# Galaxy VX

## 380 V, 400 V, 415 V, and 440 V UPS System

## Technical Specifications

9/2021



www.schneider-electric.com

# Legal Information

The Schneider Electric brand and any trademarks of Schneider Electric SE and its subsidiaries referred to in this guide are the property of Schneider Electric SE or its subsidiaries. All other brands may be trademarks of their respective owners.

This guide and its content are protected under applicable copyright laws and furnished for informational use only. No part of this guide may be reproduced or transmitted in any form or by any means (electronic, mechanical, photocopying, recording, or otherwise), for any purpose, without the prior written permission of Schneider Electric.

Schneider Electric does not grant any right or license for commercial use of the guide or its content, except for a non-exclusive and personal license to consult it on an "as is" basis. Schneider Electric products and equipment should be installed, operated, serviced, and maintained only by qualified personnel.

As standards, specifications, and designs change from time to time, information contained in this guide may be subject to change without notice.

To the extent permitted by applicable law, no responsibility or liability is assumed by Schneider Electric and its subsidiaries for any errors or omissions in the informational content of this material or consequences arising out of or resulting from the use of the information contained herein.

Go to: https://www.productinfo.schneider-electric.com/galaxyvx_iec/
or scan the QR code above for digital experience and translated manuals.

# Table of Contents

Important Safety Instructions — SAVE THESE INSTRUCTIONS ..... 5
Electromagnetic Compatibility ..... 6
Safety Precautions ..... 6
Technical Data ..... 8
System Overview ..... 8
Model List ..... 9
Overview of Configurations ..... 10
Overview of UPSs with 1250 kW I/O Cabinet - Single Utility/Mains ..... 10
Overview of UPSs with 1250 kW I/O Cabinet - Dual Utility/Mains ..... 11
Overview of UPSs with 1500 kW I/O Cabinet – Single Utility/Mains ..... 11
Overview of UPSs with 1500 kW I/O Cabinet – Dual Utility/Mains ..... 12
Input Power Factor ..... 12
Input Voltage Window ..... 13
Inverter Short-Circuit Capabilities (Bypass not Available) ..... 15
Efficiency for UPSs with 1250 kW I/O Cabinet ..... 16
Efficiency for UPSs with 1500 kW I/O Cabinet ..... 19
Derating Due to Load Power Factor ..... 21
Batteries ..... 21
Battery Runtimes for Li-Ion Battery Cabinets LIBATTSMGGIEC ..... 21
End of Discharge Voltage ..... 23
Battery Voltage Range ..... 24
Compliance ..... 24
Communication and Management ..... 24
EPO Connections ..... 25
Overview of Input Contacts and Output Relays ..... 26
Facility Planning ..... 28
Specifications for 500 kW UPS ..... 28
Specifications for 625 kW UPS ..... 30
Specifications for 750 kW UPS ..... 32
Specifications for 800 kW UPS ..... 34
Specifications for 1000 kW UPS ..... 36
Specifications for 1100 kW UPS ..... 38
Specifications for 1250 kW UPS ..... 40
Specifications for 1500 kW UPS ..... 42
Recommended Upstream Protection and Cable Sizes – IEC ..... 44
Weights and Dimensions ..... 48
Weights and Dimensions for UPSs with 1250 kW I/O Cabinet ..... 48
Weights and Dimensions for UPSs with 1500 kW I/O Cabinet ..... 48
Clearance ..... 49
Clearance for UPSs with 1250 kW I/O Cabinet ..... 49
Clearance for UPSs with 1500 kW I/O Cabinet ..... 49
Guidance for Organizing Battery Cables ..... 50
Torque Specifications ..... 50
Environment ..... 50

Heat Dissipation (BTU/hr) for UPSs with 1250 kW I/O Cabinet ..... 51
Heat Dissipation (BTU/hr) for UPSs with 1500 kW I/O Cabinet ..... 54
Options ..... 56
Hardware Options ..... 56
Configuration Options ..... 56
Limited Factory Warranty ..... 57

# 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.

## 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**

- 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 circuit breakers, battery circuit 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. Start-up must only 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

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 area free of conductive contaminants and humidity.
- Install the UPS system on a non-inflammable, 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.**

## *NOTICE*

**RISK OF OVERHEATING**

Respect the clearance 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**

Do not connect the UPS output to regenerative load systems including photovoltaic systems and speed drives.

**Failure to follow these instructions can result in equipment damage.**

# Technical Data

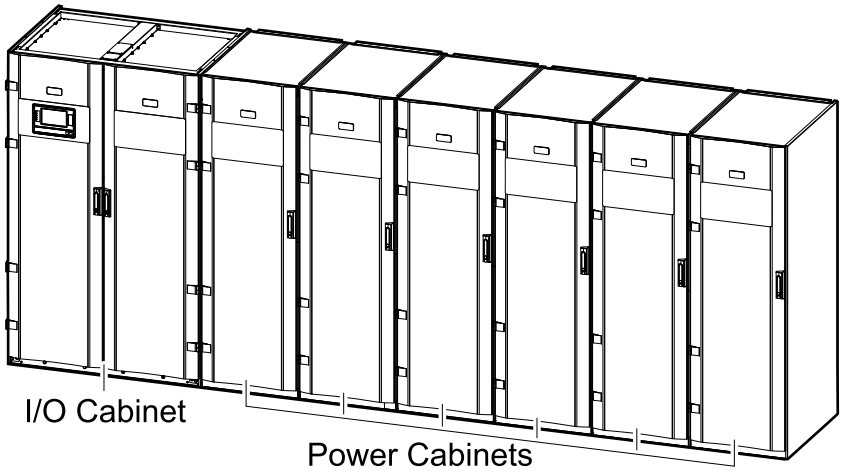
## System Overview

Each Galaxy VX UPS consists of the following components:

- An I/O cabinet for wield wiring containing the static switch, a backfeed protection switch, and the user interface.
- A number of 250 kW power cabinets containing the power electronics.

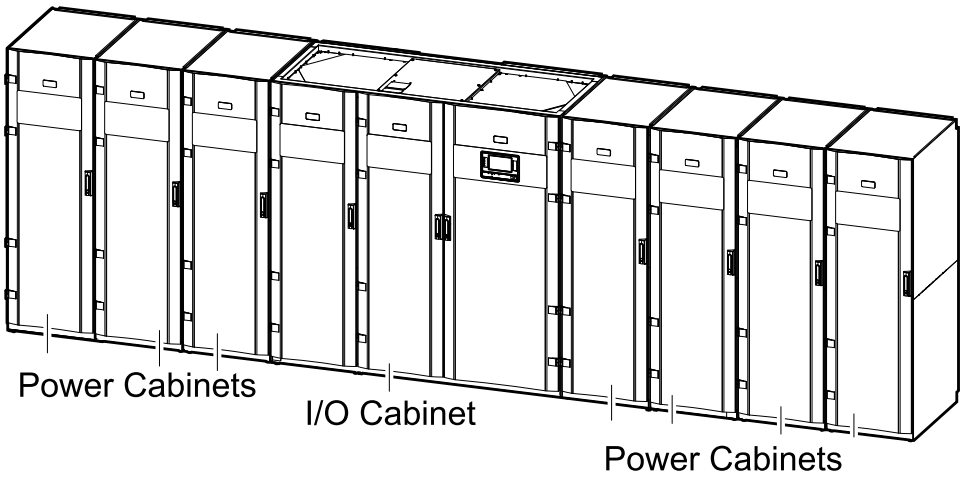
### UPSs with 1250 kW I/O Cabinet

The 1250 kW I/O cabinet is used for UPS systems from a minimum configuration of 500 kW with two power cabinets to a maximum configuration of 1250 kW N+1 with six power cabinets. The I/O cabinet is placed to the left and two to six power cabinets (depending on system size) are placed to the right. The image below shows the maximum configuration.




### UPSs with 1500 kW I/O Cabinet

The 1500 kW I/O cabinet is used for UPS systems from a minimum configuration of 500 kW with two power cabinets to a maximum configuration of 1500 kW N+1 with seven power cabinets. The image below shows the maximum configuration.



# Model List

## UPSs with 1250 kW I/O Cabinet

- GVX500K500NHS: Galaxy VX 500 kW, 400 V, start-up 5x8
- GVX500K750NHS: Galaxy VX 500 kW scalable to 750 kW 400 V, start-up 5x8
- GVX500K1000NHS: Galaxy VX 500 kW scalable to 1000 kW 400 V, start-up 5x8
- GVX500K1250NHS: Galaxy VX 500 kW scalable to 1250 kW 400 V, start-up 5x8
- GVX625K625NHS: Galaxy VX 625 kW, 400 V, start-up 5x8
- GVX625K1000NHS: Galaxy VX 625 kW scalable to 1000 kW 400 V, start-up 5x8
- GVX750K500NHS: Galaxy VX 500 kW N+1 redundant UPS 400 V, start-up 5x8
- GVX750K750NHS: Galaxy VX 750 kW, 400V, start-up 5x8
- GVX750K1000NHS: Galaxy VX 750 kW scalable to 1000 kW 400 V, start-up 5x8
- GVX750K1250NHS: Galaxy VX 750 kW scalable to 1250 kW 400 V, start-up 5x8
- GVX800K800NHS: Galaxy VX 800 kW, 400 V, start-up 5x8
- GVX1000K750NHS: Galaxy VX 750 kW N+1 redundant UPS 400 V, start-up 5x8
- GVX1000K1000NHS: Galaxy VX 1000 kW, 400 V, start-up 5x8
- GVX1000K1250NHS: Galaxy VX 1000 kW scalable to 1250 kW 400 V, start-up 5x8
- GVX1100K1100NHS: Galaxy VX 1100 kW, 400 V, start-up 5x8
- GVX1250K1000NHS: Galaxy VX 1000 kW N+1 Redundant UPS 400 V, Start-up 5x8
- GVX1250K1250NHS: Galaxy VX 1250 kW, 400 V, Start-up 5x8
- GVX1500K1100NHS: Galaxy VX 1100 kW N+1 Redundant UPS 400 V, Start up 5x8
- GVX1500K1250NHS: Galaxy VX 1250 kW N+1 Redundant UPS 400 V, Start-up 5x8

## UPSs with 1500 kW I/O Cabinet

- GVX500K1500HS: Galaxy VX 500 kW 400 V scalable to 1500 kW, start-up 5x8
- GVX750K1500HS: Galaxy VX 750 kW 400 V scalable to 1500 kW, start-up 5x8
- GVX1000K1500HS: Galaxy VX 1000 kW 400 V scalable to 1500 kW, start-up 5x8
- GVX1250K1500HS: Galaxy VX 1250 kW 400 V scalable to 1500 kW, start-up 5x8
- GVX1500K1500HS: Galaxy VX 1500 kW 400 V, start-up 5x8
- GVX1750K1500HS: Galaxy VX 1500 kW 400 V N+1 redundant UPS, start-up 5x8

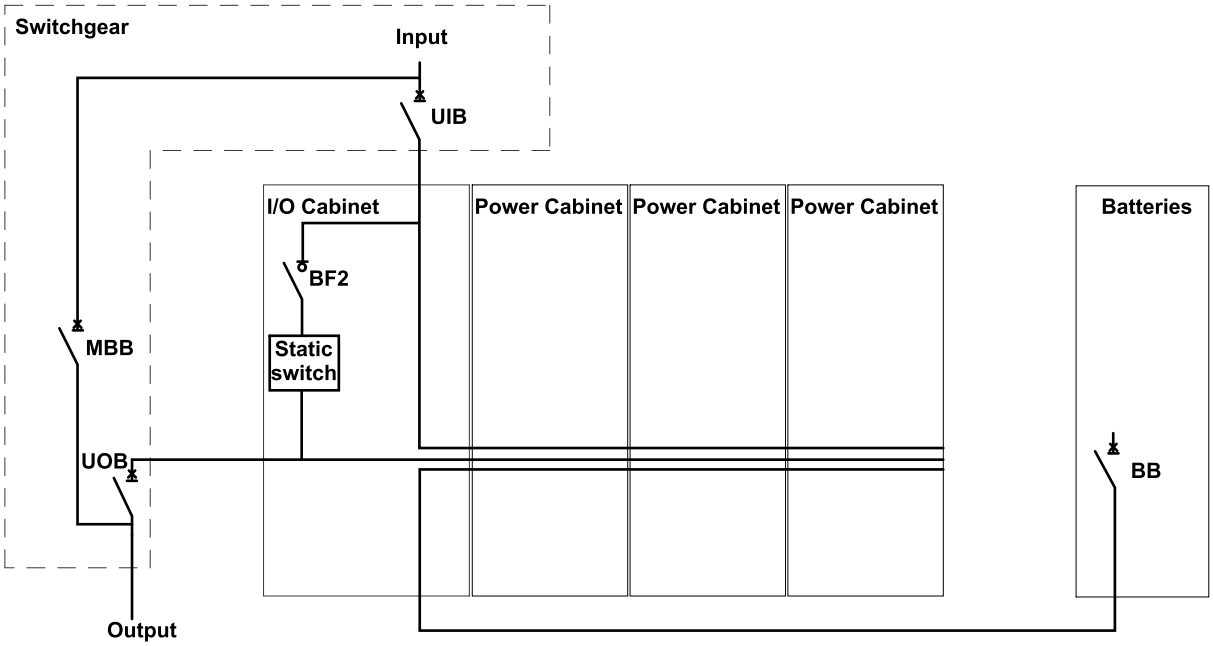
# Overview of Configurations

## Breakers in the System

| | |
|---|---|
| UIB | Unit input breaker |
| SSIB | Static switch input breaker |
| BB | Battery breaker |
| MBB | Maintenance bypass breaker |
| UOB | Unit output breaker |
| BF2 | Backfeed protection switch |

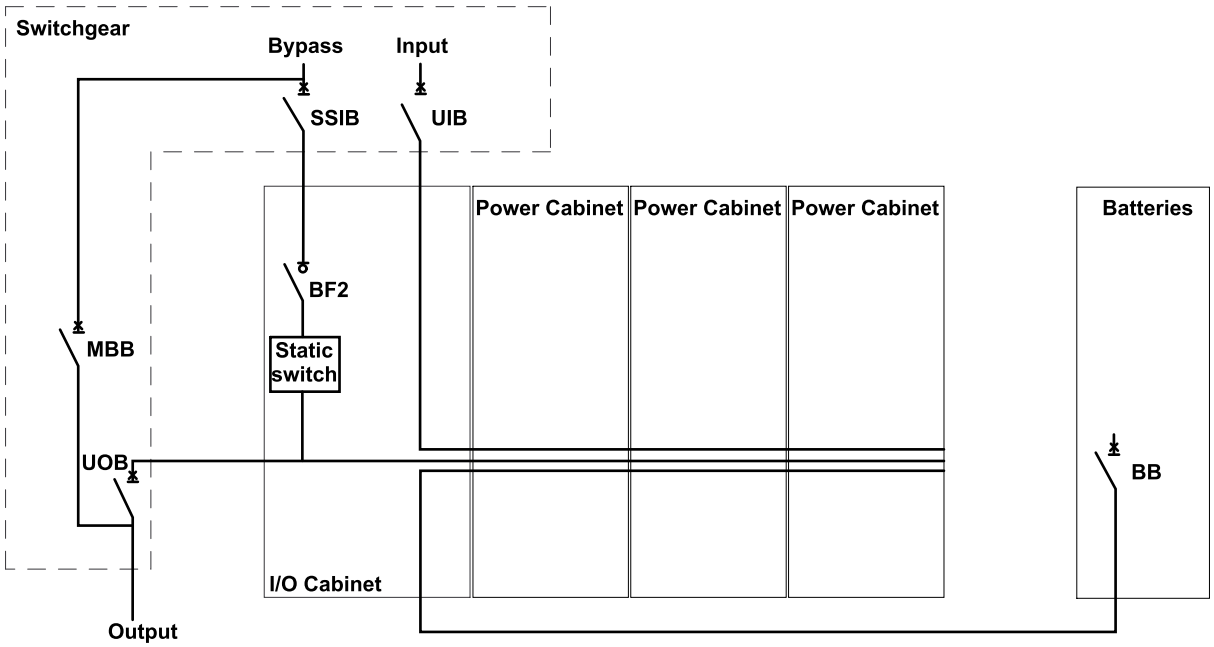
## Overview of UPSs with 1250 kW I/O Cabinet - Single Utility/Mains

The illustration shows a 750 kW UPS. The principle is the same for the other UPSs with the 1250 kW I/O cabinet.



## Overview of UPSs with 1250 kW I/O Cabinet - Dual Utility/Mains

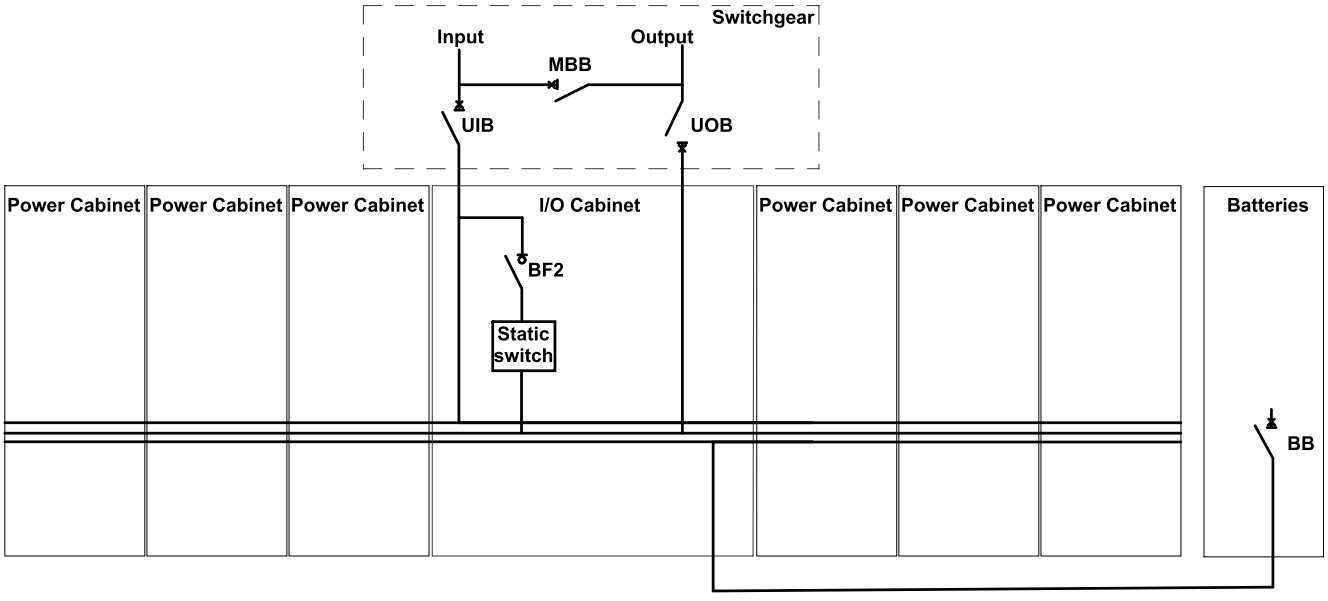
The illustration shows a 750 kW UPS. The principle is the same for the other UPSs with the 1250 kW I/O cabinet.




## Overview of UPSs with 1500 kW I/O Cabinet – Single Utility/Mains

The illustration shows a 1500 kW UPS. The principle is the same for the other UPSs with the 1500 kW I/O cabinet.

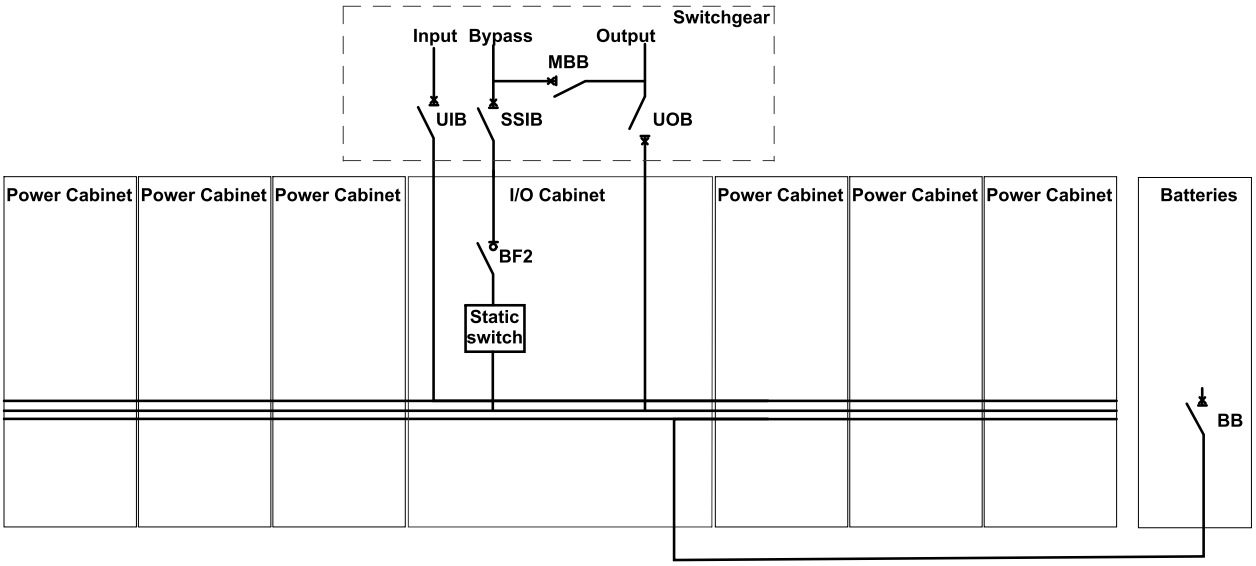
### Galaxy VX 1500 kW UPS



## Overview of UPSs with 1500 kW I/O Cabinet – Dual Utility/Mains

The illustration shows a 1500 kW UPS. The principle is the same for the other UPSs with the 1500 kW I/O cabinet.

**Galaxy VX 1500 kW UPS**




# Input Power Factor

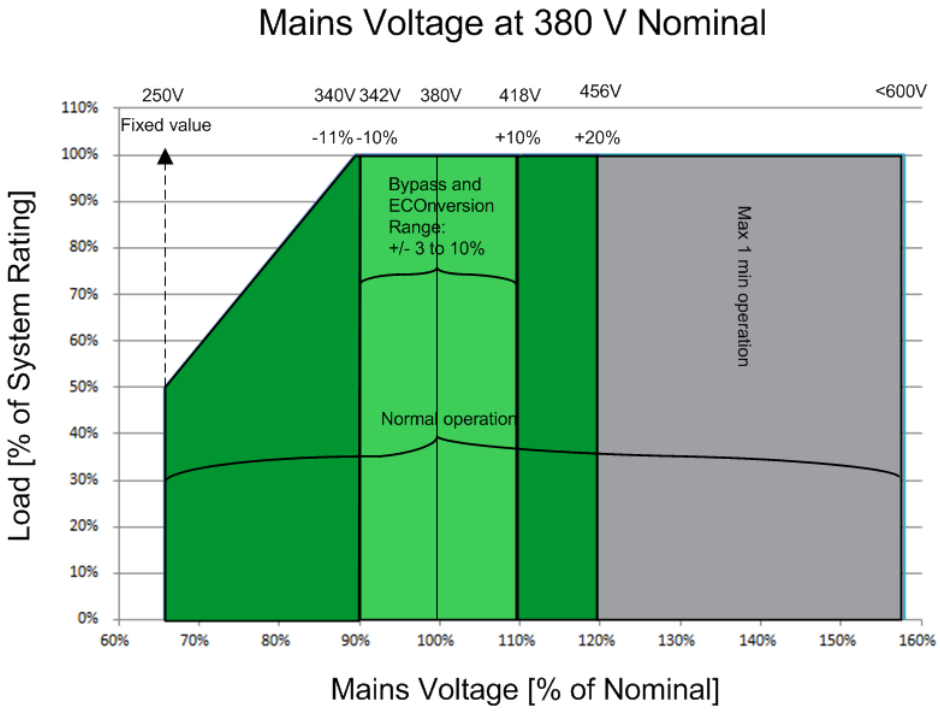
| | 500 kW | | | | 625 kW | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 50% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 75% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 100% load | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

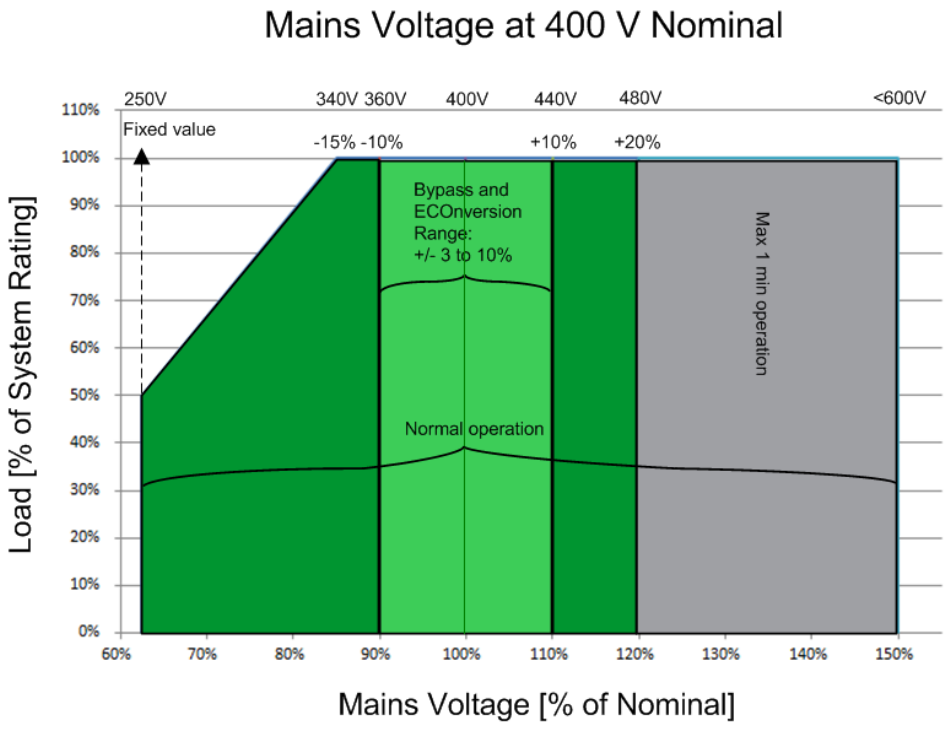
| | 750 kW | | | | 800 kW | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 50% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 75% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 100% load | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

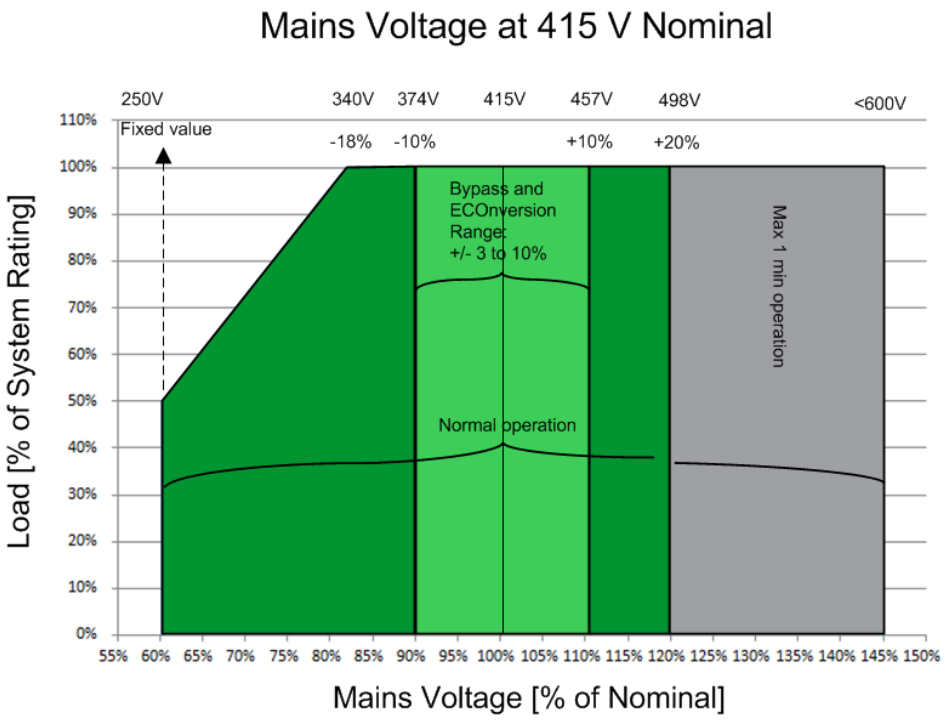
| | 1000 kW | | | | 1100 kW | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 50% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 75% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 100% load | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

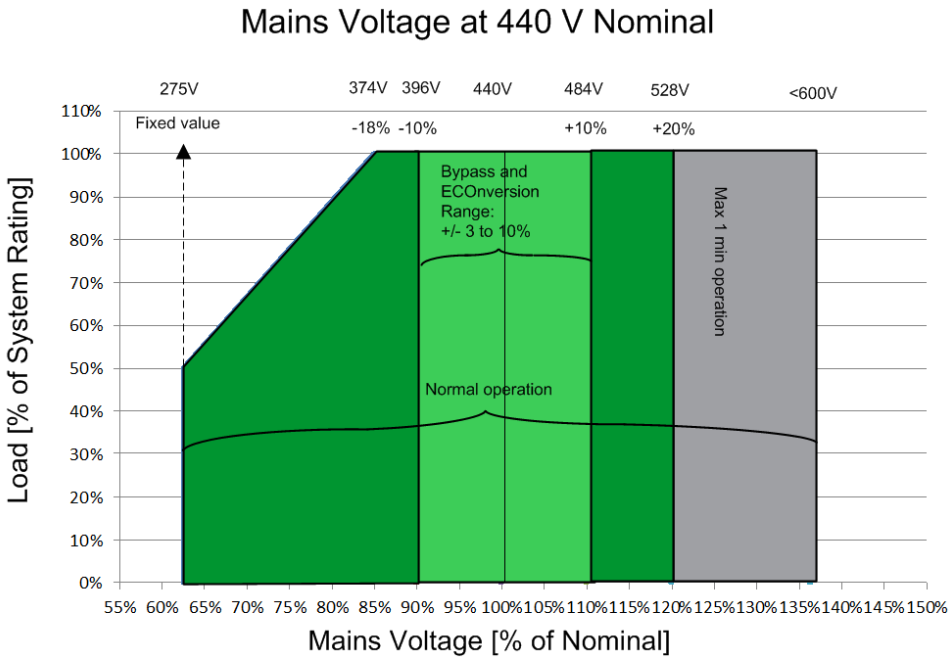
| | 1250 kW | | | | 1500 kW | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 | 0.98 |
| 50% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 75% load | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 | 0.99 |
| 100% load | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 | 1.00 |

## Input Voltage Window



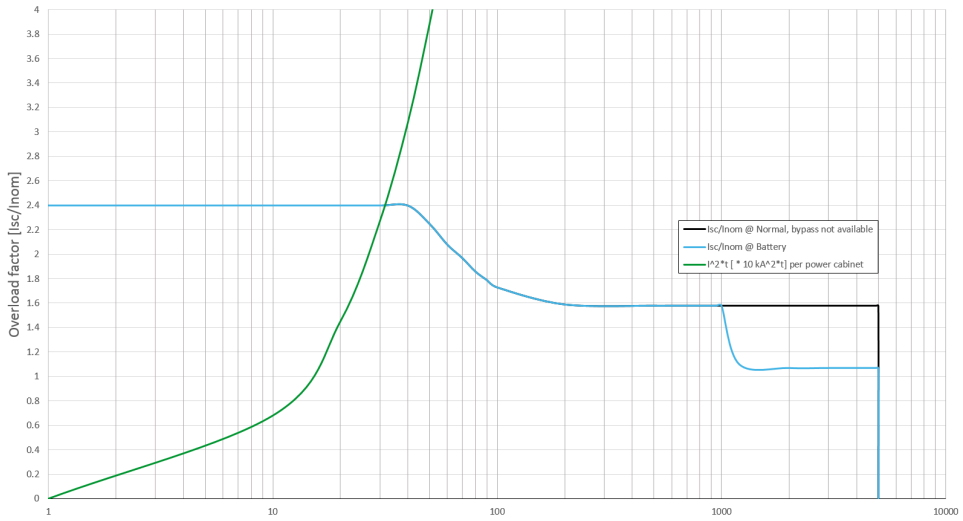




Mains Voltage at 415 V Nominal
250V
340V
374V
415V
457V
498V
<600V
Fixed value
-18%
-10%
+10%
+20%
Bypass and ECOnversion Range: +/- 3 to 10%
Max 1 min operation
Normal operation
Load [% of System Rating]
Mains Voltage [% of Nominal]

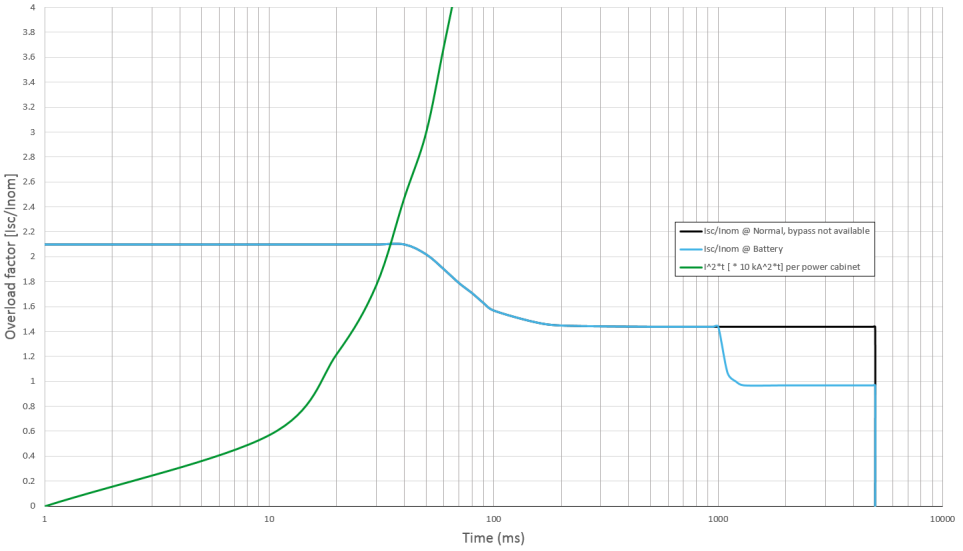

Mains Voltage at 440 V Nominal
275V
374V
396V
440V
484V
528V
<600V
Fixed value
-18%
-10%
+10%
+20%
Bypass and ECOnversion Range: +/- 3 to 10%
Max 1 min operation
Normal operation
Load [% of System Rating]
Mains Voltage [% of Nominal]

# Inverter Short-Circuit Capabilities (Bypass not Available)

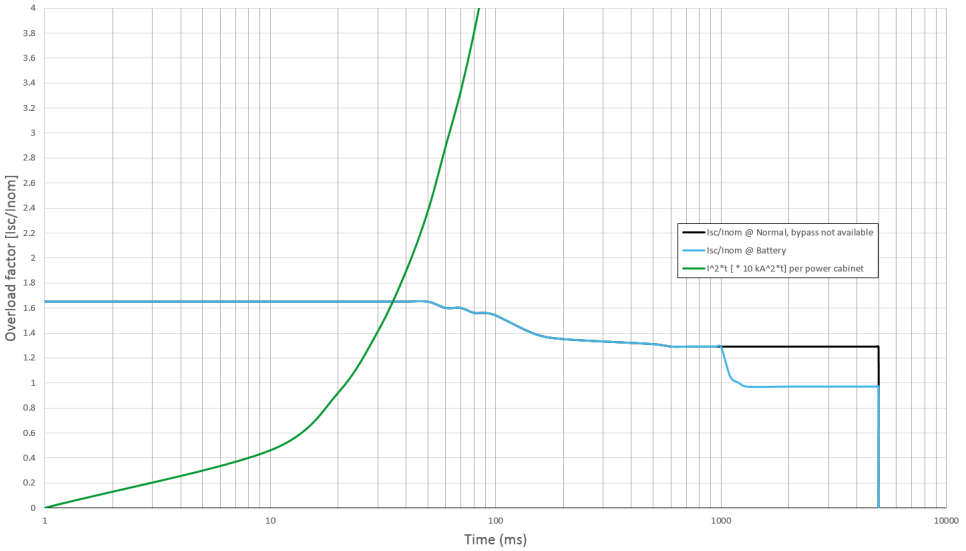
## IK1 – Short-Circuit between a Phase and Neutral




## IK2 – Short-Circuit between Two Phases




## IK3 – Short-Circuit between All Three Phases



# Efficiency for UPSs with 1250 kW I/O Cabinet

## Efficiency for a 500 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 96.0% | 95.2% | 95.2% | 95.2% | 97.4% | 96.2% | 96.3% | 96.8% |
| 50% load | 96.1% | 95.7% | 95.7% | 95.8% | 99.0% | 98.7% | 98.8% | 98.6% |
| 75% load | 95.8% | 95.6% | 95.6% | 95.8% | 99.0% | 98.8% | 98.8% | 98.8% |
| 100% load | 95.6% | 95.5% | 95.6% | 95.8% | 99.2% | 99.0% | 99.0% | 99.0% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 99.0% | 98.3% | 98.4% | 97.7% | 96.7% | 96.5% | 96.6% | 96.6% |
| 50% load | 98.4% | 98.5% | 98.1% | 98.2% | 96.7% | 96.7% | 96.5% | 96.5% |
| 75% load | 99.0% | 98.9% | 98.9% | 98.8% | 94.4% | 96.4% | 96.3% | 96.3% |
| 100% load | 99.0% | 99.2% | 99.2% | 99.1% | 96.0% | 95.8% | 95.5% | 95.5% |

## Efficiency for a 625 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 95.1% | 95.2% | 95.2% | 95.2% | 98.0% | 97.6% | 97.5% | 97.5% |
| 50% load | 95.7% | 95.7% | 95.7% | 96.0% | 98.9% | 98.7% | 98.6% | 98.6% |
| 75% load | 95.6% | 95.6% | 95.6% | 96.0% | 99.0% | 98.8% | 98.8% | 98.8% |
| 100% load | 94.9% | 95.5% | 95.6% | 95.9% | 98.9% | 98.8% | 98.8% | 98.9% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 97.1% | 97.1% | 98.0% | 97.6% | 96.9% | 96.9% | 96.6% | 96.6% |
| 50% load | 98.4% | 98.4% | 98.4% | 98.4% | 96.3% | 96.4% | 96.5% | 96.5% |
| 75% load | 98.7% | 98.7% | 98.7% | 98.7% | 96.3% | 96.3% | 96.3% | 96.3% |
| 100% load | 98.8% | 98.8% | 98.8% | 98.9% | 96.1% | 96.2% | 95.5% | 95.5% |

## Efficiency for a 750 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 95.7% | 95.4% | 95.4% | 95.4% | 98.4% | 98.0% | 97.9% | 97.9% |
| 50% load | 95.8% | 95.8% | 95.9% | 96.0% | 98.9% | 98.7% | 98.6% | 98.6% |
| 75% load | 95.3% | 95.4% | 95.7% | 95.9% | 99.0% | 98.8% | 98.8% | 98.8% |
| 100% load | 94.6% | 94.9% | 95.2% | 95.5% | 99.0% | 98.9% | 98.9% | 98.9% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 97.7% | 97.7% | 98.6% | 98.2% | 96.7% | 96.7% | 96.6% | 96.6% |
| 50% load | 98.5% | 98.5% | 98.5% | 98.5% | 96.6% | 96.7% | 96.6% | 96.6% |
| 75% load | 98.7% | 98.7% | 98.7% | 98.7% | 96.1% | 96.2% | 96.2% | 96.2% |
| 100% load | 98.8% | 98.8% | 98.8% | 98.9% | 95.7% | 95.8% | 95.8% | 95.8% |

## Efficiency for a 800 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 95.1% | 95.1% | 95.2% | 95.2% | 97.8% | 97.8% | 98.7% | 98.7% |
| 50% load | 95.8% | 95.9% | 96.0% | 96.1% | 98.6% | 98.6% | 98.9% | 98.9% |
| 75% load | 95.7% | 95.8% | 96.0% | 96.1% | 98.9% | 98.9% | 98.9% | 98.9% |
| 100% load | 95.4% | 95.5% | 95.8% | 96.1% | 98.9% | 99.0% | 99.0% | 99.0% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 97.5% | 97.4% | 97.5% | 97.5% | 96.2% | 96.9% | 97.0% | 97.0% |
| 50% load | 98.5% | 98.5% | 98.5% | 98.5% | 96.4% | 96.9% | 96.6% | 96.6% |
| 75% load | 98.8% | 98.8% | 98.8% | 98.8% | 96.3% | 96.9% | 96.8% | 96.8% |
| 100% load | 98.9% | 98.9% | 99.0% | 99.1% | 96.0% | 96.4% | 96.3% | 96.3% |

## Efficiency for a 1000 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 95.9% | 95.6% | 95.6% | 95.6% | 98.6% | 98.2% | 98.1% | 98.1% |
| 50% load | 96.0% | 96.0% | 96.1% | 96.1% | 99.1% | 98.9% | 98.8% | 98.8% |
| 75% load | 95.5% | 95.6% | 95.9% | 95.9% | 99.2% | 99.0% | 99.0% | 99.0% |
| 100% load | 94.8% | 95.1% | 95.4% | 95.4% | 99.2% | 99.1% | 99.1% | 99.1% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 97.9% | 97.9% | 98.8% | 98.4% | 96.8% | 96.8% | 96.7% | 96.7% |
| 50% load | 98.7% | 98.7% | 98.7% | 98.7% | 96.7% | 96.8% | 96.7% | 96.7% |
| 75% load | 98.9% | 98.9% | 98.9% | 98.9% | 96.2% | 96.3% | 96.3% | 96.3% |
| 100% load | 99.0% | 99.0% | 99.0% | 99.1% | 95.8% | 95.9% | 95.9% | 95.9% |

## Efficiency for a 1100 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 95.6% | 95.6% | 95.7% | 95.6% | 98.1% | 98.2% | 98.2% | 0.0% |
| 50% load | 95.8% | 96.0% | 96.1% | 96.1% | 98.8% | 98.8% | 98.8% | 0.0% |
| 75% load | 95.5% | 95.8% | 95.9% | 95.9% | 99.0% | 99.1% | 99.1% | 0.0% |
| 100% load | 94.9% | 95.3% | 95.4% | 95.4% | 99.0% | 99.0% | 99.0% | 99.1% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 97.8% | 97.8% | 97.9% | 98.1% | 96.4% | 96.2% | 96.3% | 96.7% |
| 50% load | 98.7% | 98.8% | 98.7% | 98.8% | 96.6% | 96.6% | 96.4% | 96.7% |
| 75% load | 98.8% | 98.8% | 98.8% | 99.0% | 94.5% | 96.5% | 96.4% | 96.3% |
| 100% load | 98.6% | 98.9% | 98.9% | 99.1% | 96.0% | 95.8% | 95.5% | 95.9% |

## Efficiency for a 1250 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 95.6% | 95.6% | 95.7% | 95.7% | 98.1% | 98.2% | 98.2% | 98.3% |
| 50% load | 95.8% | 96.0% | 96.1% | 96.3% | 98.8% | 98.8% | 98.8% | 98.9% |
| 75% load | 95.4% | 95.7% | 95.8% | 96.0% | 98.9% | 99.0% | 99.0% | 99.1% |
| 100% load | 94.8% | 95.2% | 95.3% | 95.7% | 99.0% | 99.0% | 99.0% | 99.1% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 97.9% | 97.9% | 98.0% | 98.0% | 96.7% | 96.5% | 96.6% | 96.6% |
| 50% load | 98.7% | 98.8% | 98.7% | 98.7% | 96.7% | 96.7% | 96.5% | 96.5% |
| 75% load | 98.9% | 98.9% | 98.9% | 99.0% | 96.4% | 96.4% | 96.3% | 96.3% |
| 100% load | 98.7% | 99.0% | 99.0% | 99.1% | 96.0% | 95.8% | 95.5% | 95.5% |

# Efficiency for UPSs with 1500 kW I/O Cabinet

## Efficiency for a 500 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 96.1% | 96.3% | 96.3% | 96.3% | 98.7% | 98.7% | 98.7% | 98.6% |
| 50% load | 96.3% | 96.5% | 96.5% | 96.5% | 99.1% | 99.1% | 99.1% | 99.1% |
| 75% load | 96.0% | 96.2% | 96.2% | 96.2% | 99.1% | 99.1% | 99.1% | 99.2% |
| 100% load | 95.2% | 95.4% | 95.4% | 95.8% | 99.2% | 99.2% | 99.2% | 99.2% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 98.5% | 98.5% | 98.5% | 98.4% | 95.9% | 95.9% | 95.9% | 95.9% |
| 50% load | 99.1% | 99.1% | 99.1% | 99.1% | 96.4% | 96.4% | 96.4% | 96.4% |
| 75% load | 99.1% | 99.1% | 99.1% | 99.2% | 96.0% | 96.0% | 96.0% | 96.0% |
| 100% load | 99.1% | 99.2% | 99.2% | 99.2% | 95.6% | 95.6% | 95.6% | 95.6% |

## Efficiency for a 750 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 96.0% | 96.2% | 96.2% | 96.2% | 98.6% | 98.6% | 98.6% | 98.6% |
| 50% load | 96.1% | 96.3% | 96.3% | 96.4% | 99.0% | 99.0% | 99.0% | 99.1% |
| 75% load | 95.7% | 95.9% | 95.9% | 96.1% | 99.1% | 99.1% | 99.1% | 99.2% |
| 100% load | 95.0% | 95.2% | 95.2% | 95.6% | 99.1% | 99.1% | 99.1% | 99.2% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 98.5% | 98.5% | 98.5% | 98.4% | 95.9% | 95.9% | 95.9% | 95.9% |
| 50% load | 99.0% | 99.0% | 99.0% | 99.0% | 96.4% | 96.4% | 96.4% | 96.4% |
| 75% load | 99.1% | 99.1% | 99.1% | 99.2% | 96.0% | 96.0% | 96.0% | 96.0% |
| 100% load | 99.1% | 99.1% | 99.1% | 99.2% | 95.6% | 95.6% | 95.6% | 95.6% |

## Efficiency for a 1000 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 95.9% | 96.1% | 96.1% | 96.2% | 98.6% | 98.6% | 98.6% | 98.6% |
| 50% load | 96.0% | 96.2% | 96.2% | 96.6% | 99.0% | 99.0% | 99.0% | 99.1% |
| 75% load | 95.4% | 95.6% | 95.6% | 96.3% | 99.1% | 99.1% | 99.1% | 99.2% |
| 100% load | 94.8% | 95.0% | 95.0% | 95.8% | 99.1% | 99.1% | 99.1% | 99.2% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 98.5% | 98.5% | 98.5% | 98.3% | 95.9% | 96.0% | 95.9% | 95.9% |
| 50% load | 99.0% | 99.0% | 99.0% | 99.0% | 96.4% | 96.4% | 96.4% | 96.4% |
| 75% load | 99.1% | 99.1% | 99.1% | 99.1% | 96.0% | 96.1% | 96.0% | 96.0% |
| 100% load | 99.1% | 99.1% | 99.1% | 99.1% | 95.6% | 95.6% | 95.6% | 95.6% |

## Efficiency for a 1250 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 96.0% | 96.2% | 96.2% | 96.2% | 98.8% | 98.8% | 98.8% | 98.8% |
| 50% load | 96.1% | 96.3% | 96.3% | 96.5% | 99.1% | 99.1% | 99.1% | 99.2% |
| 75% load | 95.6% | 95.8% | 95.8% | 96.1% | 99.2% | 99.2% | 99.2% | 99.3% |
| 100% load | 95.0% | 95.2% | 95.2% | 95.6% | 99.3% | 99.3% | 99.3% | 99.3% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 98.6% | 98.6% | 98.6% | 98.4% | 95.9% | 95.9% | 95.9% | 95.9% |
| 50% load | 99.1% | 99.1% | 99.1% | 99.1% | 96.4% | 96.4% | 96.4% | 96.4% |
| 75% load | 99.2% | 99.2% | 99.2% | 99.2% | 96.0% | 96.0% | 96.0% | 96.0% |
| 100% load | 99.2% | 99.2% | 99.2% | 99.2% | 95.6% | 95.6% | 95.6% | 95.6% |

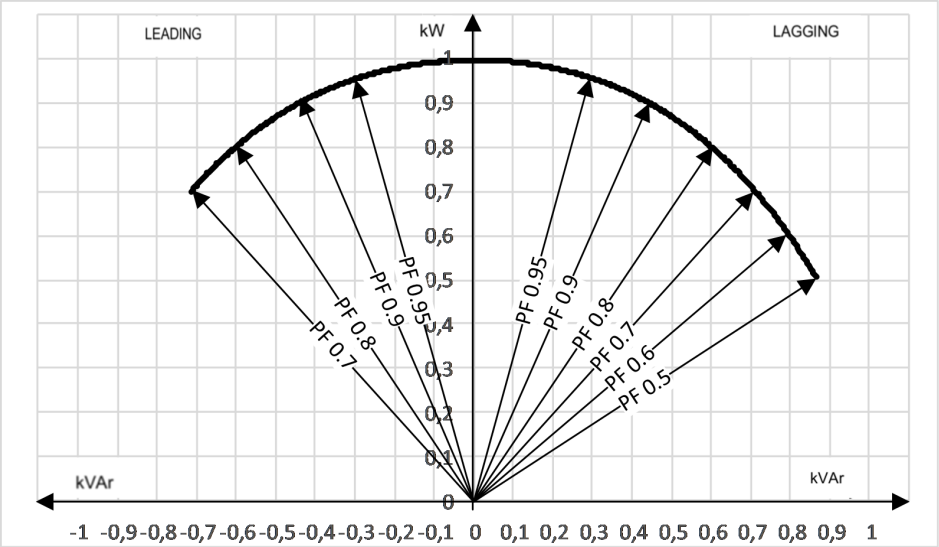
## Efficiency for a 1500 kW UPS

| | Normal operation | | | | ECO mode | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 96.0% | 96.2% | 96.2% | 96.2% | 98.8% | 98.8% | 98.8% | 98.8% |
| 50% load | 96.1% | 96.3% | 96.3% | 96.6% | 99.1% | 99.1% | 99.1% | 99.2% |
| 75% load | 95.6% | 95.8% | 95.8% | 96.2% | 99.2% | 99.2% | 99.2% | 99.3% |
| 100% load | 95.0% | 95.2% | 95.2% | 95.6% | 99.3% | 99.3% | 99.3% | 99.3% |

| | ECOnversion | | | | Battery operation | | | |
|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **380** | **400** | **415** | **440 V** |
| 25% load | 98.6% | 98.6% | 98.6% | 98.7% | 95.9% | 96.1% | 95.9% | 95.9% |
| 50% load | 99.1% | 99.1% | 99.1% | 99.2% | 96.4% | 96.4% | 96.4% | 96.4% |
| 75% load | 99.2% | 99.2% | 99.2% | 99.3% | 96.0% | 96.0% | 96.0% | 96.0% |
| 100% load | 99.2% | 99.2% | 99.2% | 99.3% | 95.6% | 95.6% | 95.6% | 95.6% |

# Derating Due to Load Power Factor

0.7 leading to 0.5 lagging without derating.




# Batteries

## Battery Runtimes for Li-Ion Battery Cabinets LIBATTSMGGIEC

**NOTE:** Please allow for a tolerance of ±10% at the beginning of life.

The estimated battery runtimes are based on an environment with an ambient temperature of 23 °C (75 °F).

### 500 kW UPS

| Number of LIBATTSMGGIEC cabinets | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| 25% load | 46:30 | 62:30 | 78:30 | 94:30 | 110:00 | 125:00 | 140:00 | 155:00 | 170:00 | 185:00 |
| 50% load | 23:00 | 31:00 | 39:00 | 47:00 | 55:00 | 63:00 | 71:00 | 79:00 | 87:00 | 95:00 |
| 75% load | 14:30 | 20:00 | 25:30 | 31:00 | 36:00 | 41:30 | 47:00 | 52:00 | 57:30 | 63:00 |
| 100% load | 10:30 | 14:30 | 18:30 | 22:30 | 27:00 | 31:00 | 35:00 | 39:00 | 43:00 | 46:30 |

### 625 kW UPS

| Number of LIBATTSMGGIEC cabinets | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|---|
| 25% load | 37:00 | 49:30 | 62:30 | 75:00 | 88:00 | 100:00 | 110:00 | 125:00 | 135:00 | 150:00 |
| 50% load | 18:00 | 24:30 | 31:00 | 37:30 | 43:30 | 50:00 | 56:30 | 63:00 | 69:30 | 76:00 |
| 75% load | 11:30 | 16:00 | 20:00 | 24:30 | 29:00 | 33:00 | 37:30 | 41:30 | 46:00 | 50:00 |
| 100% load | 5:05[1] | 11:30 | 14:30 | 18:00 | 21:00 | 24:30 | 27:30 | 31:00 | 34:00 | 37:00 |

1. Only partial discharge

### 750 kW UPS

| Number of LIBATTSMGGIEC cabinets | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|
| 25% load | 41:30 | 52:00 | 63:00 | 73:30 | 84:00 | 94:30 | 105:00 | 115:00 | 125:00 |
| 50% load | 20:00 | 25:30 | 31:00 | 36:30 | 41:30 | 47:00 | 52:30 | 57:30 | 63:00 |
| 75% load | 13:00 | 16:30 | 20:00 | 23:30 | 27:30 | 31:00 | 34:30 | 38:00 | 41:30 |
| 100% load | 9:30[2] | 12:00 | 14:30 | 17:30 | 20:00 | 22:30 | 25:30 | 28:00 | 31:00 |

### 800 kW UPS

| Number of LIBATTSMGGIEC cabinets | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|---|
| 25% load | 39:00 | 49:00 | 59:00 | 69:00 | 79:00 | 88:30 | 98:30 | 105:00 | 115:00 |
| 50% load | 19:00 | 24:00 | 29:00 | 34:00 | 39:00 | 44:00 | 49:00 | 54:30 | 59:30 |
| 75% load | 12:00 | 15:30 | 19:00 | 22:00 | 25:30 | 29:00 | 32:30 | 35:30 | 39:00 |
| 100% load | 7:45[2] | 11:00 | 14:00 | 16:30 | 19:00 | 21:30 | 24:00 | 26:30 | 29:00 |

### 1000 kW UPS

| Number of LIBATTSMGGIEC cabinets | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|
| 25% load | 39:00 | 47:00 | 55:00 | 63:00 | 71:00 | 79:00 | 87:00 | 95:00 |
| 50% load | 19:00 | 23:00 | 27:00 | 31:00 | 35:00 | 39:00 | 43:00 | 47:00 |
| 75% load | 12:00 | 15:00 | 17:30 | 20:00 | 23:00 | 25:30 | 28:00 | 31:00 |
| 100% load | 7:35[2] | 10:30 | 12:30 | 14:30 | 16:30 | 18:30 | 20:30 | 22:30 |

### 1100 kW UPS

| Number of LIBATTSMGGIEC cabinets | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|
| 25% load | 35:00 | 42:30 | 50:00 | 57:00 | 64:30 | 71:30 | 79:00 | 86:00 |
| 50% load | 17:00 | 21:00 | 24:30 | 28:00 | 32:00 | 35:30 | 39:00 | 43:00 |
| 75% load | 11:00 | 13:30 | 16:00 | 18:00 | 20:30 | 23:00 | 25:30 | 28:00 |
| 100% load | 1:00[2] | 9:50[2] | 11:30 | 13:30 | 15:00 | 17:00 | 19:00 | 20:30 |

### 1250 kW UPS

| Number of LIBATTSMGGIEC cabinets | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|
| 25% load | 37:30 | 43:30 | 50:00 | 56:30 | 63:00 | 69:30 | 76:00 |
| 50% load | 18:00 | 21:30 | 24:30 | 28:00 | 31:00 | 34:00 | 37:30 |
| 75% load | 11:30 | 13:30 | 16:00 | 18:00 | 20:00 | 22:30 | 24:30 |
| 100% load | 5:05[2] | 10:00 | 11:30 | 13:00 | 14:30 | 16:30 | 18:00 |

2. Only partial discharge

### 1500 kW UPS

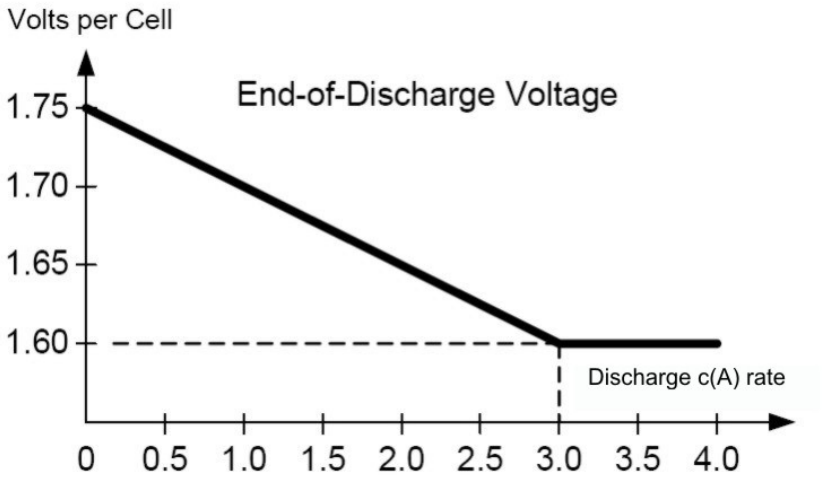
| Number of LIBATTSMGGIEC cabinets | 7 | 8 | 9 | 10 | 11 | 12 | 13 |
|---|---|---|---|---|---|---|---|
| 25% load | 36:30 | 41:30 | 47:00 | 52:30 | 57:30 | 63:00 | 68:30 |
| 50% load | 17:30 | 20:00 | 23:00 | 25:30 | 28:30 | 31:00 | 33:30 |
| 75% load | 11:00 | 13:00 | 14:30 | 16:30 | 18:30 | 20:00 | 22:00 |
| 100% load | 2:25[3] | 9:30[3] | 10:30 | 12:00 | 13:30 | 14:30 | 16:00 |

### 1500 kW UPS

| Number of LIBATTSMGGIEC cabinets | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
|---|---|---|---|---|---|---|---|
| 25% load | 73:30 | 79:00 | 84:00 | 89:30 | 94:30 | 100:00 | 105:00 |
| 50% load | 36:30 | 39:00 | 41:30 | 44:30 | 47:00 | 49:30 | 52:30 |
| 75% load | 23:30 | 25:30 | 27:00 | 29:00 | 30:30 | 32:30 | 34:30 |
| 100% load | 17:30 | 18:30 | 20:00 | 21:30 | 22:30 | 24:00 | 25:30 |

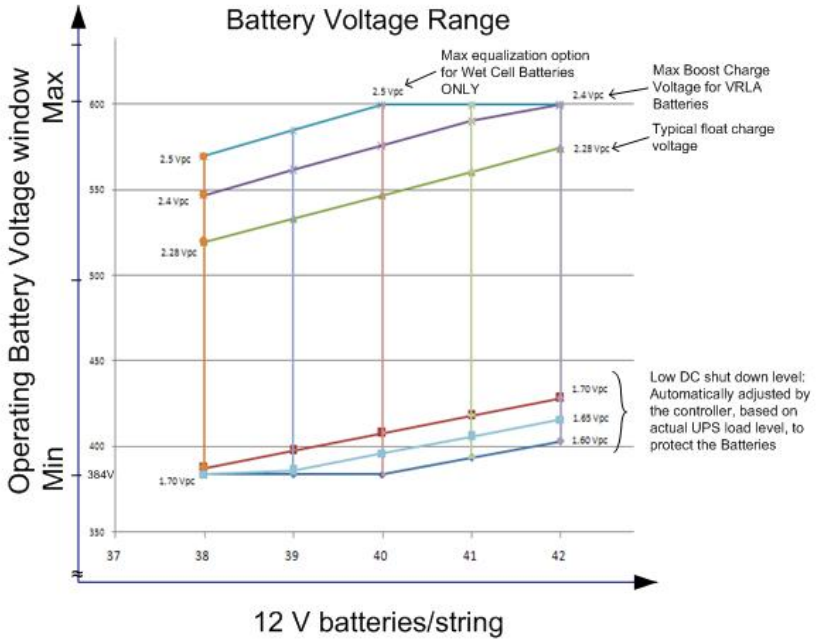
## End of Discharge Voltage

The voltage is 1.6 to 1.75 per cell depending on discharge ratio.




3. Only partial discharge

## Battery Voltage Range




# Compliance

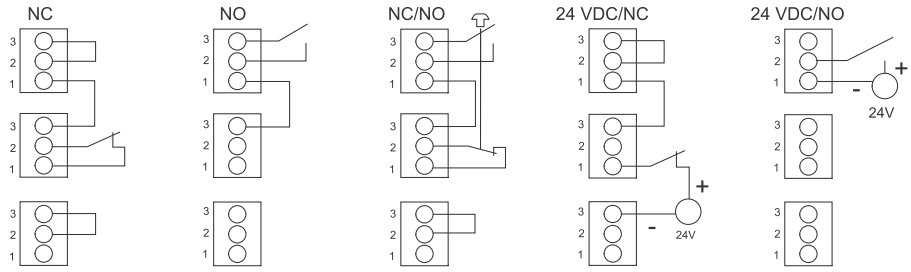
| | |
|---|---|
| Safety | IEC 62040-1: 2008-06, 1st edition Uninterruptible Power Systems (UPS) - Part 1: General and safety requirements for UPS<br><br>IEC 62040-1: 2013-01, 1st edition amendment 1 |
| EMC/EMI/RFI | IEC 62040-2: 2016, 3rd edition Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements C2 |
| Performance | IEC 62040-3: 2011-03, 2nd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements |
| Environmental | IEC 62040-4: 2013-04, 1st edition Uninterruptible Power Systems (UPS) - Part 4: Environmental aspects – Requirements and reporting |
| Markings | CE, C-Tick |
| Transportation | ISTA 2B |
| Seismic | OSHPD, IBC2012 and CBC2013 to $S_{DS}$ = 1.83 g |

# Communication and Management

| | |
|---|---|
| Local Area Network | 100 Mbps |
| Extensions | Two optional Network Management Cards |
| MODBUS | MODBUS TCP/IP |
| Output relays | 6 configurable |
| Input dry contacts | 5 configurable |
| Standard control panel | 7–inch touchscreen display |
| Audible alarm | Yes |
| Emergency Power Off (EPO) | Options:<br>• Normally Open (NO) |

| | |
|---|---|
| | • Normally Closed (NC)<br>• External 24 VDC SELV |
| External synchronization | Yes |
| Battery monitoring | Yes — string level monitoring |

## EPO Connections



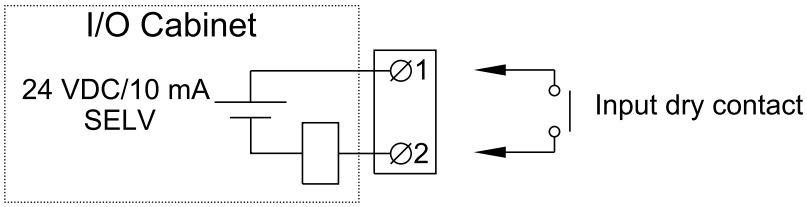
# Overview of Input Contacts and Output Relays

## Input Contacts

Do not connect any circuit to the input contacts unless it can be confirmed that the circuit is Class 2/SELV.

All circuits connected must have the same 0 V reference.

The switch SW5500 on 0P6548 is used to select between internal SELV supply for inputs (standard setting) and external supply[4]. If external supply is selected, the supply must be connected to J5530.

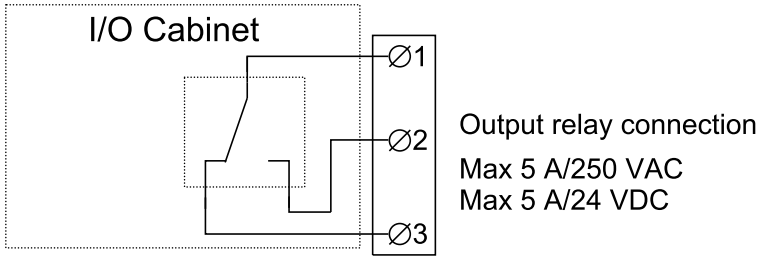



| Name | Description | Location |
|---|---|---|
| IN 1 (Contact 1) | Configurable input contact | 0P6548 terminal J5502[5] |
| IN 2 (Contact 2) | Configurable input contact | 0P6548 terminal J5503[5] |
| IN 3 (Contact 3) | Configurable input contact | 0P6548 terminal J5504[5] |
| IN 4 (Contact 4) | Configurable input contact | 0P6548 terminal J5505[5] |
| IN 5 (Contact 5) | Configurable input contact | 0P6548 terminal J5510[5] |
| IN 6 | UOB redundant AUX contact | 0P6548 terminal J5509[5] |
| IN 7 | Transformer temperature switch | 0P6548 terminal J5508[5] |
| IN 8 | External bonding contact | 0P6548 terminal J5507[5] |
| IN 9 | Forced external synchronization input | 0P6548 terminal J5506[5] |
| IN 10 | External synchronization requested | 0P6548 terminal J5511[5] |
| IN 11 | Use static bypass standby | 0P6548 terminal J5512[5] |
| IN 14 | MegaTie | 0P6552 terminal J9027[5] |

## Output Relays

**NOTE:** Maximum 250 VAC 5 A must be connected to the output relays.

All external circuitry must be fused with maximum 5 A fast acting fuses.




| Name | Description | Location |
|---|---|---|
| OUT 1 (Relay 1) | Configurable output relay | 0P6547 terminal J4939 |
| OUT 2 (Relay 2) | Configurable output relay | 0P6547 terminal J4940 |
| OUT 3 (Relay 3) | Configurable output relay | 0P6547 terminal J4941 |

4. An external supply is useful in parallel systems where inputs are connected between different UPSs. This is to have a common reference and to avoid cross currents.
5. Class 2/SELV wiring

| Name | Description | Location |
|---|---|---|
| OUT 4 | Forced external synchronization output | 0P6548 terminal J5520[6] |
| OUT 5 | MegaTie | 0P6548 terminal J5521[6] |
| OUT 6 | External synchronization requested output | 0P6548 terminal J5522[6] |
| OUT 7 | UPS in inverter ON | 0P6548 terminal J5523[6] |
| OUT 8 (Relay 4) | Configurable output relay | 0P6548 terminal J5524[6] |
| OUT 9 (Relay 5) | Configurable output relay | 0P6548 terminal J5525[6] |
| OUT 10 (Relay 6) | Configurable output relay | 0P6548 terminal J5528[6] |
| OUT 14 | Bonding contactor | 0P6552 terminal J9029[6] |

**NOTE:** Refer to the operation manual for configuration options.

6. Class 2/SELV wiring

# Facility Planning

## Specifications for 500 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [7]<br>UL: L1, L2, L3 + G [8] | | | | |
| | Input voltage range (V)[9] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 800 | 760 | 731 | 685 | 633 |
| | Maximum input current (A)[10] | 886 | 851 | 819 | 767 | 728 |
| | Input current limitation (A) | 890 | | | 832 | 760 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [11]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 767 | 729 | 703 | 663 | 606 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 9680 (1250 kW I/O)<br>16245 (1500 kW I/O) | | | | 9165 (1250 kW I/O)<br>16245 (1500 kW I/O) |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |

7. TN, TT, and IT power distribution systems are supported.
8. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
9. The system can operate at 600 V for 1 minute.
10. At nominal input voltage and full charge.
11. TN, TT, and IT power distribution systems with no earthed line conductors are supported.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| **Output Specifications** | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[12] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | Normal operation: 150% for 1 minute, 125% for 10 minutes<br>Battery operation: 115% for 1 minute<br>Bypass operation: 110%[13] continuous, 1000% for 60 milliseconds for systems with 1250 kW I/O cabinet and 100 milliseconds for systems with 1500 kW I/O cabinet | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 760 | 722 | 696 | 656 | 601 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |
| **Battery Specifications** | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 60 at 100% load, 175 at <80% load | | | | 75 at 100% load, 200 at 80% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 1090 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 1362 | | | | |
| | Maximum battery backup time | Unlimited | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

12. Per NEC 250.30.
13. 125% for 480 V.

# Specifications for 625 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [14]<br>UL: L1, L2, L3 + G [15] | | | | |
| | Input voltage range (V)[16] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 1001 | 950 | 914 | 853 | 791 |
| | Maximum input current (A)[17] | 1107 | 1063 | 1024 | 956 | 910 |
| | Input current limitation (A) | 1113 | | | 1040 | 950 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [18]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 959 | 911 | 878 | 828 | 757 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 9680 (1250 kW I/O) | | | | 9165 (1250 kW I/O) |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |
| Output Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[19] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | Normal operation: 150% for 1 minute, 125% for 10 minutes<br>Battery operation: 115% for 1 minute<br>Bypass operation: 110%[20] continuous, 1000% for 60 milliseconds for systems with 1250 kW I/O cabinet and 100 milliseconds for systems with 1500 kW I/O cabinet | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 950 | 902 | 870 | 820 | 752 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |

14. TN, TT, and IT power distribution systems are supported.
15. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
16. The system can operate at 600 V for 1 minute.
17. At nominal input voltage and full charge.
18. TN, TT, and IT power distribution systems with no earthed line conductors are supported.
19. Per NEC 250.30.
20. 125% for 480 V.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Battery Specifications | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 75 at 100% load, 218.75 at <80% load | | | | 93.75 at 100% load, 250 at 80% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 1362 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 1703 | | | | |
| | Maximum battery backup time | Unlimited | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

# Specifications for 750 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [21]<br>UL: L1, L2, L3 + G [22] | | | | |
| | Input voltage range (V)[23] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 1201 | 1139 | 1097 | 1029 | 950 |
| | Maximum input current (A)[24] | 1328 | 1276 | 1229 | 1153 | 1092 |
| | Input current limitation (A) | 1335 | | | 1248 | 1140 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [25]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 1151 | 1093 | 1054 | 994 | 909 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 9680 (1250 kW I/O)<br>16245 (1500 kW I/O) | | | | 9165 (1250 kW I/O)<br>16245 (1500 kW I/O) |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |
| Output Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[26] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | Normal operation: 150% for 1 minute, 125% for 10 minutes<br>Battery operation: 115% for 1 minute<br>Bypass operation: 110%[27] continuous, 1000% for 60 milliseconds for systems with 1250 kW I/O cabinet and 100 milliseconds for systems with 1500 kW I/O cabinet | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 1140 | 1083 | 1043 | 984 | 902 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |

21. TN, TT, and IT power distribution systems are supported.
22. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
23. The system can operate at 600 V for 1 minute.
24. At nominal input voltage and full charge.
25. TN, TT, and IT power distribution systems with no earthed line conductors are supported.
26. Per NEC 250.30.
27. 125% for 480 V.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Battery Specifications | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 90 at 100% load, 262 at <80% load | | | | 112.5 at 100% load, 300 at 80% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 1634 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 2043 | | | | |
| | Maximum battery backup time | Unlimited | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

# Specifications for 800 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [28]<br>UL: L1, L2, L3 + G [29] | | | | |
| | Input voltage range (V)[30] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 1281 | 1215 | 1170 | 1098 | 1013 |
| | Maximum input current (A)[31] | 1417 | 1361 | 1311 | 1230 | 1165 |
| | Input current limitation (A) | 1424 | | | 1331 | 1216 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [32]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 1228 | 1166 | 1124 | 1060 | 969 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 9680 (1250 kW I/O) | | | | 9165 (1250 kW I/O) |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |
| Output Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[33] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | Normal operation: 150% for 1 minute, 125% for 10 minutes<br>Battery operation: 115% for 1 minute<br>Bypass operation: 110%[34] continuous, 1000% for 60 milliseconds for systems with 1250 kW I/O cabinet and 100 milliseconds for systems with 1500 kW I/O cabinet | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 1216 | 1155 | 1113 | 1050 | 962 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |

28. TN, TT, and IT power distribution systems are supported.
29. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
30. The system can operate at 600 V for 1 minute.
31. At nominal input voltage and full charge.
32. TN, TT, and IT power distribution systems with no earthed line conductors are supported.
33. Per NEC 250.30.
34. 125% for 480 V.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Battery Specifications | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 96 at 100% load, 280 at <80% load | | | | 120 at 100% load, 320 at 80% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 1743 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 2179 | | | | |
| | Maximum battery backup time | Unlimited | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

# Specifications for 1000 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [35]<br>UL: L1, L2, L3 + G [36] | | | | |
| | Input voltage range (V)[37] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 1601 | 1519 | 1463 | 1370 | 1266 |
| | Maximum input current (A)[38] | 1771 | 1702 | 1638 | 1534 | 1456 |
| | Input current limitation (A) | 1780 | | | 1664 | 1520 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [39]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 1535 | 1458 | 1405 | 1325 | 1211 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 9680 (1250 kW I/O)<br>16245 (1500 kW I/O) | | | | 9165 (1250 kW I/O)<br>16245 (1500 kW I/O) |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |
| Output Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[40] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | Normal operation: 150% for 1 minute, 125% for 10 minutes<br>Battery operation: 115% for 1 minute<br>Bypass operation: 110%[41] continuous, 1000% for 60 milliseconds for systems with 1250 kW I/O cabinet and 100 milliseconds for systems with 1500 kW I/O cabinet | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 1519 | 1443 | 1391 | 1312 | 1203 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |

35. TN, TT, and IT power distribution systems are supported.
36. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
37. The system can operate at 600 V for 1 minute.
38. At nominal input voltage and full charge.
39. TN, TT, and IT power distribution systems with no earthed line conductors are supported.
40. Per NEC 250.30.
41. 125% for 480 V.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Battery Specifications | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 120 at 100% load, 350 at <80% load | | | | 150 at 100% load, 400 at <80% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 2179 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 2724 | | | | |
| | Maximum battery backup time | Unlimited | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

# Specifications for 1100 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [42]<br>UL: L1, L2, L3 + G [43] | | | | |
| | Input voltage range (V)[44] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 1761 | 1671 | 1609 | 1510 | 1393 |
| | Maximum input current (A)[45] | 1948 | 1872 | 1802 | 1691 | 1602 |
| | Input current limitation (A) | 1958 | | | 1830 | 1672 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [46]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 1688 | 1604 | 1546 | 1458 | 1332 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 9680 (1250 kW I/O) | | | | 9165 (1250 kW I/O) |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |
| Output Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[47] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | Normal operation: 150% for 1 minute, 125% for 10 minutes<br>Battery operation: 115% for 1 minute<br>Bypass operation: 110%[48] continuous, 1000% for 60 milliseconds for systems with 1250 kW I/O cabinet and 100 milliseconds for systems with 1500 kW I/O cabinet | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 1671 | 1588 | 1530 | 1443 | 1323 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |

42. TN, TT, and IT power distribution systems are supported.
43. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
44. The system can operate at 600 V for 1 minute.
45. At nominal input voltage and full charge.
46. TN, TT, and IT power distribution systems with no earthed line conductors are supported.
47. Per NEC 250.30.
48. 125% for 480 V.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Battery Specifications | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 132 at 100% load, 385 at <80% load | | | | 165 at 100% load, 440 at <80% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 2397 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 2996 | | | | |
| | Maximum battery backup time | Unlimited | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

# Specifications for 1250 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [49]<br>UL: L1, L2, L3 + G [50] | | | | |
| | Input voltage range (V)[51] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 2001 | 1899 | 1828 | 1716 | 1583 |
| | Maximum input current (A)[52] | 2214 | 2127 | 2048 | 1922 | 1820 |
| | Input current limitation (A) | 2225 | | | 2080 | 1900 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [53]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 1918 | 1822 | 1757 | 1657 | 1514 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 9680 (1250 kW I/O)<br>16245 (1500 kW I/O) | | | | 9165 (1250 kW I/O)<br>16245 (1500 kW I/O) |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |
| Output Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[54] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | Normal operation: 150% for 1 minute, 125% for 10 minutes<br>Battery operation: 115% for 1 minute<br>Bypass operation: 110%[55] continuous, 1000% for 60 milliseconds for systems with 1250 kW I/O cabinet and 100 milliseconds for systems with 1500 kW I/O cabinet | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 1899 | 1804 | 1739 | 1640 | 1504 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |

49. TN, TT, and IT power distribution systems are supported.
50. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
51. The system can operate at 600 V for 1 minute.
52. At nominal input voltage and full charge.
53. TN, TT, and IT power distribution systems with no earthed line conductors are supported.
54. Per NEC 250.30.
55. 125% for 480 V.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Battery Specifications | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 150 at 100% load, 437 at <80% load | | | | 187.5 at 100% load, 500 at <80% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 2724 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 3405 | | | | |
| | Maximum battery backup time | 1 hour | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

# Specifications for 1500 kW UPS

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Input Specifications | Connections | IEC: L1, L2, L3, PE [56]<br>UL: L1, L2, L3 + G [57] | | | | |
| | Input voltage range (V)[58] | 340-456 | 340-480 | 353-498 | 374-528 | 408-576 |
| | Frequency (Hz) | 40-70 | | | | |
| | Nominal input current (A) | 2401 | 2279 | 2194 | 2059 | 1899 |
| | Maximum input current (A)[59] | 2657 | 2552 | 2457 | 2306 | 2184 |
| | Input current limitation (A) | 2670 | | | 2496 | 2280 |
| | Total harmonic distortion (THDI) | <3% at 100% load, <4% at 50% load, <9% at 25% load | | | | |
| | Input power factor | 0.99 at >40% load, 0.98 at >20% load, 0.97 at >10% load | | | | |
| | Protection | Contactors | | | | |
| | Ramp-in | Adaptive 1-300 seconds | | | | |
| Bypass Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE [60]<br>UL: L1, L2, L3, G **or** L1, L2, L3, N, G | | | | |
| | Bypass voltage range (V) | 342-418 | 360-440 | 374-457 | 396-484 | 432-528 |
| | Frequency (Hz) | 50 or 60 | | | | |
| | Frequency range (Hz) | Programmable: ±0.1, ±3, ±10. Default is ±3 | | | | |
| | Nominal bypass current (A) | 2302 | 2187 | 2108 | 1988 | 1817 |
| | Maximum short circuit rating | 100 kA RMS (conditioned by an internal molded switch with 90 kA peak magnetic trip) | | | | |
| | Thyristor $I^2t$ ($kA^*s^2$) | 16245 (1500 kW I/O) | | | | |
| | BF2 magnetic trip | 39 kA | | | | |
| | Protection | Molded switch with trip for backfeed protection | | | | |
| Output Specifications | Connections | IEC: L1, L2, L3, N, PE **or** L1, L2, L3, PE<br>UL: L1, L2, L3, G, GEC[61] **or** L1, L2, L3, N, G | | | | |
| | Overload capacity | 150% for 1 minute, 125% for 10 minutes (normal operation)<br>115% for 1 minute (battery operation)<br>110% continuous,1000% for 100 milliseconds (bypass operation) | | | | |
| | Output voltage tolerance | Balanced load: ±1%, Unbalanced load: ±3% | | | | |
| | Dynamic load response | ±5% after 2 ms, ±1% after 50 ms | | | | |
| | Output power factor | 1 | | | | |
| | Nominal output current (A) | 2279 | 2165 | 2087 | 1968 | 1804 |
| | Total harmonic distortion (THDU) | <2% at 100% linear load, <3% at 100% non-linear load | | | | |
| | Output frequency (Hz) | 50/60 (synchronized to bypass), 50/60 Hz ±0.1% (free-running) | | | | |
| | Slew rate (Hz/sec) | Programmable: 0.25, 0.5, 1, 2, 4, 6 | | | | |
| | Output performance classification (according to IEC/ EN62040-3) | Double-conversion: VFI-SS-111 | | | | |
| | Load crest factor | Up to 3 (THDU < 5%) | | | | |
| | Load power factor | 0.7 leading to 0.5 lagging without derating | | | | |

56. TN, TT, and IT power distribution systems are supported.
57. WYE source – solid grounded and high resistance grounded sources are supported. Corner (line) grounding is not supported.
58. The system can operate at 600 V for 1 minute.
59. At nominal input voltage and full charge.
60. TN, TT, and IT power distribution systems with no earthed line conductors are supported.
61. Per NEC 250.30.

| | Voltage (V) | 380 | 400 | 415 | 440 V | 480 V |
|---|---|---|---|---|---|---|
| Battery Specifications | Charging power in % of output power | 35% at ≤ 80% load, 12% at 100% load | | | | 40% at ≤ 80% load, 15% at 100% load |
| | Maximum charging power (kW) | 525 at < 80% load, 180 at 100% load, | | | | 600 at <80% load, 225 at 100% load |
| | Nominal battery voltage (VDC) | 480 | | | | |
| | Nominal float voltage (VDC) | 546 | | | | |
| | End of discharge voltage (full load) (VDC) | 384 | | | | |
| | End of discharge voltage (no load) (VDC) | 420 | | | | |
| | Battery current at full load and nominal battery voltage (A) | 3269 | | | | |
| | Battery current at full load and minimum battery voltage (A) | 4086 | | | | |
| | Maximum battery backup time | 1 hour | | | | |
| | Temperature compensation (per cell) | -3.3 mV per °C for T ≥ 25 °C, 0 mV per °C for T < 25 °C | | | | |
| | Ripple current | < 5% C20 (5 minutes backup time) | | | | |
| | Battery test | Manual/automatic (selectable) | | | | |
| | Deep discharge protection | Yes | | | | |
| | Recharge according to battery temperature | Yes | | | | |

# Recommended Upstream Protection and Cable Sizes – IEC

**⚠ DANGER**

**HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH**

An easily accessible breaker is required for upstream protection. Maximum fault current disconnection time: 46 seconds at 200% input.

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

**NOTE:** Overcurrent protection is to be provided by others.

Cable sizes in this manual are based on table B.52.12 and B.52.13 of IEC 60364–5–52 with the following assertions:

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper or aluminium conductors
- Installation method F4 for DC cables and installation method F5 for AC cables, corrected for single layer in perforated cable tray.

PE cables are sized in accordance with IEC 60364-5-54 table 54.2 Minimum cross-sectional area of protective conductors.

**NOTE:** Always consider the PE size according to the complete electrical installation.

If the ambient temperature is greater than 30 °C, larger conductors are to be selected in accordance with the correction factors of the IEC.

**NOTE:** The use of aluminium conductors can limit the number of parallel Li-ion battery cabinets. Please contact Schneider Electric for more information.

## Recommended Upstream Protection and Cable Sizes for 500 kW UPS

| | **Maximum OCPD (A)** | | | | **Conductors per Phase Copper/ Aluminium (mm²)** | | | | **PE Conductor (mm²)** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** |
| Input | 1000 $I_r$=0.90 | 1000 $I_r$=0.90 | 1000 $I_r$=0.90 | 1000 $I_r$=0.90 | 2x240/ 3x185 | 2x240/ 3x185 | 2x240/ 3x185 | 2x240/ 3x185 | 1x240/ 2x150 | 1x240/ 2x150 | 1x240/ 2x150 | 1x240/ 2x150 |
| Bypass | 800 $I_r$=0.98 | 800 $I_r$=0.95 | 800 $I_r$=0.9 | 800 $I_r$=0.9 | 2x185/ 2x240 | 2x150/ 2x240 | 2x150/ 2x240 | 2x150/ 2x240 | 1x185/ 1x240 | 1x150/ 1x240 | 1x150/ 1x240 | 1x150/ 1x240 |
| Output | 800 $I_r$=0.98 | 800 $I_r$=0.95 | 800 $I_r$=0.9 | 800 $I_r$=0.9 | 2x185/ 2x240 | 2x150/ 2x240 | 2x150/ 2x240 | 2x150/ 2x240 | 1x185/ 1x240 | 1x150/ 1x240 | 1x150/ 1x240 | 1x150/ 1x240 |
| Battery | 1500 | 1500 | 1500 | 1500 | 3x185/ 3x240 | 3x185/ 3x240 | 3x185/ 3x240 | 3x185/ 3x240 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 |

## Recommended Upstream Protection and Cable Sizes for 625 kW UPS

| | **Maximum OCPD (A)** | | | | **Conductors per Phase Copper/ Aluminium (mm²)** | | | | **PE Conductor (mm²)** | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **380 V** | **400 V** | **415 V** | **440 V** | **380 V** | **400 V** | **415 V** | **440 V** | **380 V** | **400 V** | **415 V** | **440 V** |
| Input | 1250 $I_r$=0.9 | 1250 $I_r$=0.9 | 1250 $I_r$=0.9 | 1250 $I_r$=0.9 | 3x185/ 3x240 | 3x185/ 3x240 | 3x185/ 3x240 | 3x185/ 3x240 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 |
| Bypass | 1000 $I_r$=0.98 | 1000 $I_r$=0.95 | 1000 $I_r$=0.9 | 1000 $I_r$=0.9 | 2x240/ 3x240 | 2x240/ 3x185 | 2x240/ 3x185 | 2x240/ 3x185 | 1x240/ 2x185 | 1x240/ 2x150 | 1x240/ 2x150 | 1x240/ 2x150 |
| Output | 1000 $I_r$=0.98 | 1000 $I_r$=0.95 | 1000 $I_r$=0.9 | 1000 $I_r$=0.9 | 2x240/ 3x240 | 2x240/ 3x185 | 2x240/ 3x185 | 2x240/ 3x185 | 1x240/ 2x185 | 1x240/ 2x150 | 1x240/ 2x150 | 1x240/ 2x150 |
| Battery | 2000 | 2000 | 2000 | 2000 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 2x185/ 2x240 | 2x185/ 2x240 | 2x185/ 2x240 | 2x185/ 2x240 |

## Recommended Upstream Protection and Cable Sizes for 750 kW UPS

| | Maximum OCPD (A) | | | | Conductors per Phase Copper/ Aluminium (mm²) | | | | PE Conductor (mm²) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** |
| Input | 1600 $I_r$=0.9 | 1600 $I_r$=0.9 | 1600 $I_r$=0.9 | 1250 $I_r$=1.0 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x185 4x240 | 2x185/ 2x240 | 2x185/ 2x240 | 2x185/ 2x240 | 2x150/ 2x240 |
| Bypass | 1250 $I_r$=0.95 | 1250 $I_r$=0.9 | 1250 $I_r$=0.9 | 1000 $I_r$= 1.0 | 3x185/ 4x185 | 3x185/ 3x240 | 3x185/ 3x240 | 2x240/ 3x240 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 | 1x240/ 2x185 |
| Output | 1250 $I_r$=0.95 | 1250 $I_r$=0.9 | 1250 $I_r$=0.9 | 1000 $I_r$=1.0 | 3x185/ 4x185 | 3x185/ 3x240 | 3x185/ 3x240 | 2x240/ 3x240 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 | 1x240/ 2x185 |
| Battery | 2500 | 2500 | 2500 | 2500 | 4x240/ 5x240 | 4x240/ 5x240 | 4x240/ 5x240 | 4x240/ 5x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 |

## Recommended Upstream Protection and Cable Sizes for 800 kW UPS

| | Maximum OCPD (A) | | | | Conductors per Phase Copper/ Aluminium (mm²) | | | | PE Conductor (mm²) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** |
| Input | 1600 $I_r$=0.9 | 1600 $I_r$=0.9 | 1600 $I_r$=0.9 | 1600 $I_r$=0.9 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 2x185/ 2x240 | 2x185/ 2x240 | 2x185/ 2x240 | 2x185/ 2x240 |
| Bypass | 1250 $I_r$=1.0 | 1250 $I_r$=0.95 | 1250 $I_r$=0.9 | 1250 $I_r$=0.9 | 3x185/ 4x240 | 3x185/ 4x185 | 3x185/ 3x240 | 3x185/ 3x240 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 |
| Output | 1250 $I_r$=1.0 | 1250 $I_r$=0.95 | 1250 $I_r$=0.9 | 1250 $I_r$=0.9 | 3x185/ 4x240 | 3x185/ 4x185 | 3x185/ 3x240 | 3x185/ 3x240 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 | 2x150/ 2x185 |
| Battery | 2500 | 2500 | 2500 | 2500 | 4x240/ 5x240 | 4x240/ 5x240 | 4x240/ 5x240 | 4x240/ 5x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 |

## Recommended Upstream Protection and Cable Sizes for 1000 kW UPS

| | Maximum OCPD (A) | | | | Conductors per Phase Copper/ Aluminium (mm²) | | | | PE Conductor (mm²) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** |
| Input | 2000 $I_r$=0.9 | 2000 $I_r$=0.9 | 2000 $I_r$=0.9 | 2000 $I_r$=0.9 | 4x240/ 6x240 | 4x240/ 6x240 | 4x240/ 6x240 | 4x240/ 6x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 |
| Bypass | 1600 $I_r$=0.98 | 1600 $I_r$=0.95 | 1600 $I_r$=0.9 | 1600 $I_r$=0.9 | 4x185/ 5x240 | 4x185/ 5x240 | 3x240/ 4x240 | 3x240/ 4x240 | 2x185/ 3x240 | 2x185/ 3x240 | 2x185/ 2x240 | 2x185/ 2x240 |
| Output | 1600 $I_r$=0.98 | 1600 $I_r$=0.98 | 1600 $I_r$=0.9 | 1600 $I_r$=0.9 | 4x240/ 6x240 | 4x240/ 6x240 | 3x240/ 6x240 | 3x240/ 6x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 | 2x240/ 3x240 |
| Battery | 3300 | 3300 | 3300 | 3300 | 5x240/ 7x240 | 5x240/ 7x240 | 5x240/ 7x240 | 5x240/ 7x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 |

## Recommended Upstream Protection and Cable Sizes for 1100 kW UPS

| | Maximum OCPD (A) | | | | Conductors per Phase Copper/ Aluminium (mm²) | | | | PE Conductor (mm²) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** | **380** | **400** | **415** | **440** |
| Input | 2000 $I_r$=0.98 | 2000 $I_r$=0.98 | 2000 $I_r$=0.98 | 2000 $I_r$=0.95 | 4x300/ 5x300 | 4x300/ 5x300 | 4x300/ 5x300 | 4x300/ 5x300 | 2x300/ 3x300 | 2x300/ 3x300 | 2x300/ 3x300 | 2x300/ 3x300 |
| Bypass | 2000 $I_r$=0.9 | 2000 $I_r$=0.9 | 1600 $I_r$=0.98 | 1600 $I_r$=0.95 | 4x240/ 5x300 | 4x240/ 5x300 | 3x300/ 4x300 | 3x300/ 4x300 | 2x240/ 3x300 | 2x240/ 3x300 | 2x240 2x300 | 2x240/ 2x300 |
| Output | 2000 $I_r$=0.9 | 2000 $I_r$=0.9 | 1600 $I_r$=0.98 | 1600 $I_r$=0.95 | 4x240/ 5x300 | 4x240/ 5x300 | 3x300/ 4x300 | 3x300/ 4x300 | 2x240/ 3x300 | 2x240/ 3x300 | 2x240 2x300 | 2x240/ 2x300 |
| Battery | 3300 | 3300 | 3300 | 3300 | 5x300/ 7x300 | 5x300/ 7x300 | 5x300/ 7x300 | 5x300/ 7x300 | 3x300/ 4x300 | 3x300/ 4x300 | 3x300/ 4x300 | 3x300/ 4x300 |

## Recommended Upstream Protection and Cable Sizes for 1250 kW UPS

| | Maximum OCPD (A) | | | | Conductors per Phase Copper/ Aluminium (mm²) | | | | PE Conductor (mm²) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **380 V** | **400 V** | **415 V** | **440 V** | **380 V** | **400 V** | **415 V** | **440 V** | **380 V** | **400 V** | **415 V** | **440 V** |
| Input | 2500 $I_r$=0.9 | 2500 $I_r$=0.9 | 2500 $I_r$=0.9 | 2500 $I_r$=0.9 | 5x240/ 6x300 | 5x240/ 6x300 | 5x240/ 6x300 | 5x240/ 6x300 | 3x240/ 3x300 | 3x240/ 3x300 | 3x240/ 3x300 | 3x240/ 3x300 |
| Bypass | 2000 $I_r$=0.98 | 2000 $I_r$=0.95 | 2000 $I_r$=0.9 | 2000 $I_r$=0.9 | 4x300/ 5x300 | 4x300/ 5x300 | 4x240/ 5x300 | 4x240/ 5x300 | 2x300/ 3x300 | 2x300/ 3x300 | 2x240/ 3x300 | 2x240/ 3x300 |
| Output | 2000 $I_r$=0.98 | 2000 $I_r$=0.95 | 2000 $I_r$=0.9 | 2000 $I_r$=0.9 | 4x300/ 5x300 | 4x300/ 5x300 | 4x240/ 5x300 | 4x240/ 5x300 | 2x300/ 3x300 | 2x300/ 3x300 | 2x240/ 3x300 | 2x240/ 3x300 |
| Battery | 4000 | 4000 | 4000 | 4000 | 6x300/ 7x300 | 6x300/ 7x300 | 6x300/ 7x300 | 6x300/ 7x300 | 3x300/ 4x300 | 3x300/ 4x300 | 3x300/ 4x300 | 3x300/ 4x300 |

## Recommended Upstream Protection and Cable Sizes for 1500 kW UPS

| | Maximum OCPD (A) | | | | Conductors per Phase Copper/ Aluminium (mm²) | | | | PE Conductor (mm²) | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | **380 V** | **400 V** | **415 V** | **440 V** | **380 V** | **400 V** | **415 V** | **440 V** | **380 V** | **400 V** | **415 V** | **440 V** |
| Input | 3200[62] | 3200[62] | 3200[62] | 2500[63] | 7x240/ 9x240 | 7x240/ 9x240 | 7x240/ 9x240 | 6x240/ 8x240 | 4x240/ 5x240 | 4x240/ 5x240 | 4x240/ 5x240 | 3x240/ 4x240 |
| Bypass | 2500[64] | 2500[62] | 2500[62] | 2000[63] | 6x240/ 7x240 | 5x240/ 7x240 | 5x240/ 7x240 | 5x240/ 6x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 3x240 |
| Output | 2500[64] | 2500[62] | 2500[62] | 2000[63] | 6x240/ 7x240 | 5x240/ 7x240 | 5x240/ 7x240 | 5x240/ 6x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 4x240 | 3x240/ 3x240 |
| Battery | 4000 | 4000 | 4000 | 4000 | 8x240/ 10x240 | 8x240/ 10x240 | 8x240/ 10x240 | 8x240/ 10x240 | 4x240/ 5x240 | 4x240/ 5x240 | 4x240/ 5x240 | 4x240/ 5x240 |

62. Long-time setting ($I_r$) = 0.9.
63. Long-time setting ($I_r$) = 1.0.
64. Long-time setting ($I_r$) = 0.95.

# Weights and Dimensions

## Weights and Dimensions for UPSs with 1250 kW I/O Cabinet

| Commercial Reference | Parts | Weight kg | Height mm | Width mm | Depth mm |
|---|---|---|---|---|---|
| • GVX500K500NHS<br>• GVX500K750NHS<br>• GVX500K1000NHS<br>• GVX500K1250NHS | Total<br>– Power cabinets<br>– I/O cabinet | 2030 (4475)<br>2x540 (2x1190)<br>950 (2094) | 1970 (77.6) | 2400 (94.5)<br>2x600 (2x23.6)<br>1200 (47.2) | 900 (35.4) |
| • GVX625K625NHS<br>• GVX625K1000NHS<br>• GVX750K500NHS<br>• GVX750K750NHS<br>• GVX750K1000NHS<br>• GVX750K1250NHS | Total<br>– Power cabinets<br>– I/O cabinet | 2570 (5666)<br>3x540 (3x1190)<br>950 (2094) | 1970 (77.6) | 3000 (118.1)<br>3x600 (3x23.6)<br>1200 (47.2) | 900 (35.4) |
| • GVX800K800NHS<br>• GVX1000K750NHS<br>• GVX1000K1000NHS<br>• GVX1000K1250NHS | Total<br>– Power cabinets<br>– I/O cabinet | 3110 (6856)<br>4x540 (4x1190)<br>950 (2094) | 1970 (77.6) | 3600 (141.7)<br>4x600 (4x23.6)<br>1200 (47.2) | 900 (35.4) |
| • GVX1100K1100NHS<br>• GVX1250K1000NHS<br>• GVX1250K1250NHS | Total<br>– Power cabinets<br>– I/O cabinet | 3650 (8047)<br>5x540 (5x1190)<br>950 (2094) | 1970 (77.6) | 4200 (165.4)<br>5x600 (5x23.6)<br>1200 (47.2) | 900 (35.4) |
| • GVX1500K1100NHS<br>• GVX1500K1250NHS | Total<br>– Power cabinets<br>– I/O cabinet | 4190 (9237)<br>6x540 (6x1190)<br>950 (2094) | 1970 (77.6) | 4800 (189.0)<br>6x600 (6x23.6)<br>1200 (47.2) | 900 (35.4) |

## Weights and Dimensions for UPSs with 1500 kW I/O Cabinet

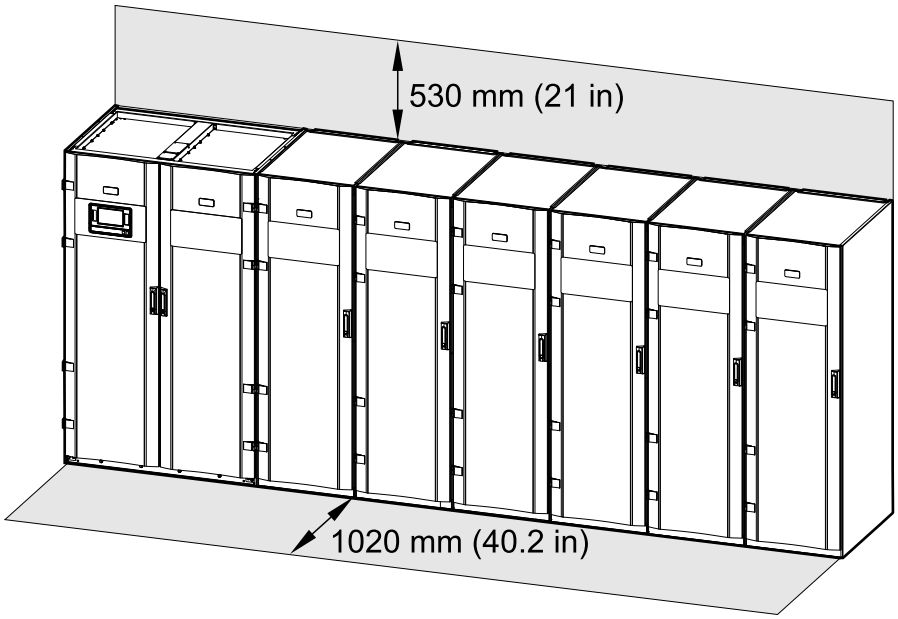
| Part Number | Parts | Weight kg (lbs) | Height mm (in) | Width mm (in) | Depth mm (in) |
|---|---|---|---|---|---|
| • GVX500K1500HS | In total<br>– Power cabinets<br>– I/O cabinet | 1956 (4312)<br>2x540 (2x1190)<br>876 (1931) | 1970 (77.6) | 3200 (126.0)<br>2x600 (2x23.6)<br>2000 (78.7) | 900 (35.4) |
| • GVX750K1500HS | In total<br>– Power cabinets<br>– I/O cabinet | 2496 (5503)<br>3x540 (3x1190)<br>876 (1931) | 1970 (77.6) | 3800 (149.6)<br>3x600 (3x23.6)<br>2000 (78.7) | 900 (35.4) |
| • GVX1000K1500HS | In total<br>– Power cabinets<br>– I/O cabinet | 3036 (6693)<br>4x540 (4x1190)<br>876 (1931) | 1970 (77.6) | 4400 (173.2)<br>4x600 (4x23.6)<br>2000 (78.7) | 900 (35.4) |
| • GVX1250K1500HS | In total<br>– Power cabinets<br>– I/O cabinet | 3576 (7884)<br>5x540 (5x1190)<br>876 (1931) | 1970 (77.6) | 5000 (196.9)<br>5x600 (5x23.6)<br>2000 (78.7) | 900 (35.4) |
| • GVX1500K1500HS | In total<br>– Power cabinets<br>– I/O cabinet | 4116 (9074)<br>6x540 (6x1190)<br>876 (1931) | 1970 (77.6) | 5600 (220.5)<br>6x600 (6x23.6)<br>2000 (78.7) | 900 (35.4) |
| • GVX1750K1500HS | In total<br>– Power cabinets<br>– I/O cabinet | 4656 (10265)<br>7x540 (7x1190)<br>876 (1931) | 1970 (77.6) | 6200 (244.1)<br>7x600 (7x23.6)<br>2000 (78.7) | 900 (35.4) |

# Clearance

## Clearance for UPSs with 1250 kW I/O Cabinet

**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:** The UPS system can be placed up against a wall and there is no requirement for rear or side access.

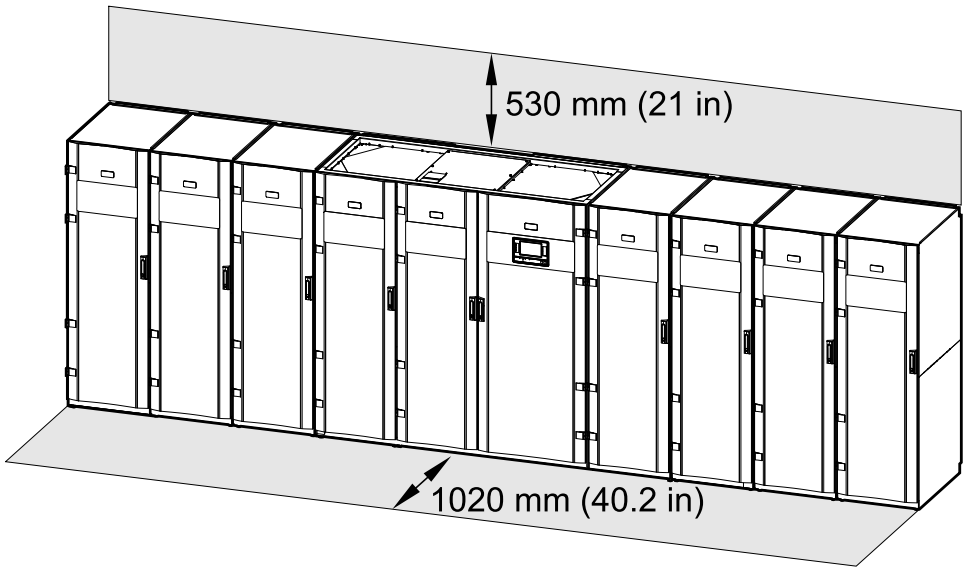



## Clearance for UPSs with 1500 kW I/O Cabinet

**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:** The UPS system can be placed up against a wall with no requirement for rear or side access.

**Front View**

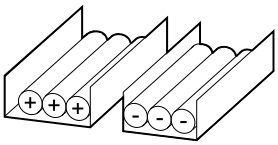
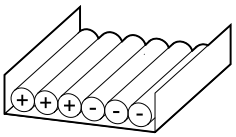
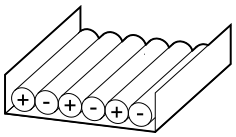
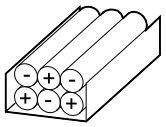


# Guidance for Organizing Battery Cables

**NOTE:** For 3rd party batteries, use only high rate batteries for UPS applications.

**NOTE:** When the battery bank is placed remotely, the organizing of the cables is important to reduce voltage drop and inductance. The distance between the battery bank and the UPS must not exceed 200 m (656 ft). Contact Schneider Electric for installations with a longer distance.

**NOTE:** To minimize the risk of electromagnetic radiation, it is highly recommended to follow the below guidance and to use grounded metallic tray supports.

| **Cable Length** |  |  |  |  |
|---|---|---|---|---|
| <30 m | Not recommended | Acceptable | Recommended | Recommended |
| 31–75 m | Not recommended | Not recommended | Acceptable | Recommended |
| 76–150 m | Not recommended | Not recommended | Acceptable | Recommended |
| 151–200 m | Not recommended | Not recommended | Not recommended | Recommended |

# Torque Specifications

| **Bolt size** | **Torque** |
|---|---|
| M6 | 5 Nm (3.69 lb-ft) |
| M8 | 17.5 Nm (12.91 lb-ft) |
| M10 | 30 Nm (22 lb-ft) |
| M12 | 50 Nm (36.87 lb-ft) |

# Environment

| | **Operating** | **Storage** |
|---|---|---|
| Temperature | 0 °C to 40 °C ( 32 °F to 104 °F )<br><br>0 °C to 50 °C ( 32 °F to 122 °F ) when derated to 75% power[65] | -15 °C to 40 °C (5 °F to 104 °F) for systems with batteries<br><br>-25 °C to 55 °C (-13 °F to 131 °F) for systems without batteries |
| Relative humidity | 0 – 95% non-condensing | 0 – 95% non-condensing |
| Altitude derating according to ANSI C57.96–1999[66] | 1000 m (3300 ft): 1.000<br>1500 m (5000 ft): 0.975<br>2000 m (6600 ft): 0.950<br>2500 m (8300 ft): 0.925<br>3000 m (10000 ft): 0.900 | 0 – 15000 m (0 – 50000 ft) |
| Audible noise one meter (three feet) from surface | 62 dB at 70% load<br><br>69.5 dB at 100% load for 400 V systems<br>68 dB at 100% load for 480 V systems | |
| Protection class | IP20 | |
| Color | RAL 9003 white | |

65. For temperatures between 40 °C and 50 °C, the load power rating must be derated with 2.5% per °C of rated output power. Above 40 °C the minimum input voltage is 340 V, and from 380 V to 340 V, the charge power must be linearly derated from 12% to 1%.
66. Maximum operation altitude is 3000 m (10000 ft).

# Heat Dissipation (BTU/hr) for UPSs with 1250 kW I/O Cabinet

## Heat Dissipation for 500 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 17771 | 21504 | 21504 | 21504 | 22920 | 11385 | 16847 | 16387 | 14099 | 11835 |
| 50% load | 34617 | 38327 | 38327 | 37397 | 36468 | 8616 | 11235 | 10360 | 12112 | 13870 |
| 75% load | 56095 | 58889 | 58889 | 56095 | 53313 | 12924 | 15540 | 15540 | 15540 | 15540 |
| 100% load | 78519 | 80387 | 78519 | 75723 | 72936 | 13758 | 17232 | 17232 | 17232 | 17232 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 4308 | 7376 | 6935 | 10264 | 13644 | 14555 | 15469 | 15011 | 15011 | 15011 |
| 50% load | 13870 | 12990 | 16521 | 16078 | 15635 | 29110 | 29110 | 30938 | 30938 | 29110 |
| 75% load | 12924 | 14231 | 14231 | 15540 | 16853 | 75903 | 47782 | 49160 | 49160 | 49160 |
| 100% load | 17232 | 13758 | 13758 | 16362 | 18975 | 71083 | 74793 | 80387 | 80387 | 72936 |

## Heat Dissipation for 625 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 27469 | 26880 | 26880 | 26880 | 28059 | 10880 | 13110 | 13670 | 13670 | 13670 |
| 50% load | 47909 | 47909 | 47909 | 45006 | 42118 | 11859 | 14044 | 15139 | 15139 | 15139 |
| 75% load | 73611 | 73611 | 73611 | 67509 | 61451 | 16155 | 19426 | 19426 | 19426 | 19426 |
| 100% load | 114602 | 100484 | 98149 | 91170 | 84236 | 23718 | 25901 | 25901 | 23718 | 21540 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 15922 | 15922 | 10880 | 13390 | 15922 | 17056 | 17056 | 18764 | 18764 | 18764 |
| 50% load | 17337 | 17337 | 17337 | 17337 | 17337 | 40967 | 39818 | 38672 | 38672 | 36387 |
| 75% load | 21066 | 21066 | 21066 | 21066 | 21066 | 61451 | 61451 | 61451 | 61451 | 61451 |
| 100% load | 25901 | 25901 | 25901 | 24809 | 23718 | 86543 | 84236 | 100484 | 100484 | 91170 |

## Heat Dissipation for 750 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 28745 | 30847 | 30847 | 30847 | 30847 | 10402 | 13056 | 13723 | 13723 | 13723 |
| 50% load | 56095 | 56095 | 54702 | 53313 | 51926 | 14231 | 16853 | 18167 | 18167 | 18167 |
| 75% load | 94653 | 92542 | 86236 | 83097 | 79969 | 19386 | 23311 | 23311 | 23311 | 23311 |
| 100% load | 146074 | 137523 | 129025 | 120581 | 112190 | 25848 | 28462 | 28462 | 28462 | 28462 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 15061 | 15061 | 9084 | 12058 | 15061 | 21832 | 21832 | 22517 | 22517 | 23203 |
| 50% load | 19485 | 19485 | 19485 | 19485 | 19485 | 45034 | 43664 | 45034 | 45034 | 45034 |
| 75% load | 25279 | 25279 | 25279 | 25279 | 25279 | 77888 | 75812 | 75812 | 75812 | 75812 |
| 100% load | 31081 | 31081 | 31081 | 29771 | 28462 | 114981 | 112190 | 112190 | 112190 | 112190 |

## Heat Dissipation for 800 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 35160 | 35160 | 34407 | 34407 | 34407 | 15351 | 15351 | 8988 | 8988 | 8988 |
| 50% load | 59835 | 58349 | 56867 | 55387 | 53911 | 19378 | 19378 | 15180 | 15180 | 15180 |
| 75% load | 91985 | 89752 | 85300 | 84190 | 83081 | 22770 | 22770 | 22770 | 22770 | 22770 |
| 100% load | 131616 | 128620 | 119669 | 112253 | 104876 | 30360 | 27572 | 27572 | 27572 | 27572 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 17497 | 18216 | 17497 | 17857 | 18216 | 26956 | 21831 | 21105 | 21105 | 7590 |
| 50% load | 20784 | 20784 | 20784 | 20784 | 20784 | 50968 | 43662 | 48036 | 48036 | 48036 |
| 75% load | 24865 | 24865 | 24865 | 24865 | 24865 | 78657 | 65493 | 67676 | 67676 | 67676 |
| 100% load | 30360 | 30360 | 27572 | 26180 | 24790 | 113733 | 101935 | 104876 | 104876 | 104876 |

## Heat Dissipation for 1000 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 36468 | 39259 | 39259 | 39259 | 39259 | 12112 | 15635 | 16521 | 16521 | 16521 |
| 50% load | 71083 | 71083 | 69234 | 69234 | 65547 | 15493 | 18975 | 20721 | 20721 | 20721 |
| 75% load | 120581 | 117778 | 109405 | 109405 | 101083 | 20637 | 25848 | 25848 | 25848 | 25848 |
| 100% load | 187156 | 175802 | 164520 | 164520 | 142167 | 27516 | 30987 | 30987 | 30987 | 30987 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 18297 | 18297 | 10360 | 14311 | 18297 | 28198 | 28198 | 29110 | 29110 | 30023 |
| 50% load | 22470 | 22470 | 22470 | 22470 | 22470 | 58219 | 56397 | 58219 | 58219 | 58219 |
| 75% load | 28462 | 28462 | 28462 | 28462 | 28462 | 101083 | 98321 | 98321 | 98321 | 98321 |
| 100% load | 34465 | 34465 | 34465 | 32725 | 30987 | 149587 | 145873 | 145873 | 145873 | 145873 |

## Heat Dissipation for 1100 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 43185 | 43185 | 42160 | 43185 | 41136 | 18173 | 17199 | 17199 | 16713 | 16227 |
| 50% load | 82273 | 78192 | 76158 | 76158 | 70080 | 22793 | 22793 | 22793 | 21832 | 20872 |
| 75% load | 132639 | 123409 | 120345 | 120345 | 108153 | 28433 | 25564 | 25564 | 26998 | 28433 |
| 100% load | 201700 | 185100 | 180972 | 180972 | 152315 | 37911 | 37911 | 37911 | 35997 | 34086 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 21107 | 21107 | 20127 | 18173 | 21107 | 35040 | 37064 | 36051 | 32021 | 36051 |
| 50% load | 24717 | 22793 | 24717 | 22793 | 24717 | 66050 | 66050 | 70080 | 64041 | 68063 |
| 75% load | 34189 | 34189 | 34189 | 28433 | 31308 | 163830 | 102095 | 105121 | 108153 | 105121 |
| 100% load | 53291 | 41744 | 41744 | 34086 | 37911 | 156383 | 164545 | 176852 | 160460 | 152315 |

## Heat Dissipation for 1250 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 49074 | 49074 | 47909 | 47909 | 46746 | 20651 | 19544 | 19544 | 18992 | 18440 |
| 50% load | 93492 | 88854 | 86543 | 83084 | 79637 | 25901 | 25901 | 25901 | 24809 | 23718 |
| 75% load | 154237 | 143726 | 140237 | 133281 | 126354 | 35578 | 32311 | 32311 | 30680 | 29050 |
| 100% load | 233945 | 215042 | 210341 | 193965 | 177708 | 43081 | 43081 | 43081 | 40906 | 38734 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 22872 | 22872 | 21760 | 22316 | 22872 | 36387 | 38672 | 37528 | 37528 | 37528 |
| 50% load | 28088 | 25901 | 28088 | 28088 | 28088 | 72774 | 72774 | 77345 | 77345 | 75057 |
| 75% load | 35578 | 35578 | 35578 | 33943 | 32311 | 119455 | 119455 | 122901 | 122901 | 122901 |
| 100% load | 56175 | 43081 | 43081 | 40906 | 38734 | 177708 | 186983 | 200969 | 200969 | 173085 |

# Heat Dissipation (BTU/hr) for UPSs with 1500 kW I/O Cabinet

## Heat Dissipation for 500 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 17309 | 16387 | 16387 | 16387 | 18698 | 5618 | 5618 | 5618 | 6056 | 6495 |
| 50% load | 32774 | 30938 | 30938 | 31396 | 31855 | 7747 | 7747 | 7747 | 7747 | 7747 |
| 75% load | 53313 | 50542 | 50542 | 50542 | 50542 | 11620 | 11620 | 11620 | 10969 | 10319 |
| 100% load | 86017 | 82260 | 82260 | 75723 | 69234 | 13758 | 13758 | 13758 | 13758 | 13758 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 6495 | 6495 | 6495 | 7155 | 7818 | 18234 | 18234 | 18234 | 18234 | 18234 |
| 50% load | 7747 | 7747 | 7747 | 7747 | 7747 | 31855 | 31855 | 31855 | 31855 | 31855 |
| 75% load | 11620 | 11620 | 11620 | 10969 | 10319 | 53313 | 53313 | 53313 | 53313 | 53313 |
| 100% load | 15493 | 13758 | 13758 | 13758 | 13758 | 78519 | 78519 | 78519 | 78519 | 78519 |

## Heat Dissipation for 750 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 26656 | 25271 | 25271 | 25271 | 27351 | 9084 | 9084 | 9084 | 9413 | 9742 |
| 50% load | 51926 | 49160 | 49160 | 47782 | 46407 | 12924 | 12924 | 12924 | 12272 | 11620 |
| 75% load | 86236 | 82053 | 82053 | 77888 | 73741 | 17430 | 17430 | 17430 | 16453 | 15478 |
| 100% load | 134684 | 129025 | 129025 | 117778 | 106625 | 23240 | 23240 | 23240 | 21938 | 20637 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 9742 | 9742 | 9742 | 10733 | 11727 | 27351 | 27351 | 27351 | 27351 | 27351 |
| 50% load | 12924 | 12924 | 12924 | 12924 | 12924 | 47782 | 47782 | 47782 | 47782 | 47782 |
| 75% load | 17430 | 17430 | 17430 | 16453 | 15478 | 79969 | 79969 | 79969 | 79969 | 79969 |
| 100% load | 23240 | 23240 | 23240 | 21938 | 20637 | 117778 | 117778 | 117778 | 117778 | 117778 |

## Heat Dissipation for 1000 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 36468 | 34617 | 34617 | 33888 | 36468 | 12112 | 12112 | 12112 | 12112 | 12112 |
| 50% load | 71083 | 67389 | 67389 | 60137 | 61876 | 17232 | 17232 | 17232 | 16362 | 15493 |
| 75% load | 123390 | 117778 | 117778 | 98514 | 95564 | 23240 | 23240 | 23240 | 21938 | 20637 |
| 100% load | 187156 | 179579 | 179579 | 149141 | 145873 | 30987 | 30987 | 30987 | 29251 | 27516 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 13334 | 13334 | 13334 | 14313 | 15294 | 36468 | 35819 | 36468 | 36468 | 36468 |
| 50% load | 17254 | 17254 | 17254 | 16956 | 16657 | 63710 | 62976 | 63710 | 63710 | 63710 |
| 75% load | 24358 | 24358 | 24358 | 22496 | 20637 | 106625 | 104128 | 106625 | 106625 | 106625 |
| 100% load | 31342 | 31342 | 31342 | 29428 | 27516 | 157038 | 156664 | 157038 | 157038 | 157038 |

## Heat Dissipation for 1250 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 44427 | 42118 | 42118 | 42118 | 44427 | 12950 | 12950 | 12950 | 13497 | 14044 |
| 50% load | 86543 | 81934 | 81934 | 78490 | 75057 | 19367 | 19367 | 19367 | 18282 | 17198 |
| 75% load | 147223 | 140237 | 140237 | 129814 | 119455 | 25796 | 25796 | 25796 | 24172 | 22549 |
| 100% load | 224474 | 215042 | 215042 | 196297 | 177708 | 30065 | 30065 | 30065 | 30065 | 30065 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 15569 | 15569 | 15569 | 17156 | 18748 | 45585 | 45585 | 45585 | 45585 | 45585 |
| 50% load | 19394 | 19394 | 19394 | 19721 | 20047 | 79637 | 79637 | 79637 | 79637 | 79637 |
| 75% load | 27191 | 27191 | 27191 | 25681 | 24172 | 133281 | 133281 | 133281 | 133281 | 133281 |
| 100% load | 34838 | 34838 | 34838 | 32451 | 30065 | 196297 | 196297 | 196297 | 196297 | 196297 |

## Heat Dissipation for 1500 kW UPS

| | Normal operation | | | | | ECO mode | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 53313 | 50542 | 50542 | 50680 | 53313 | 15540 | 15540 | 15540 | 16131 | 16853 |
| 50% load | 103851 | 98321 | 98321 | 91275 | 92813 | 23240 | 23240 | 23240 | 21626 | 23240 |
| 75% load | 176667 | 168285 | 168285 | 151832 | 147481 | 30956 | 30956 | 30956 | 28889 | 27059 |
| 100% load | 269368 | 258050 | 258050 | 234549 | 213250 | 36079 | 36079 | 36079 | 37428 | 36079 |

| | ECOnversion | | | | | Battery operation | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **Voltage (V)** | **380** | **400** | **415** | **440 V** | **480 V** | **380** | **400** | **415** | **440 V** | **480 V** |
| 25% load | 18683 | 18683 | 18683 | 17234 | 22054 | 54702 | 51372 | 54702 | 54702 | 54285 |
| 50% load | 23273 | 23273 | 23273 | 20325 | 23129 | 95564 | 95014 | 95564 | 95564 | 96666 |
| 75% load | 32629 | 32629 | 32629 | 26436 | 27059 | 159938 | 159521 | 159938 | 159938 | 154530 |
| 100% load | 41806 | 41806 | 41806 | 35819 | 36079 | 235556 | 236677 | 235556 | 235556 | 229962 |

# Options

## Hardware Options

- Standard top cable entry battery cabinets or custom front terminal battery cabinets
- Optional remote 10–inch LCD
- Optional Modbus RS-485 card

## Configuration Options

- Single or dual feed
- Default top or bottom cable entry
- N+1 redundancy
- Up to 4+1 UPSs in parallel
- ECO mode
- ECOnversion mode
- StruxureWare Data Center Expert compatible
- Generator compatible
- Internal synchronization to alternate source (single system)
- Seismic rated brackets included
- Touchscreen LCD

# Limited Factory Warranty

## One-Year Factory Warranty

The limited warranty provided by Schneider Electric in this Statement of Limited Factory Warranty applies only to products you purchase for your commercial or industrial use in the ordinary course of your business.

## Terms of Warranty

Schneider Electric warrants that the product shall be free from defects in materials and workmanship for a period of one year from the date of product start-up when start-up is performed by Schneider Electric-authorized service personnel and occurs within six months of the Schneider Electric shipment date. This warranty covers repairing or replacing any defective parts including on-site labor and travel. In the event that the product fails to meet the foregoing warranty criteria, the warranty covers repairing or replacing defective parts at the sole discretion of Schneider Electric for a period of one year from the shipment date. For Schneider Electric cooling solutions, this warranty does not cover circuit breaker resetting, loss of refrigerant, consumables, or preventive maintenance items. Repair or replacement of a defective product or part thereof does not extend the original warranty period. Any parts furnished under this warranty may be new or factory-remanufactured.

## Non-transferable Warranty

This warranty is extended to the first person, firm, association or corporation (herein referred to by “You” or “Your”) for whom the Schneider Electric product specified herein has been purchased. This warranty is not transferable or assignable without the prior written permission of Schneider Electric.

## Assignment of Warranties

Schneider Electric will assign you any warranties which are made by manufacturers and suppliers of components of the Schneider Electric product and which are assignable. Any such warranties are assigned “AS IS” and Schneider Electric makes no representation as to the effectiveness or extent of such warranties, assumes no responsibility for any matters which may be warranted by such manufacturers or suppliers and extends no coverage under this Warranty to such components.

## Drawings, Descriptions

Schneider Electric warrants for the warranty period and on the terms of the warranty set forth herein that the Schneider Electric product will substantially conform to the descriptions contained in the Schneider Electric Official Published Specifications or any of the drawings certified and agreed to by contract with Schneider Electric if applicable thereto (“Specifications”). It is understood that the Specifications are not warranties of performance and not warranties of fitness for a particular purpose.

## Exclusions

Schneider Electric shall not be liable under the warranty if its testing and examination disclose that the alleged defect in the product does not exist or was caused by end user or any third person misuse, negligence, improper installation or testing. Further, Schneider Electric shall not be liable under the warranty for unauthorized attempts to repair or modify wrong or inadequate electrical voltage or connection, inappropriate on-site operation conditions, corrosive atmosphere, repair, installation, start-up by non-Schneider Electric designated personnel, a change in location or operating use, exposure to the elements, Acts of God, fire, theft, or installation contrary to Schneider Electric recommendations or specifications or in any event if the Schneider Electric serial number has been altered, defaced, or removed, or any other cause beyond the range of the intended use.

THERE ARE NO WARRANTIES, EXPRESS OR IMPLIED, BY OPERATION OF LAW OR OTHERWISE, OF PRODUCTS SOLD, SERVICED OR FURNISHED UNDER THIS AGREEMENT OR IN CONNECTION HEREWITH. SCHNEIDER ELECTRIC DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY, SATISFACTION AND FITNESS FOR A PARTICULAR PURPOSE. SCHNEIDER ELECTRIC EXPRESS WARRANTIES WILL NOT BE ENLARGED, DIMINISHED, OR AFFECTED BY AND NO OBLIGATION OR LIABILITY WILL ARISE OUT OF, SCHNEIDER ELECTRIC RENDERING OF TECHNICAL OR OTHER ADVICE OR SERVICE IN CONNECTION WITH THE PRODUCTS. THE FOREGOING WARRANTIES AND REMEDIES ARE EXCLUSIVE AND IN LIEU OF ALL OTHER WARRANTIES AND REMEDIES. THE WARRANTIES SET FORTH ABOVE CONSTITUTE SCHNEIDER ELECTRIC SOLE LIABILITY AND PURCHASER'S EXCLUSIVE REMEDY FOR ANY BREACH OF SUCH WARRANTIES. SCHNEIDER ELECTRIC WARRANTIES RUN ONLY TO PURCHASER AND ARE NOT EXTENDED TO ANY THIRD PARTIES.

IN NO EVENT SHALL SCHNEIDER ELECTRIC, ITS OFFICERS, DIRECTORS, AFFILIATES OR EMPLOYEES BE LIABLE FOR ANY FORM OF INDIRECT, SPECIAL, CONSEQUENTIAL OR PUNITIVE DAMAGES, ARISING OUT OF THE USE, SERVICE OR INSTALLATION, OF THE PRODUCTS, WHETHER SUCH DAMAGES ARISE IN CONTRACT OR TORT, IRRESPECTIVE OF FAULT, NEGLIGENCE OR STRICT LIABILITY OR WHETHER SCHNEIDER ELECTRIC HAS BEEN ADVISED IN ADVANCE OF THE POSSIBILITY OF SUCH DAMAGES, SPECIFICALLY, SCHNEIDER ELECTRIC IS NOT LIABLE FOR ANY COSTS, SUCH AS LOST PROFITS OR REVENUE, LOSS OF EQUIPMENT, LOSS OF USE OF EQUIPMENT, LOSS OF SOFTWARE, LOSS OF DATA, COSTS OF SUBSTITUANTS, CLAIMS BY THIRD PARTIES, OR OTHERWISE.

NO SALESMAN, EMPLOYEE OR AGENT OF SCHNEIDER ELECTRIC IS AUTHORIZED TO ADD TO OR VARY THE TERMS OF THIS WARRANTY. WARRANTY TERMS MAY BE MODIFIED, IF AT ALL, ONLY IN WRITING SIGNED BY AN SCHNEIDER ELECTRIC OFFICER AND LEGAL DEPARTMENT.

## Warranty Claims

Customers with warranty claims issues may access the SCHNEIDER ELECTRIC worldwide customer support network through the SCHNEIDER ELECTRIC web site: http://www.schneider-electric.com. Select your country from the country selection pull-down menu. Open the Support tab at the top of the web page to obtain contact information for customer support in your region.

Schneider Electric
35 rue Joseph Monier
92500 Rueil Malmaison
France

+ 33 (0) 1 41 29 70 00

*990-5850G-001*

As standards, specifications, and design change from time to time, please ask for confirmation of the information given in this publication.

© 2016 – 2021 Schneider Electric. All rights reserved.

990-5850G-001