Galaxy VS

UPS with Internal Batteries

Technical Specifications

20-100 kW 480 V
10-50 kW 208 V

Latest updates are available on the Schneider Electric website
5/2025

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Access to Your Product Manuals Online

Find the UPS Manuals, Submittal Drawings, and Other Documentation for Your Specific UPS Here:

In your web browser, type in https://www.go2se.com/ref= and the commercial reference for your product.

Example: *https://www.go2se.com/ref=**GVSUPS20KGS***

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

Scan the code to go to the Galaxy VS online manual portal:

UL (200/208/220/480 V)

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

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 Galaxy VS Here:

Go to *https://www.se.com/ww/en/product-range/65772* to learn more about this product.

Table of Contents

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.

FCC Statement

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Safety Precautions

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

- IEC 60364 (including 60364–4–41- protection against electric shock, 60364–4–42 - protection against thermal effect, and 60364–4–43 - protection against overcurrent), **or**
- NEC NFPA 70

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

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

⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

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

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

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

NOTICE

RISK OF OVERHEATING

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

Failure to follow these instructions can result in equipment damage.

NOTICE

RISK OF EQUIPMENT DAMAGE

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

Failure to follow these instructions can result in equipment damage.

ENERGY STAR Qualification

Select models are ENERGY STAR® qualified.
For more information on your specific model go to www.se.com.

Model list

UPS with Internal Batteries Up to 2 Battery Strings

See UPS with Internal Batteries Up to 2 Battery Strings, page 17 for technical specifications for this UPS.

- Galaxy VS UPS 20 kW 480 V, with 1 internal 7 Ah smart modular battery string, expandable to 2, Start-up 5x8 (GVSUPS20KB2GS)
- Galaxy VS UPS 10 kW 208 V, with 1 internal 7 Ah smart modular battery string, expandable to 2, Start-up 5x8 (GVSUPS10KB2FS)

UPS with Internal Batteries Up to 4 Battery Strings Produced in the United States

See UPS with Internal Batteries Up to 4 Battery Strings, page 42 for technical specifications for this UPS.

- Galaxy VS UPS 30 kW 480 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS30KB4GS-A)
- Galaxy VS UPS 40 kW 480 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS40KB4GS-A)
- Galaxy VS UPS 50 kW 480 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS50KB4GS-A)
- Galaxy VS UPS 15 kW 208 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS15KB4FS-A)
- Galaxy VS UPS 20 kW 208 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS20KB4FS-A)
- Galaxy VS UPS 25 kW 208 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS25KB4FS-A)

UPS with Internal Batteries Up to 4 Battery Strings

See UPS with Internal Batteries Up to 4 Battery Strings, page 42 for technical specifications for this UPS.

- Galaxy VS UPS 20 kW 480 V, with 1 internal 9 Ah smart modular battery string, expandable to 4, Start-up 5x8 (GVSUPS20KB4GS)
- Galaxy VS UPS 20 kW 480 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS20K0B4GS)
- Galaxy VS UPS 30 kW 480 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS30KB4GS)
- Galaxy VS UPS 30 kW 480 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS30K0B4GS)
- Galaxy VS UPS 40 kW 480 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS40KB4GS)
- Galaxy VS UPS 40 kW 480 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS40K0B4GS)
- Galaxy VS UPS 50 kW 480 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS50KB4GS)
- Galaxy VS UPS 50 kW 480 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS50K0B4GS)

- Galaxy VS UPS 10 kW 208 V, with 1 internal 9 Ah smart modular battery string, expandable to 4, Start-up 5x8 (GVSUPS10KB4FS)
- Galaxy VS UPS 10 kW 208 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS10K0B4FS)
- Galaxy VS UPS 15 kW 208 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS15KB4FS)
- Galaxy VS UPS 15 kW 208 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS15K0B4FS)
- Galaxy VS UPS 20 kW 208 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS20KB4FS)
- Galaxy VS UPS 20 kW 208 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS20K0B4FS)
- Galaxy VS UPS 25 kW 208 V, with 2 internal 9 Ah smart modular battery strings, expandable to 4, Start-up 5x8 (GVSUPS25KB4FS)
- Galaxy VS UPS 25 kW 208 V, for up to 4 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS25K0B4FS)

UPS with Internal Batteries Up to 5 Battery Strings

See UPS with Internal Batteries Up to 5 Battery Strings, page 81 for technical specifications for this UPS.

- Galaxy VS UPS 20 kW 480 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS20KR0B5GS)
- Galaxy VS UPS 30 kW 480 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS30KR0B5GS)
- Galaxy VS UPS 40 kW 480 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS40KR0B5GS)
- Galaxy VS UPS 50 kW 480 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS50KR0B5GS)
- Galaxy VS UPS 60 kW 480 V, with 3 internal 9 Ah smart modular battery strings, expandable to 5, Start-up 5x8 (GVSUPS60KB5GS)
- Galaxy VS UPS 60 kW 480 V, for up to 5 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS60K0B5GS)
- Galaxy VS UPS 80 kW 480 V, with 3 internal 9 Ah smart modular battery strings, expandable to 5, Start-up 5x8 (GVSUPS80KB5GS)
- Galaxy VS UPS 80 kW 480 V, for up to 5 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS80K0B5GS)
- Galaxy VS UPS 100 kW 480 V, with 3 internal 9 Ah smart modular battery strings, expandable to 5, Start-up 5x8 (GVSUPS100KB5GS)
- Galaxy VS UPS 100 kW 480 V, for up to 5 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS100K0B5GS)
- Galaxy VS UPS 10 kW 208 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS10KR0B5FS)
- Galaxy VS UPS 15 kW 208 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS15KR0B5FS)
- Galaxy VS UPS 20 kW 208 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS20KR0B5FS)
- Galaxy VS UPS 25 kW 208 V, with N+1 power module, for 5 smart modular 9 Ah battery strings, Start-up 5x8 (GVSUPS25KR0B5FS)
- Galaxy VS UPS 30 kW 208 V, with 3 internal 9 Ah smart modular battery strings, expandable to 5, Start-up 5x8 (GVSUPS30KB5FS)
- Galaxy VS UPS 30 kW 208 V, for up to 5 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS30K0B5FS)
- Galaxy VS UPS 40 kW 208 V, with 3 internal 9 Ah smart modular battery strings, expandable to 5, Start-up 5x8 (GVSUPS40KB5FS)
- Galaxy VS UPS 40 kW 208 V, for up to 5 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS40K0B5FS)
- Galaxy VS UPS 50 kW 208 V, with 3 internal 9 Ah smart modular battery strings, expandable to 5, Start-up 5x8 (GVSUPS50KB5FS)
- Galaxy VS UPS 50 kW 208 V, for up to 5 internal 9 Ah smart modular battery strings, Start-up 5x8 (GVSUPS50K0B5FS)

UPS with Input Isolation Transformer and Up to 3 Internal Battery Strings

See UPS with Input Isolation Transformer and Up to 3 Internal Battery Strings, page 127 for technical specifications for this UPS.

- Galaxy VS UPS 20kW with transformer, 480V Input 400V Output, with 2 modular battery strings expandable to 3 (GVSUPS20K100B3H)

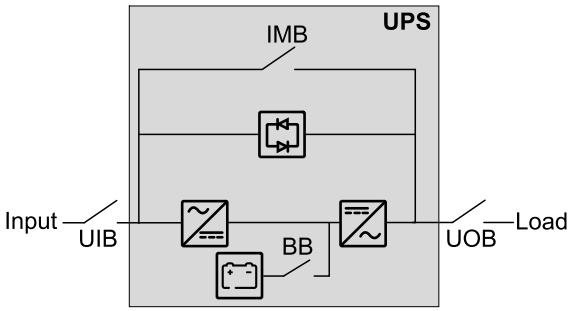
UPS with Internal Batteries Up to 2 Battery Strings

Single System Overview

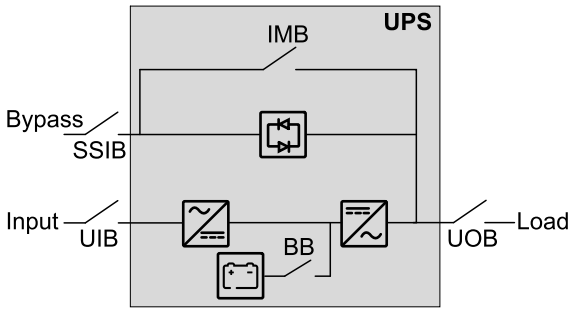
UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
IMB	Internal maintenance disconnect device
UOB	Unit output disconnect device
BB	Battery disconnect device in UPS for internal batteries

NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

Single System – Single Mains



Single System – Dual Mains



Parallel System Overview

UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
IMB	Internal maintenance disconnect device
UOB	Unit output disconnect device
SIB	System isolation disconnect device
BB	Battery disconnect device in UPS for internal batteries
MBB	Maintenance bypass disconnect device

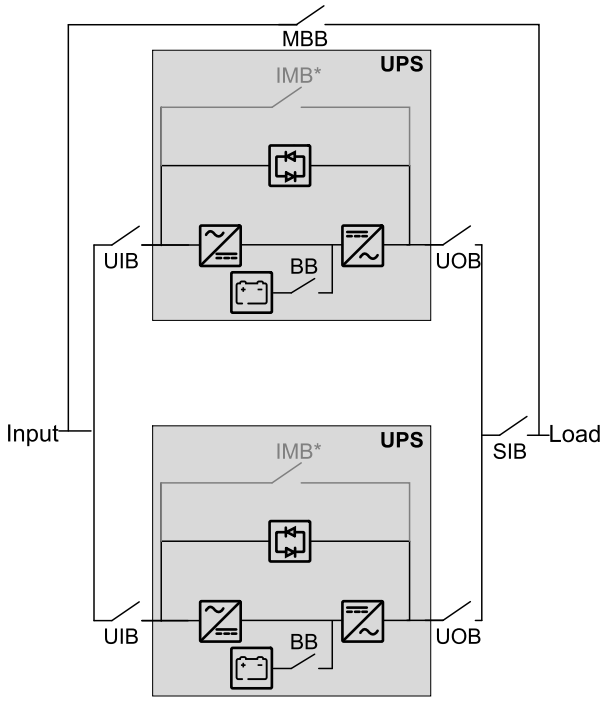
NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

Parallel Systems with Individual UIB and SSIB

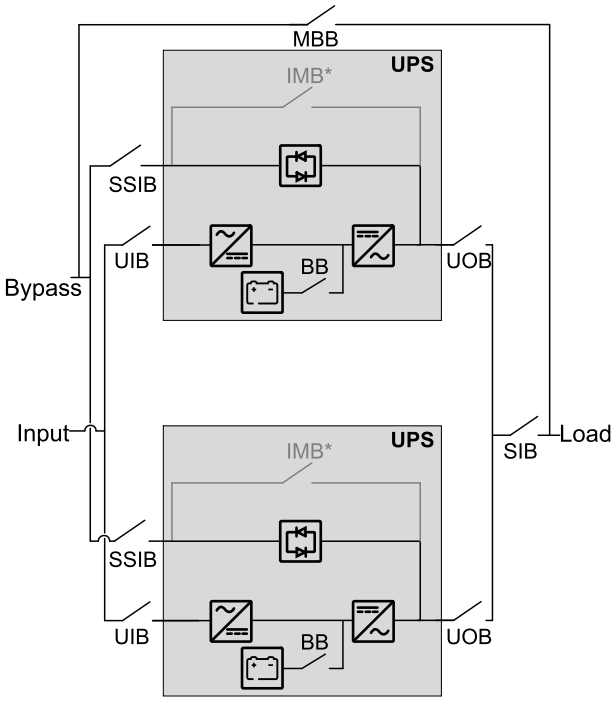
Galaxy VS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy with individual UIB and SSIB.

NOTE: In parallel systems an external MBB must be provided and the IMB* must be padlocked in the open position.

Parallel System – Single Mains



Parallel System – Dual Mains

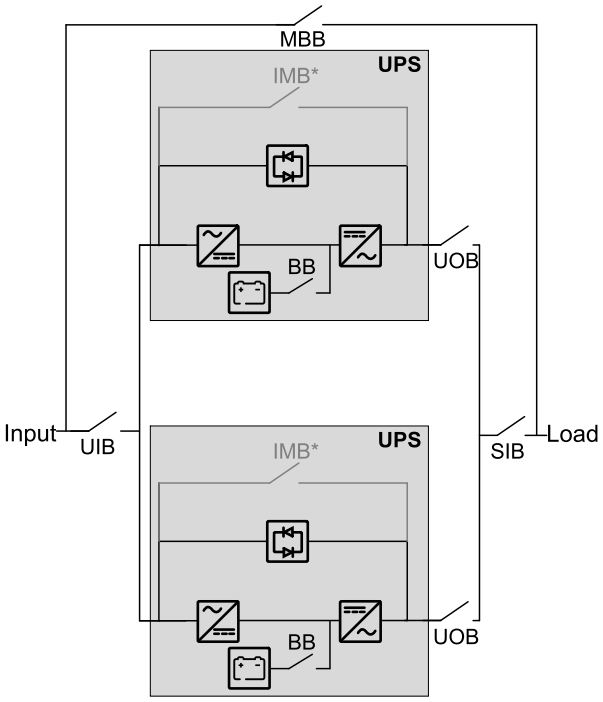


Parallel Systems with Shared UIB and SSIB

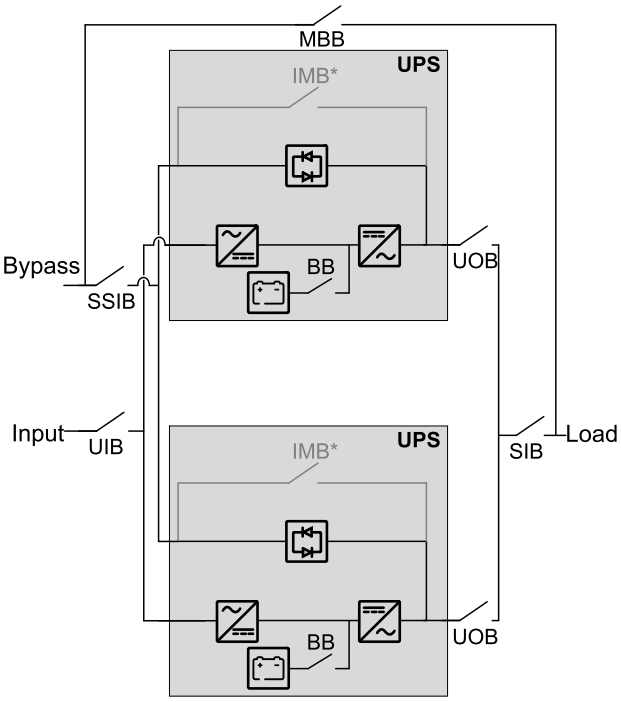
Galaxy VS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy with shared UIB and SSIB.

NOTE: In parallel systems an external MBB must be provided and the IMB* must be padlocked in the open position.

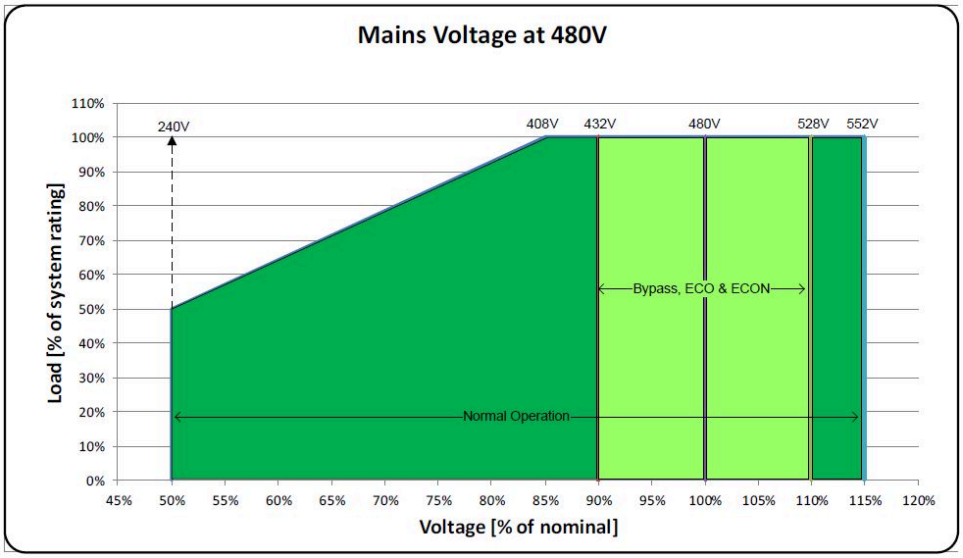
Parallel System – Single Mains

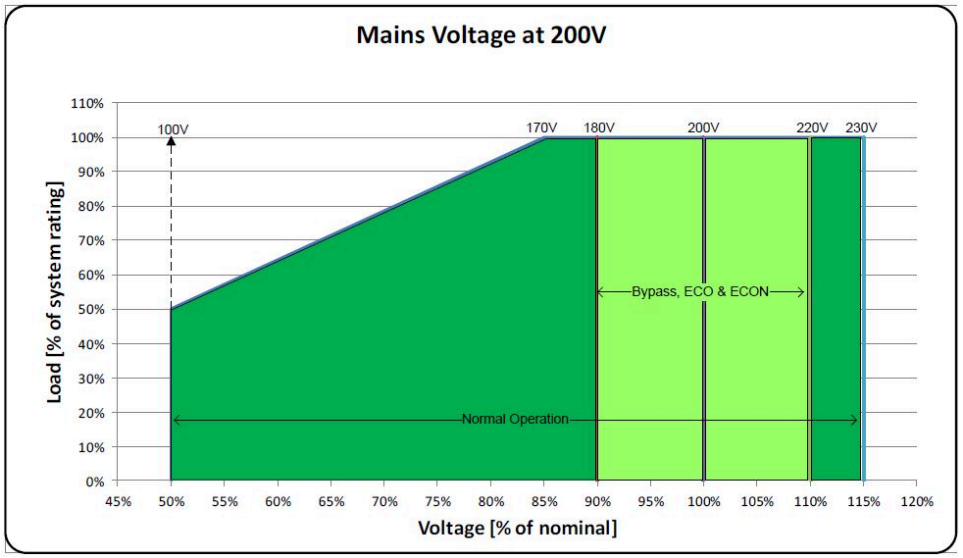


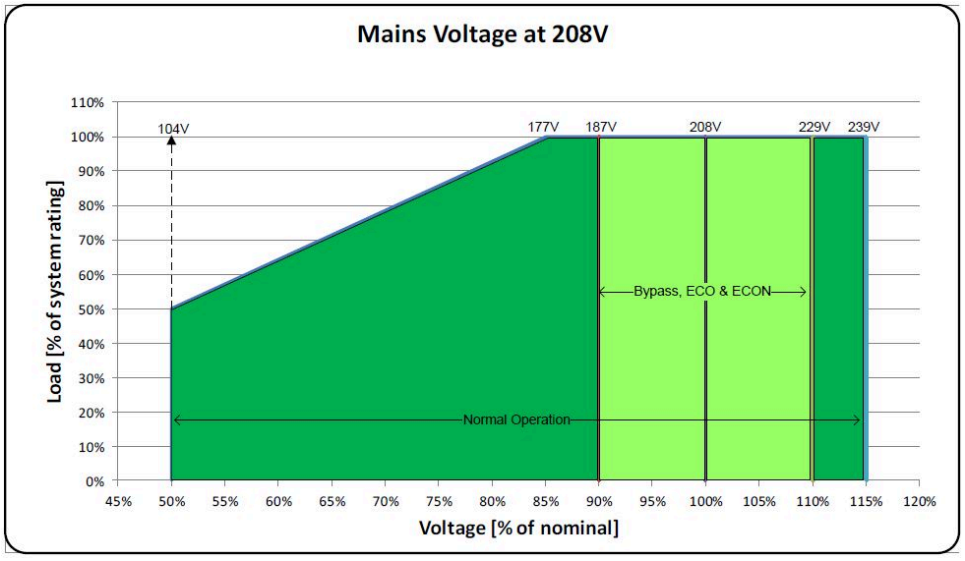
Parallel System – Dual Mains

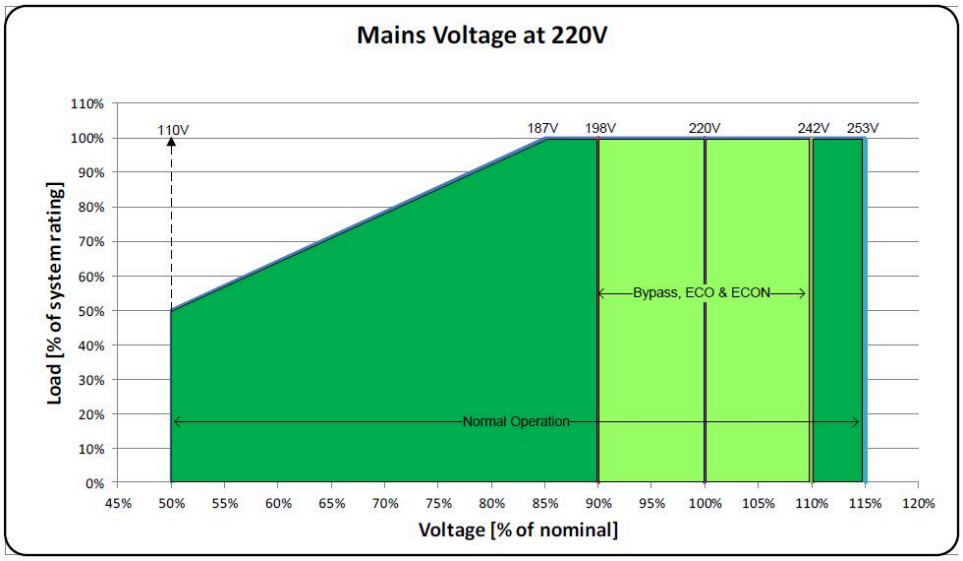


Input Voltage Window



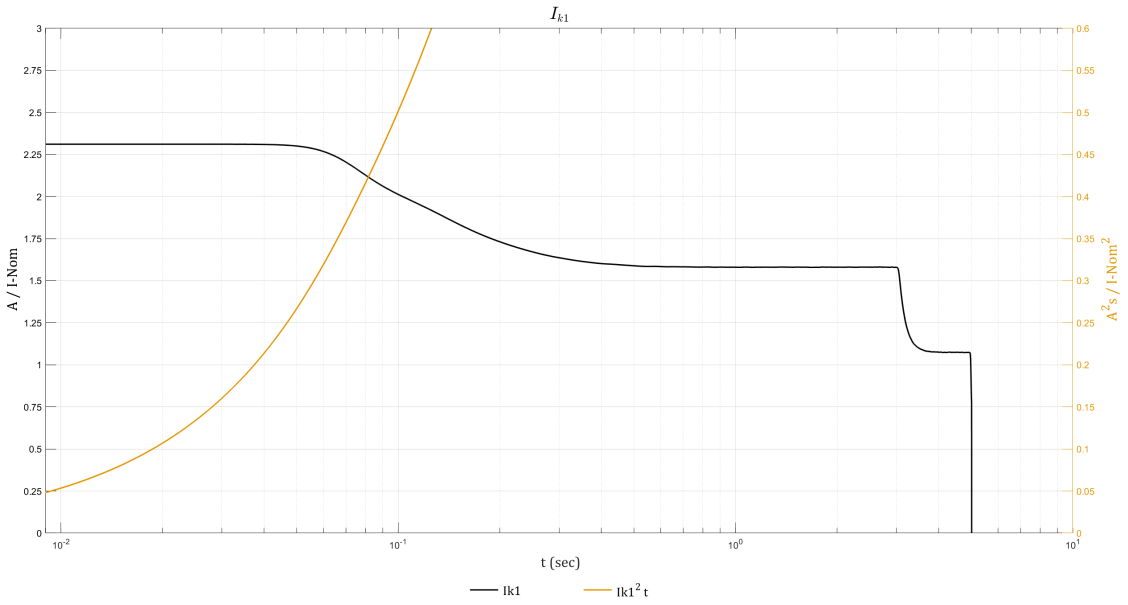





Mains Voltage at 220V
Load [% of system rating]
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
110V
187V
198V
220V
242V
253V
Bypass, ECO & ECON
Normal Operation
45%
50%
55%
60%
65%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
Voltage [% of nominal]

Inverter Short Circuit Capabilities (Bypass not Available)

IK1 – Short Circuit between a Phase and Neutral



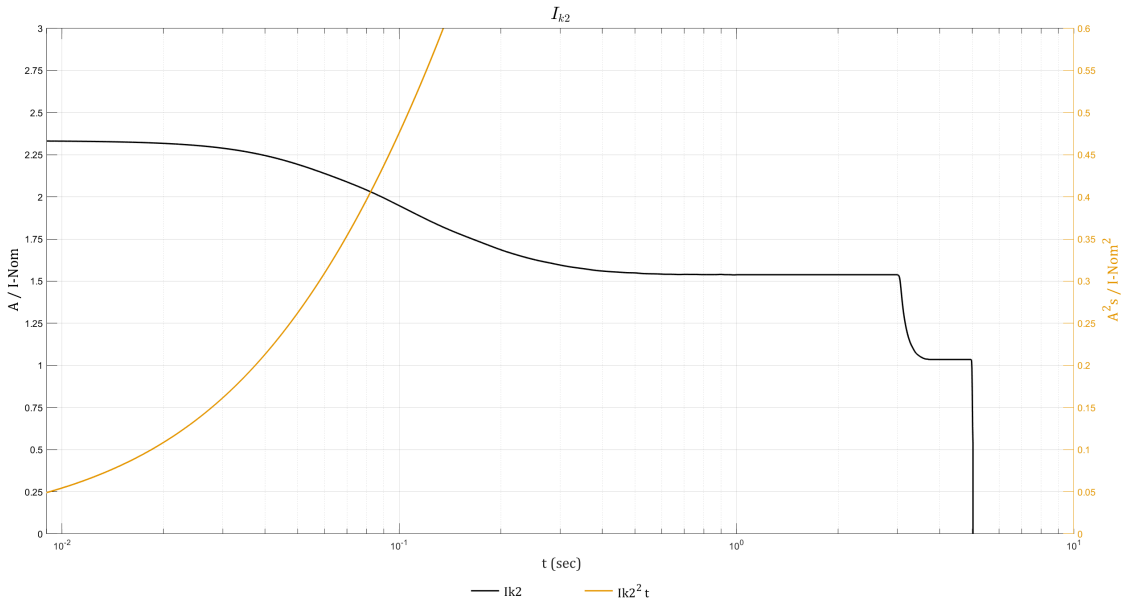
IK1 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	56 / 31	56 / 62	56 / 93	48 / 290	38 / 1674

IK1 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	64 / 41	64 / 82	64 / 123	56 / 386	44 / 2229

IK2 – Short Circuit between Two Phases



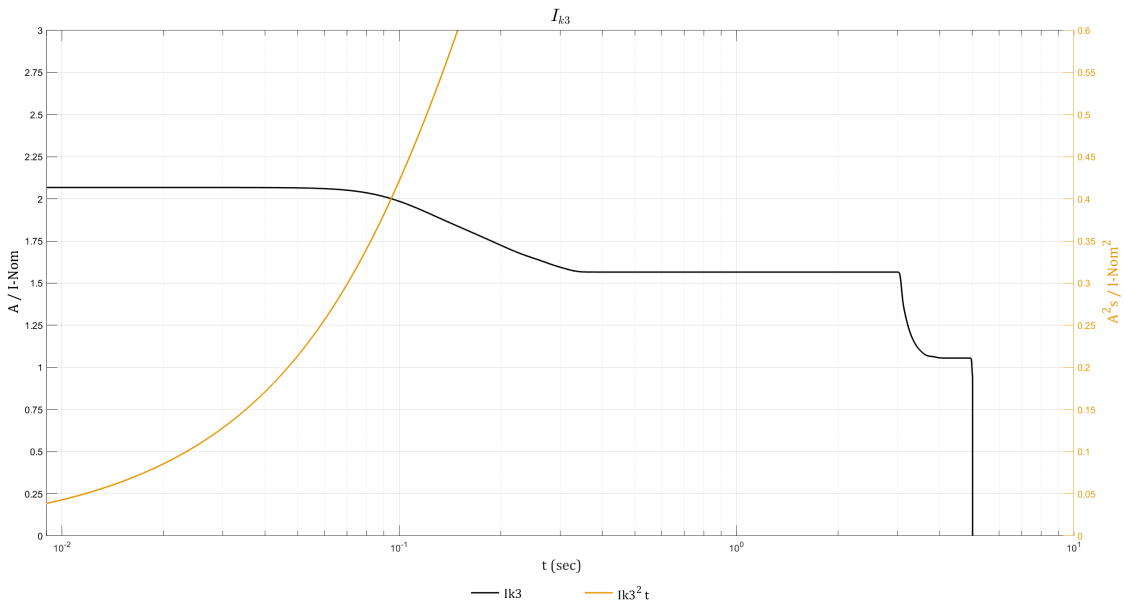
IK2 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	56 / 31	56 / 63	56 / 94	47 / 276	37 / 1586

IK2 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	65 / 42	64 / 84	64 / 125	54 / 367	43 / 2112

IK3 – Short Circuit between Three Phases



IK3 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	50 / 25	50 / 49	50 / 74	48 / 244	38 / 1593

IK3 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	57 / 33	57 / 66	57 / 99	55 / 325	43 / 2121

Efficiency

480 V UPS

20 kW UPS	Normal operation	ECO mode	eConversion	Battery operation
25% load	94.8%	97.0%	96.7%	94.4%
50% load	96.3%	98.3%	98.1%	96.2%
75% load	96.8%	98.7%	98.6%	96.4%
100% load	96.8%	98.9%	98.8%	96.3%

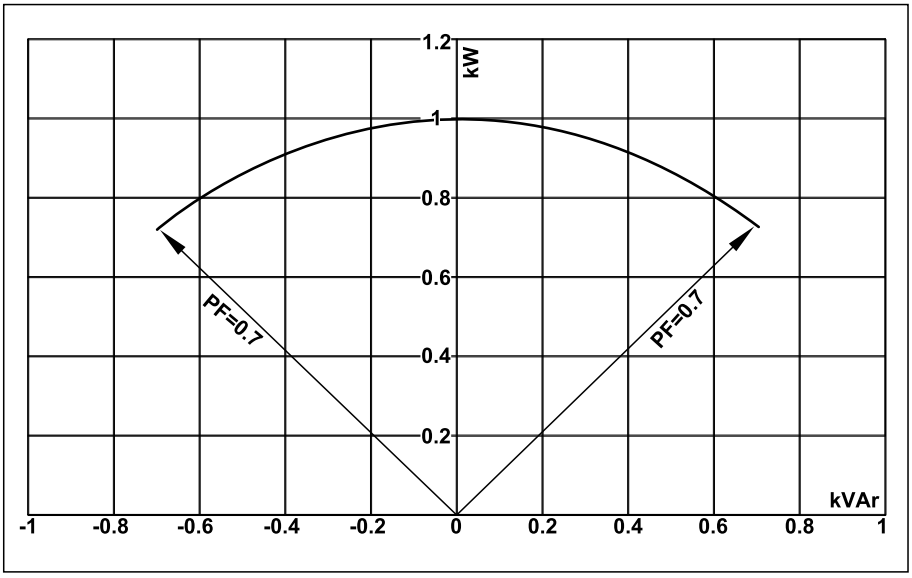
208 V UPS

10 kW UPS	Normal operation			ECO mode		
Voltage (V)	200	208	220	200	208	220
25% load	92.1%	93.3%	92.4%	94.7%	94.8%	94.8%
50% load	93.8%	94.6%	94.2%	96.9%	96.9%	96.9%
75% load	93.8%	94.7%	94.4%	97.5%	97.5%	97.6%
100% load	93.2%	94.4%	94.1%	97.7%	97.8%	97.9%

10 kW UPS	eConversion			Battery operation		
Voltage (V)	200	208	220	200	208	220
25% load	94.7%	94.9%	94.9%	89.2%	90.4%	89.5%
50% load	96.8%	96.9%	96.9%	93.2%	93.6%	93.5%
75% load	97.5%	97.6%	97.6%	94.1%	94.4%	94.5%
100% load	97.7%	97.8%	97.9%	94.3%	94.6%	94.8%

Derating Due to Load Power Factor

0.7 leading to 0.7 lagging without derating.

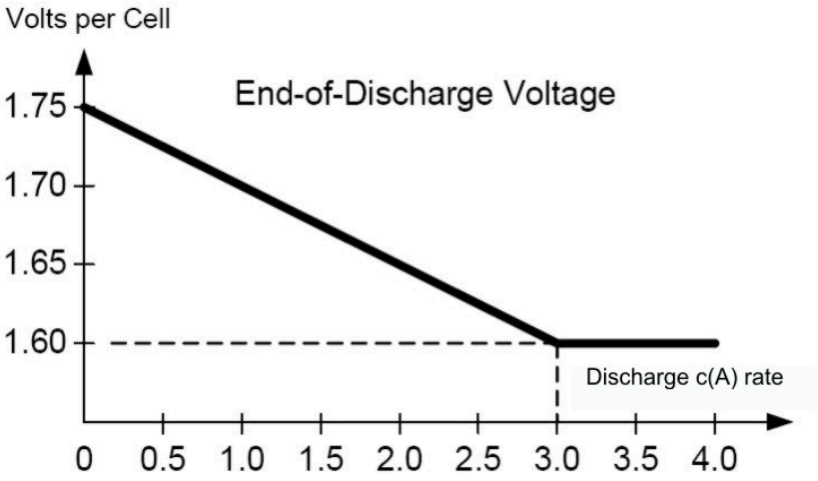


UPS rating	UPS output					
	Lagging			Leading		
PF=1	PF=0.7	PF=0.8	PF=0.9	PF=0.9	PF=0.8	PF=0.7
10 kVA/kW	10 kVA / 7 kW	10 kVA / 8 kW	10 kVA / 9 kW	10 kVA / 9 kW	10 kVA / 8 kW	10 kVA / 7 kW
20 kVA/kW	20 kVA / 14 kW	20 kVA / 16 kW	20 kVA / 18 kW	20 kVA / 18 kW	20 kVA / 16 kW	20 kVA / 14 kW

Batteries

End of Discharge Voltage

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



Battery Voltage Window

	Boost 2.38 Vpc	Nominal 2.0 Vpc	Minimum 1.6 Vpc
Battery voltage (V)	571.2	480	384

Battery Runtimes in Minutes

480 V UPS

UPS rating	20 kW
Number of modular battery strings	
1	NA
2	8.4

208 V UPS

UPS rating	10 kW
Number of modular battery strings	
1	8.3
2	22

Compliance

Safety	IEC 62040-1: 2017, Edition 2.0, Uninterruptible Power Systems (UPS) - Part 1: Safety requirements UL 1778 5th edition
EMC/EMI/RFI	IEC 62040-2: 2016, 3rd edition Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements C2 FCC Part 15 Subpart B, Class A IEEE C62.41-1991 Location Category B2, IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits
Transportation	IEC 60721-4-2 Level 2M1
Seismic	ICC-ES AC 156 (2015): OHSPD Pre-approved; Sds=1.33 g for z/h=1 and Sds=1.63 g for z/h=0; Ip= 1.5
Earthing system	TN-C, TN-S, TT, IT
Overvoltage category	This UPS is OVCII compliant. If the UPS is installed in an environment with an OVC rating higher than II, an SPD (surge protection device) must be installed upstream of the UPS to reduce the overvoltage category to OVCII.
Protective class	I
Pollution degree	2

Performance

Performance in accordance with: IEC 62040-3: 2021, 3rd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements.

Earthing Systems

Refer to the Galaxy VS Earthing Principles for earthing system details applicable for Galaxy VS UPS. The Galaxy VS Earthing Principles are available on the website.

Regional Seismic Compliance

Certificate available upon request.

Country/Region	Code ID	Hazard level ground	Hazard level roof
Argentina	INPRES-CIRSOC103	Zone 4	Zone 4
Australia	AS 1170.4-2007	Z = 0.22	Z = 0.22
Canada[1]	2020 NBCC	S_a = 2.0	S_a = 1.46
Chile	NCh 433.Of1996	Zone 3	Zone 2
China	GB 50011-2010 (2016)	α_{Max} = 1.4	α_{Max} = 1.2
Europe	Eurocode 8 EN1998-1	α_{gR} = 0.45	α_{gR} = 0.3
India	IS 1893 (Part 1) : 2016	Z = 0.36	Z = 0.36
Japan	Building Standard Law	Zone A	Zone A
New Zealand	NZS 1170.5:2004+A1	Z = 0.6	Z = 0.42
Peru	N.T.E. - E.030	Zone 4	Zone 4
Russia	SNIP II-7-81 (SP 14.13330.2014)	MSK 10	MSK 9

1. OSHPD Pre-approved in accordance with AC156 test protocol.

Country/Region	Code ID	Hazard level ground	Hazard level roof
Taiwan	CPA 2011 Seismic Design Code	$S_S^D = 0.8$	$S_S^D = 0.8$
U.S.A.[2]	ASCE 7-16 / IBC 2018	$S_{DS} = 2.0$	$S_{DS} = 1.47$

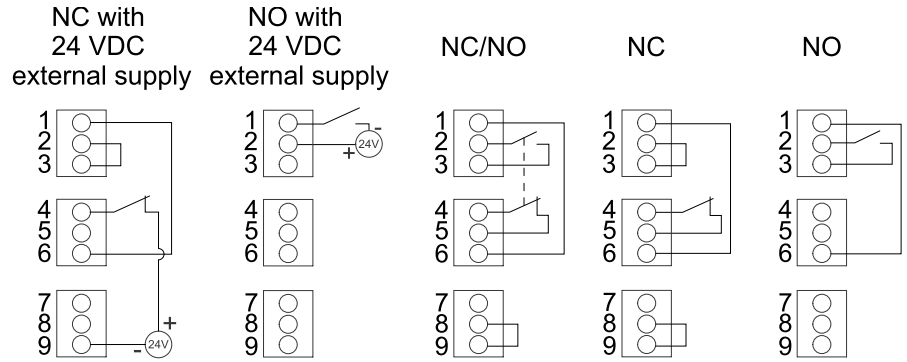
2. OSHPD Pre-approved in accordance with AC156 test protocol.

Communication and Management

Local area network	1 Gbps – 1 port as default
Modbus	Modbus (SCADA)
Output relays	4 x SELV configurable
Input contacts	4 x SELV configurable
Standard control panel	4.3 inch touchscreen display
Audible alarm	Yes
Emergency Power Off (EPO)	Options: • Normally Open (NO) • Normally Closed (NC) • External 24 VDC SELV
External switchgear	UIB UOB SSIB MBB SIB
External synchronization	No
Battery monitoring	Available for modular batteries

EPO

EPO Configurations (640–4864 terminal J6600, 1–9)



The EPO input supports 24 VDC.

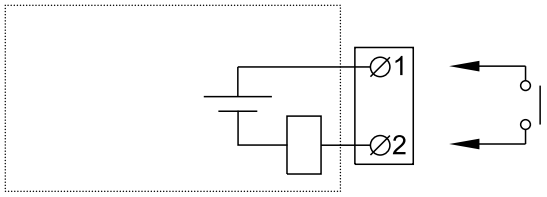
NOTE: The default setting for the EPO activation is to turn off the inverter.

If you want the EPO activation to transfer the UPS into forced static bypass operation instead, please contact Schneider Electric.

Configurable Input Contacts and Output Relays

Input Contacts

Four input contacts are available and can be configured to indicate a given event via the display. The input contacts support 24 VDC 10 mA.

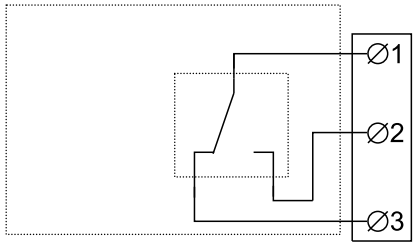


Name	Description	Location
IN _1 (input contact 1)	Configurable input contact	640-4864 terminal J6616, 1–2
IN _2 (input contact 2)	Configurable input contact	640-4864 terminal J6616, 3–4
IN _3 (input contact 3)	Configurable input contact	640-4864 terminal J6616, 5–6
IN _4 (input contact 4)	Configurable input contact	640-4864 terminal J6616, 7–8

Output Relays

Four output relays are available and can be configured to activate on one or more events via the display.

The output relays support 24 VAC/VDC 1 A. All external circuitry must be fused with maximum 1 A fast acting fuses.



Name	Description	Location
OUT _1 (output relay 1)	Configurable output relay	640–4864 terminal J6617, 1–3
OUT _2 (output relay 2)	Configurable output relay	640–4864 terminal J6617, 4–6
OUT _3 (output relay 3)	Configurable output relay	640–4864 terminal J6617, 7–9
OUT _4 (output relay 4)	Configurable output relay	640–4864 terminal J6617, 10–12

Energized check mode: When this mode is enabled, it means that the output relay is activated when the events associated with the output relay are not present (normally activated). **Energized check mode** is individually set for each output relay and makes it possible to detect if the power supply to the output relays is lost, as all output relays will deactivate and the events associated with the output relays will be indicated as present.

Specifications

Input Specifications

UPS rating	**10 kW**	**20 kW**
Voltage (V)	**200/208/220**	**480**
Connections	4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)[3]
Input voltage range (V)	200 V: 170-230 208 V: 177-239 220 V: 187-253	408-552
Frequency range (Hz)	40-70	
Nominal input current (A)	31/30/28	25
Maximum input current (A)	38/37/35	33
Input current limitation (A)	40/38/36	31
Input power factor	0.99 for load greater than 50% 0.95 for load greater than 25%	
Total harmonic distortion (THDI)	<3% at full linear load (symmetrical)	
Maximum short circuit rating	65 kA RMS	
Protection	Built-in backfeed protection and fuses	
Ramp-in	Programmable and adaptive 1-40 seconds	

Bypass Specifications

UPS rating	**10 kW**	**20 kW**
Voltage (V)	**200/208/220**	**480**
Connections	4-wire (L1, L2, L3, N, G) WYE	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE[3]
Bypass voltage range (V)	200 V: 180-220 208 V: 187-229 220 V: 198-242	432-528
Frequency range (Hz)	50/60 ± 1, 50/60 ± 3, 50/60 ± 10 (user selectable)	
Nominal bypass current (A)	31/29/28	26
Nominal neutral current (A)	50/48/45	42
Maximum short circuit rating[4]	65 kA RMS	
Protection	Built-in backfeed protection and fuses Internal fuse specifications: Rated 160 A, prearcing 2.68 kA^2s	

3. TN and TT power distribution systems are supported. Corner (line) grounding is not permitted.
4. Conditioned by the internal fuse rated 160 A, prearcing 2.68 kA^2s.

Output Specifications

NOTE: The number of output connections must match the number of input wires in a single mains system or bypass wires in a dual mains system.

UPS rating	**10 kW**	**20 kW**
Voltage (V)	**200/208/220**	**480**
Connections	4-wire (L1, L2, L3, N, G)	3-wire (L1, L2, L3, G, GEC[5]) or 4-wire (L1, L2, L3, N, G)
Output voltage regulation	Symmetrical load ± 1% Asymmetrical load ± 3%	
Overload capacity	150% for 1 minute (in normal operation) 125% for 10 minutes (in normal operation) 110% continuous (normal operation)[6] 125% for 1 minute (in battery operation) 125% continuous (bypass operation) 1000% for 100 milliseconds (bypass operation)	
Dynamic load response	± 5% after 2 milliseconds ± 1% after 50 milliseconds	
Output power factor	1	
Nominal output current (A)	29/28/26	24
Frequency regulation (Hz)	50/60 Hz bypass synchronized – 50/60 Hz ± 0.1% free-running	
Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6	
Total harmonic distortion (THDU)	<2% for linear load <5% for non-linear load	<1% for linear load <3% for non-linear load
Load crest factor	2.5	
Load power factor	From 0.7 leading to 0.7 lagging without any derating	

Battery Specifications

All values are based on 40 battery blocks.

UPS rating	**10 kW**	**20 kW**
Voltage (V)	**200/208/220**	**480**
Charging power in % of output power at 0-40% load	80%	
Charging power in % of output power at 100% load	20%	
Maximum charging power (at 0-40% load) (kW)	8	16
Maximum charging power (at 100% load) (kW)	2	4
Nominal battery voltage (VDC)	480	
Nominal float voltage (VDC)	545	
Maximum boost voltage (VDC)	571	
Temperature compensation (per cell)	-3.3mV/°C, for T ≥ 25 °C – 0mV/°C, for T < 25 °C	
End of discharge voltage (full load) (VDC)	384	
Battery current at full load and nominal battery voltage (A)	23	45
Battery current at full load and minimum battery voltage (A)	27	54
Ripple current	< 5% C20 (5 minute runtime)	

5. Per NEC 250.30.
6. 110% continuous overload in normal operation at nominal mains voltage and at maximum 40 °C ambient temperature. Contact Schneider Electric to enable this function.

UPS rating	10 kW	20 kW
Voltage (V)	**200/208/220**	**480**
Battery test	Manual/automatic (selectable)	
Maximum short circuit rating	10 kA	

Recommended Upstream Protection for 200/208/220/480 V

Recommended Upstream Protection for 208 V UPS

⚠CAUTION

HAZARD OF FIRE

- Connect only to a circuit with the below specifications.
- Connect to a circuit provided with a 63 A branch circuit overcurrent protection maximum in accordance with the National Electrical Code, ANSI/NFPA70, and the Canadian Electrical Code, Part I, C22.1.

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

NOTE: Overcurrent protection is to be provided by others and marked with its function.

UPS rating	10 kW	
	Input	**Bypass**
Breaker type	HJF36100U31X	
Ir (A)	50	40
tr @ 6 Ir	0.5	
Ii (x In)	1.5	

Recommended Upstream Protection for 480 V UPS

⚠CAUTION

HAZARD OF FIRE

- Connect only to a circuit with the below specifications.
- Connect to a circuit provided with a 63 A branch circuit overcurrent protection maximum in accordance with the National Electrical Code, ANSI/NFPA70, and the Canadian Electrical Code, Part I, C22.1.

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

NOTE: Overcurrent protection is to be provided by others and marked with its function.

UPS rating	20 kW	
	Input	**Bypass**
Breaker type	HJF36100U31X	
Ir (A)	40	35
tr @ 6 Ir	0.5	
Ii (x In)	1.5	

Recommended Cable Sizes for 200/208/220/480 V

⚠⚠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 4 AWG.

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

NOTE: Overcurrent protection is to be provided by others.

Cable sizes in this manual are based on Table 310.15 (B)(16) of the National Electrical Code (NEC) with the following assertions:

- 90 °C (194 °F) conductors (75 °C (167 °F) termination)
- An ambient temperature of 30 °C (86 °F)
- Use of copper conductors

If the ambient temperature is greater than 30 °C (86 °F), larger conductors are to be selected in accordance with the correction factors of the NEC.

Equipment grounding conductors (EGC) are sized in accordance with NEC Article 250.122 and Table 250.122.

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

NOTE: 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.

Copper

UPS rating	**10 kW**	**20 kW**
Voltage (V)	**200/208/220**	**480**
Input phases (AWG/kcmil)	8	8
Input EGC (AWG/kcmil)	8	10
Bypass/output phases (AWG/kcmil)	8	10
Bypass EGC/output EGC (AWG/kcmil)	8	10
Neutral (AWG/kcmil)	6	6

NOTE: Cable sizes are based on 80% rated circuit breakers for UIB, UOB, MBB, SSIB.

Recommended Bolt and Lug Sizes for UL

NOTICE
RISK OF EQUIPMENT DAMAGE Use only UL approved compression cable lugs. **Failure to follow these instructions can result in equipment damage.**

Narrow One Hole Lugs for Equipment Grounding Conductor/PE Cables

Cable size	Bolt size	Cable lug type	Crimping tool	Die
10 AWG	M6 x 16 mm	LCA10-14-L	CT-1570	NA
8 AWG	M6 x 16 mm	LCA8-14-L	CT-720	CD-720-1 Red P21
6 AWG	M6 x 16 mm	LCA6-14-L	CT-720	CD-720-1 Blue P24
4 AWG	M6 x 16 mm	LCA4-14-L	CT-720	CD-720-1 Gray P29

Narrow Insulated Ferrule for Phase Cables and N Cables

Bolt size	Insulated ferrule type	Crimping tool
10 AWG	FSD82-18-C	CT-1002, CT-1003, CT-1123
8 AWG	FSD83-18-C	CT-1003, CT-1004, CT-1104, CT-1123
6 AWG	FSD84-18-C	CT-1003, CT-1004, CT-1104
4 AWG	FSD85-18-L	CT-1005

Torque Specifications

Bolt size	Torque
M4	1.7 Nm (1.25 lb-ft / 15 lb-in)
M5	2.2 Nm (1.62 lb-ft / 19.5 lb-in)
M6	5 Nm (3.69 lb-ft / 44.3 lb-in)
M8	17.5 Nm (12.91 lb-ft / 154.9 lb-in)
M10	30 Nm (22 lb-ft / 194.7 lb-in)
M12	50 Nm (36.87 lb-ft / 442.5 lb-in)

Environment

	Operating	Storage
Temperature	0 °C to 40 °C (32 °F to 104 °F)	-15 °C to 40 °C (5 °F to 104 °F)for systems with batteries.
Relative humidity	5 - 95% non-condensing	10 - 80% non-condensing
Elevation	Designed for operation in 0-3000 m (0-10000 feet) elevation. Power derating required from 1000-3000 m (3300-10000 feet): Up to 1000 m (3300 feet): 1.000 Up to 1500 m (5000 feet): 0.975 Up to 2000 m (6600 feet): 0.950 Up to 2500 m (8300 feet): 0.925 Up to 3000 m (10000 feet): 0.900	
Audible noise one meter (three feet) from unit	480 V 20 kW and 208 V 10 kW: 49 dB at 70% load, 55 dB at 100% load	
Protection class	IP20	
Color	RAL 9003, gloss level 85%	

Heat Dissipation

480 V UPS in BTU/hr

20 kW UPS	Normal operation	ECO mode	eConversion	Battery operation
25% load	943	531	587	1009
50% load	1305	587	654	1356
75% load	1704	674	742	1903
100% load	2225	794	841	2650

208 V UPS in BTU/hr

10 kW UPS	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	735	609	701	473	466	465
50% load	1137	965	1045	555	548	546
75% load	1706	1438	1518	659	651	630
100% load	2494	2031	2128	796	772	746

10 kW UPS	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	473	460	459	1032	902	1000
50% load	556	552	538	1248	1167	1184
75% load	659	641	629	1591	1511	1476
100% load	787	763	731	2062	1935	1878

UPS Shipping Weights and Dimensions

	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
UPS with one battery string	270 (595)	1680 (66.14)	640 (25.19)	990 (38.98)

UPS Weights and Dimensions

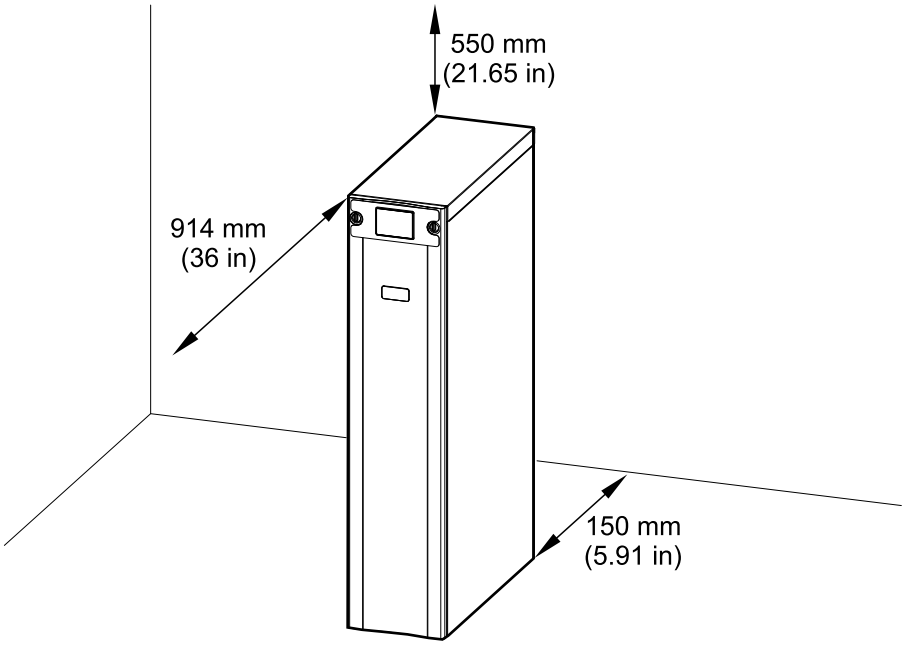
	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
UPS with one battery string	245 (540)	1485 (58.46)	333 (13.11)	847 (33.35)

NOTE: One battery module weighs approximately 32 kg (70.5 lbs). One battery string consists of four battery modules.

Clearance

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

NOTE: The required minimum rear clearance is 150 mm (5.91 in).

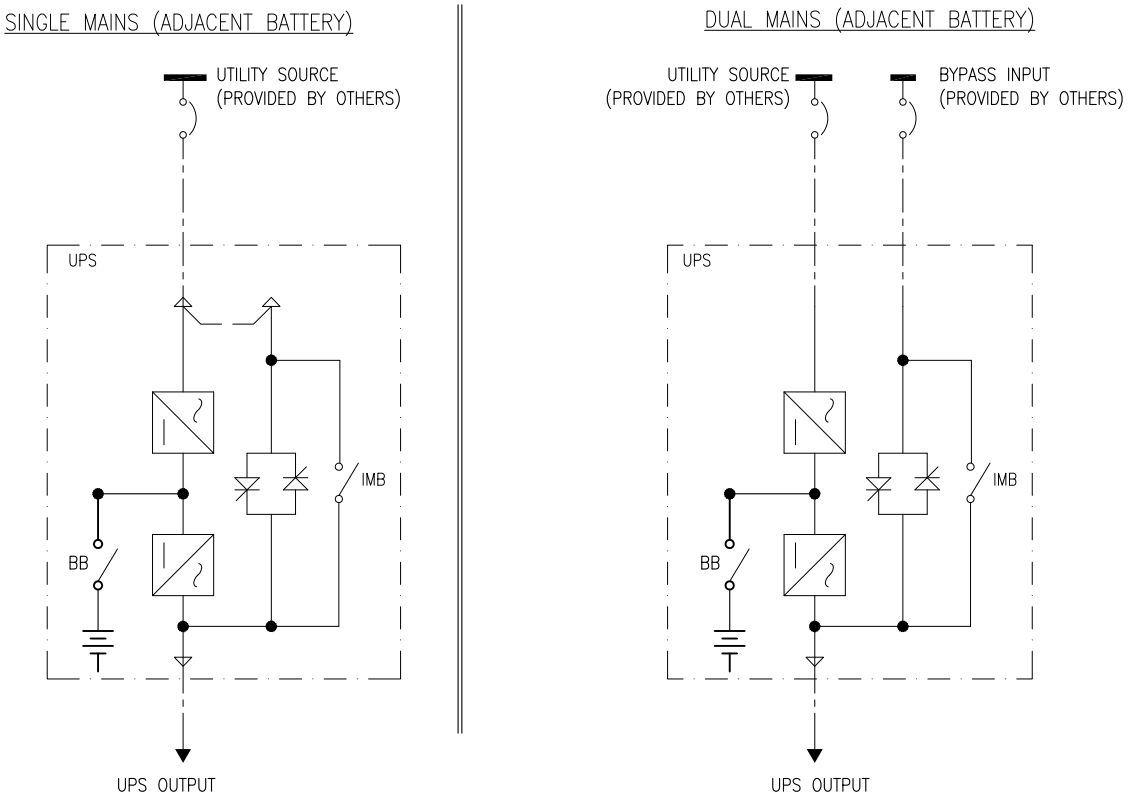


Drawings

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

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

20 kW 480 V and 10 kW 208 V



Options

Configuration Options

- eConversion mode
- Compact design, high density technology, and modular architecture
- Internal battery modules
- Single or dual mains
- Up to 4+0 UPSs in parallel for capacity
- Up to 3+1 UPSs in parallel for redundancy
- Rear cable entry
- EcoStruxure IT compatible
- Generator compatible
- Touchscreen LCD
- Replacement of power module in any operation mode (Live Swap)[7]
- ECO mode

7. In all systems configured for Live Swap.

Hardware Options

See Weights and Dimensions for Options, page 140.

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

Power Module

- Power module 20 kW 480 V/10 kW 208 V (GVPM20KD)

Maintenance Bypass Panel

Maintenance bypass panel for complete isolation of the UPS during service operations. Only for single UPS.

- 10-30 kW 208 V, 20-60 kW 480 V maintenance bypass panel (GVSBPSU60G-WP)

Optional Installation Kits

- Seismic kit for UPS (GVSOPT017)
- Parallel kit for UPS (GVSOPT006)
- Live Swap kit for the UPS (GVSOPT039)

Optional Network Management Card

- Network Management Card LCES2 with Modbus, Ethernet and AUX sensors (AP9644)

Air Filter

- Air filter kit (GVSOPT015)

Battery Modules

7 Ah smart battery modules.

- Galaxy VS 7 Ah Smart Battery Module (GVSBTU)
- Galaxy VS 7 Ah Smart Modular Battery String (GVSBT4)

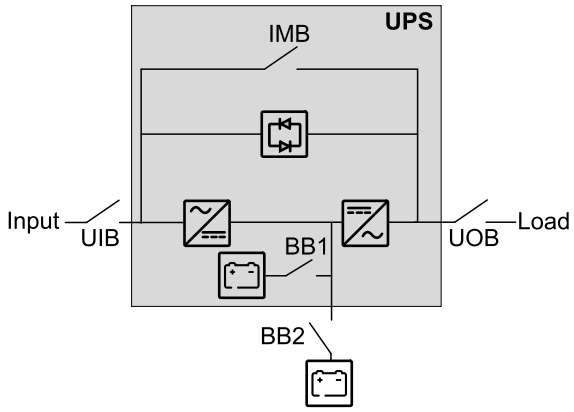
UPS with Internal Batteries Up to 4 Battery Strings

Single System Overview

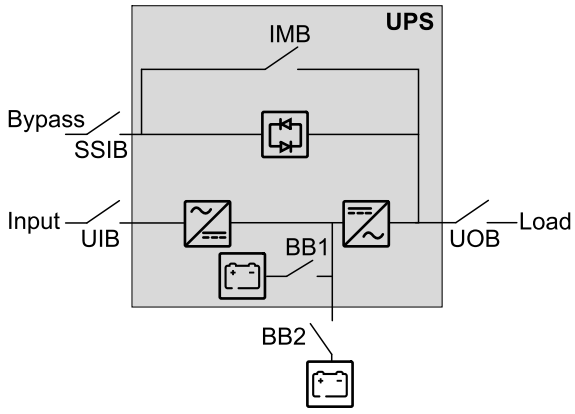
UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
IMB	Internal maintenance disconnect device
UOB	Unit output disconnect device
BB1	Battery disconnect device in UPS for internal batteries
BB2	Battery disconnect device in external battery solution (if present)

NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

Single System – Single Mains



Single System – Dual Mains



Parallel System Overview

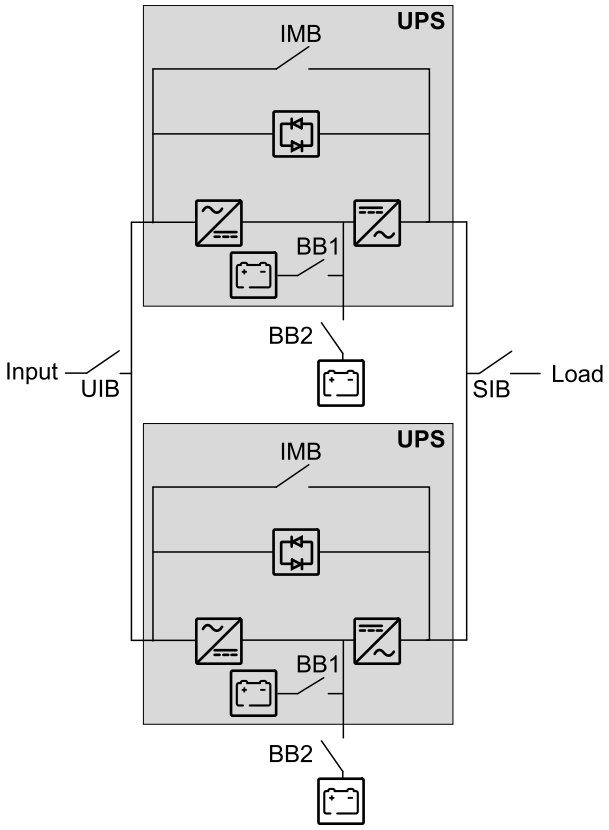
UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
IMB	Internal maintenance disconnect device
UOB	Unit output disconnect device
SIB	System isolation disconnect device
BB1	Battery disconnect device in UPS for internal batteries
BB2	Battery disconnect device in external battery solution (if present)
MBB	Maintenance bypass disconnect device

NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

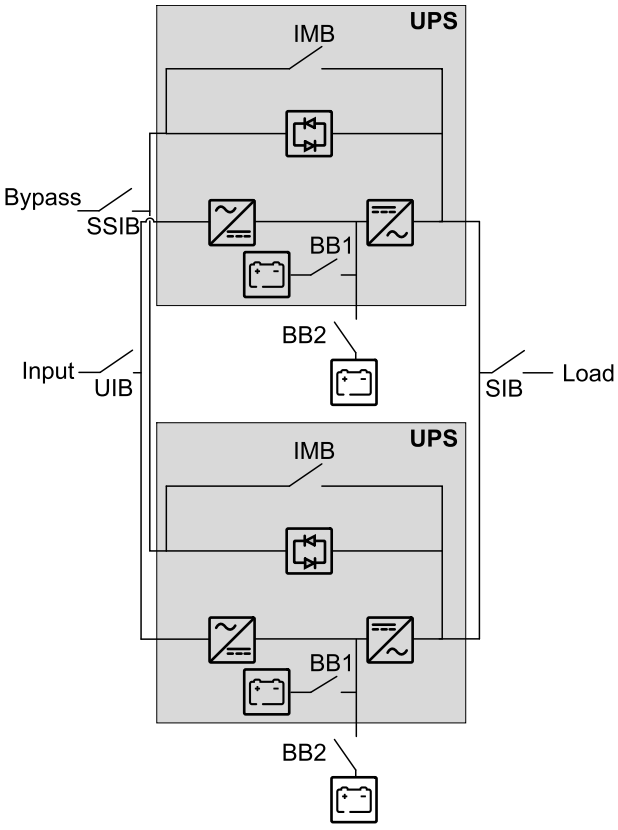
Simplified 1+1 Parallel Systems

Galaxy VS can support 2 UPSs in a simplified 1+1 parallel system for redundancy with shared UIB and SSIB.

Simplified 1+1 Parallel System – Single Mains



Simplified 1+1 Parallel System – Dual Mains

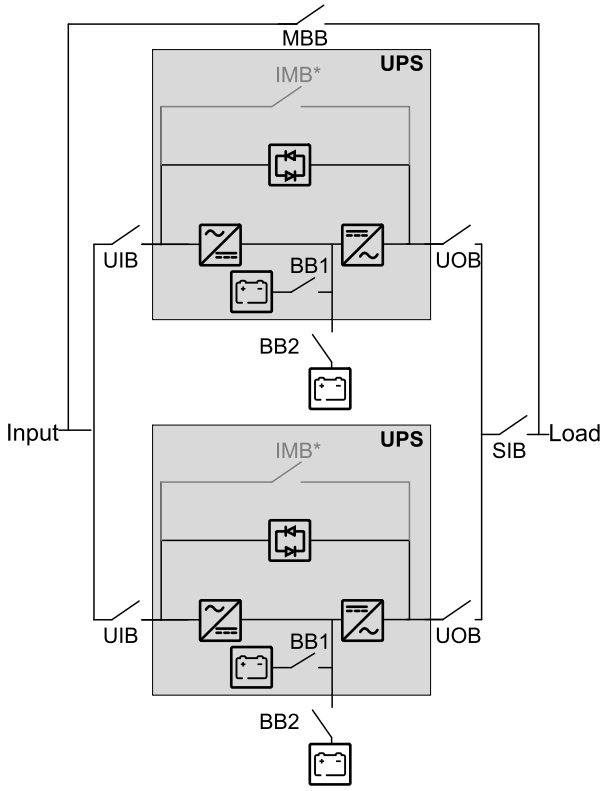


Parallel Systems with Individual UIB and SSIB

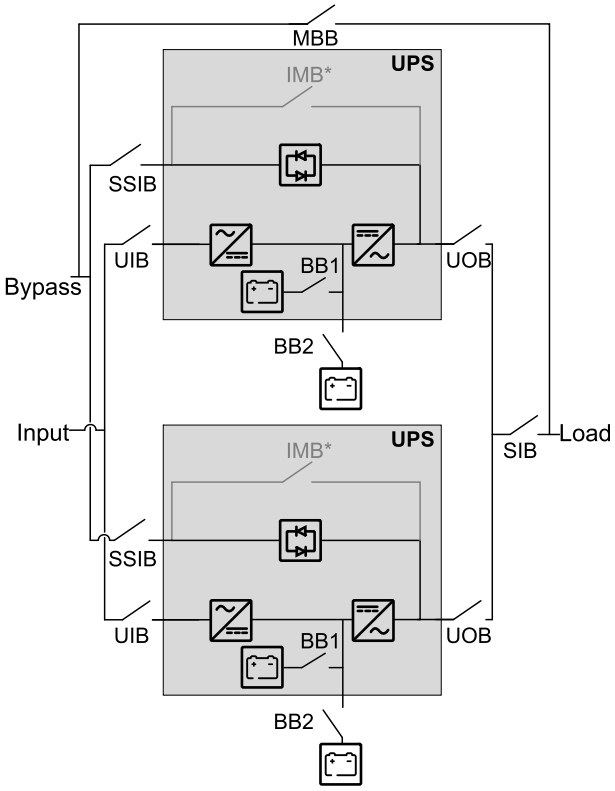
Galaxy VS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy with individual UIB and SSIB.

NOTE: IMB can only be used in a simplified 1+1 parallel system. In any other parallel system, an external MBB must be provided and IMB* must be padlocked in the open position.

Parallel System – Single Mains



Parallel System – Dual Mains

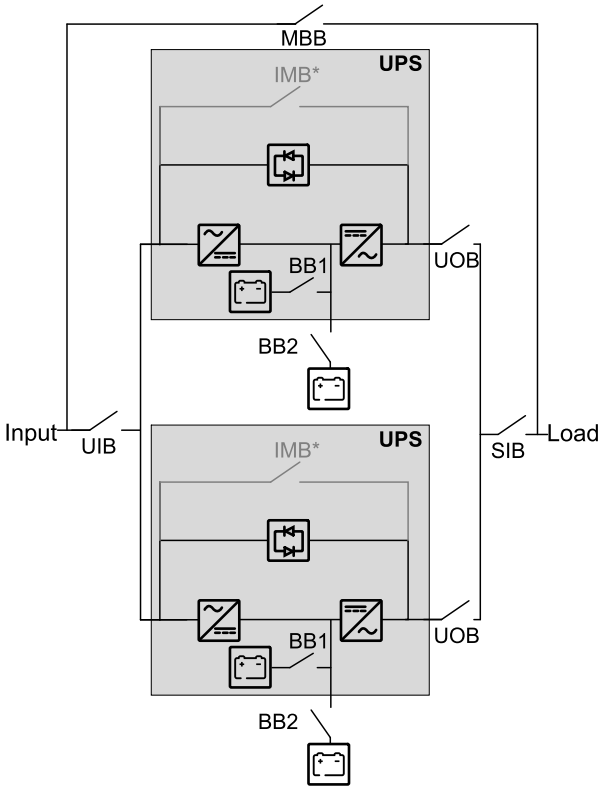


Parallel Systems with Shared UIB and SSIB

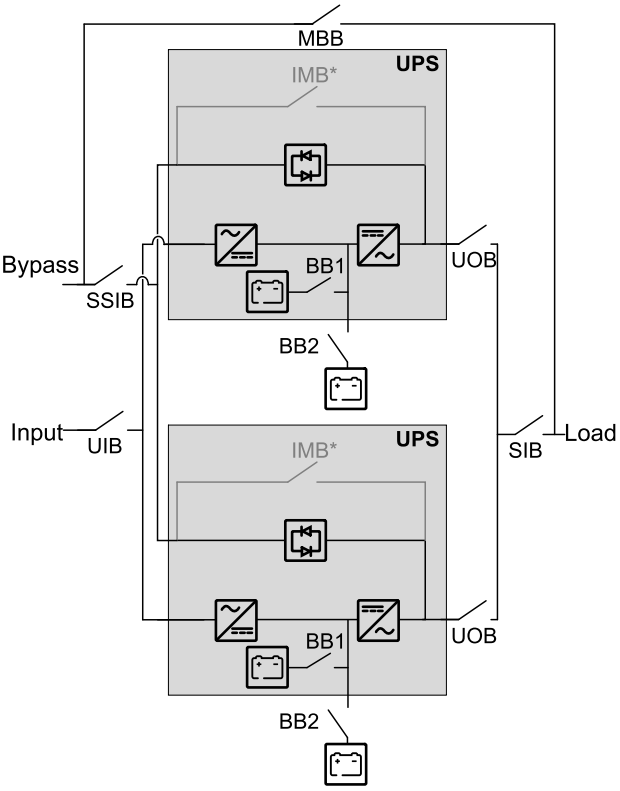
Galaxy VS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy with shared UIB and SSIB.

NOTE: IMB can only be used in a simplified 1+1 parallel system. In any other parallel system, an external MBB must be provided and IMB* must be padlocked in the open position.

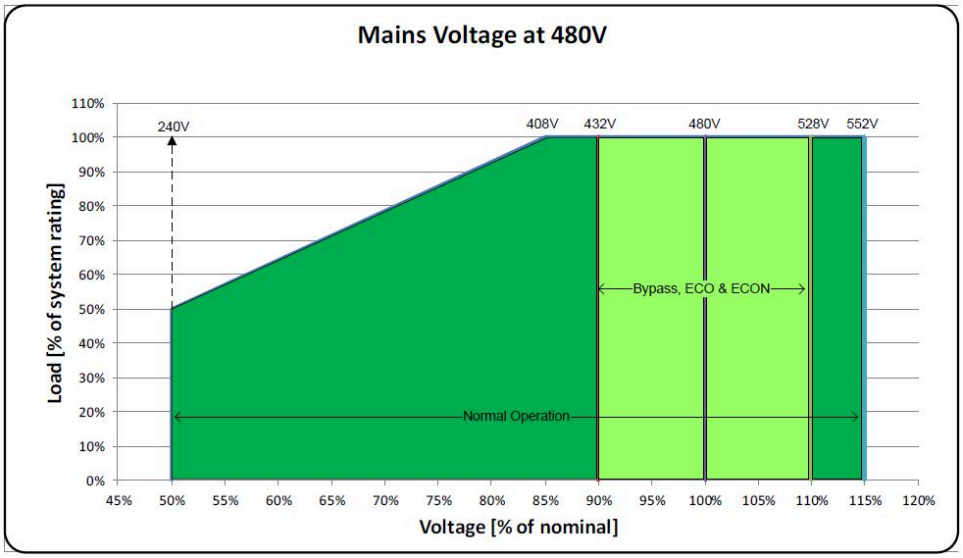
Parallel System – Single Mains

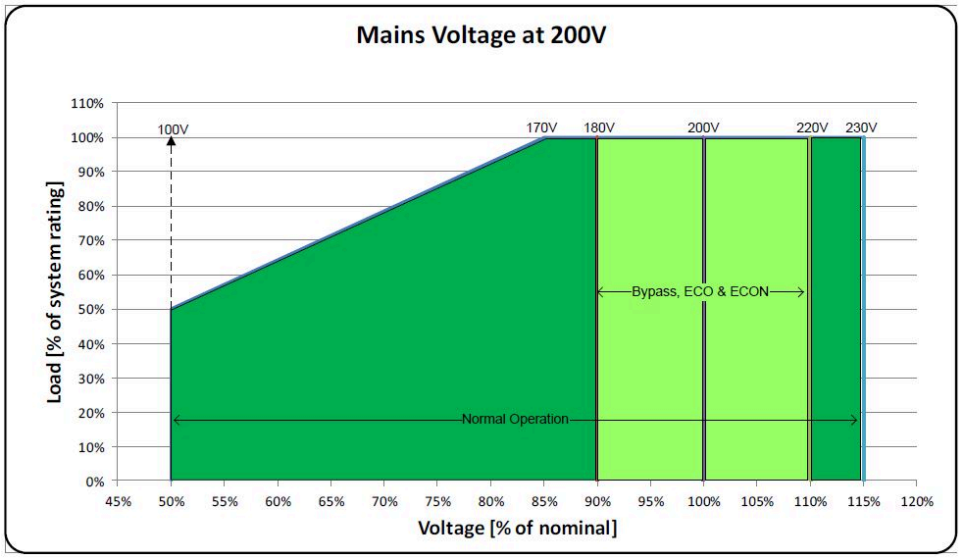


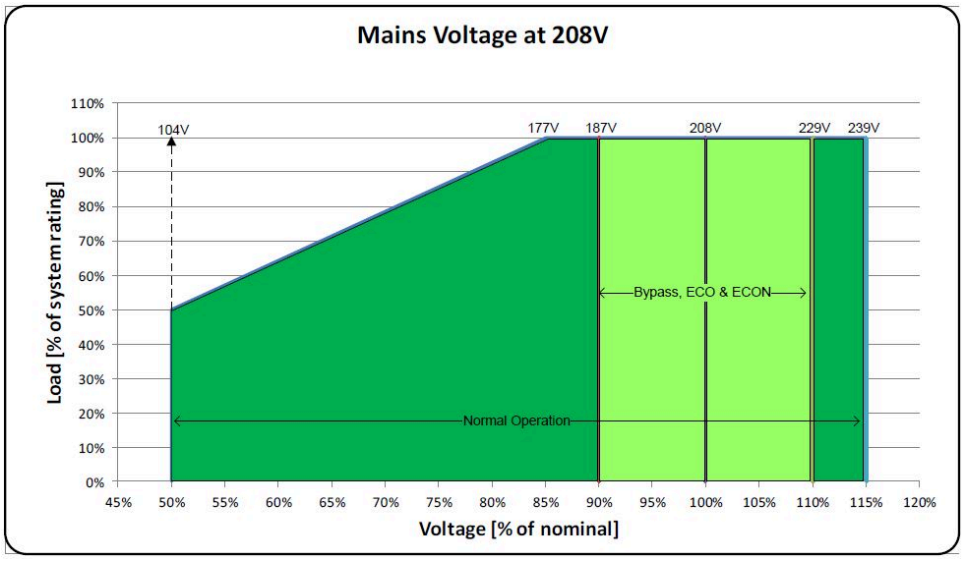
Parallel System – Dual Mains

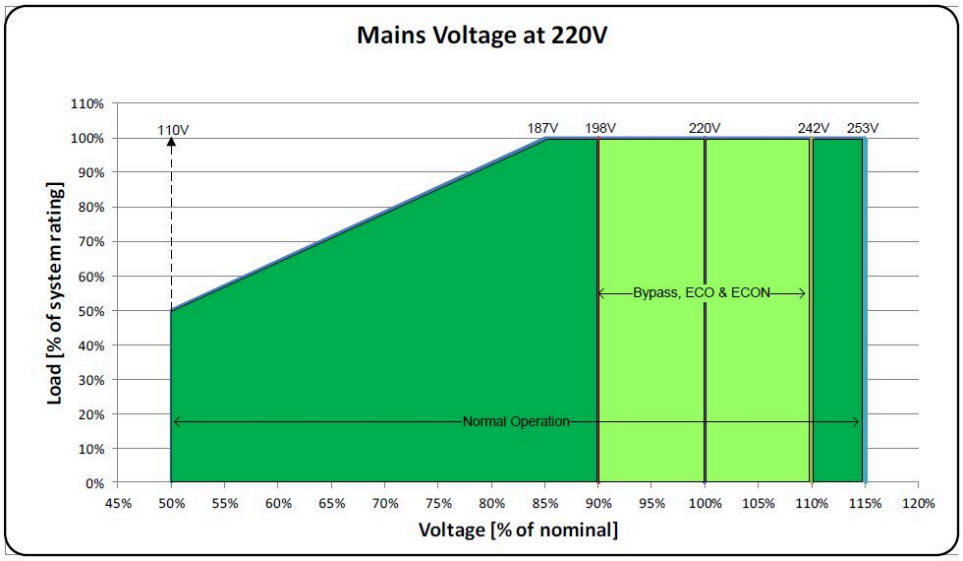


Input Voltage Window



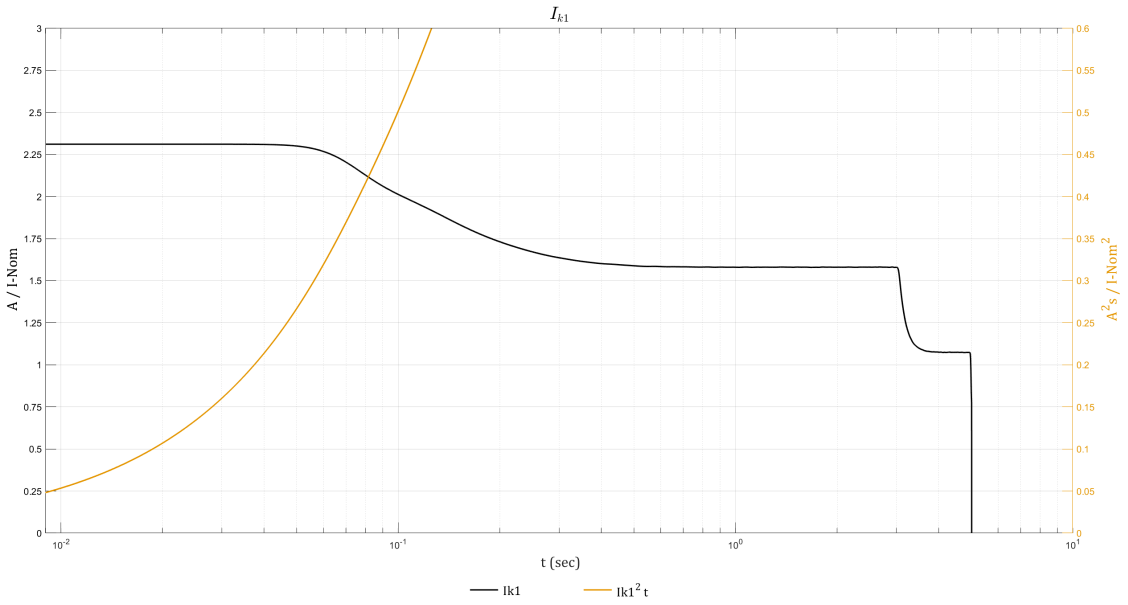





Mains Voltage at 220V
Load [% of system rating]
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
110V
187V
198V
220V
242V
253V
Bypass, ECO & ECON
Normal Operation
45%
50%
55%
60%
65%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
Voltage [% of nominal]

Inverter Short Circuit Capabilities (Bypass not Available)

IK1 – Short Circuit between a Phase and Neutral



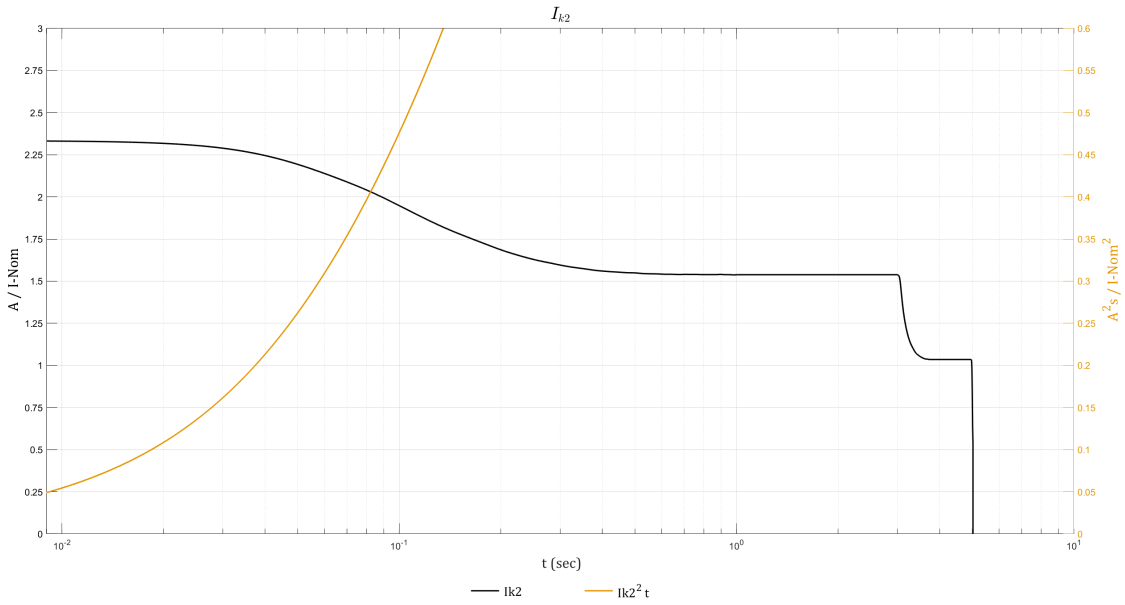
IK1 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	56 / 31	56 / 62	56 / 93	48 / 290	38 / 1674
30	83 / 70	83 / 140	83 / 210	73 / 650	57 / 3770
40	111 / 120	111 / 250	111 / 370	97 / 1160	76 / 6700
50	139 / 190	139 / 390	139 / 580	121 / 1810	95 / 10460

IK1 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	64 / 41	64 / 82	64 / 123	56 / 386	44 / 2229
15	96 / 93	96 / 185	96 / 278	84 / 869	66 / 5015
20	128 / 160	128 / 330	128 / 490	112 / 1550	88 / 8920
25	160 / 260	160 / 510	160 / 770	140 / 2420	110 / 13930

IK2 – Short Circuit between Two Phases



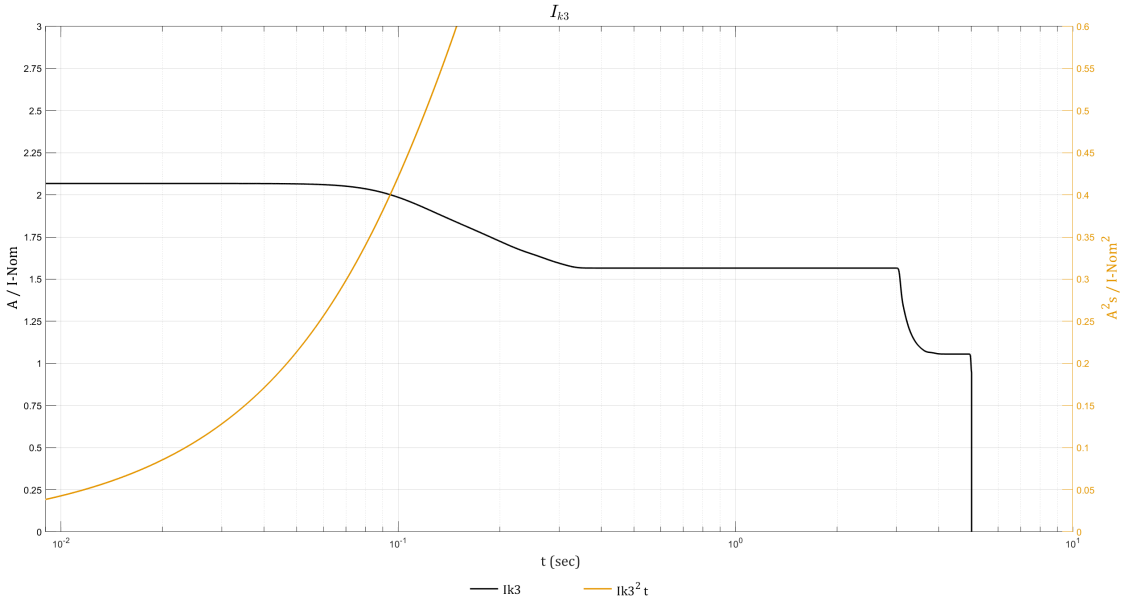
IK2 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	56 / 31	56 / 63	56 / 94	47 / 276	37 / 1586
30	84 / 70	84 / 140	84 / 210	70 / 620	55 / 3570
40	112 / 130	112 / 250	112 / 370	94 / 1100	74 / 6350
50	140 / 200	139 / 390	139 / 580	117 / 1720	92 / 9910

IK2 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	65 / 42	64 / 84	64 / 125	54 / 367	43 / 2112
15	97 / 94	96 / 188	96 / 280	81 / 825	64 / 4752
20	129 / 170	129 / 330	129 / 500	108 / 1470	85 / 8450
25	162 / 260	161 / 520	161 / 780	135 / 2290	107 / 13200

IK3 – Short Circuit between Three Phases



IK3 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	50 / 25	50 / 49	50 / 74	48 / 244	38 / 1593
30	75 / 60	75 / 110	75 / 170	72 / 550	57 / 3580
40	99 / 100	99 / 200	99 / 300	96 / 980	75 / 6370
50	124 / 150	124 / 310	124 / 460	119 / 1520	94 / 9960

IK3 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	57 / 33	57 / 66	57 / 99	55 / 325	43 / 2121
15	86 / 74	86 / 148	86 / 222	83 / 731	65 / 4772
20	115 / 130	115 / 260	115 / 400	110 / 1300	87 / 8480
25	143 / 210	143 / 410	143 / 620	138 / 2030	109 / 13260

Efficiency

480 V UPS

Normal Operation

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	94.9%	94.7%	95.2%	95.8%
50% load	96.4%	96.2%	96.6%	96.9%
75% load	96.8%	96.7%	97.0%	97.1%
100% load	96.9%	97.0%	97.1%	97.0%

ECO Mode

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	97.1%	97.7%	98.2%	98.4%
50% load	98.3%	98.6%	98.8%	98.9%
75% load	98.7%	98.9%	99.0%	99.1%
100% load	98.9%	99.0%	99.1%	99.2%

eConversion

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	96.5%	96.4%	97.2%	97.7%
50% load	98.1%	98.0%	98.3%	98.6%
75% load	98.6%	98.5%	98.7%	98.9%
100% load	98.8%	98.7%	99.0%	99.1%

Battery Operation

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	93.5%	91.1%	92.9%	94.1%
50% load	95.6%	94.8%	95.6%	96.1%
75% load	96.2%	95.9%	96.3%	96.4%
100% load	96.3%	96.3%	96.4%	96.3%

208 V UPS

10 kW	Normal operation			ECO mode		
Voltage (V)	200	208	220	200	208	220
25% load	93.3%	92.1%	92.4%	94.5%	94.3%	94.5%
50% load	94.6%	94.0%	94.2%	96.7%	96.8%	96.8%
75% load	94.5%	94.1%	94.4%	97.5%	97.5%	97.6%
100% load	94.1%	93.7%	94.2%	97.8%	97.9%	97.9%

10 kW	eConversion			Battery operation		
Voltage (V)	200	208	220	200	208	220
25% load	94.4%	94.3%	94.4%	89.3%	90.5%	89.6%
50% load	96.7%	96.8%	96.7%	93.3%	93.7%	93.6%

10 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
75% load	97.5%	97.5%	97.5%	94.2%	94.5%	94.6%
100% load	97.8%	97.9%	97.9%	94.4%	94.7%	94.9%

15 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	91.8%	92,3%	92.0%	95.4%	95.4%	95.5%
50% load	93.8%	94,1%	94.2%	97.2%	97.3%	97.3%
75% load	94.2%	94,5%	94.6%	97.7%	97.7%	97.8%
100% load	94.1%	94,5%	94.7%	98.0%	98.0%	98.1%

15 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	94.8%	94.7%	94.8%	88.1%	87.8%	87.9%
50% load	96.9%	97.0%	97.0%	92.7%	92.7%	93.0%
75% load	97.7%	97.7%	97.6%	94.1%	94.2%	94.5%
100% load	97.9%	98.0%	98.0%	94.7%	94.8%	95.1%

20 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	92.7%	93,3%	93.3%	96.4%	96.3%	96.3%
50% load	94.1%	94,5%	94.7%	97.6%	97.7%	97.8%
75% load	94.1%	94,5%	94.7%	98.0%	98.0%	98.1%
100% load	93.7%	94,3%	94.5%	98.2%	98.2%	98.3%

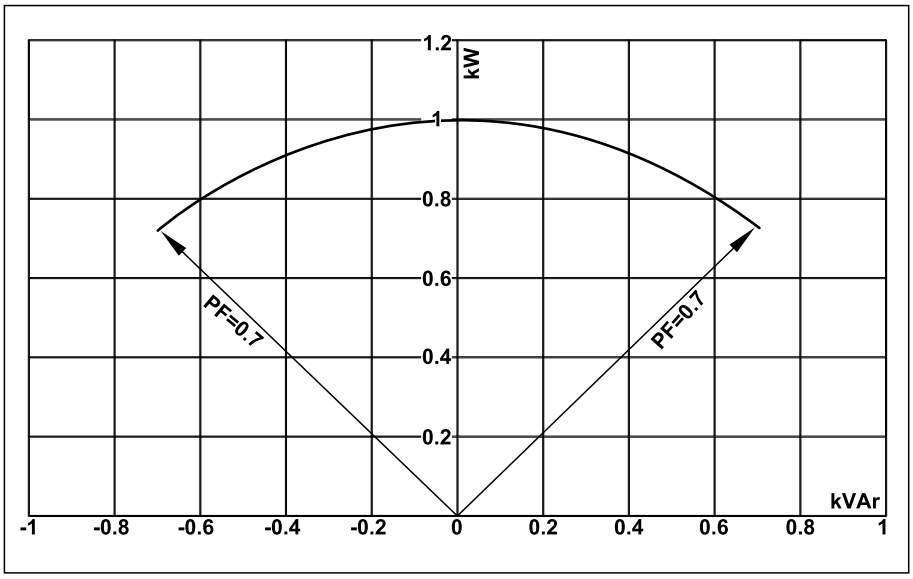
20 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	95.9%	95.9%	95.8%	90.4%	90.3%	90.4%
50% load	97.5%	97.5%	97.5%	93.8%	93.9%	94.2%
75% load	97.9%	98.0%	98.0%	94.7%	94.8%	95.1%
100% load	98.2%	98.2%	98.2%	94.9%	95.0%	95.4%

25 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	93.4%	93,8%	93.8%	96.9%	96.9%	96.9%
50% load	94.2%	94,5%	94.7%	97.8%	97.9%	97.9%
75% load	93.8%	94,4%	94.6%	98.1%	98.2%	98.3%
100% load	93.1%	93,5%	94.0%	98.2%	98.3%	98.4%

25 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	96.7%	96.5%	96.6%	91.8%	91.8%	91.9%
50% load	97.8%	97.8%	97.8%	94.4%	94.5%	94.8%
75% load	98.1%	98.2%	98.2%	94.9%	95.0%	95.3%
100% load	98.2%	98.3%	98.2%	94.8%	95.0%	95.3%

Derating Due to Load Power Factor

0.7 leading to 0.7 lagging without derating.

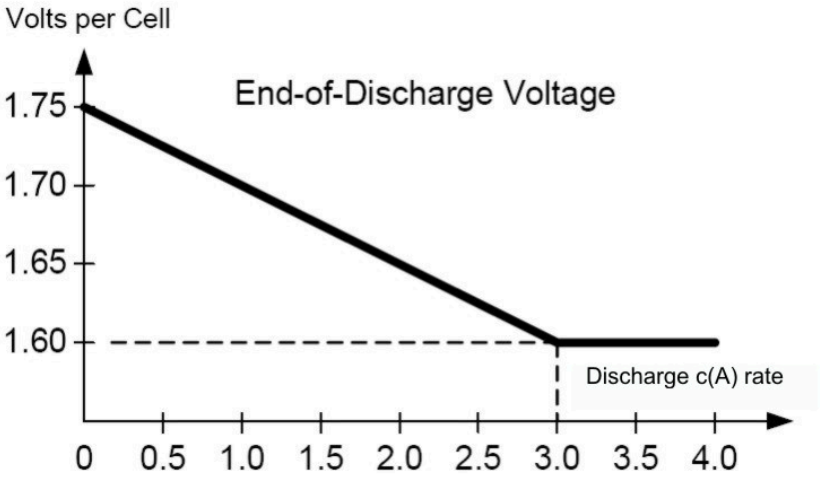


UPS rating	UPS output					
	Lagging			Leading		
PF=1	PF=0.7	PF=0.8	PF=0.9	PF=0.9	PF=0.8	PF=0.7
10 kVA/kW	10 kVA / 7 kW	10 kVA / 8 kW	10 kVA / 9 kW	10 kVA / 9 kW	10 kVA / 8 kW	10 kVA / 7 kW
15 kVA/kW	15 kVA / 10.5 kW	15 kVA / 12 kW	15 kVA / 13.5 kW	15 kVA / 13.5 kW	15 kVA / 12 kW	15 kVA / 10.5 kW
20 kVA/kW	20 kVA / 14 kW	20 kVA / 16 kW	20 kVA / 18 kW	20 kVA / 18 kW	20 kVA / 16 kW	20 kVA / 14 kW
25 kVA/kW	25 kVA / 17.5 kW	25 kVA / 20 kW	25 kVA / 22.5 kW	25 kVA / 22.5 kW	25 kVA / 20 kW	25 kVA / 17.5 kW
30 kVA/kW	30 kVA / 21 kW	30 kVA / 24 kW	30 kVA / 27 kW	30 kVA / 27 kW	30 kVA / 24 kW	30 kVA / 21 kW
40 kVA/kW	40 kVA / 28 kW	40 kVA / 32 kW	40 kVA / 36 kW	40 kVA / 36 kW	40 kVA / 32 kW	40 kVA / 28 kW
50 kVA/kW	50 kVA / 35 kW	50 kVA / 40 kW	50 kVA / 45 kW	50 kVA / 45 kW	50 kVA / 40 kW	50 kVA / 35 kW

Batteries

End of Discharge Voltage

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



Battery Voltage Window

	Boost 2.38 Vpc	**Nominal 2.0 Vpc**	**Minimum 1.6 Vpc**
Battery voltage (V)	571.2	480	384

Battery Runtimes in Minutes

480 V UPS

UPS rating Number of modular battery strings	20 kW	30 kW	40 kW	50 kW
1	NA	NA	NA	NA
2	11	6.1	NA	NA
3	18.5	10.5	7.3	5.2
4	27	16	10.5	8
5	35.5	21.5	14.5	10.5
6	45	27	18.5	14
7	54	32.5	22.5	17
8	63.5	38.5	27	20
9	73.5	44.5	31	23.5
10	83.5	51	35.5	27
11	94	57	40	30.5
12	100	63.5	44.5	34
13	115	70	49	37.5
14	125	76.5	54	41
15	135	83.5	58.5	44.5
16	145	90	63.5	48
17	155	97	68	52
18	165	100	73	56
19	180	110	78	59.5
20	190	115	83	63.5
21	200	125	88	67.5
22	215	130	93.5	71
23	225	135	98.5	75
24	235	145	100	79
25	250	150	105	83
26	260	160	110	87.5
27	275	165	115	91.5
28	285	175	125	95.5

208 V UPS

UPS rating Number of modular battery strings	10 kW	15 kW	20 kW	25 kW
1	10.5	6.1	NA	NA
2	26.5	16	10.5	7.9
3	44	26.5	18.5	13.5
4	63	38.5	26.5	20
5	82.5	50.5	35.5	26.5
6	100	63	44	33.5

UPS rating Number of modular battery strings	10 kW	15 kW	20 kW	25 kW
7	120	76.5	53.5	40.5
8	145	89.5	63	47.5
9	165	100	72.5	55
10	190	115	82.5	62.5
11	210	130	92.5	70.5
12	235	145	100	78
13	260	160	110	86
14	280	175	120	94
15	305	190	135	100
16	330	205	145	110
17	355	220	155	115
18	380	235	165	125
19	405	250	175	135
20	435	265	190	140
21	460	285	200	150
22	485	300	210	160
23	510	315	225	170
24	540	335	235	180
25	565	350	245	185
26	590	365	260	195
27	620	385	270	205
28	645	400	280	215

Compliance

Safety	IEC 62040-1: 2017, Edition 2.0, Uninterruptible Power Systems (UPS) - Part 1: Safety requirements UL 1778 5th edition
EMC/EMI/RFI	IEC 62040-2: 2016, 3rd edition Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements C2 FCC Part 15 Subpart B, Class A IEEE C62.41-1991 Location Category B2, IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits
Transportation	IEC 60721-4-2 Level 2M1
Seismic	ICC-ES AC 156 (2015): OHSPD Pre-approved; Sds=1.33 g for z/h=1 and Sds=1.63 g for z/h=0; Ip= 1.5
Earthing system	TN-C, TN-S, TT, IT
Overvoltage category	This UPS is OVCII compliant. If the UPS is installed in an environment with an OVC rating higher than II, an SPD (surge protection device) must be installed upstream of the UPS to reduce the overvoltage category to OVCII.
Protective class	I
Pollution degree	2

Performance

Performance in accordance with: IEC 62040-3: 2021, 3rd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements.

Earthing Systems

Refer to the Galaxy VS Earthing Principles for earthing system details applicable for Galaxy VS UPS. The Galaxy VS Earthing Principles are available on the website.

Regional Seismic Compliance

Certificate available upon request.

Country/Region	Code ID	Hazard level ground	Hazard level roof
Argentina	INPRES-CIRSOC103	Zone 4	Zone 4
Australia	AS 1170.4-2007	Z = 0.22	Z = 0.22
Canada[8]	2020 NBCC	S_a = 2.0	S_a = 1.46
Chile	NCh 433.Of1996	Zone 3	Zone 2
China	GB 50011-2010 (2016)	α_{Max} = 1.4	α_{Max} = 1.2
Europe	Eurocode 8 EN1998-1	α_{gR} = 0.45	α_{gR} = 0.3
India	IS 1893 (Part 1) : 2016	Z = 0.36	Z = 0.36
Japan	Building Standard Law	Zone A	Zone A
New Zealand	NZS 1170.5:2004+A1	Z = 0.6	Z = 0.42
Peru	N.T.E. - E.030	Zone 4	Zone 4
Russia	SNIP II-7-81 (SP 14.13330.2014)	MSK 10	MSK 9

8. OSHPD Pre-approved in accordance with AC156 test protocol.

Country/Region	Code ID	Hazard level ground	Hazard level roof
Taiwan	CPA 2011 Seismic Design Code	$S_S^D = 0.8$	$S_S^D = 0.8$
U.S.A.[9]	ASCE 7-16 / IBC 2018	$S_{DS} = 2.0$	$S_{DS} = 1.47$

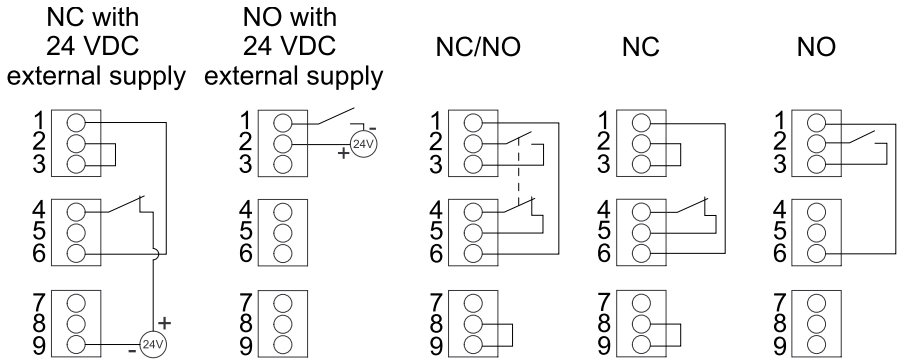
9. OSHPD Pre-approved in accordance with AC156 test protocol.

Communication and Management

Local area network	1 Gbps – 1 port as default
Modbus	Modbus (SCADA)
Output relays	4 x SELV configurable
Input contacts	4 x SELV configurable
Standard control panel	4.3 inch touchscreen display
Audible alarm	Yes
Emergency Power Off (EPO)	Options: • Normally Open (NO) • Normally Closed (NC) • External 24 VDC SELV
External switchgear	UIB UOB SSIB MBB SIB
External synchronization	No
Battery monitoring	Available for modular batteries

EPO

EPO Configurations (640–4864 terminal J6600, 1–9)



The EPO input supports 24 VDC.

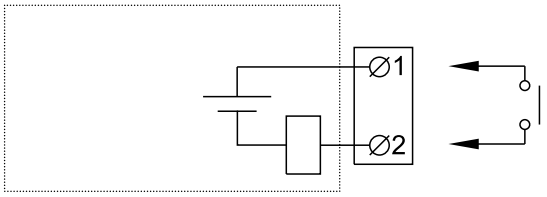
NOTE: The default setting for the EPO activation is to turn off the inverter.

If you want the EPO activation to transfer the UPS into forced static bypass operation instead, please contact Schneider Electric.

Configurable Input Contacts and Output Relays

Input Contacts

Four input contacts are available and can be configured to indicate a given event via the display. The input contacts support 24 VDC 10 mA.

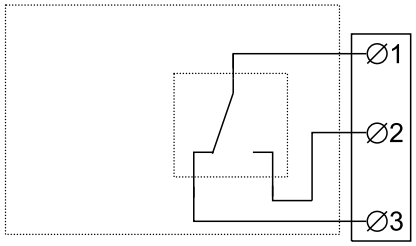


Name	Description	Location
IN _1 (input contact 1)	Configurable input contact	640-4864 terminal J6616, 1–2
IN _2 (input contact 2)	Configurable input contact	640-4864 terminal J6616, 3–4
IN _3 (input contact 3)	Configurable input contact	640-4864 terminal J6616, 5–6
IN _4 (input contact 4)	Configurable input contact	640-4864 terminal J6616, 7–8

Output Relays

Four output relays are available and can be configured to activate on one or more events via the display.

The output relays support 24 VAC/VDC 1 A. All external circuitry must be fused with maximum 1 A fast acting fuses.



Name	Description	Location
OUT _1 (output relay 1)	Configurable output relay	640–4864 terminal J6617, 1–3
OUT _2 (output relay 2)	Configurable output relay	640–4864 terminal J6617, 4–6
OUT _3 (output relay 3)	Configurable output relay	640–4864 terminal J6617, 7–9
OUT _4 (output relay 4)	Configurable output relay	640–4864 terminal J6617, 10–12

Energized check mode: When this mode is enabled, it means that the output relay is activated when the events associated with the output relay are not present (normally activated). **Energized check mode** is individually set for each output relay and makes it possible to detect if the power supply to the output relays is lost, as all output relays will deactivate and the events associated with the output relays will be indicated as present.

Specifications

Specifications for 480 V Systems

The supply for input and bypass must be solid-grounded WYE transformers. Delta input supply for either input or bypass is not permitted.

The UPS system must be installed as a separately derived system. Leakage currents will occur in the bonding jumper and the technical/system earth.

Input Specifications 480 V

UPS rating	**20 kW**	**30 kW**	**40 kW**	**50 kW**
Connections	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)[10]			
Input voltage range (V)	408-552			
Frequency range (Hz)	40-70			
Nominal input current (A)	25	37	50	62
Maximum input current (A)	33	46	61	76
Input current limitation (A)	31	48	63	77
Input power factor	0.99 for load greater than 50% 0.95 for load greater than 25%			
Total harmonic distortion (THDI)	<3% at full linear load (symmetrical)			
Maximum short circuit rating	65 kA RMS			
Protection	Built-in backfeed protection and fuses			
Ramp-in	Programmable and adaptive 1-40 seconds			

10. TN and TT power distribution systems are supported. Corner (line) grounding is not permitted.

Bypass Specifications 480 V

UPS rating	20 kW	30 kW	40 kW	50 kW
Connections	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE[11]			
Bypass voltage range (V)	432-528			
Frequency range (Hz)	50/60 ± 1, 50/60 ± 3, 50/60 ± 10 (user selectable)			
Nominal bypass current (A)	26	38	50	63
Nominal neutral current (A)	42	62	83	104
Maximum short circuit rating	65 kA RMS			
Protection	Built-in backfeed protection and fuses Internal fuse specifications: Rated 200 A, prearcing 5.25 kA^2s			

Output Specifications 480 V

NOTE: The number of output connections must match the number of input wires in a single mains system or bypass wires in a dual mains system.

UPS rating	20 kW	30 kW	40 kW	50 kW
Connections	3-wire (L1, L2, L3, G, GEC[12]) or 4-wire (L1, L2, L3, N, G)			
Output voltage regulation	Symmetrical load ± 1% Asymmetrical load ± 3%			
Overload capacity	150% for 1 minute (in normal operation) 125% for 10 minutes (in normal operation) 110% continuous (normal operation)[13] 125% for 1 minute (in battery operation) 125% continuous (bypass operation) 1000% for 100 milliseconds (bypass operation)			
Dynamic load response	± 5% after 2 milliseconds ± 1% after 50 milliseconds			
Output power factor	1			
Nominal output current (A)	24	36	48	60
Frequency regulation (Hz)	50/60 Hz bypass synchronized – 50/60 Hz ± 0.1% free-running			
Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6			
Total harmonic distortion (THDU)	<1% for linear load <5% for non-linear load			
Load crest factor	2.5			
Load power factor	From 0.7 leading to 0.7 lagging without any derating			

11. TN and TT power distribution systems are supported. Corner (line) grounding is not permitted.
12. Per NEC 250.30.
13. 110% continuous overload in normal operation at nominal mains voltage and at maximum 40 °C ambient temperature. Contact Schneider Electric to enable this function.

Battery Specifications 480 V

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Protection of the energy storage device: An overcurrent protective device must be located in close proximity to the energy storage device.

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

All values are based on 40 battery blocks.

UPS rating	**20 kW**	**30 kW**	**40 kW**	**50 kW**
Charging power in % of output power at 0-40% load	80%			
Charging power in % of output power at 100% load	20%			
Maximum charging power (at 0-40% load) (kW)	16	24	32	40
Maximum charging power (at 100% load) (kW)	4	6	8	10
Nominal battery voltage (VDC)	480			
Nominal float voltage (VDC)	545			
Maximum boost voltage (VDC)	571			
Temperature compensation (per cell)	-3.3mV/°C, for T ≥ 25 °C – 0mV/°C, for T < 25 °C			
End of discharge voltage (full load) (VDC)	384			
Battery current at full load and nominal battery voltage (A)	45	66	88	110
Battery current at full load and minimum battery voltage (A)	54	81	108	135
Ripple current	< 5% C20 (5 minute runtime)			
Battery test	Manual/automatic (selectable)			
Maximum short circuit rating	10 kA			

Recommended Cable Sizes 480 V

⚠⚠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 1/0 AWG.

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

The maximum number of cable connections per busbar: 2 on input/output/bypass busbars; 2 on DC+/DC- busbars; 4 on N busbar; 5 on G busbar.

NOTE: Overcurrent protection is to be provided by others.

Cable sizes in this manual are based on Table 310.15 (B)(16) of the National Electrical Code (NEC) with the following assertions:

- 90 °C (194 °F) conductors (75 °C (167 °F) termination)
- An ambient temperature of 30 °C (86 °F)
- Use of copper conductors

If the ambient temperature is greater than 30 °C (86 °F), larger conductors are to be selected in accordance with the correction factors of the NEC.

Equipment grounding conductors (EGC) are sized in accordance with NEC Article 250.122 and Table 250.122.

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

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

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.

Copper

UPS rating	20 kW	30 kW	40 kW	50 kW
Input phases (AWG/kcmil)	8	6	4	3
Input EGC (AWG/kcmil)	10	8	8	6
Bypass/output phases (AWG/kcmil)	10	8	6	4
Bypass EGC/output EGC (AWG/kcmil)	10	8	8	8
Neutral (AWG/kcmil)	6	4	2	1/0
DC+/DC-(AWG/kcmil)[14]	6	4	2	1/0
DC EGC (AWG/kcmil)	8	6	6	6

NOTE: Cable sizes are based on 80% rated circuit breakers for UIB, UOB, MBB, SSIB, and 100% rated circuit breaker for battery disconnect device(s).

14. Values are based on 40 battery blocks.

Recommended Upstream Protection 480 V

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

For parallel systems, instantaneous override (Ii) values must not be set higher than 800 A. Place the label 885-92557 adjacent to the upstream circuit breaker to inform about the hazard.

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

⚠CAUTION

HAZARD OF FIRE

- Connect only to a circuit with the below specifications.
- Connect to a circuit provided with a 125 A branch circuit overcurrent protection maximum in accordance with the National Electrical Code, ANSI/NFPA70, and the Canadian Electrical Code, Part I, C22.1.

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

NOTE: Overcurrent protection is to be provided by others and marked with its function.

UPS rating	**20 kW**		**30 kW**		**40 kW**		**50 kW**	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	HJF36100U31X							
Ir (A)	40	35	60	50	80	70	100	80
tr @ 6 Ir	0.5							
Ii (x In)	1.5							

Specifications for 208 V Systems

Input Specifications 208 V

UPS rating	**10 kW**	**15 kW**	**20 kW**	**25 kW**
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)			
Input voltage range (V)	200 V: 170-230 208 V: 177-239 220 V: 187-253			
Frequency range (Hz)	40-70			
Nominal input current (A)	31/30/28	47/45/42	62/60/56	78/75/71
Maximum input current (A)	38/37/35	57/55/52	75/73/69	93/92/86
Input current limitation (A)	40/38/36	59/56/53	78/75/71	93/92/86
Input power factor	0.99 for load greater than 50% 0.95 for load greater than 25%			
Total harmonic distortion (THDI)	<3% at full linear load (symmetrical)			
Maximum short circuit rating	65 kA RMS			
Protection	Built-in backfeed protection and fuses			
Ramp-in	Programmable and adaptive 1-40 seconds			

Bypass Specifications 208 V

UPS rating	**10 kW**	**15 kW**	**20 kW**	**25 kW**
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G) WYE			
Bypass voltage range (V)	200 V: 180-220 208 V: 187-229 220 V: 198-242			
Frequency range (Hz)	50/60 ± 1, 50/60 ± 3, 50/60 ± 10 (user selectable)			
Nominal bypass current (A)	31/29/28	45/43/41	60/57/54	75/71/69
Nominal neutral current (A)	50/48/45	75/72/68	100/96/91	125/120/114
Maximum short circuit rating	65 kA RMS			
Protection	Built-in backfeed protection and fuses Internal fuse specifications: Rated 200 A, prearcing 5.25 kA^2s			

Output Specifications 208 V

UPS rating	**10 kW**	**15 kW**	**20 kW**	**25 kW**
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G)			
Output voltage regulation	Symmetrical load ± 1% Asymmetrical load ± 3%			
Overload capacity	150% for 1 minute (in normal operation) 125% for 10 minutes (in normal operation) 110% continuous (normal operation)[15] 125% for 1 minute (in battery operation) 125% continuous (bypass operation) 1000% for 100 milliseconds (bypass operation)			
Dynamic load response	± 5% after 2 milliseconds ± 1% after 50 milliseconds			
Output power factor	1			
Nominal output current (A)	29/28/26	43/42/39	58/56/52	73/70/66
Frequency regulation (Hz)	50/60 Hz bypass synchronized – 50/60 Hz ± 0.1% free-running			
Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6			
Total harmonic distortion (THDU)	<2% for linear load <5% for non-linear load			
Load crest factor	2.5			
Load power factor	From 0.7 leading to 0.7 lagging without any derating			

15. 110% continuous overload in normal operation at nominal mains voltage and at maximum 40 °C ambient temperature. Contact Schneider Electric to enable this function.

Battery Specifications 208 V

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Protection of the energy storage device: An overcurrent protective device must be located in close proximity to the energy storage device.

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

All values are based on 40 battery blocks.

UPS rating	**10 kW**	**15 kW**	**20 kW**	**25 kW**
Charging power in % of output power at 0-40% load	80%			
Charging power in % of output power at 100% load	20%			
Maximum charging power (at 0-40% load) (kW)	8	12	16	20
Maximum charging power (at 100% load) (kW)	2	3	4	5
Nominal battery voltage (VDC)	480			
Nominal float voltage (VDC)	545			
Maximum boost voltage (VDC)	571			
Temperature compensation (per cell)	-3.3mV/°C, for T ≥ 25 °C – 0mV/°C, for T < 25 °C			
End of discharge voltage (full load) (VDC)	384			
Battery current at full load and nominal battery voltage (A)	23	33	44	56
Battery current at full load and minimum battery voltage (A)	27	41	54	68
Ripple current	< 5% C20 (5 minute runtime)			
Battery test	Manual/automatic (selectable)			
Maximum short circuit rating	10 kA			

Recommended Cable Sizes 208 V

⚠⚠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 1/0 AWG.

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

The maximum number of cable connections per busbar: 2 on input/output/bypass busbars; 2 on DC+/DC- busbars; 4 on N busbar; 5 on G busbar.

NOTE: Overcurrent protection is to be provided by others.

Cable sizes in this manual are based on Table 310.15 (B)(16) of the National Electrical Code (NEC) with the following assertions:

- 90 °C (194 °F) conductors (75 °C (167 °F) termination)
- An ambient temperature of 30 °C (86 °F)
- Use of copper conductors

If the ambient temperature is greater than 30 °C (86 °F), larger conductors are to be selected in accordance with the correction factors of the NEC.

Equipment grounding conductors (EGC) are sized in accordance with NEC Article 250.122 and Table 250.122.

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

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

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.

Copper

UPS rating	10 kW	15 kW	20 kW	25 kW
Input phases (AWG/kcmil)	8	4	3	2
Input EGC (AWG/kcmil)	8	8	8	6
Bypass/output phases (AWG/kcmil)	8	6	4	3
Bypass EGC/output EGC (AWG/kcmil)	8	8	8	8
Neutral (AWG/kcmil)	6	3	1	2 x 1/0
DC+/DC-(AWG/kcmil)[16]	10	8	6	4
DC EGC (AWG/kcmil)	10	10	8	8

NOTE: Cable sizes are based on 80% rated circuit breakers for UIB, UOB, MBB, SSIB, and 100% rated circuit breaker for battery disconnect device(s).

16. Values are based on 40 battery blocks.

Recommended Upstream Protection 208 V

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

For parallel systems, instantaneous override (Ii) values must not be set higher than 800 A. Place the label 885-92557 adjacent to the upstream circuit breaker to inform about the hazard.

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

⚠CAUTION

HAZARD OF FIRE

- Connect only to a circuit with the below specifications.
- Connect to a circuit provided with a 125 A branch circuit overcurrent protection maximum in accordance with the National Electrical Code, ANSI/NFPA70, and the Canadian Electrical Code, Part I, C22.1.

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

NOTE: Overcurrent protection is to be provided by others and marked with its function.

UPS rating	**10 kW**		**15 kW**		**20 kW**		**25 kW**	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	HJF36100U31X						HJF36150-U31X	HJF36100-U31X
Ir (A)	50	40	80	60	100	80	125	100
tr @ 6 Ir	0.5							
Ii (x In)	1.5							

Recommended Bolt and Lug Sizes for UL

NOTICE
RISK OF EQUIPMENT DAMAGE Use only UL approved compression cable lugs. **Failure to follow these instructions can result in equipment damage.**

Copper

Cable size	Bolt size	Cable lug type	Crimping tool	Die
10 AWG	M6 x 20 mm	LCA10-14-L	CT-1570	NA
8 AWG	M6 x 20 mm	LCA8-14-L	CT-720	CD-720-1 Red P21
6 AWG	M6 x 20 mm	LCA6-14-L	CT-720	CD-720-1 Blue P24
4 AWG	M6 x 20 mm	LCA4-14-L	CT-720	CD-720-1 Gray P29
3 AWG	M6 x 20 mm	LCA4-14-L	CT-720	CD-720-1 Gray P29
2 AWG	M6 x 20 mm	LCA4-14-L	CT-720	CD-720-1 Brown P33
1 AWG	M6 x 20 mm	LCA1-14-E	CT-720	CD-720-2 Green P37
1/0 AWG	M6 x 20 mm	LCA1/0-14-X	CT-720	CD-720-2 Pink P42
2/0 AWG	M6 x 20 mm	LCA2/0-14-X	CT-720	CD-720-2 Black P45
3/0 AWG	M6 x 20 mm	LCA3/0-14-X	CT-720	CD-720-2 Orange P50
4/0 AWG	M6 x 20 mm	LCA4/0-14-X	CT-720	CD-720-3 Purple P54

Torque Specifications

Bolt size	Torque
M4	1.7 Nm (1.25 lb-ft / 15 lb-in)
M5	2.2 Nm (1.62 lb-ft / 19.5 lb-in)
M6	5 Nm (3.69 lb-ft / 44.3 lb-in)
M8	17.5 Nm (12.91 lb-ft / 154.9 lb-in)
M10	30 Nm (22 lb-ft / 194.7 lb-in)
M12	50 Nm (36.87 lb-ft / 442.5 lb-in)

Environment

	Operating	Storage
Temperature	0 °C to 40 °C (32 °F to 104 °F)	-15 °C to 40 °C (5 °F to 104 °F) for systems with batteries.
Relative humidity	5 - 95% non-condensing	10 - 80% non-condensing
Elevation	Designed for operation in 0-3000 m (0-10000 feet) elevation. Power derating required from 1000-3000 m (3300-10000 feet): Up to 1000 m (3300 feet): 1.000 Up to 1500 m (5000 feet): 0.975 Up to 2000 m (6600 feet): 0.950 Up to 2500 m (8300 feet): 0.925 Up to 3000 m (10000 feet): 0.900	
Audible noise one meter (three feet) from unit	480 V 20 kW and 208 V 10 kW: 49 dB at 70% load, 55 dB at 100% load 480 V 30-50 kW and 208 V 15-25 kW: 54 dB at 70% load, 61 dB at 100% load	
Protection class	IP20	
Color	RAL 9003, gloss level 85%	

Heat Dissipation in BTU/hr

480 V UPS

Normal Operation

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	913	1441	1705	1865
50% load	1282	1995	2394	2754
75% load	1692	2581	3175	3883
100% load	2198	3175	4086	5210

ECO Mode

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	515	596	636	704
50% load	597	745	802	926
75% load	664	845	1015	1121
100% load	752	1015	1184	1402

eConversion

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	615	967	996	1018
50% load	678	1054	1147	1206
75% load	752	1198	1316	1383
100% load	831	1316	1434	1625

Battery Operation

UPS rating	20 kW	30 kW	40 kW	50 kW
25% load	1188	2514	2592	2690
50% load	1554	2809	3109	3491

Battery Operation (Continued)

UPS rating	20 kW	30 kW	40 kW	50 kW
75% load	2043	3290	3956	4808
100% load	2655	3956	5133	6641

208 V UPS

10 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	616	730	707	498	515	496
50% load	983	1095	1050	590	566	571
75% load	1484	1613	1510	670	659	640
100% load	2132	2286	2112	753	746	725

10 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	508	520	510	1021	891	990
50% load	588	569	577	1228	1147	1164
75% load	667	656	648	1562	1482	1448
100% load	757	743	725	2024	1897	1840

15 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1148	1073	1110	614	615	599
50% load	1687	1593	1562	726	723	706
75% load	2381	2237	2178	892	888	872
100% load	3209	2955	2853	1045	1039	970

15 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	702	710	699	1727	1777	1762
50% load	813	802	805	2016	2004	1939
75% load	924	911	929	2403	2343	2226
100% load	1072	1050	1031	2887	2792	2624

20 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1338	1218	1232	635	651	663
50% load	2143	1989	1924	822	795	771
75% load	3209	2955	2853	1045	1039	970
100% load	4596	4116	3995	1286	1244	1187

20 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	735	733	744	1812	1840	1809
50% load	868	882	891	2263	2218	2118

20 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
75% load	1072	1050	1031	2887	2792	2624
100% load	1282	1253	1221	3686	3564	3327

25 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1495	1400	1405	675	689	681
50% load	2636	2476	2387	942	933	902
75% load	4222	3799	3673	1226	1186	1133
100% load	6322	5894	5406	1564	1502	1422

25 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	725	769	755	1908	1916	1868
50% load	968	972	956	2553	2481	2346
75% load	1231	1200	1169	3470	3353	3133
100% load	1530	1487	1526	4658	4533	4227

Heat Dissipation for Maintenance Bypass Cabinet with Transformer in BTU/hr

	Maintenance bypass cabinet with input transformer	Maintenance bypass cabinet with output transformer
Commercial reference	**GVSBPIT25B**	**GVSBPOT50B**
100% load	2700	5300

UPS Shipping Weights and Dimensions

	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
20-50 kW UPS 480 V without preinstalled battery strings*	200 (441)	1680 (66.14)	640 (25.2)	990 (38.98)
20 kW 480 V UPS with one battery string	350 (772)	1680 (66.14)	640 (25.2)	990 (38.98)
30-50 kW 480 V UPS with two battery strings	490 (1080)	1680 (66.14)	640 (25.2)	990 (38.98)
10-25 kW UPS 208 V without preinstalled battery strings*	200 (441)	1680 (66.14)	640 (25.2)	990 (38.98)
10 kW 208 V UPS with one battery string	350 (772)	1680 (66.14)	640 (25.2)	990 (38.98)
15-25 kW 208 V UPS with two battery strings	490 (1080)	1680 (66.14)	640 (25.2)	990 (38.98)

NOTE: The UPS models marked with an * in the table above are shipped with no power modules preinstalled in the UPS and all power modules shipped separately. Battery strings are not included and must be bought separately.

Power Module Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVPM20KD	48 (106)	330 (12.99)	580 (22.83)	780 (30.70)
GVPM50KD	62 (137)	330 (12.99)	580 (22.83)	780 (30.70)

Modular Battery Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBTHU	33 (73)	180 (7.08)	150 (5.90)	800 (31.49)
GVSBTHULL	33 (73)	180 (7.08)	150 (5.90)	800 (31.49)

UPS Weights and Dimensions

	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
20 kW 480 V UPS with one battery string	320 (705)	1485 (58.46)	521 (20.51)	847 (33.35)
30-50 kW 480 V UPS with two battery strings	460 (1014)	1485 (58.46)	521 (20.51)	847 (33.35)
10 kW 208 V UPS with one battery string	320 (705)	1485 (58.46)	521 (20.51)	847 (33.35)
15-25 kW 208 V UPS with two battery strings	460 (1014)	1485 (58.46)	521 (20.51)	847 (33.35)

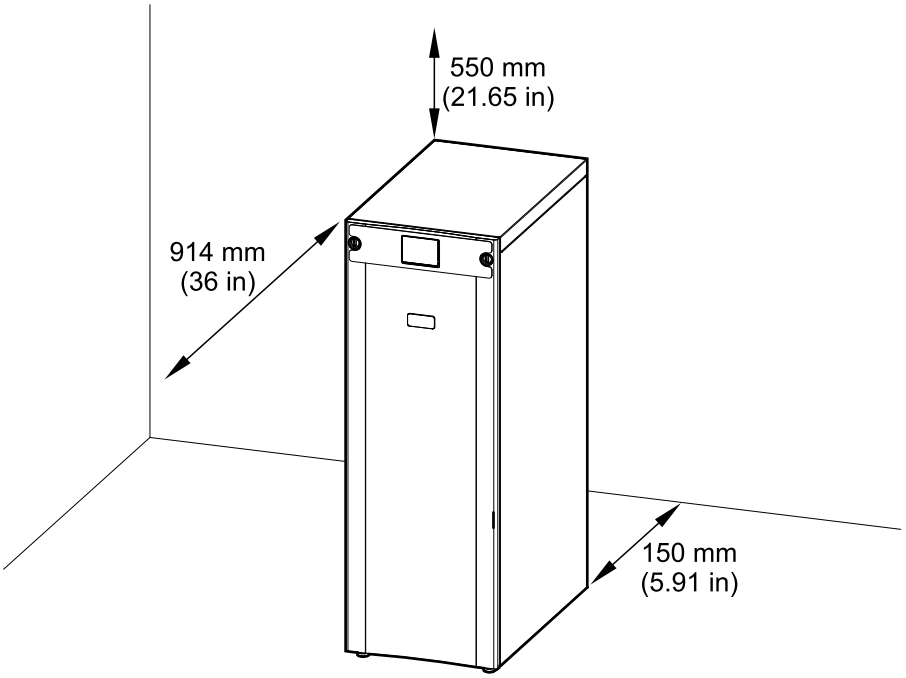
NOTE: One battery module weighs approximately 32 kg (70.5 lbs). One battery string consists of four battery modules.

Clearance

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

NOTE: The required minimum rear clearance is 150 mm (5.91 in).

Front View of the UPS

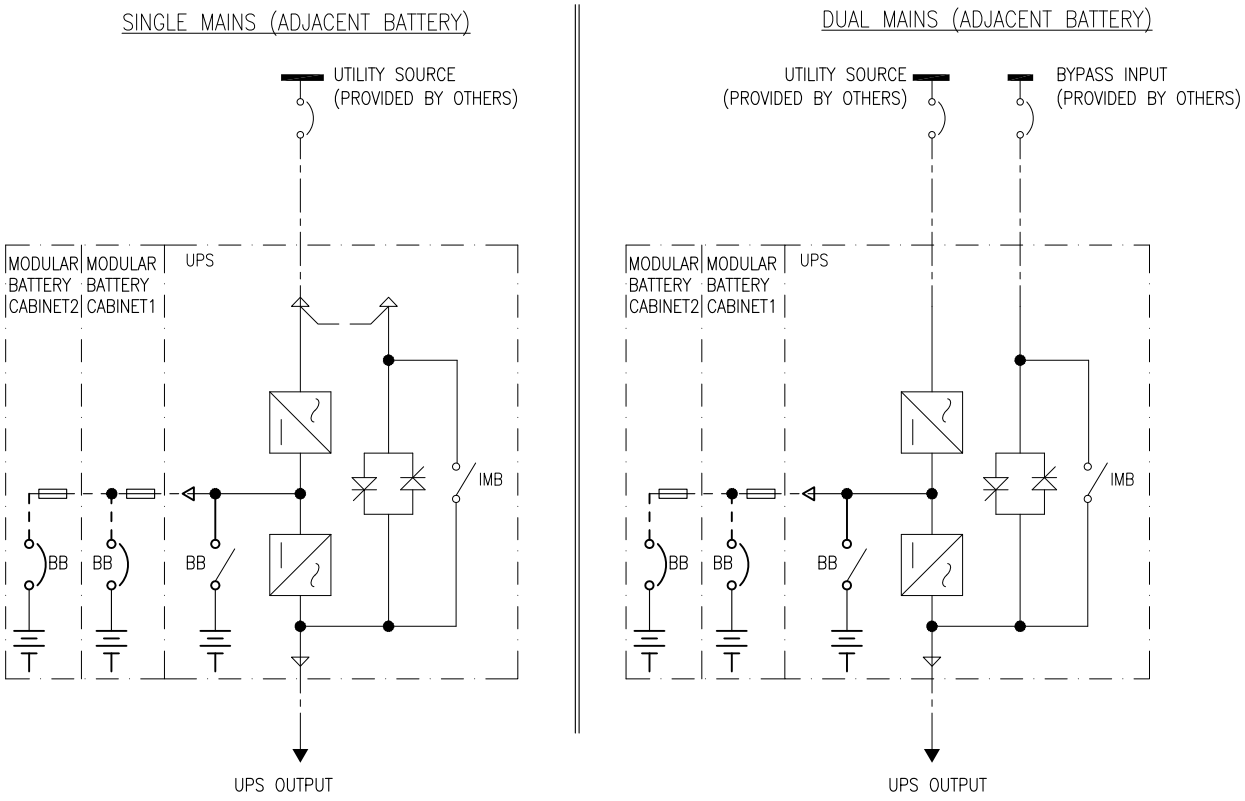


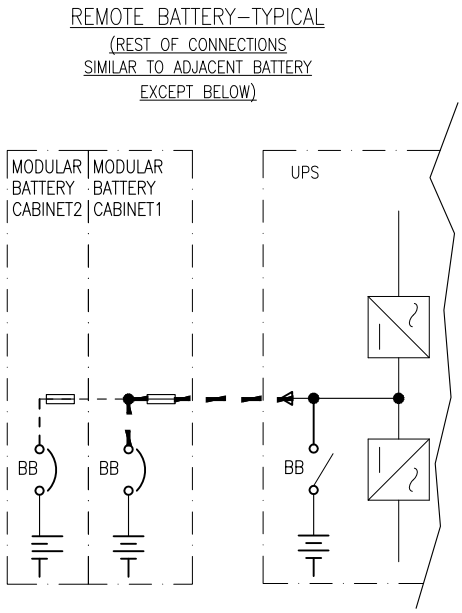
Drawings

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

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

10-50 kW 480 V and 10-25 kW 208 V UPS





Options

Configuration Options

- eConversion mode
- Compact design, high density technology, and modular architecture
- Internal battery modules
- Single or dual mains
- Up to 4+0 UPSs in parallel for capacity
- Up to 3+1 UPSs in parallel for redundancy
- Rear cable entry
- EcoStruxure IT compatible
- Generator compatible
- Touchscreen LCD
- Replacement of power module in any operation mode (Live Swap)[17]
- ECO mode

17. In all systems configured for Live Swap.

Hardware Options

See Weights and Dimensions for Options, page 140.

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

Power Module

- Power module 50 kW 480 V/25 kW 208 V (GVPM50KD)
- Power module 20 kW 480 V/10 kW 208 V (GVPM20KD)

Modular Battery Cabinet

Modular battery cabinet including battery circuit breaker.

- Modular battery cabinet for up to six smart modular battery strings (GVSMODBC6)
- Modular battery cabinet for up to nine smart modular battery strings (GVSMODBC9)

Maintenance Bypass Cabinet

Maintenance bypass cabinet for complete isolation of the UPS during service operations. Only for single UPS.

- 10-40 kW 208 V, 20-80 kW 480 V maintenance bypass cabinet (GVSBPSU80G)

Maintenance Bypass Cabinet with Input Transformer

Maintenance bypass cabinet with input transformer for complete isolation of the UPS during service operations. Only for single 208 V UPS.

- 10-25 kW 480 V or 600 V in, 208 V out, maintenance bypass cabinet with input transformer (GVSBPIT25B)

Maintenance Bypass Cabinet with Output Transformer

Maintenance bypass cabinet with output transformer for complete isolation of the UPS during service operations. Only for single 480 V UPS.

- 20-50 kW 480 V in, 208 V out, maintenance bypass cabinet with output transformer (GVSBPOT50B)

Maintenance Bypass Panel

Maintenance bypass panel for complete isolation of the UPS during service operations. Only for single UPS.

- 10-30 kW 208 V, 20-60 kW 480 V maintenance bypass panel (GVSBPSU60G-WP)

Remote Alarm Panel

- Remote alarm panel (GVSOPT036)

Optional Installation Kits

- Seismic kit for UPS (GVSOPT002)
- Parallel kit for UPS (GVSOPT006)
- Live Swap kit for the UPS (GVSOPT039)

Optional Network Management Card

- Network Management Card LCES2 with Modbus, Ethernet and AUX sensors (AP9644)

Air Filter

- Air filter kit (GVSOPT001)

Battery Modules

9 Ah smart high capacity battery modules. This battery module type is delivered for UPS models with preinstalled battery strings.

- Galaxy VS 9 Ah Smart High Capacity Battery Module (GVSBTHU)
- Galaxy VS 9 Ah Smart Modular High Capacity Battery String (GVSBTH4)

9 Ah smart long-life high capacity battery modules. For this battery module type, select a UPS models without preinstalled battery strings.

- Galaxy VS 9 Ah Smart Long-Life High Capacity Battery Module (GVSBTHULL)
- Galaxy VS 9 Ah Smart Modular Long-Life High Capacity Battery String (GVSBTH4LL)

  NOTE: Always use the same battery module type in the UPS system. Do not mix different battery module types.

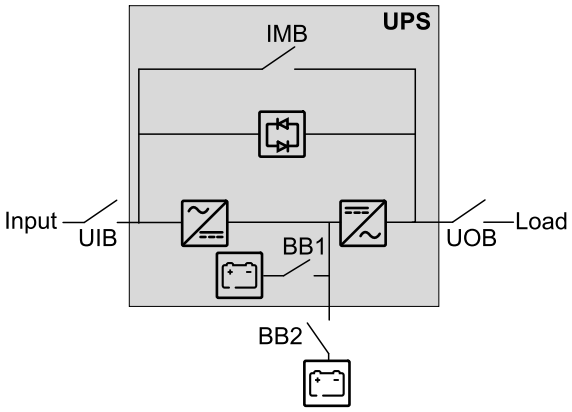
UPS with Internal Batteries Up to 5 Battery Strings

Single System Overview

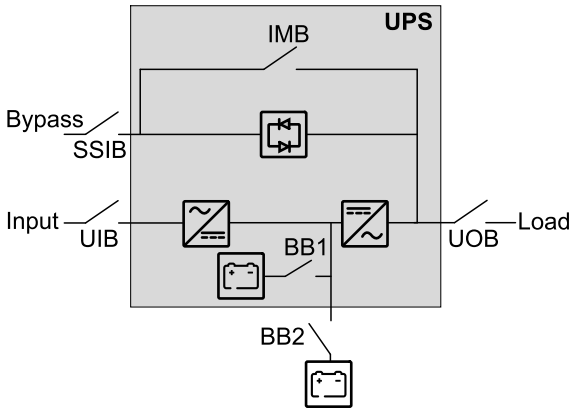
UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
IMB	Internal maintenance disconnect device
UOB	Unit output disconnect device
BB1	Battery disconnect device in UPS for internal batteries
BB2	Battery disconnect device in external battery solution (if present)

NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

Single System – Single Mains



Single System – Dual Mains



Parallel System Overview

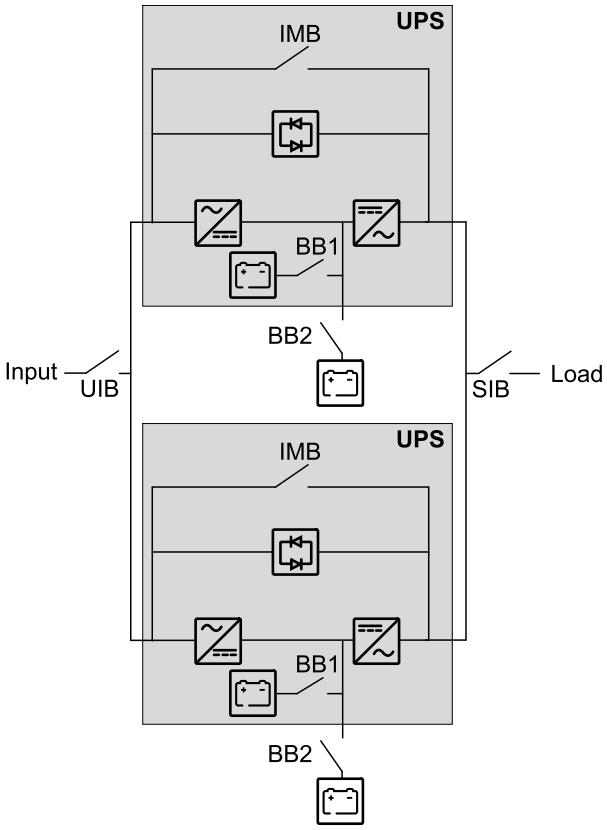
UIB	Unit input disconnect device
SSIB	Static switch input disconnect device
IMB	Internal maintenance disconnect device
UOB	Unit output disconnect device
SIB	System isolation disconnect device
BB1	Battery disconnect device in UPS for internal batteries
BB2	Battery disconnect device in external battery solution (if present)
MBB	Maintenance bypass disconnect device

NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.

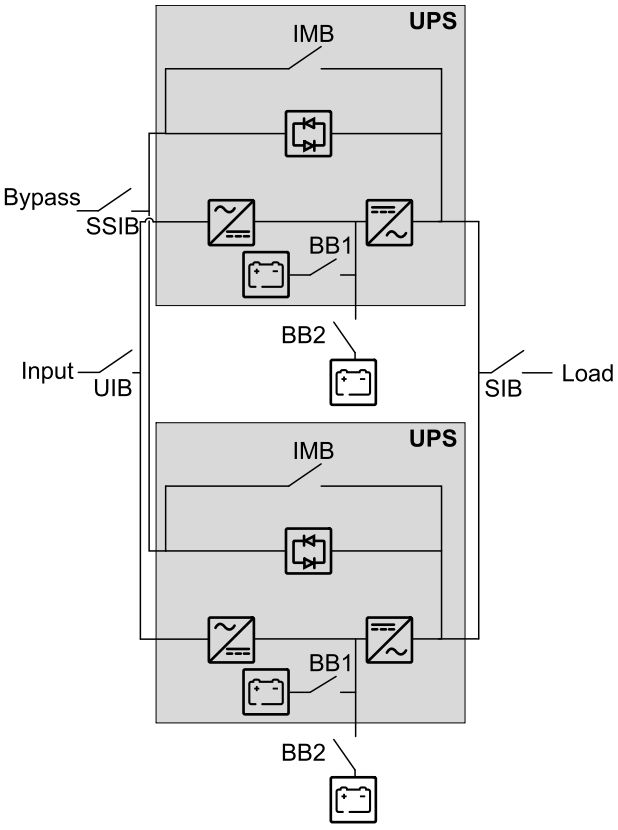
Simplified 1+1 Parallel Systems

Galaxy VS can support 2 UPSs in a simplified 1+1 parallel system for redundancy with shared UIB and SSIB.

Simplified 1+1 Parallel System – Single Mains



Simplified 1+1 Parallel System – Dual Mains

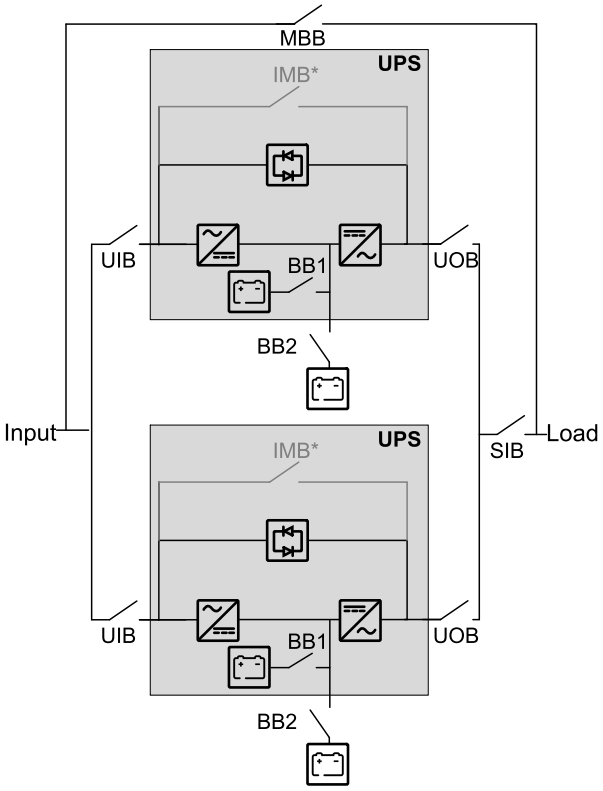


Parallel Systems with Individual UIB and SSIB

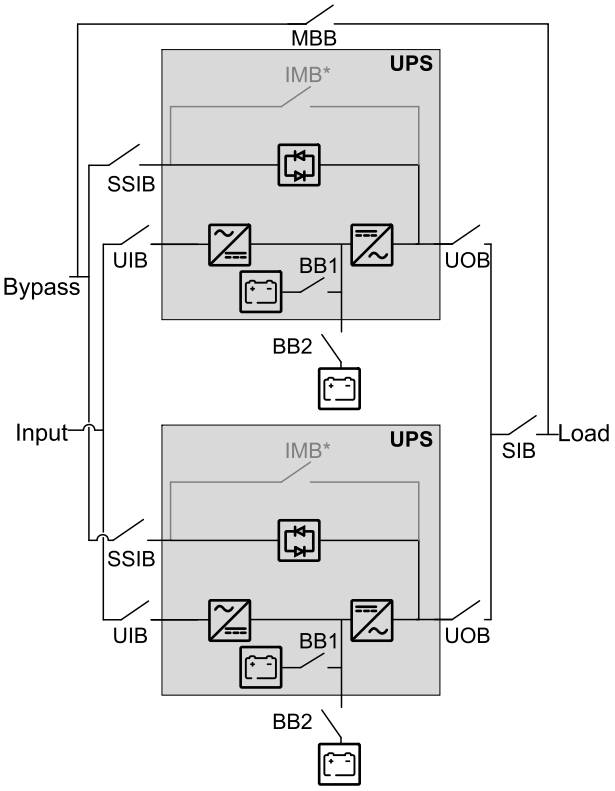
Galaxy VS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy with individual UIB and SSIB.

NOTE: IMB can only be used in a simplified 1+1 parallel system. In any other parallel system, an external MBB must be provided and IMB* must be padlocked in the open position.

Parallel System – Single Mains



Parallel System – Dual Mains

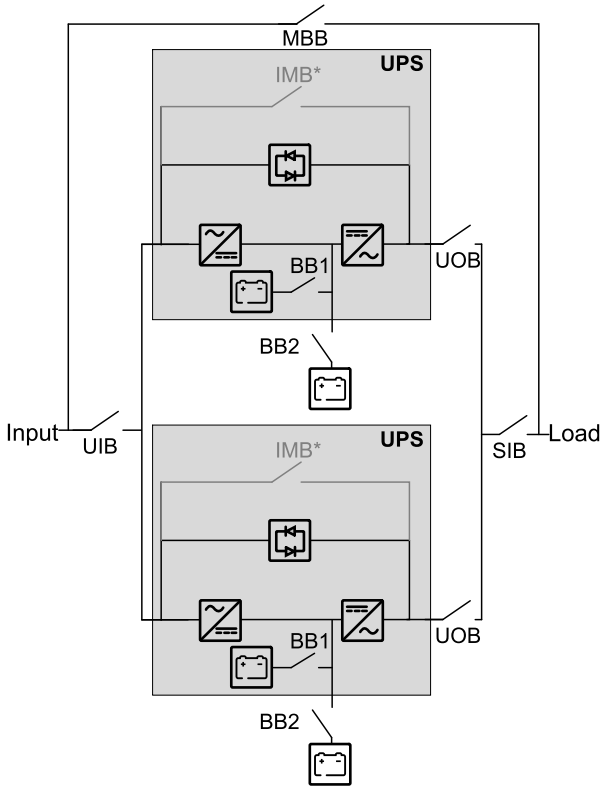


Parallel Systems with Shared UIB and SSIB

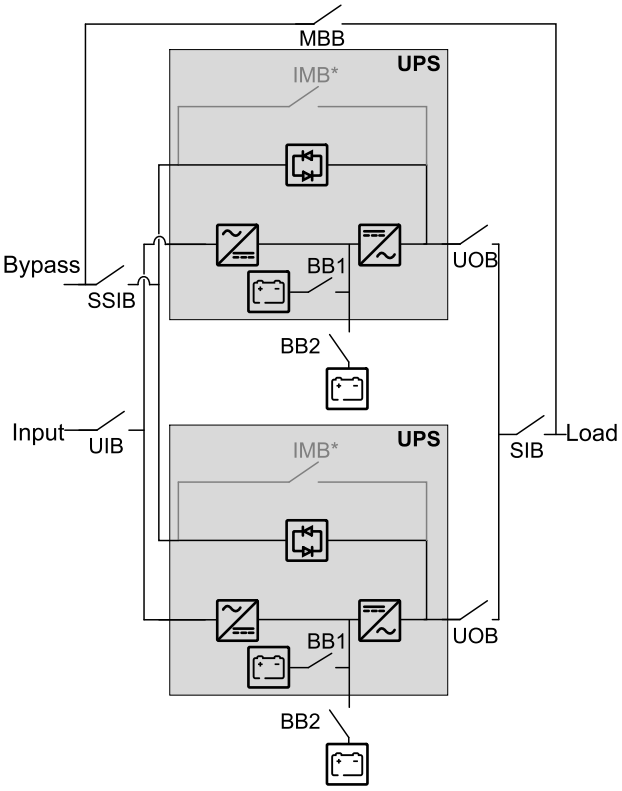
Galaxy VS can support up to 4 UPSs in parallel for capacity and up to 3+1 UPSs in parallel for redundancy with shared UIB and SSIB.

NOTE: IMB can only be used in a simplified 1+1 parallel system. In any other parallel system, an external MBB must be provided and IMB* must be padlocked in the open position.

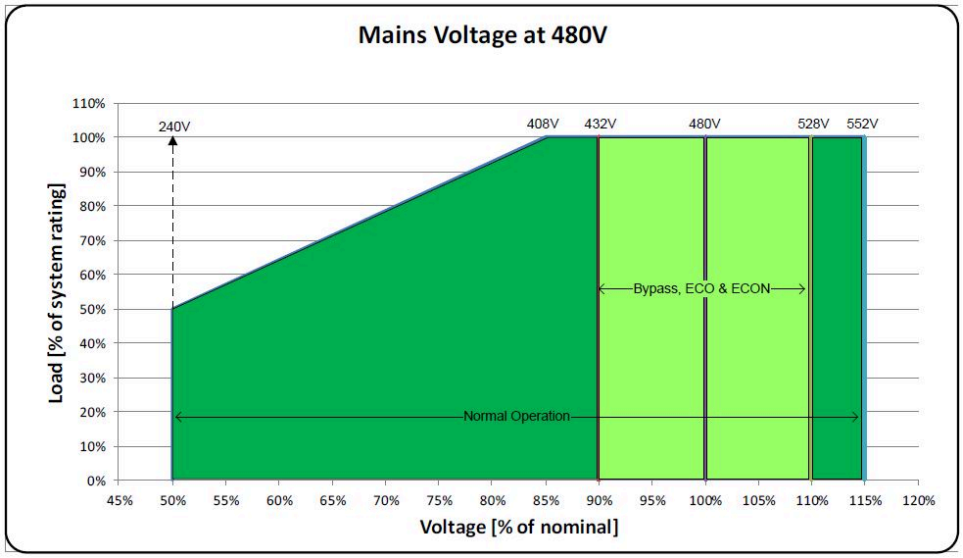
Parallel System – Single Mains

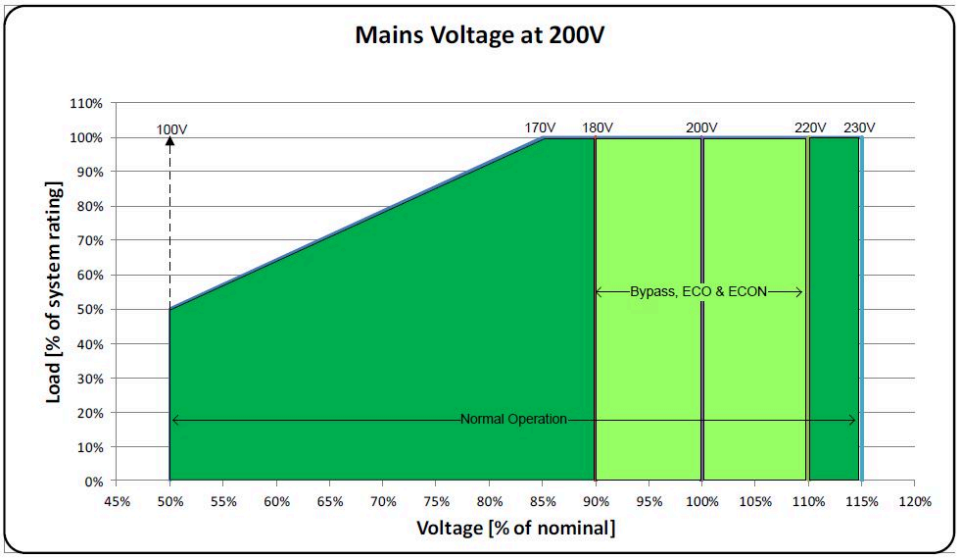


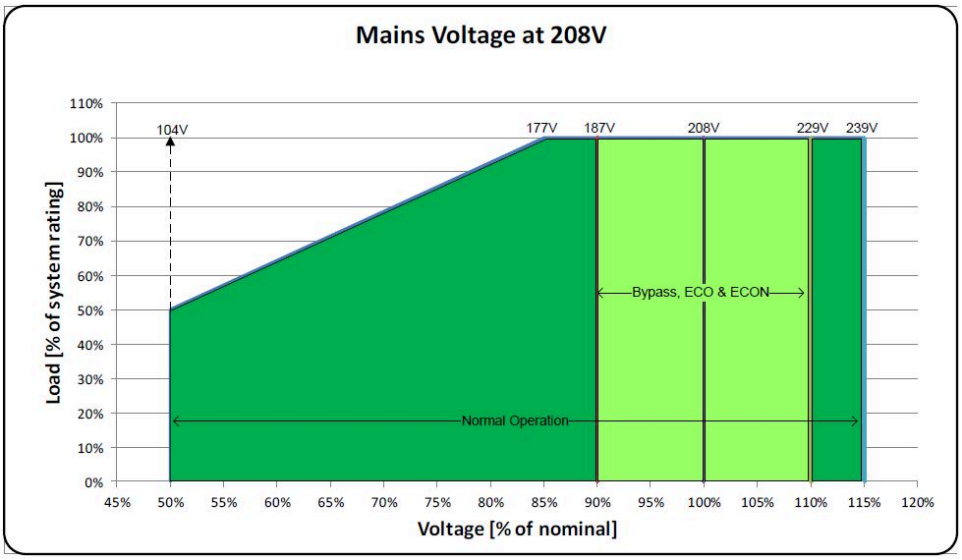
Parallel System – Dual Mains

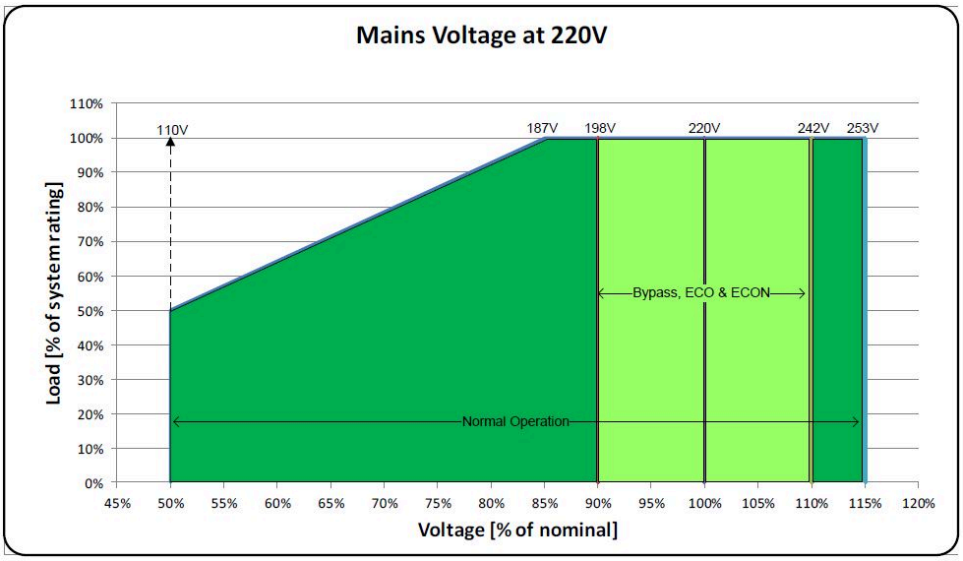


Input Voltage Window



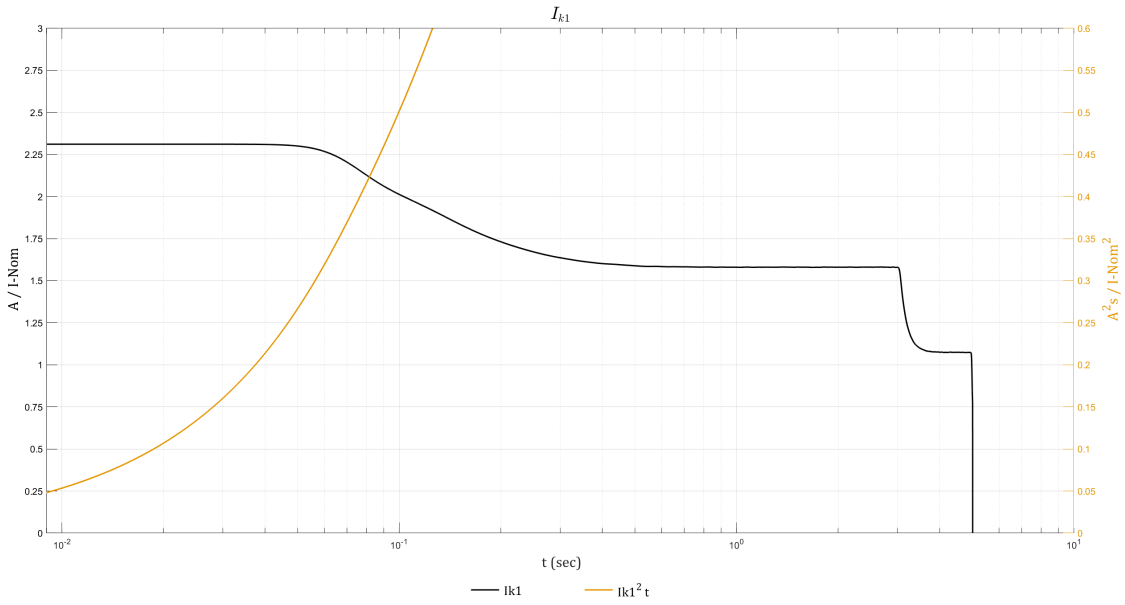





Mains Voltage at 220V
110%
100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
Load [% of system rating]
110V
187V
198V
220V
242V
253V
Bypass, ECO & ECON
Normal Operation
45%
50%
55%
60%
65%
70%
75%
80%
85%
90%
95%
100%
105%
110%
115%
120%
Voltage [% of nominal]

Inverter Short Circuit Capabilities (Bypass not Available)

IK1 – Short Circuit between a Phase and Neutral



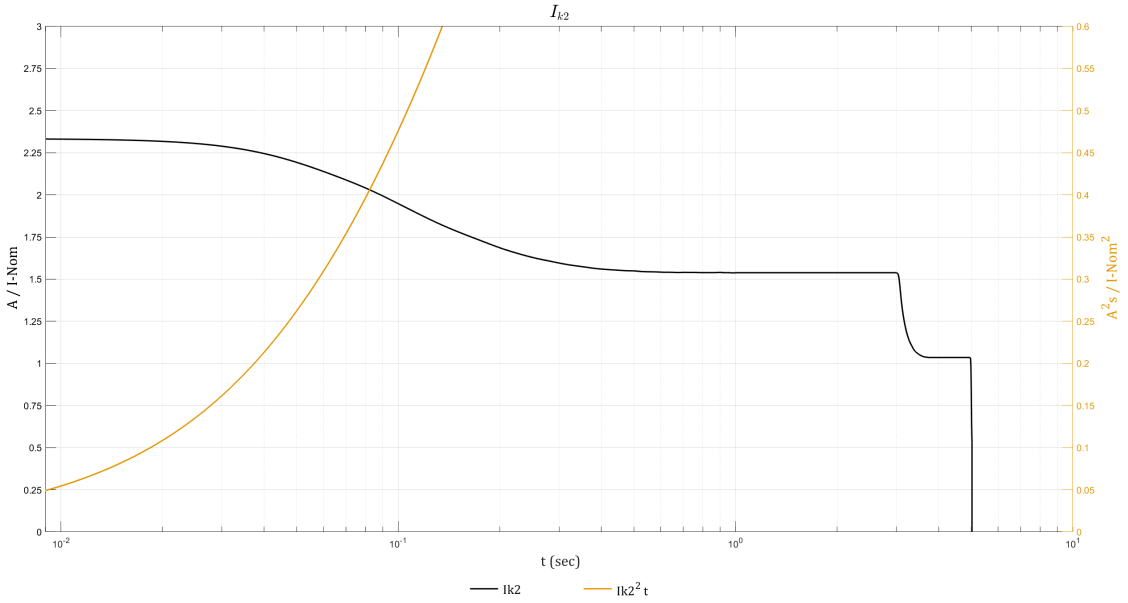
IK1 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	56 / 31	56 / 62	56 / 93	48 / 290	38 / 1674
30	83 / 70	83 / 140	83 / 210	73 / 650	57 / 3770
40	111 / 120	111 / 250	111 / 370	97 / 1160	76 / 6700
50	139 / 190	139 / 390	139 / 580	121 / 1810	95 / 10460
60	167 / 280	167 / 560	167 / 830	145 / 2610	114 / 15070
80	222 / 490	222 / 990	222 / 1480	194 / 4640	152 / 26790
100	278 / 770	278 / 1550	278 / 2320	242 / 7260	190 / 41860

IK1 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	64 / 41	64 / 82	64 / 123	56 / 386	44 / 2229
15	96 / 93	96 / 185	96 / 278	84 / 869	66 / 5015
20	128 / 160	128 / 330	128 / 490	112 / 1550	88 / 8920
25	160 / 260	160 / 510	160 / 770	140 / 2420	110 / 13930
30	192 / 370	192 / 740	192 / 1110	168 / 3480	132 / 20060
40	257 / 660	257 / 1320	257 / 1980	224 / 6180	175 / 35670
50	321 / 1030	321 / 2060	321 / 3090	279 / 9660	219 / 55730

IK2 – Short Circuit between Two Phases



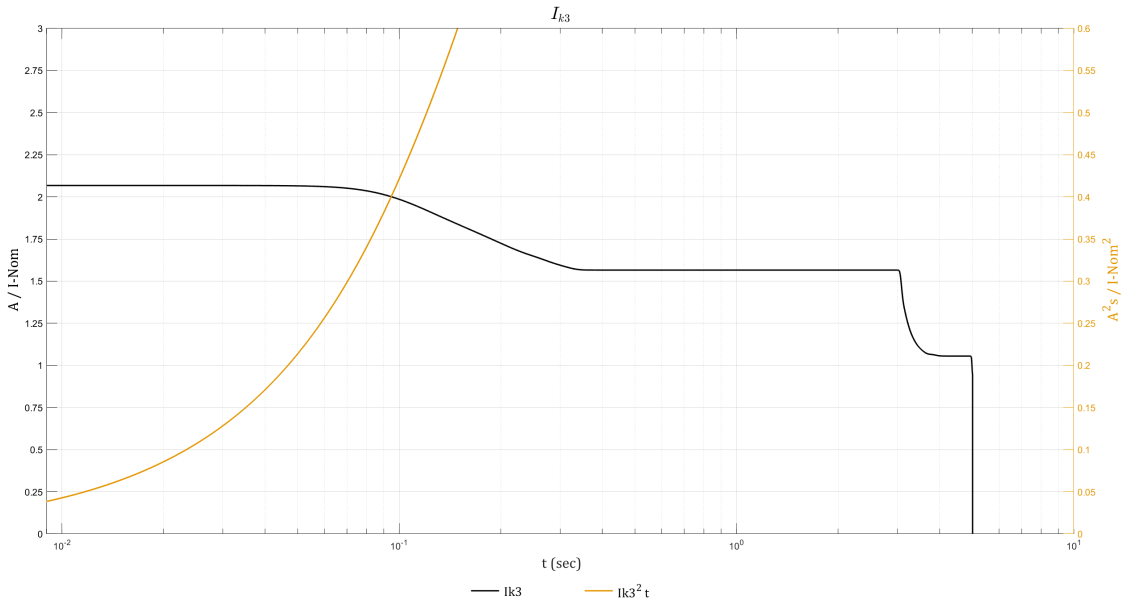
IK2 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	56 / 31	56 / 63	56 / 94	47 / 276	37 / 1586
30	84 / 70	84 / 140	84 / 210	70 / 620	55 / 3570
40	112 / 130	112 / 250	112 / 370	94 / 1100	74 / 6350
50	140 / 200	139 / 390	139 / 580	117 / 1720	92 / 9910
60	168 / 280	167 / 570	167 / 840	141 / 2480	111 / 14280
80	224 / 500	223 / 1000	223 / 1500	187 / 4410	148 / 25380
100	280 / 790	279 / 1570	279 / 2340	234 / 6890	185 / 39660

IK2 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	65 / 42	64 / 84	64 / 125	54 / 367	43 / 2112
15	97 / 94	96 / 188	96 / 280	81 / 825	64 / 4752
20	129 / 170	129 / 330	129 / 500	108 / 1470	85 / 8450
25	162 / 260	161 / 520	161 / 780	135 / 2290	107 / 13200
30	194 / 380	193 / 750	193 / 1120	162 / 3300	128 / 19010
40	259 / 670	257 / 1340	257 / 1990	216 / 5870	171 / 33790
50	323 / 1050	322 / 2090	322 / 3110	270 / 9170	213 / 52800

IK3 – Short Circuit between Three Phases



IK3 480 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	50 / 25	50 / 49	50 / 74	48 / 244	38 / 1593
30	75 / 60	75 / 110	75 / 170	72 / 550	57 / 3580
40	99 / 100	99 / 200	99 / 300	96 / 980	75 / 6370
50	124 / 150	124 / 310	124 / 460	119 / 1520	94 / 9960
60	149 / 220	149 / 450	149 / 670	143 / 2200	113 / 14340
80	199 / 400	199 / 790	199 / 1190	191 / 3900	151 / 25490
100	249 / 620	249 / 1240	249 / 1860	239 / 6100	188 / 39830

IK3 208 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
10	57 / 33	57 / 66	57 / 99	55 / 325	43 / 2121
15	86 / 74	86 / 148	86 / 222	83 / 731	65 / 4772
20	115 / 130	115 / 260	115 / 400	110 / 1300	87 / 8480
25	143 / 210	143 / 410	143 / 620	138 / 2030	109 / 13260
30	172 / 300	172 / 590	172 / 890	165 / 2920	130 / 19090
40	230 / 530	230 / 1050	230 / 1580	220 / 5200	174 / 33940
50	287 / 820	287 / 1650	287 / 2470	276 / 8120	217 / 53020

Efficiency

480 V UPS

Normal Operation

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	92.9%	92.1%	93.0%	94.0%
50% load	95.3%	94.7%	95.4%	95.8%
75% load	96.2%	95.6%	96.1%	96.3%
100% load	96.6%	96.1%	96.4%	96.5%

Normal Operation

UPS rating	60 kW	80 kW	100 kW
25% load	95.3%	95.3%	95.7%
50% load	96.3%	96.4%	96.6%
75% load	96.5%	96.7%	96.7%
100% load	96.5%	96.7%	96.6%

ECO Mode

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	95.6%	96.4%	97.0%	97.6%
50% load	97.6%	98.0%	98.3%	98.6%
75% load	98.2%	98.5%	98.8%	99.0%
100% load	98.6%	98.8%	99.0%	99.1%

ECO Mode

UPS rating	60 kW	80 kW	100 kW
25% load	98.1%	98.4%	98.6%
50% load	98.9%	99.0%	99.1%
75% load	99.1%	99.2%	99.3%
100% load	99.2%	99.3%	99.3%

eConversion

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	94.7%	93.8%	95.4%	96.3%
50% load	97.2%	96.8%	97.5%	98.0%
75% load	98.0%	97.7%	98.3%	98.5%
100% load	98.4%	98.3%	98.6%	98.8%

eConversion

UPS rating	60 kW	80 kW	100 kW
25% load	97.3%	97.5%	97.9%
50% load	98.5%	98.6%	98.8%
75% load	98.9%	98.9%	99.0%
100% load	99.1%	99.0%	99.1%

Battery Operation

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	92.4%	92.2%	93.4%	94.2%
50% load	94.9%	94.7%	95.3%	95.7%
75% load	95.8%	95.6%	96.0%	96.3%
100% load	96.2%	96.0%	96.3%	96.5%

Battery Operation

UPS rating	60 kW	80 kW	100 kW
25% load	95.3%	95.5%	95.9%
50% load	96.3%	96.4%	96.5%
75% load	96.6%	96.6%	96.6%
100% load	96.6%	96.6%	96.5%

208 V UPS

10 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	200	208	220	200	208	220
25% load	91.5%	91.4%	91.4%	91.9%	92.1%	92.2%
50% load	94.2%	94.2%	94.2%	95.6%	95.6%	95.7%
75% load	94.9%	94.9%	95.1%	97.0%	97.0%	97.0%
100% load	95.0%	95.2%	95.3%	97.5%	97.5%	97.6%

10 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	200	208	220	200	208	220
25% load	92.2%	92.4%	92.3%	89.9%	89.9%	90.1%
50% load	95.9%	95.9%	95.9%	93.1%	93.2%	93.4%
75% load	96.9%	97.0%	97.0%	94.0%	94.1%	94.3%
100% load	97.5%	97.5%	97.5%	94.2%	94.4%	94.6%

15 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	200	208	220	200	208	220
25% load	91.1%	91.1%	91.0%	93.5%	93.4%	93.5%
50% load	94.0%	94.0%	94.0%	96.4%	96.5%	96.5%
75% load	94.9%	95.0%	95.0%	97.3%	97.3%	97.4%
100% load	95.2%	95.3%	95.4%	97.7%	97.8%	97.8%

15 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	200	208	220	200	208	220
25% load	92.4%	92.4%	92.3%	90.7%	90.8%	90.9%
50% load	95.7%	95.8%	95.9%	93.5%	93.6%	93.7%
75% load	96.9%	96.9%	96.9%	94.4%	94.6%	94.7%
100% load	97.5%	97.6%	97.6%	94.9%	95.0%	95.2%

20 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	92.4%	92.5%	92.4%	94.7%	94.8%	94.9%
50% load	94.7%	94.7%	94.7%	97.1%	97.1%	97.2%
75% load	95.2%	95.3%	95.4%	97.7%	97.8%	97.8%
100% load	95.4%	95.5%	95.6%	98.0%	98.1%	98.1%

20 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	94.0%	94.0%	93.9%	92.1%	92.2%	92.3%
50% load	96.6%	96.6%	96.7%	94.2%	94.3%	94.5%
75% load	97.5%	97.6%	97.6%	94.9%	95.0%	95.2%
100% load	97.9%	97.9%	98.0%	95.2%	95.4%	95.5%

25 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	93.5%	93.5%	93.5%	95.7%	95.7%	95.8%
50% load	95.0%	95.1%	95.1%	97.5%	97.5%	97.6%
75% load	95.4%	95.5%	95.6%	98.0%	98.0%	98.1%
100% load	95.3%	95.5%	95.6%	98.1%	98.2%	98.3%

25 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	95.0%	95.0%	95.1%	92.9%	93.0%	93.2%
50% load	97.1%	97.1%	97.2%	94.6%	94.7%	94.9%
75% load	97.8%	97.9%	97.9%	95.2%	95.3%	95.5%
100% load	98.1%	98.1%	98.2%	95.4%	95.5%	95.7%

30 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	93.2%	93.2%	93.4%	96.5%	96.5%	96.6%
50% load	94.3%	94.5%	94.8%	97.9%	97.9%	98.0%
75% load	94.2%	94.5%	94.8%	98.2%	98.2%	98.3%
100% load	93.6%	94.0%	94.5%	98.3%	98.3%	98.4%

30 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	96.5%	96.4%	96.6%	94.1%	94.2%	94.2%
50% load	97.7%	97.7%	97.8%	95.2%	95.3%	95.4%
75% load	98.1%	98.1%	98.2%	95.3%	95.5%	95.7%
100% load	98.2%	98.3%	98.3%	95.3%	95.5%	95.7%

40 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	93.3%	93.4%	94.7%	97.1%	97.2%	97.2%
50% load	94.4%	94.6%	95.6%	98.0%	98.1%	98.2%
75% load	94.2%	95.3%	95.5%	98.2%	98.3%	98.4%
100% load	93.6%	94.8%	95.2%	98.2%	98.3%	98.4%

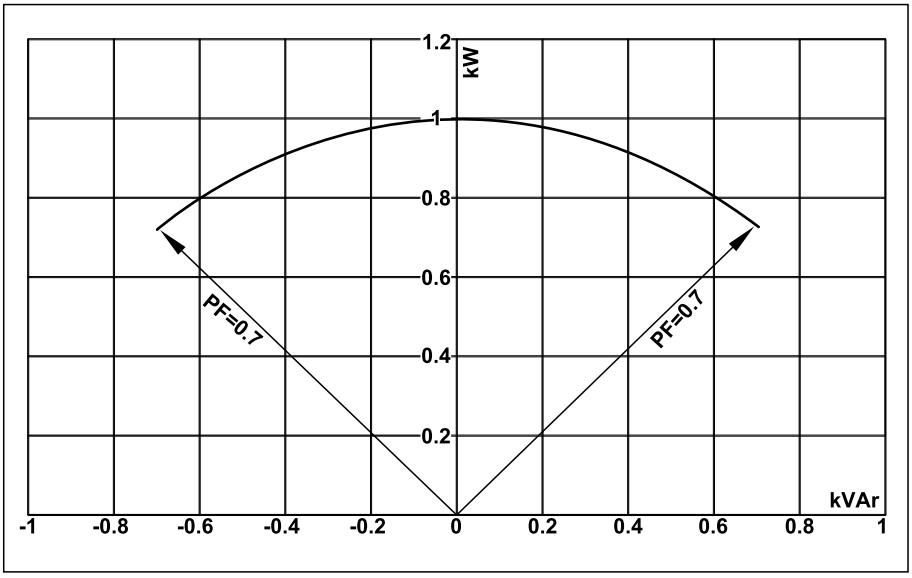
40 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	96.6%	96.6%	96.3%	94.4%	94.6%	94.7%
50% load	97.8%	97.9%	97.9%	95.3%	95.4%	95.6%
75% load	98.1%	98.2%	98.2%	95.4%	95.6%	95.8%
100% load	98.2%	98.2%	98.3%	95.3%	95.5%	95.7%

50 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	93.8%	94.0%	95.1%	97.3%	97.4%	97.4%
50% load	94.3%	95.4%	95.6%	98.2%	98.2%	98.3%
75% load	93.8%	95.0%	95.3%	98.2%	98.3%	98.4%
100% load	92.8%	94.3%	94.7%	98.2%	98.3%	98.4%

50 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	97.3%	97.2%	97.3%	94.8%	94.9%	95.1%
50% load	98.0%	98.1%	98.1%	95.4%	95.5%	95.7%
75% load	98.2%	98.2%	98.3%	95.3%	95.5%	95.7%
100% load	98.1%	98.2%	98.3%	95.1%	95.3%	95.6%

Derating Due to Load Power Factor

0.7 leading to 0.7 lagging without derating.

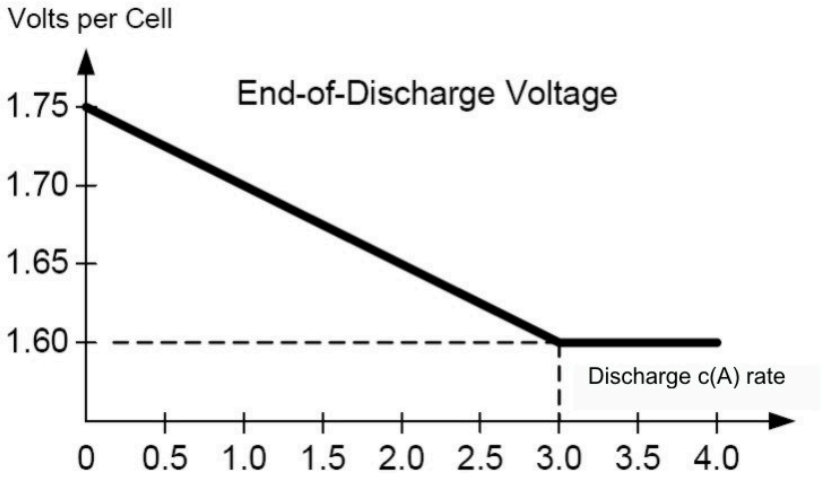


UPS rating	UPS output					
	Lagging			Leading		
PF=1	PF=0.7	PF=0.8	PF=0.9	PF=0.9	PF=0.8	PF=0.7
10 kVA/kW	10 kVA / 7 kW	10 kVA / 8 kW	10 kVA / 9 kW	10 kVA / 9 kW	10 kVA / 8 kW	10 kVA / 7 kW
15 kVA/kW	15 kVA / 10.5 kW	15 kVA / 12 kW	15 kVA / 13.5 kW	15 kVA / 13.5 kW	15 kVA / 12 kW	15 kVA / 10.5 kW
20 kVA/kW	20 kVA / 14 kW	20 kVA / 16 kW	20 kVA / 18 kW	20 kVA / 18 kW	20 kVA / 16 kW	20 kVA / 14 kW
25 kVA/kW	25 kVA / 17.5 kW	25 kVA / 20 kW	25 kVA / 22.5 kW	25 kVA / 22.5 kW	25 kVA / 20 kW	25 kVA / 17.5 kW
30 kVA/kW	30 kVA / 21 kW	30 kVA / 24 kW	30 kVA / 27 kW	30 kVA / 27 kW	30 kVA / 24 kW	30 kVA / 21 kW
40 kVA/kW	40 kVA / 28 kW	40 kVA / 32 kW	40 kVA / 36 kW	40 kVA / 36 kW	40 kVA / 32 kW	40 kVA / 28 kW
50 kVA/kW	50 kVA / 35 kW	50 kVA / 40 kW	50 kVA / 45 kW	50 kVA / 45 kW	50 kVA / 40 kW	50 kVA / 35 kW
60 kVA/kW	60 kVA / 42 kW	60 kVA / 48 kW	60 kVA / 54 kW	60 kVA / 54 kW	60 kVA / 48 kW	60 kVA / 42 kW
80 kVA/kW	80 kVA / 56 kW	80 kVA / 64 kW	80 kVA / 72 kW	80 kVA / 72 kW	80 kVA / 64 kW	80 kVA / 56 kW
100 kVA/kW	100 kVA / 70 kW	100 kVA / 80 kW	100 kVA / 90 kW	100 kVA / 90 kW	100 kVA / 80 kW	100 kVA / 70 kW

Batteries

End of Discharge Voltage

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



Battery Voltage Window

	Boost 2.38 Vpc	Nominal 2.0 Vpc	Minimum 1.6 Vpc
Battery voltage (V)	571.2	480	384

Battery Runtimes in Minutes

NOTE: Runtimes are given at power factor 1 with 100% load.

480 V UPS

UPS rating Number of modular battery strings	20 kW UPS with N+1 power module	30 kW UPS with N+1 power module	40 kW UPS with N+1 power module	50 kW UPS with N+1 power module	60 kW UPS	80 kW UPS	100 kW UPS
1	NA	NA	NA	NA	NA	NA	NA
2	11.0	6.0	NA	NA	NA	NA	NA
3	18.5	10.5	7.3	5.2	NA	NA	NA
4	27.0	15.5	10.5	8.0	6.1	NA	NA
5	36.0	21.0	14.5	10.5	8.5	5.5	NA
6	45.0	26.5	18.5	14.0	11.0	7.3	5.2
7	54.5	32.5	22.5	17.0	13.5	9.1	6.6
8	64.0	38.0	27.0	20.0	16.0	10.5	8.0
9	74.0	44.0	31.0	23.5	18.5	12.5	9.5
10	84.0	50.5	35.5	27.0	21.5	14.5	11.0
11	94.5	56.5	40.0	30.5	24.0	16.5	12.5
12	105	63.0	44.5	34.0	27.0	18.5	14.0
13	115	69.5	49.0	37.5	30.0	20.5	15.5
14	125	76.0	54.0	41.0	32.5	22.5	17.0
15	135	82.5	58.5	44.5	35.5	24.5	18.5
16	145	89.5	63.5	48.0	38.5	27.0	20.0
17	155	96.0	68.0	52.0	41.5	29.0	22.0
18	170	100	73.0	56.0	44.5	31.0	23.5
19	180	110	78.0	59.5	48.0	33.5	25.5
20	190	115	83.0	63.5	51.0	35.5	27.0
21	205	120	88.0	67.5	54.0	38.0	28.5
22	215	130	93.5	71.0	57.0	40.0	30.5
23	225	135	98.5	75.0	60.5	42.5	32.0
24	240	145	100	79.0	63.5	44.5	34.0
25	250	150	105	83.0	67.0	47.0	35.5
26	265	160	110	87.5	70.0	49.0	37.5
27	275	165	115	91.5	73.5	51.5	39.5
28	285	175	125	95.5	76.5	54.0	41.0
29	300	180	130	99.5	80.0	56.5	43.0
30	310	190	135	100	83.5	58.5	45.0
31	325	195	140	105	87.0	61.0	46.5
32	335	205	145	110	90.0	63.5	48.5
33	350	210	150	115	93.5	66.0	50.5
34	360	220	155	120	97.0	68.5	52.0
35	375	225	160	125	100	71.0	54.0
36	390	235	165	125	100	73.0	56.0
37	400	240	170	130	105	75.5	58.0
38	415	250	180	135	110	78.0	60.0

UPS rating Number of modular battery strings	20 kW UPS with N+1 power module	30 kW UPS with N+1 power module	40 kW UPS with N+1 power module	50 kW UPS with N+1 power module	60 kW UPS	80 kW UPS	100 kW UPS
39	425	260	185	140	110	80.5	62.0
40	440	265	190	145	115	83.0	63.5
41	455	275	195	150	120	86.0	65.5

208 V UPS

UPS rating Number of modular battery strings	10 kW UPS with N+1 power module	15 kW UPS with N+1 power module	20 kW UPS with N+1 power module	25 kW UPS with N+1 power module	30 kW UPS	40 kW UPS	50 kW UPS
1	11.0	5.9	NA	NA	NA	NA	NA
2	27.0	15.5	10.5	7.9	6.0	NA	NA
3	45.0	26.0	18.5	13.5	10.5	7.2	5.1
4	63.5	37.5	26.5	20.0	15.5	10.5	7.9
5	83.5	49.5	35.5	26.5	21.0	14.5	10.5
6	100	62.0	44.0	33.5	26.5	18.5	13.5
7	125	74.5	53.5	40.5	32.5	22.5	16.5
8	145	87.5	63.0	48.0	38.0	26.5	20.0
9	165	100	72.5	55.5	44.0	31.0	23.0
10	190	115	82.5	63.0	50.5	35.5	26.5
11	215	125	92.5	71.0	56.5	39.5	30.0
12	235	140	100	79.0	63.0	44.0	33.5
13	260	155	110	87.0	69.5	49.0	37.0
14	285	170	120	95.0	76.0	53.5	40.5
15	310	185	135	100	82.5	58.0	44.0
16	335	200	145	110	89.5	63.0	47.5
17	360	215	155	120	96.0	68.0	51.5
18	385	230	165	125	100	72.5	55.0
19	410	245	175	135	110	77.5	59.0
20	440	260	190	145	115	82.5	62.5
21	465	275	200	155	120	87.5	66.5
22	490	295	210	160	130	92.5	70.5
23	515	310	225	170	135	98.0	74.5
24	545	325	235	180	145	100	78.5
25	570	340	245	190	150	105	82.0
26	600	360	260	200	160	110	86.5
27	625	375	270	205	165	115	90.5
28	655	390	280	215	175	120	94.5
29	680	410	295	225	180	125	98.5
30	710	425	305	235	190	135	100
31	740	440	320	245	195	140	105
32	765	460	330	255	205	145	110
33	795	475	345	265	210	150	115
34	825	495	355	275	220	155	115
35	855	510	370	285	225	160	120

UPS rating Number of modular battery strings	10 kW UPS with N+1 power module	15 kW UPS with N+1 power module	20 kW UPS with N+1 power module	25 kW UPS with N+1 power module	30 kW UPS	40 kW UPS	50 kW UPS
36	880	530	380	295	235	165	125
37	910	545	395	300	240	170	130
38	940	565	405	310	250	175	135
39	970	580	420	320	260	180	140
40	1000	600	435	330	265	190	145
41	1000	615	445	340	275	195	145

Compliance

Safety	IEC 62040-1: 2017, Edition 2.0, Uninterruptible Power Systems (UPS) - Part 1: Safety requirements UL 1778 5th edition
EMC/EMI/RFI	IEC 62040-2: 2016, 3rd edition Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements C2 FCC Part 15 Subpart B, Class A IEEE C62.41-1991 Location Category B2, IEEE Recommended Practice on Surge Voltages in Low-Voltage AC Power Circuits
Transportation	IEC 60721-4-2 Level 2M1
Seismic	ICC-ES AC 156 (2015): OHSPD Pre-approved; Sds=1.33 g for z/h=1 and Sds=1.63 g for z/h=0; Ip= 1.5
Earthing system	TN-C, TN-S, TT, IT
Overvoltage category	This UPS is OVCII compliant. If the UPS is installed in an environment with an OVC rating higher than II, an SPD (surge protection device) must be installed upstream of the UPS to reduce the overvoltage category to OVCII.
Protective class	I
Pollution degree	2

Performance

Performance in accordance with: IEC 62040-3: 2021, 3rd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements.

Earthing Systems

Refer to the Galaxy VS Earthing Principles for earthing system details applicable for Galaxy VS UPS. The Galaxy VS Earthing Principles are available on the website.

Regional Seismic Compliance

Certificate available upon request.

Country/Region	Code ID	Hazard level ground	Hazard level roof
Argentina	INPRES-CIRSOC103	Zone 4	Zone 4
Australia	AS 1170.4-2007	Z = 0.22	Z = 0.22
Canada[18]	2020 NBCC	S_a = 2.0	S_a = 1.46
Chile	NCh 433.Of1996	Zone 3	Zone 2
China	GB 50011-2010 (2016)	α_{Max} = 1.4	α_{Max} = 1.2
Europe	Eurocode 8 EN1998-1	α_{gR} = 0.45	α_{gR} = 0.3
India	IS 1893 (Part 1) : 2016	Z = 0.36	Z = 0.36
Japan	Building Standard Law	Zone A	Zone A
New Zealand	NZS 1170.5:2004+A1	Z = 0.6	Z = 0.42
Peru	N.T.E. - E.030	Zone 4	Zone 4
Russia	SNIP II-7-81 (SP 14.13330.2014)	MSK 10	MSK 9

18. OSHPD Pre-approved in accordance with AC156 test protocol.

Country/Region	Code ID	Hazard level ground	Hazard level roof
Taiwan	CPA 2011 Seismic Design Code	$S_S^D = 0.8$	$S_S^D = 0.8$
U.S.A.[19]	ASCE 7-16 / IBC 2018	$S_{DS} = 2.0$	$S_{DS} = 1.47$

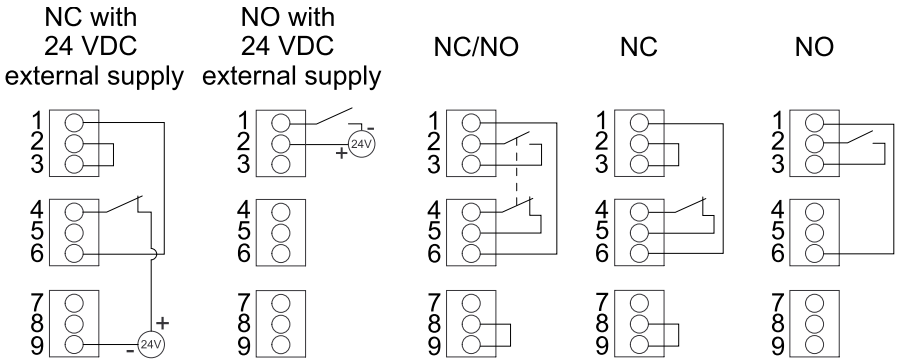
19. OSHPD Pre-approved in accordance with AC156 test protocol.

Communication and Management

Local area network	1 Gbps – 1 port as default
Modbus	Modbus (SCADA)
Output relays	4 x SELV configurable
Input contacts	4 x SELV configurable
Standard control panel	4.3 inch touchscreen display
Audible alarm	Yes
Emergency Power Off (EPO)	Options: • Normally Open (NO) • Normally Closed (NC) • External 24 VDC SELV
External switchgear	UIB UOB SSIB MBB SIB
External synchronization	No
Battery monitoring	Available for modular batteries

EPO

EPO Configurations (640–4864 terminal J6600, 1–9)



The EPO input supports 24 VDC.

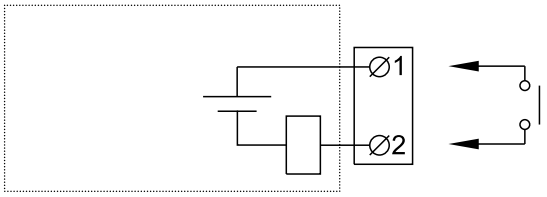
NOTE: The default setting for the EPO activation is to turn off the inverter.

If you want the EPO activation to transfer the UPS into forced static bypass operation instead, please contact Schneider Electric.

Configurable Input Contacts and Output Relays

Input Contacts

Four input contacts are available and can be configured to indicate a given event via the display. The input contacts support 24 VDC 10 mA.

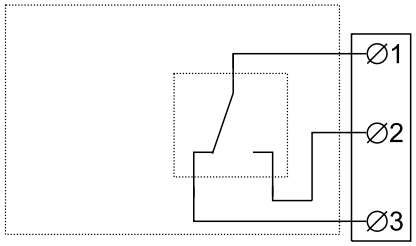


Name	Description	Location
IN _1 (input contact 1)	Configurable input contact	640-4864 terminal J6616, 1–2
IN _2 (input contact 2)	Configurable input contact	640-4864 terminal J6616, 3–4
IN _3 (input contact 3)	Configurable input contact	640-4864 terminal J6616, 5–6
IN _4 (input contact 4)	Configurable input contact	640-4864 terminal J6616, 7–8

Output Relays

Four output relays are available and can be configured to activate on one or more events via the display.

The output relays support 24 VAC/VDC 1 A. All external circuitry must be fused with maximum 1 A fast acting fuses.



Name	Description	Location
OUT _1 (output relay 1)	Configurable output relay	640–4864 terminal J6617, 1–3
OUT _2 (output relay 2)	Configurable output relay	640–4864 terminal J6617, 4–6
OUT _3 (output relay 3)	Configurable output relay	640–4864 terminal J6617, 7–9
OUT _4 (output relay 4)	Configurable output relay	640–4864 terminal J6617, 10–12

Energized check mode: When this mode is enabled, it means that the output relay is activated when the events associated with the output relay are not present (normally activated). **Energized check mode** is individually set for each output relay and makes it possible to detect if the power supply to the output relays is lost, as all output relays will deactivate and the events associated with the output relays will be indicated as present.

Specifications

Specifications for 480 V Systems

The supply for input and bypass must be solid-grounded WYE transformers. Delta input supply for either input or bypass is not permitted.

The UPS system must be installed as a separately derived system. Leakage currents will occur in the bonding jumper and the technical/system earth.

Input Specifications 480 V

UPS rating	**20 kW with N+1 power module**	**30 kW with N+1 power module**	**40 kW with N+1 power module**	**50 kW with N+1 power module**
Connections	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)[20]			
Input voltage range (V)	408-552			
Frequency range (Hz)	40-70			
Nominal input current (A)	25	37	50	62
Maximum input current (A)	33	46	61	76
Input current limitation (A)	31	48	63	77
Input power factor	0.99 at 100% load			
Total harmonic distortion (THDI)	<6% at full linear load (symmetrical)			
Maximum short circuit rating	65 kA RMS			
Protection	Built-in backfeed protection and fuses			
Ramp-in	Programmable and adaptive 1-40 seconds			

UPS rating	**60 kW**	**80 kW**	**100 kW**
Connections	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)[20]		
Input voltage range (V)	408-552		
Frequency range (Hz)	40-70		
Nominal input current (A)	74	99	124
Maximum input current (A)	91	122	152
Input current limitation (A)	95	126	154
Input power factor	0.99 for load greater than 50% 0.95 for load greater than 25%		
Total harmonic distortion (THDI)	<3% at full linear load (symmetrical)		
Maximum short circuit rating	65 kA RMS		

20. TN and TT power distribution systems are supported. Corner (line) grounding is not permitted.

UPS rating	60 kW	80 kW	100 kW
Protection	Built-in backfeed protection and fuses		
Ramp-in	Programmable and adaptive 1-40 seconds		

Bypass Specifications 480 V

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
Connections	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE [21]			
Bypass voltage range (V)	432-528			
Frequency range (Hz)	50/60 ± 1, 50/60 ± 3, 50/60 ± 10 (user selectable)			
Nominal bypass current (A)	26	38	50	63
Nominal neutral current (A)	42	62	83	104
Maximum short circuit rating[22]	65 kA RMS			
Protection	Built-in backfeed protection and fuses Internal fuse specifications: Rated 400 A, prearcing 33 kA^2s			

UPS rating	60 kW	80 kW	100 kW
Connections	3-wire (L1, L2, L3, G) WYE or 4-wire (L1, L2, L3, N, G) WYE [21]		
Bypass voltage range (V)	432-528		
Frequency range (Hz)	50/60 ± 1, 50/60 ± 3, 50/60 ± 10 (user selectable)		
Nominal bypass current (A)	75	99	123
Nominal neutral current (A)	125	166	208
Maximum short circuit rating[22]	65 kA RMS		
Protection	Built-in backfeed protection and fuses Internal fuse specifications: Rated 400 A, prearcing 33 kA^2s		

21. TN and TT power distribution systems are supported. Corner (line) grounding is not permitted.
22. Conditioned by the internal fuse rated 400 A, prearcing 33 kA^2s.

Output Specifications 480 V

NOTE: The number of output connections must match the number of input wires in a single mains system or bypass wires in a dual mains system.

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
Connections	3-wire (L1, L2, L3, G, GEC[23]) or 4-wire (L1, L2, L3, N, G)			
Output voltage regulation	Symmetrical load ± 1% Asymmetrical load ± 3%			
Overload capacity	150% for 1 minute (in normal operation) 125% for 10 minutes (in normal operation) 110% continuous (normal operation)[24] 125% for 1 minute (in battery operation) 125% continuous (bypass operation) 1000% for 100 milliseconds (bypass operation)			
Dynamic load response	± 5% after 2 milliseconds ± 1% after 50 milliseconds			
Output power factor	1			
Nominal output current (A)	24	36	48	60
Frequency regulation (Hz)	50/60 Hz bypass synchronized – 50/60 Hz ± 0.1% free-running			
Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6			
Total harmonic distortion (THDU)	<1% for linear load <3% for non-linear load			
Load crest factor	2.5			
Load power factor	From 0.7 leading to 0.7 lagging without any derating			

UPS rating	60 kW	80 kW	100 kW
Connections	3-wire (L1, L2, L3, G, GEC[23]) or 4-wire (L1, L2, L3, N, G)		
Output voltage regulation	Symmetrical load ± 1% Asymmetrical load ± 3%		
Overload capacity	150% for 1 minute (in normal operation) 125% for 10 minutes (in normal operation) 110% continuous (normal operation)[24] 125% for 1 minute (in battery operation) 125% continuous (bypass operation) 1000% for 100 milliseconds (bypass operation)		
Dynamic load response	± 5% after 2 milliseconds ± 1% after 50 milliseconds		
Output power factor	1		
Nominal output current (A)	72	96	120
Frequency regulation (Hz)	50/60 Hz bypass synchronized – 50/60 Hz ± 0.1% free-running		
Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6		
Total harmonic distortion (THDU)	<1% for linear load <3% for non-linear load		
Load crest factor	2.5		
Load power factor	From 0.7 leading to 0.7 lagging without any derating		

23. Per NEC 250.30.
24. 110% continuous overload in normal operation at nominal mains voltage and at maximum 40 °C ambient temperature. Contact Schneider Electric to enable this function.

Battery Specifications 480 V

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Protection of the energy storage device: An overcurrent protective device must be located in close proximity to the energy storage device.

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

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module	60 kW	80 kW	100 kW
Charging power in % of output power at 0-40% load	80%						
Charging power in % of output power at 100% load	20%						
Maximum charging power (at 0-40% load) (kW)	16	24	32	40	48	64	80
Maximum charging power (at 100% load) (kW)	4	6	8	10	12	16	20
Nominal battery voltage (VDC)	480						
Nominal float voltage (VDC)	545						
Maximum boost voltage (VDC)	572						
Temperature compensation (per cell)	-3.3mV/°C, for T ≥ 25 °C – 0mV/°C, for T < 25 °C						
End of discharge voltage (full load) (VDC)	384						
Battery current at full load and nominal battery voltage (A)	45	66	88	110	131	174	218
Battery current at full load and minimum battery voltage (A)	54	81	108	135	163	217	271
Ripple current	< 5% C20 (5 minute runtime)						
Battery test	Manual/automatic (selectable)						
Maximum short circuit rating	10 kA						

Recommended Cable Sizes 480 V

⚠⚠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 300 kcmil.

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

The maximum number of cable connections per busbar: Two on input/output/bypass busbars; Four on DC busbars; Six on N/G busbars.

NOTE: Overcurrent protection is to be provided by others.

Cable sizes in this manual are based on Table 310.15 (B)(16) of the National Electrical Code (NEC) with the following assertions:

- 90 °C (194 °F) conductors (75 °C (167 °F) termination)
- An ambient temperature of 30 °C (86 °F)
- Use of copper conductors

If the ambient temperature is greater than 30 °C (86 °F), larger conductors are to be selected in accordance with the correction factors of the NEC.

Equipment grounding conductors (EGC) are sized in accordance with NEC Article 250.122 and Table 250.122.

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

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

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.

UPS rating	20 kW with N+1 power module	30 kW with N +1 power module	40 kW with N+1 power module	50 kW with N +1 power module	60 kW	80 kW	100 kW
Input phases (AWG/kcmil)	8	6	4	3	1	2/0	3/0
Input EGC (AWG/kcmil)	10	8	8	6	6	6	4
Bypass/output phases (AWG/kcmil)	10	8	6	4	3	1	2/0
Bypass EGC/output EGC (AWG/kcmil)	10	10	8	8	8	6	6
Neutral (AWG/kcmil)	6	4	2	1/0	2/0	4/0	2 x 1/0
DC+/DC-(AWG/kcmil)	6	4	2	1/0	2/0	4/0	2 x 1/0
DC EGC (AWG/kcmil)	8	6	6	6	6	4	4

NOTE: Cable sizes are based on 80% rated circuit breakers for UIB, UOB, MBB, SSIB, and 100% rated circuit breaker for battery disconnect device(s).

Recommended Upstream Protection 480 V

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- For parallel systems, instantaneous override (Ii) values must not be set higher than 1250 A. Place the label 885-92556 adjacent to the upstream circuit breaker to inform about the hazard.
- In parallel systems with three or more UPSs, a circuit breaker must be installed on the output of each UPS. The unit output disconnect device (UOB) instantaneous override (Ii) values must not be set higher than 1250 A.

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

⚠CAUTION

HAZARD OF FIRE

- Connect only to a circuit with the below specifications.
- Connect to a circuit provided with a 250 A branch circuit overcurrent protection maximum in accordance with the National Electrical Code, ANSI/NFPA70, and the Canadian Electrical Code, Part I, C22.1.

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

NOTE: Overcurrent protection is to be provided by others and marked with its function.

UPS rating	**20 kW with N+1 power module**		**30 kW with N+1 power module**		**40 kW with N+1 power module**		**50 kW with N+1 power module**	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	HJF36100U31X							
Ir setting	40	35	60	50	80	70	100	80
Tr at 6 Ir setting	0.5							
Ii (x In) setting	1.5							

UPS rating	**60 kW**		**80 kW**		**100 kW**	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	HJF36150U31X	HJF36100U31X	JJF36250U31X	HJF36150U31X	JJF36250U31X	
Ir setting	125	100	175	125	200	175
Tr at 6 Ir setting	0.5					
Ii (x In) setting	1.5					

Specifications for 208 V Systems

Input Specifications 208 V

UPS rating	**10 kW with N+1 power module**	**15 kW with N+1 power module**	**20 kW with N+1 power module**	**25 kW with N+1 power module**
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)			
Input voltage range (V)	200 V: 170-230 208 V: 177-239 220 V: 187-253			
Frequency range (Hz)	40-70			
Nominal input current (A)	31/30/28	47/45/42	62/60/56	78/75/71
Maximum input current (A)	38/37/35	57/55/52	75/73/69	93/92/86
Input current limitation (A)	40/38/36	59/56/53	78/75/71	93/92/86
Input power factor	0.99 at 100% load			
Total harmonic distortion (THDI)	<6% at full linear load (symmetrical)			
Maximum short circuit rating	65 kA RMS			
Protection	Built-in backfeed protection and fuses			
Ramp-in	Programmable and adaptive 1-40 seconds			

UPS rating	**30 kW**	**40 kW**	**50 kW**
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G) WYE (single mains) 3-wire (L1, L2, L3, G) WYE (dual mains)		
Input voltage range (V)	200 V: 170-230 208 V: 177-239 220 V: 187-253		
Frequency range (Hz)	40-70		
Nominal input current (A)	93/90/85	124/119/113	155/149/141
Maximum input current (A)	114/109/104	152/145/137	185/182/172
Input current limitation (A)	117/111/106	156/149/141	185/182/172
Input power factor	0.99 for load greater than 50% 0.95 for load greater than 25%		
Total harmonic distortion (THDI)	<3% at full linear load (symmetrical)		
Maximum short circuit rating	65 kA RMS		
Protection	Built-in backfeed protection and fuses		
Ramp-in	Programmable and adaptive 1-40 seconds		

Bypass Specifications 208 V

UPS rating	**10 kW with N+1 power module**	**15 kW with N+1 power module**	**20 kW with N+1 power module**	**25 kW with N+1 power module**
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G) WYE			
Bypass voltage range (V)	200 V: 180-220 208 V: 187-229 220 V: 198-242			
Frequency range (Hz)	50/60 ± 1, 50/60 ± 3, 50/60 ± 10 (user selectable)			
Nominal bypass current (A)	31/29/28	45/43/41	60/57/54	75/71/69
Nominal neutral current (A)	50/48/45	75/72/68	100/96/91	125/120/114
Maximum short circuit rating[25]	65 kA RMS			
Protection	Built-in backfeed protection and fuses Internal fuse specifications: Rated 400 A, prearcing 33 kA²s			

UPS rating	**30 kW**	**40 kW**	**50 kW**
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G) WYE		
Bypass voltage range (V)	200 V: 180-220 208 V: 187-229 220 V: 198-242		
Frequency range (Hz)	50/60 ± 1, 50/60 ± 3, 50/60 ± 10 (user selectable)		
Nominal bypass current (A)	90/85/81	119/114/108	148/142/135
Nominal neutral current (A)	150/144/136	200/192/182	250/240/227
Maximum short circuit rating[25]	65 kA RMS		
Protection	Built-in backfeed protection and fuses Internal fuse specifications: Rated 400 A, prearcing 33 kA²s		

25. Conditioned by the internal fuse rated 400 A, prearcing 33 kA²s.

Output Specifications 208 V

UPS rating	10 kW with N+1 power module	15 kW with N+1 power module	20 kW with N+1 power module	25 kW with N+1 power module
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G)			
Output voltage regulation	Symmetrical load ± 1% Asymmetrical load ± 3%			
Overload capacity	150% for 1 minute (in normal operation) 125% for 10 minutes (in normal operation) 110% continuous (normal operation)[26] 125% for 1 minute (in battery operation) 125% continuous (bypass operation) 1000% for 100 milliseconds (bypass operation)			
Dynamic load response	± 5% after 2 milliseconds ± 1% after 50 milliseconds			
Output power factor	1			
Nominal output current (A)	29/28/26	43/42/39	58/56/52	73/70/66
Frequency regulation (Hz)	50/60 Hz bypass synchronized – 50/60 Hz ± 0.1% free-running			
Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6			
Total harmonic distortion (THDU)	<1% for linear load <5% for non-linear load	<1% for linear load <3% for non-linear load		
Load crest factor	2.5			
Load power factor	From 0.7 leading to 0.7 lagging without any derating			

UPS rating	30 kW	40 kW	50 kW
Voltage (V)	**200/208/220**	**200/208/220**	**200/208/220**
Connections	4-wire (L1, L2, L3, N, G)		
Output voltage regulation	Symmetrical load ± 1% Asymmetrical load ± 3%		
Overload capacity	150% for 1 minute (in normal operation) 125% for 10 minutes (in normal operation) 110% continuous (normal operation)[26] 125% for 1 minute (in battery operation) 125% continuous (bypass operation) 1000% for 100 milliseconds (bypass operation)		
Dynamic load response	± 5% after 2 milliseconds ± 1% after 50 milliseconds		
Output power factor	1		
Nominal output current (A)	87/83/79	115/111/105	144/139/131
Frequency regulation (Hz)	50/60 Hz bypass synchronized – 50/60 Hz ± 0.1% free-running		
Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6		
Total harmonic distortion (THDU)	<1% for linear load <5% for non-linear load		
Load crest factor	2.5		
Load power factor	From 0.7 leading to 0.7 lagging without any derating		

26. 110% continuous overload in normal operation at nominal mains voltage and at maximum 40 °C ambient temperature. Contact Schneider Electric to enable this function.

Battery Specifications 208 V

⚠ DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

Protection of the energy storage device: An overcurrent protective device must be located in close proximity to the energy storage device.

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

UPS rating	**10 kW with N+1 power module**	**15 kW with N+1 power module**	**20 kW with N+1 power module**	**25 kW with N+1 power module**	**30 kW**	**40 kW**	**50 kW**
Charging power in % of output power at 0-40% load	80%						
Charging power in % of output power at 100% load	20%						
Maximum charging power (at 0-40% load) (kW)	8	12	16	20	24	32	40
Maximum charging power (at 100% load) (kW)	2	3	4	5	6	8	10
Nominal battery voltage (VDC)	480						
Nominal float voltage (VDC)	545						
Maximum boost voltage (VDC)	572						
Temperature compensation (per cell)	-3.3mV/°C, for T ≥ 25 °C – 0mV/°C, for T < 25 °C						
End of discharge voltage (full load) (VDC)	384						
Battery current at full load and nominal battery voltage (A)	23	33	44	56	66	88	110
Battery current at full load and minimum battery voltage (A)	27	41	54	68	81	109	136
Ripple current	< 5% C20 (5 minute runtime)						
Battery test	Manual/automatic (selectable)						
Maximum short circuit rating	10 kA						

Recommended Cable Sizes 208 V

⚠⚠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 300 kcmil.

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

The maximum number of cable connections per busbar: Two on input/output/bypass busbars; Four on DC busbars; Six on N/G busbars.

NOTE: Overcurrent protection is to be provided by others.

Cable sizes in this manual are based on Table 310.15 (B)(16) of the National Electrical Code (NEC) with the following assertions:

- 90 °C (194 °F) conductors (75 °C (167 °F) termination)
- An ambient temperature of 30 °C (86 °F)
- Use of copper conductors

If the ambient temperature is greater than 30 °C (86 °F), larger conductors are to be selected in accordance with the correction factors of the NEC.

Equipment grounding conductors (EGC) are sized in accordance with NEC Article 250.122 and Table 250.122.

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

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

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.

UPS rating	10 kW with N+1 power module	15 kW with N +1 power module	20 kW with N +1 power module	25 kW with N +1 power module	30 kW	40 kW	50 kW
Input phases (AWG/kcmil)	8	4	3	2	1/0	3/0	4/0
Input EGC (AWG/kcmil)	10	8	8	6	6	6	4
Bypass/output phases (AWG/kcmil)	8	6	4	3	2	1/0	3/0
Bypass EGC/output EGC (AWG/kcmil)	10	10	8	8	6	6	6
Neutral (AWG/kcmil)	6	3	1	2/0	3/0	2 x 1/0	2 x 2/0
DC+/DC-(AWG/kcmil)	10	8	6	4	4	2	1/0
DC EGC (AWG/kcmil)	10	10	8	8	6	6	6

NOTE: Cable sizes are based on 80% rated circuit breakers for UIB, UOB, MBB, SSIB, and 100% rated circuit breaker for battery disconnect device(s).

Recommended Upstream Protection 208 V

⚠⚠DANGER

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- For parallel systems, instantaneous override (Ii) values must not be set higher than 1250 A. Place the label 885-92556 adjacent to the upstream circuit breaker to inform about the hazard.
- In parallel systems with three or more UPSs, a circuit breaker must be installed on the output of each UPS. The unit output disconnect device (UOB) instantaneous override (Ii) values must not be set higher than 1250 A.

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

⚠CAUTION

HAZARD OF FIRE

- Connect only to a circuit with the below specifications.
- Connect to a circuit provided with a 250 A branch circuit overcurrent protection maximum in accordance with the National Electrical Code, ANSI/NFPA70, and the Canadian Electrical Code, Part I, C22.1.

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

NOTE: Overcurrent protection is to be provided by others and marked with its function.

UPS rating	**10 kW with N+1 power module**		**15 kW with N+1 power module**		**20 kW with N+1 power module**		**25 kW with N+1 power module**	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	HJF36100U31X						HJF36150-U31X	HJF36100-U31X
Ir setting	50	40	80	60	100	80	125	100
Tr at 6 Ir setting	0.5							
Ii (x In) setting	1.5							

UPS rating	**30 kW**		**40 kW**		**50 kW**	
	Input	**Bypass**	**Input**	**Bypass**	**Input**	**Bypass**
Breaker type	HJF36150U31X		JJF36250U31X	HJF36150U31X	JJF36250U31X	
Ir setting	150	110	200	150	250	200
Tr at 6 Ir setting	0.5					
Ii (x In) setting	1.5					

Torque Specifications

Bolt size	Torque
M4	1.7 Nm (1.25 lb-ft / 15 lb-in)
M5	2.2 Nm (1.62 lb-ft / 19.5 lb-in)
M6	5 Nm (3.69 lb-ft / 44.3 lb-in)
M8	17.5 Nm (12.91 lb-ft / 154.9 lb-in)
M10	30 Nm (22 lb-ft / 194.7 lb-in)
M12	50 Nm (36.87 lb-ft / 442.5 lb-in)

Environment

	Operating	Storage
Temperature	0 °C to 40 °C (32 °F to 104 °F)	-15 °C to 40 °C (5 °F to 104 °F) for systems with batteries.
Relative humidity	5 - 95% non-condensing	10 - 80% non-condensing
Elevation	Designed for operation in 0-3000 m (0-10000 feet) elevation. Power derating required from 1000-3000 m (3300-10000 feet): Up to 1000 m (3300 feet): 1.000 Up to 1500 m (5000 feet): 0.975 Up to 2000 m (6600 feet): 0.950 Up to 2500 m (8300 feet): 0.925 Up to 3000 m (10000 feet): 0.900	
Audible noise one meter (three feet) from unit	480 V 20-60 kW: 49 dB at 70% load, 54 dB at 100% load 480 V 80-100 kW: 57 dB at 70% load, 65 dB at 100% load 208 V 10-30 kW: 49 dB at 70% load, 54 dB at 100% load 208 V 40-50 kW: 57 dB at 70% load, 65 dB at 100% load	
Protection class	IP20	
Color	RAL 9003, gloss level 85%	

Heat Dissipation in BTU/hr

480 V UPS

Normal Operation

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	1301	2205	2566	2718
50% load	1696	2890	3319	3781
75% load	2022	3535	4169	4901
100% load	2407	4189	5035	6115

Normal Operation

UPS rating	60 kW	80 kW	100 kW
25% load	2542	3341	3788
50% load	3935	5056	6077
75% load	5509	6969	8718
100% load	7370	9229	12103

ECO Mode

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	785	960	1071	1042
50% load	842	1068	1155	1187
75% load	922	1153	1289	1313
100% load	979	1267	1439	1501

ECO Mode

UPS rating	60 kW	80 kW	100 kW
25% load	990	1123	1190
50% load	1188	1327	1490
75% load	1419	1631	1919
100% load	1687	1988	2471

eConversion

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	947	1692	1635	1633
50% load	1000	1707	1742	1757
75% load	1036	1792	1814	1890
100% load	1101	1814	1979	2099

eConversion

UPS rating	60 kW	80 kW	100 kW
25% load	1415	1749	1790
50% load	1558	1971	2112
75% load	1647	2303	2560
100% load	1862	2641	3053

Battery Operation

UPS rating	20 kW with N+1 power module	30 kW with N+1 power module	40 kW with N+1 power module	50 kW with N+1 power module
25% load	1405	2167	2400	2632
50% load	1836	2865	3330	3795
75% load	2267	3562	4260	4958
100% load	2697	4260	5191	6122

Battery Operation

UPS rating	60 kW	80 kW	100 kW
25% load	2527	3203	3647
50% load	3900	5089	6141
75% load	5463	7266	9090
100% load	7217	9734	12493

208 V UPS

10 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	200	208	220	200	208	220
25% load	793	802	804	748	728	726
50% load	1055	1049	1041	781	779	764
75% load	1389	1362	1326	801	793	782
100% load	1781	1734	1669	878	864	844

10 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	721	706	707	955	953	942
50% load	727	724	727	1258	1242	1210
75% load	808	802	792	1636	1601	1543
100% load	891	877	858	2091	2031	1941

15 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1243	1252	1268	894	898	894
50% load	1628	1623	1621	948	941	927
75% load	2084	2041	2034	1061	1047	1028
100% load	2556	2513	2476	1186	1162	1127

15 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1052	1059	1063	1307	1290	1277
50% load	1053	1034	1022	1779	1746	1707
75% load	1158	1164	1141	2260	2210	2143
100% load	1293	1284	1235	2752	2682	2585

20 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1397	1389	1394	951	934	916
50% load	1927	1910	1906	1020	1012	994
75% load	2556	2513	2476	1186	1162	1127
100% load	3323	3234	3149	1383	1350	1304

20 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1084	1083	1099	1463	1441	1420
50% load	1201	1190	1174	2099	2055	1997
75% load	1293	1284	1235	2752	2682	2585
100% load	1487	1457	1405	3423	3323	3185

25 kW with N+1 power module	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1473	1481	1491	963	954	944
50% load	2237	2197	2177	1096	1076	1049
75% load	3117	3045	2973	1336	1299	1253
100% load	4187	4049	3898	1617	1564	1493

25 kW with N+1 power module	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1114	1114	1108	1620	1593	1563
50% load	1285	1276	1229	2423	2366	2290
75% load	1441	1406	1369	3254	3162	3034
100% load	1637	1627	1597	4112	3978	3795

30 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1881	1854	1797	928	918	904
50% load	3067	2955	2804	1100	1076	1047
75% load	4753	4510	4191	1417	1370	1317
100% load	6948	6526	5948	1779	1718	1636

30 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	933	957	901	1608	1576	1566
50% load	1199	1181	1148	2593	2513	2441
75% load	1490	1463	1412	3752	3607	3455
100% load	1857	1802	1727	5084	4859	4610

40 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	2449	2396	1908	1003	994	979
50% load	4075	3897	3161	1370	1323	1274
75% load	6336	5082	4829	1850	1771	1680
100% load	9308	7428	6927	2435	2354	2189

40 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1197	1194	1304	2024	1948	1910
50% load	1516	1472	1448	3366	3291	3141
75% load	1958	1906	1838	4936	4711	4488
100% load	2530	2443	2311	6731	6431	6133

50 kW	Normal operation			ECO mode		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	2806	2735	2181	1172	1140	1116
50% load	5117	4093	3936	1597	1529	1470
75% load	8491	6794	6377	2292	2179	2059
100% load	13160	10339	9495	3173	3029	2825

50 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
25% load	1194	1209	1193	2325	2270	2196
50% load	1730	1652	1643	4121	3985	3795

50 kW	eConversion			Battery operation		
Voltage (V)	**200**	**208**	**220**	**200**	**208**	**220**
75% load	2396	2300	2184	6275	6024	5683
100% load	3268	3128	2908	8788	8385	7862

Heat Dissipation for Maintenance Bypass Cabinet with Transformer in BTU/hr

Commercial reference	GVSBPOT100T
100% load	10600

UPS Shipping Weights and Dimensions

UPS rating	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
20-50 kW UPS 480 V with N+1 power module*	250 (551)	2082 (81.96)	755 (29.72)	1010 (39.76)
60-100 kW UPS 480 V without preinstalled battery strings*	250 (551)	2082 (81.96)	755 (29.72)	1010 (39.76)
60 kW UPS 480 V with three battery strings	690 (1521)	2082 (81.96)	755 (29.72)	1010 (39.76)
80-100 kW UPS 480 V with three battery strings	705 (1554)	2082 (81.96)	755 (29.72)	1010 (39.76)
10-25 kW UPS 208 V with N+1 power module*	250 (551)	2082 (81.96)	755 (29.72)	1010 (39.76)
30-50 kW UPS 208 V without preinstalled battery strings*	250 (551)	2082 (81.96)	755 (29.72)	1010 (39.76)
30 kW UPS 208 V with three battery strings	690 (1521)	2082 (81.96)	755 (29.72)	1010 (39.76)
40-50 kW UPS 208 V with three battery strings	705 (1554)	2082 (81.96)	755 (29.72)	1010 (39.76)

NOTE: The UPS models marked with an * in the table above are shipped with no power modules preinstalled in the UPS and all power modules shipped separately. Battery strings are not included and must be bought separately.

Power Module Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVPM20KD	48 (106)	330 (12.99)	580 (22.83)	780 (30.70)
GVPM50KD	62 (137)	330 (12.99)	580 (22.83)	780 (30.70)

Modular Battery Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBTHU	33 (73)	180 (7.08)	150 (5.90)	800 (31.49)
GVSBTHULL	33 (73)	180 (7.08)	150 (5.90)	800 (31.49)

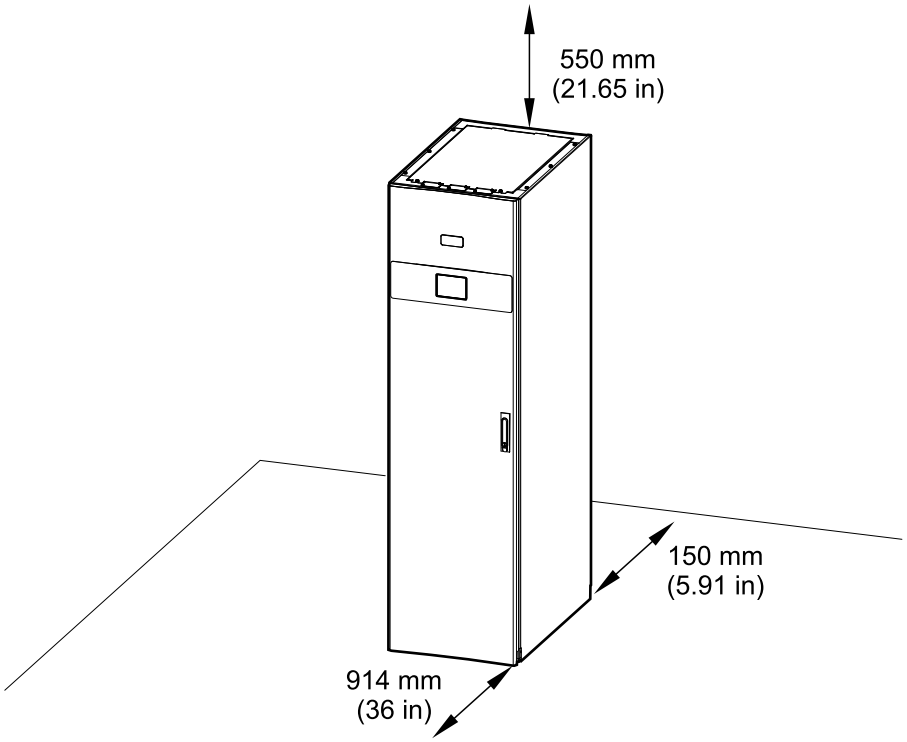
UPS Weights and Dimensions

UPS rating	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
20 kW UPS 480 V with three battery strings[27]	650 (1433)	1970 (77.56)	550 (21.65)	847 (33.35)
30-50 kW UPS 480 V with three battery strings[27]	680 (1500)	1970 (77.56)	550 (21.65)	847 (33.35)
60 kW UPS 480 V with three battery strings	665 (1466)	1970 (77.56)	550 (21.65)	847 (33.35)
80-100 kW UPS 480 V with three battery strings	680 (1500)	1970 (77.56)	550 (21.65)	847 (33.35)
10 kW UPS 208 V with three battery strings[27]	650 (1433)	1970 (77.56)	550 (21.65)	847 (33.35)
15-25 kW UPS 208 V with three battery strings[27]	680 (1500)	1970 (77.56)	550 (21.65)	847 (33.35)
30 kW UPS 208 V with three battery strings	665 (1466)	1970 (77.56)	550 (21.65)	847 (33.35)
40-50 kW UPS 208 V with three battery strings	680 (1500)	1970 (77.56)	550 (21.65)	847 (33.35)

NOTE: One battery module weighs approximately 32 kg (70.5 lbs).

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.



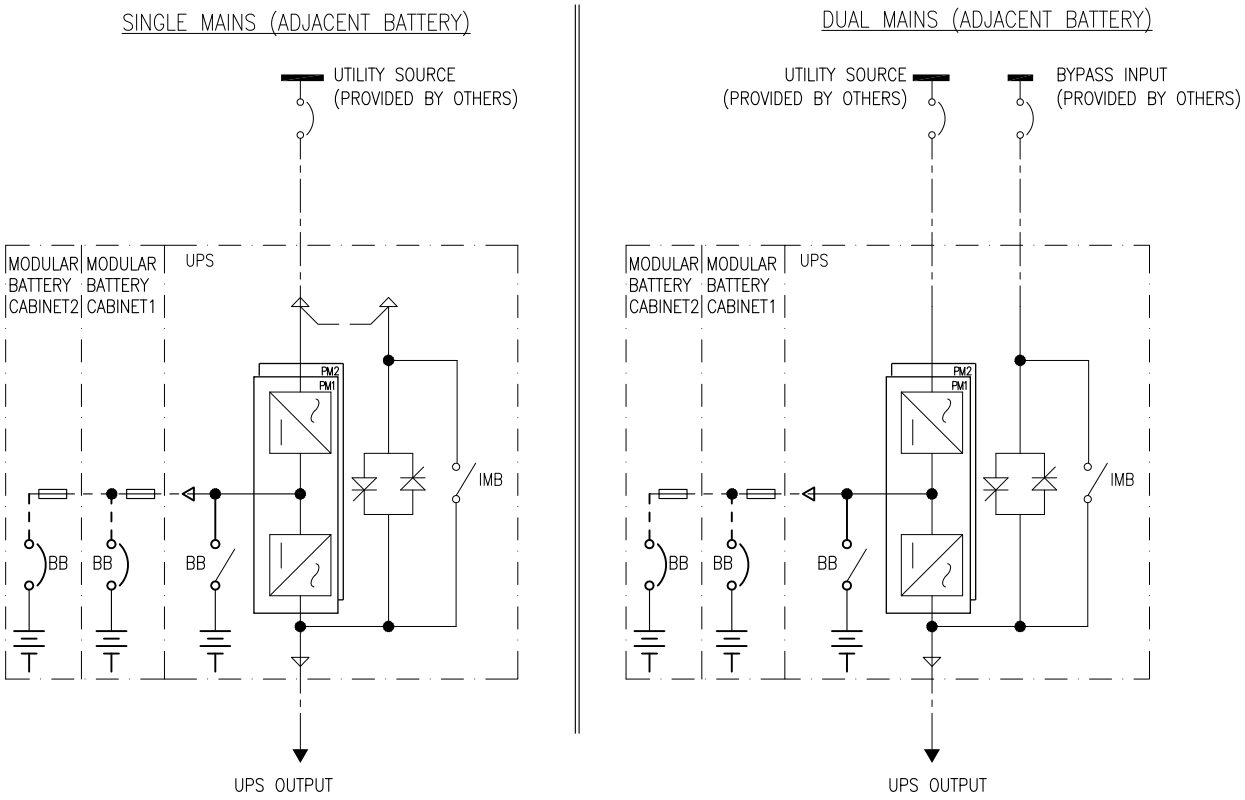
27. UPS model with N+1 power module.

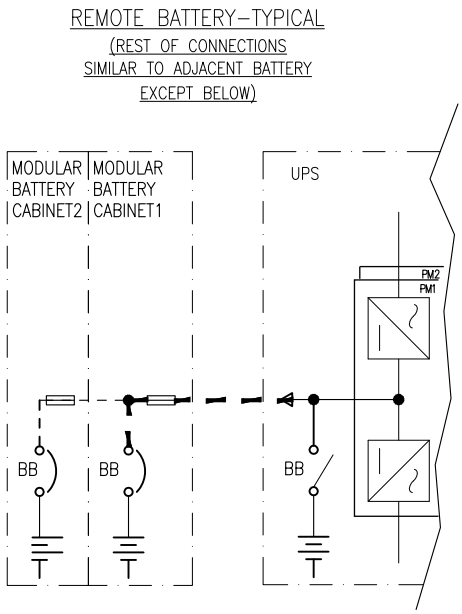
Drawings

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

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

20-50 kW (N+1 Power Module) and 60-100 kW 480 V UPS
10-25 kW (N+1 Power Module) and 30-50 kW 208 V UPS





Options

Configuration Options

- eConversion mode
- Compact design, high density technology, and modular architecture
- Internal battery modules
- Single or dual mains
- Up to 4+0 UPSs in parallel for capacity
- Up to 3+1 UPSs in parallel for redundancy
- Rear cable entry
- EcoStruxure IT compatible
- Generator compatible
- Touchscreen LCD
- Replacement of power module in any operation mode (Live Swap)[28]
- ECO mode

28. In all systems configured for Live Swap.

Hardware Options

See Weights and Dimensions for Options, page 140.

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

Power Module

- Power module 50 kW 480 V/25 kW 208 V (GVPM50KD)
- Power module 20 kW 480 V/10 kW 208 V (GVPM20KD)

Modular Battery Cabinet

Modular battery cabinet including battery circuit breaker.

- Modular battery cabinet for up to six smart modular battery strings (GVSMODBC6)
- Modular battery cabinet for up to nine smart modular battery strings (GVSMODBC9)

Maintenance Bypass Cabinet

Maintenance bypass cabinet for complete isolation of the UPS during service operations. Only for single UPS. Single mains as standard, can be installed as dual mains with optional SSIB kit GVSOPT031.

- 60-100 kW 480 V maintenance bypass cabinet (GVSBP100T)

Maintenance Bypass Cabinet with Output Transformer

Maintenance bypass cabinet with output transformer for complete isolation of the UPS during service operations. Only for single 480 V UPS.

- 60-100 kW, 480 V in, 208 V out, maintenance bypass cabinet with output transformer (GVSBPOT100T)

Maintenance Bypass Panel

Maintenance bypass panel for complete isolation of the UPS during service operations. Only for single UPS.

- 10-30 kW 208 V, 20-60 kW 480 V maintenance bypass panel (GVSBPSU60G-WP)
- 25-50 kW 208 V, 50-100 kW 480 V maintenance bypass panel (GVSBPSU100G-WP)

Remote Alarm Panel

- Remote alarm panel (GVSOPT036)

Optional Installation Kits

- Seismic kit for UPS (GVSOPT016)
- Parallel kit for UPS (GVSOPT006)
- NEMA 2 hole lug kit (GVSOPT020)
- SSIB kit for dual mains maintenance bypass cabinet (GVSOPT031)

- Live Swap kit for the UPS (GVSOPT039)

Optional Network Management Card

- Network Management Card LCES2 with Modbus, Ethernet and AUX sensors (AP9644)

Air Filter

- Air filter kit (GVSOPT014)

Battery Modules

9 Ah smart high capacity battery modules. This battery module type is delivered for UPS models with preinstalled battery strings.

- Galaxy VS 9 Ah Smart High Capacity Battery Module (GVSBTHU)
- Galaxy VS 9 Ah Smart Modular High Capacity Battery String (GVSBTH4)

9 Ah smart long-life high capacity battery modules. For this battery module type, select a UPS models without preinstalled battery strings.

- Galaxy VS 9 Ah Smart Long-Life High Capacity Battery Module (GVSBTHULL)
- Galaxy VS 9 Ah Smart Modular Long-Life High Capacity Battery String (GVSBTH4LL)

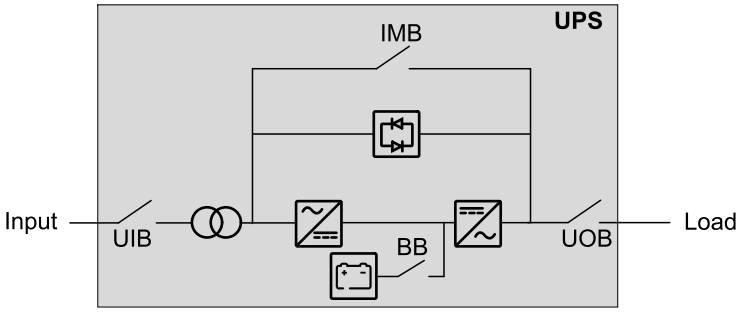
  NOTE: Always use the same battery module type in the UPS system. Do not mix different battery module types.

UPS with Input Isolation Transformer and Up to 3 Internal Battery Strings

Single System Overview

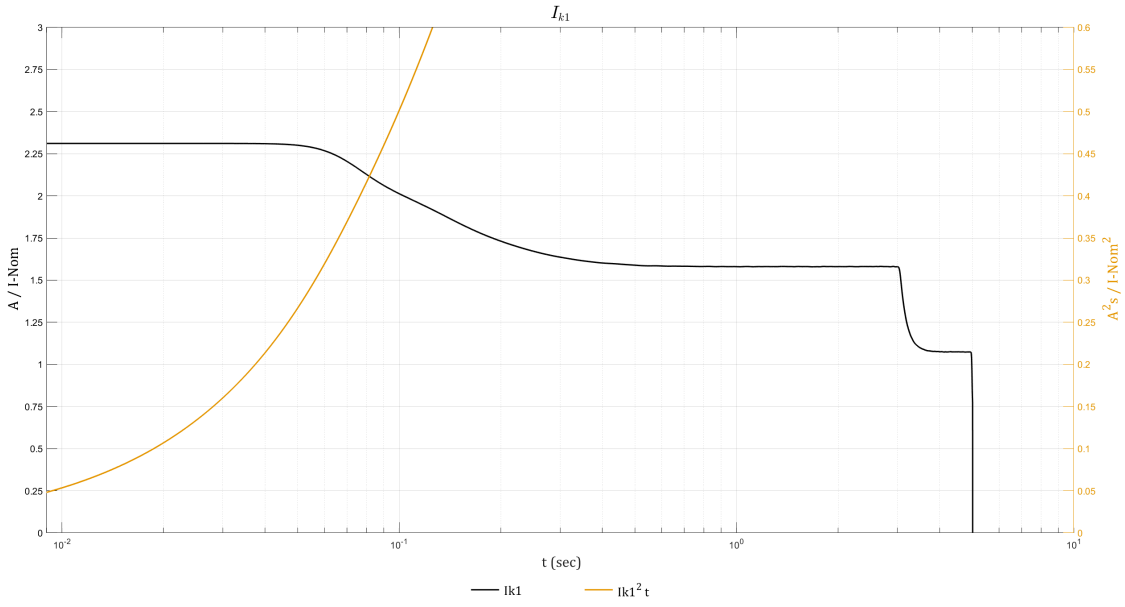
UIB	Unit input disconnect device
IMB	Internal maintenance disconnect device
UOB	Unit output disconnect device
BB	Battery disconnect device in UPS for internal batteries

NOTE: In Schneider Electric literature, 'disconnect device' is used as a generic term covering circuit breakers or switches as their position may vary depending on configuration. Details about the individual configuration are found in the electrical diagram and/or by reading the symbol on the front of each disconnect device.



Inverter Short Circuit Capabilities (Bypass not Available)

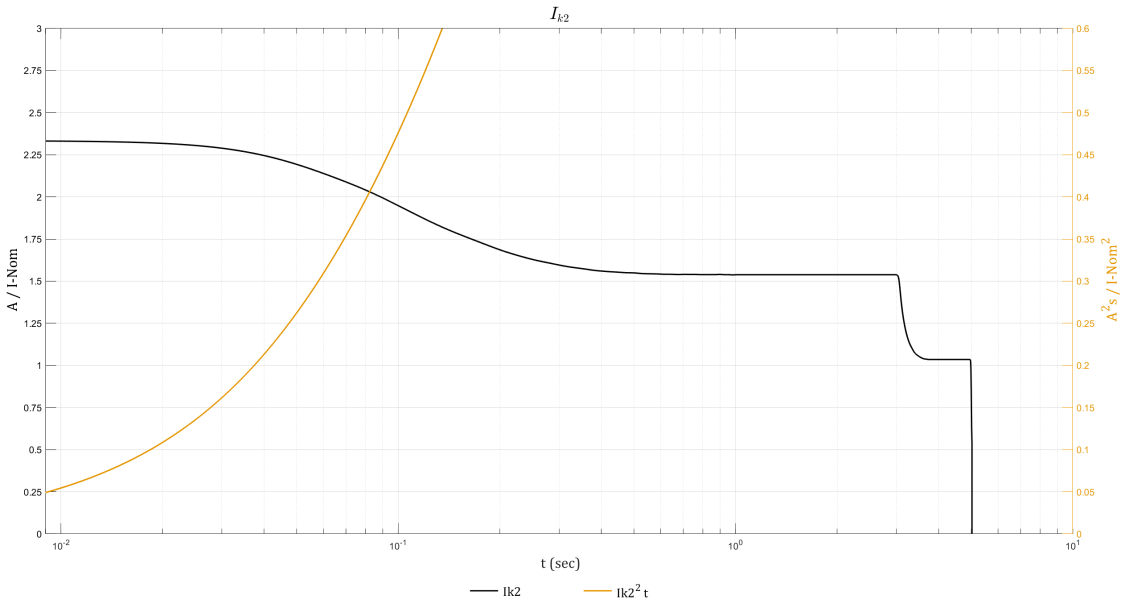
IK1 – Short Circuit between a Phase and Neutral



IK1 400 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	67 / 45	67 / 89	67 / 134	58 / 418	46 / 2411

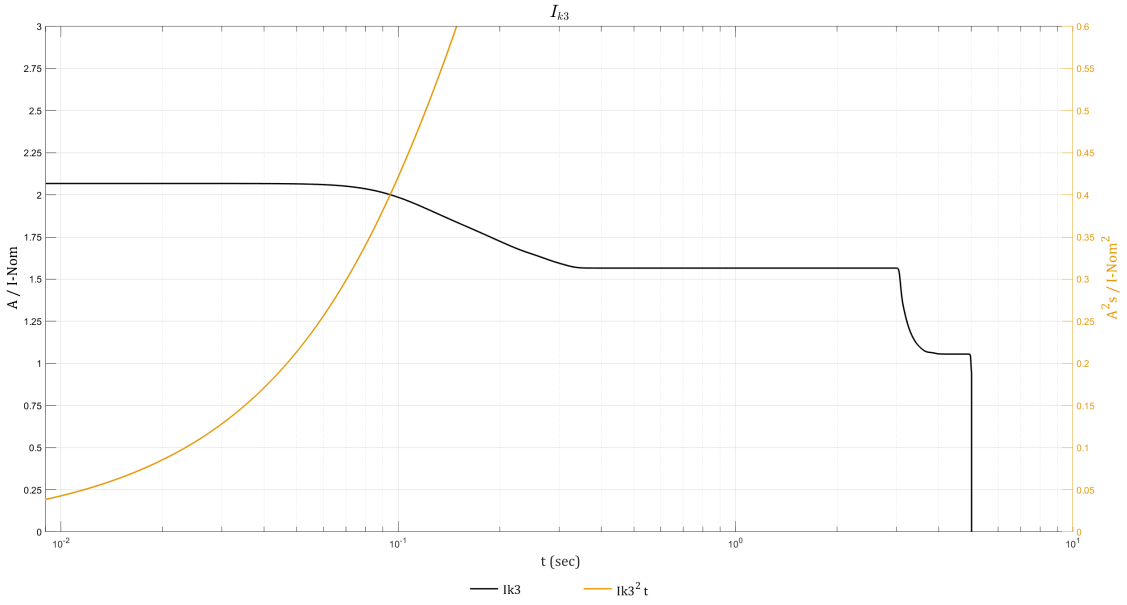
IK2 – Short Circuit between Two Phases



IK2 400 V

S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	67 / 45	67 / 90	67 / 135	56 / 397	44 / 2284

IK3 – Short Circuit between Three Phases



IK3 400 V

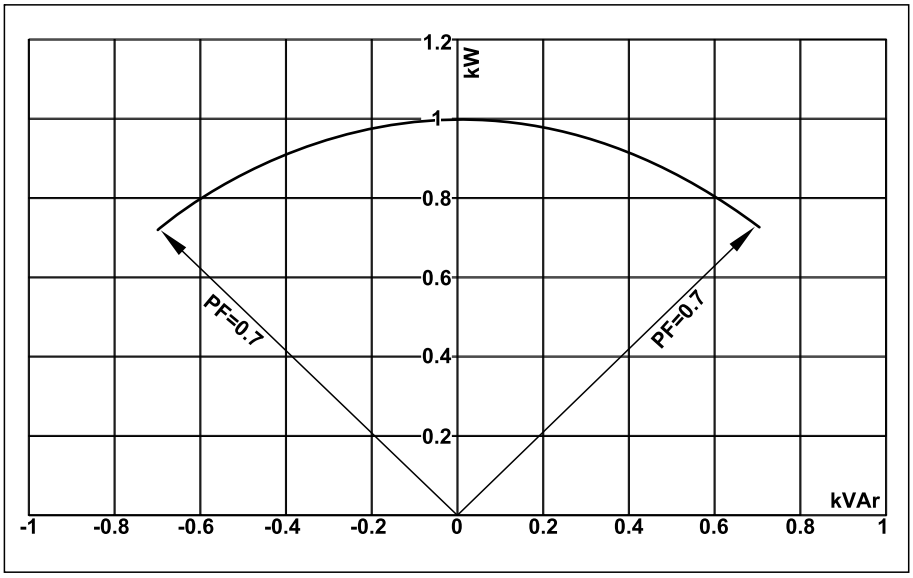
S [kVA]	10ms; I[A]/I²t [A²t]	20ms; I[A]/I²t [A²t]	30ms; I[A]/I²t [A²t]	100ms; I[A]/I²t [A²t]	1s; I[A]/I²t [A²t]
20	60 / 36	60 / 71	60 / 107	57 / 351	45 / 2294

Efficiency

20 kW	Normal operation	Battery operation
25% load	90.1%	92.4%
50% load	92.1%	94.9%
75% load	93.2%	95.8%
100% load	93.8%	96.2%

Derating Due to Load Power Factor

0.7 leading to 0.7 lagging without derating.

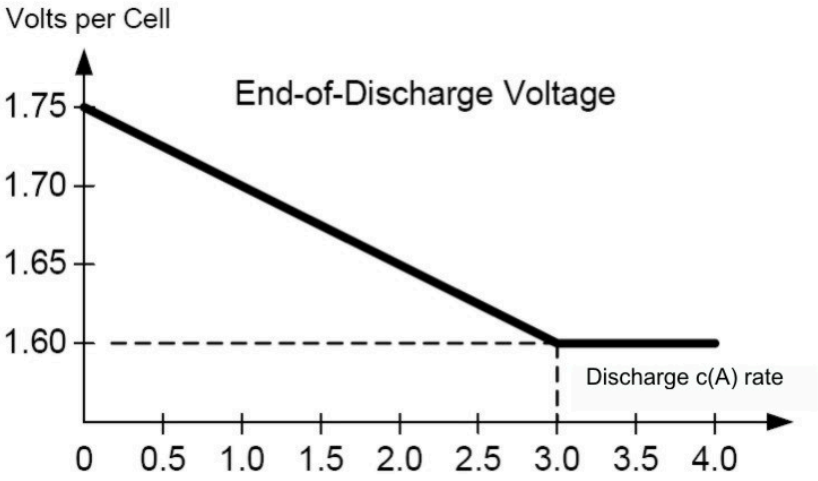


UPS rating	UPS output					
	Lagging			Leading		
PF=1	PF=0.7	PF=0.8	PF=0.9	PF=0.9	PF=0.8	PF=0.7
20 kVA/kW	20 kVA / 14 kW	20 kVA / 16 kW	20 kVA / 18 kW	20 kVA / 18 kW	20 kVA / 16 kW	20 kVA / 14 kW

Batteries

End of Discharge Voltage

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



Battery Voltage Window

	Boost 2.38 Vpc	Nominal 2.0 Vpc	Minimum 1.6 Vpc
Battery voltage (V)	571.2	480	384

Battery Runtimes in Minutes

NOTE: Runtimes are given at power factor 1 with 100% load.

NOTE: The 20 kW input isolation transformer is not active when the UPS is in battery operation. The potential runtimes can therefor exceed the time limitations in overload capacity of the UPS when in normal operation.

UPS rating Number of modular battery strings	20 kW	30 kW	40 kW	50 kW
1	NA	NA	NA	NA
2	11.0	6.0	NA	NA
3	18.5	10.5	7.3	5.2

Compliance

Safety	UL 1778 5th edition
EMC/EMI/RFI	FCC Part 15 Subpart B, Class A
Seismic	ICC-ES AC 156 (2015): OHSPD Pre-approved; Sds=1.54 g for z/h=1 and Sds=1.63 g for z/h=0; Ip= 1.5

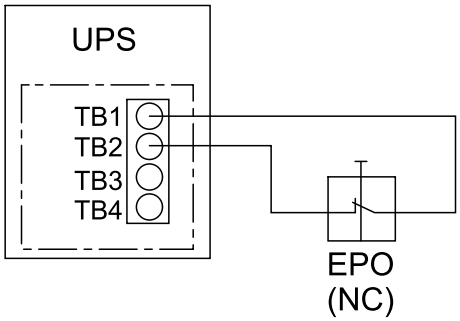
Communication and Management

Local area network	1 Gbps – 1 port as default
Modbus	Modbus (SCADA)
Output relays	4 x SELV preconfigured from factory for use with remote alarm panel (GVSOPT036). Can be reconfigured if no remote alarm panel is present in the installation.

Input contacts	3 x SELV configurable, 1 x SELV preconfigured from factory (input contact 1 reserved for input isolation transformer overtemperature)
Standard control panel	4.3 inch touchscreen display
Audible alarm	Yes
Emergency Power Off (EPO)	Normally Closed (NC), used Internal 24 VDC SELV
External switchgear	MBB
External synchronization	No
Battery monitoring	Available for modular batteries

EPO

EPO Configuration – Normally Closed (NC) Connection



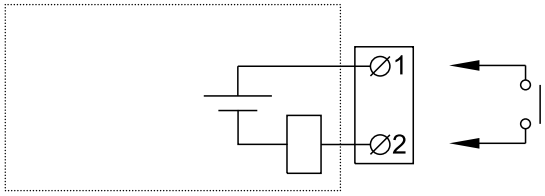
The EPO input supports 24 VDC.

NOTE: The default setting for the EPO activation is to turn off the inverter. If you want the EPO activation to transfer the UPS into forced static bypass operation instead, please contact Schneider Electric.

Configurable Input Contacts and Output Relays

Input Contacts

Four input contacts are available. Three input contacts can be configured to indicate a given event via the display. The input contacts support 24 VDC 10 mA. All circuits connected must have the same 0 V reference.

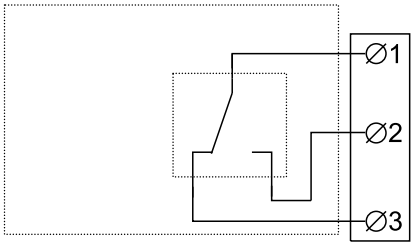


Name	Description	Location	Alarm text on UPS display
IN _1 (input contact 1)	Preconfigured input contact (reserved for input isolation transformer overtemperature)	640-4864 terminal J6616, 1-2	**Transformer temperature is too high**
IN _2 (input contact 2)	Configurable input contact	640-4864 terminal J6616, 3-4	

Name	Description	Location	Alarm text on UPS display
IN _3 (input contact 3)	Configurable input contact	640-4864 terminal J6616, 5-6	
IN _4 (input contact 4)	Configurable input contact	640-4864 terminal J6616, 7-8	

Output Relays

The output relays are preconfigured for use with the remote alarm panel GVSOPT036. If the remote alarm panel is not part of the installation, the output relays can be reconfigured for other functions – see the operation manual. The output relays support 24 VAC/VDC 1 A. All external circuitry must be fused with maximum 1 A fast acting fuses.



Name	Description	Location	Alarm text on UPS display	Corresponding lamp on remote alarm panel
OUT _1 (output relay 1)	Preconfigured output relay	640-4864 terminal J6617, 1-3	**UPS in normal operation**	UPS ONLINE
OUT _2 (output relay 2)	Preconfigured output relay	640-4864 terminal J6617, 4-6	**UPS common alarm**	UPS General Alarm
OUT _3 (output relay 3)	Preconfigured output relay	640-4864 terminal J6617, 7-9	**UPS in battery operation**	UPS on Battery
OUT _4 (output relay 4)	Preconfigured output relay	640-4864 terminal J6617, 10-12	**Battery voltage low**	UPS Low Battery

Specifications

Specifications for 20 kW UPS with Input Isolation Transformer and Internal Batteries

The UPS includes an input isolation transformer of 480 V In, 400 V Out. The UPS is designed for a continuous 20 kW load (transformer sized at 20 kW) and supports short-term peak loads up to 80 kW. The UPS protects medical equipment (e.g. X-ray, scanners) or other load equipment with similar short-time peak consumption.

Input 480 V	Connections	3-wire (L1, L2, L3, G)
	Input voltage range (V)	432-528
	Frequency (Hz)	60
	Nominal input current (A)	29
	Maximum input current (A)	34
	Input current limitation (A)	80
	Total harmonic distortion (THDI)	<6% at 100% load
	Input power factor	0.99 at 100% load
	Protection	Built-in backfeed protection and fuses
	Maximum short circuit rating	20 kA RMS
	Ramp-in	Programmable and adaptive 1-40 seconds
Output 400 V	Connections	4-wire (L1, L2, L3, N, G)
	Output voltage regulation	Symmetrical load ±1% Asymmetrical load ±3%
	Overload capacity	20 kW load: continuous in normal operation and battery operation **NOTE:** Overload capacities above 20 kW are given with load switching between 100 milliseconds ON and 200 milliseconds OFF. 30 kW load: 120 minutes in normal operation 40 kW load: 60 minutes in normal operation 50 kW load: 45 minutes in normal operation 60 kW load: 30 minutes in normal operation 70 kW load: 20 minutes in normal operation 80 kW load: 5 minutes in normal operation
	Dynamic load response	± 5%
	Output power factor	1
	Nominal output current (A)	29
	Output frequency (Hz)	60 Hz bypass synchronized – 60 Hz ±0.1% free-running
	Synchronized slew rate (Hz/sec)	Programmable to 0.25, 0.5, 1, 2, 4, 6
	Total harmonic distortion (THDU)	<1% for linear load <5% for non-linear load
	Load crest factor	2.5
	Load power factor	0.7 leading to 0.7 lagging

Battery 400 V	Charging power in % of output power at 0-40% load	80%
	Charging power in % of output power at 100% load	20%
	Maximum charging power (at 0-40% load) (kW)	16
	Maximum charging power (at 100% load) (kW)	4
	Nominal battery voltage (VDC)	480
	Nominal float voltage (VDC)	545
	Maximum boost voltage (VDC)	572
	Temperature compensation (per cell)	-3.3mV/°C, for T ≥ 25 °C – 0mV/°C, for T < 25 °C
	End of discharge voltage (full load) (VDC)	384
	Battery current at full load and nominal battery voltage (A)	43
	Battery current at full load and minimum battery voltage (A)	54
	Ripple current	< 5% C20 (5-minute runtime)
	Battery test	Manual/automatic (selectable)
	Maximum short circuit rating	10 kA

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 2 AWG.

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

Cable sizes in this manual are based on Table 310.15 (B)(16) of the National Electrical Code (NEC) with the following assertions:

- 90 °C (194 °F) conductors (75 °C (167 °F) termination)
- An ambient temperature of 30 °C (86 °F)
- Use of copper conductors
- Installation method C

If the ambient temperature is greater than 30 °C (86 °F), larger conductors are to be selected in accordance with the correction factors of the NEC.

Equipment grounding conductors are sized in accordance with NEC Article 250.122 and Table 250.122.

Input/output phases	2 AWG
Input/output EGC	2 AWG
Neutral	2 AWG

Recommended Bolt and Lug Sizes

Cable size	Bolt size	Cable lug type	Crimping tool	Die
2 AWG	M8 x 25	LCA2-56-Q	CT-720	CD-720-1 Brown P33

Recommended Upstream Protection

⚠CAUTION

HAZARD OF FIRE

- Connect only to a circuit with the below specifications.
- Connect to a circuit provided with a 125 A branch circuit overcurrent protection maximum in accordance with the National Electrical Code, ANSI/NFPA70, and the Canadian Electrical Code, Part I, C22.1.

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

UPS rating	**20 kW**
Breaker type	HDL36125

Torque Specifications

Bolt size	**Torque**
M4	1.7 Nm (1.25 lb-ft / 15 lb-in)
M5	2.2 Nm (1.62 lb-ft / 19.5 lb-in)
M6	5 Nm (3.69 lb-ft / 44.3 lb-in)
M8	17.5 Nm (12.91 lb-ft / 154.9 lb-in)
M10	30 Nm (22 lb-ft / 194.7 lb-in)
M12	50 Nm (36.87 lb-ft / 442.5 lb-in)

Environment

	Operating	Storage
Temperature	0 °C to 40 °C (32 °F to 104 °F)	-15 °C to 40 °C (5 °F to 104 °F) for systems with batteries.
Relative humidity	0 - 95% non-condensing	10 - 80% non-condensing
Elevation	Designed for operation in 0-3000 m (0-10000 feet) elevation. Power derating required from 1000-3000 m (3300-10000 feet): Up to 1000 m (3300 feet): 1.000 Up to 1500 m (5000 feet): 0.975 Up to 2000 m (6600 feet): 0.950 Up to 2500 m (8300 feet): 0.925 Up to 3000 m (10000 feet): 0.900	
Audible noise one meter (three feet) from unit	57 dB at 70% load, 65 dB at 100% load	
Protection class	IP20	
Color	RAL 9003, gloss level 85%	

Heat Dissipation in BTU/hr

20 kW	Normal operation	Battery operation
25% load	<3000	1405
50% load	<3000	1836
75% load	<3000	2267
100% load	<3000	2697

UPS Shipping Weights and Dimensions

UPS rating	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
20 kW UPS with input isolation transformer and three battery strings	902 (1989)	2082 (81.96)	755 (29.72)	1010 (39.76)

Modular Battery Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBTHULL	33 (73)	180 (7.08)	150 (5.90)	800 (31.49)

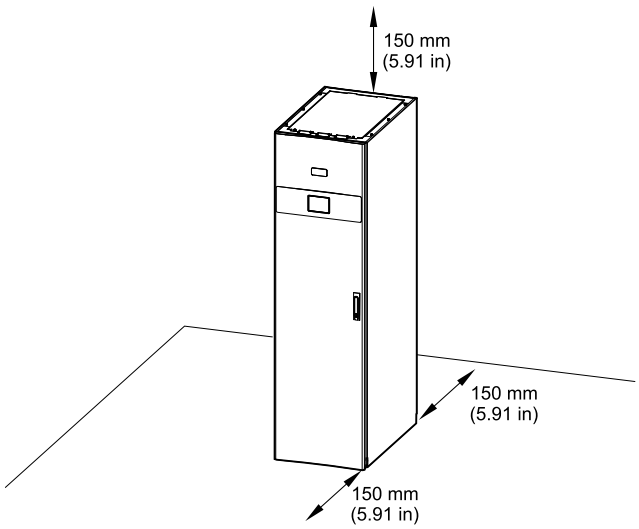
UPS Weights and Dimensions

UPS rating	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
20 kW UPS with input isolation transformer and three battery strings	877 (1933)	1970 (77.56)	550 (21.65)	847 (33.35)

NOTE: One battery module weighs approximately 32 kg (70.5 lbs).

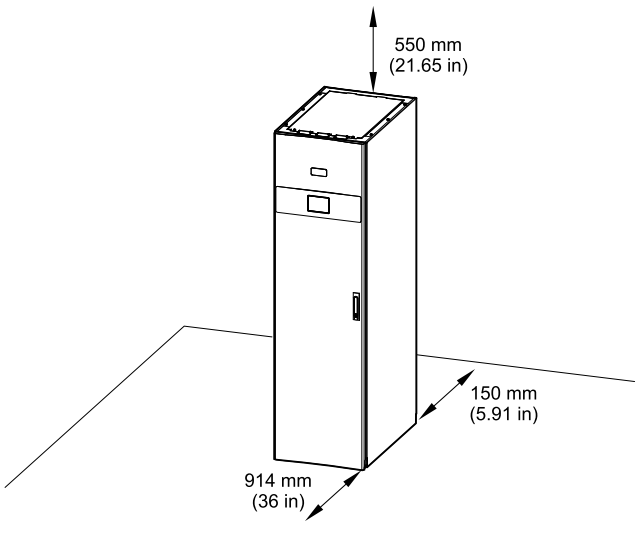
Clearance

Required Ventilation Clearance



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

Recommended Installation and Service Clearance



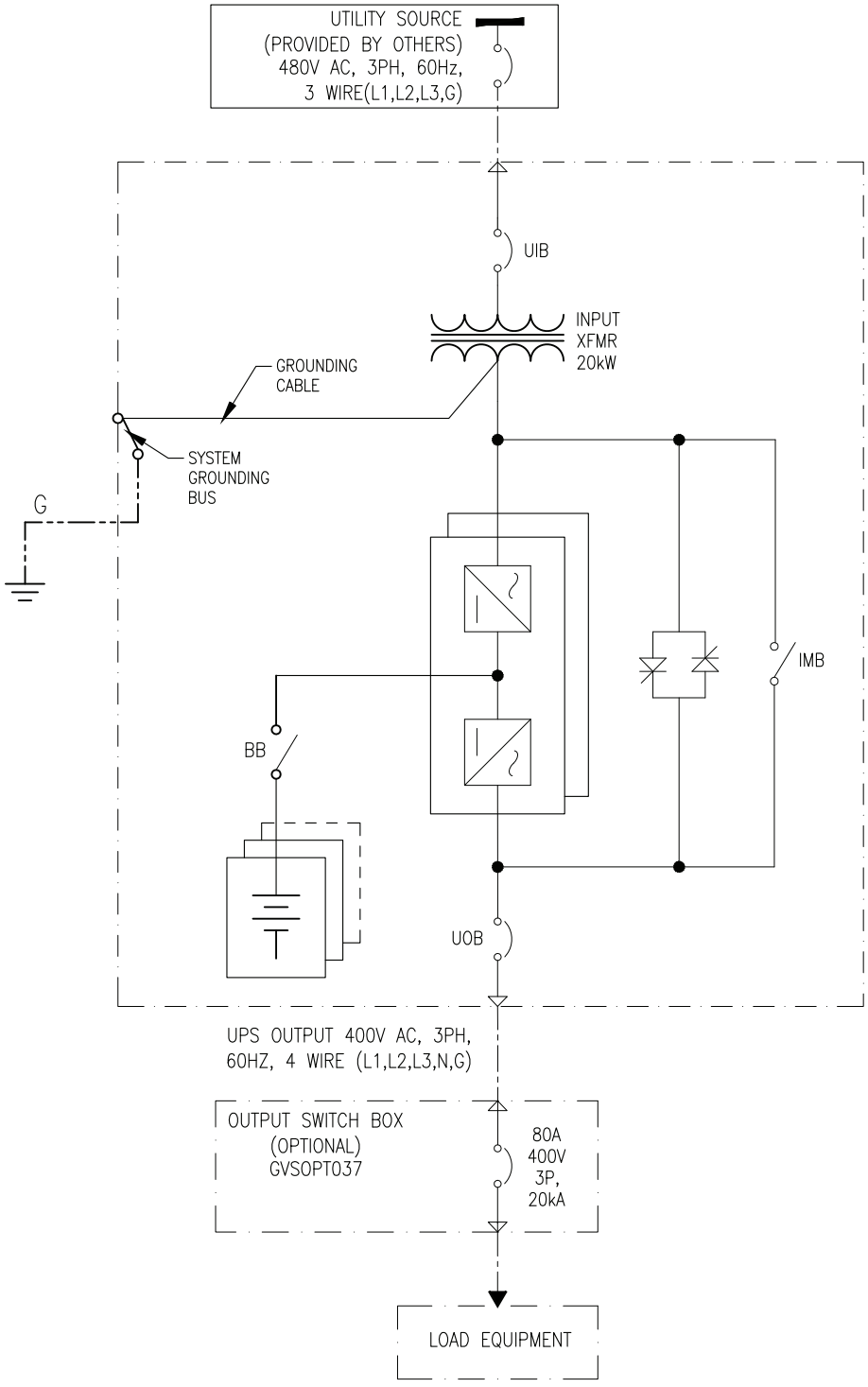
NOTE: These clearance dimensions are published for installation and service access only. Consult with the local safety codes and standards for additional requirements in your local area.

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.

20 kW UPS with Input Isolation Transformer (480 V In 400 V Out)



Options

Configuration Options

- Compact design, high density technology, and modular architecture
- Internal battery modules
- Top or bottom cable entry
- EcoStruxure IT compatible
- Generator compatible
- Touchscreen LCD

Hardware Options

See Weights and Dimensions for Options, page 140.

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

Power Module

- Power module 50 kW 480 V (GVPM50KD)

Remote Alarm Panel

- Remote alarm panel (GVSOPT036)

Output Switch Box

- Output switch box with 80 A switch (GVSOPT037)

Optional Installation Kits

- Seismic kit for UPS (GVSOPT016)

Optional Network Management Card

- Network Management Card LCES2 with Modbus, Ethernet and AUX sensors (AP9644)

Air Filter

- Air filter kit (GVSOPT014)

Battery Modules

9 Ah smart long-life high capacity battery modules.

- Galaxy VS 9 Ah Smart Long-Life High Capacity Battery Module (GVSBTHULL)
- Galaxy VS 9 Ah Smart Modular Long-Life High Capacity Battery String (GVSBTH4LL)

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.

Maintenance Bypass Cabinet Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBPSU80G	125 (275.58)	1660 (65.35)	635 (25)	990 (38.98)
GVSBP100T	210 (462.97)	2096 (82.51)	818.5 (32.22)	1008 (39.68)

Maintenance Bypass Cabinet Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBPSU80G	110 (242.51)	1485 (58.46)	318 (12.52)	850 (33.46)
GVSBP100T	195 (429.9)	1970 (77.56)	600 (23.62)	847 (33.35)

Maintenance Bypass Cabinet with Transformer Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBPIT25B	425 (936.97)	1670 (65.75)	800 (31.5)	990 (39.98)
GVSBPOT50B	560 (1234.59)	1670 (65.75)	800 (31.5)	990 (39.98)
GVSBPOT100T	725 (1598.35)	2096 (82.51)	818.5 (32.22)	1008 (39.68)

Maintenance Bypass Cabinet with Transformer Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBPIT25B	395 (870.83)	1485 (58.46)	600 (23.62)	836 (32.91)
GVSBPOT50B	530 (1168.45)	1485 (58.46)	600 (23.62)	836 (32.91)
GVSBPOT100T	710 (1565.28)	1970 (77.56)	600 (23.62)	847 (33.35)

Maintenance Bypass Panel Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in) [29]	Width mm (in)	Depth mm (in) [29]
GVSBPSU60G-WP	40 (88.18)	480 (18.89)	800 (31.49)	1200 (47.24)
GVSBPSU100G-WP	100 (220.46)	580 (22.83)	1000 (39.37)	1200 (47.24)

Maintenance Bypass Panel Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSBPSU60G-WP	28 (61.73)	650 (25.59)	600 (23.62)	220 (8.66)
GVSBPSU100G-WP	84 (185.19)	1000 (39.37)	850 (33.46)	280 (11.02)

Modular Battery Cabinet Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSMODBC6	175 (385.8)	1664 (65.51)	635 (25)	990 (38.97)
GVSMODBC9	206 (454.15)	2082 (81.96)	755 (29.72)	1010 (39.76)

NOTE: The modular battery cabinet is shipped without battery strings installed.

Modular Battery Cabinet Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSMODBC6 – Empty – With six battery strings	 145 (319.67) 913 (2012.82)	1485 (58.46)	521 (20.51)	847 (33.35)
GVSMODBC9 – Empty – With nine battery strings	 186 (410) 1338 (2950)	1970 (77.56)	550 (21.65)	847 (33.35)

NOTE: One battery module weighs approximately 32 kg (70.5 lbs).

Output Switch Box Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSOPT037	19 (42)	763 (30.03)	440 (17.32)	366 (14.40)

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

Output Switch Box Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSOPT037	14 (31)	600 (23.62)	300 (11.81)	160 (6.29)

Remote Alarm Panel Shipping Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSOPT036	19 (42)	581 (22.87)	468 (18.42)	366 (14.40)

Remote Alarm Panel Weights and Dimensions

Commercial reference	Weight kg (lbs)	Height mm (in)	Width mm (in)	Depth mm (in)
GVSOPT036	14 (31)	400 (15.74)	300 (11.81)	178 (7.00)

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