

# Instruction Manual

## 1. Marking

Thin Client Unit TCU1100-J1-*
Personal Computer Unit PCU1100-J1-*
ATEX: ATEX marking: Ⓢ II 2G Ex eb q [ib] IIC T4 IP66 Gb Ⓢ II 2D Ex tb [ib] IIIC T85°C IP66 Db
IECEX: IECEX marking: Ex eb q [ib] IIC T4 IP66 Gb Ex tb [ib] IIIC T85°C IP66 Db
Thin Client Unit TCU1200-J2-*
Personal Computer Unit PCU1200-J2-*
ATEX: ATEX marking: Ⓢ II 3G Ex ec [ib] IIC T4 IP66 Gc Ⓢ II 3D Ex tc [ib] IIIC T85°C IP66 Dc
IECEX: IECEX marking: Ex ec [ib] IIC T4 IP66 Gc Ex tc [ib] IIIC T85°C IP66 Dc

For details of on the actual type of protection applied, refer to the nameplate of the device.

Refer to the corresponding technical data of the installed components for the actual type of protection or any possible restrictions.

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.

Observe Directive 1999/92/EC in relation to hazardous areas.

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](http://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 temperature class, and the effective inner reactances.

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](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).

## 4. Intended Use

The Thin Client Unit TCU1\*00-\* and the Personal Computer Unit PCU1\*00-\* are used as explosion-protected apparatus for controlling, operating and visualizing production and manufacturing processes in hazardous areas zones 1 and 2, ignition group IIC, zone 21 and zone 22 for dust group IIIC according to type designation according to type code.

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

The device may only be used in connection with the following devices:

- Display unit DPU1100-J1-\*\*\*\*\*-\*\*-X according to ATEX certificate BVS 16 ATEX E 083 X
- Display unit DPU1200-J2-\*\*\*\*\*-\*\*-X according to ATEX certificate BVS 16 ATEX E 082 X

Optionally, the device may be used in combination with the PSU1\*00-\* power supply.

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.

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

## 5. Improper Use

Protection of the 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. 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.

Only use accessories specified by the manufacturer.

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.

Install the cables and the cable glands in accordance with IEC/EN 61241-0.

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

Only use cable glands with a temperature range appropriate to the application.

Do not damage the breather drain.

Do not cover the breather drain.

### Requirements for Cables and Connection Lines

Observe the following points when installing cables and connection lines: 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.

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.

The insulation stripping length must be considered.

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 mm<sup>2</sup> (solid, finely stranded, and stranded).

Unused cables and connection lines must be either connected to terminals or securely tied down and isolated.

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.

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

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

Ensure that all fasteners are present.

Observe the tightening torque of the screws.

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.

The metal housing parts are coated. If you require a conductive connection, bypass this coating in an appropriate way.

Safety-relevant markings are found on the nameplate supplied.

Ensure that the nameplate is present and legible. Take the ambient conditions into account.

The housing has no grounding terminal. The housing is grounded via the permanent connection with the housing of the display.

Ensure that external ground connections exist, are in good condition, and are not damaged or corroded.

Ensure that the terminals are in good condition and are not damaged or corroded.

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.

Protect the device against long-term or excessive mechanical vibrations.  
The device is heavy. In order to avoid personal injuries or property damage, make appropriate provisions for the mounting procedure.

Avoid electrostatic charges which could result in electrostatic discharges while installing, operating, or maintaining the device.

Avoid inadmissibly high electrostatic charge of the cables and connection lines.

Observe the maximum permissible length of cables and connection lines.  
Include the metal housing components in the equipotential bonding.

An electrostatic charge poses an ignition hazard in case of discharge.

Observe the installation instructions according to IEC/EN 60079-14.

Observe the installation instructions according to IEC/EN 60079-25.

Equipotential bonding must be achieved along the intrinsically safe circuits.

Connect all bare non-energized metal parts to the protective conductor.

The device is not suitable for separating hazardous areas.

The device may be installed in gas group IIC.

Only remove the cover in the absence of a potentially explosive atmosphere.

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.

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.

If the device has been used with an Ex ic circuit with voltage  $U_0$  greater than voltage  $U_i$  specified for type of protection Ex ia or Ex ib, the device must not be connected to Ex ia or Ex ib circuits anymore.

Observe the respective peak values of the field device and the associated apparatus with regard to explosion protection when connecting intrinsically safe field devices with intrinsically safe circuits of associated apparatus (verification of intrinsic safety). Also observe IEC/EN 60079-14 and IEC/EN 60079-25.

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.

### Specific Conditions of Use

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

Avoid inadmissibly high electrostatic charge on the device.

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

Equipotential bonding must be achieved along the intrinsically safe circuits.

### Requirements for Equipment Protection Levels Gc, Dc

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.

## 7. Housings and 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.

The housing is factory-sealed. Do not open the housing.

When the 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.

To ensure the degree of protection:

- The housing must not be damaged, distorted or corroded.
- All seals must be undamaged and correctly fitted.
- All screws of the housing/housing cover must be tightened with the appropriate torque.

- All cable glands must be suitably sized for the incoming cable diameters.
- All cable glands must be tightened with the appropriate torque.
- All unused cable glands must be sealed and closed with appropriate sealing plugs or stopping plugs.

## 8. Operation, Maintenance, Repair

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

Do not repair, modify, or manipulate the device.

Do not use a damaged or polluted device.

If the device is installed in potentially explosive dust atmosphere, remove dust layers which exceed 5 mm in regular intervals.

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

If there is a defect, the device must be repaired by Pepperl+Fuchs.

Do not remove the warning marking "Warning – Do not open when energized!".

Disconnect the device, before you plug or unplug the terminals.

After de-energizing the device, a specified delay before opening the cover has to be maintained.

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.

Retrieve the temperature class dependant temperature ranges from the EU-type examination certificate.

Only operate the device with a closed Ex e terminal compartment.

Remove the dust before opening the surrounding enclosure.

## 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.