0 ... 0.5 mA	
No-load supply current	I_0	≤ 20 mA	
Operating voltage indicator		LED, green	
Switching state indicator		LED, yellow	

Functional safety related parameters

MTTF _d		670 a
Mission Time (T _M)		20 a
Diagnostic Coverage (DC)		0 %

Ambient conditions

Ambient temperature		-40 ... 85 °C (-40 ... 185 °F)
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Mechanical specifications

Connection type		screw terminals
Core cross-section		≤ 2.5 mm ²
Housing material		PA/metal with epoxy powder coating
Sensing face		PA-GF35
Housing base		plastic
Degree of protection		IP68 / IP69K
Mass		225 g
Note		Tightening torque: 1.8 Nm (housing) Tightening torque: 1.0 Nm (Screw terminal)

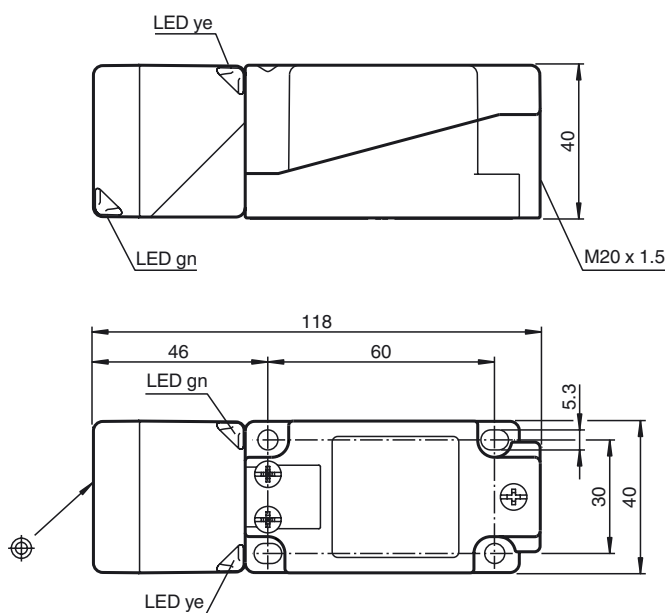
Compliance with standards and directives

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

Approvals and certificates

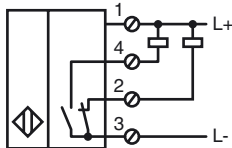
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		Certified by China Compulsory Certification (CCC)
E1 Type approval		10R-04

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	3a	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