



Hybrid UPS

# SANUPS E11A-Li

UPS equipped with lithium-ion batteries

Lineup:

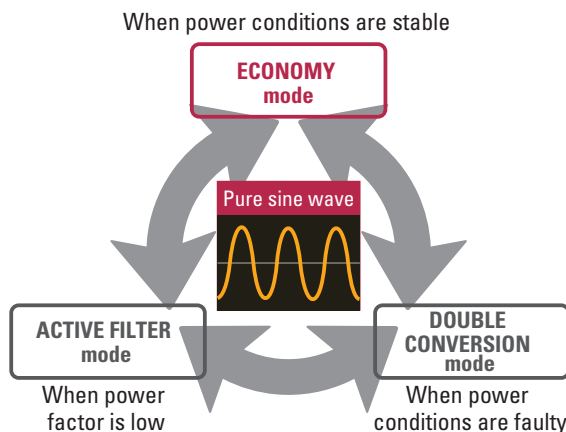
[No. of phases/wires] Input/Output voltage	Output capacity		Battery backup time*
	[VA]	[W]	
[Single-phase 2-wire] 100 V model 100/110/115/120 V	350	245	8 min

\* 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.



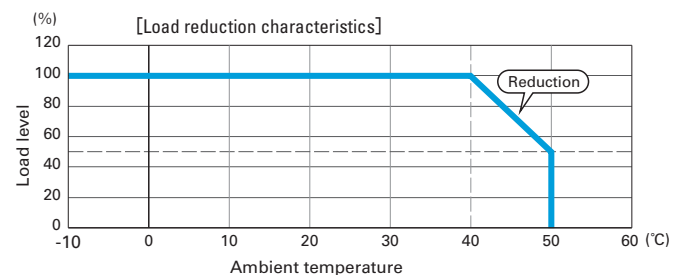
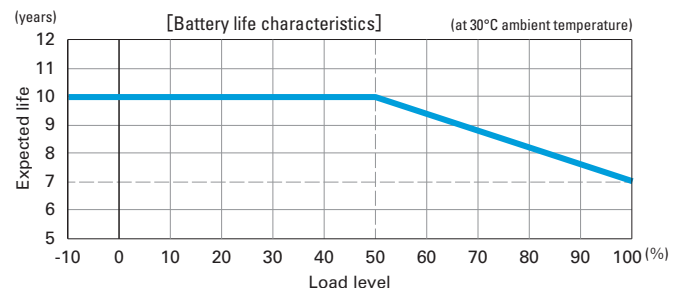
(1) A UPS design that automatically switches the double conversion and standby topologies according to the input power conditions. Operation modes other than Active Filter mode can be fixed manually.

Reduced Maintenance Work

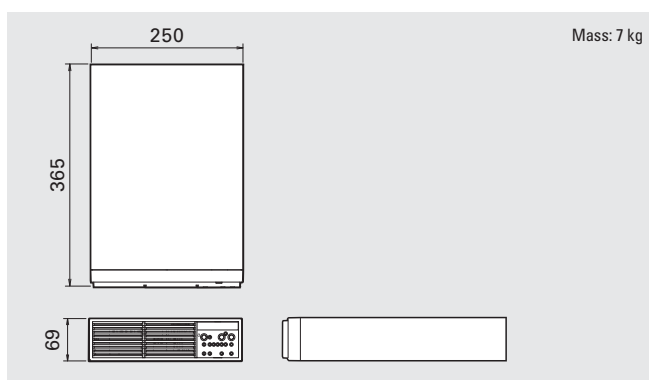
- Our conventional UPSs<sup>(2)</sup> using lead-acid batteries require battery replacement about every 5 years. Thanks to lithium-ion batteries, this UPS doesn't require battery replacement for 10 years.<sup>(3)</sup> Thus, the cost of battery replacement can be reduced.

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

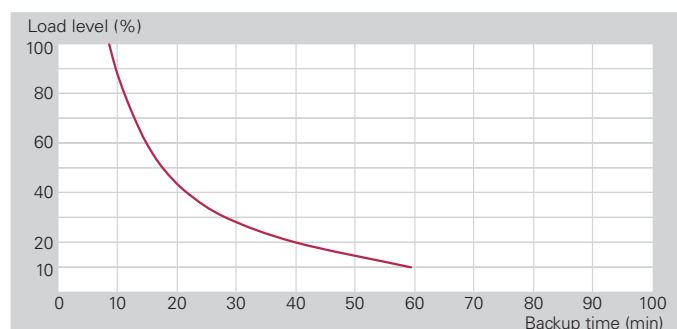
(3) At a load level of 50% or less and 30°C ambient temperature.



Dimensions (Unit: mm)



Load Level vs Backup Time



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

## Specifications

Model no.		E11AL351C021		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 load levels $\leq 50\%$	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 load levels $\leq 50\%$	Ambient temperature: $-10$ to $+50^\circ\text{C}$ ; relative humidity: 10 to 90% (non-condensing)			
	At rated load level	Ambient temperature: $-10$ 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		PRLANBOX031			
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.