

Easy UPS 3S

For Internal and External Batteries
10-40 kVA 400 V & 10-20 kVA 208 V 3:3
10-30 kVA 400 V 3:1

Technical Specifications

Latest updates are available on the Schneider Electric website
6/2024



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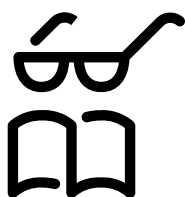
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Important Safety Instructions — SAVE THESE INSTRUCTIONS

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

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

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

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.

Per IEC 62040-1: "Uninterruptible power systems (UPS) -- Part 1: Safety Requirements," this equipment, including battery access, must be inspected, installed and maintained by a skilled person.

The skilled person is a person with relevant education and experience to enable him or her to perceive risks and to avoid hazards which the equipment can create (reference IEC 62040-1, section 3.102).

Electromagnetic Compatibility

NOTICE

RISK OF ELECTROMAGNETIC DISTURBANCE

This is a product Category C3 according to IEC 62040-2. This is a product for commercial and industrial applications in the second environment - installation restrictions or additional measures may be needed to prevent disturbances. The second environment includes all commercial, light industry, and industrial locations other than residential, commercial, and light industrial premises directly connected without intermediate transformer to a public low-voltage mains supply. The installation and cabling must follow the electromagnetic compatibility rules, e.g.:

- the segregation of cables,
- the use of shielded or special cables when relevant,
- the use of grounded metallic cable tray and supports.

Failure to follow these instructions can result in equipment damage.

Safety Precautions

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All safety instructions in this document must be read, understood and followed.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Read all instructions in the Installation Manual before installing or working on this UPS system.

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

⚠ DANGER

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.

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

⚠ 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.
- After the UPS system has been electrically wired, do not start up the system. The start-up requirements depend on the installation country. For countries with bundled start-up service, start-up must be performed by Schneider Electric.

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

⚠ DANGER

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.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

The UPS 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.

⚠ 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.

⚠ WARNING

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 UPS system and do not cover the product's ventilation openings when the UPS system is in operation.

Failure to follow these instructions can result in equipment damage.

NOTICE

RISK OF EQUIPMENT DAMAGE

The UPS must use an external regenerative braking kit to dissipate energy when connected to regenerative loads including photovoltaic systems and speed drives.

Failure to follow these instructions can result in equipment damage.

Electrical Safety

⚠ 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.
- 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.
- A disconnection device (e.g. disconnection circuit breaker or switch) must be installed to enable isolation of the system from upstream power sources in accordance with local regulations. The disconnection device must be easily accessible and visible.
- 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.

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

In systems where backfeed protection is not part of the standard design, an automatic isolation device (backfeed protection option or other device meeting the requirements of IEC/EN 62040-1 or UL1778 5th Edition – depending on which of the two standards apply to your local area) must be installed to prevent hazardous voltage or energy at the input terminals of the isolation device. The device must open within 15 seconds after the upstream power supply fails and must be rated according to the specifications.

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

When the UPS input is connected through external isolators that, when opened, isolate the neutral or when the automatic backfeed isolation is provided external to the equipment or is connected to an IT power distribution system, a label must be fitted at the UPS input terminals, and on all primary power isolators installed remote from the UPS area and on external access points between such isolators and the UPS, by the user, displaying the following text (or equivalent in a language which is acceptable in the country in which the UPS system is installed):

⚠ DANGER

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.

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

CAUTION

RISK OF ELECTRICAL DISTURBANCE

This product can cause a DC current in the PE conductor. Where a residual current-operated protective device (RCD) is used for protection against electrical shock, only an RCD of Type B is allowed on the supply side of this product.

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

Battery Safety

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.

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.

DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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















⚠ CAUTION

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.

Symbols Used in the Product

| | |
|---|---|
|  | This is the earthing/ground symbol. |
|  | This is the protective earth/equipment grounding conductor symbol. |
|  | This is the direct current symbol. It is also referred to as DC. |
|  | This is the alternating current symbol. It is also referred to as AC. |
|  | This is the positive polarity symbol. It is used to identify the positive terminal(s) of equipment which is used with, or generates direct current. |
|  | This is the negative polarity symbol. It is used to identify the negative terminal(s) of equipment which is used with, or generates direct current. |
|  | This is the battery symbol. |
|  | This is the static switch symbol. It is used to indicate switches that are designed to connect or disconnect the load to or from the supply respectively without the existence of moving parts. |
|  | This is the AC/DC converter (rectifier) symbol. It is used to identify an AC/DC converter (rectifier) and, in case of plug-in devices, to identify the relevant receptacles. |
|  | This is the DC/AC converter (inverter) symbol. It is used to identify an DC/AC converter (inverter) and, in case of plug-in devices, to identify the relevant receptacles. |
|  | This is the input symbol. It is used to identify an input terminal when it is necessary to distinguish between inputs and outputs. |
|  | This is the output symbol. It is used to identify an output terminal when it is necessary to distinguish between inputs and outputs. |
|  | This is the switch disconnecter symbol. It is used to identify the disconnecting device in the form of switch. |
|  | This is the circuit breaker symbol. It is used to identify the disconnecting device in the form of circuit breaker that protects the equipment from short circuit or heavy load current. It opens the circuits once the current flow crosses its maximum limit. |

Model List

400 V UPSs

3:3 UPS for External Batteries

- Easy UPS 3S 10 kVA 400 V 3:3 UPS for external batteries (E3SUPS10KH)
- Easy UPS 3S 15 kVA 400 V 3:3 UPS for external batteries (E3SUPS15KH)
- Easy UPS 3S 20 kVA 400 V 3:3 UPS for external batteries (E3SUPS20KH)
- Easy UPS 3S 30 kVA 400 V 3:3 UPS for external batteries (E3SUPS30KH)
- Easy UPS 3S 40 kVA 400 V 3:3 UPS for external batteries (E3SUPS40KH)

3:1 UPS for External Batteries

- Easy UPS 3S 10 kVA 400 V 3:1 UPS for external batteries (E3SUPS10K3I)
- Easy UPS 3S 15 kVA 400 V 3:1 UPS for external batteries (E3SUPS15K3I)
- Easy UPS 3S 20 kVA 400 V 3:1 UPS for external batteries (E3SUPS20K3I)
- Easy UPS 3S 30 kVA 400 V 3:1 UPS for external batteries (E3SUPS30K3I)

3:3 UPS for Internal Batteries

- Easy UPS 3S 10 kVA 400 V 3:3 UPS for internal batteries (E3SUPS10KHB) ¹
- Easy UPS 3S 15 kVA 400 V 3:3 UPS for internal batteries (E3SUPS15KHB) ¹
- Easy UPS 3S 20 kVA 400 V 3:3 UPS for internal batteries (E3SUPS20KHB) ¹
- Easy UPS 3S 30 kVA 400 V 3:3 UPS for internal batteries (E3SUPS30KHB) ¹
- Easy UPS 3S 40 kVA 400 V 3:3 UPS for internal batteries (E3SUPS40KHB) ¹
- Easy UPS 3S 10 kVA 400V 3:3 UPS, 1 internal 7Ah modular battery string, expandable to 3 (E3SUPS10KHB1) ¹
- Easy UPS 3S 10 kVA 400V 3:3 UPS, 2 internal 7Ah modular battery strings, expandable to 3 (E3SUPS10KHB2) ¹
- Easy UPS 3S 15 kVA 400V 3:3 UPS, 1 internal 7Ah modular battery string, expandable to 3 (E3SUPS15KHB1) ¹
- Easy UPS 3S 15 kVA 400V 3:3 UPS, 2 internal 7Ah modular battery strings, expandable to 3 (E3SUPS15KHB2) ¹
- Easy UPS 3S 20 kVA 400V 3:3 UPS, 2 internal 7Ah modular battery strings, expandable to 3 (E3SUPS20KHB1) ¹
- Easy UPS 3S 20 kVA 400V 3:3 UPS, 3 internal 7Ah modular battery strings (E3SUPS20KHB2) ¹
- Easy UPS 3S 30 kVA 400V 3:3 UPS, 2 internal 7Ah modular battery strings, expandable to 4 (E3SUPS30KHB1) ¹
- Easy UPS 3S 30 kVA 400V 3:3 UPS, 4 internal 7Ah modular battery strings (E3SUPS30KHB2) ¹
- Easy UPS 3S 40 kVA 400V 3:3 UPS, 3 internal 7Ah modular battery strings, expandable to 4 (E3SUPS40KHB1) ¹
- Easy UPS 3S 40 kVA 400V 3:3 UPS, 4 internal 7Ah modular battery strings (E3SUPS40KHB2) ¹

3:1 UPS for Internal Batteries

- Easy UPS 3S 10 kVA 400 V 3:1 UPS for internal batteries (E3SUPS10K3IB) ¹
- Easy UPS 3S 15 kVA 400 V 3:1 UPS for internal batteries (E3SUPS15K3IB) ¹
- Easy UPS 3S 20 kVA 400 V 3:1 UPS for internal batteries (E3SUPS20K3IB) ¹
- Easy UPS 3S 30 kVA 400 V 3:1 UPS for internal batteries (E3SUPS30K3IB) ¹
- Easy UPS 3S 10 kVA 400V 3:1 UPS, 1 internal 7Ah modular battery string, expandable to 3 (E3SUPS10K3IB1) ¹
- Easy UPS 3S 10 kVA 400V 3:1 UPS, 2 internal 7Ah modular battery strings, expandable to 3 (E3SUPS10K3IB2) ¹
- Easy UPS 3S 15 kVA 400V 3:1 UPS, 1 internal 7Ah modular battery string, expandable to 3 (E3SUPS15K3IB1) ¹
- Easy UPS 3S 15 kVA 400V 3:1 UPS, 2 internal 7Ah modular battery strings, expandable to 3 (E3SUPS15K3IB2) ¹
- Easy UPS 3S 20 kVA 400V 3:1 UPS, 2 internal 7Ah modular battery strings, expandable to 3 (E3SUPS20K3IB1) ¹
- Easy UPS 3S 20 kVA 400V 3:1 UPS, 3 internal 7Ah modular battery strings (E3SUPS20K3IB2) ¹
- Easy UPS 3S 30 kVA 400V 3:1 UPS, 2 internal 7Ah modular battery strings, expandable to 4 (E3SUPS30K3IB1) ¹
- Easy UPS 3S 30 kVA 400V 3:1 UPS, 4 internal 7Ah modular battery strings (E3SUPS30K3IB2) ¹

208 V UPSs

3:3 UPS

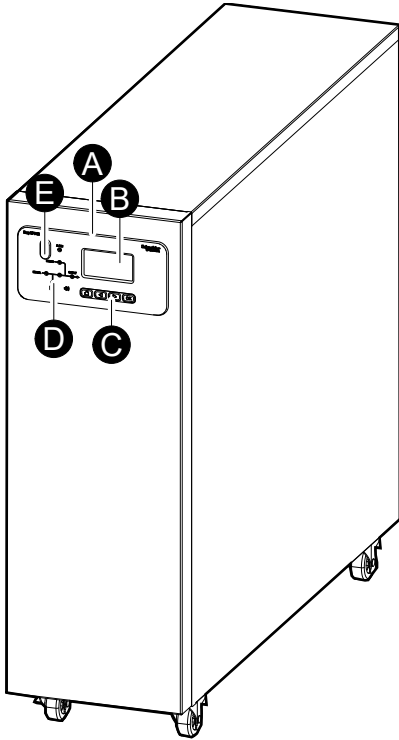
- Easy UPS 3S 10 kVA 208 V 3:3 UPS 15 minutes runtime (E3SUPS10KFB1) ²
- Easy UPS 3S 15 kVA 208 V 3:3 UPS 9 minutes runtime (E3SUPS15KFB1) ²
- Easy UPS 3S 20 kVA 208 V 3:3 UPS 10 minutes runtime (E3SUPS20KFB1) ²

1. Not available in India and China
2. The product is not UL-certified.

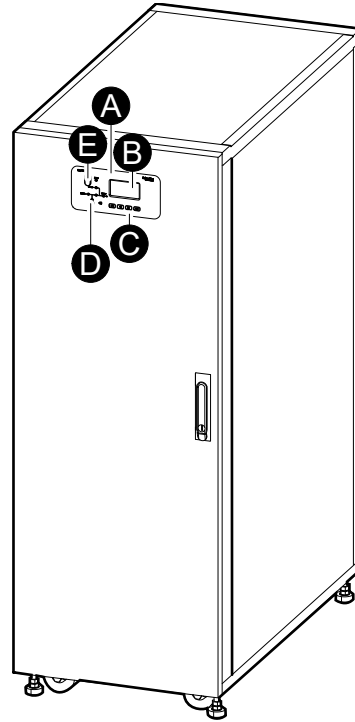
System Overview

- A. User interface
- B. Display interface
- C. Keys
- D. Status LEDs
- E. EPO button

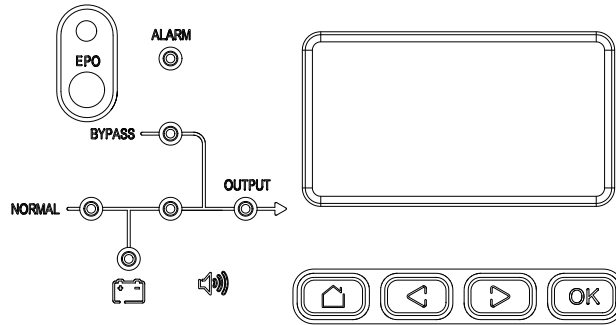
UPS for External Batteries



UPSs with Internal Batteries



User Interface



Keys

| | | | |
|------|----------|------|---------|
| | | | |
| Home | Previous | Next | Confirm |

EPO

Only use the EPO button in case of emergency.

It can be configured whether, when the EPO is activated, the UPS should:

- turn off the rectifier, inverter, charger, and static bypass and stop supplying the load immediately (default), or
- transfer to static bypass mode and continue supplying the load.

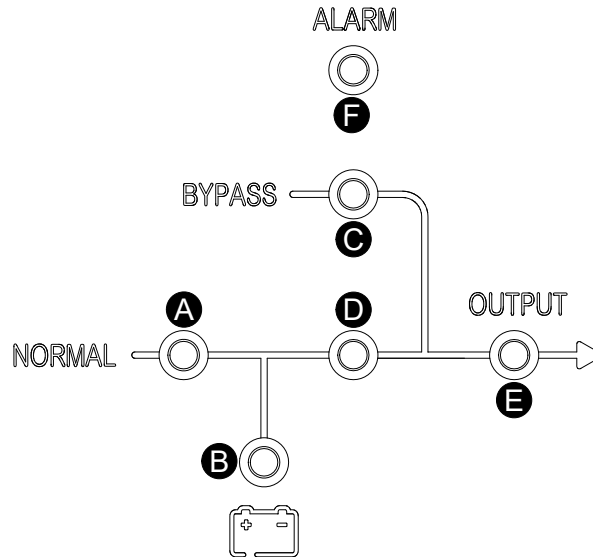
DANGER


















HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH









The UPS control circuit will remain active after the EPO has been pushed if utility/mains is available.

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

Status LEDs

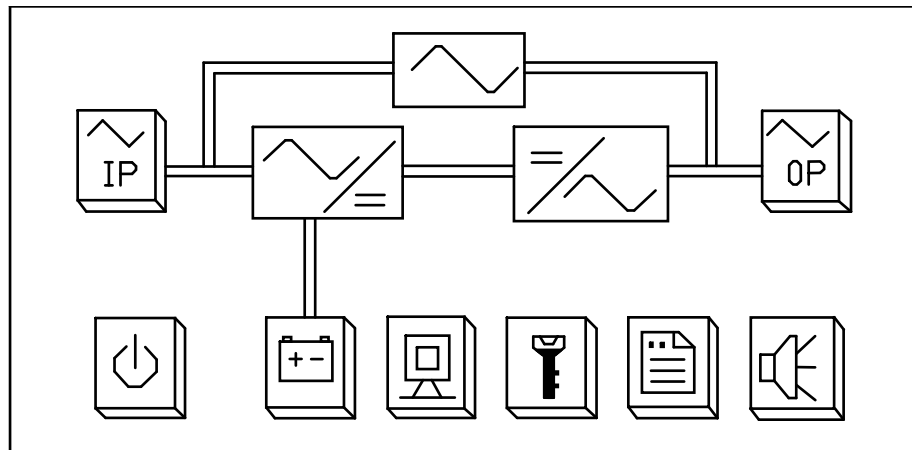


| LED | Status |
|-----|--|
| A | <p>Rectifier</p> <p>Green : Rectifier is working correctly.</p> <p>Flashing green : Rectifier is starting up.</p> <p>Red : Rectifier is inoperable.</p> <p>Flashing red : Utility/mains is unavailable.</p> <p>OFF : Rectifier is off.</p> |
| B | <p>Battery</p> <p>Green : Battery is charging.</p> <p>Flashing green : Battery is discharging.</p> <p>Red : Battery is inoperable.</p> <p>Flashing red : Battery low voltage.</p> <p>OFF : Battery and battery charger are OK, battery is not charging or discharging.</p> |
| C | <p>Bypass</p> <p>Green : Load supplied by bypass source.</p> <p>Red : Bypass source is unavailable or static bypass switch is inoperable.</p> <p>Flashing red : Bypass voltage is out of tolerance.</p> <p>OFF : Bypass source is OK.</p> |
| D | <p>Inverter</p> <p>Green : Load supplied by inverter.</p> <p>Flashing green : Inverter on, start, synchronization or standby (ECO mode).</p> <p>Red : Load not supplied by inverter, inverter is inoperable.</p> |









| | LED | Status |
|---|--------|--|
| | | Flashing red  : Load supplied by inverter, but an inverter alarm is present. OFF  : Inverter is off. |
| E | Load | Green  : UPS output is on. Red  : Overload on UPS output for too long, or output has shorted, or no output power present. Flashing red  : Overload on UPS output. OFF  : UPS output is off. |
| F | Status | Green  : UPS is OK. Red  : Inoperable status. |

Display Interface

Home Screen



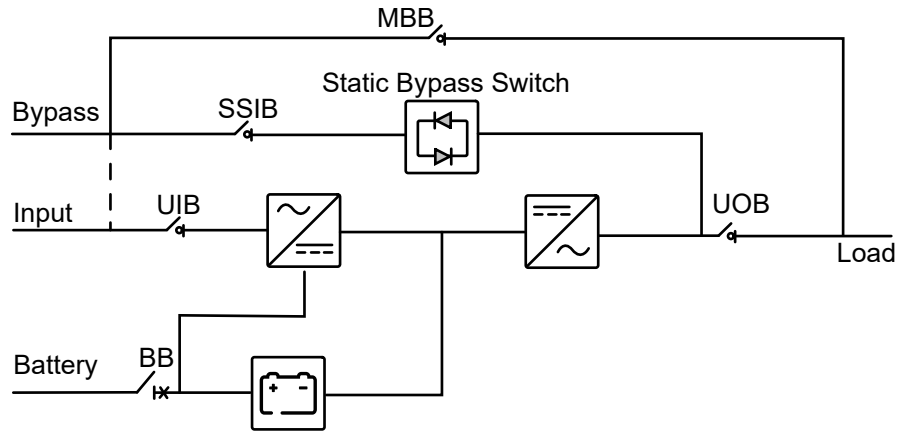
Buttons

| | | | | | | | |
|---|---|---|---|---|--|---|---|
|  |  |  |  |  |  |  |  |
| Power On/Off | Input and bypass status information | Output status information | Battery status information | UPS status | Function settings | Log | Mute |

Overview of Single UPS

| | |
|------|------------------------------------|
| UIB | Unit input breaker/switch |
| SSIB | Static switch input breaker/switch |
| UOB | Unit output breaker/switch |
| MBB | Maintenance bypass breaker/switch |
| BB | Battery breaker/switch |

NOTE: Refer to Appendix: Switch/Breaker Details, page 67 for the disconnecting device type.

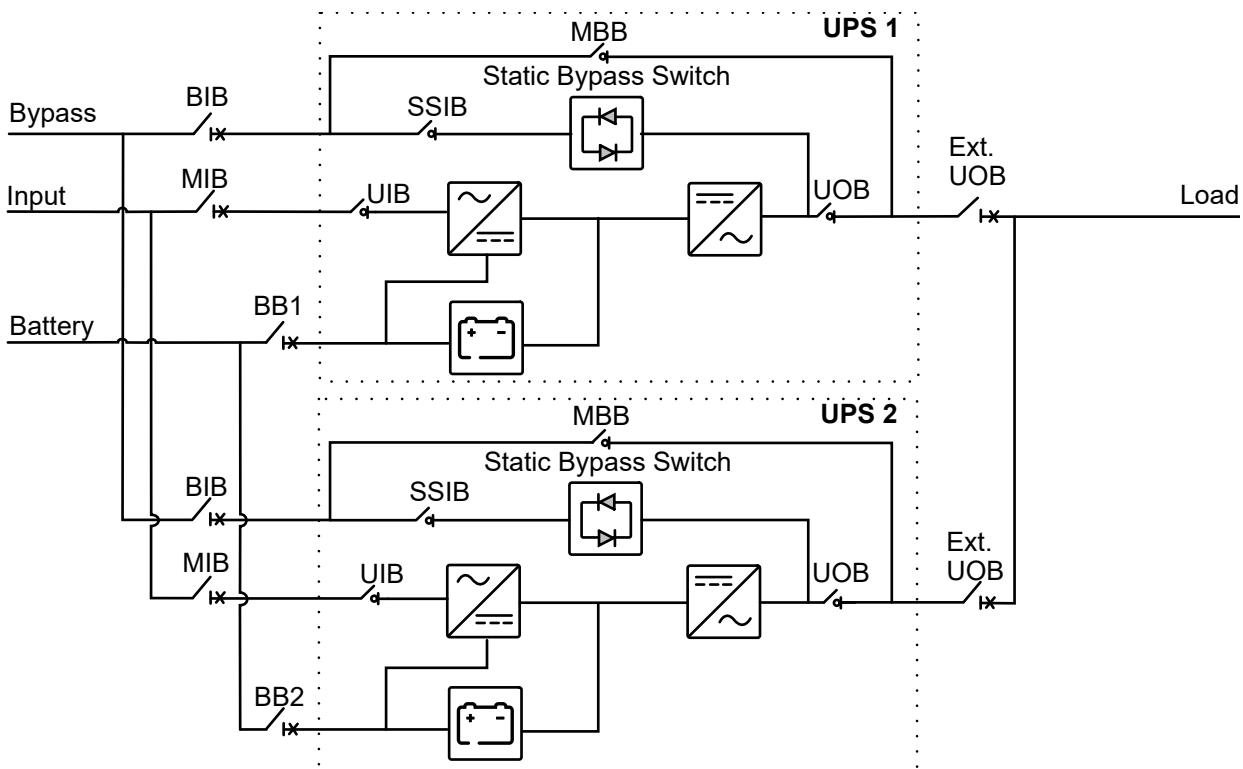


Overview of 1+1 Redundant Parallel System with Common Battery Bank

| | |
|----------|--|
| MIB | Mains input breaker/switch |
| BIB | Bypass input breaker/switch |
| UIB | Unit input breaker/switch |
| SSIB | Static switch input breaker/switch |
| UOB | Unit output breaker/switch |
| Ext. UOB | External unit output breaker/switch |
| MBB | Maintenance bypass breaker/switch |
| Ext. MBB | External maintenance bypass breaker/switch |
| BB1 | Battery breaker/switch 1 |
| BB2 | Battery breaker/switch 2 |

NOTE: Refer to Appendix: Switch/Breaker Details, page 67 for the disconnecting device type.

NOTE: For UPS with internal batteries, the batteries must be removed and the internal battery breaker (BB) must be padlocked in the open (OFF) position.



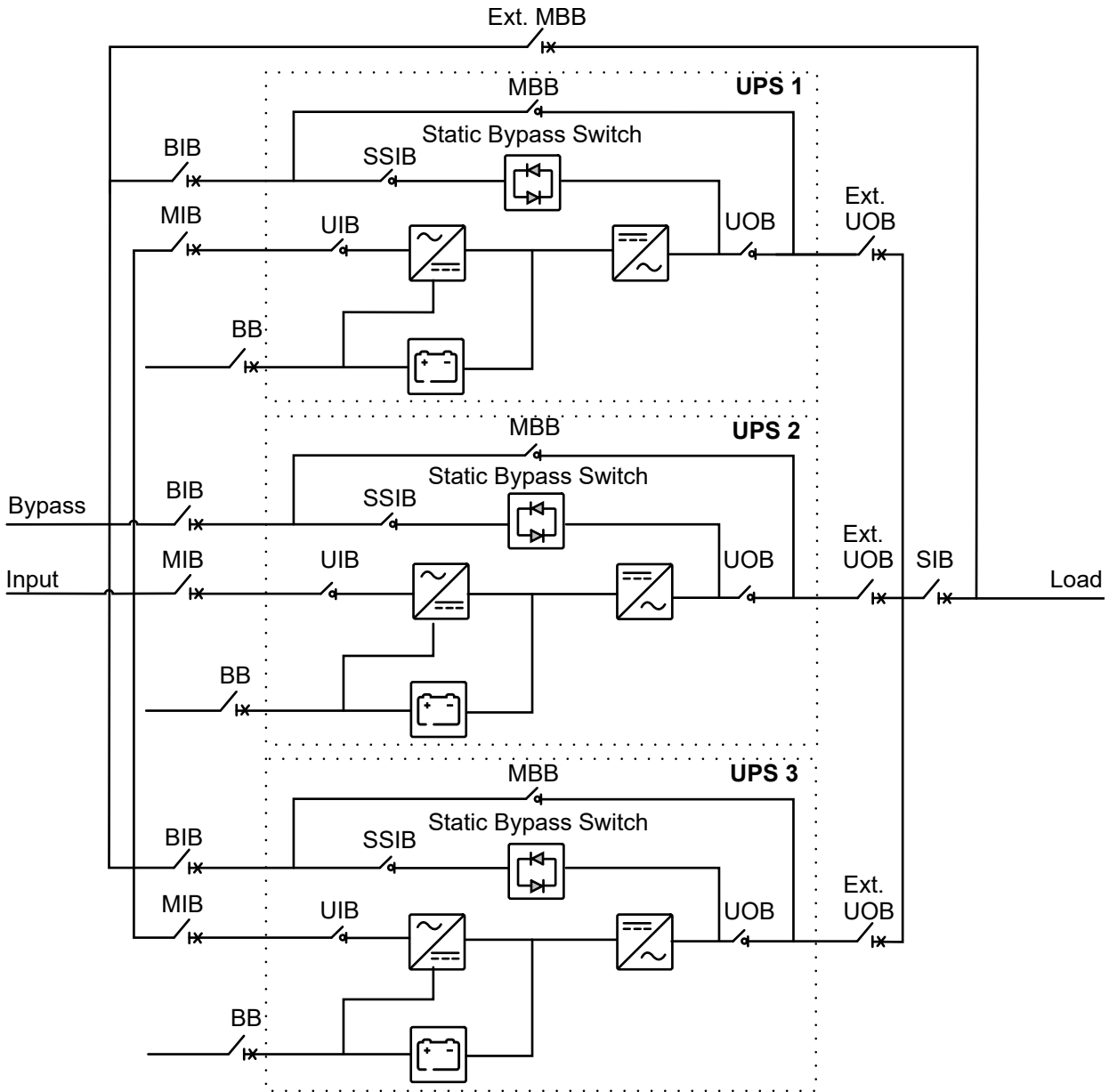
Overview of Parallel System

| | |
|----------|--|
| MIB | Mains input breaker/switch |
| BIB | Bypass input breaker/switch |
| UIB | Unit input breaker/switch |
| SSIB | Static switch input breaker/switch |
| UOB | Unit output breaker/switch |
| Ext. UOB | External unit output breaker/switch |
| MBB | Maintenance bypass breaker/switch |
| Ext. MBB | External maintenance bypass breaker/switch |
| SIB | System isolation breaker/switch |
| BB | Battery breaker/switch |

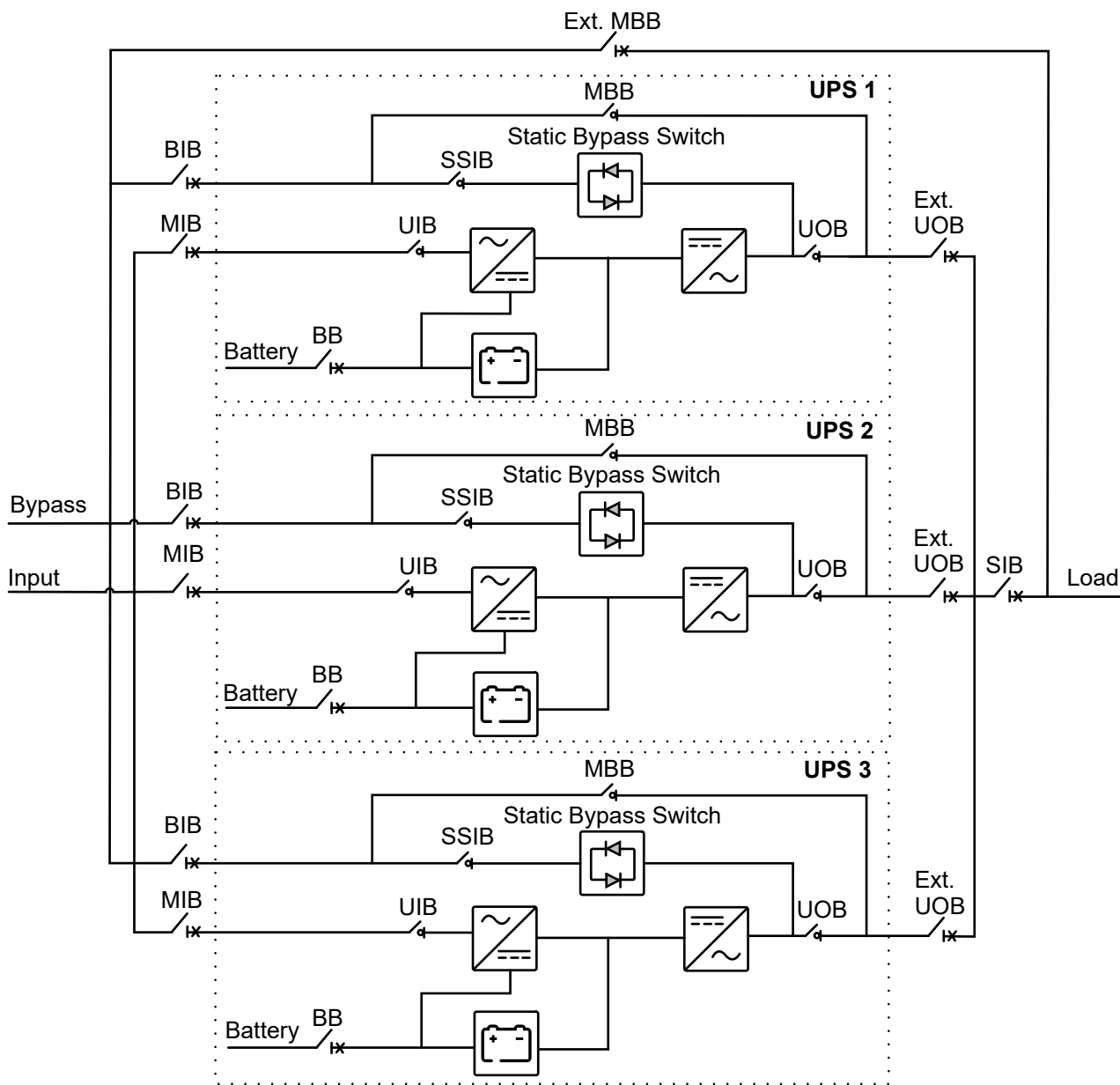
NOTE: Refer to Appendix: Switch/Breaker Details, page 67 for the disconnecting device type.

NOTE: In parallel systems with an external maintenance bypass breaker Ext. MBB, the maintenance bypass breakers/switches MBB must be padlocked in the open (OFF) position.

UPSs for External Batteries



UPSs for Internal Batteries



The impedance of the bypass paths need to be controlled in a parallel UPS system. When operating in bypass mode, the parallel load sharing is determined by the total impedance of the bypass path comprising cables, switchgear, static bypass switch, and cable formation.

NOTICE

RISK OF EQUIPMENT DAMAGE

To ensure correct load sharing in bypass operation in a parallel system, the following recommendations apply:

- The bypass cables must be the same length for all UPSs.
- The output cables must be the same length for all UPSs.
- The input cables must be the same length for all UPSs in a single mains system.
- Cable formation recommendations must be followed.
- The reactance of busbar layout in the bypass/input and output switchgear must be the same for all UPSs.

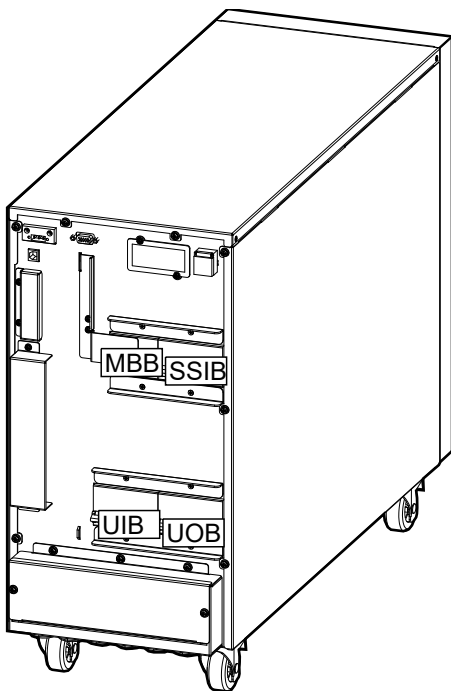
If the above recommendations are not followed the result can be uneven load sharing in bypass and overload of individual UPSs.

Failure to follow these instructions can result in equipment damage.

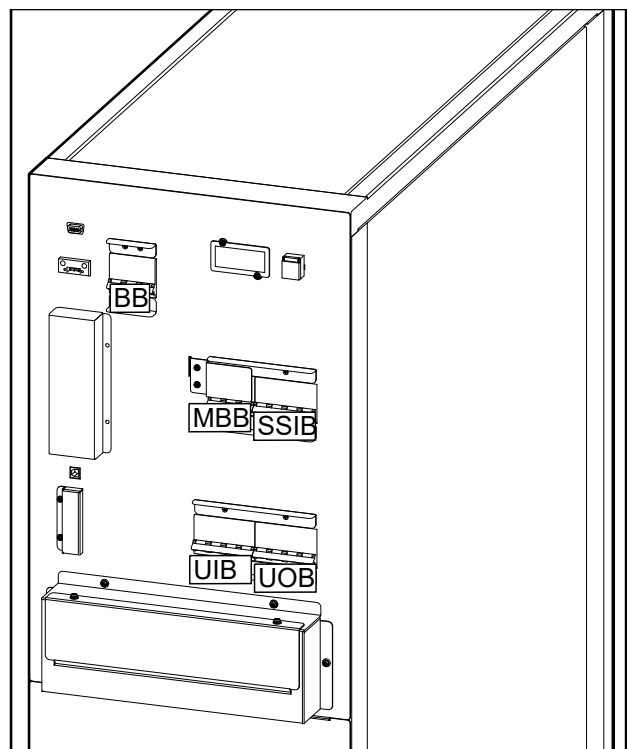
Location of Breakers - 400 V Systems

Location of Breakers in 3:3 UPSs

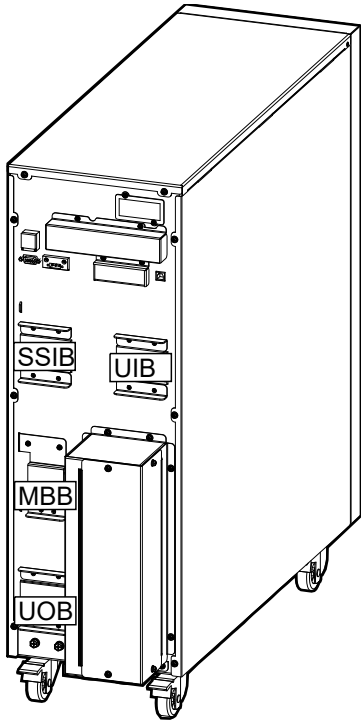
Rear View of the 10–15 kVA UPS for External Batteries



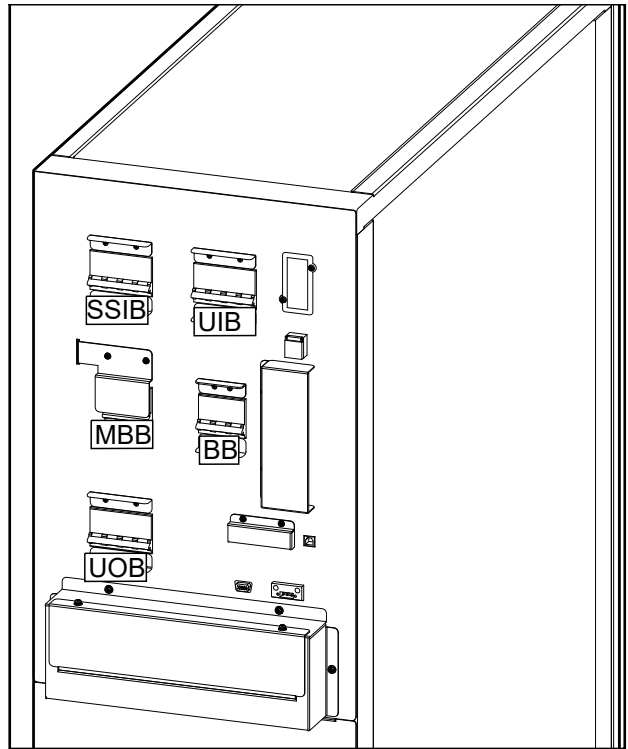
Rear View of the 10–15 kVA UPS with Internal Batteries



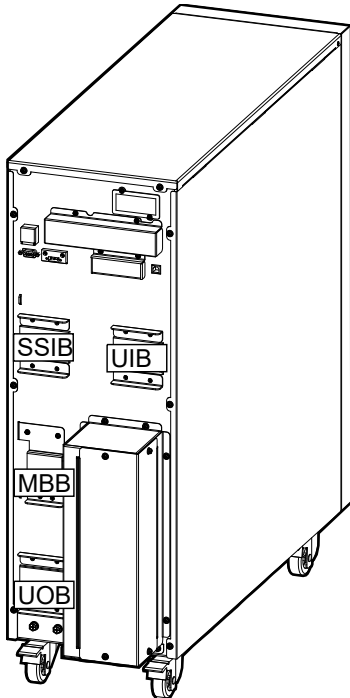
Rear View of the 20 kVA UPS for External Batteries



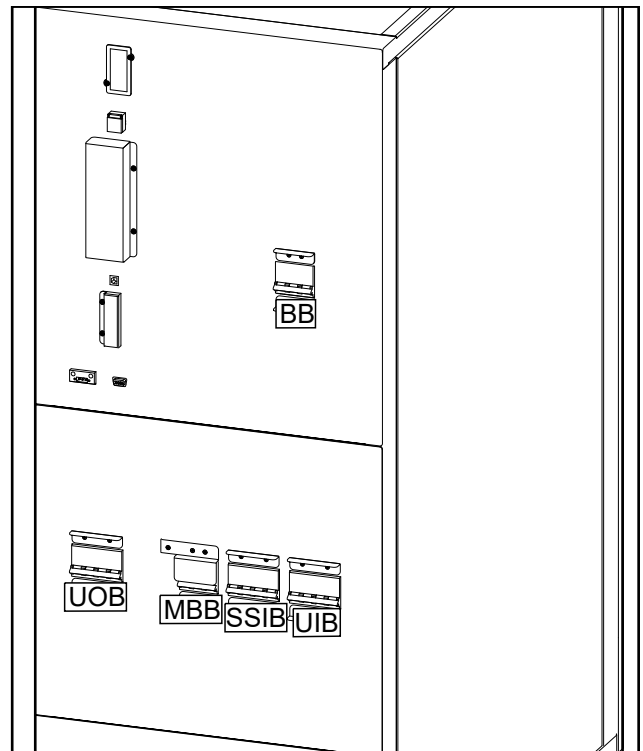
Rear View of the 20 kVA UPS with Internal Batteries



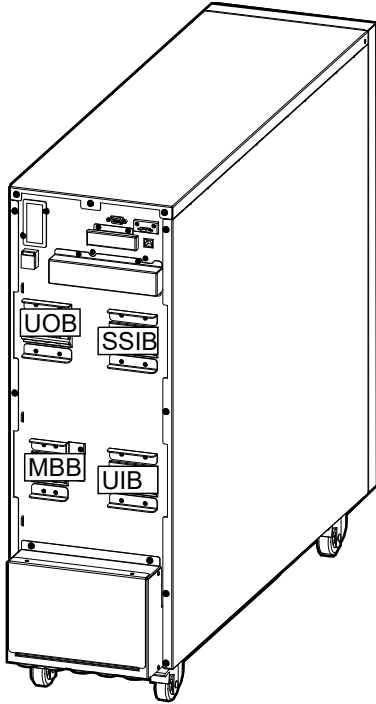
Rear View of the 30 kVA UPS for External Batteries



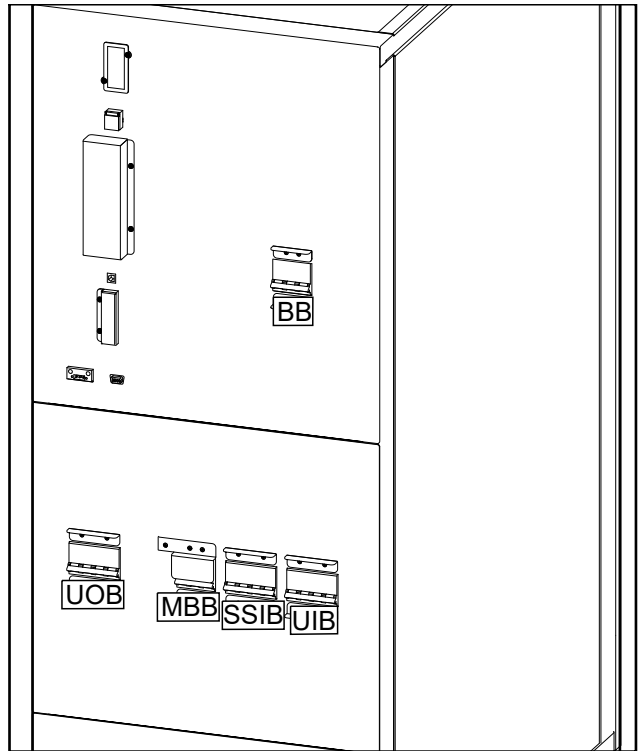
Rear View of the 30 kVA UPS with Internal Batteries



Rear View of the 40 kVA UPS for External Batteries

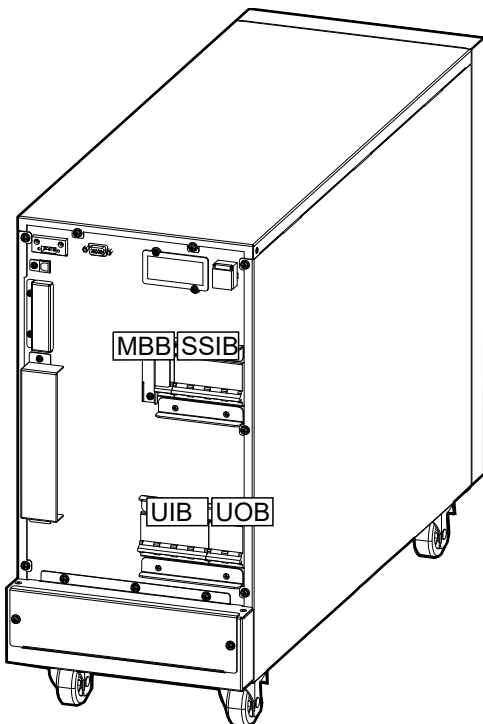


Rear View of the 40 kVA UPS with Internal Batteries

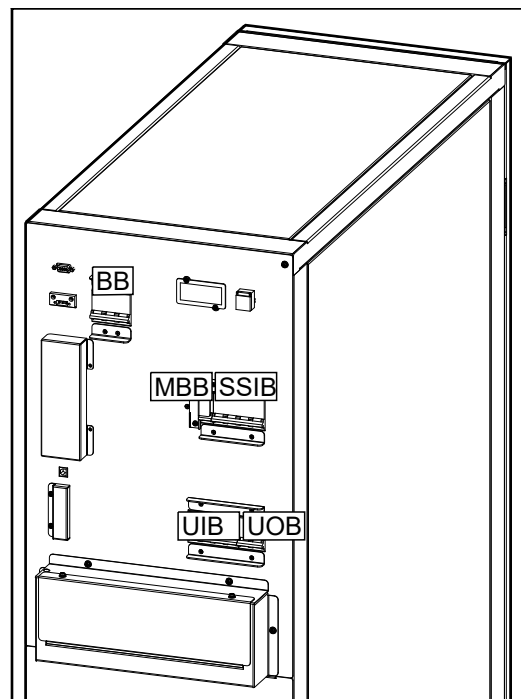


Location of Breakers in 3:1 UPSs

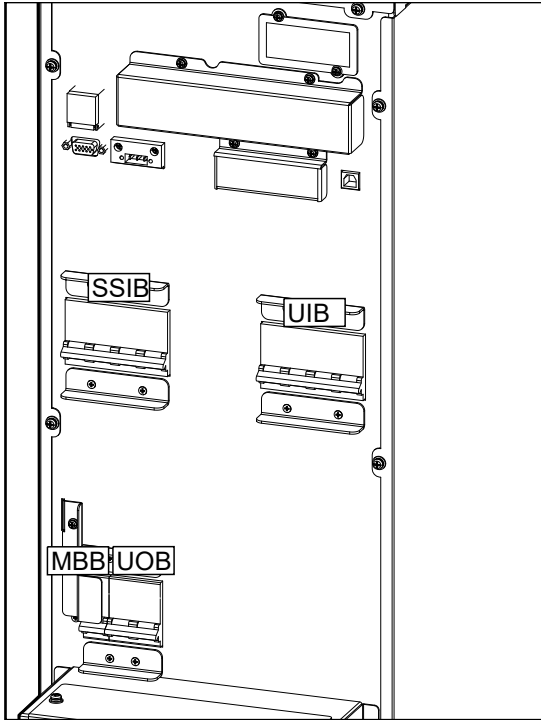
Rear View of the 10–15 kVA UPS for External Batteries



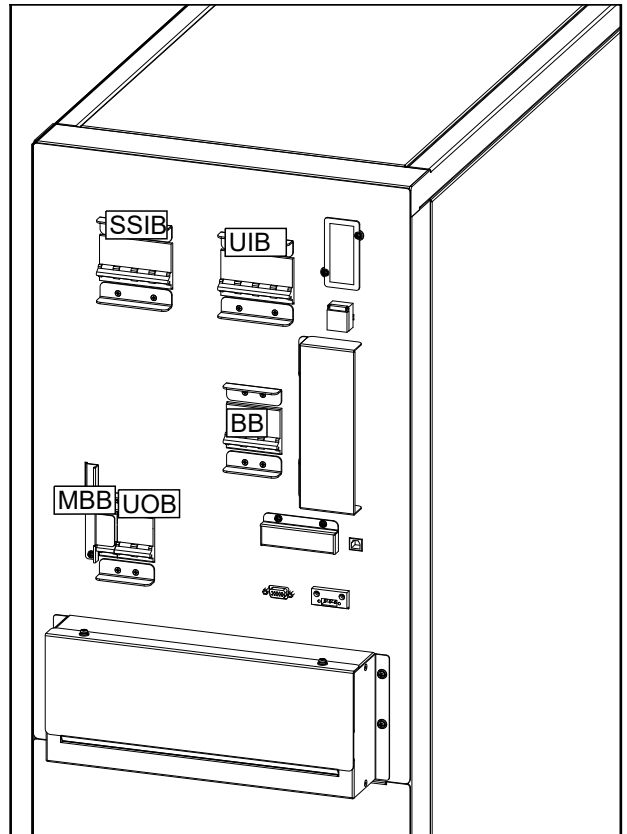
Rear View of the 10–15 kVA UPS with Internal Batteries



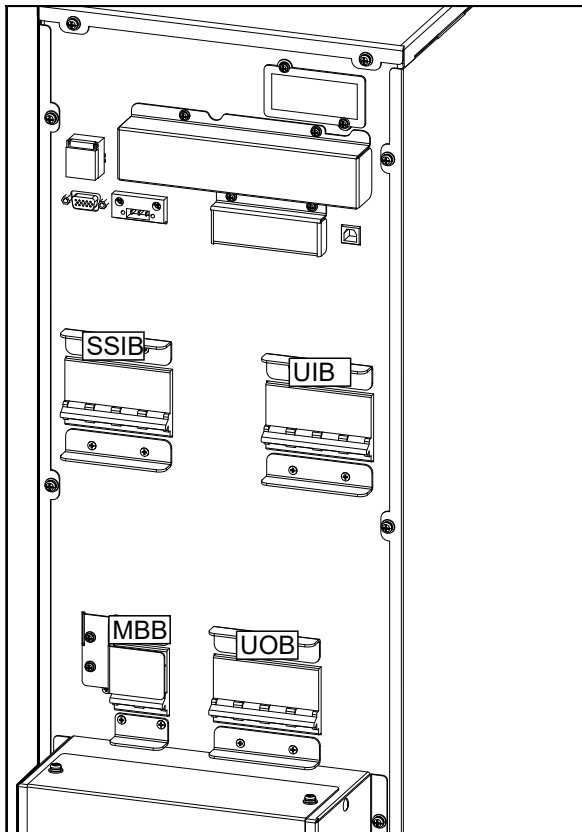
Rear View of the 20 kVA UPS for External Batteries



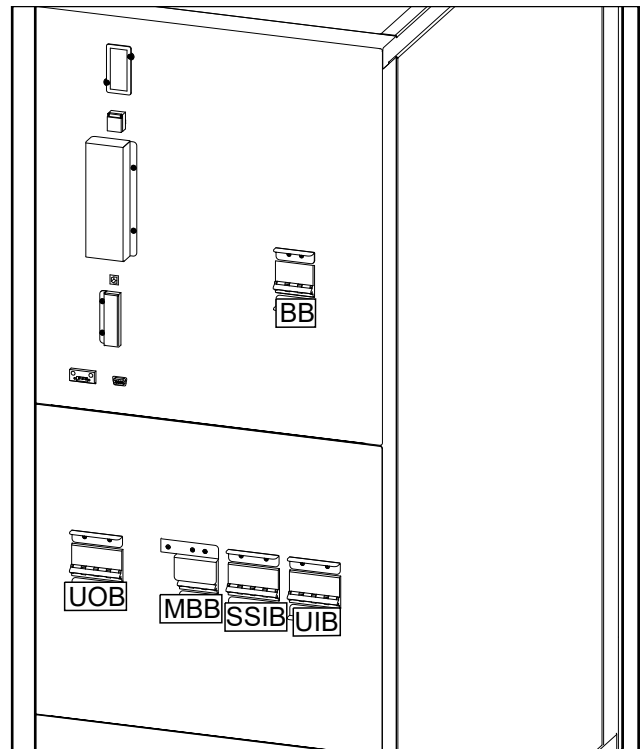
Rear View of the 20 kVA UPS with Internal Batteries



Rear View of the 30 kVA UPS for External Batteries



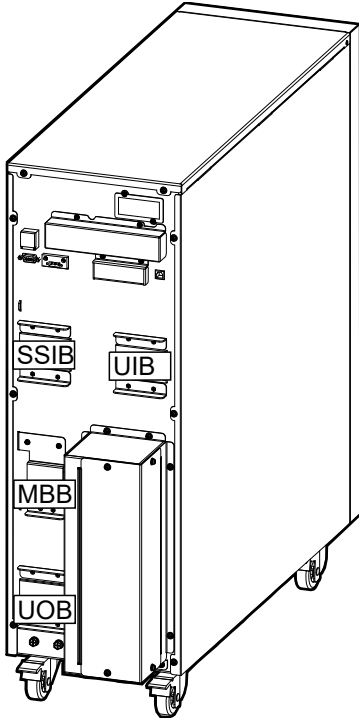
Rear View of the 30 kVA UPS with Internal Batteries



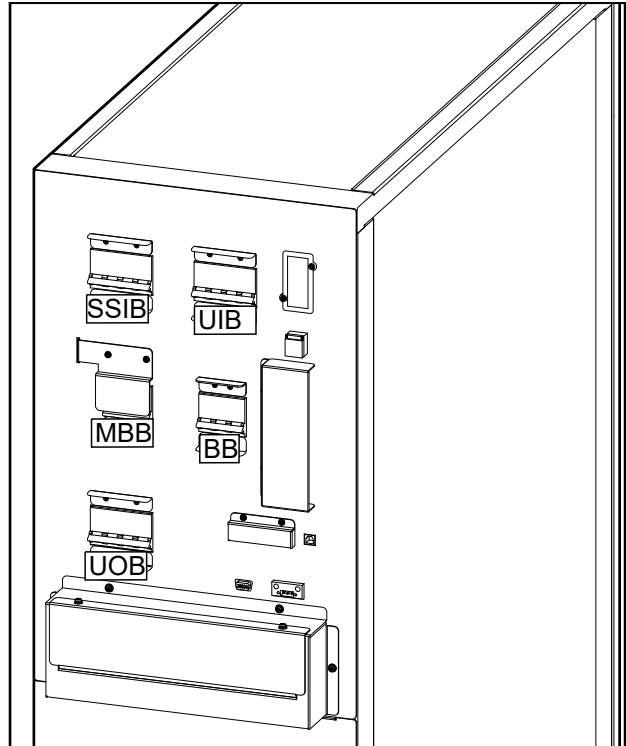
Location of Breakers - 208 V Systems

Location of Breakers in 3:3 UPSs

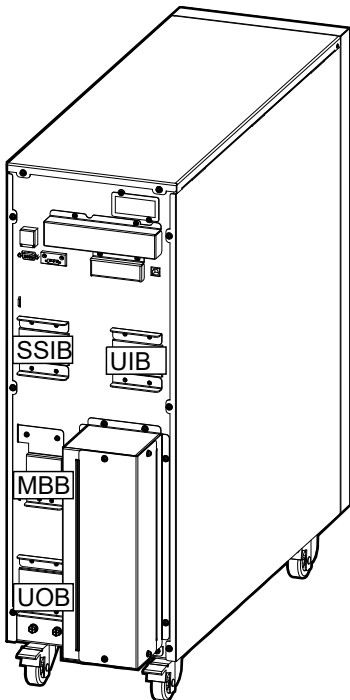
Rear View of the 10 kVA UPS for External Batteries



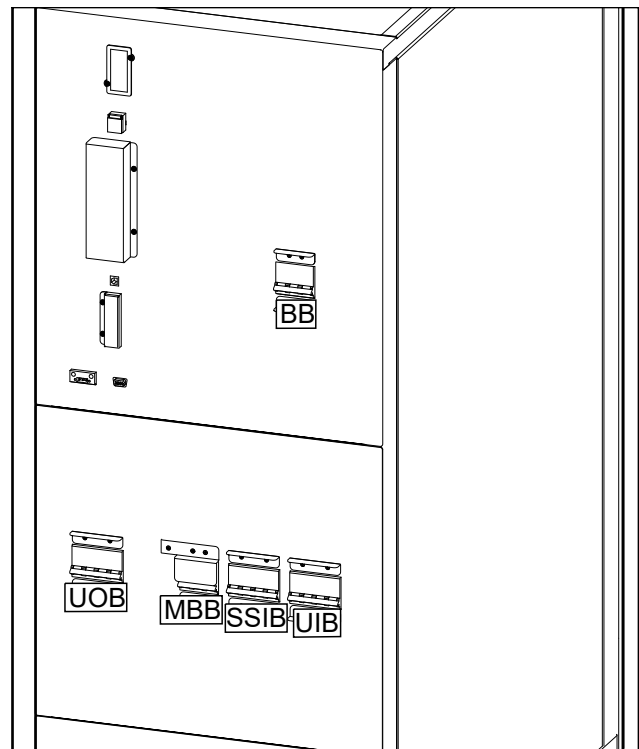
Rear View of the 10 kVA UPS with Internal Batteries



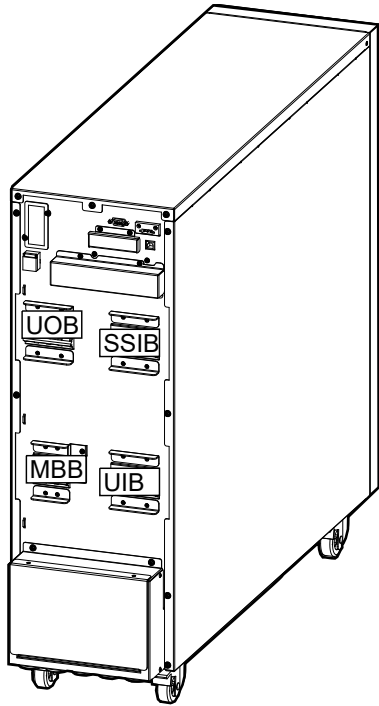
Rear View of the 15 kVA UPS for External Batteries



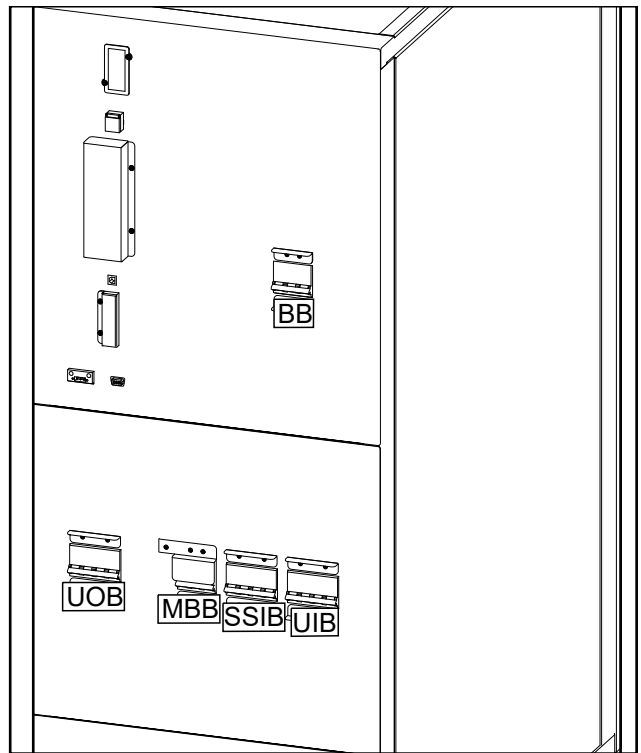
Rear View of the 15 kVA UPS with Internal Batteries



Rear View of the 20 kVA UPS for External Batteries



Rear View of the 20 kVA UPS with Internal Batteries



Technical Data

Technical Data for 400 V Systems

Input Power Factor

Input Power Factor – 3:3 UPSs

The values are at a 400 V, 50 Hz load.

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA | 40 kVA |
|-----------|--------|--------|--------|--------|--------|
| 25% load | 0.90 | 0.92 | 0.93 | 0.97 | 0.96 |
| 50% load | 0.98 | 0.98 | 0.99 | 0.99 | 0.99 |
| 75% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 100% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |

Input Power Factor – 3:1 UPSs

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA |
|-----------|--------|--------|--------|--------|
| 25% load | 0.96 | 0.97 | 0.94 | 0.96 |
| 50% load | 0.99 | 0.99 | 0.99 | 0.99 |
| 75% load | 0.99 | 0.99 | 0.99 | 0.99 |
| 100% load | 0.99 | 0.99 | 0.99 | 0.99 |

Efficiency – 3:3 UPSs

Efficiency in Normal Mode

The values are at a 400 V, 50 Hz load.

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA | 40 kVA |
|-----------|--------|--------|--------|--------|--------|
| 25% load | 94.4 | 94.0 | 95.0 | 95.3 | 95.2 |
| 50% load | 95.3 | 95.1 | 95.8 | 95.9 | 95.8 |
| 75% load | 95.3 | 95.0 | 95.8 | 95.8 | 95.7 |
| 100% load | 94.9 | 94.7 | 95.5 | 95.3 | 95.3 |

Efficiency in ECO Mode

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA | 40 kVA |
|-----------|--------|--------|--------|--------|--------|
| 25% load | 95.1 | 96.3 | 97.0 | 97.9 | 98.0 |
| 50% load | 97.3 | 97.9 | 98.1 | 98.6 | 98.8 |
| 75% load | 98.0 | 98.5 | 98.6 | 99.0 | 99.0 |
| 100% load | 98.4 | 98.7 | 98.8 | 99.1 | 99.1 |

Efficiency in Battery Mode

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA | 40 kVA |
|-----------|--------|--------|--------|--------|--------|
| 25% load | 94.0 | 93.3 | 94.5 | 94.7 | 94.7 |
| 50% load | 94.9 | 94.6 | 95.2 | 95.4 | 95.2 |
| 75% load | 94.7 | 94.5 | 95.2 | 95.2 | 95.1 |
| 100% load | 94.3 | 94.0 | 94.9 | 94.6 | 94.6 |

Efficiency – 3:1 UPSs

Efficiency in Normal Mode

The values are at a 400 V, 50 Hz load.

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA |
|-----------|--------|--------|--------|--------|
| 25% load | 94.2 | 94.2 | 94.6 | 95.1 |
| 50% load | 95.2 | 95.0 | 95.5 | 95.6 |
| 75% load | 94.9 | 94.8 | 95.3 | 95.2 |
| 100% load | 94.4 | 94.4 | 95.0 | 94.7 |

Efficiency in ECO Mode

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA |
|-----------|--------|--------|--------|--------|
| 25% load | 94.0 | 94.9 | 95.2 | 96.4 |
| 50% load | 96.2 | 96.7 | 97.4 | 98.0 |
| 75% load | 97.3 | 97.6 | 98.0 | 98.5 |
| 100% load | 97.8 | 98.1 | 98.4 | 98.7 |

Efficiency in Battery Mode

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA |
|-----------|--------|--------|--------|--------|
| 25% load | 94.0 | 93.3 | 94.5 | 94.7 |
| 50% load | 94.9 | 94.6 | 95.2 | 95.4 |
| 75% load | 94.7 | 94.5 | 95.2 | 95.2 |
| 100% load | 94.3 | 94.0 | 94.9 | 94.6 |

Technical Data for 208 V Systems

Input Power Factor

Input Power Factor – 3:3 UPSs

The values are at 208 V, 60 Hz load.

| | 10 kVA | 15 kVA | 20 kVA |
|-----------|--------|--------|--------|
| 25% load | 0.98 | 0.99 | 0.97 |
| 50% load | 0.99 | 0.99 | 0.99 |
| 75% load | 0.99 | 0.99 | 0.99 |
| 100% load | 0.99 | 0.99 | 0.99 |

Efficiency – 3:3 UPSs

Efficiency in Normal Mode

The values are at a 208 V, 60 Hz load.

| | 10 kVA | 15 kVA | 20 kVA |
|-----------|--------|--------|--------|
| 25% load | 90.7 | 92.8 | 93.1 |
| 50% load | 92.1 | 92.9 | 93.5 |
| 75% load | 91.9 | 92.0 | 92.7 |
| 100% load | 91.6 | 91.1 | 92.1 |

Efficiency in ECO Mode

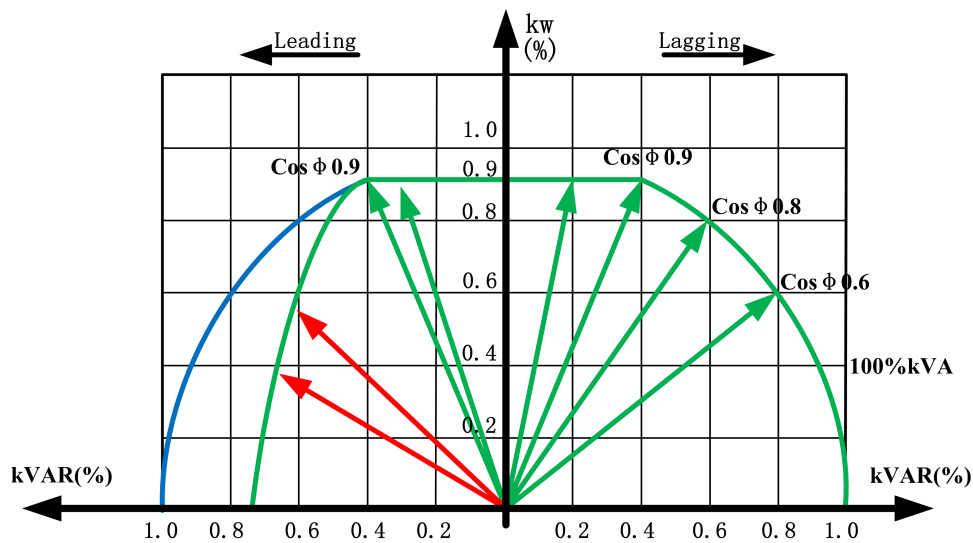
| | 10 kVA | 15 kVA | 20 kVA |
|-----------|--------|--------|--------|
| 25% load | 96.5 | 96.1 | 96.5 |
| 50% load | 97.5 | 97.3 | 97.5 |
| 75% load | 97.8 | 97.4 | 98.6 |
| 100% load | 98.0 | 97.7 | 98.0 |

Efficiency in Battery Mode

| | 10 kVA | 15 kVA | 20 kVA |
|-----------|--------|--------|--------|
| 25% load | 90.4 | 92.4 | 92.6 |
| 50% load | 91.8 | 93.3 | 93.4 |
| 75% load | 92.0 | 92.8 | 93.0 |
| 100% load | 91.8 | 91.8 | 92.5 |

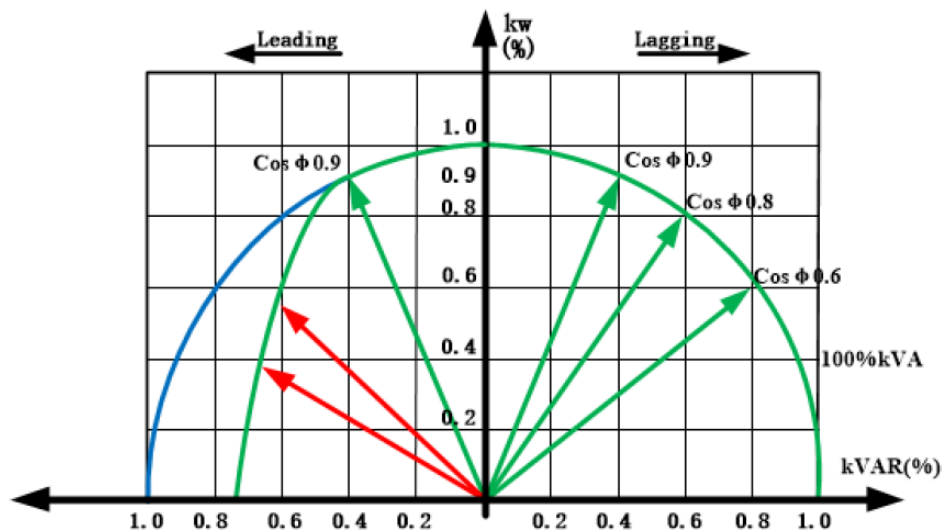
Derating Due to Load Power Factor

400 V Systems



For 0.9 lagging <math>\cos\Phi < 0.9</math> leading

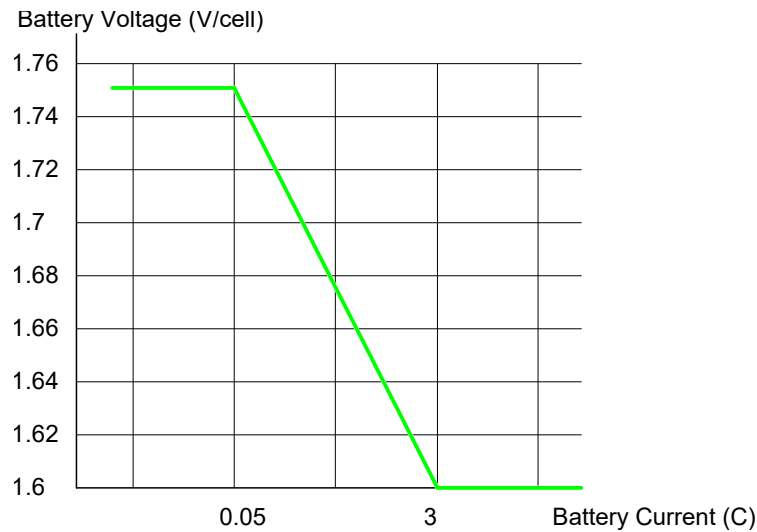
208 V Systems



For 1 lagging <math>\cos\Phi < 0.9</math> leading

Batteries

End of Discharge Voltage



Battery Gassing Rates for Modular Battery Cabinets and UPSs with Internal Batteries

The battery gassing rates are calculated based on:

- Gassing Rate at 2.4 V/cell (ft³/hr) assuming 97% recombination efficiency
- Six cells per battery module
- Ten batteries per cartridge

| Commercial Reference | Description | Typical cm ³ /hr (ml/hr) |
|----------------------|---------------------------------|-------------------------------------|
| E3SBTU | Standard battery module | 10.73 (10.73) |
| E3SBT4 | Standard battery string | 42.93 (42.93) |
| E3SBTHU | High performance battery module | 12.67 (12.67) |
| E3SBTH4 ³ | High performance battery string | 50.68 (50.68) |

Electrolyte Values for Modular Battery Cabinet and UPSs with Internal Batteries

| Commercial Reference | Description | Electrolyte Volume L (gal) | Electrolyte Weight kg (lbs) |
|----------------------|---------------------------------|----------------------------|-----------------------------|
| E3SBTU | Standard battery module | 3.780 (1) | 5 (11.1) |
| E3SBT4 | Standard battery string | 15.120 (4) | 20 (44.4) |
| E3SBTHU | High performance battery module | 3.330 (0.9) | 4.4 (9.8) |
| E3SBTH4 | High performance battery string | 13.320 (3.6) | 17.6 (39.2) |

3. Each battery string E3SBTH4 consists of four 9 Ah battery modules E3SBTHU.

Compliance

| | |
|----------------------|---|
| Safety | IEC 62040-1:2017, Edition 2.0, Uninterruptible power systems (UPS) – Part 1: Safety requirements IEC 62040-1: 2008-6, 1st edition, Uninterruptible Power Systems (UPS) – Part 1: General and safety requirements for UPS IEC 62040-1:2013-01, 1st edition amendment 1 |
| EMC/EMI/RFI | IEC 62040-2:2016, Edition 3.0, Uninterruptible power systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements. IEC 62040-2:2005-10, 2nd edition, Uninterruptible Power Systems (UPS) – Part 2: Electromagnetic compatibility (EMC) requirements |
| Performance | IEC 62040-3: 2011-03, 2nd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements |
| Markings | CE, RCM, EAC, WEEE, UKCA |
| Transportation | ISTA 2B |
| Pollution degree | 2 |
| Overvoltage category | III |
| Earthing system | TN, TT, or IT |

Communication and Management

- User interface with status LEDs and display
- RS232
- RS485
- Network management card
- Dry contacts
- USB

Facility Planning

Facility Planning for Easy UPS 3S 3:3 400 V

Input Specifications – 3:3 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | | 30 kVA | | | 40 kVA | | |
|--------------------------------------|---|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| Voltage (V) | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 |
| Connections ⁴ | L1, L2, L3, N, PE | | | | | | | | | | | | | | |
| Input voltage range (V) | 304–477 | | | | | | | | | | | | | | |
| Frequency range (Hz) | 45–65 | | | | | | | | | | | | | | |
| Nominal input current (A) | 16 | 15 | 15 | 24 | 23 | 22 | 32 | 31 | 30 | 48 | 46 | 44 | 65 | 61 | 59 |
| Maximum input current (A) | 19 | 18 | 18 | 29 | 28 | 26 | 38 | 37 | 36 | 58 | 55 | 53 | 78 | 73 | 71 |
| Input current limitation (A) | 22 | 20 | 20 | 33 | 31 | 30 | 44 | 42 | 41 | 65 | 63 | 60 | 89 | 83 | 80 |
| Total harmonic distortion (THDI) | <3% for 10 kVA UPS <4% for 15–40 kVA UPS | | | | | | | | | | | | | | |
| Input power factor | > 0.99 | | | | | | | | | | | | | | |
| Maximum input shortcircuit withstand | I _{cc} =10 kA | | | | | | | | | | | | | | |
| Protection | Circuit breaker and fuse | | | | | | | | | Fuse | | | | | |
| Ramp-in | 15 seconds | | | | | | | | | | | | | | |

Bypass Specifications – 3:3 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | | 30 kVA | | | 40 kVA | | |
|---------------------------------------|---|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| Voltage (V) | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 |
| Connections | L1, L2, L3, N, PE | | | | | | | | | | | | | | |
| Overload capacity | 125% continuous 125–130% for 10 minutes 130–150% for 1 minute >150% for 300 milliseconds | | | | | | | | | | | | | | |
| Minimum bypass voltage (V) | 304 | 320 | 332 | 304 | 320 | 332 | 304 | 320 | 332 | 304 | 320 | 332 | 304 | 320 | 332 |
| Maximum bypass voltage (V) | 437 | 460 | 477 | 437 | 460 | 477 | 437 | 460 | 477 | 437 | 460 | 477 | 437 | 460 | 477 |
| Frequency (Hz) | 50 or 60 | | | | | | | | | | | | | | |
| Nominal bypass current (A) | 15 | 14 | 14 | 23 | 22 | 21 | 30 | 29 | 28 | 46 | 43 | 42 | 61 | 58 | 56 |
| Maximum input short circuit withstand | I _{cc} =10 kA | | | | | | | | | | | | | | |

4. It is mandatory to have the neutral line for the main input and load. If the main input or load does not have a neutral line, a Δ-Y transformer for main input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.

Output Specifications – 3:3 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | | 30 kVA | | | 40 kVA | | |
|--|---|-----|-----|-------------|-----|-----|------------------|-----|-----|--------------|-----|-----|--------------|-----|-----|
| Voltage (V) | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 |
| Connections ⁵ | L1, L2, L3, N, PE | | | | | | | | | | | | | | |
| Overload capacity | 110% for 60 minutes 125% for 10 minutes 150% for 1 minute >150% for less than 200 milliseconds | | | | | | | | | | | | | | |
| Output voltage tolerance | ± 1% | | | | | | | | | | | | | | |
| Dynamic load response | 40 milliseconds | | | | | | | | | | | | | | |
| Output power factor | 1.0 | | | | | | 1.0 ⁶ | | | | | | | | |
| Nominal output current (A) | 15 | 14 | 14 | 23 | 22 | 21 | 30 | 29 | 28 | 46 | 43 | 42 | 61 | 58 | 56 |
| Output short circuit current | 52 A/246 ms | | | 58 A/261 ms | | | 82 A/255 ms | | | 121 A/258 ms | | | 181 A/253 ms | | |
| Total harmonic distortion (THDU) | <1% at 100% balanced linear load <5.5% at 100% non-linear load | | | | | | | | | | | | | | |
| Output frequency (Hz) | 50 or 60 | | | | | | | | | | | | | | |
| Slew rate (Hz/sec) | Programmable: 0.1 to 5.0. Default is 2.0. | | | | | | | | | | | | | | |
| Output performance classification (according to EN62040-3) | VFI-SS-111 | | | | | | | | | | | | | | |

Battery Specifications – 3:3 UPSs with Internal Batteries

| | 10 kVA | | | 15 kVA | | | 20 kVA | | | 30 kVA | | | 40 kVA | | |
|--|--|--|--|--------|--|--|--------|--|--|--------|--|--|--------|--|--|
| Charging power | Programmable from 1% to 20% of UPS capacity. Default is 10%. | | | | | | | | | | | | | | |
| Maximum charging power (W) | 2000 | | | 3000 | | | 4000 | | | 6000 | | | 8000 | | |
| Nominal battery voltage (VDC) | ± 240 | | | | | | | | | | | | | | |
| Nominal float voltage (VDC) | ± 270 | | | | | | | | | | | | | | |
| End of discharge voltage (full load) (VDC) | ± 192 | | | | | | | | | | | | | | |
| End of discharge voltage (no load) (VDC) | ± 210 | | | | | | | | | | | | | | |
| Battery current at full load and nominal battery voltage (A) | 22 | | | 33 | | | 44 | | | 66 | | | 89 | | |
| Battery current at full load and minimum battery voltage (A) | 27 | | | 40 | | | 54 | | | 81 | | | 107 | | |
| Temperature compensation (per cell) | Programmable from 0–5 mV. Default is 3 mV. | | | | | | | | | | | | | | |
| Ripple current | < 5% C10 | | | | | | | | | | | | | | |

- It is mandatory to have the neutral line for the main input and load. If the main input or load does not have a neutral line, a Δ-Y transformer for main input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
- When ambient temperature is below 30 °C. When the ambient temperature is above 30 °C, the power factor is 0.9.

Battery Specifications – 3:3 UPSs for External Batteries

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA | 40 kVA |
|---|--|--------|--------|--------|---------|
| Charging power | Programmable from 1% to 20% of UPS capacity. Default is 10%. | | | | |
| Maximum charging power (W) | 2000 | 3000 | 4000 | 6000 | 8000 |
| Nominal battery voltage (16–20 blocks) (VDC) | ±192 to ± 240 | | | | |
| Nominal float voltage (16–20 blocks) (VDC) | ± 216 to ± 270 | | | | |
| End of discharge voltage (16–20 blocks) (full load) (VDC) | ± 153 to ± 192 | | | | |
| End of discharge voltage (16–20 blocks) (no load) (VDC) | ± 168 to ± 210 | | | | |
| Battery current at full load and nominal battery voltage (16–20 blocks) (A) | 28–22 | 42–33 | 55–44 | 83–66 | 111–89 |
| Battery current at full load and minimum battery voltage (16–20 blocks) (A) | 34–27 | 50–40 | 67–54 | 101–81 | 134–107 |
| Temperature compensation (per cell) | Programmable from 0–5 mV. Default is 3 mV. | | | | |
| Ripple current | < 5% C10 | | | | |

Required Upstream Protection and Cable Sizes – 3:3 UPSs

NOTE: Overcurrent protection must be provided by others.

Cable sizes in this manual are based on table B.52.5 of IEC 60364-5-52 with the following assertions:

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Installation method C
- PE size is based on table 54.2 of IEC 60364-5-54.
- Specific to AC cables: Maximum length 70 m with a line voltage drop <3% installed on perforated cable trays, XLPE-type insulation, single layer trefoil formation, THDI between 15% and 33%, 35 °C at 400 V grouped in four touching cables
- Specific to DC cables: Maximum length 15 m with a line voltage drop <1%

NOTE: If neutral conductor is expected to carry a high current, due to line-neutral non-linear load, the circuit breaker must be rated according to expected neutral current.

NOTE: If the ambient temperature is greater than 30 °C, large conductors are to be used in accordance with the correction factors of the IEC.

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Not all auxiliary products support aluminum cables. Refer to the installation manual provided with the auxiliary product.

NOTE: The DC cable sizes given here are recommendations – Always follow the specific instructions in the battery solution documentation for DC cable sizes and DC PE cable sizes and ensure that the DC cable sizes match the battery breaker rating.

10 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|---|---|----------------------------------|
| Input – single mains Input – dual mains | iC65H-C-20A / C60H-C-20A iC65H-C-20A / C60H-C-20A | 6 | 6 |
| Bypass | iC65H-C-20A / C60H-C-20A | 6 | 6 |
| Output | C65N-B-4P-10A / C60N-B-4P-10A / C65N-B-4P-10A / C60N-C-4P-6A iC65N-4P-C4A | 6 | 6 |
| Battery | Compact NSX100F DC TM50D - 3P | 8 | 8 |

15 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|--|---|----------------------------------|
| Input – single mains Input – dual mains | iC65H-C-32A / C60H-C-32A iC65H-C-32A / C60H-C-32A | 6 | 6 |
| Bypass | iC65H-C-32A / C60H-C-32A | 6 | 6 |
| Output | C65N-B-4P-10A / C60N-B-4P-10A/ C65N-B-4P-10A / C60N-C-4P-6A iC65N-4P-C6A | 6 | 6 |
| Battery | Compact NSX100F DC TM63D - 3P | 8 | 8 |

20 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|--|---|----------------------------------|
| Input – single mains Input – dual mains | iC65H-C-40A / C60H-C-40A iC65H-C-40A / C60H-C-40A | 10 | 10 |
| Bypass | iC65H-C-40A / C60H-C-40A | 10 | 10 |
| Output | C65N-B-4P-10A / C60N-B-4P-10A/ C65N-B-4P-10A / C60N-C-4P-6A iC65N-4P-C6A | 10 | 10 |
| Battery | Compact NSX100F DC TM80D - 3P | 25 | 16 |

30 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|---|---|----------------------------------|
| Input – single mains Input – dual mains | iC65H-C-63A / C60H-C-63A / C120H-C-63A iC65H-C-63A / C60H-C-63A / C120H-C-63A | 16 | 16 |
| Bypass | iC65H-C-63A / C60H-C-63A / C120H-C-63A | 16 | 16 |
| Output | C65N-B-4P-16A / C60N-B-4P-16A / C65N-C-4P-10A / C60N-C-4P-10A iC65N-4P-C10A | 16 | 16 |
| Battery | Compact NSX160F DC TM125D - 3P | 25 | 16 |

40 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|---|---|----------------------------------|
| Input – single mains Input – dual mains | C120H-C-80A / NSX100F TM80C 80A C120H-C-80A / NSX100F TM80C 80A | 25 | 16 |
| Bypass | C120H-C-80A / NSX100F TM80C 80A | 25 | 16 |
| Output | C65N-B-4P-20A / C60N-B-4P-20A / C65N-C-4P-10A / C60N-C-4P-10A iC65N-4P-C10A | 25 | 16 |
| Battery | Compact NSX160F DC TM160D - 3P | 35 | 16 |

NOTE:

- These protection devices ensures discrimination for each of the **Easy 3S** output circuits. If the recommended downstream protection is not installed and a short-circuit occurs, the result may be a break longer than 50 ms on all the other output circuits.
- The recommended output branch breakers are for reference only. Whether to include the output branch breakers in your circuit depends on your use cases.

UPS Weights and Dimensions – 3:3 UPSs

| UPS | Weight kg | Height mm | Width mm | Depth mm |
|------------------------------------|------------------|-----------|----------|----------|
| 10 kVA UPS for external batteries | 36 | 530 | 250 | 700 |
| 15 kVA UPS for external batteries | 36 | 530 | 250 | 700 |
| 20 kVA UPS for external batteries | 58 | 770 | 250 | 800 |
| 30 kVA UPS for external batteries | 60 | 770 | 250 | 800 |
| 40 kVA UPS for external batteries | 70 | 770 | 250 | 900 |
| 10 kVA UPS with internal batteries | 112 ⁷ | 1400 | 380 | 928 |
| 15 kVA UPS with internal batteries | 112 ⁷ | 1400 | 380 | 928 |
| 20 kVA UPS with internal batteries | 122 ⁷ | 1400 | 380 | 928 |
| 30 kVA UPS with internal batteries | 152 ⁷ | 1400 | 500 | 969 |
| 40 kVA UPS with internal batteries | 158 ⁷ | 1400 | 500 | 969 |
| Battery | 27 | 157 | 107 | 760 |

UPS Shipping Weights and Dimensions – 3:3 UPSs

| UPS | Weight kg | Height mm | Width mm | Depth mm |
|------------------------------------|------------------|-----------|----------|----------|
| 10 kVA UPS for external batteries | 50 | 772 | 400 | 857 |
| 15 kVA UPS for external batteries | 50 | 772 | 400 | 857 |
| 20 kVA UPS for external batteries | 75 | 1015 | 400 | 982 |
| 30 kVA UPS for external batteries | 77 | 1015 | 400 | 982 |
| 40 kVA UPS for external batteries | 86 | 1015 | 400 | 1050 |
| 10 kVA UPS with internal batteries | 145 ⁷ | 1640 | 563 | 1014 |
| 15 kVA UPS with internal batteries | 145 ⁷ | 1640 | 563 | 1014 |
| 20 kVA UPS with internal batteries | 158 ⁷ | 1640 | 563 | 1014 |
| 30 kVA UPS with internal batteries | 190 ⁷ | 1640 | 683 | 1114 |
| 40 kVA UPS with internal batteries | 195 ⁷ | 1640 | 683 | 1114 |
| Battery | 28 | 180 | 140 | 820 |

7. Weight without batteries

Facility Planning for Easy UPS 3S 3:1 400 V

Input Specifications – 3:1 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | | 30 kVA | | |
|--------------------------------------|---|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| Voltage (V) | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 | 380 | 400 | 415 |
| Connections | L1, L2, L3, N, PE | | | | | | | | | | | |
| Input voltage range (V) | 304–477 | | | | | | | | | | | |
| Frequency range (Hz) | 45–65 | | | | | | | | | | | |
| Nominal input current (A) | 16 | 15 | 15 | 24 | 23 | 22 | 32 | 31 | 30 | 48 | 46 | 44 |
| Maximum input current (A) | 19 | 18 | 18 | 29 | 28 | 26 | 38 | 37 | 36 | 58 | 55 | 53 |
| Input current limitation (A) | 22 | 20 | 20 | 33 | 31 | 30 | 44 | 42 | 41 | 65 | 63 | 60 |
| Total harmonic distortion (THDI) | <4% for 10 kVA UPS <5% for 15–30 kVA UPS | | | | | | | | | | | |
| Input power factor | > 0.99 | | | | | | | | | | | |
| Maximum input shortcircuit withstand | I _{cc} =10 kA | | | | | | | | | | | |
| Protection | Circuit breaker and fuse | | | | | | | | | Fuse | | |
| Ramp-in | 15 seconds | | | | | | | | | | | |

Bypass Specifications – 3:1 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | | 30 kVA | | |
|---------------------------------------|---|-----|-----|--------|-----|-----|--------|-----|-----|--------|-----|-----|
| Voltage (V) | 220 | 230 | 240 | 220 | 230 | 240 | 220 | 230 | 240 | 220 | 230 | 240 |
| Connections | L, N, PE | | | | | | | | | | | |
| Overload capacity | 125% continuous 125–130% for 10 minutes 130–150% for 1 minute >150% for 300 milliseconds | | | | | | | | | | | |
| Minimum bypass voltage (V) | 176 | 184 | 192 | 176 | 184 | 192 | 176 | 184 | 192 | 176 | 184 | 192 |
| Maximum bypass voltage (V) | 253 | 264 | 276 | 253 | 264 | 276 | 253 | 264 | 276 | 253 | 264 | 276 |
| Frequency (Hz) | 50 or 60 | | | | | | | | | | | |
| Nominal bypass current (A) | 46 | 43 | 42 | 69 | 66 | 63 | 91 | 87 | 84 | 137 | 131 | 125 |
| Maximum input short circuit withstand | I _{cc} =10 kA | | | | | | | | | | | |

Output Specifications – 3:1 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | | 30 kVA | | |
|--|---|-----|-----|--------------|-----|-----|------------------|-----|-----|--------------|-----|-----|
| Voltage (V) | 220 | 230 | 240 | 220 | 230 | 240 | 220 | 230 | 240 | 220 | 230 | 240 |
| Connections | L, N, PE | | | | | | | | | | | |
| Overload capacity | 110% for 60 minutes 125% for 10 minutes 150% for 1 minute >150% for less than 200 milliseconds | | | | | | | | | | | |
| Output voltage tolerance | ± 1% | | | | | | | | | | | |
| Dynamic load response | 40 milliseconds | | | | | | | | | | | |
| Output power factor | 1.0 | | | | | | 1.0 ⁸ | | | | | |
| Nominal output current (A) | 46 | 43 | 42 | 69 | 66 | 63 | 91 | 87 | 84 | 137 | 131 | 125 |
| Output short circuit current | 154 A/242 ms | | | 168 A/242 ms | | | 236 A/247 ms | | | 339 A/239 ms | | |
| Total harmonic distortion (THDU) | <1% at 100% balanced linear load <5.5% at 100% non-linear load | | | | | | | | | | | |
| Output frequency (Hz) | 50 or 60 | | | | | | | | | | | |
| Slew rate (Hz/sec) | Programmable: 0.1 to 5.0. Default is 2.0. | | | | | | | | | | | |
| Output performance classification (according to EN62040-3) | VFI-SS-111 | | | | | | | | | | | |

Battery Specifications – 3:1 UPSs with Internal Batteries

| | 10 kVA | | 15 kVA | | 20 kVA | | 30 kVA | |
|--|--|--|--------|--|--------|--|--------|--|
| Charging power | Programmable from 1% to 20% of UPS capacity. Default is 10%. | | | | | | | |
| Maximum charging power (W) | 2000 | | 3000 | | 4000 | | 6000 | |
| Nominal battery voltage (VDC) | ± 240 | | | | | | | |
| Nominal float voltage (VDC) | ± 270 | | | | | | | |
| End of discharge voltage (full load) (VDC) | ± 198 | | | | | | | |
| End of discharge voltage (no load) (VDC) | ± 210 | | | | | | | |
| Battery current at full load and nominal battery voltage (A) | 22 | | 33 | | 44 | | 66 | |
| Battery current at full load and minimum battery voltage (A) | 27 | | 40 | | 54 | | 81 | |
| Temperature compensation (per cell) | Programmable from 0–5 mV. Default is 3 mV. | | | | | | | |
| Ripple current | < 5% C10 | | | | | | | |

8. When ambient temperature is below 30 °C. When the ambient temperature is above 30 °C, the power factor is 0.9.

Battery Specifications – 3:1 UPSs for External Batteries

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA |
|---|--|--------|--------|--------|
| Charging power | Programmable from 1% to 20% of UPS capacity. Default is 10%. | | | |
| Maximum charging power (W) | 2000 | 3000 | 4000 | 6000 |
| Nominal battery voltage (16–20 blocks) (VDC) | ± 192 to ± 240 | | | |
| Nominal float voltage (16–20 blocks) (VDC) | ± 216 to ± 270 | | | |
| End of discharge voltage (16–20 blocks) (full load) (VDC) | ± 158 to ± 198 | | | |
| End of discharge voltage (16–20 blocks) (no load) (VDC) | ± 168 to ± 210 | | | |
| Battery current at full load and nominal battery voltage (16–20 blocks) (A) | 28–22 | 42–33 | 55–44 | 83–66 |
| Battery current at full load and minimum battery voltage (16–20 blocks) (A) | 34–27 | 50–40 | 67–54 | 101–81 |
| Temperature compensation (per cell) | Programmable from 0–5 mV. Default is 3 mV. | | | |
| Ripple current | < 5% C10 | | | |

Required Upstream and Downstream Protection and Cable Sizes – 3:1 UPSs

NOTE: Overcurrent protection must be provided by others.

Cable sizes in this manual are based on table B.52.5 of IEC 60364-5-52 with the following assertions:

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Installation method C
- PE size is based on table 54.2 of IEC 60364-5-54
- Specific to AC cables: Maximum length 70 m with a line voltage drop <3% installed on perforated cable trays, XLPE-type insulation, single layer trefoil formation, THDI between 15% and 33% , 35 °C at 400 V grouped in four touching cables
- Specific to DC cables: Maximum length 15 m with a line voltage drop <1%

NOTE: If neutral conductor is expected to carry a high current, due to line-neutral non-linear load, the circuit breaker must be rated according to expected neutral current.

NOTE: If the ambient temperature is greater than 30 °C, large conductors are to be used in accordance with the correction factors of the IEC.

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Not all auxiliary products support aluminum cables. Refer to the installation manual provided with the auxiliary product.

NOTE: The DC cable sizes given here are recommendations – Always follow the specific instructions in the battery solution documentation for DC cable sizes and DC PE cable sizes and ensure that the DC cable sizes match the battery breaker rating.

10 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|--|---|----------------------------------|
| Input – single mains Input – dual mains | iC65H-C-50A / C60H-C-50A iC65H-C-20A / C60H-C-20A | 16 6 | 16 6 |
| Bypass | iC65H-C-50A / C60H-C-50A | 16 | 16 |
| Output | C65N-B-2P-25A/ C60N-B-2P-25A | 16 | 16 |
| Battery | Compact NSX100F DC TM50D - 3P | 8 | 8 |

15 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|---|---|----------------------------------|
| Input – single mains Input – dual mains | C120H-C-80A / NSX100F TM80C 80A iC65H-C-32A / C60H-C-32A | 25 6 | 16 6 |
| Bypass | C120H-C-80A / NSX100F TM80C 80A | 25 | 16 |
| Output | C65N-B-2P-25A/ C60N-B-2P-25A | 25 | 16 |
| Battery | Compact NSX100F DC TM63D - 3P | 8 | 8 |

20 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|--|---|----------------------------------|
| Input – single mains Input – dual mains | C120H-C-100A / NSX100F TM100C 100A iC65H-C-40A / C60H-C-40A | 35 10 | 16 10 |
| Bypass | C120H-C-100A / NSX100F TM100C 100A | 35 | 16 |
| Output | C65N-B-2P-32A/ C60N-B-2P-32A | 35 | 16 |
| Battery | Compact NSX100F DC TM80D - 3P | 16 | 16 |

30 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|---|---|----------------------------------|
| Input – single mains Input – dual mains | Compact NSX160F TM160C 160A iC65H-C-63A / C60H-C-63A / C120H-C-63A | 50 16 | 25 16 |
| Bypass | Compact NSX160F TM160C 160A | 50 | 25 |
| Output | C65N-B-2P-50A/ C60N-B-2P-50A | 50 | 25 |
| Battery | Compact NSX160F DC TM125D - 3P | 25 | 16 |

NOTE:

- These protection device ensures discrimination for each of the Easy 3S output circuits.
- If the recommended downstream protection is not installed and a short-circuit occurs, the result may be a break longer than 50 ms on all the other output circuits.
- The recommended output branch breakers are for reference only. Whether to include the output branch breakers in your circuit depends on your use cases.

Weights and Dimensions – 3:1 UPSs

| UPS | Weight kg | Height mm | Width mm | Depth mm |
|--|------------------|-----------|----------|----------|
| 10 kVA 3:1 UPS for external batteries | 36 | 530 | 250 | 700 |
| 15 kVA 3:1 UPS for external batteries | 36 | 530 | 250 | 700 |
| 20 kVA 3:1 UPS for external batteries | 58 | 770 | 250 | 800 |
| 30 kVA 3:1 UPS for external batteries | 60 | 770 | 250 | 800 |
| 10 kVA 3:1 UPS with internal batteries | 130 ⁹ | 1400 | 380 | 907 |
| 15 kVA 3:1 UPS with internal batteries | 130 ⁹ | 1400 | 380 | 907 |
| 20 kVA 3:1 UPS with internal batteries | 150 ⁹ | 1400 | 380 | 907 |
| 30 kVA 3:1 UPS with internal batteries | 185 ⁹ | 1400 | 500 | 996 |
| Battery | 27 | 157 | 107 | 760 |

Shipping Weights and Dimensions – 3:1 UPSs

| UPS | Weight kg | Height mm | Width mm | Depth mm |
|--|------------------|-----------|----------|----------|
| 10 kVA 3:1 UPS for external batteries | 50 | 772 | 400 | 857 |
| 15 kVA 3:1 UPS for external batteries | 50 | 772 | 400 | 857 |
| 20 kVA 3:1 UPS for external batteries | 75 | 1015 | 400 | 982 |
| 30 kVA 3:1 UPS for external batteries | 77 | 1015 | 400 | 982 |
| 10 kVA 3:1 UPS with internal batteries | 145 ⁹ | 1640 | 563 | 1014 |
| 15 kVA 3:1 UPS with internal batteries | 145 ⁹ | 1640 | 563 | 1014 |
| 20 kVA 3:1 UPS with internal batteries | 158 ⁹ | 1640 | 563 | 1014 |
| 30 kVA 3:1 UPS with internal batteries | 185 ⁹ | 1640 | 683 | 1114 |
| Battery | 28 | 180 | 140 | 820 |

9. Weight without batteries.

Facility Planning for Easy UPS 3S 3:3 208 V

Input Specifications – 3:3 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | |
|--------------------------------------|--------------------------|-----|-----|--------|-----|-----|--------|-----|-----|
| Voltage (V) | 200 | 208 | 220 | 200 | 208 | 220 | 200 | 208 | 220 |
| Connections ¹⁰ | L1, L2, L3, N, PE | | | | | | | | |
| Input voltage range (V) | 180-253 | | | | | | | | |
| Frequency range (Hz) | 45-65 | | | | | | | | |
| Nominal input current (A) | 32 | 31 | 29 | 48 | 46 | 43 | 63 | 61 | 58 |
| Maximum input current (A) | 36 | 34 | 32 | 53 | 51 | 49 | 70 | 68 | 65 |
| Input current limitation (A) | 42 | 40 | 38 | 63 | 60 | 57 | 83 | 80 | 76 |
| Total harmonic distortion (THDI) | <4% | | | | | | | | |
| Input power factor | > 0.99 | | | | | | | | |
| Maximum input shortcircuit withstand | I _{cc} =10 kA | | | | | | | | |
| Protection | Circuit breaker and fuse | | | Fuse | | | | | |
| Ramp-in | 15 seconds | | | | | | | | |

Bypass Specifications – 3:3 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | |
|---------------------------------------|---|-----|-----|--------|-----|-----|--------|-----|-----|
| Voltage (V) | 200 | 208 | 220 | 200 | 208 | 220 | 200 | 208 | 220 |
| Connections | L1, L2, L3, N, PE | | | | | | | | |
| Overload capacity | 110% continuous 110-120% for 10 minutes 120-135% for 1 minute >135% for 300 milliseconds | | | | | | | | |
| Minimum bypass voltage (V) | 180 | 187 | 198 | 180 | 187 | 198 | 180 | 187 | 198 |
| Maximum bypass voltage (V) | 230 | 240 | 253 | 230 | 240 | 253 | 230 | 240 | 253 |
| Frequency (Hz) | 50 or 60 | | | | | | | | |
| Nominal bypass current (A) | 29 | 28 | 27 | 44 | 42 | 40 | 58 | 56 | 53 |
| Maximum input short circuit withstand | I _{cc} =10 kA | | | | | | | | |

10. It is mandatory to have the neutral line for the main input and load. If the main input or load does not have a neutral line, a Δ-Y transformer for main input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.

Output Specifications – 3:3 UPSs

| | 10 kVA | | | 15 kVA | | | 20 kVA | | |
|--|---|-----|-----|--------------|-----|-----|--------------|-----|-----|
| Voltage (V) | 200 | 208 | 220 | 200 | 208 | 220 | 200 | 208 | 220 |
| Connections ¹¹ | L1, L2, L3, N, PE | | | | | | | | |
| Overload capacity | 110% for 60 minutes 125% for 10 minutes 150% for 1 minute >150% for less than 200 milliseconds | | | | | | | | |
| Output voltage tolerance | ± 1% | | | | | | | | |
| Dynamic load response | 40 milliseconds | | | | | | | | |
| Output power factor | 1.0 | | | | | | | | |
| Nominal output current (A) | 29 | 28 | 27 | 44 | 42 | 40 | 58 | 56 | 53 |
| Output short circuit current | 77 A/223 ms | | | 111 A/248 ms | | | 177 A/252 ms | | |
| Total harmonic distortion (THDU) | <2% at 100% linear load <6% at 100% non-linear load | | | | | | | | |
| Output frequency (Hz) | 50 or 60 | | | | | | | | |
| Slew rate (Hz/sec) | Programmable: 0.1 to 5.0. Default is 2.0. | | | | | | | | |
| Output performance classification (according to EN62040-3) | VFI-SS-111 | | | | | | | | |

Battery Specifications – 3:3 UPSs with Internal Batteries

| | 10 kVA | 15 kVA | 20 kVA |
|--|--|--------|--------|
| Charging power | Programmable from 1% to 20% of UPS capacity. Default is 10%. | | |
| Maximum charging power (W) | 2000 | 3000 | 4000 |
| Nominal battery voltage (VDC) | ± 120 | | |
| Nominal float voltage (VDC) | ± 135 | | |
| End of discharge voltage (full load) (VDC) | ± 96 | | |
| End of discharge voltage (no load) (VDC) | ± 105 | | |
| Battery current at full load and nominal battery voltage (A) | 46 | 68 | 92 |
| Battery current at full load and minimum battery voltage (A) | 56 | 83 | 111 |
| Temperature compensation (per cell) | Programmable from 0-5 mV. Default is 3 mV. | | |
| Ripple current | < 5% C10 | | |

11. It is mandatory to have the neutral line for the main input and load. If the main input or load does not have a neutral line, a Δ -Y transformer for main input or a Y- Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.

Battery Specifications – 3:3 UPSs for External Batteries

| | 10 kVA | 15 kVA | 20 kVA |
|--|--|--------|--------|
| Charging power | Programmable from 1% to 20% of UPS capacity. Default is 10%. | | |
| Maximum charging power (W) | 2000 | 3000 | 4000 |
| Nominal battery voltage (10 blocks) (VDC) | ±120 | | |
| Nominal float voltage (10 blocks) (VDC) | ± 135 | | |
| End of discharge voltage (10 blocks) (full load) (VDC) | ± 96 | | |
| End of discharge voltage (10 blocks) (no load) (VDC) | ± 105 | | |
| Battery current at full load and nominal battery voltage (10 blocks) (A) | 46 | 68 | 92 |
| Battery current at full load and minimum battery voltage (10 blocks) (A) | 56 | 83 | 111 |
| Temperature compensation (per cell) | Programmable from 0–5 mV. Default is 3 mV. | | |
| Ripple current | < 5% C10 | | |

Required Upstream Protection and Cable Sizes – 3:3 UPSs

NOTE: Overcurrent protection must be provided by others.

Cable sizes in this manual are based on table B.52.5 of IEC 60364-5-52 with the following assertions:

- 90 °C conductors
- Ambient temperature of 30 °C
- Use of copper conductors
- Installation method C
- PE size is based on table 54.2 of IEC 60364-5-54.
- Specific to AC cables: Maximum length 70 m with a line voltage drop <3% installed on perforated cable trays, XLPE-type insulation, single layer trefoil formation, THDI between 15% and 33%, 35 °C at 208 V grouped in four touching cables
- Specific to DC cables: Maximum length 15 m with a line voltage drop <1%

NOTE: If neutral conductor is expected to carry a high current, due to line-neutral non-linear load, the circuit breaker must be rated according to expected neutral current.

NOTE: If the ambient temperature is greater than 30 °C, large conductors are to be used in accordance with the correction factors of the IEC.

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Not all auxiliary products support aluminum cables. Refer to the installation manual provided with the auxiliary product.

NOTE: The DC cable sizes given here are recommendations – Always follow the specific instructions in the battery solution documentation for DC cable sizes and DC PE cable sizes and ensure that the DC cable sizes match the battery breaker rating.

10 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|--|---|----------------------------------|
| Input – single mains Input – dual mains | iC65H-C-40A / C60H-C-40A iC65H-C-40A / C60H-C-40A | 10 | 10 |
| Bypass | iC65H-C-40A / C60H-C-40A | 10 | 10 |

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|---------|--|---|----------------------------------|
| Output | C65N-B-4P-10A / C60N-B-4P-10A / C65N-B-4P-10A / C60N-C-4P-6A | 10 | 10 |
| Battery | Compact NSX100F DC TM80D - 3P | 25 | 16 |

15 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|--|---|----------------------------------|
| Input – single mains Input – dual mains | iC65H-C-63A / C60H-C-63A / C120H-C-63A iC65H-C-63A / C60H-C-63A / C120H-C-63A | 16 | 16 |
| Bypass | iC65H-C-63A / C60H-C-63A / C120H-C-63A | 16 | 16 |
| Output | C65N-B-4P-16A / C60N-B-4P-16A / C65N-C-4P-10A / C60N-C-4P-10A | 16 | 16 |
| Battery | Compact NSX160F DC TM125D - 3P | 25 | 16 |

20 kVA UPS

| | Breaker type | Cable size per phase (mm ²) | PE cable size (mm ²) |
|--|--|---|----------------------------------|
| Input – single mains Input – dual mains | C120H-C-80A / NSX100F TM80C 80A C120H-C-80A / NSX100F TM80C 80A | 25 | 16 |
| Bypass | C120H-C-80A / NSX100F TM80C 80A | 25 | 16 |
| Output | C65N-B-4P-20A / C60N-B-4P-20A / C65N-C-4P-10A / C60N-C-4P-10A | 25 | 16 |
| Battery | Compact NSX160F DC TM160D - 3P | 35 | 16 |

NOTE:

- These protection devices ensures discrimination for each of the **Easy 3S** output circuits. If the recommended downstream protection is not installed and a short-circuit occurs, the result may be a break longer than 50 ms on all the other output circuits.
- The recommended output branch breakers are for reference only. Whether to include the output branch breakers in your circuit depends on your use cases.

UPS Weights and Dimensions – 3:3 UPSs

| UPS | Weight kg | Height mm | Width mm | Depth mm |
|------------------------------------|-------------------|-----------|----------|----------|
| 10 kVA UPS for external batteries | 58 | 770 | 250 | 800 |
| 15 kVA UPS for external batteries | 60 | 770 | 250 | 800 |
| 20 kVA UPS for external batteries | 70 | 770 | 250 | 900 |
| 10 kVA UPS with internal batteries | 122 ¹² | 1400 | 380 | 928 |
| 15 kVA UPS with internal batteries | 152 ¹² | 1400 | 500 | 969 |

12. Weight without batteries

| UPS | Weight kg | Height mm | Width mm | Depth mm |
|------------------------------------|-------------------|-----------|----------|----------|
| 20 kVA UPS with internal batteries | 158 ¹³ | 1400 | 500 | 969 |
| Battery | 27 | 157 | 107 | 760 |

UPS Shipping Weights and Dimensions – 3:3 UPSs

| UPS | Weight kg | Height mm | Width mm | Depth mm |
|------------------------------------|-------------------|-----------|----------|----------|
| 10 kVA UPS for external batteries | 75 | 1015 | 400 | 982 |
| 15 kVA UPS for external batteries | 77 | 1015 | 400 | 982 |
| 20 kVA UPS for external batteries | 86 | 1015 | 400 | 1050 |
| 10 kVA UPS with internal batteries | 158 ¹³ | 1640 | 563 | 1014 |
| 15 kVA UPS with internal batteries | 190 ¹³ | 1640 | 683 | 1114 |
| 20 kVA UPS with internal batteries | 195 ¹³ | 1640 | 683 | 1114 |
| Battery | 28 | 180 | 140 | 820 |

Recommended Bolts and Cable Lugs

| Cable Size (mm ²) | Bolt Size | Cable Lug Type | Note |
|-------------------------------|-----------|----------------|--|
| 6 | M5 | KST TLK6-5 | If the recommended lug type is not available, use a local M5 lug type as a substitute. |
| 8 | M5 | KST RNBS8-5 | |
| 10 | M6 | KST TLK10-6 | If the recommended lug type is not available, use a local M6 lug type as a substitute. |
| 16 | M6 | KST TLK16-6 | |
| 25 | M6 | KST DRNB6-25 | |
| 35 | M6 | KST TLK35-6 | If the recommended lug type is not available, use a local M8 lug type as a substitute. |
| 50 | M8 | KST TLK50-8 | |

Torque Specifications

| Bolt Size | Torque |
|-----------|--------|
| M5 | 4 Nm |
| M6 | 5 Nm |
| M8 | 12 Nm |

13. Weight without batteries

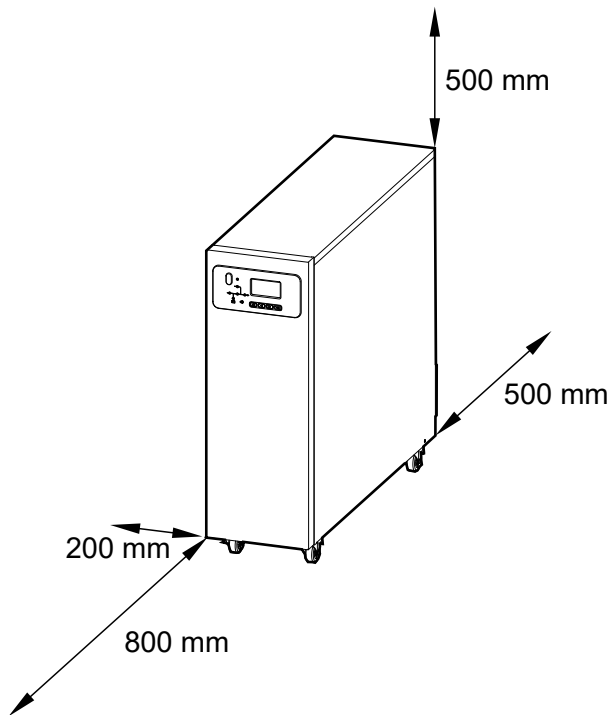
Clearance

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.

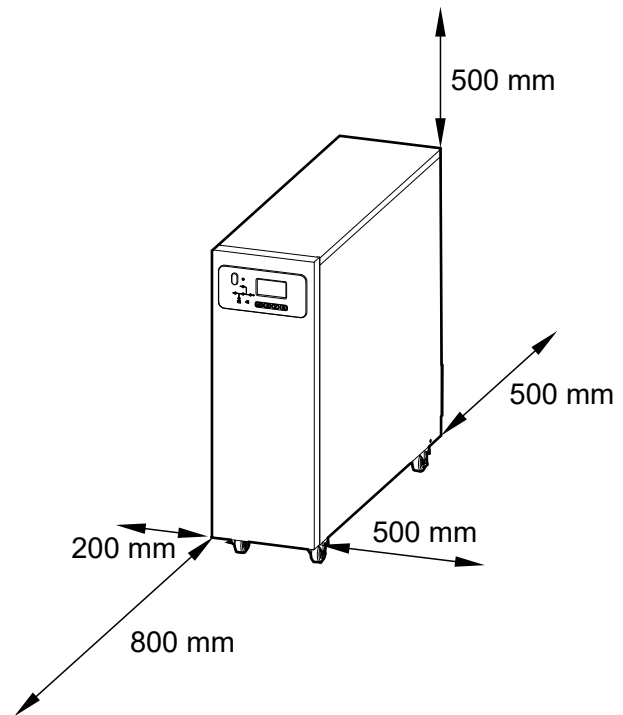
NOTE: If the UPS is installed without side access (Option A*), the length of the cables connected to the UPS must allow for rolling out the UPS.

Clearance for UPS for External Batteries

Option A*



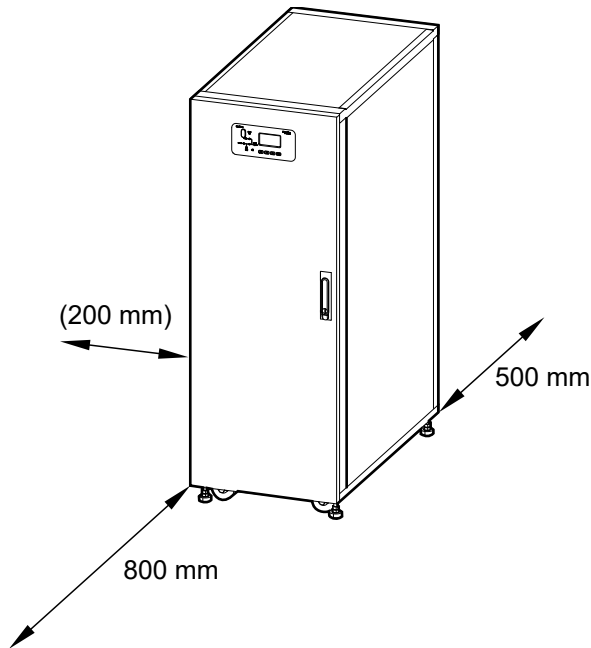
Option B



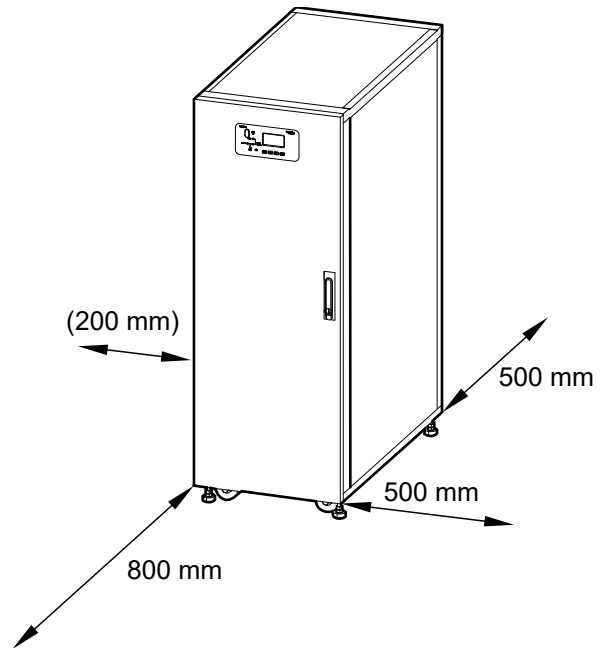
NOTE: 200 mm left side clearance is required when the UPS is placed next to a wall to allow the front door to open properly.

Clearance for UPS with Internal Batteries

Option A*



Option B



NOTE: 200 mm left side clearance is required when the UPS is placed next to a wall to allow the front door to open properly.

Environmental

| | Operation | Storage |
|---|---|---|
| Temperature | 0 °C to 40 °C 20 °C to 25 °C (optimal operation temperature for batteries) | -15 °C to 40 °C for systems with batteries -25 °C to 55 °C for systems without batteries |
| Relative humidity | 0–95% non-condensing | |
| Elevation derating according to IEC 62040–3 | 1000 m: 1.000 1500 m: 0.975 2000 m: 0.950 | < 15000 m above sea level (or in an environment with equivalent air pressure) |
| Audible noise | 10–20 kVA 400 V: <60 dBA at full load 30–40 kVA 400 V: <63 dBA at full load 10–20 kVA 208 V: <63 dBA at full load | |
| Protection class | IP20 (dust filter as standard) | |
| Color | RAL 9003 | |

Heat Dissipation for 400 V Systems

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA | 40 kVA |
|------------------|--------|--------|--------|--------|--------|
| Normal mode (W) | 516 | 852 | 870 | 1410 | 1810 |
| Battery mode (W) | 600 | 950 | 1080 | 1700 | 2270 |
| ECO mode (W) | 135 | 223 | 240 | 370 | 480 |

Heat Dissipation for 208 V Systems

| | 10 kVA | 15 kVA | 20 kVA |
|------------------|--------|--------|--------|
| Normal mode (W) | 920 | 1469 | 1701 |
| Battery mode (W) | 948 | 1247 | 1861 |
| ECO mode (W) | 245 | 358 | 415 |

Airflow Requirement for 400 V Systems

NOTE: The UPS requires a sufficient amount of fresh air in the installation room.

| | 10 kVA | 15 kVA | 20 kVA | 30 kVA | 40 kVA |
|--|--------|--------|--------|--------|--------|
| Fan air throughput (m ³ /min) | 6.20 | 8.25 | 10.85 | 15.57 | 16.38 |

Airflow Requirement for 208 V Systems

NOTE: The UPS requires a sufficient amount of fresh air in the installation room.

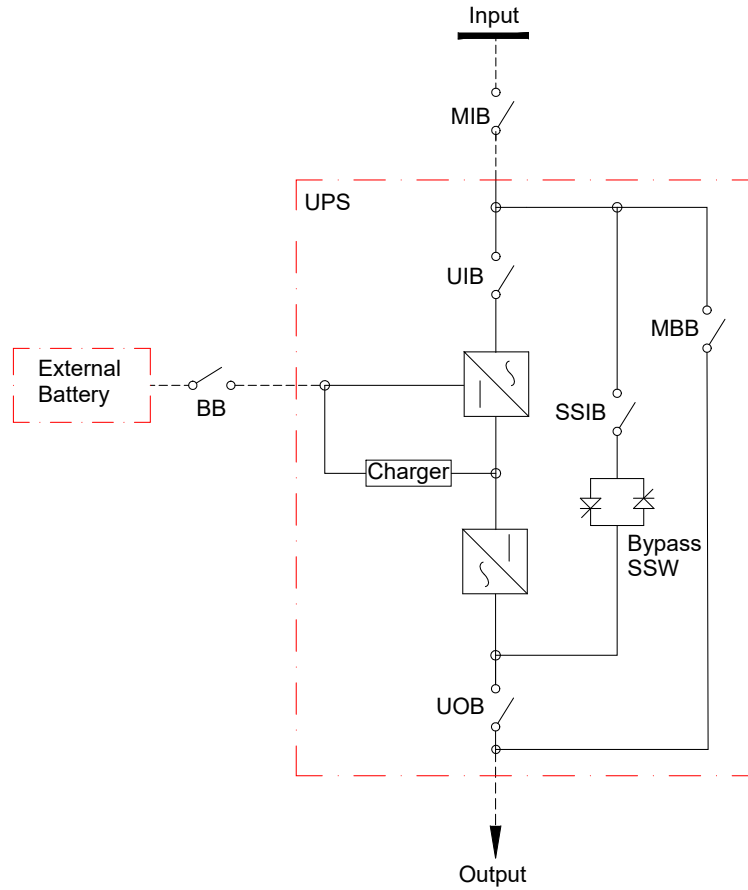
| | 10 kVA | 15 kVA | 20 kVA |
|--|--------|--------|--------|
| Fan air throughput (m ³ /min) | 10.85 | 15.57 | 16.38 |

Drawings

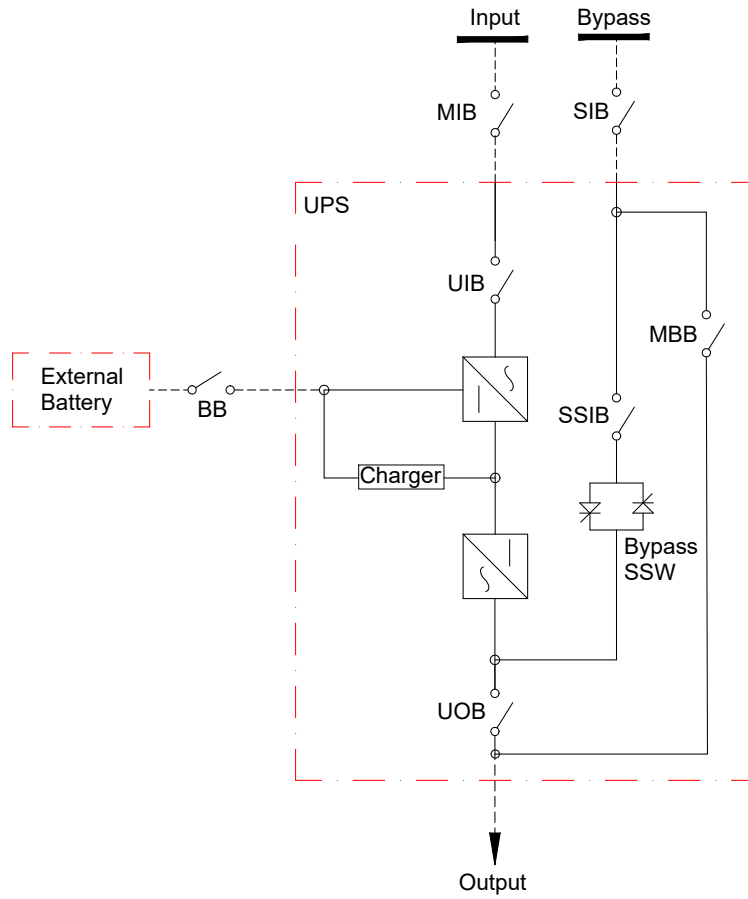
NOTE: A comprehensive set of drawings is available on www.se.com.

NOTE: These drawings are for reference ONLY – subject to change without notice.

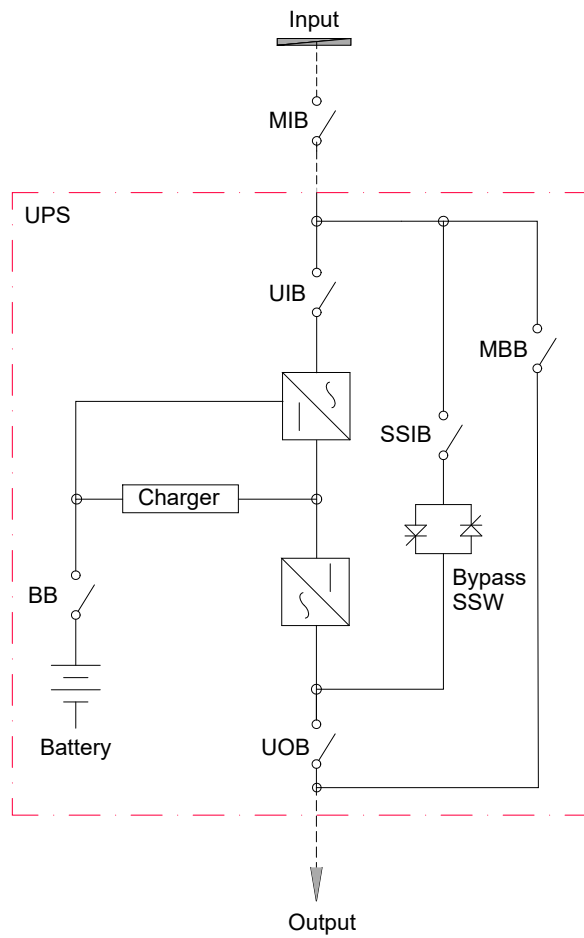
Easy UPS 3S for External Batteries – Single Mains System



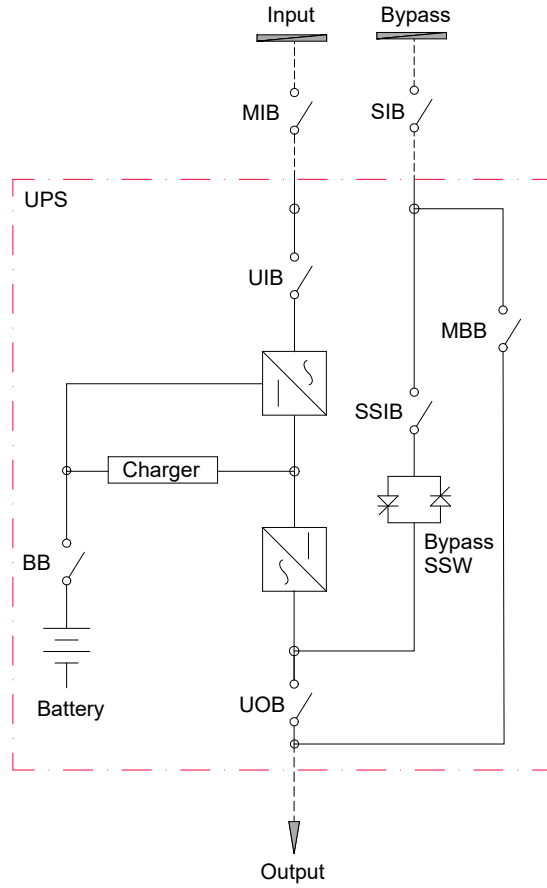
Easy UPS 3S for External Batteries – Dual Mains System



Easy UPS 3S with Internal Batteries – Single Mains System



Easy UPS 3S with Internal Batteries – Dual Mains System



Options

Configuration Options

- Single or dual mains
- Bottom cable entry
- Up to four UPSs in parallel
- ECO mode

Hardware Options

Modular Battery Cabinet

- Easy UPS 3S modular battery cabinet (E3SXR6)

Battery Breaker Box

- Easy UPS 3S battery breaker box (E3SOPT007)

Battery Breaker Kit

- Easy UPS 3S battery breaker kit (E3SOPT008)

Empty Battery Cabinets

- Empty battery cabinet, 700 mm wide (GVEBC7)
- Empty battery cabinet, 1100 mm wide (GVEBC11)

Batteries

- Easy UPS 3S standard battery module (E3SBTU)
- Easy UPS 3S high performance battery module (E3SBTHU)
- Easy UPS 3S standard battery string (E3SBT4)
- Easy UPS 3S high performance battery string (E3SBTH4)

Maintenance Bypass Panels

- Easy UPS 3S parallel maintenance bypass panel for up to 2 units 10-40 kVA (E3SOPT006)
- Maintenance Bypass Panel, single unit, 10-400kVA 400V wallmount, for Easy UPS 3-Phase (E3MBP60K400H)
- Parallel Maintenance Bypass Panel, 10-200kVA 400V wallmount, for Easy UPS 3S/3M (E3MBPAR60K200H)
- Parallel Maintenance Bypass Panel for 2 UPSs, 40-50kW 400V wallmount, for Galaxy VS and Easy UPS 3S (GVSBPAR40K50H)

- Parallel Maintenance Bypass Panel for 2 UPSs, 60-120kW 400V wallmount for Galaxy VS & Easy UPS 3S/3M (GVSBPAR60K120H)
- Maintenance Bypass Panel, single unit, 10-20kW 400V wallmount, for Galaxy VS and Easy UPS 3S (GVSBPSU10K20H)
- Maintenance Bypass Panel, single unit, 20-60kW 400V wallmount, for Galaxy VS and Easy UPS 3S (GVSBPSU20K60H)
- Maintenance Bypass Panel, single unit, 80-120kW 400V wallmount, for Galaxy VS and Easy UPS 3S/3M (GVSBPSU80K120H)

Backfeed Box

- Wall-mount box with 95A power contactor and connections that delivers backfeed protection for 400V Easy UPS 3S 10-40 kVA 3:1 and 3:3 (SP3OPT008)

Options

- Easy UPS 3S parallel kit (E3SOPT002)
- Easy UPS 3S temperature sensor kit for external battery system (E3SOPT003)
- Easy UPS 3S cold start kit (E3SOPT004) ¹⁴
- Easy UPS battery connector kit (E3SOPT009)
- Easy UPS 3S parallel kit with 15m cable (E3SOPT016)
- Wall-mount cabinet with 95 A power contactor and connections that delivers backfeed protection for Easy UPS 3S 10-40 kVA 400 V (SP3OPT008)

14.

NOTE: Cold start function must be used together with the MX trip coil, recommended Schneider Electric MX trip coil LV429390.

Weights and Dimensions for Options

NOTE: Not all options listed here are available for all UPS models. Refer to the hardware options list for the relevant UPS model.

Battery Breaker Box Shipping Weights and Dimensions

| | Weight kg | Height mm | Width mm | Depth mm |
|---------------------------------|-----------|-----------|----------|----------|
| Battery breaker box (E3SOPT007) | 46.5 | 1220 | 850 | 510 |

Battery Breaker Box Weights and Dimensions

| | Weight kg | Height mm | Width mm | Depth mm |
|---------------------------------|-----------|-----------|----------|----------|
| Battery breaker box (E3SOPT007) | 25 | 650 | 500 | 280 |

Modular Battery Cabinet Shipping Weights and Dimensions

| | Weight kg | Height mm | Width mm | Depth mm |
|-------------------------|-----------|-----------|----------|----------|
| Modular battery cabinet | 140 | 1620 | 650 | 1020 |

Modular Battery Cabinet Weights and Dimensions

| | Weight kg | Height mm | Width mm | Depth mm |
|-------------------------|-----------|-----------|----------|----------|
| Modular battery cabinet | 125 | 1400 | 500 | 851 |

Backfeed Box Shipping Weights and Dimensions

| Commercial reference | Weight kg (lbs) | Height mm (in) | Width mm (in) | Depth mm (in) |
|----------------------|-----------------|----------------|---------------|---------------|
| SP3OPT008 | 30 | 530 | 780 | 460 |
| SP3OPT009 | 48 | 835 | 835 | 510 |
| SP3OPT010 | 76 | 940 | 1050 | 660 |

NOTE: Shipping weights and dimensions are for one unit on a wooden pallet.

Backfeed Box Weights and Dimensions

| Commercial reference | Weight kg (lbs) | Height mm (in) | Width mm (in) | Depth mm (in) |
|----------------------|-----------------|----------------|---------------|---------------|
| SP3OPT008 | 20 | 300 | 550 | 200 |
| SP3OPT009 | 33 | 600 | 600 | 250 |
| SP3OPT010 | 58 | 800 | 700 | 400 |

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Appendix: Switch/Breaker Details

3:1 UPS

| | Model | Switch/Breaker | Description | Switch or Breaker |
|---------------|-------|----------------|------------------|---|
| 10 kVA | UIB | OSMC65H4C32 | 32A 4P | Breaker |
| | SIB | OSMC65H4C32 | 32A 4P | Breaker |
| | UOB | A9S68263 | 63A 2P | Switch |
| | MBB | A9S68163 | 63A 1P | Switch |
| | BB | A9S68332 | 32A 3P | Switch (for UPSs with internal batteries) |
| 15 kVA | UIB | OSMC65H4C40 | 40A 4P | Breaker |
| | SIB | OSMC65H4C40 | 40A 4P | Breaker |
| | UOB | A9S68280 | 80A 2P | Switch |
| | MBB | A9S68180 | 80A 1P | Switch |
| | BB | A9S68363 | 63A 3P | Switch (for UPSs with internal batteries) |
| 20 kVA | UIB | OSMC65H4C63 | 63A 4P | Breaker |
| | SIB | OSMC65H4C63 | 63A 4P | Breaker |
| | UOB | A9S68292 | 125A 2P | Switch |
| | MBB | A9S68192 | 125A 1P | Switch |
| | BB | A9S68363 | 63A 3P | Switch (for UPSs with internal batteries) |
| 30 kVA | UIB | A9S68480 | 500VAC 80A 4P | Switch |
| | SIB | A9S68491 | 100A 4P | Switch |
| | UOB | A9S68491 | 100A 4P | Switch |
| | MBB | A9S68280 | 80A 2P | Switch |
| | BB | A9S68391 | 100A 3P | Switch (for UPSs with internal batteries) |

3:3 UPS

| | Model | Switch/Breaker | Description | Switch or Breaker |
|---------------|-------|----------------|-------------|---|
| 10 kVA | UIB | OSMC65H4C32 | 32A 4P | Breaker |
| | SIB | OSMC65H4C32 | 32A 4P | Breaker |
| | UOB | A9S68432 | 32A 4P | Switch |
| | MBB | OSMC65H3C32 | 32A 3P | Breaker |
| | BB | A9S68332 | 32A 3P | Switch (for UPSs with internal batteries) |
| 15 kVA | UIB | OSMC65H4C40 | 40A 4P | Breaker |
| | SIB | OSMC65H4C40 | 40A 4P | Breaker |
| | UOB | A9S68440 | 40A 4P | Switch |
| | MBB | OSMC65H3C40 | 40A 3P | Breaker |
| | BB | A9S68363 | 63A 3P | Switch (for UPSs with internal batteries) |
| 20 kVA | UIB | OSMC65H4C63 | 63A 4P | Breaker |
| | SIB | OSMC65H4C63 | 63A 4P | Breaker |
| | UOB | A9S68463 | 63A 4P | Switch |
| | MBB | OSMC65H3C50 | 50A 3P | Breaker |
| | BB | A9S68363 | 63A 3P | Switch (for UPSs with internal batteries) |

| | | | | |
|---------------|-----|----------|------------------|---|
| 30 kVA | UIB | A9S68480 | 500VAC 80A 4P | Switch |
| | SIB | A9S68480 | 500VAC 80A 4P | Switch |
| | UOB | A9S68480 | 500VAV 80A 4P | Switch |
| | MBB | A9S68363 | 500VAC 63A 3P | Switch |
| | BB | A9S68391 | 100A 3P | Switch (for UPSs with internal batteries) |
| 40 kVA | UIB | A9S68492 | 125A 4P | Switch |
| | SIB | A9S68492 | 125A 4P | Switch |
| | UOB | A9S68492 | 125A 4P | Switch |
| | MBB | A9S68380 | 80A 3P | Switch |
| | BB | A9S68392 | 125A 3P | Switch (for UPSs with internal batteries) |

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