



## Model Number

**NBB15-U1-Z2**

## Features

- Sensor head bidirectional and rotatable
- 15 mm flush
- 2 LEDs indicator for 360° visibility

## 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 function		Normally open/closed (NO/NC)
Output type		Two-wire
Rated operating distance	$s_n$	15 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 12.15 mm
Actual operating distance	$s_r$	13.5 ... 16.5 mm typ. 15 mm
Reduction factor $r_{AI}$		0.3
Reduction factor $r_{Cu}$		0.3
Reduction factor $r_{304}$		0.7
Output type		2-wire

### Nominal ratings

Operating voltage	$U_B$	5 ... 60 V
Switching frequency	$f$	0 ... 400 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		reverse polarity tolerant
Short-circuit protection		yes
Voltage drop	$U_d$	$\leq 5$ V
Voltage drop at $I_L$		
Voltage drop $I_L = 100$ mA, switching element on $U_d$		... 5 V
Operating current	$I_L$	2 ... 200 mA
Off-state current	$I_r$	0 ... 0.5 mA
Switching state indicator		2 LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>	1133 a
Mission Time ( $T_M$ )	20 a
Diagnostic Coverage (DC)	0 %

### Ambient conditions

Ambient temperature	-25 ... 85 °C (-13 ... 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 <sup>2</sup>
Minimum core cross-section	without wire end ferrule 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>
Maximum core cross-section	without wire end ferrule 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>
Housing material	PA/metal with epoxy powder coating
Sensing face	PA
Housing base	plastic
Degree of protection	IP68 / IP69K
Mass	225 g
Note	Tightening torque: 1.8 Nm (housing)

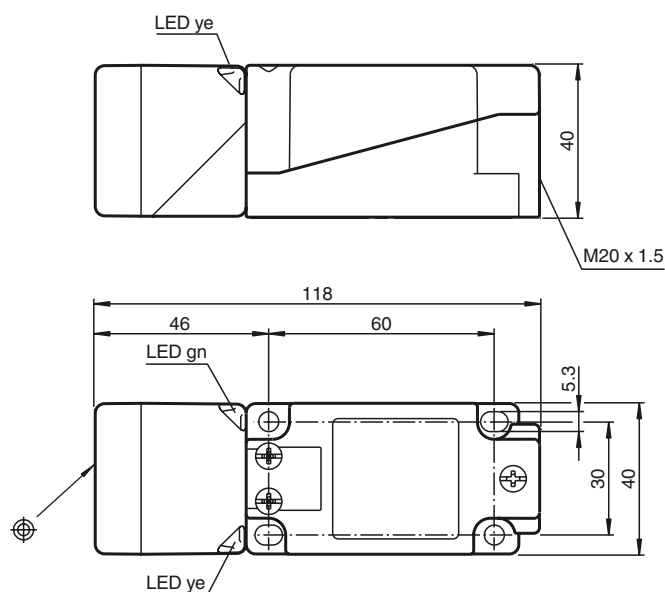
### Compliance with standards and directives

Standard conformity	
Standards	EN 60947-5-2:2007 EN 60947-5-2/A1:2012 IEC 60947-5-2:2007 IEC 60947-5-2 AMD 1:2012

### Approvals and certificates

EAC conformity	TR CU 020/2011
UL approval	cULus Listed, General Purpose
CCC approval	Certified by China Compulsory Certification (CCC)

## Dimensions



# Electrical Connection

