



### Model Number

NJ30P+U1+1N

### Features

- Comfort series
- 30 mm non-flush
- Only for non-ferrous metals

### Accessories

MHW 01  
Modular mounting bracket

## Technical Data

### General specifications

|                              |                     |
|------------------------------|---------------------|
| Switching function           | Normally open (NO)  |
| Output type                  | NAMUR               |
| Rated operating distance     | $s_n$ 30 mm         |
| Installation                 | non-flush           |
| Assured operating distance   | $s_a$ 1 ... 24.3 mm |
| Reduction factor $r_{Al}$    | 1                   |
| Reduction factor $r_{Cu}$    | 1                   |
| Reduction factor $r_{S37}$   | 0                   |
| Reduction factor $r_{Brass}$ | 1                   |

### Nominal ratings

|                              |                  |
|------------------------------|------------------|
| Nominal voltage              | $U_o$ 8 V        |
| Switching frequency          | $f$ 0 ... 150 Hz |
| Current consumption          |                  |
| Measuring plate not detected | ≤ 1 mA           |
| Measuring plate detected     | min. 3 mA        |

### Functional safety related parameters

|                                |        |
|--------------------------------|--------|
| MTTF <sub>d</sub>              | 3636 a |
| Mission Time (T <sub>M</sub> ) | 20 a   |
| Diagnostic Coverage (DC)       | 0 %    |

### Ambient conditions

|                     |                                |
|---------------------|--------------------------------|
| Ambient temperature | -25 ... 70 °C (-13 ... 158 °F) |
|---------------------|--------------------------------|

### Mechanical specifications

|                      |                           |
|----------------------|---------------------------|
| Connection type      | screw terminals           |
| Core cross-section   | up to 2.5 mm <sup>2</sup> |
| Housing material     | PBT                       |
| Sensing face         | PBT                       |
| Degree of protection | IP68                      |

### General information

|                           |                         |
|---------------------------|-------------------------|
| Use in the hazardous area | see instruction manuals |
| Category                  | 2G                      |

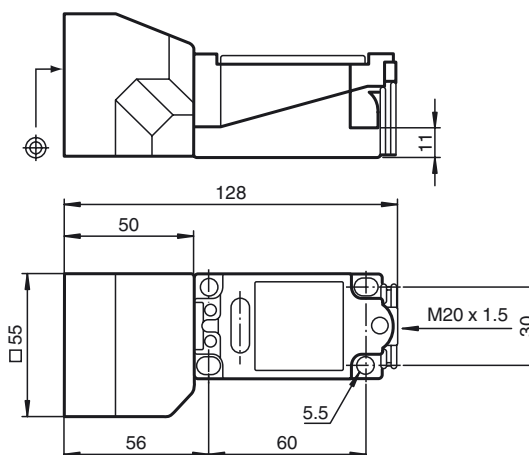
### Compliance with standards and directives

|                     |   |
|---------------------|---|
| Standard conformity |   |
| NAMUR               | EN 60947-5-6:2000<br>IEC 60947-5-6:1999 |
| Standards           | EN 60947-5-2:2007<br>IEC 60947-5-2:2007 |

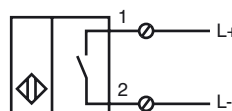
### Approvals and certificates

|                 |  |
|-----------------|--|
| FM approval     |  |
| Control drawing | 116-0165   |
| UL approval     | cULus Listed, General Purpose                                |
| CSA approval    | cCSAus Listed, General Purpose                               |
| CCC approval    | CCC approval / marking not required for products rated ≤36 V |

## Dimensions



## Electrical Connection



**Equipment protection level Ga**

## Instruction

Device category 1G

EC-Type Examination Certificate

CE marking

ATEX marking

Standards

Appropriate type

Effective internal inductivity  $C_i$ Effective internal inductance  $L_i$ 

General

Ambient temperature

Installation, commissioning

Maintenance

**Special conditions**

Protection from mechanical danger

Electrostatic charge

**Manual electrical apparatus for hazardous areas**

for use in hazardous areas with gas, vapour and mist

PTB 00 ATEX 2032 X

CE 0102

Ex II 1G Ex ia IIC T6...T1 Ga

The Ex-related marking can also be printed on the enclosed label.

EN 60079-0:2012+A11:2013 EN 60079-11:2012

Ignition protection "Intrinsic safety"

Use is restricted to the following stated conditions

NJ 30P+U.+1N...

 $\leq 150$  nF ; a cable length of 10 m is considered. $\leq 170$   $\mu$ 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-type examination certificate has to be observed. The special conditions must be adhered to! Directive 94/9/EC and therefore the EC-type-examination certificates generally apply only to the use of electrical apparatus under atmospheric conditions. The device has been checked for suitability for use at ambient temperatures of  $\geq 60$  °C by the named certification authority. The surface temperature of the device remains within the required limits. If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.

Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on 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. If the Ex-related marking is printed only on the supplied label, then this must be attached in the immediate vicinity of the sensor. The sticking surface for the label must be clean and free from grease. The attached label must be legible and indelible, including in the event of possible chemical corrosion. After opening the housing, you should check that the seal is in the correct position and is clean and intact before closing the housing again.

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

The connecting parts of the sensor must be set up in such a way that degree of protection IP20, in accordance with IEC 60529, is achieved as a minimum.

When using the device in a temperature range of -60 °C to -20 °C, protect the sensor against the effects of impact by installing an additional enclosure. The information regarding the minimum ambient temperature for the sensor as provided in the datasheet must also be observed.

When used in group IIC non-permissible electrostatic charges should be avoided on the plastic housing parts. Information on electrostatic hazards can be found in the technical specification IEC/TS 60079-32-1. Avoid electrostatic charges that can cause electrostatic discharge when installing or operating the device.

**Equipment protection level Gb**

Instruction

**Device category 2G**

EC-Type Examination Certificate

CE marking

ATEX marking

Standards

Appropriate type

Effective internal inductivity  $C_i$ Effective internal inductance  $L_i$ 

General

Maximum permissible ambient temperature  $T_{amb}$ 

Installation, commissioning

Maintenance

**Special conditions**

Protection from mechanical danger

Electrostatic charge

**Manual electrical apparatus for hazardous areas**

for use in hazardous areas with gas, vapour and mist

PTB 00 ATEX 2032 X

CE 0102

Ex II 1G Ex ia IIC T6...T1 Ga

The Ex-related marking can also be printed on the enclosed label.

EN 60079-0:2012+A11:2013, EN 60079-11:2012

Ignition protection "Intrinsic safety"

Use is restricted to the following stated conditions

NJ 30P+U.+1N...

 $\leq 150$  nF ; a cable length of 10 m is considered. $\leq 170$   $\mu$ 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-type examination certificate has to be observed. The special conditions must be adhered to! Directive 94/9/EC and therefore the EC-type-examination certificates generally apply only to the use of electrical apparatus under atmospheric conditions. The device has been checked for suitability for use at ambient temperatures of  $\geq 60$  °C by the named certification authority. The surface temperature of the device remains within the required limits. If the equipment is not used under atmospheric conditions, a reduction of the permissible minimum ignition energies may have to be taken into consideration.

Details of the correlation between the type of circuit connected, the maximum permissible ambient temperature, the temperature class, and the effective internal reactance values can be found on 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. If the Ex-related marking is printed only on the supplied label, then this must be attached in the immediate vicinity of the sensor. The sticking surface for the label must be clean and free from grease. The attached label must be legible and indelible, including in the event of possible chemical corrosion. After opening the housing, you should check that the seal is in the correct position and is clean and intact before closing the housing again.

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

The connecting parts of the sensor must be set up in such a way that degree of protection IP20, in accordance with IEC 60529, is achieved as a minimum.

When using the device in a temperature range of -60 °C to -20 °C, protect the sensor against the effects of impact by installing an additional enclosure. The information regarding the minimum ambient temperature for the sensor as provided in the datasheet must also be observed.

Additional requirements for gas group IIC. Avoid electrostatic charges that can cause electrostatic discharge when installing or operating the device. Information on electrostatic hazards can be found in the technical specification IEC/TS 60079-32-1.