



## ИБП Schneider Electric Galaxy VM - технические спецификации. Юниджет

Постоянная ссылка на страницу: <https://www.uni-jet.com/catalog/ibp/on-line-ibp/schneider-electric-galaxy-vm/>



# Galaxy VM

**160–200 kVA 400 V**

## Technical Specifications

GVMSB160KHS, GVMSB200KHS, GVMPB160KHS, GVMPB200KHS

02/2017



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

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# Important Safety Instructions — SAVE THESE INSTRUCTIONS

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



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



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

## **DANGER**

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

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

## **WARNING**

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

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

## **CAUTION**

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

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

## **NOTICE**

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

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

## Please Note

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

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

## Safety Precautions

### **⚠ DANGER**

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

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

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

### **⚠ DANGER**

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

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

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

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

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

### **⚠ DANGER**

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

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

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

## **⚠ DANGER**

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

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

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

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

## **NOTICE**

### **RISK OF OVERHEATING**

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

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

## **NOTICE**

### **RISK OF EQUIPMENT DAMAGE**

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

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

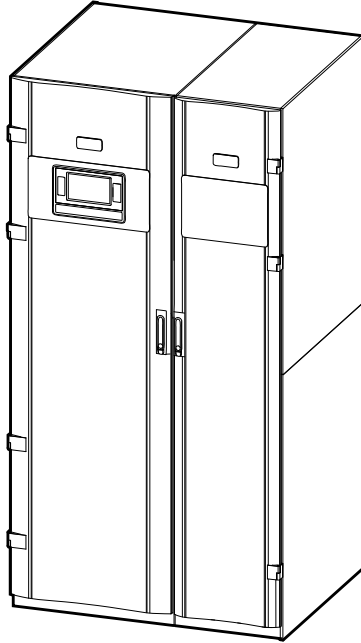


# Technical Data

## Galaxy VM System Overview

### UPS

Front View of UPS



The UPS is the core in each Galaxy VM System and consists of two cabinets:

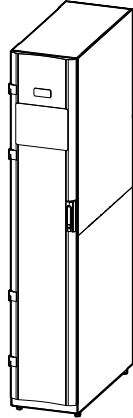
- To the right an I/O cabinet for field wiring and containing disconnection devices.
- To the left a power cabinet containing power electronics and the user interface.

## Battery Options

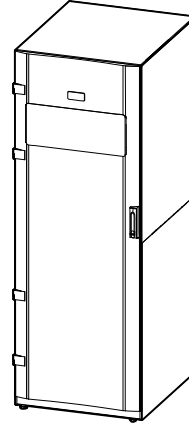
### Modular Battery Cabinets

The modular battery cabinet is available in two sizes:

**Narrow Modular Battery Cabinet**



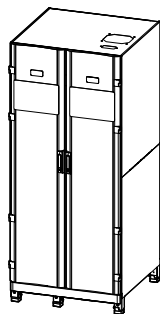
**Wide Modular Battery Cabinet**



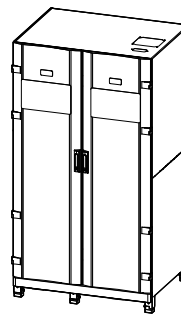
### Classic Battery Cabinets

The classic battery cabinet is available in two sizes:

**Narrow Classic Battery Cabinet**



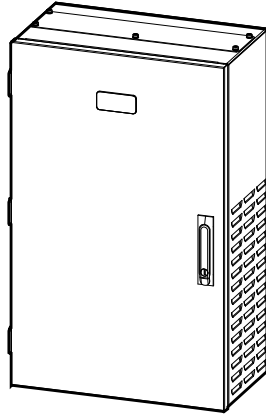
**Wide Classic Battery Cabinet**



## Battery Breaker Box

The battery breaker box provides protection in installations with customer-specific battery solutions.

### Battery Breaker Box



## Model List

### UPS Model List

- 160 kVA UPS (GVMSB160KHS)
- 200 kVA UPS (GVMSB200KHS)
- 160 kVA parallel UPS (GVMPB160KHS)
- 200 kVA parallel UPS (GVMPB200KHS)

### Modular Battery Cabinets Model List

- Modular battery cabinet wide up to 12 battery module strings (GVMMODBCWS)
- Modular battery cabinet narrow up to 6 battery module strings (GVMMODBCNS)

### Classic Battery Cabinet Model List

Solutions available in Europe, Middle East, and Africa:

- Classic battery solution with 1 x wide A cabinet (GVMCBCWEA)
- Classic battery solution with 2 x narrow C cabinet (GVMCBC2NEC)
- Classic battery solution with 2 x wide C cabinet (GVMCBC2WEC)
- Classic battery solution with 2 x wide D cabinet (GVMCBC2WED)
- Classic battery solution with 3 x wide C cabinet (GVMCBC3WEC)
- Classic battery solution with 3 x wide D cabinet (GVMCBC3WED)
- Classic battery cabinet wide empty (GVMCBCABWEL)

Solution available in Japan and India:

- Classic battery cabinet wide empty (GVMCBCABWEL)

### Battery Breaker Box

Solutions available in Europe, Middle East, and Africa:

- Galaxy VM Battery Breaker Box 630 A (GVMBBB630IEC)
- Galaxy VM Battery Breaker Box 630 A (GVMBBB630EL)

Solution available in Japan and India:

- Galaxy VM Battery Breaker Box 630 A (GVMBBB630EL)

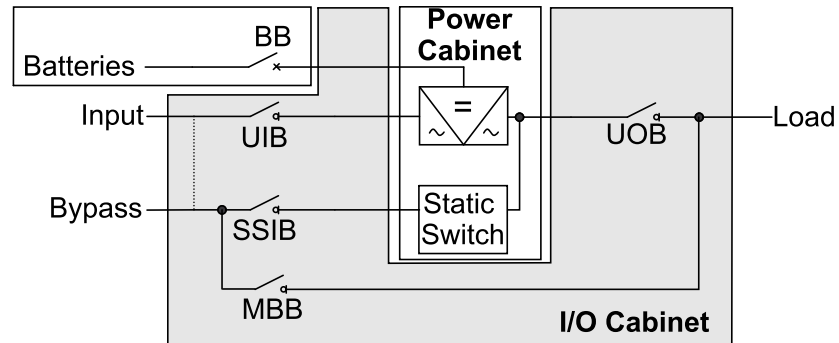
### System Bypass Cabinet

- Galaxy VM System Bypass Cabinet (GVMSBC640KHEL)

## Overview of Configurations

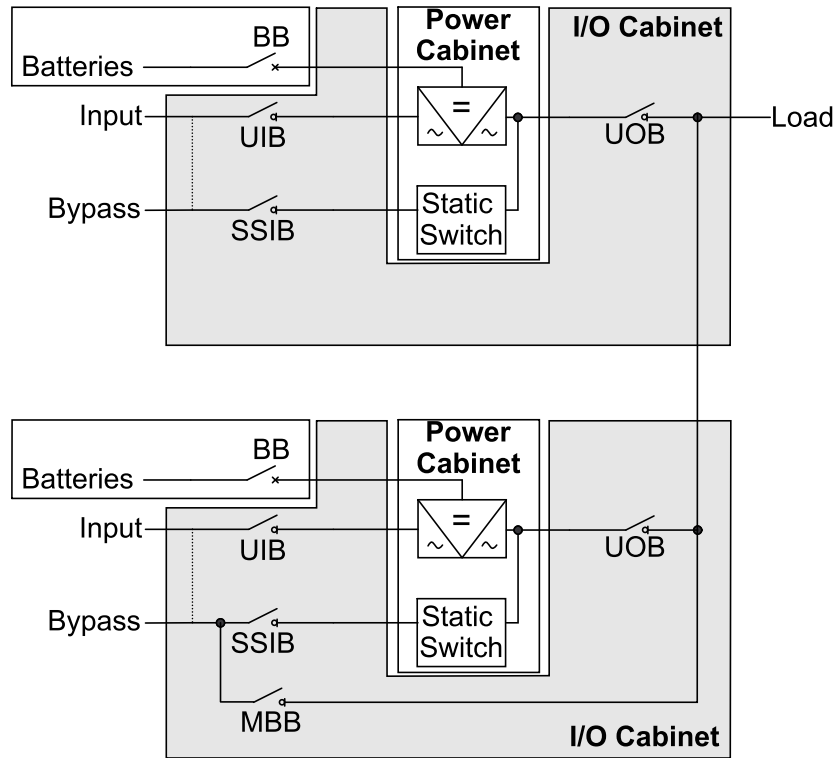
UIB	Unit input switch
SSIB	Static switch input switch
BB	Battery breaker
MBB	Maintenance bypass breaker
UOB	Unit output switch
SIB	System isolation breaker

### Single System



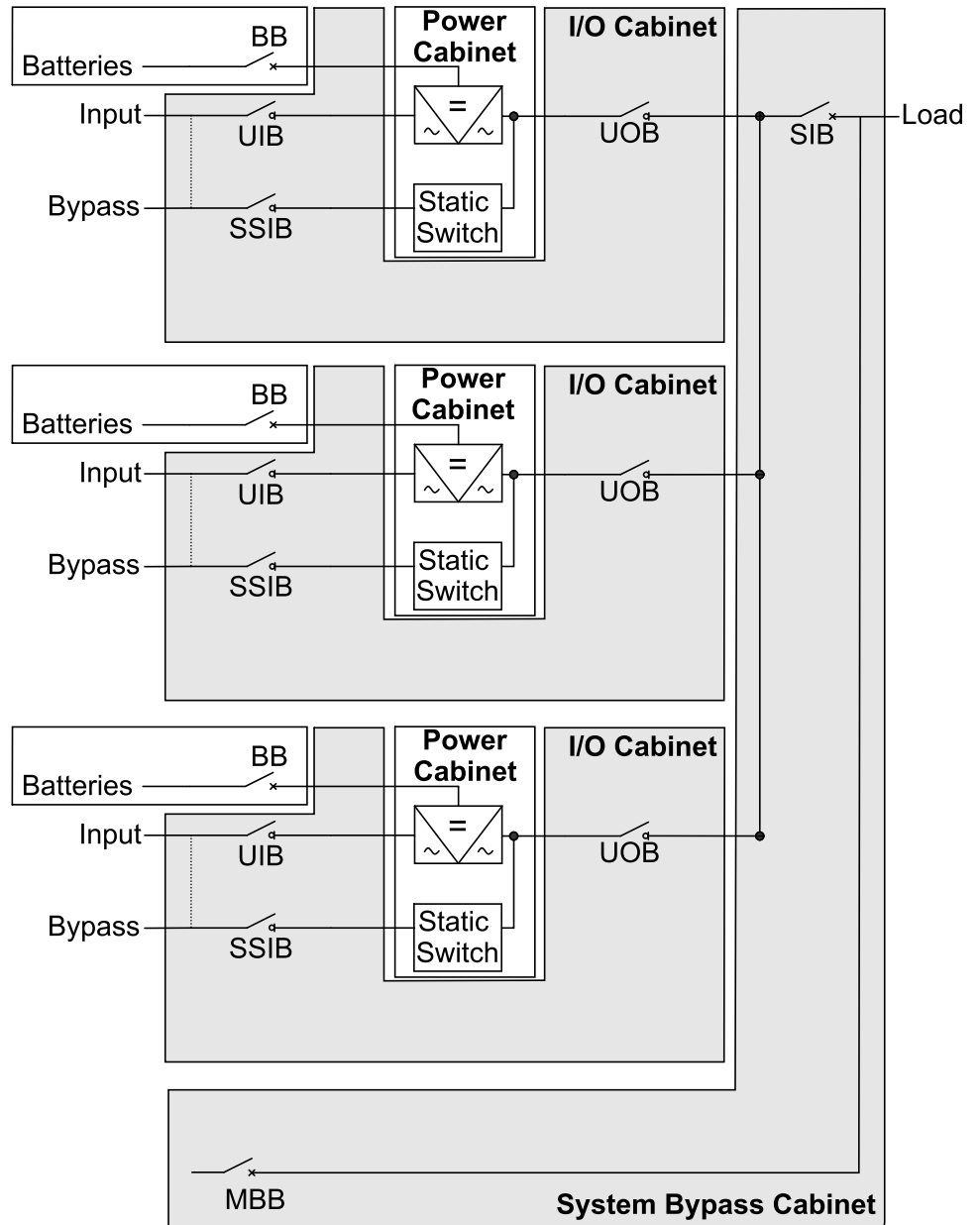
### 1+1 Redundant Parallel System

<b>NOTICE</b>
<p><b>HAZARD OF EQUIPMENT DAMAGE</b></p> <p>The cable length for bypass cables and output cables must be the same for all parallel UPS units to ensure correct load sharing in bypass operation. In parallel systems with single mains all input cables must be the same length.</p> <p><b>Failure to follow these instructions can result in equipment damage.</b></p>



### Parallel System

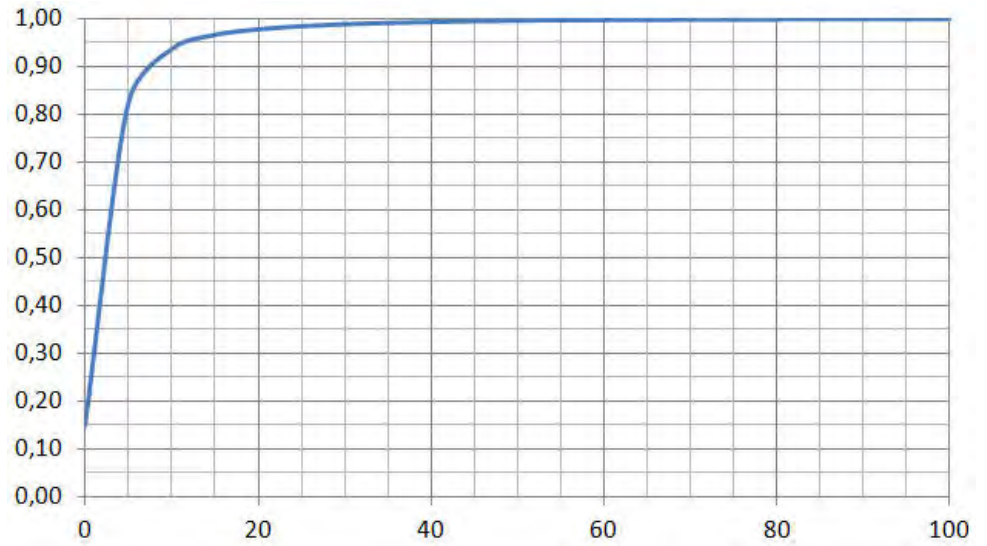
<b>NOTICE</b>
<p><b>HAZARD OF EQUIPMENT DAMAGE</b></p> <p>The cable length for bypass cables and output cables must be the same for all parallel UPS units to ensure correct load sharing in bypass operation. In parallel systems with single mains all input cables must be the same length.</p> <p><b>Failure to follow these instructions can result in equipment damage.</b></p>



## Input Power Factor

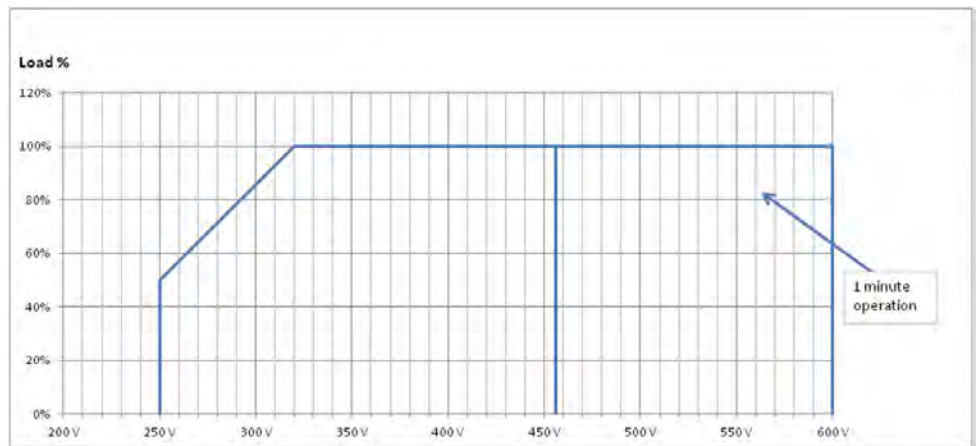
Power factor is given for a 400 V normal AC source for linear and non-linear loads.

	160 kVA	200 kVA
25% load	0.97	0.97
50% load	0.99	0.99
75% load	0.99	0.99
100% load	0.99	0.99

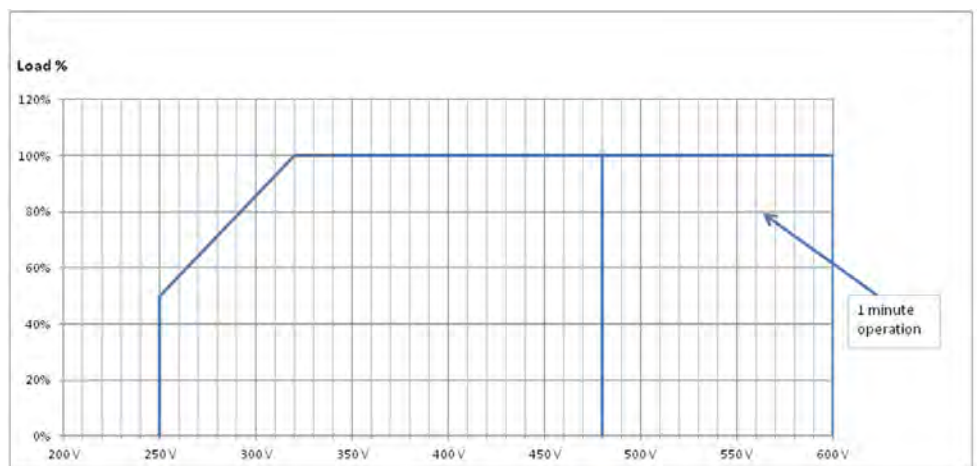


## Input Voltage Window

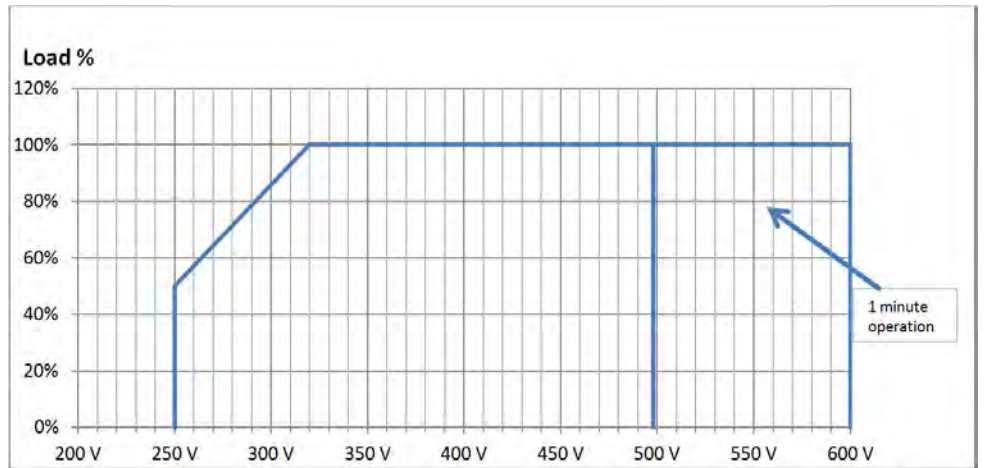
### 380 V Systems



### 400 V Systems

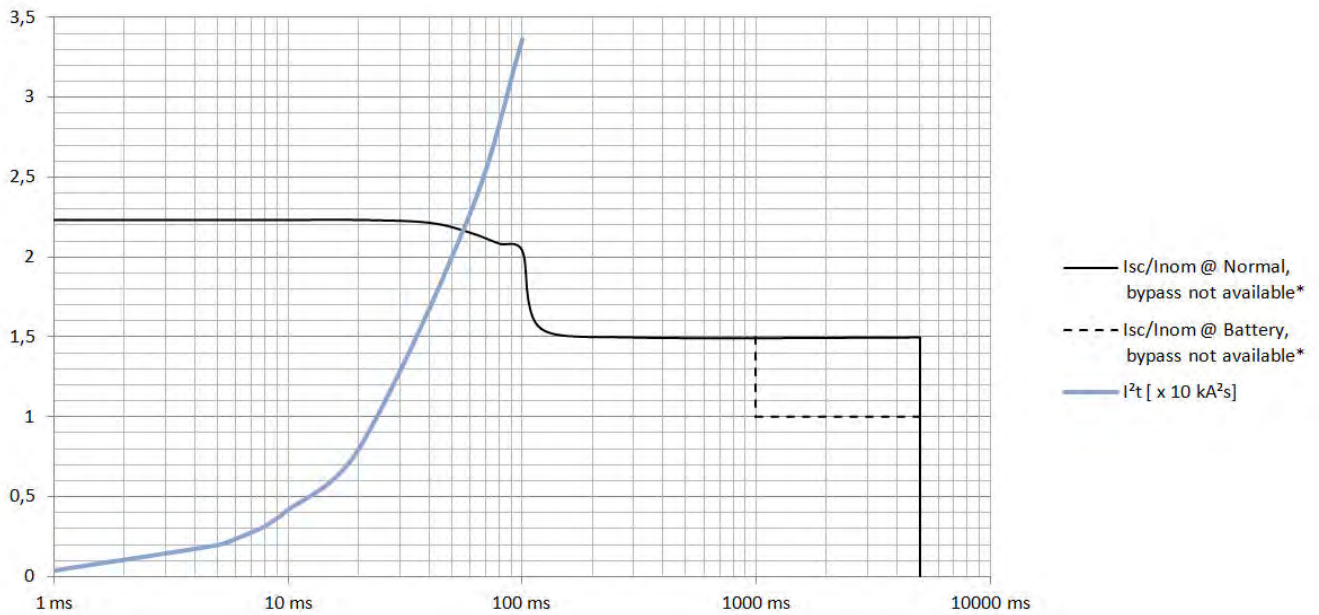


## 415 V Systems



## Inverter Short-Circuit Capabilities (Bypass not Available)

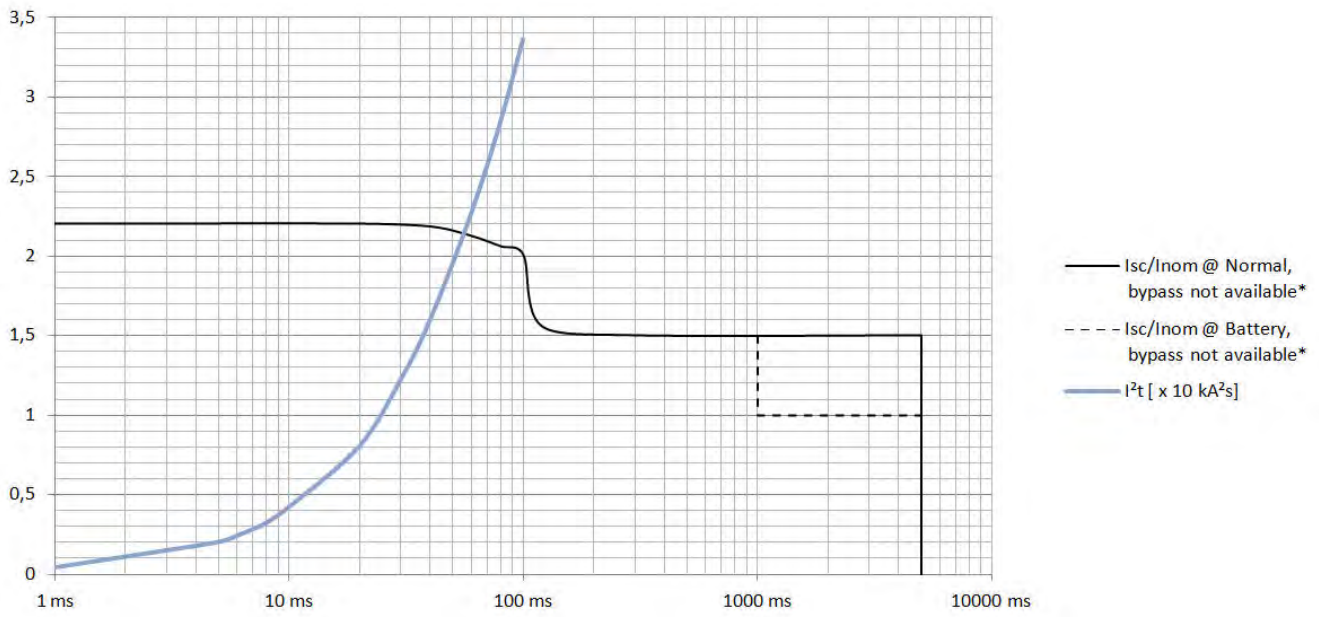
### IK1 – Short-Circuit between a Phase and Neutral



\*  $I_{sc}$  = Inverter short-circuit current RMS,  $I_{nom}$  = Inverter nominal current RMS

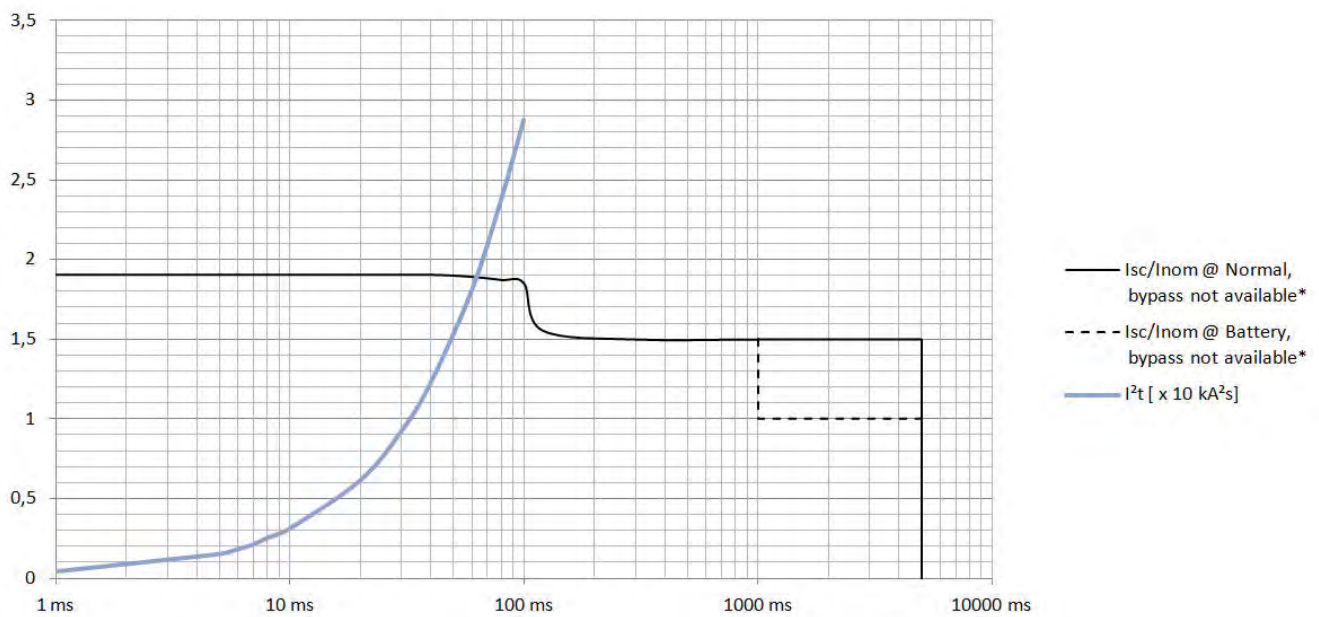


**IK2 – Short-Circuit between Two Phases**



\* I<sub>sc</sub> = Inverter short-circuit current RMS, I<sub>nom</sub> = Inverter nominal current RMS

**IK3 – Short-Circuit between All Three Phases**



\* I<sub>sc</sub> = Inverter short-circuit current RMS, I<sub>nom</sub> = Inverter nominal current RMS

## Efficiency

### Efficiency in Normal Operation

The table below provides average system efficiencies with a balanced linear load, and a power factor of 0.9.

	160 kVA				200 kVA			
	380 V	400 V	415	440	380 V	400 V	415	440
25% load	95.7	95.7	95.7	95.7	95.8	95.9	95.8	95.8
50% load	96.3	96.4	96.5	96.4	96.3	96.4	96.5	96.4
75% load	96.1	96.3	96.3	96.4	96.0	96.2	96.4	96.4
100% load	95.7	95.9	96.1	96.2	95.6	95.7	96.0	96.2

### Efficiency in EConversion Mode

	160 kVA				200 kVA			
	380 V	400 V	415	440	380 V	400 V	415	440
25% load	97.5	97.3	97.3	97.2	97.7	97.6	97.6	97.5
50% load	98.6	98.5	98.5	98.4	98.7	98.6	98.6	98.6
75% load	98.9	98.9	98.8	98.8	99.0	99.0	99.0	98.9
100% load	99.0	99.0	99.0	99.0	99.0	99.0	99.0	99.0

### Efficiency in ECO Mode

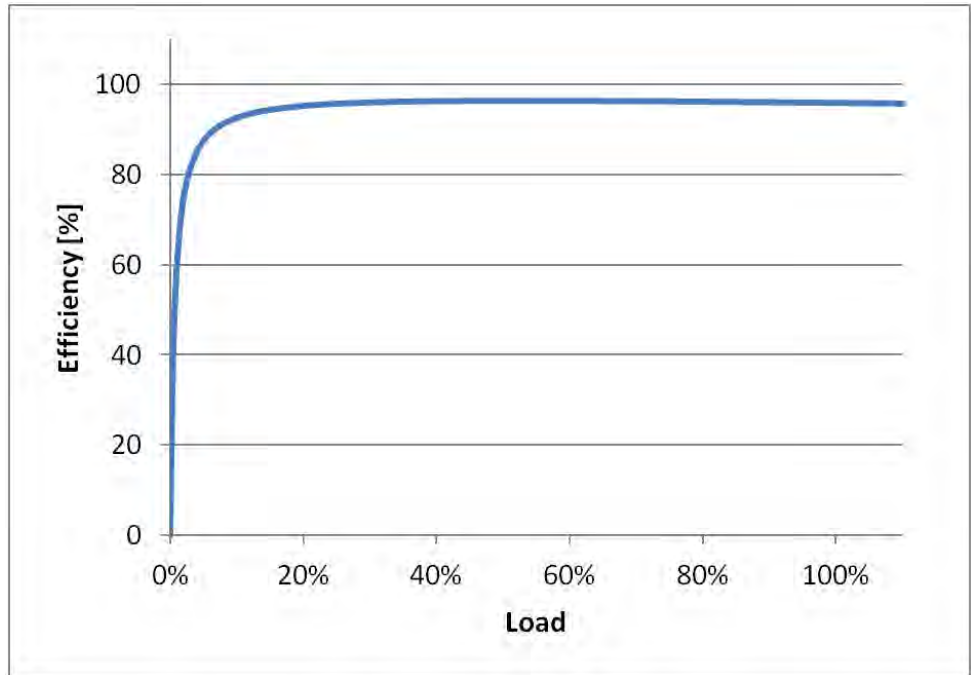
	160 kVA				200 kVA			
	380 V	400 V	415	440	380 V	400 V	415	440
25% load	98.2	98.3	98.3	98.3	98.6	98.6	98.6	98.5
50% load	99.0	98.9	99.0	99.0	99.1	99.1	99.1	99.1
75% load	99.1	99.2	99.2	99.3	99.2	99.2	99.3	99.3
100% load	99.2	99.3	99.3	99.3	99.2	99.3	99.3	99.4

### Efficiency in Battery Operation

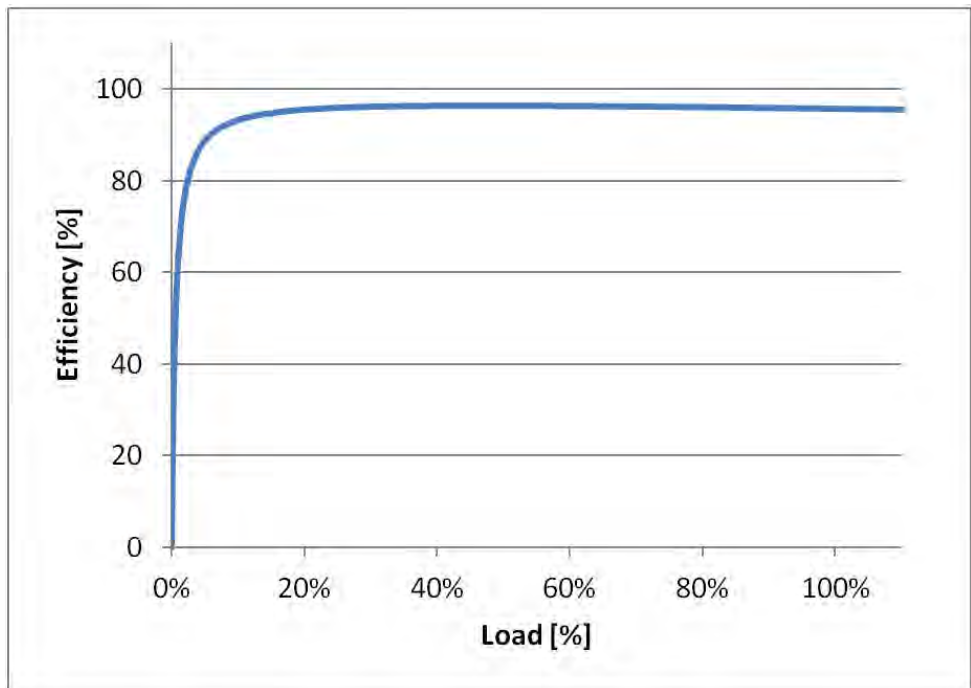
	160 kVA				200 kVA			
	380 V	400 V	415	440	380 V	400 V	415	440
25% load	96.8	96.8	96.8	96.8	96.8	96.8	96.8	96.8
50% load	96.5	96.5	96.5	96.5	96.5	96.5	96.5	96.5
75% load	96.4	96.4	96.4	96.4	96.4	96.4	96.4	96.4
100% load	96.0	96.0	96.0	96.0	96.0	96.0	96.0	96.0

### Efficiency Curves Normal Operation at 400 V

160 kVA



200 kVA



## Batteries

### Modular Battery Specifications

Battery	Capacity	Type	Recommended Operating Temperature	Life	Block Quantity
PXL12090	C20: 9 Ah	VRLA	25 °C +/- 3 °C	5 years	40 blocks/string <sup>1</sup>
HRL 1234W F2FR	C20: 9 Ah <sup>2</sup>	VRLA	25 °C +/- 3 °C	8 years	40 blocks/string <sup>1</sup>

### Classic Battery Specifications – Europe, Middle East, and Africa

Basic Configuration	Block Quantity	Battery	Capacity	Type	Recommended Operating Temperature	Life
0G-GVMCBCNEB	40 blocks/string	Exide XP12V1800	C20: 64.9 Ah	VRLA	25 °C +/- 3 °C	7–10 years
	40 blocks/string	Yuasa SWL1800	C20: 56.6 Ah	VRLA	25 °C +/- 3 °C	7–10 years
0G-GVMCBCWEA	40 blocks/string	Exide XP12V2500	C20: 79.9 Ah	VRLA	25 °C +/- 3 °C	7–10 years
	40 blocks/string	Yuasa SWL2500	C20: 92.4 Ah	VRLA	25 °C +/- 3 °C	7–10 years
0G-GVMCBCWEB	40 blocks/string	Exide XP12V3000	C20: 106.3 Ah	VRLA	25 °C +/- 3 °C	7–10 years
	40 blocks/string	Yuasa SWL2500	C20: 92.4 Ah	VRLA	25 °C +/- 3 °C	7–10 years

### Typical Battery Runtimes

**NOTE:** The battery runtimes are intended as a guide only.

#### Typical Battery Runtimes in Minutes for Systems with Modular Battery Cabinets

Modular Battery Cabinets	Number of Battery Modules	160 kVA	200 kVA
(1) GVMMODBCWS	10	6.7	NA
	11	7.8	NA
	12	8.8	NA
(1) GVMMODBCWS (1) GVMMODBCNS	13	9.9	7.1
	14	11	7.9
	15	12	8.8
	16	13	9.7
	17	14.5	10.5
	18	15.5	11.5
(2) GVMMODBCWS	24	22.5	17
(2) GVMMODBCWS (1) GVMMODBCNS	30	30	22.5
(3) GVMMODBCWS	36	38	28.5
(3) GVMMODBCWS (1) GVMMODBCNS	42	46	34.5
(4) GVMMODBCWS	48	54	41
(4) GVMMODBCWS (1) GVMMODBCNS	54	62.5	47.5

1. Narrow modular battery cabinets can contain 6 parallel strings and wide modular battery cabinets can contain 12 parallel strings  
 2. 34 W - approximately 9 Ah

Modular Battery Cabinets	Number of Battery Modules	160 kVA	200 kVA
(5) GVMMODBCWS	60	71	54
(5) GVMMODBCWS (1) GVMMODBCNS	66	79.5	60.5
(6) GVMMODBCWS	72	88.5	67.5
(6) GVMMODBCWS (1) GVMMODBCNS	78	97.5	74
(7) GVMMODBCWS	84	105	81
(7) GVMMODBCWS (1) GVMMODBCNS	90	115	88
(8) GVMMODBCWS	96	125	95.5

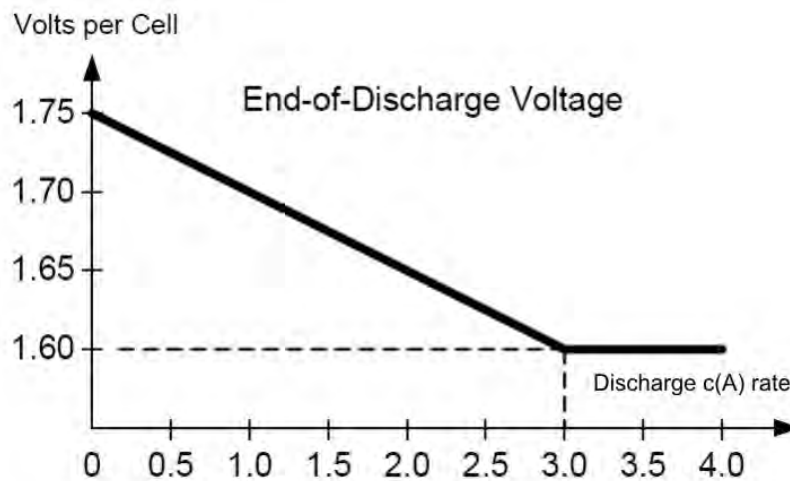
**Typical Battery Runtimes in Minutes for Systems with Classic Battery Cabinets**

**Systems in Europe, Middle East and Africa**

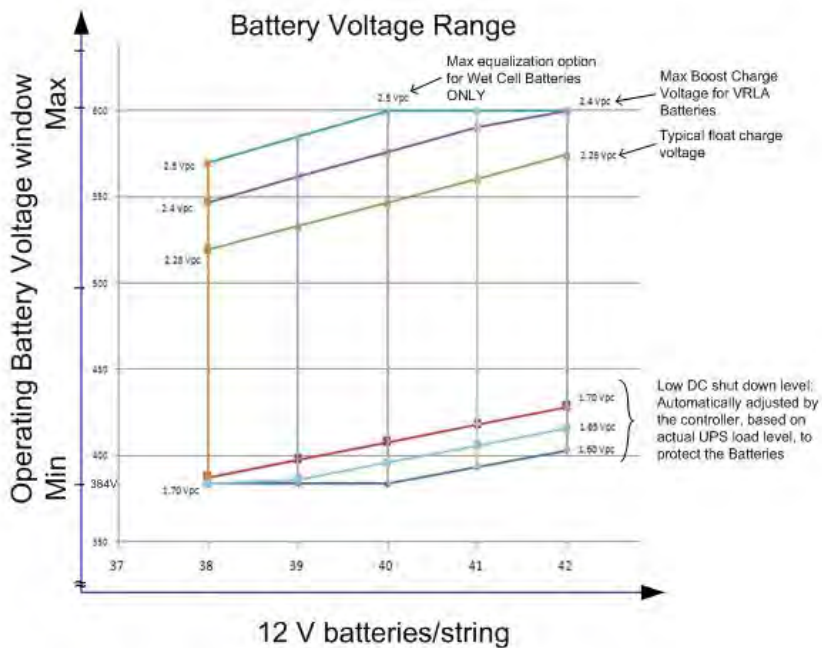
Runtime Needed	UPS System	Battery Solution
5 minutes	160 kVA	GVMCBCWEA
	200 kVA	GVMCBC2NEC
10 minutes	160 kVA	GVMCBC2NEC
	200 kVA	GVMCBC2WEC
15 minutes	160 kVA	GVMCBC2WEC
	200 kVA	GVMCBC2WED
30 minutes	160 kVA	GVMCBC3WEC
	200 kVA	GVMCBC3WED

**End of Discharge Voltage**

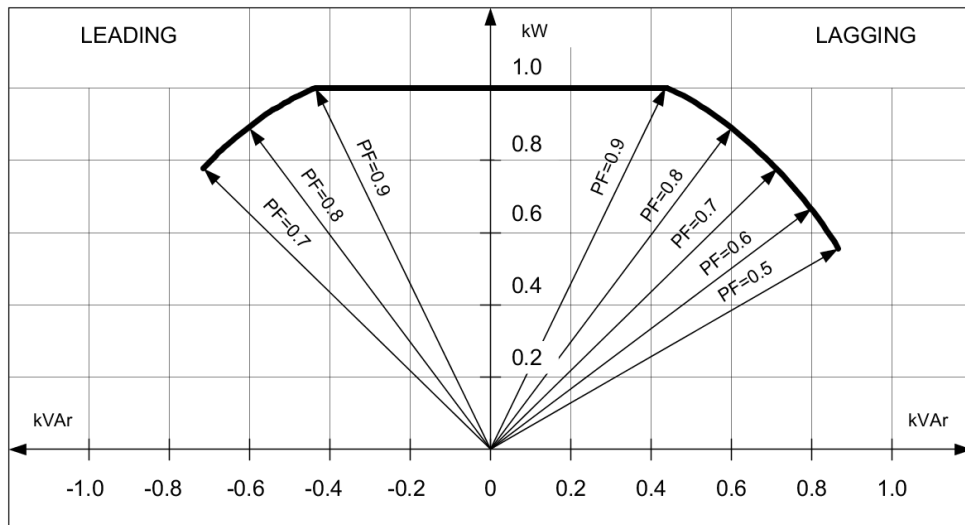
The voltage is 1.6 to 1.75 per cell depending on discharge ratio.



### Battery Voltage Range



### Derating Due to Load Power Factor



### Battery Gassing Rates for Modular Battery Cabinets

Gassing Rate	Single Cartridge	Single Shelf Narrow Modular Battery Cabinet (2 Cartridges)	Single Shelf Wide Modular Battery Cabinet (4 Cartridges)
Typical cc/hr (ml/hr)	18 (18)	36 (36)	73 (73)
Maximum cc/hr (ml/hr)	59 (59)	119 (119)	238 (238)

## Electrolyte Values for Modular Battery Cabinets

	Single Cartridge	Single Shelf Narrow Modular Battery Cabinet (2 Cartridges)	Single Shelf Wide Modular Battery Cabinet (4 Cartridges)
Electrolyte Volume L (gal)	3.66 (0.967)	7.32 (1.93)	14.6 (3.86)
Electrolyte Weight kg (lbs)	4.89 (10.08)	9.78 (21.5)	19.6 (43.1)
Sulfuric Acid Weight kg (lbs)	2.13 (4.69)	4.26 (9.38)	8.52 (18.8)

## Battery Material Safety Data Sheet

**NOTE:** For Material Safety Data Sheet (MSDS), go to the Knowledge Base [http://schneider-electric.com/sites/corporate/en/support/faq/faq\\_main.page](http://schneider-electric.com/sites/corporate/en/support/faq/faq_main.page) and type “MSDS” to get the latest MSDS information.

## Compliance

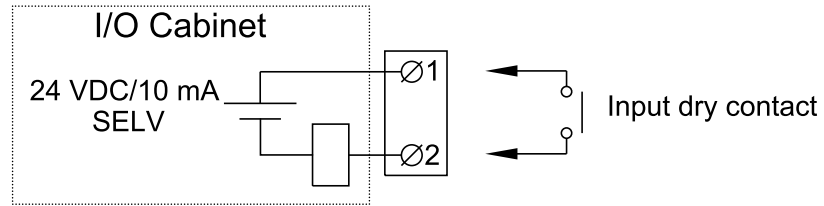
Safety	IEC 62040-1: 2008-06, 1st edition Uninterruptible Power Systems (UPS) - Part 1: General and safety requirements for UPS EN 62040-1: 2013-01, 1st edition amendment 1
EMC/EMI/RFI	IEC 62040-2: 2005-10, 2nd edition Uninterruptible Power Systems (UPS) - Part 2: Electromagnetic compatibility (EMC) requirements
Performance	IEC 62040-3: 2011-03, 2nd edition Uninterruptible Power Systems (UPS) - Part 3: Method of specifying the performance and test requirements
Environmental	IEC 62040-4: 2013-04, 1st edition Uninterruptible Power Systems (UPS) - Part 4: Environmental aspects – Requirements and reporting
Markings	CE, C-Tick
Transportation	ISTA 2B
Seismic	OSHPD, IBC2012 and CBC2013 to Sds=2.02g

## Communication and Management

Local Area Network	100 Mbps
Extensions	2 x Rhodes 2 NMC Cards (optional)
MODBUS	MODBUS (SCADA & ION-E)
Relay Outputs	12 of which 6 are configurable
Dry Contact Inputs	12 of which 6 are configurable
Standard Control Panel	7" Touch Screen Display
Audible alarm	Yes
Emergency Power Off (EPO)	Options: <ul style="list-style-type: none"> <li>• Normally Open</li> <li>• Normally Closed</li> <li>• External 24 VDC SELV</li> </ul>
External switchgear	Yes
External Synchronization	Yes all 3 phases
Transformer compensation	Yes
Battery Monitoring	Available for modular battery cabinets

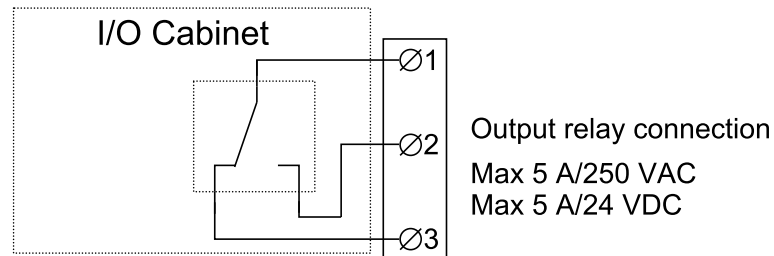
## Overview of Input Contacts and Output Relays

### Input Contacts



Name	Description	Location
IN 1 (Contact 1)	Configurable input contact	640-3640 terminal J5502
IN 2 (Contact 2)	Configurable input contact	640-3640 terminal J5503
IN 3 (Contact 3)	Configurable input contact	640-3640 terminal J5504
IN 4 (Contact 4)	Configurable input contact	640-3640 terminal J5505
IN 5 (Contact 5)	Configurable input contact	640-3640 terminal J5510
IN 6 (Contact 6)	Configurable input contact	640-3640 terminal J5509
IN 7	Transformer temperature switch	640-3640 terminal J5508
IN 9	Forced external synchronization input	640-3640 terminal J5506
IN 10	External synchronization requested input	640-3640 terminal J5511
IN 11	Use static bypass standby	640-3640 terminal J5512

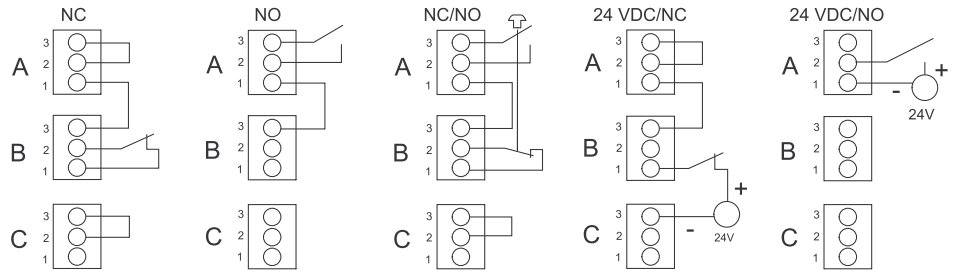
### Output Relays



Name	Description	Location
OUT 1 (Relay 1)	Configurable output relay	640–3635 terminal J4939
OUT 2 (Relay 2)	Configurable output relay	640–3635 terminal J4940
OUT 3 (Relay 3)	Configurable output relay	640–3635 terminal J4941
OUT 4	Forced external synchronization output	640–3640 terminal J5520
OUT 5	Reserved for future use	640–3640 terminal J5521
OUT 6	External synchronization requested output	640–3640 terminal J5522
OUT 7	UPS in inverter ON	640–3640 terminal J5523
OUT 8 (Relay 4)	Configurable output relay	640–3640 terminal J5524
OUT 9 (Relay 5)	Configurable output relay	640–3640 terminal J5525
OUT 10 (Relay 6)	Configurable output relay	640–3640 terminal J5528



**EPO Connections**



# Facility Planning

## Input Specifications

	160 kVA				200 kVA			
Input Voltage (V)	380	400	415	440	380	400	415	440
Connections	4–wire (L1, L2, L3, PE)							
Voltage range (V)	320–600 <sup>3</sup>							
Frequency range (Hz)	40 - 70							
Nominal input current (A)	230	219	211	199	288	273	263	250
Maximum input current (A)	278	262	253	238	345	328	316	298
Input current limitation (A)	278				347			
Input power factor	> 0.99 at load > 40% > 0.97 at load > 25%							
Total harmonic distortion (THDI)	<3% at 100% load <4% at 50% load <6% at 25% load							
Maximum input short-circuit withstand (kA) Icc	Rated conditional short–circuit current Icc: 65 kA Rated peak withstand current Ipk: Icc x 2.2 Device: Refer to <i>Required Upstream Breakers, page 28</i>							
Protection	Built-in backfeed contactor							
Ramp-in	Adaptive 1 - 40 sec							

## Bypass Specifications

**NOTE:** Bypass is inoperable when the system is configured as a frequency converter.

	160 kVA				200 kVA			
Bypass Voltage (V)	380	400	415	440	380	400	415	440
Connections	5–wire (L1, L2, L3, N, PE) 4–wire (L1, L2, L3, PE)							
Voltage range (V)	342–457							
Frequency (Hz)	50 or 60							
Frequency range (Hz)	Programmable: +/-0.1, +/-3, +/-10. Default is +/-3.							
Nominal bypass current (A)	243	231	223	210	304	289	278	262
Protection	Built-in backfeed contactor							

3. The system can operate at 600 V for 1 minute.

## Output Specifications

	160 kVA				200 kVA			
<b>Output Voltage (V)</b>	<b>380</b>	<b>400</b>	<b>415</b>	<b>440</b>	<b>380</b>	<b>400</b>	<b>415</b>	<b>440</b>
Connections	5–wire (L1, L2, L3, N, PE) 4–wire (L1, L2, L3, PE)							
Overload capacity <sup>4</sup>	150% for 1 minute (normal operation) at 40 °C 125% for 10 minutes (normal operation) at 40 °C 150% for 1 second (battery operation) at 40 °C 125% for 1 minute (battery operation) at 40 °C 1000% for 100 ms (bypass operation) at 40 °C							
Output voltage tolerance	Symmetric load (0–100%): +/- 1% static +/- 5% after 2 ms +/- 1% after 50 ms							
Output power factor	0.9							
Nominal output current (A)	243	231	223	210	304	289	278	263
Total harmonic distortion (THDU)	<2% at 100% linear load <3% at 100% non–linear load							
Output frequency (Hz)	50/60 (sync to bypass) 50/60 Hz +/-0.1% (free–running)							
Slew rate (Hz/sec)	Programmable: 0.25, 0.5, 1, 2, 4, 6							
Output performance classification (according to IEC/EN62040-3)	Double–conversion: VFI–SS–111							
Load crest factor	Unlimited							
Load power factor	0.7 leading to 0.5 lagging without derating							

## Battery Specifications

	160 kVA	200 kVA
Connections	DC+, DC-, PE	
Charging power in % of output power	40% charge ≤ 80% load 20% charge ≤ 100% load	
Nominal battery voltage (VDC)	480	
Nominal float voltage (VDC)	545	
End of discharge voltage (full load) (VDC)	384	
End of discharge voltage (no load) (VDC)	420	
Battery current at full load and nominal battery voltage (A)	314	393
Battery current at full load and minimum battery voltage (A)	393	491
Recharge time to 90% charge	< 20 hours for a 4 hour battery bank	
Temperature compensation	–3.3 mV per °C for T ≥ 25 °C 0 mV per °C for T < 25 °C	
Ripple current	< 5% C20 (5 minutes backup time)	
Battery test	Programmable: Manual/automatic	
Deep discharge protection	Yes	
Recharge according to battery temperature	Yes	
Cold start	Yes	

4. Overload capabilities are not available when the system is configured as a frequency converter

## Requirements for a Third Party Battery Solution

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

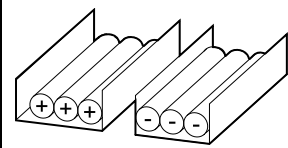
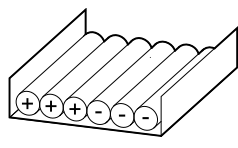
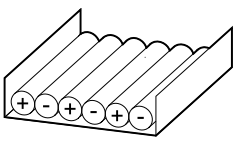
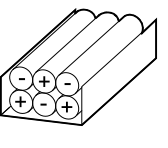
**NOTE:** The battery breaker box is not covered by the DNV type approval.

## Guidance for Organizing Battery Cables

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

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

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

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

## Recommended Cable Sizes

Cable sizes in this manual are based on table 52–C2 of IEC 60364–5–52 with the following assertions:

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

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

### 160 kVA System

Installation Method	B1 (mm) <sup>2</sup>	B2 (mm) <sup>2</sup>	C (mm) <sup>2</sup>
Input	2 x 70 mm <sup>2</sup>	2 x 95 mm <sup>2</sup>	2 x 50 mm <sup>2</sup>
Bypass	2 x 70 mm <sup>2</sup>	2 x 70 mm <sup>2</sup>	1 x 95 mm <sup>2</sup>
Output	2 x 70 mm <sup>2</sup>	2 x 70 mm <sup>2</sup>	1 x 95 mm <sup>2</sup>
Battery	2 x 70 mm <sup>2</sup>	3 x 70 mm <sup>2</sup>	2 x 70 mm <sup>2</sup>

### 200 kVA System

Installation Method	B1 (mm) <sup>2</sup>	B2 (mm) <sup>2</sup>	C (mm) <sup>2</sup>
Input	2 x 95 mm <sup>2</sup>	2 x 120 mm <sup>2</sup>	2 x 70 mm <sup>2</sup>
Bypass	2 x 70 mm <sup>2</sup>	2 x 95 mm <sup>2</sup>	1 x 120 mm <sup>2</sup>

Installation Method	B1 (mm) <sup>2</sup>	B2 (mm) <sup>2</sup>	C (mm) <sup>2</sup>
Output	2 x 70 mm <sup>2</sup>	2 x 95 mm <sup>2</sup>	1 x 120 mm <sup>2</sup>
Battery	2 x 120 mm <sup>2</sup>	3 x 95 mm <sup>2</sup>	2 x 95 mm <sup>2</sup>

## Required Upstream Breakers

**⚠ DANGER**

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

The specified upstream breakers below are required to obtain the conditional short-circuit current rating, I<sub>cc</sub> at 65 kA symmetrical rms.

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

	160 kVA		200 kVA	
	Input	Bypass <sup>5</sup>	Input	Bypass <sup>5</sup>
Breaker	NSX400H Mic2.3	NSX400H Mic2.3	NSX400H Mic2.3	NSX400H Mic2.3
Rating (A)	400	400	400	400
I <sub>o</sub> (A)	280	250	360	320
I <sub>r</sub> (x I <sub>o</sub> )	1	1	1	1
I <sub>sd</sub> (X I <sub>r</sub> )	1.5–10	8	1.5–10	8

## Torque Specifications

Bolt size	Torque
M4	1.7 Nm (1.25 lb-ft)
M5	2.5 Nm (1.84 lb-ft)
M6	5 Nm (3.69 lb-ft)
M8	17.5 Nm (12.91 lb-ft)
M10	30 Nm (22 lb-ft)
M12	50 Nm (36.87 lb-ft)
M14	75 Nm (55.31 lb-ft)

## Physical

### Weights and Dimensions

#### UPS Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
160 kVA UPS (GVMSB160KHS) Power cabinet I/O cabinet	469 230	1970	1052	854
200 kVA UPS (GVMSB200KHS) Power cabinet I/O cabinet	494 230	1970	1052	854

5. Only applicable to dual mains systems.

	Weight kg	Height mm	Width mm	Depth mm
160 kVA parallel UPS (GVMPB160KHS) Power cabinet I/O cabinet	469 230	1970	1052	854
200 kVA parallel UPS (GVMPB200KHS) Power cabinet I/O cabinet	494 230	1970	1052	854

### Modular Battery Cabinet Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Modular battery cabinet wide up to 12 battery module strings (GVMMODBCWS)	210 <sup>6</sup>	1970	700	854
Modular battery cabinet narrow up to 6 battery module strings (GVMMODBCNS)	139 <sup>6</sup>	1970	370	854

### Classic Battery Cabinet Weights and Dimensions

	Total Weight kg	Height mm	Total Width mm	Depth mm
Classic battery solution with 1 x wide A cabinet (GVMCBCWEA)	1662	1970	1080	854
Classic battery solution with 2 x narrow C cabinet (GVMCBC2NEC)	2399	1970	1700	854
Classic battery solution with 2 x wide C cabinet (GVMCBC2WEC)	3314	1970	2160	854
Classic battery solution with 2 x wide D cabinet (GVMCBC2WED)	3314	1970	2160	854
Classic battery solution with 3 x wide C cabinet (GVMCBC3WEC)	4934	1970	3240	854
Classic battery solution with 3 x wide D cabinet (GVMCBC3WED)	4960	1970	3240	854

### Classic Battery Cabinet Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Classic battery cabinet (GVMCBCABWEL)	175	1970	1100	854

### Battery Breaker Box Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Battery breaker box 630 A (GVMBBB630EL)	40	810	511	291

### System Bypass Cabinet Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
System bypass cabinet (GVMSBC640KHEL)	328	1970	712	859

6. The weight is without batteries. Each battery module (GVMMBTU) weights 4 x 30 kg

## Shipping Weights and Dimensions

### UPS Shipping Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
160 kVA UPS (GVMSB160KHS) Power cabinet I/O cabinet	484.5 260	2156 2150	740 750	1052 1060
200 kVA UPS (GVMSB200KHS) Power cabinet I/O cabinet	510 260	2156 2150	740 750	1052 1060
160 kVA parallel UPS (GVMPB160KHS) Power cabinet I/O cabinet	484.5 260	2156 2150	740 750	1052 1060
200 kVA parallel UPS (GVMPB200KHS) Power cabinet I/O cabinet	510 260	2156 2150	740 750	1052 1060

### Modular Battery Cabinet Shipping Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Modular battery cabinet wide up to 12 battery module strings (GVMMODBCWS) <sup>7</sup>	252	2150	990	1060
Modular battery cabinet narrow up to 6 battery module strings (GVMMODBCNS) <sup>7</sup>	164	2150	750	1060

### System Bypass Cabinet Shipping Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
System bypass cabinet (GVMSBC640KHEL)	425	2250	1030	1170

### Classic Battery Cabinet Shipping Weights and Dimensions

	Total Weight kg	Cabinet Height mm	Cabinet Width mm	Cabinet Depth mm
Classic battery solution with 1 x wide A cabinet (GVMCBCWEA)	1725	2045	1380	1156
Classic battery solution with 2 x narrow C cabinet (GVMCBC2NEC)	2515	2045	1150	1156
Classic battery solution with 2 x wide C cabinet (GVMCBC2WEC)	3440	2045	1380	1156
Classic battery solution with 2 x wide D cabinet (GVMCBC2WED)	3440	2045	1380	1156
Classic battery solution with 3 x wide C cabinet (GVMCBC3WEC)	5123	2045	1380	1156
Classic battery solution with 3 x wide D cabinet (GVMCBC3WED)	5149	2045	1380	1156

### Battery Breaker Box Shipping Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
Battery breaker box 630 A (GVMBBB630EL)	45	820	520	300

7. The weight is without batteries. Each battery module string (GVMMBTU) weights 4 x 31.5 kg

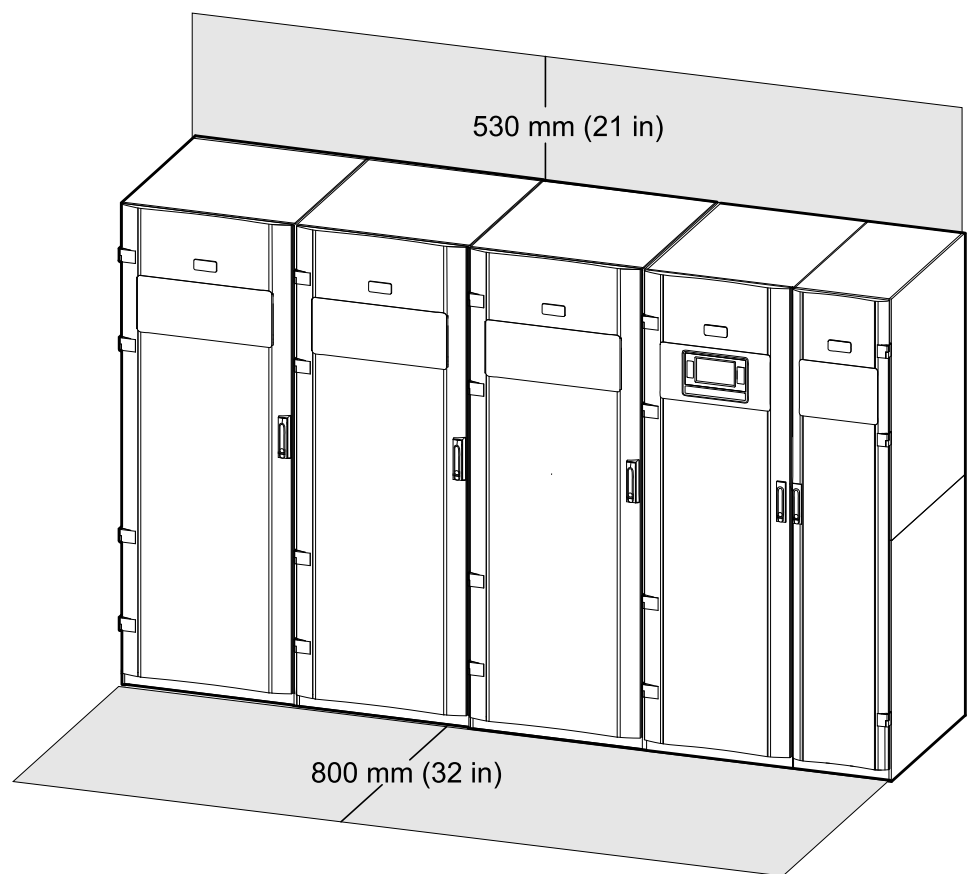
### Kits Shipping Weights and Dimensions

	Weight kg	Height mm	Width mm	Depth mm
630 A battery breaker kit (GVMBBK630IEC)	10.7	262	377	766
800 A fuse kit (GVMFU800WW)	3.5	127	396	241
Cable kit 0N-9272	2.5	132	396	396
Cable kit 0N-9255	11.5	212	396	396
Cable kit 0N-9281	20.5	282	396	396

### Clearance

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

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



### Environment

#### **⚠ DANGER**

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

- Install the UPS system in a temperature controlled environment free of conductive contaminants and humidity.
- Install the UPS system on a non-flammable, level and solid surface (e.g. concrete) that can support the weight of the system.
- No responsibility is assumed by Schneider Electric if these requirements are not respected.

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



	Operation	Storage
Temperature	0 °C to 40 °C	-15 °C to 40 °C for systems with batteries -25 °C to 55 °C for systems without batteries
Relative humidity	0-95% non-condensing	0-95% non-condensing
Altitude derating according to IEC 62040–3	1000 m: 1.000 1500 m: 0.975 2000 m: 0.950 2500 m: 0.925 3000 m: 0.900	≤ 5000 m above sea-level (or in an environment with equivalent air pressure)
Audible noise (1 meter from surface)	55 dBA at 70% load and 40 °C 65 dBA at 100% load and 40 °C	
Protection class	IP20	
Color	RAL 9003 White	

## Heat Dissipation

**NOTE:** The maximum air flow through the UPS at highest fan speed is 3600 m<sup>3</sup>/h.

### Heat Dissipation for 160 kVA Systems

Operation Mode	Normal Operation		ECO Mode		ECOConversion		Battery Operation	
	W	BTU/hr	W	BTU/hr	W	BTU/hr	W	BTU/hr
Heat dissipation at 100% load	6157	21006	1015	3464	1308	4462	6000	20472
Heat dissipation at 75% load	4149	14158	871	2972	1201	4099	4033	13761
Heat dissipation at 50% load	2689	9174	801	2732	1096	3741	2611	8910
Heat dissipation at 25% load	1618	5519	623	2124	999	3408	1190	4061

### Heat Dissipation for 200 kVA Systems

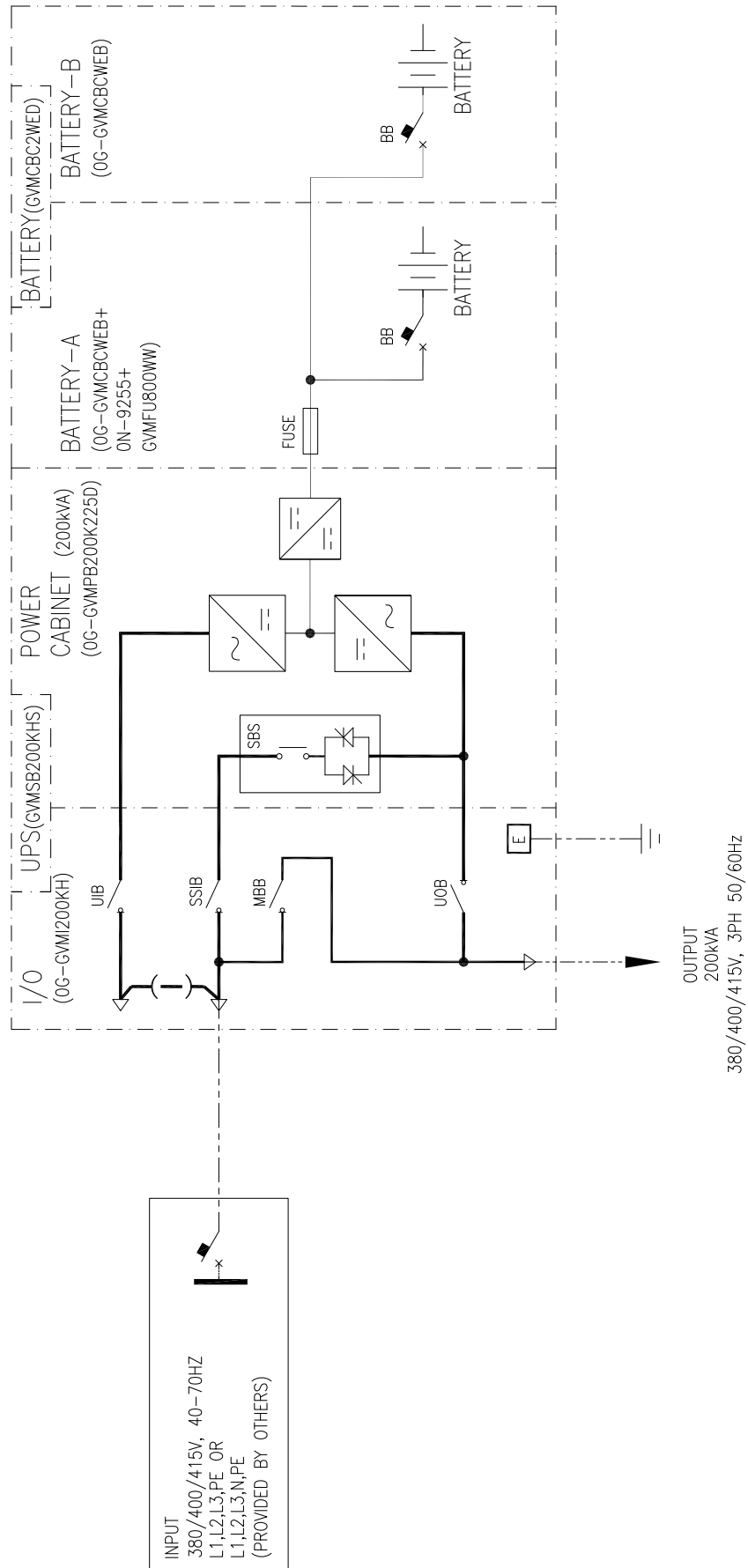
Operation Mode	Normal Operation		ECO Mode		ECOConversion		Battery Operation	
	W	BTU/hr	W	BTU/hr	W	BTU/hr	W	BTU/hr
Heat dissipation at 100% load	8088	27595	1269	4329	1818	6204	7500	25590
Heat dissipation at 75% load	5333	18195	1089	3715	1364	4653	5042	17202
Heat dissipation at 50% load	3361	11468	817	2789	1278	4360	3264	11138
Heat dissipation at 25% load	1924	6564	639	2180	1107	3776	1488	5076

# Drawings

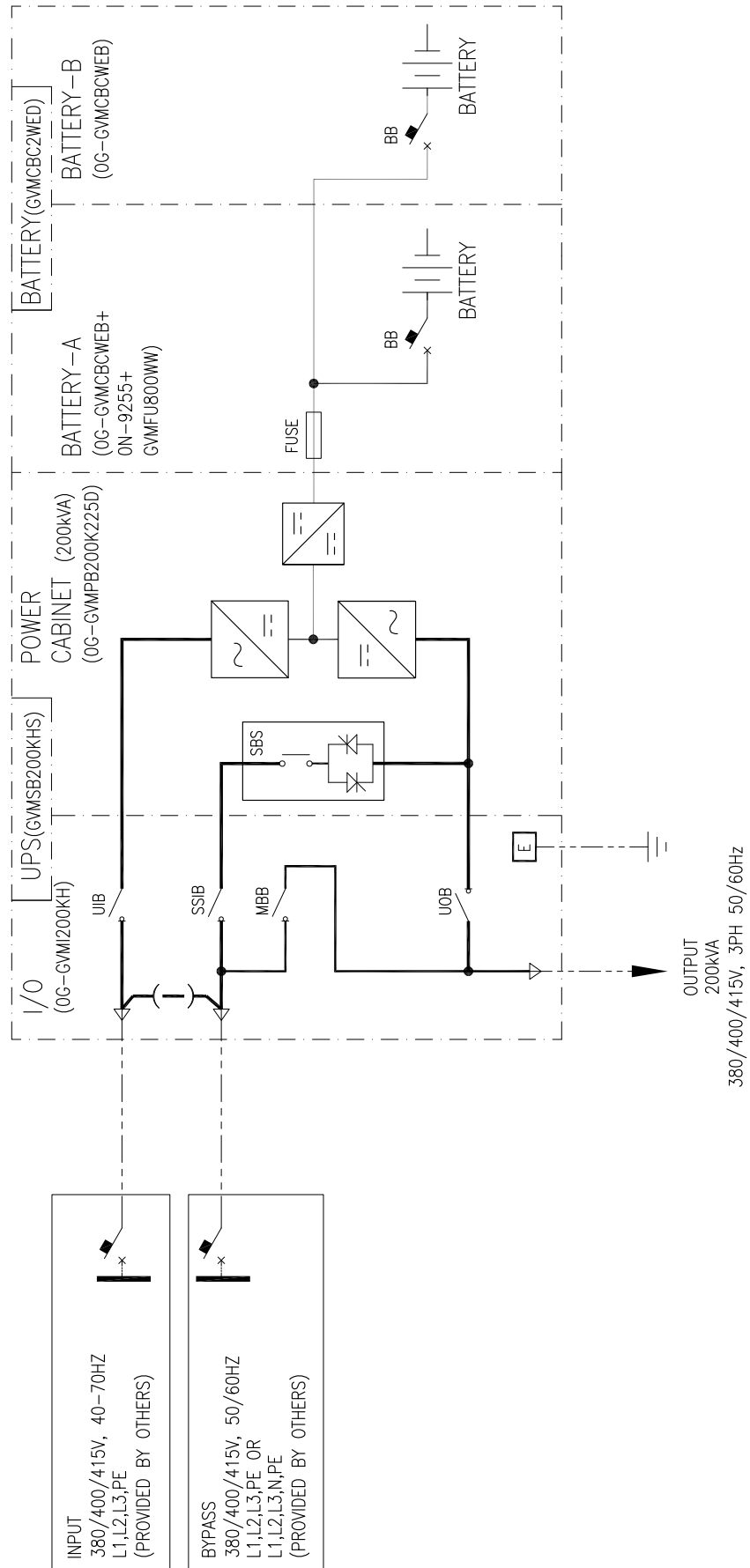
**NOTE:** A comprehensive set of drawings is available on the engineering website at [engineer.apc.com](http://engineer.apc.com).

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

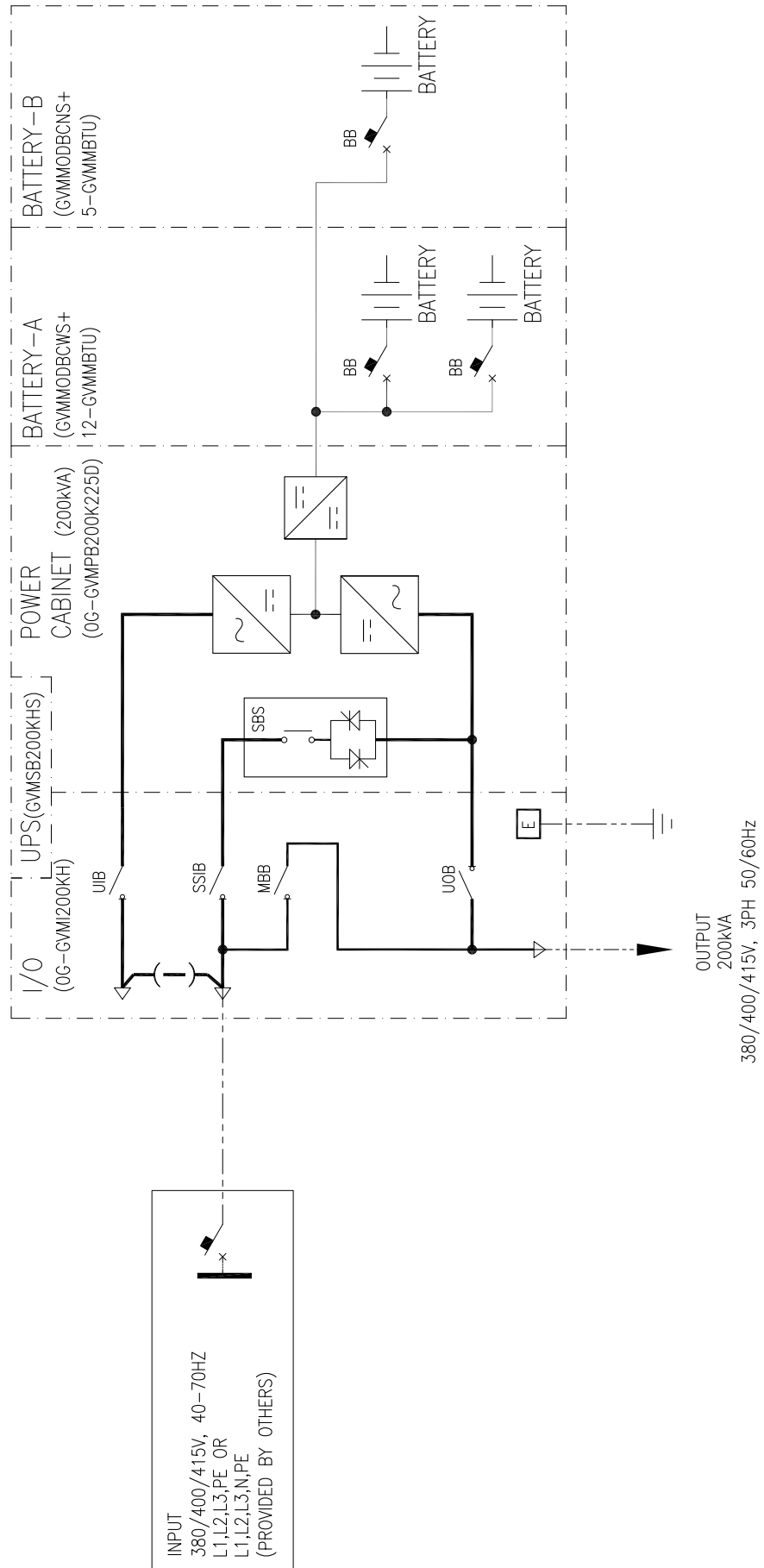
# Single System Single Mains with Classic Battery Cabinet GVMCBC2WEC



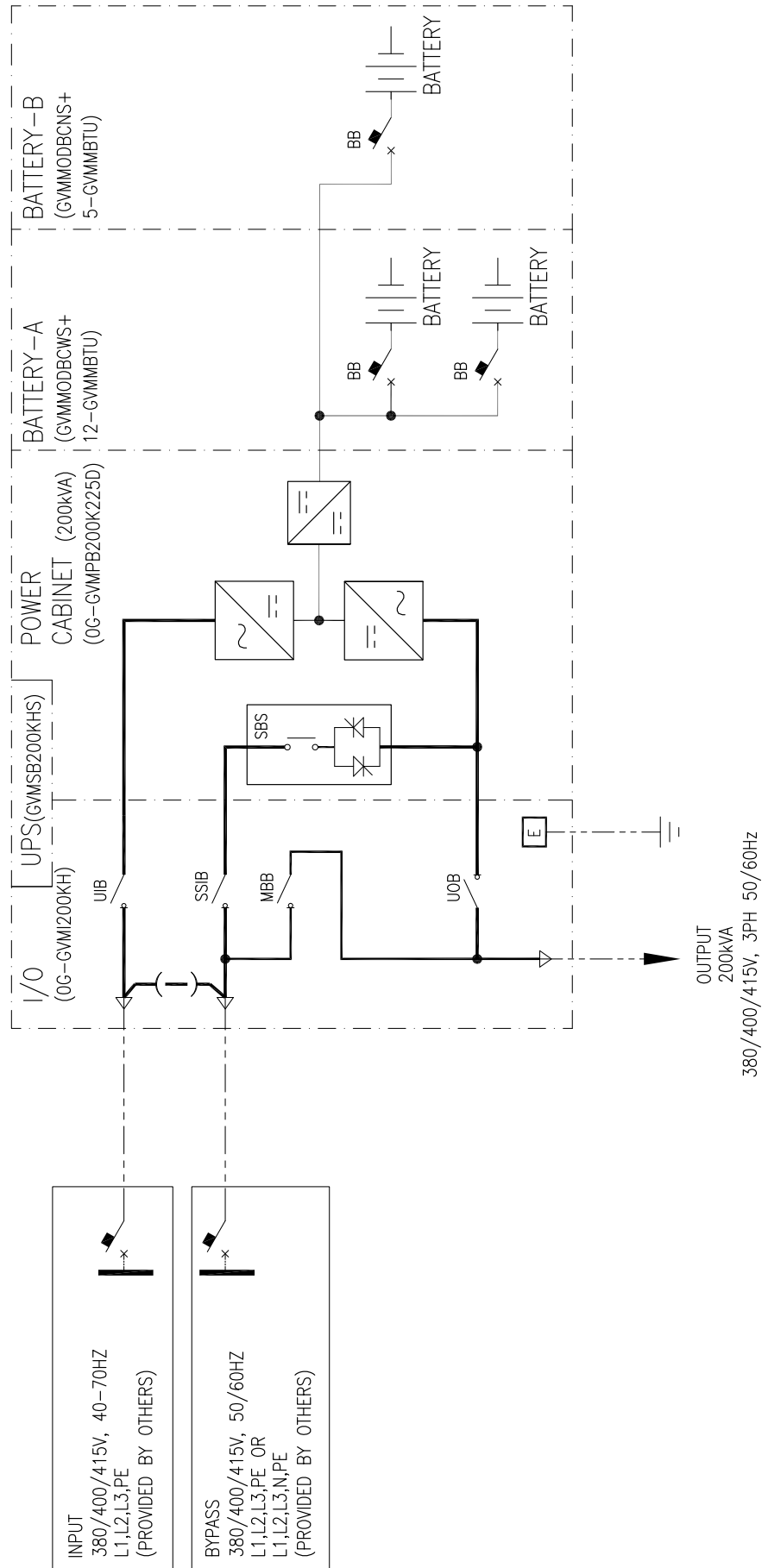
# Single System Dual Mains with Classic Battery Cabinet GVMCBC2WEC



# Single System Single Mains with Modular Battery Cabinet



# Single System Dual Mains with Modular Battery Cabinet



# Options

## Hardware Options

- Dust filters

## Battery Options

- Modular battery cabinets
- Classic battery cabinets
- Battery breaker box

## Configuration Options

- Single or dual feed
- Top or bottom feed
- Bypass Connection: Built-in Static Bypass
- Frequency Converter

# Limited Factory Warranty

## One-Year Factory Warranty

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

## Terms of Warranty

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

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

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

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