



### Model Number

NBB20-U1-E2

### Features

- Sensor head bidirectional and rotatable
- 20 mm flush
- 3-wire DC
- 4 LEDs indicator for 360° visibility

### Accessories

#### V1-M20-80

Receptacles, M12/M20; plastic version

#### MHW 01

Modular mounting bracket

#### MH 04-2681F

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

## Technical Data

### General specifications

Switching element function		PNP	NO
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	

### 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
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>	1460 a
Mission Time (T <sub>M</sub> )	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
Core cross-section	$\leq 2.5$ 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) Tightening torque: 1.0 Nm (Screw terminal)

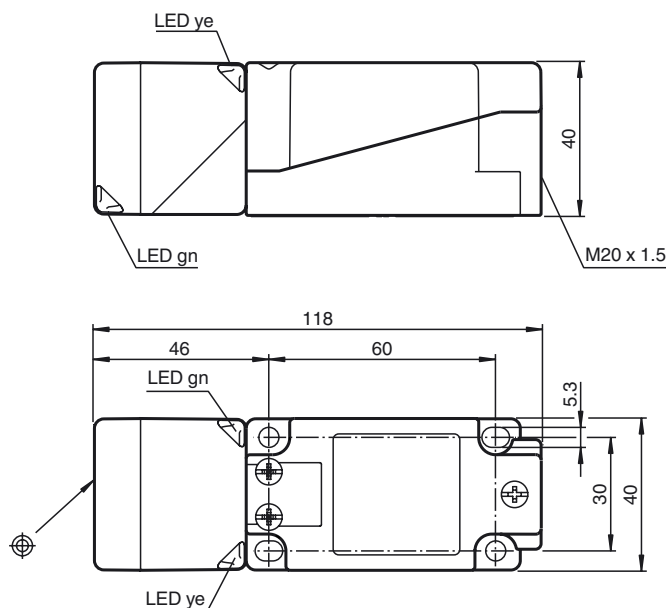
### Compliance with standards and directives

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

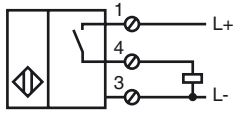
### Approvals and certificates

EAC conformity	TR CU 020/2011
UL approval	cULus Listed, General Purpose
CSA approval	cCSAus Listed, General Purpose
CCC approval	CCC approval / marking not required for products rated $\leq 36$ V

## Dimensions



Electrical Connection



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