



### Model Number

NBB20-U1-A2-T-V1

### Features

- Sensor head bidirectional and rotatable
- 20 mm flush
- 4-wire DC
- 4 LEDs indicator for 360° visibility
- Temperature range -25 ... 100 °C (-13 ... 212 °F)

### Accessories

#### MHW 01

Modular mounting bracket

#### MH 04-2681F

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

#### V1-G

Female connector, M12, 4-pin, field attachable

#### V1-W

Female connector, M12, 4-pin, field attachable

#### V1-W-2M-PUR

Female cordset, M12, 4-pin, PUR cable

#### V1-G-2M-PUR

Female cordset, M12, 4-pin, PUR cable

## Technical Data

### General specifications

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
Output type		4-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
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>	1230 a
Mission Time ( $T_M$ )	20 a
Diagnostic Coverage (DC)	0 %

### Ambient conditions

Ambient temperature	-25 ... 100 °C (-13 ... 212 °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)

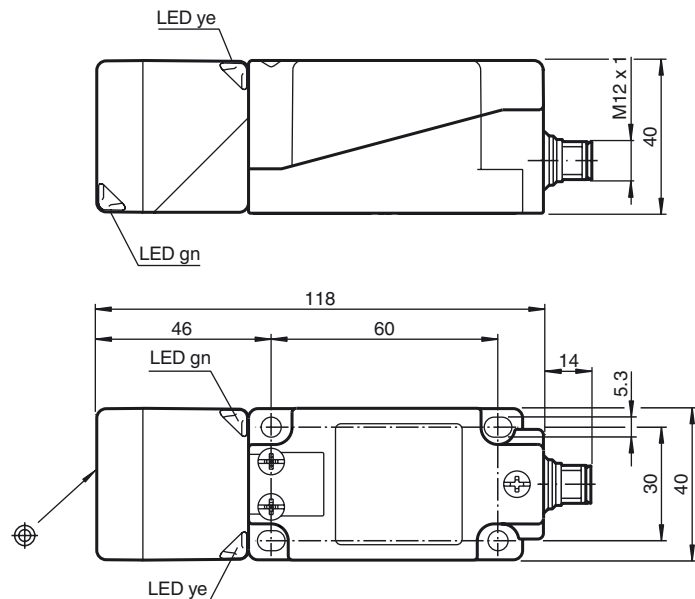
### Compliance with standards and directives

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

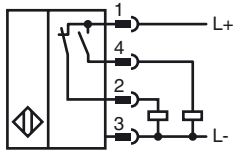
### Approvals and certificates

EAC conformity	TR CU 012/2011
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)