



## Model Number

NBN40-U1L-A2-M

## Features

- Sensor head bidirectional and rotatable
- 40 mm non-flush
- 4 LEDs indicator for 360° visibility
- Increased noise immunity 100 V/m
- e1-Type approval

## Accessories

### MHW 01

Modular mounting bracket

## Technical Data

### General specifications

Switching function		complementary
Output type		PNP
Rated operating distance	$s_n$	40 mm
Installation		non-flush
Output polarity		DC
Assured operating distance	$s_a$	0 ... 32.4 mm
Actual operating distance	$s_r$	36 ... 44 mm
Reduction factor $r_{Al}$		0.39
Reduction factor $r_{Cu}$		0.37
Reduction factor $r_{304}$		0.75
Reduction factor $r_{Brass}$		0.45
Output type		4-wire

### Nominal ratings

Operating voltage	$U_B$	10 ... 60 V DC
Switching frequency	$f$	0 ... 100 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	$t_v$	120 ms
Operating voltage indicator		LED, green
Switching state indicator		LED, yellow

### Functional safety related parameters

MTTF <sub>d</sub>	1030 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
Information for connection	A maximum of two conductors with the same core cross section may be mounted on one terminal connection! tightening torque 1.2 Nm + 10 %
Core cross-section	up to 2.5 mm <sup>2</sup>
Minimum core cross-section	without wire end ferrule 0.5 mm <sup>2</sup> , with connector sleeves 0.34 mm <sup>2</sup>
Maximum core cross-section	without wire end ferrule 2.5 mm <sup>2</sup> , with connector sleeves 1.5 mm <sup>2</sup>
Housing material	PA/metal
Sensing face	PA
Housing base	plastic
Degree of protection	IP68 / IP69K
Mass	225 g
Note	Tightening torque: 1.8 Nm (housing)

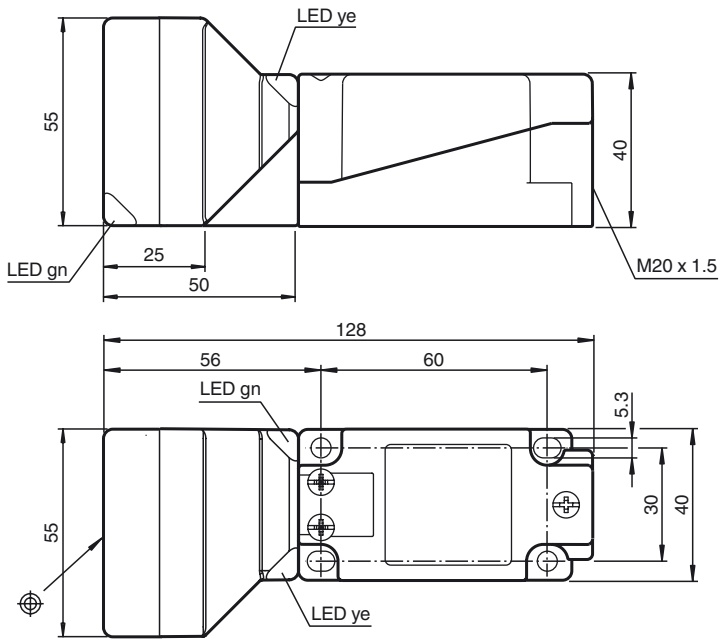
### Compliance with standards and directives

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

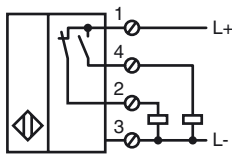
### Approvals and certificates

Protection class	II
Rated insulation voltage	$U_i$ 230 V
Rated impulse withstand voltage	$U_{imp}$ 2.5 kV
UL approval	cULus Listed, General Purpose
E1 Type approval	10R-047189

**Dimensions**



**Electrical Connection**



**EMC Properties**

Interference immunity in accordance with DIN ISO 11452-2:  
 Frequency band 20 MHz up to 1 GHz 100 V/m  
 Frequency band 1 GHz up to 2 GHz 50 V/m

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	III
Failure criterion	C	A	C	A	A	B	C

EN 61000-4-2: CD: 8 kV / AD: 15 kV

Severity level 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: Klasse A

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