SANUPS E11B-Li

Hybrid UPS

Ver.2.1

SANYO DENKI

SANUPS E11B-Li

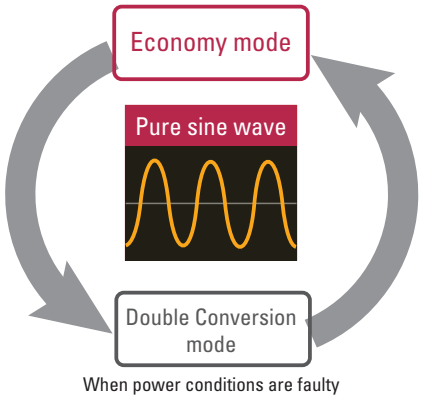
UPS That Achieves Power Quality and Efficiency and Can Be Used Worldwide

UPS unit
3-year warranty

Achieves Both High-Quality Power Supply and Energy Saving

- This UPS provides high-quality, reliable power to loads while achieving energy saving.
  Thanks to the hybrid topology,(1) the UPS automatically selects the optimal mode of operation for any given input power conditions.

When power conditions are stable



When power conditions are faulty

(1) A UPS design that automatically switches the double conversion and standby topologies according to the input power conditions.

Reduced Maintenance Work

- Our conventional UPSs(2) using lead-acid batteries require battery replacement in about 5 years. Thanks to Li-ion batteries, this UPS doesn't require battery replacement for 10 years.(3) Thus, the cost of battery replacement can be reduced.

(2) Conventional UPS: E11B (with lead-acid batteries)
(3) At a 30°C ambient temperature.

Wide Operating Temperature Range

- The operating temperature range is -10 to +55°C.
  This provides the product with a higher degree of freedom of installation, allowing it to be installed in locations with large temperature differences.

Compliance with Safety Standards

- This UPS conforms to UL and EN safety standards and CE Marking. It can be used with confidence in various regions.

Lineup:

[No. of phases/wires] Input/Output voltage	Output capacity [kVA]	Output capacity [kW]	Battery backup time*	Input plug	UL/CE certification	Model no.	Page: Specifications	Page: Dimensions
[Single-phase 2-wire] 100 V model 100/110/115/120 V	1	0.8	4 min	NEMA 5-15P	✓	**E11BL102A001AUJ**	p. 4	p. 3
	1.5	1.2		NEMA 5-20P	✓	**E11BL152A001AUJ**	p. 4	p. 3
	2	1.6		NEMA L5-30P	✓	**E11BL202A001AUJ**	p. 4	p. 3
[Single-phase 2-wire] 200 V model 200/208/220/230/240 V	1	0.8	4 min	IEC60320-C14	✓	**E11BL102A002AUJ**	p. 5	p. 3
				NEMA L6-20P	✓	**E11BL102A012AUJ**	p. 5	p. 3
	2	1.6		IEC60320-C20	✓	**E11BL202A002AUJ**	p. 5	p. 3
				NEMA L6-20P	✓	**E11BL202A012AUJ**	p. 5	p. 3

* At a 25°C ambient temperature, 0.8 load power factor, using new, fully charged batteries.

Installation examples

Mountable in an EIA standard 19-inch rack

Rack-mounting brackets are included as standard. Rack support rails are optional.

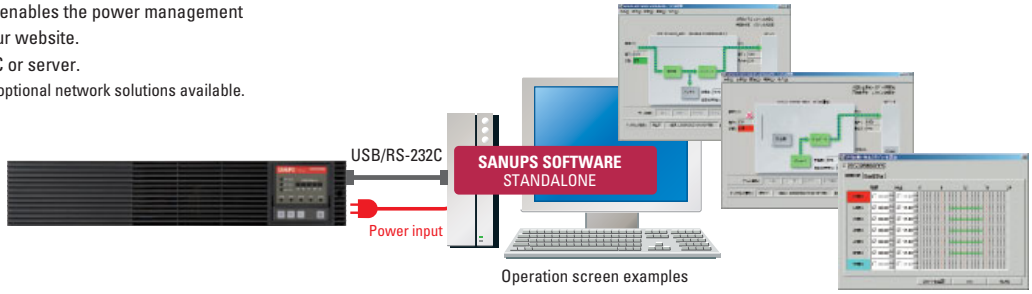
Vertical installation

Vertical stands are optional.

SANUPS SOFTWARE STANDALONE

A free software program (Windows version) that enables the power management from computers is available for download from our website.
UPS status can be checked at a glance from a PC or server.
Note: For power management via a network, we have optional network solutions available.

Main functions
- Automatic start-up/shutdown of computers
- Scheduled operation
- UPS status display
- Message display
- UPS event log



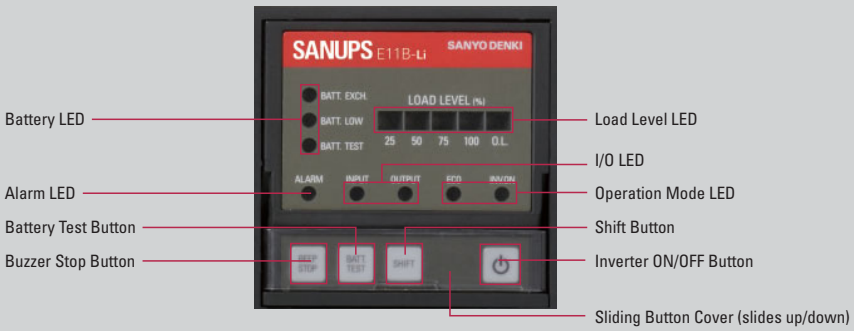
Operation screen examples

Battery Cold Start Function

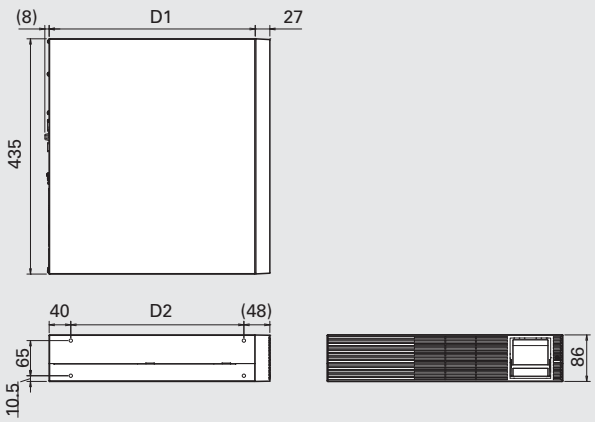
Batteries can start up the UPS even when grid AC power is not available, enabling inverter operation.
With this function enabled, the UPS can be used as an emergency power supply in the event of a natural disaster or emergency. The default setting is "Disabled."

Operating Panel

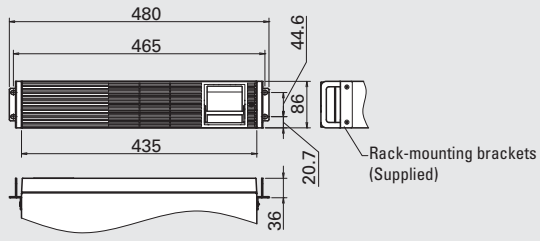
LED Panel



Dimensions (Unit: mm)



Rack mount



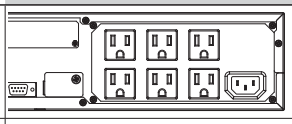
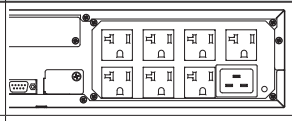
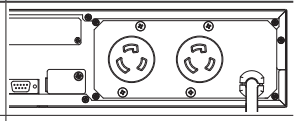
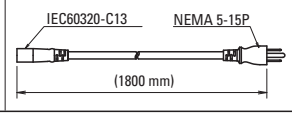
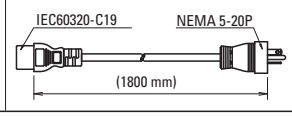
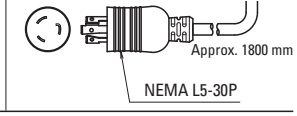
Output capacity	D1	D2	Mass
1 kVA	381	320	12 kg
1.5 kVA	473	412	15 kg
2 kVA	538	477	18 kg

Specifications

100 V model **UL/CE** certified models

Model no.				E11BL102A001AUJ	E11BL152A001AUJ	E11BL202A001AUJ
UL-registered no.				E11BL102U001J	E11BL152U001J	E11BL202U001J
Rated output capacity (apparent power / active power)				1.0 kVA / 0.8 kW	1.5 kVA / 1.2 kW	2.0 kVA / 1.6 kW
Technology	Topology			Hybrid(1)		
	Cooling method			Forced air cooling		
AC input	No. of phases/wires			Single-phase 2-wire(2)		
	Rated voltage (Same as output)			100/110/115/120 V		
	Voltage range	In Double Conversion mode		At load level < 40%: 55 to 150 V		
				At load level < 70%: 68 to 144 V		At load level < 70%: 68 to 140 V
				At load level ≥ 70%: 80 to 144 V		At load level ≥ 70%: 80 to 140 V
		In Economy mode		Within ±8% of rated voltage		
	Rated frequency			50/60 Hz (auto-sensing)		
	Frequency range(3)	In Double Conversion mode fixed setting		Within ±1% of rated frequency (Synchronization range)		
				40 to 120 Hz (Asynchronous operation range)		
		In automatic transfer setting		Within ±1, 3, or 5% of rated frequency (Factory setting is ±3%; synchronization range)		
				40 to 120 Hz (Asynchronous operation range)		
	Required capacity(4)			1.1 kVA or less	1.5 kVA or less	2.2 kVA or less
	Input power factor			0.95 or greater		
AC output	No. of phases/wires			Single-phase 2-wire		
	Rated voltage (Changeable with settings)			100/110/115/120 V (Factory setting: 100 V)		
	Voltage regulation	In Double Conversion mode		Within ±2% of rated voltage		
		In Economy mode		Within -10 to +8% of rated voltage		
	Rated frequency (same as input)			50/60 Hz		
	Frequency regulation	In grid operation	In Double Conversion mode fixed setting	Within ±1% of rated frequency		
			In automatic transfer setting	Within ±1, 3, or 5% of rated frequency (Factory setting: ±3%)		
		In battery operation		Within ±0.5% of rated frequency (Including during asynchronous operation)		
	Voltage harmonic distortion (At rated output)		At linear load	3% or less		
			At rectifier load	8% or less		
	Load power factor	Rated		0.8 lagging (Variation range: 0.7 lagging to 1.0)		
	Transient voltage fluctuation	For abrupt load change		Within ±5% of rated voltage (For 0⇔100% load step changes at rated input)		
		For loss or return of input power		Within ±5% of rated voltage (At rated output)		
		For abrupt input voltage change		Within ±5% of rated voltage (For ±10% abrupt change)		
	Overcurrent protection			Automatic transfer to bypass (With automatic retransfer function)		
	Overload capability	Inverter	In Double Conversion mode	105% (for 200 ms)		
		Bypass		200% (for 30 s), 800% (for 2 cycles)		
Battery	Type			Lithium-ion battery		
	Battery backup time(5)			4 min		
	Expected life (6)			Approx. 10 years		
	Battery capacity			40 Ah·cell	60 Ah·cell	80 Ah·cell
	Battery self-test			Can be enabled (Factory setting: "disabled")		
Interface	PC port			RS-232C, USB Type B(7) (Cannot be used at the same time)		
	Remote port			Remote ON/OFF		
	Dry contact			Optional dry contact interface card is required		
	Network support			Optional LAN interface card is required		
Acoustic noise (In Double Conversion mode)				51 dB	52 dB	55 dB
Heat dissipation (In Double Conversion mode at rated output, after battery charging completed)				130 W	195 W	260 W
Input leakage current (Including during asynchronous operation)				3 mA or less		3.5 mA or less
Operating environment				Ambient temperature: -10 to +55˚ C;(8) relative humidity: 20 to 90% (non-condensing)		
Storage environment(9)				Ambient temperature: -15 to +60˚ C; relative humidity: 20 to 90% (non-condensing)		
Safety standard				UL 1778 5th edition (E226092), CSA C22.2 No. 107.3-14 (3rd edition), CE marking (EN 62040-1:2008/A1:2013)		
EMC standard				VCCI 32-1 Class A FCC Part 15 Subpart B Class A, EN 62040-2 C2:2010, EN 55022:2010 Class A, EN 62040-2:2006, EN 55024:2010		
Separate options						
Vertical stands				STAND2UA00		
Floor mounting brackets				FM2UA00		
Rack support rails(10)				RM030-US (2U)		
Air filter(11)				FL011		

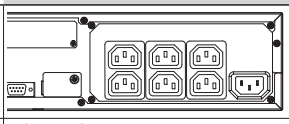
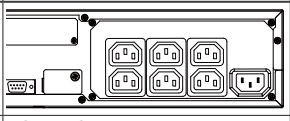
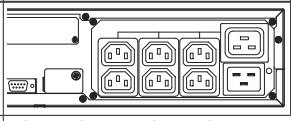
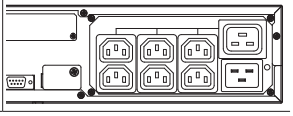
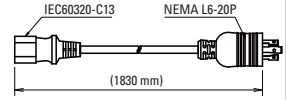
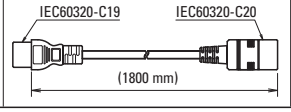
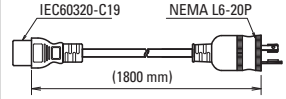
(1) When the UPS transfers from Economy mode to battery operation, there will be an interruption of approximately 8 ms. In the event of an abrupt input voltage or frequency change while in Economy mode, the UPS might transfer to battery operation. For use without interruption, fix the operation mode to Double Conversion mode.
(2) When grounding, connect the grounded phase of the AC input power to the UPS's W (N) input terminal (S-phase).
(3) The inverter synchronizes with AC input and allows an uninterrupted transfer to bypass provided that the AC input frequency is within a range of the rated frequency ±3% (1, 3, or 5% selectable).
(4) Max. capacity during battery recovery charging
(5) At 25°C ambient temperature and load power factor of 0.8, using new, fully charged batteries.
(6) At an operating temperature of 30°C.
(7) Use of USB interface requires driver installation.
(8) When the ambient temperature exceeds 40°C, battery charging will stop and a Device Error (minor malfunction) alarm will be generated.
(9) Avoid use or storage in +30°C or higher temperatures for extended periods of time, or the battery's life will be shortened. When a UPS is stored without being operated for a long period, the batteries require recharging once every six months.
(10) Used for mounting the UPS on a standard 19-inch rack.
(11) A front side air intake filter for preventing dust ingress.

	E11BL102A001AUJ	E11BL152A001AUJ	E11BL202A001AUJ
Rear view			
Output outlet shape	NEMA 5-15R×6	NEMA 5-20R×7	NEMA L5-30R×2
Power input cable			

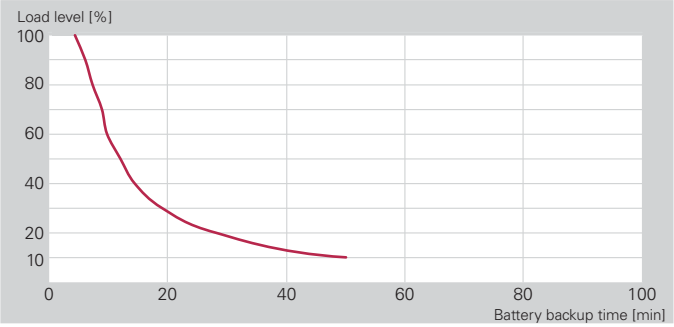
200 V model **UL/CE certified models**

Model no.				E11BL102A002AUJ	E11BL102A012AUJ	E11BL202A002AUJ	E11BL202A012AUJ
UL-registered no.				E11BL102U002J	E11BL102U012J	E11BL202U002J	E11BL202U012J
Rated output capacity (apparent power / active power)				1.0 kVA / 0.8 kW		2.0 kVA / 1.6 kW	
Technology	Topology			Hybrid[1]			
	Cooling method			Forced air cooling			
AC input	No. of phases/wires			Single-phase 2-wire[2]			
	Rated voltage (Same as output)			200/208/220/230/240 V			
	Voltage range	In Double Conversion mode		At load level < 40%: 110 to 300 V			
				At load level < 70%: 136 to 288 V		At load level < 70%: 136 to 280 V	
				At load level ≥ 70%: 160 to 288 V		At load level ≥ 70%: 160 to 280 V	
		In Economy mode		Within ±8% of rated voltage			
	Rated frequency			50/60 Hz (auto-sensing)			
	Frequency range[3]	In Double Conversion mode fixed setting		Within ±1% of rated frequency (Synchronization range)			
				40 to 120 Hz (Asynchronous operation range)			
		In automatic transfer setting		Within ±1, 3, or 5% of rated frequency (Factory setting is ±3%; synchronization range)			
				40 to 120 Hz (Asynchronous operation range)			
	Required capacity[4]			1.1 kVA or less		2.2 kVA or less	
	Input power factor			0.95 or greater			
AC output	No. of phases/wires			Single-phase 2-wire			
	Rated voltage (Changeable with settings)			200/208/220/230/240 V (Factory setting: 200 V)			
	Voltage regulation	In Double Conversion mode		Within ±2% of rated voltage			
		In Economy mode		Within -10 to +8% of rated voltage			
	Rated frequency (same as input)			50/60 Hz			
	Frequency regulation	In grid operation	In Double Conversion mode fixed setting	Within ±1% of rated frequency			
			In automatic transfer setting	Within ±1, 3, or 5% of rated frequency (Factory setting: ±3%)			
		In battery operation		Within ±0.5% of rated frequency (Including during asynchronous operation)			
	Voltage harmonic distortion (At rated output)		At linear load	3% or less			
			At rectifier load	8% or less			
	Load power factor	Rated		0.8 lagging (Variation range: 0.7 lagging to 1.0)			
	Transient voltage fluctuation	For abrupt load change		Within ±5% of rated voltage (For 0⇔100% load step changes at rated input)			
		For loss or return of input power		Within ±5% of rated voltage (At rated output)			
		For abrupt input voltage change		Within ±5% of rated voltage (For ±10% abrupt change)			
	Overcurrent protection			Automatic transfer to bypass (With automatic retransfer function)			
	Overload capability	Inverter	In Double Conversion mode	105% (for 200 ms)			
		Bypass		200% (for 30 s), 800% (for 2 cycles)			
Battery	Type			Lithium-ion battery			
	Battery backup time[5]			4 min			
	Expected life [6]			Approx. 10 years			
	Battery capacit			40 Ah·cell		80 Ah·cell	
	Battery self-test			Can be enabled (Factory setting: "disabled")			
Interface	PC port			RS-232C, USB Type B[7] (Cannot be used at the same time)			
	Remote port			Remote ON/OFF			
	Dry contact			Optional dry contact interface card is required			
	Network support			Optional LAN interface card is required			
Acoustic noise (In Double Conversion mode)				51 dB		55 dB	
Heat dissipation (In Double Conversion mode at rated output, after battery charging completed)				130 W		260 W	
Input leakage current (Including during asynchronous operation)				3 mA or less		3.5 mA or less	
Operating environment				Ambient temperature: -10 to +55° C;[8] relative humidity: 20 to 90% (non-condensing)			
Storage environment[9]				Ambient temperature: -15 to +60° C; relative humidity: 20 to 90% (non-condensing)			
Safety standard				UL 1778 5th edition (E226092), CSA C22.2 No. 107.3-14 (3rd edition), CE marking (EN 62040-1:2008/A1:2013)			
EMC standard				VCCI 32-1 Class A FCC Part 15 Subpart B Class A, EN 62040-2 C2:2010, EN 55022:2010 Class A, EN 62040-2:2006, EN 55024:2010			
Separate options							
Vertical stands				STAND2UA00			
Floor mounting brackets				FM2UA00			
Rack support rails[10]				RM030-US (2U)			
Air filter[11]				FL011			

(1) When the UPS transfers from Economy mode to battery operation, there will be an interruption of approximately 8 ms. In the event of an abrupt input voltage or frequency change while in Economy mode, the UPS might transfer to battery operation. For use without interruption, fix the operation mode to Double Conversion mode.
(2) When grounding, connect the grounded phase of the AC input power to the UPS's W (N) input terminal (S-phase).
(3) The inverter synchronizes with AC input and allows an uninterrupted transfer to bypass provided that the AC input frequency is within a range of the rated frequency ±3% (1, 3, or 5% selectable).
(4) Max. capacity during battery recovery charging
(5) At 25°C ambient temperature and load power factor of 0.8, using new, fully charged batteries.
(6) At an operating temperature of 30°C.
(7) Use of USB interface requires driver installation.
(8) When the ambient temperature exceeds 40°C, battery charging will stop and a Device Error (minor malfunction) alarm will be generated.
(9) Avoid use or storage in +30°C or higher temperatures for extended periods of time, or the battery's life will be shortened. When a UPS is stored without being operated for a long period, the batteries require recharging once every six months.
(10) Used for mounting the UPS on a standard 19-inch rack.
(11) A front side air intake filter for preventing dust ingress.

	E11BL102A002AUJ	E11BL102A012AUJ	E11BL202A002AUJ	E11BL202A012AUJ
Rear view				
Output outlet shape	IEC60320-C13×6	IEC60320-C13×6	IEC60320-C13×6, IEC60320-C19×1	
Power input cable				

Load Level vs Backup Time



Note: Reference value at 25˚C ambient temperature and load power factor of 0.8, using new, fully charged batteries.

Network Options

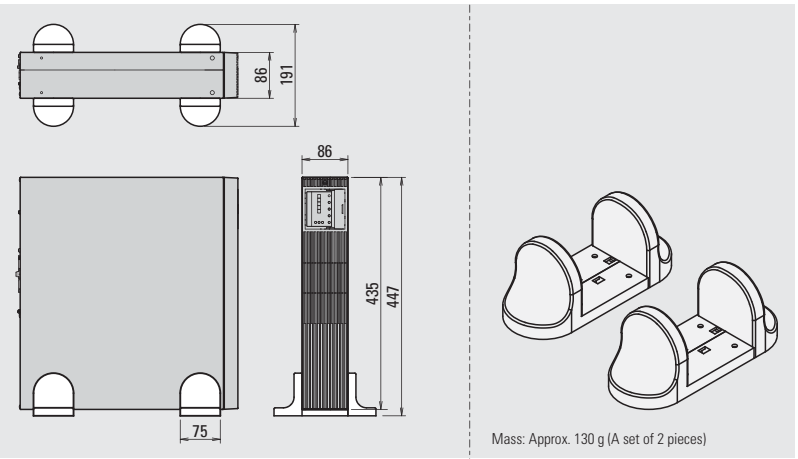
Item	Model no.		Remarks
LAN Interface Card	IPv4/IPv6, Modbus TCP supported	**PRLANIF022A**	When installed in the optional card slot, this card enables 24/7 monitoring of UPS operations and status, and sends email notifications to system administrators for quick actions via network in the event of a power failure.
	IPv4/IPv6, Modbus TCP/RTU supported	**PRLANIF024A**	
	IPv4/IPv6, environmental monitoring supported	**PRLANIF013B-US**	Combined with our temperature sensor (PRLANSN001) and humidity sensor (PRLANSN002), this model enables monitoring of UPS ambient temperature and humidity.
Dry Contact Interface Card	Terminal block output	**PRCONIF007**	This card outputs no-voltage contact signals to notify UPS status. A and B contacts can be selected for each signal.
	D-sub output connector	**PRCONIF008**	
SANUPS SOFTWARE Download version	for Windows	**PMS52□00DL**(2)	This is an installation-based UPS management software. For the latest OS support information, refer to our website. For bulk purchase of software licenses, append an appropriate -suffix to the model number as on the right. **-10** (10 licenses) **-50** (50 licenses) **-100** (100 licenses)
	for Multi-OS(1)	**PMS53□00DL**(2)	

(1) Supports Windows, Unix, and Linux.
(2) The □ 's denote revision characters.
Note: Optional products have different operating temperature ranges from the UPS.

Dimensions of Options (Unit: mm)

Vertical Stands

STAND2UA00

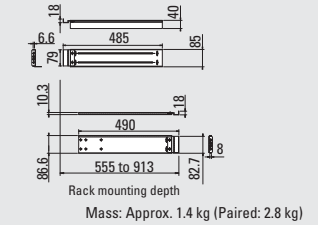


Mass: Approx. 130 g (A set of 2 pieces)

Rack Support Rails

Used for mounting the UPS on a standard 19-inch rack.
Rack mounting brackets for securing a UPS in a rack come included or installed. A pair of left and right rails. Shown is the left rail.

RM030-US (2U)



Mass: Approx. 1.4 kg (Paired: 2.8 kg)

MEMO