

# Easy UPS 3S

10-40 kVA 400 V & 10-20 kVA 208 V 3:3,  
10-30 kVA 400 V 3:1

## Technical Specifications

03/2020



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# Important Safety Instructions — SAVE THESE INSTRUCTIONS

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



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



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

## DANGER

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

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

## WARNING

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

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

## CAUTION

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

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

## NOTICE

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

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

## Please Note

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

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

## 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-flammable, level, and solid surface (e.g. concrete) that can support the weight of the system.

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

**⚠ DANGER**

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

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

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

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

**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**

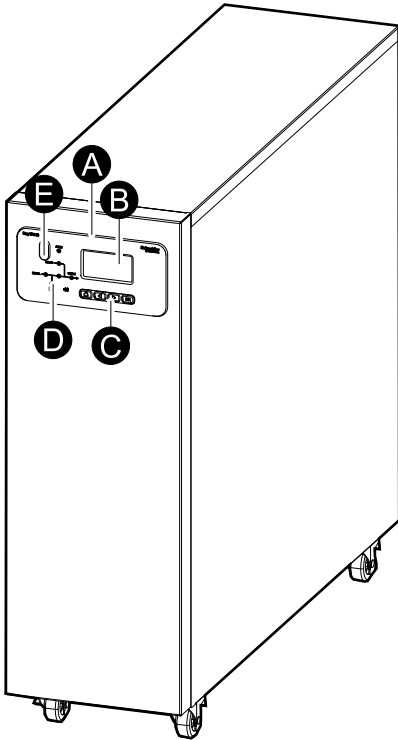
The UPS must use an external regenerative braking kit to dissipate energy when connected to regenerative loads including photovoltaic systems and speed drives.

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

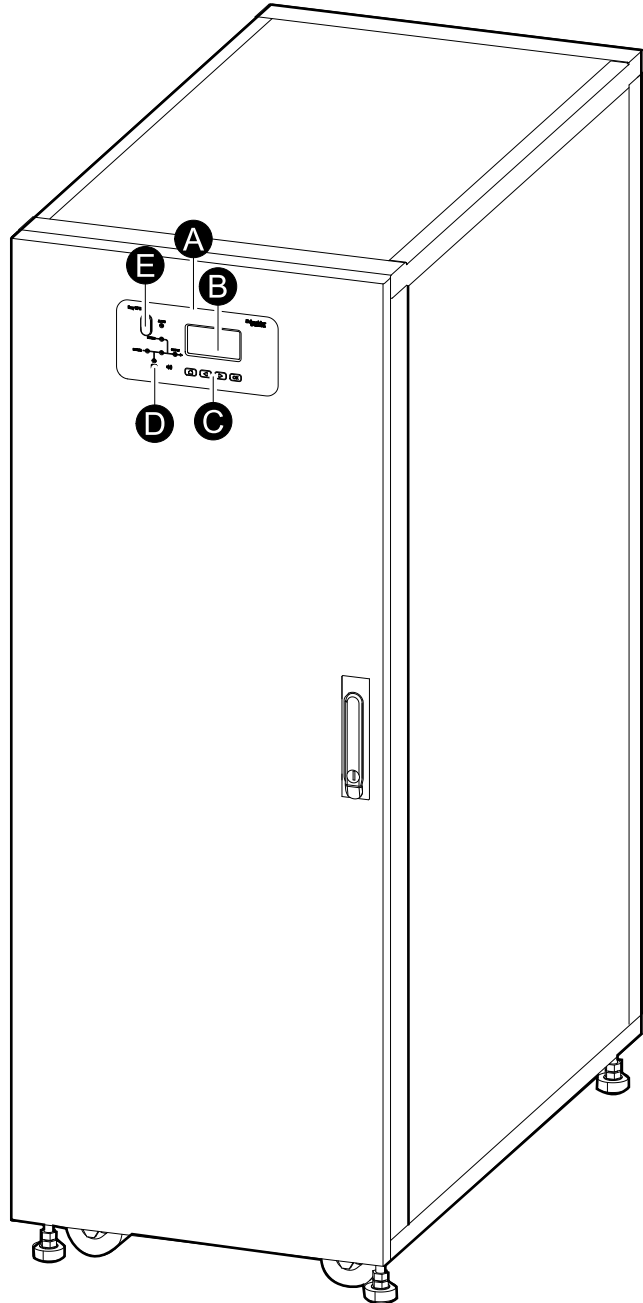
# System Overview

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

**UPS for External Batteries**



**UPSs with Internal Batteries**





## Model List

### 400 V UPSs

#### 3:3 UPS

- E3UPS10KH: Easy UPS 3S 10 kVA 400 V 3:3 UPS for external batteries
- E3UPS15KH: Easy UPS 3S 15 kVA 400 V 3:3 UPS for external batteries
- E3UPS20KH: Easy UPS 3S 20 kVA 400 V 3:3 UPS for external batteries
- E3UPS30KH: Easy UPS 3S 30 kVA 400 V 3:3 UPS for external batteries
- E3UPS40KH: Easy UPS 3S 40 kVA 400 V 3:3 UPS for external batteries
- E3SUPS10KHB: Easy UPS 3S 10 kVA 400 V 3:3 UPS for internal batteries<sup>1</sup>
- E3SUPS15KHB: Easy UPS 3S 15 kVA 400 V 3:3 UPS for internal batteries<sup>1</sup>
- E3SUPS20KHB: Easy UPS 3S 20 kVA 400 V 3:3 UPS for internal batteries<sup>1</sup>
- E3SUPS30KHB: Easy UPS 3S 30 kVA 400 V 3:3 UPS for internal batteries<sup>1</sup>
- E3SUPS40KHB: Easy UPS 3S 40 kVA 400 V 3:3 UPS for internal batteries<sup>1</sup>
- E3SUPS10KHB1: Easy UPS 3S 10 kVA 400 V 3:3 UPS with internal batteries - 15 minutes runtime<sup>1</sup>
- E3SUPS10KHB2: Easy UPS 3S 10 kVA 400 V 3:3 UPS with internal batteries - 40 minutes runtime<sup>1</sup>
- E3SUPS15KHB1: Easy UPS 3S 15 kVA 400 V 3:3 UPS with internal batteries - 9 minutes runtime<sup>1</sup>
- E3SUPS15KHB2: Easy UPS 3S 15 kVA 400 V 3:3 UPS with internal batteries - 25 minutes runtime<sup>1</sup>
- E3SUPS20KHB1: Easy UPS 3S 20 kVA 400 V 3:3 UPS with internal batteries - 15 minutes runtime<sup>1</sup>
- E3SUPS20KHB2: Easy UPS 3S 20 kVA 400 V 3:3 UPS with internal batteries - 30 minutes runtime<sup>1</sup>
- E3SUPS30KHB1: Easy UPS 3S 30 kVA 400 V 3:3 UPS with internal batteries - 9 minutes runtime<sup>1</sup>
- E3SUPS30KHB2: Easy UPS 3S 30 kVA 400 V 3:3 UPS with internal batteries - 25 minutes runtime<sup>1</sup>
- E3SUPS40KHB1: Easy UPS 3S 40 kVA 400 V 3:3 UPS with internal batteries - 10 minutes runtime<sup>1</sup>
- E3SUPS40KHB2: Easy UPS 3S 40 kVA 400 V 3:3 UPS with internal batteries - 15 minutes runtime<sup>1</sup>

#### 3:1 UPS

- E3SUPS10K3I: Easy UPS 3S 10 kVA 400 V 3:1 UPS for external batteries
- E3SUPS15K3I: Easy UPS 3S 15 kVA 400 V 3:1 UPS for external batteries
- E3SUPS20K3I: Easy UPS 3S 20 kVA 400 V 3:1 UPS for external batteries
- E3SUPS30K3I: Easy UPS 3S 30 kVA 400 V 3:1 UPS for external batteries
- E3SUPS10K3IB: Easy UPS 3S 10 kVA 400 V 3:1 UPS for internal batteries<sup>1</sup>
- E3SUPS15K3IB: Easy UPS 3S 15 kVA 400 V 3:1 UPS for internal batteries<sup>1</sup>
- E3SUPS20K3IB: Easy UPS 3S 20 kVA 400 V 3:1 UPS for internal batteries<sup>1</sup>
- E3SUPS30K3IB: Easy UPS 3S 30 kVA 400 V 3:1 UPS for internal batteries<sup>1</sup>
- E3SUPS10K3IB1: Easy UPS 3S 10 kVA 400 V 3:1 UPS with internal batteries - 15 minutes runtime<sup>1</sup>
- E3SUPS10K3IB2: Easy UPS 3S 10 kVA 400 V 3:1 UPS with internal batteries - 40 minutes runtime<sup>1</sup>
- E3SUPS15K3IB1: Easy UPS 3S 15 kVA 400 V 3:1 UPS with internal batteries - 9 minutes runtime<sup>1</sup>
- E3SUPS15K3IB2: Easy UPS 3S 15 kVA 400 V 3:1 UPS with internal batteries - 25 minutes runtime<sup>1</sup>
- E3SUPS20K3IB1: Easy UPS 3S 20 kVA 400 V 3:1 UPS with internal batteries - 15 minutes runtime<sup>1</sup>
- E3SUPS20K3IB2: Easy UPS 3S 20 kVA 400 V 3:1 UPS with internal batteries - 30 minutes runtime<sup>1</sup>
- E3SUPS30K3IB1: Easy UPS 3S 30 kVA 400 V 3:1 UPS with internal batteries - 9 minutes runtime<sup>1</sup>
- E3SUPS30K3IB2: Easy UPS 3S 30 kVA 400 V 3:1 UPS with internal batteries - 25 minutes runtime<sup>1</sup>

1. Not available in India and China

## 208 V UPSs

### 3:3 UPS

- E3SUPS10KFB1: Easy UPS 3S 10 kVA 208 V  
3:3 UPS 15 minutes runtime<sup>2</sup>
- E3SUPS15KFB1: Easy UPS 3S 15 kVA 208 V  
3:3 UPS 9 minutes runtime<sup>2</sup>
- E3SUPS20KFB1: Easy UPS 3S 20 kVA 208 V  
3:3 UPS 10 minutes runtime<sup>2</sup>

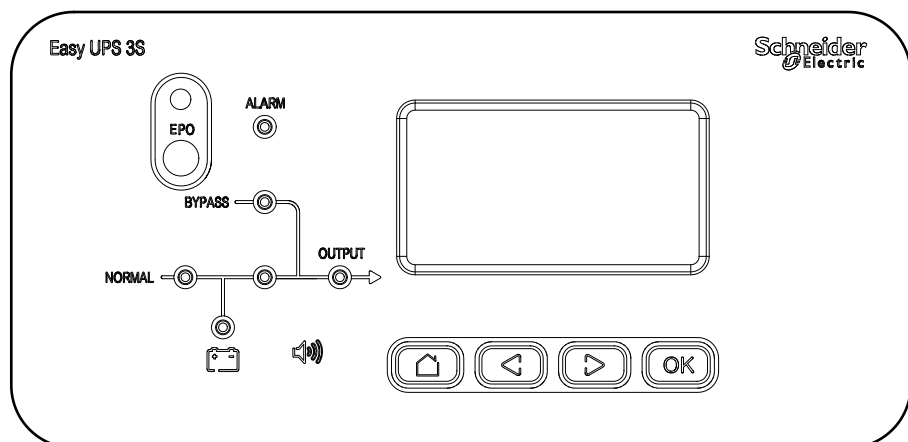
## Options

- E3SOPT001: Easy UPS 3S network card
- E3SOPT002: Easy UPS 3S parallel kit
- E3SOPT003: Easy UPS 3S temperature sensor kit for external battery system
- E3SOPT004: Easy UPS 3S cold start kit
- E3SOPT006: Easy UPS 3S Parallel Maintenance Bypass Panel for up to 2 Units 10-40 kVA
- E3SOPT007: Easy UPS 3S battery breaker box
- E3SOPT008: Easy UPS 3S battery breaker kit
- E3SOPT009: Easy UPS battery connector kit
- GVEBC7: Empty battery cabinet, 700 mm wide
- GVEBC11: Empty battery cabinet, 1100 mm wide

## Batteries

- E3SXR6: Easy UPS 3S modular battery cabinet
- E3SBTU: Easy UPS 3S standard battery module
- E3SBTHU: Easy UPS 3S high performance battery module
- E3SBT4: Easy UPS 3S standard battery string
- E3SBTH4: Easy UPS 3S high performance battery string

## User Interface



2. The product is not UL-certified.

### Keys

Home	Previous	Next	Confirm

### EPO

Only use the EPO button in case of emergency. When the EPO button is pushed, the system turns off the rectifier and the inverter, and stops supplying the load immediately.

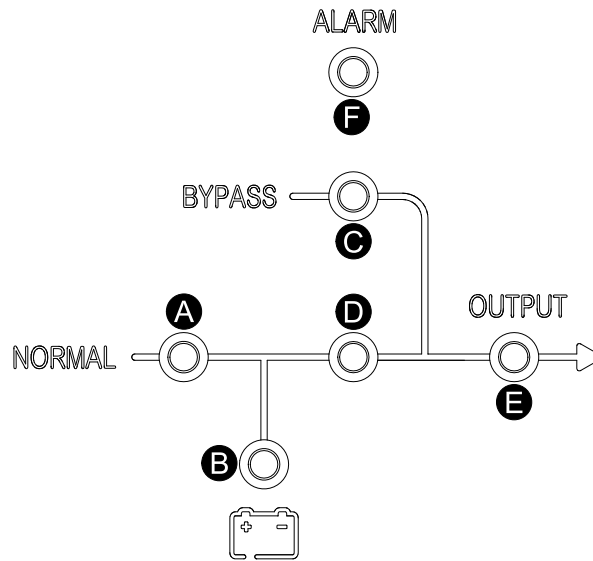
**⚠ DANGER**

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



















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

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

### Status LEDs

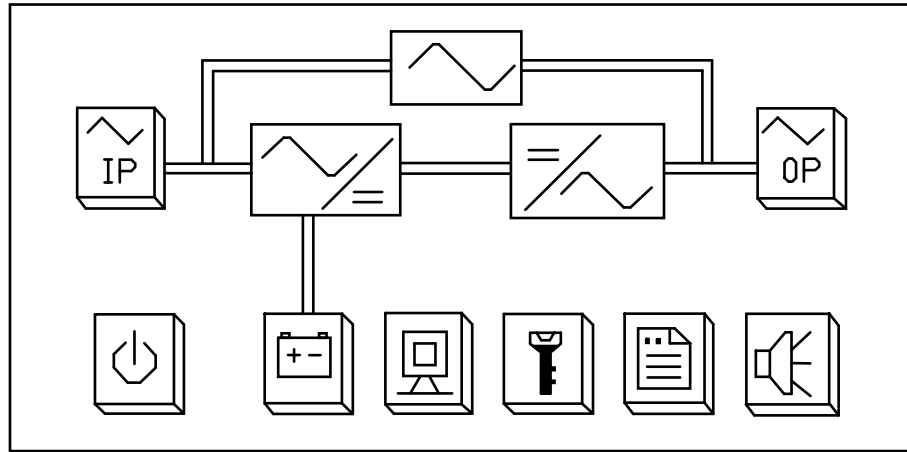


	LED	Status
A	Rectifier	Green  : Rectifier is working correctly. Flashing green  : Rectifier is working correctly and mains is normal. Red  : Rectifier is inoperable. Flashing red  : Mains is unavailable. OFF  : Rectifier is off.
B	Battery	Green  : Battery is charging. Flashing green  : Battery is discharging.

	LED	Status
		<p>Red : Battery is inoperable.</p> <p>Flashing red : Battery low voltage.</p> <p>OFF : Battery and battery charger are normal, battery is not charging.</p>
C	Bypass	<p>Green : Load supplied by bypass source.</p> <p>Red : Bypass source is unavailable or static bypass switch is inoperable.</p> <p>Flashing red : Bypass voltage is out of tolerance.</p> <p>OFF : Bypass source is normal.</p>
D	Inverter	<p>Green : Load supplied by inverter.</p> <p>Flashing green : Inverter on, start, synchronization or standby (ECO mode) for at least one module.</p> <p>Red : Load not supplied by inverter, inverter is inoperable.</p> <p>Flashing red : Load supplied by inverter, but an inverter alarm is present.</p> <p>OFF : Inverter is off.</p>
E	Load	<p>Green : UPS output is on.</p> <p>Red : Overload on UPS output for too long, or output has shorted, or no output power present.</p> <p>Flashing red : Overload on UPS output.</p> <p>OFF : UPS output is off.</p>
F	Status	<p>Green : Normal mode.</p> <p>Red : Inoperable status.</p>

## Display Interface

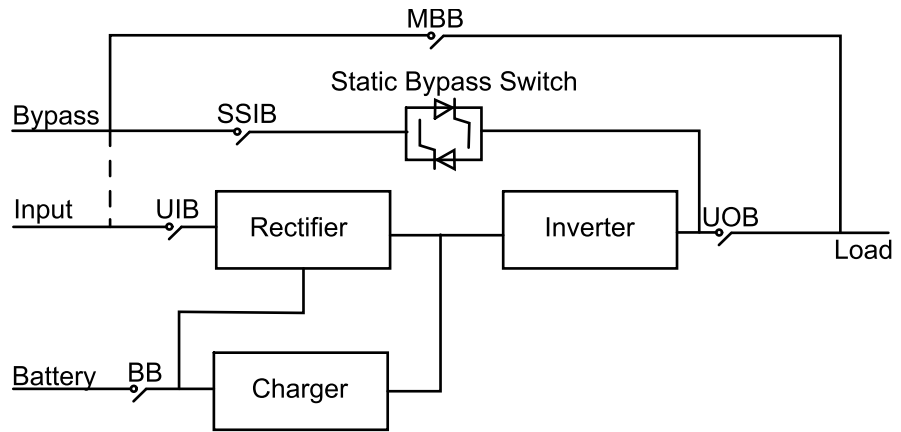
### Home Screen



### Buttons

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

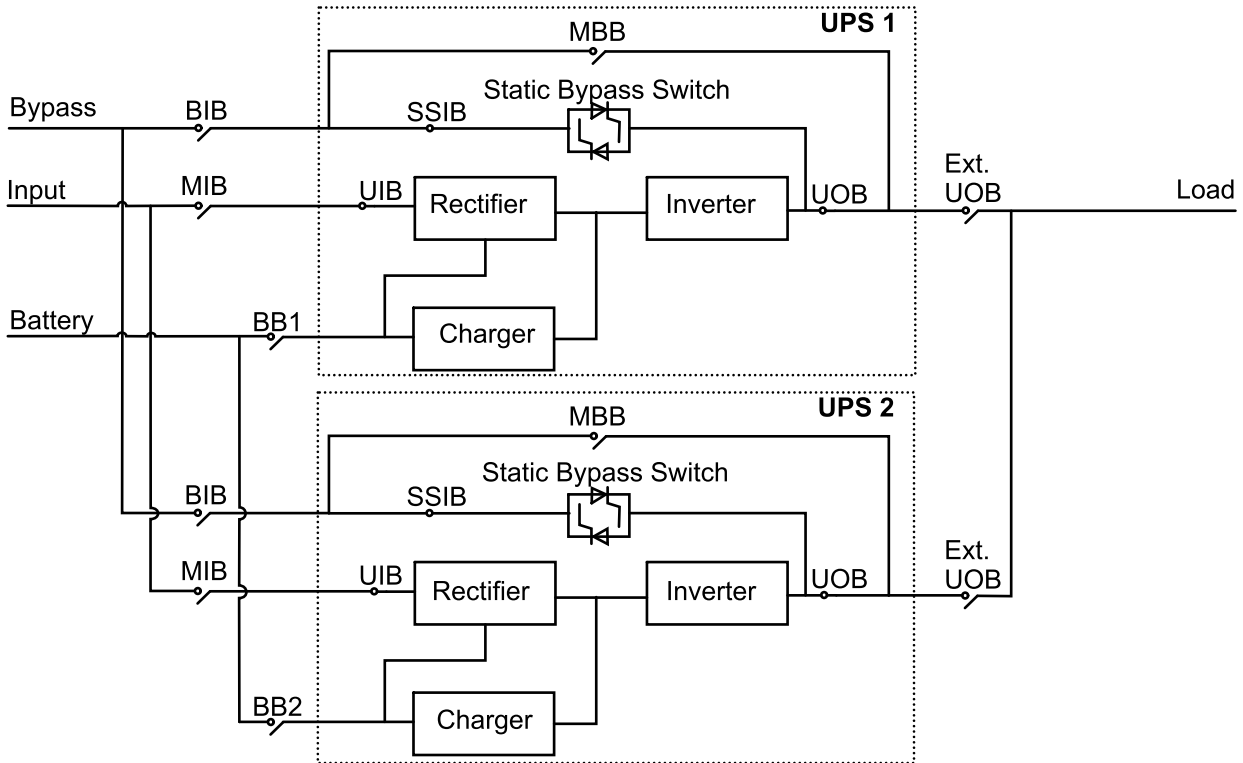
## Overview of Single UPS



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

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

**NOTE:** For UPS with internal batteries, the batteries must be removed and the internal battery breaker (BB) must be opened.

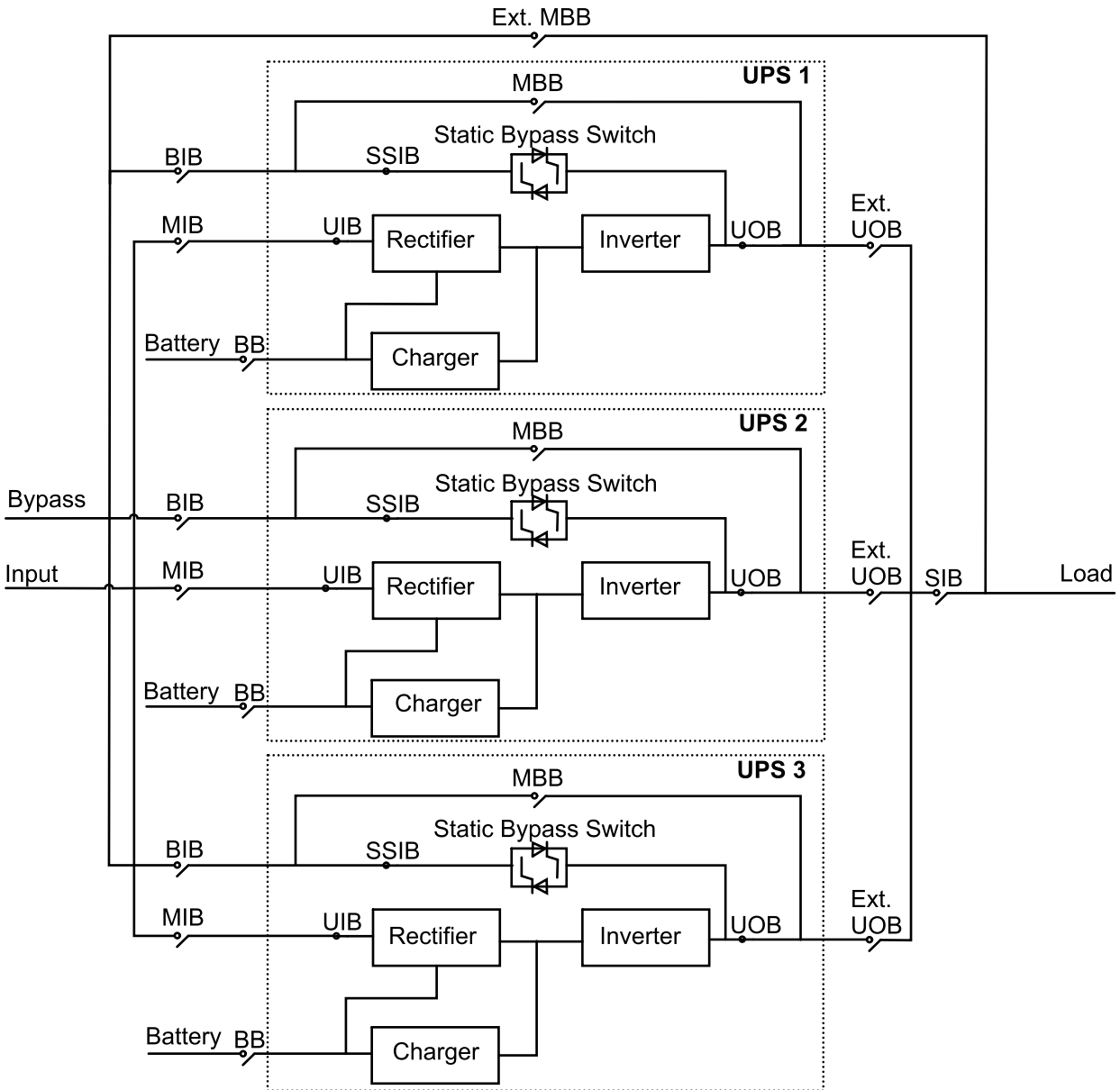


MIB	Mains input breaker
BIB	Bypass input breaker
UIB	Unit input breaker
SSIB	Static switch input breaker
UOB	Unit output breaker
Ext. UOB	External unit output breaker
MBB	Maintenance bypass breaker
Ext. MBB	External maintenance bypass breaker
BB1	Battery breaker 1
BB2	Battery breaker 2

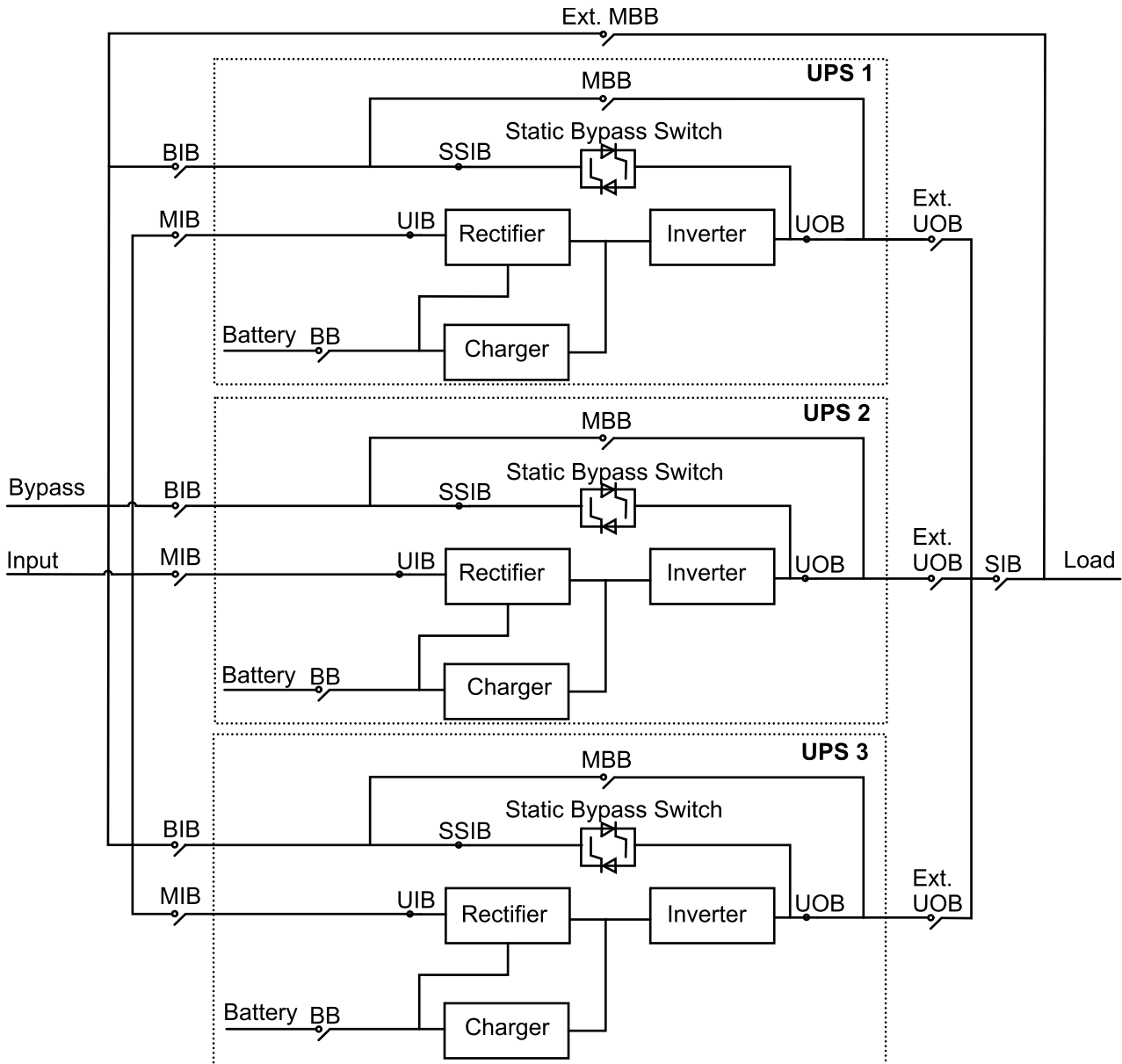
# Overview of Parallel System

**NOTE:** In parallel systems with an external maintenance bypass breaker Ext. MBB, the maintenance bypass breakers MBB must be padlocked in the open position.

## UPSs for External Batteries



**UPSs for Internal Batteries**



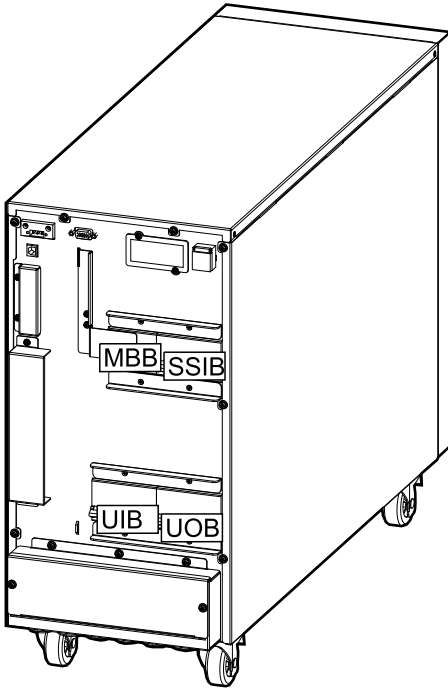
MIB	Mains input breaker
BIB	Bypass input breaker
UIB	Unit input breaker
SSIB	Static switch input breaker
UOB	Unit output breaker
Ext. UOB	External unit output breaker
MBB	Maintenance bypass breaker
Ext. MBB	External maintenance bypass breaker
SIB	System isolation breaker
BB	Battery breaker



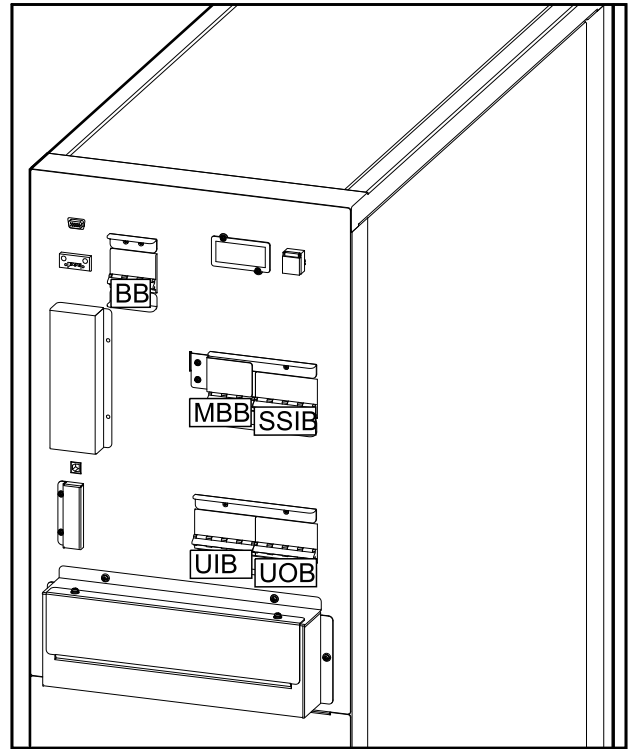
## Location of Breakers - 400 V Systems

### Location of Breakers in 3:3 UPSs

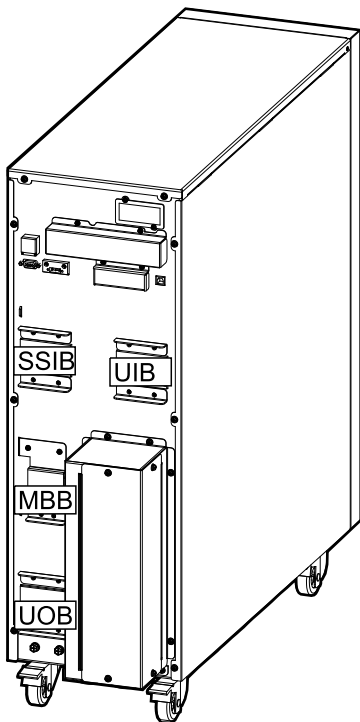
**Rear View of the 10–15 kVA UPS for External Batteries**



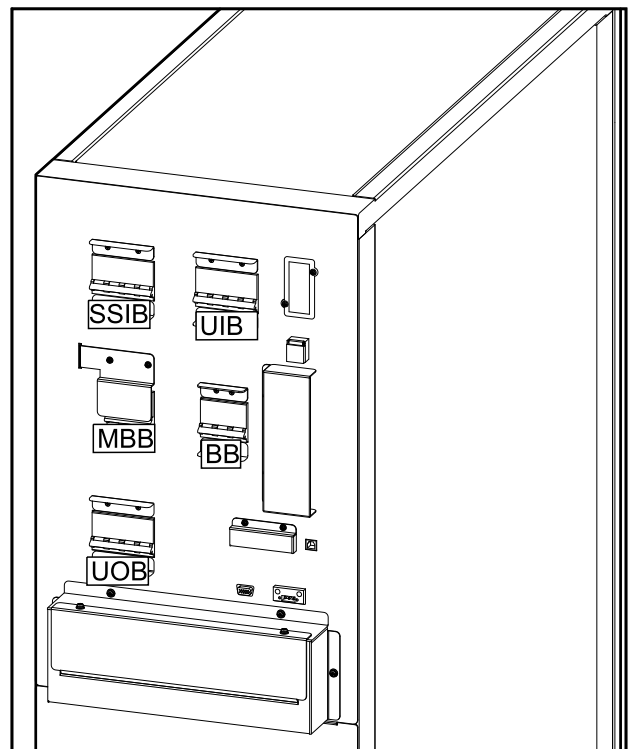
**Rear View of the 10–15 kVA UPS with Internal Batteries**



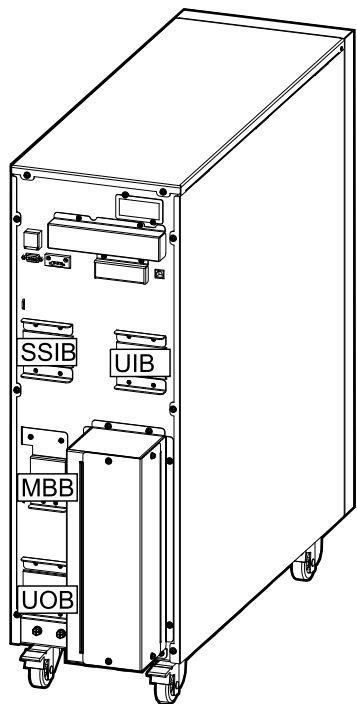
**Rear View of the 20 kVA UPS for External Batteries**



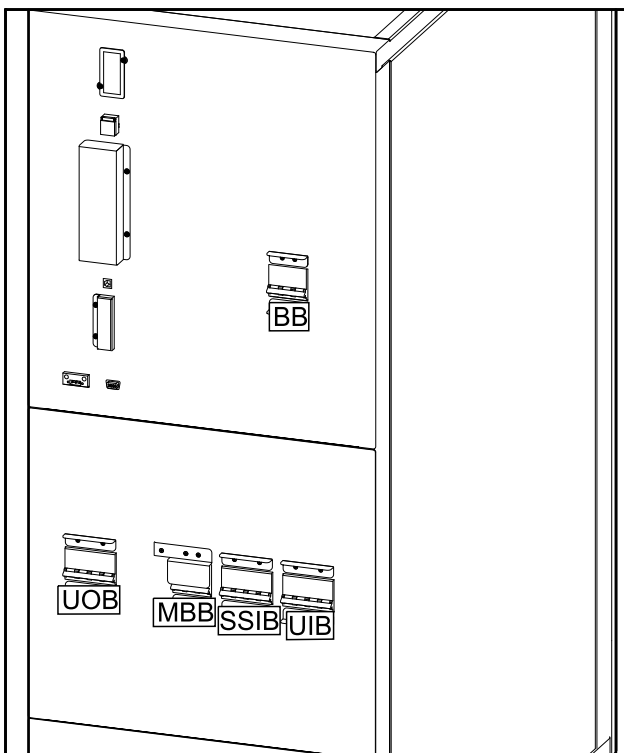
**Rear View of the 20 kVA UPS with Internal Batteries**



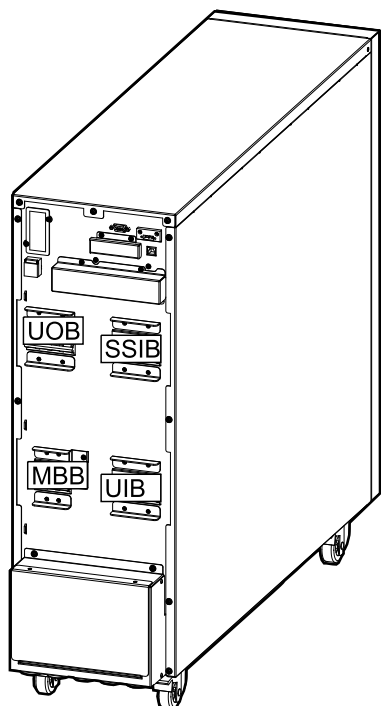
**Rear View of the 30 kVA UPS for External Batteries**



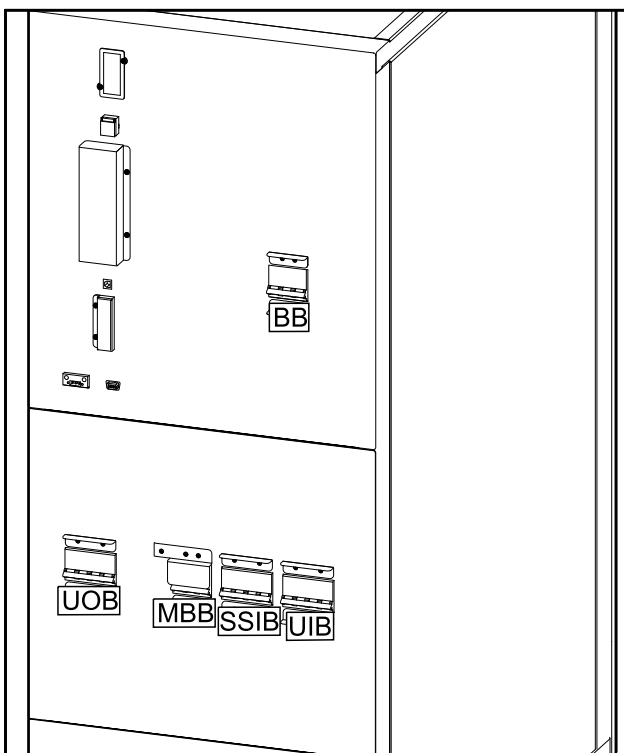
**Rear View of the 30 kVA UPS with Internal Batteries**



**Rear View of the 40 kVA UPS for External Batteries**

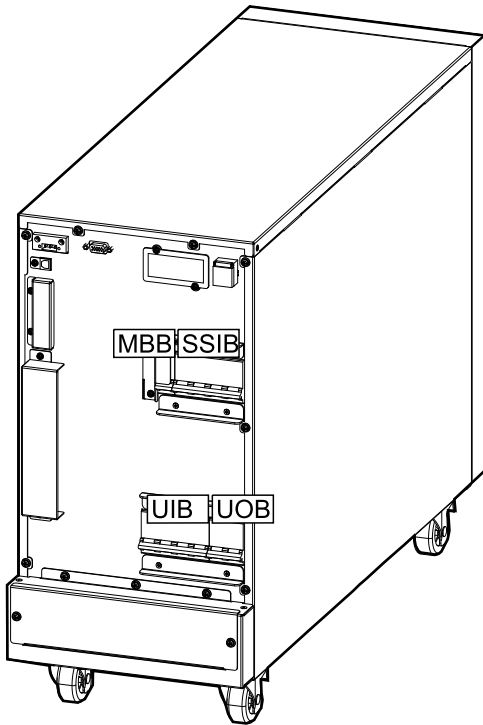


**Rear View of the 40 kVA UPS with Internal Batteries**

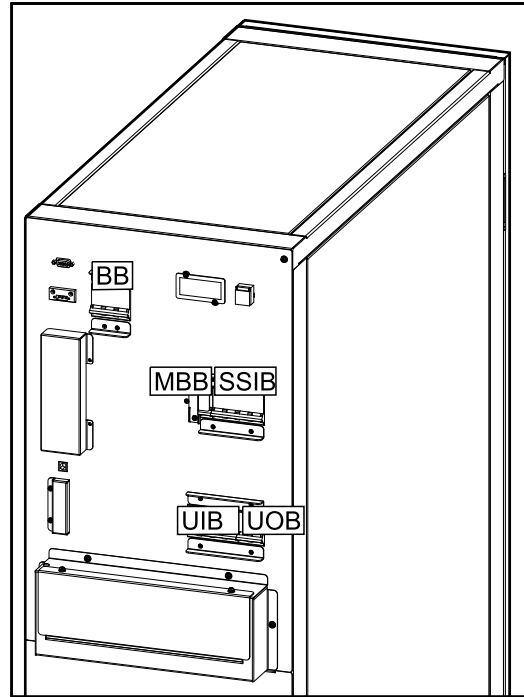


### Location of Breakers in 3:1 UPSs

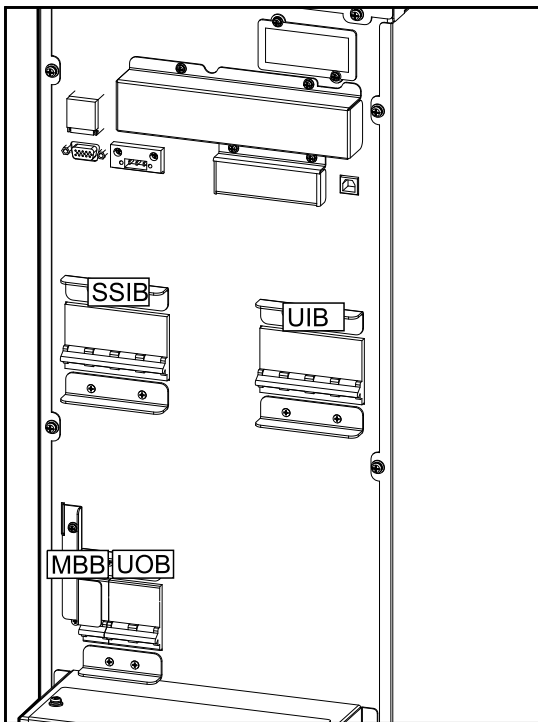
Rear View of the 10–15 kVA UPS for External Batteries



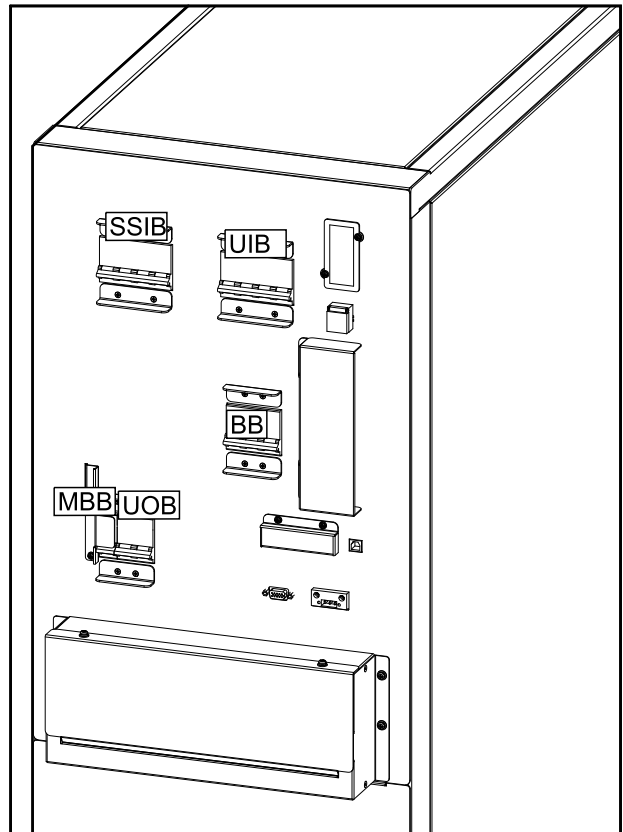
Rear View of the 10–15 kVA UPS with Internal Batteries



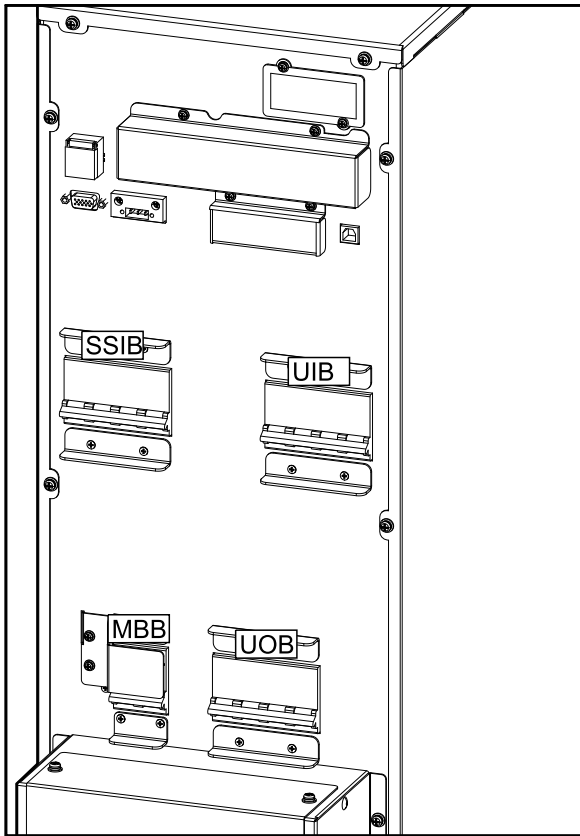
Rear View of the 20 kVA UPS for External Batteries



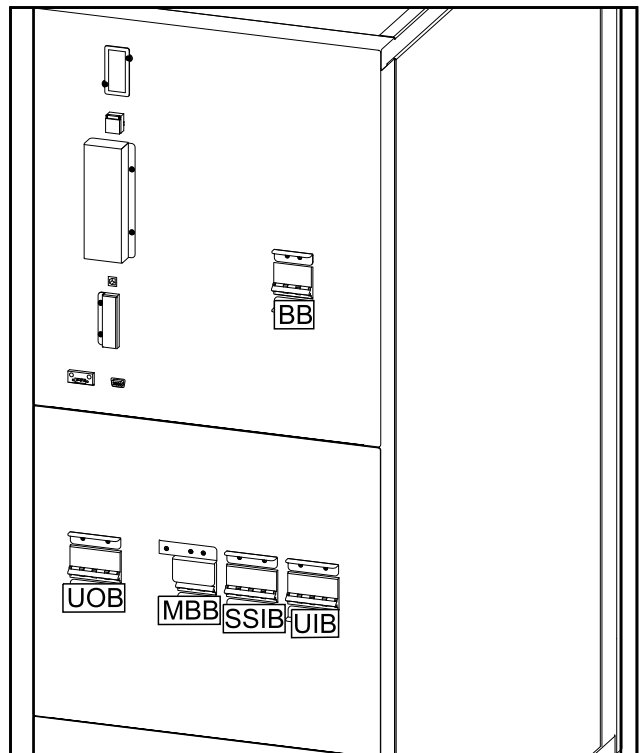
Rear View of the 20 kVA UPS with Internal Batteries



**Rear View of the 30 kVA UPS for External Batteries**



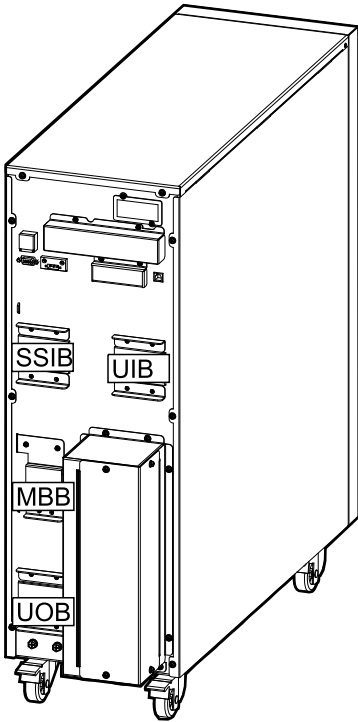
**Rear View of the 30 kVA UPS with Internal Batteries**



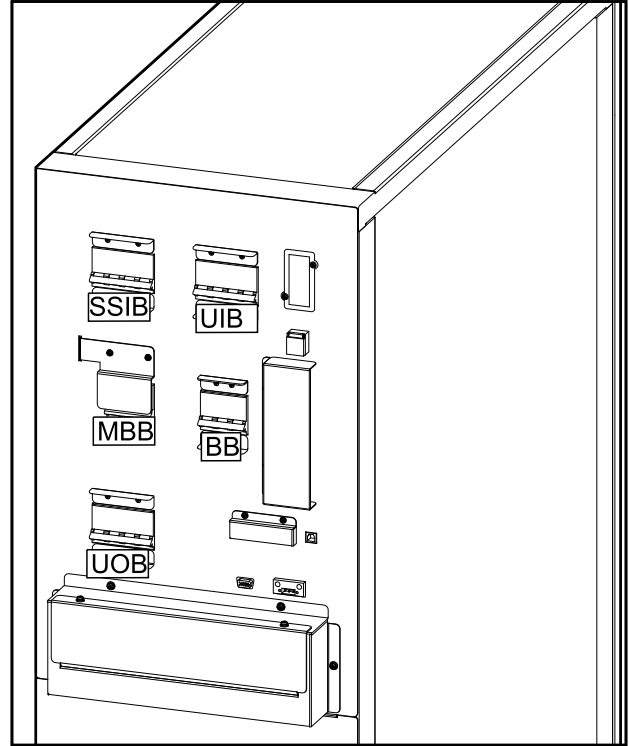
## Location of Breakers - 208 V Systems

### Location of Breakers in 3:3 UPSs

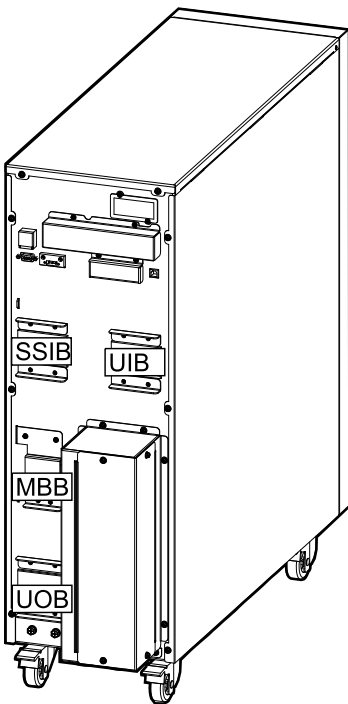
Rear View of the 10 kVA UPS for External Batteries



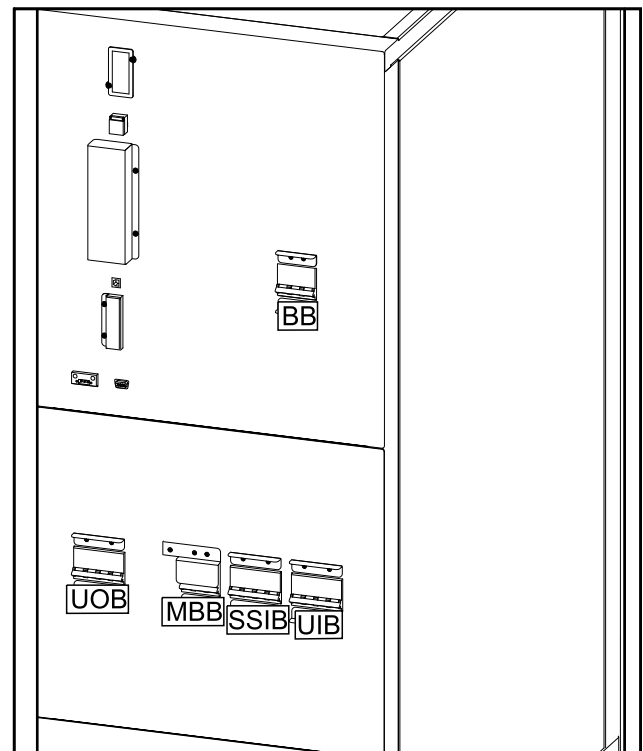
Rear View of the 10 kVA UPS with Internal Batteries



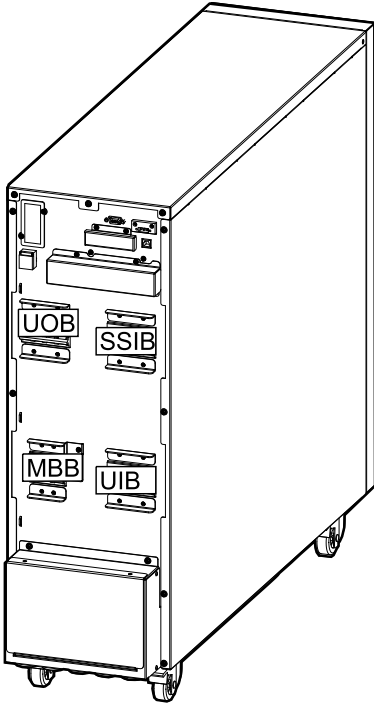
Rear View of the 15 kVA UPS for External Batteries



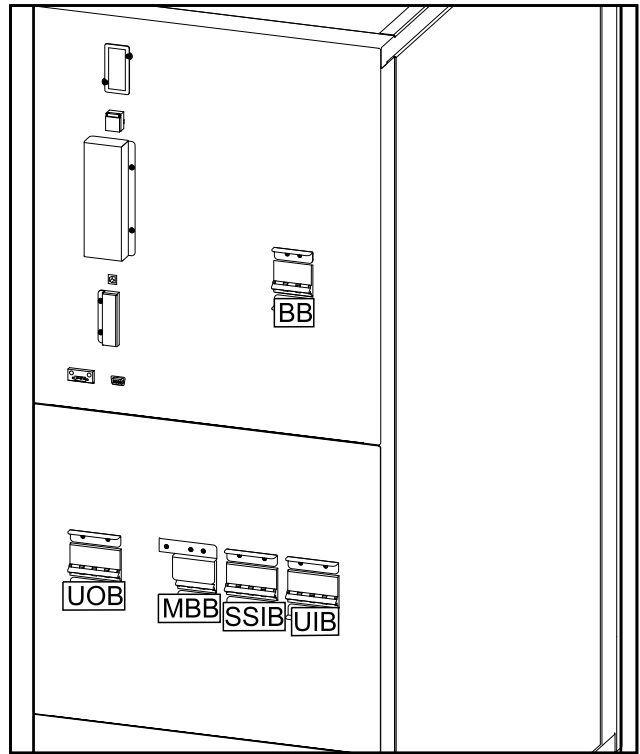
Rear View of the 15 kVA UPS with Internal Batteries



**Rear View of the 20 kVA UPS for External Batteries**



**Rear View of the 20 kVA UPS with Internal Batteries**



# Technical Data for 400 V Systems

## Input Power Factor

### Input Power Factor – 3:3 UPSs

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

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

### Input Power Factor – 3:1 UPSs

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

## Efficiency – 3:3 UPSs

### Efficiency in Normal Mode

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

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

### Efficiency in ECO Mode

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

### Efficiency in Battery Mode

	10 kVA	15 kVA	20 kVA	30 kVA	40 kVA
25% load	94.0	93.3	94.5	94.7	94.7
50% load	94.9	94.6	95.2	95.4	95.2

	10 kVA	15 kVA	20 kVA	30 kVA	40 kVA
75% load	94.7	94.5	95.2	95.2	95.1
100% load	94.3	94.0	94.9	94.6	94.6

## Efficiency – 3:1 UPSs

### Efficiency in Normal Mode

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

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

### Efficiency in ECO Mode

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

### Efficiency in Battery Mode

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



# Technical Data for 208 V Systems

## Input Power Factor

### Input Power Factor – 3:3 UPSs

The values are at 208 V, 60 Hz load.

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

## Efficiency – 3:3 UPSs

### Efficiency in Normal Mode

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

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

### Efficiency in ECO Mode

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

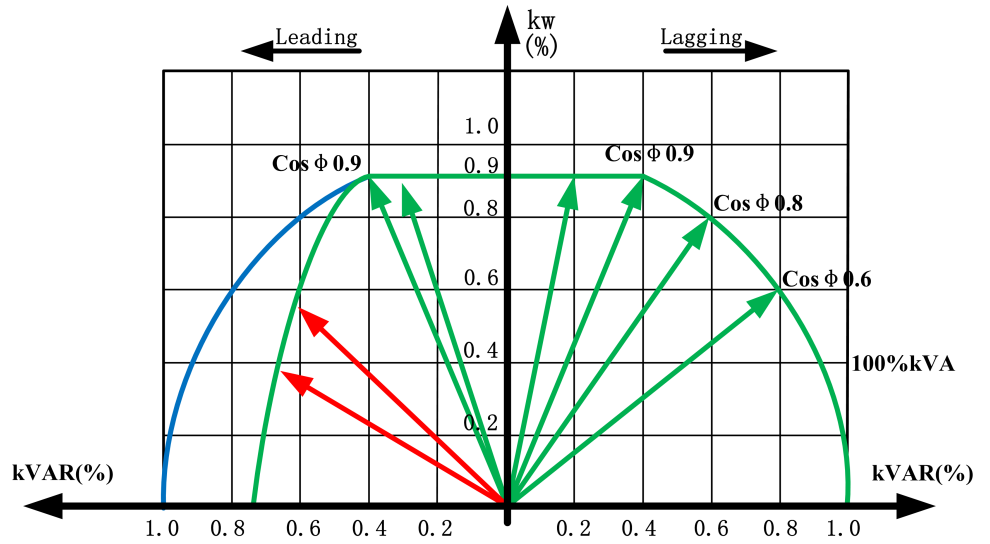
### Efficiency in Battery Mode

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

# Technical Data

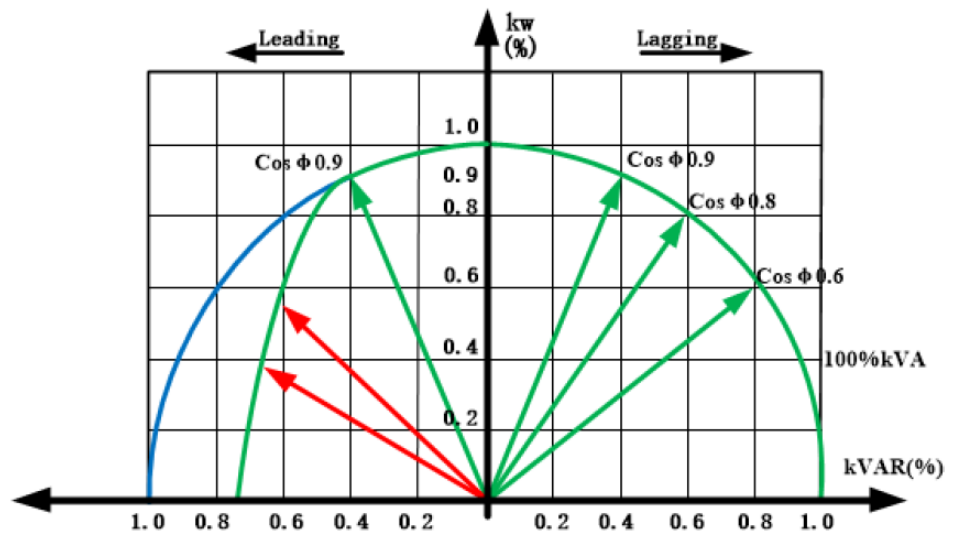
## Derating Due to Load Power Factor

### 400 V Systems



For 0.9 lagging < Cos φ < 0.9 leading

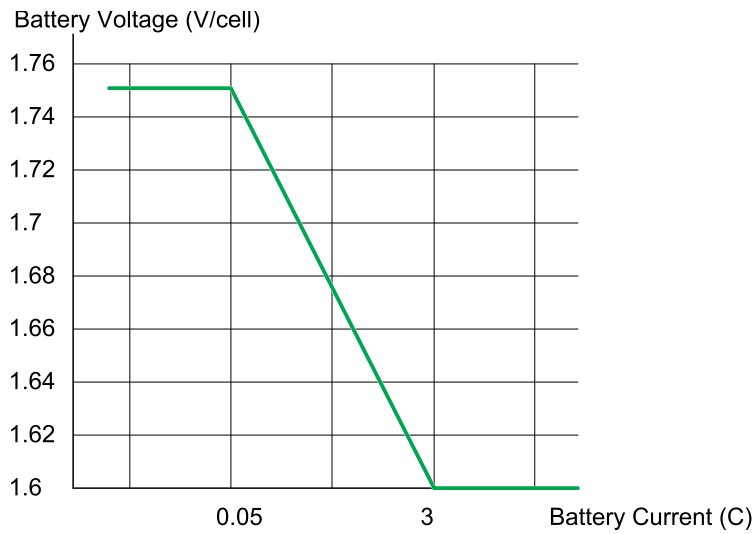
### 208 V Systems



For 1 lagging < Cos φ < 0.9 leading

# Batteries

## End of Discharge Voltage



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

The battery gassing rates are calculated based on:

- Gassing Rate at 2.4 V/cell (ft<sup>3</sup> /hr) assuming 97% recombination efficiency
- Six cells per battery module
- Ten batteries per cartridge

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

## Electrolyte Values for Modular Battery Cabinet and UPSs with Internal Batteries

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

## Compliance

Safety	IEC 62040-1: 2008-06, 1st edition Uninterruptible Power Systems (UPS) - Part 1: General and safety requirements for UPS IEC 62040-1: 2013-01, 1st edition amendment 1
EMC/EMI/RFI	IEC 62040-2: 2005-10, 2nd edition Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements
Performance	IEC 62040-3: 2011-03, 2nd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements
Environmental	IEC 62040-4: 2013-04, 1st edition Uninterruptible Power Systems (UPS) - Part 4: Environmental aspects – Requirements and reporting
Markings	CE, RCM, EAC, WEEE
Transportation	ISTA 2B

## Communication and Management

- User interface with status LEDs and display
- RS232
- RS485
- SNMP (option)
- Dry contacts
- USB

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

## Input Specifications – 3:3 UPSs

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

## Bypass Specifications – 3:3 UPSs

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

## Output Specifications – 3:3 UPSs

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

## Battery Specifications – 3:3 UPSs with Internal Batteries

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

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

## Battery Specifications – 3:3 UPSs for External Batteries

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

## Required Upstream Protection and Cable Sizes – 3:3 UPSs

**NOTE:** Overcurrent protection must be provided by others.

Cable sizes in this manual are based on:

- Single core cables type U1000 R02V
- Specific to AC cables: Maximum length 70 m with a line voltage drop <3% installed on perforated cable trays, XLPE-type insulation, single layer trefoil formation, THDI between 15% and 33%, 35 °C at 400 V grouped in four touching cables
- Specific to DC cables: Maximum length 15 m with a line voltage drop <1%

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

### 10 kVA UPS

	Breaker type	Cable Size per Phase (mm <sup>2</sup> )	PE Cable Size (mm <sup>2</sup> )
Input – single mains Input – dual mains	iC65H-C-20A / C60H-C-20A iC65H-C-20A / C60H-C-20A	6	6
Bypass	iC65H-C-20A / C60H-C-20A	6	6
Output	C65N-B-4P-10A/C60N-B-4P-10A/ C65N-B-4P-10A /C60N-C-4P-6A	6	6
Battery	Compact NSX100F DC TM50D - 3P	8	6

**15 kVA UPS**

	<b>Breaker type</b>	<b>Cable Size per Phase (mm<sup>2</sup>)</b>	<b>PE Cable Size (mm<sup>2</sup>)</b>
Input – single mains Input – dual mains	iC65H-C-32A / C60H-C-32A iC65H-C-32A / C60H-C-32A	6	6
Bypass	iC65H-C-32A / C60H-C-32A	6	6
Output	C65N-B-4P-10A/C60N-B-4P-10A/ C65N-B-4P-10A /C60N-C-4P-6A	6	6
Battery	Compact NSX100F DC TM63D - 3P	8	6

**20 kVA UPS**

	<b>Breaker type</b>	<b>Cable Size per Phase (mm<sup>2</sup>)</b>	<b>PE Cable Size (mm<sup>2</sup>)</b>
Input – single mains Input – dual mains	iC65H-C-40A / C60H-C-40A iC65H-C-40A / C60H-C-40A	10	10
Bypass	iC65H-C-40A / C60H-C-40A	10	10
Output	C65N-B-4P-10A/C60N-B-4P-10A/ C65N-B-4P-10A /C60N-C-4P-6A	10	10
Battery	Compact NSX100F DC TM80D - 3P	25	10

**30 kVA UPS**

	<b>Breaker type</b>	<b>Cable Size per Phase (mm<sup>2</sup>)</b>	<b>PE Cable Size (mm<sup>2</sup>)</b>
Input – single mains Input – dual mains	iC65H-C-63A / C60H-C-63A /C120H-C-63A iC65H-C-63A / C60H-C-63A /C120H-C-63A	16	16
Bypass	iC65H-C-63A / C60H-C-63A /C120H-C-63A	16	16
Output	C65N-B-4P-16A/C60N-B-4P-16A/ C65N-C-4P-10A /C60N-C-4P-10A	16	16
Battery	Compact NSX160F DC TM125D - 3P	25	16

**40 kVA UPS**

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



## UPS Weights and Dimensions – 3:3 UPSs

UPS	Weight kg	Height mm	Width mm	Depth mm
10 kVA UPS for external batteries	36	530	250	700
15 kVA UPS for external batteries	36	530	250	700
20 kVA UPS for external batteries	58	770	250	800
30 kVA UPS for external batteries	60	770	250	800
40 kVA UPS for external batteries	70	770	250	900
10 kVA UPS with internal batteries	112 <sup>4</sup>	1400	380	928
15 kVA UPS with internal batteries	112 <sup>4</sup>	1400	380	928
20 kVA UPS with internal batteries	122 <sup>4</sup>	1400	380	928
30 kVA UPS with internal batteries	152 <sup>4</sup>	1400	500	969
40 kVA UPS with internal batteries	158 <sup>4</sup>	1400	500	969
Battery	27	157	107	760

## UPS Shipping Weights and Dimensions – 3:3 UPSs

UPS	Weight kg	Height mm	Width mm	Depth mm
10 kVA UPS for external batteries	50	772	400	857
15 kVA UPS for external batteries	50	772	400	857
20 kVA UPS for external batteries	75	1015	400	982
30 kVA UPS for external batteries	77	1015	400	982
40 kVA UPS for external batteries	86	1015	400	1050
10 kVA UPS with internal batteries	145 <sup>4</sup>	1640	563	1014
15 kVA UPS with internal batteries	145 <sup>4</sup>	1640	563	1014
20 kVA UPS with internal batteries	158 <sup>4</sup>	1640	563	1014
30 kVA UPS with internal batteries	190 <sup>4</sup>	1640	683	1114
40 kVA UPS with internal batteries	195 <sup>4</sup>	1640	683	1114
Battery	28	180	140	820

4. Weight without batteries

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

## Input Specifications – 3:1 UPSs

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

## Bypass Specifications – 3:1 UPSs

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

## Output Specifications – 3:1 UPSs

	10 kVA			15 kVA			20 kVA			30 kVA		
Voltage (V)	220	230	240	220	230	240	220	230	240	220	230	240
Connections	L, N, PE											
Overload capacity	110% for 60 minutes 125% for 10 minutes 150% for 1 minute >150% for less than 200 milliseconds											
Output voltage tolerance	± 1%											
Dynamic load response	40 milliseconds											
Output power factor	1.0						1.0 <sup>5</sup>					
Nominal output current (A)	46	43	42	69	66	63	91	87	84	137	131	125
Total harmonic distortion (THDU)	<3% at 100% linear load <5.5% at 100% non-linear load											
Output frequency (Hz)	50 or 60											
Slew rate (Hz/sec)	Programmable: 0.1 to 5.0. Default is 2.0.											
Output performance classification (according to EN62040-3)	VFI-SS-111											

## Battery Specifications – 3:1 UPSs with Internal Batteries

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

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

## Battery Specifications – 3:1 UPSs for External Batteries

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

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

**NOTE:** Overcurrent protection must be provided by others.

Cable sizes in this manual are based on:

- Single core cables type U1000 R02V
- Specific to AC cables: Maximum length 70 m with a line voltage drop <3% installed on perforated cable trays, XLPE-type insulation, single layer trefoil formation, THDI between 15% and 33% , 35 °C at 400 V grouped in four touching cables
- Specific to DC cables: Maximum length 15 m with a line voltage drop <1%

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

### 10 kVA UPS

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

### 15 kVA UPS

	Breaker type	Cable Size per Phase (mm <sup>2</sup> )	PE Cable Size (mm <sup>2</sup> )
Input – single mains Input – dual mains	C120H-C-80A / NSX100F TM80C 80A iC65H-C-32A / C60H-C-32A	25 6	6
Bypass	C120H-C-80A / NSX100F TM80C 80A	25	6

	Breaker type	Cable Size per Phase (mm <sup>2</sup> )	PE Cable Size (mm <sup>2</sup> )
Output	C65N-B-2P-25A/ C60N-B-2P-25A	25	6
Battery	Compact NSX100F DC TM63D - 3P	8	6

### 20 kVA UPS

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

### 30 kVA UPS

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

## Weights and Dimensions – 3:1 UPSs

UPS	Weight kg	Height mm	Width mm	Depth mm
10 kVA 3:1 UPS for external batteries	36	530	250	700
15 kVA 3:1 UPS for external batteries	36	530	250	700
20 kVA 3:1 UPS for external batteries	58	770	250	800
30 kVA 3:1 UPS for external batteries	60	770	250	800
10 kVA 3:1 UPS with internal batteries	130 <sup>6</sup>	1400	380	907
15 kVA 3:1 UPS with internal batteries	130 <sup>6</sup>	1400	380	907
20 kVA 3:1 UPS with internal batteries	150 <sup>6</sup>	1400	380	907
30 kVA 3:1 UPS with internal batteries	185 <sup>6</sup>	1400	500	996
Battery	27	157	107	760

6. Weight without batteries.

## Shipping Weights and Dimensions – 3:1 UPSs

UPS	Weight kg	Height mm	Width mm	Depth mm
10 kVA 3:1 UPS for external batteries	50	772	400	857
15 kVA 3:1 UPS for external batteries	50	772	400	857
20 kVA 3:1 UPS for external batteries	75	1015	400	982
30 kVA 3:1 UPS for external batteries	77	1015	400	982
10 kVA 3:1 UPS with internal batteries	145 <sup>7</sup>	1640	563	1014
15 kVA 3:1 UPS with internal batteries	145 <sup>7</sup>	1640	563	1014
20 kVA 3:1 UPS with internal batteries	158 <sup>7</sup>	1640	563	1014
30 kVA 3:1 UPS with internal batteries	185 <sup>7</sup>	1640	683	1114
Battery	28	180	140	820

7. Weight without batteries.

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

## Input Specifications – 3:3 UPSs

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

## Bypass Specifications – 3:3 UPSs

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

## Output Specifications – 3:3 UPSs

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

## Battery Specifications – 3:3 UPSs with Internal Batteries

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



## Battery Specifications – 3:3 UPSs for External Batteries

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

## Required Upstream Protection and Cable Sizes – 3:3 UPSs

**NOTE:** Overcurrent protection must be provided by others.

Cable sizes in this manual are based on:

- Single core cables type U1000 R02V
- Specific to AC cables: Maximum length 70 m with a line voltage drop <3% installed on perforated cable trays, XLPE-type insulation, single layer trefoil formation, THDI between 15% and 33%, 35 °C at 208 V grouped in four touching cables
- Specific to DC cables: Maximum length 15 m with a line voltage drop <1%

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

### 10 kVA UPS

	Breaker type	Cable Size per Phase (mm <sup>2</sup> )	PE Cable Size (mm <sup>2</sup> )
Input – single mains Input – dual mains	iC65H-C-40A / C60H-C-40A iC65H-C-40A / C60H-C-40A	10	10
Bypass	iC65H-C-40A / C60H-C-40A	10	10
Output	C65N-B-4P-10A/C60N-B-4P-10A/ C65N-B-4P-10A /C60N-C-4P-6A	10	10
Battery	Compact NSX100F DC TM80D - 3P	25	10

### 15 kVA UPS

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

## 20 kVA UPS

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

## UPS Weights and Dimensions – 3:3 UPSs

UPS	Weight kg	Height mm	Width mm	Depth mm
10 kVA UPS for external batteries	58	770	250	800
15 kVA UPS for external batteries	60	770	250	800
20 kVA UPS for external batteries	70	770	250	900
10 kVA UPS with internal batteries	122 <sup>8</sup>	1400	380	928
15 kVA UPS with internal batteries	152 <sup>8</sup>	1400	500	969
20 kVA UPS with internal batteries	158 <sup>8</sup>	1400	500	969
Battery	27	157	107	760

## UPS Shipping Weights and Dimensions – 3:3 UPSs

UPS	Weight kg	Height mm	Width mm	Depth mm
10 kVA UPS for external batteries	75	1015	400	982
15 kVA UPS for external batteries	77	1015	400	982
20 kVA UPS for external batteries	86	1015	400	1050
10 kVA UPS with internal batteries	158 <sup>8</sup>	1640	563	1014
15 kVA UPS with internal batteries	190 <sup>8</sup>	1640	683	1114
20 kVA UPS with internal batteries	195 <sup>8</sup>	1640	683	1114
Battery	28	180	140	820

8. Weight without batteries

# Facility Planning

## Recommended Bolts and Cable Lugs

Cable Size (mm <sup>2</sup> )	Bolt Size	Cable Lug Type
6	M5	KST TLK6-5
8	M5	KST RNBS8-5
10	M6	KST TLK10-6
16	M6	KST TLK16-6
25	M6	KST DRNB6-25
35	M6	KST TLK35-6
50	M8	KST TLK50-8

## Torque Specifications

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

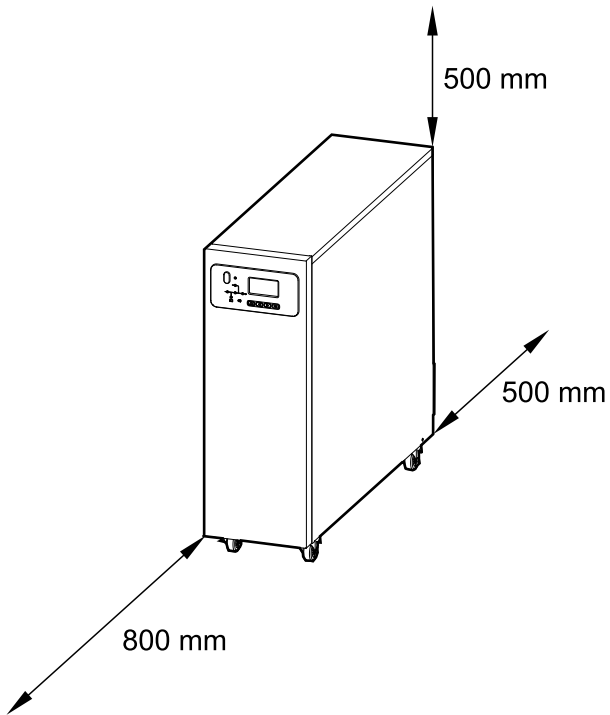
## Clearance

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

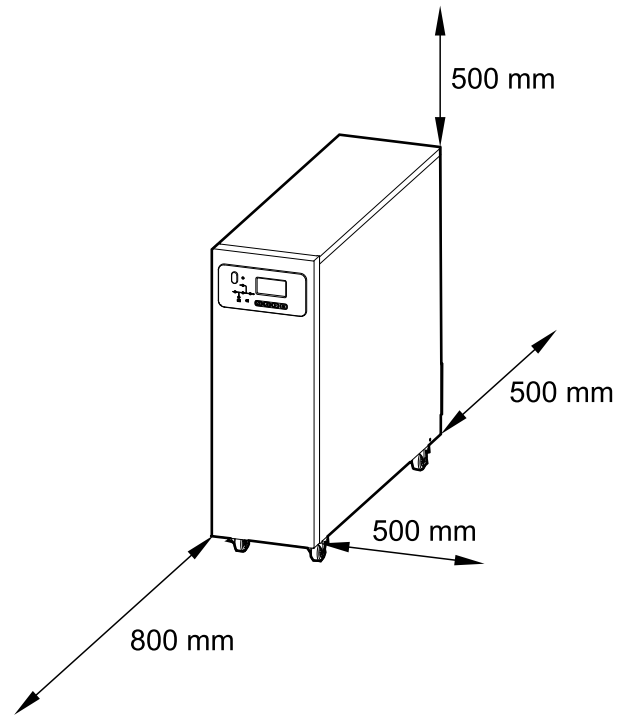
**NOTE:** If the UPS is installed without side access, the length of the cables connected to the UPS must allow for rolling out the UPS.

### UPS for External Batteries

Option A

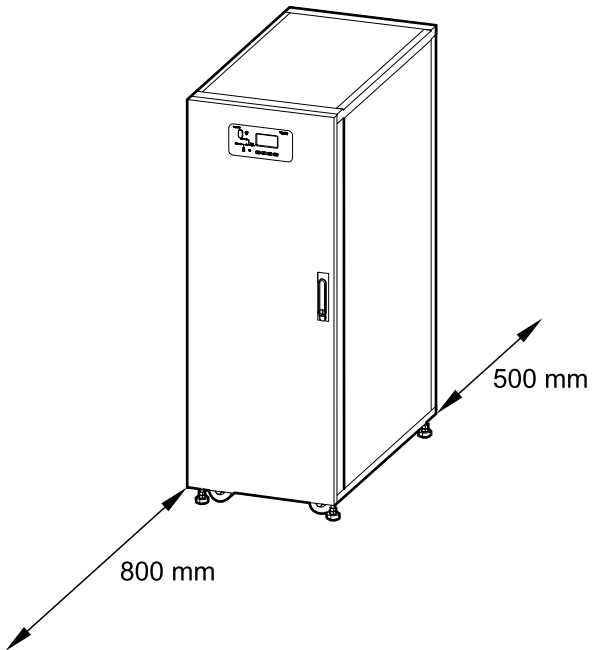


Option B

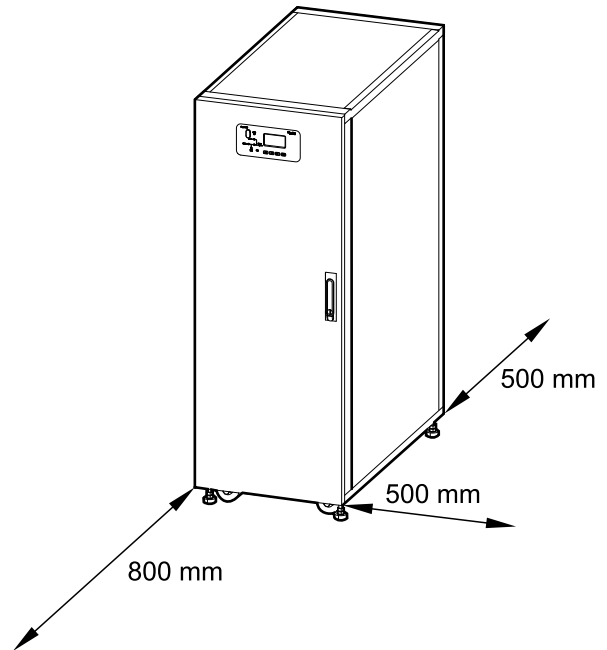


### UPS with Internal Batteries

Option A



Option B



## Environmental

	Operation	Storage
Temperature	0 °C to 40 °C <sup>9</sup>	-15 °C to 40 °C for systems with batteries -25 °C to 55 °C for systems without batteries
Relative humidity	0–95% non-condensing	
Elevation derating according to IEC 62040–3	1000 m: 1.000 1500 m: 0.975 2000 m: 0.950	< 15000 m above sea level (or in an environment with equivalent air pressure)
Audible noise	10–20 kVA 400 V: <60 dBA at full load 30–40 kVA 400 V: <63 dBA at full load 10–20 kVA 208 V: <63 dBA at full load	
Protection class	IP20 (dust filter as standard)	
Color	RAL 9003	

## Heat Dissipation for 400 V Systems

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

## Heat Dissipation for 208 V Systems

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

## Airflow Requirement for 400 V Systems

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

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

## Airflow Requirement for 208 V Systems

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

	10 kVA	15 kVA	20 kVA
Fan air throughput (m <sup>3</sup> /min)	10.85	15.57	16.38

9. The optimal operation temperature for batteries is 20 °C to 25 °C

## Battery Breaker Box Weights and Dimensions

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

## Modular Battery Cabinet Weights and Dimensions

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

## Modular Battery Cabinet Shipping Weights and Dimensions

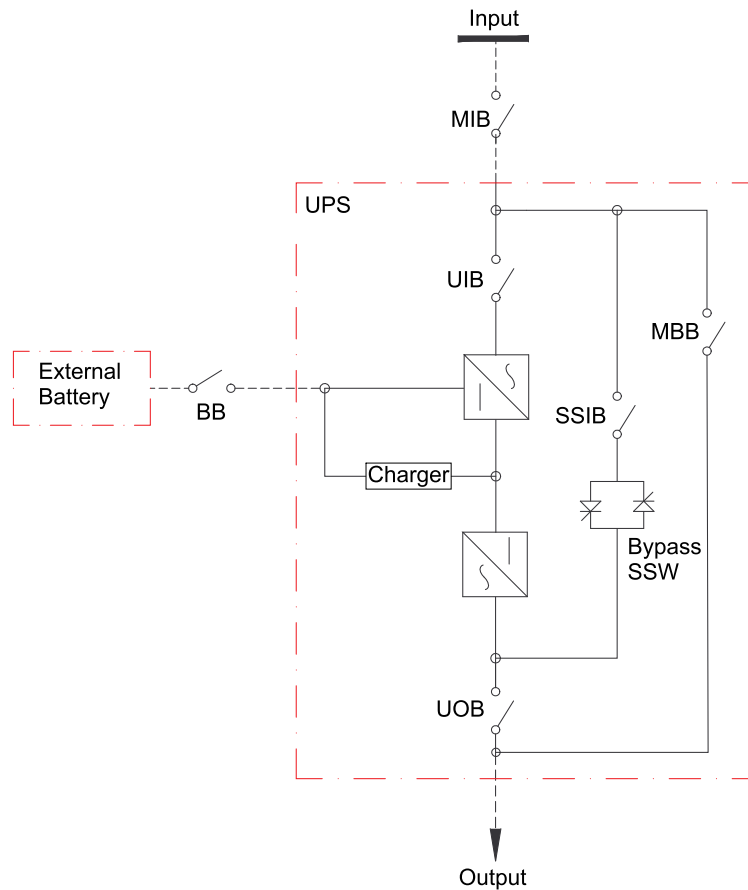
	Weight kg	Height mm	Width mm	Depth mm
Modular battery cabinet	140	1620	650	1020

# Drawings

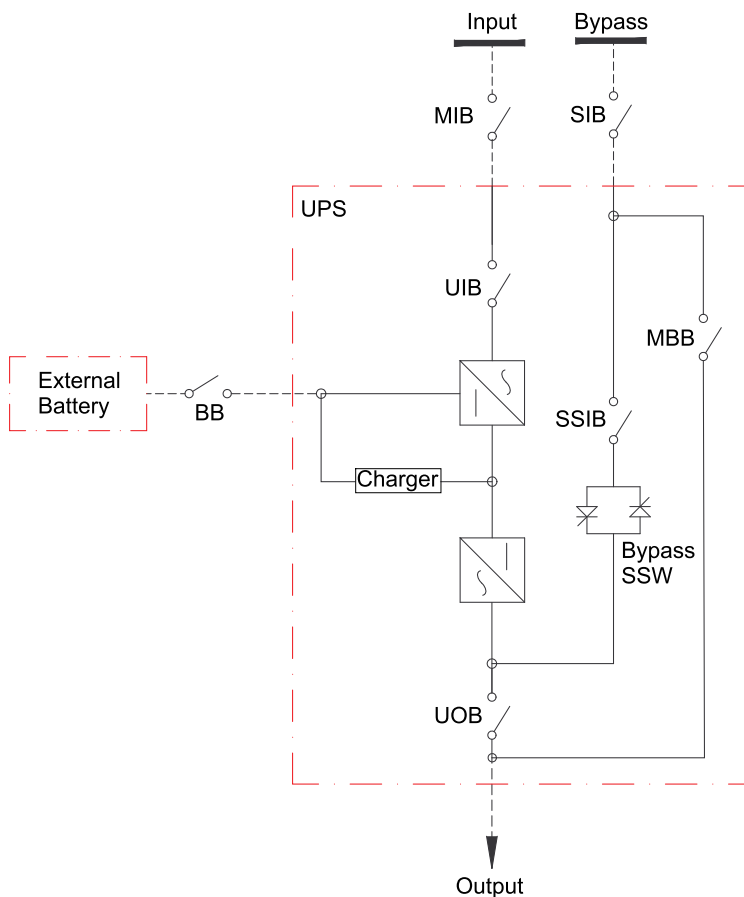
**NOTE:** A comprehensive set of drawings is available on [www.schneider-electric.com](http://www.schneider-electric.com).

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

## Easy UPS 3S for External Batteries – Single Mains System

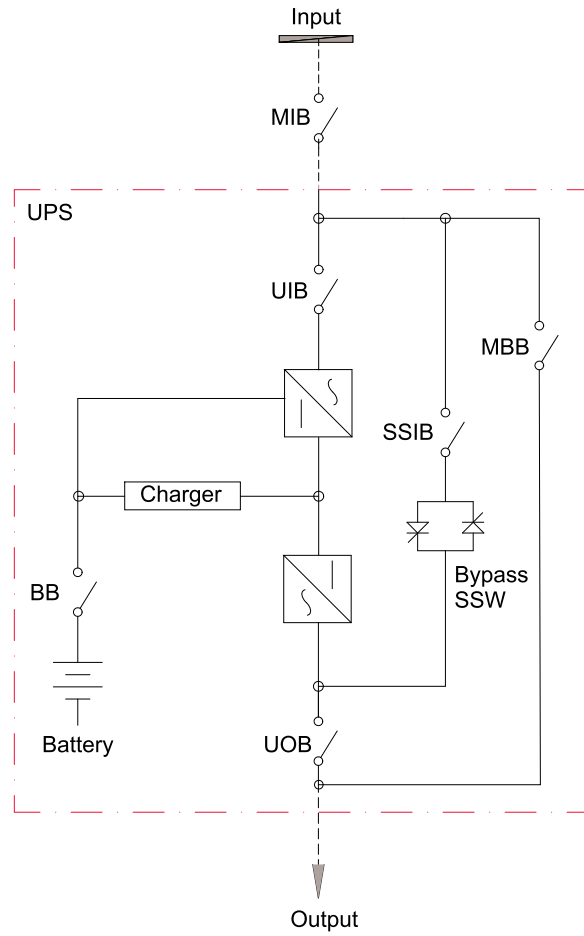


# Easy UPS 3S for External Batteries – Dual Mains System

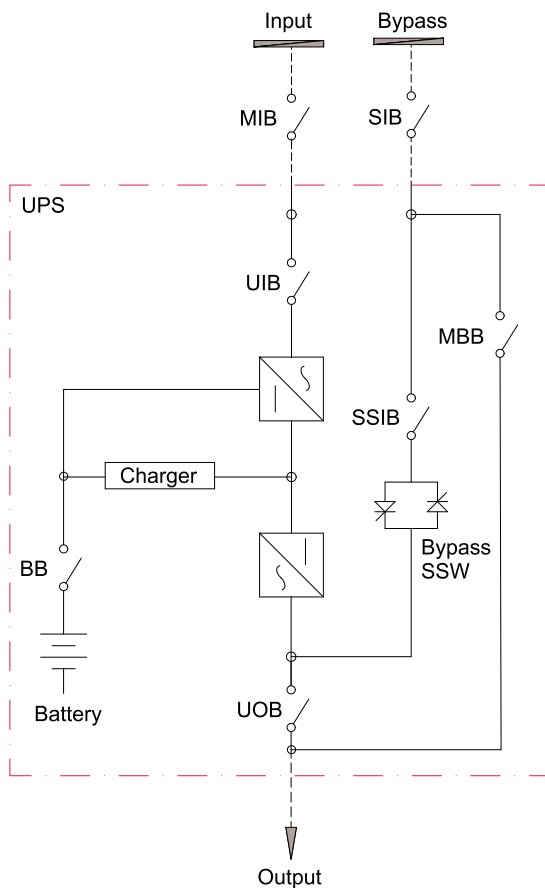




# Easy UPS 3S with Internal Batteries – Single Mains System



# Easy UPS 3S with Internal Batteries – Dual Mains System



# Options

## Hardware Options

- E3SOPT001: Easy UPS 3S network card
- E3SOPT002: Easy UPS 3S parallel kit
- E3SOPT003: Easy UPS 3S temperature sensor kit for external battery system
- E3SOPT004: Easy UPS 3S cold start kit
- E3SOPT006: Easy UPS 3S parallel maintenance bypass panel for up to 2 units 10-40 kVA
- E3SXR6: Easy UPS 3S modular battery cabinet
- E3SOPT007: Easy UPS 3S battery breaker box
- E3SOPT008: Easy UPS 3S battery breaker kit
- E3SOPT009: Easy UPS battery connector kit
- GVEBC7: Empty battery cabinet, 700 mm wide
- GVEBC11: Empty battery cabinet, 1100 mm wide

## Configuration Options

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

## Settings

Setting	Default Value	Available Settings
LCD contrast	60	0 to 100
Date and Time	05/07/2013 08:55:55	Year > 2000
Language	English	Chinese simplified, English, Italian, German, Russian, Spanish, Portuguese Brazilian, and French
Input voltage	400 V	200 V/208 V/220 V or 380 V/400 V/415 V
Bypass voltage	400 V for 3:3 UPSs 230 V for 3:1 UPSs	200 V/208 V/220 V or 380 V/400 V/415 V for 3:3 UPSs 220 V/230 V/240 V for 3:1 UPSs
Input frequency	50 Hz	60 Hz
Output voltage	400 V for 3:3 UPSs 230 V for 3:1 UPSs	200 V/208 V/220 V or 380 V/400 V/415 V for 3:3 UPSs 220 V/230 V/240 V for 3:1 UPSs
Output frequency	50 Hz	60 Hz
Output phase	3 for 3:3 UPSs 1 for 3:1 UPSs	3/1
Auto boost	disable	enable
Auto maint	disable	enable
System mode	single	parallel/ECO/parallel ECO/self aging
Unit number	1	1 to 4
System ID	0	0 to 3

Setting	Default Value	Available Settings
Adjusted output voltage	400 V for 3:3 UPSs 230 V for 3:1 UPSs	Output voltage $\pm 10$ V
Frequency slew rate	2 Hz/s	0.1 to 5.0 Hz/s
Frequency synchronization window	3 Hz	0.5 to 5.0 Hz
Monochrome LCD time (min)	10	1/3/5/10/20/30
Bypass voltage upper limit (%)	15	10/20/25
Bypass voltage lower limit (%)	-20	-10/-15/-30/-40
Bypass frequency limited (Hz)	$\pm 5$	$\pm 1/\pm 3/\pm 5$
System restart mode after end of discharge	Normal	bypass only/ no output
Fan maintenance period	34560 hours (48 months)	0 to 60000 hours
DC capacitor maintenance period	34560 hours (48 months)	0 to 60000 hours
warranty period	9 months	1 to 36 months
AC capacitor maintenance period	120 months	60 to 120 months
APS maintenance period	84 months	36 to 120 months
Dust filter maintenance period	3 months	0/3/4/5/12 months
Battery maintenance period	4 years	2 to 10 years
Battery number	32 for UPSs for external batteries 40 for UPSs with internal batteries	20/32/34/36/38/40
Battery AH	1	1 to 30000
Float charge voltage/cell (V)	2.25	2.10 to 2.35
Boost charge voltage/cell (V)	2.25	2.20 to 2.45
End of discharge voltage/cell, at 3 C current (V)	1.6	1.50 to 1.85
End of discharge voltage/cell, at 0.05 C current (V)	1.75	1.55 to 1.90
Charge current percent limit (%)	10	1 to 20
Battery temperature compensation	0	0 to 5 mV/°C
Boost charge time limit	12 hours	1 to 48 hours
Auto boost period	2160 hours (3 months)	720 to 30000 hours, available when auto boost is enabled
Auto maintenance discharge period	6480 hours (9 months)	720 to 30000 hours, available when auto maintenance is enabled
Critical battery temperature	45 °C	25 °C to 70 °C
Critical ambient temperature	40 °C	25 °C to 70 °C

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