OMRON

Uninterruptible power supply (UPS)

S8BA & BU_2RWL series

- Small size: 800g (Li-Ion batteries)
- Life expectancy of 10 years
- Plug-in installation

industrial.omron.eu/s8ba

Let nothing interrupt your power

Value Design for Panel

To ensure stable power supply, also in less stable supply networks around the world, we are constantly expanding our range to include UPS systems. The series S8BA is ideal for countermeasures for instantaneous voltage drop and power interruptions.

S8BA
Uninterruptible Power Supply (UPS)

Life-expectancy of 10 years

Switch Mode Power Supply
S8VK-S (120 W)

Life Size

100 mm

Hot - swappable batteries

Hot - swappable batteries provide uniterrupted operations at all time

Lightweight, allows S8BA to be directly mounted on the DIN rail

LED indicators indicate the status of the power supply

Smallest in the market with weight of just 800 gms (Li-Ion batteries) helps in downsizing of the panels

Push-in terminal blocks provide effortless installation

3X Connection
USB - RS232C - I/O

Communication connections, allow compatibility with variety of factory automation controllers & PC's.

In/Output DC24V

Li-Ion

I/O - USB RS-232

Battery HOT Swapping

c UL us LISTED

CE

Downsizing

Free software

Lloyd's Register

DNV·GL

DESIGN ABS ASSESSED

From customer problems to our solutions

Customer Problem

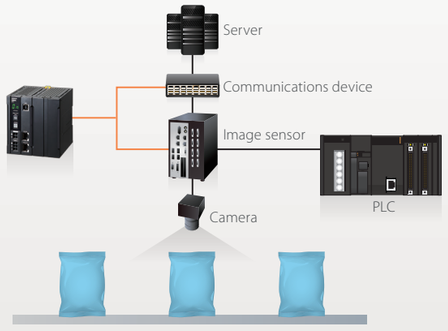
Image data lost due to momentary power interruption

Image data is saved through a network to a host system to ensure traceability during printing inspection processes in a food factory. However, a momentary power interruption, due to a lightning strike, reset the power supply to the image sensor and communications device. This prevented the image data from being saved to the host system.

Solution

Traceability ensured with the S8BA

The S8BA was used to back up the power supplies to the image sensor and communications device. This allowed the system to continue operating until the data was saved in the host system, which provided greater traceability reliability.



Example of S8BA application
Location: food factory
Equipment: image inspection devices
Connected devices: image sensor and communications device

Customer Problem

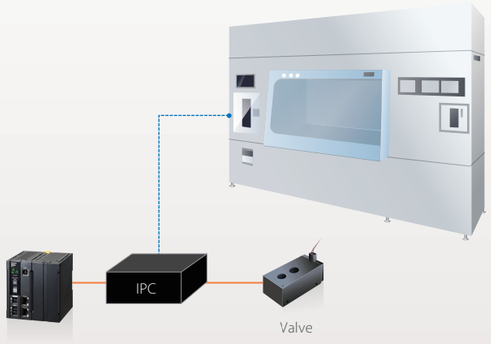
Loss of valve control due to power interruption caused by lightning strike

A lightning strike during a summer storm caused a power interruption at a factory. Due to the power interruption, it became impossible to control the valve that maintains sterile conditions for pharmaceutical manufacturing equipment. During recovery from the power interruption, the valve opened before the clean fans started their normal operation. Sterile conditions were lost, and production had to be stopped for a long time until the sterile conditions could be restored.

Solution

Control continued before and after a power interruption with the S8BA

The S8BA was used to back up an IPC and a power supply to the valve. A signal from the S8BA enables the IPC to communicate with and control the open/close of the valve during instantaneous voltage drop or power interruptions.



Example of S8BA application
Location: pharmaceuticals factory
Equipment: pharmaceutical manufacturing devices
Connected devices: IPC and valve

Customer Problem

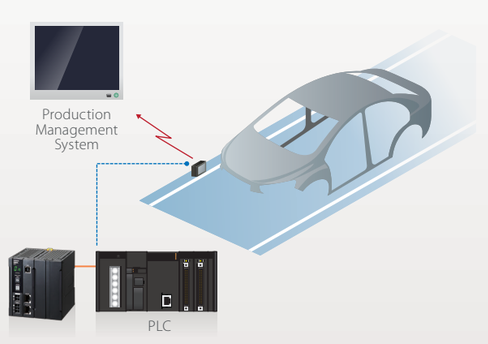
Line stop due to lost process data

Problems with power lines caused instantaneous voltage drops in a factory, This reset the power supply to the Wireless Communications Unit that connects the PLC to the production management system. This interrupted communications and caused the production management system to miss data, which resulted in line stops until the data could be recovered.

Solution

Interruptions in communications prevented with the S8BA

The S8BA was used to back up the power supply to the Wireless Communications Unit and PLC. This enables process data to be reliably communicated to the production management system, and reduced the risk of line stops.



Example of S8BA application
Location: automobile factory
Equipment: production management system
Connected devices: Wireless Communications Unit and PLC

Customer Problem

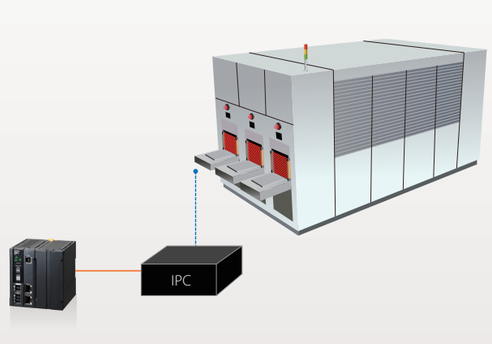
Loss of PC data due to operating errors

Maintenance technicians in a semiconductor manufacturing plant made procedural errors while stopping a device during equipment maintenance. This caused the main power supply to suddenly turn OFF. The power supply to the PC used for SECS communications was also turned OFF without shutting down the PC normally. This caused important data to be lost, and the factory suffered a long production stop.

Solution

S8BA used to enable IPC shutdown

The S8BA was used to back up the power supply to the PC used for communications, and then the Simple Shutdown Software was installed on that PC. This prevented data losses during unexpected power interruptions by enabling the PC to shut down normally when power is lost. Also, the combination of a compact embedded PC with a compact UPS enabled device downsizing.



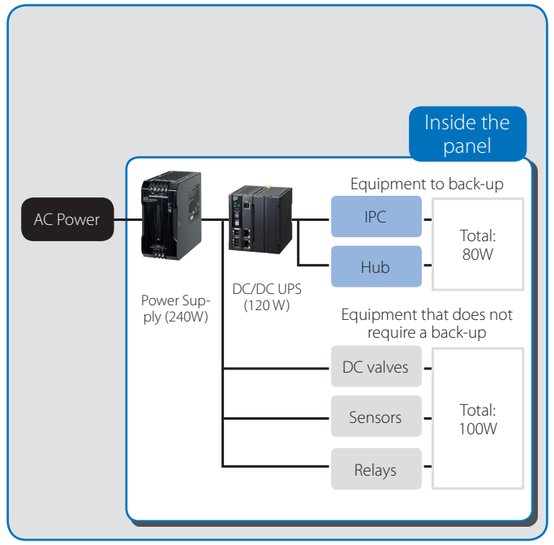
Example of S8BA application
Location: semiconductor manufacturing plant (post-process)
Equipment: semiconductor manufacturing device
Connected device: PC

How big is the machine or panel you would like to back up?

Where do you want to install UPS?

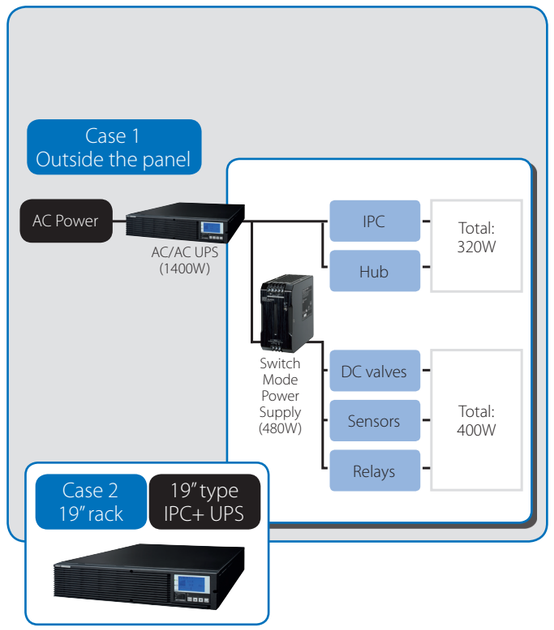
Small back-up capacity DC/DC UPS in control panel or on DIN rail

Ideal for when only a single piece of equipment or a small machine needs backing up. Suitable for harsh environments. Also at just 800g this UPS can be installed in the panel mounted on DIN railing.



Large back-up capacity AC/AC UPS in free-space or in a 19" rack

When an entire system needs backing up. This UPS can be placed outside the panel. Multiple mounting online AC-AC type can be used as a stand-alone device or for mounting in a 19" rack.

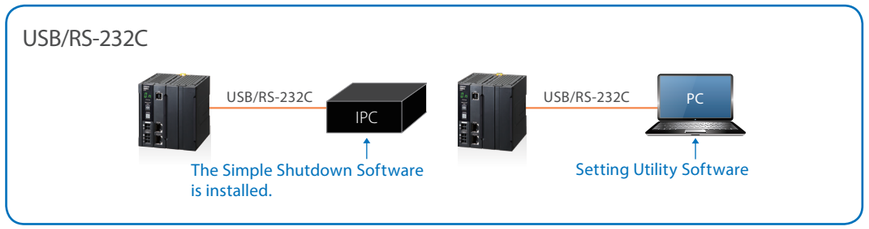


Flexibility of our UPS products

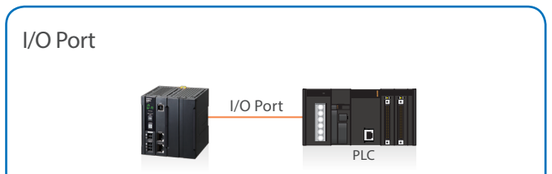
Our UPS products are compatible with all brands of IPCs. All you have to do is download and install the software from the following link: industrial.omron.eu/s8ba.

How to install S8BA with your IPC?

Connect the USB/RS-232C to the PC and make sure that you have downloaded the Software and installed it on your IPC.



Or Connect the I/O signal to the PLC.



Once the S8BA has been connected it should communicate with its I/O signal functions, below mentioned signals explain how the product communicates.

Type of output signals

Signal	Description
Backup signal output (BU)	Stays ON during backup operation at a power failure.
Battery LOW signal output (BL)	Goes ON when the battery becomes weak during backup operation at a power failure.
Trouble signal output (TR)	Goes ON when an internal failure of the UPS occurs or when the battery life counter expires.
Battery replacement signal output (WB)	Goes ON when the test determines that battery replacement is necessary due to deterioration or when the battery life counter goes off-scale.

Type of input signals

Signal	Description
Backup stop signal input (BS)	When the BS signal is ON (High), the output of the UPS is stopped after the time period specified in advance has elapsed. *
Remote ON/OFF signal	Remote ON/OFF signals can be used to start and stop the UPS, by using either an externally connected contact or the ON/OFF status of the open collector circuit. When signal is OFF, the UPS will be turned on. When signal is ON, the UPS will be turned off. In the factory settings, the UPS stops operation when this is short-circuited. In addition, it is necessary to turn on the "Power" switch of UPS to use this function.

* BS signal delay time: It is possible to set the period of time from when a BS signal is received until the output of the UPS is stopped. The output of the UPS can be stopped by inputting the voltage signal (High).

S8BA Series

Additional features:

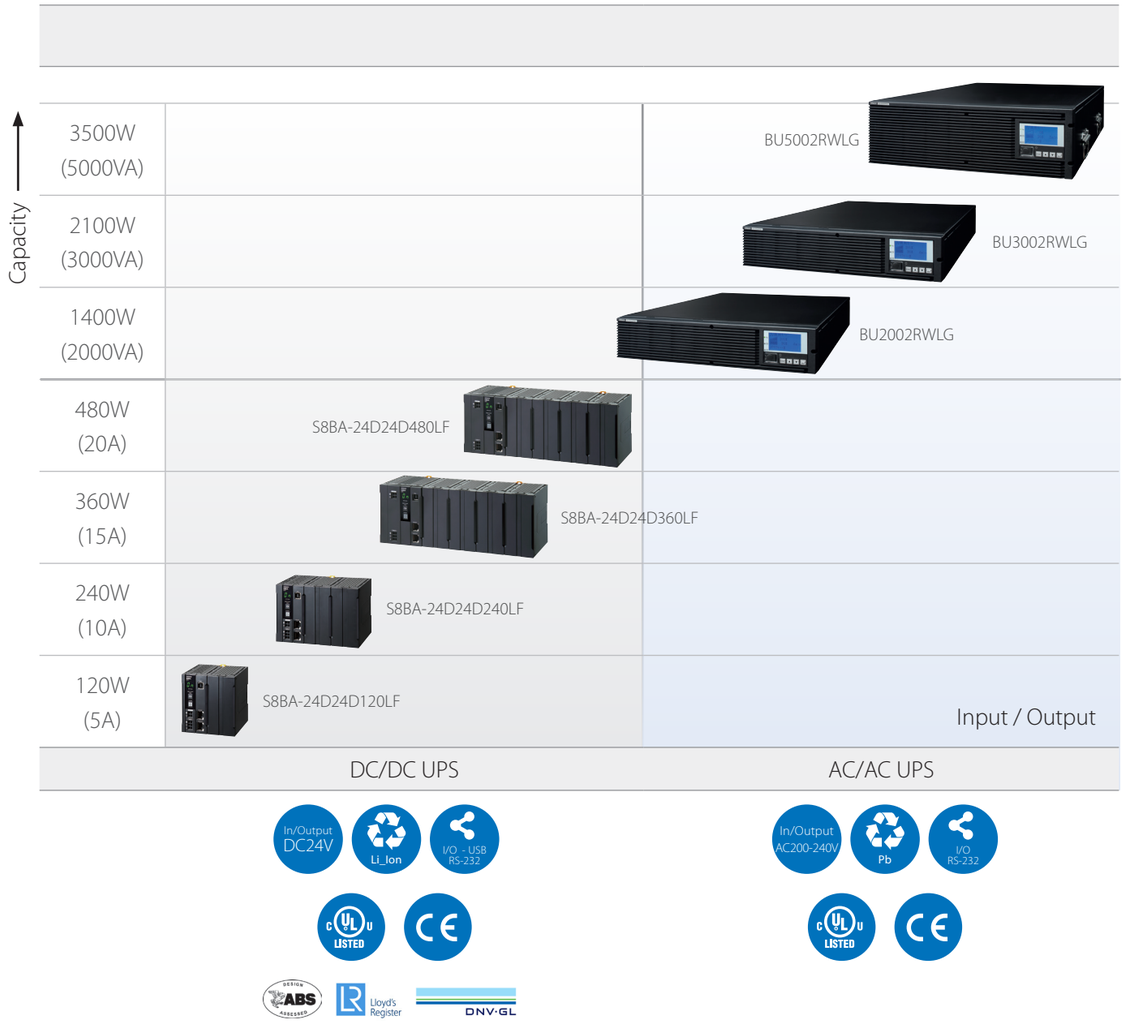
- Wide range of power failure detection(DC24V±5%/±10%/±15%) can help customers to use a weak components for countermeasures for instantaneous voltage drop and power interruptions
- Support 6 IO singals: Backup(BU), Low level(BL), Trouble(TR), Battery replacement(WB) Input: UPS stop(BS), Remote On/OFF
- S8BA can supply a stable power that DC/DC Converter always can adjust the output voltage of the battery to 24Vdc.
- S8BA helps backing up data in IA controllers such as NX/NJ & IPC and servo / motor system

BU_2RWL Series

Features and benefits:

- Multiple mounting online type UPS
- Online power supply method: continuous power supply against instantaneous voltage drop or power interruptions
- LCD operation without PC & multiple mounting methods.
- Standardised one product which can be used in different environments.
- Variety of I/F for IA needs Input / Output Terminal block, RS-232C/I/O signal for communication and external remote on/off signal
- Hot-swappable batteries: Ensure clean, uninterrupted power to protected equipment while batteries are being replaced

Our UPS product family to fulfill back up application.



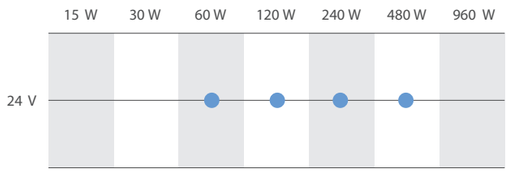
Our UPS family is structured into two different products (S8BA & BU_2RWL). Products are able to support various applications such as packaging, material handling, F&B, machine tools.

Recommended related product

Power supplies

S8VK-S

- Perfect fit for small control panels
- Coated PCBs for better resistance to environment
- Push-in Plus technolgy for easy wiring

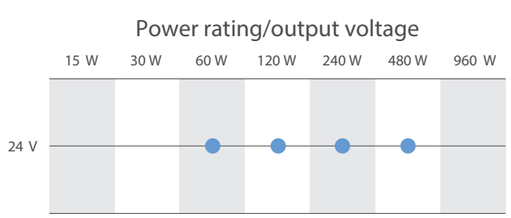


Power rating	Rated input voltage	Rated output voltage	Rated output current	Undervoltage alarm output	Maximum boost current	Size (W×H×D) (mm)	Model
60 W	100 to 240 VAC (allowable range: 85 to 264 VAC or 90 to 350 VDC)	24 V	2.5 A	No	3 A	32×90×90	S8VK-S06024
120 W		24 V	5 A	No	6 A	55×90×90	S8VK-S12024
240 W		24 V	10 A	Yes	15 A	38×124×117.8	S8VK-S24024
480 W		24 V	20 A	Yes	30 A	60×124×117.8	S8VK-S48024

S8VK-C

Single- phase

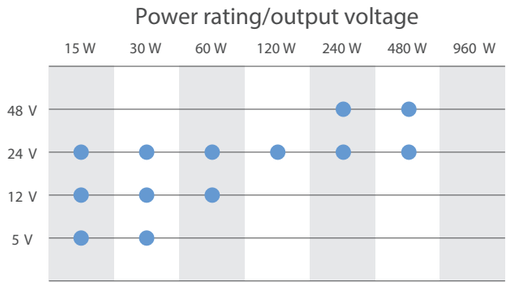
- Cost-effective
- Universal input and Safety standards for worldwide applications



S8VK-G

Single-phase input

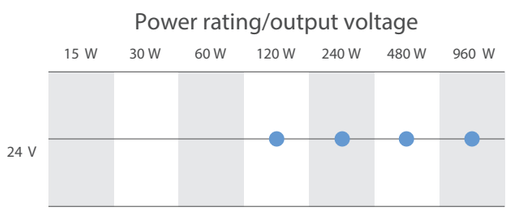
- Reliable and easy operation worldwide
- Resistant in tough environments
- Easy and fast installation



S8VK-T

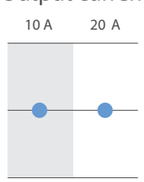
Three-phase, 400-VAC input

- Resistant in tough environments
- Easy and fast installation
- Most compact class on the market



S8VK-R

- Redundancy Units
- Contribute to build high reliable systems
- Compact and cost-effective solution for backup applications
- Easy setup for system reliability requirement



Recommended related product

Industrial PC Platform

Industrial Panel PC NY-series

The Industrial Panel PC intelligently combines the functionality of the Industrial Box PC and Industrial Monitor. No cables are used between the two components, which ensures optimal signal distribution and reliable operation in industrial environments.

Industrial Box PC NY-series

The Industrial Box PC is designed to meet the specific needs of the industrial environment. Design simplification and future-proof architecture minimize the risk of failure.

Industrial Monitor NY-series

The Industrial Monitor is of key importance at the interface between operator and system. The Industrial Monitor is efficient, effective and highly visible with an attractive design.

Value Design for Panel

Compact DC-DC UPS with a DIN-rail for mounting, best suited for the prevention of voltage drop and power failure in industrial PCs (IPC)/controllers

- System reliability greatly improved because 24 VDC power supply is backed up for a certain period of time in the event of voltage drop or power failure.
- Compact, weight reduction, and long battery life thanks to the adoption of a lithium-ion battery.
- Push-in terminal block adopted for the power input and output connections.
- Shutdown in conjunction with the IPC or controller realized by the USB, RS-232C, I/O port installed in the UPS.

Ordering information

Uninterruptible power supply (UPS)

Input voltage	Output voltage	Output current/capacity	Battery type	Terminal block shape	Order code
24 VDC	24 VDC	5 A/120 W	Lithium-ion battery	Push-in terminal block	S8BA-24D24D120LF
		10 A/240 W			S8BA-24D24D240LF
		15 A/360 W			S8BA-24D24D360LF
		20 A/480 W*1			S8BA-24D24D480LF

*1 16.7 A/400 W for use as a UL compliant device.

Communication cable

Specifications	Type	Length	Order code
For RS-232C port	RJ45/Dsub9Pin	2 m	S8BW-C01
For Contact port	RJ45/Discrete wire x 8P	2 m	S8BW-C02

Replacement battery pack

Rated voltage	Rated capacity	Weight	Order code
14.4 VDC	1600 mAh	0.3 kg	S8BA-B120L

Specifications

Item		Capacity	120 W	240 W	360 W	480 W*1
DC input	Rated input voltage		24 VDC			
	Input voltage range	(When standard voltage sensitivity is set)	24 VDC±10%			
		(When low voltage sensitivity is set)	24 VDC±12.5%			
		(When high voltage sensitivity is set)	24 VDC±5%			
	Input maximum current	(for rated input voltage)	5.9 A	11.7 A	17.5 A	23.3 A*2
	Input terminal		Push-in terminal block			
	Inrush current		12 A max., 0.1 ms max.	14 A max., 0.1 ms max.	16 A max., 0.1 ms max.	
DC output	Rated current	(for rated output voltage)	5 A	10 A	15 A	20 A*3
	Switching time		Uninterrupted			
	Output voltage	Normal operation	Output of input voltage as-is			
		Backup operation	24 V±5%			
	Output terminal		Push-in terminal block			
Battery	Type		Lithium-ion battery			
	Rated voltage		14.4 VDC			
	Rated capacity		1600 mAh × 1 parallel	1600 mAh × 2 parallel	1600 mAh × 3 parallel	1600 mAh × 4 parallel
	Expected battery life*4		2.5 years (50°C), 5 years (40°C), 10 years (25°C)			
	Replacement by user		Yes (Hot swapping)			
	Charging time		4 hours*5			
Backup time (25°C, initial characteristics)			6 min. (120 W)	6 min. (240 W)	6 min. (360 W)	6 min. (480 W)
Environment	Operating ambient temperature/humidity		0 to 55°/10 to 90% (with no condensation)			
	Storage ambient temperature/humidity		–20° to 55°/10 to 90% (with no condensation)			
Enclosure	Dimensions (W × D × H mm)		94 × 100 × 100	148 × 100 × 100	270 × 100 × 100	
	Weight of unit		Approx. 0.8 kg	Approx. 1.3 kg	Approx. 2.0 kg	Approx. 2.3 kg
	Cooling method		Natural cooling			
Safety standard compliance			UL508/CE/C22.2 No.107.1-01			
Marine standards			Lloyd's register/ABS/EN60945*6/DNV GL (Certification is pending for DNV GL)			
Internal power consumption (normal*7/maximum*8)			7 W/22 W	11 W/41 W	14 W/60 W	18 W/80 W

Item		Capacity	120 W	240 W	360 W	480 W*1
Serial communication	RS232C (Interface terminal)		Yes (RJ45)			
	USB (interface terminal)		Yes (B connector)			
I/O signal			Yes (RJ45)			

*1 400 W for use as a UL compliant device.
*2 20 A for use as a UL compliant device.
*3 16.7 A for use as a UL compliant device.
*4 An estimated value for standard mounting. Not a guaranteed value.
*5 When using in an environment at a high temperature, charging may be paused by charging temperature protection, then the charging time will be longer than specified time. "CS" will be displayed when charging temperature protection is operated.
*6 For the S8BA-24D24D120LF, install all of the RSMN-2030, RSHN-2030, and RSEN-2030 EMC filters manufactured by TDK. For the S8BA-24D24D240LF, S8BA-24D24D360LF, or S8BA-24D24D480LF, install both the RSMN-2030 and RSHN-2030 or their equivalents. Install these filters in series to the cable connected to the DC input terminal block. When you do, do not connect anything to the GR terminal.
The effectiveness of the noise filters may be affected by the installation environment. Be sure to check effectiveness before starting operation.
*7 Conditions: With rated loads connected, at a rated input voltage, and with the battery fully charged.
*8 Conditions: With rated loads connected, at a rated input voltage, and at the maximum battery charging current.

Backup time table (Time unit: minutes)

For devices that use the A indication, convert the capacity into W: W = A × 24

	Capacity (W)									
	30	60	90	120	180	240	300	360	420	480
120 W	29	14	9	6	–	–	–	–	–	–
240 W	58	29	19	15	9	6	–	–	–	–
360 W	87	43	28	22	14	10	8	6	–	–
480 W	119	59	39	29	19	15	11	9	8	6

Note: The above backup times are for reference only. They may change depending on the battery life and external environment (such as temperature).

Dimensions

S8BA-24D24D120LF (120 W)

Unit: mm

S8BA-24D24D240LF (240 W)

Unit: mm

S8BA-24D24D360LF (360 W)
S8BA-24D24D480LF (480 W)

Unit: mm

Multiple mounting online AC-AC type UPS, useful in a variety of applications

- Online power supply method: Continuous power supply against instantaneous voltage drop or power interruptions
- Easy LCD operation without PC & multiple mounting methods.
- Multiple connections, input/output terminal block and RS232-C, I/O for external communication, plus external remote ON/OFF signal
- Hot-swappable batteries: Ensures clean, uninterrupted power to protect equipment during battery replacement

Ordering information

Uninterruptible power supply (UPS)

Input voltage	Output voltage	Capacity	Type	Order code
200/208/220/230/240 VAC	200/208/220/230/240 VAC	2000 VA/1400 W	Rackmount*1, Multi voltage power, Low power consumption	BU2002RWLG
		3000 VA/2100 W		BU3002RWLG
		5000 VA/3500 W		BU5002RWLG

*1 Can also use the included vertical stand when positioning the unit vertically

Replacement battery pack

Rated voltage	Rated capacity	Weight	Applicable model	Order code
12 VDC	9 Ah	11 kg	BU2002RWL	BUB2002RW
		17 kg	BU3002RWL, BU5002RWL (2pcs needed	BUB3002RW

Specifications

		BU2002RWLG	BU3002RWLG	BU5002RWLG
Operation method		Full-time inverter supply method (high efficiency)		
AC input	Rated input voltage	200/208/220/230/240 VAC		
	Startup voltage range	200 V mode: 160±2 to 288±2 VAC, 208 V mode: 167±2 to 278±2 VAC 220 V mode: 176±2 to 278±2 VAC, 230 V mode: 184±2 to 278±2 VAC 240 V mode: 192±2 to 278±2 VAC, 100 V mode: 160±2 to 288±2 VAC		
	Input voltage range	200 V mode: 170±2 to 278±2 VAC, 208 V mode: 177±2 to 278±2 VAC 220 V mode: 186±2 to 278±2 VAC, 230 V mode: 194±2 to 278±2 VAC 240 V mode: 202±2 to 278±2 VAC, 100 V mode: 170±2 to 278±2 VAC		
	Input frequency	50/60 Hz±1, 3, 5, or 14% (5% in the factory settings)		
	Maximum current (at rated voltage)	9 A	14 A	23 A
	Phase	Single-phase, two-wire (grounded)		
	Input plug	Terminal block		NEMA L6-30P / Terminal block
AC output	Output capacity (upper limit)	2000 VA/1400 W (1000 VA/700 W in 100 V mode)	3000 VA/2100 W (1500 VA/1050 W in 100 V mode)	5000 VA/3500 W (2500 VA/1750 W in 100 V mode)
	Rated current (at rated voltage)	10 A	15 A	25 A
	Switching time	Uninterrupted		
	Output voltage (commercial operation)	200 V mode: 200 VAC±2%, 208 V mode: 208 VAC±2% 220 V mode: 220 VAC±2%, 230 V mode: 230 VAC±2% 240 V mode: 240 VAC±2%, 100 V mode: 100 VAC±5%		
	Output voltage (backup operation)	200 V mode: 200 VAC±2%, 208 V mode: 208 VAC±2% 220 V mode: 220 VAC±2%, 230 V mode: 230 VAC±2% 240 V mode: 240 VAC±2%, 100 V mode: 100 VAC±5%		
	Output frequency (commercial operation)	Synchronized with input frequency		
	Output frequency (backup operation)	50/60±0.5 Hz		
	Output waveform (in commercial power mode/battery mode)	Sine wave/Sine wave		
	Phase	Single-phase, two-wire		
	Output receptacles	Terminal block		NEMA L6-30R × 2, terminal block
Battery	Sealed lead battery life expectancy	5 years (ultralong operating life) (ambient temperature 25°C)		
	Battery capacity (V/Ah) (× Quantity)	12 VDC/9 Ah (× 4)	12 VDC/9 Ah (× 6)	12 VDC/9 Ah (× 12)
	Charging time	8 hours		
Backup time (25°C, initial characteristics)		5 min (1400 W)	5 min (2100 W)	5 min (3500 W)
Dimensions in mm (W × D × H)		430×660×88 (2U)		430×700×132 (3U)
Weight of unit		Approx. 28 kg	Approx. 33 kg	Approx. 61 kg
Operating environment temperature/humidity		0 to 40°C/25% to 85% with no condensation		
Storage environment temperature/humidity		–15 to 50°C/10% to 90% (with battery fully charged, stored with no condensation)		
Noise regulation		VCCI Class A compliant		
Safety standard compliance		UL1778/CE/RoHS compliance		
Internal power consumption (normal*1/maximum*2)		70 W/145 W	148 W/265 W	249 W/480 W

	BU2002RWLG	BU3002RWLG	BU5002RWLG
Cooling method	Forced air cooling		
Serial communication (RS-232C) (interface)	■ (D-sub 9pin)		
Contact signal (interface)	■ (D-sub 9pin)		

*1 Rated load/rated input voltage/when fully charged
*2 Rated load/rated input voltage/when battery charge current is at maximum

Backup time table (Time unit: minutes)

Model	Capacity (W)																	
	20	50	100	200	300	400	600	800	1000	1200	1400	1600	1800	2000	2100	2700	3000	3500
BU5002RWLG	660	480	320	200	140	106	68	50	39	31	25	21	18	16	15	10	8	5
BU3002RWLG	450	260	165	93	63	45	28	19	15	11	9	7.5	6	5.2	5	–	–	–
BU2002RWLG	360	190	110	60	39	27	16	12	9.5	7	5	–	–	–	–	–	–	–

Note: These backup times are for reference only. Times may vary according to battery life and external environmental conditions (temperature, etc.)

Would you like to know more?

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