

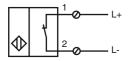
Model Number

NCB15+U1+N0

Features

- **Comfort series**
- 15 mm flush

Connection



Accessories

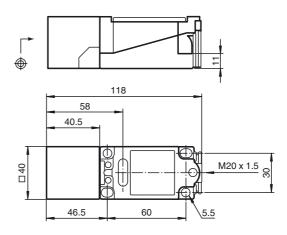
MHW 01

Modular mounting bracket

MH 04-2057B

Mounting aid for VariKont and +U1+

Dimensions



	rechnical Data				
	General specifications				
	Switching element function		NAMUR, NC		
	Rated operating distance	s _n	15 mm		
	Installation		flush		
	Output polarity		NAMUR		
	Assured operating distance	sa	0 12.15 mm		
	Reduction factor r _{Al}		0.28		
	Reduction factor r _{Cu}		0.25		
	Reduction factor r ₃₀₄		0.75		
Nominal ratings					
	Nominal voltage	Uo	8 V		
	Switching frequency	f	0 400 Hz		
	Hysteresis	Н	1 15 typ. 5 %		
	Reverse polarity protection		reverse polarity protected		
	Short-circuit protection		yes		
	Current consumption				

Measuring plate not detected \geq 3 mA Measuring plate detected \leq 1 mA

LED, yellow Switching state indication Functional safety related parameters

MTTF_d
Mission Time (T_M)
Diagnostic Coverage (DC) 3387 a 20 a 0 %

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

Mechanical specifications

terminal compartment up to 2.5 mm² Connection type Core cross-section Housing material PBT PBT Sensing face Protection degree IP68

General information

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

Compliance with standards and directives

Standard conformity

EN 60947-5-6:2000 NAMUR IEC 60947-5-6:1999 NE 21:2007 Electromagnetic compatibility 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 Products with a maximum operating voltage of ≤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

General

Ex-identification

EC-Type Examination Certificate Appropriate type Effective internal capacitance Ci Effective internal inductance L

Highest permissible ambient temperature

Installation, Comissioning

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€0102

⟨ II 1G Ex ia IIC T6 Ga

PTB 00 ATEX 2032 X

NCB15+U...+N0...

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

 \leq 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 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 $^{\circ}$ 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

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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 Li

General

Highest permissible ambient temperature

Installation, Comissioning

Maintenance

Specific conditions

Protection from mechanical danger

Manual electrical apparatus for hazardous areas

for use in hazardous areas with gas, vapour and mist 94/9/FG

EN 60079-0:2009, EN 60079-11:2007
Ignition protection "Intrinsic safety"
Use is restricted to the following stated conditions

€ 0102

(Ex) II 1G Ex ia IIC T6 Ga PTB 00 ATEX 2032 X NCB15+U...+NO...

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

 \leq 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 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 $^{\circ}\text{C}$ the sensor should be protected from knocks by the provision of an additional housing.

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ATEX 1D

Instruction

Device category 1D

Directive conformity Standard conformity

CE marking

Ex-identification

EC-Type Examination Certificate

Appropriate type

Effective internal capacitance Ci

Effective internal inductance Li

General

Maximum housing surface temperature

Installation, Comissioning

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

C€0102

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

ZELM 03 ATEX 0128 X

NCB15+U...+N0...

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

 \leq 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 $100\ \text{cm}^2$.