Model Number

NBN30-U1K-N0

Features

- **Sensor head bidirectional and rotatable**
- **30 mm non-flush**

Accessories

MHW 01
Modular mounting bracket

MH 04-2057B
Mounting aid for VariKont and +U1+

Technical Data

General specifications		
Switching function		Normally closed (NC)
Output type		NAMUR
Rated operating distance	s_n	30 mm
Installation		non-flush
Assured operating distance	s_a	0 ... 24.3 mm
Actual operating distance	s_r	27 ... 33 mm typ.
Reduction factor r_{Al}		0.45
Reduction factor r_{Cu}		0.42
Reduction factor r_{304}		0.79
Output type		2-wire
Nominal ratings		
Nominal voltage	U_o	8 V
Switching frequency	f	0 ... 150 Hz
Hysteresis	H	1 ... 15 typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		yes
Current consumption		
Measuring plate not detected		≥ 3 mA
Measuring plate detected		≤ 1 mA
Switching state indicator		LED, yellow
Functional safety related parameters		
$MTTF_d$		1660 a
Mission Time (T_M)		20 a
Diagnostic Coverage (DC)		0 %
Ambient conditions		
Ambient temperature		-25 ... 100 °C (-13 ... 212 °F)
Storage temperature		-40 ... 100 °C (-40 ... 212 °F)
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^2
Minimum core cross-section		without wire end ferrule 0.5 mm^2 , with connector sleeves 0.34 mm^2
Maximum core cross-section		without wire end ferrule 2.5 mm^2 , with connector sleeves 1.5 mm^2
Housing material		PA
Sensing face		PA
Degree of protection		IP66 / IP68 / IP69K
Mass		225 g
Note		Tightening torque: 1.8 Nm (housing)
General information		
Use in the hazardous area		see instruction manuals
Category		1G; 2G; 3G; 1D
Compliance with standards and directives		
Standard conformity		
NAMUR		EN 60947-5-6:2000 IEC 60947-5-6:1999
Electromagnetic compatibility		NE 21:2007
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		
UL approval		cULus Listed, General Purpose
CSA approval		cCSAus Listed, General Purpose
CCC approval		CCC approval / marking not required for products rated ≤36 V

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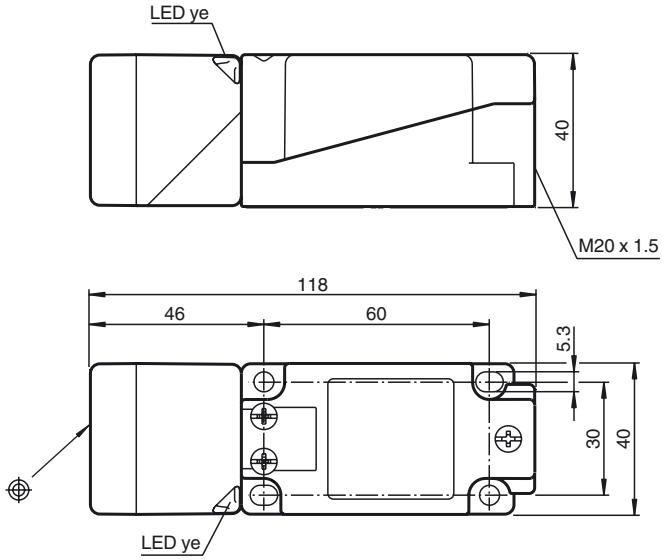
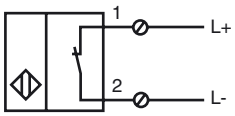
Dimensions



Electrical Connection



Equipment protection level Ga		
CE marking		CE 0102
Effective internal inductivity	C_i	≤ 105 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 300 µH ; a cable length of 10 m is considered.
Ambient temperature		Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on the EC-type examination certificate. **Note:** Use the temperature table for category 1 !!! The 20 % reduction in accordance with EN 1127-1 has already been applied to the temperature table for category 1.
Equipment protection level Gb		
CE marking		CE 0102
Effective internal inductivity	C_i	≤ 105 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 300 µH ; a cable length of 10 m is considered.
Maximum permissible ambient temperature	T_{amb}	Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on the EC-type examination certificate.

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Equipment protection level Gc (ic)		
CE marking		CE
Effective internal inductivity	C_i	≤ 105 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 300 µH ; A cable length of 10 m is considered.
Special conditions		
for Pi=34 mW, Ii=25 mA, T6		73 °C (163.4 °F)
for Pi=34 mW, Ii=25 mA, T5		88 °C (190.4 °F)
for Pi=34 mW, Ii=25 mA, T4-T1		100 °C (212 °F)
for Pi=64 mW, Ii=25 mA, T6		66 °C (150.8 °F)
for Pi=64 mW, Ii=25 mA, T5		81 °C (177.8 °F)
for Pi=64 mW, Ii=25 mA, T4-T1		100 °C (212 °F)
for Pi=169 mW, Ii=52 mA, T6		45 °C (113 °F)
for Pi=169 mW, Ii=52 mA, T5		60 °C (140 °F)
for Pi=169 mW, Ii=52 mA, T4-T1		89 °C (192.2 °F)
for Pi=242 mW, Ii=76 mA, T6		30 °C (86 °F)
for Pi=242 mW, Ii=76 mA, T5		45 °C (113 °F)
for Pi=242 mW, Ii=76 mA, T4-T1		74 °C (165.2 °F)
Equipment protection level Da		
Effective internal inductivity	C_i	≤ 105 nF ; a cable length of 10 m is considered.
Effective internal inductance	L_i	≤ 300 µH ; a cable length of 10 m is considered.

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