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Huawei UPS2000-G Series 1-20kVA Uninterruptible Power Systems

HUAWEI TECHNOLOGIES CO., LTD.

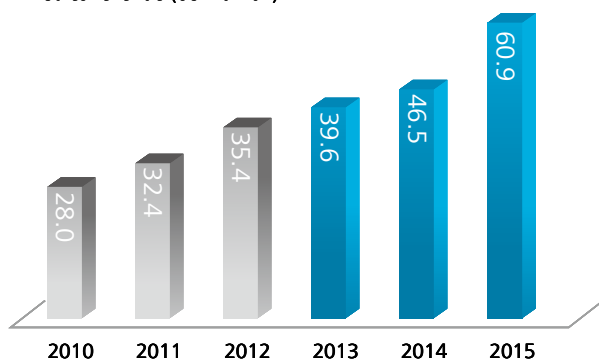


About Huawei Network Energy

Corporate Information

Huawei is a leading global ICT solutions provider. Through our dedication to customer-centric innovation and strong partnerships, we have established end-to-end capabilities and strengths across the carrier networks, enterprise, consumer, and cloud computing fields. Our telecom network equipment, IT products and solutions, and smart devices are used in 170 countries and regions. With annual sales revenue of USD60.9 billion in 2015, Huawei ranked 228th on the Global Fortune 500. And in 2015 Huawei ranked 88th in the Interbrand's Top 100 Best Global Brands list. Together with our partners, we are building a better connected world.

Sales revenue (USD billion)



Best Partners in Enterprise ICT

- Public Sector: 140+ countries including both government agencies and public sectors
- Finance Industry: 300+ financial institutions
- Grid Industry: 160+ power companies
- Transportation Industry: 180,000+ km highway & railway
- Internet Industry: 100+ famous Internet Companies Worldwide
- Finance Industry: 300+ famous Colleges & Universities Worldwid

Globalization, localization



San Diego
USA



Dallas
USA



Moscow
Russia



Bangalore
India



Stockholm/Goteborg
Sweden



Munich
Germany

Huawei Network Energy

Network energy productline is one of seven main productlines in Huawei with its products covering fields including data center energy, telecom energy, and PV inverter. It concentrates on establishing simple, efficient, and reliable network energy so as to protect customers' long-term investment in energy field through helping them lay a solid foundation for excellent network.

At present, Huawei network energy productline owns 9 R&D centers, 520+ patent applications, 2000+ R&D personnel around the world. As far as the end of 2015, the booking revenue of the network energy productline had reached 2.8 billion US dollars.

By the end of 2015, Huawei network energy had deployed more than 1.8 million power systems globally and ranked first in global market shares. It has helped customers establish more than 660+ data centers and 15.5 GW smart PV plant globally.

- 2015 Huawei ranked first for modular UPS in China market shares (Released by CCID)
- 2015 Huawei ranked first for big power UPS over 200kVA in China market shares (Released by CCID)
- 2015 Huawei ranked first for prefabricated data center in world market shares (Released by IHS)
- Contribution Member of Green Grid
- 2015 Huawei ranked first for modular data center in China market shares (Released by ICTresearch)
- DCD Data Center "The blueprint Award", "Innovation Award" and "Green Data Center Award"
- Huawei UPS5000-E won "Excellent Data Center Product Award"
- Huawei UPS won Global first batch of "Energy Star" certification
- Uptime Founding Member

Network Energy Product

Data center facilities



Modular and prefabricated DC



UPS (1-800kVA)



Row/room level precision air conditioner (20-150kw)

Telecom power



Embedded power (30-400A)



Outdoor power (30-600A)



Indoor power (100-24000A)



Hybrid power

Solar Inverter



From 8kW to 1MW



Utility PV Plant



Commercial PV Plant

Intelligent management system



NetEco

Contents



Huawei UPS2000-G Series	1
Features	2
Panel Views	5
Specifications	6
Optional Components.....	7
Battery Runtime	10



*High-frequency, small online UPS — **UPS2000-G Series***

Reliable. Efficient. Flexible. Intelligent



>> UPS2000-G Series

Capacity: 1/2/3/6/10/15/20 kVA
Voltage: 220/230/240V AC (L-N)
Frequency: 50/60 Hz

>> Power protection for:

- Small & medium data centers
- Storage, IT, Networking, VoIP, Telecom, Office terminals
- Precision instruments and facilities

UPS2000-G, the true on-line double conversion UPS, can efficiently protect loads against the abnormal grid to ensure stable and reliable supply. 6-20kVA can easily realize the parallel expansion and redundancy, offering a more reliable and flexible power supply.

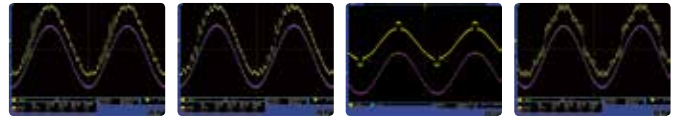


UPS2000-G Features

Reliable and Saving

>> High Reliability

- Wide input voltage and frequency range:
80V to 280V AC (L-N), 40 Hz to 70 Hz, adapts to unstable grids and harsh environments; minimizes battery use and extends battery life
- 5kA /6kV lightning protection: prevents lightning-related failures
- Provides pre-failure alarms for bus capacitors, battery, and fans to eliminate potential power offs due to component failures
- Comprehensive reliability tests ensure stable and reliable power



Input voltage

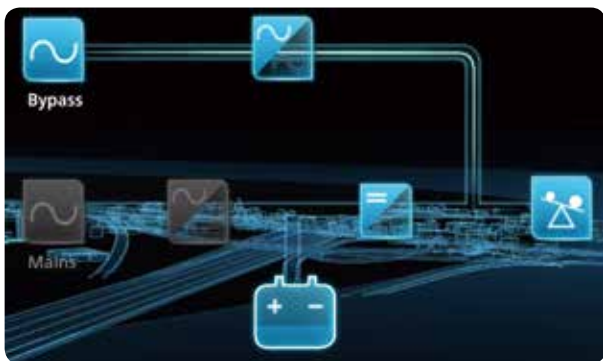


Output voltage

Lightning test	1,000 hours , 40℃		-40° C to 70℃ HALT	Open field
 5 kA lightning	 High temperature test	 Temperature shock sampling test	 Global Certification Test Center	 Shenzhen open field
 Rocket-triggered lightning	 THB Temperature: 40℃ Humidity: 95%, 1,000h	 LLT Long life test Temperature: 40℃, 6 months	 Highly accelerated life test -60 °C to 110 °C, 5 cycles	 Hainan open field High temperature, dust, salt and fog
Huawei UPS comprehensive reliability tests				

>> High Efficiency

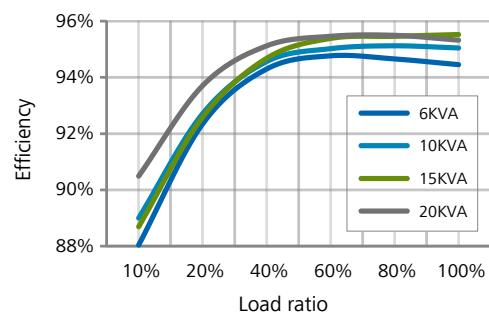
- Batch 1 Energy star certification: first in the UPS field globally
- High efficiency: 6kVA: 94%, 10kVA: 94.5%, 15kVA/20kVA: up to 95%; significantly reduces TCO
- Eco-Efficiency up to 98%: highly rated for resource efficiency



- Input power factor (PF) > 0.99: high grid utilization
- The lowest ratio of matching D.G can be 1:1.5, reducing D.G investment



UPS2000-G efficiency figure (Efficiency-Load ratio)



Friendly and Flexible

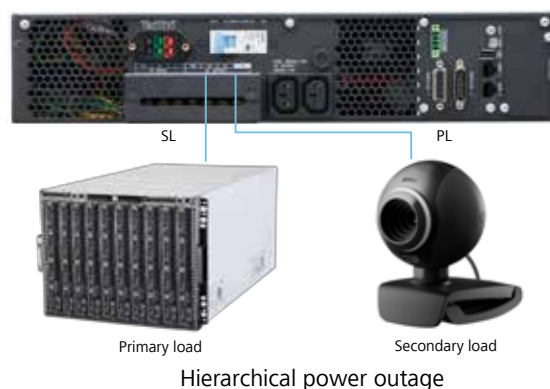
>> User-friendly LCD

- Displays real-time status
- Supports multiple languages
- Stores UPS history for easy lookups or inquiries



>> Compact, flexible design

- Space-saving design: 6/10 kVA only 2U in height, 15/20 kVA only 3U
- Supports rack and tower installation, easily converted
- Supports multiple formats for input and output, neatly regulating power according to on-site power distribution
- Supports hierarchical power distribution to protect the primary load



>> Multiple formats for input and output

UPS format	Input format	Output format	1 kVA	3 kVA	6 kVA	10 kVA	15 kVA	20 kVA
1 ph input 1 ph output			✓	✓	✓	✓	✓	✓
3 ph input 1 ph output			×	×	×	✓	✓	✓
3 ph input 3 ph output			×	×	×	×	✓	✓

UPS2000-G Features

Expandable and Easy to Manage

>> Easy to deploy and expand

- Highly expandable: up to 4 units connected in parallel
- Automatic synchronization of parallel parameters
- No need to set parallel addresses
- One communication card can monitor the whole parallel system: reduces TCO
- 15/20kVA parallel system supports sharing of battery modules.



>> Intelligent Web browser management (with SNMP card)

- Query real-time UPS status and operate the UPS system online
- Update the SNMP application and monitor software
- Configure the SNMP card

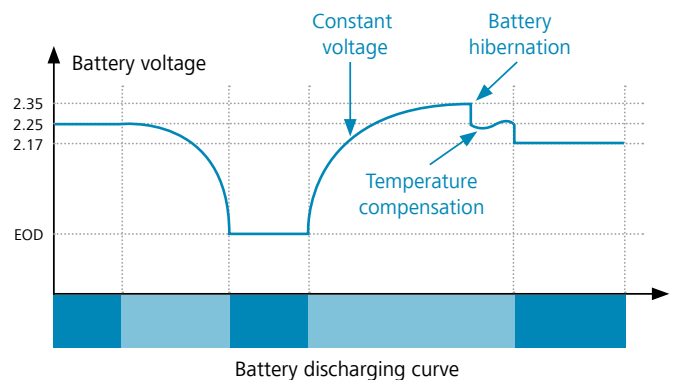


>> NetEco intelligent power system management

- Online real-time monitoring system with dynamic visual layouts of run states and UPS operation
- Supports delayed shutdown and graceful, safe shutdown of the application and operating system
- Supports USB, SNMP, and Modbus network interfaces
- Supports multi-mode alarm notifications, such as email and SMS

>> Intelligent battery management

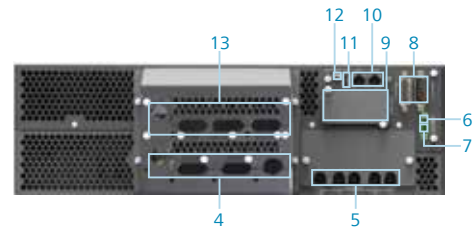
- Flexible battery configuration: 16 to 20 cells per string for 6/10kVA, 32 to 40 cells per string for 15/20kVA.
- Automatic adjustment of float and equalized charging, intelligent hibernation, and temperature compensation effectively extend battery life, reducing TCO
- Automatic adjustment of discharge termination voltage according to load condition and discharging time



UPS2000-G UPS Panel Views

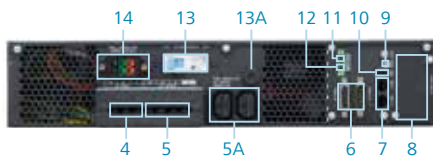


6 kVA to 20 kVA front panel



15/20 kVA rear panel

1	Indicators	2	LCD	3	Function buttons	4	AC input terminals	5	Battery terminals
6	EPO	7	MBS	8	Parallel ports	9	Optional card slot	10	Control Area Network (CAN)
11	USB port	12	Temperature sensor port	13	AC output terminals (pL&sL)				



6 kVA rear panel

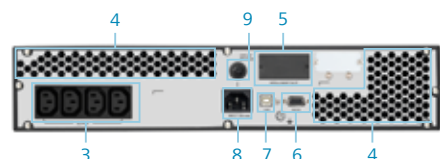


10 kVA rear panel

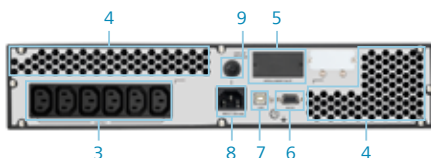
4	AC input terminals	5	AC output terminals (pL&sL)	5A	Output sockets	6	Parallel ports
7	Control Area Network (CAN)	8	Optional card slot	9	Temperature sensor port	10	USB port
12	MBS	13	Input circuit breaker	13A	Fuse base	11	EPO
						14	Battery terminals



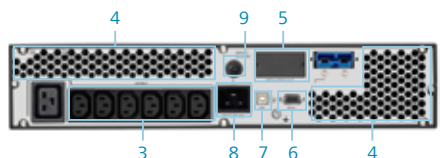
1 kVA to 3 kVA front panel



1 kVA rear panel



2 kVA rear panel



3 kVA rear panel

1	LED	2	Power on/off button	3	Output sockets	4	Fan	5	Optional card slot
6	RS232 serial port	7	USB port	8	Input socket	9	Input breaker		

Note: Schematic picture is the standard version, the long backup version has additional battery interface.

Specifications

Rated Capacity (KVA/KW)		1/0.8	2/1.6	3/2.4	6/5.4	10/9	15/13.5	20/18
Input: Output		1-in: 1-out				1-in: 1-out 3-in: 1-out	1-in: 1-out 3-in: 1-out 3-in: 3-out	
Mains Input	Input Wiring	L+N+PE				L+N+PE /3Ph+N+PE		
	Rated Voltage	200/208/220/230/240 V AC			L-N: 220/230/240 V AC			
	Input Voltage Range	110-300 V AC			80-280 V AC			
	Input Frequency Range	40-70Hz						
Bypass Input	Rated Voltage	200/208/220/230/240 V AC			L-N: 220/230/240 V AC			
	Frequency	50/60 ± 3 Hz			50/60 ± 6 Hz			
Battery	Rated Voltage (Standard)	24 V DC	48 V DC	72 V DC	192-240 V DC		± (192-240) V DC	
	Rated Voltage (Long Backup)	36 V DC	72 V DC	96 V DC				
	Standard backup time	4 min	4 min	4 min	/			
Output	Output Wiring	L+N+PE					L+N+PE /3Ph+N+PE	
	Output Sockets	4 × IEC C13	6 × IEC C13	6 × IEC C13 1 × IEC C19	2 × IEC C13	/		
	Rated Voltage	200/208/220/230/240 V AC ± 1%			220/230/240 V AC ± 1%		L-N: 220/230/240 V AC ± 1%	
	Rated Frequency	1-3K: Tracking the bypass input (Normal mode); 50/60 Hz ± 0.05% (Battery mode);			6-20K: Tracking the bypass input (Normal mode); 50/60 Hz ± 0.05% (Battery mode)			
	Waveform	Sine wave, THDv≤3%			Sine wave, THDv≤2%			
	Efficiency	88%	89%	90%	94.0%	94.5%	95%	95%
	Capacity Load	105%≤Load < 110% 10 min 130%≤Load < 150% 3 s 150%≤Load 0.5 s			105%≤Load < 125% 10 min 125%≤Load < 150% 1 min 150%≤Load 0.1 s			
Environment	Operating Temperature	0℃ - 40℃						
	Storage Temperature	-40℃- +70℃ (battery: -20℃ - +40℃)						
	Relative Humidity	0-95% (No condensing)						
	Operating Altitude	0-1000m(Above 1000 m,derating according to IEC62040-3)						
	Audible Noise	<50dB			<55dB		<58dB	
H × W × D (mm)	Standard	88 × 438 × 310	88 × 438 × 410	88 × 438 × 630	86 × 430 × 615		130 × 430 × 757	
	Long Backup	88 × 438 × 310	88 × 438 × 410	88 × 438 × 410				
Weight	Standard	11.1kg	18.8kg	28.9kg	14kg	16kg	32kg	
	Long Backup	6.0kg	8.7kg	9.3kg				
Certifications		EN/IEC 62040-1; EN/IEC 62040-2; EN/IEC 62040-3; CE; CB; RoHS, REACH, WEEE, etc.			EN/IEC 62040-1; EN/IEC 62040-2; EN/IEC 62040-3; CE; CB; RoHS, REACH, WEEE, etc.			
Communications		USB&RS232 (Optional RS485, Dry contact, SNMP)			USB (Optional RS485, Dry contact, SNMP)			

UPS2000-G Optional Components

Intelligent communication cards*

UPS2000-G supports multiple interface options: standard USB port, plus an intelligent card slot that accommodates an SNMP card, Modbus card, or Dry-Contact Relay Card for enhanced UPS monitoring and control functionality.

>> SNMP card

- Provides SNMP agent and web management functions
- Supports an optional temperature and humidity module

Temperature and humidity sensor port



>> Modbus card

- Provides an RS485 networking solution
- Provides access to the NetEco intelligent management system for monitoring UPS operations



>> Dry-Contact Relay card

- Provides six alarm dry contact outputs and two dry contract control inputs
- The related output for each dry contact can be set in the LCD



>> Wireless modem

- Operates with NetEco system to convert GSM network alarms to SMS alarms.

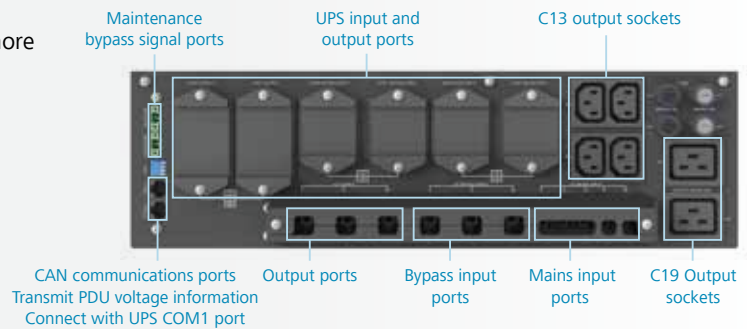


* Suitable for 6kVA to 20 kVA modules only

UPS2000-G Optional Components

20 kVA parallel PDU*

- Supports 2 units parallel, the total capacity no more than 20kVA
- Provides standard power input and output ports with trouble-free wiring
- Provides manual maintenance bypass and convenient online maintenance
- Provides multiple output ports



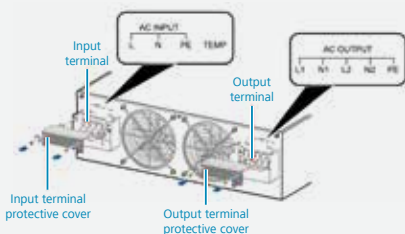
Battery module

- Suitable for IT data centers, available for integrated solutions



Transformer*

- Electronic insulation for UPS output
- Provides 220/110V AC voltage outputs



Other optional components



* Suitable for 6 kVA to 20 kVA modules only

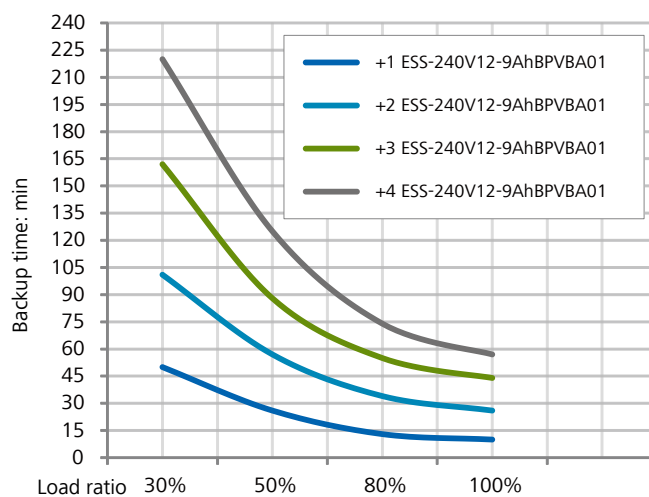
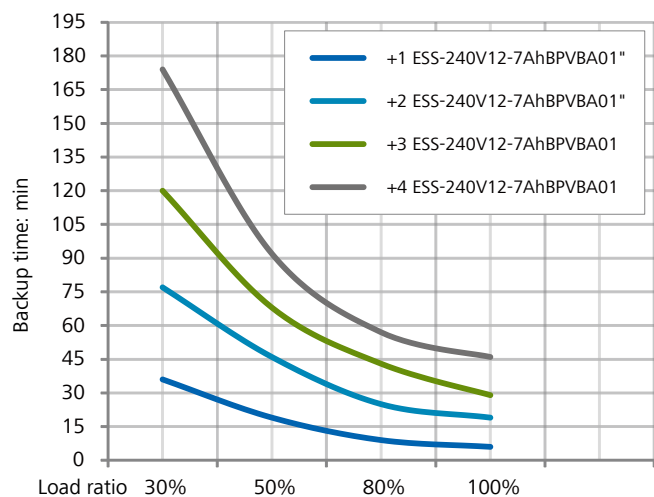
UPS2000-G Optional Components List

Optional component	Model	Remarks
SNMP card*	RMS-SNMP01A RMS-SNMP01B	RMS-SNMP01A for 6-20kVA, RMS-SNMP01B for 1-3 kVA
Modbus card*	RMS-MODBUS01A RMS-MOSBUS01B	RMS-MOSBUS01A for 6-20kVA, RMS-MOSBUS01B for 1-3 kVA
Dry-contact relay card*	RMS-RELAY01A RMS-RELAY01B	RMS-RELAY01A for 6-20kVA, RMS-RELAY01B for 1-3 kVA
Wireless modem*	TD-8013	
36V DC 2*9 Ah battery module	ESS-36V12-9*2AHBPVBB01	Built-in 2 group 6 pcs, 9 Ah serial batteries (for 1 kVA)
72V DC 9 Ah battery module	ESS-72V12-9AHBPVBB01	Built-in 6 pcs, 9 Ah serial batteries (for 2 kVA)
96V DC 9 Ah battery module	ESS-96V12-9AHBPVBB02	Built-in 8 pcs, 9 Ah serial batteries (for 3 kVA)
240V DC 7 Ah battery module*	ESS-240V12-7AhBPVBA01	Built-in 20 pcs, 7 Ah BB serial batteries
240V DC 9 Ah battery module*	ESS-240V12-9AhBPVBA01	Built-in 20 pcs, 9 Ah BB serial batteries
36V DC 40 Ah battery box	ESS-36V40Ah(12V)*1-BBNBB	Batteries not included, can add 3 pcs, 40 Ah batteries (for 1 kVA)
36V DC 65 Ah battery box	ESS-36V65Ah(12V)*1-BBNBB	Batteries not include, can add 3 pcs, 65 Ah batteries (for 1 kVA)
96V DC 40 Ah battery box	ESS-96V40Ah(12V)*1-BBNBB	Batteries not included, can add 8 pcs, 40 Ah batteries (for 3 kVA)
20 kVA 3/1 parallel PDU*	PDC-0091V2ACIOA	Suitable for two 6 kVA to 20 kVA parallel systems with 1 ph input and 1 ph output format, or 15/20kVA two parallel systems with 3 ph input and 1 ph output format; total power capacity is not more than 20 kVA.
20 kVA 3/3 parallel PDU*	PDC-0038V4ACIOA	Suitable for two 15/ 20 kVA parallel systems with 3 ph input and 3 ph output format; total power capacity is not more than 20 kVA.
6 kVA output isolation transformer*	DGL-6/0.22	
10 kVA output isolation transformer*	DGL-10/0.22	
63 A battery breaker box*	PDC-0063DC0440BBB	Battery Circuit Breaker Box-63A-3P-440V DC-Over Current Releases
125 A battery breaker box*	PDU8000-0125DCV8-BXA001	Battery Circuit Breaker Box-125A-4P-750V DC-Remote Control/Shunt Release
Battery temperature sensor*	TE820E10B / W103-B02-L1	Temperature Sensor, -40 °C to 80 °C, +1 °C
Temperature & humidity sensor*	WS302M2A-5/RH811AC05D	With SNMP card, Temperature & humidity sensor, 12V DC to 24V DC, 0 °C to 50 °C, 0% RH to 100% RH, DS OUTPUT
Parallel monitor and alarm cable*	UPSCU2KUMC00	UPS2000 merge cable, 1.5m, D15M, CC8P0.48B(S), D15F

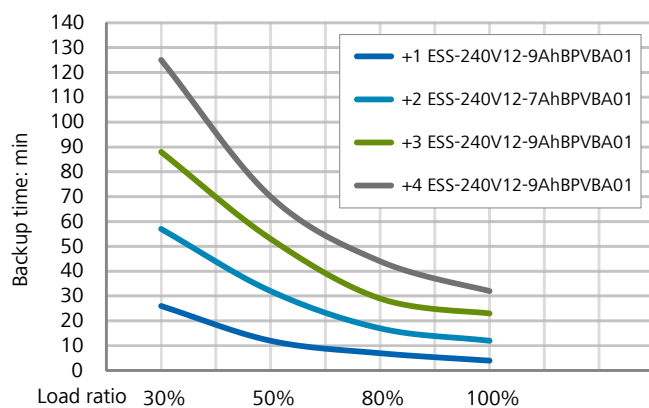
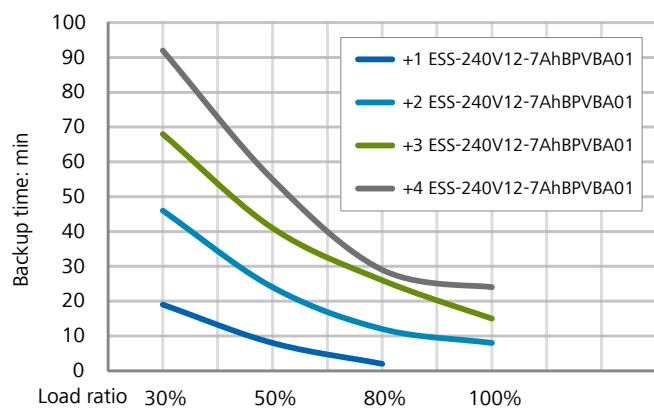
* Suitable for 6 kVA to 20 kVA modules only

Battery module runtime reference charts

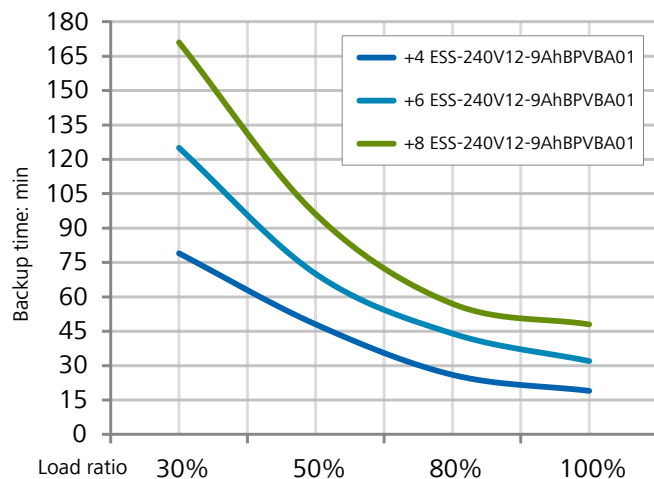
6 kVA Runtime



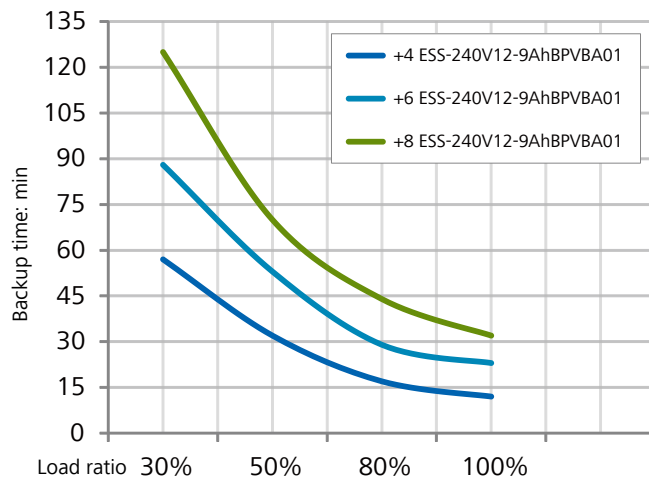
10 kVA Runtime



15 kVA Runtime

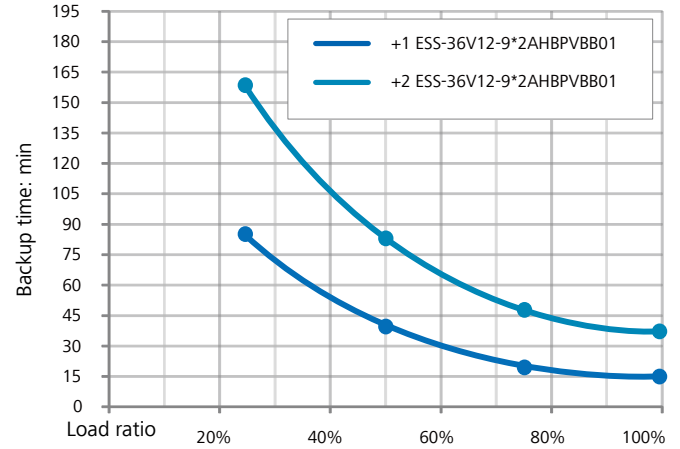
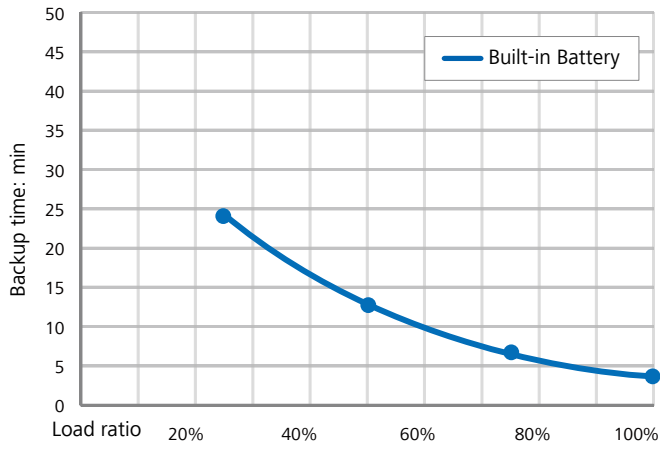


20 kVA Runtime

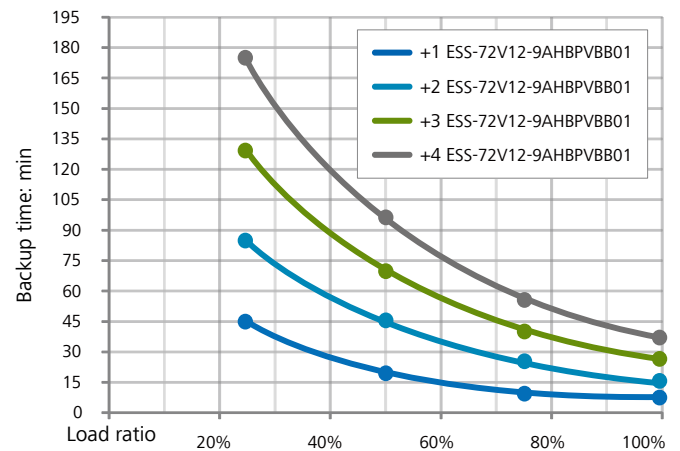
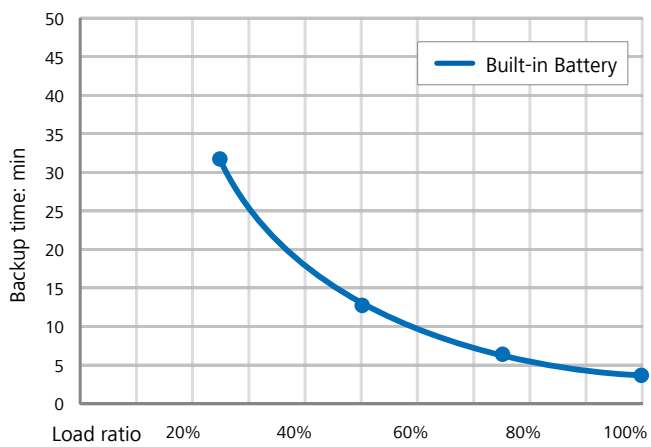


Battery module runtime reference charts

1kVA Runtime



2kVA Runtime



3kVA Runtime

