Model Number

NBB20-U1-E2-T-V1

Features

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

Accessories

V1-G
Female connector, M12, 4-pin, field attachable

V1-G-2M-PUR
Female cordset, M12, 4-pin, PUR cable

MHW 01
Modular mounting bracket

MH 04-2681F
Mounting aid for VariKont, +U1+ and +U9*

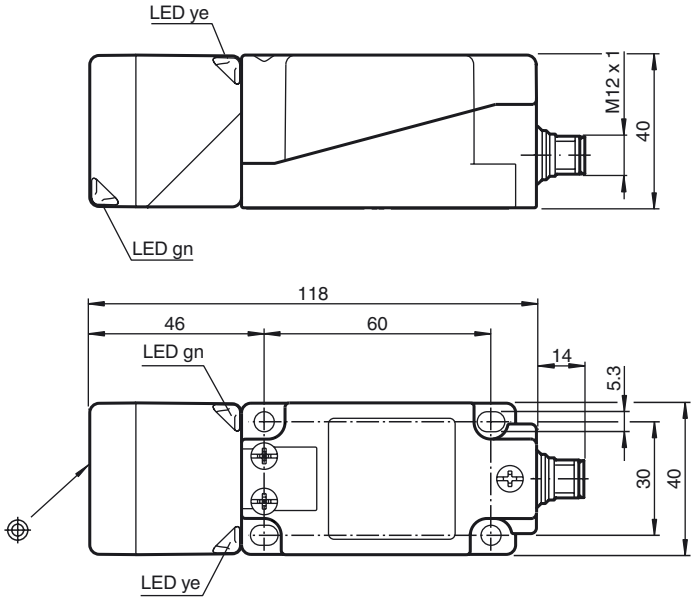
V1-W
Female connector, M12, 4-pin, field attachable

V1-W-2M-PUR
Female cordset, M12, 4-pin, PUR cable

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}		0.35
Reduction factor r_{Cu}		0.3
Reduction factor r_{304}		0.75
Nominal ratings		
Operating voltage	U_B	10 ... 30 V
Switching frequency	f	0 ... 300 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		pulsing
Voltage drop	U_d	≤ 2 V
Operating current	I_L	0 ... 200 mA
Off-state current	I_r	0 ... 0.5 mA typ. 0.1 µA at 25 °C
No-load supply current	I_0	≤ 20 mA
Time delay before availability	t_v	80 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow
Functional safety related parameters		
$MTTF_d$		1428 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 M12 x 1 , 4-pin
Housing material		PA / LCP
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 IEC 60947-5-2:2007
Approvals and certificates		
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V

Dimensions



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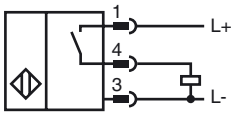
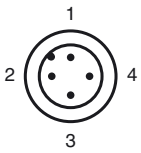
Electrical Connection



Pinout



Wire colors in accordance with EN 60947-5-2

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

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Refer to “General Notes Relating to Pepperl+Fuchs Product Information”.
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