Galaxy VL

Maintenance Bypass Cabinet for IEC

Installation

GVLMBCA200K500H

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Important Safety Instructions — SAVE THESE INSTRUCTIONS

Read these instructions carefully and look at the equipment to become familiar with it before trying to install, operate, service or maintain it. The following safety messages may appear throughout this manual or on the equipment to warn of potential hazards or to call attention to information that clarifies or simplifies a procedure.



The addition of this symbol to a "Danger" or "Warning" safety message indicates that an electrical hazard exists which will result in personal injury if the instructions are not followed.



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages with this symbol to avoid possible injury or death.

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

Failure to follow these instructions will result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, **could result** in death or serious injury.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

CAUTION indicates a hazardous situation which, if not avoided, **could result in** minor or moderate injury.

Failure to follow these instructions can result in injury or equipment damage.

NOTICE

NOTICE is used to address practices not related to physical injury. The safety alert symbol shall not be used with this type of safety message.

Failure to follow these instructions can result in equipment damage.

Please Note

Electrical equipment should only be installed, operated, serviced, and maintained by qualified personnel. No responsibility is assumed by Schneider Electric for any consequences arising out of the use of this material.

A qualified person is one who has skills and knowledge related to the construction, installation, and operation of electrical equipment and has received safety training to recognize and avoid the hazards involved.

Safety Precautions

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read all instructions in the installation manual before installing or working on this product.

Failure to follow these instructions will result in death or serious injury.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not install the product until all construction work has been completed and the installation room has been cleaned.

Failure to follow these instructions will result in death or serious injury.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The product must be installed according to the specifications and requirements as defined by Schneider Electric. It concerns in particular the external and internal protections (upstream breakers, battery breakers, cabling, etc.) and environmental requirements. No responsibility is assumed by Schneider Electric if these requirements are not respected.

Failure to follow these instructions will result in death or serious injury.

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The UPS system must be installed according to local and national regulations. Install the UPS according to:

- IEC 60364 (including 60364–4–41- protection against electric shock, 60364– 4–42 - protection against thermal effect, and 60364–4–43 - protection against overcurrent), or
- NEC NFPA 70, or
- Canadian Electrical Code (C22.1, Part 1)

depending on which one of the standards apply in your local area.

Failure to follow these instructions will result in death or serious injury.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Install the product in a temperature controlled indoor environment free of conductive contaminants and humidity.
- Install the product on a non-flammable, level and solid surface (e.g. concrete) that can support the weight of the system.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The product is not designed for and must therefore not be installed in the following unusual operating environments:

- Damaging fumes
- Explosive mixtures of dust or gases, corrosive gases, or conductive or radiant heat from other sources
- · Moisture, abrasive dust, steam or in an excessively damp environment
- · Fungus, insects, vermin
- Salt-laden air or contaminated cooling refrigerant
- Pollution degree higher than 2 according to IEC 60664-1
- Exposure to abnormal vibrations, shocks, and tilting
- Exposure to direct sunlight, heat sources, or strong electromagnetic fields

Failure to follow these instructions will result in death or serious injury.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or cut holes for cables or conduits with the gland plates installed and do not drill or cut holes in close proximity to the UPS.

Failure to follow these instructions will result in death or serious injury.

HAZARD OF ARC FLASH

Do not make mechanical changes to the product (including removal of cabinet parts or drilling/cutting of holes) that are not described in the installation manual.

Failure to follow these instructions can result in death, serious injury, or equipment damage.

NOTICE

RISK OF OVERHEATING

Respect the space requirements around the product and do not cover the ventilation openings when the product is in operation.

Failure to follow these instructions can result in equipment damage.

Additional Safety Precautions After Installation

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not install the UPS system until all construction work has been completed and the installation room has been cleaned. If additional construction work is needed in the installation room after this product has been installed, turn off the product and cover the product with the protective packaging bag the product was delivered in.

Electrical Safety

This manual contains important safety instructions that should be followed during the installation and maintenance of the UPS system.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Electrical equipment must be installed, operated, serviced, and maintained only by qualified personnel.
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- Disconnection devices for AC and DC must be provided by others, be readily
 accessible, and the function of the disconnect device marked for its function.
- Turn off all power supplying the UPS system before working on or inside the equipment.
- Before working on the UPS system, check for hazardous voltage between all terminals including the protective earth.
- The UPS contains an internal energy source. Hazardous voltage can be present even when disconnected from the mains supply. Before installing or servicing the UPS system, ensure that the units are OFF and that mains and batteries are disconnected. Wait five minutes before opening the UPS to allow the capacitors to discharge.
- The UPS must be properly earthed/grounded and due to a high leakage current, the earthing/grounding conductor must be connected first.

Failure to follow these instructions will result in death or serious injury.

The label below must be added if:

- 1. The UPS input is connected through external isolators that, when opened, isolate the neutral, OR
- 2. The UPS input is connected via an IT power system.

The label must be placed adjacent to all upstream power disconnection devices that isolate the neutral.

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Risk of voltage backfeed. Before working on this circuit: Isolate the UPS and check for hazardous voltage between all terminals including the protective earth.

Battery Safety

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Battery circuit breakers must be installed according to the specifications and requirements as defined by Schneider Electric.
- Servicing of batteries must only be performed or supervised by qualified personnel knowledgeable of batteries and the required precautions. Keep unqualified personnel away from batteries.
- Disconnect charging source prior to connecting or disconnecting battery terminals.
- Do not dispose of batteries in a fire as they can explode.
- Do not open, alter, or mutilate batteries. Released electrolyte is harmful to the skin and eyes. It may be toxic.

Failure to follow these instructions will result in death or serious injury.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Batteries can present a risk of electric shock and high short-circuit current. The following precautions must be observed when working on batteries

- Remove watches, rings, or other metal objects.
- · Use tools with insulated handles.
- · Wear protective glasses, 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 the battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electric 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).

Failure to follow these instructions will result in death or serious injury.

AADANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

When replacing batteries, always replace with the same type and number of batteries or battery packs.

RISK OF EQUIPMENT DAMAGE

- Mount the batteries in the UPS system, but do not connect the batteries until the UPS system is ready to be powered up. The time duration from battery connection until the UPS system is powered up must not exceed 72 hours or 3 days.
- Batteries must not be stored more than six months due to the requirement of recharging. If the UPS system remains de-energized for a long period, we recommend that you energize the UPS system for a period of 24 hours at least once every month. This charges the batteries, thus avoiding irreversible damage.

Failure to follow these instructions can result in injury or equipment damage.

Specifications

Maximum Short Circuit Rating

The maximum short circuit rating for the maintenance bypass cabinet is 25 kA RMS symmetrical lcw.

Recommended Upstream Protection

Refer to the UPS installation manual for recommended upstream protection.

Recommended Cable Sizes

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 240 mm².

Failure to follow these instructions will result in death or serious injury.

Refer to the UPS installation manual for recommended cable sizes.

Torque Specifications

Bolt size	Torque
M6	5 Nm
M8	17.5 Nm
M10	30 Nm
M12	50 Nm

Maintenance Bypass Cabinet Weights and Dimensions

Commercial reference	Weight kg	Height mm	Width mm	Depth mm
GVLMBCA200K500H	175	1970	500	847

Clearance

NOTE: Clearance dimensions are published for airflow and service access only. Consult with the local safety codes and standards for additional requirements in your local area.

Front View of the Maintenance Bypass Cabinet and the UPS



Environment

	Operating	Storage
Temperature	0 °C to 40 °C	-25 °C to 55 °C
Relative humidity	0-95% non-condensing	0-95% non-condensing
Protection class	IP20	
Color	RAL 9003, gloss level 85%	

System Overview

UIB	Unit input breaker/switch
SSIB	Static switch input switch
МВВ	Maintenance bypass switch
UOB	Unit output switch

Single Mains UPS System



Dual Mains UPS System



Installation Procedure

- 1. Install the Seismic Anchoring (Option), page 15.
- 2. Prepare for Installation, page 17.
- 3. Connect the Power Cables, page 24.
- 4. Interconnect the UPS with the Maintenance Bypass Cabinet, page 27.
- 5. Prepare the UPS for Internal Busbar Connection, page 30.
- 6. Connect the busbars between the UPS and the maintenance bypass cabinet. Perform one of the following procedures:
 - Install Busbars Between the UPS and the Maintenance Bypass Cabinet in Single Mains System, page 31, or
 - Install Busbars Between the UPS and the Maintenance Bypass Cabinet in Dual Mains System, page 33.
- 7. Install Busbars for Load Bank Breaker (Option), page 36.
- 8. Prepare for signal cabling. Perform one of the following procedures:
 - Prepare for Signal Cables in Top Cable Entry Systems, page 37, or
 - Prepare for Signal Cables in Bottom Cable Entry Systems, page 39.
- 9. Connect the Signal Cables Between the Maintenance Bypass Cabinet and the UPS, page 42.
- 10. Follow the UPS installation manual and other auxiliary product installation manuals to connect relevant signal cables and external communication cables in the UPS.
- 11. Add Translated Safety Labels to Your Product, page 45.
- 12. Final Installation, page 46.

Install the Seismic Anchoring (Option)

Use the optional seismic kit GVLOPT002 for this procedure.

1. Connect the rear anchoring assemblies for the UPS and the maintenance bypass cabinet with the interconnection plate.

Rear View



2. Mount the rear anchoring assembly to the floor. Use appropriate hardware for the floor type – the hole diameter in the rear anchors is ø16 mm. Minimum requirement is M12 strength grade 8.8 hardware.



3. Remove all the screws and the interconnection plate.



4. Remove the rear anchoring brackets.



5. Install the rear anchoring brackets on the UPS and the maintenance bypass cabinet with the provided bolts.

Rear View of the UPS and the Maintenance Bypass Cabinet



Prepare for Installation

1. Remove the brackets (A) and (B) from the maintenance bypass cabinet. Install the brackets (A) on the rear of the maintenance bypass cabinet. Save the bracket (B) for top interconnection with the UPS.

Right Side View of the Maintenance Bypass Cabinet

Rear View of the Maintenance Bypass Cabinet





2. Remove the right side panel from the maintenance bypass cabinet.

The Maintenance Bypass Cabinet

3. Remove the left side panel from the UPS. Install the left side panel on the maintenance bypass cabinet.

The Maintenance Bypass Cabinet and the UPS



4. Push the maintenance bypass cabinet into final position. Align with seismic anchoring, if present. For systems without seismic anchoring, reinstall the rear transportation bracket on the maintenance bypass cabinet and mount it to the floor.

Rear View with Seismic Anchoring

Rear View without Seismic Anchoring





- 5. Prepare for power cables:
 - a. Remove the top or bottom gland plate.
 - b. For bottom cable entry, remove the rear caster and the caster screws from the bottom gland plate. Discard the caster.
 - c. Drill or punch holes for power cables or grommets in the gland plate. Grommets are not provided.
 - d. Reinstall the top or bottom gland plate.

A A DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or punch holes with the gland plates installed and do not drill or punch holes in close proximity to the cabinet.

Failure to follow these instructions will result in death or serious injury.

Top Cable Entry



Bottom Cable Entry



6. Open the inner door on the UPS.

7. Remove the transparent protection covers in the UPS.



- 8. Remove busbars from the UPS. Some of the busbars will be installed in the maintenance bypass cabinet:
 - a. Remove the three busbars from the UPS. Install the three busbars in the maintenance bypass cabinet with the nine provided M8 nuts with washer (provided in kit). If the M8 nuts with washer are not in the provided kit, new M8 nuts with washer must be locally sourced and used.
 - b. Remove the three busbars from the UPS. **Only for dual mains**: Install the three busbars in the maintenance bypass cabinet with the 12 provided M8 nuts with washer (provided in kit). If the M8 nuts with washer are not in the provided kit, new M8 nuts with washer must be locally sourced and used.
 - c. Remove the three busbars from the UPS. Save for load bank breaker (LBB) option if this is part of the system.
 - d. Remove the four busbars from the UPS. Discard or save for spare parts.

Front View of the UPS



Front View of the Maintenance Bypass Cabinet



9. **Only for TNC earthing system**: Install the provided jumper busbar to connect the N busbar to the PE busbar as shown.

Front View of the Maintenance Bypass Cabinet

Connect the Power Cables

- 1. Route the power cables through the top or bottom of the maintenance bypass cabinet.
- 2. Connect the PE cables, input cables, bypass cables (in dual mains systems), load cables, and DC cables. Assemble the cable lugs to the busbars as shown.





Cable Lug to Busbar Assembly



- A. Spring washer provided in kit.
- B. Flat washer (not provided).
- 3. Check the fastening of the cable lugs.

RISK OF EQUIPMENT DAMAGE

Check the fastening of the cable lugs. If the cable lugs move due to pulling on cables, the bolt can become loose.

Failure to follow these instructions can result in injury or equipment damage.

4. Reinstall the right side panel on the maintenance bypass cabinet.



5. Reposition the protection covers on the right side panel. Reuse the M6 screws.



Interconnect the UPS with the Maintenance Bypass Cabinet

- 1. Push the UPS into position next to the maintenance bypass cabinet. Align with seismic anchoring, if present.
- 2. Lower the front and rear leveling feet on the maintenance bypass cabinet and on the UPS with a wrench until they connect with the floor. The casters must not have contact with the floor. Use a bubble-leveler to check that the cabinet is level.

NOTICE

RISK OF EQUIPMENT DAMAGE

Do not move the cabinet after the leveling feet have been lowered.

Failure to follow these instructions can result in equipment damage.

3. Interconnect the maintenance bypass cabinet and the UPS in the front with screws as shown

4. Install the top bracket. The top bracket was removed from the side of the maintenance bypass cabinet earlier.



5. Open the inner door in the UPS.



6. Remove the two special screws from the UPS and use for rear interconnection between the maintenance bypass cabinet and the UPS as shown.

Prepare the UPS for Internal Busbar Connection

- 1. Reposition the PE busbar in the UPS:
 - a. Disconnect the EMC cable, the EMC cable holder and the bonding cables from the PE busbar. Note the connection of the cables on the ground busbar.
 - b. Remove and discard the copper busbar.
 - c. Move the PE busbar to the new position.
 - d. Hold onto the EMC cable holder and pull gently on the end of the EMC cable to extend the length. Reconnect the EMC cable to the PE busbar.
 - e. Reconnect the bonding cables to the PE busbar.



2. Bend the M zone flaps upwards on the plastic box. This is necessary to make room for the internal busbars between the maintenance bypass cabinet and the UPS.



Install Busbars Between the UPS and the Maintenance Bypass Cabinet in Single Mains System

The busbars and insulator parts are provided in a kit with the maintenance bypass cabinet. The part numbers shown on the illustrations are printed on the parts. Use the provided M8x30 screws and torque to 17.5 Nm.

1. Install the neutral busbars, the DC busbars, the insulator part, and the PE busbar.

Front View of the UPS



2. Install the input busbars and the insulator part.



Output

3. Install the output busbars and the insulator parts.

Front View of the UPS

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Install Busbars Between the UPS and the Maintenance Bypass Cabinet in Dual Mains System

The busbars and insulator parts are provided in a kit with the maintenance bypass cabinet. The part numbers shown on the illustrations are printed on the parts. Use the provided M8x30 screws and torque to 17.5 Nm.

1. Remove the three single mains busbars.

NOTE: Save the three single mains busbars. They are needed for testing during start-up of the UPS.



2. Install the input busbars, the neutral busbar, the DC busbars, the insulator part, and the PE busbar.

Front View of the UPS



3. Install the bypass busbars and the insulator part.



4. Install the output busbars and the insulator parts.



Install Busbars for Load Bank Breaker (Option)

NOTE: The busbars for the load bank breaker were removed from the UPS during preparation for installation.

1. Install busbars for load bank breaker (LBB) in the UPS. Note the direction of the busbars.

Front View of the UPS



2. The load bank breaker cables can be routed through the top of the UPS for a permanent installation or through the open inner door for a temporary installation. See the UPS manual for information on how to create top cable entry in the UPS.
Prepare for Signal Cables in Top Cable Entry Systems

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or punch holes with the gland plates installed and do not drill or punch holes in close proximity to the cabinet.

Failure to follow these instructions will result in death or serious injury.

- 1. Prepare the UPS for signal cables:
 - a. Remove the cover.
 - b. Remove the gland plates and brush plates from the top of the UPS.

Front View of the UPS



- c. For installation without grommets: Reinstall the brush plates.
- d. **For installation with grommets**: Drill a hole in the gland plates for grommets, install grommets, and reinstall the gland plates.

2. Route the signal cables as shown to separate the Class 2/SELV cables from the non-Class 2/non-SELV cables. A divider inside the cable channel separates the cables.

Front View of the UPS



Prepare for Signal Cables in Bottom Cable Entry Systems

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Do not drill or punch holes with the gland plates installed and do not drill or punch holes in close proximity to the cabinet.

Failure to follow these instructions will result in death or serious injury.

1. Remove the covers.



- 2. Prepare for signal cables:
 - a. Remove the gland plates.
 - b. Drill/punch holes for signal cables or grommets in the gland plate. Install grommets (not provided), if applicable.
 - c. Reinstall the gland plates.



3. Route the signal cables from the UPS, into the maintenance bypass cabinet, and out through the bottom of the maintenance bypass cabinet.



4. Reinstall the covers.

Connect the Signal Cables Between the Maintenance Bypass Cabinet and the UPS

1. Connect the provided Class 2/SELV signal cable 0W50021 and the provided non-Class 2/non-SELV signal cable 0W50023 between the maintenance bypass cabinet and the UPS as shown.



Single Mains System



Dual Mains System



Add Translated Safety Labels to Your Product

The safety labels on your product are in English and French. Sheets with translated safety labels are provided with your product.

- 1. Find the sheets with translated safety labels provided with your product.
- 2. Check which 885-XXX numbers are on the sheet with translated safety labels.
- 3. Locate the safety labels on your product that match the translated safety labels on the sheet look for the 885-XXX numbers.
- 4. Add the replacement safety label in your preferred language to your product on top of the existing French safety label.

Final Installation

1. **Only for dual mains**: Add the labels for SSIB, the indicator lights, and the diagram label on the maintenance bypass cabinet. The labels are provided with this manual.

Dual Mains



Single Mains

- 2. Add label 885-91965 (provided with the UPS) on the maintenance bypass cabinet.
- 3. **Only for seismic anchoring**: Install the seismic front anchoring bracket on the maintenance bypass cabinet and on the UPS. Mount the seismic front brackets to the floor. Use appropriate hardware for the floor type the hole diameter in the seismic front bracket is ø14 mm. The minimum requirement is M12 strength grade 8.8 hardware.



4. Close the front door on the maintenance bypass cabinet

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