

# Instruction manual

## Marking

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|---|
| Inductive sensor                              |
| NCB20-L2-N0-V1                                |
| 182705  |
| Pepperl+Fuchs GmbH                            |
| Lilienthalstraße 200, 68307 Mannheim, Germany |

| Range of application | Certification      | Group, category, type of protection   |
|----------------------|--------------------|---|
| ATEX 1G              | PTB 00 ATEX 2032 X | Ⓜ II 1G Ex ia IIC T6...T1 Ga<br>The Ex-related marking can also be printed on the enclosed label. |
| ATEX 2G              | PTB 00 ATEX 2032 X | Ⓜ II 1G Ex ia IIC T6...T1 Ga<br>The Ex-related marking can also be printed on the enclosed label. |
| ATEX 3G (ic)         | PF 13 CERT 2895 X  | Ⓜ II 3G Ex ic IIC T6...T1 Gc<br>The Ex-related marking can also be printed on the enclosed label. |
| ATEX 1D              | PTB 00 ATEX 2032 X | Ⓜ II 1D Ex ia IIIC T135°C Da<br>The Ex-related marking can also be printed on the enclosed label. |
| ATEX 3D (tc)         |                    | Ⓜ II 3D Ex tc IIIC T80°C Dc<br>The Ex-related marking can also be printed on the enclosed label.  |
| ATEX 3D (tD)         |                    | Ⓜ II 3D Ex tD A22 IP67 T80°C X  |

## Validity

Specific processes and instructions in this document require special precautions to guarantee the safety of the operating personnel.

## Target group, personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismantling lies with the plant operator.  
Mounting, installation, commissioning, operation, maintenance and disassembly of any devices may only be carried out by trained, qualified personnel. The instruction manual must be read and understood.

## Reference to further documentation

Observe laws, standards, and directives applicable to the intended use and the operating location. Observe Directive 1999/92/EC in relation to hazardous areas. The corresponding datasheets, declarations of conformity, EC-type-examination certificates, certificates and control drawings if applicable (see datasheet) are an integral part of this document. You can find this information under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).  
Due to constant revisions, documentation is subject to permanent change. Please refer only to the most up-to-date version, which can be found under [www.pepperl-fuchs.com](http://www.pepperl-fuchs.com).

## Intended use

The device is only approved for appropriate and intended use. Ignoring these instructions will void any warranty and absolve the manufacturer from any liability.

## Range of application

### Manual electrical apparatus for hazardous areas

#### Range of application 1D

for use in hazardous areas with combustible dust

#### Range of application 3D (tD)

for use in hazardous areas with non-conducting combustible dust

#### Range of application 1G

for use in hazardous areas with gas, vapour and mist

#### Range of application 2G

for use in hazardous areas with gas, vapour and mist

#### Range of application 3G (ic)

for use in hazardous areas with gas, vapour and mist

## Improper use

Protection of the personnel and the plant is not ensured if the product is not being used according to its intended use.

## Mounting and installation

Prior to mounting, installation and commissioning of the device you should make yourself familiar with the device and carefully read the instruction manual.  
Mount the device so that it is not exposed to any mechanical hazard. For example, mount the device in a protective housing.

### Range of application 1D

#### Protection from mechanical danger

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.

#### Electrostatic charge

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. 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. Do not attach the nameplate provided in areas where electrostatic charge can build up.

### Range of application 3D (tc)

#### Protection from mechanical danger

The sensor must not be exposed to **ANY FORM** of mechanical danger.

#### Protection from UV light

The sensor and the connection cable must be protected from damaging UV-radiation. This can be achieved when the sensor is used in internal areas.

## Electrostatic charge

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. 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. Do not attach the nameplate provided in areas where electrostatic charge can build up.

## Material selection accessories

When selecting accessories, ensure that the material allows the temperature of the enclosure to rise to up to 70 °C.

## Plug connector

The plug connector must not be withdrawn under voltage. The proximity switch is identified as follows: "WARNING - DO NOT SEPARATE WHEN ENERGIZED". With the plug connector disconnected, soiling of the internal area must be prevented. (i.e. the area that is inaccessible when the connector is inserted) If connectors are required for the installation, then the following points must be observed: ♦ The connectors must be certified in accordance with the application. ♦ The temperature range of the connectors must be selected according to the application. ♦ The degree of protection must not be reduced by the connectors.

Seal the housing. Use a seal that meets the requirements of the application. The plug connection can only be separated using a tool. This is achieved by using the locking protection V1-Clip (Mounting accessory from Pepperl + Fuchs).

### Range of application 3D (tD)

#### Protection from mechanical danger

The sensor must not be exposed to **ANY FORM** of mechanical danger.

#### Protection from UV light

The sensor and the connection cable must be protected from damaging UV-radiation. This can be achieved when the sensor is used in internal areas.

## Electrostatic charge

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.

## Plug connector

The plug connector must not be withdrawn under voltage. The proximity switch is identified as follows: "WARNING - DO NOT SEPARATE WHEN ENERGIZED". With the plug connector disconnected, soiling of the internal area must be prevented. (i.e. the area that is inaccessible when the connector is inserted)  
The plug connection can only be separated using a tool. This is achieved by using the locking protection V1-Clip (Mounting accessory from Pepperl + Fuchs).

### Range of application 1G

#### Protection from mechanical danger

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.

#### Electrostatic charge

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

### Range of application 2G

#### Protection from mechanical danger

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.

#### Electrostatic charge

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.

### Range of application 3G (ic)

#### Protection from mechanical danger

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 charge

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.

#### Connection parts

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

## Operation, maintenance, repair

The device must not be repaired, changed or manipulated.  
In the event of a fault, always return the device to Pepperl+Fuchs.  
If there is a defect, the device must always be replaced with an original device from Pepperl+Fuchs.

## Delivery, transport, disposal

Check the packaging and contents for damage.  
Check if you have received every item and if the items received are the ones you ordered.  
Keep the original packaging. Always store and transport the device in the original packaging.  
Store the device in a clean and dry environment. The permitted ambient conditions (see datasheet) must be considered.  
Disposing of device, packaging material, and possibly contained batteries must be in compliance with the applicable laws and guidelines of the respective country.