

Hybrid UPS

# SANUPS E11A-Li

UPS equipped with lithium-ion batteries

Lineup:

[No. of phases/wires] Input/Output voltage	Output capacity		Battery backup time*
	[VA]	[W]	
[Single-phase 2-wire] 100 V model 100/110/115/120 V	350	245	8 min

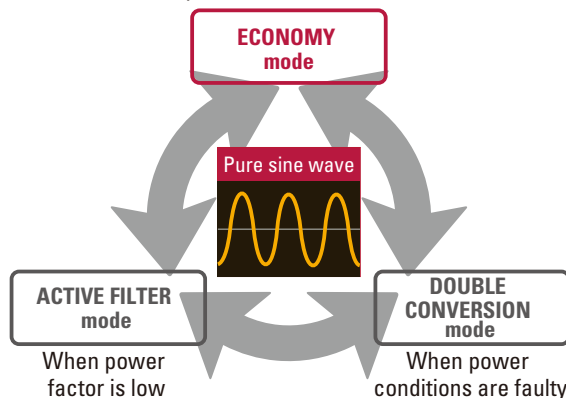
\* At a 25°C ambient temperature and load power factor of 0.7, using new, fully charged batteries.



## Power Quality Mode and Energy-Saving Mode

- This UPS employs a hybrid topology.<sup>(1)</sup> 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.

When power conditions are stable



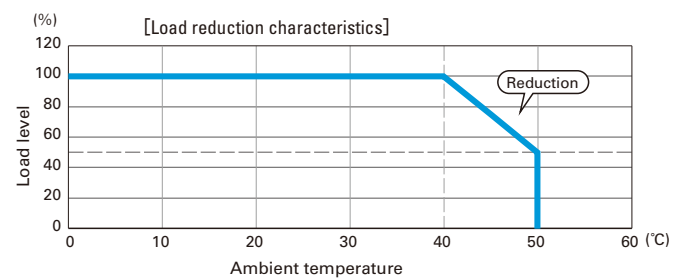
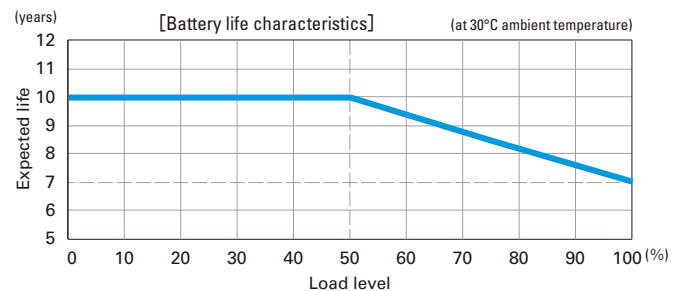
(1) A UPS design that automatically switches the double conversion and standby topologies according to the input power conditions. Operation modes other than Active Filter mode can be fixed manually.

## Reduced Maintenance Work

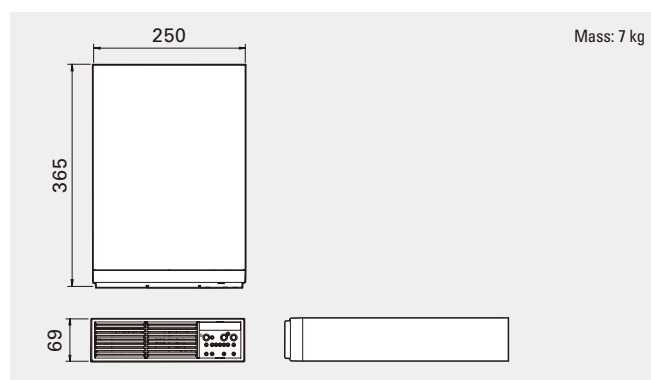
- Our conventional UPSs<sup>(2)</sup> using lead-acid batteries require battery replacement about every 5 years. Thanks to Li-ion batteries, this UPS doesn't require battery replacement for 10 years.<sup>(3)</sup> Thus, the cost of battery replacement can be reduced.

(2) Conventional UPS: E11A351 (with lead-acid batteries)

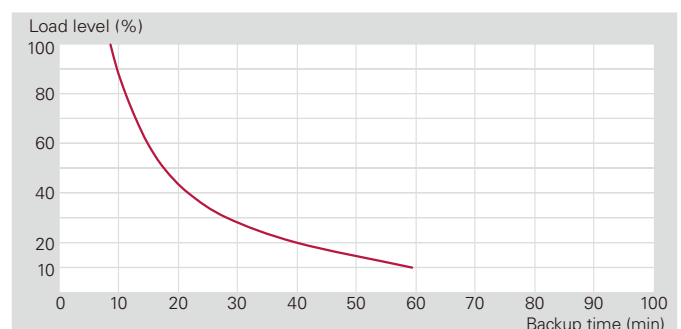
(3) At a load level of 50% or less and 30°C ambient temperature.



## Dimensions (Unit: mm)



## Load Level vs Backup Time



\* At a 25°C ambient temperature, using new, fully charged batteries.

## Specifications

Model no.		E11AL351B021		Remarks	
Rated output capacity (apparent power / active power)		350 VA / 245 W			
Technology	Topology	Hybrid <sup>(1)</sup>			
	Cooling method	Forced air cooling			
AC input	No. of phases/wires	Single-phase 2-wire <sup>(2)</sup>			
	Rated voltage	100/110/115/120 V		Same as AC output	
	Input plug	NEMA 5-15P			
	Voltage range	In Double Conversion mode	80 to 115 V		
		In Active Filter mode	95 to 105 V		
		In Economy mode	Within $\pm 8\%$ of rated voltage ( $\pm 5\%$ in automatic setting)		
	Rated frequency	50/60 Hz (auto-sensing <sup>(3)</sup> )			
	Frequency range	In Double Conversion mode	Within $\pm 8\%$ of rated frequency		
		In Active Filter mode	Within $\pm 1, 3, \text{ or } 5\%$ of rated frequency		
		In Economy mode			
Required capacity <sup>(4)</sup>	358 VA				
Input power factor	0.95 or greater				
AC output	No. of phases/wires	Single-phase 2-wire			
	Rated voltage	100/110/115/120 V (Factory setting: 100 V)		User-selectable	
	Voltage regulation	In Double Conversion mode	Within $\pm 2\%$ of rated voltage		
		In Active Filter mode	Within $-7$ to $+5\%$ of rated voltage		
		In Economy mode	Within $-10\%$ to $+8\%$ of rated voltage ( $-7\%$ to $+5\%$ in automatic setting)		
	Rated frequency	50/60 Hz		Same as the input frequency	
	Frequency regulation	In grid operation	In Double Conversion mode fixed setting	Within $\pm 1\%$ of rated frequency	
			In automatic transfer setting	Within $\pm 1, 3, \text{ or } 5\%$ of rated frequency (Factory setting: $\pm 3\%$ )	
		In battery operation	Within $\pm 0.5\%$ of rated frequency (This applies in asynchronous operation too)		
	Voltage harmonic distortion	At linear load	3% or less		At rated output
		At rectifier load	8% or less		
	Load power factor	Rated	0.7 lagging (Variation range: 0.7 lagging to 1.0)		
	Transient voltage fluctuation	For abrupt load change	Within $\pm 5\%$ of rated voltage (For $0 \leftrightarrow 100\%$ load step changes at rated input)		
		For loss or return of input power	Within $\pm 5\%$ of rated voltage (At rated output)		
For abrupt input voltage change		Within $\pm 5\%$ of rated voltage (For $\pm 10\%$ abrupt change)			
Overcurrent protection	Breaker protection				
Overload capability	200% (for 30 s), 800% (for 2 cycles)				
Output outlet (x pcs)	NEMA 5-15R (x 4)				
Battery	Type	Lithium-ion battery			
	Battery backup time <sup>(5)</sup>	8 min			
	Expected service life	At 50% load level	Approx. 10 years		At 30°C ambient temperature
		At rated load level	Approx. 7 years		
	Battery capacity	66 Wh		5 Ah	
Battery self-test	Can be enabled (Factory setting: "disabled")				
Interface	PC port	RS-232C			
	Network support	Optional LAN interface card box is required			
Acoustic noise (In Economy mode)	38 dB				
Heat dissipation (In Double Conversion mode)	59 W (At rated output, after battery charging completed)				
Input leakage current	3 mA or less				
Operating environment	At 50% load level	Ambient temperature: 0 to $+50^{\circ}\text{C}$ ; relative humidity: 10 to 90% (non-condensing)			
	At rated load level	Ambient temperature: 0 to $+40^{\circ}\text{C}$ ; relative humidity: 10 to 90% (non-condensing)			
Storage environment <sup>(6)</sup>	Ambient temperature: $-10$ to $+40^{\circ}\text{C}$ ; relative humidity: 10 to 90% (non-condensing)				
EMC standard	Emission (noise)	VCCI32-1 Class A			
Separate options					
LAN interface card box		PRLANBOX011B PRLANBOX012B (Supports temperature/humidity sensors)			
Replacement air filter		FL003			

(1) When the UPS transfers from Economy mode to battery operation, interruption of less than 5 ms will occur. Fix the operation mode to Double Conversion mode for applications that require uninterrupted transfer.

(2) If single-wire grounding the AC input and output, set the input/output ground phase according to the UPS specification.

(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  $\pm 3\%$  (1, 3, or 5% selectable).

(4) Max. capacity during battery recovery charging

(5) At a 25°C ambient temperature and load power factor of 0.7, using new, fully charged batteries.

(6) Avoid use or storage in  $+30^{\circ}\text{C}$  or higher temperature for extended periods of time, or the (lithium-ion) battery's life will be shortened. When storing the UPS for a long period without operating it, the lithium-ion batteries require recharging once every six months.