Easy UPS 3M

For Internal and External Batteries

Technical Specifications

60-200 kVA 400 V and 50-100 kVA 208 V

Latest updates are available on the Schneider Electric website

12/2024

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Find the UPS Manuals, Relevant Auxiliary Product Manuals, and Option Manuals Here:

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IEC (380/400/415 V)

https://www.productinfo.schneider-electric.com/easyups3m/

Here you can find your UPS installation manual, UPS operation manual, and UPS technical specifications, and you can also find installation manuals for your auxiliary products and options.

This online manual portal is available on all devices and offers digital pages, search functionality across the different documents in the portal, and PDF download for offline use.

Learn More About the Easy UPS 3M Here:

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Table of Contents

Important Safety Instructions — SAVE THESE INSTRUCTIONS 7
- Electromagnetic Compatibility 8
- Safety Precautions 8
  - Electrical Safety 11
  - Battery Safety 12

Model List 14

System Overview 15
- User Interface 16
  - Status LEDs 16
- Location of Breakers and Switches 17
- Overview of Single UPS 19
- Overview of 1+1 Redundant Parallel System with Common Battery Bank 20
- Overview of Parallel System 21

Technical Data 24
- Technical Data for 400 V Systems 24
  - Input Power Factor 24
  - Efficiency 24
  - Battery Runtimes 25
  - Battery Gassing Rates for Modular Battery Cabinets and UPSs with Internal Batteries 25
  - Electrolyte Values for Modular Battery Cabinet and UPSs with Internal Batteries 25
- Technical Data for 208 V Systems 26
  - Input Power Factor 26
  - Efficiency 26
  - Battery Runtimes 27
- Derating Due to Load Power Factor 27
- End of Discharge Voltage 27
- Compliance 28
- Communication and Management 28
- IP Capacity for UPS with Optional IP Kits 28

Facility Planning for 60-80 kVA 400 V UPS for Internal Batteries 29

Facility Planning for 60-100 kVA 400 V UPS for External Batteries 35

Facility Planning for 120-200 kVA 400 V UPS for External Batteries 41

Facility Planning for 50 kVA 208 V UPS for External Batteries 47

Facility Planning for 60-100 kVA 208 V UPS for External Batteries 53

Requirements for a Third Party Battery Solution 59
- Third Party Battery Breaker Requirements 59

Guidance for Organizing Battery Cables....59
Drawings....61
Easy UPS 3M UPS for External Batteries – Single Mains System....61
Easy UPS 3M UPS for External Batteries – Dual Mains System....62
Easy UPS 3M UPS for Internal Batteries – Single Mains System....63
Easy UPS 3M UPS for Internal Batteries – Dual Mains System....64
Options....65
Hardware Options....66
Weights and Dimensions for Options....69
Modular Battery Cabinet Shipping Weights and Dimensions....69
Modular Battery Cabinet Weights and Dimensions....69
Classic Battery Cabinet Shipping Weights and Dimensions....69
Classic Battery Cabinet Weights and Dimensions....70
Battery Breaker Box Shipping Weight and Dimensions....70
Battery Breaker Box Weight and Dimensions....70
Battery Breaker Kit Shipping Weights and Dimensions....70
Battery Breaker Kit Weights and Dimensions....70
Maintenance Bypass Panel Shipping Weights and Dimensions....71
Maintenance Bypass Panel Weights and Dimensions....71
Parallel Maintenance Bypass Panel Weights and Dimensions....71
Parallel Maintenance Bypass Panel Shipping Weights and Dimensions....71
Parallel Maintenance Bypass Panel Shipping Weights and Dimensions....71
Parallel Maintenance Bypass Panel Weights and Dimensions....72
Backfeed Box Shipping Weights and Dimensions....72
Backfeed Box Weights and Dimensions....72
Limited Factory Warranty....73

Important Safety Instructions — SAVE THESE INSTRUCTIONS

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

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

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

⚠DANGER

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

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

⚠WARNING

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

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

⚠CAUTION

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

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

NOTICE

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

Failure to follow these instructions can result in equipment damage.

Please Note

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

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

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

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

Electromagnetic Compatibility

NOTICE

RISK OF ELECTROMAGNETIC DISTURBANCE

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

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

Failure to follow these instructions can result in equipment damage.

Safety Precautions

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- The product must be installed according to the specifications and requirements as defined by Schneider Electric. It concerns in particular the external and internal protections (upstream breakers, battery breakers, cabling, etc.) and environmental requirements. No responsibility is assumed by Schneider Electric if these requirements are not respected.
- After the UPS system has been electrically wired, do not start up the system. 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, **or**
- Canadian Electrical Code (C22.1, Part 1)

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

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

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

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠WARNING

HAZARD OF ARC FLASH

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

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

NOTICE

RISK OF OVERHEATING

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

Failure to follow these instructions can result in equipment damage.

NOTICE

RISK OF EQUIPMENT DAMAGE

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

Failure to follow these instructions can result in equipment damage.

Electrical Safety

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Electrical equipment must be installed, operated, serviced, and maintained only by qualified personnel.
- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- Turn off all power supplying the UPS system before working on or inside the equipment.
- Before working on the UPS system, check for hazardous voltage between all terminals including the protective earth.
- The UPS contains an internal energy source. Hazardous voltage can be present even when disconnected from the mains supply. Before installing or servicing the UPS system, ensure that the units are OFF and that mains and batteries are disconnected. Wait five minutes before opening the UPS to allow the capacitors to discharge.
- A disconnection device (e.g. disconnection circuit breaker or switch) must be installed to enable isolation of the system from upstream power sources in accordance with local regulations. The disconnection device must be easily accessible and visible.
- The UPS must be properly earthed/grounded and due to a high leakage current, the earthing/grounding conductor must be connected first.

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠ CAUTION

RISK OF ELECTRICAL DISTURBANCE

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

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

Battery Safety

⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

- Remove watches, rings, or other metal objects.
- Use tools with insulated handles.
- Wear protective glasses, gloves and boots.
- Do not lay tools or metal parts on top of batteries.
- Disconnect the charging source prior to connecting or disconnecting battery terminals.
- Determine if the battery is inadvertently grounded. If inadvertently grounded, remove source from ground. Contact with any part of a grounded battery can result in electric shock. The likelihood of such shock can be reduced if such grounds are removed during installation and maintenance (applicable to equipment and remote battery supplies not having a grounded supply circuit).

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

⚠⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠CAUTION

RISK OF EQUIPMENT DAMAGE

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

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

Model List

400 V UPSs

UPS for External Batteries

- Easy UPS 3M 60 kVA 400 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS60KHS)
- Easy UPS 3M 80 kVA 400 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS80KHS)
- Easy UPS 3M 100 kVA 400 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS100KHS)
- Easy UPS 3M 120 kVA 400 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS120KHS)
- Easy UPS 3M 160 kVA 400 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS160KHS)
- Easy UPS 3M 200 kVA 400 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS200KHS)

UPS for Internal Batteries

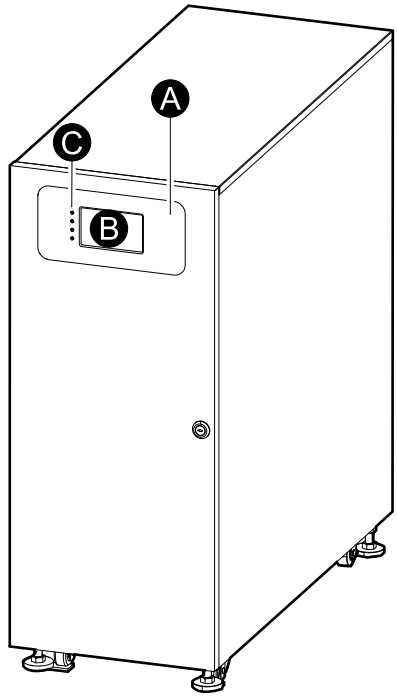
- Easy UPS 3M 60kVA 400V 3:3 UPS for internal batteries, Start-up 5x8 (E3MUPS60KHBS)
- Easy UPS 3M 60kVA 400V 3:3 UPS, 3 internal 9Ah modular battery strings expandable to 6, Start-up 5x8 (E3MUPS60KHB1S)
- Easy UPS 3M 60kVA 400V 3:3 UPS, 4 internal 9Ah modular battery strings expandable to 6, Start-up 5x8 (E3MUPS60KHB2S)
- Easy UPS 3M 80kVA 400V 3:3 UPS for internal batteries, Start-up 5x8 (E3MUPS80KHBS)
- Easy UPS 3M 80kVA 400V 3:3 UPS, 4 internal 9Ah modular battery strings expandable to 6, Start-up 5x8 (E3MUPS80KHB1S)
- Easy UPS 3M 80kVA 400V 3:3 UPS, 6 internal 9Ah modular battery strings, Start-up 5x8 (E3MUPS80KHB2S)

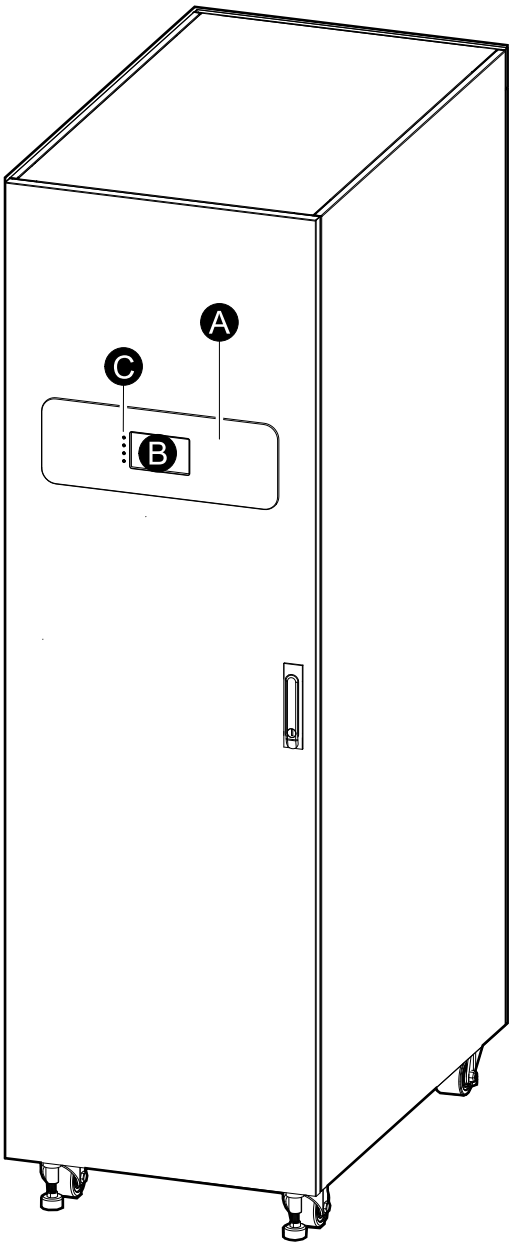
208 V UPSs

- Easy UPS 3M 50 kVA 208 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS50KFNS)
- Easy UPS 3M 60 kVA 208 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS60KFNS)
- Easy UPS 3M 80 kVA 208V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS80KFNS)
- Easy UPS 3M 100 kVA 208 V 3:3 UPS for external batteries, Start-up 5x8 (E3MUPS100KFNS)

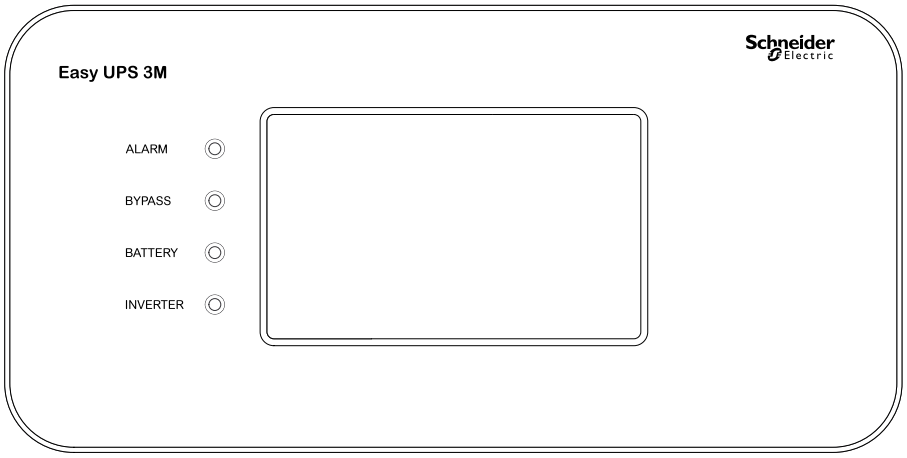
System Overview

A. User interface
B. Display interface
C. Status LEDs





User Interface

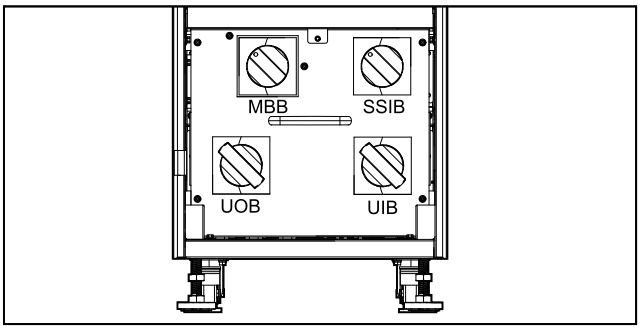


Status LEDs

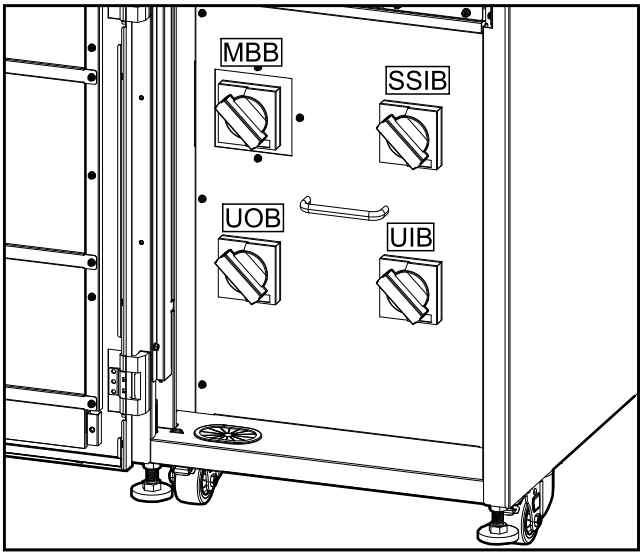
LED	State	Description
ALARM	Steady red	Critical alarm
	Flashing red	Warning alarm
	Off	No alarm condition
BYPASS	Steady yellow	The load is supplied by the bypass source
	Flashing yellow	There is an alarm condition on the bypass source
	Off	The load is not supplied by the bypass source
BATTERY	Steady yellow	The load is supplied by the battery source
	Flashing yellow	The battery source is unavailable
	Off	The load is not supplied by the battery source
INVERTER	Steady green	Inverter on
	Off	Inverter off

Location of Breakers and Switches

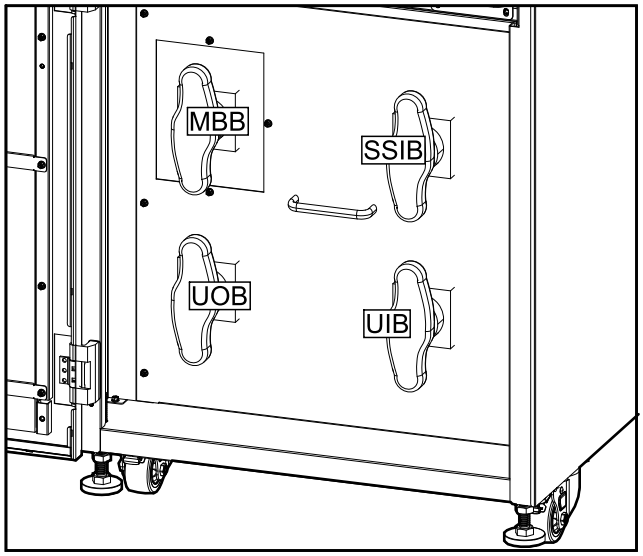
60-100 kVA 400 V/50 kVA 208 V UPS for External Batteries



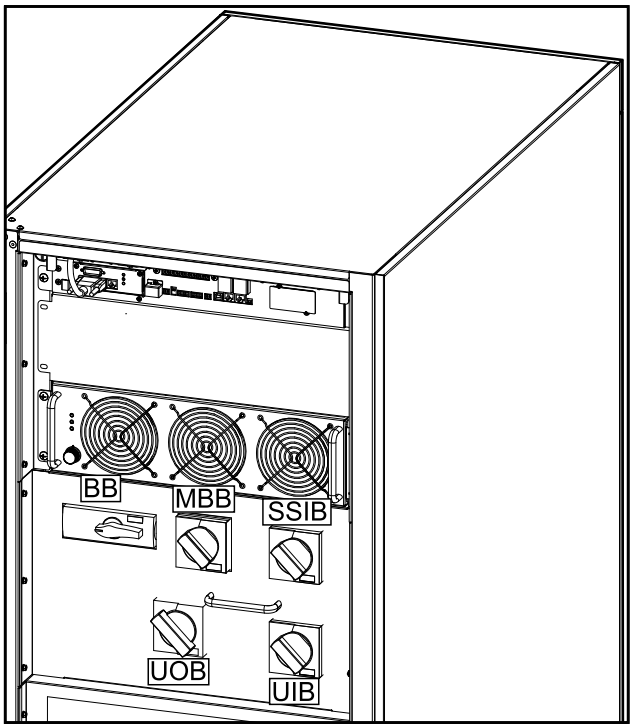
120-160 kVA 400 V/60–80 kVA 208 V UPS for External Batteries



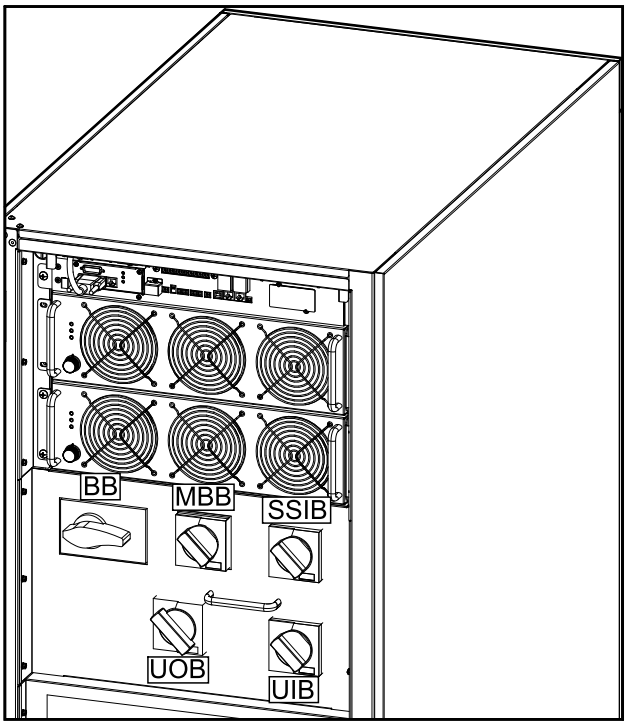
200 kVA 400 V/100 kVA 208 V UPS for External Batteries



Front View of the 60 kVA 400 V UPS for Internal Batteries

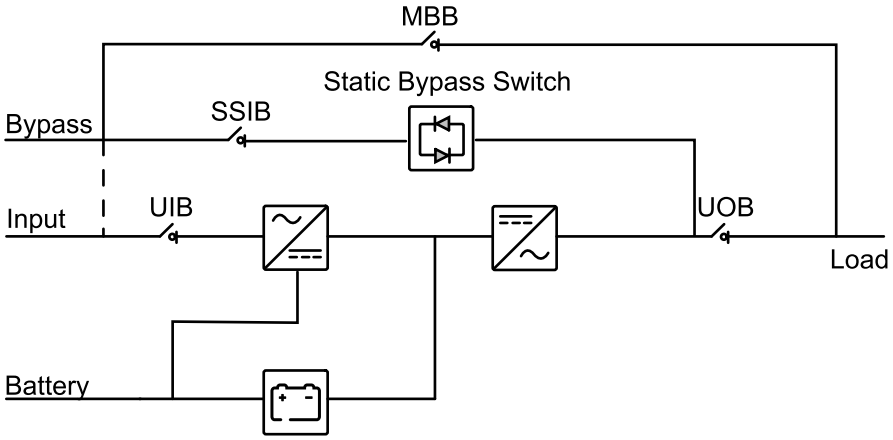


Front View of the 80 kVA 400 V UPS for Internal Batteries



Overview of Single UPS

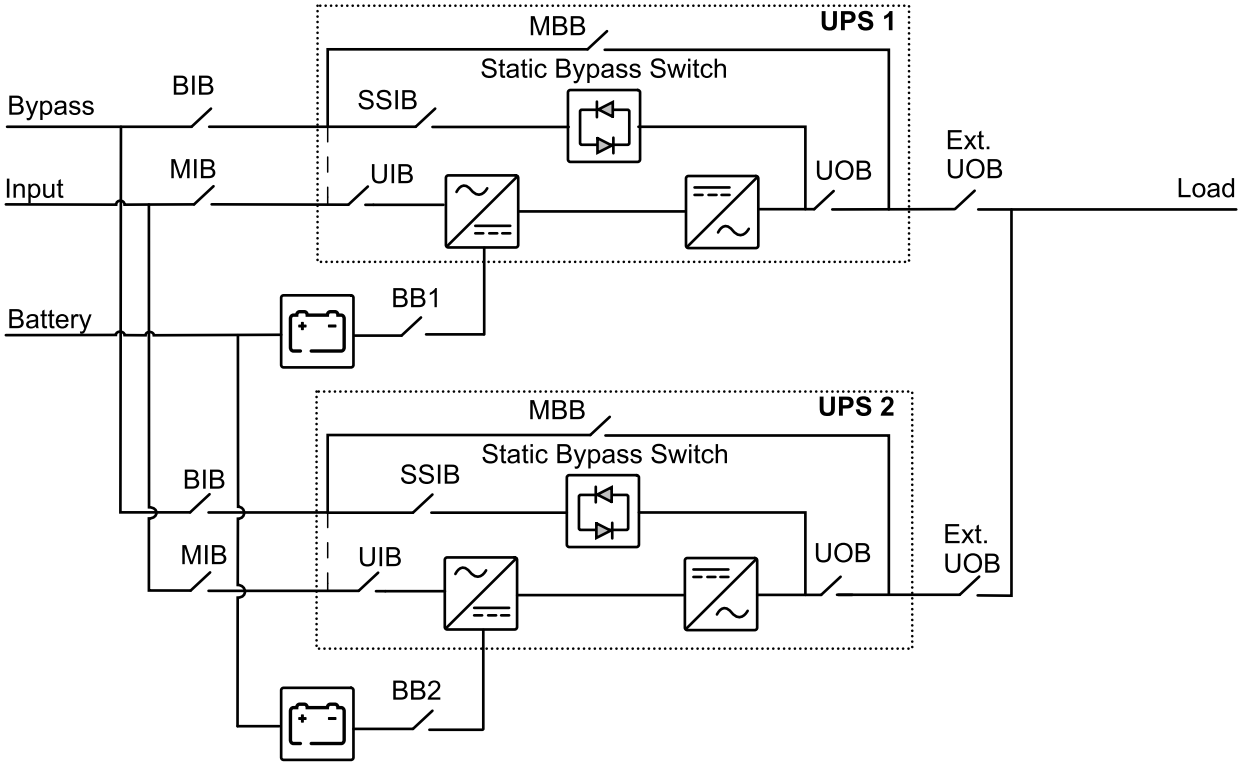
UIB	Unit input switch
SSIB	Static switch input switch
UOB	Unit output switch
MBB	Maintenance bypass switch



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

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

NOTE: Common battery banks are not supported in systems with internal batteries.

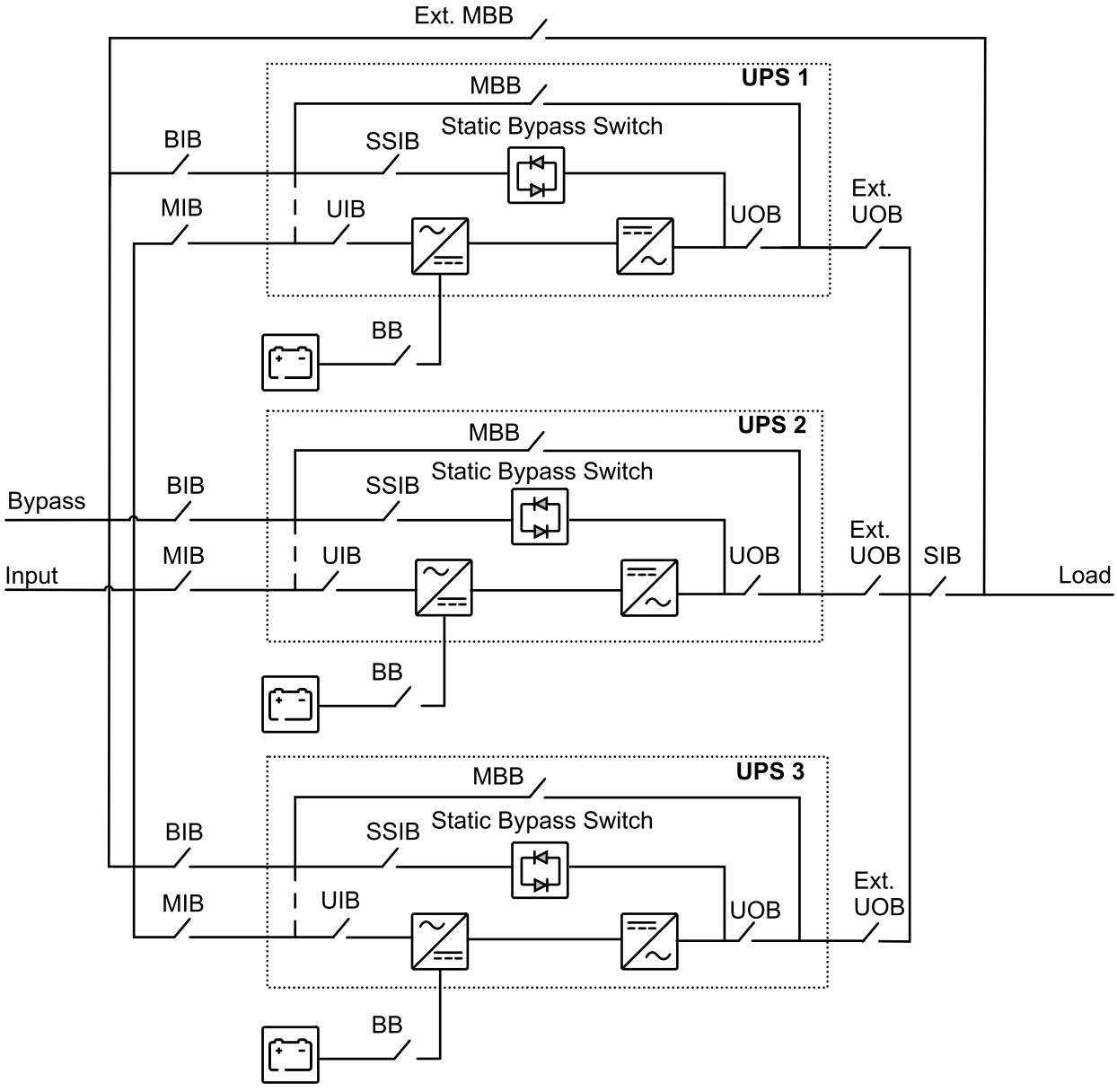


Overview of Parallel System

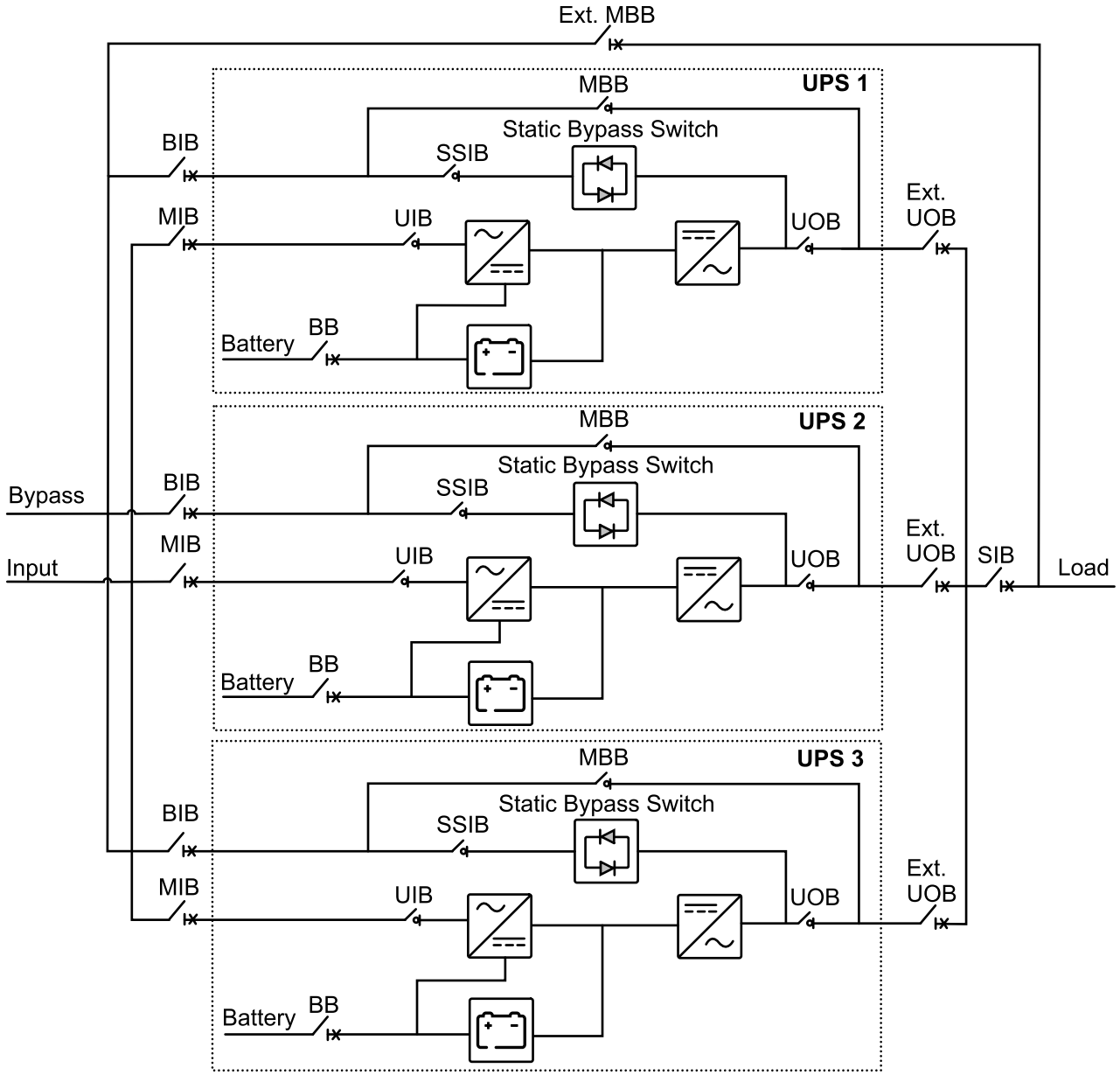
MIB	Mains input breaker
BIB	Bypass input breaker
UIB	Unit input switch
SSIB	Static switch input switch
UOB	Unit output switch
Ext. UOB	External unit output breaker
MBB	Maintenance bypass switch
Ext. MBB	External maintenance bypass breaker
SIB	System isolation breaker
BB	Battery breaker

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

UPSs for External Batteries



UPSs for Internal Batteries



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

NOTICE

RISK OF EQUIPMENT DAMAGE

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

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

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

Failure to follow these instructions can result in equipment damage.

Technical Data

Technical Data for 400 V Systems

Input Power Factor

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

	UPSs for Internal Batteries		UPSs for External Batteries					
	60 kVA	80 kVA	60 kVA	80 kVA	100 kVA	120 kVA	160 kVA	200 kVA
25% load	0.99	0.99	0.98	0.97	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	0.99	0.99	0.99	0.99	0.99	0.99	0.99	0.99

Efficiency

Efficiency in Normal Mode

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

	UPSs for Internal Batteries		UPSs for External Batteries					
	60 kVA	80 kVA	60 kVA	80 kVA	100 kVA	120 kVA	160 kVA	200 kVA
25% load	95.3	94.8	95.5	94.7	95.3	95.3	95.6	95.5
50% load	95.6	95.5	95.8	95.5	95.6	95.6	95.8	95.6
75% load	95.3	95.3	95.4	95.3	95.2	95.2	95.2	95.1
100% load	94.8	94.9	94.8	94.9	94.8	94.6	94.5	94.5

Efficiency in ECO Mode

	UPSs for Internal Batteries		UPSs for External Batteries					
	60 kVA	80 kVA	60 kVA	80 kVA	100 kVA	120 kVA	160 kVA	200 kVA
25% load	98.9	98.8	98.9	98.8	99.0	99.0	99.0	99.0
50% load	99.1	98.9	99.1	99.0	99.2	99.2	99.1	99.1
75% load	99.0	98.9	99.0	98.9	99.0	99.0	99.0	99.0
100% load	99.1	99.0	99.1	99.0	99.1	99.0	99.0	99.0

Efficiency in Battery Operation

	UPSs for Internal Batteries		UPSs for External Batteries					
	60 kVA	80 kVA	60 kVA	80 kVA	100 kVA	120 kVA	160 kVA	200 kVA
25% load	95.0	94.5	94.9	95.0	95.1	94.8	95.1	94.7
50% load	95.8	95.3	95.7	95.4	95.7	95.5	95.5	95.2

	UPSs for Internal Batteries		UPSs for External Batteries					
	60 kVA	**80 kVA**	**60 kVA**	**80 kVA**	**100 kVA**	**120 kVA**	**160 kVA**	**200 kVA**
75% load	95.7	95.3	95.4	95.2	95.4	95.3	95.1	94.9
100% load	95.3	95.1	95.1	94.8	94.9	95.0	94.7	94.4

Battery Runtimes

Go to *www.se.com* for battery runtimes.

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

The battery gassing rates are calculated based on:

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

Commercial Reference	Description	Typical cm^3/hr (ml/hr)
E3SBTHU	High performance battery module	12.67 (12.67)
E3SBTH4[1]	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)
E3SBT4	Standard battery string	15.120 (4)	20 (44.4)
E3SBTH4	High performance battery string	13.320 (3.6)	17.6 (39.2)

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

Technical Data for 208 V Systems

Input Power Factor

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

	UPSs for External Batteries			
	50 kVA	**60 kVA**	**80 kVA**	**100 kVA**
25% load	0.99	0.99	0.99	0.99
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

Efficiency in Normal Mode

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

	UPSs for External Batteries			
	50 kVA	**60 kVA**	**80 kVA**	**100 kVA**
25% load	93.6	93.3	93.6	93.0
50% load	93.5	93.1	93.3	92.9
75% load	92.6	92.1	92.1	91.9
100% load	91.5	90.8	90.9	90.8

Efficiency in ECO Mode

	UPSs for External Batteries			
	50 kVA	**60 kVA**	**80 kVA**	**100 kVA**
25% load	97.8	97.9	97.9	97.9
50% load	98.3	98.2	98.3	98.3
75% load	98.0	97.9	98.0	97.9
100% load	98.2	98.0	98.1	98.0

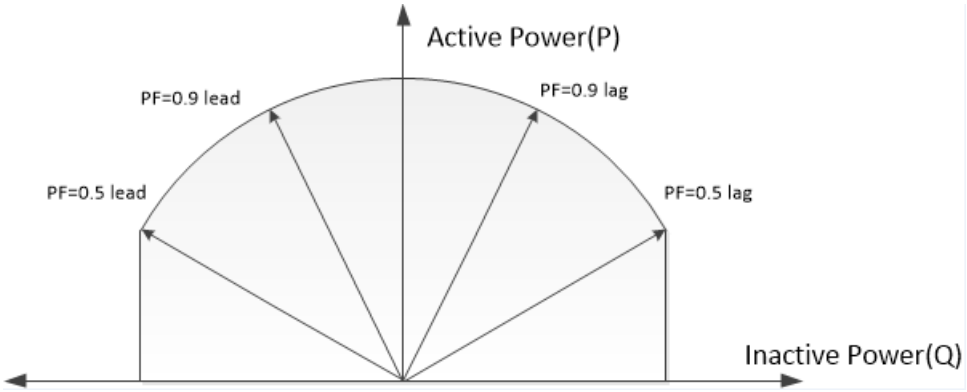
Efficiency in Battery Operation

	UPSs for External Batteries			
	50 kVA	**60 kVA**	**80 kVA**	**100 kVA**
25% load	93.2	93.1	93.7	93.2
50% load	94.0	94.0	94.0	93.9
75% load	93.7	93.7	93.5	93.4
100% load	93.4	93.4	93.3	93.1

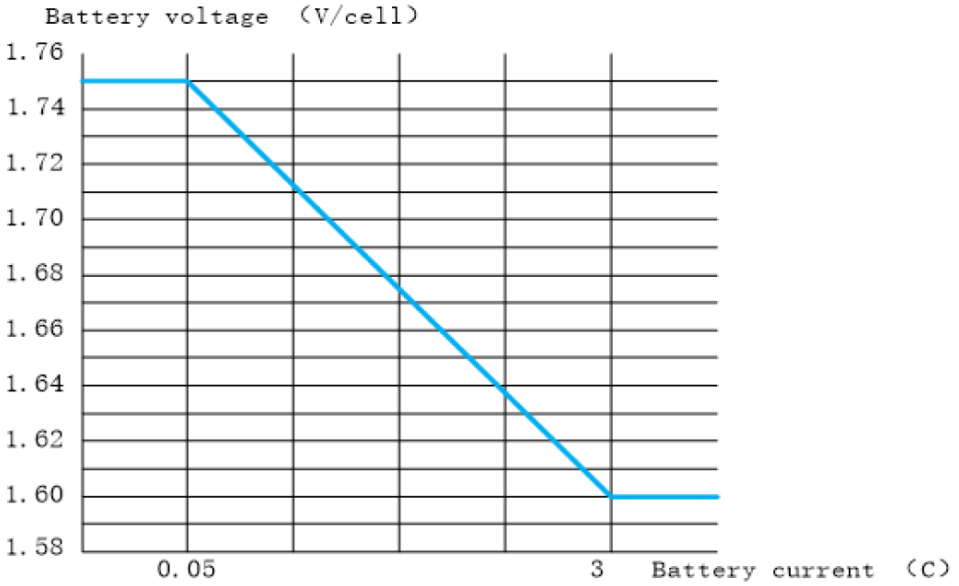
Battery Runtimes

Go to *www.se.com* for battery runtimes.

Derating Due to Load Power Factor



End of Discharge Voltage



Compliance

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

Communication and Management

- User interface with status LEDs and display
- RS485
- SNMP
- Dry contacts
- USB

IP Capacity for UPS with Optional IP Kits

- IP22 rating: UPS installed with IPX2 kit
- IP30 rating: UPS installed with IP30 kit
- IP32 rating: UPS installed with IP30 kit and IPX2 kit
- IP40 rating: UPS installed with IP40 kit
- IP42 rating: UPS installed with IP40 kit and IPX2 kit

See Hardware Options, page 66 for IP kit overview.

Facility Planning for 60-80 kVA 400 V UPS for Internal Batteries

Input Specifications

	60 kVA			80 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**
Connections[2]	L1, L2, L3, N, PE					
Input voltage range (V)	342-477 at full load[3]					
Frequency range (Hz)	40-70					
Nominal input current (A)	96	91	88	128	122	117
Maximum input current (A)	109	104	100	154	146	141
Input current limitation (A)	155			206		
Total harmonic distortion (THDI)	<3% for linear loads					
Input power factor	> 0.99					
Maximum short circuit rating	Icc=10 kA					
Protection	Fuse					
Ramp-in	7 seconds					

Bypass Specifications

	60 kVA			80 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**
Connections	L1, L2, L3, N, PE					
Overload capacity	110% for 60 minutes 130% for 10 minutes 130–150% for 1 minute					
Minimum bypass voltage (V)	266	280	291	266	280	291
Maximum bypass voltage (V)	475	480	477	475	480	477
Frequency (Hz)	50 or 60					
Frequency range (%)	±1, ±2, ±4, ±5, ±10. Default is ±10 (user selectable).					
Nominal bypass current (A)	91	87	83	122	115	111
Maximum short circuit rating	Icw=10 kA					

2. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
3. 150–342 V with a linear derating of the load to 30%.

Output Specifications

	60 kVA			80 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**
Connections[4]	L1, L2, L3, N, PE					
Overload capacity[5]	110% for 60 minutes 125% for 10 minutes 150% for 1 minute					
Output voltage regulation	± 1%					
Dynamic load response	20 milliseconds					
Output power factor	1.0					
Nominal output current (A)	91	87	83	122	115	111
Total harmonic distortion (THDU)	<2% at 100% balanced linear load <5% at 100% non-linear load					
Output frequency (Hz)	50 or 60					
Slew rate (Hz/sec)	Programmable: 0.5 to 2.0. Default is 0.5					
Output performance classification (according to IEC/ EN62040-3)	VFI-SS–111					
Load power factor	0.5 leading to 0.5 lagging without derating					
Output short circuit current	210 A/200 ms			330 A/200 ms		

Battery Specifications

	60 kVA	80 kVA
Charging power in % of output power	1–16%	1–24%
Maximum charging power (kW)	9600	19200
Nominal battery voltage (2x20 blocks) (VDC)	± 240	
Nominal float voltage (2x20 blocks) (VDC)	± 270	
End of discharge voltage (2x20 blocks) (VDC)	± 192	
Battery current at full load and nominal battery voltage (A)	133	176
Battery current at full load and minimum battery voltage (A)	166	222
Temperature compensation (per cell)	Programmable from 0–7 mV. Default is 0 mV	
Ripple current	< 5% C10	

4. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
5. At 30 °C.

Recommended Upstream Protection

NOTE: For local directives which require 4–pole circuit breakers: 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.

	60 kVA		80 kVA	
	Input	**Bypass**	**Input**	**Bypass**
Breaker type	NSX160F 36kA AC 3P3D 125A TMD C16F3TM125	NSX100F 36kA AC 3P3D 100A TMD C10F3TM100	NSX160F 36kA AC 3P3D 160A TMD C16F3TM160	NSX160F 36kA AC 3P3D 160A TMD C16F3TM160
In setting	125	100	160	160
Ir setting	125	100	160	144
Im setting	1250 (fixed)	800 (fixed)	1250 (fixed)	1250 (fixed)

Recommended Cables Sizes

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 50 mm².

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

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

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Installation method C

PE size is based on table 54.2 of IEC 60364-5-54.

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

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

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Refer to the installation manual provided with the auxiliary product.

NOTE: Neutral conductor is sized to handle 1.73 times phase current in case of high harmonic content from non-linear loads. If non or less harmonic currents are expected, neutral conductor can be sized accordingly but not less than the phase conductor.

60 kVA

Copper

	Cable size per phase (mm^2)	Neutral cable size (mm^2)	PE cable size (mm^2)
Input	35	2x25	16

Copper (Continued)

	Cable size per phase (mm^2)	Neutral cable size (mm^2)	PE cable size (mm^2)
Bypass	25		16
Output	25	2x25	16
Battery	50	50	25

80 kVA

Copper

	Cable size per phase (mm^2)	Neutral cable size (mm^2)	PE cable size (mm^2)
Input	50	2x50	25
Bypass	50		25
Output	50	2x50	25
Battery	2x50	2x50	50

Recommended Bolts and Cable Lugs

Cable size (mm^2)	Bolt size	Cable lug type
16	M8	KST TLK16-8
25	M8	KST TLK25-8
35	M8	KST TLK35-8
50	M8	KST TLK50-8

NOTE: If the recommended lug type is not available, use a local M8 lug type as a substitute.

Torque Specifications

Bolt Size	Torque
M8	17.5 Nm

UPS Weights and Dimensions

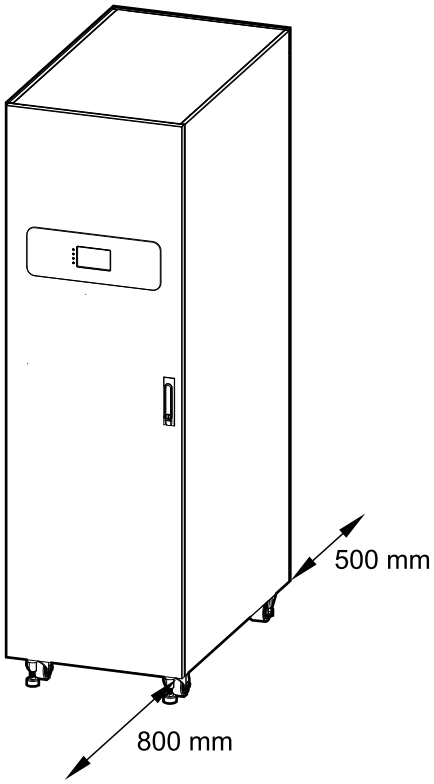
UPS	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
60 kVA	311	1970	600	1000
80 kVA	339	1970	600	1000

UPS Shipping Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
60 kVA	360	2102	750	1125
80 kVA	387	2102	750	1125

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.



Environmental

	Operating	Storage
Temperature	0 °C to 40 °C Recommended optimal temperature for batteries: 20 °C to 25 °C	-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 According to IEC 62040–3	Power derating factor: 0-1500 m: 1.000 1500-2000 m: 0.975	< 15000 m above sea level (or in an environment with equivalent air pressure)
Audible noise	<65 dBA at full load and an ambient temperature of 30 °C[6]	
Protection class	IP20 (dust filter as standard)	
Color	RAL 9003	

6. According to ISO 3746.

Heat Dissipation

	60 kVA		80 kVA	
	W	**BTU/hr**	**W**	**BTU/hr**
Normal operation	3084	10523	4296	14659
Battery operation	2958	10093	4352	14850
ECO mode	540	1843	696	2375

Facility Planning for 60-100 kVA 400 V UPS for External Batteries

Input Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**	**380**	**400**	**415**
Connections[7]	L1, L2, L3, N, PE								
Input voltage range (V)	342-477 at full load[8]								
Frequency range (Hz)	40-70								
Nominal input current (A)	96	91	88	128	122	117	160	152	146
Maximum input current (A)	109	104	100	154	146	141	186	177	170
Input current limitation (A)	155			206			258		
Total harmonic distortion (THDI)	<3% for linear loads								
Input power factor	> 0.99								
Maximum short circuit rating	Icc=10 kA								
Protection	Fuse								
Ramp-in	7 seconds								

Bypass Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**	**380**	**400**	**415**
Connections	L1, L2, L3, N, PE								
Overload capacity	110% for 60 minutes 130% for 10 minutes 130–150% for 1 minute								
Minimum bypass voltage (V)	266	280	291	266	280	291	266	280	291
Maximum bypass voltage (V)	475	480	477	475	480	477	475	480	477
Frequency (Hz)	50 or 60								
Frequency range (%)	±1, ±2, ±4, ±5, ±10. Default is ±10 (user selectable).								
Nominal bypass current (A)	91	87	83	122	115	111	152	144	139
Maximum short circuit rating	Icw=10 kA								

7. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
8. 150-342 V with a linear derating of the load to 30%.

Output Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**	**380**	**400**	**415**
Connections[9]	L1, L2, L3, N, PE								
Overload capacity[10]	110% for 60 minutes 125% for 10 minutes 150% for 1 minute								
Output voltage regulation	± 1%								
Dynamic load response	20 milliseconds								
Output power factor	1.0								
Nominal output current (A)	91	87	83	122	115	111	152	144	139
Total harmonic distortion (THDU)	<2% at 100% balanced linear load <5% at 100% non-linear load								
Output frequency (Hz)	50 or 60								
Slew rate (Hz/sec)	Programmable: 0.5 to 2.0. Default is 0.5								
Output performance classification (according to IEC/ EN62040-3)	VFI-SS–111								
Load power factor	0.5 leading to 0.5 lagging without derating								
Output short circuit current	210 A/200 ms			330 A/200 ms			330 A/200 ms		

Battery Specifications

	60 kVA	80 kVA	100 kVA
Charging power in % of output power	1–20%	1–30%	1–24%
Maximum charging power (W)	12000	24000	24000
Nominal battery voltage (2x16–2x25 blocks[11]) (VDC)	± 192 to ± 300		
Nominal float voltage (2x16–2x25 blocks[11]) (VDC)	± 215.5 to ± 337.5		
End of discharge voltage (2x16–2x25 blocks) (VDC)	± 153.6 to ± 240		
Battery current at full load and nominal battery voltage (2x18–2x25 blocks) (A)	147–105	196–140	245–175
Battery current at full load and minimum battery voltage (2x18–2x25 blocks) (A)	185–132	246–176	308–221
Temperature compensation (per cell)[12]	Programmable from 0–7 mV. Default is 0 mV		
Ripple current	< 5% C10		

9. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
10. At 30 °C.
11. 32–34 blocks are only possible when the load is <90%.
12. If the temperature is above 25 °C. If the temperature is below 25 °C, no compensation is needed.

Recommended Upstream Protection

NOTE: For local directives which require 4-pole circuit breakers: 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.

	60 kVA		80 kVA		100 kVA	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	NSX160F 36kA AC 3P3D 125A TMD C16F3TM125	NSX100F 36kA AC 3P3D 100A TMD C10F3TM100	NSX160F 36kA AC 3P3D 160A TMD C16F3TM160	NSX160F 36kA AC 3P3D 160A TMD C16F3TM160	NSX250F 36kA AC 3P3D 200A TMD C25F3TM200	NSX160F 36kA AC 3P3D 160A TMD C16F3TM160
In setting	125	100	160	160	200	160
Ir setting	125	100	160	144	200	160
Im setting	1250 (fixed)	800 (fixed)	1250 (fixed)	1250 (fixed)	1000	1250 (fixed)

60 kVA selectivity of down stream circuit breaker: After 8.7 ms circuit breaker trip after short circuit, output without interruption. (Circuit breaker specifications: iC65H-C-16A)

Recommended Cables Sizes

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 70 mm².

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

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

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Installation method C

PE size is based on table 54.2 of IEC 60364-5-54.

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

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

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Refer to the installation manual provided with the auxiliary product.

NOTE: Neutral conductor is sized to handle 1.73 times phase current in case of high harmonic content from non-linear loads. If non or less harmonic currents are expected, neutral conductor can be sized accordingly but not less than the phase conductor.

60 kVA

Copper

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²)
Input	35	2x25	16
Bypass	25		16
Output	25	2x25	16
Battery	50	50	25

80 kVA

Copper

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²)
Input	50	2x50	25
Bypass	50		25
Output	50	2x50	25
Battery	2x50	2x50	50

100 kVA

Copper

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²)
Input	70	2x70	35
Bypass	70		35
Output	70	2x70	35
Battery	2x70	2x70	70

Recommended Bolts and Cable Lugs

Cable size (mm²)	Bolt size	Cable lug type
16	M8	KST TLK16-8
25	M8	KST TLK25-8
35	M8	KST TLK35-8
50	M8	KST TLK50-8
70	M8	KST TL70-8

NOTE: If the recommended lug type is not available, use a local M8 lug type as a substitute.

UPS Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
60 kVA 400 V	109	915	360	850
80 kVA 400 V	140	915	360	850
100 kVA 400 V/50 kVA 208 V	145	915	360	850

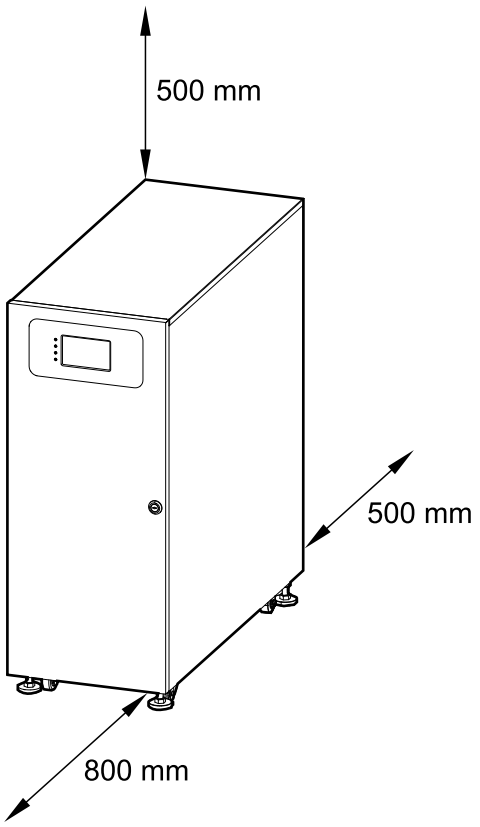
UPS Shipping Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
60 kVA 400 V	133	1140	475	965
80 kVA 400 V	164	1140	475	965
100 kVA 400 V/50 kVA 208 V	169	1140	475	965

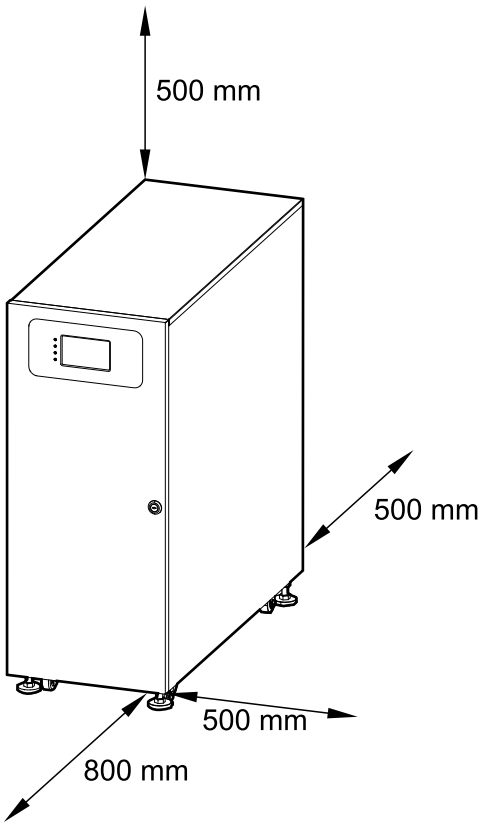
Clearance

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.

Option A



Option B



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.

Environmental

	Operating	Storage
Temperature	0 °C to 40 °C Recommended optimal temperature for batteries: 20 °C to 25 °C	-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 According to IEC 62040–3	Power derating factor: 0-1500 m: 1.000 1500-2000 m: 0.975	< 15000 m above sea level (or in an environment with equivalent air pressure)
Audible noise	<65 dBA at full load and an ambient temperature of 30 °C[13]	
Protection class	IP20 (dust filter as standard)	
Color	RAL 9003	

Heat Dissipation

	60 kVA		80 kVA		100 kVA	
	W	BTU/hr	W	BTU/hr	W	BTU/hr
Normal mode	3084	10523	4296	14659	5500	18767
Battery mode	2958	10093	4352	14850	5520	18835
ECO mode	540	1843	696	2375	1020	3480

13. According to ISO 3746.

Facility Planning for 120-200 kVA 400 V UPS for External Batteries

Input Specifications

	120 kVA			160 kVA			200 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**	**380**	**400**	**415**
Connections[14]	L1, L2, L3, N, PE								
Input voltage range (V)	342-477 at full load[15]								
Frequency range (Hz)	40-70								
Nominal input current (A)	192	182	176	256	243	234	320	304	293
Maximum input current (A)	218	207	200	262	262	262	336	336	336
Input current limitation (A)	309			412			515		
Total harmonic distortion (THDI)	<3% for linear loads								
Input power factor	> 0.99								
Maximum short circuit rating	Icc=10 kA								
Protection	Fuse								
Ramp-in	7 seconds								

Bypass Specifications

	120 kVA			160 kVA			200 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**	**380**	**400**	**415**
Connections	L1, L2, L3, N, PE								
Overload capacity	110% for 60 minutes 130% for 10 minutes 130-150% for 1 minute								
Minimum bypass voltage (V)	266	280	291	266	280	291	266	280	291
Maximum bypass voltage (V)	475	480	477	475	480	477	475	480	477
Frequency (Hz)	50 or 60								
Frequency range (%)	±1, ±2, ±4, ±5, ±10. Default is ±10 (user selectable).								
Nominal bypass current (A)	184	175	169	246	233	225	307	292	281
Maximum short circuit rating	Icw=10 kA								

14. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
15. 150-342 V with a linear derating of the load to 30%.

Output Specifications

	120 kVA			160 kVA			200 kVA		
Voltage (V)	**380**	**400**	**415**	**380**	**400**	**415**	**380**	**400**	**415**
Connections[16]	L1, L2, L3, N, PE								
Overload capacity[17]	110% for 60 minutes 125% for 10 minutes 150% for 1 minute								
Output voltage regulation	± 1%								
Dynamic load response	20 milliseconds								
Output power factor	1.0								
Nominal output current (A)	182	173	167	243	231	223	304	289	278
Total harmonic distortion (THDU)	<2% at 100% balanced linear load <5% at 100% non-linear load								
Output frequency (Hz)	50 or 60								
Slew rate (Hz/sec)	Programmable: 0.5 to 2.0. Default is 0.5								
Output performance classification (according to IEC/ EN62040-3)	VFI-SS–111								
Load power factor	0.5 leading to 0.5 lagging without derating								
Output short circuit current	370 A/200 ms			470 A/200 ms			620 A/200 ms		

Battery Specifications

	120 kVA	160 kVA	200 kVA
Charging power in % of output power	1-20%	1-22.5%	1-24%
Maximum charging power (W)	24000	36000	48000
Nominal battery voltage (2x16 - 2x25 blocks[18]) (VDC)	± 192 to ± 300		
Nominal float voltage (2x16 - 2x25 blocks[18]) (VDC)	± 215.5 to ± 337.5		
End of discharge voltage (2x16 - 2x25 blocks) (VDC)	± 153.6 to ± 240		
Battery current at full load and nominal battery voltage (36-50 blocks) (A)	294-211	392-281	490-351
Battery current at full load and minimum battery voltage (36-50 blocks) (A)	369-265	493-353	616-441
Temperature compensation (per cell)[19]	Programmable from 0-7 mV. Default is 0 mV		
Ripple current	< 5% C10		

16. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
17. At 30 °C.
18. 2x16 - 2x17 blocks are only possible when the load is <90%.
19. If the temperature is above 25 °C. If the temperature is below 25 °C, no compensation is needed.

Recommended Upstream Protection

NOTE: For local directives which require 4-pole circuit breakers: 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.

	120 kVA		160 kVA		200 kVA	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	NSX250F 36kA AC 3P3D 250A Mic2.2 C25F32D250	NSX250F 36kA AC 3P3D 250A Mic2.2 C25F32D250	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400
Io setting	250	250	360	320	400	400
Ir setting	0.97	0.95	0.9	0.98	1	0.98
Isd setting	1.5-10	1.5-10	1.5-10	1.5-10	1.5-10	1.5-10

Recommended Cable Sizes

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 150 mm².

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

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

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Installation method C

PE size is based on table 54.2 of IEC 60364-5-54.

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

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

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Refer to the installation manual provided with the auxiliary product.

NOTE: Neutral conductor is sized to handle 1.73 times phase current in case of high harmonic content from non-linear loads. If non or less harmonic currents are expected, neutral conductor can be sized accordingly but not less than the phase conductor.

120 kVA

Copper

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²)
Input	95	120	50
Bypass	95	120	50
Output	95	120	50
Battery	2x70	2x70	70

160 kVA

Copper

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²)
Input	120	120	70
Bypass	120	120	70
Output	120	120	70
Battery	2x95	2x95	95

200 kVA

Copper

	Cable size per phase (mm²)	Neutral cable size (mm²)	PE cable size (mm²)
Input	150	150	95
Bypass	150	150	95
Output	150	150	95
Battery	2x120	2x120	120

Recommended Bolts and Cable Lugs

Cable size (mm²)	Bolt size	Cable lug type
50	M8	KST TLK50-8
70	M10	KST TLK70-10
95	M10	KST TLK95–10
120	M10	KST TLK120–10
150	M10	KST TLK150–10

NOTE: If the recommended lug type is not available, use a local M8/M10 lug type as a substitute.

UPS Weights and Dimensions

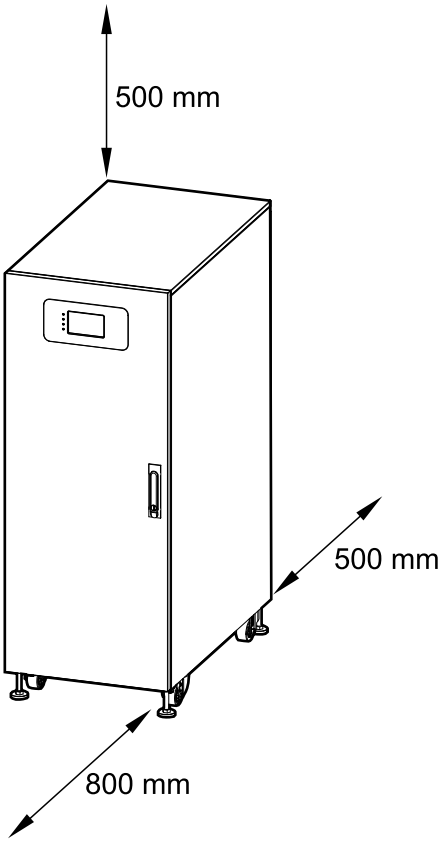
UPS	Weight kg	Height mm	Width mm	Depth mm
120 kVA 400 V/60 kVA 208 V	193	1300	500	850
160 kVA 400 V/80 kVA 208 V	227	1300	500	850
200 kVA 400 V/100 kVA 208 V	304	1300	600	850

UPS Shipping Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
120 kVA 400 V/60 kVA 208 V	223	1500	625	975
160 kVA 400 V/80 kVA 208 V	257	1500	625	975
200 kVA 400 V/100 kVA 208 V	338	1500	725	975

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.



Environmental

	Operating	Storage
Temperature	0 °C to 40 °C Recommended optimal temperature for batteries: 20 °C to 25 °C	-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 According to IEC 62040–3	Power derating factor: 0-1500 m: 1.000 1500-2000 m: 0.975	< 15000 m above sea level (or in an environment with equivalent air pressure)
Audible noise	<70 dBA at full load and an ambient temperature of 30 °C[20]	
Protection class	IP20 (air filter as standard)	
Color	RAL 9003	

Heat Dissipation

	120 kVA		160 kVA		200 kVA	
	W	BTU/hr	W	BTU/hr	W	BTU/hr
Normal mode	6000	20473	8000	27297	10000	34121
Battery mode	6000	20473	8000	27297	10000	34121
ECO mode	1020	3480	1600	5459	2000	6824

20. According to ISO 3746.

Facility Planning for 50 kVA 208 V UPS for External Batteries

Input Specifications

	50 kVA		
Voltage (V)	**200**	**208**	**220**
Connections[21]	L1, L2, L3, N, PE		
Input voltage range (V)	180-272 at full load[22]		
Frequency range (Hz)	40-70		
Nominal input current (A)	159	152	143
Maximum input current (A)	170	163	154
Input current limitation (A)	254		
Total harmonic distortion (THDI)	<3% for linear loads		
Input power factor	> 0.99		
Maximum short circuit rating	Icc=10 kA		
Protection	Fuse		
Ramp-in	12 seconds		

Bypass Specifications

	50 kVA		
Voltage (V)	**200**	**208**	**220**
Connections	L1, L2, L3, N, PE		
Overload capacity	110% for 60 minutes 130% for 10 minutes 130–150% for 1 minute		
Minimum bypass voltage (V)	140	146	154
Maximum bypass voltage (V)	250	260	275
Frequency (Hz)	50 or 60		
Frequency range (%)	±1, ±2, ±4, ±5, ±10. Default is ±10 (user selectable).		
Nominal bypass current (A)	147	141	133
Maximum short circuit rating	Icw=10 kA		

21. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
22. 126-180 V with a linear derating of the load to 30%.

Output Specifications

	50 kVA		
Voltage (V)	**200**	**208**	**220**
Connections[23]	L1, L2, L3, N, PE		
Overload capacity[24]	110% for 60 minutes 125% for 10 minutes 150% for 1 minute		
Output voltage regulation	± 1%		
Dynamic load response	20 milliseconds		
Output power factor	1.0		
Nominal output current (A)	144	139	131
Total harmonic distortion (THDU)	<3% at 100% linear load <5% at 100% non-linear load		
Output frequency (Hz)	50 or 60		
Slew rate (Hz/sec)	Programmable: 0.5 to 2.0. Default is 0.5		
Output performance classification (according to IEC/EN62040-3)	VFI-SS–111		
Load power factor	0.5 leading to 0.5 lagging without derating		
Output short circuit current	330 A/200 ms		

Battery Specifications

	50 kVA
Charging power in % of output power	1-38.4%
Maximum charging power (W)	19200
Nominal battery voltage (2x16 - 2x20 blocks) (VDC)	± 192 to ± 240
Nominal float voltage (2x16 - 2x20 blocks) (VDC)	± 215.5 to ± 270
End of discharge voltage (2x16 - 2x20 blocks) (VDC)	± 153.6 to ± 192
Battery current at full load and nominal battery voltage (2x16 - 2x20 blocks) (A)	140-112
Battery current at full load and minimum battery voltage (2x16 - 2x20 blocks) (A)	175-140
Temperature compensation (per cell)[25]	Programmable from 0-7 mV. Default is 0 mV
Ripple current	< 5% C10

23. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
24. At 30 °C.
25. If the temperature is above 25 °C. If the temperature is below 25 °C, no compensation is needed.

Recommended Upstream Protection

NOTE: For local directives which require 4-pole circuit breakers: 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.

	50 kVA	
	Input	**Bypass**
Breaker type	NSX250F 36kA AC 3P3D 200A TMD C25F3TM200	NSX160F 36kA AC 3P3D 160A TMD C16F3TM160
In setting	200	160
Ir setting	200	160
Im setting	1000	1250 (fixed)

Recommended Cable Sizes

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 70 mm².

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

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

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Installation method C

PE size is based on table 54.2 of IEC 60364-5-54.

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

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

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Refer to the installation manual provided with the auxiliary product.

NOTE: Neutral conductor is sized to handle 1.73 times phase current in case of high harmonic content from non-linear loads. If non or less harmonic currents are expected, neutral conductor can be sized accordingly but not less than the phase conductor.

50 kVA

Copper

	Cable size per phase (mm²)	**Neutral cable size (mm²)**	**PE cable size (mm²)**
Input	70	2x70	35
Bypass	70		35

Copper (Continued)

	Cable size per phase (mm^2)	Neutral cable size (mm^2)	PE cable size (mm^2)
Output	70	2x70	35
Battery	70	70	35

UPS Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
60 kVA 400 V	109	915	360	850
80 kVA 400 V	140	915	360	850
100 kVA 400 V/50 kVA 208 V	145	915	360	850

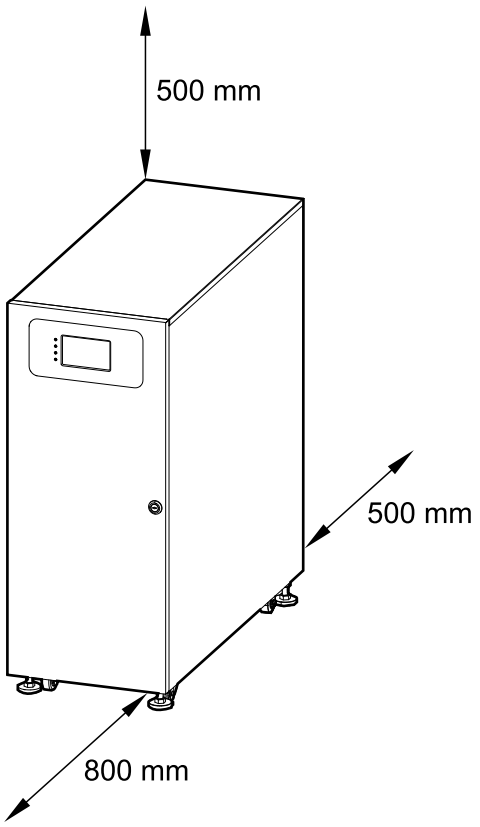
UPS Shipping Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
60 kVA 400 V	133	1140	475	965
80 kVA 400 V	164	1140	475	965
100 kVA 400 V/50 kVA 208 V	169	1140	475	965

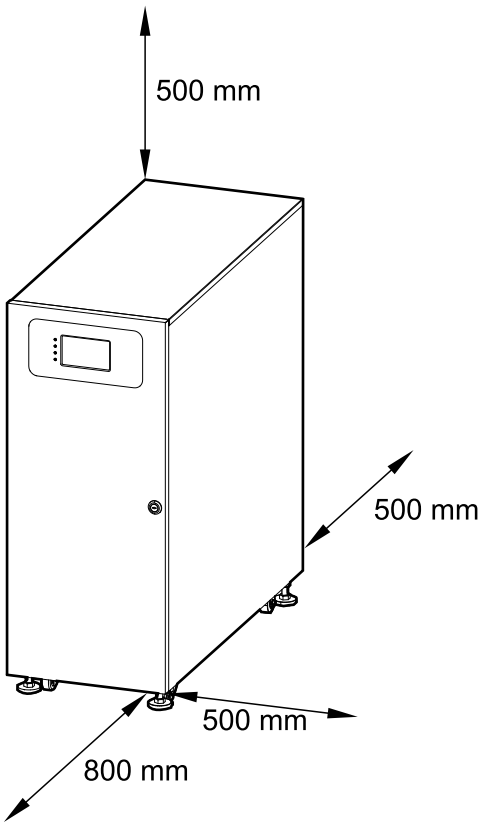
Clearance

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.

Option A



Option B



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.

Environmental

	Operating	Storage
Temperature	0 °C to 40 °C Recommended optimal temperature for batteries: 20 °C to 25 °C	-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 According to IEC 62040–3	Power derating factor: 0-1500 m: 1.000 1500-2000 m: 0.975	< 15000 m above sea level (or in an environment with equivalent air pressure)
Audible noise	<65 dBA at full load and an ambient temperature of 30 °C[26]	
Protection class	IP20 (dust filter as standard)	
Color	RAL 9003	

26. According to ISO 3746.

Heat Dissipation

50 kVA

	W	BTU/hr
Normal mode	4648	15859
Battery mode	3528	12038
ECO mode	890	3037

Facility Planning for 60-100 kVA 208 V UPS for External Batteries

Input Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**	**200**	**208**	**220**
Connections[27]	L1, L2, L3, N, PE								
Input voltage range (V)	180-272 at full load[28]								
Frequency range (Hz)	40–70								
Nominal input current (A)	192	184	172	255	244	229	321	306	287
Maximum input current (A)	203	195	183	260	249	234	325	310	291
Input current limitation (A)	307			408			514		
Total harmonic distortion (THDI)	<3% for linear loads								
Input power factor	> 0.99								
Maximum short circuit rating	Icc=10 kA								
Protection	Fuse								
Ramp-in	12 seconds								

Bypass Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**	**200**	**208**	**220**
Connections	L1, L2, L3, N, PE								
Overload capacity	110% for 60 minutes 130% for 10 minutes 130-150% for 1 minute								
Minimum bypass voltage (V)	140	146	154	140	146	154	140	146	154
Maximum bypass voltage (V)	250	260	275	250	260	275	250	260	275
Frequency (Hz)	50 or 60								
Frequency range (%)	±1, ±2, ±4, ±5, ±10. Default is ±10 (user selectable).								
Nominal bypass current (A)	176	169	160	235	226	213	294	282	266
Maximum short circuit rating	Icw=10 kA								

27. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
28. 126-180 V with a linear derating of the load to 30%.

Output Specifications

	60 kVA			80 kVA			100 kVA		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**	**200**	**208**	**220**
Connections[29]	L1, L2, L3, N, PE								
Overload capacity[30]	110% for 60 minutes 125% for 10 minutes 150% for 1 minute								
Output voltage regulation	± 1%								
Dynamic load response	20 milliseconds								
Output power factor	1.0								
Nominal output current (A)	173	167	157	231	222	210	289	278	262
Total harmonic distortion (THDU)	<3% at 100% linear load <5% at 100% non-linear load								
Output frequency (Hz)	50 or 60								
Slew rate (Hz/sec)	Programmable: 0.5 to 2.0. Default is 0.5								
Output performance classification (according to IEC/ EN62040-3)	VFI-SS–111								
Load power factor	0.5 leading to 0.5 lagging without derating								
Output short circuit current	370 A/200 ms			470 A/200 ms			620 A/200 ms		

Battery Specifications

	60 kVA	80 kVA	100 kVA
Charging power in % of output power	1-32%	1-36%	1-38.4%
Maximum charging power (W)	19200	28800	38400
Nominal battery voltage (2x16 - 2x20 blocks) (VDC)	± 192 to ± 240		
Nominal float voltage (2x16 - 2x20 blocks) (VDC)	± 215.5 to ± 270		
End of discharge voltage (2x16 - 2x20 blocks) (VDC)	± 153.6 to ± 192		
Battery current at full load and nominal battery voltage (2x16 - 2x20 blocks) (A)	168-134	223-179	280-224
Battery current at full load and minimum battery voltage (2x16 - 2x20 blocks) (A)	209-168	279-223	350-280
Temperature compensation (per cell)[31]	Programmable from 0-7 mV. Default is 0 mV		
Ripple current	< 5% C10		

29. It is mandatory to have the neutral line for the input and the load. If the input or the load does not have a neutral line, a Δ-Y transformer for input or a Y-Δ transformer for load needs to be installed. And the capacity of the transformer should be >1.2 times the rated capacity of the UPS.
30. At 30 °C.
31. If the temperature is above 25 °C. If the temperature is below 25 °C, no compensation is needed.

Recommended Upstream Protection

NOTE: For local directives which require 4-pole circuit breakers: 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.

	60 kVA		**80 kVA**		**100 kVA**	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	NSX250F 36kA AC 3P3D 250A Mic2.2 C25F32D250	NSX250F 36kA AC 3P3D 250A Mic2.2 C25F32D250	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400	NSX400F 36kA AC 3P3D 400A Mic2.3 C40F32D400
Io setting	250	250	360	320	400	400
Ir setting	0.97	0.95	0.9	0.98	1	0.98
Isd setting	1.5-10	1.5-10	1.5-10	1.5-10	1.5-10	1.5-10

Recommended Cable Sizes

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All wiring must comply with all applicable national and/or electrical codes. The maximum allowable cable size is 150 mm².

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

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

- 90 °C conductors
- An ambient temperature of 30 °C
- Use of copper conductors
- Installation method C

PE size is based on table 54.2 of IEC 60364-5-54.

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

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

NOTE: Recommended cable sizes and maximum allowable cable size may vary for the auxiliary products. Refer to the installation manual provided with the auxiliary product.

NOTE: Neutral conductor is sized to handle 1.73 times phase current in case of high harmonic content from non-linear loads. If non or less harmonic currents are expected, neutral conductor can be sized accordingly but not less than the phase conductor.

60 kVA

Copper

	Cable size per phase (mm^2)	Neutral cable size (mm^2)	PE cable size (mm^2)
Input	95	120	50
Bypass	95	120	50
Output	95	120	50
Battery	70	70	70

80 kVA

Copper

	Cable size per phase (mm^2)	Neutral cable size (mm^2)	PE cable size (mm^2)
Input	120	120	70
Bypass	120	120	70
Output	120	120	70
Battery	2x70	2x70	70

100 kVA

Copper

	Cable size per phase (mm^2)	Neutral cable size (mm^2)	PE cable size (mm^2)
Input	150	150	95
Bypass	150	150	95
Output	150	150	95
Battery	2x70	2x70	70

UPS Weights and Dimensions

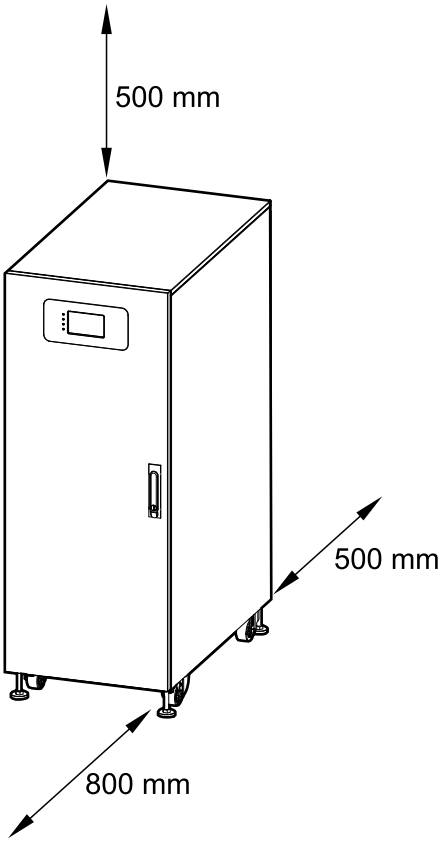
UPS	Weight kg	Height mm	Width mm	Depth mm
120 kVA 400 V/60 kVA 208 V	193	1300	500	850
160 kVA 400 V/80 kVA 208 V	227	1300	500	850
200 kVA 400 V/100 kVA 208 V	304	1300	600	850

UPS Shipping Weights and Dimensions

UPS	Weight kg	Height mm	Width mm	Depth mm
120 kVA 400 V/60 kVA 208 V	223	1500	625	975
160 kVA 400 V/80 kVA 208 V	257	1500	625	975
200 kVA 400 V/100 kVA 208 V	338	1500	725	975

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.



Environmental

	Operating	Storage
Temperature	0 °C to 40 °C Recommended optimal temperature for batteries: 20 °C to 25 °C	-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 According to IEC 62040–3	Power derating factor: 0-1500 m: 1.000 1500-2000 m: 0.975	< 15000 m above sea level (or in an environment with equivalent air pressure)
Audible noise	<70 dBA at full load and an ambient temperature of 30 °C[32]	
Protection class	IP20 (air filter as standard)	
Color	RAL 9003	

Heat Dissipation

	60 kVA		80 kVA		100 kVA	
	W	BTU/hr	W	BTU/hr	W	BTU/hr
Normal mode	5418	18486	7910	26989	10198	34796
Battery mode	4241	14470	5732	19558	7353	25087
ECO mode	1200	4094	1552	5295	1970	6722

32. According to ISO 3746.

Requirements for a Third Party Battery Solution

Battery breaker boxes from Schneider Electric are recommended for the battery interface. Please contact Schneider Electric for more information.

Third Party Battery Breaker Requirements

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

All selected battery breakers must be equipped with instantaneous trip functionality with an undervoltage release coil or a shunt trip release coil.

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

NOTE: There are more factors to consider when selecting a battery breaker than the requirements listed below. Please contact Schneider Electric for more information.

Design Requirements for Battery Breaker

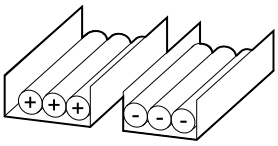
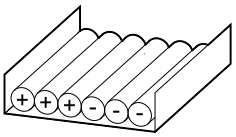
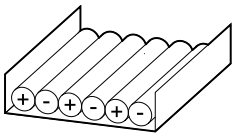
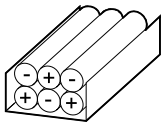
Battery breaker rated DC voltage > Normal battery voltage	The normal voltage of the battery configuration is defined as the highest nominal occurring battery voltage. This can be equivalent to the float voltage which may be defined as **number of battery blocks x number of cells x cell float voltage**.
Battery breaker rated DC current > Rated discharge battery current	This current is controlled by the UPS and must include maximum discharge current. This will typically be the current at the end of discharge (minimum operation DC voltage or in overload condition or a combination).
DC landings	Three DC landings (+, -, N) for DC cables are required.
AUX switches for monitoring	One AUX switch must be installed in each battery breaker and connected to the UPS. The UPS can monitor one battery breaker.
Short-circuit breaking capability	The short-circuit breaking capability must be higher than the short-circuit DC current of the (largest) battery configuration.
Minimum trip current	The minimum short-circuit current to trip the battery breaker must match the (smallest) battery configuration, to make the breaker trip in case of a short circuit, up to the end of its life time.

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.

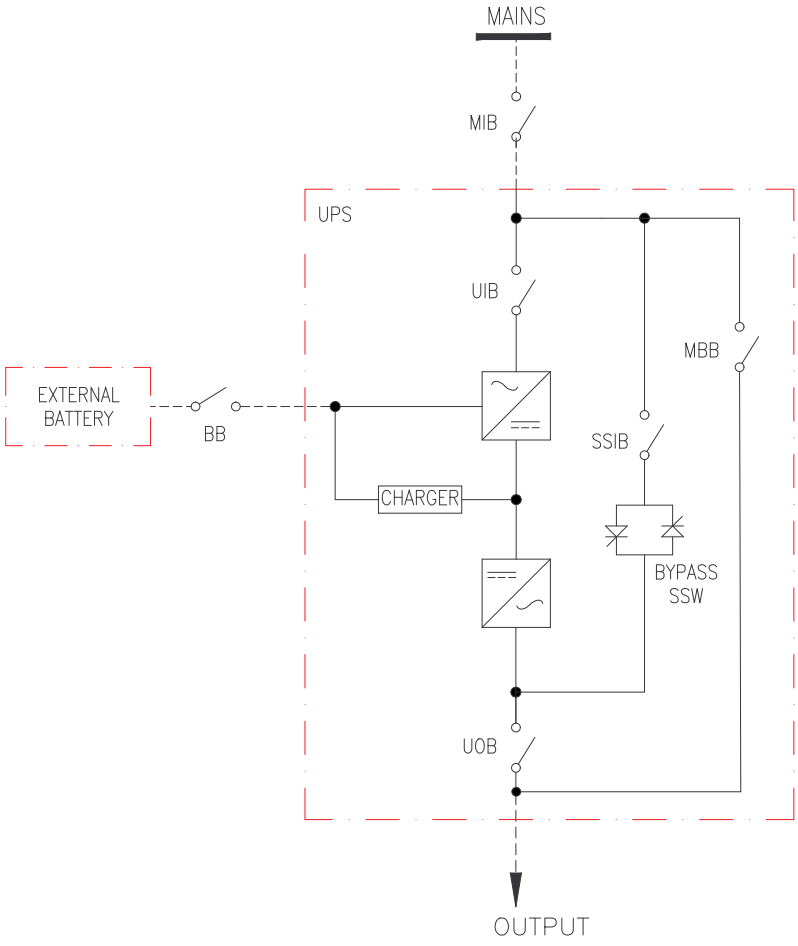
Cable Length				
<30 m	Not recommended	Acceptable	Recommended	Recommended
31–75 m	Not recommended	Not recommended	Acceptable	Recommended
76–150 m	Not recommended	Not recommended	Acceptable	Recommended
151–200 m	Not recommended	Not recommended	Not recommended	Recommended

Drawings

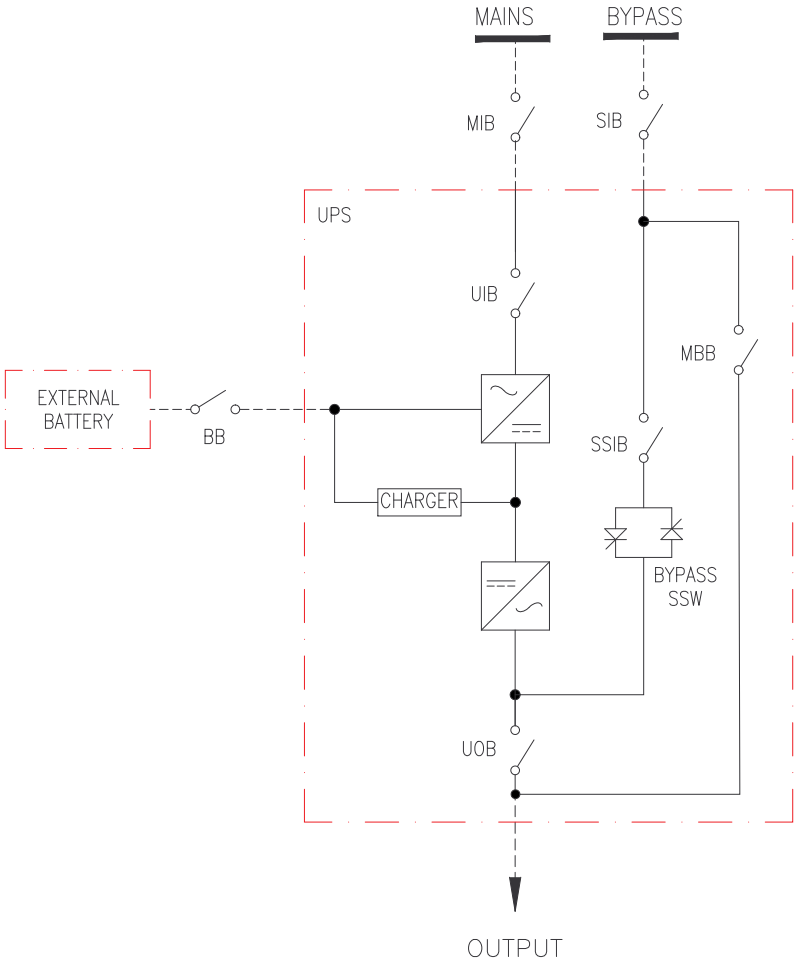
NOTE: A comprehensive set of drawings is available on www.se.com.

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

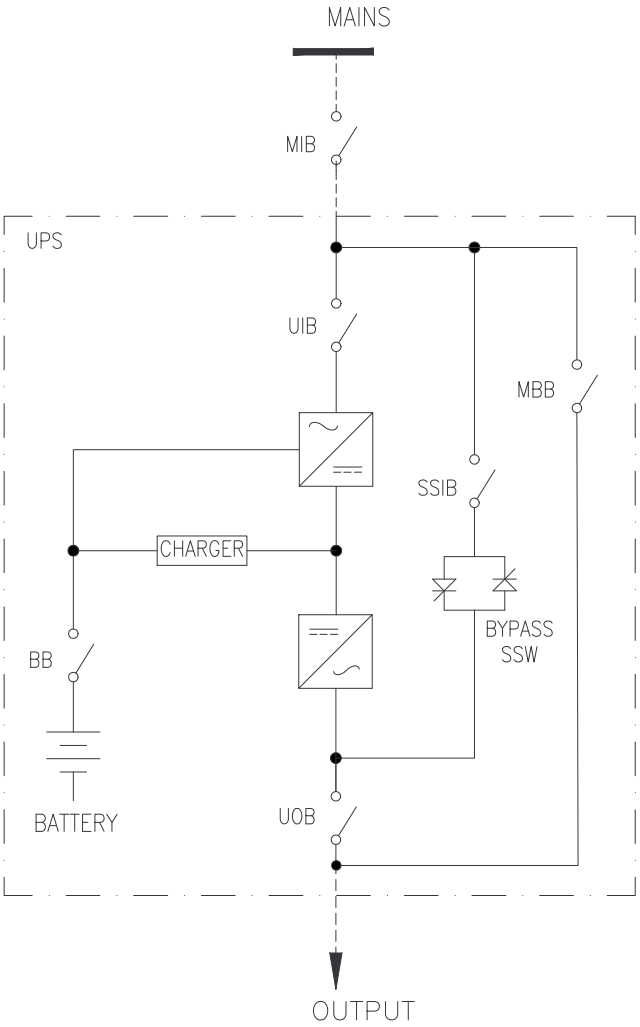
Easy UPS 3M UPS for External Batteries – Single Mains System



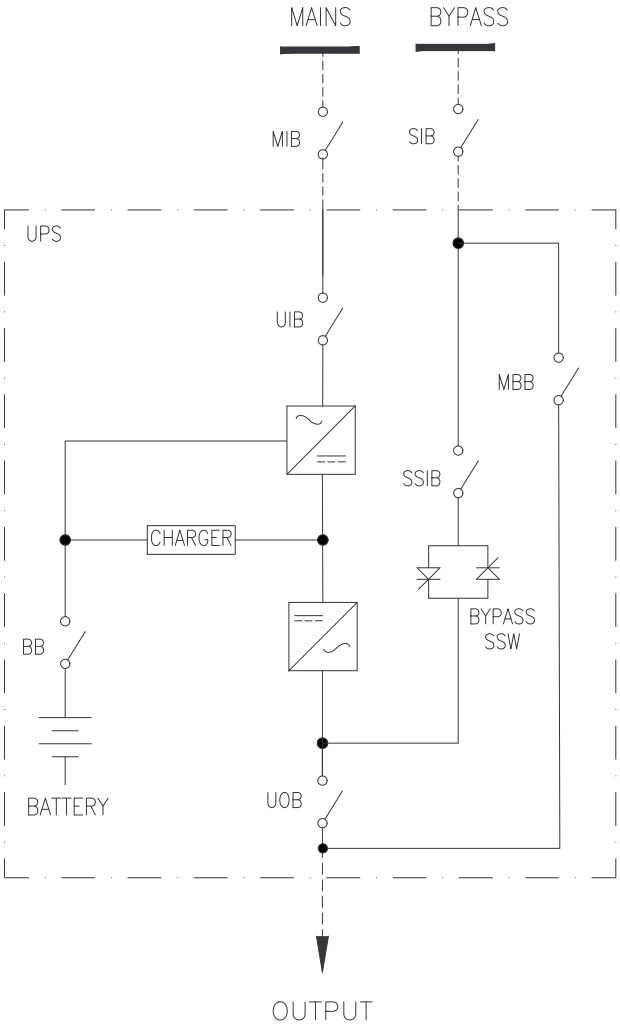
Easy UPS 3M UPS for External Batteries – Dual Mains System



Easy UPS 3M UPS for Internal Batteries – Single Mains System



Easy UPS 3M UPS for Internal Batteries – Dual Mains System



Options

Configuration Options

- Single or dual mains
- Up to six UPSs in parallel
- ECO mode

Hardware Options

NOTE: All hardware options listed here may not be available in all regions.

Classic Battery Cabinets

- Easy UPS 3M Classic Battery Cabinet with batteries, IEC, 700 mm wide - Config C (E3MCBC7C)
- Easy UPS 3M Classic Battery Cabinet with batteries, IEC, 700 mm wide - Config D (E3MCBC7D)
- Easy UPS 3M Classic Battery Cabinet with batteries, IEC, 1000 mm wide - Config A (E3MCBC10A)
- Easy UPS 3M Classic Battery Cabinet with batteries, IEC, 1000 mm wide - Config B (E3MCBC10B)
- Easy UPS 3M Classic Battery Cabinet with batteries, IEC, 1000 mm wide - Config C (E3MCBC10C)
- Easy UPS 3M Classic Battery Cabinet with batteries, IEC, 1000 mm wide - Config D (E3MCBC10D)
- Easy UPS 3M Classic Battery Cabinet with batteries, IEC, 1000 mm wide - Config E (E3MCBC10E)

Battery Breaker Boxes

- Easy UPS 3M Battery Breaker Box 60-80 kVA 400 V (E3MBBB60K80H)
- Battery Breaker Box, 630A, one circuit breaker for Easy UPS 3M/3L (E3MBBB100K200H)

Battery Breaker Kits

- Easy UPS 3M Battery Breaker Kit 60-80 kVA 400 V (E3MBBK60K80H)
- Battery Breaker Kit, 630A, one circuit breaker for Easy UPS 3M/3L (E3MBBK100K200H)

Empty Modular Battery Cabinets

- Easy UPS 3S Empty Modular Battery Cabinet (E3SXR6)

Batteries

- Easy UPS 3S High Capacity Battery String (E3SBTH4)

Maintenance Bypass Panels

- Maintenance Bypass Panel, single unit, 10-400kVA 400V wallmount, for Easy UPS 3-Phase (E3MBP60K400H)
- Parallel Maintenance Bypass Panel, 10-200kVA 400V wallmount, for Easy UPS 3S/3M (E3MBPAR60K200H)
- Maintenance Bypass Panel, single unit, 80-120kW 400V wallmount, for Galaxy VS and Easy UPS 3S/3M (GVSBPSU80K120H)

- Maintenance Bypass Panel, single unit, 150kW 400V wallmount, for Galaxy VS and Easy UPS 3M (GVSBPSU150KH)
- Parallel Maintenance Bypass Panel for 2 UPSs, 60-120kW 400V wallmount for Galaxy VS & Easy UPS 3S/3M (GVSBPAR60K120H)

Backfeed Boxes

- Wall-mount box with 275A power contactor and connections that delivers backfeed protection for 400V Easy UPS 3M 60-100 kVA (SP3OPT009)
- Wall-mount box with 550A power contactor and connections that delivers backfeed protection for 400V Easy UPS 3M 120-200 kVA (SP3OPT010)

IP Kits

- Easy UPS 3M IP30 Kit for 60 to 80 kVA 400 V UPS with internal batteries (E3MOPT008)
- Easy UPS 3M IP30 Kit for 60 to 100 kVA 400 V UPS for external batteries (E3MOPT009)
- Easy UPS 3M IP30 Kit for 120 to 160 kVA 400 V UPS for external batteries (E3MOPT010)
- Easy UPS 3M IP30 Kit for 200 kVA 400 V UPS for external batteries (E3MOPT011)
- Easy UPS 3M IPX2 Kit for 60 to 80 kVA 400 V UPS with internal batteries (E3MOPT013)
- Easy UPS 3M IPX2 Kit for 60 to 100 kVA 400 V UPS for external batteries (E3MOPT014)
- Easy UPS 3M IPX2 Kit for 120 to 160 kVA 400 V UPS for external batteries (E3MOPT015)
- Easy UPS 3M IPX2 Kit for 200 kVA 400 V UPS for external batteries (E3MOPT016)
- Easy UPS 3M IP40 Kit for 60 to 80 kVA 400 V UPS with internal batteries (E3MOPT017)
- Easy UPS 3M IP40 Kit for 60 to 100 kVA 400 V UPS for external batteries (E3MOPT018)
- Easy UPS 3M IP40 Kit for 120 to 160 kVA 400 V UPS for external batteries (E3MOPT019)
- Easy UPS 3M IP40 Kit for 200 kVA 400 V UPS for external batteries (E3MOPT020)

Cable Kits for Battery Cabinet

- Easy UPS 3M Cable Kit for Adjacent Installation of 700 mm Classic Battery Cabinet, 60-100 kVA UPS (E3MOPT003)
- Easy UPS 3M Cable Kit for Adjacent Installation of 1000 mm Classic Battery Cabinet, 60-100 kVA UPS (E3MOPT004)
- Easy UPS 3M Cable Kit, Classic Battery Cabinet & 60-100 kVA UPS, Modular Battery Cabinet & 60–80 kVA UPS (E3MOPT006)

Options

- Easy UPS 3M Parallel Kit for 60-200 kVA UPS (E3MOPT001)
- Easy UPS 3M 15M Parallel Kit for 60-200 kV (E3MOPT012)

- Easy UPS 3M Cold start kit (E3MOPT005)
- Synchronization Kit with 20m cable for Easy UPS 3M/3L (E3LOPT002)

Weights and Dimensions for Options

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

Modular Battery Cabinet Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
E3SXR6	140	1620	650	1020

Modular Battery Cabinet Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
E3SXR6	125	1400	500	851

Classic Battery Cabinet Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
E3MCBC7C	551	1980	815	970
E3MCBC7D	820	1980	815	970
E3MCBC10A	1117	1980	1130	970
E3MCBC10B	1297	1980	1130	970
E3MCBC10C	1424	1980	1130	970
E3MCBC10D Cabinet with breaker Cabinet without breaker	1120	1980	1130	970
	1102	1980	1130	970
E3MCBC10E Cabinet with breaker Cabinet without breaker	1300	1980	1130	970
	1282	1980	1130	970

Classic Battery Cabinet Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
E3MCBC7C	531	1900	710	845
E3MCBC7D	800	1900	710	845
E3MCBC10A	1038	1900	1010	845
E3MCBC10B	1164	1900	1010	845
E3MCBC10C	1280	1900	1010	845
E3MCBC10D	1041	1900	1010	845
	1023	1900	1010	845
E3MCBC10E	1170	1900	1010	845
	1152	1900	1010	845

NOTE: E3MCBC10D and E3MCBC10E consist of two cabinets.

Battery Breaker Box Shipping Weight and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Battery breaker box E3MBBB60K80H	55	1200	825	530
Battery breaker box E3MBBB100K200H	65	1200	825	530

Battery Breaker Box Weight and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Battery breaker box E3MBBB60K80H	25	650	500	280
Battery breaker box E3MBBB100K200H	38	800	500	280

Battery Breaker Kit Shipping Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Battery breaker kit E3MBBK60K80H	22	800	500	570
Battery breaker kit E3MBBK100K200H	29	800	500	570

Battery Breaker Kit Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Battery breaker kit E3MBBK60K80H	7	415	288	190
Battery breaker kit E3MBBK100K200H	13	530	320	230

Maintenance Bypass Panel Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in) [33]	Width mm (in)	Depth mm (in) [33]
GVSBPSU10K20H	20	260	530	590
GVSBPSU20K60H	40	440	730	810
GVSBPSU80K120H	55	490	840	1220
GVSBPSU150KH	60	490	840	1220

Maintenance Bypass Panel Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBPSU10K20H	12	450	400	150
GVSBPSU20K60H	25	600	550	220
GVSBPSU80K120H	40	800	600	280
GVSBPSU150KH	48	800	600	280

Parallel Maintenance Bypass Panel Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBPAR10K30H	35	700	650	210
GVSBPAR40K50H	86	850	750	250
GVSBPAR60K120H	110	1000	900	280

Parallel Maintenance Bypass Panel Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in) [33]	Width mm (in)	Depth mm (in) [33]
GVSBPAR10K30H	56	500	800	1200
GVSBPAR40K50H	96	580	800	1200
GVSBPAR60K120H	120	500	1000	1200

Parallel Maintenance Bypass Panel Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
E3MBPAR60K200H	92	1200	800	570
E3MBP60K400H	110	1200	810	600

33. The product is packaged in a horizontal position, so the shipping height and depth dimensions differ from the product itself.

Parallel Maintenance Bypass Panel Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
E3MBPAR60K200H	62	1000	700	320
E3MBP60K400H	75	1050	750	350

Backfeed Box Shipping Weights and Dimensions

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

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

Backfeed Box Weights and Dimensions

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

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One-Year Factory Warranty

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