



Model Number

NBB15-U1-A2-M

Features

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

Accessories

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

Technical Data

General specifications

Switching element function		PNP	NO/NC
Rated operating distance	s_n	15 mm	
Installation		flush	
Output polarity		DC	
Assured operating distance	s_a	0 ... 12.15 mm	
Reduction factor r_{Al}		0.34	
Reduction factor r_{Cu}		0.32	
Reduction factor r_{304}		0.77	
Reduction factor r_{Brass}		0.43	

Nominal ratings

Operating voltage	U_B	10 ... 60 V
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

Ambient conditions

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

Connection type	screw terminals
Information for connection	A maximum of two conductors with the same core cross-section may be mounted on one terminal connection! tightening torque 1.2 Nm + 10 %
Core cross-section	up to 2.5 mm ²
Minimum core cross-section	without wire end ferrule 0.5 mm ² , with connector sleeves 0.34 mm ²
Maximum core cross-section	without wire end ferrule 2.5 mm ² , with connector sleeves 1.5 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)

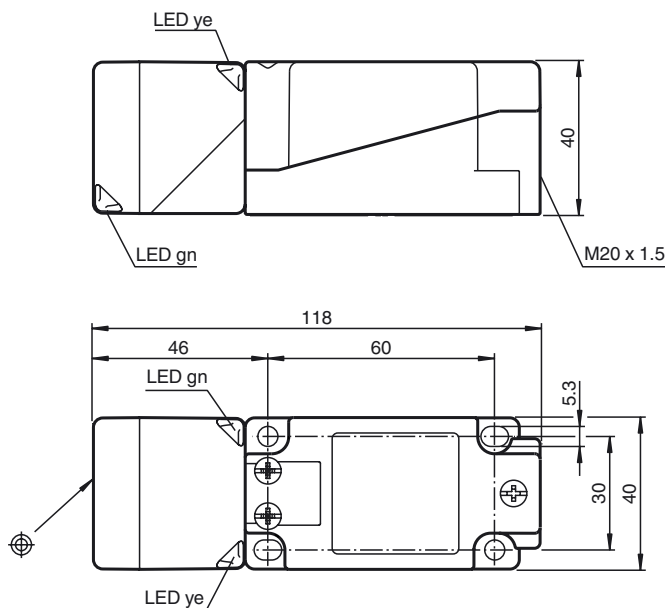
Compliance with standards and directives

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

Approvals and certificates

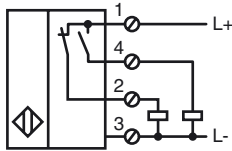
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)
E1 Type approval	10R-04

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