



## Model Number

NBB20-U1-E2-V1

## Features

- Sensor head bidirectional and rotatable
- 20 mm flush
- 3-wire DC
- 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

### MH 04-2681F

Mounting aid for VariKont, +U1+ and +U9\*

## Technical Data

### General specifications

Switching function		Normally open (NO)
Output type		PNP
Rated operating distance	$s_n$	20 mm
Installation		flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 16.2 mm
Reduction factor $r_{Al}$		0.33
Reduction factor $r_{Cu}$		0.31
Reduction factor $r_{304}$		0.74
Reduction factor $r_{Brass}$		0.41
Output type		3-wire

### Nominal ratings

Operating voltage	$U_B$	10 ... 30 V DC
Switching frequency	$f$	0 ... 440 Hz
Hysteresis	$H$	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	$U_d$	$\leq 2$ V
Design data		
Operating current	$I_L$	0 ... 200 mA
Off-state current	$I_r$	0 ... 0.5 mA typ. 0.01 mA
No-load supply current	$I_0$	$\leq 20$ mA
Time delay before availability	$t_v$	80 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>		1289 a
Mission Time ( $T_M$ )		20 a
Diagnostic Coverage (DC)		0 %

### Ambient conditions

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

### Mechanical specifications

Connection type		Connector plug M12 x 1, 4-pin
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)

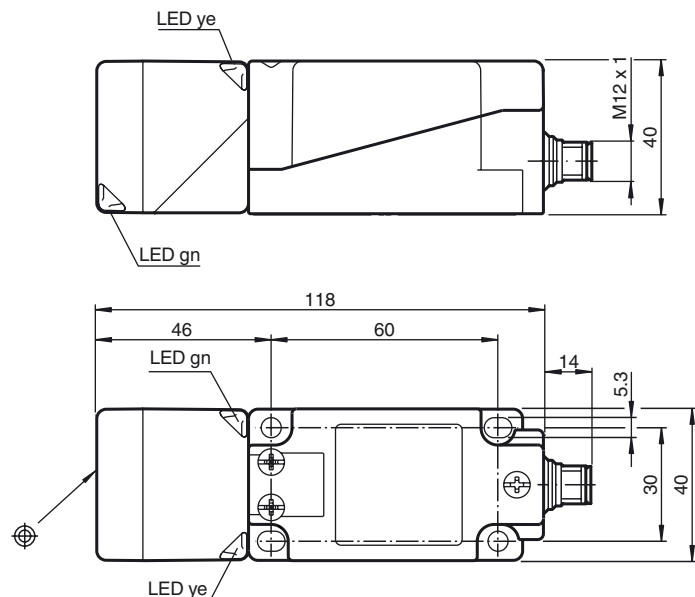
### Compliance with standards and directives

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

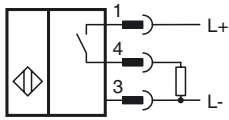
### Approvals and certificates

UL approval		cULus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated $\leq 36$ V

## Dimensions



Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

1	BN	(brown)
2	WH	(white)
3	BU	(blue)
4	BK	(black)