



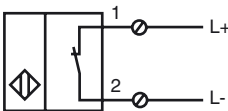
**Model Number**

NCN30+U4+N0

**Features**

- Comfort series
- 30 mm non-flush

**Connection**



**Accessories**

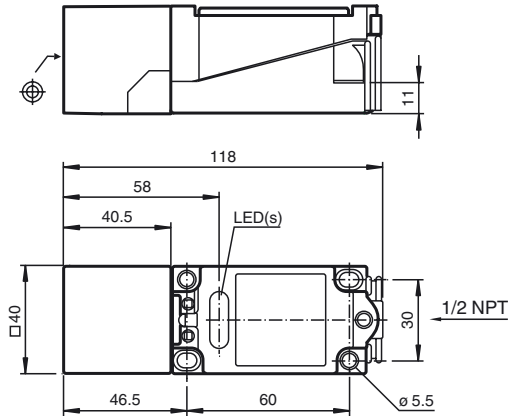
**MHW 01**

Modular mounting bracket

**MH 04-2057B**

Mounting aid for VariKont and +U1+

**Dimensions**



**Technical Data**

**General specifications**

Switching element function		NAMUR, NC
Rated operating distance	$s_n$	30 mm
Installation		non-flush
Output polarity		NAMUR
Assured operating distance	$s_a$	0 ... 24.3 mm
Reduction factor $r_{AI}$		0.45
Reduction factor $r_{Cu}$		0.42
Reduction factor $r_{304}$		0.79

**Nominal ratings**

<b>Installation conditions</b>		
A		10 mm
Nominal voltage	$U_o$	8.2 V ( $R_i$ approx. 1 k $\Omega$ )
Switching frequency	f	0 ... 150 Hz
Hysteresis	H	1 ... 15 typ. 5 %
Reverse polarity protection		reverse polarity protected
Short-circuit protection		yes
<b>Current consumption</b>		
Measuring plate not detected		$\geq 3$ mA
Measuring plate detected		$\leq 1$ mA
Switching state indication		LED, yellow

**Ambient conditions**

Ambient temperature		-25 ... 100 °C (-13 ... 212 °F)
Storage temperature		-40 ... 100 °C (-40 ... 212 °F)

**Mechanical specifications**

Connection type		screw terminals
Core cross-section		$\leq 2.5$ mm <sup>2</sup>
Housing material		PBT/metal
Sensing face		PBT
Protection degree		IP68

**General information**

Use in the hazardous area		see instruction manuals
Category		1G; 2G; 1D

**Compliance with standards and directives**

<b>Standard conformity</b>		
NAMUR		EN 60947-5-6:2000 IEC 60947-5-6:1999
<b>Electromagnetic compatibility</b>		
Standards		NE 21:2007 EN 60947-5-2:2007 IEC 60947-5-2:2007

**Approvals and certificates**

<b>FM approval</b>		
Control drawing		116-0165F
<b>UL approval</b>		
CSA approval		cULus Listed, General Purpose
<b>CCC approval</b>		
		Products with a maximum operating voltage of $\leq 36$ V do not bear a CCC marking because they do not require approval.

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**ATEX 1G**

## Instruction

Device category 1G  
 Directive conformity  
 Standard conformity

## CE marking

## 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


**Specific 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 60079-0:2009, EN 60079-11:2007, EN 60079-26:2007  
 Ignition protection "Intrinsic safety"  
 Use is restricted to the following stated conditions  
 C E 0102

 II 1G Ex ia IIC T6 Ga

PTB 00 ATEX 2032 X  
 NCN30+U...+N0...

$\leq 110$  nF ; a cable length of 10 m is considered.  
 $\leq 160$   $\mu$ 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 EC-Type Examination Certificate has to be observed. The special conditions must be adhered to!

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.

When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts. 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 metal housing parts are coated. If a conductive connection is required, this coating must be electrically bridged by suitable means.

**ATEX 2G**

Instruction

**Device category 2G**

Directive conformity

Standard conformity

CE marking

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

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

Ignition protection "Intrinsic safety"

Use is restricted to the following stated conditions

CE 0102

Ex II 1G Ex ia IIC T6 Ga

PTB 00 ATEX 2032 X

NCN30+U...+N0...

 $\leq 110$  nF ; a cable length of 10 m is considered. $\leq 160$   $\mu$ 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 EC-Type Examination Certificate has to be observed. The special conditions must be adhered to!

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.

When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts. Electrostatic charges on the metal housing components must be avoided. Dangerous electrostatic charges on the metal housing components can be avoided by incorporating these components in the equipotential bonding.

The metal housing parts are coated. If a conductive connection is required, this coating must be electrically bridged by suitable means.

**ATEX 1D**

Instruction

**Device category 1D**

Directive conformity

Standard conformity

CE marking

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

**Specific 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

 0102 II 1D Ex iaD 20 T 108 °C (226.4 °F)

ZELM 03 ATEX 0128 X

NCN30+U...+N0...

≤ 110 nF ; a cable length of 10 m is considered.

≤ 160 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 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 cm<sup>2</sup>.

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 metal housing parts are coated. If a conductive connection is required, this coating must be electrically bridged by suitable means.