



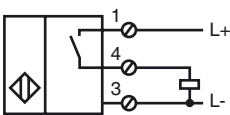
Model Number

NBB20-U1-E2-M

Features

- 20 mm flush
- e1-Type approval
- Extended temperature range - 40 ... +85 °C
- 4 LEDs indicator for 360° visibility

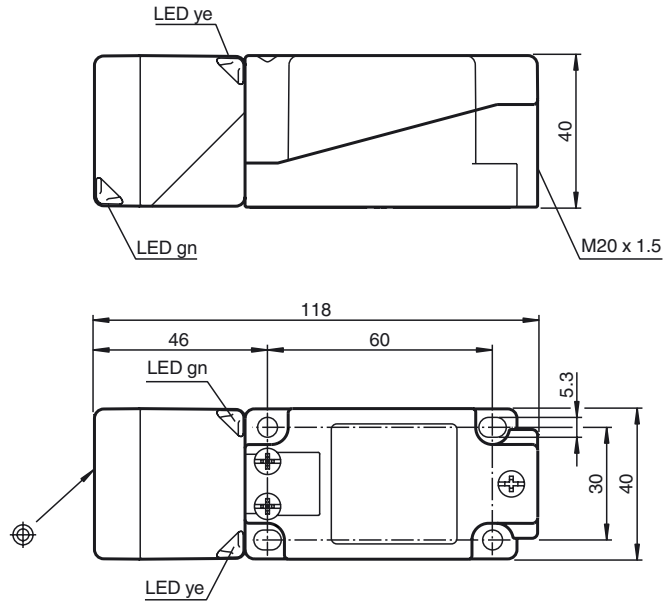
Connection



Accessories

MHW 01
Modular mounting bracket

Dimensions



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}		0.34
Reduction factor r_{Cu}		0.32
Reduction factor r_{304}		0.77
Reduction factor r_{Si37}		1
Reduction factor r_{Brass}		0.43

Nominal ratings

Operating voltage	U_B	10 ... 60 V DC
Switching frequency	f	0 ... 200 Hz
Hysteresis	H	typ. 5 %
Reverse polarity protected		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
No-load supply current	I_0	≤ 20 mA
Operating voltage display		LED, green
Indication of the switching state		LED, yellow

Functional safety related parameters

MTTF _d		880 a
Mission Time (T _M)		20 a
Diagnostic Coverage (DC)		0 %

Ambient conditions

Ambient temperature		-40 ... 85 °C (-40 ... 185 °F)
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Mechanical specifications

Connection type		screw terminals
Core cross-section		≤ 2.5 mm ²
Housing material		PA/metal with epoxy powder coating
Sensing face		PA-GF35
Housing base		plastic
Protection degree		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

UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
e1 Type approval		2006/28/EG

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Installation hint

Emitted interference and interference immunity in accordance with motor vehicle directive 2006/28/EG (e1 Type approval)
Interference immunity in accordance with DIN ISO 11452-2: 30 V/m
Frequency band 20 MHz up to 2 GHz

Mains-borne interference in accordance with ISO 7637-2: Pulse 1 2a 2b 3a 3b 4 5
Severity level III III III III III III IV
Failure criterion C A C A A A C

EN 61000-4-2: CD: 8 kV / AD: 15 kV
Severity level IV IV
EN 61000-4-3: 30 V/m (80...2500 MHz)
Severity level IV
EN 61000-4-4: 2 kV
Severity level III
EN 61000-4-6: 10 V (0.01...80 MHz)
Severity level III
EN 55011: Class A

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