



## Model Number

NBB20-U1-UU

## Features

- Sensor head bidirectional and rotatable
- NO/NC selectable
- Comfort series
- 20 mm flush

## Accessories

MHW 01

Modular mounting bracket

## Technical Data

### General specifications

Switching function		Normally open/closed (NO/NC)
Output type		Two-wire
Rated operating distance	$s_n$	20 mm
Installation		flush
Output polarity		AC/DC
Assured operating distance	$s_a$	0 ... 16.2 mm
Actual operating distance	$s_r$	18 ... 22 mm
Reduction factor $r_{Al}$		0.4
Reduction factor $r_{Cu}$		0.3
Reduction factor $r_{304}$		0.77
Reduction factor $r_{Fe}$		1
Reduction factor $r_{Brass}$		0.43
Output type		2-wire

### Nominal ratings

Switching frequency	f	AC, 0 ... 30 Hz DC, 0 ... 100 Hz
Hysteresis	H	1 ... 10 typ. 5 %
Reverse polarity protection		reverse polarity tolerant
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 5$ V (typ. 2V) DC operation $\leq 8$ V (typ. 3 V) AC operation
Momentary current (20 ms, 0.1 Hz)		0 ... 3000 mA

### Design data

Operating current	$I_L$	5 ... 500 mA
Off-state current	$I_r$	$\leq 1.5$ mA
Time delay before availability	$t_v$	$\leq 300$ ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow
Error indicator		flashes when overcurrent

### Functional safety related parameters

MTTF <sub>d</sub>	540 a
Mission Time (T <sub>M</sub> )	20 a
Diagnostic Coverage (DC)	0 %

### Electrical specifications

Rated operating voltage	$U_e$	24 ... 250 V DC / 24 ... 230 V AC
Operating voltage	$U_B$	20 ... 300 V DC / 20 ... 253 V AC

### Ambient conditions

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

### Mechanical specifications

Connection type	terminal compartment
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 6.6 / metal
Sensing face	PA 6.6
Housing base	plastic
Degree of protection	IP67

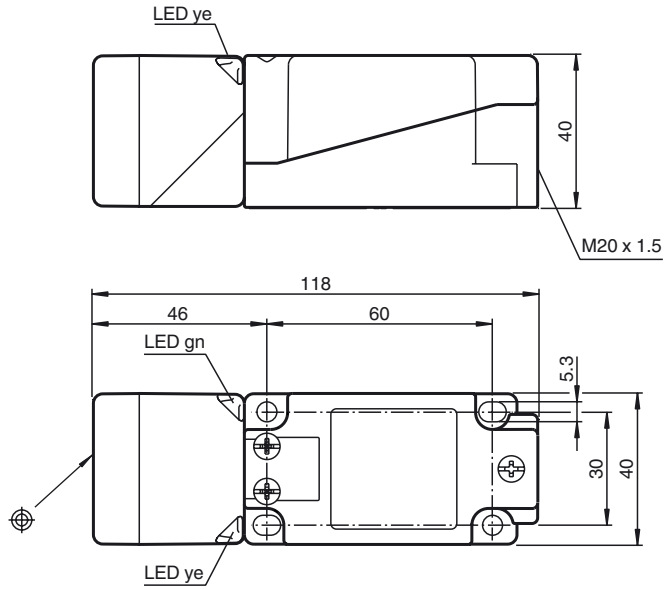
### Compliance with standards and directives

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

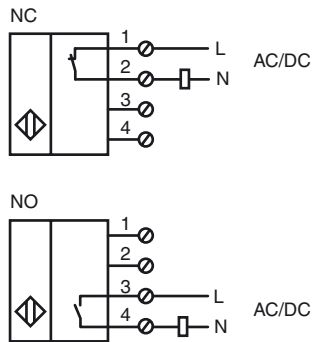
### Approvals and certificates

Protection class	II
Rated insulation voltage	$U_i$ 230 V
Rated impulse withstand voltage	$U_{imp}$ 2.5 kV
UL approval	cULus Listed, General Purpose "For use in NFPA 79 Applications only" For overcurrent protection, install a fuse with a rated current of max. 3 A and at least 300 V AC/DC
CCC approval	Ue 75VDC - 250VDC Ue 75VAC - 230VAC

**Dimensions**



**Electrical Connection**



**Note**

The sensor is designed for individual operation. A series or parallel connection of sensors is not permissible.