Model Number

NCN4-V3-N0

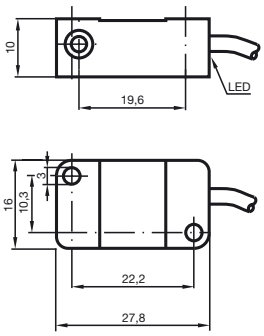
Features

- **4 mm non-flush**
- **Usable up to SIL2 acc. to IEC 61508**

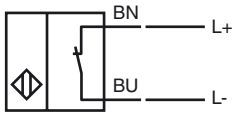
Technical Data

General specifications		
Switching element function		NAMUR, NC
Rated operating distance	s_n	4 mm
Installation		non-flush
Output polarity		NAMUR
Assured operating distance	s_a	0 ... 3.24 mm
Reduction factor r_{Al}		0.3
Reduction factor r_{Cu}		0.2
Reduction factor r_{304}		0.7
Nominal ratings		
Nominal voltage	U_o	8.2 V (R_i approx. 1 kΩ)
Switching frequency	f	0 ... 2000 Hz
Hysteresis	H	typ. 5 %
Current consumption		
Measuring plate not detected		≥ 3 mA
Measuring plate detected		≤ 1 mA
Switching state indication		LED, yellow
Ambient conditions		
Ambient temperature		-25 ... 100 °C (-13 ... 212 °F)
Mechanical specifications		
Connection type		cable PVC , 130 mm
Core cross-section		0.14 mm²
Housing material		PBT
Sensing face		PBT
Protection degree		IP67
General information		
Use in the hazardous area		see instruction manuals
Category		1G; 2G; 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 IEC 60947-5-2:2007
Approvals and certificates		
FM approval		
Control drawing		116-0165F
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



Electrical Connection



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ATEX 1G

Instruction	**Manual electrical apparatus for hazardous areas**
Device category 1G	for use in hazardous areas with gas, vapour and mist
EC-Type Examination Certificate	PTB 00 ATEX 2032 X
CE marking	CE 0102
ATEX marking	Ex II 1G Ex ia IIC T6 Ga
Directive conformity	94/9/EG
Standards	EN 60079-0:2009, EN 60079-11:2007, EN 60079-26:2007 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
Appropriate type	NCN4-V3-N0...
Effective internal capacitance C_i	≤ 100 nF ; a cable length of 10 m is considered.
Effective internal inductance L_i	≤ 100 µH ; a cable length of 10 m is considered.
Cable length	Dangerous electrostatic charges on the fixed connection cable must be taken into account for lengths equal to and exceeding the following values:
Explosion group IIC	14.8 cm
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EC-Type Examination Certificate has to be observed. The special conditions must be adhered to!
Ambient temperature	The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate. Note: Use the temperature table for category 1 !!! The 20 % reduction in accordance with EN 1127-1:2007 has already been accounted for in the temperature table for category 1.
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety. The associated apparatus must satisfy the requirements of category ia. Due to the possible danger of ignition, which can arise due to faults and/or transient currents in the equipotential bonding system, galvanic isolation of the power supply and signal circuit is preferable. Associated apparatus without electrical isolation must only be used if the appropriate requirements of IEC 60079-14 are met.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

Specific conditions

Protection from mechanical danger	When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.
Electrostatic charging	When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts.

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ATEX 2G

Instruction	**Manual electrical apparatus for hazardous areas**
Device category 2G	for use in hazardous areas with gas, vapour and mist
EC-Type Examination Certificate	PTB 00 ATEX 2032 X
CE marking	CE 0102
ATEX marking	Ex II 1G Ex ia IIC T6 Ga
Directive conformity	94/9/EG
Standards	EN 60079-0:2009, EN 60079-11:2007 Ignition protection "Intrinsic safety" Use is restricted to the following stated conditions
Appropriate type	NCN4-V3-N0...
Effective internal capacitance C_i	≤ 100 nF ; a cable length of 10 m is considered.
Effective internal inductance L_i	≤ 100 µH ; a cable length of 10 m is considered.
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EC-Type Examination Certificate has to be observed. The special conditions must be adhered to!
Ambient temperature	The temperature ranges, according to temperature class, are given in the EC-Type Examination Certificate.
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.
Specific conditions	
Protection from mechanical danger	When used in the temperature range below -20 °C the sensor should be protected from knocks by the provision of an additional housing.

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ATEX 1D

Instruction	**Manual electrical apparatus for hazardous areas**
Device category 1D	for use in hazardous areas with combustible dust
EC-Type Examination Certificate	ZELM 03 ATEX 0128 X
CE marking	CE 0102
ATEX marking	Ex II 1D Ex iaD 20 T 108 °C (226.4 °F) The Ex-significant identification is on the enclosed adhesive label
Directive conformity	94/9/EG
Standards	IEC 61241-11:2002: draft; prEN61241-0:2002 type of protection intrinsic safety "iD" Use is restricted to the following stated conditions
Appropriate type	NCN4-V3-N0...
Effective internal capacitance C_i	≤ 100 nF ; a cable length of 10 m is considered.
Effective internal inductance L_i	≤ 100 µH ; a cable length of 10 m is considered.
General	The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EC-Type Examination Certificate has to be observed. The special conditions must be adhered to!
Maximum housing surface temperature	The maximum surface temperature of the housing is given in the EC-Type Examination Certificate.
Installation, Comissioning	Laws and/or regulations and standards governing the use or intended usage goal must be observed. The intrinsic safety is only assured in connection with an appropriate related apparatus and according to the proof of intrinsic safety. The associated apparatus must satisfy at least the requirements of category ia IIB or iaD. Because of the possibility of the danger of ignition, which can arise due to faults and/or transient currents in the equipotential bonding system, galvanic isolation in the power supply and signal circuits is preferable. Associated apparatus without electrical isolation must only be used if the appropriate requirements of IEC 60079-14 are met. The intrinsically safe circuit has to be protected against influences due to lightning. The adhesive label provided must be affixed in the immediate vicinity of the sensor! The surface to which the label is applied must be clean, flat and free from grease! The affixed adhesive label must be readable and durable, taking account of the possibility of chemical corrosion! When used in the isolating wall between Zone 20 and Zone 21 or Zone 21 und Zone 22 the sensor must not be exposed to any mechanical danger and must be sealed in such a way, that the protective function of the isolating wall is not impaired. The applicable directives and standards must be observed.
Maintenance	No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

Specific conditions

Electrostatic charging	The connection cables are to be laid in accordance with EN 50281-1-2 and must not normally be subjected to chaffing during use.

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