Instruction Manual

1. Marking

USB Intrinsic Safety Barrier SK-PC-D2-UU1-10-HS
ATEX certificate: DEMKO 14 ATEX 1269806 X ATEX marking: Ⓔx II 3G Ex ec [ic Gc] IIC T6 Gc Ⓔx II (3)D [Ex ic Dc] IIIB
IECEx certificate: IECEx UL 14.0017X IECEx marking: Ex ec [ic Gc] IIC T6 Gc [Ex ic Dc] IIIB
North America Certifcates: E106378 (UL), 116-0337 UL marking: Class I, Division 2, A, B, C, D Class II, Division 2, F, G Class III USA marking: Class 1, Zone 2, AEx ec [ic Gc] IIC T6 Gc [AEx ic Dc] IIIB CAN marking: Ex ec [ic Gc] IIC T6 Gc X [Ex ic Dc] IIIB X

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2. 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.

3. Reference to Further Documentation

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

Observe directives, standards, and national laws applicable to the intended use and the operating location.
Observe Directive 1999/92/EC in relation to hazardous areas.

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The corresponding datasheets, manuals, declarations of conformity, EU-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.

For specific device information such as the year of construction, scan the QR code on the device. As an alternative, enter the serial number in the serial number search at www.pepperl-fuchs.com.

Refer to the relevant EU-type examination certificate to see the relationship between the connected circuit type, the maximum permitted ambient temperature, the surface temperature, and the effective inner reactances.

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.

4. Intended Use

The SK-PC-D2-UU1-10-HS is an open-type USB barrier that provides two USB channel connections. The barrier is intended for installation into an ATEX/IECEx certified, tool-removable, IP54 minimum enclosure and is suitable for installation in Zone 2, Group IIC hazardous locations. The barrier provides "ic" energy-limited field wiring to Zone 2, Group IIC and Zone 22, Group IIIB hazardous locations.

For each of the two USB channels, the barrier provides four lines to the "ic" intrinsically safe apparatus: The power lines (V+, GND) and the data lines (TxD+, RxD-)

The SK-PC-D2-UU1-10-HS may be mounted in Class I, Div. 2, A, B, C, D and Zone 2, IIC locations. The barrier provides non-incendive outputs for Class I, Div 2., A, B, C, D; Class II, Div. 2, F and G; Class III; Zone 2, IIC; and Zone 22, IIIB areas based on the entity parameter concept.

Take the intended use of the connected devices from the corresponding documentation.

The device is an electrical apparatus for hazardous areas.

5. Improper Use

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

The device is not suitable to separate intrinsically safe circuits from non-intrinsically safe circuits.

6. Specific Conditions of Use

The device is designed for a maximum altitude of 2000 m.

Observe the grounding requirements for type of protection Ex i according to IEC/EN 60079-14.

Supply the device with a power supply that meets the requirements for safety extra-low voltage (SELV) or protective extra-low voltage (PELV).

The device is designed for use in pollution degree 2 and overvoltage category II according to IEC/EN 60664-1.

7. Mounting and Installation

Prior to using the product make yourself familiar with it. Read the instruction manual carefully.

Only use accessories specified by the manufacturer.

When mounting the surrounding enclosure in hazardous areas, the surrounding enclosure must meet the requirements of a type of protection listed in IEC/EN 60079-0.

Only connect a device that is in accordance with IEC/EN 60950-1 and is designed as safety extra-low protective voltage (SELV) system.

Equipotential bonding must be achieved along the intrinsically safe circuits.

Connection or disconnection of energized circuits is only permitted in the absence of a potentially explosive atmosphere.

Adjust the sealing element of the cable gland to the diameter of the cables and connection lines used.

Ensure that all cable glands are in good condition and are securely tightened.

7.1. Requirements for Cables and Connection Lines

Only cables and connection lines that meet the requirements of the respective hazardous area certificate of the device may be connected to the intrinsically safe connection.

Only use cables and connection lines with a temperature range appropriate to the application.

Observe the permissible cable type and cable length given in the respective hazardous area certificate.

Regarding the verification of intrinsic safety, observe the maximum permissible external capacitance of this device and the other devices in the circuit.

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

Install cables and cable glands in a way that they are not exposed to mechanical hazards.

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

For intrinsically safe circuits, the dielectric strength of the insulation against other intrinsically safe circuits and against the shield must be at least 500 V according to IEC/EN 60079-14.

Observe the permissible core cross section of the conductor.

When installing the conductors the insulation must reach up to the terminal.

When using stranded conductors, crimp wire end ferrules on the conductor ends.

Do not use aluminum wire for connection of the device.

Protect plastic cable glands against mechanical hazard.

Observe the minimum bending radius of the conductors.

Unused cables and connection lines must be connected to earth or be adequately insulated by means of terminals suitable for the type of protection.

Observe the grounding requirements for type of protection Ex i according to IEC/EN 60079-14.

8. Operation, Maintenance, Repair

Prior to using the product make yourself familiar with it. Read the instruction manual carefully.

Observe the warning markings.

The device must not be repaired, changed, or manipulated. In case of failure, always replace the device with an original device.

Do not use a damaged or polluted device.

Do not connect or disconnect the electrical connection when energized.

If cleaning is necessary while the device is located in a hazardous area, in order to avoid electrostatic charging only use a clean damp cloth.

Observe IEC/EN 60079-17 for maintenance and inspection.

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.

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.