

Instruction Manual

1. Marking

VisuNet FLX – System with Enclosure Remote Monitor RM-320S-* Personal Computer PC-320S-*
Equipment protection level Gc ATEX certificate: UL 22 ATEX 2481 X ATEX marking: Ⓜ II 3G Ex ec [ic Gc] IIC T4 Gc IECEX certificate: IECEX ULD 22.0019X IECEX marking: Ex ec [ic Gc] IIC T4 Gc
Equipment protection level Dc ATEX certificate: UL 22 ATEX 2481 X ATEX marking: Ⓜ II 3D Ex tc [ic Dc] IIIC T85°C Dc IECEX certificate: IECEX ULD 22.0019X IECEX marking: Ex tc [ic Dc] IIIC T85°C Dc
North America Certificates: OrdLoc: E223772 (UL) HazLoc: E492874 (UL), Control Drawing 116-0478 Device suitable for mounting in: Class I, Division 2, Groups A-D, T4 Class II, Division 2, Groups E, F, G, T4 Class III Device suitable for mounting in: Class I, Zone 2, Group IIC, T4 Class II, Zone 22, Group IIIB, T85°C Class III, Zone 22, Group IIIA, T85°C Associated apparatus with intrinsically safe circuits for: Class I, Division 2, Groups A-D Class II, Division 2, Groups E, F, G Class III Associated apparatus with intrinsically safe circuits for: Class I, Zone 2, Group IIC Class II, Zone 22, Group IIIB Class III, Zone 22, Group IIIA

VisuNet FLX – System with Enclosure Direct Monitor DM-320S-*
Equipment protection level Gc ATEX certificate: UL 22 ATEX 2481 X ATEX marking: Ⓜ II 3G Ex ec IIC T4 Gc IECEX certificate: IECEX ULD 22.0019X IECEX marking: Ex ec IIC T4 Gc
Equipment protection level Dc ATEX certificate: UL 22 ATEX 2481 X ATEX marking: Ⓜ II 3D Ex tc IIIC T85°C Dc IECEX certificate: IECEX ULD 22.0019X IECEX marking: Ex tc IIIC T85°C Dc
North America Certificates: OrdLoc: E223772 (UL) HazLoc: E492874 (UL) Device suitable for mounting in: Class I, Division 2, Groups A-D, T4 Class II, Division 2, Groups E, F, G, T4 Class III Device suitable for mounting in: Class I, Zone 2, Group IIC, T4 Class II, Zone 22, Group IIIB, T85°C Class III, Zone 22, Group IIIA, T85°C

The *-marked letters of the type code are placeholders for versions of the device.

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2. Target Group, Personnel

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

The personnel must be appropriately trained and qualified in order to carry out mounting, installation, commissioning, operation, maintenance, and dismantling 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.

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.

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

Only use the device in the industrial location.

The VisuNet FLX Systems are designed for Zone 2/22 and non-Ex applications. The different mounting and configuring options lead to the highest application flexibility. Due to a fully modular design, the new platform, which is geared to the needs of the (petro-) chemical and pharmaceutical industries, the HMIs can be configured to fit exactly and enables simple and fast adjustments in the field.

Use the device only within the specified ambient and operating conditions.

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

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

The device is an electrical apparatus for hazardous areas.

The device is not suitable for separating hazardous areas.

Devices for which specific conditions of use apply have the X marking at the end of the certificate number.

Only use the device stationary.

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.

The device is not suitable for separating hazardous areas.

6. Specific Conditions of Use

The device must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC/EN 60664-1.

Use the device only within the specified ambient and operating conditions.

Install the device in locations with a low risk of mechanical hazard according to IEC/EN 60079-0 only.

Avoid mechanical impacts to the device (e. g. from heavy or sharp-edged objects).

Avoid inadmissibly high electrostatic charge on the device.

Mount the device in a location with low electrostatic charge.

Secure the connections of the non-intrinsically safe circuits against loosening by suitable means.

Do not use interfaces that are not intended for the use in the explosion-hazardous area.

Do not use operating elements that are not intended for the use in the explosion-hazardous area.

Some interfaces of the device must be closed during operation in the explosion-hazardous area. Ensure that these interfaces are closed.

For DC Supply

The device must be installed and operated only in an environment of overvoltage category II (or better) according to IEC/EN 60664-1.

Only connect supplies that provide protection against electric shock (e. g. SELV or PELV).

For AC Supply

The device must be installed and operated only in an environment of overvoltage category III (or better) according to IEC/EN 60664-1.

Requirements for Usage with RFID Reader RFID20-*NF-****-N**

Observe the instruction manuals for the associated components.

7. 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.

Do not stay below the open device. In order to avoid personal injuries or property damage, make appropriate provisions for the mounting and maintenance procedures.

Use mounting materials which are suitable to secure the device safely.
 Use mounting materials that fit the nature of the mounting surface.
 Only use accessories specified by the manufacturer.
 Mount the device in a weatherproof location.
 Ensure that the operating location has a sufficient floor load capacity.
 If mounting the enclosure on concrete use expansion anchors.
 When mounting the enclosure to a steel framework use vibration resistant mounting material.
 Ensure that all fasteners are present.
 Observe the tightening torque of the screws.
 Protect the device against long-term or excessive mechanical vibrations.
 Install the device in locations with a low risk of mechanical hazard according to IEC/EN 60079-0 only.
 The device is heavy. In order to avoid personal injuries or property damage, make appropriate provisions for the mounting procedure.
 Do not mount the device at locations where an aggressive atmosphere may be present.
 Do not damage the breather drain.
 Do not cover the breather drain.
 Observe the installation instructions according to IEC/EN 60079-14.
 Observe the installation instructions according to IEC/EN 60079-25.
 If the device has already been operated in general electrical installations, the device may subsequently no longer be installed in electrical installations used in combination with hazardous areas.
 Ensure that the equipotential bonding connections are in good condition, and are not damaged or corroded.
 Ensure that the terminals are in good condition and are not damaged or corroded.
 When connecting intrinsically safe devices with intrinsically safe circuits of associated apparatus, observe the maximum peak values with regard to explosion protection (verification of intrinsic safety). Observe the standards IEC/EN 60079-14 or IEC/EN 60079-25.
 Provide a transient protection. Ensure that the peak value of the transient protection does not exceed 140 % of the rated voltage.
 The device must be installed and operated only in a controlled environment that ensures a pollution degree 2 (or better) according to IEC/EN 60664-1.
 The device must be disconnected from the power supply prior to installation and maintenance. The power supply may be activated only after all the circuits required for operation have been fully assembled and connected.
 Only connect a device that is in accordance with IEC/EN 60950-1 and is designed as safety extra-low protective voltage (SELV) system.
 Protect the circuit against overvoltage (e. g., lightning).
 The device provides a grounding terminal to which an equipotential bonding conductor with a minimum cross section of 4 mm² must be connected.

7.1. Requirements in Relation to Intrinsic Safety

Secure the connections of the non-intrinsically safe circuits against loosening by suitable means.
 If circuits with type of protection Ex i are operated with non-intrinsically safe circuits, they must no longer be used as circuits with type of protection Ex i.
 Observe the maximum values of the device, when connecting the device to intrinsically safe apparatus.
 Keep the separation distances between all non-intrinsically safe circuits and intrinsically safe circuits according to IEC/EN 60079-14.
 Observe the compliance of the separation distances between two adjacent intrinsically safe circuits according to IEC/EN 60079-14.
 Circuits of intrinsically safe apparatus can be led into hazardous areas, whereby special attention must be paid to maintaining separation distances to all non-intrinsically safe circuits according to the requirements in IEC/EN 60079-14.
 Observe the grounding requirements for type of protection Ex i according to IEC/EN 60079-14.
 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.
 Equipotential bonding must be achieved along the intrinsically safe circuits.

7.2. Requirements for Cable Glands

Install the cables and the cable glands in accordance with IEC/EN IEC 60079-0 and IEC/EN 60079-14.
 Only use cables and connection lines with a temperature range appropriate to the application.
 Use only one connection line per opening.
 Use only one conductor per terminal.
 Adjust the sealing element of the cable gland to the diameter of the cables and connection lines used.
 Observe the tightening torque of the cable glands.
 Tighten all cable glands with the appropriate torque.
 Ensure that all cable glands are in good condition and are securely tightened.
 Close all unused cable glands with the appropriate sealing plugs.

7.3. Requirements for Cables and Connection Lines

Observe the maximum permissible length of cables and connection lines.
 The dielectric strength of the insulation must be at least 500 V according to IEC/EN 60079-14.
 Observe the permissible core cross section of the conductor.
 Observe the insulation stripping length.
 When installing the conductors the insulation must reach up to the terminal.
 When using stranded conductors, crimp wire end ferrules on the conductor ends.
 Observe the minimum bending radius of the conductors.
 The nominal core cross section of a connected conductor is 2.5 mm² (solid, finely stranded, and stranded).
 Unused cables and connection lines must be either connected to terminals or securely tied down and isolated.
 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.
 Equipotential bonding must be achieved along the field circuits.

7.4. Requirements in Relation to Electrostatics

Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, or maintaining the device.
 Mount the device in a location with low electrostatic charge.
 Avoid inadmissibly high electrostatic charge of the cables and connection lines.
 Include the metal housing components in the equipotential bonding.
 An electrostatic charge poses an ignition hazard in case of discharge.
 Include the fasteners in the equipotential bonding.

7.5. Requirements for Surrounding Enclosures

If additional surrounding enclosures are required, the following points must be considered during installation:

- Degree of protection according to IEC/EN 60529
- Resistance to light according to IEC/EN 60079-0
- Resistance to impact according to IEC/EN 60079-0
- Resistance to chemical agents according to IEC/EN 60079-0
- Thermal endurance according to IEC/EN 60079-0
- Electrostatics according to IEC/EN 60079-0

Mount the surrounding enclosure in a way that all housing outlets, e. g., cable glands and breather drains face downwards.
 When the enclosure cover is fitted, ensure that all fasteners are fully tightened.
 Mount the device so that it complies with the specified degree of protection according to IEC/EN 60529.
 For cable glands only use incoming cable diameters of the appropriate size.
 Ensure that the surrounding enclosure is not damaged, distorted, or corroded.
 Ensure that all seals are clean, undamaged, and correctly fitted.
 Tighten all screws of the surrounding enclosure/surrounding enclosure cover with the appropriate torque.
 Close all unused enclosure holes with the appropriate stopping plugs.

8. Operation, Maintenance, Repair

Prior to using the product make yourself familiar with it. Read the instruction manual carefully.
 Do not stay below the open device. In order to avoid personal injuries or property damage, make appropriate provisions for the mounting and maintenance procedures.
 Observe IEC/EN 60079-17 for maintenance and inspection.
 Do not use a damaged or polluted device.
 If there is a defect, the device must be repaired by Pepperl+Fuchs.
 The device must not be repaired, changed, or manipulated. In case of failure, always replace the device with an original device.
 Observe the warning markings.
 Do not remove the warning markings.
 If the device is installed in potentially explosive dust atmosphere, observe that the thickness of the dust layer does not exceed 5 mm.
 Remove the dust layers in regular intervals.
 Remove the dust before opening the surrounding enclosure.
 Connection or disconnection of energized non-intrinsically safe circuits is only permitted in the absence of a potentially explosive atmosphere.
 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.
 Avoid mechanical impacts to the device (e. g. from heavy or sharp-edged objects).
 The device can get very hot during operation. To protect the device from excessive heating, observe the required clearances and sufficient ventilation when installing the device.
 Do not use interfaces that are not intended for the use in the explosion-hazardous area.

Do not use operating elements that are not intended for the use in the explosion-hazardous area.

Some interfaces of the device must be closed during operation in the explosion-hazardous area. Ensure that these interfaces are closed.

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.