



## External battery cabinet for 3PH UPS

**UK**

ENGLISH

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## 1. Introduction

### 1.1 Overview

Congratulations on your LEGRAND external battery cabinet purchase.

Legrand offers a complete range of battery cabinets for the whole Three-Phase UPS portfolio in Legrand UPS catalogue, from 10kVA up to 800kVA power range.

The external battery cabinets family is designed for standard VRLA batteries of capacity range from 24Ah to 105Ah (C10).

The battery cabinets, with 5 different mechanical dimensions, can contain various combinations of batteries, up to maximum 63 blocks, connected in series and parallel, with positive, negative and middle point poles and with a maximum DC voltage of 800 V.

Legrand battery cabinets are available in:

- empty versions, without switches and protections but with the predisposition for their installation by the user;
- versions equipped with fuse holder switches and relevant protection fuses, sized accordingly with the power capability of installed batteries,

In the versions equipped with fuse holder is provided, as standard, an auxiliary contact to monitor the status of the fuse holder switch (open or closed).

Electric safety is guaranteed also with the opened door thanks to a polycarbonate panel, which segregate batteries, and dedicated plastic cover on the poles of the fuse holder switches.

The proper ventilation is guaranteed with natural air circulation thanks to the ventilation holes, present on the cabinet sides and on the rear panels.

This publication, simply defined "installation manual" herein, contains all the information for the installation of the battery cabinet, also referred to as "equipment".

### 1.2 Purpose of the manual

The purpose of this manual is to provide the skilled technician (see paragraph 2.2.1) with instructions for safely installing the equipment, also called EBC (External Battery Cabinet) in the rest of the manual.

Extraordinary maintenance operations are not dealt with because they are the sole preserve of the LEGRAND Technical Support Service.

The reading of this manual is essential but does not substitute the skill of technical personnel who must have received adequate preliminary training.

The intended use and configurations envisaged for the equipment as shown in this manual are the only ones allowed by the Manufacturer.

Any other use or configuration must be previously agreed with the Manufacturer in writing and, in this case, the written agreement will be attached to the installation manual.

This manual also refers to laws, directives and standards that the skilled technician is required to be aware of and consult.

The original text of this publication, drafted in English, is the only reference for the resolution of disputes of interpretation linked to translations into other languages.

## 1.3 Symbols in the manual

Some operations are shown in graphic symbols that draw the attention of the reader to the danger or the importance they imply:



### **DANGER**

This indication shows a danger entailing a high degree of risk that, if not avoided, will lead to death or serious injury or considerable damage to the equipment and things around it.



### **WARNING**

This indication shows a danger entailing a medium degree of risk that, if not avoided, could lead to death or serious injury or considerable damage to the equipment and the things around it.



### **CAUTION**

This indication shows a danger entailing a low level of risk that, if not avoided, could lead to minor or moderate injury or material damage to the equipment and the things around it.

### **INDICATION**

This symbol indicates important information which should be read carefully.

## 1.4 Where and how to keep the manual

This manual must be kept in a safe, dry place and must always be available for consultation.

It is recommended to make a copy and file it away.

If information is exchanged with the Manufacturer or the authorized assistance personnel, it is essential to refer to the equipment's rating plate data and serial number.

### **INDICATION**

The manual provided with the equipment is an integral part of it and must therefore be kept for its entire lifetime. In case of need (for example in case of damage that even partially compromises its consultation) the skilled technician is required to get a new copy from the Manufacturer, quoting the publication code on the cover.

## 1.5 Update of the manual

The manual reflects the state of the art when the equipment was put onto the market. The publication conforms to the directives current on that date. The manual cannot be considered inadequate when new standards come into force or modifications are made to the equipment.

Any addition to the manual the Manufacturer considers appropriate to send to the users, must be kept together with the manual of which they will become an integral part.

The version of the manual updated to its latest release is available on the Internet at <http://www.ups.legrand.com>

## 1.6 Manufacturer's liability and guarantee

The skilled technician and the operator shall scrupulously comply with the precautions and installation instructions indicated in the manual. In particular they must:

- always work within the operating limits of the equipment;
- always carry out constant and careful maintenance through a skilled technician who complies with all the procedures indicated in the installation and maintenance manual.

---

## 1. Introduction

The Manufacturer declines all indirect or direct responsibility arising from:

- assembly and battery cabling made by personnel not fully qualified according to national standards to work on equipment presenting electrical hazards;
- assembly and battery cabling made without using safety equipment and tools required by national safety standards;
- failure to observe the installation and maintenance instructions and use of the equipment which differs from the specifications in the manuals;
- use by personnel who have not read and thoroughly understood the content of the manual;
- use that does not comply with the specific standards used in the country where the equipment is installed;
- modifications made to the equipment, software, functioning logic unless they have been authorized by the Manufacturer in writing;
- repairs that have not been authorized by the LEGRAND Technical Support Service;
- damage caused intentionally, through negligence, by acts of God, natural phenomena, fire or liquid infiltration;
- damage caused by the use of battery types and protections not specified in the manual;
- accidents caused by a wrong assembly of the safety protections or due to the lack of application of the safety labels specified in this manual.

The transfer of the equipment to others also requires the handing over of all the manuals. Failure to do it will automatically nullify any right of the buyer, including the terms of the guarantee where applicable.

If the equipment is sold to a third party in a country where a different language is spoken, the original owner shall be responsible for providing a faithful translation of this manual in the language of the country where the equipment will be used.

### 1.6.1 Guarantee terms

The guarantee terms may vary depending on the country where the EBC is sold. Check the validity and duration with LEGRAND's local sale representative.

If there should be a fault in the product, contact the LEGRAND Technical Support Service which will provide instructions on what to do.

Do not send anything back without LEGRAND's prior authorization.

The guarantee becomes void if the EBC has not been brought into service by a properly trained skilled technician (see paragraph 2.2.1).

If during the guarantee period the EBC does not conform to the characteristics and performance laid down in this manual, LEGRAND at its discretion will repair or replace the EBC and relative parts.

All the repaired or replaced parts will remain LEGRAND's property.

LEGRAND is not responsible for costs such as:

- losses of profits or earnings;
- losses of equipment, data or software;
- claims by third parties;
- any damage to persons or things due to improper use, unauthorized technical alterations or modifications;
- any damage to persons or things due to installations where the full compliance with the standard regulating the specific usage applications have not been guaranteed.

### 1.6.2 Extension of the guarantee and maintenance contracts

The standard guarantee can be consolidated in a single extension contract (maintenance contract).

Once the guarantee period has passed, LEGRAND is available for giving a technical assistance service able to meet all requirements, maintenance agreements, 24/7 availability and monitoring.

Please, contact the LEGRAND Technical Support Service for further information.

## 1.7 Copyright

The information contained in this manual cannot be disclosed to any third party. Any partial or total duplication of the manual by photocopying or other systems, including electronic scanning, which is not authorized in writing by the Manufacturer, violates copyright conditions and may lead to prosecution.

LEGRAND reserves the copyright of this publication and prohibits its reproduction wholly or in part without previous written authorization.

## 2. Safety regulations

### DANGER

Before carrying out any operation on the equipment, it is necessary to read the entire manual carefully, especially this chapter.

The skilled technician must regularly review the manual during installation and maintenance.

### 2.1 General notes

The equipment has been made for the applications given in the manual. It may not be used for purposes other than those for which it has been designed or differently from those specified in this manual.

The various operations must be carried out according to the criteria and the chronology described in this manual.

### 2.2 Definitions of "Skilled technician" and "Operator"

#### 2.2.1 Skilled Technician

The figure that will carry out the installation, start up and ordinary maintenance is called "Skilled Technician".

This definition refers to people who have the specific technical qualification and are aware of the method of installing, assembling, repairing, bringing online and using the equipment safely.

In addition to the requirements listed in the section below for a general operator, the Skilled Technician is qualified according to national safety standards to work under dangerous electrical voltage and uses the personal protective equipment required by national safety standards for all the operations indicated in this manual (see the examples listed in paragraph 2.3).

### WARNING

The safety manager is responsible for protection and company risks prevention according to what is indicated in European directives 2007/30/EC and 89/391/EEC regarding safety in the workplace.

The safety manager must ensure that all the people working on the equipment have received all the instructions concerning them in the manual, especially those contained in this chapter.

#### 2.2.2 Operator

The figure assigned to the equipment for normal use is called "Operator".

This definition refers to people who know how to operate the equipment defined in the manual and have the following requisites:

1. technical education, which enables them to operate according to safety standards in relation to the dangers linked to the presence of electric current;
2. training on the use of personal protective equipment and basic first aid interventions.

The company safety manager, in choosing the person (operator) who uses the equipment, must consider

- the person's work fitness according to the laws in force;
- the physical aspect (not disabled in any way);
- the psychological aspect (mental stability, sense of responsibility);
- the educational background, training and experience;
- the knowledge of the standards, regulations and measures for accident prevention.

He shall also provide training in such a way as to provide thorough knowledge of the equipment and its component parts.

Some typical activities the operator is expected to carry out are:

- the use of the equipment in its normal functioning state and restoring it to working order after it shuts down;
- adoption of the necessary provisions for maintaining the quality performance of the UPS;
- cleaning the equipment;
- working with people responsible for ordinary maintenance activities (skilled technicians).

## 2. Safety regulations

### 2.3 Personal Protective Equipment



The EBC poses a considerable risk of electric shocks and a high short circuit current. During installation, use and maintenance operations, the equipment mentioned in this section must be used.

People responsible for operating this equipment and/or passing close to it must not wear garments with flowing sleeves, nor may laces, belts, bracelets or other metal pieces that might cause a danger.

The following list sum up the minimum Personal Protective Equipment to wear at all times. Additional requirements may be needed according to national safety standards.



Anti-accident and non-sparking shoes with rubber sole and reinforced toe



Protective gloves for handling operations



Isolated rubber gloves for operations of connection and work under hazardous voltage



Protective garments for electrical work



Protective face and head shield



Isolated tools

#### INDICATION

The skilled technician must work on electrical insulated carpet and he must not wear any kind of metal objects like watches, bracelets, etc.

### 2.4 Hazard signs in the workplace

The following signs must be exhibited at all points of access to the room where the equipment is installed:



Electric current  
This sign indicates the electrical live parts.



How to proceed in an emergency  
Do not use water to quench fires but just the extinguishers specially designed for putting out fires in electrical equipment.



No smoking  
This sign indicates that smoking is not allowed.



## 2.5 Signs on the equipment

Displayed on the EBC are explanatory plates that can vary depending on the country the equipment is intended for and constructional standards applied.

Make sure the instructions are adhered to. Removing these plates and working in a way that differs from what written there, is strictly prohibited.

The plates must always be clearly read and they must be cleaned periodically.

If a plate deteriorates and/or it is no longer legible, even partially, the Manufacturer must be contacted for another one.

### CAUTION

The plates must not be removed or covered. Signs in different languages are provided along with the cabinet in order to replace the default ones in English. No other plates may be affixed to the equipment without the Manufacturer's prior written authorisation

### WARNING

Potential risks can be drastically reduced by wearing the Personal Protective Equipment listed in this chapter, which are indispensable. Always operate with due care around dangerous areas marked by the appropriate warning notices on the equipment.

## 2.6 General warnings

### DANGER

The EBC works with dangerous voltages. Skilled technicians shall perform the installation and ordinary maintenance operations. No part of the EBC can be repaired by the operator.

Extraordinary maintenance operations must be carried out by LEGRAND Technical Support Service personnel.

### DANGER

Before beginning any installation and/or maintenance operation, make sure that all the DC and AC power sources are disconnected.

The UPS and the EBC must be installed with an earth connection to avoid high leakage currents. First connect the earthing cable.

Check during each installation and/or maintenance operation the continuity of the earthing system.

### WARNING

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

- a) remove watches, rings or other metal objects.
- b) use tools with insulated handles.
- c) wear rubber gloves and boots.
- d) do not lay tools or metal parts on top of batteries.
- e) disconnect the charging source prior to connecting or disconnecting battery terminals.
- f) determine if battery is inadvertently grounded. 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).

- g) never leave live cable terminals without an insulated protection.

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

Do not open or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic. The batteries installed inside the cabinet must be disposed of correctly. For the disposal requirements refer to local laws and relevant standards.

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## 2. Safety regulations



Do not open the battery fuse holders while the UPS is powering the loads in battery mode.



To reduce the risk of fire or electric shock, the EBC must work in closed, clean environments with controlled temperature and humidity. It must be kept away from inflammable liquids and corrosive substances.



- The equipment must be maintained and used according to the instructions of this manual.
- The departmental manager must instruct the operating and maintenance personnel on the safe use and maintenance of the equipment.
- Only specifically-trained, highly skilled personnel are allowed access to the equipment in order to perform maintenance. While the maintenance operation is being carried out, signs saying "Maintenance work in progress" must be affixed in the department in such a way that they can be easily seen from any access area.
- The connection of the equipment (and of any accessory devices) must always be perfectly grounded to discharge short-circuit currents and electrostatic voltages. The input voltage must correspond with the value shown on the rating plate. Current adapters must not be used under any circumstances. Pay attention to polarity when connecting.
- Any intervention on the equipment must be done only after it has been disconnected from the power supply network by means of a switch disconnecter and must be locked with an appropriate padlock.
- The UPS must not be turned on if liquid is leaking from the batteries.
- The equipment used for any maintenance operations (pliers, screwdrivers etc.) must be electrically insulated.
- Depositing flammable material near the equipment is strictly forbidden. The equipment should always be locked, and only specifically trained personnel are allowed access to it.
- Do not disable any safety, notification or warning device and do not ignore any alarm, warning message or notice, no matter whether they are generated automatically or represented by plates fixed to the equipment.
- Do not run the equipment with fixed protections not installed (panels etc.).
- In case of breaking, buckling or malfunctioning of the equipment or parts of it, repair or replace immediately.
- For no reason can the structure of the equipment, the devices mounted on it, the operation sequence etc., be modified, manipulated or tampered with in any way, without prior consultation with the Manufacturer.
- When replacing fuses, only use ones of the same type.
- The replacement of the batteries is an operation intended to be carried out by a skilled technician.
- Keep a register in which to enter the date, time, type, performer's name and any other useful information about each and any routine and extraordinary maintenance operation.
- Do not use oils or chemical products for cleaning because they could scratch, corrode or damage certain parts of the equipment.
- The equipment and workplace must be kept completely clean.
- Upon completion of the maintenance operations, before connecting the power supply, carefully check that no tools and/or material of any kind have been left next to the equipment.

### 2.7 How to proceed in an emergency

The following information are general. For the specific interventions consult the regulations in force in the country where the equipment is installed.

#### 2.7.1 First-aid procedures

When administering first aid, adhere to the company rules and the usual procedures.

#### 2.7.2 Fire procedures

Do not use water to quench fires but just the extinguishers specially designed for putting out fires on electrical equipment.

## 3. Installation

### **DANGER**

All EBC installation operations must be carried out exclusively by a SKILLED TECHNICIAN (paragraph 2.2.1).

### 3.1 Safety regulations

#### **CAUTION**

Before carrying out any installation operation you must read and apply the following:

1. Consult chapter 2 of the manual containing mandatory safety regulations and wear the Personal Protective Equipment mentioned in paragraph 2.3.
2. Turn off the UPS and disconnect it from the power supply before the EBC installation.
3. The connection to the earth ground is essential for safety and proper installation and operation. Before carrying out any other installation operation, connect the earthing wiring.
4. Do not carry out the installation if there is water or humidity around.

### 3.2 Inspecting and unpacking

Carefully inspect the outer packaging for evidence of damage during transit.

If there is possible or ascertained damage, immediately inform:

- the transporter;
- the LEGRAND Technical Support Service.

Check that the equipment corresponds with the items indicated in the delivery documentation.

Follow the instructions in chapter 5 when storing the UPS.

### **WARNING**

Move the EBC very carefully, lifting it as little as possible and avoiding dangerous swings or falls.

The EBC and the batteries are heavy. The cabinet may tip and cause serious injury. For any lifting, use a forklift or a transpallet with an adequate carrying capacity, placing the forks in the wooden base and making sure they come out the other side by at least twenty centimetres.

The equipment must always be handled by trained and instructed personnel equipped with the Personal Protective Equipment illustrated in chapter 2.

### 3.3 Battery cabinet installation site

The UPS system installation, including the EBC, must meet the following guidelines:

- The support surface must be scaled in for the carrying capacity necessary to support the equipment.
- Dust or corrosive/explosive gasses must be absent.
- The site must be free of vibration and there should be enough lighting.
- The system must be installed in a temperature and humidity controlled indoor. The ambient temperature range is 0-40°C (32-104°F) with a maximum relative humidity of 95%, non-condensing. However, the recommended operating range is 20-25°C (68-77°F) to ensure nominal battery lifetime.
- The rear and side space must be enough to guarantee an adequate circulation of air for cooling.
- The cooling flow of air must be guaranteed.
- The external battery cabinet must be accessible on all sides for assistance or periodic servicing.

#### **INDICATION**

Operating temperatures above the recommended range will result in decreased battery life and performance and will reduce or void the battery warranty.

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## 3. Installation

### 3.4 Battery assembly

The manufacturer of the batteries provides the following documentation:

- position of the batteries on the shelves;
- connection and wiring schematics;
- list of cables.



#### CAUTION

It is mandatory to install in the EBC only the brands and models of batteries, fuse holders and fuses indicated by Legrand to guarantee the safety and the functionality of the equipment.



#### CAUTION

The instructions provided by the battery manufacturer are mandatory.

LEGRAND is not liable for any damage or bad functioning of the battery cabinet and UPS caused by personnel who have not observed those instructions.



#### ATTENTION

It is mandatory to install battery terminal covers when supplied by the battery manufacturer.



#### WARNING

Do not move the EBC after the installation of the batteries.

#### INDICATION

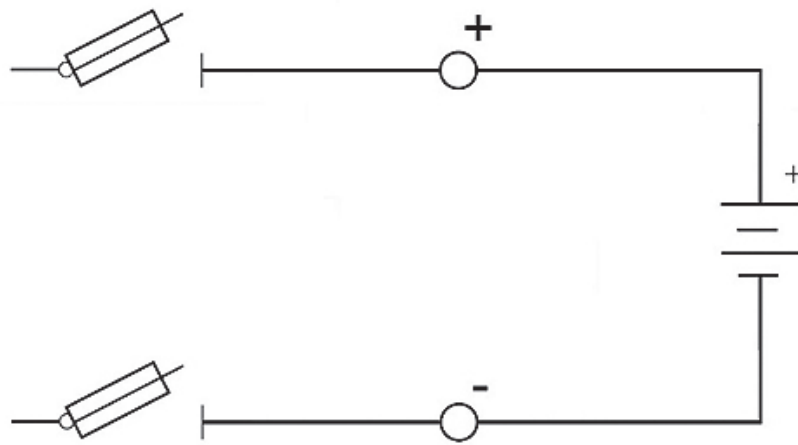
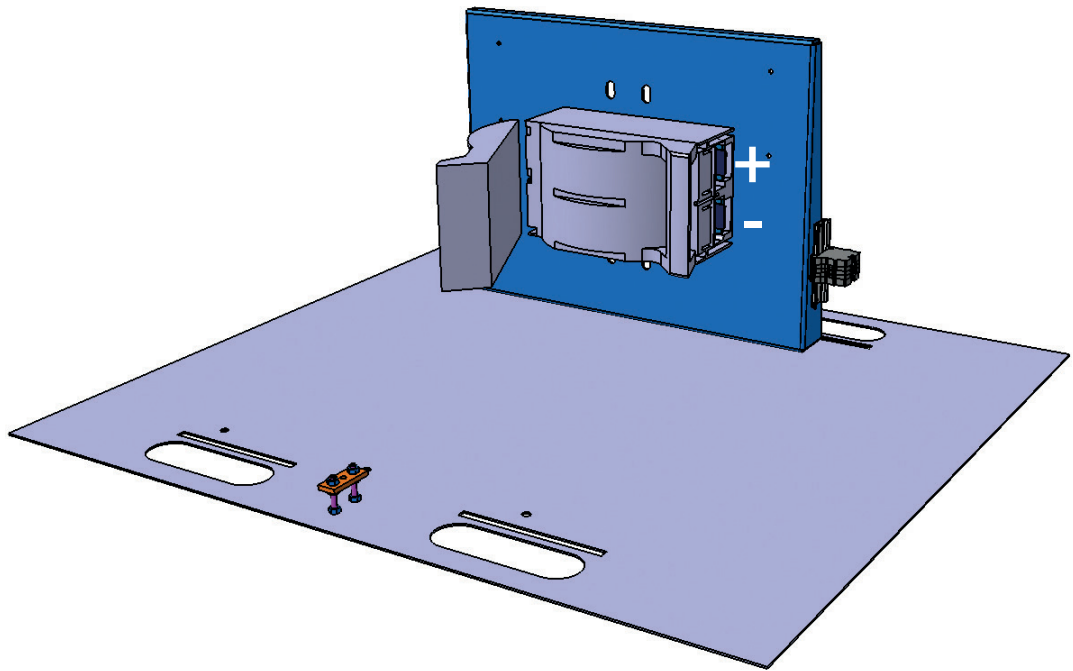
It is mandatory to fill the technical label located on the internal side of the door.

Follow these indications for the assembly:

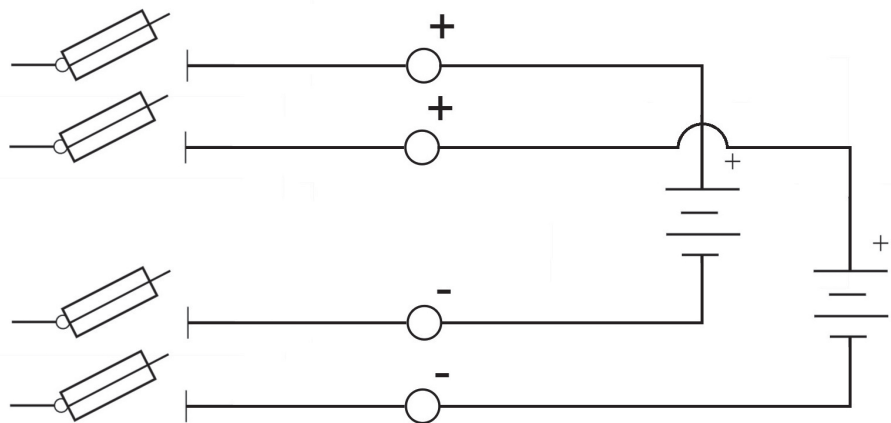
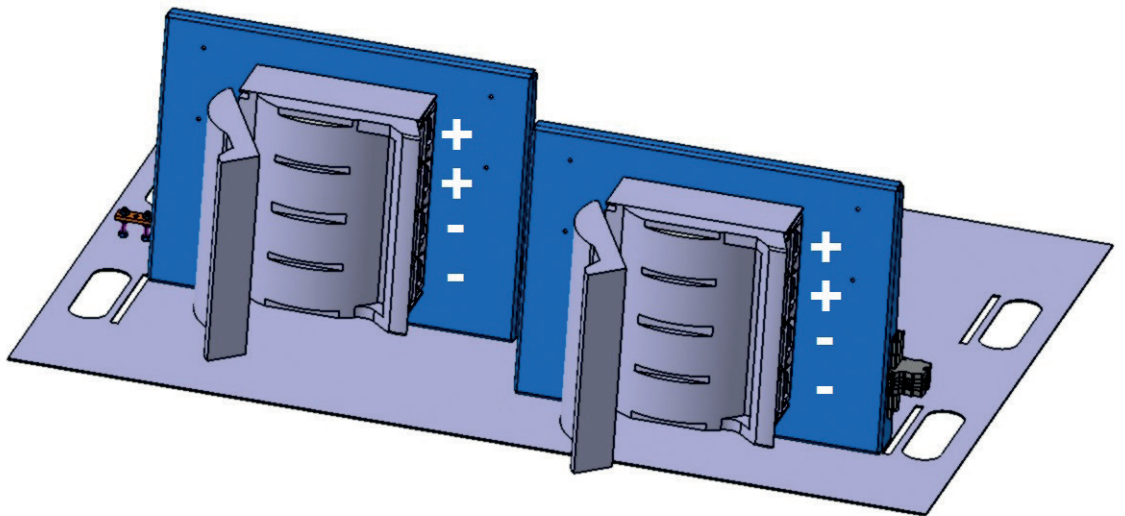
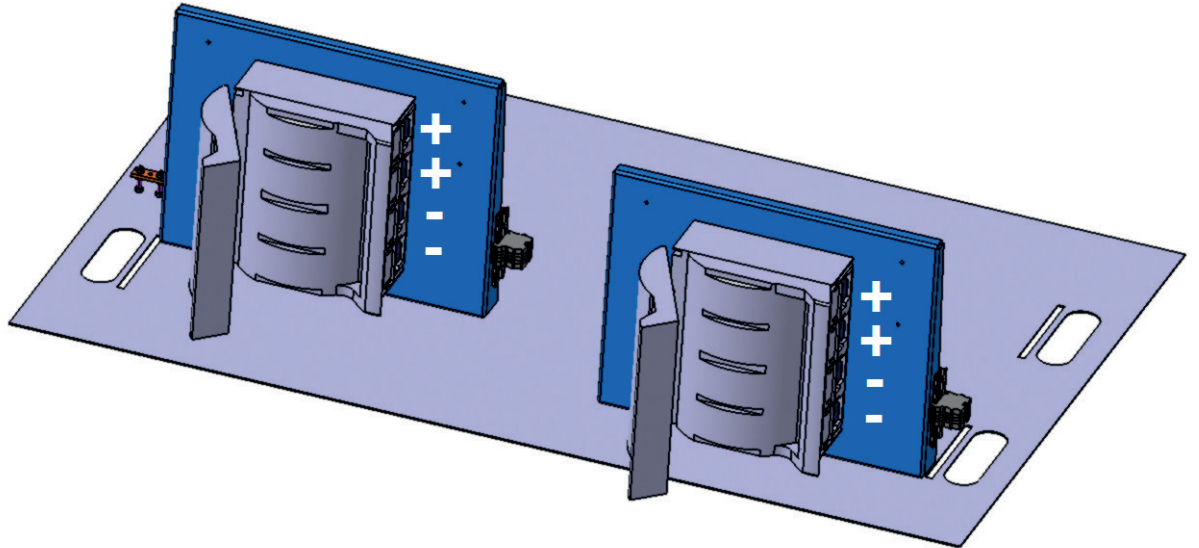
- add a number label on each battery block for each shelf according to the electrical drawing provided by the battery manufacturer.
- the assembly and cabling must always start from the bottom shelf following the connection diagram provided by the battery manufacturer;
- always check the tightening of the screws;
- before starting the assembly of the second shelf, add the battery terminal covers to the batteries on the first completed shelf and keep one connection open;
- finish the assembly of all the shelves keeping one connection open per shelf;
- connect the interconnections between the shelves: temporary install an isolating cover on one extremity of the cable while connecting the other extremity on the battery block. Then connect the second extremity;
- respect the polarity indicated on the battery connection diagram to connect the battery cables to the correct side and polarity of the battery protections, as indicated in paragraph 3.5;
- before closing the open connection on each shelf, check there is no voltage between the two battery terminals to connect;
- check the total voltage and the polarity on the battery protection terminals;
- connect the battery cabinet to the UPS and check there is no polarity inversion between UPS and battery cabinet;
- do not close the battery protection at this stage. It is necessary to make the following verifications:
  - 1) check there is no polarity inversion between UPS and battery cabinet;
  - 2) respect the start-up sequence defined in the UPS installation manual to start the UPS;
  - 3) check the presence of the corresponding DC voltages upstream and downstream the battery protection;
- install the protective screens and the safety warning labels;
- close the battery protection only when all above verifications are performed and after the start-up procedure of the UPS.

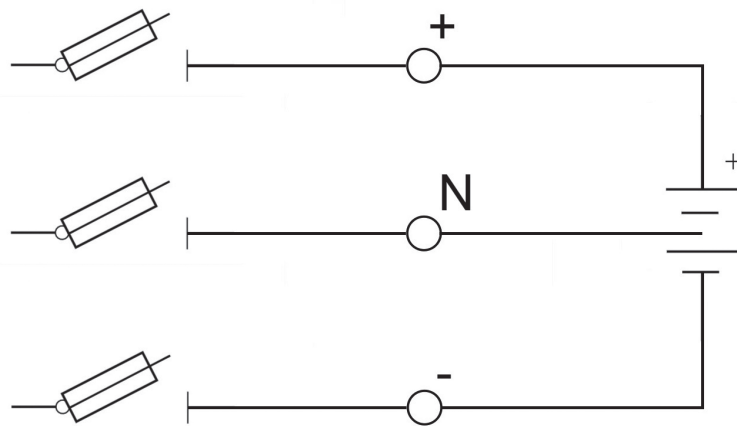
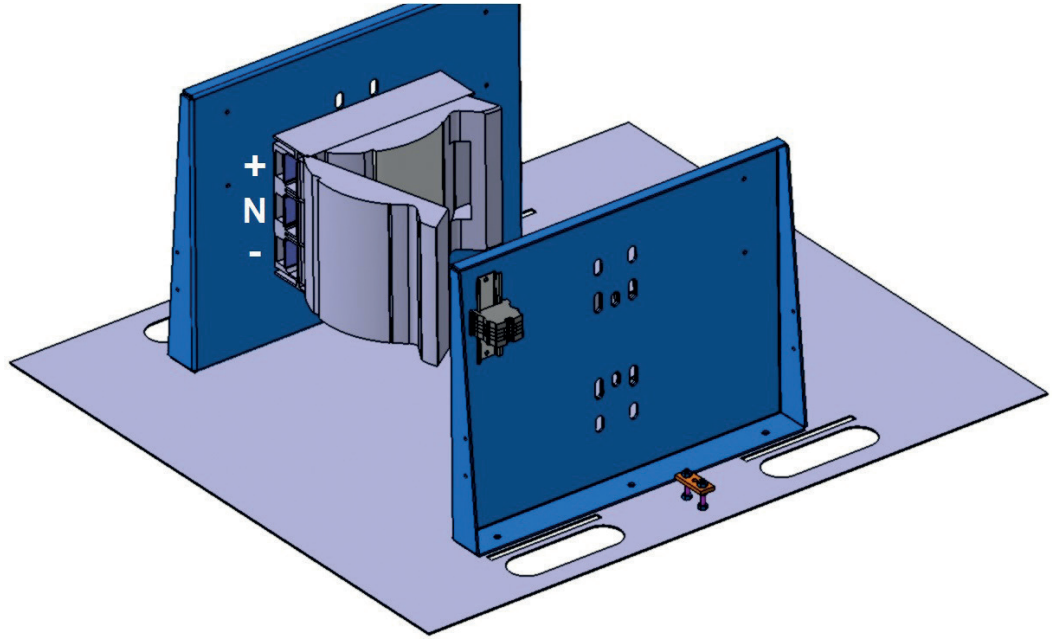
#### INDICATION

It is mandatory to apply for each input/output battery fuse holder the labels that indicate the polarization, as indicated in the following images. The first pole on the top must always be the positive one and the last pole on the bottom must always be the negative one.



### 3. Installation

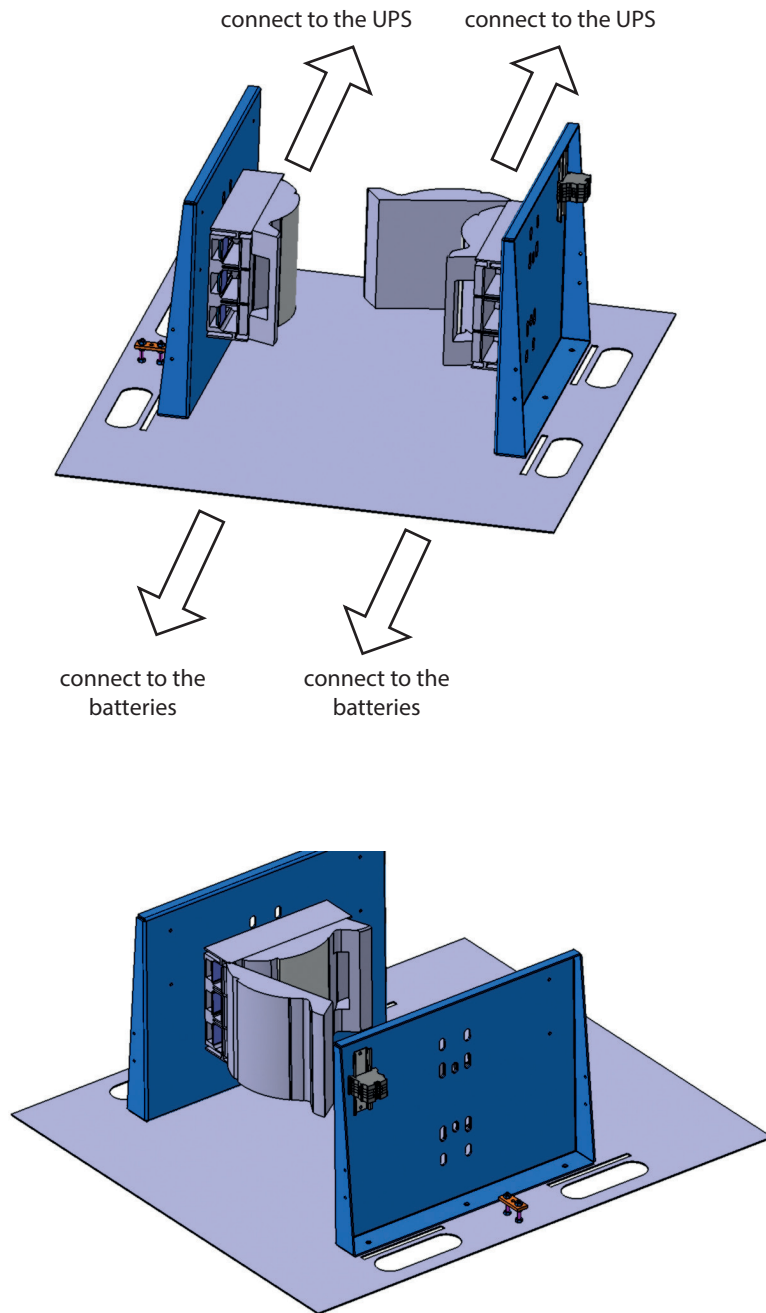




### 3. Installation

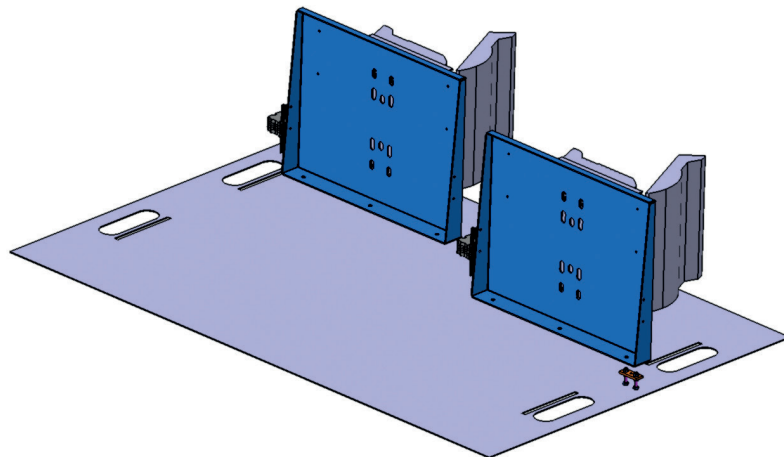
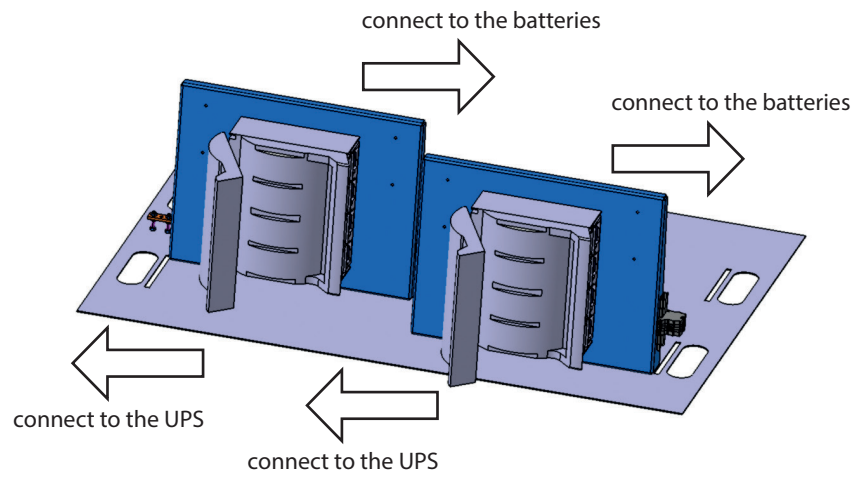
#### 3.5 Support plates and earthing bar assembly

The preset EBC include two support plates to install two fuse holders in the configurations where there are three strings of batteries. In these cases, the support plates and the fuse holders must be installed, along with the earthing bar, as indicated in the following drawings:



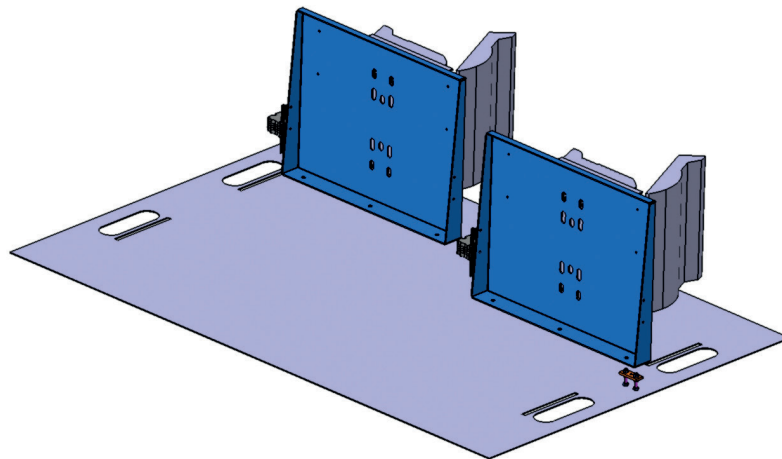
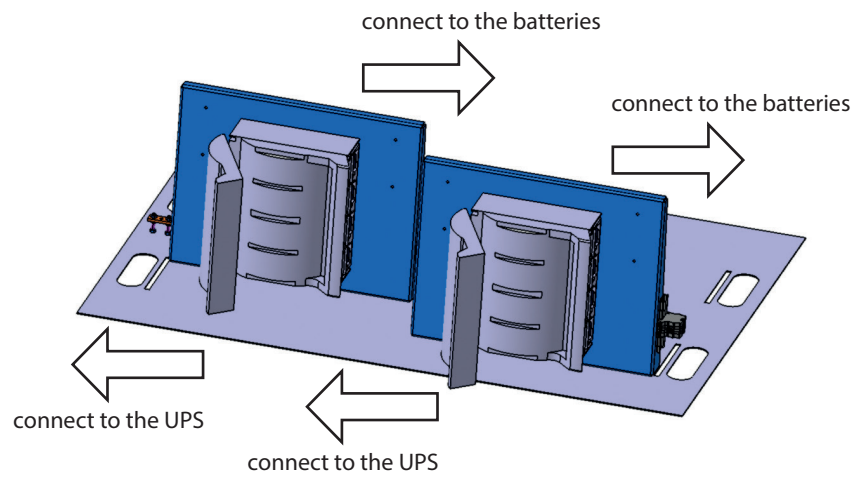
CABINET WITH BASE 800 mm x 900 mm





CABINET WITH BASE 1200 mm x 900 mm

### 3. Installation



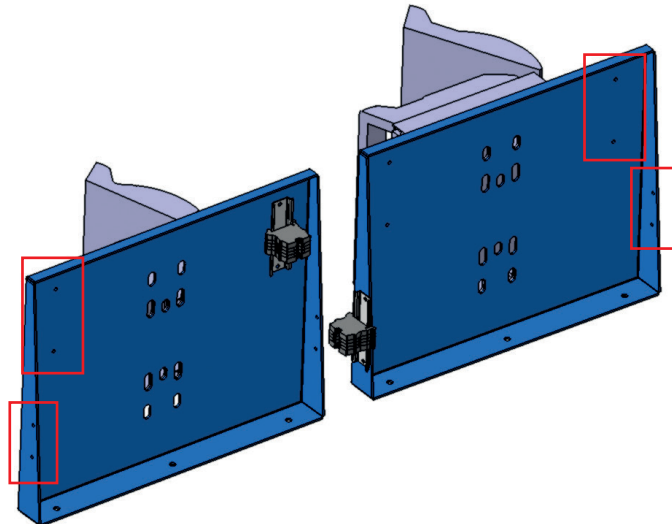
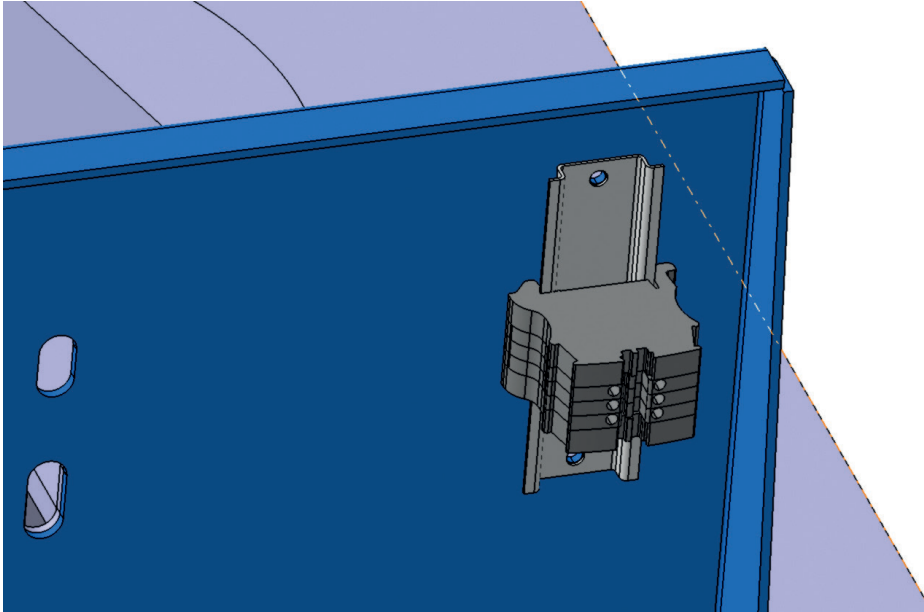
**CABINET WITH BASE 1400 mm x 900 mm**

In the other cases with only one or two strings of batteries, it is enough one fuse holder with one plate. The installer can place the single plate (with the relevant fuse holder), using the preset holes on the base shelf, in the most comfortable way he prefers, independently from one or the other position.

### 3.6 Auxiliary contacts assembly

The preset EBC include auxiliary contacts to monitor the status of the fuse holders (open/closed).

It is possible to install the DIN bar with the contacts in several positions of the support plate, as indicated in the following drawings:



### 3. Installation

#### 3.7 External power cables connecting

The electrical hook-up of the EBC to the UPS is part of the installation that is not normally performed by the UPS manufacturer. For this reason, the indications that follow are to be considered approximate and it is recommended that the electrical connections are made on the basis of local installation standards.

 **ATTENTION**

The choice of cable type and cross section depending on the rated current and installation must be made as indicated by the installation standards in force and it is a responsibility of the skilled technician. Check the UPS installation manual to verify the battery current.

After the battery assembly and the installation of the support plates with the fuse holders, the skilled technician can begin to make the electrical connections.

It is important to check the corresponding UPS cables polarity on the other side of the battery protection and eventually to respect the correct start-up procedure defined into the UPS operating manual before closing the battery protection.

 **ATTENTION**

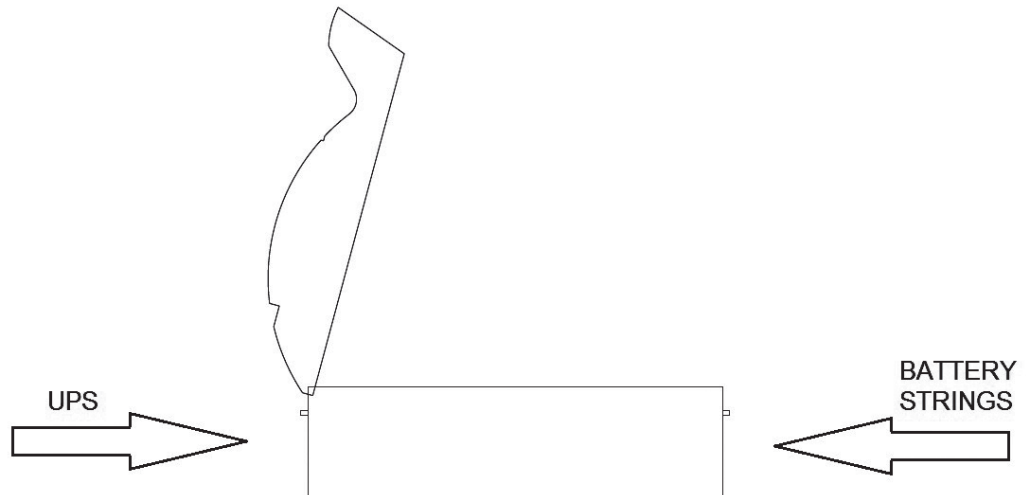
At the end of the installation, it is mandatory to use for electrical safety the polycarbonate panel to segregate batteries and the dedicated plastic covers on the poles of the fuse holder switches.

**INDICATION**

It is mandatory to clearly mark the power cables polarity during the installation on-site.

**INDICATION**

When the fuse holder is open or closed, the first part that opens or closes is the one connected to the batteries, as indicated in the following image:



## 4. Maintenance



### **DANGER**

INSTALLATION and ORDINARY MAINTENANCE operations must be carried out only by SKILLED TECHNICIANS (paragraph 2.2.1). EXTRAORDINARY MAINTENANCE operations must be carried out only by LEGRAND TECHNICAL SUPPORT SERVICE.

### **INDICATION**

LEGRAND declines all liability for any injury or damage caused by activities carried out differently from the instructions written in this manual.

### **4.1 Installation**

The operator is not authorized to install and connect electrically the EBC to the UPS. These operations are the sole preserve of a skilled technician (paragraph 2.2.1) who must follow the instructions addressed to him in this manual.

### **4.2 Preventive maintenance**

The EBC does not contain parts for preventive maintenance by the operator.

The operator must periodically perform:

- a general external cleaning;
- a check to the area surrounding the UPS system to ensure that there is free access to the units.

### **4.3 Periodical checks**

The correct functioning of the EBC must be guaranteed by periodical maintenance inspections. These are essential to safeguard the reliability of the battery cabinet.

These inspections should be made to determine if components, wiring, and connections exhibit evidence of overheating.



### **WARNING**

The periodical checks involve operations inside the equipment in presence of dangerous voltages. Only maintenance personnel trained by LEGRAND are authorized to intervene.

### **4.4 Battery maintenance**

Contact a skilled technician for battery maintenance.

If necessary, contact the LEGRAND Technical Support Service.

## 5. Warehousing



All storage operations must be carried out only by a SKILLED TECHNICIAN (paragraph 2.2.1)



A SKILLED TECHNICIAN must check that there is no voltage present before disconnecting the cables. All the battery isolator switches on the UPS and on the EBC must be open.

### 5.1 Batteries

It is possible to store batteries without recharging them in the following conditions:

- up to 6 months at +20°C (+68°F);
- up to 3 months at +30°C (+86°F);
- up to 2 months at +35°C (+95°F).



The batteries must never be stored if the batteries are partially or totally discharged.

LEGRAND is not liable for any damage or bad functioning caused to the UPS by wrong warehousing of the batteries.

## 6. Dismantling



### DANGER

Dismantling and disposal operations must be carried out only by a SKILLED TECHNICIAN (paragraph 2.2.1). The instructions in this chapter are to be considered indicative: in every country there are different regulations regarding the disposal of electronic or hazardous waste such as batteries. It is necessary to strictly adhere to the standards in force in the country where the equipment is used. Do not throw any component of the equipment in the ordinary rubbish.

### 6.1 Battery disposal

Batteries must be disposed of in a site intended for the recovery of toxic waste. Disposal in the traditional rubbish is not allowed.

Apply to the competent agencies in your countries for the proper procedure.



Pb



### WARNING

A battery may constitute a risk of electric shock and high short-circuit current. When working on batteries, the prescriptions indicated in chapter 2 must be adhered to.

### 6.2 Cabinet dismantling

The dismantling of the cabinet must occur after the dismantling of the various parts it consists of. For the dismantling operations, it is necessary to wear the Personal Protective Equipment mentioned in paragraph 2.3. Sub-divide the components separating the metal from the plastic, from the copper and so on according to the type of selective waste disposal in the country where the equipment is dismantled. If the dismantled components must be stored before their disposal, be careful to keep them in a safe place protected from atmospheric agents to avoid soil and groundwater contamination.

### 6.3 Electronic component dismantling

For the disposal of electronic waste, it is necessary to refer to the relevant standards.



This symbol indicates that in order to prevent any negative effects on the environment and on people, this product should be disposed of separately from other household waste, by taking it to authorised collection centres, in accordance with the EU countries local waste disposal legislations. Disposing of the product without following local regulations may be punished by law. It is recommended to check that this equipment subject to WEEE legislations in the country where it is used.

## 7. Technical data

### General specifications

<b>Nominal Voltage</b>	800 Vdc
<b>Battery segregation</b>	Internal panel in Polycarbonate
<b>Switches and protection access</b>	Internal bottom front side
<b>Disconnection and protection devices *</b>	Fuse Holders Switch with NH fast fuses (sized accordingly with Battery Power)
<b>Fuse holder Open/Close signal*</b>	Auxiliary Micro Switch
<b>Cable Entrance</b>	bottom sides (both left and right)
<b>Cable connections</b>	on Fuse holder terminals
<b>Max Cable side entrance</b>	3x 150mm <sup>2</sup>
<b>Cabinet Access</b>	Front door with key lock and removable sides and rear panels
<b>Shelter Bent Metal Sheet Thickness</b>	20/10
<b>Shelves Bent Metal Sheet Thickness</b>	30/10
<b>Protection Degrees</b>	IP20 (optional IP21)
<b>Color</b>	RAL 7016
<b>Packaging</b>	Carton box, Cabinet base with Forklift Access

### Preset cabinets (with switches and protections)

Item Code	Cabinet Dimension (L x D x H) mm	Switches and Protection Kit	Terminal screws	Weight (kg)*	Batt. (Ah)	No. of Blocks	EXIDE	CSB	VISION	YUASA
310626	800x900x1420	1x FUSE HOLDER 3P NH1 250A - 3x aR FUSE 100A	6x M10	214	24	60	P12V600	HRL 12110W	HFS12-115W-X	SWL780V
310627	800x900x1420	1x FUSE HOLDER 4P NH1 250A - 4x aR FUSE 100A	8x M10	215	24	40	P12V600	HRL 12110W	HFS12-115W-X	SWL780V
310655	800x900x1420	1x FUSE HOLDER 2P NH1 250A - 2x aR FUSE 250A	4x M10	213	55	20	XP12V1800	HRL 12200W	HFS12-200W-X	SWL1800
310656	800x900x1420	1x FUSE HOLDER 3P NH2 400A - 2x aR FUSE 315A	6x M10	215	70-93	20	XP12V2500 XP12V3000	HRL 12280W XHRL 12360W	HFS12-320W-X HFS12-400W-X	SWL2250 SWL2500
310657	800x900x1420	1x FUSE HOLDER 3P NH2 400A - 2x aR FUSE 350A	6x M10	215	105	20	XP12V3400	XHRL 12475W	HFS12-420W-X	SWL3300
310658	800x900x1900	1x FUSE HOLDER 2P NH1 250A - 2x aR FUSE 100A	4x M10	253	24	21	P12V600	HRL 12110W	HFS12-115W-X	SWL780V
310670	800x900x1900	1x FUSE HOLDER 4P NH1 250A - 4x aR FUSE 100A	8x M10	255	24	42	P12V600	HRL 12110W	HFS12-115W-X	SWL780V



## External battery cabinet for 3PH UPS

Item Code	Cabinet Dimension (L x D x H) mm	Switches and Protection Kit	Terminal screws	Weight (kg)*	Batt. (Ah)	No. of Blocks	EXIDE	CSB	VISION	YUASA
310671	800x900x1900	2x FUSE HOLDER 3P NH1 250A - 6x aR FUSE 100A	6x M10	254	24	63	P12V600	HRL 12110W	HFS12-115W-X	SWL780V
310672	800x900x1900	1x FUSE HOLDER 2P NH1 250A - 2x aR FUSE 125A	4x M10	253	41	21	P12V875	HRL 12150W	HFS12-150W-X	SWL1100
310674	800x900x1900	1x FUSE HOLDER 4P NH1 250A - 4x aR FUSE 125A	8x M10	255	41	42	P12V875	HRL 12150W	HFS12-150W-X	SWL1100
310940	800x900x1900	1x FUSE HOLDER 2P NH1 250A - 2x aR FUSE 250A	4x M10	253	55	21	XP12V1800	HRL 12200W	HFS12-200W-X	SWL1800
310941	800x900x1900	1x FUSE HOLDER 4P NH1 250A - 4x aR FUSE 250A	8x M10	255	55	42	XP12V1800	HRL 12200W	HFS12-200W-X	SWL1800
310942	800x900x1900	1x FUSE HOLDER 3P NH2 400A - 2x aR FUSE 315A	6x M10	255	70-93	21	XP12V2500 XP12V3000	HRL 12280W XHRL 12360W	HFS12-400W-X HFS12-320W-X	SWL2250 SWL2500
310943	800x900x1900	1x FUSE HOLDER 3P NH2 400A - 2x aR FUSE 350A	6x M10	255	105	21	XP12V3400	XHRL 12475W	HFS12-420W-X	SWL3300
310659	800x900x1900	1x FUSE HOLDER 3P NH1 250A - 3x aR FUSE 100A	6x M10	254	24	60-62	P12V600	HRL 12110W	HFS12-115W-X	SWL780V
310673	800x900x1900	1x FUSE HOLDER 3P NH1 250A - 3x aR FUSE 125A	6x M10	254	41	60-62	P12V875	HRL 12150W	HFS12-150W-X	SWL1100
310966	1200x900x1900	1x FUSE HOLDER 4P NH2 400A - 4x aR FUSE 315A	8x M10	337	70-93	40-42	XP12V2500 XP12V3000	HRL 12280W XHRL 12360W	HFS12-400W-X HFS12-320W-X	SWL2250 SWL2500
310968	1200x900x1900	1x FUSE HOLDER 4P NH2 400A - 4x aR FUSE 350A	8x M10	337	105	42	XP12V3400	XHRL 12475W	HFS12-420W-X	SWL3300
310965	1200x900x1900	1x FUSE HOLDER 3P NH2 400A - 2x aR FUSE 315A	6x M10	335	70-93	50-52	XP12V2500 XP12V3000	HRL 12280W XHRL 12360W	HFS12-400W-X HFS12-320W-X	SWL2250 SWL2500

## 7. Technical data

Item Code	Cabinet Dimension (L x D x H) mm	Switches and Protection Kit	Terminal screws	Weight (kg)*	Batt. (Ah)	No. of Blocks	EXIDE	CSB	VISION	YUASA
310967	1200x900x1900	1x FUSE HOLDER 3P NH2 400A - 2x aR FUSE 350A	6x M10	335	105	50-52	XP12V3400	XHRL12475W	HFS12-420W-X	SWL3300
310944	1200x900x1900	1x FUSE HOLDER 3P NH1 250A - 3x aR FUSE 250A	6x M10	334	55	60-62	XP12V1800	HRL 12200W	HFS12-200W-X	SWL1800
310980	1400x900x1900	1x FUSE HOLDER 3P NH2 400A - 3x aR FUSE 315A	6x M10	385	70-93	60-62	XP12V2500 XP12V3000	HRL 12280W XHRL12360W	HFS12-400W-X HFS12-320W-X	SWL2250 SWL2500
310982	1400x900x1900	1x FUSE HOLDER 3P NH2 400A - 3x aR FUSE 350A	6x M10	385	105	60-62	XP12V3400	XHRL12475W	HFS12-420W-X	SWL3300
310981	1400x900x1900	2x FUSE HOLDER 3P NH2 400A - 6x aR FUSE 315A	6x M10	385	70-93	60	XP12V2500 XP12V3000	HRL 12280W XHRL12360W	HFS12-400W-X HFS12-320W-X	SWL2250 SWL2500
310983	1400x900x1900	2x FUSE HOLDER 3P NH2 400A - 6x aR FUSE 350A	6x M10	385	105	60	XP12V3400	XHRL12475W	HFS12-420W-X	SWL3300
310984	1400x900x2080	1x FUSE HOLDER 3P NH2 400A - 2x aR FUSE 350A	6x M10	415	105	21	XP12V3400	XHRL12475W	HFS12-420W-X	SWL3300
310985	1400x900x2080	1x FUSE HOLDER 4P NH2 400A - 4x aR FUSE 350A	8x M10	417	105	42	XP12V3400	XHRL12475W	HFS12-420W-X	SWL3300
310986	1400x900x2080	2x FUSE HOLDER 3P NH2 400A - 6x aR FUSE 350A	6x M10	415	105	63	XP12V3400	XHRL12475W	HFS12-420W-X	SWL3300

### INDICATION

The protections are valid for the uses defined in the table only for the batteries indicated.

## Empty cabinets

Item Code	Description and dimensions (W x D x H) mm	Shelves (including the base)	Weight (kg)*
310620	EMPTY BATTERY CABINET 800x900x1420	4	210
310621	EMPTY BATTERY CABINET 800x900x1900	5	250
310622	EMPTY BATTERY CABINET 1200x900x1900	5	330
310623	EMPTY BATTERY CABINET 1400x900x1900	5	380
310624	EMPTY BATTERY CABINET 1400x900x2080	5	410

## Fuse holder kits

Item Code	Description	Cable termination size	Cover pole Quantity	Status Indicator Aux Switch	Fuse Holder Kit Weight (kg)
981167	FUSE SWITCH KIT 3P 250A NH1	6x M10 terminal screws	1	Yes	2,42
981168	FUSE SWITCH KIT 2P 250A NH1	4x M10 terminal screws	2	Yes	2,06
981169	FUSE SWITCH KIT 4P 250A NH1	8x M10 terminal screws	1	Yes	3,4
981170	FUSE SWITCH KIT 3P 400A NH2	6x M10 terminal screws	1	Yes	3,5
981171	FUSE SWITCH KIT 4P 400A NH2	8x M10 terminal screws	2	Yes	5,04

## Fuses

Item Code	Description	Fuse Weight (kg)	Related Batt Cap. (Ah)
981172	FUSE NH1 AR 100 A	0,42	24
981173	FUSE NH1 AR 125 A	0,42	41
981174	FUSE NH1 AR 250 A	0,42	55
981175	FUSE NH2 AR 315 A	0,62	70-93
981176	FUSE NH2 AR 350 A	0,62	105

