Instruction Manual

1. Marking

DC Power Supply PSU1100-J1-DC-*
Equipment protection level Gb
ATEX marking: Ⓔ II 2G Ex eb q IIC T4 Gb
IECEx marking: Ex eb q IIC T4 Gb
Equipment protection level Db
ATEX marking: Ⓔ II 2D Ex tb IIIC T85°C Db
IECEx marking: Ex tb IIIC T85°C Db

DC Power Supply PSU1200-J2-DC-*
Equipment protection level Gc
ATEX marking: Ⓔ II 3G Ex ec q IIC T4 Gc
IECEx marking: Ex ec q IIC T4 Gc
Equipment protection level Dc
ATEX marking: Ⓔ II 3D Ex tc IIIC T85°C Dc
IECEx marking: Ex tc IIIC T85°C Dc

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 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.

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 an apparatus certified for use in hazardous areas rated according to ATEX directive and IECEx Zones 1 and 21 and Zones 2 and 22 depending on the type version used. The device is also UL listed for use in Class I and Class II, Division 2 and Class III hazardous areas.

The device is a DC-DC power supply. The device supplies explosion-protected equipment in the hazardous area. The device provides an output voltage of 24 V DC based on 18 V to 36 V DC input voltage.

The output power has a derating from 50 °C to 65 °C (80 W to 50 W).

The device is optimized to be used with the following devices:

- Display Unit DPU1*00-*
- Thin Client Unit TCU1*00-*
- PC Unit PCU1*00-*

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

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

Take the intended use of the connected 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.

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.

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

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.

The device is not suitable for separating hazardous areas.

The device may be installed in gas group IIC.

Safety-relevant markings are found on the nameplate supplied. Ensure that the nameplate is present and legible. Take the ambient conditions into account.

Only use accessories specified by the manufacturer.

Protect the circuit against overvoltage (e. g., lightning).

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.

The housing has a ground connection. Connect to this ground connection an equipotential bonding conductor with a minimum cross section of 4 mm^2.

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

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.

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

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.

Do not damage the breather drain.

Do not cover the breather drain.

Specific Conditions of Use

Mount the device in a location with low electrostatic charge.

6.1. Requirements for 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^2 (solid, finely stranded, and stranded).

6.2. Requirements for Cable Glands

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.

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

6.3. Requirements in Relation to Electrostatics

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.

7. Housings and Surrounding Enclosures

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.
Ensure that the enclosure is not damaged, distorted, or corroded.
Ensure that all seals are clean, undamaged, and correctly fitted.
Tighten all screws of the enclosure/enclosure cover with the appropriate torque.
For cable glands only use incoming cable diameters of the appropriate size.
Close all unused cable glands with the appropriate sealing plugs.
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 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.
Observe the warning markings.
Do not remove the warning markings.
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.
The housing is factory-sealed. Do not open the housing.
Do not connect or disconnect the electrical connection 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 terminal compartment.

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.