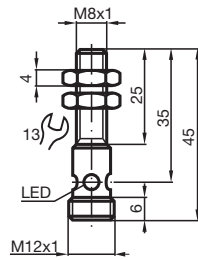


Comfort series  
1.5 mm embeddable

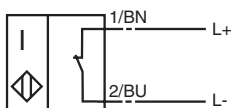


CE 0102

General specifications	
Switching element function	NAMUR NC
Rated operating distance $s_n$	1.5 mm
Installation	embeddable
Assured operating distance $s_a$	0 ... 1.215 mm
Reduction factor $r_{Al}$	0.22
Reduction factor $r_{Cu}$	0.19
Reduction factor $r_{V2A}$	0.65
Nominal ratings	
Nominal voltage $U_o$	8 V
Switching frequency $f$	0 ... 2000 Hz
Hysteresis $H$	1 ... 10 typ. 3 %
Reverse polarity protection	protected against reverse polarity
Short-circuit protection	yes
Current consumption	
Measuring plate not detected	$\geq 3$ mA
Measuring plate detected	$\leq 1$ mA
Indication of the switching state	Multihole-LED, yellow
Standard conformity	
EMC in accordance with	IEC / EN 60947-5-2:2004
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	V1-connector
Housing material	Stainless steel
Sensing face	PBT
Protection degree	IP67
General information	
Use in the hazardous area	see instruction manuals
Category	1G; 2G; 1D

### 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

The Ex-significant identification is on the enclosed adhesive label

PTB 00 ATEX 2048 X

NCB1,5...M...N0...

$\leq 90$  nF ; a cable length of 10 m is considered.

$\leq 100$   $\mu$ 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!

Directive 94/9EG and hence also EC-Type Examination Certificates apply in general only to the use of electrical apparatus under atmospheric conditions

The use in ambient temperatures of  $> 60$  °C was tested with regard to hot surfaces by the mentioned certification authority.

If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.

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 has already been applied to 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.

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!

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.

Electrostatic charges must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.

## 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

Ⓔ II 1G EEx ia IIC T6

The Ex-significant identification is on the enclosed adhesive label

PTB 00 ATEX 2048 X

NCB1,5...M...N0...

$\leq 90$  nF ; a cable length of 10 m is considered.

$\leq 100$   $\mu$ 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!

Directive 94/9/EG and hence also EC-Type Examination Certificates apply in general only to the use of electrical apparatus under atmospheric conditions. The use in ambient temperatures of  $> 60$  °C was tested with regard to hot surfaces by the mentioned certification authority.

If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.

The temperature ranges, according to temperature class, are 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 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!

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.

Electrostatic charges must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.

## 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

[Fett]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

Ex II 1D Ex iaD 20 T 108 °C (381 K)

The Ex-significant identification is on the enclosed adhesive label

ZELM 03 ATEX 0128 X

NCB1,5...M...N0...

≤ 90 nF ; a cable length of 10 m is considered.

≤ 100 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.

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.

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

Electrostatic charges must be avoided on the mechanical housing components. Dangerous electrostatic charges on the mechanical housing components can be avoided by incorporating these in the equipotential bonding.