SANYO DENKI

Hybrid UPS

SANUPS E11B

UPS Achieving Power Quality and Efficiency For Use Around the Globe

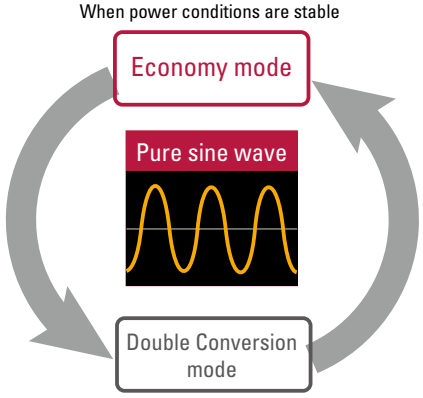
Lineup

[No. of phases/wires] Input/Output voltage	Output capacity [kVA]	[kW]	Battery backup time* Standard
[Single-phase 2-wire] 100 V model 100/110/115/120 V	1	0.8	3 min (5 min)
	1.5	1.2	
	2	1.6	
[Single-phase 2-wire] 200 V model 200/208/220/230/240 V	1	0.8	3 min (5 min)
	2	1.6	

* At 25°C ambient temperature and load power factor of 0.8, using new, fully charged batteries. In parentheses are the values at a load power factor of 0.7.

Power Quality Mode and Energy-Saving Mode

- The E11B employs a hybrid UPS topology.* The UPS automatically selects the optimal mode of operation for any given input power conditions. It achieves energy savings while providing high-quality power to loads when needed.



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

Wide Input Voltage Range

- The 100 V and 200 V models have wide input voltage ranges of 55 to 150 V and 110 to 300 V,** respectively. Both models have a wide input frequency range of 40 to 120 Hz.
- Even with poor power conditions, these wide ranges reduce the number of unnecessary transfers to battery power, minimizing battery drain.

** At a load level less than 40%.

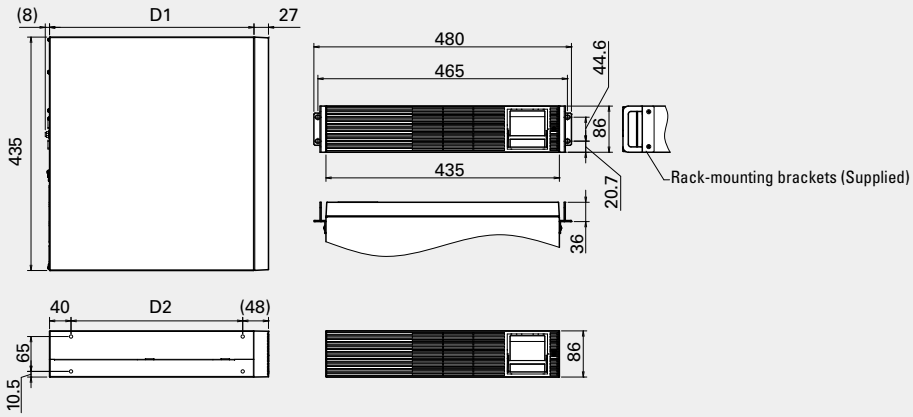
Wide Operating Temperature Range

- The E11B has a wide operating temperature range of -10 to +55°C. (-10 to +40°C for UL/CE certified models)

Variety of Input and Output Options Available

- We have a variety of input plug and output outlet options available for selection, allowing the E11B to be used in various countries.

Dimensions (Unit: mm)



Output capacity	W	H	D1	D2	Mass
1 kVA	480	86	408	320	15 kg
1.5 kVA			473	412	20 kg
2 kVA			565	477	25 kg

Specifications

100 V Model

Model no.				E11B102A001AM	E11B152A001AM	E11B202A001AM
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 AC output)			100/110/115/120 V		
	Voltage range	During Double Conversion mode		At load level < 40%: 55 to 150 V At load level < 70%: 68 to 144 V At load level ≥ 70%: 80 to 144 V		
		During Economy mode		Within ±8% of rated voltage		
	Rated frequency			50/60 Hz (auto-sensing[3])		
	Frequency range	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 the 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	During Double Conversion mode		Within ±2% of rated voltage		
		During Economy mode		Within -10 to +8% of rated voltage		
	Rated frequency (Same as the input rated frequency)			50/60 Hz		
	Frequency regulation	During grid operation	In Double Conversion mode fixed setting	Within ±1% of rated frequency		
			In automatic transfer setting	Within ±1, 3, or 5% of the rated frequency (Factory setting: ±3%)		
		During battery operation		Within ±0.5% of rated frequency (This applies during asynchronous operation too)		
	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		105% (for 200 ms)		
		Bypass		200% (for 30 s), 800% (for 2 cycles)		
Battery	Type			Small-sized valve-regulated lead-acid (VRLA) battery		
	Battery backup time[5]			3 min (5 min)		
	Expected life[6]			Approx. 5 years		
	Battery capacity (At 15-minute rate)			34 W (2 in series)	34 W (3 in series)	34 W (4 in series)
	Battery self-test			Automatic		
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 (during Economy mode)				40 dB	45 dB	55 dB
Heat dissipation (during Double Conversion mode, at rated operation, after battery charging completed)				130 W	195 W	260 W
Input leakage current				3 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)		
EMC standard				VCCI ClassA		
Separate options						
Vertical stands				STAND2UA00		
Rack support rail[10]				RM030 (2U)		

(1) When the UPS transfers from Economy mode to battery operation, interruption of less than 8 ms will occur. Please fix the operation mode to Double Conversion mode for applications that require uninterrupted transfers.

(2) If single-wire grounding the AC input and output, set the input/output ground phase according to the UPS specification. The W (N) terminal of AC input (S phase) and the W (N) terminal of AC output (V phase) are to be grounded.

(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. In parentheses are the values at a load power factor of 0.7.

(6) When used at 25°C ambient temperature.

(7) Use of USB interface requires driver installation.

(8) Battery charging will stop when battery temperature exceeds 40°C.

(9) To extend battery life, avoid use or storage for extended periods of time in environments exceeding +30°C. If a UPS is stored without being operated for a long period, the batteries require recharging once every six months.

(10) Used for mounting a UPS unit or battery module on a standard 19-inch rack.

200 V Model

E11B102A002AM	E11B202A002AM	Model no.			
1.0 kVA / 0.8 kW	2.0 kVA / 1.6 kW	Rated output capacity (apparent power / active power)			
Hybrid[1]		Topology			Technology
Forced air cooling		Cooling method			
Single-phase 2-wire[2]		No. of phases/wires			AC input
200/208/220/230/240 V		Rated voltage (Same as AC output)			
At load level < 40%: 110 to 300 V At load level < 70%: 136 to 288 V At load level ≥ 70%: 160 to 288 V		During Double Conversion mode		Voltage range	
Within ±8% of rated voltage		During Economy mode			
50/60 Hz (auto-sensing[3])		Rated frequency			
Within ±1% of rated frequency (Synchronization range)		In Double Conversion mode fixed setting		Frequency range	
40 to 120 Hz (Asynchronous operation range)					
Within ±1, 3, or 5% of the rated frequency (Factory setting is ±3%; synchronization range)		In automatic transfer setting			
40 to 120 Hz (Asynchronous operation range)					
1.1 kVA or less	2.2 kVA or less	Required capacity[4]			
0.95 or greater		Input power factor			
Single-phase 2-wire		No. of phases/wires			AC output
200/208/220/230/240 V (Factory setting: 200 V)		Rated voltage (Changeable with settings)			
Within ±2% of rated voltage		During Double Conversion mode		Voltage regulation	
Within -10 to +8% of rated voltage		During Economy mode			
50/60 Hz		Rated frequency (Same as the input rated frequency)			
Within ±1% of rated frequency		In Double Conversion mode fixed setting	During grid operation	Frequency regulation	
Within ±1, 3, or 5% of the rated frequency (Factory setting: ±3%)		In automatic transfer setting			
Within ±0.5% of rated frequency (This applies during asynchronous operation too)		During battery operation			
3% or less		At linear load	Voltage harmonic distortion (At rated output)		
8% or less		At rectifier load			
0.8 lagging (Variation range: 0.7 lagging to 1.0)		Rated		Load power factor	
Within ±5% of rated voltage (For 0⇔100% load step changes at rated input)		For abrupt load change		Transient voltage fluctuation	
Within ±5% of rated voltage (At rated output)		For loss or return of input power			
Within ±5% of rated voltage (For ±10% abrupt change)		For abrupt input voltage change			
Automatic transfer to bypass (With automatic retransfer function)		Overcurrent protection			
105% (for 200 ms)		Inverter		Overload capability	
200% (for 30 s), 800% (for 2 cycles)		Bypass			
Small-sized valve-regulated lead-acid (VRLA) battery		Type			Battery
3 min (5 min)		Battery backup time[5]			
Approx. 5 years		Expected life[6]			
34 W (2 in series)	34 W (4 in series)	Battery capacity (At 15-minute rate)			
Automatic		Battery self-test			
RS-232C, USB Type B[7] (Cannot be used at the same time)		PC port			Interface
Remote ON/OFF		Remote port			
Optional dry contact interface card is required		Dry contact			
Optional LAN interface card is required		Network support			
40 dB	55 dB	Acoustic noise (during Economy mode)			
130 W	260 W	Heat dissipation (during Double Conversion mode, at rated operation, after battery charging completed)			
3 mA or less		Input leakage current			
Ambient temperature: -10 to +55°C;[8] relative humidity: 20 to 90% (non-condensing)		Operating environment			
Ambient temperature: -15 to +60°C; relative humidity: 20 to 90% (non-condensing)		Storage environment[9]			
VCCI ClassA		EMC standard			
		Separate options			
STAND2UA00		Vertical stands			
RM030 (2U)		Rack support rail[10]			

Specifications

UL/CE certified model

Model no.				E11B102A001AMUJ	E11B102A002AMUJ
Rated output capacity (apparent power / active power)				1.0 kVA / 0.8 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 AC output)			100/110/115/120 V	200/208/220/230/240 V
	Voltage range	During Double Conversion mode		At load level < 40%: 55 to 150 V	At load level < 40%: 110 to 300 V
				At load level < 70%: 68 to 144 V	At load level < 70%: 136 to 288 V
				At load level ≥ 70%: 80 to 144 V	At load level ≥ 70%: 160 to 288 V
		During Economy mode		Within ±8% of rated voltage	
	Rated frequency			50/60 Hz (auto-sensing[3])	
	Frequency range	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 the rated frequency (Factory setting is ±3%; synchronization range)	
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	Required capacity[4]			1.1 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)	200/208/220/230/240 V (Factory setting: 200 V)
	Voltage regulation	During Double Conversion mode		Within ±2% of rated voltage	
		During Economy mode		Within -10 to +8% of rated voltage	
	Rated frequency (Same as the input rated frequency)			50/60 Hz	
	Frequency regulation	During grid operation	In Double Conversion mode fixed setting	Within ±1% of rated frequency	
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	Remote port			Remote ON/OFF	
	Dry contact			Optional dry contact interface card is required	
	Network support			Optional LAN interface card is required	
Acoustic noise (during Economy mode)				40 dB	
Heat dissipation (during Double Conversion mode, at rated operation, after battery charging completed)				130 W	
Input leakage current				3 mA or less	
Operating environment				Ambient temperature: -10 to +40°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)	
EMC standard				VCCI ClassA	
Separate options					
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