



CE
0102



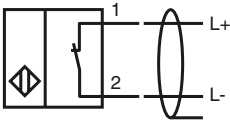
Model Number

NCB10-30GM40-N0-5M-OG

Features

- 10 mm flush
- Shielded PUR cable for oil and gas sector

Connection

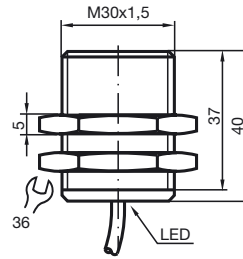


Accessories

BF 30

Mounting flange, 30 mm

Dimensions



Technical Data

General specifications

Switching element function	NAMUR, NC
Rated operating distance	s_n 10 mm
Installation	flush
Output polarity	NAMUR
Assured operating distance	s_a 0 ... 8.1 mm
Reduction factor r_{Al}	0.32
Reduction factor r_{Cu}	0.32
Reduction factor r_{304}	0.72

Nominal ratings

Nominal voltage	U_o 8 V
Switching frequency	f 0 ... 650 Hz
Hysteresis	H 1 ... 10 typ. 5 %
Reverse polarity protection	reverse polarity protected
Short-circuit protection	yes
Suitable for 2:1 technology	yes, Reverse polarity protection diode not required
Current consumption	
Measuring plate not detected	≥ 3 mA
Measuring plate detected	≤ 1 mA
Switching state indication	LED, yellow

Functional safety related parameters

MTTF _d	1870 a
Mission Time (T _M)	20 a
Diagnostic Coverage (DC)	0 %

Ambient conditions

Ambient temperature	-25 ... 80 °C (-13 ... 176 °F)
Storage temperature	-40 ... 80 °C (-40 ... 176 °F)

Mechanical specifications

Connection type	cable PUR (halogen-free), 5 m, screened, Oil resistant, Flame-retardant as per IEC 60332-1
Core cross-section	2x 0.5 mm ²
Housing material	Stainless steel 1.4305 / AISI 303
Sensing face	PBT
Protection degree	IP66 / IP67
Note	The shield is not connected to the sensor.

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
Standards	EN 60947-5-2:2007 IEC 60947-5-2:2007

Approvals and certificates

CCC approval	CCC approval / marking not required for products rated ≤36 V
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ATEX 1G

Instruction

Device category 1G
 EC-Type Examination Certificate
 CE marking

ATEX marking

Directive conformity
 Standards

Appropriate type

Effective internal capacitance C_i
 Effective internal inductance L_i
 Cable length

Explosion group IIA

Explosion group IIB

Explosion group IIC

General

Ambient temperature

Installation, Commissioning

Maintenance

Specific conditions

Protection from mechanical danger

Electrostatic charging

Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist
 PTB 00 ATEX 2048 X
 CE 0102

Ex II 1G Ex ia IIC T6 Ga

94/9/EG

EN 60079-0:2009, EN 60079-11:2007, EN 60079-26:2007

Ignition protection "Intrinsic safety"

Use is restricted to the following stated conditions

NCB10-30GM...-N0...

≤ 105 nF ; a cable length of 10 m is considered.

≤ 100 μ H ; a cable length of 10 m is considered.

Dangerous electrostatic charges on the fixed connection cable must be taken into account for lengths equal to and exceeding the following values:

67 cm

33 cm

5 cm

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!

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. 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.

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.

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

ATEX 2G

Instruction

Device category 2G

EC-Type Examination Certificate

CE marking

ATEX marking

Directive conformity

Standards

Appropriate type

Effective internal capacitance C_i Effective internal inductance L_i

General

Ambient temperature

Installation, Commissioning

Maintenance

Specific conditions

Protection from mechanical danger

Electrostatic charging

Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist

PTB 00 ATEX 2048 X

CE 0102

Ex II 1G Ex ia IIC T6 Ga

94/9/EG

EN 60079-0:2009, EN 60079-11:2007

Ignition protection "Intrinsic safety"

Use is restricted to the following stated conditions

NCB10-30GM...-N0...

 ≤ 105 nF ; a cable length of 10 m is considered. ≤ 100 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 EC-Type Examination Certificate has to 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.

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

EC-Type Examination Certificate

CE marking

ATEX marking

Directive conformity

Standards

Appropriate type

Effective internal capacitance C_i Effective internal inductance L_i

General

Maximum housing surface temperature

Installation, Commissioning

Maintenance

Specific conditions

Electrostatic charging

Manual electrical apparatus for hazardous areas

for use in hazardous areas with combustible dust

ZELM 03 ATEX 0128 X

CE 0102

II 1D Ex iaD 20 T 108 °C (226.4 °F)

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

NCB10-30GM...-N0...

≤ 105 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 EC-Type Examination Certificate has to 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.

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.

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

ATEX 3G (ic)

Instruction

Device category 3G (ic)

CE marking

ATEX marking

Directive conformity

Standards

Effective internal capacitance C_i Effective internal inductance L_i

General

Installation, Commissioning

Maintenance

Specific conditionsMaximum permissible ambient temperature T_{Umax} at $U_i = 20 V$ for $P_i=34 mW$, $I_i=25 mA$, T6for $P_i=34 mW$, $I_i=25 mA$, T5for $P_i=34 mW$, $I_i=25 mA$, T4-T1for $P_i=64 mW$, $I_i=25 mA$, T6for $P_i=64 mW$, $I_i=25 mA$, T5for $P_i=64 mW$, $I_i=25 mA$, T4-T1for $P_i=169 mW$, $I_i=52 mA$, T6for $P_i=169 mW$, $I_i=52 mA$, T5for $P_i=169 mW$, $I_i=52 mA$, T4-T1for $P_i=242 mW$, $I_i=76 mA$, T6for $P_i=242 mW$, $I_i=76 mA$, T5for $P_i=242 mW$, $I_i=76 mA$, T4-T1

Protection from mechanical danger

Electrostatic charging

Connection parts

Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist

CE 0102

II 3G Ex ic IIC T6 Gc X

94/9/EG

EN 60079-0:2009, EN 60079-11:2007 Ignition protection category "ic"

Use is restricted to the following stated conditions

 $\leq 105 nF$; 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 data stated in the data sheet are restricted by this operating instruction!

The special conditions must be observed!

Laws and/or regulations and standards governing the use or intended usage goal must be observed. The sensor must only be operated with energy-limited circuits, which satisfy the requirements of IEC 60079-11. The explosion group complies with the connected, supplying, power limiting circuit.

No changes can be made to apparatus, which are operated in hazardous areas.

Repairs to these apparatus are not possible.

55 °C (131 °F)

55 °C (131 °F)

55 °C (131 °F)

55 °C (131 °F)

55 °C (131 °F)

55 °C (131 °F)

52 °C (125.6 °F)

52 °C (125.6 °F)

52 °C (125.6 °F)

44 °C (111.2 °F)

44 °C (111.2 °F)

44 °C (111.2 °F)

The sensor must not be mechanically damaged.

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.

The connection parts are to be installed, such that a minimum protection class of IP20 is achieved, in accordance with IEC 60529.