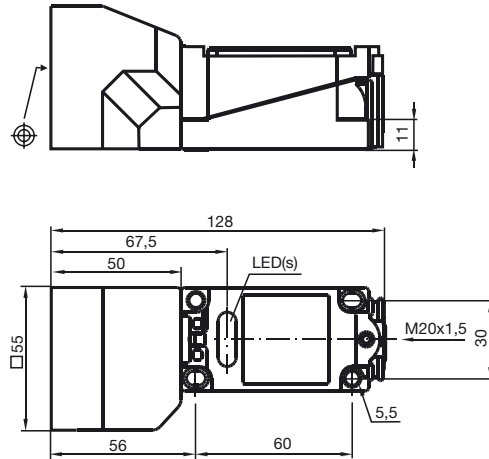


Comfort series
40 mm not embeddable

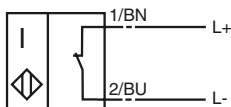


CE 0102

General specifications	
Switching element function	NAMUR NC
Rated operating distance s_n	40 mm
Installation	not embeddable
Assured operating distance s_a	0 ... 32.4 mm
Reduction factor r_{Al}	0.45
Reduction factor r_{Cu}	0.45
Reduction factor r_{V2A}	0.8
Nominal ratings	
Mounting conditions	
A	10 mm
Nominal voltage U_o	8 V
Switching frequency f	0 ... 100 Hz
Hysteresis H	1 ... 15 typ. 5 %
Reverse polarity protection	Protected against reverse polarity
Short-circuit protection	yes
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Indication of the switching state	LED, yellow
Standard conformity	
EMC in accordance with	IEC / EN 60947-5-2:2004; NE 21
Standards	DIN EN 60947-5-6 (NAMUR)
Ambient conditions	
Ambient temperature	-25 ... 100 °C (248 ... 373 K)
Storage temperature	-40 ... 100 °C (233 ... 373 K)
Mechanical specifications	
Connection type	terminal compartment
Core cross-section	up to 2.5 mm ²
Housing material	PBT
Sensing face	PBT
Protection degree	IP68
General information	
Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D; 3D

Connection type:

N / N0



ATEX 1G

Instruction

Device category 1G
Directive conformity
Standard conformity

CE symbol

Ex-identification

EC-Type Examination Certificate
Appropriate type
Effective internal capacitance C_i
Effective internal inductance L_i
General

Highest permissible ambient temperature

Installation, Commissioning

Maintenance

Special conditions
Protection from mechanical danger

Electrostatic charging

Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist
94/9/EG
EN 50014:1997; EN 50020:1994; EN 50284:1999
Ignition protection "Intrinsic safety"
Use is restricted to the following stated conditions

CE 0102

Ex II 1G EEx ia IIC T6

PTB 00 ATEX 2032 X
NCN40+U...+N0...

$\leq 120 \text{ nF}$; a cable length of 10 m is considered.
 $\leq 130 \mu\text{H}$; a cable length of 10 m is considered.

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual.
The EU prototype test certificate must be observed. The special conditions must be adhered to!

The temperature ranges, according to temperature class, are given in the EU prototype test certificate. Note: Use the temperature table for category 1 !!! The 20 % reduction in accordance with EN 1127-1:1997 has already been accounted for in the temperature table for category 1.

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.

No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

When used in the temperature range below -20°C the sensor should be protected from knocks by the provision of an additional housing.

When used in group IIB/IIC non-permissible electrostatic charges should be avoided on the plastic housing parts..

ATEX 2G

Instruction

Device category 2G

Directive conformity

Standard conformity

CE symbol

Ex-identification

EC-Type Examination Certificate

Appropriate type

Effective internal capacitance C_i

Effective internal inductance L_i

General

Highest permissible ambient temperature

Installation, Commissioning

Maintenance

Special conditions

Protection from mechanical danger

Electrostatic charging

Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist

94/9/EG

EN 50014:1997, EN 50020:1994

Ignition protection "Intrinsic safety"

Use is restricted to the following stated conditions

CE 0102

Ex II 1G EEx ia IIC T6

PTB 00 ATEX 2032 X

NCN40+U...+N0...

≤ 120 nF ; a cable length of 10 m is considered.

≤ 130 μ H ; a cable length of 10 m is considered.

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual. The EU prototype test certificate must be observed. The special conditions must be adhered to!

The temperature ranges, according to temperature class, are given in the EU prototype test certificate.

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.

No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

When used in the temperature range below -20°C the sensor should be protected from knocks by the provision of an additional housing.

When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts.

ATEX 1D

Instruction

Device category 1D

Directive conformity

Standard conformity

CE symbol

Ex-identification

EC-Type Examination Certificate

Appropriate type

Effective internal capacitance C_i

Effective internal inductance L_i

General

Maximum housing surface temperature

Installation, Commissioning

Maintenance

Special conditions

Electrostatic charging

Manual electrical apparatus for hazardous areas

for use in hazardous areas with combustible dust

94/9/EG

IEC 61241-11:2002: draft; prEN61241-0:2002

type of protection intrinsic safety "iD"

Use is restricted to the following stated conditions

CE 0102

II 1D Ex iaD 20 T 108 °C (381 K)

ZELM 03 ATEX 0128 X

NCN40+U...+N0...

≤ 120 nF ; a cable length of 10 m is considered.

≤ 130 μH ; a cable length of 10 m is considered.

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual.

The EU prototype test certificate must be observed.

The special conditions must be adhered to!

The maximum surface temperature of the housing is given in the EC-Type Examination Certificate.

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.

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.

No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

Sliding contact discharges must be avoided. To avoid sliding contact discharges, which are associated with applications involving high charges (e.g. electrostatic enamelling, film manufacture, anti-dust precautions, processes involving mechanical friction, etc.), the surface area of the plastic housing, which is exposed to this charging should be limited to approx. 15 cm² by appropriate installation measures

Electrostatic charging due to the flow of media during operation must be excluded.

This can be achieved by limiting the surface area of the plastic housing exposed to the electrostatic charging to less than 100 cm².

ATEX 3D

Instruction

Device category 3D

Directive conformity

Standard conformity

CE symbol

Ex-identification

General

Installation, Commissioning

Maintenance

[Fett]Special conditions

Minimum series resistance R_V

Maximum operating voltage U_{Bmax}

Maximum heating (Temperature rise)

at $U_{Bmax}=9\text{ V}$, $R_V=562\ \Omega$

using an amplifier in accordance with EN 60947-5-6

Plug connector

Protection from mechanical danger

Connections for external wire

Lead insertion

Manual electrical apparatus for hazardous areas

for use in hazardous areas with non-conducting combustible dust

94/9/EG

EN 50281-1-1

Protection via housing

Use is restricted to the following stated conditions

CE 0102

Ex II 3D IP68 T 112 °C (385 K) X

The apparatus has to be operated according to the appropriate data in the data sheet and in this instruction manual.

The data stated in the data sheet are restricted by this operating instruction! The special conditions must be adhered to!

Laws and/or regulations and standards governing the use or intended usage goal must be observed.

No changes can be made to apparatus, which are operated in hazardous areas. Repairs to these apparatus are not possible.

A minimum series resistance R_V is to be provided between the power supply voltage and the proximity switch in accordance with the following list. This can also be assured by using a switch amplifier.

The maximum permissible operating voltage U_{Bmax} must be restricted to the values given in the following list. Tolerances are not permitted.

Values can be obtained from the following list, depending on the max. operating voltage U_b max and the minimum series resistance R_V .

12 °C (285 K)

12 °C (285 K)

The plug connector must not be disconnected under voltage. The proximity switch is marked as follows: "DO NOT DISCONNECT UNDER VOLTAGE!" When the plug connector is disconnected the ingress of dirt into the inner areas (i.e. the areas, which are not accessible in the plugged-in condition) must be prevented.

The sensor must not be mechanically damaged.

Terminal connection: Minimum conductor cross-section: 0.5 mm^2 , maximum conductor cross-section: 2.5 mm^2 . The ends of the conductor must be provided with cable sleeves.

The cable entry must be such, that no tension load or twist is applied to the cable

The protection category must be in accordance with EN 60529 and as stated in the data sheet. The cable entry must be designed so that there are no sharp edges to damage the cable and impair the level of protection of the sensor. The cable entry must be in accordance with the relevant European standard for industrial cable and lead entries. In addition, in the case of flexible leads, the points of entry of the cable must be rounded off over an angle of at least 75° , with a radius (R), which is at least one quarter of the maximum permissible cable diameter for the entry, but not greater than 3 mm.