Pepperl Fuchs NCB2-12GM40-E2-3G-3D Inductive Sensor Instruction Manual

PEPPERL+FUCHS

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Pepperl Fuchs NCB2-12GM40-E2-3G-3D Inductive Sensor Instruction Manual

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IECEx marking Ex ec IIC T6...T1 Gc Ex tc IIIC T80°C Dc

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2. Validity

Specific processes and instructions in this instruction manual require special provisions to guarantee the safety of the operating personnel.

3. Target Group, Personnel

Responsibility for planning, assembly, commissioning, operation, maintenance, and dismounting lies with the plant operator.

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismounting of the device. The trained and qualified personnel must have read and understood the instruction manual.

4. 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, manuals, declarations of conformity, EUtype 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**.

For specific device information, scan the QR code on the device or enter the serial number in the serial number search at **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.

5. 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.

Technical data provided in the datasheet may be partly restrained by the information given in this instruction manual.

Use the device only within the specified ambient and operating conditions.
The device is an electrical apparatus for hazardous areas.

The certificate applies only to the use of apparatus under atmospheric conditions.

If you use the device outside atmospheric conditions, consider that the permissible safety parameters should be reduced.

The device can be used in hazardous areas containing gas, vapor, and mist.

The device can be used in hazardous areas containing combustible dust.

6. Improper Use

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

7. Mounting and Installation

Observe the installation instructions according to IEC/EN 60079-14. Safety-relevant markings are found on the nameplate of the device or the nameplate supplied.

Attach the nameplate supplied in the immediate vicinity of the device.
Attach the nameplate so that it is legible and indelible. Take the ambient conditions into account.

Do not mount a damaged or polluted device.

Mount the device so that it complies with the specified degree of protection according to IEC/EN 60529.

If you use the device in environments subject to adverse conditions, you must protect the device accordingly.

Do not remove the warning markings.

7.1. Requirements for Equipment Protection Level Gc (ec)

The device is designed for use in an environment with pollution degree 3 according to IEC/EN 60664-1.

When selecting materials for accessories consider that the temperature of the housing can rise up to 70 °C.

Provide a transient protection. Ensure that the peak value of the transient protection does not exceed 140 % of 85 V.

7.2. Requirements for Equipment Protection Level Dc

The device is designed for use in an environment with pollution degree 3 according to IEC/EN 60664-1.

When selecting materials for accessories consider that the temperature of the housing can rise up to 70 °C.

The maximum surface temperature of the device was determined without a dust layer on the apparatus.

7.3. Specific Conditions of Use

Mount the device so that it complies with the specified degree of protection according to IEC/EN 60529

7.3.1. Requirements in Relation to Electrostatics

Information on electrostatic hazards can be found in the technical specification IEC/TS 60079-32-1.

Do not mount the supplied nameplate in areas that can be electrostatically charged.

You can reduce the electrostatic hazards by minimizing the generation of static electricity. For example, you have the following options to minimize the generation of static electricity:

- Control the environmental humidity.
- Protect the device from direct airflow.
- Ensure a continuous drain off of the electrostatic charges.

Avoid inadmissibly high electrostatic charge of the metal housing components on the device.
Include the metal housing components in the equipotential bonding.

7.3.2. Requirements to Mechanics

7.3.2.1. Requirements for Equipment Protection Level Gc (ec)

Mount the device in a way that the device is protected against mechanical hazard.
Protect cables and cable glands from tensile load and torsional stress or use certified cable glands.

7.3.2.2. Requirements for Equipment Protection Level Dc
Mount the device in a way that the device is protected against mechanical hazard.

Protect cables and cable glands from tensile load and torsional stress or use certified cable glands.

7.3.3. Requirements in Relation to Ultraviolet Radiation

7.3.3.1. Requirements for Equipment Protection Level Gc (ec) Mount the device in such a way that it is protected from ultraviolet radiation.

Install the cables and connection lines in such a way that they are protected from ultraviolet radiation.

7.3.3.2. Requirements for Equipment Protection Level Dc

Mount the device in such a way that it is protected from ultraviolet radiation.

Install the cables and connection lines in such a way that they are protected from ultraviolet radiation.

8. Operation, Maintenance, Repair

Observe the specific conditions of use.
Safety-relevant markings are found on the nameplate of the device or the nameplate supplied.

Do not use a damaged or polluted device.

Do not repair, modify, or manipulate the device.

Modifications are permitted only if approved in this instruction manual and in the device-related documentation.

If there is a defect, always replace the device with an original device.

Do not remove the warning markings.

8.1. Requirements for Equipment Protection Level Gc (ec)

Do not exceed the maximum permissible operating voltage Ubmax.
Tolerances are not permitted.

Do not exceed the maximum permitted output current. Prevent short circuits.

8.2. Requirements for Equipment Protection Level Dc

Do not exceed the maximum permissible operating voltage Ubmax.
Tolerances are not permitted.

Do not exceed the maximum permitted output current. Prevent short circuits.

9. 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 must be considered, see datasheet.

The device, built-in components, packaging, and any batteries contained within must be disposed in compliance with the applicable laws and guidelines of the respective country.

10. Safety-Relevant Technical Data

10.1. Equipment protection level Gc (ec)

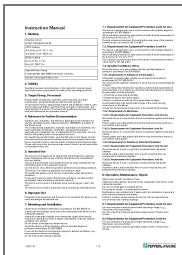
Type of protection	Protection by increased safety "ec"
CE marking	CE
Certificates	
ATEX certificate	TÜV 20 ATEX 8523 X
ATEX marking	Ⓔ II 3G Ex ec IIC T6...T1 Gc
ATEX standards	EN IEC 60079-0:2018-07, EN 60079-7:2015-12, EN IEC 60079-7/A1:2018-01
IECEx certificate	IECEx TUR 21.0017X
IECEx marking	Ex ec IIC T6...T1 Gc
IECEx standards	IEC 60079-0:2017-12, IEC 60079-7 Edition 5.1:2017-08
Minimum ingress protection	IP 54 according to IEC/EN 60529
Minimum permissible ambient temperature in °C	Ta min: -25 °C

Maximum permissible ambient temperature in °C	Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values. Maximum operating voltage U_{Bmax} Maximum load current I_{Lmax} Minimum series resistance R_V Maximum analog output voltage U_{Amax} Maximum analog output current I_{Amax} at U_{Bmax} = 30 V, I_{Lmax} =200 mA: 44 °C at U_{Bmax} = 30 V, I_{Lmax} = 100 mA: 50 °C at U_{Bmax} = 30 V, I_{Lmax} =30 mA: 53 °C

10.2. Equipment protection level Dc

Type of protection	Protection by enclosure "tc"
CE marking	CE
Certificates	
ATEX certificate	TÜV 20 ATEX 8524 X
ATEX marking	Ⓔ II 3D Ex tc IIIC T80°C Dc
ATEX standards	EN IEC 60079-0: 2018-07, EN 60079-31: 2014-07
IECEx certificate	IECEx TUR 21.0018X
IECEx marking	Ex tc IIIC T80°C Dc
IECEx standards	IEC 60079-0:2017-12, IEC 60079-31:2013-11
Minimum ingress protection	IP 6x according to IEC/EN 60529
Minimum permissible ambient temperature in °C	Ta min: -25 °C

Maximum permissible ambient temperature in °C	Also observe the maximum permissible ambient temperature stated in the general technical data. Keep to the lower of the two values. Maximum operating voltage U_{Bmax} Maximum load current I_{Lmax} Minimum series resistance R_V Maximum analog output voltage U_{Amax} Maximum analog output current I_{Amax} at U_{Bmax} = 30 V, I_{Lmax} =200 mA: 44 °C at U_{Bmax} = 30 V, I_{Lmax} = 100 mA: 50 °C at U_{Bmax} = 30 V, I_{Lmax} =30 mA: 53 °C



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NCB2-12GM40-E2-3G-3D, Inductive Sensor