SIEMENS

Cerberus PACE

System

Mounting

Installation

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Building Technologies

Control Products and Systems

Legal notice

Technical specifications and availability subject to change without notice.

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1 About this document

Retention and availability

!	*NOTICE*
	Missing information Damage due to misuse • This document must be available in a usable format throughout the entire life cycle of the product. Keep the document for reference and ensure that it can be accessed by target groups.

Should you require another copy of this document, please contact the Customer Support Center, phone +49 89 9221-8000.

Goal and purpose

This document describes how to mount and install a 'Cerberus PACE' network-based voice alarm and announcement system for the following tasks:

- Determining an authorized installation or mounting site.
- Connecting the pre-installed devices to the building infrastructure.
- Connecting batteries and the power supply.

Scope

The information contained in this document is valid for 'Cerberus PACE'.

Target groups

The information in this document is intended for the following target groups:

Target group	Activity	Qualification
System owner	• According to EN 50110-1, 'nominated person with the overall responsibility to ensure the safe operation of the electrical installation by setting rules and organisation or framework.'	• 'This person can be the owner, employer, proprietor or a delegated person.' • 'Some of these duties can be delegated to others as required. For large or complex electrical installations or networks, the duties can be delegated for parts of the installations or the network.'
Project engineer	• Sets parameters for product depending on specific national and/or customer requirements. • Checks operability and approves the product for commissioning at the place of installation. • Is responsible for troubleshooting.	• Has obtained suitable specialist training for the function and for the products. • Has attended the training courses for Product Engineer.
Installation personnel	• Assembles and installs the product components at the place of installation. • Carries out a function check following installation.	• Has received specialist training in the area of building installation technology or electrical installations.
Commissioning personnel	• Configures the product at the place of installation according to customer-specific requirements. • Checks the product operability and releases the product for use by the operator. • Searches for and corrects malfunctions.	• Has obtained suitable specialist training for the function and for the products. • Has attended the training courses for commissioning personnel.
Maintenance personnel	• Carries out all maintenance work. • Checks that the products are in perfect working order. • Searches for and corrects malfunctions.	• Has obtained suitable specialist training for the function and for the products.

Source language and reference document

- The source/original language of this document is German (de).
- The reference version of this document is the international version in English. The international version is not localized.

Document identification

The document ID is structured as follows:

ID code	Examples
ID_languageCOUNTRY_ modification index -- = multilingual or international	A6V10215123_deDE_a A6V10215123_en--_a A6V10315123_----_a

Date format

The date format in the document corresponds to the recommendation of international standard ISO 8601 (format YYYY-MM-DD).

Conventions for text marking

Markups

Special markups are shown in this document as follows:

▷	Requirement for a behavior instruction
1. 2.	Behavior instruction with at least two operation sequences
–	Version, option, or detailed information for a behavior instruction
⇨	Intermediate result of a behavior instruction
⇨	End result of a behavior instruction
•	Numbered lists and behavior instructions with an operation sequence
[→ X]	Reference to a page number
'Text'	Quotation, reproduced identically
<Key>	Identification of keys
>	Relation sign and for identification between steps in a sequence, e.g., 'Menu bar' > 'Help' > 'Help topics'
↑ Text	Identification of a glossary entry

Supplementary information and tips

The 'i' symbol identifies supplementary information and tips for an easier way of working.

1.1 Applicable documents

You will find more information on the 'Cerberus PACE' system and its components in the following documents:

Title	Document ID
IT security policies	
Cerberus PACE – IT security policies*	A6V11439692
System documentation	
Cerberus PACE – Planning*	A6V11244536
PACE-Design – Technical manual*	A6V10429097
Cerberus PACE – Mounting / Installation	A6V10430579
Cerberus PACE – Operation	A6V10430571
Data sheets	
System data sheet	A6V11243351
19" cabinets	A6V10429243
Digital audio matrix	A6V10430497
Power amplifier	A6V10430515
Operating terminals	A6V10430526
Call stations	A6V10430544
Power supply and batteries	A6V10430553
Accessories and options	A6V10430563
Environmental declaration	
Cerberus PACE – Environmental declaration	A6V11444004

***You can obtain these documents from the product support platform via the following link:** https://psp.sbt.siemens.com/.

Download center

https://siemens.com/bt/download

- Enter the document ID in the search field.

1.2 Revision history

The reference document's version applies to all languages into which the reference document is translated.

The first edition of a language version or a country variant may, for example, be version 'd' instead of 'a' if the reference document is already this version.

The table below shows this document's revision history:

Version	Edition date	Brief description
a	2018-06-08	First edition

2 Safety

2.1 Safety instructions

The safety notices must be observed in order to protect people and property.

The safety notices in this document contain the following elements:

- Symbol for danger
- Signal word
- Nature and origin of the danger
- Consequences if the danger occurs
- Measures or prohibitions for danger avoidance

Symbol for danger

	This is the symbol for danger. It warns of **risks of injury**. Follow all measures identified by this symbol to avoid injury or death.

Additional danger symbols

These symbols indicate general dangers, the type of danger or possible consequences, measures and prohibitions, examples of which are shown in the following table:

 General danger

 Explosive atmosphere

 Voltage/electric shock

 Laser light

 Battery

 Heat

Signal word

The signal word classifies the danger as defined in the following table:

Signal word	Danger level
DANGER	'DANGER' identifies a dangerous situation, which **will result directly in death or serious injury** if you do not avoid this situation.
WARNING	'WARNING' identifies a dangerous situation, which **may result in death or serious injury** if you do not avoid this situation.
CAUTION	'CAUTION' identifies a dangerous situation, which could result in **slight to moderately serious injury** if you do not avoid this situation.
NOTICE	'*NOTICE*' identifies a possibly harmful situation or possible damage to property that may result from non-observance. '*NOTICE*' does not relate to possible bodily injury.

How risk of injury is presented

Information about the risk of injury is shown as follows:

⚠ WARNING

Nature and origin of the danger
Consequences if the danger occurs
- Measures / prohibitions for danger avoidance

How possible damage to property is presented

Information about possible damage to property is shown as follows:

NOTICE

Nature and origin of the danger
Consequences if the danger occurs
- Measures / prohibitions for danger avoidance

2.2 Safety regulations for the method of operation

National standards, regulations and legislation

Siemens products are developed and produced in compliance with the relevant European and international safety standards. Should additional national or local safety standards or legislation concerning the planning, mounting, installation, operation or disposal of the product apply at the place of operation, then these must also be taken into account together with the safety regulations in the product documentation.

Electrical installations

⚠ WARNING

Electrical voltage
Electric shock
- Work on electrical installations may only be carried out by qualified electricians or by instructed persons working under the guidance and supervision of a qualified electrician, in accordance with the electrotechnical regulations.

- Wherever possible disconnect products from the power supply when carrying out commissioning, maintenance or repair work on them.
- Lock volt-free areas to prevent them being switched back on again by mistake.
- Label the connection terminals with external voltage using a 'DANGER External voltage' sign.
- Route mains connections to products separately and fuse them with their own, clearly marked fuse.
- Fit an easily accessible disconnecting device in accordance with IEC 60950-1 outside the installation.
- Produce earthing as stated in local safety regulations.

⚠ CAUTION

Noncompliance with the following safety regulations

Risk of injury to persons and damage to property

- Compliance with the following regulations is required.

- Specialist electrical engineering knowledge is required for installation.
- Only an expert is permitted to carry out installation work.

Incorrect installation can take safety devices out of operation unbeknown to a layperson.

Mounting, installation, commissioning and maintenance

- If you require tools such as a ladder, these must be safe and must be intended for the work in hand.
- When starting the fire control panel ensure that unstable conditions cannot arise.
- Ensure that all points listed in the 'Testing the product operability' section below are observed.
- You may only set controls to normal function when the product operability has been completely tested and the system has been handed over to the customer.

Testing the product operability

- Prevent the remote transmission from triggering erroneously.
- If testing building installations or activating devices from third-party companies, you must collaborate with the people appointed.
- The activation of fire control installations for test purposes must not cause injury to anyone or damage to the building installations. The following instructions must be observed:
  - Use the correct potential for activation; this is generally the potential of the building installation.
  - Only check controls up to the interface (relay with blocking option).
  - Make sure that only the controls to be tested are activated.
- Inform people before testing the alarm devices and allow for possible panic responses.
- Inform people about any noise or mist which may be produced.
- Before testing the remote transmission, inform the corresponding alarm and fault signal receiving stations.

Modifications to the system design and the products

Modifications to the system and to individual products may lead to faults, malfunctioning and safety risks. Written confirmation must be obtained from Siemens and the corresponding safety bodies for modifications or additions.

Modules and spare parts

- Components and spare parts must comply with the technical specifications defined by Siemens. Only use products specified or recommended by Siemens.
- Only use fuses with the specified fuse characteristics.
- Wrong battery types and improper battery changing lead to a risk of explosion. Only use the same battery type or an equivalent battery type recommended by Siemens.
- Batteries must be disposed of in an environmentally friendly manner. Observe national guidelines and regulations.

Disregard of the safety regulations

Before they are delivered, Siemens products are tested to ensure they function correctly when used properly. Siemens disclaims all liability for damage or injuries caused by the incorrect application of the instructions or the disregard of danger warnings contained in the documentation. This applies in particular to the following damage:

- Personal injuries or damage to property caused by improper use and incorrect application
- Personal injuries or damage to property caused by disregarding safety instructions in the documentation or on the product
- Personal injury or damage to property caused by poor maintenance or lack of maintenance

2.3 Responsibility of the operator

A voice alarm system is safety equipment that protects people, buildings, and facilities using alarms.

In order for it to satisfy this requirement, the voice alarm system must be maintained at regular intervals. The maintenance intervals are defined by the EN 54 standard that applies within the European Union, and are also subject to national and local requirements.

The voice alarm system must be serviced in order to function properly. The voice alarm system consists of components whose function may be impaired by ambient conditions and aging.

The servicing of a voice alarm system is regulated in the scope of the EN 54 standard.

Manufacturer's recommendation

To service the voice alarm system, the following tasks should be carried out at regular intervals:

- Visually inspect the devices for damage or possible sources of error.
- Inspect the system parts four times a year; this includes testing the emergency tones and messages.
- Perform annual maintenance; this includes inspecting and checking the power supply and emergency power supply.
- Replace batteries no later than the intervals specified in the information provided by the battery manufacturer.
- Manage an operating log for documenting system messages, shutdowns, and servicing work.

The frequency of inspections and servicing work depends on the ambient conditions.

Shorter inspection intervals may be required if voice alarm systems are being used in critical ambient conditions – for example, in rooms with a high concentration of dust, high levels of air humidity, or significant temperature fluctuations.

2.4 Standards and directives complied with

A list of the standards and directives complied with is available from your Siemens contact.

2.5 Cyber security disclaimer

Siemens provides a portfolio of products, solutions, systems and services that includes security functions that support the secure operation of plants, systems, machines and networks. In the field of Building Technologies, this includes building automation and control, fire safety, security management as well as physical security systems. In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art security concept. Siemens' portfolio only forms one element of such a concept.

You are responsible for preventing unauthorized access to your plants, systems, machines and networks which should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place. Additionally, Siemens' guidance on appropriate security measures should be taken into account. For additional information, please contact your Siemens sales representative or visit https://www.siemens.com/global/en/home/company/topic-areas/future-of-manufacturing/industrial-security.html.

Siemens' portfolio undergoes continuous development to make it more secure. Siemens strongly recommends that updates are applied as soon as they are available and that the latest versions are used. Use of versions that are no longer supported, and failure to apply the latest updates may increase your exposure to cyber threats. Siemens strongly recommends to comply with security advisories on the latest security threats, patches and other related measures, published, among others, under https://www.siemens.com/cert/en/cert-security-advisories.htm.

3 Preparatory work

This chapter contains all the instructions that must be carried out or ensured by the customer before the system is actually mounted and installed.

3.1 Installation site

General guidelines

- The housings used must conform to the types listed in the documentation and to at least protection category IP 30, in accordance with EN 60529:1991 or EN 60529:1991/A2:2000.
- The installation must be sufficiently stable, with the installation method recommended in the documentation applied.
- All the housing connections and settings must be accessible at access level 3.
- The system may only be mounted and installed in dry rooms and so that it is stationary.
- The system may consist of several housing units.
- If the housings are arranged separately in the fused area, all operating and display elements that are defined as binding must be attached to a housing or housings mounted exclusively in the immediate vicinity.
- The connections for the transmission paths and fuses must be clearly marked.
- All operating and display elements must be clearly labeled to indicate their intended use.
- The labels must be readable at a distance of 0.8 m at an ambient illumination level of 100 lx…500 lx.
- The potential floor load for pedestal cabinets must meet the following requirements:
  - **Bearing capacity** 42 HU, up to **600 kg**
  - Bearing capacity 24 HU, up to 400 kg
- The housings must be positioned in a way that ensures the escape routes and access routes are kept clear. This also applies to open cabinet doors.
- We recommend maintaining a minimum distance of 1 m to the next door frame.

3.2 Delivery units

The cabinet is delivered on a Euro pallet.

⚠ WARNING

High weight and incorrectly dimensioned transport methods

Severe accidents due to tipping

- Choose suitable transport methods.
- Secure the delivery unit to prevent tipping.

- Check that the delivery units are complete according to the details for ordering.

3.3 Electrical supply lines

General guidelines

1. Read the safety instructions for electrical installations in Safety regulations for the method of operation [→ 10].
2. Batteries must only be inserted and connected in the housing by authorized specialist personnel.

- The connections for the transmission paths and fuses must be clearly marked.
- The mains supply line must be designed with at least 1.5 mm^2 per conductor.
- The fuse for each outer conductor must be above the rated current indicated on the type plate.
- In order to avoid an unintentional shutdown, the mains supply line must not be routed via a switch.

See also

Safety regulations for the method of operation [→ 10]

4 Mounting/Installation

4.1 Installing the 19" pedestal cabinet

⚠ WARNING

Severe accidents due to tipping

- Secure the cabinet mechanically by fixing it to the floor or to the wall.
- Do not open the swivel frame of the 19" cabinet while the cabinet is not fixed securely.

The type of floor mounting may vary according to the design of the 19" cabinet.

▷ Ensure that the transport methods used are appropriate for the cabinet weight and that the transport routes are freely accessible.

1. Position the cabinet in such a way that no doors or escape routes are obstructed when the cabinet door is open and that the room can be easily accessed.
2. Position the Euro pallet with the attached cabinet as close as possible to the mounting site.
3. Remove the fixings on the Euro pallet and move the pedestal cabinet to the exact mounting site.
4. Secure the cabinet mechanically by fixing it to the floor or wall, using the supplied base system or the floor fixing straps.
5. Screw the cabinet to the supplied ground anchors and/or wall brackets.
6. The cabinet is ready for installation and the swivel frame can now be opened.

4.2 Wiring the mains supply line

⚠ WARNING

Electrical voltage

Electric shock

- Work on electrical installations may only be carried out by qualified electricians or by instructed persons working under the guidance and supervision of a qualified electrician, in accordance with the electrotechnical regulations.

⚠ CAUTION

Noncompliance with the following safety regulations

Risk of injury to persons and damage to property

- Compliance with the following regulations is required.

- Specialist electrical engineering knowledge is required for installation.
- Only an expert is permitted to carry out installation work.

Incorrect installation can take safety devices out of operation unbeknown to a layperson.

Preparatory work

- Before working on the system, check that the mains supply line is de-energized.
- Check that the supply system is protected against being switching on unintentionally.
- The mains connection is positioned at the bottom left or bottom right depending on whether the swivel frame is mounted on the left or right.
- Depending on the equipment and design, the system features one or more terminal blocks for 1-phase or 3-phase mains connection cables.
- The central grounding point of the 19" cabinet is wired to the PE terminal at the factory.
- The inlets and outlets of the primary wiring must be routed in the cable ducts.
- Live cables must not be routed in the same cable ducts as data cables.

4.2.1 1-phase mains connection

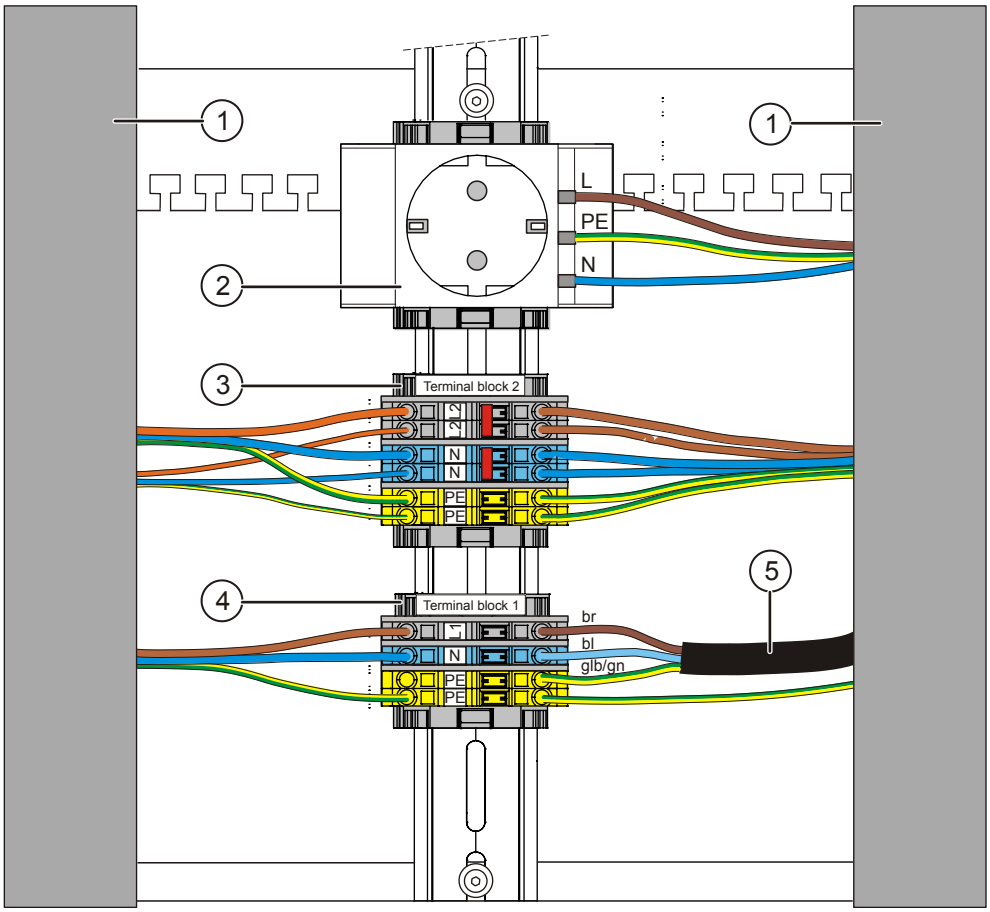

Figure 1: Example diagram of the 1-phase mains connection wiring

1 Cable ducts on left side panel
2 Power socket for notebook
3 Terminal block 2, line distributor
4 Terminal block 1, line distributor and line supply
5 Mains connection cable, 3-core

Terminal designation	Connection	Conductor color
L1	Outer conductor	Brown
N	Neutral conductor	Blue
PE	Protective conductor	Yellow/green
PE	Protective ground, pre-wired	Yellow/green

1. Working with the mains supply line, start by connecting the protective conductor with the yellow/green wire to the free 'PE' ground terminal.
2. Connect the blue neutral conductor to terminal 'N'.
3. Connect the brown outer conductor to terminal 'L1'.

4.2.2 3-phase mains connection

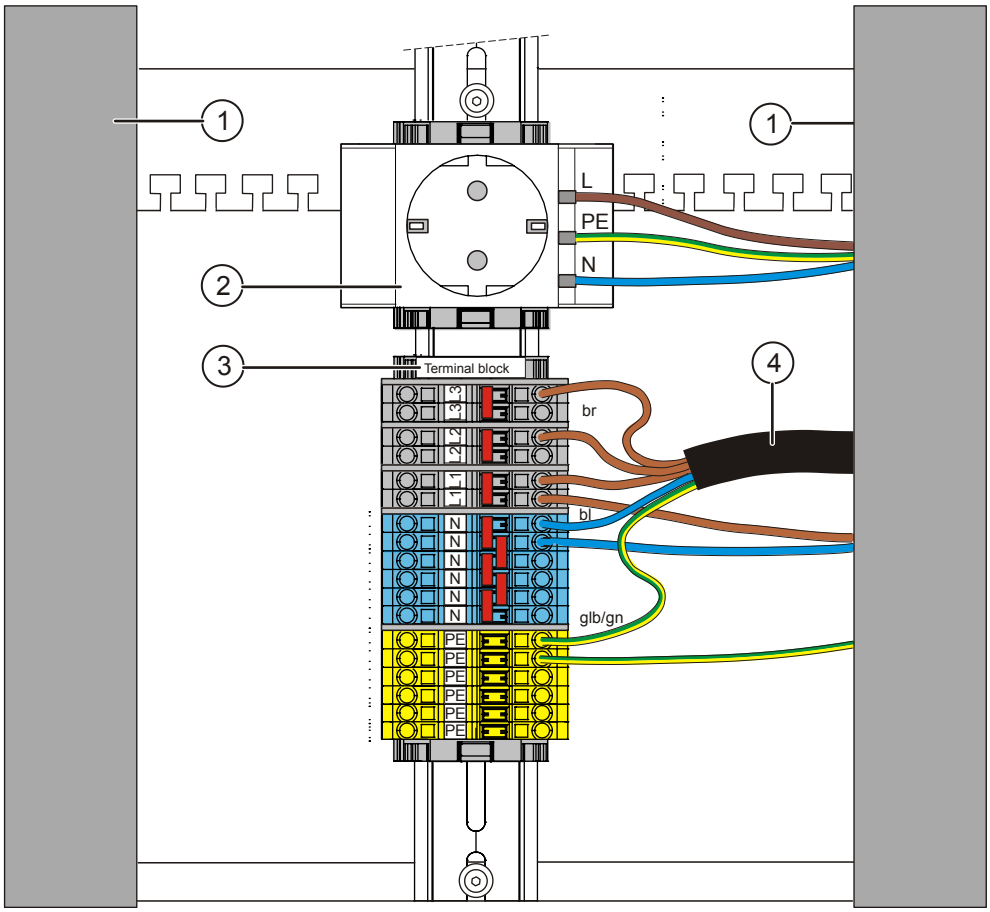

Figure 2: Example diagram of the 3-phase mains connection wiring

1 Cable ducts on left side panel

2 Power socket for notebook

3 Terminal block for line distributor and line supply

4 Power supply cable, 5-core

Terminal designation	Connection	Conductor color
L1, L2, L3	Outer conductor	Brown
N	Neutral conductor	Blue
PE	Protective conductor and protective ground, pre-wired	Yellow/green

1. Working with the mains supply line, start by connecting the protective conductor with the yellow/green wire to a free 'PE' ground terminal.
2. Connect the blue neutral conductor to a free terminal 'N'.
3. Connect each of the brown outer conductors to a free terminal: 'L1', 'L2', and 'L3'.

5 Wiring the batteries

Depending on the design and space, a maximum of 2 battery blocks can be installed in the pedestal cabinet and buffered via the power supply.

General guidelines

Do not connect the batteries after installation; instead, connect them immediately before commissioning starts.

- The batteries must be mounted in a leak-proof manner.
- The batteries can be attached to the back box with a tension strap. The strap must be ordered separately and is not included in the scope of delivery.

5.1 Power supply PP2003

The power supply PP2003 is a 19" slide-in module for the pedestal cabinet with the following connections:

- 230 V IEC plug connection
- Temperature sensor input
- 6x DC 24 V outputs for supplying power to the amplifiers via connection cables with ferrite toroidal core decoupling
- 2x DC 24 V outputs for supplying power to the network modules
- 4x screw terminals for max. 2x 24 V battery banks
- 2x screw terminals for one equalizing charge connection per battery bank
- 2x connections for external error display
- 3x connections with potential-free relay contacts for supply system and battery monitoring
- 1x Ethernet port

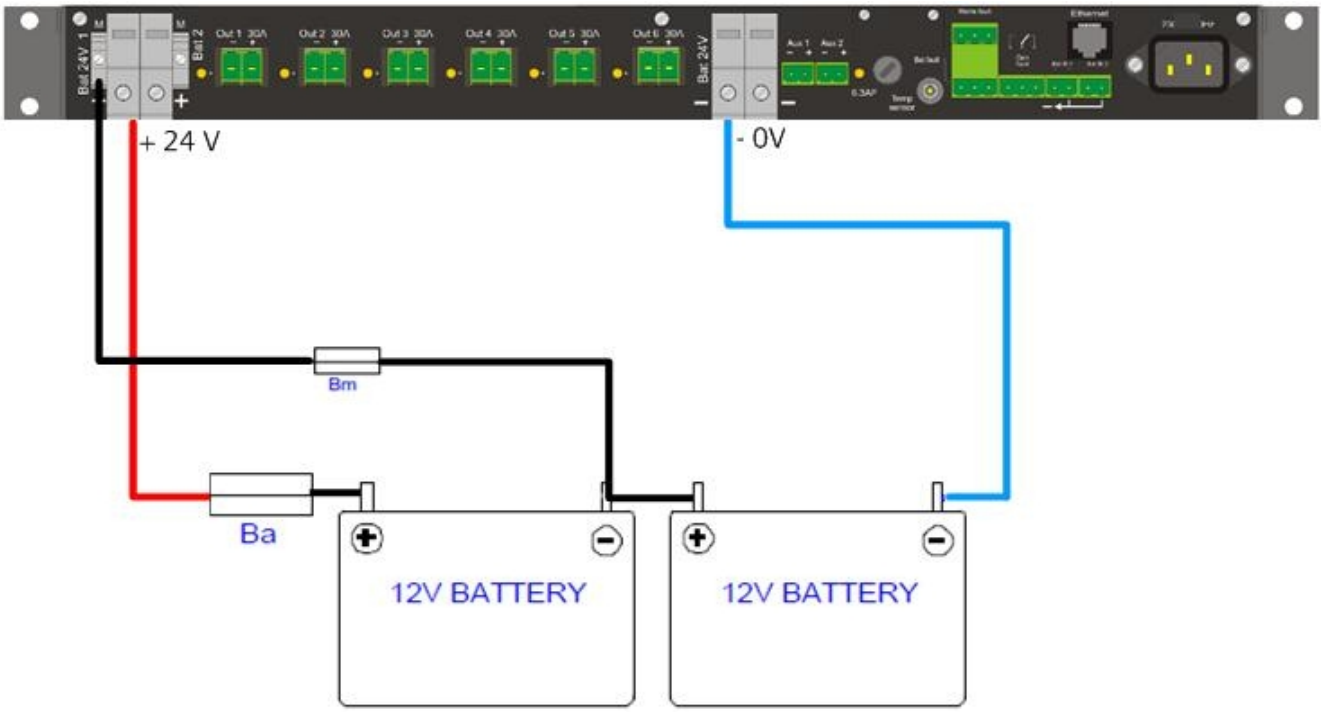

Figure 3: Wiring diagram for 1x battery set

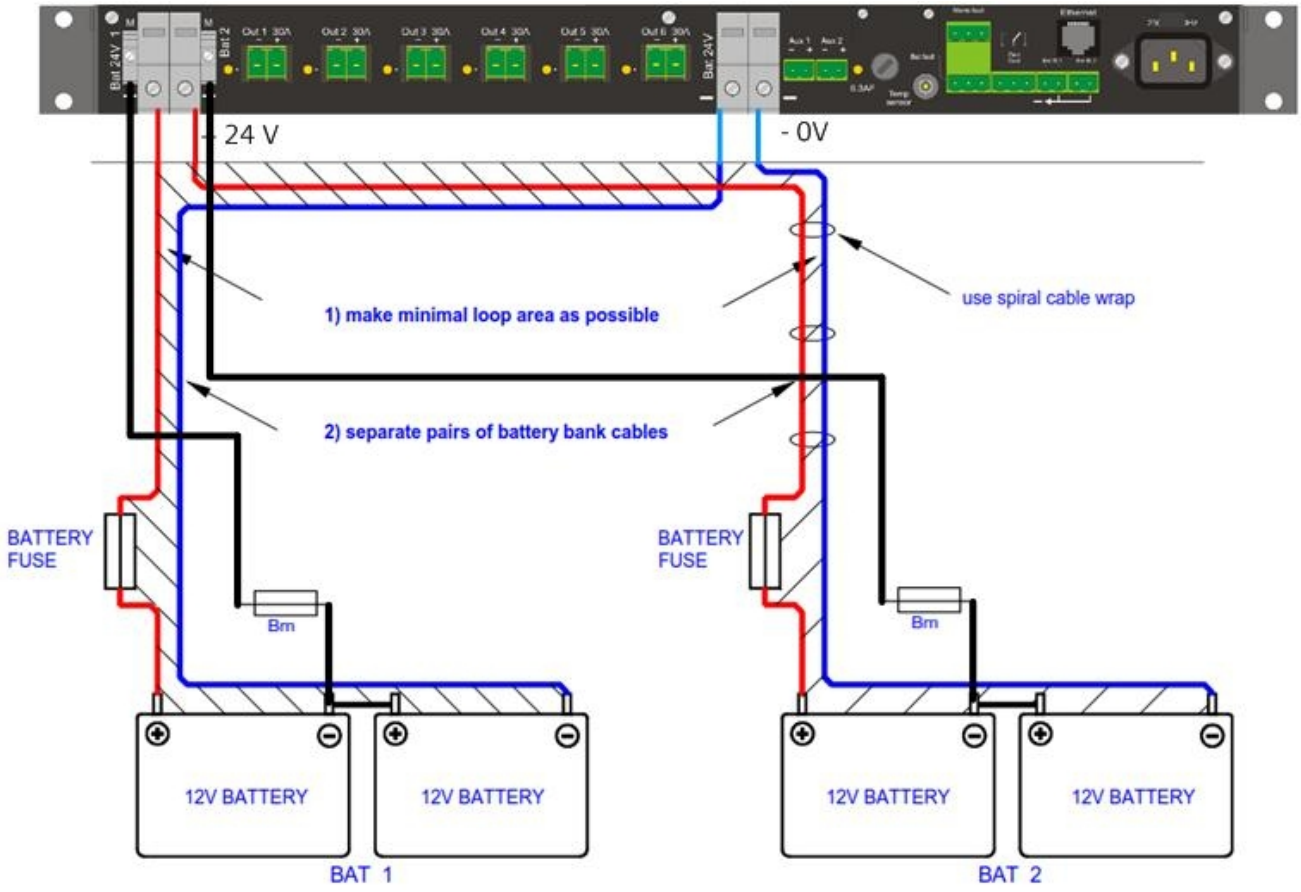

Figure 4: Wiring diagram for 2x battery sets

Ba Battery fuse	Battery separator, positive conductor
Bm	Battery separator, equalizing charge conductor
BAT1	Battery block 1
BAT2	Battery block 2

Power unit terminal	Connection	Conductor color
Bat 24 V 1/+	Battery +24 V	Red
Bat 24 V 1/-	Battery – 0 V	Blue
Bat 1/M	Equalizing charge connection for battery block 1	Black
Bat 2/M	Equalizing charge connection for battery block 2	Black

- The battery connection cables must be as short as possible.
- The positive and negative conductors must be routed together, either slightly twisted or in a spiral cable.
- The minimum distance between two battery cable sets must be 15 cm.
- The temperature sensor must be positioned directly next to the batteries.
- The battery separators must be mounted as close as possible to the battery terminals.

5.2 Power supply PP2004

The power supply PP2004 is a wall-mounted power supply with installable batteries and the following connections:

- 230 V mains connection via power supply terminals
- 1x DC 24 V battery connection
- 2x DC 24 V supply outputs
- Input for pre-assembled temperature sensor
- 2x plug connections for the supply system and battery monitoring signaling function

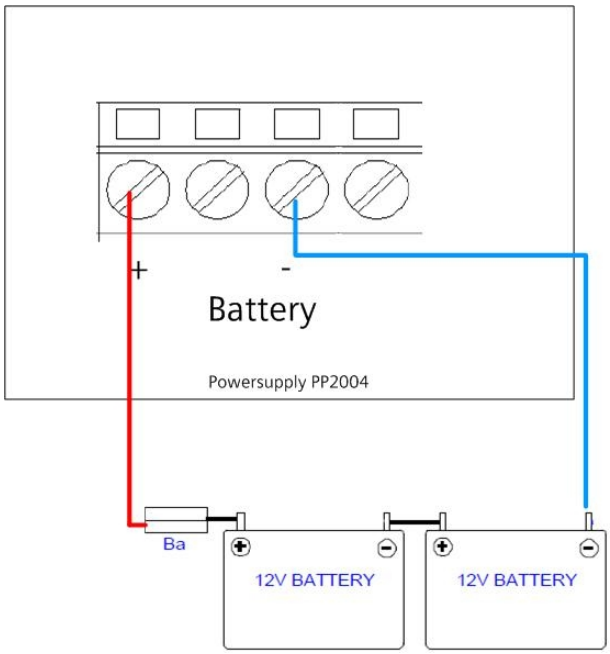

Figure 5: Wiring diagram for the batteries in the PP2004

Ba	Battery separator, positive conductor
Battery +	Positive connection terminal DC 24 V
Battery -	Negative connection terminal DC 0 V

- The battery connection cables must be as short as possible.
- The positive and negative conductors must be routed together, either slightly twisted or in a spiral cable.
- The temperature sensor must be positioned directly next to the batteries.
- The battery separator must be mounted as close as possible to the battery's positive terminal.

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