

MASTERYS

battery cabinet
for 10-80 kVA

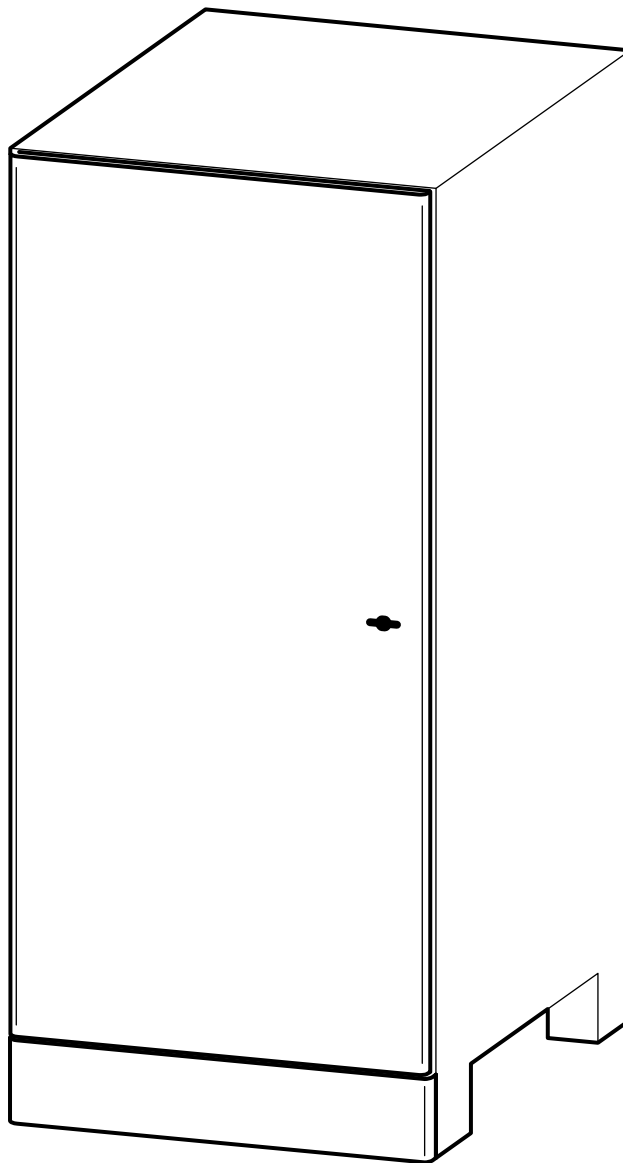
Installation and operating manual (EN)

Manuel d'installation et d'utilisation (FR)

Manuale di installazione e uso (IT)

Installations- und bedienungsanleitung (DE)

Manual de instalación y uso (ES)



CONDITIONS OF WARRANTY

The SOCOMEC battery cabinet is part of a system that also includes the UPS. For the warranty conditions, please refer to chapter 1 of the UPS Use and Installation manual, "Certificate and conditions of warranty."

WARNING LABEL

The warning label provided shall identify the battery room.

The label shall be stucked outside of the battery room in a visible position.



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1. SAFETY STANDARDS

DANGER	High risk - death or serious injury will occur
WARNING	Medium risk - death or serious injury may occur
CAUTION	Low to medium risk - minor injury may occur
NOTE	Low risk - information on nature of hazard and possible outcome



NOTE: This user manual specifies installation and maintenance procedures, technical data and safety instructions for SOCOMEC products. For further information visit the Socomec website: www.socomec.com.



NOTE: Before carrying out any operations on the unit read the installation and operating manual carefully. All safety instructions contained in this document must be read, understood and followed. Keep this manual safe for future reference.



DANGER: Failure to observe safety standards could result in fatal accidents or serious injury, and damage equipment or the environment.



NOTE: Any work carried out on the equipment must be performed by skilled, qualified technicians who have attended SOCOMEC training courses on construction, installation and hazards, and are experienced in procedures, practices and precautions to be taken.



DANGER: High electrical voltages are generated inside the power system, which is dangerous for maintenance personnel not suitably qualified or trained for such work. Keep unqualified personnel away from batteries.



NOTE: This equipment complies with the European Community directives for industrial equipment and bears the CE approval mark.



NOTE: Install the unit in accordance with clearance indications in order to prevent access to handling devices and guarantee sufficient ventilation (refer to Environmental Requirements chapter).



NOTE: Install the unit in a technical room with the following features:

- suitable size
- clean
- adequately ventilated
- maintained at a temperature between 0 °C and 40 °C (15 to 25 °C recommended for longer battery life)
- an even solid floor that can support the weight of the unit
- free from conductive, inflammable, explosive and corrosive items
- free from moisture, steam, mould, insects, vermin, dust, abrasive dust, corrosive gases, salty atmosphere or contaminated cooling refrigerant, harmful fumes, explosive dust/gas mixtures, restricted ventilation (for UPS and/or battery), radiated or conducted heat from other sources
- pollution level < 2 in accordance with IEC 60664-1
- atmosphere which is not conductive, inflammable, explosive or corrosive atmosphere
- non-radioactive environment.



NOTE: Do not:

- install the unit outdoors
- place the unit in a room with ongoing construction work
- insert foreign bodies in the unit
- expose the unit to rain or direct sunlight
- expose the unit to abnormal vibrations, shocks or tilt it.



CAUTION: If the unit is found to be damaged externally or internally, or any of the accessories are damaged or missing, contact SOCOMEC. Do not operate the unit if it has suffered a violent mechanical shock of any kind.



NOTE: When the equipment is transferred from a cold to a warm place wait approx. two hours before activating the unit.



CAUTION: Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.



CAUTION: Do not dispose of batteries in a fire. The batteries may explode.



WARNING: Care shall be taken not to wear clothes and footwear which may build up electrostatic charge. Absorbing cloth moistened only with water shall be used for battery cleaning. Other cleaning agents may result in built up of static charge or may damage the battery cases.



NOTE: Use Personal Protective Equipment (PPE) when carrying out any work on the unit.



NOTE: When carrying out electrical installation, all applicable standards specified by the IEC (in particular IEC 60364) and the electricity supplier must be observed. All national standards applicable to batteries must be observed. For further information refer to Technical specification chapter.



NOTE: Only use accessories recommended or sold by the manufacturer.



NOTE: Batteries must only be replaced with batteries recommended or sold by the manufacturer. Batteries must only be replaced by qualified technicians.



NOTE: Before connecting the unit check it is fully compatible with the UPS model.



NOTE: If using cabinets not supplied by the manufacturers of the UPS, it is the installer's responsibility to check the electrical compatibility and the presence of appropriate protection devices between the UPS and the battery cabinet (fuses and switches of sufficient capacity to protect the cables from the UPS to the battery cabinet). As soon as the UPS is switched on (before closing the battery switches) the battery parameters must be verified accordingly (voltage, capacity, number of elements, etc.) on the mimic panel menu. If the values indicated on the battery cabinet data plate are different from those shown on the mimic panel, please correct the settings.



NOTE: Use the double insulated cables supplied with the unit to connect the UPS to the battery cabinet.



CAUTION: A battery can present a risk of electrical shock and high short circuit current. The following precautions should be observed when working on batteries:

- remove watches, rings or other metal objects
- use tools with insulated handles
- wear rubber gloves and boots
- do not lay tools or metal parts on top of batteries
- disconnect the charging source prior to connecting or disconnecting battery terminals
- determine if battery is inadvertently earthed. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electrical shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).



WARNING: Batteries shall be neither connected nor disconnected when current is flowing. Isolate the circuit elsewhere first.



- WARNING:** Before carrying out any operations, ensure that:
- the switches located inside the battery cabinet are open
 - the UPS is not live and all mains or battery switches are open
 - the switches upstream of the UPS are open
 - wait approx. 5 minutes for the unit to discharge completely.



NOTE: Connect the PE ground conductor before making any other connections.



DANGER! RISK OF ELECTRIC SHOCK: Disconnect all power sources before carrying out any operations on the unit (cleaning and maintenance, connection of appliances, etc.).



DANGER! RISK OF ELECTRIC SHOCK: After disconnecting all power sources wait approx. 5 minutes for the complete discharge of the unit.



DANGER! RISK OF ELECTRIC SHOCK: Do not interfere with the disconnecting switches on the unit while the UPS is running on battery power.



DANGER! RISK OF ELECTRIC SHOCK: There is no insulation between the batteries and the mains supply therefore it is extremely dangerous to touch any parts of the accumulator battery.



WARNING: Strictly observe the following:

- polarity of each individual string: cabling errors with inversion of battery polarity may cause permanent damage to the equipment
- cable cross-section (refer to Electrical Requirements chapter).



NOTE: As soon as the UPS is switched on (before closing the battery switches) the battery parameters must be verified accordingly (voltage, capacity, number of elements, etc.) on the mimic panel menu. If the values indicated on the battery cabinet data plate are different from those shown on the mimic panel, please correct the settings.



NOTE: If the unit needs to be disposed of it must be given to companies specialising in the disposal of the system's constituent materials.



NOTE: The batteries are toxic waste. If the battery cabinet needs to be scrapped it is essential to entrust the equipment solely and exclusively to firms specializing in the disposal of the materials making up the system. These are obliged to break up and dispose of the various components in accordance with the legal provisions in force in the country where the system is installed.



NOTE: Any use other than the specified purpose will be considered improper. The manufacturer/supplier shall not be held responsible for damage resulting from this. Risk and responsibility lies with the system manager.

1.1. Description of the symbols used on the labels applied to the unit

All the precautions and the warnings on the labels and plates on the inside and outside of the equipment should be respected.



It is forbidden for non-qualified personnel to work on the batteries.



Do not smoke, use naked flames or generate sparks in the vicinity of the accumulators, in order to avoid fires or explosions.



Accumulators are heavy! Use suitable transport and lifting equipment and work safely.



Connecting accumulators in series can create hazardous voltages.



The electrolyte corrodes metals and burns the skin and all parts of the human body.



WARNING!

Explosion hazard! Avoid short circuits!

The metal parts of accumulators are live at all times. Never place tools or metal objects on the accumulators.



Wear safety goggles and suitable clothing.



Read the user instructions carefully.



Wear protective gloves and clothing.



Ground terminal.



In the event of contact with the eyes, wash immediately with abundant quantities of water and call a doctor.
Call a doctor immediately in the event of accidents or illness.

2. REQUISITES

The packaging guarantees the stability of the battery cabinet during shipping and physical transfer. Carry the packaged unit as close as possible to the installation site.



When moving the unit on even slightly sloping surfaces, use the blocking equipment and breaking devices to ensure that the unit does not fall over.

2.1. Shipping and moving



WARNING! HEAVY WEIGHT!

Move the battery cabinet using a fork lift truck, taking the utmost caution at all times.

- The unit must remain in a vertical position during all shipping and moving operations.
- Ensure that the floor is strong enough to support the weight of the battery cabinet.



Avoid moving the unit by putting pressure on the front door.



The battery cabinet **MUST** be handled with the utmost care by at least two people.

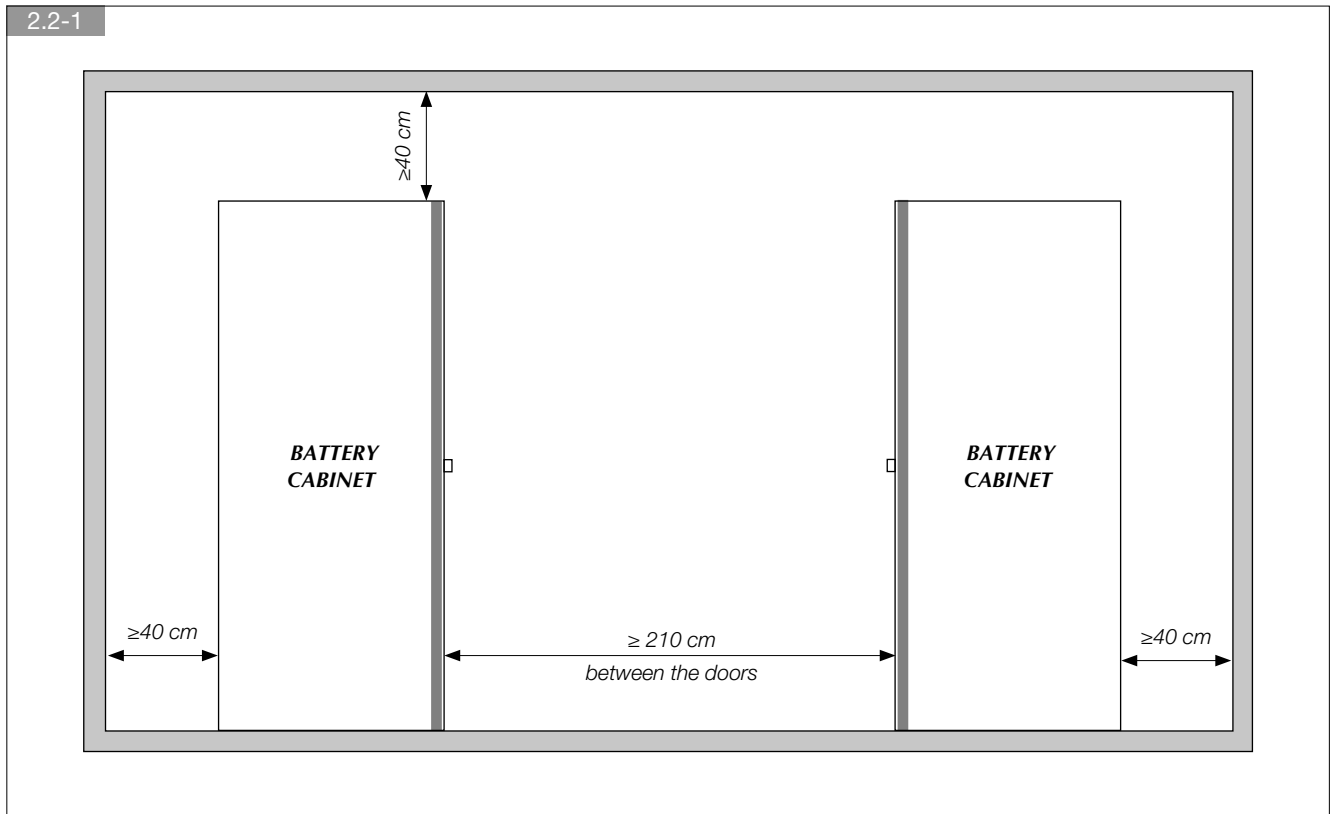


CAUTION IF DAMAGED.

Packages, crushed, punctured, or torn such that contents are revealed must be set aside in an isolated area and inspected by a qualified person. If the package is deemed to be not shippable, the contents must be promptly collected, segregated, and either the consignor or consignee contacted.

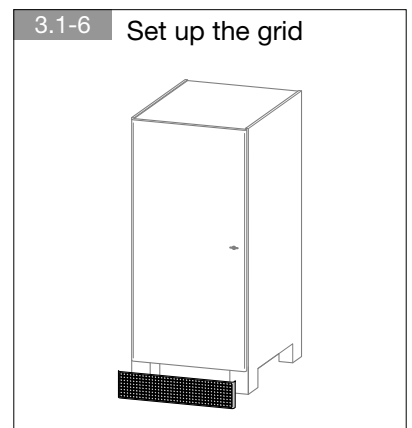
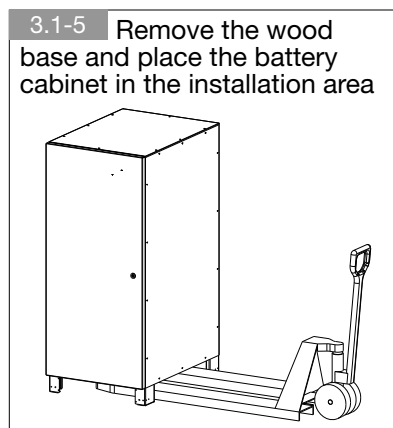
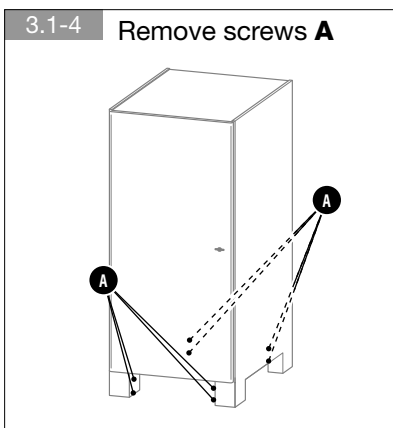
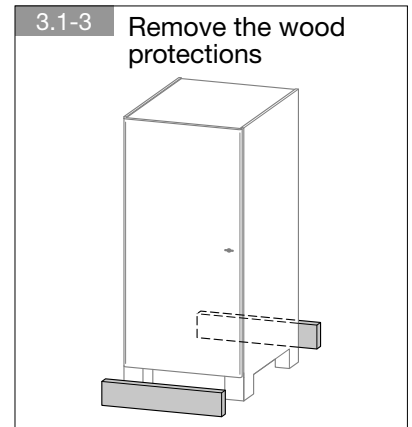
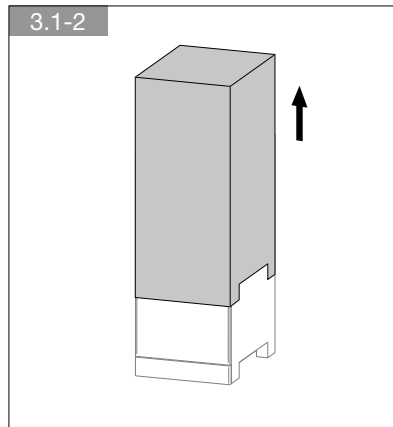
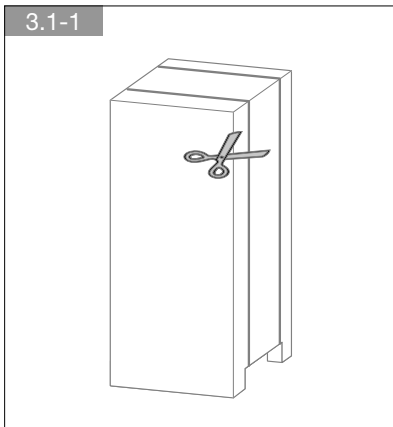
2.2. Environmental requisites

- The unit is not designed for outdoor use.
- Do not expose the unit to direct sunlight or to sources of excessive heat.
- The recommended operating temperature and humidity are listed in the technical specifications table (see chapter 5). Cooling systems may be required to maintain these values.
- The unit must be installed in an environment without obstructions and which is dry, clean and dust-free.
- Avoid dusty environments or areas where there is dust from conductive or corrosive materials (e.g. metal dust or chemical solutions).
- A space of at least 40 cm must be left at the back for adequate ventilation (see figure 2.2-1). The upper part of the unit must be positioned at least 40 cm away from the ceiling (figure 2.2-1).
- The battery cabinet switch is accessed from the front; a space of at least 1.5 metres should be left at the front of the cabinet for maintenance purposes.
- For battery cabinets arranged frontally, leave a minimum space of 210 cm between the cabinets so as to allow a passage way when both doors are open (in accordance with the provisions of standard IEC 60364 - see figure 2.2-1).

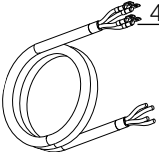
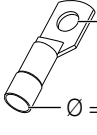

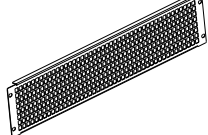


3. UNPACKING AND MOVING

3.1. Unpacking procedure



All packaging material must be recycled in compliance with the laws in force in the country where the system is installed.

	 4 x 16 mm ²	 Ø = 10 mm Ø = 16 mm ²	 A 5 x 12	 B
4P	x 1	x 2	x 4	x 1
2F	x 1	x 0	x 4	x 1
4F	x 2	x 4	x 4	x 1

4. INSTALLATION



WARNING!

- Before carrying out any operation, ensure that:
- the switch located inside the battery cabinet is open;
 - the UPS is not live and all mains or battery switches are open;
 - the switches upstream of the UPS are open.



Use double insulated cables or the cables supplied with the unit to connect the UPS to the Battery cabinet.



Cabling errors with inversion of the battery polarity may cause permanent damage to the equipment.

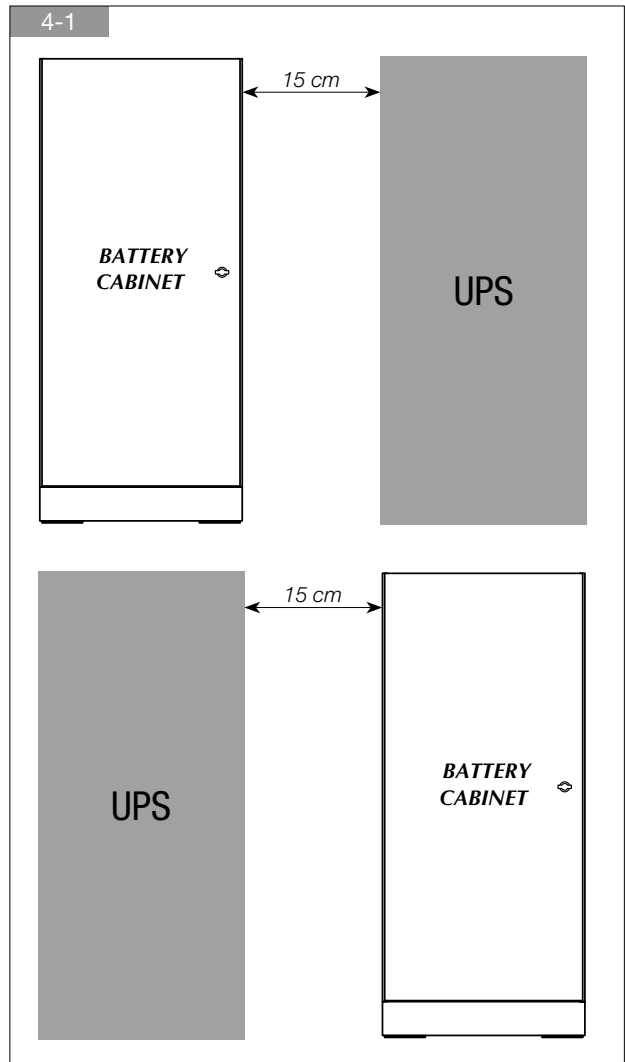


If using cabinets not supplied by the manufacturers of the UPS, it is the installer's responsibility to check the electrical compatibility and the presence of appropriate protection devices between the UPS and the battery cabinet (fuses and switches of sufficient capacity to protect the cables from the UPS to the battery cabinet). As soon as the UPS is switched on (before closing the battery switches) the battery parameters must be verified accordingly (voltage, capacity, number of elements, etc.) on the mimic panel menu. If the values indicated on the battery cabinet data plate are different from those shown on the mimic panel, please correct the settings.

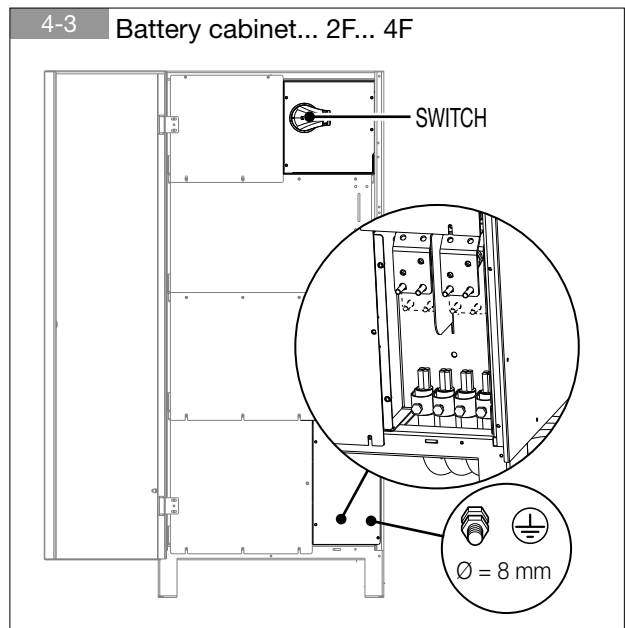
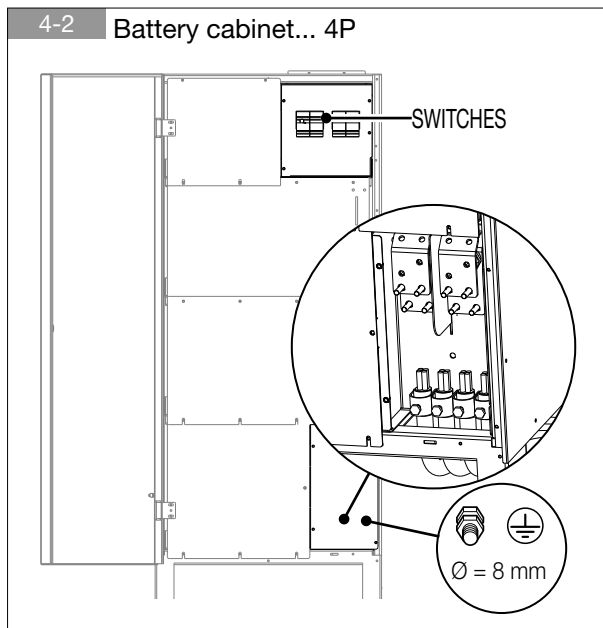


IMPORTANT!

Protective earthing conductor (PE) must have sufficient current-carrying capacity. The PE cable core size has to be chosen according to the PROTECTIVE CURRENT RATING of the earth circuit that depends on the provision and location of overcurrent protective devices. We suggest 35 mm² for Mastersy Battery Cabinet.

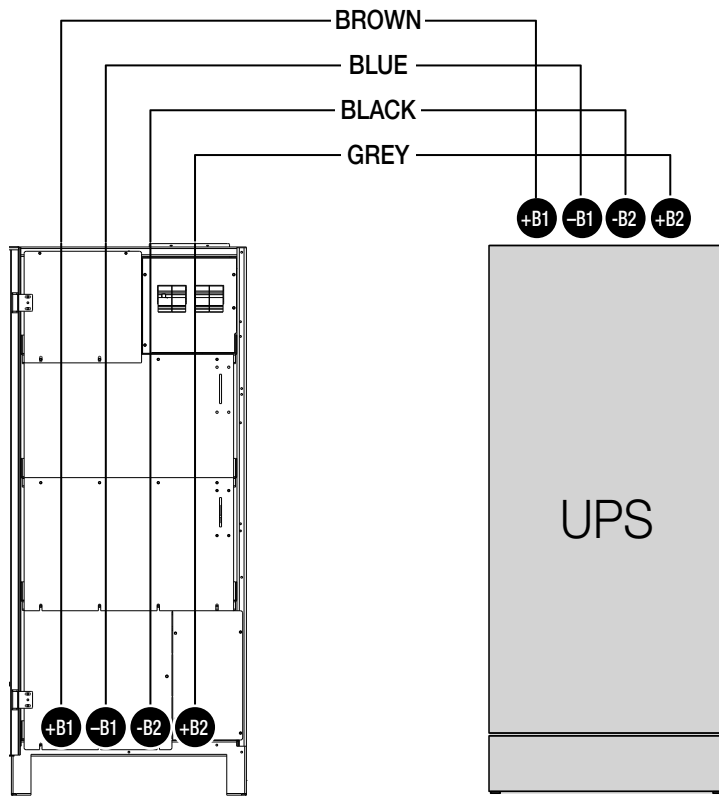


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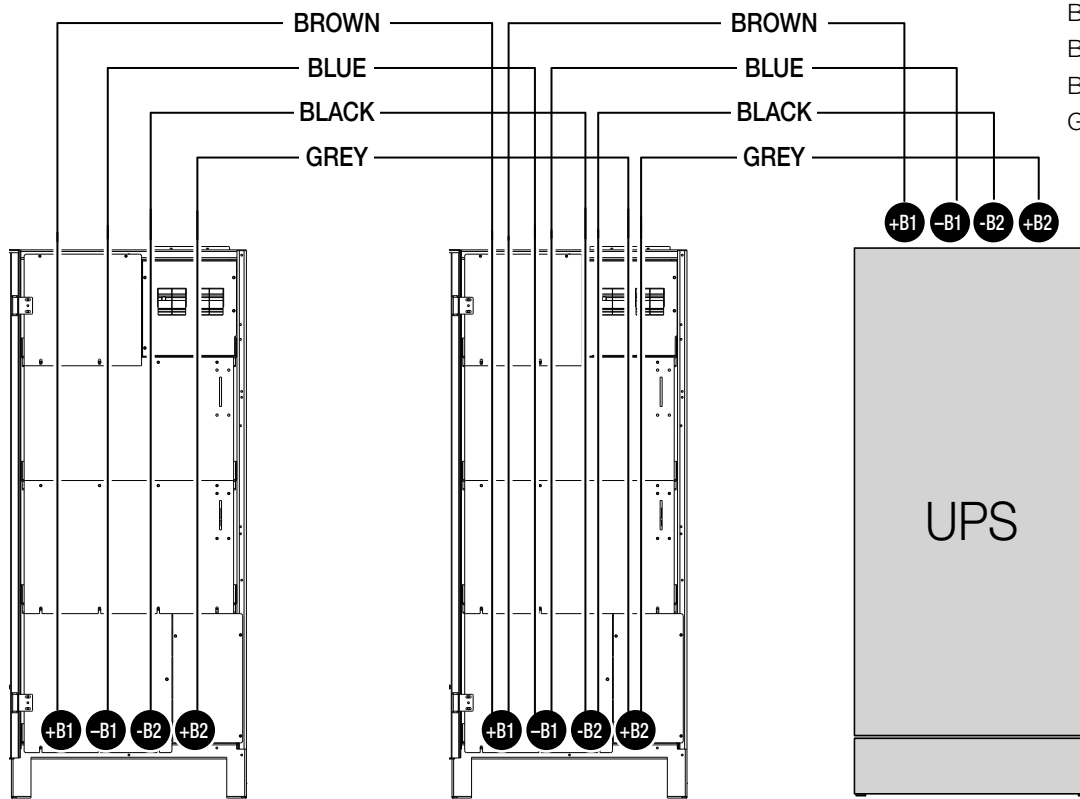


5. CONNECTION

5.1. Battery cabinet ...4P with MASTERYS 10-40 kVA



- BLUE: 1 x 16 mm²
- BROWN: 1 x 16 mm²
- BLACK: 1 x 16 mm²
- GREY: 1 x 16 mm²

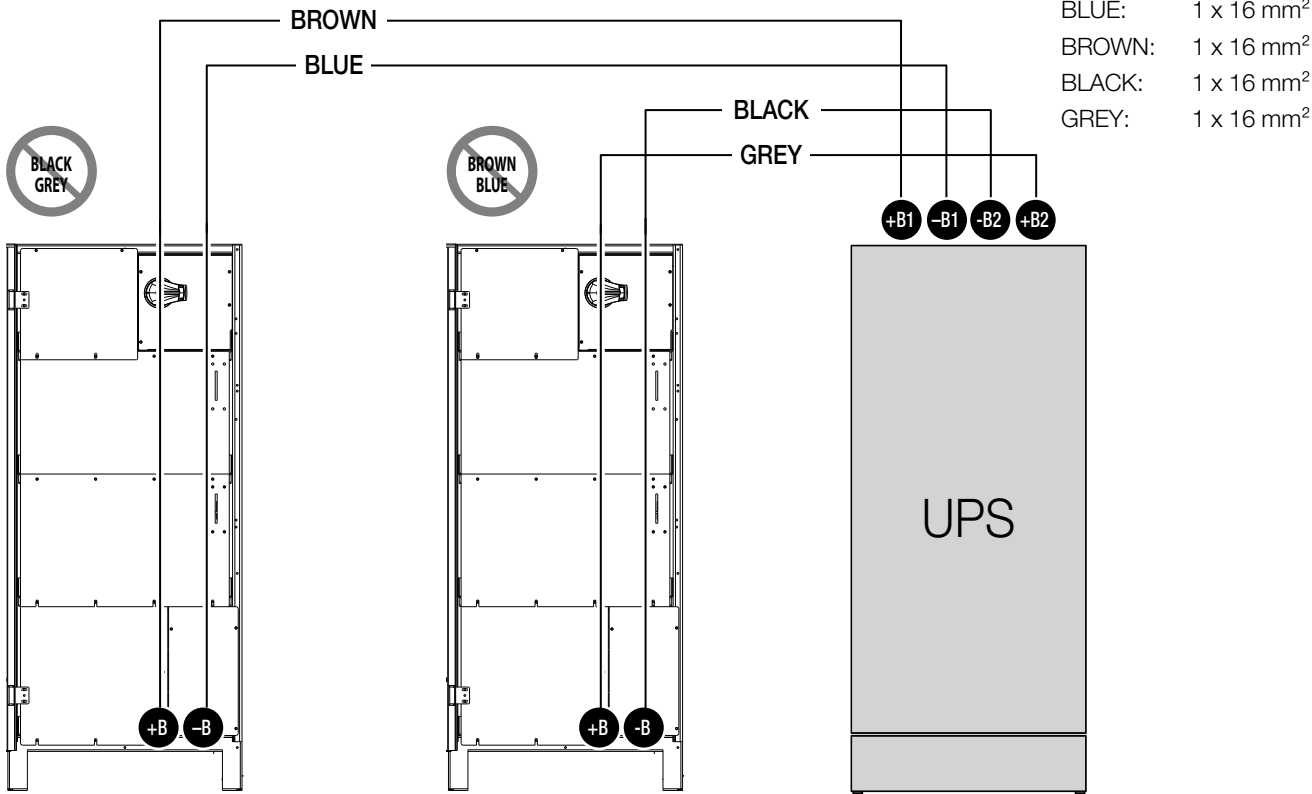


- BLUE: 1 x 16 mm²
- BROWN: 1 x 16 mm²
- BLACK: 1 x 16 mm²
- GREY: 1 x 16 mm²

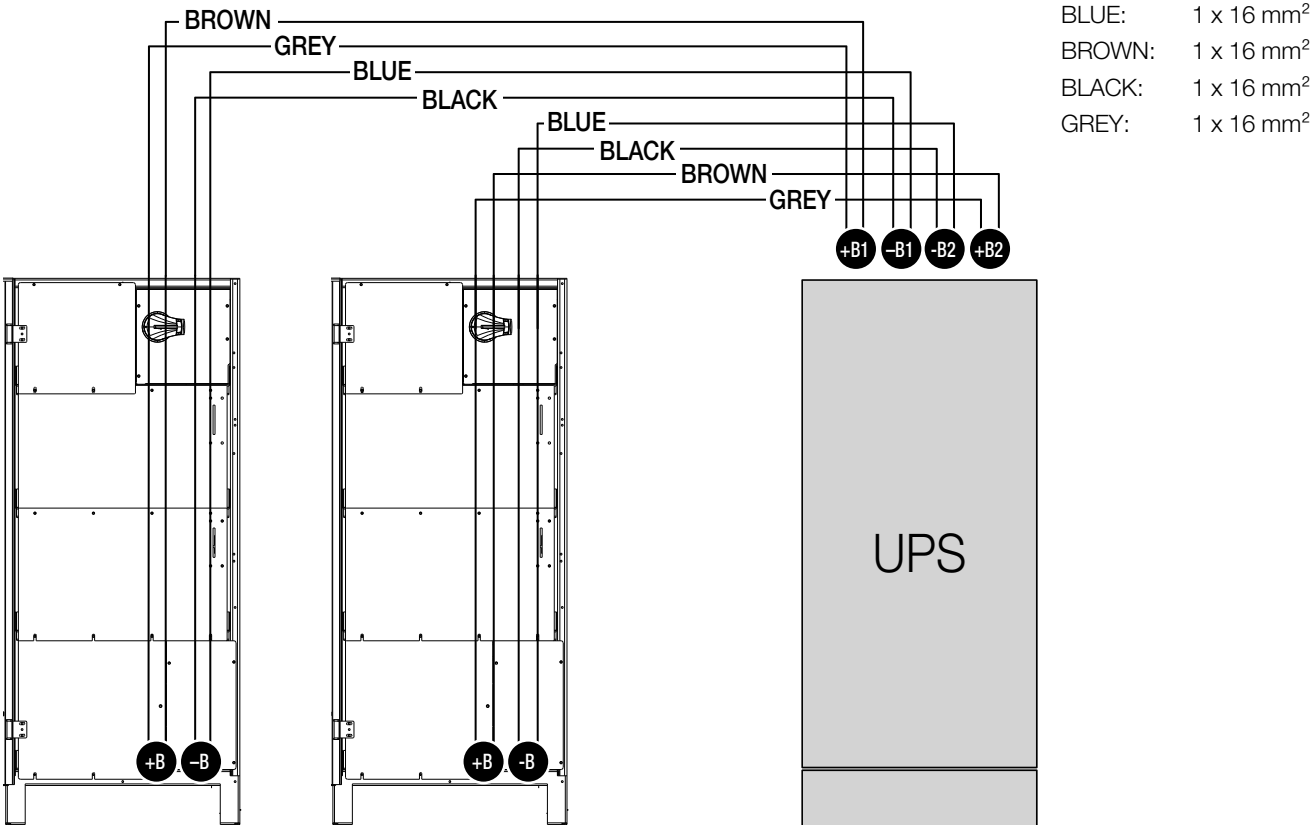
Note.

To connect the two battery cabinets, use the cable lugs provided, squeezing them with a suitable pair of pliers.

5.2. Battery cabinet ...2F with MASTERYS 10-40 kVA

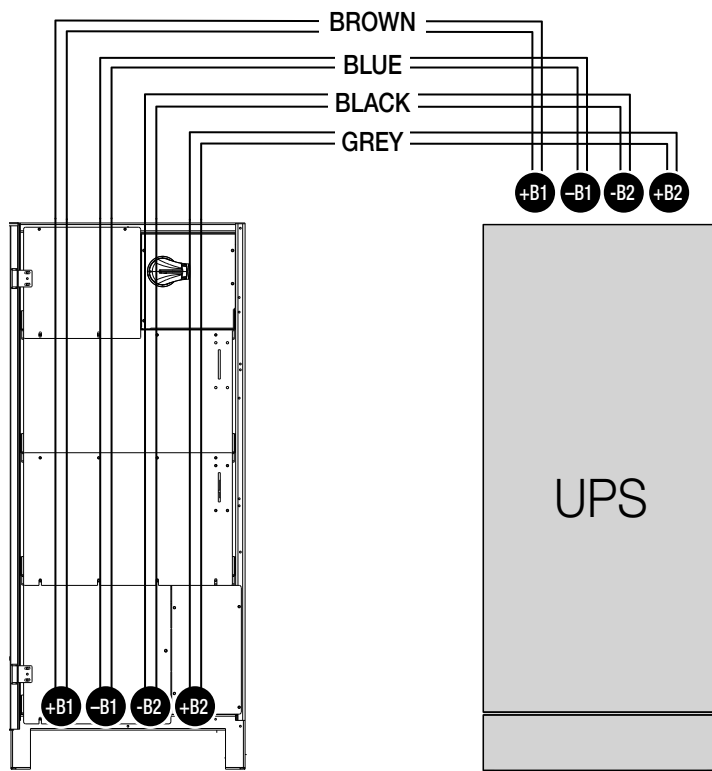


5.3. Battery cabinet ...2F with MASTERYS 60-80 kVA



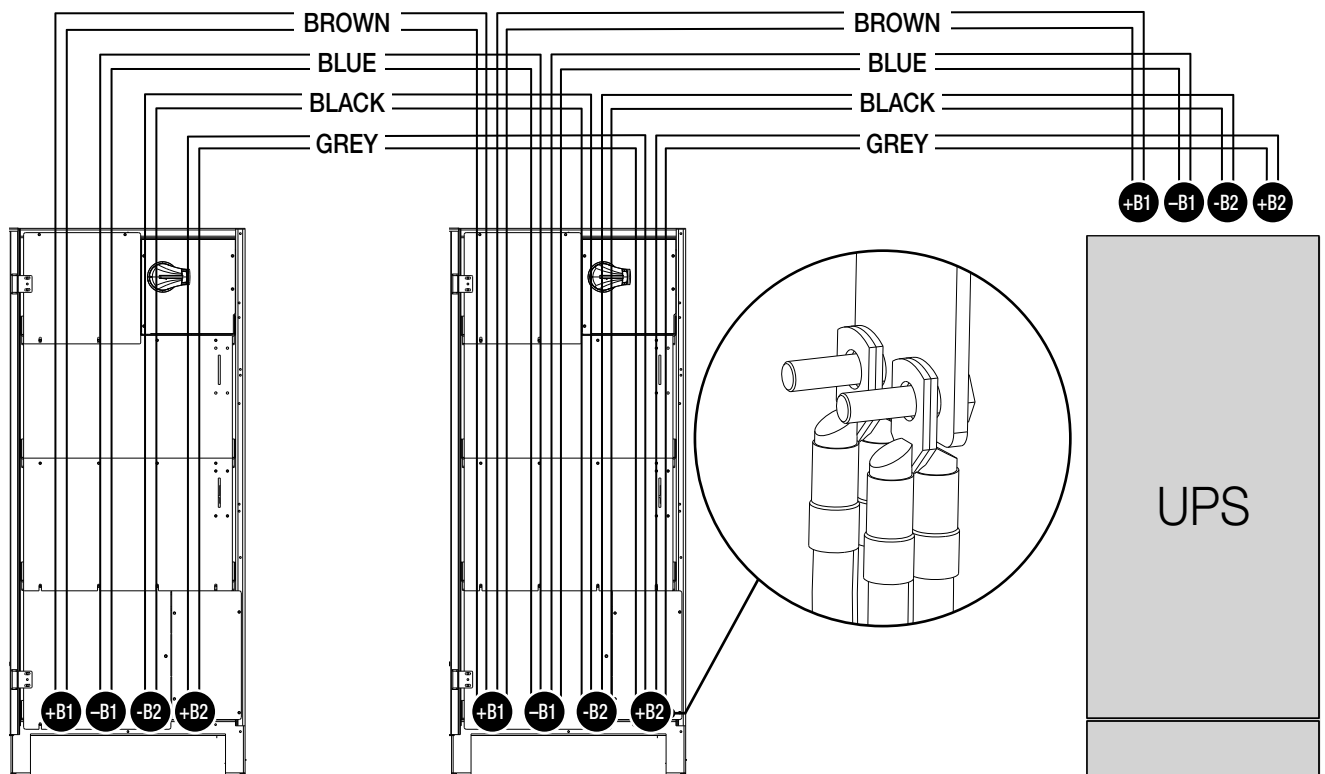
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5.4. Battery cabinet ...4F with MASTERYS 60-80 kVA



- BLUE: 2 x 16 mm²
- BROWN: 2 x 16 mm²
- BLACK: 2 x 16 mm²
- GREY: 2 x 16 mm²

- BLUE: 2 x 16 mm²
- BROWN: 2 x 16 mm²
- BLACK: 2 x 16 mm²
- GREY: 2 x 16 mm²



Note.

To connect the two battery cabinets, use the cable lugs provided, squeezing them with a suitable pair of pliers.

6. TECHNICAL SPECIFICATIONS

Technical specifications			
Dimensions (LxDxH)	600x835x1400 mm		
Weight (with packaging):	850 kg max (weight depends on the configuration of the battery cabinet)		
Protection level	IP20-option IP32		
Operating temperature	0÷40 °C (15÷25 °C recommended for longer battery life)		
Ambient storage and transport temperature ⁽¹⁾	-5 °C ÷ +40 °C max (recommended: 25 °C)		
Relative humidity (condensation-free)	up to 95%		
Battery recharging	T _{ambient} ≤ 25 °C: every 6 months 25 °C ≤ T _{ambient} ≤ 30 °C: every 4 months 30 °C ≤ T _{ambient} ≤ 35 °C: every 3 months 35 °C ≤ T _{ambient} ≤ 40 °C: every 2 months T _{ambient} > 40 °C: not recommended		
Battery protection	Battery cabinet ...4P	Battery cabinet ...2F	Battery cabinet ...4F
	100 gR	200 aR	200 aR

(1) General indication for the application of lead batteries. For further details, see the battery manufacturer's indications.

Safety	
Conforms to standards	EN 50272-2, EN 62040-1
Product certification	CE - TÜV SÜD



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